

January 31, 2022

Mr. Jeff Gove, Director of Compliance and Enforcement
Bay Area Air Quality Management District
375 Beale Street, Suite 600
San Francisco, CA 94105
Attn. Title V Reports
Transmitted by e-mail to compliance@baaqmd.gov

TV Tracking #: 392

1. RECEIVED IN ENFORCEMENT: 01/31/2022

Dear Mr. Gove:

RE: Semiannual Major Facility Review (Title V) Monitoring Report for the East Bay
Municipal Utility District (EBMUD) Main Wastewater Treatment Plant
(Facility #A0591)

Attached is the semiannual monitoring report for the EBMUD Main Wastewater Treatment Plant (Facility #A0591) as required under Section I.F of the facilities Major Facility Review Permit issued November 7, 2019. The report covers the period from July 1, 2021 – December 31, 2021. One non-compliance was identified and is described below.

The daily hydrogen sulfide sample of digester gas required in Condition #18860, part 12 was missed on July 18, 2021, due to a gas header outage where both primary and secondary sampling locations were out of service. Supervisors have been advised to sample raw digester gas from in-service digesters as a surrogate reading in the future if the primary and secondary digester gas sampling points in the header are not available. This sampling omission has been reported to Bay Area Air Quality Management District and corrective actions were reviewed to prevent further missed samples.

Several monthly turbine emissions tests are not available in this reporting period due to multiple outages on the turbine. The turbine was out of service from mid-July to October when the gas conditioning system required to treat the gas combusted in the turbine was offline. This outage occurred when a small leak was discovered in the low pressure gas holder and significant system changes were required to prevent the leak from continuing. Another outage occurred in December when the air compressor for the turbine failed. In December, the annual turbine test was completed in early December but the monthly test due later in December could not be done.

Based on information and belief formed after reasonable inquiry, I certify that the statements and information in this report are true, accurate and complete.

Jeff Gove, Director of Compliance and Enforcement
January 31, 2022
Page 2

If you have any questions about this report, please call Chris Dembiczak at (510) 287-0509.

Sincerely,



Eileen M. White, P.E.
Director of Wastewater

EMW:CD:bmy

Attachment

O:\WTD - Admin\Regulatory Compliance\BAAQMD\Transmittal letter July-December 2021.docx

**Major Facility Review (Title V)
Semi-Annual Monitoring Report**

for

**East Bay Municipal Utility District
Main Wastewater Treatment Plant
Facility #A0591**

Reporting Period: July 1, 2021 – December 31, 2021

Source	Monitoring Requirement	Limit	Monitoring Results
S-55 Boiler	Condition 20651 2. Shall not operate S-55 boiler when more than two of the three cogen engines S-37, S-38, or S-39 are operating 3. Boiler gross heat input 5a. NOx emission from boiler 5b. CO emission from boiler 18. Daily records of hours of operation, fuel consumption 19. Annual performance test for emission limits in 5	 20.41 MMBtu/hr 30ppm 50ppm	Condition met. See Attachment 1 for boiler and engine data. Condition met. See Attachment 2. Heat input ranged from 6.0-16.4 MMBtu/hr. See 19 for test results if annual tests run in monitoring period See Attachment 1 for hours and gas consumption. Condition met. Annual performance test completed on 12/8/21. Summary of results is in Attachment 3.
S-37, S-38, S-39 Cogeneration Engines	Condition 20651 Emission limits – 6. NOx emissions from S-38 7. POC emissions from S-38 8. CO emissions from S-38 9. Filterable particulate emissions from S-38 10. NOx emissions from S-37 & S-39 11. CO emissions from S-37 & S-39 13. Thermal throughput per engine 14. Combined hours of operation for S-37, S-38, and S-39 15. Combined diesel consumption for S-37, S-38, and S-39	 1.25 g/hp-hr 0.6 g/hp-hr 3.0 g/hp-hr 0.085 g/hp-hr 70 ppmvd 2000 ppmvd 25 MMBtu/hr 25,316 hours in any rolling 365 day period 150,000 gallons in any rolling 365 day period	For items 6-11 see 19 for test results if annual tests run in monitoring period Condition met. Estimated values have been approaching 25 MMBtu. See Attachment 2 for values. Condition met. 12,708 hours in last year. See Attachment 2. Jan-Jun 2021: 4,250 hours Jul-Dec 2021: 8,458 hours Condition met. 24,286 gallons in last year. See Attachment 2. Jan-Jun 2021: 9,512 gallons Jul-Dec 2021: 14,774 gallons

Source	Monitoring Requirement	Limit	Monitoring Results
S-37, S-38, S-39 Cogeneration Engines (continued)	18. Daily records of hours of operation, fuel consumption 19. Annual performance test for emission limits in 6-11		Condition met. See Attachment 1 for records. Condition met. Annual performance tests completed 9/10/21 for engine #2 and #3. Summary of results are in Attachment 3.
S-48 Gasoline Dispensing Facility	Condition 25723 The Static Pressure Performance Test (CARB TP 201.3B) shall be successfully conducted at least once in each 12-month period.		Condition met. Completed on 9/22/21. See Attachment 4b for results.
	Condition 21663 Annual gasoline throughput	334,000 gal per year	Condition met. 25,620 gal in last year. See Attachment 4. Jan-June 2021: 13,606 gal July-Dec 2021: 12,014 gal
S-50 Diesel Engine Back-up Generator	Condition 22830 1. Hours of operation	30 hours/year reliability-related hours	Condition met. Generator ran 2.4 hours in last 12 months. Refer to Attachment 5. <u>Source removed 12/31/2021.</u>
S-51 Diesel Engine Back-up Generator	Condition 22850 1. Hours of operation	50 hours/year reliability-related hours	Condition met. Generator ran 20.9 hours in last 12 months. Refer to Attachment 5.
S-53 Diesel Engine Back-up Generator	Condition 22830 1. Hours of operation	30 hours/year reliability-related hours	Condition met. Generator ran 10.5 hours in last 12 months. Refer to Attachment 5.
S-54 Diesel Engine Back-up Generator	Condition 22850 1. Hours of operation	50 hours/year reliability-related hours	Condition met. Generator did not run in last 12 months. Refer to Attachment 5.

Source	Monitoring Requirement	Limit	Monitoring Results
S-56 Turbine	Condition 24050 2. Total combined heat input 3. NOx emission limits 4. CO emission limit and monitoring 5. Daily monitoring of H2S to demonstrate compliance with SO2 limits 5. SO2 emission limit 7. Annual turbine source test 8. Monthly NOx and CO test	389,820 MMBtu in any 12-month period 23 ppm (15-min) 34,400 lb (12-mo) 100 ppm (15-min) 92,200 lb (12-mo) Daily monitoring per 40 CFR 60.4370 150 ppmv	Condition met. 211,122 MMBtu in last 12 months. Refer to Attachment 2. Jan-Jun 2021: 171,503 MMBtu Jul-Dec 2021: 39,619 MMBtu Emission limits met. Refer to Attachments 2 and 6. Annual mass emission: 3,585 lb Emission limits met. Refer to Attachments 2 and 6. Annual mass emission: 639 lb See Attachment 11 for readings. Emission limit met. Refer to Attachments 2 and 6. Condition met. Last annual test was 12/8/21. See Attachment 3 for results. Tests done when turbine was online. Several turbine outages occurred in this monitoring period. Monthly test results are in Attachment 6.
S-58 Diesel Engine Back-up Generator	Condition 22850 1. Hours of operation	50 hours/year reliability-related hours	Condition met. Generator ran 0.4 hours in last 12 months. Refer to Attachment 5.
S-100 Municipal Wastewater Treatment Plant	Condition 21759 1. Total wastewater flow	120 MGD monthly dry weather average 325 MGD monthly wet weather average	Condition met. Maximum wet weather monthly flow in period was 94 MGD influent. Maximum dry weather monthly flow was 49 MGD. See Attachment 7.

Source	Monitoring Requirement	Limit	Monitoring Results
<p>S-110 Headworks</p> <p>A-462 Carbon Scrubber</p> <p>A-463/A-464 Biotrickling Filters/Carbon Scrubbers</p>	<p>Condition 17335</p> <p>3. Inlet and outlet H₂S concentrations of carbon beds, as well as any other appropriate operating parameters shall be continuously monitored and reviewed on a daily basis to determine when carbon adsorption bed breakthrough is imminent or has been reached.</p>		<p>Monitoring results for inlet and outlet H₂S and any noted outages are in Attachment 8.</p> <p>Maintenance records for scrubber are in Attachment 9.</p>
<p>S-170 Sludge handling</p> <p>A-7/A-8 Atomized Mist Scrubbers</p>	<p>Condition 18006</p> <p>1. Monitor and record on a daily basis the activated sewage sludge throughput through S-170.</p>		<p>Sludge throughput is recorded in Attachment 10.</p> <p>Maintenance records for the scrubber are in Attachment 9.</p>
<p>S-172 Pre-Digestion Blend Tanks</p> <p>A-9 Iron Oxide</p> <p>A-10 Biofilter</p> <p>A-11 Activated Carbon</p>	<p>Condition 25919</p> <p>1. Throughput of waste shall not exceed 2,100,000 gallons during any day.</p> <p>4. POC emissions shall not exceed 2.02 lb/calendar day and 20.3 ppm total carbon on a daily basis.</p> <p>6. Quarterly POC readings at outlet of A11</p>		<p>Condition met. See Attachment 11 for record of daily throughput.</p> <p>See item 6 for test results.</p> <p>Condition met. POC readings in this reporting period were less than 2ppm.</p>

Source	Monitoring Requirement	Limit	Monitoring Results
<p>S-180 Anaerobic Digesters</p> <p>Note: A-194, A-195 are enclosed flares</p> <p>A-190, A-191, A-192, and A- 193 are older “candlestick” flares</p>	<p>Condition 18860</p> <p>2. Monthly inspection of digesters and gas management/venting prevention</p> <p>3. Sulfur content of digester gas</p> <p>4. Combined digester gas flow rate to combustion sources</p> <p>5. Combustion zone temperature monitoring to A-194, A-195</p> <p>6. Gas flow to A-194, A-195</p> <p>7. Source testing of A-194, A-195 (every 8,760 hours of use or 5 years)</p> <p>Emission limits for A-194, A-195</p> <p>9. NO_x limit</p> <p>10. CO limit</p> <p>11. H₂S limit</p> <p>12. Daily sampling and testing of digester gas for H₂S</p> <p>13. Hours of flaring per day</p>	<p><200 ppmv annual average</p> <p><3,400 scfm annual average</p> <p>>1,200F, after 15-min start-up</p> <p><3,000 cfm, 1-hr average</p> <p>0.12 lb/MMBtu</p> <p>0.20 lb/MMBtu</p> <p>0.032 lb/hour</p>	<p>Inspections conducted by Operations on daily rounds.</p> <p>Condition met. Refer to Attachment 12 for the H₂S gas sampling records.</p> <p>Condition met. See Attachment 13 for combined digester gas flow rates.</p> <p>Condition met.</p> <p>Condition met.</p> <p>Condition met. Source test conducted 11/7/19.</p> <p>Conditions met. Source test conducted 11/7/19.</p> <p>Refer to Attachment 11. Note: 7/18/21 sample missed. See cover letter for details.</p> <p>Refer to Attachment 1 for the hours of flaring per day.</p>

Attachment Index:

1	Combustion Source Air Permit Data
2	Combustion Summaries – Boiler, Engines, Turbine, Flares
3	Annual Source Test Results
4a	Gasoline Facility Throughput
4b	Gasoline Tank Static Pressure Performance Test Results
5	Hours of Operation for Stand-by Emergency Generators
6	Turbine Monthly Test Results
7	Monthly Wastewater Summary
8	IPS Carbon Bed Inlet/Outlet H ₂ S Readings
9	Odor Scrubber Maintenance Records for S-170 and S-110
10	Activated Sludge Throughput for S-170
11	Blend Tank Throughput Records
12	Digester Gas H ₂ S Sampling
13	Combined Digester Gas Combustion Volumes

ATTACHMENT 1

COMBUSTION SOURCE AIR PERMIT DATA

(engines, turbine, boiler, flares)

**DAILY REPORTS
JULY-DECEMBER 2021**



July - 2021

Daily Data for Air Permit

Elmer E. Ross Power Station

Date	Run Time, Hours				KiloWatt Hours Generated				Fuel Oil Used, gal				Gas, FCI Meter, cu ft			
	Eng 1	Eng 2	Eng 3	Total	Gen. 1	Gen 2	Gen 3	Total	Eng. 1	Eng. 2	Eng. 3	Total	Eng. 1	Eng. 2	Eng. 3	Total
1st	0	24	24	48	0	51,812	52,852	104,664	0	48	40	88	0	899,456	917,518	1,816,974
2nd	0	24	24	48	0	51,638	52,675	104,314	0	40	43	83	0	898,592	916,634	1,815,226
3rd	0	24	24	48	0	47,038	48,092	95,130	0	47	36	83	0	840,830	859,657	1,700,486
4th	0	8	24	32	0	11,370	49,215	60,586	0	16	47	63	0	208,440	902,202	1,110,642
5th	0	0	20	20	0	0	40,400	40,400	0	0	26	26	0	0	731,528	731,528
6th	0	10	14	24	0	24,422	31,333	55,756	0	28	37	64	0	431,771	553,950	985,721
7th	0	24	24	48	0	51,833	52,827	104,660	0	56	57	112	0	903,285	920,611	1,823,897
8th	0	24	24	48	0	51,863	52,850	104,713	0	53	46	98	0	900,797	917,953	1,818,751
9th	0	24	24	48	0	50,663	51,650	102,313	0	43	41	84	0	879,631	896,770	1,776,401
10th	0	24	24	48	0	51,786	52,775	104,561	0	47	41	88	0	897,165	914,295	1,811,460
11th	0	24	8	32	0	42,771	13,232	56,004	0	44	17	61	0	770,382	238,337	1,008,719
12th	0	16	15	31	0	36,301	32,755	69,055	0	32	27	59	0	655,584	591,540	1,247,125
13th	0	24	24	48	0	51,518	52,579	104,096	0	48	79	127	0	891,699	910,058	1,801,757
14th	4	21	24	49	3,778	41,790	51,979	97,546	67	82	55	204	62,691	693,521	862,614	1,618,826
15th	0	21	24	45	0	39,537	48,047	87,585	0	131	69	200	0	695,810	845,577	1,541,386
16th	0	24	24	48	0	51,770	52,831	104,601	0	49	37	86	0	946,277	965,668	1,911,946
17th	0	23	24	47	0	51,532	52,828	104,360	0	48	49	97	0	938,371	961,961	1,900,331
18th	0	24	24	48	0	51,828	52,900	104,728	0	47	40	86	0	949,166	968,789	1,917,956
19th	0	24	24	48	0	51,719	52,797	104,516	0	44	42	86	0	964,055	984,139	1,948,194
20th	0.2	24	24	48	193	51,788	52,878	104,858	32	40	43	115	3,544	953,120	973,165	1,929,829
21st	0.1	23	23	46	0	48,254	52,871	101,126	11	54	44	109	0	884,650	969,294	1,853,944
22nd	0	24	24	48	0	51,740	52,574	104,315	0	45	50	96	0	938,586	953,717	1,892,303
23rd	0	24	24	48	0	51,829	52,895	104,724	0	42	44	86	0	938,478	957,790	1,896,268
24th	0	24	24	48	0	51,730	52,823	104,553	0	43	39	82	0	944,239	964,191	1,908,429
25th	0	24	24	48	0	51,807	52,848	104,656	0	44	44	87	0	959,987	979,277	1,939,265
26th	0	24	24	48	0	51,882	52,903	104,785	0	42	33	75	0	973,602	992,769	1,966,370
27th	0	24	24	48	0	51,848	52,937	104,785	0	46	46	92	0	967,550	987,868	1,955,418
28th	0	24	24	48	0	51,853	52,905	104,758	0	45	47	92	0	950,789	970,073	1,920,862
29th	0.2	24	24	48	0	51,836	52,896	104,732	5	52	45	102	0	950,993	970,429	1,921,421
30th	0	24	24	48	0	51,795	52,858	104,654	0	42	38	80	0	930,156	949,242	1,879,399
31st	0	24	24	48	0	51,805	52,883	104,688	0	46	44	90	0	925,796	945,054	1,870,850
Totals	5	674	704	1,383	3,970	1,429,362	1,528,889	2,962,221	114	1,443	1,344	2,901	66,235	25,682,777	27,472,671	53,221,683
	Sum of Engines			1,383	Sum of Engines			2,962,221	Sum of Engines			2,901	Sum of Engines			53,221,683



