

January 31, 2024

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 #:867

1. RECEIVED IN 01/31/2024
ENFORCEMENT: _____

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

Dear Mr. Gove:

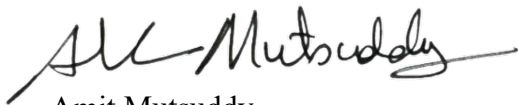
Attached is the semiannual monitoring report for the EBMUD Main Wastewater Treatment Plant (Facility #A0591) as required under Section I.F of the facilities Major Facility Review Permit issued November 7, 2019. The report covers the period from July 1, 2023 to December 31, 2023.

No violations or instances of non-compliance with the permit were identified. One monthly turbine check for NOx and CO was not completed in October 2023 due to the turbine being out of service for most of the month. The monthly test was made up as soon as possible after the outage, but outside of the 25- to 35-day window since the previous test as required in permit condition 24050-8. Since the turbine was out of service and unavailable to be tested, EBMUD considers this scenario as meeting permit conditions.

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

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

Sincerely,



Amit Mutsuddy

AM:CD:sak

Attachment

O:\WTD - Admin\Regulatory Compliance\BAAQMD\Transmittal letter Jan-June 2023.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, 2023 – December 31, 2023

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. Condition met in last performance test (see item 19). See Attachment 1 for hours and gas consumption. Condition met. Annual performance test completed on 11/7/2023. See Attachment 3 for summary.
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	Conditions met. Annual source tests for Engines 1 and 3 on 8/31/2023 and Engine 2 on 9/29/2023. See Attachment 3 for summaries. Condition met. See Attachment 2 for values. Condition met. 14,220 hours in last year. See Attachment 2. Jan-Jun 2023: 6,868 hours Jul-Dec 2023: 7,352 hours Condition met. 22,161 gallons in last year. See Attachment 2. Jan-Jun 2023: 11,125 gallons Jul-Dec 2023: 11,036 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 source tests for Engines 1 and 3 on 8/31/2023 and Engine 2 on 9/29/2023. See Attachment 3 for summaries.
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 9/18/2023. See Attachment 4a.
	Condition 21663 Annual gasoline throughput	334,000 gal per year	Condition met. 71,829 gal in last year. See Attachment 4b. Jan-June 2023: 15,850 gal July-Dec 2023: 55,978 gal
S-53 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.
S-54 Diesel Engine Back-up Generator	Condition 22850 1. Hours of operation	50 hours/year reliability-related hours	Condition met. Generator ran 1 hour 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. 258,459 MMBtu in last 12 months. Refer to Attachment 2. Jan-Jun 2023: 129,217 MMBtu Jul-Dec 2023: 129,242 MMBtu Emission limits met. Refer to Attachments 2 and 6. Annual mass emission: 5,108 lb Emission limits met. Refer to Attachments 2 and 6. Annual mass emission: 4,743 lb See Attachment 11 for readings. Emission limit met. Refer to Attachments 2 and 6. Condition met. Last annual test was December 5, 2023. See Attachment 3 for results. Monthly test results are in Attachment 6. October 2023 test not completed due to turbine outage.
S-58 Diesel Engine Back-up Generator	Condition 22850 1. Hours of operation	50 hours/year reliability-related hours	Condition met. Generator ran 0.2 hours in last 12 months. Refer to Attachment 5.
S-59 Diesel Engine Back-up Generator	Condition 22850 1. Hours of operation	50 hours/year reliability-related hours	Condition met. Generator ran 14.1 hours in last 12 months. Refer to Attachment 5.
S-60 Diesel Engine Back-up Generator	Condition 22850 1. Hours of operation	50 hours/year reliability-related hours	Condition met. Generator ran 8.9 hours in last 12 months. Refer to Attachment 5.

