



# WHEELABRATOR NORTH ANDOVER A WIN-WASTE INNOVATIONS COMPANY COMPLIANCE SUMMARY REPORT



Date 8/13/23

Wheel Plant Wheelabrator North Andover  
Unit 1 Unit Unit 1  
Outlet Source Outlet

Date	Hour	On-Line Minutes	O2		NOx		SO2					CO			Carbon Feed		FF Temp (deg F)		Steam KLbs/Hr		
			Out Vol % Dry	Status	Outlet ppm 7%O2	Status	Outlet ppm 7%O2	Status	Inlet ppm 7%O2	Status	Removal	Status	Outlet ppm 7%O2	Status	4 Hr Block	Status	Lbs/Hr Avg.	8 Hr Block	1 Hr Avg.	4 Hr Block	1 Hr Avg.
8/13/2023	0	60	10.2		141		1		56		99		0			13		309		161.8	
8/13/2023	1	60	10.0		141		3		57		95		0			13		310		168.1	
8/13/2023	2	60	10.0		142		2		55		97		0			14		309		169.9	
8/13/2023	3	60	10.2		139		3		59		94		0		0	13		309	309	166.1	166.5
8/13/2023	4	60	10.3		142		10		67		85		0			13		310		166.4	
8/13/2023	5	60	10.3		142		10		70		86		0			14		309		166.5	
8/13/2023	6	60	10.2		140		7		65		90		0			13		309		167.2	
8/13/2023	7	60	10.2		142		9		73		87		1		0	13	13	310	310	168.6	167.2
8/13/2023	8	60	10.4		140		7		75		91		0			14		309		168.7	
8/13/2023	9	60	10.4		141		8		71		88		0			13		309		168.1	
8/13/2023	10	60	10.4		141		7		69		91		0			13		310		165.3	
8/13/2023	11	60	10.5		139		11		80		87		0		0	14		309	309	166.9	167.2
8/13/2023	12	60	10.3		142		3		60		95		0			14		310		168.8	
8/13/2023	13	60	10.3		141		4		61		93		0			13		310		166.3	
8/13/2023	14	60	10.3		143		3		56		95		0			14		309		168.1	
8/13/2023	15	60	10.2		142		4		57		93		0		0	14	14	309	310	167.7	167.7
8/13/2023	16	60	10.3		141		10		69		85		0			14		310		164.9	
8/13/2023	17	60	10.4		141		3		52		94		0			14		309		165.7	
8/13/2023	18	60	10.4		141		3		53		95		0			14		310		166.0	
8/13/2023	19	60	10.2		140		3		57		95		0		0	14		309	309	167.4	166.0
8/13/2023	20	60	10.0		137		3		58		95		0			14		309		168.1	
8/13/2023	21	60	10.4		143		17		82		79		0			14		309		167.3	
8/13/2023	22	60	10.4		143		11		67		84		0			14		310		168.0	
8/13/2023	23	60	10.4		141		3		55		95		0		0	15	14	309	309	164.2	166.9

Average:  
Geometric Mean Average:

Limit:

141	5
≤ 150 24-HR Block Avg.	≤ 29 24-HR Geometric Mean

OR

93
≥ 80% Removal Efficiency

see above
≤ 69 4-HR Block Average

ppmc

see above
≥ 12 8-HR. Block Average

lb/hr

see above
≤ 345 °F 4-HR Block Average

°F

see above
≤ 173 4-HR Block Average

klb/hr

**Status Flags**

- I - Invalid
- B - Bad
- C - Calibration
- M - Maintenance
- F - Offline
- P - Purge
- T - Out of Control
- E - Excluded
- ^ - Startup
- \* - Shutdown



# WHEELABRATOR NORTH ANDOVER A WIN-WASTE INNOVATIONS COMPANY COMPLIANCE SUMMARY REPORT



Date 8/13/23

Wheel Plant Wheelabrator North Andover  
Unit 2 Unit Unit 1  
Outlet Source Outlet

