



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, ILLINOIS 60604**

OCT 28 2019

DATE:

SUBJECT: CLEAN AIR ACT INSPECTION REPORT
Antero Resources (Antero) – Andes Well Pad, Quaker City, Ohio

FROM: Constantinos Loukeris, Environmental Engineer
AECAB (MI/WI)

THRU: Ethan Chatfield, Acting Section Chief
AECAB (MI/WI)

TO: File

BASIC INFORMATION

Facility Name: Antero Resources (Antero) – Andes Well Pad

Facility Location: Quaker City, Ohio

Date of Inspection: August 29, 2019

EPA Inspectors:

1. Constantinos Loukeris, Environmental Engineer

Other Attendees

1. Lou Ann Lee, Environmental Field Supervisor, Antero
2. Doug Stebbins, Production Superintendent, Antero
3. Mark Hertzler, Production Supervisor, Antero
4. Eddy Grenert, Field Production Engineer, Antero
5. Gary Stephens, Production Roustabout, Antero
6. Bob Lucas, Production Roustabout, Antero
7. Jeremy Kinney, Environmental Field Specialist II, Antero
8. Ken Callaway- Production FSS, Contractor to Antero

Contact Email Address: llee@anteroresources.com

Purpose of Inspection: to assess compliance with requirements of NSPS Subparts
OOOO/OOOOa and facility PTIO

Facility Type: oil and natural gas well pad

Regulations Central to Inspection: New Source Performance Standards (NSPS) Subparts OOOO and OOOOa

Arrival Time: 5:15 pm

Departure Time: 6:02 pm

Inspection Type:

- ☐ Unannounced Inspection
- ☒ Announced Inspection

OPENING CONFERENCE

- ☒ Credentials Presented
- ☒ CBI warning to facility provided

The following information was obtained verbally from Antero representatives unless otherwise noted.

Process Description:

At the well pad, an oil/gas/water emulsion is extracted from the formation through wells on-site. The emulsion from each well goes to a separator, from which the gas is sent to the sales line and the oil and water are piped to separate 400-barrel, atmospheric pressure, fixed-roof tanks on-site. The vapors from the tank headspaces are piped together and to a combustor for destruction. Each tank has a "thief" hatch on top for gaining access to the liquid when necessary. The thief hatches are set to relieve pressure should the pressure due to flashing, working, or breathing emissions from the liquids contained within the tanks get too high for the piping of the vapor capture system and combustor to accommodate.

Staff Interview: The Andes well pad has five wells and fourteen tanks.

TOUR INFORMATION

EPA toured the facility: Yes

Data Collected and Observations:

We climbed the tank battery and viewed the thief hatches and pressure relief devices with the FLIR® GF-320 camera (FLIR® camera). We observed emissions with the FLIR® camera from emergency vents on water tanks and condensate tanks and confirmed the presence of volatile organic compounds (VOC) in the emissions plume using the photo ionization detector. This facility has five enclosed combustors, and VOC were imaged from the one of the five. In addition, Antero used a "zero emission" model Jayco thief hatch on several of the tanks at this pad. EPA did not observe VOC emissions from those thief hatches.

Photos and/or Videos: were taken during the inspection.

Field Measurements: were not taken during this inspection.

CLOSING CONFERENCE

Requested documents:

We requested the following documents, and summarized via e-mail on April 23, 2019:

- Documentation from the last quarterly optical gas imaging inspection performed by Antero at the well pads EPA inspected on August 29, 2019;
- Well names associated with the well pads EPA inspected on August 29, 2019;
- Pressure settings for the thief hatch, emergency vent, conservation vent, vacuum breakers for each tank/tank battery at the well pads EPA inspected on August 29, 2019;
- Antero indicated that all sites are complying with NSPS OOOO/OOOOa; however, based on Antero's PTE calcs, which ones are required to comply with NSPS OOOO/OOOOa and which ones are not? Provide the emissions calcs for those Antero believes are not required to;
- Model for Jayco "zero-emission" thief hatch that was observed at a few of the Antero well pads EPA inspected on August 29, 2019;
- Arrangement and pressure settings of the 5 enclosed combustors at the Andes Well Pad, including how the vapor recovery systems;
- Emission calcs associated with dump events and/or other malfunction events for the past 2 years at the well pads EPA inspected on August 29, 2019; and
- Names and titles of those who participated on our well pad inspections (I don't believe I asked for this, but if you could please provide).

Antero responded with responses to each of the requested documents via e-mail on October 2 and 11, 2019.

Concerns: Where we detected emissions with the FLIR® camera, we shared our observations with Antero personnel, so the leak point could be tagged for repair.

SIGNATURES

Report Author:



Date:

10/24/2019

Section Chief:



Date:

10/28/2019

Facility Name: Antero Resources (Antero) – Andes Well Pad
Facility Location: Quaker City, Ohio
Date of Inspection: August 29, 2019

APPENDICES AND ATTACHMENTS

1. Digital image/video log
2. Digital images and videos on CD

Facility Name: Antero Resources (Antero) – Andes Well Pad

Facility Location: Quaker City, Ohio

Date of Inspection: August 29, 2019

APPENDIX A: DIGITAL IMAGE LOG

1. Inspector Name: Constantinos Loukeris	2. Date(s) of Inspection: August 29, 2019
3. Company/Facility Name: Antero Resources (Antero) – Andes Well Pad	4. Street Address, City, State: Quaker City, Ohio
5. Number of Images: 8	6. Archival Record Location: CD-R labeled “Antero Resources – Andes Well Pad – Inspection video 8/29/2019”

Image Number	File Name	Date	Description of Image
1	MOV_2373.mp4	8/29/2019	VOC emissions imaged from the conservation vent located above tank#14 on the pipe header to the tank battery.
2	MOV_2374.mp4	8/29/2019	VOC emissions imaged from the emergency vent at tank#14.
3	MOV_2375.mp4	8/29/2019	VOC emissions imaged from the emergency vent at tank#2.
4	MOV_2376.mp4	8/29/2019	VOC emissions imaged from the emergency vent at tank#13.
5	MOV_2377.mp4	8/29/2019	VOC emissions imaged from the emergency vent at tank#12.
6	MOV_2378.mp4	8/29/2019	VOC emissions imaged from the emergency vent at tank#6.
7	MOV_2380.mp4	8/29/2019	VOC emissions imaged from the high/low motor valve from vapor recovery unit 9693.
8	MOV_2381.mp4	8/29/2019	VOC emissions imaged from one of the five combustors.