

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

September 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	41.4	34.6	45.9
SO ₂	200	24 hr	98.6	80.9	66.4
NOx	190	24 hr	137.3	132.5	140.4
THC	10	24 hr	0.29	0.52	0.69
			Monthly Average (mg/dscm)		
			Unit 1	Unit 2	Unit 3
Opacity (%)			1.05	0.97	0.48
CO			33.5	27.1	37.5
THC			0.12	0.16	0.28
SO ₂			69.8	59.7	50.2
NOx			130.1	129.9	132.4

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-Sep 17:00	30 min	151.8	Adjusted airflow.
8-Sep 10:30	30 min	104.9	Started gas burners, adjusted airflow, modified feed rate.
11-Sep 02:00	30 min	115.4	Feed chute plugged. Started gas burners, adjusted airflow, modified feed rate.
17-Sep 00:00	30 min	130.1	Started gas burners, adjusted airflow, modified feed rate, checked instrumentation.
14-Sep 11:00	30 min	109.3	Started gas burners, adjusted airflow, modified feed rate.
21-Sep 20:30	30 min	136.1	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
3-Sep 09:00	30 min	143.9	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
1-Sep 19:30	30 min	205.7	Started gas burners, adjusted airflow, modified feed rate.
4-Sep 23:30	30 min	178.6	Feed chute plugged. Started gas burners, adjusted airflow, modified feed rate.
5-Sep 12:00	30 min	208.2	Started gas burners, adjusted airflow, modified feed rate.
5-Sep 16:30	30 min	135.6	Started gas burners, adjusted airflow, modified feed rate.
11-Sep 01:30	30 min	112.8	Feed chute plugged. Adjusted airflow, modified feed rate.
13-Sep 13:00	30 min	109.6	Volatile fuel. Started gas burners, adjusted airflow, modified feed rate, checked instrumentation.
13-Sep 18:00	30 min	107.9	Started gas burners, adjusted airflow, modified feed rate.
15-Sep 06:00	30 min	110.9	Started gas burners, adjusted airflow.
15-Sep 14:00	30 min	104.7	Started gas burners, adjusted airflow, modified feed rate.
21-Sep 15:00	30 min	104.7	Started gas burners, adjusted airflow, modified feed rate.
21-Sep 17:30	60 min	186.1	Feed chute plugged. Started gas burners, adjusted airflow, modified feed rate.
21-Sep 19:00	30 min	189.5	Started gas burners, adjusted airflow, modified feed rate.
22-Sep 02:30	30 min	117.3	Started gas burners, adjusted airflow, modified feed rate.
22-Sep 10:30	30 min	158.7	Feed chute plugged. Started gas burners, adjusted airflow, modified feed rate.
22-Sep 12:00	30 min	179.2	Online wash. Started gas burners, adjusted airflow.
22-Sep 22:00	30 min	106.8	Feed chute plugged. Started gas burners, adjusted airflow, modified feed rate.
23-Sep 17:00	30 min	125.3	Adjusted airflow.
25-Sep 16:00	30 min	106.6	Started gas burners, adjusted airflow, modified feed rate.

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	100	100	100
CO	90	Hour	100	100	100
SO ₂	90	Hour	100	100	100
NOx	90	Hour	100	100	100
THC	90	Hour	100	100	100
Stack Flow	90	Hour	100	100	100

4. Shutdown Report

Unit 1

Duration in Hours	Reason	Date
28.38	Boiler wash	September 1-2
0.58	Refuse cranes offline	September 15
63.56	Full plant outage	September 26-29

Unit 2

Duration in Hours	Reason	Date
0.62	Fabric filter bag replacement	September 5
317.52	Major outage	September 17-30

Unit 3

Duration in Hours	Reason	Date
3.65	Ash Discharger plug	September 17
67.03	Full plant outage	September 26-29

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	17,441		
Waste Processed	tonnes/day	210	112	198
Maximum Waste Processed	tonnes/day	261	215	236
Natural Gas Consumed	m ³ /day	3,698		
	m ³ /month	110,938		
Fly ash disposed	tonnes	602		
Bottom ash disposed	tonnes	2,805		

