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

JUN 30 2016

REPLY TO THE ATTENTION OF

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Angie Byars
Operations Manager
3M Company
3M Cottage Grove Center
10746 Innovation Road
Cottage Grove, MN 55016-4600

Re: Finding of Violation
3M Company
Cottage Grove, MN

Dear Ms. Byars:

The U.S. Environmental Protection Agency is issuing the enclosed Finding of Violation (FOV) to 3M Company (you) under Section 113(a)(3) of the Clean Air Act (CAA), 42 U.S.C. § 7413(a)(3). We find that you have violated Section 112 of the CAA, 42 U.S.C. § 7412, the applicable implementing regulations, and Title V of the CAA, 42 U.S.C. § 7661 *et seq.*, at your Cottage Grove, Minnesota, facility.

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.

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The EPA contact in this matter is Charles Hall. You may contact him by telephone at (312) 353 3443 or by e-mail at hall.charles@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,

Edward Nam
Acting Director
Air and Radiation Division

Enclosure

cc: Sarah Kilgriff, Minnesota Pollution Control Agency

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5

IN THE MATTER OF:	)	**FINDING OF VIOLATION**
	)	
3M Company	)	**EPA-5-16-MN-06**
Cottage Grove, MN	)	
	)	
Proceedings Pursuant to the Clean Air Act,	)	
42 U.S.C. §§ 7401 et seq.	)	

FINDING OF VIOLATION

The U.S. Environmental Protection Agency finds that 3M Company (3M) violated Section 112 of the Clean Air Act (CAA), 42 U.S.C. § 7412, the applicable implementing regulations, and Title V of the CAA, 42 U.S.C. § 7661 *et seq.*, at its Cottage Grove, Minnesota, facility as follows:

Statutory and Regulatory Authority

1. On September 30, 1999, EPA promulgated the National Emission Standards for Hazardous Air Pollutants from Hazardous Waste Combustors (hereinafter, the HWC MACT) at 40 C.F.R. Part 63, Subpart EEE, pursuant to Section 112(d) of the CAA, 42 U.S.C. § 7412(d). 64 *Fed. Reg.* 53038. The HWC MACT set standards to ensure that all subject sources achieve the maximum degree of reduction in emissions of HAPs that EPA determines is achievable for the source category, known as "maximum achievable control technology" or "MACT."

2. The HWC MACT applies to the owner or operator of a hazardous waste incinerator (HWI), as defined in 40 C.F.R. § 63.1201.

3. On March 16, 1994, EPA promulgated the General Provisions of the National Emission Standards for Hazardous Air Pollutants for Source Categories (hereinafter, the MACT General Provisions) at 40 C.F.R. Part 63, Subpart A, pursuant to Section 112(d) of the CAA, 42 U.S.C. § 7412(d). 59 *Fed. Reg.* 12408.

4. The MACT General Provisions apply to the owner or operator of affected sources for which any relevant standard has been established pursuant to Section 112 of the CAA and the applicability of such requirements is set out in accordance with 40 C.F.R. § 63.1(a)(4).

5. Table 1 of the HWC MACT provides that, among others, the MACT General Provisions at 40 C.F.R. §§ 63.1, 63.4, 63.6(e) and 63.8(g) apply to the HWC MACT.

6. 40 C.F.R. § 63.6(e)(1)(i) of the MACT General Provisions set forth, in part: At all times, including periods of startup, shutdown, and malfunction, the owner or operator must operate and maintain any affected source, including associated air pollution control equipment

and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions.

7. 40 C.F.R. § 63.8(g)(4) of the MACT General Provisions sets forth: "All emission data shall be converted into units of the relevant standard for reporting purposes using the conversion procedures specified in that standard."

8. 40 C.F.R. § 63.1219(a)(5)(i) and (ii) of the HWC MACT sets forth:

> (a) *Emission limits for existing sources.* [The owner or operator of a HWI] must not discharge or cause combustion gases to be emitted into the atmosphere that contain:
>
> (5) For carbon monoxide and hydrocarbons, either:
>
> (i) Carbon monoxide in excess of 100 parts per million by volume, over an hourly rolling average (monitored continuously with a continuous emissions monitoring system), dry basis and corrected to 7 percent oxygen (ppmV @ 7% O_2); or
>
> (ii) Hydrocarbons in excess of 10 parts per million by volume, over an hourly rolling average (monitored continuously with a continuous emissions monitoring system), dry basis, corrected to 7 percent oxygen, and reported as propane[.]

