

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

July 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	37.9	43.1
SO ₂	200	24 hr	126.2	82.7	92.9
NOx	190	24 hr	148.5	146.8	182.1
THC	10	24 hr	0.56	0.17	0.84
			Monthly Average (mg/dscm)		
			Unit 1	Unit 2	Unit 3
Opacity (%)			0.29	1.15	0.89
CO			33.2	28.5	34.1
THC			0.15	0.08	0.39
SO ₂			62.4	64.3	58.6
NOx			125.4	127.7	135.3

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
6-Jul 02:30	30 min	151.4	Forced draft fan trip. Started gas burners.
12-Jul 06:00	30 min	123.0	Started gas burners, adjusted airflow, modified feed rate.
14-Jul 23:00	30 min	101.9	No action required.
21-Jul 16:00	30 min	100.5	Started gas burners, adjusted airflow.
23-Jul 12:00	30 min	147.4	Forced draft fan trip. 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

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

Date / Time	Duration	Exceedance (mg/dscm)	Action Taken
6-Jul 08:00	60 min	225.9	Boiler coming out of shutdown. Started gas burners, adjusted airflow, modified feed rate.
10-Jul 22:30	30 min	145.3	Thermocouple issue. Started gas burners, adjusted airflow, modified feed rate.
13-Jul 06:30	30 min	140.3	Started gas burners, adjusted airflow, modified feed rate, checked instrumentation.
13-Jul 21:00	30 min	125.5	Started gas burners, adjusted airflow, modified feed rate.
27-Jul 12:00	30 min	149.3	Feed chute plugged. Started gas burners, adjusted airflow, modified feed rate, checked instrumentation.
29-Jul 08:00	30 min	125.2	Started gas burners, adjusted airflow, modified feed rate.
31-Jul 09:00	30 min	104.5	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	96	98	98
CO	90	Hour	96	98	98
SO ₂	90	Hour	96	98	98
NOx	90	Hour	96	98	98
THC	90	Hour	96	97	98
Stack Flow	90	Hour	100	100	100

4. Shutdown Report

Unit 1

Duration in Hours	Reason	Date
29.15	Boiler wash	July 6-8
1.32	Fabric filter baghouse inspection	July 14
48.18	Boiler tube leak	July 23-25

Unit 2

Duration in Hours	Reason	Date
2.17	Overfire air leak	July 1
0.43	Primary economizer inspection	July 2
56.17	Primary economizer tube leak	July 4-6
76.08	Fire in grate area/repair/boiler wash	July 7-10
0.58	Induce draft fan trip	July 10
0.48	Forced draft fan trip	July 12
0.25	Grate bar visual inspection	July 12
0.45	Underfire air compartment plugged	July 18
0.55	Primary economizer inspection	July 19
33.30	Primary economizer tube leak	July 20-21
0.32	BC Hydro power interruption	July 21
127.58	Primary economizer tube leak	July 25-30

Unit 3

Duration in Hours	Reason	Date
0.20	Grate bar inspection	July 3
0.78	Underfire air compartment plugged	July 3
65.60	Grate bar repair	July 3-6
7.82	Fabric filter baghouse bag replacement	July 12
2.03	Fabric filter baghouse bag replacement	July 14
3.40	Ammonia pump repair	July 15
0.73	Air discharger plugged	July 18

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	17,977		
Waste Processed	tonnes/day	210	135	210
Maximum Waste Processed	tonnes/day	260	237	248
Natural Gas Consumed	m ³ /day	3,458		
	m ³ /month	107,207		
Fly ash disposed	tonnes	667		
Bottom ash disposed	tonnes	3,169		