July - 2021

Daily Data for Air Permit

SD1 Flare Burners, Turbine, and Boiler

Date	Flares A-190,191,192,193		Flares A-194,195			Turbine			Boiler		Run Time Check	
	Run Time Hrs	Gas cu ft	Run Time Hrs	Gas cu ft	Peak 1-hr Flow, SCFM	Run Time Hrs	Power KWh	Gas cu ft	Run Time Hrs	Gas cu ft	Engine Hrs	Eng + Boiler Hrs
1st	7	255,221	23	641,200	714	24	90,119	1,543,859	0	0	48	48
2nd	6	233,416	17	531,523	856	24	90,463	1,543,935	0	0	48	48
3rd	0	0	8	189,146	635	24	85,152	1,443,187	0	0	48	48
4th	0	0	0	0	10	24	80,606	1,406,633	0	0	32	32
5th	0	0	0	2,030	17	24	83,702	1,458,292	5	86,947	20	25
6th	0.7	6,955	1.0	14,895	121	24	90,963	1,591,590	10	193,119	24	34
7th	2	15,233	1.2	6,671	33	24	91,255	1,551,420	0	0	48	48
8th	0	0	15	400,714	621	24	90,241	1,545,560	0	0	48	48
9th	0	0	15	391,722	695	24	90,008	1,515,316	0	0	48	48
10th	0	0	16	507,347	752	24	88,245	1,503,569	0	0	48	48
11th	0	0	0	0	10	24	78,664	1,400,689	2	28,757	32	34
12th	1.4	13,972	0	0	4	24	89,789	1,560,412	7	120,811	31	38
13th	3	101,959	11	279,117	822	24	90,309	1,553,435	0	0	48	48
14th	0	0	24	893,269	1,051	24	91,896	1,551,610	4	43,519	49	53
15th	9	426,226	24	1,152,183	1,435	12	47,369	799,761	13	157,619	45	58
16th	0	0	24	1,624,975	1,467	0	0	0	24	269,019	48	72
17th	12	511,795	24	1,359,825	1,586	0	0	0	24	266,568	47	71
18th	0	0	24	786,049	746	0	0	0	24	314,504	48	72
19th	3	121,446	23	778,026	968	0	0	0	24	292,003	48	72
20th	24	1,001,661	24	709,259	655	0	0	0	24	296,030	48	72
21st	24	902,143	24	724,224	725	0	0	0	24	268,941	46	70
22nd	15	823,090	24	1,159,844	1,434	0	0	0	24	207,898	48	72
23rd	24	1,157,725	24	903,781	729	0	0	0	24	234,191	48	72
24th	19	811,622	24	739,863	649	0	0	0	24	223,074	48	72
25th	11	146,073	5	102,808	512	0	0	0	24	225,683	48	72
26th	12	251,134	0	6,110	68	0	0	0	24	198,115	48	72
27th	24	1,232,549	10	450,406	730	0	0	0	24	186,193	48	72
28th	24	1,119,376	24	867,036	756	0	0	0	24	209,463	48	72
29th	17	947,465	24	1,037,376	1,005	0	0	0	24	228,523	48	72
30th	24	1,341,267	24	1,007,656	801	0	0	0	24	213,653	48	72
31st	24	1,004,406	24	840,385	731	0	0	0	24	212,497	48	72
Totals	285	12,424,734	481	18,107,438		348	1,278,781	21,969,267	425	4,477,126	1,383	1,807
				Maximum	1,586						Maximum	72



August - 2021

Daily Data for Air Permit

Elmer E. Ross Power Station

Date	Run Time, Hours				KiloWatt Hours Generated				Fuel Oil Used, gal				Gas, FCI Meter, cu ft			
	Eng 1	Eng 2	Eng 3	Total	Gen. 1	Gen 2	Gen 3	Total	Eng. 1	Eng. 2	Eng. 3	Total	Eng. 1	Eng. 2	Eng. 3	Total
1st	0	24	24	48	0	50,060	51,144	101,204	0	39	35	74	0	918,840	938,736	1,857,576
2nd	0	24	24	48	0	51,820	52,877	104,697	0	32	31	62	0	954,602	974,059	1,928,661
3rd	0	24	24	48	0	51,893	52,935	104,828	0	43	42	85	0	946,017	965,014	1,911,031
4th	0	24	24	48	0	51,836	52,892	104,728	0	38	34	72	0	928,127	947,043	1,875,170
5th	0.2	24	24	48	36	51,870	52,906	104,811	11	38	37	86	0	937,875	956,608	1,894,483
6th	0	24	24	48	0	51,831	52,860	104,691	0	38	50	88	0	935,998	954,568	1,890,566
7th	0	24	24	48	0	51,846	52,879	104,725	0	36	36	71	0	956,088	975,145	1,931,233
8th	0	24	24	48	0	51,831	52,839	104,670	0	40	33	74	0	938,715	956,978	1,895,693
9th	0	21	21	42	0	44,517	45,121	89,638	0	40	38	78	0	948,915	961,777	1,910,693
10th	0	24	24	48	0	51,921	52,924	104,845	0	37	16	53	0	954,876	973,332	1,928,208
11th	0	24	24	48	0	51,889	52,921	104,810	0	38	38	76	0	946,328	965,147	1,911,474
12th	0	24	24	48	0	51,879	52,940	104,820	0	33	29	62	0	956,966	976,541	1,933,507
13th	0	24	24	48	0	51,875	52,909	104,784	0	42	43	85	0	947,741	966,635	1,914,376
14th	0	24	24	48	0	51,833	52,880	104,713	0	34	35	69	0	949,735	968,915	1,918,649
15th	0	24	24	48	0	51,977	53,013	104,989	0	40	36	76	0	955,694	974,745	1,930,439
16th	0	19	24	43	0	40,899	52,261	93,161	0	36	35	72	0	783,494	1,001,150	1,784,645
17th	0	24	24	48	0	51,705	52,782	104,486	0	38	34	71	0	1,016,062	1,037,218	2,053,280
18th	0	24	24	48	0	51,643	52,728	104,371	0	38	38	75	0	949,231	969,172	1,918,403
19th	0	24	24	48	0	51,853	52,974	104,827	0	37	30	67	0	1,032,877	1,055,210	2,088,088
20th	0.2	24	24	48	43	51,857	52,934	104,834	16	39	39	94	0	968,431	988,532	1,956,963
21st	0	24	24	48	0	51,927	53,012	104,939	0	33	32	66	0	934,586	954,120	1,888,706
22nd	0	24	24	48	0	49,853	50,971	100,824	0	46	40	86	0	918,893	939,502	1,858,395
23rd	0.2	24	24	48	20	51,859	52,919	104,798	7	35	36	77	0	963,111	982,796	1,945,907
24th	0	24	24	48	0	51,868	52,900	104,768	0	42	34	76	0	954,536	973,536	1,928,073
25th	0.2	24	24	48	31	51,761	52,832	104,624	5	36	37	79	0	948,408	968,029	1,916,437
26th	0	24	24	48	0	51,306	52,332	103,638	0	59	59	118	0	933,620	952,286	1,885,906
27th	0	24	24	48	0	51,810	52,790	104,600	0	34	33	67	0	952,387	970,409	1,922,796
28th	0.2	24	24	48	22	51,901	52,878	104,801	8	41	37	86	0	945,122	962,902	1,908,024
29th	0	24	24	48	0	51,961	52,924	104,885	0	35	36	71	0	943,497	960,986	1,904,483
30th	0	24	24	48	0	51,655	52,621	104,277	0	40	34	74	0	951,444	969,231	1,920,675
31st	0.2	24	24	48	40	51,875	52,847	104,762	6	37	37	80	0	954,962	972,861	1,927,823
Totals	1.3	736	741	1,478	192	1,584,612	1,626,745	3,211,548	53	1,195	1,123	2,371	0	29,327,180	30,113,185	59,440,365
	Sum of Engines			1,478	Sum of Engines			3,211,548	Sum of Engines			2,371	Sum of Engines			59,440,365



August - 2021

Daily Data for Air Permit

SD1 Flare Burners, Turbine, and Boiler

Date	Flares A-190,191,192,193		Flares A-194,195			Turbine			Boiler		Run Time Check	
	Run Time Hrs	Gas cu ft	Run Time Hrs	Gas cu ft	Peak 1-hr Flow, SCFM	Run Time Hrs	Power KWh	Gas cu ft	Run Time Hrs	Gas cu ft	Engine Hrs	Eng + Boiler Hrs
1st	0	0	14	326,675	829	0	0	0	24	200,142	48	72
2nd	12	323,145	10	278,511	705	0	0	0	24	169,114	48	72
3rd	4	244,460	24	1,753,781	1,867	0	0	0	24	188,156	48	72
4th	0	0	24	1,759,942	1,748	0	0	0	24	200,260	48	72
5th	8	371,033	24	1,453,688	1,863	0	0	0	24	206,900	48	72
6th	4	127,767	24	1,440,650	1,399	0	0	0	24	212,710	48	72
7th	0	0	24	2,183,100	1,794	0	0	0	24	246,153	48	72
8th	2	19,451	20	695,504	1,262	0	0	0	24	227,863	48	72
9th	12	388,237	12	694,798	1,396	0	0	0	24	324,420	42	66
10th	0	12,268	24	1,818,457	1,851	0	0	0	24	249,488	48	72
11th	9	393,144	24	2,249,077	1,908	0	0	0	24	236,867	48	72
12th	2	77,500	24	1,974,590	1,745	0	0	0	24	230,426	48	72
13th	0	12,027	24	1,292,751	1,259	0	0	0	23	217,503	48	71
14th	0	0	24	1,509,764	1,308	0	0	0	24	209,270	48	72
15th	0	2,598	24	881,806	853	0	0	0	24	202,447	48	72
16th	17	576,712	0	0	0	0	0	0	24	211,880	43	67
17th	24	1,536,621	1	69,232	787	0	0	0	24	199,428	48	72
18th	13	591,421	24	1,685,449	1,775	0	0	0	24	207,273	48	72
19th	24	1,074,387	24	1,500,656	1,296	0	0	0	24	205,076	48	72
20th	22	880,345	24	1,369,539	1,234	0	0	0	24	267,949	48	72
21st	0	0	24	1,340,335	1,265	0	0	0	24	347,535	48	72
22nd	0	0	16	446,260	821	0	0	0	24	333,840	48	72
23rd	8	128,113	17	1,218,821	1,813	0	0	0	24	292,715	48	72
24th	12	522,732	24	1,772,686	1,794	0	0	0	24	296,771	48	72
25th	24	926,497	24	1,787,901	1,601	0	0	0	24	313,457	48	72
26th	24	870,964	24	1,677,810	1,524	0	0	0	24	302,976	48	72
27th	24	855,518	24	1,683,522	1,453	0	0	0	24	288,619	48	72
28th	19	643,721	24	1,538,024	1,303	0	0	0	24	290,859	48	72
29th	9	153,936	14	517,112	1,010	0	0	0	24	290,428	48	72
30th	11	165,401	12	604,344	1,155	0	0	0	24	270,825	48	72
31st	12	519,021	24	1,789,771	1,696	0	0	0	24	266,611	48	72
Totals	296	11,417,018	619	39,314,556		0	0	0	743	7,707,963	1,478	2,221
				Maximum	1,908						Maximum	72



September - 2021

Daily Data for Air Permit

Elmer E. Ross Power Station

Date	Run Time, Hours				KiloWatt Hours Generated				Fuel Oil Used, gal				Gas, FCI Meter, cu ft			
	Eng 1	Eng 2	Eng 3	Total	Gen. 1	Gen 2	Gen 3	Total	Eng. 1	Eng. 2	Eng. 3	Total	Eng. 1	Eng. 2	Eng. 3	Total
1st	0	24	24	48	0	51,882	52,841	104,723	0	41	33	74	0	946,228	963,718	1,909,946
2nd	0	24	24	48	0	51,895	52,883	104,777	0	43	42	85	0	938,461	956,324	1,894,785
3rd	0	24	24	48	0	51,915	52,923	104,838	0	33	34	67	0	942,567	960,852	1,903,419
4th	0	24	24	48	0	51,957	52,916	104,873	0	49	44	93	0	940,983	958,363	1,899,346
5th	0	24	24	48	0	51,937	52,938	104,876	0	38	40	78	0	947,461	965,724	1,913,185
6th	0	24	24	48	0	51,179	52,114	103,293	0	44	38	82	0	956,109	973,591	1,929,700
7th	0	24	24	48	0	51,958	52,986	104,944	0	39	42	81	0	966,149	985,254	1,951,403
8th	0.2	24	24	48	25	51,988	52,983	104,997	6	44	36	86	0	967,289	985,800	1,953,088
9th	0	24	24	48	0	52,041	52,923	104,965	0	41	41	82	0	962,799	979,120	1,941,919
10th	0	24	24	48	0	51,828	52,818	104,645	0	38	31	69	0	949,950	968,097	1,918,047
11th	0	24	23	47	0	51,879	50,995	102,873	0	44	53	97	0	944,500	928,405	1,872,906
12th	0	24	24	48	0	51,830	52,868	104,698	0	36	30	66	0	947,372	966,339	1,913,711
13th	0.2	24	24	48	35	50,033	52,621	102,690	12	52	45	110	0	934,362	982,689	1,917,052
14th	0	24	24	48	0	51,126	52,185	103,312	0	44	42	86	0	943,795	963,345	1,907,140
15th	0	24	24	48	0	51,779	52,797	104,576	0	47	45	93	0	947,208	965,830	1,913,037
16th	0	24	24	48	0	51,864	52,878	104,741	0	39	38	77	0	945,919	964,409	1,910,329
17th	0	24	24	48	0	51,843	52,855	104,698	0	43	36	79	0	941,328	959,716	1,901,045
18th	0	24	24	48	0	51,867	52,902	104,769	0	40	40	80	0	934,634	953,295	1,887,930
19th	0	24	24	48	0	51,831	52,857	104,688	0	41	35	76	0	941,302	959,926	1,901,228
20th	0	24	24	48	0	50,979	51,948	102,927	0	42	41	83	0	961,565	979,851	1,941,416
21st	0	24	24	48	0	51,955	52,914	104,869	0	37	30	67	0	949,761	967,286	1,917,046
22nd	0.5	24	24	48	150	51,763	52,776	104,690	21	51	50	122	0	938,884	957,260	1,896,143
23rd	0	24	24	48	0	51,984	52,981	104,965	0	38	35	73	0	855,560	871,975	1,727,535
24th	0	24	24	48	0	51,874	52,868	104,742	0	44	39	83	0	842,698	858,856	1,701,553
25th	0	24	24	48	0	51,945	52,895	104,840	0	40	40	80	0	848,929	864,455	1,713,384
26th	0	24	24	48	0	51,908	52,829	104,738	0	41	36	77	0	864,362	879,704	1,744,066
27th	0	24	24	48	0	51,900	52,911	104,811	0	42	41	83	0	879,954	897,107	1,777,061
28th	0	24	24	48	0	51,843	52,358	104,201	0	39	30	69	0	852,666	861,127	1,713,793
29th	0	24	24	48	0	51,875	52,873	104,748	0	45	44	90	0	860,657	877,215	1,737,872
30th	2.4	24	24	50	3,308	49,929	52,758	105,996	34	41	34	109	55,082	831,306	878,405	1,764,793
Totals	3.3	720	719	1,442	3,519	1,550,587	1,581,395	3,135,501	73	1,256	1,164	2,493	55,082	27,684,759	28,234,037	55,973,877
	Sum of Engines		1,442		Sum of Engines		3,135,501		Sum of Engines		2,493		Sum of Engines		55,973,877	