9. 40 C.F.R. § 63.1209(a)(1) of the HWC MACT requires the owner or operator of a HWI to use either a carbon monoxide (CO) continuous emission monitor system (CEM) or a total hydrocarbon (THC) CEM to demonstrate and monitor compliance with the applicable standard in 40 C.F.R. § 63.1219(a)(5), and further requires the owner or operator of a HWI to use an oxygen (O_2) CEM to continuously correct the CO or THC concentration to 7 percent O_2.

10. Pursuant to Section 502(a) of the CAA, 42 U.S.C. § 7661a(a), it is unlawful for any person to, among other things, operate a major source subject to Title V except in compliance with a Title V permit after the effective date of any permit program approved or promulgated under Title V of the CAA. EPA fully approved Minnesota's Title V operating program on December 1, 2001. *See* 57 *Fed. Reg.* 31637, and 66 *Fed. Reg.* 62967. Minnesota's Title V operating permit program regulations are codified at Minn. R. 7007.

11. On June 28, 2012, MPCA issued Air Emission Permit No. 16300025-002 to 3M to operate the HWI (Title V Permit).

12. 3M's Title V Permit limits 3M's emissions of CO to less than or equal to 100 ppmV @ 7% O_2.

13. 3M's Title V Permit requires 3M to use a CO CEM and an O_2 CEM to demonstrate and monitor compliance with the CO emission standard in 40 C.F.R. § 63.1219(a)(5)(i).

Factual Background and Violations

14. 3M owns and operates an HWI at 10746 Innovation Road, Cottage Grove, Minnesota. 3M's HWI is subject to the requirements of the HWC MACT, and is an "existing source" as defined in 40 C.F.R. § 63.1201.

15. On May 4, 2016, the Minnesota Pollution Control Agency (MPCA) submitted information to EPA relating to MPCA's investigation into citizen complaints of an emissions plume that was purple to pink in color from 3M's HWI stack that occurred on March 21, 2016. This included 3M's April 4, 2016 response to MPCA's March 25, 2016 request for information regarding the incident.

16. In its April 4, 2016 response to MPCA's request for information, 3M identified the cause of the purple plume as the processing of an iodine compound in two containers of waste at the HWI. 3M's response stated that the iodine compound was composed of octafluoro-1,4-diiodobutane (OFDB), which is 55.9% iodine by weight.

17. 3M's April 4, 2016 response stated that 3M processed the iodine compound at a rate that was greater than the maximum removal rate of iodine in the HWI's air pollution control system scrubbers and that iodine that is not effectively removed by the scrubbers will result in emissions that are purple to pink in color.

18. 3M's April 4, 2016 response, when explaining that the processing of OFDB was the cause of the purple plume, stated, "Because iodine has the potential to cause stack coloration, wastes containing iodine are normally limited to less than 10 [pounds] of iodine fed in a single container. Through the analysis of all the waste streams and the timing of this larger than normal quantity of iodine being processed, it was concluded this was the material that caused the purple/pink coloration."

19. During the combustion of the two containers of OFDB, 3M failed to operate its HWI, including the associated air pollution control equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions, in violation of 40 C.F.R. § 63.6(e)(1)(i) and Section 112 of the CAA, 42 U.S.C. § 7412.

20. 3M has installed, operates, calibrates, and maintains a CO CEM and an O_2 CEM.

21. On March 11, 2016, EPA issued an information request pursuant to Section 114 of the CAA, 42 U.S.C. § 7414, to 3M. EPA requested, among other things, 3M's HWI CO CEM data for January 1, 2012, to March 18, 2016.

22. On April 15, 2016, 3M responded to EPA's information request by providing, among other things, CO CEM data for January 1, 2012, to March 18, 2016.

23. According to the CO CEM data, 3M discharged or caused combustion gases to be emitted from the HWI into the atmosphere that contained CO in excess of 100 ppmV @ 7% O_2 on an hourly rolling average basis on a number of occasions over 108 days during February 1,

2012, through March 6, 2016, in violation of 40 C.F.R. § 63.1219(a)(5)(i), Section 112 of the CAA, 42 U.S.C. § 7412, and 3M's Title V Permit. The specific dates, times, and average CO concentrations associated with these emission standard violations are identified in Table 1 of this Finding of Violation.

Environmental Impact of Violations

24. These violations may cause excess emissions of CO and particulate matter.

25. CO reduces oxygen delivery to the body's organs and tissues. CO contributes to the formation of ground-level ozone, which can trigger serious respiratory problems.

