Oregon
Kate Brown, Governor

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August 19, 2022

Terry Coble
Covanta Marion, Inc.
4850 Brooklake Road NE
Brooks, OR 97305
Sent via email only

Terry Coble,

DEQ received the Cleaner Air Oregon (CAO) Emissions Inventory (Inventory) for Covanta Marion, Inc. (Covanta) in Brooks, OR on November 24, 2020. DEQ completed an initial review and responded on March 11, 2021, requiring source testing of the Municipal Waste Combustors, MWC-1 and MWC-2, for the purpose of emission factor development for use in the Risk Assessment for this facility. Per the submittal deadlines in that response, a revised Inventory must be submitted to DEQ no later than 30 days after receiving DEQ approval of the source test results. This letter serves as notice that DEQ has approved all required source testing, completed in December 2021 and March 2022 (see Attachment A), and the revised Inventory is due by **September 19, 2022**.

Based on the initial review of the November 2020 Inventory submittal, and in addition to the source testing requirements, DEQ has determined that, in accordance with Oregon Administrative Rule (OAR) 340-245-0030(2), the following information, corrections, and updates are required in the revised Inventory due by **September 19, 2022**, in order to approve the Inventory:

1. Provide a current, detailed process flow diagram (PFD) showing all emissions producing activities, which includes expected release points for all fugitive and non-fugitive emissions, as well as all air pollution control devices or practices.
2. Update emissions for MWC-1 and MWC-2 as follows:
    a. Develop daily and annual emission factors[1], considering all representative site-specific source test data collected within the past three years, including:
        i. Startup/shutdown emissions testing;
        ii. Title V permit compliance testing; and
        iii. Testing completed for the purposes of CAO Inventory development.
    b. Provide all calculations (in native spreadsheet file format) demonstrating the derivation of emission factors used in the Inventory from source test results, including:
        i. Treatment of non-detect values using the guidance in Appendix G of CAO's Recommended Procedures for Toxic Air Contaminant Health Risk Assessment or DEQ's Source Sampling Manual, as applicable.
        ii. Development of emission factors from individual congener source test results for the following TAC reporting categories, if individual congeners are not reported in the Inventory[2]:

[1] Due to the potential for day-to-day variability in source test results, DEQ recommends that an appropriate safety factor be applied to emission factors obtained in source testing. Future permit conditions may require source testing to demonstrate compliance with emission limits set equal to the emission factors used in the Inventory.
[2] For each of these TAC categories, the Inventory may include the general TAC category **or** the individual congeners comprising that category.

1. Polychlorinated dibenzo-*p*-dioxins (PCDDs) & dibenzofurans (PCDFs) TEQ [DEQ SEQ ID 646]
2. Polychlorinated biphenyls (PCBs) TEQ [DEQ SEQ ID 645]
3. Polychlorinated biphenyls (PCBs) [CASRN 1336-36-3]

c. In the March 2022 high load source test, polycyclic aromatic hydrocarbon (PAH) non-detect results were approximately 10 times higher than the estimated In Stack Detection Limits (ISDLs) in the approved source test plan. For PAHs that are listed as non-detects, DEQ will not allow the substitution of values less than the detection limit.

3. For the emergency fire pump generator (TEU RICE), provide documentation supporting the requested maximum potential daily and annual fuel usage (for example, maximum usage hours requested and documentation of generator-specific fuel usage rates).
4. For the auxiliary burners (TEUs AUX-1 and AUX-2):
   a. Provide documentation of the rated burner capacity (MMBtu per hour); and
   b. Review and update the requested potential to emit to reflect expected natural gas usage. The Inventory currently reports an annual maximum of 700 standard cubic feet of natural gas for each burner. Prior reporting indicates actual usage is higher than this.
5. All Toxic Emissions Units (TEUs) must be included in the Inventory. Please revise the Inventory to include TAC emissions from the following TEUs; or, if TACs are not likely to be emitted from the TEU, provide justification for exemption per OAR 340-245-0060(3)(a):
   a. Ash handling system and ash transfer building:
      i. Provide a detailed description of the ash handling system, including:
         1. A description of fully-enclosed and open-to-atmosphere portions of the ash conveyor and transfer building;
         2. A list of any transfer points which are open to the atmosphere;
         3. Documentation of ash moisture content; and
         4. Maximum tons of ash handled on a daily and annual basis, for
            a. calendar year 2019, and
            b. requested potential to emit.
      ii. Provide emissions estimates for metals and dioxins/furans using an appropriate methodology (for example, AP-42 section 13.2.4 equation for drop points combined with a representative ash composition analysis).
   b. TEUs associated with categorically insignificant activities which are not exempt TEUs per OAR 340-245-0060(3)(b). DEQ's Cleaner Air Oregon Exempt TEU Reporting document may assist in identifying activities which are considered categorically insignificant but are not exempt from CAO reporting. For Covanta, these include but may not be limited to the following:
      i. Routine maintenance and maintenance shop activities:
         1. Any regularly scheduled maintenance activities, including annual maintenance conducted on site by firms contracted by Covanta, must be addressed in the Inventory with emissions estimates;
         2. Please refer to the Exempt TEU Reporting document for information about requesting an exemption for activities such as welding and product usage which fall below CAO reporting thresholds; and
         3. Emissions may be estimated on a conservative basis using the best available information from maintenance plans or recent years' maintenance records.
      ii. Cooling towers.
6. Complete and submit the form, "Categorically Exempt Toxics Emissions Units" (AQ523).
7. Provide Safety Data Sheets and/or analytical data documenting the composition of all raw materials used.
8. Submit a revised Emission Inventory form (AQ520).

DEQ is requesting that you submit additional information to complete your Inventory. If you think that

any of that information is confidential, trade secret or otherwise exempt from disclosure, in whole or in part, you must comply with the requirements in OAR 340-214-0130 to identify this information. This includes clearly marking each page of the writing with a request for exemption from disclosure and stating the specific statutory provision under which you claim exemption. Emissions data is not exempt from disclosure.

DEQ remains available to discuss this information request with you and answer any questions you may have. Failure to provide additional information, corrections, or updates to DEQ by the deadlines above may result in a violation of OAR 340-245-0030(1).

If you have any questions regarding this letter please contact me directly at 503-866-9643 or julia.degagne@deq.oregon.gov, and I look forward to your continued assistance with this process.

Sincerely,

Julia DeGagné
Air Toxics Project Manager

Cc: Kirk Little, Covanta Marion, Inc.
Brian Kent, Covanta Marion, Inc.
Jeffery Hahn, Covanta Marion, Inc.
Jesse Gonzalez, Trinity Consultants
Michael Eisele, DEQ
JR Giska, DEQ
Matt Davis, DEQ
File

Enc: Attachment A: Source Test Report Review memoranda for December 2021 and March 2022 Testing

State of Oregon
Department of Environmental Quality Memorandum

Date: 4/8/2022

To: File/Julia DeGagné
From: Thomas Rhodes

Subject: Source Test Review Report
Covanta Marion, Inc.
Permit No. 24-5398-TV-01

Test Dates: December 8, 2021
Report Received: January 31, 2022
Source Tester: Montrose Air Quality
DEQ Observed: Yes

I) Source Description: Covanta Marion, Inc. (CMI) owns and operates a Solid Waste-to-Energy Facility (Facility) in Brooks, Oregon. The primary objective of the CMI Facility is to provide for the disposal of solid waste. In order to achieve this primary objective the Facility receives, stores, and combusts solid waste as defined in Oregon Revised Statues (ORS) 459.005 and the Facility's Solid Waste Permit. The combustible fraction of the solid waste is utilized to produce steam, which is in turn utilized in a turbine generator to produce electricity which is sold to the local utility. The Facility operates 24 hours per day, 365 days per year, except for periods of scheduled and unscheduled maintenance.

Additionally, CMI is authorized under the Solid Waste Permit to accept for disposal the following: a) cannery wastes; b) conditionally exempt small quantity generator hazardous wastes; c) narcotics, illicit drugs, and equipment and other materials used in the production of illicit drugs; d) pharmaceutical wastes such as prescription and over-the-counter drugs, and DEA-controlled substances; and e) infectious wastes.

II) Process (es)/Emissions Unit(s) Tested: Testing was conducted on the Unit 2 combustor. Target operating parameters for the test were:

Minimum steam load	≥ 67,000 lbs/hr
Minimum rate of Regulated Medical Waste (RMW)	1.5 tons/hr
Minimum rate of Liquid Direct Injection (LDI)	180 gallons/hr

III) Test Purpose: To evaluate emissions of Toxic Air Contaminants (TACs) at a maximum steam production rate.

IV) Testing Locations:

Unit 2 Stack:

Diameter:	48"
Distance A (Method 1):	1440" (30 Diameters)
Distance B (Method 1):	1200" (25 Diameters)
Number traverse points utilized:	12

V) Testing Methodology: The following testing methods were utilized during the testing program:

Exhaust Gas Flow Rate: EPA Methods 1-4
Ammonia: BAAQMD Method ST-1B
Hydrogen Halides and Halogens: Modified EPA Method 26A
Aldehydes: Modified CARB Method 430
Volatile Organic Compounds: EPA SW-846 Method 0031

VI) Summary of Results: The test results and operating parameters are summarized in the Tables below:

Table 1: Ammonia Emissions
Table 2: Aldehyde Emissions
Table 3: Hydrogen Halide and Halogen Emissions
Table 4: Volatile Organic Compound Emissions

TABLE 1: Ammonia Emissions

Parameter	Run 1	Run 2	Run 3[a]	Average
Date	12/8/2021	12/8/2021	12/8/2021	--
Test Times	9:37-10:37	11:23-12:23	13:13-14:13	--
Steam Load (lbs/hr)	68,300	67,900	66,700	**67,633**
Ammonia Injection (gal/hr)	0.0	0.1	0.0	**0.03**
RMW (tons/hr)	1.62	0.81	0.0	**0.81**
RMW (% of total fuel)	16	7	0	**7.7**
LDI Rate (gals/hr)	181	211	183	**192**
Exhaust Gas Flow Rate (dscf/m)	36,736	38,544	*37,432*	**37,432**
Sample Volume (dscf)	39.072	38.206	37.912	**38.397**
NH_3 Emissions:	--	--	--	--
· **ppmv**	1.5	1.5	2.7	**1.9**
· **lb/hr**	0.15	0.15	*0.27*	**0.19**
· **lb/1000 lb steam**	2.18E-03	2.20E-03	*4.05E-03*	**2.81E-03**

[a] Flow rate was not measured during Run 3 of the ammonia testing. The average flow rate from the three Method 26A velocity traverses was used to estimate the mass emission rate for that test run. Estimated lb/hr and lb/1000 lb steam values are *italicized*.

TABLE 2: Aldehyde Emissions

Parameter	Run 1	Run 2[a]	Run 3[a]	Average
Date	12/8/2021	12/8/2021	12/8/2021	--
Test Times	11:39-12:39	13:13-14:13	14:40-15:40	--
Steam Load (lbs/hr)	68,200	66,700	68,000	**67,633**
RMW (tons/hr)	0.54	0.0	1.05	**0.53**
RMW (% of total fuel)	5	0	10	**5**
LDI Rate (gals/hr)	161	183	212	**185**
Exhaust Gas Flow Rate (dscf/m)	38,544	*37,432*	*37,432*	**37,432**
Sample Volume (dsL)	30.120	29.871	30.285	**30.092**
Formaldehyde Emissions:	--	--	--	--
· **ug/dscm**	< 41.8	< 42.2	< 41.6	**< 41.9**
· **ppmv**	< 0.03	< 0.03	< 0.03	**< 0.03**
· **lb/hr**	< 6.04E-03	< *5.91E-03*	< *5.83E-03*	**< 5.93E-03**
· **lb/1000 lb steam**	< 8.86E-05	< *8.87E-05*	< *8.58E-05*	**< 8.77E-05**
Acetaldehyde Emissions:	--	--	--	--
· **ug/dscm**	< 41.8	42.5	< 41.6	**< 42.0**
· **ppmv**	< 0.02	0.02	< 0.02	**< 0.02**
· **lb/hr**	< 6.04E-03	5.97E-03	< *5.83E-03*	**< 5.95E-03**
· **lb/1000 lb steam**	< 8.86E-05	8.94E-05	< *8.58E-05*	**< 8.79E-05**
Acrolein Emissions:	--	--	--	--
· **ug/dscm**	< 41.8	< 42.2	< 41.6	**< 41.9**
· **ppmv**	< 0.02	< 0.02	< 0.02	**< 0.02**
· **lb/hr**	< 6.04E-03	< *5.91E-03*	< *5.83E-03*	**< 5.93E-03**
· **lb/1000 lb steam**	< 8.86E-05	< *8.87E-05*	< *8.58E-05*	**<8.77E-05**

[a] Flow rate was not measured during Run 2 and 3 of the aldehyde testing. The average flow rate from the three Method 26A velocity traverses was used to estimate the mass emission rates for those test runs. Estimated lb/hr and lb/1000 lb steam values are *italicized.*

'<' denotes results calculated using the reporting limit of five times the average field blank concentration.

