



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

DEC 21 2016

REPLY TO THE ATTENTION OF:

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Allen Doyel, Regulatory Attorney
Chesapeake Energy Corporation
P.O. Box 18496
Oklahoma City, OK 73154-0496

Re: Finding of Violation
Chesapeake Energy Corporation, et al.
Oklahoma City, Oklahoma

Dear Mr. Doyel:

The U.S. Environmental Protection Agency is issuing the enclosed Finding of Violation (FOV) to Chesapeake Energy Corporation, Chesapeake Exploration, L.L.C., and Chesapeake Appalachia, L.L.C. (together, Chesapeake, or you) under Section 113(a)(3) of the Clean Air Act, 42 U.S.C. § 7413(a)(3). We find that you are violating Section 111 of the Clean Air Act, and the Standards of Performance for Crude Oil and Natural Gas Production, Transmission, and Distribution found in 40 C.F.R. Part 60, Subpart OOOO, at a number of your oil and gas production facilities located in Ohio.

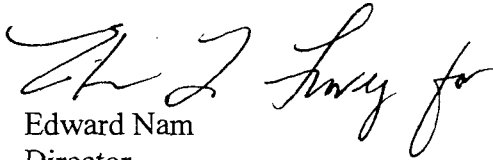
Section 113 of the Clean Air Act gives us several enforcement options. These options include issuing an administrative compliance order, issuing an administrative penalty order and bringing a judicial civil or criminal action.

We are offering you an opportunity to confer with us about the violations alleged in the FOV. The conference will give you an opportunity to present information on the specific findings of violation, any efforts you have taken to comply and the steps you will take to prevent future violations. In addition, in order to make the conference more productive, we encourage you to submit to us information responsive to the FOV prior to the conference date.

Please plan for your facility's technical and management personnel to attend the conference to discuss compliance measures and commitments. You may have an attorney represent you at this conference.

The EPA contacts in this matter are Natalie Topinka and Shilpa Patel. You may contact Ms. Topinka at (312) 886-3853 or topinka.natalie@epa.gov, or Ms. Patel at (312) 886-0120 or patel.shilpa@epa.gov to request a conference. You should make the request within 10 calendar days following receipt of this letter. We should hold any conference within 30 calendar days following receipt of this letter.

Sincerely,

A handwritten signature in black ink, appearing to read "Edward Nam" with a stylized flourish at the end.

Edward Nam
Director
Air and Radiation Division

Enclosure

cc: Bob Hodanbosi, OEPA
Melisa Witherspoon, OEPA

5. Subpart OOOO, at 40 C.F.R. § 60.5365, provides, among other things, that owners and operators of one or more storage vessel affected facilities constructed, modified or reconstructed after August 23, 2011, and on or before September 18, 2015, are subject to the applicable provisions of Subpart OOOO.

6. Subpart OOOO, at 40 C.F.R. § 60.5365(e), provides that a storage vessel affected facility is a single storage vessel located in the oil and natural gas production segment, natural gas processing segment or natural gas transmission and storage segment, and has the potential for VOC emissions equal to or greater than 6 [tons per year] as determined according to this section.... The potential for VOC emissions must be calculated using a generally accepted model or calculation methodology, based on the maximum average daily throughput determined for a 30-day period of production prior to the applicable emission determination deadline specified in this section. The determination may take into account requirements under a legally and practically enforceable limit in an operating permit or other requirement established under a Federal, State, local or tribal authority.

7. Subpart OOOO, at 40 C.F.R. § 60.5411(b), requires owners and operators of storage vessel affected facilities to ensure that covers on storage vessels meet certain requirements, including that the cover and all openings on the cover shall form a continuous impermeable barrier over the entire surface area of the liquid in the vessel; each cover opening shall be secured in a closed sealed position except when certain activities are ongoing; and that each storage vessel thief hatch shall be equipped, maintained, and operated with a weighted mechanism or equivalent, to ensure the lid remains properly seated.

