

Monthly Operating Reports

October 2023

The following October 2023 operating report was sent to the Ministry of Environment and Climate Change Strategy on December 11, 2023.

Metro Vancouver - Waste-to-Energy Facility CONTINUOUS EMISSION MONITORING SYSTEM

October 2023

1. Monthly Summary Report

Parameter	Compliance Limit (mg/dscm)	Compliance Period	Maximum Measurement (mg/dscm)		
			Unit 1	Unit 2	Unit 3
CO	50	24 hr	44.3	35.6	31.3
SO ₂	200	24 hr	123.3	162.8	100.0
NOx	190	24 hr	134.1	145.6	154.5
THC	10	24 hr	0.23	1.21	0.64
			Monthly Average (mg/dscm)		
			Unit 1	Unit 2	Unit 3
Opacity (%)			1.14	0.58	0.67
CO			35.7	26.9	22.2
THC			0.09	0.42	0.36
SO ₂			60.7	81.1	55.2
NOx			129.2	129.0	134.9

Interim Discharge Limits will apply until and including the following dates, at which point the Discharge Limits and Response Limits will apply

a. HCl – March 3, 2025

b. SO₂ – March 3, 2025

2. Monthly Exceedance Report

2.a. Discharge Limit Exceedances

Unit	Compliance Parameter	Discharge Limit (mg/dscm)	Date	Exceedance Level
	Reason/Action Taken			

2.b. Response Limit Exceedances

Compliance Parameter: Carbon Monoxide

Response Limit: 100 mg/dscm 1/2 hour average

Unit No. 1

Date / Time	Duration	Exceedance (mg/dscm)	Action Taken
7-Oct 16:30	30 min	143.1	Started gas burners, adjusted airflow, modified feed rate.
11-Oct 09:00	30 min	106.2	Started gas burners, adjusted airflow, modified feed rate.
13-Oct 18:00	30 min	211.5	Volatile Fuel. Started gas burners, adjusted airflow, modified feed rate.
14-Oct 22:30	30 min	123.8	Started gas burners, adjusted airflow, modified feed rate.
15-Oct 16:00	30 min	219.9	Started gas burners, adjusted airflow, modified feed rate.
17-Oct 18:00	30 min	112.3	Started gas burners, adjusted airflow, modified feed rate.
20-Oct 11:00	30 min	112.4	Started gas burners, adjusted airflow, modified feed rate, checked instrumentation.
21-Oct 10:30	30 min	124.9	Started gas burners, adjusted airflow, modified feed rate.
24-Oct 13:30	30 min	103.7	Started gas burners, adjusted airflow, modified feed rate.
25-Oct 23:30	30 min	108.3	Feed chute hang up. Started gas burners, adjusted airflow, modified feed rate.
31-Oct 09:30	30 min	105.7	Started gas burners, adjusted airflow, modified feed rate.

Compliance Parameter: Carbon Monoxide
Response Limit: 100 mg/dscm 1/2 hour average
Unit No. 2

Date / Time	Duration	Exceedance (mg/dscm)	Action Taken
1-Oct 18:30	30 min	134.1	Started gas burners, adjusted airflow, modified feed rate.
5-Oct 06:30	30 min	120.8	Started gas burners, adjusted airflow, modified feed rate.
7-Oct 07:00	30 min	155.0	Started gas burners, adjusted airflow, modified feed rate.
16-Oct 21:00	30 min	123.8	Feed chute hang up. Started gas burners, adjusted airflow, modified feed rate.
29-Oct 19:30	30 min	106.0	Adjusted airflow, modified feed rate, checked instrumentation.
31-Oct 14:00	30 min	104.1	Feed chute hang up. Started gas burners, adjusted airflow, modified feed rate.

Compliance Parameter: Carbon Monoxide
Response Limit: 100 mg/dscm 1/2 hour average
Unit No. 3

Date / Time	Duration	Exceedance (mg/dscm)	Action Taken
7-Oct 08:00	60 min	129.2	Boiler plugged. Started gas burners, adjusted airflow, modified feed rate.
7-Oct 09:30	30 min	118.1	Boiler plugged. Started gas burners, adjusted airflow, modified feed rate.
11-Oct 06:00	30 min	137.5	Adjusted airflow, modified feed rate.
11-Oct 10:30	30 min	101.6	Started gas burners, adjusted airflow, modified feed rate.
15-Oct 10:30	30 min	290.3	Volatile fuel. Started gas burners, adjusted airflow, modified feed rate, checked instrumentation.

