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

FEB 03 2012

REPLY TO THE ATTENTION OF:

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Joe Campbell
Plant Manager
Afton Chemical Corporation
501 Monsanto Avenue
Sauget, Illinois 62201

Re: Notice of Violation/Finding of Violation
Afton Chemical Corporation, Sauget, Illinois

Dear Mr. Campbell:

This letter advises you that the U.S. Environmental Protection Agency (EPA, we, or us) has determined that Afton Chemical Corporation's facility at 501 Monsanto Avenue, Sauget, IL (Afton, the facility, or you) has violated the Clean Air Act (CAA or the Act). Specifically, Afton has violated the New Source Performance Standards (NSPS) at 40 C.F.R. Part 60, the Illinois State Implementation Plan (SIP), and your Title V Permit. The requirements violated are described below. We are today issuing to you a Notice of Violation/Finding of Violation (NOV/FOV) for these violations.

Afton owns and operates certain process and control equipment at its facility that is subject to the NSPS at 40 Code of Federal Regulations (C.F.R.) Part 60 and the Illinois SIP. Specifically, Afton uses flares to comply with certain NSPS and SIP standards that pertain to the control of volatile organic material that is vented from process equipment like reactors and tanks. These standards require compliance with certain General Provisions found in 40 C.F.R. Part 60, Subpart A, which specify that flares only combust gases that meet minimum heating values, and that Afton use "good air pollution control practices for minimizing emissions" when operating its flares.

Additionally, Afton's Title V Permit requires the facility to comply with the NSPS and SIP requirements relating to flares. Violations of these NSPS and SIP provisions are also considered violations of Title V of the Act.

Section 113 of the CAA gives us several enforcement options to resolve these violations, including: issuing an administrative compliance order, issuing an administrative penalty order, bringing a judicial civil action, and bringing a judicial criminal action.

We are offering you the opportunity to request a conference with us about the violations alleged in the NOV/FOV. A conference should be requested within 10 days following receipt of this notice. A conference should be held within 30 days following receipt of this notice. This conference will provide you a chance to present information on the identified violations, any efforts you have taken to comply, and the steps you will take to prevent future violations. Please plan for your facility's technical and management personnel to take part in these discussions. You may have an attorney represent and accompany you at this conference.

The EPA contact in this matter is Brian Dickens. You may call him at (312) 886-6073 if you wish to request a conference. EPA hopes that this NOV/FOV will encourage Afton's compliance with the requirements of the CAA.

Sincerely,

Cheryl L. Newton
Director
Air and Radiation Division

Enclosure

cc: Ray Pilapil, Manager
Compliance and Systems Management Section
Illinois Environmental Protection Agency

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5

IN THE MATTER OF:	)	NOTICE OF VIOLATION/FINDING OF VIOLATION
Afton Chemical Corporation Sauget, IL	)	EPA-5-12-IL-05
Proceedings Pursuant to the Clean Air Act, 42 U.S.C. §§ 7401 et seq.	)	

NOTICE AND FINDING OF VIOLATION

Afton Chemical Corporation owns and operates a chemical manufacturing operation at 501 Monsanto Avenue, Sauget, Illinois (Afton, the facility, or you). Afton utilizes a steam-assisted flare, Flare 266/280, to control emissions of volatile organic compounds (VOCs). The facility, including the flare, is subject to the requirements in New Source Performance Standards (NSPS) at 40 Code of Federal Regulations (C.F.R.) Part 60, the Illinois State Implementation Plan (SIP), and its Title V Permit.

The U.S. Environmental Protection Agency (EPA) is sending this Notice and Finding of Violation (NOV/FOV) to notify you that we have found your facility has violated these requirements.

Section 113 of the Clean Air Act (CAA or the Act) provides you with the opportunity to request a conference with us to discuss the violations alleged in the NOV/FOV. This conference will provide you a chance to present information on the identified violations, any efforts you have taken to comply, and the steps you will take to prevent future violations. Please plan for the facility's technical and management personnel to take part in these discussions. You may have an attorney represent and accompany you at this conference.

Explanation of Violations

The following outlines the statutory and regulatory bases of the violations.

NSPS Background and Provisions

1. Section 111(b) of the CAA, 42 United States Code (U.S.C.) § 7411(b) requires EPA to publish a list of categories of stationary sources and, within a year after the inclusion of a category of stationary sources in the list, to publish proposed regulations establishing Federal standards of performance for new sources within the source category.