8. Subpart OOOO, at 40 C.F.R. § 60.5411(c), requires owners and operators of storage vessels using a control device to control emissions to design its 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 of 40 C.F.R. § 60.5412(c) and (d); and to design and operate a closed vent system with no detectable emissions, as determined using olfactory, visual, and auditory inspections.

9. Subpart OOOO, at 40 C.F.R. § 60.5410(h), requires owners and operators of storage vessel affected facilities to demonstrate initial compliance with Subpart OOOO for each storage vessel. In order to demonstrate initial compliance with Subpart OOOO, owners and operators must have completed five compliance requirements found elsewhere in Subpart OOOO: determining the potential VOC emission rate (40 C.F.R. § 60.5365(e)); reducing VOC emissions (40 C.F.R. § 60.5395(d)); meeting certain cover, closed vent and control device requirements, as applicable (40 C.F.R. § 60.5395(e), referencing, among other things, 40 C.F.R. § 60.5411(b) and (c)); meeting reporting requirements, including an initial annual report due no later than 90 days after the initial compliance period (40 C.F.R. § 60.5420(b)); and maintaining appropriate records (40 C.F.R. § 60.5420(c)).

10. Subpart OOOO, at 40 C.F.R. § 60.5370(b), requires that at all times, including periods of startup, shutdown, and malfunction, owners and operators shall maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5**

IN THE MATTER OF:)
)
Chesapeake Energy Corporation) **FINDING OF VIOLATION**
Chesapeake Exploration, L.L.C.)
Chesapeake Appalachia, L.L.C.)
Oklahoma City, Oklahoma)
) **EPA-5-17-OH-06**
Proceedings Pursuant to)
the Clean Air Act,)
42 U.S.C. §§ 7401 et seq.)
)

FINDING OF VIOLATION

The U.S. Environmental Protection Agency (EPA) is issuing this Finding of Violation (FOV) under Section 113(a)(3) of the Clean Air Act (CAA), 42 U.S.C. § 7413(a)(3). Based on available information and as explained below, EPA finds that Chesapeake Energy Corporation and its wholly owned subsidiaries Chesapeake Exploration, L.L.C. and Chesapeake Appalachia, L.L.C. (together, Chesapeake), are violating Section 111 of the CAA, 42 U.S.C. § 7411, and its implementing regulations.

Statutory and Regulatory Authority

1. The CAA is designed to, among other things, protect and enhance the quality of the nation's air so as to promote the public health and welfare and the productive capacity of its population. Section 101(b)(1) of the CAA, 40 U.S.C. §7401(b)(1).
2. Section 111(b) of the CAA, 42 U.S.C. § 7411(b), requires EPA to publish a list of categories of stationary sources of air pollution if those sources cause or contribute significantly to air pollution that may reasonably be anticipated to endanger public health or welfare, and to promulgate regulations establishing federal standards of performance for new sources within the source category. These emission standards are known as New Source Performance Standards (NSPS), and are codified at 40 C.F.R. Part 60.
3. The NSPS includes Standards of Performance for New Stationary Sources for Crude Oil and Natural Gas Production, Transmission and Distribution, found in 40 C.F.R. Part 60, Subpart OOOO (“Subpart OOOO”).
4. Subpart OOOO, at 40 C.F.R. § 60.5430, among other things defines “storage vessel” as a tank or other vessel that contains an accumulation of crude oil, condensate, intermediate hydrocarbon liquids, or produced water, and that is constructed primarily of non-earthen materials (such as wood, concrete, steel, fiberglass, or plastic) which provide structural support.

available to EPA which may include but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.

Relevant Factual Background

11. In April and November 2015, EPA staff inspected and observed several oil and natural gas production well pads owned and operated by Chesapeake in Columbiana and Carroll counties in northeastern Ohio. These well pads include but are not limited to those identified in Attachment A to this FOV.