TABLE 3: Hydrogen Halide and Halogen Emissions

Parameter	Run 1	Run 2	Run 3	Average
Date	12/8/2021	12/8/2021	12/8/2021	--
Test Times	9:37-10:37	11:23-12:23	16:28-17:28	--
Steam Load (lbs/hour)	68,300	67,900	66,700	**67,633**
Lime flow (lbs/hr)	249	249	283	**260**
RMW (tons/hr)	1.62	0.81	1.35	**1.26**
RMW (% of total fuel)	16	7	14	**12.3**
LDI Rate (gals/hr)	181	211	172	**188**
Exhaust Gas Temperature (°F)	268	269	264	**267**
Exhaust Gas Moisture (%)	16.2	15.8	16.6	**16**
Exhaust O_2 (% dry vol)	11.0	11.0	11.1	**11.0**
Exhaust CO_2 (% dry vol)	8.4	8.5	8.3	**8.4**
Exhaust Gas Flow Rate (dscf/m)	36,736	38,544	37,015	**37,432**
Sample Volume (dscf)	43.100	43.193	42.265	**42.853**
HCl Emissions:	--	--	--	--
· **ug/dscm**	6717.5	10224.0	7540.2	**8160.5**
· **ppmv**	4.42	6.73	4.96	**5.37**
· **lb/hr**	0.92	1.47	1.04	**1.15**
· **lb/1000 lb steam**	1.35E-02	2.17E-02	1.56E-02	**1.69E-02**
HBr Emissions:	--	--	--	--
· **ug/dscm**	219.6	164.3	183.0	**188.9**
· **ppmv**	0.065	0.049	0.054	**0.056**
· **lb/hr**	3.02E-02	2.37E-02	2.53E-02	**2.64E-02**
· **lb/1000 lb steam**	4.41E-04	3.49E-04	3.80E-04	**3.90E-04**
HF Emissions:	--	--	--	--
· **ug/dscm**	< 18.5	< 18.5	< 18.1	**< 18.5**
· **ppmv**	< 0.02	< 0.02	< 0.02	**< 0.02**
· **lb/hr**	< 2.54E-03	< 2.66E-03	< 2.51E-03	**< 2.60E-03**
· **lb/1000 lb steam**	< 3.72E-05	< 3.92E-05	< 3.76E-05	**< 3.82E-05**
Cl_2 Emissions:	--	--	--	--
· **ug/dscm**	198.3	197.0	218.9	**204.7**
· **ppmv**	0.067	0.067	0.074	**0.069**
· **lb/hr**	2.72E-02	2.84E-02	3.03E-02	**2.86E-02**
· **lb/1000 lb steam**	3.99E-04	4.18E-04	4.54E-04	**4.24E-04**
Br_2 Emissions:	--	--	--	--
· **ug/dscm**	< 28.3	< 25.6	< 28.0	**< 27.3**
· **ppmv**	< 0.0042	< 0.0038	< 0.0042	**< 0.0041**
· **lb/hr**	< 3.88E-03	< 3.69E-03	< 3.87E-03	**< 3.81E-03**
· **lb/1000 lb steam**	< 5.68E-05	< 5.43E-05	< 5.81E-05	**< 5.64E-05**

'<' denotes results calculated using the MDL for results that were non-detect

TABLE 4: Volatile Organic Compound Emissions

Parameter	Run 1	Run 2[a]	Run 3	Average
Date	12/8/2021	12/8/2021	12/8/2021	--
Test Times	9:37-12:09	12:45-15:14	15:47-18:06	--
Steam Load (lbs/hr)	68,100	66,900	67,800	**67,600**
RMW (tons/hr)	1.39	0.53	1.36	**1.09**
RMW (% of total fuel)	14	5	13	**10.7**
LDI Rate (gals/hr)	196	182	199	**192**
Exhaust Gas Flow Rate (dscf/m)	36,736	*37,432*	37,015	**37,432**
Sample Volume (dsL)	62.331	61.473	61.762	**61.855**
Acetone Emissions:	--	--	--	--
· **ug/dscm**	< 1.95E+01	< 2.01E+01	< 2.09E+01	**< 2.02E+01**
· **lb/hr**	< 2.69E-03	< *2.82E-03*	< 2.90E-03	**< 2.80E-03**
· **lb/ 1000 lb steam**	< 3.95E-05	< *4.22E-05*	< 4.27E-05	**< 4.15E-05**
Benzene Emissions:	--	--	--	--
· **ug/dscm**	< 1.73E+01	< 3.58E+01	< 2.90E+01	**< 2.74E+01**
· **lb/hr**	< 2.38E-03	< *5.02E-03*	< 4.02E-03	**< 3.80E-03**
· **lb/ 1000 lb steam**	< 3.49E-05	< *7.50E-05*	< 5.93E-05	**< 5.64E-05**
Bromodichloromethane Emissions:	--	--	--	--
· **ug/dscm**	< 2.05E+00	< 2.06E+00	< 1.98E+00	**< 2.03E+00**
· **lb/hr**	< 2.83E-04	< *2.88E-04*	< 2.74E-04	**< 2.82E-04**
· **lb/ 1000 lb steam**	< 4.15E-06	< *4.31E-06*	< 4.04E-06	**< 4.17E-06**
Bromomethane Emissions:	--	--	--	--
· **ug/dscm**	< 6.39E+00	< 6.16E+00	< 4.50E+00	**< 5.68E+00**
· **lb/hr**	< 8.79E-04	< *8.63E-04*	< 6.25E-04	**< 7.89E-04**
· **lb/ 1000 lb steam**	< 1.29E-05	< *1.29E-05*	< 9.21E-06	**< 1.17E-05**
Carbon Disulfide Emissions:	--	--	--	--
· **ug/dscm**	< 3.51E+00	< 5.96E+00	< 4.94E+00	**< 4.80E+00**
· **lb/hr**	< 4.83E-04	< *8.35E-04*	< 6.85E-04	**< 6.68E-04**
· **lb/ 1000 lb steam**	< 7.09E-06	< *1.25E-05*	< 1.01E-05	**< 9.89E-06**
Carbon Tetrachloride Emissions:	--	--	--	--
· **ug/dscm**	< 2.94E+00	< 2.98E+00	< 3.03E+00	**< 2.98E+00**
· **lb/hr**	< 4.05E-04	< *4.18E-04*	< 4.21E-04	**< 4.14E-04**
· **lb/ 1000 lb steam**	< 5.94E-06	< *6.24E-06*	< 6.21E-06	**< 6.13E-06**
Chlorobenzene Emissions:	--	--	--	--
· **ug/dscm**	< 6.53E-01	< 6.85E-01	< 6.66E-01	**< 6.68E-01**
· **lb/hr**	< 8.99E-05	< *9.61E-05*	< 9.23E-05	**< 9.28E-05**
· **lb/ 1000 lb steam**	< 1.32E-06	< *1.44E-06*	< 1.36E-06	**< 1.37E-06**
Chlorodibromomethane Emissions:	--	--	--	--
· **ug/dscm**	< 8.50E-01	< 8.35E-01	< 8.13E-01	**< 8.33E-01**
· **lb/hr**	< 1.17E-04	< *1.17E-04*	< 1.13E-04	**< 1.16E-04**
· **lb/ 1000 lb steam**	< 1.72E-06	< *1.75E-06*	< 1.66E-06	**< 1.71E-06**

TABLE 4: Volatile Organic Compound Emissions continued

Parameter	Run 1	Run 2[a]	Run 3	Average
Chloroform Emissions:	--	--	--	--
· **ug/dscm**	< 4.90E+00	< 5.25E+00	< 5.07E+00	**< 5.07E+00**
· **lb/hr**	< 6.74E-04	*< 7.36E-04*	< 7.02E-04	**< 7.04E-04**
· **lb/ 1000lb steam**	< 9.90E-06	*< 1.10E-05*	< 1.04E-05	**< 1.04E-05**
Chloromethane Emissions:	--	--	--	--
· **ug/dscm**	< 3.43E+00	< 6.67E+00	< 5.99E+00	**< 5.36E+00**
· **lb/hr**	< 4.73E-04	*< 9.35E-04*	< 8.31E-04	**< 7.46E-04**
· **lb/ 1000lb steam**	< 6.94E-06	*< 1.40E-05*	< 1.23E-05	**< 1.11E-05**
Dichlorodifluoromomethane Emissions:	--	--	--	--
· **ug/dscm**	< 1.89E+00	< 1.87E+00	< 1.86E+00	**< 1.87E+00**
· **lb/hr**	< 2.60E-04	*< 2.63E-04*	< 2.57E-04	**< 2.60E-04**
· **lb/ 1000lb steam**	< 3.83E-06	*< 3.93E-06*	< 3.80E-06	**< 3.85E-06**
1,2-Dichloroethane Emissions:	--	--	--	--
· **ug/dscm**	< 4.35E-01	< 5.45E-01	< 5.51E-01	**< 5.10E-01**
· **lb/hr**	< 5.99E-05	*< 7.64E-05*	< 7.64E-05	**< 7.09E-05**
· **lb/ 1000lb steam**	< 8.80E-07	*< 1.14E-06*	< 1.13E-06	**< 1.05E-06**
Methylene Chloride Emissions:	--	--	--	--
· **ug/dscm**	< 1.48E+01	< 1.44E+01	< 1.21E+01	**< 1.38E+01**
· **lb/hr**	< 2.04E-03	*< 2.02E-03*	< 1.67E-03	**< 1.91E-03**
· **lb/ 1000lb steam**	< 2.99E-05	*< 3.01E-05*	< 2.47E-05	**< 2.82E-05**
Styrene Emissions:	--	--	--	--
· **ug/dscm**	< 3.75E-01	< 4.61E-01	< 4.19E-01	**< 4.18E-01**
· **lb/hr**	< 5.16E-05	*< 6.46E-05*	< 5.81E-05	**< 5.81E-05**
· **lb/ 1000lb steam**	< 7.58E-07	*< 9.66E-07*	< 8.57E-07	**< 8.60E-07**
Tetrachloroethene Emissions:	--	--	--	--
· **ug/dscm**	< 9.51E-01	< 1.03E+00	< 1.10E+00	**< 1.03E+00**
· **lb/hr**	< 1.31E-04	*< 1.44E-04*	< 1.52E-04	**< 1.43E-04**
· **lb/ 1000lb steam**	< 1.92E-06	*< 2.16E-06*	< 2.25E-06	**< 2.11E-06**
Toluene Emissions:	--	--	--	--
· **ug/dscm**	< 4.86E+00	< 4.85E+00	< 6.74E+00	**< 5.48E+00**
· **lb/hr**	< 6.68E-04	*< 6.80E-04*	< 9.35E-04	**< 7.61E-04**
· **lb/ 1000lb steam**	< 9.81E-06	*< 1.02E-05*	< 1.38E-05	**< 1.13E-05**
Trichloroethene Emissions:	--	--	--	--
· **ug/dscm**	< 6.88E-01	< 8.04E-01	< 7.51E-01	**< 7.48E-01**
· **lb/hr**	< 9.46E-05	*< 1.13E-04*	< 1.04E-04	**< 1.04E-04**
· **lb/ 1000lb steam**	< 1.39E-06	*< 1.69E-06*	< 1.54E-06	**< 1.54E-06**
Trichlorofluoromethane Emissions:	--	--	--	--
· **ug/dscm**	< 1.18E+00	< 1.20E+00	< 1.15E+00	**< 1.18E+00**
· **lb/hr**	< 1.62E-04	*< 1.68E-04*	< 1.60E-04	**< 1.63E-04**
· **lb/ 1000lb steam**	< 2.38E-06	*< 2.51E-06*	< 2.35E-06	**< 2.42E-06**

TABLE 4: Volatile Organic Compound Emissions

Parameter	Run 1	Run 2[a]	Run 3	Average
Vinyl Chloride Emissions:	--	--	--	--
· **ug/dscm**	< 1.03E+00	< 1.17E+00	< 1.24E+00	**< 1.15E+00**
· **lb/hr**	< 1.42E-04	*< 1.64E-04*	< 1.72E-04	**< 1.59E-04**
· **lb/ 1000lb steam**	< 2.08E-06	*< 2.46E-06*	< 2.54E-06	**< 2.36E-06**
m,p-Xylene Emissions:	--	--	--	--
· **ug/dscm**	< 9.26E-01	< 8.98E-01	< 8.41E-01	**< 8.89E-01**
· **lb/hr**	< 1.27E-04	*< 1.26E-04*	< 1.17E-04	**< 1.23E-04**
· **lb/ 1000lb steam**	< 1.87E-06	*< 1.88E-06*	< 1.72E-06	**< 1.82E-06**

[a] Flow rate was not measured during Run 2 of the volatile organic compound testing. The average flow rate from the three Method 26A velocity traverses was used to estimate the mass emission rates for that test run. Estimated lb/hr and lb/1000 lb steam values are *italicized.*
'<' denotes results calculated using the MDL for each sample fraction that was non-detect

VII) Concerns & Comments:

1) Testing for metals, hexavalent chromium, dioxins and furans, PAHs, chlorophenols and chlorobenzenes was not completed due to leachate from the Marion County ash monofill becoming unavailable for delivery to the site. Leachate from the Marion County ash monofill was to be used for Liquid Direct Injection (LDI) during the testing. This was discussed while DEQ was onsite observing the source testing. The facility submitted an extension request to complete source testing by March 31, 2022, to ensure that sufficient leachate would be available to complete the source testing at the desired LDI rate.

