UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I
JOHN F. KENNEDY FEDERAL BUILDING
BOSTON, MASSACHUSETTS 02203-0001

June 24, 1994

Mr. Frank DeLorier
Circle D Ranch
RR2 Box 253 Lovers Lane
Charlestown, NH 036003

OFFICE OF THE
REGIONAL ADMINISTRATOR

Re: Municipal Solid Waste Incinerator

Dear Mr. DeLorier:

Thank you for your letter of February 19, 1994, to President Clinton about the Wheelabrator Claremont municipal solid waste incinerator in Claremont, New Hampshire in which you raised concerns about the removal of metals from incinerator ash and requested recent EPA inspection reports for this facility. Your letter has been delegated to the Environental Protection Agency's New England Regional Office (EPA) for a response.

We hope to address your concerns by explaining more fully the federal/state relationship for regulation of facilities of this type. Recent regulatory developments are also summarized that will affect municipal solid waste incinerators in the near future.

Wheelabrator Claremont is currently subject to air permitting requirements of the Clean Air Act as well as solid waste permitting requirements of the Resource Conservation and Recovery Act (RCRA). The New Hampshire Department of Environmental Services (NH DES) has the primary responsibiltiy for implementing both of these programs.

EPA has delegated authority to NH DES to administer and enforce the Clean Air Act through its State Implementation Plan. NH DES issued a permit to Wheelabrator Claremont on April 1, 1992, and inspected the facility on January 21, 1992, and May 12, 1993. The last EPA Clean Air Act inspection of the facility occurred on September 20, 1990. Past performance based on both state and Federal inspections have shown that the facility is in compliance and enforcement actions are not warranted. For further detail, an air compliance status report of the Wheelabrator facility is enclosed.

On May 2, 1994, the Supreme Court issued an opinion interpreting that RCRA does not exempt ash generated at resource recovery facilities burning household and nonhazardous commercial wastes from the hazardous waste requirements of Subtitle C of RCRA. This opinion requires EPA to revise its prior position that both types of ash were exempt from hazardous waste regulation.

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Therefore, facilities will now be required to test their ash to determine whether it exceeds regulatory levels defined for "hazardous" wastes. Ash generated from municipal facilities that exhibit characteristics of a hazardous waste will be subject to the hazardous waste requirements set forth in 40 CFR parts 260 to 299.

EPA is now in the process of approving New Hampshire's solid waste program. This state program issues solid waste permits and enforces regulations regarding the inspection and testing of incinerator ash for hazardous constituents. Currently, EPA is developing a strategy with all states for testing, inspecting and, if necessary, taking enforcement actions against incinerators who burn municipal waste.

As the regulatory and enforcement authority for both air and solid waste programs are delegated primarily to the state of New Hampshire, we recommend that you contact the NH DES at the address below for information relating to the most recent inspections for the Claremont facility.

Robert W. Varney, Commissioner
New Hampshire Department of
Environmental Services
6 Hazen Drive
P.O. Box 95
Concord, NH 03301-6509
Tel: (603) 271-3303

I appreciate your concerns and welcome the opportunity to respond to your letter to President Clinton. If you have further questions, please contact Mel Cheeks of the Maine/ New Hampshire/ Vermont RCRA Section at (617) 223-5590 or William Osbahr of the Stationary Source Compliance Section at (617) 565-3264.

Sincerely,

John P. DeVillars
Regional Administrator

Enclosure

cc: Honorable Robert Varney, Commissioner
New Hampshire Department of Environmental Services

AIR RESOURCES DIVISION	FROM	TO	INIT/DATE	COPY
ENGINEERING/FIELD REPORT	Mary Ann Ruel	Lunderville		
		Davis		
		Bodnarik		
		Wright		

DATE: February 25, 1992

PLANT/FACILITY: Wheelabrator Claremont

LOCATION: Claremont, NH

INSPECTION DATE: January 21, 1992 and February 18, 1992

INSPECTED BY: Mary Ann Ruel

CONTACTS: Jay Berry, Environmental Manager and
Chuck Conklin, Operations Superintendent

I met with Jay Berry and Chuck Conklin to conduct a permit renewal compliance inspection at the Wheelabrator facility in Claremont, NH. Wheelabrator Claremont operates two identical Von Roll Municipal Solid Waste (MSW) Incinerators under PO-C-362 and PO-C-363. These permits expire March 31, 1992.

