

Monthly Operating Reports

June 2021

The following June 2021 operating report was sent to the Ministry of Environment and Climate Change Strategy on August 11, 2021.



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

June 2021

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	31.6	32.7	42.6
SO ₂	200	24 hr	111.6	95.1	138.7
NO _x	190	24 hr	131.6	131.9	136.7
THC	10	24 hr	0.08	0.12	0.44
			Monthly Average (mg/dscm)		
			Unit 1	Unit 2	Unit 3
Opacity (%)			0.45	0.99	0.66
CO			22.6	22.7	33.5
THC			0.01	0.05	0.32
SO ₂			53.7	56.2	72.8
NO _x			128.0	128.4	132.9

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
3-Jun 13:00	30 min	114.0	Started gas burners, adjusted airflow, modified feed rate.
9-Jun 09:30	30 min	104.8	Started gas burners, adjusted airflow, modified feed rate.
12-Jun 10:30	30 min	126.4	Started gas burners, adjusted airflow, modified feed rate, checked instrumentation.
12-Jun 18:00	30 min	104.3	Volatile fuel. Adjusted airflow.
17-Jun 13:30	30 min	150.5	Started gas burners, adjusted airflow.
22-Jun 15:00	30 min	170.8	Feeder hang-up. Started gas burners, adjusted airflow.

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

Date / Time	Duration	Exceedance (mg/dscm)	Action Taken
2-Jun 14:30	30 min	165.6	Started gas burners, adjusted airflow, modified feed rate.
2-Jun 16:00	30 min	157.1	Started gas burners, adjusted airflow, modified feed rate.
2-Jun 20:30	30 min	103.8	Started gas burners, adjusted airflow, modified feed rate.
11-Jun 12:30	30 min	142.4	Forced draft fan trip, started gas burners.
12-Jun 18:30	30 min	110.0	Volatile fuel. Started gas burners, adjusted airflow.
14-Jun 18:00	30 min	154.6	Adjusted airflow, modified feed rate, checked instrumentation.
17-Jun 13:30	30 min	107.0	Started gas burners, adjusted airflow.
17-Jun 14:30	30 min	190.3	Started gas burners, adjusted airflow.
23-Jun 16:00	30 min	128.1	Adjusted airflow, modified feed rate, checked instrumentation.
24-Jun 06:00	30 min	118.5	Started gas burners, adjusted airflow, modified feed rate, checked instrumentation.

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

Date / Time	Duration	Exceedance (mg/dscm)	Action Taken
4-Jun 18:30	30 min	105.5	Volatile fuel, started gas burners, adjusted boiler airflow.
12-Jun 02:30	30 min	129.0	Adjusted airflow.
14-Jun 18:00	30 min	112.3	Adjusted airflow, modified feed rate, checked instrumentation.
15-Jun 08:30	30 min	143.3	Started gas burners, adjusted airflow, modified feed rate.
17-Jun 15:30	30 min	249.5	Started gas burners, adjusted airflow.
19-Jun 10:30	30 min	121.7	Started gas burners, adjusted airflow, modified feed rate.
19-Jun 16:00	30 min	186.0	Started gas burners, adjusted airflow, modified feed rate.
22-Jun 22:30	30 min	124.0	Volatile fuel. Adjusted airflow.
25-Jun 06:30	30 min	143.2	Started gas burners, adjusted airflow, modified feed rate.
28-Jun 21:00	30 min	113.9	Modified feed rate.
30-Jun 20:30	30 min	149.2	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	
#1	57 minutes	2-Jun-21	00:50-01:47	
Cause				
Auxiliary burners on unit 1 were unavailable to maintain the secondary combustion zone temperature during boiler shutdown period.				
Unit 1 was placed in shutdown mode at 2021-06-02 00:50 due to a ground fault trip which impacted all three boilers. The Provincial Boiler Vessel Safety Act and the Provincial Gas Act require a boiler purge following the restart of the combustion fans. The auxiliary burners were unavailable for a period of 57 minutes between 2021-06-02 00:50 and 2021-06-02 01:47.				
Action Taken to Restore Steady State Conditions				
Covanta restarted the induced draft fan at 2021-06-02 01:39 and the forced draft fan at 2021-06-02 01:41. The natural gas burners were back online at 2021-06-02 01:47. The shutdown was completed at 2021-06-02 02:05.				
Remedial Action Planned and/or Taken				
The refuse crane was repaired to prevent future ground faults.				