7. Complaints and Responses

Date/Time	Complaint	Action Taken

July 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
7/1/23	146	11.1	48.3	124.9	41.4	0.16	0.29	928	147	9.7	68.9	129	29.8	0.13	1.15	948	155	9	51.3	136.6	31.3	0.84	0.99	924
7/2/23	143	11.5	48.2	126.2	32.8	0.16	0.25	925	141	9.7	58.5	127.4	23.3	0.08	1.14	941	153	9.2	52.7	133.3	25.3	0.64	1.08	914
7/3/23	142	11.7	48.1	122.1	28.8	0.17	0.18	932	133	9.8	47.7	126.6	19.4	0.10	1.12	949								
7/4/23	145	11.6	62.3	123.4	27.7	0.22	0.18	945																
7/5/23	139	11.9	46.6	119.3	31	0.26	0.14	937																
7/6/23	131	13	18.9	110	33.3	0.56	0.08	910																
7/7/23																	153	9.3	57.6	132.6	30.9	0.48	1.17	910
7/8/23	156	10.2	116.2		35.1	0.17	0.32	934									157	9.6	76.4	130.6	29.4	0.51	1.26	903
7/9/23	154	10	126.2	126	29.5	0.11	0.33	950									158	10	92.9	130.7	31.5	0.40	1.33	905
7/10/23	156	10.7	99.8	128.1	36.1	0.19	0.32	928									160	9.9	86.4	135	28.6	0.45	1.39	912
7/11/23	151	9.7	93.7	123.8	21.8	0.08	0.29	971	161	10.5	79	126.6	24.9	0.11	1.21	942	163	10	72.3	131.9	28.9	0.42	1.38	905
7/12/23	151	9.7	70.4	125.8	30.2	0.14	0.32	975	158	9.9	64.8	128.2	21.1	0.03	1.21	966								
7/13/23	151	9.8	84.1	124.1	32.9	0.11	0.30	954	159	10	75.5	126.6	23.7	0.04	1.22	955	162	9.1	80.1	146.2	29.5	0.28	1.42	919
7/14/23	148	9.3	78.3	123.6	28.6	0.15	0.18	975	157	10.1	70.1	126.7	25.1	0.16	1.21	965	159	9.5	65.7	143.9	31.5	0.10	1.04	919
7/15/23	145	9.6	57.3	148.5	31.5	0.00	0.05	966	155	10.4	62.1	146.8	28.6	0.00	1.19	956	154	9.8	59.3	182.1	33.4	0.00	0.83	921
7/16/23	149	10.5	60.5	128.8	20.9	0.10	0.12	949	152	10.2	59.3	124.3	27.3	0.13	1.18	962	153	9.8	55.8	132.7	33.6	0.39	0.82	922
7/17/23	148	10.7	54.3	122.6	38	0.14	0.22	925	150	10.4	56.7	125.5	37.9	0.17	1.17	947	153	9.8	55.5	131.6	34.1	0.56	0.84	901
7/18/23	148	10.8	85	125.4	38	0.14	0.19	930	147	10.2	65.7	126.7	37.3	0.09	1.19	968	153	9.8	69.8	140.8	41.2	0.75	0.85	949
7/19/23	147	9.8	50.9	126.3	33.7	0.10	0.12	969	150	10.1	55.4	130.5	31.8	0.13	1.22	946	153	10	53.6	139.6	34.7	0.60	0.86	962
7/20/23	153	10.3	56.9	130	38.5	0.24	0.10	920									151	9	51	133.2	30.1	0.33	0.80	949
7/21/23	146	9.6	46.3	127	36	0.00	0.16	959									156	9.8	55.2	132.1	35.6	0.36	0.87	935
7/22/23	144	10.3	51.5	130.3	37.5	0.19	0.19	909	157	9.3	71.5	126.7	34.5	0.00	1.21	971	157	9.7	65.1	137	36	0.00	0.88	929
7/23/23									153	9.2	60.2	124.4	32.2	0.00	1.23	967	156	9.6	57	129.6	36.4	0.00	0.86	910
7/24/23									148	8.9	50.5	123.7	30.7	0.04	1.19	960	157	10.2	50	129.1	40.5	0.37	0.96	897
7/25/23																	152	9.6	70.8	129.8	41.2	0.45	0.94	919
7/26/23	146	9.9	58.8	128.3	38.7	0.12	0.42	928									152	9.9	44.5	129.2	37.6	0.61	0.92	908
7/27/23	145	9.3	54.2	125.8	35.8	0.09	0.61	971									152	10.2	40.5	130.2	43.1	0.07	0.91	924
7/28/23	146	9.4	34.6	124.9	34.2	0.09	0.53	945									152	9.4	37.2	130.7	33.7	0.39	0.43	928
7/29/23	147	9.7	32.3	126.1	34.8	0.17	0.60	925									155	9.9	34.9	129.5	37.9	0.35	0.05	907
7/30/23	145	9.5	45	120.9	35.7	0.08	0.62	935									152	9.9	40.8	131.5	36.4	0.43	0.14	907
7/31/23	147	9.3	55.7	118.7	32.8	0.09	0.59	951	161	10.4	82.7	123.9	28.4	0.11	0.58	928	153	9.7	48.2	128.7	34.6	0.29	0.11	911
Average	147	10.3	62.4	125.4	33.2	0.15	0.29	942	151.8	9.9	64.3	127.7	28.5	0.08	1.15	954.4	155.0	9.7	58.6	135.3	34.1	0.39	0.89	918.8
Min	131	9.3	18.9	110.0	20.9	0.00	0.05	909	133.0	8.9	47.7	123.7	19.4	0.00	0.58	928.0	151.0	9.0	34.9	128.7	25.3	0.00	0.05	897.0
Max	156	13.0	126.2	148.5	41.4	0.56	0.62	975	161.0	10.5	82.7	146.8	37.9	0.17	1.23	971.0	163.0	10.2	92.9	182.1	43.1	0.84	1.42	962.0
St Dev	5.2	0.95	24.91	6.27	4.84	0.10	0.17	19.8	7.58	0.47	9.91	5.41	5.46	0.06	0.16	12.07	3.27	0.34	14.88	10.61	4.44	0.22	0.37	15.89

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.