2. On October 15, 1973, EPA promulgated the General Provisions for the Part 60 NSPS standards at 40 C.F.R. Part 60, Subpart A, §§ 60.1 - 60.19. 38 FR 28565; the provisions have been subsequently amended.

3. 40 C.F.R. § 60.11(d) requires that "at all times, including periods of startup, shutdown, and malfunction, owners and operators shall, to the extent practicable, 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."

4. 40 C.F.R. § 60.18(d) provides that "owners or operators of flares used to comply with the provisions of this subpart shall monitor these control devices to ensure that they are operated and maintained in conformance with their designs...".

5. 40 C.F.R. § 60.18(c)(3)(ii) requires that flare owner/operators only combust gases that meet certain heat content specifications. For steam assisted flares, the minimum heat content for the gases being combusted is 300 BTU/scf.

6. On April 8, 1987, EPA promulgated Standards of Performance for Volatile Organic Liquid Storage Vessels for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984, found at 40 C.F.R. Part 60, Subpart Kb. 52 FR 11429. The affected facility to which this subpart applies is generally each storage vessels larger than 40 cubic meters that is used to store volatile organic liquids. 40 C.F.R. § 60.110(b).

7. Afton's Carbon Disulfide Storage Tank, Tank 125, is an affected facility under Subpart Kb and vents to Flare 266/280.

8. 40 C.F.R. § 60.112b(a)(3)(ii) provides that flares used to comply with Subpart Kb must comply with Section 60.18 of Part 60, Subpart A, General Provisions.

Illinois SIP

9. On April 2, 1996, EPA approved Illinois rule 35 Illinois Administrative Code (IAC) 219. 61 FR 14484.

10. 35 IAC 219.501 of the Illinois SIP requires that synthetic organic chemical manufacturing industry (SOCMI) batch and air oxidation processes control volatile organic material emissions to the environment. Afton uses Flare 266/280 to meet the 35 IAC 219.501 control requirements at the 267, 280, and 290 process units. 35 IAC 219.501 states that the flare shall comply with 40 C.F.R. § 60.18.

11. 40 C.F.R. § 52.23 states, "...failure to comply with...any approved regulatory provision of a State implementation plan, or with any permit condition or permit denial issued pursuant to approved or promulgated regulations for the review of new or modified stationary or indirect sources, or with any permit limitation or condition contained within an operating permit issued under an EPA-approved program that is incorporated into the State implementation plan, shall render the person or governmental entity so failing to comply in violation of a requirement of an applicable implementation plan and subject to enforcement action under section 113 of the Clean Air Act."

Title V Background and Provisions

12. Section 502(a) of the Act states, "After the effective date of any permit program approved or promulgated under this subchapter, it shall be unlawful for any person to violate any requirement of a permit issued under this subchapter, or to operate...a major source...except in compliance with a permit issued by a permitting authority under this subchapter."

13. 40 C.F.R. § 70.7(b) states, "...no part 70 source may operate after the time that it is required to submit a timely and complete application under an approved permit program, except in compliance with a permit issued under a part 70 program."

14. EPA fully approved the Illinois Title V Permit program, effective March 7, 1995. 60 FR 12478 (March 7, 1995). Illinois' Title V Permit program requirements are codified at IAC Title 35, Part 270.

15. The Illinois Environmental Protection Agency (Illinois EPA) issued a Title V Permit to the facility on December 17, 2009.

16. Paragraph 5.4.4 of Afton's Title V permit applies to flares that are used as a control device to meet 40 C.F.R. Part 60 and 63, and SIP Section 219 control requirements. Specifically, it requires flares to meet the heat content specifications in 40 C.F.R. § 60.18.

17. Paragraph 7.10.3(c) of Afton's Title V permit applies to process unit 280 and requires compliance with 35 IAC 219.501. Paragraph 7.10.5(b) states the flare shall comply with 40 C.F.R. § 60.18.

18. Paragraph 7.13.3(c) of Afton's Title V permit applies to process unit 290 and requires compliance with 35 IAC 219.501. Paragraph 7.13.5(b) states the flare shall comply with 40 C.F.R. § 60.18.

19. Paragraph 7.16.3(c) of Afton's Title V permit applies to process unit 267 and requires compliance with 35 IAC 219.501. Paragraph 7.16.5(b) states the flare shall comply with 40 C.F.R. § 60.18.