26. Particulate matter contains microscopic solids or liquid droplets that can penetrate the lungs and cause serious health problems. Particulate matter exposure contributes to a variety of problems, including: increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; decreased lung function; aggravated asthma; development of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease.

6/30/16
Date

Edward Nam
Acting Director
Air and Radiation Division

Table 1. Dates, Times, and Average Concentrations of CO Emission Standard Violations.		
Start	End	1-Hour Rolling Average CO Concentration, ppmV @ 7% O_2
02/01/12 08:53:00	02/01/12 10:22:00	334.8
02/02/12 13:19:00	02/02/12 13:29:00	117.2
02/13/12 01:52:00	02/13/12 04:25:00	397.8
03/05/12 19:53:00	03/05/12 21:49:00	913.7
05/19/12 13:02:00	05/19/12 13:09:00	167.8
05/20/12 00:07:00	05/20/12 03:19:00	1612.7
05/25/12 03:57:00	05/25/12 10:09:00	611.8
07/05/12 13:05:00	07/06/12 11:39:00	1096.0
07/07/12 10:54:00	07/07/12 12:43:00	239.6
07/08/12 13:40:00	07/09/12 00:41:00	1026.6
07/11/12 12:12:00	07/11/12 12:47:00	236.2
07/11/12 17:04:00	07/11/12 22:42:00	1129.7
07/12/12 17:05:00	07/12/12 18:06:00	755.1
07/14/12 02:23:00	07/14/12 07:05:00	586.5
07/14/12 17:46:00	07/14/12 20:09:00	1262.7
07/17/12 11:08:00	07/17/12 12:19:00	167.5
11/12/12 02:23:00	11/12/12 03:19:00	108.3
01/18/13 17:42:00	01/18/13 23:26:00	488.9
02/12/13 11:53:00	02/13/13 12:53:00	825.4
02/22/13 15:52:00	02/22/13 18:22:00	1211.2
02/22/13 22:03:00	02/23/13 03:10:00	115.1
04/07/13 11:45:00	04/07/13 12:44:00	162.5
05/25/13 13:26:00	05/25/13 14:25:00	143.6
05/30/13 22:06:00	05/30/13 23:05:00	139.3
06/20/13 03:19:00	06/20/13 04:18:00	146.6
06/27/13 03:48:00	06/27/13 07:15:00	471.6
06/27/13 14:39:00	06/27/13 18:12:00	1072.6
06/27/13 20:13:00	06/27/13 20:45:00	104.4
07/12/13 20:50:00	07/12/13 21:29:00	136.4
07/12/13 22:45:00	07/12/13 23:27:00	118.2
07/13/13 15:59:00	07/14/13 02:48:00	1024.3
07/16/13 04:10:00	07/16/13 11:56:00	763.5
07/16/13 12:23:00	07/16/13 23:35:00	153.6
07/18/13 15:48:00	07/18/13 16:41:00	205.4
07/18/13 16:43:00	07/18/13 20:35:00	854.2
07/23/13 20:57:00	07/23/13 21:56:00	155.6
07/25/13 03:23:00	07/25/13 04:22:00	161.2
07/30/13 11:22:00	07/30/13 12:21:00	155.7
08/17/13 02:00:00	08/17/13 02:59:00	132.4
08/20/13 12:39:00	08/20/13 13:21:00	241.0