September - 2021

Daily Data for Air Permit

SD1 Flare Burners, Turbine, and Boiler

Date	Flares A-190,191,192,193		Flares A-194,195			Turbine			Boiler		Run Time Check	
	Run Time Hrs	Gas cu ft	Run Time Hrs	Gas cu ft	Peak 1-hr Flow, SCFM	Run Time Hrs	Power KWh	Gas cu ft	Run Time Hrs	Gas cu ft	Engine Hrs	Eng + Boiler Hrs
1st	24	1,083,144	24	1,903,350	1,503	0	0	0	24	294,794	48	72
2nd	24	849,017	24	1,702,723	1,306	0	0	0	24	301,316	48	72
3rd	24	1,013,155	24	1,905,604	1,499	0	0	0	24	337,335	48	72
4th	22	637,372	24	1,443,967	1,265	0	0	0	24	346,169	48	72
5th	1	4,028	23	679,255	871	0	0	0	24	324,415	48	72
6th	14	260,023	15	687,116	1,043	0	0	0	24	275,091	48	72
7th	22	816,135	24	1,242,046	1,205	0	0	0	24	273,884	48	72
8th	15	655,770	24	1,719,373	1,715	0	0	0	24	277,740	48	72
9th	24	1,384,710	24	1,781,889	1,446	0	0	0	24	304,425	48	72
10th	24	1,583,637	24	1,993,855	1,541	0	0	0	24	329,143	48	72
11th	20	854,273	24	1,549,939	1,514	0	0	0	24	344,170	47	71
12th	0	0	24	1,110,925	1,119	0	0	0	24	323,237	48	72
13th	15	503,740	16	971,214	1,647	0	0	0	24	316,751	48	72
14th	17	715,130	24	1,420,424	1,186	0	0	0	24	347,988	48	72
15th	2	59,513	24	2,023,733	1,835	0	0	0	24	358,208	48	72
16th	10	391,421	24	1,508,377	1,581	0	0	0	24	344,909	48	72
17th	4	121,896	24	1,766,552	1,617	0	0	0	24	358,005	48	72
18th	8	328,382	24	1,789,129	1,812	0	0	0	24	353,149	48	72
19th	4	77,248	20	585,762	850	0	0	0	24	284,076	48	72
20th	21	976,008	19	771,166	836	0	0	0	24	251,655	48	72
21st	23	1,094,519	24	1,558,461	1,835	0	0	0	24	289,769	48	72
22nd	20	875,763	24	1,491,051	1,254	0	0	0	23	342,738	48	72
23rd	10	546,146	23	1,493,143	1,811	0	0	0	24	376,838	48	72
24th	4	128,645	24	1,512,228	1,541	0	0	0	24	394,227	48	72
25th	0	0	24	1,370,344	1,376	0	0	0	24	418,498	48	72
26th	0	0	22	553,333	707	0	0	0	24	402,343	48	72
27th	23	894,205	19	1,018,190	1,146	0	0	0	24	349,346	48	72
28th	24	1,076,903	24	1,511,740	1,287	0	0	0	24	334,580	48	72
29th	12	599,804	24	1,567,934	1,431	2	102	101,931	22	315,995	48	70
30th	16	664,466	24	1,532,102	1,793	0	0	0	21	300,721	50	72
Totals	426	18,195,054	683	42,164,928		2	102	101,931	713	9,871,517	1,442	2,156
				Maximum	1,835						Maximum	72



October - 2021

Daily Data for Air Permit

Elmer E. Ross Power Station

Date	Run Time, Hours				KiloWatt Hours Generated				Fuel Oil Used, gal				Gas, Roots Meter, cu ft			
	Eng 1	Eng 2	Eng 3	Total	Gen. 1	Gen 2	Gen 3	Total	Eng. 1	Eng. 2	Eng. 3	Total	Eng. 1	Eng. 2	Eng. 3	Total
1st	5	24	20	49	7,963	50,501	41,102	99,566	79	36	75	191	127,359	807,731	657,410	1,592,500
2nd	0	24	24	48	0	48,314	49,338	97,652	0	46	42	89	0	828,377	845,938	1,674,316
3rd	0	24	24	48	0	43,697	46,749	90,446	0	73	37	110	0	766,920	820,495	1,587,415
4th	0	24	24	48	0	51,184	52,240	103,424	0	43	41	85	0	888,394	906,722	1,795,116
5th	0	24	24	48	0	51,826	52,862	104,689	0	33	32	65	0	883,590	901,251	1,784,841
6th	0	24	24	48	0	51,829	52,807	104,636	0	48	43	91	0	866,146	882,499	1,748,644
7th	0.4	24	24	48	0	51,772	52,831	104,603	36	38	39	113	0	849,691	867,067	1,716,758
8th	0	24	24	48	0	51,820	52,839	104,660	0	46	41	87	0	852,116	868,875	1,720,990
9th	0	24	24	48	0	51,803	52,882	104,685	0	38	40	78	0	854,881	872,687	1,727,568
10th	0	24	24	48	0	51,110	52,138	103,248	0	41	33	74	0	868,117	885,566	1,753,683
11th	1.2	24	24	49	1,336	51,862	52,967	106,165	62	42	39	142	22,547	875,119	893,771	1,791,436
12th	0	24	24	48	0	51,865	52,871	104,736	0	40	32	71	0	849,918	866,404	1,716,322
13th	1.2	24	24	49	1,942	51,191	52,626	105,759	40	56	46	142	31,727	836,322	859,753	1,727,802
14th	0	24	24	48	0	49,392	50,405	99,797	0	37	36	73	0	819,628	836,444	1,656,072
15th	0	24	24	48	0	48,093	49,143	97,236	0	79	72	151	0	811,582	829,288	1,640,870
16th	0	24	24	48	0	47,154	48,229	95,382	0	38	39	77	0	809,288	827,743	1,637,032
17th	0	24	2	26	0	51,204	1,568	52,772	0	43	4	47	0	865,671	26,505	892,176
18th	0	24	17	41	0	49,575	34,880	84,455	0	42	43	85	0	852,769	599,998	1,452,767
19th	0	24	23	47	0	48,699	49,774	98,472	0	44	38	82	0	816,273	834,292	1,650,565
20th	0	24	24	48	0	47,707	48,188	95,895	0	81	55	136	0	794,449	802,463	1,596,912
21st	0	24	24	48	0	46,884	47,911	94,795	0	43	38	81	0	800,991	818,521	1,619,512
22nd	0	24	24	48	0	48,040	49,087	97,128	0	39	37	77	0	811,671	829,357	1,641,028
23rd	0	24	24	48	0	47,950	48,983	96,934	0	43	41	84	0	807,764	825,167	1,632,931
24th	0	24	24	48	0	51,850	52,900	104,749	0	38	37	75	0	864,725	882,235	1,746,960
25th	0	24	17	41	0	36,394	35,186	71,580	0	76	31	108	0	617,151	596,673	1,213,824
26th	0	24	24	48	0	51,656	52,841	104,497	0	48	40	88	0	867,130	887,024	1,754,154
27th	0.5	24	24	49	710	51,801	52,904	105,415	20	39	40	100	11,861	865,029	883,440	1,760,330
28th	0	24	24	48	0	51,807	52,820	104,628	0	41	17	58	0	850,791	867,424	1,718,215
29th	0	24	24	48	0	51,841	52,824	104,664	0	42	40	82	0	852,995	869,167	1,722,162
30th	0	24	24	48	0	51,825	52,808	104,633	0	37	31	69	0	860,497	876,815	1,737,312
31st	0	24	24	48	0	51,842	52,822	104,664	0	48	44	92	0	877,126	893,701	1,770,828
Totals	8	744	703	1,455	11,951	1,542,488	1,497,524	3,051,963	236	1,441	1,225	2,902	193,493	25,872,854	25,114,696	51,181,042
	Sum of Engines			1,455	Sum of Engines			3,051,963	Sum of Engines			2,902	Sum of Engines			51,181,042



October - 2021

Daily Data for Air Permit

SD1 Flare Burners, Turbine, and Boiler

Date	Flares A-190,191,192,193		Flares A-194,195			Turbine			Boiler		Run Time Check	
	Run Time Hrs	Gas cu ft	Run Time Hrs	Gas cu ft	Peak 1-hr Flow, SCFM	Run Time Hrs	Power KWh	Gas cu ft	Run Time Hrs	Gas cu ft	Engine Hrs	Eng + Boiler Hrs
1st	19	740,743	24	1,298,314	1,175	12	37,545	656,365	13	204,518	49	62
2nd	10	168,456	4	83,332	554	23	70,782	1,224,520	1	28,202	48	49
3rd	10	174,957	0	0	0	12	31,603	580,057	12	195,965	48	60
4th	17	558,107	12	389,144	724	4	13,545	249,257	19	243,180	48	67
5th	16	782,102	24	933,725	865	0	0	0	24	293,388	48	72
6th	24	1,310,457	24	1,208,004	1,217	0	0	0	24	333,478	48	72
7th	24	1,252,587	24	1,539,677	1,316	0	0	0	24	363,871	48	72
8th	16	764,518	24	1,557,946	1,703	0	0	0	24	389,593	48	72
9th	0	0	24	1,098,188	1,252	0	0	0	24	365,735	48	72
10th	12	110,340	1	35,504	466	0	0	0	24	336,298	48	72
11th	6	77,480	12	1,126,544	1,803	0	0	0	22	295,755	49	71
12th	10	412,184	24	1,950,174	1,840	0	0	0	24	363,731	48	72
13th	16	653,273	24	1,274,807	1,271	2	7,782	139,083	18	290,830	49	68
14th	8	344,721	24	1,332,249	1,574	16	46,455	814,882	8	127,769	48	56
15th	0	0	24	974,086	1,296	24	71,550	1,247,074	0	0	48	48
16th	0	4,203	17	768,205	1,385	14	40,167	743,650	10	148,600	48	58
17th	0	0	0	2,415	19	24	70,056	1,262,235	23	244,796	26	49
18th	10	341,566	11	419,399	854	21	69,505	1,202,147	9	99,832	41	50
19th	0	1,117	24	1,129,089	1,274	21	60,287	1,066,508	3	47,900	47	50
20th	0	0	24	1,540,223	1,438	18	52,994	918,583	6	109,668	48	54
21st	5	51,237	22	1,290,985	1,430	16	46,775	847,402	8	174,346	48	56
22nd	0	0	24	1,728,224	1,531	24	71,638	1,256,357	0	0	48	48
23rd	0	2,789	21	1,319,439	1,363	24	70,286	1,207,330	0	11,845	48	48
24th	3	45,247	24	954,637	1,011	0	0	0	24	459,553	48	72
25th	19	1,213,555	14	533,956	878	0	0	0	23	497,590	41	64
26th	24	1,081,011	0	0	0	0	0	0	24	488,983	48	72
27th	24	1,453,312	0	0	0	0	0	0	23	433,479	49	72
28th	24	2,029,086	0	0	0	0	0	0	24	453,620	48	72
29th	24	1,706,879	11	587,440	1,231	0	0	0	24	462,022	48	72
30th	9	285,282	24	1,364,545	1,395	0	0	0	24	471,456	48	72
31st	3	95,448	24	751,098	804	0	0	0	24	439,913	48	72
Totals	333	15,660,657	509	27,191,348		254	760,969	13,415,452	510	8,375,914	1,455	1,965
					Maximum		1,840				Maximum	72



November - 2021

Daily Data for Air Permit

Elmer E. Ross Power Station

Date	Run Time, Hours				KiloWatt Hours Generated				Fuel Oil Used, gal				Gas, Roots Meter, cu ft			
	Eng 1	Eng 2	Eng 3	Total	Gen. 1	Gen 2	Gen 3	Total	Eng. 1	Eng. 2	Eng. 3	Total	Eng. 1	Eng. 2	Eng. 3	Total
1st	0	9	24	33	0	18,253	52,744	70,997	0	19	60	79	0	312,162	902,025	1,214,187
2nd	0	0	20	20	0	0	44,687	44,687	0	0	31	31	0	0	747,188	747,188
3rd	0	0	24	24	0	0	52,938	52,938	0	0	34	34	0	0	889,807	889,807
4th	0	0	24	24	0	0	52,868	52,868	0	0	27	27	0	0	887,475	887,475
5th	0	0	24	24	0	0	52,872	52,872	0	0	30	30	0	0	885,776	885,776
6th	0	0	24	24	0	0	52,927	52,927	0	0	30	30	0	0	882,053	882,053
7th	0	0	25	25	0	0	55,171	55,171	0	0	29	29	0	0	931,479	931,479
8th	0	0	24	24	0	0	52,993	52,993	0	0	31	31	0	0	906,880	906,880
9th	0	0	24	24	0	0	52,895	52,895	0	0	25	25	0	0	894,094	894,094
10th	0	0	24	24	0	0	52,867	52,867	0	0	32	32	0	0	900,303	900,303
11th	0	0	24	24	0	0	52,950	52,950	0	0	25	25	0	0	885,804	885,804
12th	0	0	24	24	0	0	52,888	52,888	0	0	34	34	0	0	885,079	885,079
13th	0	0	24	24	0	0	52,964	52,964	0	0	30	30	0	0	896,507	896,507
14th	0	0	24	24	0	0	52,840	52,840	0	0	28	28	0	0	896,013	896,013
15th	0	0	24	24	0	0	52,950	52,950	0	0	32	32	0	0	920,886	920,886
16th	0	0	24	24	0	0	52,933	52,933	0	0	13	13	0	0	891,215	891,215
17th	0	0	24	24	0	0	52,828	52,828	0	0	30	30	0	0	885,068	885,068
18th	0	8	18	26	0	17,626	38,070	55,696	0	46	30	76	0	296,460	640,316	936,776
19th	0	24	24	48	0	51,866	52,882	104,748	0	33	29	62	0	867,975	884,969	1,752,944
20th	0	24	24	48	0	51,961	52,896	104,857	0	26	23	49	0	882,565	898,445	1,781,010
21st	0	24	24	48	0	51,879	52,826	104,705	0	35	34	69	0	890,922	907,191	1,798,113
22nd	0	24	24	48	0	49,292	50,223	99,516	0	31	29	59	0	868,319	884,724	1,753,043
23rd	0	24	24	48	0	48,377	49,261	97,638	0	32	27	59	0	829,407	844,570	1,673,977
24th	0	24	24	48	0	51,979	52,865	104,844	0	30	32	62	0	865,028	879,762	1,744,791
25th	0	24	24	48	0	50,830	51,691	102,520	0	33	28	61	0	839,443	853,668	1,693,111
26th	0	24	12	36	0	47,285	20,666	67,950	0	32	18	50	0	811,452	354,643	1,166,095
27th	0	24	24	48	0	47,351	48,768	96,119	0	36	35	71	0	811,363	835,637	1,646,999
28th	0	0	22	22	0	0	40,086	40,086	0	0	29	29	0	0	721,250	721,250
29th	0	15	16	31	0	32,893	36,888	69,781	0	27	43	69	0	568,331	637,362	1,205,693
30th	0	24	24	48	0	51,873	52,895	104,768	0	30	33	62	0	863,486	880,506	1,743,992
Totals	0	272	689	961	0	571,464	1,493,332	2,064,796	0	409	912	1,321	0	9,706,914	25,310,692	35,017,607