Source	Monitoring Requirement	Limit	Monitoring Results
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 122 MGD influent. Maximum dry weather monthly flow was 57 MGD. See Attachment 7.
S-110 Headworks A-462 Carbon Scrubber A-463/A-464 Biotrickling Filters/Carbon Scrubbers	Condition 17335 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.		Monitoring results for inlet and outlet H2S and any noted outages are in Attachment 8. Maintenance records for scrubber are in Attachment 9.
S-170 Sludge handling A-7/A-8 Atomized Mist Scrubbers	Condition 18006 1. Monitor and record on a daily basis the activated sewage sludge throughput through S-170.		Sludge throughput is recorded in Attachment 10. Maintenance records for the scrubber are in Attachment 9.
S-172 Pre-Digestion Blend Tanks A-9 Iron Oxide A-10 Biofilter A-11 Activated Carbon	Condition 25919 1. Throughput of waste shall not exceed 2,100,000 gallons during any day. 4. POC emissions shall not exceed 2.02 lb/calendar day and 20.3 ppm total carbon on a daily basis. 6. Quarterly POC readings at outlet of A11		Condition met. See Attachment 11 for record of daily throughput. See item 6 for test results. Condition met. POC readings in this reporting period were less than 2ppm.

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>2./11. Venting of digester gas only allowed under listed exceptions.</p> <p>3. Sulfur content of digester gas</p> <p>4. Combined digester gas flow rate to combustion sources</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. NOx limit 10. CO limit 11a. H2S limit</p> <p>12. Daily sampling and testing of digester gas for H2S</p> <p>13. Hours of flaring per day</p>	<p>0.70 lb/hour from PRV</p> <p><200 ppmv annual average</p> <p><3,400 scfm annual average</p> <p><3,000 cfm, 1-hr average</p> <p>0.12 lb/MMBtu 0.20 lb/MMBtu 0.032 lb/hour</p>	<p>Inspections conducted by Operations on daily rounds.</p> <p>Condition met. No venting incidents this period.</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. Attachment 1 contains gas flow records.</p> <p>Condition met. Source test last conducted 4/27/22.</p> <p>Condition met. Source test last conducted 4/27/22.</p> <p>Condition met. Refer to Attachment 11.</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	Annual Static Pressure Tests Results for Gasoline Tank
4b	Gasoline Facility Throughput
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 2023**



July - 2023

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	14	0	24	38	27,880	0	49,506	77,386	25	0	35	60	490,542	0	871,042	1,361,584
2nd	1.0	0	20	21	0	0	40,069	40,069	0	0	29	29	0	0	727,537	727,537
3rd	0	0	24	24	0	0	48,880	48,880	0	0	30	30	0	0	882,394	882,394
4th	16	0	24	40	29,246	0	44,971	74,217	28	0	33	60	528,998	0	813,420	1,342,418
5th	0	0	24	24	0	0	49,281	49,281	0	0	26	26	0	0	879,678	879,678
6th	13	0	24	37	25,550	0	47,813	73,363	24	0	35	59	462,888	0	866,248	1,329,136
7th	21	0	18	39	35,882	0	31,224	67,106	32	0	25	57	649,547	0	565,223	1,214,770
8th	0	0	9	9	0	0	17,952	17,952	0	0	27	27	0	0	316,135	316,135
9th	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10th	0	0	13	13	0	0	28,965	28,965	0	0	21	21	0	0	524,646	524,646
11th	15	0	20	35	27,846	0	33,419	61,265	22	0	33	55	505,665	0	606,870	1,112,535
12th	23	0	23	46	45,662	0	46,760	92,422	38	0	33	72	813,734	0	833,295	1,647,029
13th	22	0	24	46	41,813	0	48,186	89,999	32	0	31	64	719,102	0	828,712	1,547,814
14th	2	0	24	26	2,158	0	49,208	51,366	0	0	28	28	38,226	0	871,525	909,751
15th	2	0	24	26	1,457	0	44,450	45,906	14	0	32	46	26,319	0	803,192	829,511
16th	19	0	0	19	35,424	0	0	35,424	31	0	0	31	657,752	0	0	657,752
17th	11	0	0	11	22,607	0	0	22,607	23	0	0	23	407,819	0	0	407,819
18th	24	0	0	24	50,511	0	0	50,511	31	0	0	31	884,512	0	0	884,512
19th	24	0	0	24	51,137	0	0	51,137	33	0	0	33	864,401	0	0	864,401
20th	24	0	0	24	50,878	0	0	50,878	31	0	0	31	870,578	0	0	870,578
21st	24	0	0	24	50,416	0	0	50,416	58	0	0	58	868,015	0	0	868,015
22nd	23	0	0	23	46,422	0	0	46,422	31	0	0	31	825,951	0	0	825,951
23rd	14	0	0	14	21,814	0	0	21,814	20	0	0	20	402,478	0	0	402,478
24th	18	0	4	22	39,544	0	8,099	47,642	29	0	23	52	701,690	0	143,710	845,400
25th	18	0	24	42	32,234	0	47,995	80,229	29	0	29	58	566,380	0	843,326	1,409,706
26th	17	0	24	41	37,467	0	52,729	90,196	32	0	29	61	647,287	0	910,958	1,558,245
27th	24	0	24	48	41,684	0	43,457	85,142	26	0	34	60	734,807	0	766,058	1,500,865
28th	24	0	24	48	43,625	0	45,580	89,204	40	0	30	69	780,278	0	815,246	1,595,524
29th	1.0	0	23	24	1,491	0	42,048	43,539	0	0	33	33	26,965	0	760,511	787,476
30th	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31st	11	0	11	22	23,982	0	24,679	48,661	29	0	20	49	426,461	0	438,869	865,330
Totals	405	0	429	834	786,727	0	845,271	1,631,999	657	0	616	1,273	13,900,395	0	15,068,595	28,968,990