2) Flow rate measurements used to calculate mass emissions rates needed to have been taken during, immediately prior to, or immediately after each test method. Flow rate measurements were only taken during the modified Method 26A test runs. Run 3 of Method ST-1B, runs 2 and 3 of Method 430, and run 2 of SW-846 Method 0031 do not have corresponding flow rate measurements. The average of the modified Method 26A flow rate measurements was used to estimate mass emission rates in the tables above for each test run that did not have a corresponding flow rate measurement.

3) The Method 26A regent blank exceeded the allowable amount of HCl. The maximum blank correction allowed by the method was used.

4) There were some minor data entry errors of the Method 0031 lab data. The correct lab data is used in the Table 4 above.

5) The amount of Regulated Medical Waste (RMW) burned during the test runs was less than the minimum rate of 1.5 tons/hour in the approved source test plan.

6) Acrolein, hydrogen fluoride, and bromine were non-detect in all sample fractions and all test runs.

7) Only Method 0031 analytes that were detected in at least one sample fraction are listed in Table 4 of this review report. Results for compounds that were non-detect in all sample fractions for all test runs can be found in Appendix A.10 of the source test report.

VIII) Overall Evaluation: As noted above, testing was not successfully completed for the RMW operating parameter approved in the source test plan. The test methods conducted, and the data provided are sufficient to evaluate emissions of TACs tested from the facility only at the operating conditions tested. Use of this data in a Cleaner Air Oregon risk assessment may result in source risk limits, as applicable, based on the conditions and operating parameters demonstrated during this source test.

cc: Terry Coble
Covanta Marion, Inc.
4850 Brooklake Road NE
Brooks, OR 97305

State of Oregon
Department of Environmental Quality Memorandum

Date: 4/8/2022

To: File/Julia DeGagné
From: Thomas Rhodes

Subject: Source Test Review Report
Covanta Marion, Inc.
Permit No. 24-5398-TV-01

Test Date: December 7, 2021
Report Received: January 31, 2022
Source Tester: Montrose Air Quality
DEQ Observed: Yes

I) Source Description: Covanta Marion, Inc. (CMI) owns and operates a Solid Waste-to-Energy Facility (Facility) in Brooks, Oregon. The primary objective of the CMI Facility is to provide for the disposal of solid waste. In order to achieve this primary objective the Facility receives, stores, and combusts solid waste as defined in Oregon Revised Statues (ORS) 459.005 and the Facility's Solid Waste Permit. The combustible fraction of the solid waste is utilized to produce steam, which is in turn utilized in a turbine generator to produce electricity which is sold to the local utility. The Facility operates 24 hours per day, 365 days per year, except for periods of scheduled and unscheduled maintenance.

Additionally, CMI is authorized under the Solid Waste Permit to accept for disposal the following: a) cannery wastes; b) conditionally exempt small quantity generator hazardous wastes; c) narcotics, illicit drugs, and equipment and other materials used in the production of illicit drugs; d) pharmaceutical wastes such as prescription and over-the-counter drugs, and DEA-controlled substances; and e) infectious wastes.

II) Process (es)/Emissions Unit(s) Tested: Testing was conducted on the Unit 1 combustor. Target operating parameters for the test were:

Maximum steam load	≤ 90% of design or 60,000 lbs/hr
Minimum rate of Regulated Medical Waste (RMW)	1.5 tons/hr
Minimum rate of Liquid Direct Injection (LDI)	225 gallons/hr

III) Test Purpose: To evaluate emissions of Toxic Air Contaminants with acute health effects at a low steam production rate.

IV) Testing Location:

Unit 1 Stack:

Diameter:	48"
Distance A (Method 1):	1440" (30 Diameters)
Distance B (Method 1):	1200" (25 Diameters)
Number traverse points utilized:	12

V) Testing Methodology: The following testing methods were utilized during the testing program:

Exhaust Gas Flow Rate: EPA Methods 1-4
Hydrogen Chloride and Hydrogen Fluoride: Modified EPA Method 26A
Multi Metals: EPA Method 29

VI) Summary of Results: The test results and operating parameters are summarized in the Tables below:

Table 1: Hydrogen Chloride and Hydrogen Fluoride Emissions
Table 2: Multi Metal Emissions

TABLE 1: Hydrogen Chloride and Hydrogen Fluoride Emissions

Parameter	Run 1	Run 2	Average
Date	12/7/2021	12/7/2021	--
Test Times	13:37-14:37	16:05-17:05	--
Steam Load (lbs/hour)	60,700	55,300	**58,000**
Natural Gas (kscf/hr)	0.2	0.2	**0.2**
Lime flow (lbs/hr)	254	254	**254**
RMW (tons/hr)	1.3	0.69	**1.0**
RMW (% of total fuel)	12	8	**10**
LDI Rate (gals/hr)	199	139	**169**
Exhaust Gas Temperature (^{o}F)	221	230	**225**
Exhaust Gas Moisture (%)	13.4	10.8	**12.1**
Exhaust O_2 (% dry vol)	13.4	14.4	**13.9**
Exhaust CO_2 (% dry vol)	6.3	5.4	**5.9**
Exhaust Gas Velocity (ft/m)	4,928	5,223	**5,075**
Exhaust Gas Flow Rate (dscf/m)	41,230	44,434	**42,832**
Sample Volume (dscf)	43.780	43.315	**43.548**
HCl Emissions:	--	--	--
· **ug/dscm**	5,244	8,653	**6,948**
· **ppmv**	3.5	5.7	**4.6**
· **lb/hr**	0.81	1.44	**1.12**
· **lb/1000 lb steam**	1.33E-02	2.60E-02	**1.96E-02**
HF Emissions:	--	--	--
· **ug/dscm**	< 17.8	< 18.4	**< 18.1**
· **ppmv**	< 0.02	< 0.02	**< 0.02**
· **lb/hr**	< 2.75E-03	< 3.06E-03	**< 2.90E-03**
· **lb/1000 lb steam**	< 4.50E-05	< 5.53E-05	**< 5.02E-05**

'<' denotes results calculated using the MDL for results that were non-detect

TABLE 2: Multi Metal Emissions

Parameter	Run 1	Run 2	Average
Date	12/7/2021	12/7/2021	--
Test Times	13:37-15:45	16:05-18:12	--
Steam Load (lbs/hr)	58,900	54,400	**56,650**
Natural Gas (kscf/hr)	0.2	0.2	**0.2**
Carbon Feed (lbs/hr)	9.5	9.5	**9.5**
RMW (tons/hr)	1.13	0.65	**0.89**
RMW (% of total fuel)	13	8	**10.5**
LDI Rate (gals/hr)	158	140	**149**
Exhaust Gas Flow Rate (dscfm)	42,009	44,973	**43,491**
Sample Volume (dscf)	75.337	78.853	**77.10**
Aluminum Emissions:	--	--	--
· **ug/dscm**	7.21E+01	4.98E+01	**6.10E+01**
· **lb/hr**	1.13E-02	8.39E-03	**9.87E-03**
· **lb/1000 lb steam**	1.93E-04	1.54E-04	**1.73E-04**
Antimony Emissions:	--	--	--
· **ug/dscm**	<1.53E-01	2.96E-01	**< 2.25E-01**
· **lb/hr**	<2.41E-05	4.99E-05	**< 3.70E-05**
· **lb/1000 lb steam**	<4.10E-07	9.17E-07	**< 6.63E-07**
Arsenic Emissions:	--	--	--
· **ug/dscm**	<2.45E-01	<3.23E-01	**< 2.84E-01**
· **lb/hr**	<3.86E-05	<5.43E-05	**< 4.65E-05**
· **lb/1000 lb steam**	<6.55E-07	<9.99E-07	**< 8.27E-07**
Barium Emissions:	--	--	--
· **ug/dscm**	9.33E-01	8.63E-01	**8.98E-01**
· **lb/hr**	1.47E-04	1.45E-04	**1.46E-04**
· **lb/1000 lb steam**	2.49E-06	2.67E-06	**2.58E-06**
Beryllium Emissions:	--	--	--
· **ug/dscm**	<2.86E-02	<2.74E-02	**< 2.80E-02**
· **lb/hr**	<4.51E-06	<4.62E-06	**< 4.56E-06**
· **lb/1000 lb steam**	<7.65E-08	<8.49E-08	**< 8.07E-08**
Cadmium Emissions:	--	--	--
· **ug/dscm**	6.17E-01	1.40E-01	**3.78E-01**
· **lb/hr**	9.70E-05	2.36E-05	**6.03E-05**
· **lb/1000 lb steam**	1.65E-06	4.34E-07	**1.04E-06**
Chromium Emissions:	--	--	--
· **ug/dscm**	4.30E+00	3.22E+00	**3.76E+00**
· **lb/hr**	6.76E-04	5.42E-04	**6.09E-04**
· **lb/1000 lb steam**	1.15E-05	9.96E-05	**1.07E-05**

TABLE 2: Multi Metal Emissions continued

Parameter	Run 1	Run 2	Average
Cobalt Emissions:	--	--	--
· **ug/dscm**	1.28E-01	1.11E-01	**1.19E-01**
· **lb/hr**	2.01E-05	1.87E-05	**1.94E-05**
· **lb/1000 lb steam**	3.42E-07	3.43E-07	**3.43E-07**
Copper Emissions:	--	--	--
· **ug/dscm**	7.86E-01	1.07E+00	**9.28E-01**
· **lb/hr**	1.24E-04	1.80E-04	**1.52E-04**
· **lb/1000 lb steam**	2.10E-06	3.31E-06	**2.71E-06**
Iron Emissions:	--	--	--
· **ug/dscm**	1.78E+02	1.34E+02	**1.56E+02**
· **lb/hr**	2.80E-02	2.25E-02	**2.53E-02**
· **lb/1000 lb steam**	4.75E-04	4.14E-04	**4.45E-04**
Lead Emissions:	--	--	--
· **ug/dscm**	5.39E-01	1.23E+00	**8.85E-01**
· **lb/hr**	8.48E-05	2.07E-04	**1.46E-04**
· **lb/1000 lb steam**	1.44E-06	3.81E-06	**2.63E-06**
Manganese Emissions:	--	--	--
· **ug/dscm**	2.34E+00	7.12E+00	**4.73E+00**
· **lb/hr**	3.68E-04	1.20E-03	**7.83E-04**
· **lb/1000 lb steam**	6.25E-06	2.20E-05	**1.41E-05**
Mercury Emissions:	--	--	--
· **ug/dscm**	< 8.49E-01	< 1.15E+00	**< 9.99E-01**
· **lb/hr**	< 1.34E-04	< 1.94E-04	**< 1.64E-04**
· **lb/1000 lb steam**	< 2.27E-06	< 3.56E-06	**< 2.91E-06**
Molybdenum Emissions:	--	--	--
· **ug/dscm**	< 1.43E+00	< 1.37E+00	**< 1.40E+00**
· **lb/hr**	< 2.25E-04	< 2.31E-04	**< 2.28E-04**
· **lb/1000 lb steam**	< 3.82E-06	< 4.24E-06	**< 4.03E-06**
Nickel Emissions:	--	--	--
· **ug/dscm**	2.64E+00	1.94E+00	**2.29E+00**
· **lb/hr**	4.15E-04	3.26E-04	**3.71E-04**
· **lb/1000 lb steam**	7.05E-06	5.99E-06	**6.52E-06**
Phosphorus Emissions:	--	--	--
· **ug/dscm**	2.60E+00	1.78E+00	**2.19E+00**
· **lb/hr**	4.09E-04	3.00E-04	**3.54E-04**
· **lb/1000 lb steam**	6.94E-06	5.52E-06	**6.23E-06**
Potassium Emissions:	--	--	--
· **ug/dscm**	3.70E+01	3.24E+01	**3.47E+01**
· **lb/hr**	5.83E-03	5.46E-03	**5.64E-03**
· **lb/1000 lb steam**	9.90E-05	1.00E-04	**9.96E-05**

