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

Wheelabrator Technologies

WIN Waste Innovations — Performance for the Planet

Date 10/6/22

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.	4 Hr Block
10/6/2022	0	60	10.5		198		11		44		75		4				13		309		166.0	
10/6/2022	1	60	10.3		200		10		44		77		4				12		310		166.3	
10/6/2022	2	60	10.2		197		11		47		77		4				13		310		166.8	
10/6/2022	3	60	9.9		197		12		51		77		4		4		13		309	309	166.9	166.5
10/6/2022	4	60	9.9		199		6		46		87		34	IBCT			13		309		162.8	
10/6/2022	5	60	9.6		199		10		53		82		4	IT			13		310		163.5	
10/6/2022	6	60	9.5		194		10		41		75		5	IT			13		309		167.1	
10/6/2022	7	60	9.8		167		4		38		90		14	IT	14	IBCT	13	13	310	310	158.2	162.9
10/6/2022	8	60	10.3		194		4		39		89		108	IBCT			13		309		168.1	
10/6/2022	9	60	9.9		201		4		36		89		5	IBCMT			13		310		165.3	
10/6/2022	10	60	10.1		197		5		33		86		6				13		310		168.1	
10/6/2022	11	60	9.7		199		4		38		90		5		5		13		309	309	166.1	166.9
10/6/2022	12	60	10.0		201		16		62		75		2				13		308		167.4	
10/6/2022	13	60	10.2		196		7		39		83		5				13		312		168.1	
10/6/2022	14	60	9.6		193		2		33		94		5				13		307		166.5	
10/6/2022	15	60	10.2		203		12		34		66		3		4		13	13	309	309	168.0	167.5
10/6/2022	16	60	10.3		195		13		29		56		4				13		310		165.1	
10/6/2022	17	60	10.0		194		4		24		84		5				13		310		165.1	
10/6/2022	18	60	9.7		191		3		26		87		5				14		309		166.2	
10/6/2022	19	60	9.9		192		4		26		83		5		5		13		309	310	163.8	165.0
10/6/2022	20	60	9.7		190		11		35		70		5				12		310		165.8	
10/6/2022	21	60	9.4		181		6		35		84		5				13		309		164.7	
10/6/2022	22	60	9.6		191		3		29		90		5				14		309		162.4	
10/6/2022	23	60	9.7		186		5		31		84		4		5		13	13	309	309	164.2	164.3
Average:					**194**										see above		see above		see above		see above	
Geometric Mean Average:							**6**				**83**											
Limit:					**≤ 205** 24-HR Block Avg.		**≤ 29** 24-HR Geometric Mean		**OR**		**≥ 75%** Removal Efficiency				**≤ 69** ppmc 4-HR Block Average		**≥ 12** lb/hr 8-HR. Block Average		**≤ 345** °F 4-HR Block Average		**≤ 173** klb/hr 4-HR Block Average	

