



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

Report Title: Clean Air Act Inspection of Cunningham Energy
Inspection Date(s): May 6, 2021
Regulatory Program(s): SIP, NSPS
Company Name: Cunningham Energy LLC
Facility Name: King, Cochran, Doctors Creek, and Morris Sites
Facility Location: Shelton Road
Bomont, WV 25030
Latitude: 38.42557 (King Site) **Longitude:** -81.21959
County/Parish: Clay
AFS Number: WV00001500021
Permit Number: R13-3370 (King Site)
NAICS Code: 211111 **SIC:** 1311
Unique Project #: [Click or tap here to enter text]

Facility Representatives: **Point of Contact**
Mike Murphy, Well Tender, Summit ☐
Phone: 304-380-5299 Contact: [Enter contact information]
Barry Cunningham, Cunningham Energy ☒
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EPA Inspectors:
Bruce Augustine, Environmental Scientist 3ED21
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State/Local Inspectors:
Doug Hammell, West Virginia Department of Environmental Protection
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EPA Lead Inspector

Signature

Bruce Augustine

Date

1650 Arch Street (3ED21)
Philadelphia, PA 19103-2029

Supervisor

Signature

Kristen Hall

Date

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I. Introduction

The United States Environmental Protection Agency (EPA) conducted a Clean Air Act (CAA) inspection at Cunningham Energy LLC (Cunningham or Facility) to verify compliance with applicable State and Federal regulations. The West Virginia Department of Environmental Protection (WVDEP) was notified of the inspection on April 21, 2021 via email. On May 3, 2021, EPA attempted to notify the Facility of the planned inspection via phone and email (see Attachment 1), however, EPA was not able to make contact with any employees. EPA was eventually contacted by a former employee who was able to arrange a meeting time with the third party company who currently operates the wellpads.

A. Summary of the Facility

The Facility office is located at 3230 Pennsylvania Avenue, Charleston, WV 25302. EPA inspected four of Cunningham's sites: King, JS Cochran, Doctor's Creek, and Morris. Cunningham is an independent oil and gas producer that began operations in 2008 and is owned by members of the Cunningham family. The Cunningham Energy website states that operations are primarily based in West Virginia, but they also have operating interests in Ohio, Kentucky, and Illinois. Cunningham is engaged in the drilling of oil and gas wells to extract natural gas and oil for sale. Multiple wells are drilled on a wellpad and then separated using a two phase separator. Liquids are placed into storage vessels where separation of oil and water occurs.

The King Site received a minor source R13 permit (R13-3370) from WVDEP issued on 12/18/2018. The Cochran Site received a minor source G70 permit (G70-D223) from WVDEP issued on 2/21/2017. It was not clear during the inspection if the Doctor's Creek and Morris site are permitted by WVDEP.

Each of the four sites are classified as minor source for all criteria pollutants and hazardous air pollutants (HAP). The Facilities are subject to, or potentially subject to the following federal regulations:

- 40 CFR Part 60 Subpart OOOO - 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 (NSPS OOOO)
- 40 CFR Part 60 Subpart OOOOa - Crude Oil and Natural Gas Facilities for Which Construction, Modification, or Reconstruction Commenced after September 18, 2015 (NSPS OOOOa)
- 40 CFR Part 60 Subpart JJJJ - New Source Performance Standards for Stationary Spark Ignition Internal Combustion Engines (NSPS JJJJ)
- 40 CFR Part 63 Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines (MACT ZZZZ)

B. Inspection Opening Conference

At 9:17AM on May 6, 2021, EPA arrived at the Facility for a CAA Inspection and conducted a brief opening conference. Cunningham was represented by Mike Murphy from Summit. Mr. Murphy indicated that Summit is the third party company that operates Cunningham's wells in the area. Also, Doug Hammell WVDEP was present. EPA inspector, Bruce Augustine presented his credentials and explained the purpose of the visit was to conduct a full compliance evaluation (FCE) to determine compliance with their permit and any applicable regulations. Since no representatives of Cunningham were present, no claim of CBI was made for any material collected during the inspection.

II. Site Activity/Process Description

Cunningham operates wellpads which extract oil and natural gas from horizontal and vertical wells. Cunningham uses pumpjacks and compressors to extract liquids and gas from the wells before sending it to a two phase separator. The separator separates the gas from the liquids. The natural gas is sent to a header pipe which is combined with gas from other wellpads before being sent downstream to a Dominion pipeline. The liquids are sent to a dedicated tank for each well where water and oil are separated through gravity. Water or oil is pumped out of the tank and removed from the site via truck. Oil is sent for sale and water is sent for disposal. Combustion sources at the site(s) include a compressor engine for the wells, and a vapor recovery unit or enclosed combustor to control storage vessel emissions.