Each incinerator is rated at 115 tons per day based on Type 2 waste and 4500 BTU per lb at a capacity of 43.1 MMBTU per hour. The MSW can be a mix of Types 0, 1, 2, 3, and 6 wastes. Each incinerator is limited to 100 tons per day. Each incinerator is equipped with a baghouse for control of particulate emissions and a dry lime injection system for control of acid gases.

The inspection began at the tipping floor. No visible evidence of red bag waste, large metal or wood objects, or other non regulated waste was obvious. The storage capacity of the tipping floor is 1000 tons. A 2 day supply of 350-400 tons was on site.

Combustion air is drawn off the tipping floor to create a negative pressure. This process helps to alleviate the odor problems created in the tipping area.

Due to past carbon monoxide problems, combustion air was used to preheat the refuse. The operator by monitoring of the oxygen percentage, CO concentration and visual observation of the refuse determines whether preheat air is necessary. The reason for non-continual operation of the preheat process is due to the use of the steam generated from the refuse incineration. The steam therefore isn't generating power.

The inspection continued through the refuse trail. Unit #2 was down during the time of this inspection due to routine maintenance. Each unit is shut down once per quarter. Propane is used for start up and shut down and complies with condition B.12 of the permit. Unit #1 was fully operational. The refuse was relatively far down in the combustion zone, the reason was explained to be wetness in the trash. When compared to the operational data, this was verified. The operational data for Unit #1 is as follows:

steam rate	27,000	lb/hr	running at maximum, all other components backing down to keep control
boiler draft	-0.23	WC	furnace pressure
Combustion zone temp.	1749	F	based on CO limit
oxygen conc.	7	%	
overfire air pressure	8	inches	
baghouse temp			delta T= 9 F
inlet	393	F	
outlet	384	F	
baghouse pres. drop	4.5	inches	ave

Module	#1	#2	#3
	3"	3.9"	4"

lime feed rate	30 - 40	tons/hr	The lime is blown in counter flow to the air before entering the baghouse by a dry lime injection using a screw/rotary feed.

CEM data for Unit #1 only

steam flow	26,590	lb/hr	
opacity %	oxygen %		CO ppm corrected to 7.02 % oxygen
	3 minute average		
0.84	10.04		7.68
	3 hour average		
	9.77		7.03

opacity %	oxygen %	CO ppm corrected to 7.02
8 hour average		
	9.68	10.52
96 hour average		
	8.56	11.08

The CEM is a shared system for Unit #1 and Unit #2. Every 7 1/2 minutes it switches units. This type of system is good for cleaning and avoiding plugging of the lines.

As mentioned earlier, the percent oxygen being high is the result of wet trash. The CO value is also directly reflective of this phenomena.

The lime is blown into the gas stream in a counter current flow prior to the baghouse. The lime system is a dry injection by a screw/rotary feeder. The lime is mixed in with the fly ash and then combines with the bottom ash for removal.

This facility generates 4 1/2 MW of power. The annual amount of refuse incinerated in 1991 was 71,106.09 tons which is equivalent to 8533 hours per year. The annual emissions generated from this refuse are as follows. These values are calculated from past stack test emissions data.