TABLE 2: Multi Metal Emissions continued

Parameter	Run 1	Run 2	Average
Selenium Emissions:	--	--	--
· **ug/dscm**	<1.73E-01	<1.40E-01	**< 1.56E-01**
· **lb/hr**	<2.72E-05	<2.35E-05	**< 2.54E-05**
· **lb/1000 lb steam**	<4.62E-07	<4.33E-07	**< 4.48E-07**
Silver Emissions:	--	--	--
· **ug/dscm**	1.06E-01	6.87E-02	**8.72E-02**
· **lb/hr**	1.66E-05	1.16E-05	**1.41E-05**
· **lb/1000 lb steam**	2.82E-07	2.13E-07	**2.47E-07**
Thallium Emissions:	--	--	--
· **ug/dscm**	<5.21E-02	<4.98E-02	**< 5.09E-02**
· **lb/hr**	<8.19E-06	<8.39E-06	**< 8.29E-06**
· **lb/1000 lb steam**	<1.39E-07	<1.54E-07	**< 1.47E-07**
Vanadium Emissions:	--	--	--
· **ug/dscm**	<2.86E+00	<2.74E+00	**< 2.80E+00**
· **lb/hr**	<4.50E-04	<4.62E-04	**< 4.56E-04**
· **lb/1000 lb steam**	<7.65E-06	<8.49E-06	**< 8.07E-06**
Zinc Emissions:	--	--	--
· **ug/dscm**	9.98E+00	9.83E+00	**9.90E+00**
· **lb/hr**	1.57E-03	1.66E-03	**1.61E-03**
· **lb/1000 lb steam**	2.67E-05	3.04E-05	**2.85E-05**

'<' denotes results calculated using the MDL for front half and/or back half results that were non-detect.

VII) Concerns & Comments:

1) Only two test runs were completed due to leachate from the Marion County ash monofill becoming unavailable for delivery to the site. Leachate from the Marion County ash monofill was to be used for Liquid Direct Injection (LDI) during the testing. This was discussed while DEQ was onsite observing the source testing. The facility submitted an extension request to complete source testing by March 31, 2022, to ensure that sufficient leachate would be available to complete the source testing at the desired LDI rate.

2) Molybdenum speciation analysis on the Method 29 or the modified Method 26A particulate filters was not completed as proposed in the source test plan. Analysis could not be completed using the Method 29 filters due to potentially destructive analysis. Analysis was not completed using the modified Method 26A filters due to potential bias in the amount of particulate collected from non-isokinetic sampling.

3) The Method 29 front half reagent blank exceeded the allowable amount for aluminum, iron, and potassium. The maximum blank correction allowed by the method was used.

4) The Method 29 back half results for zinc were corrected using the wrong reagent blank value of 0.0976 ug (page 59). The lab report on page 127 shows the reagent blank value for zinc was 0.9758 ug. The results in Table 2 above were corrected for the correct zinc reagent blank value.

5) The amount of LDI during the test runs was less than the proposed minimum rate of 225 gallons/hour in the approved source test plan.

6) The amount of Regulated Medical Waste (RMW) burned during the test runs was less than the proposed minimum rate of 1.5 tons/hour in the approved source test plan.

7) Hydrogen fluoride, beryllium, thallium, and vanadium were non-detect in all sample fractions and all test runs.

VIII) Overall Evaluation: As noted above, testing was not successfully completed for all of the conditions and operating parameters approved in the source test plan. The test methods conducted, and the data provided are sufficient to evaluate emissions of HCl, HF, and metals from the facility only at the operating conditions tested. Use of this data in a Cleaner Air Oregon risk assessment may result in source risk limits, as applicable, based on the conditions and operating parameters demonstrated during this source test.

cc: Terry Coble
Covanta Marion, Inc.
4850 Brooklake Road NE
Brooks, OR 97305

State of Oregon
Department of Environmental Quality Memorandum

Date: 8/18/2022

To: File/Julia DeGagné
From: Thomas Rhodes

Subject: Source Test Review Report
Covanta Marion, Inc.
Permit No. 24-5398-TV-01

Test Dates: March 9-11, 2022
Report Received: May 9, 2022
Revised Report Received: July 5, 2022
Source Tester: Montrose Air Quality
DEQ Observed: Yes

I) Source Description: Covanta Marion, Inc. (CMI) owns and operates a Solid Waste-to-Energy Facility (Facility) in Brooks, Oregon. The primary objective of the CMI Facility is to provide for the disposal of solid waste. In order to achieve this primary objective the Facility receives, stores, and combusts solid waste as defined in Oregon Revised Statues (ORS) 459.005 and the Facility's Solid Waste Permit. The combustible fraction of the solid waste is utilized to produce steam, which is in turn utilized in a turbine generator to produce electricity which is sold to the local utility. The Facility operates 24 hours per day, 365 days per year, except for periods of scheduled and unscheduled maintenance.

Additionally, CMI is authorized under the Solid Waste Permit to accept for disposal the following: a) cannery wastes; b) conditionally exempt small quantity generator hazardous wastes; c) narcotics, illicit drugs, and equipment and other materials used in the production of illicit drugs; d) pharmaceutical wastes such as prescription and over-the-counter drugs, and DEA-controlled substances; and e) infectious wastes.

II) Process (es)/Emissions Unit(s) Tested: Testing was conducted on the Unit 1 and Unit 2 combustors. Target operating parameters for the test were:

Minimum steam load	$\geq$ 67 thousand pounds/hour (klbs/hr)
Minimum rate of Regulated Medical Waste (RMW)	1.5 tons/hour
Minimum rate of Liquid Direct Injection (LDI)	180 gallons/hour (gal/hr)

III) Test Purpose: To evaluate emissions of Toxic Air Contaminants (TACs) at a maximum steam production rate.

IV) Testing Locations:

Unit 1 Stack:

Diameter:	48"
Distance A (Method 1):	1440" (30 Diameters)
Distance B (Method 1):	1200" (25 Diameters)
Number traverse points utilized:	12

Unit 2 Stack:

Diameter:	48"
Distance A (Method 1):	1440" (30 Diameters)
Distance B (Method 1):	1200" (25 Diameters)
Number traverse points utilized:	12

V) Testing Methodology: The following testing methods were utilized during the testing program:

Exhaust Gas Flow Rate: EPA Methods 1-4
Hydrogen Halides and Halogens: EPA Method 26A
Dioxins and Furans (D/F): EPA Method 23
Polychlorinated Biphenyls (PCBs): EPA Method 23
Chlorophenols and Chlorobenzenes: EPA SW-846 Method 0023A
Polycyclic Aromatic Hydrocarbons (PAHs): CARB Method 429
Multi Metals: EPA Method 29
Hexavalent Chromium: EPA SW-846 Method 0061

VI) Summary of Results: The test results and operating parameters are summarized in the Tables below:

TABLE 1: Hydrogen Halide and Halogen Emissions

Parameter	Run 1	Run 2	Run 3	Average
Date	3/9/2022	3/9/2022	3/9/2022	--
Test Times	10:03-12:08	13:50-15:55	17:30-19:45	--
Steam Load (klbs/hr)	68.3	68.6	66.5	**67.8**
Lime flow (lbs/hr)	254	255	254	**254**
RMW (tons/hr)	1.3	2.0	1.4	**1.5**
RMW (% of total fuel)	13	20	16	**16.3**
LDI Rate (gals/hr)	210	198	198	**202**
Exhaust Gas Temperature (^{o}F)	234	234	235	**234**
Exhaust Gas Moisture (%)	14.2	14.8	14.7	**14.6**
Exhaust O_2 (% dry vol)	12.7	12.0	12.1	**12.3**
Exhaust CO_2 (% dry vol)	6.8	7.3	7.2	**7.1**
Exhaust Gas Flow Rate (dscf/m)	44,027	43,227	43,764	**43,673**
Sample Volume (dscf)	80.148	78.111	79.709	**79.323**
HCl Emissions:	--	--	--	--
· **ug/dscm**	7163.5	7283.8	8075.6	**7507.6**
· **ppmv**	4.7	4.8	5.3	**4.9**
· **lb/hr**	1.18	1.18	1.32	**1.23**
· **lb/1000 lb steam**	1.73E-02	1.72E-02	1.98E-02	**1.81E-02**
HBr Emissions:	--	--	--	--
· **ug/dscm**	175.8	189.9	155.9	**173.9**
· **ppmv**	0.052	0.056	0.046	**0.052**
· **lb/hr**	2.89E-02	3.07E-02	2.55E-02	**2.84E-02**
· **lb/1000 lb steam**	4.24E-04	4.47E-04	3.82E-04	**4.18E-04**
HF Emissions:	--	--	--	--
· **ug/dscm**	< 11.0	< 10.8	< 11.5	**< 10.9**
· **ppmv**	< 0.013	< 0.013	< 0.014	**< 0.013**
· **lb/hr**	< 1.81E-03	< 1.75E-03	< 1.88E-03	**< 1.78E-03**
· **lb/1000 lb steam**	< 2.65E-05	< 2.54E-05	< 2.83E-05	**< 2.60E-05**
Cl_2 Emissions:	--	--	--	--
· **ug/dscm**	< 123.4	< 115.3	< 128.5	**< 122.4**
· **ppmv**	< 0.042	< 0.039	< 0.043	**< 0.041**
· **lb/hr**	< 2.03E-02	< 1.86E-02	< 2.10E-02	**< 2.00E-02**
· **lb/1000 lb steam**	< 2.97E-04	< 2.72E-04	< 3.15E-04	**< 2.95E-04**
Br_2 Emissions:	--	--	--	--
· **ug/dscm**	< 123.4	< 115.3	< 128.5	**< 122.4**
· **ppmv**	< 0.019	< 0.017	< 0.019	**< 0.018**
· **lb/hr**	< 2.03E-02	< 1.86E-02	< 2.10E-02	**< 2.00E-02**
· **lb/1000 lb steam**	< 2.97E-04	< 2.72E-04	< 3.15E-04	**< 2.95E-04**

'<' denotes results calculated using the MDL for results that were non-detect

TABLE 2: Dioxin and Furan Emissions

Parameters	Run 1	Run 2	Run 3	Average
Test Date	3/10/2022	3/11/2022	3/11/2022	--
Test Times	13:43-18:18	8:35-12:40	13:42-17:47	--
Steam Load (klbs/hr)	67.7	67.7	68.3	**67.9**
Baghouse Inlet Temperature (°F)	304	304	304	**304**
Carbon Feed (lbs/hr)	9.8	9.5	9.8	**9.7**
RMW (tons/hr)	1.3	2.1	1.0	**1.5**
RMW (% of total fuel)	16	23	10	**16.3**
LDI Rate (gals/hr)	174	192	186	**184**
Exhaust Gas Temperature (°F)	272	274	274	**273**
Exhaust Gas Moisture (%)	14.9	14.6	17.4	**15.7**
Exhaust O_2 (% dry vol)	11.6	11.5	10.5	**11.2**
Exhaust CO_2 (% dry vol)	7.7	7.9	8.7	**8.1**
Exhaust Gas Flow Rate (dscf/min)	42,641	41,898	41,110	**41,883**
Sample Volume (dscf)	129.103	148.065	129.661	**135.610**
2,3,7,8-TCDD Emissions:	--	--	--	--
· **ng/dscm**	< 9.87E-04	< 1.13E-03	< 1.03E-03	**< 1.05E-03**
· **lb/hr**	< 1.57E-10	< 1.77E-10	< 1.58E-10	**< 1.64E-10**
1,2,3,7,8-PeCDD Emissions:	--	--	--	--
· **ng/dscm**	< 1.03E-03	< 1.58E-03	< 1.85E-03	**< 1.48E-03**
· **lb/hr**	< 1.64E-10	< 2.47E-10	< 2.84E-10	**< 2.32E-10**
1,2,3,4,7,8-HxCDD Emissions:	--	--	--	--
· **ng/dscm**	< 9.96E-04	< 1.49E-03	< 2.45E-03	**< 1.65E-03**
· **lb/hr**	< 1.59E-10	< 2.33E-10	< 3.77E-10	**< 2.56E-10**
1,2,3,6,7,8-HxCDD Emissions:	--	--	--	--
· **ng/dscm**	3.53E-03	3.48E-03	4.47E-03	**3.83E-03**
· **lb/hr**	5.62E-10	5.45E-10	6.86E-10	**5.98E-10**
1,2,3,7,8,9 HxCDD Emissions:	--	--	--	--
· **ng/dscm**	< 1.66E-03	2.67E-03	< 2.42E-03	**< 2.25E-03**
· **lb/hr**	< 2.65E-10	4.18E-10	< 3.72E-10	**< 3.52E-10**
1,2,3,4,6,7,8-HpCDD Emissions:	--	--	--	--
· **ng/dscm**	2.32E-02	2.46E-02	2.69E-02	**2.49E-02**
· **lb/hr**	3.70E-09	3.85E-09	4.13E-09	**3.89E-09**
OCDD Emissions:	--	--	--	--
· **ng/dscm**	3.45E-02	3.22E-02	3.02E-02	**3.23E-02**
· **lb/hr**	5.49E-09	5.04E-09	4.65E-09	**5.06E-09**

'<' denotes results calculated using the EDL or EMPC for results that were non-detect.