Sum of Engines 834

Sum of Engines 1,631,999

Sum of Engines 1,273

Sum of Engines 28,968,990



July - 2023

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	5	48,181	0	0	0	24	1,452	1,451,756	0	0	38	38
2nd	16	348,591	0	0	0	10	488	488,440	15	396,095	21	36
3rd	12	160,800	0	0	0	24	1,498	1,497,638	0	0	24	24
4th	5	65,698	0	0	0	24	1,445	1,444,539	0	0	40	40
5th	7	85,643	0.5	9,791	92	24	1,526	1,526,035	0	0	24	24
6th	10	198,169	0	0	0	24	1,529	1,528,592	0	0	37	37
7th	0.1	842	0	0	0	24	1,431	1,430,676	5	74,312	39	44
8th	6	120,870	0	0	0	24	1,496	1,495,703	15	187,737	9	24
9th	0.5	2,497	0	0	0	24	1,491	1,490,716	24	289,422	0	24
10th	8	145,875	0.1	869	14	24	1,510	1,510,019	9	107,146	13	22
11th	8	292,078	0	0	0	24	1,512	1,511,737	0	0	35	35
12th	10	266,387	6	529,355	1,712	24	1,458	1,458,359	0	0	46	46
13th	12	238,195	0	0	0	24	1,459	1,458,937	0	0	46	46
14th	8	109,824	0	0	0	24	1,460	1,459,661	0	0	26	26
15th	2	16,624	0	0	0	24	1,411	1,410,862	0	0	26	26
16th	1.3	9,564	0	0	0	24	1,457	1,456,728	5	73,828	19	24
17th	13	231,146	0	0	0	24	1,493	1,493,348	12	208,257	11	23
18th	14	393,295	6	349,490	1,274	24	1,571	1,570,567	0	0	24	24
19th	5	86,179	15	1,249,292	1,702	24	1,527	1,526,551	0	0	24	24
20th	8	251,977	18	1,103,715	1,554	24	1,521	1,520,691	0	0	24	24
21st	0.02	148	17	513,301	708	24	1,483	1,483,370	0	0	24	24
22nd	9	205,406	4	69,774	352	24	1,504	1,503,554	0.8	16,752	23	24
23rd	3	20,864	0	0	0	24	1,405	1,404,601	11	144,571	14	25
24th	8	100,113	10	502,378	1,012	24	1,580	1,579,990	5	66,042	22	27
25th	2	16,957	1.1	56,121	720	23	1,387	1,387,183	0	0	42	42
26th	9	138,956	16	640,582	943	24	1,526	1,525,679	0	0	41	41
27th	0	0	0.8	10,849	155	24	1,375	1,375,463	0	0	48	48
28th	0.3	2,330	5	72,290	264	24	1,407	1,406,722	0	0	48	48
29th	1.0	10,471	0	0	0	24	1,393	1,393,097	2	26,909	24	26
30th	4	40,578	0	0	0	24	1,514	1,513,689	24	326,951	0	24
31st	14	211,625	1.1	50,802	654	12	813	813,042	12	171,092	22	34
Totals	198	3,819,883	100	5,158,609		717	44,118	44,117,945	139	2,089,114	834	973
				Maximum	1,712						Maximum	48