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

Unit	Duration	Date	Time	
#2	69 min	2-Jun-21	00:50-01:59	
Cause				
Auxiliary burners on unit 2 were unavailable to maintain the secondary combustion zone temperature during boiler shutdown period.				
Unit 2 was placed in shutdown mode at 2021-06-02 00:50 due to a ground fault trip which impacted all three boilers. The Provincial Boiler Vessel Safety Act and the Provincial Gas Act require a boiler purge following the restart of the combustion fans. The auxiliary burners were unavailable for a period of 69 minutes between 2021-06-02 00:50 and 2021-06-02 01:59.				
Action Taken to Restore Steady State Conditions				
Covanta restarted the induced draft fan at 2021-06-02 01:42 and the forced draft fan at 2021-06-02 01:43. The natural gas burners were back online at 2021-06-02 01:59. The shutdown was completed at 2021-06-02 02:11.				
Remedial Action Planned and/or Taken				
The refuse crane was repaired to prevent future ground faults.				

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

Unit	Duration	Date	Time	
#3	1 hr 50 min	2-Jun-21	00:50-02:40	
Cause				
Auxiliary burners on unit 3 were unavailable to maintain the secondary combustion zone temperature during boiler shutdown period.				
Unit 3 was placed in shutdown mode at 2021-06-02 00:50 due to a ground fault trip which impacted all three boilers. The Provincial Boiler Vessel Safety Act and the Provincial Gas Act require a boiler purge following the restart of the combustion fans. The auxiliary burners were unavailable for a period of 1 hour and 50 minutes between 2021-06-02 00:50 and 2021-06-02 02:40.				
Action Taken to Restore Steady State Conditions				
Covanta restarted the induced draft fan at 2021-06-02 01:44 and the forced draft fan at 2021-06-02 01:45. The natural gas burners were back online at 2021-06-02 02:40. The shutdown was completed at 2021-06-02 02:59.				
Remedial Action Planned and/or Taken				
The refuse crane was repaired to prevent future ground faults.				

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

Unit	Duration	Date	Time	
#3	46 minutes	3-Jun-21	13:23 - 14:09	
Cause				
Auxiliary burners on unit 3 were unavailable to maintain the secondary combustion zone temperature during boiler shutdown period.				
Unit 3 was placed in shutdown mode at 2021-06-03 13:23 due to a ground fault trip. The Provincial Boiler Vessel Safety Act and the Provincial Gas Act require a boiler purge following the restart of the combustion fans. The auxiliary burners were unavailable for a period of 46 minutes between 2021-06-03 13:23 and 2021-06-03 14:09.				
Action Taken to Restore Steady State Conditions				
Covanta restarted the induced draft fan at 2021-06-03 13:52 and the forced draft fan at 2021-06-03 13:53. The natural gas burners were back online at 2021-06-03 14:09. The shutdown was completed at 2021-06-03 14:10.				
Remedial Action Planned and/or Taken				
The refuse crane was repaired to prevent future ground faults.				

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	99	99	100
CO	90	Hour	99	99	100
SO ₂	90	Hour	99	99	99
NOx	90	Hour	99	99	100
THC	90	Hour	99	99	100
Stack Flow	90	Hour	98	99	98

4. Shutdown Report

Unit 1

Duration in Hours	Reason	Date
1.25	Refuse crane ground fault	June 2
0.35	Refuse crane ground fault	June 3
0.20	Refuse crane ground fault	June 3
0.20	Induced draft fan trip	June 21
0.20	Induced draft fan trip	June 25
0.17	Refuse crane power failure	June 25
0.18	Refuse crane power failure	June 25
0.68	Boiler grate bar inspection	June 27
0.35	Forced draft fan trip	June 27
0.07	Forced draft fan trip	June 28