Date	Hour	On-Line Minutes	O2		NOx		SO2					CO			Carbon Feed		FF Temp (deg F)		Steam KLbs/Hr		
			Out Vol % Dry	Status	Outlet ppm 7%O2	Status	Outlet ppm 7%O2	Status	Inlet ppm 7%O2	Status	Removal	Status	Outlet ppm 7%O2	Status	4 Hr Block	Status	Lbs/Hr Avg.	8 Hr Block	1 Hr Avg.	4 Hr Block	1 Hr Avg.
8/13/2023	0	60	10.1		140		0		41		100		4			14		311		167.5	
8/13/2023	1	60	10.1		141		0		32		100		4			15		310		166.3	
8/13/2023	2	60	10.3		139		0		26		100		4			14		310		167.3	
8/13/2023	3	60	10.1		140		0		25		100		4	4		15		310	310	167.5	167.1
8/13/2023	4	60	10.2		140		0		40		100		5			14		310		168.0	
8/13/2023	5	60	10.0		142		0		40		100		4			15		310		167.9	
8/13/2023	6	60	10.1		139		0		35		100		5			14		310		166.7	
8/13/2023	7	60	10.1		138		0		41		100		4	5		14	14	310	310	166.3	167.2
8/13/2023	8	60	10.3		140		1		50		99		5			14		310		167.5	
8/13/2023	9	60	9.9		141		1		51		99		5			14		310		167.5	
8/13/2023	10	60	10.0		138		0		40		100		6			13		309		166.9	
8/13/2023	11	60	10.0		140		0		48		100		5	5		14		310	310	168.6	167.7
8/13/2023	12	60	9.8		141		0		35		100		4			14		310		167.8	
8/13/2023	13	60	9.8		139		0		32		100		4			15		310		166.8	
8/13/2023	14	60	9.9		138		0		39		100		4			15		309		167.8	
8/13/2023	15	60	9.8		140		1		31		98		5	4		15	14	311	310	167.5	167.5
8/13/2023	16	60	9.9		139		0		34		100		5			15		309		166.6	
8/13/2023	17	60	10.0		140		0		37		100		5			15		310		166.5	
8/13/2023	18	60	9.9		140		0		36		100		5			15		311		167.1	
8/13/2023	19	60	10.0		139		0		49		100		5	5		16		310	310	167.5	166.9
8/13/2023	20	60	9.8		140		1		49		99		5			14		310		168.1	
8/13/2023	21	60	10.0		141		0		27		100		4			14		309		167.7	
8/13/2023	22	60	9.8		135		0		35		100		5			15		310		167.4	
8/13/2023	23	60	10.1		133		0		32		100		8	5		13	15	309	310	167.0	167.6

<b>Average:</b> <b>Geometric Mean Average:</b>	<div style="background-color: yellow; padding: 5px; border: 1px solid black;">139</div>	<div style="background-color: green; color: white; padding: 5px; border: 1px solid black;">0</div>	<b>OR</b>	<div style="background-color: green; color: white; padding: 5px; border: 1px solid black;">100</div>	<div style="background-color: grey; color: white; padding: 5px; border: 1px solid black;">see above</div>	<div style="background-color: green; color: white; padding: 5px; border: 1px solid black;">see above</div>	<div style="background-color: purple; color: white; padding: 5px; border: 1px solid black;">see above</div>	<div style="background-color: grey; color: white; padding: 5px; border: 1px solid black;">see above</div>
<b>Limit:</b>	<div style="border: 1px solid black; padding: 5px;"> <math>\leq 150</math> 24-HR Block Avg.         </div>	<div style="border: 1px solid black; padding: 5px;"> <math>\leq 29</math> 24-HR Geometric Mean         </div>		<div style="border: 1px solid black; padding: 5px;"> <math>\geq 80\%</math> Removal Efficiency         </div>	<div style="border: 1px solid black; padding: 5px;"> <math>\leq 69</math> ppmc 4-HR Block Average         </div>	<div style="border: 1px solid black; padding: 5px;"> <math>\geq 12</math> lb/hr 8-HR. Block Average         </div>	<div style="border: 1px solid black; padding: 5px;"> <math>\leq 345</math> °F 4-HR Block Average         </div>	<div style="border: 1px solid black; padding: 5px;"> <math>\leq 173</math> klb/hr 4-HR Block Average         </div>