August - 2023

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	24	0	24	48	51,106	0	52,834	103,939	38	0	35	72	895,392	0	925,664	1,821,056
2nd	24	0	24	48	51,138	0	52,911	104,049	34	0	33	67	866,221	0	896,269	1,762,490
3rd	24	0	24	48	47,857	0	49,622	97,479	37	0	29	66	836,344	0	867,173	1,703,517
4th	24	0	7	31	47,007	0	10,953	57,960	37	0	24	61	838,959	0	195,480	1,034,439
5th	24	0	0	24	49,100	0	0	49,100	33	0	0	33	860,086	0	0	860,086
6th	24	0	0	24	42,560	0	0	42,560	42	0	0	42	781,071	0	0	781,071
7th	24	0	12	36	47,686	0	25,095	72,780	33	0	21	55	864,242	0	454,806	1,319,048
8th	24	0	24	48	46,744	0	48,788	95,532	36	0	32	68	818,376	0	854,161	1,672,537
9th	24	0	24	48	46,646	0	48,658	95,304	36	0	32	68	812,458	0	847,518	1,659,976
10th	24	0	24	48	45,315	0	47,362	92,677	32	0	29	61	792,244	0	828,035	1,620,279
11th	24	0	13	37	44,597	0	21,338	65,934	38	0	29	67	812,909	0	388,941	1,201,850
12th	24	0	0	24	47,155	0	0	47,155	34	0	0	34	849,088	0	0	849,088
13th	24	0	0	24	39,590	0	0	39,590	38	0	0	38	754,358	0	0	754,358
14th	23	0	18	41	40,207	0	33,907	74,113	36	0	32	68	748,376	0	631,109	1,379,485
15th	19	0	24	43	35,428	0	44,064	79,492	38	0	32	70	652,893	0	812,049	1,464,942
16th	24	0	24	48	46,735	0	48,332	95,067	33	0	30	63	827,169	0	855,447	1,682,616
17th	24	0	24	48	46,950	0	48,542	95,492	34	0	29	64	822,294	0	850,183	1,672,477
18th	24	0	20	44	44,761	0	37,997	82,758	37	0	41	78	804,881	0	683,246	1,488,127
19th	10	0	18	28	14,236	0	34,863	49,099	14	0	29	43	254,528	0	623,304	877,832
20th	0	0	19	19	0	0	29,450	29,450	0	0	33	33	0	0	551,593	551,593
21st	7	0	18	25	10,619	0	37,372	47,991	21	0	40	61	198,421	0	698,323	896,744
22nd	16	0	24	40	35,696	0	50,745	86,440	31	0	33	64	635,117	0	902,877	1,537,994
23rd	24	0	24	48	48,016	0	49,896	97,912	34	0	31	65	848,849	0	882,090	1,730,939
24th	24	0	24	48	47,707	0	49,567	97,274	39	0	15	55	826,482	0	858,706	1,685,188
25th	10	0	24	34	16,730	0	48,930	65,660	26	0	33	59	295,775	0	865,068	1,160,843
26th	7	0	24	31	10,671	0	45,625	56,297	16	0	29	44	193,457	0	827,136	1,020,593
27th	0	0	20	20	0	0	33,302	33,302	0	0	35	35	0	0	617,889	617,889
28th	9	0	20	29	17,439	0	38,875	56,314	21	0	26	47	319,106	0	711,329	1,030,435
29th	14	1.0	23	38	23,128	1,377	46,145	70,650	26	36	37	100	417,487	24,862	832,982	1,275,331
30th	24	0	24	48	44,662	0	46,481	91,143	20	0	31	52	808,297	0	841,229	1,649,526
31st	24	0	24	48	41,884	0	43,420	85,304	40	0	31	71	731,987	0	758,837	1,490,824
Totals	595	1.0	572	1,168	1,131,367	1,377	1,125,073	2,257,817	934	36	832	1,803	20,166,867	24,862	20,061,444	40,253,173
	Sum of Engines			1,168	Sum of Engines			2,257,817	Sum of Engines			1,802	Sum of Engines			40,253,173