Factual Background and Violations

20. Flare 266/280 is a steam assisted flare. Steam is added to the vent gas exiting the flare during certain operating scenarios. This steam addition can occur automatically through control logic, or manually to levels specified by operations personnel.

21. Afton supplied to EPA flare operating data for a period of ten days. During certain times on four of those days, Afton supplied steam to its flare, rendering the flare "steam assisted", during periods where the heating value was not maintained by supplemental gas addition to at least 300 BTU/scf. Afton operates its flare as "steam assisted" but fails to meet a minimum heating value of 300 BTU/scf.

22. The failure of Afton to maintain 300 BTU/scf in the gases to be combusted at the flare is a violation of 40 C.F.R. § 60.18(c)(3)(ii).

23. Published literature, flare test reports, and EPA documents explain the negative effects that steam can have on flares if applied in excessive amounts. The most prominent of these is a 1983 flare testing study funded jointly by the Chemical Manufacturers Association (CMA) and EPA, conducted by the flare manufacturer John Zink Company, and reported in both a March 1983 report issued by the CMA titled, "A Report on a Flare Efficiency Study," and a July 1983 report issued by EPA titled, "Flare Efficiency Study." EPA 600/2-83-052. The 1983 study included various tests to determine the efficiency of flares under a variety of operating conditions. The tests performed included a range of steam flows. The report's authors indicated that excessive steam-to-vent gas ratios (lb steam per lb vent gas) likely caused steam quenching of the flare during the tests. In particular, the reports noted that of all the various operating conditions applied during the flare tests, the only runs where combustion fell significantly below 98% were during tests when high steam-to-vent gas ratios were applied. Based on these findings, EPA, in the abstract of its report, concludes that "under conditions representing good industrial practice," combustion efficiencies at the sampling probe consistently were greater than 98%. Combustion efficiencies declined, however, "under conditions of excessive steam (steam quenching) and high exit velocities of low-Btu content gases." The EPA report, at page 37, specifically states that the data collected shows, "[G]eneral tendencies for combustion efficiencies to decline at higher or lower than normal steam flows. This data suggests that steam-to-relief gas ratios ranging from 0.4 to 1.5 yield the best combustion efficiencies."

24. Flare manufacturers provide design documents and some form of operations and maintenance instruction to flare owners, usually around the time the flare is installed. These documents or instructions state the minimum steam rates, maximum steam rates, and expected steam use rates. Following these specific instructions ensures the flare will combust waste gases effectively.

25. Afton stated in a response to an information request issued by EPA dated September 7, 2011, that it does not possess guidance or literature that would allow it to determine how much steam to add to its Flare 266/280.

26. Afton' failure to possess and implement flare specific and publicly available documents that prescribe or recommend the amount of steam to add to the flare is a failure to meet the requirement to use good air pollution control practices to minimize emissions found at 40 C.F.R. § 60.11(d).

27. By violating provisions 5.4.4, 7.10.3, 7.13.3, and 7.16.3, Afton violated its Title V Permit.

Environmental Impact of Violations

28. Volatile organic compound emissions increase ground-level (tropospheric) ozone (smog). Ground-level ozone irritates lung airways and can cause wheezing, coughing, painful or difficult breathing, especially in people with respiratory problems. Repeated exposure can lead to more serious health problems like asthma, reduced lung capacity, and increased susceptibility to pneumonia or bronchitis. In addition, ground-level ozone inhibits the ability of plants to produce and store food, leading to ecological damage.

2/3/12
Date

Cheryl L. Newton
Director
Air and Radiation Division

CERTIFICATE OF MAILING

I, Tracy Jamison, certify that I sent a Notice of Violation and Finding of Violation, No. EPA-5-12-IL-05, by Certified Mail, Return Receipt Requested, to:

Joe Campbell
Plant Manager
Afton Chemical Corporation
501 Monsanto Avenue
Sauget, IL 62201

I also certify that I sent a copy of the Notice of Violation/Finding of Violation by first class mail to:

Ray Pilapil, Manager
Compliance and Systems Management Section
Illinois Environmental Protection Agency
1021 North Grand Avenue
Springfield, Illinois 62702

on the 7th day of February, 2012.

Tracy Jamison
Planning and Administrative Section

CERTIFIED MAIL RECEIPT NUMBER: 7009 1680 0000 7672 8123