The permit for the King Site institutes a limit on HAP emissions from the site of 10tpy for a single HAP and 25tpy for combined HAP. The permit also imposes emission limits on the VRU compressor engine. The permit for the Cochran Site imposes a VOC limit of 80tpy and HAP limit of 8tpy for a single HAP or 20tpy for combined HAP.

III. Observations

On May 6, 2021, the EPA inspection team, accompanied by Mike Murphy of Summit and Doug Hammel of WVDEP, performed inspections of facilities owned Cunningham Energy located in Clay County. In general, the inspection team inspected the wells, storage vessels, compressor engines, and enclosed combustor at each well site. Emissions sources at each of the well sites were surveyed using the following equipment:

- Infrared (IR) camera manufactured by FLIR, Model GF320, Serial Number: 44401135. The GF320 is an optical gas imaging ("OGI") camera capable of detecting hydrocarbon emissions. Bruce Augustine operated the FLIR camera during the inspection.
- A digital camera, Model Ricoh G700SE, was used to take photographs in visible light. Bruce Augustine operated the digital camera during the inspection.

The temperature during the walkthrough was approximately 55-60°F with sun and clouds. The following is a summary of information obtained, observations, and the emissions survey results from each inspected facility. A photo log is included in Attachment 2 and the OGI files are included in Attachment 3:

Site Name:	King
Air-ICIS #:	WV00001500021
Address:	Shelton Road Bomont, WV 25030 Clay County
Longitude & Latitude:	38.42557, -81.21959
Date & time:	5/6/2021; Arrived at 9:17 A.M. and departed at 10:15 A.M.
Number of tanks:	10 storage tanks
Combustor temp. & pressure:	N/A – No Combustor or VRU onsite
OGI filenames:	MOV_0420.mp4 – Tank Battery MOV_0421.mp4 – Thief Hatch on TK9412 MOV_0422.mp4 – Tak Vapor Collection Line Open on Ground
Digital photos:	RIMG0001-0010.jpg See Attachment 2 for description
Observations:	Equipment on-site: 10 storage tanks, 5 wells, 4 two phase separators, 2 frac water tanks The King Site currently has four horizontal wells (18-21) and one small vertical well. None of the wells were in production during the inspection. Summit is in the process of treating the wells with water and a chemical that will be pumped down the well to “clean” it for production. Summit indicated that they took over operation of the sites in January 2021 for Cunningham and that the wells had sat for a while without producing. The wells originally came back online in February 2021. Well 18 can run produce the most and will operate 6 hr/day, 3 day/week. While wells 19-21 operate a little less. The wells can produce 15-18 bbl oil/day. There is a dedicated two phase separator for each well to separate liquids and gas. The gas is sent downstream to Dominion. The wells were operating, however, the compressor was pulling air into the line and Dominion shut them in to prevent excess oxygen in the gas line. Any liquids from the separator are sent to a storage tank and water is then pumped from the tank to a truck. Summit estimated that it would be approximately two weeks before well treatment was completed and the wells were back online producing. There was no compressor engine for the VRU or an enclosed combustor at this site to control tank vapors. Summit stated that the compressor had been removed and sent to the Cochran Site. Using the FLRI camera, EPA observed vapors from the thief hatch on TK