Unit 2

Duration in Hours	Reason	Date
1.35	Refuse crane ground fault	June 2
0.53	Induced draft fan trip	June 2
0.38	Induced draft fan trip	June 3
0.23	Refuse crane ground fault	June 3
0.22	Refuse crane ground fault	June 3
0.22	Refuse crane power failure	June 25
0.17	Refuse crane power failure	June 25
0.40	Water jet sootblower inspection	June 30

Unit 3

Duration in Hours	Reason	Date
2.15	Refuse crane ground fault	June 2
0.78	Refuse crane ground fault	June 3
25.73	Boiler wash and induced draft fan balancing	June 24-25

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/day	21,174		
Waste Processed	tonnes/day	223	222	214
Maximum Waste Processed	tonnes/day	232	232	232
		Units 1, 2, and 3		
Natural Gas Consumed	m ³ /day	2,008		
	m ³ /month	60,247		
Fly ash disposed	tonnes	949		
Bottom ash disposed	tonnes	3,532		

7. Complaints and Responses

Date/Time	Complaint	Action Taken

June 2021 - 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
6/1/21	155	9.3	68.5	128.4	20.1	0.00	0.59	916	152	9.3	60	130.8	22	0.05	0.93	941	153	9.9	88.2	131.1	32.9	0.33	0.50	889
6/2/21	151	8.8	45	129.3	25.8	0.00	0.18	913	149	9	45.1	126.5	32.7	0.12	0.92	946	157	10.1	58.2	134.3	34.8	0.32	0.58	891
6/3/21	153	8.4	44.1	126.9	24.8	0.00	0.19	933	151	8.6	59.6	126.9	22	0.01	0.44	968	156	9.3	69	130.8	34.9	0.34	0.62	912
6/4/21	155	8.8	51.9	126.8	26.8	0.00	0.25	929	153	8.7	49.5	128	19.9	0.04	0.93	962	156	9.6	67.5	130.8	36.5	0.34	0.76	917
6/5/21	156	8.9	52.7	131.6	21.7	0.00	0.28	938	154	8.7	60.2	131.9	16.9	0.02	0.74	969	157	9.7	65.5	132.5	26	0.29	0.76	919
6/6/21	155	8.9	51.1	129.1	20.3	0.00	0.29	935	153	8.5	58.2	130.2	15.4	0.03	1.56	973	158	9.8	71.1	133.3	35.3	0.27	0.78	918
6/7/21	156	8.6	61.4	128.8	24.1	0.00	0.30	939	154	8.4	62.4	127.5	20.7	0.03	1.40	966	157	9.4	67.3	132.5	37.1	0.34	0.79	929
6/8/21	153	9	76.1	127.1	26.3	0.00	0.36	921	153	9	72.2	129.2	22.5	0.03	1.13	949	155	9.6	74.4	133.4	33.8	0.34	0.90	913
6/9/21	156	8.4	45.9	126.8	25.4	0.00	0.53	946	155	8.5	58.3	128	18.9	0.01	0.96	975	157	9.4	65.3	132.5	36.1	0.27	1.04	934
6/10/21	156	8.3	53.8	128.4	21.2	0.00	0.51	946	154	8.3	62.3	129.2	22.4	0.11	1.24	992	157	9.3	70.2	133.4	34	0.32	1.00	938
6/11/21	157	8.5	54.6	128.2	19.4	0.00	0.55	945	154	8.5	53.8	129.1	24.9	0.05	1.23	971	156	9.2	59.1	133.7	28.4	0.27	0.94	933
6/12/21	156	8.9	57.1	129.2	25.5	0.00	0.72	934	153	8.7	57.1	129.5	24.8	0.04	1.35	941	155	9.5	64.6	136	31.4	0.40	0.86	920
6/13/21	156	8.5	49.3	128.6	18.2	0.00	0.61	940	153	8.3	50.8	130.2	20.3	0.03	1.43	956	155	9.4	67.3	132.6	31	0.26	0.82	918