Sum of Engines 961

Sum of Engines 2,064,796

Sum of Engines 1,321

Sum of Engines 35,017,607



November - 2021

Daily Data for Air Permit

SD1 Flare Burners, Turbine, and Boiler

Date	Flares A-190,191,192,193		Flares A-194,195			Turbine			Boiler		Run Time Check	
	Run Time Hrs	Gas cu ft	Run Time Hrs	Gas cu ft	Peak 1-hr Flow, SCFM	Run Time Hrs	Power KWh	Gas cu ft	Run Time Hrs	Gas cu ft	Engine Hrs	Eng + Boiler Hrs
1st	18	1,036,481	24	867,194	796	0	0	0	24	579,057	33	57
2nd	24	1,319,661	24	1,644,875	1,384	0	0	0	24	708,862	20	44
3rd	24	1,339,560	24	1,832,882	1,575	0	0	0	24	705,166	24	48
4th	24	1,339,184	24	1,793,598	1,405	0	0	0	24	718,024	24	48
5th	24	1,102,071	24	1,558,768	1,256	0	0	0	24	703,779	24	48
6th	23	952,148	24	1,371,412	1,188	0	0	0	24	704,671	24	48
7th	19	670,275	22	765,866	869	0	0	0	24	710,884	25	49
8th	24	1,502,720	17	742,454	917	0	0	0	24	709,687	24	48
9th	24	1,440,347	24	992,480	852	0	0	0	24	711,670	24	48
10th	24	1,515,123	23	1,300,937	1,458	0	0	0	24	674,984	24	48
11th	24	1,343,652	24	1,801,168	1,520	0	0	0	24	688,461	24	48
12th	21	969,053	24	1,556,599	1,518	0	0	0	24	670,909	24	48
13th	19	825,630	24	990,890	994	0	0	0	24	659,173	24	48
14th	9	224,603	24	820,042	834	0	0	0	24	631,261	24	48
15th	16	659,649	24	1,143,712	1,094	0	0	0	24	629,076	24	48
16th	24	1,419,541	24	1,175,841	959	0	0	0	24	647,204	24	48
17th	24	1,433,968	24	1,049,758	934	0	0	0	24	642,102	24	48
18th	23	1,197,421	24	907,456	890	0	0	0	24	642,256	26	50
19th	18	760,469	14	555,777	1,025	0	0	0	24	474,632	48	72
20th	24	964,832	0	0	0	0	0	0	24	456,727	48	72
21st	23	503,213	0	7,230	121	0	0	0	24	432,838	48	72
22nd	22	770,106	0	2,427	40	3	8,254	167,758	17	296,046	48	65
23rd	18	425,338	0	0	0	24	87,787	1,442,742	0	0	48	48
24th	21	799,428	20	685,218	763	12	41,520	494,889	17	324,014	48	65
25th	12	349,855	9	280,411	515	15	53,909	883,048	9	187,649	48	57
26th	7	91,578	0	0	0	24	86,409	1,417,021	12	204,713	36	48
27th	6	64,173	0	0	0	24	88,921	1,441,055	0	5,090	48	48
28th	1	8,943	0	0	0	24	77,406	1,319,200	24	320,119	22	46
29th	7	222,308	13	426,768	828	19	67,188	1,148,493	13	199,460	31	44
30th	16	481,538	15	483,896	789	24	78,879	1,295,697	7	116,365	48	55
Totals	564	25,732,868	492	24,757,661		169	590,273	9,609,904	603	15,154,879	961	1,564
					Maximum		1,575				Maximum	72



December - 2021

Daily Data for Air Permit

Elmer E. Ross Power Station

Date	Run Time, Hours				KiloWatt Hours Generated				Fuel Oil Used, gal				Gas, Roots Meter, cu ft			
	Eng 1	Eng 2	Eng 3	Total	Gen. 1	Gen 2	Gen 3	Total	Eng. 1	Eng. 2	Eng. 3	Total	Eng. 1	Eng. 2	Eng. 3	Total
1st	0	24	24	48	0	51,855	52,918	104,773	0	41	18	59	0	863,421	881,134	1,744,555
2nd	0	24	24	48	0	51,829	52,866	104,695	0	38	36	73	0	864,478	881,781	1,746,259
3rd	0	24	24	48	0	49,751	50,692	100,443	0	41	38	79	0	841,907	857,836	1,699,743
4th	0	24	24	48	0	50,013	50,988	101,002	0	41	34	75	0	841,606	858,017	1,699,623
5th	0	1	24	25	0	347	50,211	50,559	0	25	38	63	0	6,061	875,981	882,042
6th	3	3	24	30	4,872	6,139	52,901	63,912	75	15	38	128	81,054	102,126	880,017	1,063,197
7th	5	0	24	29	12,158	0	52,907	65,065	30	0	34	64	204,613	0	890,442	1,095,055
8th	24	0	24	48	50,426	0	48,910	99,337	27	0	41	68	857,975	0	832,181	1,690,155
9th	18	8	24	50	35,512	15,922	52,800	104,234	30	31	36	98	590,318	264,668	877,693	1,732,679
10th	5	24	20	49	12,604	49,802	37,693	100,098	39	32	30	102	212,690	840,421	636,080	1,689,190
11th	24	23	0	47	47,606	48,058	0	95,664	32	32	0	64	792,814	800,350	0	1,593,164
12th	24	10	0	34	40,607	15,027	1,541	57,174	29	33	7	68	729,237	269,860	27,666	1,026,763
13th	6	24	24	54	14,971	45,746	46,806	107,523	23	37	36	97	271,878	830,771	850,012	1,952,661
14th	24	24	24	72	51,171	51,092	52,209	154,472	35	37	34	106	873,851	872,487	891,564	2,637,902
15th	24	24	24	72	51,291	51,415	52,492	155,198	29	33	38	99	868,402	870,490	888,736	2,627,627
16th	24	24	24	72	51,239	51,126	52,163	154,528	25	33	34	92	874,809	872,876	890,576	2,638,262
17th	24	24	24	72	50,824	50,876	52,026	153,725	29	36	38	102	878,780	879,679	899,563	2,658,023
18th	24	24	24	72	51,253	51,921	52,838	156,012	29	30	31	90	855,882	867,032	882,342	2,605,256
19th	19	24	24	67	35,895	47,059	47,974	130,927	27	39	39	105	619,013	811,538	827,318	2,257,869
20th	15	24	24	63	29,219	48,303	49,425	126,946	26	28	30	84	511,178	845,054	864,687	2,220,919
21st	24	24	24	72	49,267	49,710	50,925	149,902	34	40	40	114	858,836	866,562	887,744	2,613,142
22nd	22	23	23	68	42,264	46,972	45,930	135,166	50	33	40	123	725,440	806,261	788,366	2,320,068
23rd	24	23	24	71	51,188	51,927	50,716	153,831	27	31	35	93	860,729	873,167	852,793	2,586,689
24th	24	24	24	72	51,174	51,895	52,715	155,785	26	37	31	93	866,491	878,703	892,582	2,637,776
25th	12	24	23	59	21,179	49,158	51,127	121,463	20	30	41	91	374,496	869,222	904,038	2,147,757
26th	0	24	24	48	0	51,046	52,776	103,822	0	41	34	75	0	891,009	921,204	1,812,212
27th	8	16	24	48	17,075	33,407	52,877	103,359	29	24	37	90	297,122	581,312	920,094	1,798,528
28th	11	13	24	48	22,291	28,651	52,660	103,602	17	24	37	78	386,455	496,728	912,976	1,796,159
29th	16	20	24	60	34,446	42,089	52,898	129,433	54	38	35	127	593,423	725,099	911,318	2,229,840
30th	24	24	24	72	51,281	51,743	52,890	155,915	26	32	38	96	884,138	892,092	911,878	2,688,109
31st	24	24	24	72	51,225	51,896	52,889	156,011	26	31	34	91	878,719	890,232	907,266	2,676,218
Totals	452	596	690	1,738	931,037	1,244,775	1,478,764	3,654,576	793	963	1,030	2,786	15,948,340	21,315,212	25,303,888	62,567,441
	Sum of Engines			1,738	Sum of Engines			3,654,576	Sum of Engines			2,786	Sum of Engines			62,567,441



December - 2021

Daily Data for Air Permit

SD1 Flare Burners, Turbine, and Boiler

Date	Flares A-190,191,192,193		Flares A-194,195			Turbine			Boiler		Run Time Check	
	Run Time Hrs	Gas cu ft	Run Time Hrs	Gas cu ft	Peak 1-hr Flow, SCFM	Run Time Hrs	Power KWh	Gas cu ft	Run Time Hrs	Gas cu ft	Engine Hrs	Eng + Boiler Hrs
1st	8	197,942	16	824,404	1,467	24	81,684	1,343,528	0	0	48	48
2nd	0.1	1,916	24	1,115,374	1,169	24	81,642	1,340,364	0	0	48	48
3rd	0	0	18	674,975	930	24	80,608	1,341,201	0	0	48	48
4th	0.2	6,119	17	606,997	803	24	78,173	1,257,909	0	0	48	48
5th	0	0	7	154,873	508	24	79,738	1,308,038	24	317,850	25	49
6th	8	297,090	24	803,757	959	24	84,915	1,410,160	18	250,224	30	48
7th	11	411,421	24	1,005,289	974	24	89,812	1,435,283	19	304,421	29	48
8th	11	487,387	24	823,423	741	23	75,690	1,248,882	7	122,649	48	55
9th	0.2	6,150	24	926,016	1,032	24	82,969	1,323,245	0	0	50	50
10th	2	56,150	16	546,036	977	24	84,070	1,353,717	0	0	49	49
11th	0	0	15	310,314	517	24	73,527	1,217,125	0	0	47	47
12th	0	0	0	5,955	46	24	50,936	1,006,588	9	126,806	34	43
13th	0.1	1,273	11	383,495	912	9	13,832	320,881	0	0	54	54
14th	0	0	24	782,411	786	0	0	0	0	0	72	72
15th	13	244,437	2	38,883	399	0	0	0	0	0	72	72
16th	15	208,295	8	268,518	716	0	0	0	0	0	72	72
17th	0	0	16	567,081	901	0	0	0	0	0	72	72
18th	2	33,045	23	842,852	893	0	0	0	0	0	72	72
19th	0	0	0	6,041	95	0	0	0	5	57,173	67	72
20th	0.5	5,977	0	0	0	0	0	0	9	121,915	63	72
21st	4	100,619	12	363,727	926	0	0	0	0	0	72	72
22nd	17	540,715	24	1,275,927	1,509	0	0	0	4	84,727	68	72
23rd	0	0	24	1,514,975	1,250	0	0	0	0	0	71	71
24th	0	0	20	654,582	1,006	0	0	0	0	0	72	72
25th	0.1	1,112	13	272,207	472	0	0	0	13	169,227	59	72
26th	0	0	17	443,417	659	0	0	0	24	377,198	48	72
27th	0	0	22	531,693	569	0	0	0	24	389,935	48	72
28th	0	0	22	798,216	848	0	0	0	24	389,280	48	72
29th	1.1	17,856	23	652,022	706	0	0	0	11	194,404	60	71
30th	0	0	13	222,870	429	0	0	0	0	0	72	72
31st	0	0	22	560,564	691	0	0	0	0	0	72	72
Totals	92	2,617,504	505	17,976,892		296	957,596	15,906,922	191	2,905,810	1,738	1,929
				Maximum	1,509						Maximum	72

Attachment 2 - Combustion Device Summaries

EBMUD Main Wastewater Plant

July 1 - December 31, 2021

Engine Thermal Throughput - Thermal Mass Meter, Common Engine Digester Gas Line

Turbine Operation			Data Source	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Semi-annual Totals	Limits
Run Time	Total	hrs	metered	348	-	2	254	169	296	1,068	389,820 MMBTU HHV per 12-Month period
Digester Gas	Total	cu ft	metered	21,969,267	-	101,931	13,415,452	9,609,904	15,906,922	61,003,475	
Thermal Throughput ³	Total	MMBTU		14,170	-	66	8,734	6,284	10,364	39,619	
	Total	MMBTU/hr		40.7	-	40.2	34.4	37.3	35.1	x	
Nitrogen Oxide ⁴	Max	ppm	sampled	-	-	-	6.1	6.1	-	x	23 ppm at any time
Carbon Monoxide ⁴	Max	ppm	sampled	-	-	-	1.6	1.6	-	x	100
Sulfur Dioxide ⁴	Max	ppm	sampled	-	-	-	7.5	7.6	-	x	150
Nitrogen Oxide	Total	lbs	calc'd	Based on last annual source test mass load rate (0.69 lbs/hr) x run time (4,128+1,068hrs)-->						3,585	34,400 lbs per 12-Month period
Carbon Monoxide	Total	lbs	calc'd	Based on last annual source test mass load rate (0.123 lbs/hr) x run time (4,128+1,068hrs)-->						639	92,200
Engine Operation											
Run Time	Eng #1	hrs	metered	5	1.3	3	8	-	452	469	25,316 hr/365 days
	Eng #2	hrs	metered	674	736	720	744	272	595	3,741	
	Eng #3	hrs	metered	704	741	719	703	689	691	4,247	
	Total	hrs	sum	1,383	1,478	1,442	1,455	961	1,739	8,458	
Diesel Fuel ¹	Eng #1	gal	calc'd	114	53	73	236	-	793	1,269	150,000 gal/365 days
	Eng #2	gal	calc'd	1,443	1,195	1,256	1,441	409	963	6,707	
	Eng #3	gal	calc'd	1,344	1,123	1,164	1,225	912	1,030	6,798	
	Total	gal	sum	2,901	2,371	2,493	2,902	1,321	2,786	14,774	
Digester Gas ²	Eng #1	cu ft	metered	62,691	-	55,082	193,493	-	15,948,340	16,259,607	25 MMBTU/hr 25 MMBTU/hr 25 MMBTU/hr
	Eng #2	cu ft	metered	25,684,530	29,327,180	27,684,759	25,872,854	9,706,914	21,315,212	139,591,449	
	Eng #3	cu ft	metered	27,474,461	30,113,185	28,234,037	25,114,696	25,310,692	25,303,888	161,550,959	
	Total	cu ft	sum	53,221,683	59,440,365	55,973,877	51,181,042	35,017,607	62,567,441	317,402,015	
Thermal Throughput ³	Eng #1	MMBTU/hr		12.4	5.6	13.0	19.1	-	23.2	x	
	Eng #2	MMBTU/hr		23.1	23.4	22.9	22.9	23.5	23.6	x	
	Eng #3	MMBTU/hr		23.7	23.9	23.4	23.5	24.2	24.1	x	
Natural Gas	Total	cu ft	metered	-	-	-	-	-	-	-	
Boiler Operation											
Run Time	Boiler	hrs	metered	425	743	713	510	603	191	3,185	20.41 MMBTU/hr
Digester Gas	Boiler	cu ft	metered	4,477,126	7,707,963	9,871,517	8,375,914	15,154,879	2,905,810	48,493,209	
Thermal Thruput ³	Boiler	MMBTU/hr		6.5	6.0	8.2	10.7	16.4	9.9	x	
Flare Operation (A-190,191,192,193)											
Run Time	Flares	hrs	metered	285	296	426	333	564	92	1,996	3,000 scfm/1 hr avg 12-month rolling avg
Digester Gas	Flares	cu ft	metered	12,424,734	11,417,018	18,195,054	15,660,657	25,732,868	2,617,504	86,047,835	
Thermal Thruput ³	Flares	MMBTU/hr		26.7	22.5	25.2	30.6	29.8	18.6	x	
Flare Operation (A-194,195)											
Run Time	Flares	hrs	metered	481	619	683	509	492	505	3,290	3,000 scfm/1 hr avg 12-month rolling avg
Digester Gas	Flares	cu ft	metered	18,107,438	39,314,556	42,164,928	27,191,348	24,757,661	17,976,892	169,512,823	
Thermal Thruput ³	Flares	MMBTU/hr		23.1	37.0	36.4	34.7	32.9	23.2	x	
Max Total Flow	Flares	scfm	metered	1,586	1,908	1,835	1,840	1,575	1,509	x	
Digester Gas HHV	Grab	BTU/scf	sampled	613	583	591	651	654	652	x	

(1) Diesel use per engine (gal) = diesel withdrawn from common storage tank daily (gal) x ratio of fuel used per engine (single day tank level / sum of all day tanks)

(2) Digester gas usage (cf) = DCS/PI flow data from common engine line meter (scfm) x minutes of gas flow x (engine hours/sum of engine hours)

(3) Thermal Throughput is estimated using the 12-month HHV average and monthly digester gas flow volumes combined with similar diesel fuel data..

(4) Monthly turbine exhaust check - ppm corrected to 15% O2. Several months missing since turbine was out of service during test windows.