	9412 and observed liquids around the thief hatches on multiple storage tanks. The vapor control header pipe for the tanks was observed open on the ground and vapors were observed with the FLIR camera emitting from the end of the open pipe. While onsite, several water trucks arrived to add water to the two water tanks that will be pumped down the wells.
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Site Name:	Cochran
Air-ICIS #:	WV00001500018
Address:	Shelton Road Bomont, WV 25030 Clay County
Longitude & Latitude:	38.42557, -81.21959
Date & time:	5/6/2021; Arrived at 10:20 A.M. and departed at 11:08 A.M.
Number of tanks:	18 storage tanks
Combustor temp. & pressure:	Enclosed Combustor – Not Operating
OGI filenames:	MOV_0423.mp4 – 3rd Tank for Well 8h -Thief hatch MOV_0424.mp4 – TK9408 thief hatch leak MOV_0425.mp4 – TK9410 for Well 9H thief hatch leak MOV_0426.mp4 - Oil Tank for Well 6 thief hatch MOV_0427.mp4 - Kimray Gas Regulator to gas sales line
Digital photos:	RIMG0011-0023.jpg See Attachment 2 for description
Observations:	Equipment on-site: 18 storage tanks, 6 wells, 1 enclosed combustor, 2 compressor engines The Cochran Site consists of six wells, none of which were in production. Summit is planning to bring, at least, wells 5, 6, and 8 back into production in the near future. Summit stated that the wells operated approximately three weeks ago for a week before ceasing production. There is an enclosed combustor onsite to control tank vapor emissions, however, the pilot light was not lit. Also, there was no identification on the combustor to determine the make and model. Emissions were observed with the FLIR camera from the thief hatches on the third tank in (not labeled) for Well 8H, the thief hatch on TK9408, and the thief hatch for TK 9410. No emissions were observed from the combustor stack. There are two compressor engines at the site. A large Ajax compressor is out of service and appeared to be partially dismantled. Summit indicated that it was going to be removed from the site. A smaller LeRoi compressor was onsite but not operating. A leak was observed with the FLIR camera from a

	Kimray gas regulator valve from the compressor to the gas sales line. No other production or parametric monitoring data was available at this site.
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Site Name:	Doctors Creek
Air-ICIS #:	N/A
Address:	N/A
Longitude & Latitude:	38.506016, -81.359267
Date & time:	5/6/2021; Arrived at 11:34 A.M. and departed at 11:46 A.M.
Number of tanks:	5 storage tanks
Combustor temp. & pressure:	N/A
OGI filenames:	None Taken
Digital photos:	RIMG0024-0027.jpg See Attachment 2 for description
Observations:	The Doctor's Creek Site consists of five storage vessels and a single well. Summit indicated that oil from sites up the road is trucked down to this site and then removed by other trucks at a later time when the tanks are full. Nothing at the site was operating during the inspection. The tanks had minimal if any liquid in them and they were not equipped with pressure hatches. Each of the tanks had a flap that covered the tank hatch but it was not tightly secured. There was staining observed near the ground around the tank bottom where hose connections might be made. None of the tanks were equipped with vapor controls. This site had no signage or markings of any kind. Summit could not provide any additional production or operating information regarding this site.

Site Name:	Morris
Air-ICIS #:	N/A
Address:	N/A
Longitude & Latitude:	38.506016, -81.359267
Date & time:	5/6/2021; Arrived at 12:10 P.M. and departed at 12:23 P.M.
Number of tanks:	1 storage tank
Combustor temp. & pressure:	N/A
OGI filenames:	MOV_0428.mp4 Pipes venting from tank
Digital photos:	RIMG0028-0030.jpg See Attachment 2 for description
Observations:	The Morris Site consists of a single well, tank, separator, and compressor engine. The tank is uncontrolled and vapors were observed with the FLIR camera from two straight pipes on the top of the tank. Summit could provide no further operating or production info on this site.

The walkthrough concluded at 12.23PM

IV. Records Review

Since no one from Cunningham was contacted prior to the inspection, no records were provided during the inspection and Summit did not have any records. Therefore, a record review was not conducted onsite and further attempts will be made to contact Cunningham and seek appropriate records.

V. Closing Conference

A brief closing meeting was held with Summit at the Morris Site. EPA indicated that an inspection report would be prepared and be sent to the appropriate contacts. Mr. Murphy provided names and contact numbers for his supervisors at Summit and Ryan Cunningham of Cunningham Energy. No further information was discussed with Summit.

The following have been identified as *potential* issues during the inspection. They are issues that require either further investigation by EPA or additional information or explanation by Cunningham.

- The vapors from the storage vessels at the King Site are being vented directly to atmosphere. The permit indicates that tank emissions shall be controlled by a VRU and be reduced by 95%. No tank emission controls were visible and emissions were observed with the FLIR camera at the site.
- It is not clear that Cunningham has provided any reports or notifications for NSPS OOOO, OOOOa, JJJJ, or MACT ZZZZ.
- It is not clear the Cunningham has submitted an annual emission inventory for the King Site, as required by Condition 3.5.5 of the permit.
- It is not clear that Cunningham is submitting an annual certification for the G70D permit at the Cochran Site, as required.

VI. List of Attachments

Attachment 1: Email to Barry Cunningham notifying Cunningham of inspection and requesting records

Attachment 2: Photo Log

Attachment 3: OGI Log