12. In June of 2015, EPA issued to Chesapeake an information request under Section 114 of the CAA.

13. On September 8, 2015, October 5, 2015, and February 25, 2016, Chesapeake responded to the information request. Chesapeake's responses to the information request included, among other things, emissions evaluations of the storage vessels at all the well pads listed in Attachment A.

14. Each of Chesapeake's well pads listed in Attachment A includes storage vessels that contain an accumulation of condensate or produced water, and that are constructed primarily of non-earthen materials.

15. Chesapeake's storage vessels at well pads listed in Attachment A were all constructed after August 23, 2011, but before September 18, 2015.

16. Chesapeake's storage vessels at all well pads listed in Attachment A had the potential for VOC emissions equal to or greater than six tons per year in their first 30 days of production.

17. During the April and November 2015 inspections EPA staff detected emissions from thief hatches or pressure relief devices on storage vessels at all the well pads listed in Attachment A.

Violations

18. Chesapeake's storage vessels at well pads listed in Attachment A are subject to Subpart OOOO, and based on the above described detectable emissions from storage vessels observed by EPA staff Chesapeake has failed to ensure that the covers on its storage vessels meet certain requirements, including that the covers and all openings shall form a continuous impermeable barrier over the entire surface area of the liquid in the vessel, and that each cover opening shall be secured in a closed, sealed position except when certain activities are ongoing, and therefore has violated 40 C.F.R. § 60.5411(b).

19. Based on the above described detectable emissions from storage vessels observed by EPA staff, Chesapeake has failed to design its closed vent systems to route all gases, vapors and fumes emitted from the material in the storage vessels to a control device, and to design and

operate closed vent systems with no detectable emissions, as determined using olfactory, visual, and auditory inspections, and therefore has violated 40 C.F.R. § 60.5411(c).

20. Based on, among other things, Chesapeake's failure to meet certain cover, closed vent and control device requirements, demonstrated by the above described detectable emissions from storage vessels observed by EPA staff, Chesapeake has failed to demonstrate initial compliance at its storage vessel affected facilities listed in Attachment A, and therefore has violated 40 C.F.R. § 60.5410(h).

21. Based on the above described detectable emissions from storage vessels observed by EPA staff during the April and November 2015 inspections, Chesapeake failed to operate its storage vessel affected facilities listed in Attachment A in a manner consistent with good air pollution control practice for minimizing emissions, and therefore has violated 40 C.F.R. § 60.5370(b).

Environmental Impact of Violations

22. These violations have caused or can cause excess emissions of VOC and methane.

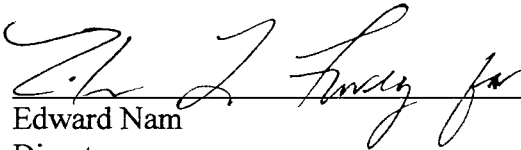
23. Excess VOC emissions can cause eye, nose, and throat irritation, headaches, loss of coordination, nausea and damage to liver, kidney and the central nervous system.

24. VOC emissions are a precursor to ground-level ozone. Breathing ozone contributes to a variety of health problems including chest pain, coughing, throat irritation and congestion. It can worsen bronchitis, emphysema, and asthma. Ground-level ozone also can reduce lung function and inflame lung tissue.