	Unit #1		Unit #2	
	emission rate	tons/ year	emission rate	tons/ year
SO_2	4.15	17.7	5.69	24.3
NO_x	18.4	78.5	14.6	62.3
CO	2.29	9.77	2.01	8.6
HCL	1.47	6.27	2.0	8.5
% efficiency	95.2		94.56	
PM 10	0.943	4.02	0.345	1.5

A second inspection was conducted on February 18, 1992 to determine compliance of Unit #2. The operational data for Unit #2 is as follows:

steam rate	24,300	lb/hr	
boiler draft	-0.31	WC	furnace pressure
Combustion zone temp.	gt 2000	F	out of range
oxygen conc.	10.01	%	same as CEM; was running at 8-9 moments prior
overfire air pressure	6 and 2	inches	
baghouse temp			
inlet	397	F	delta T = 26 F
outlet	371	F	
baghouse pres. drop	5.01	inches	

Module	#1	#2	#3	
	4.4"	8"	5.1"	this could be due to a frozen line, the delta is reasonable

CEM data

steam flow	24,600	lb/hr	

opacity %	oxygen %		CO ppm corrected to 7.02 % oxygen
	3 minute average		
0.72			CO low on Unit #1 out of range
	3 hour average		
	10.5		5.16
	8 hour average		
	10.05		6.04
	96 hour average		
	9.76		9.27

There was a lot of burning in combustion zone 1, the fire was way back. The high temperature and high CO could be reflective of this phenomena. This phenomena could be caused be dry trash being burned and having wet trash added. Wet trash needs to have a longer residence time in zone 1 to dry and burn. The dry trash will burn more quickly and thus move thru faster.

Unit #1 had a lower chamber temperature of 1600 F and an Upper temp of 675 F. When compared to Unit #2, the lower temp was out of range (above 2000 F) and the upper temp was 958 F. Based on this information it doesn't seem unreasonable that the lower temp was out of range.

There was a study conducted on furnace temperature verification in February of 1988. This study will be reviewed to determine the lower chamber temperature of Unit 2. At this time the compliance status of this facility could not be determined.

Due to the permit CO limit being averaged on e 3-hour average, the respective steam rates will be adjusted to a 3-hour average. This condition will be reflected in the permits.

RECOMMENDED ACTION

The permits will be re-issued as is upon receipt of payment. The AFS and NHEIS will be updated. The study of furnace temperature will be found and reviewed.

0055f-14/MAR

DEPARTMENT OF ENVIRONMENTAL SERVICES
AIR RESOURCES DIVISION
Engineering Field Report
June 15, 1993 [October 21, 1993]
Wheelabrator
Claremont, NH

C. Wright	A. Bodnarik	D. Davis	D. Lunderville
CW 10/21/93	CW/ 10/21/93		

I. Background Information :

Date of Inspection ----------5-12-93 and 5-17-93
Type of Inspection ----------Compliance
Inspected by ----------Mary Ruel MR
Weather ----------Sunny
Source Contact ----------Ted Clark
Opacity ----------< 5%

II. Inspection :

On May 12, 1993, I met with Ted Clark to conduct a routine compliance inspection at Wheelabrator, Claremont. Ted is responsible for both the Wheelabrator Concord and Wheelabrator Claremont facilities. Chuck Conklin, who is plant superintendent of Claremont was unavailable on the day of the inspection. Ted and I inspected the control room and collected the following data.

	unit #1	unit #2
lower	1916 F	2016 F
upper	1254 F	1314 F
baghouse	4.2 psi	4.1 psi
steam	27,000 lbs/hr	27,000 lbs/hr

From the control room, Ted and I inspected the CEM monitor. I obtained a daily print out, instantaneous print out, corrected value print out and a calibration sheet. See attached sheets for the printouts.

From the CEM we inspected the refuse delivery area. The weather outside was sunny and 80 degrees F. Due to the warm weather, the smell of garbage lingered throughout the plant. The refuse delivery area appeared to be very full on both sides of the building.

At first analysis, the plant appears to be in compliance with its current operating conditions. A more thorough review of the data obtained will be conducted at a later time.

Wheelabrator Claremont is looking at more efficient ways of lime usage. One idea is a recirculation of the lime through the system. Any option desired would need to be checked with the WMD before any testing or alterations could be enacted. Also, the Division may request additional stack testing to verify compliance with thr HCl and SO2 standards.