TABLE 2 continued: Dioxin and Furan Emissions

Parameters	Run 1	Run 2	Run 3	Average
2,3,7,8-TCDF Emissions:	--	--	--	--
· **ng/dscm**	4.70E-03	2.29E-03	< 2.35E-03	**< 3.11E-03**
· **lb/hr**	7.50E-10	3.59E-10	< 3.61E-10	**< 4.90E-10**
1,2,3,7,8-PeCDF Emissions:	--	--	--	--
· **ng/dscm**	< 2.69E-03	< 3.12E-03	4.41E-03	**< 3.41E-03**
· **lb/hr**	< 4.29E-10	< 4.89E-10	6.78E-10	**< 5.32E-10**
2,3,4,7,8-PeCDF Emissions:	--	--	--	--
· **ng/dscm**	5.22E-03	5.15E-03	4.96E-03	**5.11E-03**
· **lb/hr**	8.33E-10	8.07E-10	7.62E-10	**8.00E-10**
1,2,3,4,7,8-HxCDF Emissions:	--	--	--	--
· **ng/dscm**	< 3.56E-03	4.15E-03	4.36E-03	**< 4.02E-03**
· **lb/hr**	< 5.67E-10	6.50E-10	6.70E-10	**< 6.29E-10**
1,2,3,6,7,8-HxCDF Emissions:	--	--	--	--
· **ng/dscm**	4.81E-03	4.44E-03	5.17E-03	**4.81E-03**
· **lb/hr**	7.67E-10	6.95E-10	7.95E-10	**7.52E-10**
2,3,4,6,7,8-HxCDF Emissions:	--	--	--	--
· **ng/dscm**	4.05E-03	< 2.32E-03	4.82E-03	**< 3.73E-03**
· **lb/hr**	6.45E-10	< 3.63E-10	7.41E-10	**< 5.83E-10**
1,2,3,7,8,9 HxCDF Emissions:	--	--	--	--
· **ng/dscm**	< 1.63E-03	1.19E-03	< 1.39E-03	**< 1.40E-03**
· **lb/hr**	< 2.60E-10	1.87E-10	< 2.13E-10	**< 2.20E-10**
1,2,3,4,6,7,8-HpCDF Emissions:	--	--	--	--
· **ng/dscm**	1.34E-02	1.34E-02	1.39E-02	**1.36E-02**
· **lb/hr**	2.14E-09	2.10E-09	2.13E-09	**2.12E-09**
1,2,3,4,7,8,9-HpCDF Emissions:	--	--	--	--
· **ng/dscm**	2.25E-03	< 1.49E-03	2.42E-03	**< 2.05E-03**
· **lb/hr**	3.59E-10	< 2.33E-10	3.71E-10	**< 3.21E-10**
OCDF Emissions:	--	--	--	--
· **ng/dscm**	4.35E-03	< 5.56E-03	4.55E-03	**< 4.82E-03**
· **lb/hr**	6.93E-10	< 8.70E-10	6.99E-10	**< 7.54E-10**

'<' denotes results calculated using the EDL or EMPC for results that were non-detect.

TABLE 3: PCB Emissions

Parameters	Run 1	Run 2	Run 3	Average
PCB-5/8 Emissions:	--	--	--	--
· **ng/dscm**	3.34E-01	8.63E-01	9.23E-02	**4.30E-01**
· **lb/hr**	5.32E-08	1.35E-07	1.42E-08	**6.75E-08**
PCB-18 Emissions:	--	--	--	**--**
· **ng/dscm**	2.28E-01	6.01E-01	5.91E-02	**2.96E-01**
· **lb/hr**	3.64E-08	9.41E-08	9.08E-09	**4.65E-08**
PCB-28 Emissions:	--	--	--	**--**
· **ng/dscm**	1.81E-01	2.21E-01	4.33E-02	**1.48E-01**
· **lb/hr**	2.88E-08	3.46E-08	6.65E-09	**2.34E-08**
PCB-44 Emissions:	--	--	--	**--**
· **ng/dscm**	1.01E-01	9.11E-02	< 2.72E-02	**< 7.32E-02**
· **lb/hr**	1.61E-08	1.43E-08	< 4.18E-09	**< 1.15E-08**
PCB-52/69 Emissions:	--	--	--	**--**
· **ng/dscm**	9.71E-02	1.05E-01	3.46E-02	**7.90E-02**
· **lb/hr**	1.55E-08	1.65E-08	5.32E-09	**1.24E-08**
PCB-66/76 Emissions:	--	--	--	**--**
· **ng/dscm**	4.95E-02	4.39E-02	2.28E-02	**3.87E-02**
· **lb/hr**	7.89E-09	6.87E-09	3.51E-09	**6.09E-09**
PCB-77 Emissions:	--	--	--	**--**
· **ng/dscm**	1.25E-02	1.91E-02	< 7.22E-03	**< 1.29E-02**
· **lb/hr**	1.99E-09	2.99E-09	< 1.11E-09	**< 2.03E-09**
PCB-81 Emissions:	--	--	--	**--**
· **ng/dscm**	< 2.45E-03	< 1.94E-03	< 2.47E-03	**< 2.29E-03**
· **lb/hr**	< 3.90E-10	< 3.04E-10	< 3.80E-10	**< 3.58E-10**
PCB-90/101 Emissions:	--	--	--	**--**
· **ng/dscm**	8.42E-02	5.65E-02	2.59E-21	**5.56-02**
· **lb/hr**	1.34E-08	8.85E-09	3.98E-09	**8.75E-09**
PCB-105 Emissions:	--	--	--	**--**
· **ng/dscm**	3.01E-02	1.35E-02	9.31E-03	**1.76E-02**
· **lb/hr**	4.80E-09	2.12E-09	1.43E-09	**2.78E-09**
PCB-114 Emissions:	--	--	--	**--**
· **ng/dscm**	< 6.45E-03	< 3.36E-03	< 2.22E-03	**< 4.01E-03**
· **lb/hr**	< 1.03E-09	< 5.27E-10	< 3.42E-10	**< 6.32E-10**
PCB-106/118 Emissions:	--	--	--	**--**
· **ng/dscm**	6.37E-02	3.82E-02	1.97E-02	**4.05E-02**
· **lb/hr**	1.02E-08	5.98E-09	3.03E-09	**6.39E-09**
PCB-123 Emissions:	--	--	--	**--**
· **ng/dscm**	< 3.15E-03	< 2.27E-03	< 1.92E-03	**< 2.44E-03**
· **lb/hr**	< 5.01E-10	< 3.55E-10	< 2.95E-10	**< 3.84E-10**

'<' denotes results calculated using the EDL or EMPC for each sample fraction that was non-detect

TABLE 3 continued: PCB Emissions

Parameters	Run 1	Run 2	Run 3	Average
PCB-126 Emissions:	--	--	--	--
· **ng/dscm**	< 6.51E-03	< 3.34E-03	< 2.23E-03	**< 4.03E-03**
· **lb/hr**	< 1.04E-09	< 5.23E-10	< 3.42E-10	**< 6.34E-10**
PCB-128/162 Emissions:	--	--	--	**--**
· **ng/dscm**	1.33E-02	7.01E-03	< 5.58E-03	**< 8.65E-03**
· **lb/hr**	2.13E-09	1.10E-09	< 8.58E-10	**< 1.36E-09**
PCB-138/163/164 Emissions:	--	--	--	**--**
· **ng/dscm**	5.91E-02	2.72E-02	2.08E-02	**3.57E-02**
· **lb/hr**	9.42E-09	4.26E-09	3.19E-09	**5.62E-09**
PCB-153 Emissions:	--	--	--	**--**
· **ng/dscm**	< 5.01E-02	< 1.96E-02	1.69E-02	**< 2.88E-02**
· **lb/hr**	< 7.98E-09	< 3.06E-09	2.60E-09	**< 4.55E-09**
PCB-156 Emissions:	--	--	--	**--**
· **ng/dscm**	< 2.79E-03	3.70E-03	< 2.05E-03	**< 2.85E-03**
· **lb/hr**	< 4.45E-10	5.79E-10	< 3.15E-10	**< 4.46E-10**
PCB-157 Emissions:	--	--	--	**--**
· **ng/dscm**	< 3.17E-03	< 1.66E-03	< 2.21E-03	**< 2.35E-03**
· **lb/hr**	< 5.06E-10	< 2.59E-10	< 3.39E-10	**< 3.68E-10**
PCB-167 Emissions:	--	--	--	**--**
· **ng/dscm**	< 2.90E-03	< 1.49E-03	< 2.15E-03	**< 2.18E-03**
· **lb/hr**	< 4.62E-10	< 2.33E-10	< 3.30E-10	**< 3.42E-10**
PCB-169 Emissions:	--	--	--	**--**
· **ng/dscm**	< 3.06E-03	< 1.52E-03	< 2.12E-03	**< 2.24E-03**
· **lb/hr**	< 4.88E-10	< 2.38E-10	< 3.26E-10	**< 3.51E-10**
PCB-170 Emissions:	--	--	--	**--**
· **ng/dscm**	< 5.44E-03	< 2.03E-02	< 2.58E-03	**< 9.44E-03**
· **lb/hr**	< 8.68E-10	< 3.18E-09	< 3.96E-10	**< 1.48E-09**
PCB-180 Emissions:	--	--	--	**--**
· **ng/dscm**	1.70E-02	< 7.04E-03	1.17E-02	**< 1.19E-02**
· **lb/hr**	2.70E-09	< 1.10E-09	1.80E-09	**< 1.87E-09**
PCB-182/187 Emissions:	--	--	--	**--**
· **ng/dscm**	1.52E-02	< 5.22E-03	< 5.26E-03	**< 8.56E-03**
· **lb/hr**	2.42E-09	< 8.18E-10	< 8.08E-10	**< 1.35E-09**
PCB-189 Emissions:	--	--	--	**--**
· **ng/dscm**	< 4.21E-03	< 1.72E-03	< 1.52E-03	**< 2.49E-03**
· **lb/hr**	< 6.71E-10	< 2.70E-10	< 2.34E-10	**< 3.92E-10**
PCB-195 Emissions:	--	--	--	**--**
· **ng/dscm**	< 7.77E-03	4.41E-03	< 3.76E-03	**< 5.31E-03**
· **lb/hr**	< 1.24E-09	6.91E-10	< 5.78E-10	**< 8.36E-10**

'<' denotes results calculated using the EDL or EMPC for results that were non-detect.

TABLE 3 continued: PCB Emissions

Parameters	Run 1	Run 2	Run 3	Average
PCB-206 Emissions:	--	--	--	--
· **ng/dscm**	< 2.60E-02	1.79E-02	2.45E-02	**< 2.28E-02**
· **lb/hr**	< 4.15E-09	2.80E-09	3.76E-09	**< 3.57E-09**
PCB-209 Emissions:	--	--	--	**--**
· **ng/dscm**	5.66E-02	4.29E-02	5.83E-02	**5.26E-02**
· **lb/hr**	9.02E-09	6.72E-09	8.96E-09	**8.23E-09**
Total PCB Emissions:	--	--	--	**--**
· **ng/dscm**	3.88E+00	5.70E+00	1.09E+00	**3.56E+00**
· **lb/hr**	6.19E-07	8.93E-07	1.67E-07	**5.60E-07**

'<' denotes results calculated using the EDL or EMPC for results that were non-detect.