Status Flags

I - Invalid
B - Bad
C - Calibration
M - Maintenance
F - Offline
P - Purge
T - Out of Control
E - Excluded
^ - Startup
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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.	4 Hr Block
10/6/2022	0	0	21.0	IF	9	IF	5	IF	-23	IBF	0	IBF	0	IF			0		67		0.0	
10/6/2022	1	0	21.0	IF	9	IF	5	IF	-27	IBF	0	IBF	0	IF			0		67		0.0	
10/6/2022	2	0	21.0	IF	8	IF	5	IF	-26	IBF	0	IBF	0	IF			0		66		0.0	
10/6/2022	3	5	20.2	ICF	8	ICF	4	ICF	-28	IBF	0	IBCF	0	ICF	0	ICF	1		66	66	0.0	0.0
10/6/2022	4	12	17.3	IBCF	143	IBCF	91	IBCF	-28	IBF	0	IBCF	93	IBCFT			0		66		0.0	
10/6/2022	5	0	21.0	IF	7	IF	5	IF	180	IBCF	97	IBCF	0	IFT			0		66		0.0	
10/6/2022	6	0	21.0	IF	7	IF	4	IF	-30	IBF	0	IBF	0	IFT			0		66		0.0	
10/6/2022	7	17	16.7	IBCMF	67	IBCMF	42	IBCMF	-26	IBF	0	IBCMF	413	IBCMF	126	IBCMF	0	0	66	66	0.0	0.0
10/6/2022	8	5	19.5	IBCF	95	IBCF	57	IBCF	-29	IBF	0	IBCF	1345	IBCFT			0		67		0.0	
10/6/2022	9	0	21.0	IF	8	IF	4	IF	-27	IBF	0	IBF	0	IF			0		69		0.0	
10/6/2022	10	0	21.0	IF	9	IF	4	IF	-30	IBF	0	IBF	0	IF			0		70		0.0	
10/6/2022	11	0	21.0	IF	9	IF	4	IF	-32	IBF	0	IBF	0	IF	336	IBCFT	0		71	69	0.0	0.0
10/6/2022	12	0	21.0	IF	8	IF	4	IF	-32	IBF	0	IBF	0	IF			0		72		0.0	
10/6/2022	13	0	21.0	IF	8	IF	5	IF	-31	IBF	0	IBF	0	IF			0		72		0.0	
10/6/2022	14	0	21.0	IF	8	IF	5	IF	-32	IBF	0	IBF	0	IF			0		72		0.0	
10/6/2022	15	0	21.0	IF	7	IF	5	IF	-31	IBF	0	IBF	0	IF	0	IF	0	0	72	72	0.0	0.0
10/6/2022	16	0	21.0	IF	7	IF	5	IF	-29	IBF	0	IBF	0	IF			0		72		0.0	
10/6/2022	17	0	21.0	IF	8	IF	5	IF	-27	IBF	0	IBF	0	IF			1		72		0.0	
10/6/2022	18	0	21.0	IF	9	IF	4	IF	-26	IBF	0	IBF	0	IF			1		72		0.0	
10/6/2022	19	0	21.0	IF	9	IF	4	IF	-27	IBF	0	IBF	0	IF	0	IF	1		71	72	0.0	0.0
10/6/2022	20	0	21.0	IF	9	IF	4	IF	-28	IBF	0	IBF	0	IF			0		70		0.0	
10/6/2022	21	0	21.0	IF	9	IF	4	IF	-27	IBF	0	IBF	0	IF			0		69		0.0	
10/6/2022	22	0	21.0	IF	9	IF	4	IF	-26	IBF	0	IBF	0	IF			0		67		0.0	
10/6/2022	23	0	21.0	IF	9	IF	4	IF	-28	IBF	0	IBF	0	IF	0	IF	1	1	65	68	0.0	0.0

Average:	20 IBCMF			see above	see above	see above
Geometric Mean Average:		6 IBCMF	0 IBCMF			
Limit:	≤ 205 24-HR Block Avg.	≤ 29 24-HR Geometric Mean	OR ≥ 75% Removal Efficiency	≤ 69 ppmc 4-HR Block Average	≥ 12 lb/hr 8-HR. Block Average	≤ 345 °F 4-HR Block Average	≤ 173 klb/hr 4-HR Block Average

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WHEELABRATOR NORTH ANDOVER
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OPACITY REPORT

Date 06-Oct-2022

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		0		1	1	1	1	1	1	1	1	0
6	3	IC	5	IC	1	1	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	0		0		0	0	1	1	1	1	1	1	0
18	1		1		1	1	1	0	1	1	1	0	0
19	1		1		1	1	1	1	1	1	0	1	1
20	0		0		1	0	1	0	0	0	1	0	0
21	1		1		1	1	1	1	1	1	1	1	1
22	1		1		0	0	0	0	0	0	1	0	0
23	0		0		1	1	0	0	0	0	0	0	0

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OPACITY REPORT

Date 06-Oct-2022

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	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1
1	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1
2	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1
3	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1
4	1		1		1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1
5	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1
6	2	BCF	23	BCF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	4
7	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1		1		1
8	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1
9	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1
10	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1
11	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1
12	1	IF	1	IF	1	IF	1	IF	1	IF	2	IF	1	IF	1	IF	1	IF	2	IF	1
13	1	IF	1	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	1
14	1	IF	2	IF	2	IF	2	IF	2	IF	1	IF	2	IF	2	IF	2	IF	1	IF	1
15	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	1	IF	2	IF	2	IF	2	IF	2
16	2	IF	2	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1
17	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1
18	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1
19	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1
20	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1
21	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1
22	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1
23	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1

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