On May 17, 1993, a pre-test meeting was held for the upcoming stack test. After the meeting was adjourned, we took a walk through the plant. We observed the fires on the grates of the Units. Unit #2 had an ideal fire, with most of the combustion occurring on the first grate, and the remaining on the second grate. The fire in Unit #1 was all the way down to the fourth grate. The reason for this appeared to be a large amount of steel pipe in the refuse stream.

The walk through continued to the control room. The data obtained is listed below.

	unit #1	unit #2
lower	1980 F	1830 F
upper	1301 F	1251 F
baghouse	4.5 psi	5.0 psi
steam	26,700 lbs/hr	27,000 lbs/hr

The low CO alarm was lit. The station was generating 4.7 MW on a 5.0 MW generator. The opacity on each unit was 3 %. The lime feed rate was 45.3 on top and 45.5 on bottom. The screw auger can measure the rate of the lime feed. The rate is up by 0.1 on both occasionally. The percent capacity of the screw feed, doesn't change. The plant operator takes hourly manometer readings of the differential pressure of the lime feed. This reading tells the operator whether the lime feed is plugged up or not.

I observed the CEM monitor and obtained the daily report and instantaneous print out. We walked through the refuse delivery area. Chuck said there was 75 tons of refuse on the right. The left side was full.

Propane is used for start up and shut down of the units. Ted and I discussed the emissions. They have an 18,000 gallon liquid propane tank on site, which is 65 % full. The tank is never filled more than 75 %. The annual emissions from propane appear to be very low from estimates.

RECOMMENDED ACTION

Update the NHEIS and AFS.

STATE OF NEW HAMPSHIRE

Inter-Department Communication

DATE: 4 March 1994

FROM: Ken Boivin AT: Air Resources Division

SUBJECT: Wheelabrator, Claremont
Toxics Modelling

TO: Leigh Morrill DOC. #: KDB940020

As requested, an ambient air impact analysis was performed for the Wheelabrator MSW Incinerator in Claremont. Emission rates were based on the results of recent stack testing done at the source. Impacts were also calculated using previously estimated maximum emission rates, which in all but one case were higher than those calculated from stack testing. Prior modelling for the source (1983) was evaluated and it was determined that a scale up would not be applicable. The source was modeled using current models and procedures which tend to be much more conservative than those used in the previous modelling.

Modelling was done for terrain which is both above (complex terrain) and below (simple terrain) stack height. Downwash impacts were not evaluated as the stack is at GEP height. Maximum impacts were found in simple terrain for all cases. As can be seen in the attached tables, Mercury impacts are 2.5 to 12 times less than the AAL and 2378-TCDD impacts are 24 to 45 times less than the reference level selected by the division. All other toxic pollutants passed by similar margins.

Modelling output and summary tables are attached for you reference. If you have any questions regarding this matter, please feel free to see me.

c: T. Noel, W. Olender, C. Wright, J. Glenn

Calabrate Claremont ZSB 3/4/94

Valley Impacts

	Emission Rate	Impact Factor	Max 24-HR Impact	Standard	Pass/Fail
	(g/s)	(ug/m3)/(g/s)	(ug/m3)	(ug/m3)	
ad	4.54E-04	3.66	1.33E-03	1.50E+00	PASS
ercury	3.78E-03	3.65	1.38E-02	1.67E-01	PASS
eryllium	0.00E+00	3.66	0.00E+00	5.00E-03	PASS
senic	1.39E-05	3.66	5.08E-05	4.80E-01	PASS
admuim	4.41E-05	3.66	1.62E-04	2.40E-02	PASS
hromium	1.77E-05	3.66	6.46E-05	1.20E-01	PASS
opper	8.20E-05	3.66	3.00E-04	3.30E-01	PASS
ickel	1.39E-05	3.66	5.08E-05	1.20E-01	PASS
elenium	0.00E+00	3.66	0.00E+00	6.67E-01	PASS
otal PCDD	7.57E-07	3.65	2.77E-06	n/a	PASS
378-TCDD	5.55E-10	3.66	2.03E-09	9.20E-08	PASS