TABLE 4: Chlorophenol and Chlorobenzene Emissions

Parameters	Run 1	Run 2	Average
Test Date	3/10/2022	3/11/2022	--
Test Times	13:30-18:28	10:05-15:46	--
Steam Load (klbs/hour)	64.5	63.2	**63.9**
RMW (tons/hr)	1.8	1.1	**1.5**
RMW (% of total fuel)	18	12	**15**
LDI Rate (gals/hr)	186	192	**189**
Exhaust Gas Temperature (°F)	227	235	**231**
Exhaust Gas Moisture (%)	15.0	14.6	**14.8**
Exhaust O_2 (% dry vol)	12.9	11.4	**12.2**
Exhaust CO_2 (% dry vol)	6.7	7.6	**7.1**
Exhaust Gas Flow Rate (dscf/min)	43,329	42,326	**42,827**
Sample Volume (dscf)	124.294	128.367	**126.280**
2-Chlorophenol Emissions:	--	--	--
· **ng/dscm**	< 3.01E+01	< 2.92E+01	**< 2.96E+01**
· **lb/hr**	< 4.88E-06	< 4.62E-06	**< 4.75E-06**
1,3-Dichlorobenzene Emissions:	--	--	**--**
· **ng/dscm**	< 4.03E+01	3.94E+01	**< 3.99E+01**
· **lb/hr**	< 6.53E-06	6.23E-06	**< 6.38E-06**
1,4-Dichlorobenzene Emissions:	--	--	**--**
· **ng/dscm**	< 6.68E+01	< 6.47E+01	**< 6.57E+01**
· **lb/hr**	< 1.08E-05	< 1.02E-05	**< 1.05E-05**
1,2-Dichlorobenzene Emissions:	--	--	**--**
· **ng/dscm**	< 7.61E+01	< 7.38E+01	**< 7.50E+01**
· **lb/hr**	< 1.23E-05	< 1.17E-05	**< 1.20E-05**
2,4-Dichlorophenol Emissions:	--	--	**--**
· **ng/dscm**	< 5.94E+01	< 5.75E+01	**< 5.85E+01**
· **lb/hr**	< 9.62E-06	< 9.10E-06	**< 9.36E-06**
1,2,4-Trichlorobenzene Emissions:	--	--	**--**
· **ng/dscm**	< 5.11E+01	< 4.96E+01	**< 5.03E+01**
· **lb/hr**	< 8.28E-06	< 7.84E-06	**< 8.06E-06**
2,4,6-Trichlorophenol Emissions:	--	--	**--**
· **ng/dscm**	< 5.99E+01	6.47E+01	**< 6.23E+01**
· **lb/hr**	< 9.71E-06	1.02E-05	**< 9.97E-06**
2,4,5-Trichlorophenol Emissions:	--	--	**--**
· **ng/dscm**	< 7.13E+01	< 6.91E+01	**< 7.02E+01**
· **lb/hr**	< 1.15E-05	< 1.09E-05	**< 1.12E-05**
2,3,4,6-Tetrachlorophenol Emissions:	--	--	**--**
· **ng/dscm**	< 9.72E+01	< 9.41E+01	**< 9.57E+01**
· **lb/hr**	< 1.57E-05	< 1.49E-05	**< 1.53E-05**

'<' denotes results calculated using the DL for results that were non-detect.

TABLE 4 continued: Chlorophenol and Chlorobenzene Emissions

Parameter	Run 1	Run 2	Average
Hexachlorobenzene Emissions:	--	--	**--**
· **ng/dscm**	< 9.12E+01	< 8.84E+01	**< 8.98E+01**
· **lb/hr**	< 1.48E-05	< 1.40E-05	**< 1.44E-05**
Pentachlorophenol Emissions:	--	--	**--**
· **ng/dscm**	< 6.34E+01	< 6.14E+01	**< 6.24E+01**
· **lb/hr**	< 1.03E-05	< 9.71E-06	**< 9.99E-06**

'<' denotes results calculated using the DL for results that were non-detect.

TABLE 5: PAH Emissions

Parameters	Run 1	Run 2	Run 3	Average
Test Date	3/10/2022	3/11/2022	3/11/2022	--
Test Times	13:43-18:18	8:35-12:40	13:42-17:47	--
Steam Load (klbs/hour)	67.7	67.7	68.3	**67.9**
Baghouse Inlet Temperature (°F)	304	304	304	**304**
Carbon Feed (lbs/hr)	9.8	9.5	9.8	**9.7**
RMW (tons/hr)	1.3	2.1	1.0	**1.5**
RMW (% of total fuel)	16	23	10	**16.3**
LDI Rate (gals/hr)	174	192	186	**184**
Exhaust Gas Temperature (°F)	273	271	275	**273**
Exhaust Gas Moisture (%)	15.0	14.2	16.8	**15.3**
Exhaust O_2 (% dry vol)	11.6	11.5	10.5	**11.2**
Exhaust CO_2 (% dry vol)	7.7	7.9	8.7	**8.1**
Exhaust Gas Flow Rate (dscf/min)	43,117	43,489	42,774	**43,126**
Sample Volume (dscf)	139.644	152.717	159.412	**150.591**
Acenaphthene Emissions:	--	--	--	--
· **ng/dscm**	< 5.06E+00	< 4.62E+00	< 4.43E+00	**< 4.70E+00**
· **lb/hr**	< 8.15E-07	< 7.52E-07	< 7.08E-07	**< 7.58E-07**
Acenaphthylene Emissions:	--	--	--	--
· **ng/dscm**	< 5.06E+00	< 4.62E+00	< 4.43E+00	**< 4.70E+00**
· **lb/hr**	< 8.15E-07	< 7.52E-07	< 7.08E-07	**< 7.58E-07**
Anthracene Emissions:	--	--	--	--
· **ng/dscm**	< 5.06E+00	5.34E+00	< 4.43E+00	**< 4.94E+00**
· **lb/hr**	< 8.15E-07	8.68E-07	< 7.08E-07	**< 7.97E-07**
Benz[a]anthracene Emissions:	--	--	--	--
· **ng/dscm**	< 5.06E+00	< 4.62E+00	< 4.43E+00	**< 4.70E+00**
· **lb/hr**	< 8.15E-07	< 7.52E-07	< 7.08E-07	**< 7.58E-07**
Benzo[a]pyrene Emissions:	--	--	--	--
· **ng/dscm**	< 5.06E+00	< 4.62E+00	< 4.43E+00	**< 4.70E+00**
· **lb/hr**	< 8.15E-07	< 7.52E-07	< 7.08E-07	**< 7.58E-07**
Benzo[b]fluoranthene Emissions:	--	--	--	--
· **ng/dscm**	< 5.06E+00	< 4.62E+00	< 4.43E+00	**< 4.70E+00**
· **lb/hr**	< 8.15E-07	< 7.52E-07	< 7.08E-07	**< 7.58E-07**
Benzo[e]pyrene Emissions:	--	--	--	--
· **ng/dscm**	< 5.06E+00	1.14E+01	< 4.43E+00	**< 6.98E+00**
· **lb/hr**	< 8.15E-07	1.86E-06	< 7.08E-07	**< 1.13E-06**
Benzo[g,h,i]perylene Emissions:	--	--	--	--
· **ng/dscm**	< 5.06E+00	1.82E+01	9.55E+00	**< 1.09E+01**
· **lb/hr**	< 8.15E-07	2.96E-06	1.53E-06	**< 1.77E-06**

'<' denotes results calculated using the RL for results that were non-detect.

TABLE 5 continued: PAH Emissions

Parameters	Run 1	Run 2	Run 3	Average
Benzo[k]fluoranthene Emissions:	--	--	--	--
· **ng/dscm**	< 5.06E+00	< 4.62E+00	< 4.43E+00	**< 4.70E+00**
· **lb/hr**	< 8.15E-07	< 7.52E-07	< 7.08E-07	**< 7.58E-07**
Chrysene Emissions:	--	--	--	--
· **ng/dscm**	< 5.06E+00	< 4.62E+00	< 4.43E+00	**< 4.70E+00**
· **lb/hr**	< 8.15E-07	< 7.52E-07	< 7.08E-07	**< 7.58E-07**
Dibenz[a,h]anthracene Emissions:	--	--	--	--
· **ng/dscm**	< 5.06E+00	< 4.62E+00	< 4.43E+00	**< 4.70E+00**
· **lb/hr**	< 8.15E-07	< 7.52E-07	< 7.08E-07	**< 7.58E-07**
Fluoranthene Emissions:	--	--	--	--
· **ng/dscm**	6.37E+00	2.84E+01	5.71E+00	**1.35E+01**
· **lb/hr**	1.03E-06	4.62E-06	9.14E-07	**2.19E-06**
Fluorene Emissions:	--	--	--	--
· **ng/dscm**	< 5.06E+00	1.48E+01	< 4.43E+00	**< 8.10E+00**
· **lb/hr**	< 8.15E-07	2.41E-06	< 7.08E-07	**< 1.31E-06**
Indeno[1,2,3-cd]pyrene Emissions:	--	--	--	--
· **ng/dscm**	< 5.06E+00	< 4.62E+00	< 4.43E+00	**< 4.70E+00**
· **lb/hr**	< 8.15E-07	< 7.52E-07	< 7.08E-07	**< 7.58E-07**
2-Methyl naphthalene Emissions:	--	--	--	--
· **ng/dscm**	1.55E+01	2.04E+01	4.54E+01	**2.71E+01**
· **lb/hr**	2.49E-06	3.31E-06	7.26E-06	**4.36E-06**
Naphthalene Emissions:	--	--	--	--
· **ng/dscm**	7.43E+01	9.11E+01	1.11E+02	**9.21E+01**
· **lb/hr**	1.20E-05	1.48E-05	1.77E-05	**1.48E-05**
Perylene Emissions:	--	--	--	--
· **ng/dscm**	< 5.06E+00	< 4.62E+00	< 4.43E+00	**< 4.70E+00**
· **lb/hr**	< 8.15E-07	< 7.52E-07	< 7.08E-07	**< 7.58E-07**
Phenanthrene Emissions:	--	--	--	--
· **ng/dscm**	7.00E+01	9.43E+01	1.94E+01	**6.13E+01**
· **lb/hr**	1.13E-05	1.53E-05	3.11E-06	**9.91E-06**
Pyrene Emissions:	--	--	--	--
· **ng/dscm**	< 5.06E+00	2.80E+01	5.47E+00	**< 1.28E+01**
· **lb/hr**	< 8.15E-07	4.55E-06	8.75E-07	**< 2.08E-06**

'<' denotes results calculated using the RL for results that were non-detect.

TABLE 6: Multi Metal Emissions

Parameter	Run 1	Run 2	Run 3	Average
Date	3/9/2022	3/9/2022	3/9/2022	--
Test Times	9:40-11:53	13:50-15:55	17:30-19:35	--
Steam Load (klbs/hr)	67.6	68.4	68.5	**68.2**
Natural Gas (kscf/hr)	0	0	0	**0**
Carbon Feed (lbs/hr)	9.8	9.8	9.9	**9.8**
RMW (tons/hr)	1.6	1.9	2.1	**1.9**
RMW (% of total fuel)	16	17	20	**17.7**
LDI Rate (gals/hr)	180	180	180	**180**
Exhaust Gas Flow Rate (dscf/m)	42,042	41,869	41,590	**41,834**
Sample Volume (dscf)	78.087	78.666	78.227	**78.327**
Aluminum Emissions:	--	--	--	--
· **ug/dscm**	7.38E+01	5.50E+01	< 5.34E+01	**< 6.07E+01**
· **lb/hr**	1.16E-02	8.63E-03	< 8.32E-03	**< 9.52E-03**
· **lb/1000 lb steam**	1.72E-04	1.26E-04	< 1.21E-04	**< 1.40E-04**
Antimony Emissions:	--	--	--	--
· **ug/dscm**	2.46E+00	< 4.11E+00	4.41E+00	**< 3.66E+00**
· **lb/hr**	3.87E-04	< 6.45E-04	6.86E-04	**< 5.73E-04**
· **lb/1000 lb steam**	5.72E-06	< 9.42E-06	1.00E-05	**< 8.39E-06**
Arsenic Emissions:	--	--	--	--
· **ug/dscm**	2.54E-01	< 3.59E-01	< 2.60E-01	**< 2.91E-01**
· **lb/hr**	4.00E-05	< 5.63E-05	< 4.04E-05	**< 4.56E-05**
· **lb/1000 lb steam**	5.91E-07	< 8.23E-07	< 5.90E-07	**< 6.68E-07**
Barium Emissions:	--	--	--	--
· **ug/dscm**	1.38E+00	1.13E+00	1.09E+00	**1.20E+00**
· **lb/hr**	2.17E-04	1.77E-04	1.70E-04	**1.88E-04**
· **lb/1000 lb steam**	3.21E-06	2.59E-06	2.48E-06	**2.76E-06**
Beryllium Emissions:	--	--	--	--
· **ug/dscm**	< 2.76E-02	< 2.74E-02	< 2.75E-02	**< 2.75E-02**
· **lb/hr**	< 4.34E-06	< 4.29E-06	< 4.29E-06	**< 4.31E-06**
· **lb/1000 lb steam**	< 6.43E-08	< 6.28E-08	< 6.26E-08	**< 6.32E-08**
Cadmium Emissions:	--	--	--	--
· **ug/dscm**	4.12E-01	< 7.14E-01	< 9.76E-01	**< 7.01E-01**
· **lb/hr**	6.49E-05	< 1.12E-04	< 1.52E-04	**< 1.10E-04**
· **lb/1000 lb steam**	9.60E-07	< 1.64E-06	< 2.22E-06	**< 1.61E-06**
Chromium Emissions:	--	--	--	--
· **ug/dscm**	1.07E+00	1.73E+00	1.28E+00	**1.36E+00**
· **lb/hr**	1.69E-04	2.71E-04	2.00E-04	**2.13E-04**
· **lb/1000 lb steam**	2.50E-06	3.97E-06	2.91E-06	**3.13E-06**

'<' denotes results calculated using the MDL for front half and/or back half results that were non-detect.