**Status Flags**

- |             |                 |             |                    |
|-------------|-----------------|-------------|--------------------|
| I - Invalid | C - Calibration | F - Offline | T - Out of Control |
| B - Bad     | M - Maintenance | P - Purge   | E - Excluded       |
- ^ - Startup  
\* - Shutdown



# WHEELABRATOR NORTH ANDOVER A WIN-WASTE INNOVATIONS COMPANY OPACITY REPORT



Date 13-Aug-2023

Plant Wheelabrator North Andover  
Unit Unit 1  
Source Outlet

Opacity is a measure of how much soot or smoke may be contained in stack emissions. The more smoke that is contained in the emissions the higher the level of opacity. Continuous opacity monitors located after all of the air pollution control equipment measure the opacity of the emissions from each boiler. Typically the human eye can not detect or see smoke that is less than 5% opacity. You won't see smoke from a modern trash-to-energy plant although in colder weather you will see water vapor condensation, similar to seeing your breath on a cold day. This is not considered opacity. We have a permit limit established by the Massachusetts Department of Environmental Protection of 10% opacity averaged every six (6) minutes.

Limit 10 %

Time (hr)	1-6 min	7-12 min	13-18 min	19-24 min	25-30 min	31-36 min	37-42 min	43-48 min	49-54 min	55-60 min	Average
0	1	1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	1	1	1	1	1
3	1	1	1	1	1	1	1	1	1	1	1
4	1	1	1	1	1	1	1	1	1	1	1
5	1	1	1	1	1	1	1	1	1	1	1
6	3	IC	5	IC	1	1	1	1	1	1	1
7	1	1	1	1	1	1	1	1	1	1	1
8	1	1	1	1	1	1	1	1	1	1	1
9	1	1	1	1	1	1	1	1	1	1	1
10	1	1	1	1	1	1	1	1	1	1	1
11	1	1	1	1	1	1	1	1	1	1	1
12	1	1	1	1	1	1	1	1	1	1	1
13	1	1	1	1	1	1	1	1	1	1	1
14	1	1	1	1	1	1	1	1	1	1	1
15	1	1	1	1	1	1	1	1	1	1	1
16	1	1	1	1	1	1	1	1	1	1	1
17	1	1	1	1	1	1	1	1	1	1	1
18	1	1	1	1	1	1	1	1	1	1	1
19	1	1	1	1	1	1	1	1	1	1	1
20	1	1	1	1	1	1	1	1	1	1	1
21	1	1	1	1	1	1	1	1	1	1	1
22	1	1	1	1	1	1	1	1	1	1	1
23	1	1	1	1	1	1	1	1	1	1	1

**Status Flags**

I - Invalid                      C - Calibration                      F - Offline                      T - Out of Control                      ^ - Startup  
 B - Bad                            M - Maintenance                      P - Purge                            E - Excluded                            \* - Shutdown



# WHEELABRATOR NORTH ANDOVER A WIN-WASTE INNOVATIONS COMPANY OPACITY REPORT



Date 13-Aug-2023

Plant Wheelabrator North Andover  
Unit Unit 2  
Source Outlet

Opacity is a measure of how much soot or smoke may be contained in stack emissions. The more smoke that is contained in the emissions the higher the level of opacity. Continuous opacity monitors located after all of the air pollution control equipment measure the opacity of the emissions from each boiler. Typically the human eye can not detect or see smoke that is less than 5% opacity. You won't see smoke from a modern trash-to-energy plant although in colder weather you will see water vapor condensation, similar to seeing your breath on a cold day. This is not considered opacity. We have a permit limit established by the Massachusetts Department of Environmental Protection of 10% opacity averaged every six (6) minutes.

Limit 10 %

Time (hr)	1-6 min	7-12 min	13-18 min	19-24 min	25-30 min	31-36 min	37-42 min	43-48 min	49-54 min	55-60 min	Average
0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0
6	2	IBC	4	IBC	0	0	0	0	0	0	1
7	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0

**Status Flags**

I - Invalid                      C - Calibration                      F - Offline                      T - Out of Control                      ^ - Startup  
 B - Bad                            M - Maintenance                      P - Purge                            E - Excluded                            \* - Shutdown