Quarterly — 12 ×

Simple Terrain

Pollutant	Emission Rate	Impact Factor	Max 24-HR Impact	Standard	Pass/Fail
	(g/s)	(ug/m3)/(g/s)	(ug/m3)	(ug/m3)	
Lead	4.54E-04	5.49	2.49E-03	1.50E+00	PASS
Mercury	3.78E-03	5.49	2.08E-02	1.67E-01	PASS
Beryllium	0.00E+00	5.49	0.00E+00	5.00E-03	PASS
Arsenic	1.39E-05	5.49	7.62E-05	4.80E-01	PASS
Cadmuim	4.41E-05	5.49	2.42E-04	2.40E-02	PASS
Chromium	1.77E-05	5.49	9.69E-05	1.20E-01	PASS
Copper	8.20E-05	5.49	4.50E-04	3.30E-01	PASS
Nickel	1.39E-05	5.49	7.62E-05	1.20E-01	PASS
Selenium	0.00E+00	5.49	0.00E+00	6.67E-01	PASS
CDD	7.57E-07	5.49	4.15E-06	n/a	PASS
CDD	5.55E-10	5.49	3.05E-09	9.20E-08	PASS

Quarterly — 8 ×

Valley Impacts-Estimated Max Emission Rates

Pollutant	Emission Rate	Impact Factor	Max 24-HR Impact	Standard	Pass/Fail
	(g/s)	(ug/m3)/(g/s)	(ug/m3)	(ug/m3)	
Lead	3.66E-02	3.66	1.07E-01	1.50E+00	PASS
Mercury	1.20E-02	3.65	4.38E-02	1.67E-01	PASS
Beryllium	1.08E-06	3.66	3.97E-06	5.00E-03	PASS
Arsenic	2.52E-04	3.66	9.23E-04	4.80E-01	PASS
Cadmuim	9.84E-04	3.66	3.60E-03	2.40E-02	PASS
Chromium	1.51E-03	3.66	5.54E-03	1.20E-01	PASS
Copper	9.84E-04	3.66	3.60E-03	3.30E-01	PASS
Nickel	9.84E-04	3.66	3.60E-03	1.20E-01	PASS
Selenium	2.52E-05	3.66	9.23E-05	6.67E-01	PASS
Total PCDD	6.94E-07	3.66	2.54E-06	n/a	PASS
2378-TCDD	6.94E-10	3.66	2.54E-09	9.20E-08	PASS

Quarterly — 35 ×

Simple Terrain - Estimated Max. Emission Rates

Pollutant	Emission Rate	Impact Factor	Max 24-HR Impact	Standard	Pass/Fail
	(g/s)	(ug/m3)/(g/s)	(ug/m3)	(ug/m3)	
Lead	3.66E-02	5.49	1.61E-01	1.50E+00	PASS
Mercury	1.20E-02	5.49	6.58E-02	1.67E-01	PASS
Beryllium	1.08E-06	5.49	5.95E-06	5.00E-03	PASS
Arsenic	2.52E-04	5.49	1.38E-03	4.80E-01	PASS
Cadmuim	9.84E-04	5.49	5.40E-03	2.40E-02	PASS
Chromium	1.51E-03	5.49	8.31E-03	1.20E-01	PASS
er	9.84E-04	5.49	5.40E-03	3.30E-01	PASS
l	9.84E-04	5.49	5.40E-03	1.20E-01	PASS
Selenium	2.52E-05	5.49	1.38E-04	6.67E-01	PASS
Total PCDD	6.94E-07	5.49	3.81E-06	n/a	PASS
2378-TCDD	6.94E-10	5.49	3.81E-09	9.20E-08	PASS

Quarterly — 2.5 ×