2.c. Transient Conditions

Gas burners unavailable during shutdown and furnace temperature average below 800C

Unit	Duration	Date	Time	
Cause				
Action Taken to Restore Steady State Conditions				
Remedial Action Planned and/or Taken				

3. CEMS Availability

Analyzer	Required Availability (% hours per quarter)	Averaging Period	Monthly Availability		
			Unit 1	Unit 2	Unit 3
Opacity	90	Hour	100	100	100
Oxygen	90	Hour	98	99	99
CO	90	Hour	98	99	99
SO ₂	90	Hour	97	99	99
NOx	90	Hour	98	99	99
THC	90	Hour	98	97	99
Stack Flow	90	Hour	100	100	100

4. Shutdown Report

Unit 1

Duration in Hours	Reason	Date
0.58	CEMS maintenance	October 10
3.28	Ash Discharger plugged	October 26
31.32	Secondary economizer leak	October 27-28

Unit 2

Duration in Hours	Reason	Date
14.75	Major outage	October 1
0.43	Forced draft fan trip	October 3
0.27	Forced draft fan trip	October 5
0.67	CEMS maintenance	October 10
0.55	Burner issues	October 18
0.35	Forced draft fan trip	October 21

Unit 3

Duration in Hours	Reason	Date
4.80	Ash Discharger plug	October 1
34.48	Boiler water wash	October 7-9
0.67	CEMS maintenance	October 10
2.03	CEMS maintenance	October 10
2.00	Poor refuse quality	October 15
295.81	Major outage	October 15-28
0.63	CEMS maintenance	October 28
24.00	Primary economizer tube leak	October 31

5. Facility Bypass and Emergency/spill Event Report

Date/Time	Cause	Duration
	Action Taken	

6. Other Data

		UNIT 1	UNIT 2	UNIT 3
Waste Received	tonnes	17,686		
Waste Processed	tonnes/day	220	225	103
Maximum Waste Processed	tonnes/day	261	247	238
Natural Gas Consumed	m ³ /day	8,139		
	m ³ /month	252,297		
Fly ash disposed	tonnes	765		
Bottom ash disposed	tonnes	2,804		