Table 1. Dates, Times, and Average Concentrations of CO Emission Standard Violations.		
Start	End	1-Hour Rolling Average CO Concentration, ppmV @ 7% O_2
09/24/13 18:50:00	09/25/13 03:44:00	1046.5
09/25/13 04:08:00	09/25/13 21:56:00	948.3
09/26/13 00:46:00	09/26/13 14:21:00	275.9
10/15/13 13:44:00	10/15/13 14:43:00	149.9
10/16/13 05:16:00	10/16/13 06:15:00	169.9
10/31/13 17:24:00	10/31/13 17:55:00	102.4
12/08/13 18:52:00	12/08/13 19:51:00	122.8
12/12/13 05:58:00	12/12/13 06:57:00	165.4
01/05/14 18:48:00	01/05/14 21:53:00	2339.8
01/06/14 17:14:00	01/06/14 20:14:00	1556.0
01/13/14 14:34:00	01/13/14 15:33:00	134.6
01/14/14 22:33:00	01/14/14 23:32:00	147.7
02/28/14 20:01:00	02/28/14 21:00:00	137.7
03/10/14 00:50:00	03/10/14 00:56:00	115.8
03/13/14 22:22:00	03/13/14 23:21:00	171.7
04/02/14 08:56:00	04/02/14 09:43:00	141.8
04/03/14 13:51:00	04/03/14 18:18:00	1012.6
04/19/14 10:39:00	04/19/14 15:56:00	1679.1
04/25/14 19:00:00	04/25/14 22:41:00	355.5
05/29/14 02:00:00	05/30/14 05:00:00	998.5
07/01/14 06:12:00	07/01/14 07:11:00	185.6
07/22/14 05:34:00	07/22/14 06:34:00	258.3
08/02/14 02:35:00	08/02/14 03:34:00	123.5
08/18/14 08:04:00	08/18/14 09:03:00	137.3
09/03/14 07:53:00	09/03/14 08:52:00	165.9
09/10/14 12:34:00	09/10/14 13:28:00	108.8
09/18/14 10:58:00	09/18/14 11:14:00	108.5
09/18/14 17:11:00	09/19/14 10:40:00	376.5
10/02/14 13:30:00	10/03/14 03:35:00	968.2
01/04/15 20:52:00	01/05/15 01:04:00	266.3
01/05/15 16:19:00	01/05/15 22:16:00	782.5
02/10/15 14:09:00	02/10/15 19:01:00	449.1
03/13/15 18:47:00	03/14/15 21:25:00	1002.4
03/21/15 21:10:00	03/21/15 22:09:00	137.9
04/16/15 04:32:00	04/16/15 05:32:00	229.9
04/22/15 21:56:00	04/22/15 22:55:00	151.4
04/27/15 22:27:00	04/27/15 23:26:00	151.3
04/30/15 11:24:00	04/30/15 15:13:00	463.6
04/30/15 20:49:00	05/01/15 11:19:00	741.8
05/07/15 06:29:00	05/07/15 07:28:00	129.4

Table 1. Dates, Times, and Average Concentrations of CO Emission Standard Violations.		
Start	End	1-Hour Rolling Average CO Concentration, ppmV @ 7% O_2
05/10/15 16:15:00	05/10/15 17:14:00	133.8
05/15/15 22:51:00	05/15/15 23:50:00	184.6
05/21/15 09:55:00	05/21/15 12:52:00	550.4
05/25/15 20:03:00	05/26/15 14:19:00	902.6
06/13/15 01:49:00	06/13/15 02:48:00	160.2
06/16/15 00:10:00	06/16/15 01:09:00	125.9
06/16/15 03:52:00	06/16/15 07:57:00	169.1
06/17/15 14:14:00	06/18/15 10:15:00	904.8
06/23/15 01:10:00	06/23/15 02:09:00	149.3
06/23/15 23:14:00	06/24/15 00:00:00	104.4
07/17/15 14:01:00	07/17/15 22:38:00	1434.6
09/01/15 23:23:00	09/02/15 00:22:00	126.8
10/16/15 14:00:00	10/19/15 08:29:00	613.7
10/24/15 05:27:00	10/24/15 06:26:00	152.8
11/29/15 20:37:00	11/29/15 21:36:00	148.3
12/01/15 23:06:00	12/02/15 06:16:00	419.7
12/06/15 18:14:00	12/07/15 07:58:00	515.2
01/14/16 09:06:00	01/14/16 10:05:00	140.7
01/14/16 14:59:00	01/14/16 15:58:00	156.1
01/14/16 16:13:00	01/14/16 17:12:00	157.5
01/17/16 11:20:00	01/17/16 12:19:00	145.2
01/19/16 20:01:00	01/19/16 21:00:00	169.7
02/05/16 13:01:00	02/05/16 13:42:00	117.4
02/26/16 11:48:00	02/26/16 12:47:00	181.8
03/06/16 03:32:00	03/06/16 04:31:00	141.6

CERTIFICATE OF MAILING

I, Loretta Shaffer, certify that I sent a Finding of Violation, No. EPA-5-16-MN-06, by Certified Mail, Return Receipt Requested, to:

Angie Byars
Operations Manager
3M Company
3M Cottage Grove Center
10746 Innovation Road
Cottage Grove, MN 55016-4600

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

Gary D. Garner, Advanced Environmental Specialist
3M Company
3M Cottage Grove Center
10746 Innovation Road
Cottage Grove, MN 55016-4600

Sarah Kilgriff, Chief
Land and Air Compliance Section
520 Lafayette Road North
St. Paul, MN 55155-4194

on the 30 day of June 2016

Loretta Shaffer

Loretta Shaffer, Program Technician
AECAB, PAS

Certified Mail Receipt Number: 7009 1680 0000 7673 8033