7. Complaints and Responses

Date/Time	Complaint	Action Taken

ATTACHMENT 2

August 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
9/1/23								159	10.1	61.8	132.1	28.3	0.44	1.38	949	161	9.5	50	136.1	43.4	0.53	1.38	920	
9/2/23	152	9.1	71.6	127.5	34.1	0.19	0.92	968	158	10.2	77.1	130.8	32.7	0.52	1.41	938	162	9.9	61.1	134.3	38.1	0.16	1.56	917
9/3/23	151	10.2	63.6	131.7	36.3	0.29	0.96	933	156	10.5	48	130.6	24.9	0.46	1.40	901	158	9.6	41.6	131.4	39	0.46	1.73	911
9/4/23	149	10.5	65.4	129.6	34.9	0.24	0.98	915	156	10.7	41.5	129.6	29.3	0.25	2.04	883	155	9.4	41.5	129.5	40.9	0.48	2.12	902
9/5/23	152	10.2	98.6	128.6	21.6	0.17	1.58	951	154	10.7	48.7	131.5	28.4	0.14	1.71	914	157	10.1	50.7	131.4	44.9	0.13	2.57	904
9/6/23	149.9	9.4	77.3	133.9	26.8	0.12	2.00	951	155	10	56.9	131.9	18.6	0.05	0.68	942	157	10.1	45.1	131.7	38	0.11	0.97	897
9/7/23	147	9.7	66.1	130.2	31.3	0.16	1.97	954	153	9.9	57.1	129.1	28.8	0.14	0.65	945	156	10	49.4	136	38.3	0.03	0.00	910
9/8/23	148	9.3	72.1	129.1	29.3	0.14	1.97	970	154	9.8	68.5	130.9	18.5	0.11	0.67	950	155	9.7	48.9	133.4	35.1	0.55	0.00	925
9/9/23	149	9.3	74.1	129.2	25.8	0.15	2.02	966	156	10.2	62.7	132.5	16.3	0.12	0.71	939	155	10	49.6	140.4	30.9	0.08	0.01	908
9/10/23	154	9.7	96.9	129.6	35.1	0.13	2.10	945	155	10.8	68.9	127.6	30.6	0.13	0.71	912	157	9.6	61.4	134.9	31.8	0.69	0.01	928
9/11/23	148	9.2	62.5	128.9	35	0.00	1.14	951	155	10.5	59.2	130.5	26.9	0.00	0.68	921	160	9.7	44.6	134.5	40	0.00	0.01	903
9/12/23	145	9.1	74.7	128.1	33	0.00	0.55	975	154	10.6	80.9	132.2	34.6	0.00	0.69	943	157	10.1	45.5	133.1	42.3	0.00	0.02	909
9/13/23	147	8.9	61	126.7	33	0.00	0.57	976	154	10.7	56.2	132.3	31.5	0.00	0.71	931	157	10	46.1	136.5	40.2	0.00	0.04	910
9/14/23	148	9.6	62.8	130.2	36.5	0.00	0.61	948	154	10.1	57	129.7	26	0.00	0.73	963	156	10	43.8	136.6	33.5	0.00	0.03	921
9/15/23	148	9.5	74.2	130.7	35.5	0.17	0.63	964	153	10.4	58.2	129.3	28.7	0.11	0.74	948	156	10.2	52.2	135.4	41.2	0.33	0.08	922
9/16/23	149	9.5	65.1	133.1	27.6	0.11	0.66	937	153	10.2	55.9	125.7	22.9	0.12	0.77	936	155	10	49.4	133.1	37.7	0.21	0.13	890
9/17/23	148	9.8	63.3	129.6	36.8	0.18	0.68	944	154	10.7	56.8	122.2	34.1	0.15	0.78	943	158	9.9	50.5	134.5	43.6	0.63	0.12	873
9/18/23	146	10	50.7	129.4	33.8	0.07	0.66	934								155	9.6	40.5	130.5	34.5	0.35	0.11	877	
9/19/23	148	9.9	94.2	133.7	37.2	0.11	0.83	933								155	9.7	58.8	128.3	36.5	0.56	0.12	889	
9/20/23	146	9.6	60.1	130	38.1	0.13	0.73	942								155	9.5	46.2	128.4	35.7	0.31	0.14	880	
9/21/23	147	10	66.1	131.2	41.4	0.14	0.77	936								155	9.1	47	128.5	45.9	0.47	0.17	902	
9/22/23	150	10.1	71.1	128.5	37.3	0.14	0.77	940								157	9.7	64	129.5	42.2	0.28	0.16	886	
9/23/23	148	10	82.3	130	32.1	0.12	0.78	939								158	9.8	66.4	129.4	37.1	0.17	0.22	863	
9/24/23	148	10.3	94.1	130.2	35.9	0.12	0.82	927								158	10	61.4	127.8	26.1	0.47	0.24	861	
9/25/23	145	10.3	42	128	36.6	0.17	0.76	915								154	9.3	47.7	128	35.2	0.31	0.22	878	
9/26/23																								
9/27/23																								
9/28/23																								
9/29/23	150	10.3	56.1	137.3	29	0.00	0.85	923																
9/30/23	149	10.4	47.5	128.2	37	0.00	1.09	925								153	9.8	41.7	129.5	22.6	0.00	0.27	898	
Average	149	9.8	69.8	130.1	33.5	0.12	1.05	945	154.9	10.4	59.7	129.9	27.1	0.16	0.97	932.8	156.6	9.8	50.2	132.4	37.5	0.28	0.48	899.4
Min	145	8.9	42.0	126.7	21.6	0.00	0.55	915	153.0	9.8	41.5	122.2	16.3	0.00	0.65	883.0	153.0	9.1	40.5	127.8	22.6	0.00	0.00	861.0
Max	154	10.5	98.6	137.3	41.4	0.29	2.10	976	159.0	10.8	80.9	132.5	34.6	0.52	2.04	963.0	162.0	10.2	66.4	140.4	45.9	0.69	2.57	928.0
St Dev	2.1	0.46	14.53	2.30	4.49	0.08	0.52	17.5	1.69	0.32	9.93	2.68	5.41	0.16	0.44	20.37	2.10	0.28	7.46	3.37	5.49	0.22	0.74	18.95

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.