7. Complaints and Responses

Date/Time	Complaint	Action Taken

October 2023 - Monthly CEMS Data

Date	Boiler #1								Boiler #2								Boiler #3							
	Stack Temp	O ₂ (%)	SO ₂ (mg/m ³)	NO _x (mg/m ³)	CO (mg/m ³)	THC (mg/m ³)	Opacity (%)	Furnace Temp	Stack Temp	O ₂ (%)	SO ₂ (mg/m ³)	NO _x (mg/m ³)	CO (mg/m ³)	THC (mg/m ³)	Opacity (%)	Furnace Temp	Stack Temp	O ₂ (%)	SO ₂ (mg/m ³)	NO _x (mg/m ³)	CO (mg/m ³)	THC (mg/m ³)	Opacity (%)	Furnace Temp
10/1/23	153	10.0	57.9	131.6	33.2	0.00	1.22	931									154	10.0	49.1	131.2	21.5	0.00	0.28	895
10/2/23	153	10.1	49.3	128.2	31.0	0.07	1.20	927	139	11.2	66.2	143.6	35.6	0.18	0.52	850	153	9.3	37.5	129.4	22.3	0.29	0.26	905
10/3/23	154	9.9	67.0	128.3	28.1	0.09	1.19	941	146	11.0	116.5	145.6	27.3	0.68	0.49	881	155	9.6	51.2	130.8	18.0	0.44	0.22	911
10/4/23	156	9.8	50.2	129.7	29.7	0.06	1.33	931	152	10.8	76.9	141.0	31.9	0.83	0.54	897	157	10.0	35.8	128.9	25.3	0.37	0.19	901
10/5/23	155	9.9	47.1	130.3	36.1	0.13	1.22	951	153	11.1	80.5	143.9	32.7	1.03	0.50	912	157	9.4	39.5	134.7	16.1	0.55	0.16	948
10/6/23	153	10.0	51.4	134.1	32.4	0.06	1.24	936	152	10.7	82.6	142.5	20.6	0.89	0.51	919	153	10.1	29.3	128.0	15.2	0.50	0.12	891
10/7/23	153	10.2	60.3	129.5	40.0	0.07	1.29	927	147	11.0	65.3	134.3	34.1	0.83	0.54	901								
10/8/23	152	9.7	52.0	128.1	31.1	0.09	1.35	927	144	11.0	67.3	135.3	16.4	0.99	0.53	915								
10/9/23	153	9.9	62.4	128.6	35.6	0.08	1.31	909	145	11.1	88.7	131.8	26.5	1.21	0.49	900								
10/10/23	153	10.1	73.5	131.6	33.0	0.09	1.39	919	144	11.0	93.6	140.4	17.9	1.01	0.47	925	158	8.9	100.0	154.5	19.1	0.53	0.09	895
10/11/23	149	10.3	58.1	133.1	42.7	0.11	1.48	915	141	11.2	75.5	135.7	23.3	0.64	0.50	920	159	8.8	66.6	141.8	22.8	0.48	0.14	909
10/12/23	148	10.1	56.1	134.1	22.6	0.05	1.93	935	140	11.3	91.7	134.1	20.3	0.19	0.54	926	159	8.9	68.0	139.9	19.6	0.18	0.19	913
10/13/23	151	9.5	56.9	127.4	40.8	0.00	1.56	952	141	10.8	89.9	13.1	19.6	0.00	0.58	933	159	8.9	70.9	136.9	18.2	0.00	0.23	905
10/14/23	150	9.5	62.1	126.0	37.1	0.13	0.89	933	146	10.4	85.4	130.0	19.3	0.21	0.55	921	159	8.4	66.7	134.4	21.8	0.47	0.24	913
10/15/23	147	10.1	123.3	128.2	27.8	0.23	1.06	906	148	10.7	162.8	129.3	18.0	0.21	0.54	903								
10/16/23	146	10.5	61.3	128.7	34.4	0.00	0.90	907	145	11.0	76.6	128.4	30.5	0.00	0.50	892								
10/17/23	145	10.4	97.2	128.0	34.2	0.00	0.90	913	148	11.0	137.6	132.4	28.4	0.00	0.56	893								
10/18/23	149	10.3	61.2	127.8	34.4	0.00	0.97	898	151	10.2	87.0	127.6	30.1	0.00	0.62	892								
10/19/23	147	10.0	50.6	128.3	40.7	0.00	0.80	917	144	9.6	68.0	129.7	27.5	0.00	0.54	915								
10/20/23	147	10.0	51.0	129.5	38.0	0.12	0.75	914	147	9.5	73.7	127.0	28.5	0.17	0.52	913								
10/21/23	150	10.1	59.9	127.4	41.4	0.13	0.87	900	148	10.3	69.9	129.8	26.9	0.15	0.58	886								
10/22/23	151	10.0	65.5	128.2	35.7	0.09	0.86	910	148	10.2	88.6	128.6	28.5	0.14	0.60	891								
10/23/23	151	10.1	58.1	128.6	44.3	0.13	0.93	906	152	10.5	79.3	127.9	32.9	0.07	0.62	880								
10/24/23	148	9.8	81.6	131.6	42.2	0.11	0.99	918	149	10.2	93.0	132.8	28.3	0.23	0.62	892								
10/25/23	147	9.5	44.8	128.8	41.4	0.22	1.06	904	148	10.0	58.7	136.8	25.3	0.27	0.68	894								
10/26/23	145	9.4	44.2	127.9	36.0	0.18	1.04	942	149	10.4	61.4	131.7	28.5	0.27	0.72	894								
10/27/23	144					0.96		903	149	10.6	63.2	129.2	31.9		0.74	882								
10/28/23									148	10.0	62.1	127.8	25.9	0.47	0.76	910	145	9.5	47.9	128.9	29.3	0.64	1.89	864
10/29/23									150	10.1	61.8	126.1	29.5	0.65	0.74	894	149	9.4	59.1	130.5	31.3	0.17	2.37	861
10/30/23	150	9.7	48.5	126.2	35.5	0.20	1.17	931	146	10.0	53.6	126.0	32.0	0.50	0.71	906	149	9.5	50.8	138.4	30.4	0.45	2.93	868
10/31/23	150	10.3	47.8	127.2	38.8	0.20	1.07	934	147.0	10.2	55.3	128.2	28.6	0.47	0.71	904.0								
Average	150	10.0	60.7	129.2	35.7	0.09	1.14	922	147	10.6	81.1	129.0	26.9	0.42	0.58	901	155	9.3	55.2	134.9	22.2	0.36	0.67	899
Min	144	9.4	44.2	126.0	22.6	0.00	0.75	898	139	9.5	53.6	13.1	16.4	0.00	0.47	850	145	8.4	29.3	128.0	15.2	0.00	0.09	861
Max	156	10.5	123.3	134.1	44.3	0.23	1.93	952	153	11.3	162.8	145.6	35.6	1.21	0.76	933	159	10.1	100.0	154.5	31.3	0.64	2.93	948
St Dev	3.2	0.3	16.8	2.1	5.2	0.07	0.26	15.2	3.6	0.5	23.7	22.6	5.3	0.37	0.09	17.3	4.5	0.5	18.5	7.2	5.2	0.20	0.96	22.9

Blank days have less than 18 hours of valid data due to unit shut downs or analyzer outage/maintenance.

According to standard guidelines used by Metro Vancouver Air Quality Policy and Environment Division, a minimum of 18 hours of valid data is required to generate a valid 24hr average.