ATTACHMENT 3

ANNUAL SOURCE TEST RESULTS

- Engine #2 (S-38) Source Test Summary, Blue Sky Environmental, 9/10/21
- Engine #3 (S-39) Source Test Summary, Blue Sky Environmental, 9/10/21
- Boiler Source Test Summary, Blue Sky Environmental, 12/8/2021
- Turbine Source Test Summary, Blue Sky Environmental, 12/8/2021
- Engine #1 (S-39) Source Test Summary, Blue Sky Environmental, 12/28/21 (report not yet received)

TABLE 1

East Bay Municipal Utility District
Engine #2 (S-38)

Parameter	Run 1	Run 2	Run 3	Average Limits	Permit Limits
Test Date	9/10/21	9/10/21	9/10/21		
Test Time	1001-1031	1047-1116	1129-1158		
Standard Temperature, °F	70	70	70		
Generator kW	2,115	2,189	2,206	2,170	
Engine kW	2,221	2,298	2,316	2,279	
Engine BHP	2,976	3,080	3,104	3,053	
Fuel:					
Fuel Flow Rate, dscfm (EPA Method 2)	9,002	9,063	9,123	9,063	
Oxygen (O ₂), % volume dry	12.50	12.73	12.75	12.66	
Carbon Dioxide (CO ₂), % volume dry	6.05	6.16	6.26	6.16	
NO_x Emissions (reported as NO₂):					
NO _x , ppmv	50.6	51.4	50.5	50.8	
NO _x , ppmv @ 15% O ₂	28.2	28.6	27.6	28.1	
NO _x , lb/hr	3.25	3.33	3.29	3.29	
NO _x , lb/day	78.1	79.8	78.9	78.9	
NO _x , g/BHP-hr	0.50	0.49	0.48	0.49	1.0
CO Emissions:					
CO, ppmv	322.5	322.7	325.7	323.6	
CO, ppmv @ 15% O ₂	179.7	179.6	177.8	179.0	
CO, lb/hr	12.61	12.70	12.91	12.74	
CO, lb/day	302.7	304.9	309.8	305.8	
CO, g/BHP-hr	1.92	1.87	1.89	1.89	3.0
Methane (CH₄) Emissions:					
CH ₄ , ppmv	2,206	2,207	2,241	2,218	
THC Emissions (reported as CH₄):					
THC, ppmv	2,253	2,228	2,325	2,269	
THC, lb/hr	50.36	50.13	52.65	51.0	
TNMHC Emissions (reported as CH₄):					
TNMHC, ppmv	47.2	21.7	83.9	50.9	
TNMHC, ppmv @ 15% O ₂	26.28	12.06	45.82	28.1	
TNMHC, lb/hr	1.05	0.49	1.90	1.15	
TNMHC, lb/day	25.3	11.7	45.6	27.5	
TNMHC, g/BHP-hr	0.16	0.072	0.28	0.17	0.6

WHERE:

ppmv = parts per million concentration by volume expressed on a dry gas basis
 lb/hr = pound per hour emission rate
 Tstd. = standard temperature (°R = °F + 460)
 MW = molecular weight
 dscfm = dry standard cubic feet per minute
 NO_x = oxides of nitrogen, reported as NO₂ (MW = 46)
 CO = carbon monoxide (MW = 28)
 CH₄ = Methane (MW = 16)
 THC = total hydrocarbons including CH₄, reported as CH₄ (MW = 16)
 TNMHC = total non-methane hydrocarbons, reported as CH₄ (MW = 16)

CALCULATIONS:

15% O₂ correction = ppm · 5.9 / (20.9 - %O₂)
 lb/hr = ppm · 8.223 E-5 · dscfm · MW of pollutant / Tstd. °R
 lb/day = lb/hr · 24
 g/Bhp-hr = (lb/hr) / engine Bhp · 453.6
 Engine BHP = Engine kW · 1.34
 Engine kW = Generator kW · 1.05

TABLE 2

Total Particulate Results

East Bay Municipal Utility District

Engine #2 (S-38)

Parameter	Run 1	Run 2	Run 2	Average Results	Permit Limits
Test Date	09/10/21	09/10/21	09/10/21	--	
Test Time	0952-1055	1200-1334	1351-1455	--	
Sample Volume, dscf	37.15	36.75	36.42	36.77	
Generator kW	2,115	2,189	2,206	2,170	
Engine kW	2,221	2,298	2,316	2,279	
Engine BHP	2,976	3,080	3,104	3,053	
Process Parameters:					
Isokinetic, %	104.1	102.2	100.6	102.3	
Duct Temperature, °F	397.3	395.7	397.9	397.0	
Velocity, ft/sec	93.74	93.60	95.09	94.14	
Stack Gas:					
Exhaust Flow Rate, acfm	16,228	16,203	16,462	16,298	
Exhaust Flow Rate, dscfm	9,002	9,063	9,123	9,063	
Moisture (H ₂ O), % volume	10.13	9.54	10.12	9.93	
Oxygen (O ₂), % volume dry	12.50	12.73	12.75	12.66	
Carbon Dioxide (CO ₂), % volume dry	6.05	6.16	6.26	6.16	
Filterable Particulate Emissions:					
Filterable Particulate, mg	1.13	2.04	0.53	1.23	
Filterable Particulate, gr/dscf	0.000469	0.000856	0.000226	0.000517	
Filterable Particulate, lb/hr	0.0362	0.0665	0.0177	0.0401	
Filterable Particulate, g/BHP-hr	0.00552	0.00979	0.00258	0.00596	0.085

WHERE:

dscf = sample volume in dry standard cubic foot
dscfm = dry standard cubic foot per minute
acfm = actual cubic foot per minute
H₂O, volume % = stack gas percent water vapor
gr/dscf = particulate concentration in grains per dscf
Filterable (F/H)

CALCULATIONS:

lb/hr emission rate = 0.00857 · gr/dscf · dscfm
g/BHP-hr = lb/hr · 453.6 / engine BHP
Engine kW = Generator kW · 1.05
Engine BHP = Engine kW · 1.34

TABLE 3

**East Bay Municipal Utility District
Engine #3 (S-39)**

Parameter	Run 1	Run 2	Run 3	Average Limits	Permit Limits
Test Date	9/10/21	9/10/21	9/10/21		
Test Time	1223-1253	1302-1332	1342-1412		
Standard Temperature, °F	70	70	70		
Generator kW	2,033	2,155	2,191	2,126	
Engine kW	2,140	2,268	2,306	2,238	
Engine BHp	2,868	3,040	3,090	2,999	
Fuel:					
Fuel Flow Rate, dscfm (natural gas)	0.0	0.0	0.0	0.0	
Fuel Flow Rate, dscfm (digester gas)	1,340	1,330	1,304	1,325	
Oxygen (O ₂), % volume dry	13.0	13.0	13.0	13.0	
Carbon Dioxide (CO ₂), % volume dry	5.64	5.73	5.69	5.69	
NO_x Emissions (reported as NO₂):					
NO _x , ppmv	38.7	37.6	37.6	38.0	
NO _x , ppmv @ 15% O ₂	29.0	28.2	28.0	28.4	70
CO Emissions:					
CO, ppmv	399.8	399.9	402.6	400.8	
CO, ppmv @ 15% O ₂	300.1	299.4	299.7	299.7	2,000

WHERE:

ppmv = parts per million concentration by volume expressed on a dry gas basis
 lb/hr = pound per hour emission rate
 Tstd. = standard temperature (°R = °F + 460)
 MW = molecular weight
 dscfm = dry standard cubic feet per minute
 NO_x = oxides of nitrogen, reported as NO₂ (MW = 46)
 CO = carbon monoxide (MW = 28)

CALCULATIONS:

15% O₂ correction = $\text{ppm} \cdot 5.9 / (20.9 - \%O_2)$
 Engine BHp = Engine kW * 1.34
 Engine kW = Generator kW / 0.95

TABLE #1

East Bay Municipal Utility District
Boiler (S-55)
S/N OL104755

Parameter	Run 1	Run 2	Run 3	Average Results	Permit Limits
Test Location	Outlet	Outlet	Outlet		
Test Date	12/8/21	12/8/21	12/8/21		
Test Condition	1146-1216	1334-1404	1415-1445		
Standard Temperature, °F	70	70	70		
Process Parameters:					
Boiler Rating, MMBtu/hr	20.925	20.93	20.93	20.93	
Operating Load, MMBtu/hr	11.4	9.9	9.0	10.1	
Firing Rate, % Capacity	54%	47%	43%	48%	
Stack Gas:					
Flow Rate, DSCFM (<i>EPA Method 19</i>)	2,154	2,010	1,817	1,994	
Oxygen (O ₂), % volume dry	3.8	5.1	5.0	4.6	
Carbon Dioxide (CO ₂), % volume dry	13.4	12.9	12.9	13.1	
NO_x Emissions:					
NO _x , ppmvd	23.2	17.5	17.0	19.2	
NO _x , ppmvd @ 3% O ₂	24.3	19.7	19.1	21.0	30
NO _x , lb/MMBtu	0.0295	0.0239	0.0231	0.0255	
NO _x , lb/hr	0.357	0.250	0.220	0.276	
CO Emissions:					
CO, ppmvd	1.5	<0.3	<0.3	0.7	
CO, ppmvd @ 3% O ₂	1.6	<0.3	<0.3	0.7	50
CO, lb/MMBtu	0.0012	<0.0003	<0.0002	0.0006	
CO, lb/hr	0.014	<0.003	<0.002	0.006	

WHERE:

ppmvd = parts per million concentration by volume expressed on a dry gas basis
 lb/hr = pound per hour emission rate
 lb/MMBtu = pound per million Btu emission rate
 Tstd. = standard temperature (°R = °F+460)
 MW = molecular weight
 DSCFM = dry standard cubic foot per minute
 NO_x = oxides of nitrogen, reported as NO₂ (MW = 46)
 CO = carbon monoxide (MW = 28)

CALCULATIONS:

3% O₂ Correction = ppm · 17.9 / (20.9 - %O₂)
 lb/hr = ppm · 8.223 E-05 · DSCFM · MW / Tstd. °R
 lb/MMBtu = Fd · MW · ppm · 2.59E-9 · 20.9/(20.9 - %O₂)
 Fd = 8,710 (EPA F-factor for natural gas)
 < value = < 2% of analyzer range

TABLE # 1

**East Bay Municipal Utility District
DG Turbine #1 (S-56)
3,394 kW**

Parameter	Run 1	Run 2	Run 3	Average Results	Permit Limits
Test Date	12/8/21	12/8/21	12/8/21		
Test Time	0853-0923	0936-1006	1016-1046		
Standard Temperature, °F	70	70	70	70	
Turbine kW	3,380	3,397	3,404	3,394	
Fuel:					
Fuel Flow Rate, DSCFM	907	913	910	910	
Fuel Flow Rate, MMBtu/hr	33.8	34.0	33.9	33.9	
Stack Gas:					
Flow Rate, DSCFM (EPA Method 19)	28,488	28,998	28,889	28,792	
Oxygen (O ₂), % volume dry	17.1	17.1	17.1	17.1	
Carbon Dioxide (CO ₂), % volume dry	2.8	2.8	2.8	2.8	
NO_x Emissions (reported as NO₂):					
NO _x , ppmvd	3.4	3.4	3.3	3.4	
NO _x , ppmvd @ 15% O ₂	5.3	5.2	5.2	5.2	23
NO _x , lb/hr	0.69	0.69	0.69	0.69	
NO _x , lb/yr	6,076	6,082	6,042	6,067	
NO _x , lb/MMBtu	0.021	0.020	0.020	0.020	
CO Emissions:					
CO, ppmvd	1.2	1.0	0.8	1.0	
CO, ppmvd @ 15% O ₂	1.8	1.6	1.2	1.5	100
CO, lb/hr	0.14	0.128	0.094	0.123	
CO, lb/yr	1267	1125	828	1073	
CO, lb/MMBtu	0.0043	0.0038	0.0028	0.0036	
SO₂ Emissions:					
SO ₂ , ppmvd	5.3	5.7	6.4	5.8	
SO ₂ , ppmvd @ 15% O ₂	8.1	8.9	10.0	9.0	150
SO ₂ , lb/hr	1.5	1.6	1.8	1.7	
SO ₂ lb/yr	13,079	14,454	16,128	14,554	
SO ₂ , lb/MMBtu	0.044	0.048	0.054	0.049	
Hydrocarbon Emissions (reported as CH₄):					
THC, ppmv	2.5	1.9	1.3	1.9	
CH ₄ , ppmv	2.1	1.5	1.1	1.6	
NMOC, ppmv	<1.0	<1.0	<1.0	<1.0	
NMOC, ppmv @ 15% O ₂	<1.5	<1.6	<1.6	<1.6	
NMOC, lb/hr	<0.071	<0.072	<0.072	<0.071	
NMOC, lb/yr	<619	<631	<628	<626	
NMOC, lb/MMBtu	<0.0021	<0.0021	<0.0021	<0.0021	

WHERE:

ppmv = parts per million concentration by volume expressed on a dry gas basis
 lb/hr = pound per hour emission rate
 Tstd. = standard temperature (°R = °F+460)
 MW = molecular weight
 DSCFM = dry standard cubic foot per minute
 NO_x = oxides of nitrogen, reported as NO₂ (MW = 46)
 CO = carbon monoxide (MW = 28)
 CH₄ = methane (MW = 16)
 THC = total hydrocarbons including CH₄ as methane (MW = 16)
 NMOC = non-methane organic compounds as methane (MW = 16)
 SO₂ = sulfur dioxide (MW = 64.1)

CALCULATIONS:

ppmv @ 15% O₂ = ppmvd · 5.9 / (20.9 - %O₂)
 ppmvd @ 3% O₂ = ppmvd · 17.9 / (20.9 - %O₂)
 lb/hr = ppmvd · 8.223 E-05 · DSCFM · MW / Tstd. °R
 lb/yr = lb/hr · 24 · 365
 lb/MMBtu = (lb/hr) / (MMBtu/hr)
 < Value = <2% of Analyzer Range

Attachment 4b
Gasoline Facility Throughput (S-48)

MAIN WASTEWATER TREATMENT PLANT
GASOLINE DISPENSING FACILITY
Maintenance Center (3,000 gallon gasoline compartment)
Year: 2021
As of December 31, 2021

MONTH	GALLONS RECEIVED	RECEIVED YR-TO-DATE	GALLONS ISSUED	ISSUED YR-TO-DATE	COMMENTS
JAN	1900	1900	2149	2149	
FEB	2450	4350	2134	4283	
MAR	1100	5450	2251	6534	
APR	3681	9131	2740	9274	
MAY	1750	10881	2175	11449	
JUN	2725	13606	2333	13782	
JUL	800	14406	1359	15141	
AUG	2692	17098	1865	17006	
SEP	1433	18531	3023	20029	
OCT	2803	21334	2297	22326	
NOV	1951	23285	2426	24752	
DEC	2335	25620	2177	26929	
Total	-	25620	-	26929	

Static Pressure Performance Test

GDF Name and Address EBMUD – Main Wastewater Treatment Plant 2020 Wake Avenue Oakland, CA, 94607	GDF Representative and Title <p style="text-align: center;">Chris Dembiczak EHSS</p> GDF Phone No. (510) 287-0509	PHASE II SYSTEM TYPE Balance <input checked="" type="checkbox"/> Assist <input type="checkbox"/> Other <input type="checkbox"/> Permit Conditions:
Number of Gasoline Nozzles: 2 Phase I Type: Two Point GDF # 9008		
Manifolded: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		

	TANK #:	1	2	3	4
1. Product Grade		87			
2. Actual Compartment Capacity, gallons		3000			
3. Gasoline Volume		1972			
4. Ullage, gallons (ullage = capacity-volume)		1028			
5. Initial Pressure (inches water column)		2.00			
6. Pressure After 1 Minute		1.93			
7. Pressure After 2 Minutes		1.89			
8. Pressure After 3 Minutes		1.86			
9. Pressure After 4 Minutes		1.84			
10. Final Pressure After 5 Minutes		1.83			
11. Allowable Final Pressure		1.61			
12. Test Result		Pass			

Test Date: 9/22/21 Test Time: 14:46 Comments: 1. Replaced jumper hoses prior to the test.	Test Firm: Reinholdt Engineering Construction Test Technician: Darin Reinholdt Manufacturer's Certification / Expiration Date: Morrison Brothers 000250 / 8/12/22
-------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

ATTACHMENT 5

Hours of Operation for Stand-by Emergency Generators

July 1, 2021 – December 31, 2021

Source	Location	Hours Meter Begin	Hours Meter End	Emergency Use Hours	Reliability-related Hours	Limit on reliability-related Hours
S-50	North of PGS	142.9	142.9	0	0	30
S-51	Dechlorination	734.7	750.9	12.7	3.5	50
S-53	West of Admin Bldg	126.9	128.2	0	1.3	30
S-54	East Bayshore RWP	36	36	0	0	50
S-58	North of Maintenance	20.2	20.2	0	0	50