TABLE 6 continued: Multi Metal Emissions

Parameter	Run 1	Run 2	Run 3	Average
Cobalt Emissions:	--	--	--	--
· **ug/dscm**	1.56E-01	1.11E-01	1.46E-01	**1.38E-01**
· **lb/hr**	2.46E-05	1.74E-05	2.27E-05	**2.16E-05**
· **lb/1000 lb steam**	3.65E-07	2.55E-07	3.31E-07	**3.17E-07**
Copper Emissions:	--	--	--	--
· **ug/dscm**	1.84E+00	1.90E+00	1.79E+00	**1.84E+00**
· **lb/hr**	2.90E-04	2.98E-04	2.78E-04	**2.89E-04**
· **lb/1000 lb steam**	4.29E-06	4.33E-06	4.06E-06	**4.24E-06**
Iron Emissions:	--	--	--	--
· **ug/dscm**	1.06E+02	1.12E+02	1.25E+02	**1.14E+02**
· **lb/hr**	1.66E-02	1.75E-02	1.95E-02	**1.79E-02**
· **lb/1000 lb steam**	2.46E-04	2.56E-04	2.84E-04	**2.62E-04**
Lead Emissions:	--	--	--	--
· **ug/dscm**	2.60E+00	4.77E+00	< 4.78E+00	**< 4.05E+00**
· **lb/hr**	4.09E-04	7.48E-04	< 7.45E-04	**< 6.34E-04**
· **lb/1000 lb steam**	6.05E-06	1.09E-05	< 1.09E-05	**< 9.29E-06**
Manganese Emissions:	--	--	--	--
· **ug/dscm**	2.00E+00	1.74E+00	1.62E+00	**1.79E+00**
· **lb/hr**	3.15E-04	2.72E-04	2.53E-04	**2.80E-04**
· **lb/1000 lb steam**	4.67E-06	3.98E-06	3.69E-06	**4.11E-06**
Mercury Emissions:	--	--	--	--
· **ug/dscm**	< 6.68E-01	< 6.21E-01	< 6.46E-01	**< 6.45E-01**
· **lb/hr**	< 1.05E-04	< 9.74E-05	< 1.01E-04	**< 1.01E-04**
· **lb/1000 lb steam**	< 1.55E-06	< 1.43E-06	< 1.47E-06	**< 1.48E-06**
Molybdenum Emissions:	--	--	--	--
· **ug/dscm**	< 1.38E+00	< 1.37E+00	< 1.38E+00	**< 1.38E+00**
· **lb/hr**	< 2.17E-04	< 2.15E-04	< 2.15E-04	**< 2.16E-04**
· **lb/1000 lb steam**	< 3.22E-06	< 3.14E-06	< 3.13E-06	**< 3.16E-06**
Nickel Emissions:	--	--	--	--
· **ug/dscm**	7.40E-01	1.08E+00	5.65E-01	**7.95E-01**
· **lb/hr**	1.17E-04	1.69E-04	8.80E-05	**1.25E-04**
· **lb/1000 lb steam**	1.72E-06	2.47E-06	1.28E-06	**1.83E-06**
Phosphorus Emissions:	--	--	--	--
· **ug/dscm**	6.17E+00	1.33E+01	5.99E+00	**8.49E+00**
· **lb/hr**	9.71E-04	2.09E-03	9.33E-04	**1.33E-03**
· **lb/1000 lb steam**	1.44E-05	3.05E-05	1.36E-05	**1.95E-05**
Potassium Emissions:	--	--	--	--
· **ug/dscm**	1.25E+02	1.64E+02	1.56E+02	**1.48E+02**
· **lb/hr**	1.97E-02	2.58E-02	2.43E-02	**2.33E-02**
· **lb/1000 lb steam**	2.91E-04	3.77E-04	3.55E-04	**3.41E-04**

'<' denotes results calculated using the MDL for front half and/or back half results that were non-detect.

TABLE 6 continued: Multi Metal Emissions

Parameter	Run 1	Run 2	Run 3	Average
Selenium Emissions:	--	--	--	--
· **ug/dscm**	4.54E-01	< 3.50E-01	3.23E-01	**< 3.75E-01**
· **lb/hr**	7.14E-05	< 5.49E-05	5.03E-05	**< 5.88E-05**
· **lb/1000 lb steam**	1.06E-06	< 8.02E-07	7.34E-07	**< 8.64E-07**
Silver Emissions:	--	--	--	--
· **ug/dscm**	1.30E-01	< 9.92E-02	1.26E-01	**< 1.19E-01**
· **lb/hr**	2.05E-05	< 1.56E-05	1.97E-05	**< 1.86E-05**
· **lb/1000 lb steam**	3.03E-07	< 2.27E-07	2.87E-07	**< 2.73E-07**
Thallium Emissions:	--	--	--	--
· **ug/dscm**	<9.75E-02	<9.54E-02	<9.60E-02	**< 9.63E-02**
· **lb/hr**	<1.54E-05	<1.50E-05	<1.50E-05	**< 1.51E-05**
· **lb/1000 lb steam**	<2.27E-07	<2.19E-07	<2.18E-07	**< 2.21E-07**
Vanadium Emissions:	--	--	--	--
· **ug/dscm**	< 2.76E+00	< 2.74E+00	< 2.75E+00	**< 2.75E+00**
· **lb/hr**	< 4.35E-04	< 4.29E-04	< 4.29E-04	**< 4.31E-04**
· **lb/1000 lb steam**	< 6.43E-06	< 6.27E-06	< 6.27E-06	**< 6.32E-06**
Zinc Emissions:	--	--	--	--
· **ug/dscm**	5.08E+01	7.20E+01	6.87E+01	**6.39E+01**
· **lb/hr**	8.00E-03	1.13E-02	1.07E-02	**1.00E-02**
· **lb/1000 lb steam**	1.18E-04	1.65E-04	1.56E-04	**1.47E-04**

'<' denotes results calculated using the MDL for front half and/or back half results that were non-detect.

TABLE 7: Hexavalent Chromium Emissions

Parameter	Run 1	Run 2	Run 3	Average
Date	3/9/2022	3/9/2022	3/9/2022	--
Test Times	9:40-11:53	13:50-16:12	17:30-19:45	--
Steam Load (klbs/hr)	67.6	68.1	68.6	**68.1**
RMW (tons/hr)	1.6	1.7	1.9	**1.7**
RMW (% of total fuel)	16	17	20	**17.7**
LDI Rate (gals/hr)	180	180	180	**180**
Exhaust Gas Flow Rate (dscf/m)	43,206	44,749	44,139	**44,031**
Sample Volume (dscf)	79.623	79.976	82.798	**80.799**
Hexavalent Chromium Emissions:	--	--	--	--
· **ug/dscm**	9.67E-01	1.23E+00	1.65E-01	**7.88E-01**
· **lb/hr**	1.56E-04	2.06E-04	2.73E-05	**1.30E-04**
· **lb/1000 lb steam**	2.31E-06	3.03E-06	3.98E-06	**1.91E-06**
· **% of total Chromium**	92	76	14	**61**

VII) Concerns & Comments:

1) The reported three run average results for hydrogen fluoride (HF) and chlorine (Cl_2) in Table 4-1 and 4-2 are incorrect. The reported averages appear to be for two runs instead of all three. The individual run results presented in the report are accurate. The correct average results are presented in Table 1 above.

2) The analysis for bromine (Br_2) and chlorine (Cl_2) used a dilution factor of 10. No explanation was provided as to why samples that were reported as ND required dilution.

3) The wrong sample volume was used in the Method 23 Run 2 calculations. Page 150 shows that a sample volume of 147.913 actual ft^3 was used in the calculations and the data sheet on page 69 shows a starting volume of 251.165 ft^3 and an ending volume of 404.098 ft^3 which gives a sample volume of 152.913 actual ft^3. The lower sample volume value causes higher calculated emissions for D/F and PCBs in the source test report. The 152.913 actual ft^3 sample volume value was used to calculate the results presented in Tables 2 and 3 above.

4) Testing for chlorobenzenes and chlorophenols was not completed at the minimum required steam rate of ≥ 67 klbs /hr. The average steam rate during the two test runs was 63.9 klbs/hr.

5) For PAHs that were non-detect (ND), the reported in-stack detection limits (ISDLs) are approximately 10x higher than the estimated ISDLs in the approved source test plan.

6) The Method 29 front half reagent blank exceeded the allowable amount for aluminum, iron, and potassium. The maximum blank correction allowed by the method was used.

7) Molybdenum speciation analysis on the Method 26A particulate filters was completed as proposed in the source test plan and on bulk samples of baghouse fly ash. Analysis did not yield any results for molybdenum from the samples.

VIII) Overall Evaluation: As noted above, not all of the testing was completed at the required minimum steam rate specified in the source test plan approval letter. The test methods conducted, and the data provided are sufficient to evaluate emissions of TACs tested from the facility only at the operating conditions tested. Use of this data in a Cleaner Air Oregon risk assessment may result in source risk limits, as applicable, based on the conditions and operating parameters demonstrated during this source test.

cc: Terry Coble
Covanta Marion, Inc.
4850 Brooklake Road NE
Brooks, OR 97305

State of Oregon
Department of Environmental Quality Memorandum

Date: 8/18/2022

To: File/Julia DeGagné
From: Thomas Rhodes

Subject: Source Test Review Report
Covanta Marion, Inc.
Permit No. 24-5398-TV-01

Test Date: March 8, 2022
Report Received: May 9, 2022
Revised Report Received: July 5, 2022
Source Tester: Montrose Air Quality
DEQ Observed: Yes

I) Source Description: Covanta Marion, Inc. (CMI) owns and operates a Solid Waste-to-Energy Facility (Facility) in Brooks, Oregon. The primary objective of the CMI Facility is to provide for the disposal of solid waste. In order to achieve this primary objective the Facility receives, stores, and combusts solid waste as defined in Oregon Revised Statues (ORS) 459.005 and the Facility's Solid Waste Permit. The combustible fraction of the solid waste is utilized to produce steam, which is in turn utilized in a turbine generator to produce electricity which is sold to the local utility. The Facility operates 24 hours per day, 365 days per year, except for periods of scheduled and unscheduled maintenance.

Additionally, CMI is authorized under the Solid Waste Permit to accept for disposal the following: a) cannery wastes; b) conditionally exempt small quantity generator hazardous wastes; c) narcotics, illicit drugs, and equipment and other materials used in the production of illicit drugs; d) pharmaceutical wastes such as prescription and over-the-counter drugs, and DEA-controlled substances; and e) infectious wastes.

II) Process (es)/Emissions Unit(s) Tested: Testing was conducted on the Unit 2 combustor. Target operating parameters for the test were:

Maximum steam load	≤ 90% of design or 60 klbs/hr
Minimum rate of Regulated Medical Waste (RMW)	1.5 tons/hour
Minimum rate of Liquid Direct Injection (LDI)	225 gallons/hour

III) Test Purpose: To evaluate emissions of Toxic Air Contaminants with acute health effects at a low steam production rate.