6/14/21	156	8.4	38.3	129.9	20.6	0.00	0.39	934	153	8.3	33.5	127.6	29.5	0.05	1.21	949	155	9.6	52	133.7	40.5	0.37	0.79	913
6/15/21	156	8.5	66.6	128.5	21.6	0.00	0.69	939	153	8.2	55.1	129.5	25.2	0.06	1.17	963	156	9.6	61.7	136.7	39.8	0.28	0.82	925
6/16/21	155	8.4	42	126.4	21.2	0.00	1.24	948	153	8.5	41.8	126.8	24.4	0.06	0.93	963	155	9.6	52.6	131.4	39.6	0.38	0.84	936
6/17/21	154	8.5	35.8	124.3	24.2	0.03	1.55	951	154	8.9	43.9	125.2	26.5	0.08	1.06	954	153	9.2	52.7	127.9	38.8	0.36	0.70	939
6/18/21	157	8.6	48.9	127.3	20.1	0.07	1.58	947	155	8.7	52.7	128.3	24.3	0.05	0.96	977	157	9.6	63	135.1	35.8	0.44	0.81	931
6/19/21	155	8.8	52.1	128.2	25.3	0.08	0.86	944	152	8.7	60.2	126.8	24.4	0.03	1.24	988	155	9	65.6	132.1	42.6	0.33	0.56	930
6/20/21	154	8.8	44.8	128.1	21.3	0.01	0.20	951	154	8.6	54.5	130.8	27	0.05	0.82	978	155	9	55.5	136.4	28	0.32	0.51	925
6/21/21	157	8.6	45.5	131	20.1	0.01	0.13	947	155	8.5	47.4	128	26.4	0.06	0.61	965	157	8.9	58	134.8	28.7	0.34	0.59	920
6/22/21	157	8.8	54.8	130.7	31.6	0.07	0.14	935	154	8.5	61	128.5	24.8	0.07	0.85	979	156	8.9	62.7	134.7	30.3	0.31	0.59	920
6/23/21	157	9.1	37.9	128.4	19.3	0.00	0.23	945	155	8.7	42	128.9	25.2	0.02	1.09	968	153	8.3	45.5	130.2	25.3	0.21	0.62	945
6/24/21	157	9	45.2	128.6	19.6	0.00	0.20	940	154	8.8	54.4	130.6	23.6	0.05	0.94	956								
6/25/21	155	8.8	111.6	127.3	25.4	0.01	0.13	927	154	8.6	95.1	128.1	22.9	0.02	0.70	972	152						0.28	875
6/26/21	151	8.5	85.8	126.3	19	0.00	0.13	936	152	8.8	81.3	127.6	17	0.04	0.51	959	150	8.9	138.7	131.1	33	0.27	0.27	892
6/27/21	153	8.9	65.3	126.3	23.8	0.06	0.12	918	154	8.7	62	125.3	16.8	0.04	0.54	945	155	9.3	127.1	132.6	32.3	0.29	0.28	882
6/28/21	151	10.4	39.5	125.6	26.8	0.02	0.12	894	151	9.4	44.8	126	16.5	0.04	0.49	921	153	10	97.8	132.3	29.1	0.29	0.28	876
6/29/21	154	9.4	50.3	128.1	19.6	0.05	0.13	918	153	8.8	66.8	131	21.5	0.04	0.86	947	157	9.3	127.9	133.8	24.5	0.26	0.39	911
6/30/21	153	8.7	35.1	124.9	19.4	0.00	0.15	943	153	8.2	40.9	126.2	20.9	0.06	1.31	976	157	9.1	91	132.4	37.6	0.29	0.41	921
Average	155	8.8	53.7	128.0	22.6	0.01	0.45	935	153.2	8.6	56.2	128.4	22.7	0.05	0.99	962.3	155.3	9.4	72.8	132.9	33.5	0.32	0.66	916.3
Min	151	8.3	35.1	124.3	18.2	0.00	0.12	894	149.0	8.2	33.5	125.2	15.4	0.01	0.44	921.0	150.0	8.3	45.5	127.9	24.5	0.21	0.27	875.0
Max	157	10.4	111.6	131.6	31.6	0.08	1.58	951	155.0	9.4	95.1	131.9	32.7	0.12	1.56	992.0	158.0	10.1	138.7	136.7	42.6	0.44	1.04	945.0
St Dev	1.8	0.41	16.06	1.69	3.22	0.03	0.40	13.2	1.33	0.28	12.39	1.77	3.98	0.03	0.30	15.51	1.86	0.39	23.64	1.97	4.80	0.05	0.22	19.02

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.