January 1, 2021 – June 30, 2021

Source	Location	Hours Meter Begin	Hours Meter End	Emergency Use Hours	Reliability-related Hours	Limit on reliability-related Hours
S-50	North of PGS	140.5	142.9	0	2.4	30
S-51	Dechlorination	730.0	734.7	0.9	3.8	50
S-53	West of Admin Bldg	117.7	126.9	8.7	0.5	30
S-54	East Bayshore RWP	36	36	0	0	50
S-58	North of Maintenance	19.8	20.2	0	0.4	50

January 1, 2021 – December 31, 2021 (last 12 months total)

Source	Location	Hours Meter Begin	Hours Meter End	Emergency Use Hours	Reliability-related Hours	Limit on reliability-related Hours
S-50	North of PGS	140.5	142.9	0	2.4	30
S-51	Dechlorination	730.0	750.9	13.6	7.3	50
S-53	West of Admin Bldg	117.7	128.2	8.7	1.8	30
S-54	East Bayshore RWP	36	36	0	0	50
S-58	North of Maintenance	19.8	20.2	0	0.4	50

ATTACHMENT 6

TURBINE MONTHLY TEST RESULTS

TABLE # 1

**EBMUD-OCT-2021
DG TURBINE #1 (S-56)
3003 kW**

RUN	1	LIMITS
Test Date	10/14/21	
Test Time	1604-1619	
PGS-2 Turbine kW	3,003	
PGS-2 Fuel Flow Rate, DSCFM	876	
Oxygen, O ₂ , %	16.9	
NO _x , ppm	4.1	
NO_x, ppm @ 15% O₂	6.1	23
CO, ppm	1.1	
CO, ppm @ 15% O₂	1.6	100
SO ₂ , ppm	5.1	
SO₂, ppm @ 15% O₂	7.5	150

WHERE,

ppm = Parts Per Million Concentration

NO_x = Oxides of Nitrogen as NO₂ (MW = 46)

CO = Carbon Monoxide (MW = 28)

SO₂ = Sulfur Dioxide (MW= 64)

CALCULATIONS,

$$\text{PPM @ 15\% O}_2 = \text{ppm} * 5.9 / (20.9 - \%O_2)$$

TABLE # 1

**EBMUD-NOV-2021
DG TURBINE #1 (S-56)
3176 kW**

RUN	1	LIMITS
Test Date	11/30/21	
Test Time	1246-1300	
PGS-2 Turbine kW	3,176	
PGS-2 Fuel Flow Rate, DSCFM	895	
Oxygen, O ₂ , %	16.9	
NO _x , ppm	4.1	
NO_x, ppm @ 15% O₂	6.1	23
CO, ppm	1.1	
CO, ppm @ 15% O₂	1.6	100
SO ₂ , ppm	5.1	
SO₂, ppm @ 15% O₂	7.6	150

WHERE,

ppm = Parts Per Million Concentration
 NO_x = Oxides of Nitrogen as NO₂ (MW = 46)
 CO = Carbon Monoxide (MW = 28)
 SO₂ = Sulfur Dioxide (MW= 64)

CALCULATIONS,

PPM @ 15% O₂ = ppm * 5.9 / (20.9 - %O₂)

ATTACHMENT 7

MAIN WASTEWATER TREATMENT PLANT FLOWS

East Bay Municipal Utility District

ANNUAL WASTEWATER MONITORING SUMMARY 2021

STATION: WWTP INFLUENT - INF-001
 STATION: WWTP EFFLUENT - EFF-001/EFF-001B
 FLOWS & CONVENTIONAL POLLUTANTS (R2-2020-0024)

INF (MGD)				EFF (MGD)			CBOD					TSS					Oil and Grease				
Mo.	Daily Avg	Daily Avg	3-mo Dry Season Avg	Mo.	Daily Avg	Daily Avg	Inf (INF-001)	Eff	Eff	# excs/ # of		%	Inf	Eff	Eff	# excs/ # of		%	Eff	Eff	
							mg/L	mg/L	mg/L	Max	Max	Max	Mo.	Week	Month	mg/L	mg/L	mg/L	Mo.	Week	Month
							Month	Month	Week	Mo.	Week	Month	Month	Month	Week	Mo.	Week	Month	Month	Daily	
							Avg	Avg	Avg	Avg	Avg	Avg	Avg	Avg	Avg	Avg	Avg	Avg	Avg	Avg	Max
Limits:				120			25	40				Min 85	30	45			Min 85			10	20
Jan	55	90	46		49	85	41	768	6	8	0/ 1	0/ 5	99%	1061	11	14	0/ 1	0/ 5	99%		
Feb	58	100	47		53	98	45	313	5	7	0/ 1	0/ 4	98%	461	8	9	0/ 1	0/ 4	98%		
Mar	56	82	48		51	76	45	328	6	7	0/ 1	0/ 4	98%	394	7	8	0/ 1	0/ 4	98%	< 1.3	< 1.3
Apr	49	54	46		45	48	43	330	8	9	0/ 1	0/ 4	98%	424	11	11	0/ 1	0/ 4	98%		
May	49	52	44		44	47	41	342	8	10	0/ 1	0/ 5	98%	421	12	13	0/ 1	0/ 5	97%	1.8	1.8
Jun	47	50	40		42	48	37	336	10	11	0/ 1	0/ 4	97%	454	15	17	0/ 1	0/ 4	97%		
Jul	45	47	41		41	44	38	365	13	16	0/ 1	0/ 5	97%	401	19	29	0/ 1	0/ 5	95%	< 1.2	< 1.2
Aug	46	52	40	46	42	48	36	351	11	14	0/ 1	0/ 4	97%	382	14	19	0/ 1	0/ 4	96%		
Sep	46	50	43		42	45	41	335	9	10	0/ 1	0/ 4	97%	447	11	14	0/ 1	0/ 4	98%		
Oct	61	229	43		58	229	40	285	9	11	0/ 1	0/ 5	97%	425	11	14	0/ 1	0/ 5	97%		
Nov	56	92	47		56	92	47	320	6	7	0/ 1	0/ 4	98%	575	8	11	0/ 1	0/ 4	99%	< 1.3	< 1.3
Dec	94	201	48		89	201	42	179	7	13	0/ 1	0/ 4	96%	287	11	19	0/ 1	0/ 4	96%		
Avg	55	92	44		51	88	41	354	8	10			97%	478	11	15			97%	1.4	1.4
Max	94	229	48		89	229	47	768	13	16			99%	1061	19	29			99%	1.8	1.8
Min	45	47	40		41	44	36	179	5	7			96%	287	7	8			95%	< 1.2	< 1.2
Exc/Analyses	0/1										0/ #	0/ 52	0/12				0/ 12	0/ 52	0/12	0/4	0/4

Exc / Analyses = number of exceedances / number of analyses

ATTACHMENT 8 -- IPS Scrubber Inlet and Outlet H2S Readings, ppm

	Coarse Scrubber		Fine Scrubber		Coarse Scrubber		Fine Scrubber	
	Inlet Avg	Outlet Avg	Inlet Avg	Outlet Avg	Inlet Max	Outlet Max	Inlet Max	Outlet Max
01-Jul-21	5.0	0.0	0.0	0.0	10.8	0.0	0.0	0.0
02-Jul-21	3.9	0.0	0.0	0.0	9.7	0.0	0.0	0.0
03-Jul-21	3.0	0.0	0.0	0.0	7.6	0.0	0.0	0.0
04-Jul-21	3.9	0.0	0.0	0.0	9.5	0.0	0.0	0.0
05-Jul-21	2.5	0.0	0.0	0.0	16.7	0.0	0.0	0.0
06-Jul-21	4.2	0.0	0.0	0.0	11.7	0.0	0.0	0.0
07-Jul-21	5.3	0.0	0.0	0.0	24.0	0.0	0.0	0.0
08-Jul-21	3.0	0.0	0.0	0.0	9.5	0.0	0.0	0.0
09-Jul-21	3.2	0.0	0.0	0.0	8.1	0.0	0.0	0.0
10-Jul-21	3.4	0.0	0.0	0.0	12.4	0.0	0.0	0.0
11-Jul-21	4.1	0.0	0.0	0.0	9.3	0.0	0.0	0.0
12-Jul-21	4.3	0.0	0.0	0.0	10.7	0.0	0.0	0.0
13-Jul-21	4.4	0.0	0.0	0.0	13.2	0.0	0.0	0.0
14-Jul-21	3.6	0.0	0.0	0.0	10.2	0.0	0.0	0.0
15-Jul-21	4.6	0.0	0.0	0.0	9.6	0.0	0.0	0.0
16-Jul-21	3.9	0.0	0.0	0.0	13.0	0.0	1.5	0.0
17-Jul-21	3.4	0.0	0.0	0.0	8.6	0.0	1.5	0.0
18-Jul-21	2.7	0.0	0.0	0.0	6.6	0.0	0.0	0.0
19-Jul-21	1.9	0.0	0.0	0.0	7.8	0.0	0.0	0.0
20-Jul-21	4.4	0.0	0.0	0.0	14.0	0.0	0.0	0.0
21-Jul-21	2.5	0.0	0.0	0.0	11.0	0.0	0.0	0.0
22-Jul-21	2.7	0.0	0.0	0.0	8.2	0.0	3.6	0.0
23-Jul-21	2.7	0.0	0.0	0.0	6.6	0.0	0.0	0.0
24-Jul-21	3.2	0.0	0.0	0.0	8.7	0.0	0.0	0.0
25-Jul-21	2.5	0.0	0.0	0.0	6.5	0.0	0.0	0.0
26-Jul-21	3.4	0.0	0.0	0.0	13.6	0.0	0.0	0.0
27-Jul-21	3.6	0.0	0.0	0.0	14.0	0.0	7.0	0.0
28-Jul-21	3.6	0.0	0.0	0.0	9.5	0.0	0.0	0.0
29-Jul-21	3.0	0.0	0.0	0.0	26.9	0.0	0.0	0.0
30-Jul-21	3.9	0.0	0.0	0.0	42.7	0.0	1.6	0.0
31-Jul-21	3.8	0.0	0.0	0.0	14.1	0.0	8.5	0.0

Monthly Avg
Monthly Max

3.5	0.0	0.0	0.0	42.7	0.0	8.5	0.0
-----	-----	-----	-----	------	-----	-----	-----

	Coarse Scrubber		Fine Scrubber		Coarse Scrubber		Fine Scrubber	
	Inlet Avg	Outlet Avg	Inlet Avg	Outlet Avg	Inlet Max	Outlet Max	Inlet Max	Outlet Max
01-Aug-21	3.1	0.0	0.0	0.0	6.8	0.0	0.0	0.0
02-Aug-21	4.0	0.0	0.0	0.0	11.9	0.0	1.5	0.0
03-Aug-21	4.8	0.0	0.0	0.0	13.8	0.0	2.3	0.0
04-Aug-21	5.0	0.0	0.0	0.0	15.3	0.0	0.0	0.0
05-Aug-21	4.7	0.0	0.0	0.0	11.7	0.0	0.0	0.0
06-Aug-21	3.8	0.0	0.0	0.0	10.6	0.0	0.0	0.0
07-Aug-21	3.7	0.0	0.0	0.0	11.0	0.0	0.0	0.0
08-Aug-21	3.8	0.0	0.0	0.0	8.2	0.0	0.0	0.0
09-Aug-21	3.9	0.0	0.0	0.0	14.3	0.0	2.6	0.0
10-Aug-21	3.0	0.0	0.0	0.0	7.9	0.0	0.0	0.0
11-Aug-21	2.7	0.0	0.0	0.0	11.7	0.0	0.0	0.0
12-Aug-21	6.5	0.0	0.0	0.0	22.1	0.0	0.0	0.0
13-Aug-21	5.4	0.0	0.0	0.0	13.9	0.0	0.0	0.0
14-Aug-21	4.7	0.0	0.0	0.0	11.0	0.0	0.0	0.0
15-Aug-21	3.9	0.0	0.0	0.0	13.9	0.0	0.0	0.0
16-Aug-21	6.8	0.0	0.0	0.0	25.1	0.0	0.0	0.0
17-Aug-21	5.6	0.0	0.0	0.0	15.0	0.0	2.9	0.0
18-Aug-21	6.0	0.0	0.0	0.0	42.2	0.0	0.0	0.0
19-Aug-21	4.0	0.0	0.0	0.0	10.9	0.0	0.0	0.0
20-Aug-21	4.9	0.0	0.0	0.0	13.5	0.0	0.0	0.0
21-Aug-21	3.8	0.0	0.0	0.0	11.2	0.0	1.5	0.0
22-Aug-21	2.8	0.0	0.0	0.0	9.2	0.0	0.0	0.0
23-Aug-21	4.1	0.0	0.0	0.0	9.8	0.0	0.0	0.0
24-Aug-21	1.9	0.0	0.0	0.0	17.1	0.0	6.2	0.0
25-Aug-21	1.5	0.0	0.0	0.0	7.7	0.0	0.0	0.0
26-Aug-21	3.2	0.0	0.0	0.0	9.2	0.0	0.0	0.0
27-Aug-21	3.1	0.0	0.0	0.0	9.4	0.0	0.0	0.0
28-Aug-21	3.6	0.0	0.0	0.0	17.3	0.0	0.0	0.0
29-Aug-21	1.9	0.0	0.0	0.0	7.9	0.0	0.0	0.0
30-Aug-21	3.1	0.0	0.0	0.0	17.8	0.0	0.0	0.0
31-Aug-21	6.6	0.0	0.0	0.0	14.3	0.0	0.0	0.0

Monthly Avg
Monthly Max

4.1	0.0	0.0	0.0	42.2	0.0	6.2	0.0
-----	-----	-----	-----	------	-----	-----	-----