IV) Testing Location:

Unit 2 Stack:

Diameter:	48"
Distance A (Method 1):	1440" (30 Diameters)
Distance B (Method 1):	1200" (25 Diameters)
Number traverse points utilized:	12

V) Testing Methodology: The following testing methods were utilized during the testing program:

Exhaust Gas Flow Rate: EPA Methods 1-4
Hydrogen Chloride and Hydrogen Fluoride: EPA Method 26A
Multi Metals: EPA Method 29

VI) Summary of Results: The test results and operating parameters are summarized in the Tables below:

Table 1: Hydrogen Chloride and Hydrogen Fluoride Emissions
Table 2: Multi Metal Emissions

TABLE 1: Hydrogen Chloride and Hydrogen Fluoride Emissions

Parameter	Run 1	Run 2	Run 3	Average
Date	3/8/2022	3/8/2022	3/8/2022	--
Test Times	10:20-12:26	13:57-16:05	17:00-19:07	--
Steam Load (klbs/hr)	58.6	58.9	58.7	**58.7**
Natural Gas (kscf/hr)	0.0	0.0	0.0	**0.0**
Lime flow (lbs/hr)	249	250	249	**249**
RMW (tons/hr)	0.7	1.4	1.8	**1.3**
RMW (% of total fuel)	8	17	23	**16**
LDI Rate (gals/hr)	210	210	210	**210**
Exhaust Gas Temperature (^{o}F)	271	272	273	**272**
Exhaust Gas Moisture (%)	14.0	14.2	13.7	**14.0**
Exhaust O_2 (% dry vol)	13.1	13.0	13.0	**13.1**
Exhaust CO_2 (% dry vol)	6.7	6.6	6.5	**6.6**
Exhaust Gas Velocity (ft/m)	5,558	5,530	5,400	**5,496**
Exhaust Gas Flow Rate (dscf/m)	43,449	43,065	42,246	**42,920**
Sample Volume (dscf)	80.786	82.490	80.514	**81.263**
HCl Emissions:	--	--	--	--
· **ug/dscm**	2,846	2,747	2,988	**2,860**
· **ppmv**	1.9	1.8	2.0	**1.9**
· **lb/hr**	0.46	0.44	0.47	**0.46**
· **lb/1000 lb steam**	7.89E-03	7.51E-03	8.04E-03	**7.81E-03**
HF Emissions:	--	--	--	--
· **ug/dscm**	< 9.9	< 10.2	< 11.3	**< 10.5**
· **ppmv**	< 0.01	< 0.01	< 0.01	**< 0.01**
· **lb/hr**	< 1.60E-03	< 1.65E-03	< 1.78E-03	**< 1.68E-03**
· **lb/1000 lb steam**	< 2.74E-05	< 2.80E-05	< 3.03E-05	**< 2.86E-05**

'<' denotes results calculated using the MDL for results that were non-detect

TABLE 2: Multi Metal Emissions

Parameter	Run 1	Run 2	Run 3	Average
Date	3/8/2022	3/8/2022	3/8/2022	--
Test Times	10:20-12:26	13:57-16:05	17:00-19:07	--
Steam Load (klbs/hr)	58.6	58.9	58.7	**58.7**
Natural Gas (kscf/hr)	0.0	0.0	0.0	**0.0**
Carbon Feed (lbs/hr)	10.1	9.8	9.8	**9.9**
RMW (tons/hr)	0.7	1.4	1.8	**1.3**
RMW (% of total fuel)	8	17	23	**16**
LDI Rate (gals/hr)	210	210	210	**210**
Exhaust Gas Flow Rate (dscf/m)	43,373	43,838	42,453	**43,221**
Sample Volume (dscf)	79.618	79.095	77.864	**78.859**
Aluminum Emissions:	--	--	--	--
· **ug/dscm**	6.34E+01	6.09E+01	<5.57E+01	**<6.00E+01**
· **lb/hr**	1.03E-02	9.99E-03	<8.85E-03	**<9.71E-03**
· **lb/1000 lb steam**	1.76E-04	1.70E-04	<1.51E-04	**<1.65E-04**
Antimony Emissions:	--	--	--	--
· **ug/dscm**	<4.43E+00	<3.31E+00	<4.38E+00	**<4.04E+00**
· **lb/hr**	<7.20E-04	<5.43E-04	<6.96E-04	**<6.53E-04**
· **lb/1000 lb steam**	<1.23E-05	<9.22E-06	<1.19E-05	**<1.11E-05**
Arsenic Emissions:	--	--	--	--
· **ug/dscm**	<2.07E-01	<2.21E-01	<1.94E-01	**<2.07E-01**
· **lb/hr**	<3.36E-05	<3.62E-05	<3.08E-05	**<3.35E-05**
· **lb/1000 lb steam**	<5.73E-07	<6.15E-07	<5.25E-07	**<5.71E-07**
Barium Emissions:	--	--	--	--
· **ug/dscm**	9.45E-01	1.12E+00	9.08E-01	**9.90E-01**
· **lb/hr**	1.53E-04	1.83E-04	1.44E-04	**1.60E-04**
· **lb/1000 lb steam**	2.62E-06	3.11E-06	2.46E-06	**2.73E-06**
Beryllium Emissions:	--	--	--	--
· **ug/dscm**	<2.71E-02	<2.73E-02	<2.77E-02	**<2.73E-02**
· **lb/hr**	<4.40E-06	<4.48E-06	<4.40E-06	**<4.43E-06**
· **lb/1000 lb steam**	<7.51E-08	<7.61E-08	<7.49E-08	**<7.54E-08**
Cadmium Emissions:	--	--	--	--
· **ug/dscm**	<6.33E-01	<9.66E-01	<6.56E-01	**<7.52E-01**
· **lb/hr**	<1.03E-04	<1.59E-04	<1.04E-04	**<1.22E-04**
· **lb/1000 lb steam**	<1.76E-06	<2.69E-06	<1.78E-06	**<2.08E-06**
Chromium Emissions:	--	--	--	--
· **ug/dscm**	1.63E+00	1.52E+00	1.10E+00	**1.42E+00**
· **lb/hr**	2.65E-04	2.49E-04	1.75E-04	**2.30E-04**
· **lb/1000 lb steam**	4.52E-06	4.23E-06	2.99E-06	**3.91E-06**

'<' denotes results calculated using the MDL for front half and/or back half results that were non-detect.

TABLE 2: Multi Metal Emissions continued

Parameter	Run 1	Run 2	Run 3	Average
Cobalt Emissions:	--	--		--
· **ug/dscm**	9.40E-02	1.43E-01	<8.70E-02	**<1.08E-01**
· **lb/hr**	1.53E-05	2.35E-05	<1.38E-05	**<1.75E-05**
· **lb/1000 lb steam**	2.61E-07	4.00E-07	<2.36E-07	**<2.99E-07**
Copper Emissions:	--	--		--
· **ug/dscm**	1.67E+00	1.47E+00	1.36E+00	**1.50E+00**
· **lb/hr**	2.71E-04	2.42E-04	2.16E-04	**2.43E-04**
· **lb/1000 lb steam**	4.63E-06	4.11E-06	3.67E-06	**4.13E-06**
Iron Emissions:	--	--		--
· **ug/dscm**	1.05E+02	1.41E+02	1.05E+02	**1.17E+02**
· **lb/hr**	1.71E-02	2.32E-02	1.67E-02	**1.90E-02**
· **lb/1000 lb steam**	2.92E-04	3.93E-04	2.85E-04	**3.23E-04**
Lead Emissions:	--	--		--
· **ug/dscm**	2.95E+00	2.98E+00	3.02E+00	**2.98E+00**
· **lb/hr**	4.79E-04	4.89E-04	4.81E-04	**4.83E-04**
· **lb/1000 lb steam**	8.18E-06	8.31E-06	8.19E-06	**8.22E-06**
Manganese Emissions:	--	--		--
· **ug/dscm**	1.55E+00	2.02E+00	1.37E+00	**1.65E+00**
· **lb/hr**	2.52E-04	3.31E-04	2.18E-04	**2.67E-04**
· **lb/1000 lb steam**	4.31E-06	5.62E-06	3.72E-06	**4.55E-06**
Mercury Emissions:	--	--		--
· **ug/dscm**	<5.03E-01	<5.50E-01	<5.77E-01	**<5.43E-01**
· **lb/hr**	<8.16E-05	<9.03E-05	<9.17E-05	**<8.79E-05**
· **lb/1000 lb steam**	<1.39E-06	<1.53E-06	<1.56E-06	**<1.50E-06**
Molybdenum Emissions:	--	--		--
· **ug/dscm**	< 1.35E+00	< 1.36E+00	<1.38E+00	**<1.37E+00**
· **lb/hr**	< 2.20E-04	< 2.24E-04	<2.20E-04	**<2.21E-04**
· **lb/1000 lb steam**	< 3.75E-06	< 3.80E-06	<3.75E-06	**<3.77E-06**
Nickel Emissions:	--	--		--
· **ug/dscm**	1.20E+00	7.46E-01	5.30E-01	**8.26E-01**
· **lb/hr**	1.95E-04	1.23E-04	8.42E-05	**1.34E-04**
· **lb/1000 lb steam**	3.33E-06	2.08E-06	1.43E-06	**2.28E-06**
Phosphorus Emissions:	--	--		--
· **ug/dscm**	9.08E+00	9.09E+00	1.05E+01	**9.57E+00**
· **lb/hr**	1.48E-03	1.49E-03	1.67E-03	**1.55E-03**
· **lb/1000 lb steam**	2.52E-05	2.53E-05	2.85E-05	**2.63E-05**
Potassium Emissions:	--	--		--
· **ug/dscm**	1.28E+02	1.37E+02	1.37E+02	**1.34E+02**
· **lb/hr**	2.08E-02	2.25E-02	2.17E-02	**2.17E-02**
· **lb/1000 lb steam**	3.54E-04	3.82E-04	3.70E-04	**3.69E-04**

'<' denotes results calculated using the MDL for front half and/or back half results that were non-detect.

TABLE 2: Multi Metal Emissions continued

Parameter	Run 1	Run 2	Run 3	Average
Selenium Emissions:	--	--		--
· **ug/dscm**	<3.66E-01	<3.90E-01	3.19E-01	**<3.58E-01**
· **lb/hr**	<5.94E-05	<6.40E-05	5.07E-05	**<5.80E-05**
· **lb/1000 lb steam**	<1.01E-06	<1.09E-06	8.63E-07	**<9.88E-07**
Silver Emissions:	--	--		--
· **ug/dscm**	9.56E-02	1.75E-01	<9.50E-02	**<1.22E-01**
· **lb/hr**	1.55E-05	2.87E-05	<1.51E-05	**<1.98E-05**
· **lb/1000 lb steam**	2.65E-07	4.87E-07	<2.57E-07	**<3.36E-07**
Thallium Emissions:	--	--		--
· **ug/dscm**	<9.43E-02	<1.01E-01	<9.64E-02	**<9.74E-02**
· **lb/hr**	<1.53E-05	<1.66E-05	<1.53E-05	**<1.58E-05**
· **lb/1000 lb steam**	<2.62E-07	<2.82E-07	<2.61E-07	**<2.68E-07**
Vanadium Emissions:	--	--		--
· **ug/dscm**	<2.71E+00	<2.73E+00	<2.77E+00	**<2.73E+00**
· **lb/hr**	<4.40E-04	<4.48E-04	<4.40E-04	**<4.43E-04**
· **lb/1000 lb steam**	<7.51E-06	<7.61E-06	<7.50E-06	**<7.54E-06**
Zinc Emissions:	--	--		--
· **ug/dscm**	4.81E+01	5.12E+01	5.09E+01	**5.01E+01**
· **lb/hr**	7.81E-03	8.41E-03	8.09E-03	**8.10E-03**
· **lb/1000 lb steam**	1.33E-04	1.43E-04	1.38E-04	**1.38E-04**

'<' denotes results calculated using the MDL for front half and/or back half results that were non-detect.

VII) Concerns & Comments:

1) Molybdenum speciation analysis on the Method 26A particulate filters was completed as proposed in the source test plan and on bulk samples of baghouse fly ash. Analysis did not yield any results for molybdenum from the samples.

2) The Method 29 front half reagent blank exceeded the allowable amount for aluminum, iron, and potassium. The maximum blank correction allowed by the method was used.

3) The amount of LDI during the test runs was less than the proposed minimum rate of 225 gallons/hour in the approved source test plan.

4) The amount of RMW burned during the test runs was less than the proposed minimum rate of 1.5 tons/hour in the approved source test plan.

VIII) Overall Evaluation: As noted above, testing was not successfully completed for all of the conditions and operating parameters approved in the source test plan. The test methods conducted, and the data provided are sufficient to evaluate emissions of HCl, HF, and metals from the facility only at the operating conditions tested. Use of this data in a Cleaner Air Oregon risk assessment may result in source risk limits, as applicable, based on the conditions and operating parameters demonstrated during this source test.

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