25. Methane is a potent greenhouse gas, and emissions of methane contribute to climate change.

12/21/16

Date



Edward Nam
Director
Air and Radiation Division

ATTACHMENT A

| Facility Air Permit ID | Well Facility Name | Wells Supplying the Facility | GPS Latitude | GPS Longitude | County |
|------------------------|--------------------|-------------------------------|--------------|---------------|------------|
| 02-15-00-2008 | Altenhof | ALTENHOF 10-15-4 3H | 40.79199 | -80.91016 | Columbiana |
| 02-10-00-2010 | Burry | BURRY 20-14-4 6H | 40.68209 | -80.93888 | Carroll |
| | | BURRY 20-14-4 8H | | | |
| 02-10-00-2007 | Coniglio | CONIGLIO 7-14-4 1H | 40.71615 | -80.95917 | Carroll |
| | | CONIGLIO 7-14-4 3H | | | |
| | | CONIGLIO 7-14-4 6H | | | |
| 02-15-04-2010 | D & B Kibler | D & B KIBLER 29-15-4 1H | 40.74539 | -80.94060 | Columbiana |
| 02-15-04-2006 | Frank Zehentbauer | FRANK ZEHENTBAUER 26-15-4 10H | 40.74710 | -80.88757 | Columbiana |
| | | FRANK ZEHENTBAUER 26-15-4 3H | | | |
| 02-10-00-2022 | Hawk | HAWK 2-15-5 1H | 40.71354 | -81.00489 | Carroll |
| | | HAWK 2-15-5 8H | | | |
| 02-15-00-2015 | Huffman Trust | HUFFMAN TRUST 36-16-4 10H | 40.82166 | -80.87260 | Columbiana |
| | | HUFFMAN TRUST 36-16-4 1H | | | |
| 02-10-00-2028 | Jeffery | JEFFERY 2-15-5 10H | 40.71903 | -80.99543 | Carroll |
| | | JEFFERY 2-15-5 5H | | | |
| 02-15-04-2008 | Judy Brown | JUDY BROWN 27-15-4 3H | 40.74896 | -80.90241 | Columbiana |
| | | JUDY BROWN 27-15-4 6H | | | |
| 02-10-00-2067 | Leslie | LESLIE 9-14-4 8H | 40.71398 | -80.93334 | Carroll |
| 02-10-00-2011 | Lozier | LOZIER 14-15-5 1H | 40.68600 | -81.00468 | Carroll |
| | | LOZIER 14-15-5 205H | | | |
| | | LOZIER 14-15-5 3H | | | |
| | | LOZIER 14-15-5 5H | | | |
| | | LOZIER 14-15-5 6H | | | |
| | | LOZIER 14-15-5 8H | | | |
| 02-10-00-2035 | Mills | MILLS 1-15-5 1H | 40.71447 | -80.97755 | Carroll |
| | | MILLS 1-15-5 8H | | | |
| 02-15-06-2011 | Mrugala | MRUGALA 6-14-3 10H | 40.81007 | -80.85040 | Columbiana |
| 02-10-00-2063 | Pidgeon | PIDGEEON A 22-15-5 5H | 40.67978 | -81.01440 | Carroll |
| | | PIDGEEON A 22-15-5 6H | | | |
| 02-15-00-2005 | Trebilcock | TREBILCOCK 25-15-4 1H | 40.75053 | -80.86457 | Columbiana |
| | | TREBILCOCK SOUTH 25-15-4 8H | | | |

CERTIFICATE OF MAILING

I, Kathy Jones, certify that I sent a Finding of Violation, No. EPA-5-17-OH-06, by Certified Mail, Return Receipt Requested, to:

Allen Doyel, Regulatory Attorney
Chesapeake Energy Corporation
P.O. Box 18496
Oklahoma City, OK 73154-0496

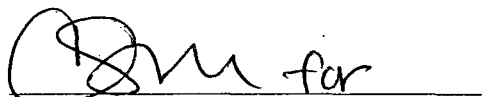
I also certify that I sent copies of the Finding of Violation by first-class mail to:

Bob Hodanbosi
Chief, Division of Air Pollution Control
Ohio Environmental Protection Agency
bob.hodanbosi@epa.ohio.gov

and

Melisa Witherspoon
Assistant Chief, Southeast District Office
Ohio Environmental Protection Agency
melisa.witherspoon@epa.ohio.gov

On the 22 day of December 2016



Kathy Jones
Program Technician
AECAB, PAS

CERTIFIED MAIL RECEIPT NUMBER: 7014 2870 0001 9378 8919