ATTACHMENT 8 -- IPS Scrubber Inlet and Outlet H2S Readings, ppm

	Coarse Scrubber		Fine Scrubber		Coarse Scrubber		Fine Scrubber			Coarse Scrubber		Fine Scrubber		Coarse Scrubber		Fine Scrubber	
	Inlet Avg	Outlet Avg	Inlet Avg	Outlet Avg	Inlet Max	Outlet Max	Inlet Max	Outlet Max		Inlet Avg	Outlet Avg	Inlet Max	Outlet Max	Inlet Avg	Outlet Avg	Inlet Max	Outlet Max
01-Sep-21	1.9	0.0	0.0	0.0	7.9	0.0	0.0	0.0	01-Oct-21	2.2	0.0	0.0	0.0	5.6	0.0	0.0	0.0
02-Sep-21	3.1	0.0	0.0	0.0	17.8	0.0	0.0	0.0	02-Oct-21	2.5	0.0	0.0	0.0	6.5	0.0	0.0	0.0
03-Sep-21	6.6	0.0	0.0	0.0	14.3	0.0	0.0	0.0	03-Oct-21	1.9	0.0	0.0	0.0	5.6	0.0	0.0	0.0
04-Sep-21	6.0	0.0	0.0	0.0	17.4	0.0	0.0	0.0	04-Oct-21	3.4	0.0	0.0	0.0	9.2	0.0	0.0	0.0
05-Sep-21	6.8	0.0	0.0	0.0	13.2	0.0	0.0	0.0	05-Oct-21	2.7	0.0	0.0	0.0	8.8	0.0	0.0	0.0
06-Sep-21	6.8	0.0	0.0	0.0	14.7	0.0	0.0	0.0	06-Oct-21	2.6	0.0	0.0	0.0	9.4	0.0	0.0	0.0
07-Sep-21	6.5	0.0	0.0	0.0	13.0	0.0	0.0	0.0	07-Oct-21	3.3	0.0	0.0	0.0	10.7	0.0	0.0	0.0
08-Sep-21	4.4	0.0	0.0	0.0	12.0	0.0	0.0	0.0	08-Oct-21	4.0	0.0	0.0	0.0	10.7	0.0	0.0	0.0
09-Sep-21	3.6	0.0	0.0	0.0	10.0	0.0	0.0	0.0	09-Oct-21	3.7	0.0	0.0	0.0	8.5	0.0	0.0	0.0
10-Sep-21	4.9	0.0	0.0	0.0	15.9	0.0	0.0	0.0	10-Oct-21	2.4	0.0	0.0	0.0	11.6	0.0	0.0	0.0
11-Sep-21	8.8	0.0	0.0	0.0	24.6	0.0	0.0	0.0	11-Oct-21	2.7	0.0	0.0	0.0	26.4	0.0	0.0	0.0
12-Sep-21	6.8	0.0	0.0	0.0	14.5	0.0	1.5	0.0	12-Oct-21	2.1	0.0	0.0	0.0	8.0	0.0	0.0	0.0
13-Sep-21	6.0	0.0	0.0	0.0	13.9	0.0	0.0	0.0	13-Oct-21	4.5	0.0	0.0	0.0	9.7	0.0	0.0	0.0
14-Sep-21	2.9	0.0	0.0	0.0	12.3	0.0	0.0	0.0	14-Oct-21	3.6	0.0	0.0	0.0	9.9	0.0	0.0	0.0
15-Sep-21	3.2	0.0	0.0	0.0	11.7	0.0	0.0	0.0	15-Oct-21	3.4	0.0	0.0	0.0	10.4	0.0	0.0	0.0
16-Sep-21	2.7	0.0	0.0	0.0	17.8	0.0	0.0	0.0	16-Oct-21	4.4	0.0	0.0	0.0	11.9	0.0	0.0	0.0
17-Sep-21	2.8	0.0	0.0	0.0	14.2	0.0	0.0	0.0	17-Oct-21	3.2	0.0	0.0	0.0	7.9	0.0	0.0	0.0
18-Sep-21	4.5	0.0	0.0	0.0	13.4	0.0	0.0	0.0	18-Oct-21	3.4	0.0	0.0	0.0	8.1	0.0	0.0	0.0
19-Sep-21	4.9	0.0	0.0	0.0	12.9	0.0	0.0	0.0	19-Oct-21	3.0	0.0	0.0	0.0	9.9	0.0	0.0	0.0
20-Sep-21	3.4	0.0	0.0	0.0	14.9	0.0	4.9	0.0	20-Oct-21	5.6	0.0	0.0	0.0	17.5	0.0	0.0	0.0
21-Sep-21	2.8	0.0	0.0	0.0	14.9	0.0	0.0	0.0	21-Oct-21	4.9	0.0	0.0	0.0	18.9	0.0	2.1	0.0
22-Sep-21	1.9	0.0	0.0	0.0	10.4	0.0	0.0	0.0	22-Oct-21	1.6	0.0	0.0	0.0	7.5	0.0	0.0	0.0
23-Sep-21	3.3	0.0	0.0	0.0	8.9	0.0	0.0	0.0	23-Oct-21	3.3	0.0	0.0	0.0	7.6	0.0	0.0	0.0
24-Sep-21	3.5	0.0	0.0	0.0	54.0	0.0	11.2	0.0	24-Oct-21	0.2	0.0	0.0	0.0	4.7	0.0	0.0	0.0
25-Sep-21	1.5	0.0	0.0	0.0	4.9	0.0	0.0	0.0	25-Oct-21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26-Sep-21	2.2	0.0	0.0	0.0	9.0	0.0	0.0	0.0	26-Oct-21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27-Sep-21	3.3	0.0	0.0	0.0	9.3	0.0	0.0	0.0	27-Oct-21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28-Sep-21	3.3	0.0	0.0	0.0	9.9	0.0	0.0	0.0	28-Oct-21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29-Sep-21	2.4	0.0	0.0	0.0	6.0	0.0	0.0	0.0	29-Oct-21	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0
30-Sep-21	1.4	0.0	0.0	0.0	8.9	0.0	1.6	0.0	30-Oct-21	0.1	0.0	0.0	0.0	2.7	0.0	0.0	0.0
									31-Oct-21	0.5	0.0	0.0	0.0	2.2	0.0	0.0	0.0
Monthly Avg	4.1	0.0	0.0	0.0					Monthly Avg	2.4	0.0	0.0	0.0				
Monthly Max					54.0	0.0	11.2	0.0	Monthly Max					26.4	0.0	2.1	0.0

ATTACHMENT 8 -- IPS Scrubber Inlet and Outlet H2S Readings, ppm

	Coarse Scrubber		Fine Scrubber		Coarse Scrubber		Fine Scrubber			Coarse Scrubber		Fine Scrubber		Coarse Scrubber		Fine Scrubber	
	Inlet Avg	Outlet Avg	Inlet Avg	Outlet Avg	Inlet Max	Outlet Max	Inlet Max	Outlet Max		Inlet Avg	Outlet Avg	Inlet Max	Outlet Max	Inlet Avg	Outlet Avg	Inlet Max	Outlet Max
01-Nov-21	0.5	0.0	0.0	0.0	2.2	0.0	0.0	0.0	01-Dec-21	1.8	0.0	0.0	0.0	4.1	0.0	0.0	0.0
02-Nov-21	0.6	0.0	0.0	0.0	4.6	0.0	0.0	0.0	02-Dec-21	1.4	0.0	0.0	0.0	3.5	0.0	0.0	0.0
03-Nov-21	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0	03-Dec-21	1.7	0.0	0.0	0.0	5.5	0.0	0.0	0.0
04-Nov-21	0.6	0.0	0.0	0.0	3.4	0.0	0.0	0.0	04-Dec-21	1.6	0.0	0.0	0.0	5.2	0.0	0.0	0.0
05-Nov-21	0.9	0.0	0.0	0.0	5.0	0.0	0.0	0.0	05-Dec-21	0.3	0.0	0.0	0.0	2.8	0.0	0.0	0.0
06-Nov-21	1.0	0.0	0.0	0.0	3.8	0.0	0.0	0.0	06-Dec-21	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0
07-Nov-21	0.7	0.0	0.0	0.0	3.1	0.0	0.0	0.0	07-Dec-21	0.2	0.0	0.0	0.0	2.3	0.0	0.0	0.0
08-Nov-21	0.5	0.0	0.0	0.0	2.2	0.0	1.6	0.0	08-Dec-21	0.4	0.0	0.0	0.0	3.3	0.0	0.0	0.0
09-Nov-21	2.1	0.0	0.0	0.0	9.7	0.0	0.0	0.0	09-Dec-21	0.1	0.0	0.0	0.0	1.5	0.0	0.0	0.0
10-Nov-21	0.4	0.0	0.0	0.0	7.9	0.0	0.0	0.0	10-Dec-21	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0
11-Nov-21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11-Dec-21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12-Nov-21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12-Dec-21	0.9	0.0	0.0	0.0	3.4	0.0	0.0	0.0
13-Nov-21	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0	13-Dec-21	0.1	0.0	0.0	0.0	0.5	0.0	0.0	0.0
14-Nov-21	0.1	0.0	0.0	0.0	1.5	0.0	0.0	0.0	14-Dec-21	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
15-Nov-21	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0	15-Dec-21	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
16-Nov-21	1.0	0.0	0.0	0.0	2.9	0.0	0.0	0.0	16-Dec-21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17-Nov-21	0.4	0.0	0.0	0.0	2.4	0.0	0.0	0.0	17-Dec-21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18-Nov-21	0.8	0.0	0.0	0.0	2.5	0.0	0.0	0.0	18-Dec-21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19-Nov-21	2.0	0.0	0.0	0.0	6.2	0.0	0.0	0.0	19-Dec-21	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
20-Nov-21	1.4	0.0	0.0	0.0	5.8	0.0	0.0	0.0	20-Dec-21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21-Nov-21	0.7	0.0	0.0	0.0	3.7	0.0	0.0	0.0	21-Dec-21	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
22-Nov-21	1.0	0.0	0.0	0.0	3.6	0.0	1.6	0.0	22-Dec-21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23-Nov-21	1.6	0.0	0.0	0.0	5.5	0.0	0.0	0.0	23-Dec-21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24-Nov-21	1.7	0.0	0.0	0.0	3.4	0.0	0.0	0.0	24-Dec-21	1.7	0.0	0.0	0.0	5.5	0.0	0.0	0.0
25-Nov-21	1.4	0.0	0.0	0.0	5.9	0.0	0.0	0.0	25-Dec-21	1.6	0.0	0.0	0.0	5.2	0.0	0.0	0.0
26-Nov-21	2.1	0.0	0.0	0.0	5.1	0.0	0.0	0.0	26-Dec-21	0.3	0.0	0.0	0.0	2.8	0.0	0.0	0.0
27-Nov-21	0.9	0.0	0.0	0.0	4.0	0.0	0.0	0.0	27-Dec-21	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0
28-Nov-21	0.9	0.0	0.0	0.0	5.0	0.0	0.0	0.0	28-Dec-21	0.2	0.0	0.0	0.0	2.3	0.0	0.0	0.0
29-Nov-21	0.7	0.0	0.0	0.0	2.5	0.0	0.0	0.0	29-Dec-21	0.4	0.0	0.0	0.0	3.3	0.0	0.0	0.0
30-Nov-21	0.8	0.0	0.0	0.0	6.7	0.0	0.0	0.0	30-Dec-21	0.1	0.0	0.0	0.0	1.5	0.0	0.0	0.0
									31-Dec-21	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0
Monthly Avg	0.8	0.0	0.0	0.0					Monthly Avg	0.4	0.0	0.0	0.0				
Monthly Max					9.7	0.0	1.6	0.0	Monthly Max					5.5	0.0	0.0	0.0

ATTACHMENT 8 -- IPS Scrubber Inlet and Outlet H2S Readings - Related Outages

Influent Pump Station Odor Scrubber Outage Table

Start	Finish	Duration	Reason
19-Sep-21 06:45	19-Sep-21 07:07	0:22	Power failure multiple locations at IPS including A642
22-Dec-21 14:03	22-Dec-21 14:45	0:42	Power failure multiple locations at IPS including A642
25-Dec-21 09:21	25-Dec-21 09:33	0:12	Power failure multiple locations at IPS including A642
	Total Down Time	<u>1:16</u>	

ATTACHMENT 9 - ODOR SCRUBBER MAINTENANCE RECORDS - S-170, S-110

Headworks Odor Scrubber Maintenance Work Orders Jul - Dec 2021

Area	Wonum	Description	Assetnum	Dept	Status	Type	Report Date	Reported By
W-12	2021808974	Believe this sensor is faulty and giving me a high level reading. Please confirm sensor is working	W-12-FA-PDIT-401	PO	COMP	BD	7/13/2021	TTRINTA
W-12	2021808976	Believe this sensor could be faulty. Need to confirm its working properly.	W-12-FA-PDIT-208	PO	COMP	BD	7/13/2021	TTRINTA
W-12	2021809001	BTF #2.. Drain manifold needs to be opened up and cleaned out due to possible clog.	W-12-FA-BIO-201	PO	CLOSE	CM	7/15/2021	DGARCIA
W-12	2021809000	BTF #2 High-High level sensor is in alarm when tank level isn't high.	W-12-FA-BIO-201	PO	COMP	CM	7/15/2021	DGARCIA
W-12	2021822309	IPS Odor Scrubber #1 pH Meter Not Closing Solenoid. See L/D Constant flow through rotometer on IPS odor scrubber #1 pH system. Meter is indicating a pH level that should stop flow but solenoid is not	W-12-IRR-AIT-128	PO	COMP	BD	8/3/2021	RYBUCK
W-12	2021878159	Leak from crack in plastic line from nutrient tank to pump.	W-12-MSL-OCS-01	PO	CLOSE	BD	9/7/2021	ABAISCH
W-12	2021878226	Plastic line from nutrient tank to pump has a significant leak. Temp patched with rubber glove.	W-12-IRR-TNK-101	PO	COMP	BD	9/14/2021	ABAISCH
W-12	2021890871	IPS sample trough's H2S sensor has failed (see long description) Rebooting the gas monitor and unplugging the sensor did not correct the H2S sensor's fail alarm. After startup, sensor immediately displays fail alarm and continues to read zero.	W-12-INS-001-02	PO	COMP	BD	10/1/2021	MMYEE
W-12	2021938184	IPS carbon scrubber 2's differential pressure transmitter (see long description) IPS carbon scrubber #2's differential pressure transmitter is displaying the max reading of 25.4 with an "ANALOG SAT" error on the local readout. DCS signal is registering as POOR.	W-12-FA-PDIT-401	PO	COMP	CM	11/10/2021	MMYEE

Thickening/Dewatering Odor Scrubber Maintenance Work Orders Jul - Dec 2021

Area	Wonum	Description	Assetnum	Dept	Status	Type	Report Date	Reported By
W-30	2021823094	Dewatering side odor scrubber hypo rotometer not showing flow; please repair. Thanks.	W-30-TKS-301-00	PO	CAN	CM	8/9/2021	MCOLLINS
W-25	2021836874	W30-FAN (DW-419) Fan not coming on Will not start at breaker or at switch by the Thickening office, opened and closed breaker and local disconnect still unable to start	W-25-FAN-EF2-01	PO	APPR	BD	8/17/2021	JOCHOA
W-30	2021850308	Unable to establish flow to Odor scrubber number 2, Hypo and 2W	W-30-TKS-301-00	PO	COMP	CM	8/26/2021	TKELLY
W-30	2021854782	Odor Scrubber Sump pump #1 not working. See long description. Ops tested using the floats. Pump #2 works but not pump #1.	W-30-TKS-301-00	PO	COMP	CM	8/29/2021	TKELLY
W-25	2021872164	Floor drain from sink in front of C-2 has become disconnected from drain system near #2 cake pump; please repair. Thanks.	W-25-MISC-000-00	PO	COMP	BD	8/31/2021	MCOLLINS
W-25	2021877440	replace sleeve on foul air pipe work for cake chute on C1	W-25-CTF-0C1-01	PO	CLOSE	CM	9/4/2021	GCOOK
W-30	2021894015	TWB Odor scrubber leaking hypo at pressure gauge in south panel	W-30-TKS-301-00	PO	COMP	CM	10/5/2021	MMYEE
W-30	2021894017	Odor scrubber hypo line is leaking at vent tubing by primary effluent channel	W-30-TKS-301-00	PO	COMP	CM	10/5/2021	MMYEE
W-25	2021912926	Replace C4 odor scrubber water rotometer	W-25-DSL-CTF-401	MEP	COMP	CM	10/18/2021	KDOSBORN
W-30	2021921274	Hypo leak at PVC tee on feed line for DWB and Thickening odor scrubbers.	W-30-TKS-301-00	PO	COMP	CM	10/28/2021	WLOCONTE

ATTACHMENT 11

2021 July - December Blend Tank Summary Flow Table

(Sum of 1st Stage Digester feed substituted due to questionable Blend meter)

Daily Flows	July	August	September	October	November	December
	Kgal	Kgal	Kgal	Kgal	Kgal	Kgal
1st	782	404	739	980	710	741
2nd	761	550	819	763	906	833
3rd	644	725	785	609	933	799
4th	538	732	669	679	907	726
5th	492	784	583	728	762	636
6th	584	730	595	837	762	811
7th	815	761	850	909	718	804
8th	815	481	865	826	797	822
9th	667	578	941	716	971	728
10th	688	674	890	498	878	814
11th	512	742	817	674	863	768
12th	717	725	749	879	833	697
13th	703	699	758	874	734	784
14th	762	752	820	948	624	810
15th	765	611	780	803	891	868
16th	682	543	794	718	915	874
17th	676	874	747	713	798	676
18th	599	840	750	847	789	799
19th	637	822	660	886	805	511
20th	702	805	828	924	786	576
21st	708	803	1,047	884	709	808
22nd	764	530	953	965	745	744
23rd	698	697	950	750	907	1,008
24th	670	843	849	924	783	727
25th	586	778	808	885	693	664
26th	405	852	652	685	640	763
27th	784	874	879	580	700	743
28th	712	823	830	672	556	800
29th	727	654	896	734	652	851
30th	623	539	918	637	813	735
31st	640	887		510		803
Monthly Total	20,857	22,111	24,223	24,035	23,580	23,723
Semi-Annual Total	138,529					

ATTACHMENT 10 -- S-170 Waste Activated Sludge Throughput

2021 July - December Gravity Belt Thickener Summary Flow Table

Daily Flows	July	August	September	October	November	December
	Kgal	Kgal	Kgal	Kgal	Kgal	Kgal
1st	726	621	592	1,308	771	1,075
2nd	588	575	651	1,122	943	1,127
3rd	558	537	688	1,202	1,032	1,075
4th	639	675	547	1,214	1,204	986
5th	580	655	590	1,200	1,176	1,191
6th	605	495	691	1,328	1,177	1,119
7th	752	456	680	1,156	1,227	1,160
8th	657	489	842	1,158	1,189	987
9th	473	509	1,010	1,193	1,296	1,091
10th	669	485	1,050	1,150	1,269	1,119
11th	649	472	1,101	1,237	1,276	1,295
12th	704	471	1,068	1,061	1,118	1,246
13th	735	477	821	1,064	972	1,099
14th	702	468	642	1,086	1,011	1,091
15th	802	483	582	1,072	992	1,144
16th	800	413	579	1,276	1,046	944
17th	784	625	679	1,450	1,042	941
18th	796	530	721	1,371	1,075	1,236
19th	892	641	905	1,441	1,078	1,035
20th	764	576	1,024	1,297	1,109	1,181
21st	815	504	1,231	1,339	1,084	1,211
22nd	961	312	1,062	2,065	1,112	1,048
23rd	828	622	1,092	2,063	1,064	1,026
24th	804	792	1,265	2,067	1,080	959
25th	1,015	791	1,126	2,092	1,155	982
26th	488	923	1,056	1,888	1,166	1,013
27th	900	630	969	1,866	1,294	997
28th	884	588	909	1,628	1,215	1,016
29th	655	675	1,077	873	1,264	1,059
30th	599	557	1,142	740	1,173	1,191
31st	678	592		747		1,325
Monthly Total	22,500	17,639	26,392	41,754	33,611	33,966
Semi-Annual Total	175,862					

Gravity Belt Thickener and Dewatering Centrifuge Odor Scrubber Outage Table

Start	Finish	Duration	Reason
			No outages to report
Total Down Time, DWB		<u>0:00</u>	
			No outages to report
Total Down Time, THK		<u>0:00</u>	

ATTACHMENT 12 - DIGESTER GAS SAMPLING DATA

**EBMUD Biogas H2S
July - December 2021**

2021	Cogen Feed H2S (ppm)	365 Day Avg H2S (ppm)
7/1/2021	106	127
7/2/2021	106	127
7/3/2021	101	127
7/4/2021	95	127
7/5/2021	82	126
7/6/2021	77	126
7/7/2021	94	126
7/8/2021	144	126
7/9/2021	158	126
7/10/2021	181	127
7/11/2021	126	127
7/12/2021	81	127
7/13/2021	100	127
7/14/2021	109	127
7/15/2021	84	127
7/16/2021	70	127
7/17/2021	87	127
7/18/2021		127
7/19/2021	72	127
7/20/2021	50	127
7/21/2021	49	127
7/22/2021	54	127
7/23/2021	50	127
7/24/2021	50	127
7/25/2021	40	127
7/26/2021	44	127
7/27/2021	49	127
7/28/2021	38	127
7/29/2021	44	127
7/30/2021	52	127
7/31/2021	42	127
8/1/2021	47	127
8/2/2021	41	127
8/3/2021	39	127
8/4/2021	56	127
8/5/2021	48	127
8/6/2021	69	126
8/7/2021	81	126
8/8/2021	88	126
8/9/2021	76	127
8/10/2021	62	127
8/11/2021	93	126
8/12/2021	62	127
8/13/2021	65	126
8/14/2021	103	126
8/15/2021	76	127
8/16/2021	74	127
8/17/2021	100	127
8/18/2021	76	127
8/19/2021	126	127
8/20/2021	115	127
8/21/2021	112	127
8/22/2021	78	127
8/23/2021	82	127
8/24/2021	89	127
8/25/2021	118	126
8/26/2021	103	126
8/27/2021	172	126
8/28/2021	296	126
8/29/2021	77	127
8/30/2021	78	127
8/31/2021	82	126

2021	Cogen Feed H2S (ppm)	365 Day Avg H2S (ppm)
9/1/2021	236	126
9/2/2021	121	126
9/3/2021	179	126
9/4/2021	245	126
9/5/2021	82	126
9/6/2021	114	126
9/7/2021	116	126
9/8/2021	103	126
9/9/2021	226	126
9/10/2021	264	126
9/11/2021	140	127
9/12/2021	130	127
9/13/2021	102	127
9/14/2021	154	127
9/15/2021	76	127
9/16/2021	77	127
9/17/2021	121	127
9/18/2021	78	127
9/19/2021	107	126
9/20/2021	105	126
9/21/2021	142	126
9/22/2021	197	126
9/23/2021	229	126
9/24/2021	147	126
9/25/2021	172	126
9/26/2021	148	126
9/27/2021	86	126
9/28/2021	182	126
9/29/2021	115	126
9/30/2021	130	125
10/1/2021	105	125
10/2/2021	98	125
10/3/2021	95	125
10/4/2021	71	125
10/5/2021	71	125
10/6/2021	98	124
10/7/2021	116	124
10/8/2021	128	124
10/9/2021	79	124
10/10/2021	148	123
10/11/2021	143	123
10/12/2021	148	123
10/13/2021	152	123
10/14/2021	152	123
10/15/2021	185	123
10/16/2021	152	124
10/17/2021	167	124
10/18/2021	137	124
10/19/2021	161	124
10/20/2021	178	124
10/21/2021	213	124
10/22/2021	234	124
10/23/2021	249	124
10/24/2021	144	124
10/25/2021	131	124
10/26/2021	105	124
10/27/2021	39	124
10/28/2021	151	124
10/29/2021	140	124
10/30/2021	94	124
10/31/2021	95	124

2021	Cogen Feed H2S (ppm)	365 Day Avg H2S (ppm)
11/1/2021	69	124
11/2/2021	79	124
11/3/2021	78	124
11/4/2021	143	123
11/5/2021	204	123
11/6/2021	164	123
11/7/2021	125	123
11/8/2021	156	123
11/9/2021	98	123
11/10/2021	128	122
11/11/2021	149	122
11/12/2021	106	121
11/13/2021	126	121
11/14/2021	112	121
11/15/2021	83	121
11/16/2021	98	120
11/17/2021	111	119
11/18/2021	155	119
11/19/2021	208	119
11/20/2021	222	119
11/21/2021	236	119
11/22/2021	164	119
11/23/2021	208	119
11/24/2021	130	119
11/25/2021	174	119
11/26/2021	125	119
11/27/2021	202	119
11/28/2021	89	120
11/29/2021	67	120
11/30/2021	120	119
12/1/2021	86	119
12/2/2021	169	119
12/3/2021	111	119
12/4/2021	172	119
12/5/2021	137	119
12/6/2021	171	119
12/7/2021	210	119
12/8/2021	223	119
12/9/2021	600	119
12/10/2021	390	119
12/11/2021	495	118
12/12/2021	284	118
12/13/2021	97	118
12/14/2021	164	117
12/15/2021	126	117
12/16/2021	149	117
12/17/2021	312	117
12/18/2021	292	117
12/19/2021	301	116
12/20/2021	223	116
12/21/2021	298	116
12/22/2021	306	116
12/23/2021	91	116
12/24/2021	424	116
12/25/2021	643	116
12/26/2021	476	116
12/27/2021	236	116
12/28/2021	580	116
12/29/2021	750	116
12/30/2021	644	116
12/31/2021	338	116

Rolling 365-Day limit: 200 ppm

ATTACHMENT 13 - TOTAL DIGESTER GAS COMBUSTION

**EBMUD Biogas to Combustion Devices
July - December 2021**

2021	Total Combustion, SCFM		
	Daily Max	Daily Avg	365-Day Avg
7/1/2021	3,793	2,956	2,245
7/2/2021	3,927	2,864	2,247
7/3/2021	3,053	2,314	2,246
7/4/2021	2,123	1,749	2,243
7/5/2021	2,006	1,585	2,241
7/6/2021	2,592	1,939	2,243
7/7/2021	2,596	2,359	2,245
7/8/2021	3,334	2,615	2,246
7/9/2021	3,108	2,558	2,246
7/10/2021	3,228	2,654	2,248
7/11/2021	2,215	1,694	2,249
7/12/2021	2,566	2,043	2,251
7/13/2021	3,087	2,595	2,255
7/14/2021	3,489	2,852	2,260
7/15/2021	3,535	2,831	2,265
7/16/2021	3,088	2,643	2,268
7/17/2021	3,296	2,805	2,270
7/18/2021	2,439	2,096	2,272
7/19/2021	2,925	2,180	2,274
7/20/2021	3,101	2,734	2,278
7/21/2021	3,265	2,604	2,281
7/22/2021	3,748	2,836	2,283
7/23/2021	3,389	2,911	2,287
7/24/2021	2,971	2,558	2,289
7/25/2021	2,146	1,676	2,289
7/26/2021	2,117	1,682	2,289
7/27/2021	3,304	2,656	2,292
7/28/2021	3,476	2,859	2,296
7/29/2021	4,917	2,871	2,298
7/30/2021	3,548	3,085	2,301
7/31/2021	3,291	2,728	2,303
8/1/2021	3,144	1,656	2,299
8/2/2021	2,433	1,875	2,298
8/3/2021	3,529	2,845	2,301
8/4/2021	3,287	2,663	2,303
8/5/2021	3,781	2,726	2,305
8/6/2021	3,168	2,550	2,306
8/7/2021	4,671	3,028	2,309
8/8/2021	2,906	1,971	2,309
8/9/2021	4,776	2,304	2,307
8/10/2021	3,441	2,784	2,308
8/11/2021	3,799	3,327	2,311
8/12/2021	4,418	2,928	2,314
8/13/2021	2,867	2,387	2,317
8/14/2021	2,905	2,526	2,318
8/15/2021	2,472	2,095	2,318
8/16/2021	3,901	1,787	2,318
8/17/2021	4,741	2,680	2,321
8/18/2021	4,590	3,057	2,323
8/19/2021	4,808	3,381	2,327
8/20/2021	5,275	3,107	2,330
8/21/2021	3,040	2,484	2,330
8/22/2021	2,497	1,833	2,327
8/23/2021	3,554	2,490	2,324
8/24/2021	3,983	3,139	2,326
8/25/2021	4,269	3,434	2,327
8/26/2021	4,747	3,290	2,327
8/27/2021	3,890	3,299	2,330
8/28/2021	3,704	3,042	2,331
8/29/2021	2,841	1,990	2,331
8/30/2021	2,905	2,056	2,330
8/31/2021	4,014	3,127	2,334

2021	Total Combustion, SCFM		
	Daily Max	Daily Avg	365-Day Avg
9/1/2021	4,472	3,605	2,338
9/2/2021	3,830	3,297	2,341
9/3/2021	4,322	3,583	2,343
9/4/2021	3,607	3,005	2,342
9/5/2021	2,576	2,028	2,339
9/6/2021	3,227	2,189	2,337
9/7/2021	3,608	2,975	2,341
9/8/2021	3,846	3,199	2,346
9/9/2021	4,671	3,759	2,351
9/10/2021	4,890	4,045	2,355
9/11/2021	3,794	3,209	2,356
9/12/2021	2,805	2,325	2,355
9/13/2021	5,887	2,576	2,354
9/14/2021	3,829	3,049	2,357
9/15/2021	3,607	3,024	2,359
9/16/2021	4,341	2,885	2,358
9/17/2021	3,368	2,880	2,357
9/18/2021	3,811	3,027	2,358
9/19/2021	2,585	1,978	2,357
9/20/2021	3,653	2,736	2,359
9/21/2021	4,284	3,375	2,364
9/22/2021	3,796	3,198	2,367
9/23/2021	3,870	2,878	2,368
9/24/2021	3,155	2,595	2,369
9/25/2021	3,029	2,432	2,368
9/26/2021	2,362	1,875	2,366
9/27/2021	3,824	2,805	2,367
9/28/2021	4,510	3,223	2,371
9/29/2021	4,491	3,002	2,374
9/30/2021	4,512	2,962	2,376
10/1/2021	3,794	3,120	2,377
10/2/2021	2,816	2,208	2,374
10/3/2021	2,058	1,763	2,372
10/4/2021	3,892	2,246	2,371
10/5/2021	3,331	2,635	2,374
10/6/2021	4,798	3,195	2,377
10/7/2021	3,992	3,384	2,378
10/8/2021	3,817	3,079	2,379
10/9/2021	2,858	2,216	2,376
10/10/2021	2,054	1,553	2,370
10/11/2021	3,443	2,286	2,368
10/12/2021	3,587	3,085	2,372
10/13/2021	4,033	2,837	2,375
10/14/2021	3,689	2,969	2,376
10/15/2021	3,435	2,682	2,377
10/16/2021	3,091	2,293	2,377
10/17/2021	2,139	1,668	2,375
10/18/2021	3,605	2,441	2,375
10/19/2021	3,237	2,705	2,378
10/20/2021	3,410	2,894	2,381
10/21/2021	3,505	2,766	2,384
10/22/2021	3,711	3,212	2,387
10/23/2021	3,533	2,899	2,388
10/24/2021	3,292	2,227	2,388
10/25/2021	3,103	2,403	2,390
10/26/2021	2,967	2,308	2,391
10/27/2021	3,214	2,533	2,393
10/28/2021	3,554	2,917	2,394
10/29/2021	4,308	3,110	2,395
10/30/2021	3,439	2,680	2,396
10/31/2021	2,963	2,123	2,394

3,400 Annual Average Limit

2021	Total Combustion, SCFM		
	Daily Max	Daily Avg	365-Day Avg
11/1/2021	46,052	2,570	2,394
11/2/2021	46,697	3,052	2,399
11/3/2021	46,423	3,283	2,403
11/4/2021	46,653	3,270	2,405
11/5/2021	46,452	2,934	2,406
11/6/2021	46,377	2,727	2,407
11/7/2021	45,616	2,070	2,406
11/8/2021	46,482	2,693	2,406
11/9/2021	46,450	2,809	2,409
11/10/2021	46,312	3,026	2,412
11/11/2021	46,610	3,264	2,414
11/12/2021	46,299	2,833	2,415
11/13/2021	46,121	2,353	2,416
11/14/2021	45,634	1,790	2,414
11/15/2021	45,579	2,323	2,415
11/16/2021	46,306	2,870	2,419
11/17/2021	46,545	2,795	2,421
11/18/2021	46,143	2,565	2,422
11/19/2021	46,765	2,492	2,423
11/20/2021	46,736	2,255	2,421
11/21/2021	46,315	1,930	2,419
11/22/2021	46,312	2,107	2,419
11/23/2021	46,906	2,491	2,421
11/24/2021	46,749	2,820	2,423
11/25/2021	46,672	2,388	2,422
11/26/2021	46,578	2,031	2,420
11/27/2021	47,053	2,224	2,420
11/28/2021	46,253	1,677	2,420
11/29/2021	45,770	2,240	2,421
11/30/2021	46,644	2,893	2,425
12/1/2021	3,809	2,854	2,428
12/2/2021	3,490	2,919	2,430
12/3/2021	3,182	2,581	2,431
12/4/2021	3,062	2,480	2,431
12/5/2021	2,448	1,849	2,431
12/6/2021	3,265	2,656	2,434
12/7/2021	3,791	2,952	2,438
12/8/2021	3,653	3,036	2,441
12/9/2021	3,578	2,770	2,443
12/10/2021	3,342	2,531	2,443
12/11/2021	2,708	2,167	2,442
12/12/2021	2,092	1,504	2,440
12/13/2021	2,480	1,846	2,440
12/14/2021	2,784	2,375	2,443
12/15/2021	2,293	2,021	2,444
12/16/2021	2,698	2,163	2,443
12/17/2021	2,853	2,240	2,442
12/18/2021	2,983	2,417	2,441
12/19/2021	2,129	1,612	2,436
12/20/2021	1,921	1,631	2,433
12/21/2021	3,066	2,137	2,434
12/22/2021	3,447	2,932	2,437
12/23/2021	3,222	2,848	2,437
12/24/2021	2,969	2,286	2,436
12/25/2021	2,285	1,799	2,434
12/26/2021	2,286	1,828	2,434
12/27/2021	2,186	1,889	2,436
12/28/2021	2,482	2,072	2,437
12/29/2021	2,345	2,149	2,437
12/30/2021	2,342	2,022	2,437
12/31/2021	2,669	2,248	2,436