August - 2023

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	1,058,995	0	0	0	0	0	0	0	0	48	48
2nd	24	956,500	0	0	0	14	43,980	834,645	2	42,611	48	50
3rd	8	101,752	0	0	0	24	75,797	1,432,370	0	0	48	48
4th	11	172,296	0	0	0	24	78,549	1,462,011	10	124,631	31	41
5th	6	71,657	0	0	0	24	77,557	1,466,311	1.3	13,911	24	25
6th	0	0	0	0	0	24	73,316	1,406,776	0	0	24	24
7th	6	95,837	0	0	0	22	70,872	1,376,433	2	52,404	36	38
8th	15	525,307	1.1	12,790	123	10	29,016	549,140	14	310,470	48	62
9th	0.1	2,247	17	655,408	970	24	76,753	1,357,273	0	0	48	48
10th	0	0	8	171,751	426	24	76,011	1,326,214	0	0	48	48
11th	0	0	4	70,835	335	24	73,822	1,337,195	0.3	8,488	37	37
12th	0	0	2	25,216	168	24	78,057	1,390,075	0	0	24	24
13th	0	0	0	0	0	24	66,791	1,249,923	0	0	24	24
14th	0	0	1.5	24,644	176	24	77,211	1,422,208	0	0	41	41
15th	0	0	1.0	12,873	116	24	74,846	1,330,028	0	0	43	43
16th	2	19,729	12	323,562	635	24	75,295	1,359,285	0.1	1,464	48	48
17th	0.8	8,198	6	91,783	347	24	79,357	1,401,945	0	0	48	48
18th	0.03	153	7	143,904	528	24	75,398	1,366,413	0	0	44	44
19th	0	0	5	103,306	545	24	78,349	1,346,738	5	125,149	28	33
20th	0	0	0	0	0	24	70,295	1,295,473	7	87,296	19	26
21st	0.7	4,173	1.1	15,717	149	24	77,008	1,398,053	4	53,698	25	29
22nd	0.03	224	4	46,675	176	24	79,021	1,439,019	0	0	40	40
23rd	0	0	16	685,679	966	24	75,910	1,374,708	0	0	48	48
24th	0	0	6	124,871	500	24	78,530	1,380,667	0	0	48	48
25th	0	0	9	213,441	747	24	79,334	1,387,521	0	0	34	34
26th	0	0	1.3	16,439	165	24	75,890	1,322,116	0	0	31	31
27th	0	0	0.2	1,791	30	24	70,277	1,302,998	5	67,481	20	25
28th	0.03	964	7	125,347	547	24	77,108	1,406,190	4	51,206	29	33
29th	0	0	6	141,391	406	24	73,798	1,341,165	0	0	38	38
30th	0.1	1,334	9	221,725	710	24	74,495	1,319,844	0	0	48	48
31st	0.1	360	13	483,118	1,175	24	79,883	1,389,122	0	0	48	48
Totals	97	3,019,726	137	3,712,266		693	2,192,526	39,771,859	56	938,809	1,168	1,224
				Maximum	1,175						Maximum	62



September - 2023

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	21	0	21	42	38,461	0	36,492	74,953	40	0	41	81	717,588	0	680,843	1,398,431
2nd	24	0	0	24	47,637	0	0	47,637	41	0	0	41	847,857	0	0	847,857
3rd	7	0	0	7	8,605	0	0	8,605	15	0	0	15	163,033	0	0	163,033
4th	23	0	0	23	45,074	0	0	45,074	44	0	0	44	808,265	0	0	808,265
5th	24	0	12	36	47,796	0	25,181	72,977	40	0	27	67	843,944	0	444,635	1,288,579
6th	22	0	24	46	40,263	0	41,906	82,169	84	0	101	185	668,935	0	696,241	1,365,176
7th	24	0	24	48	44,321	0	45,978	90,299	45	0	35	80	787,188	0	816,622	1,603,810
8th	23	0	24	47	43,732	0	47,261	90,994	42	0	35	77	771,420	0	833,667	1,605,087
9th	18	1.0	24	43	29,133	1,169	44,657	74,959	16	7	38	61	515,202	20,667	789,734	1,325,603
10th	0	0	24	24	0	0	41,716	41,716	0	0	31	31	0	0	768,521	768,521
11th	11	0.1	24	35	22,760	34	47,283	70,077	32	9	41	83	410,121	604	851,990	1,262,715
12th	24	15	9	48	48,674	28,992	16,954	94,620	37	41	20	98	858,386	511,279	298,993	1,668,658
13th	24	22	3	49	50,866	44,799	4,590	100,255	40	41	20	101	881,574	776,420	79,556	1,737,550
14th	24	24	0	48	44,681	45,928	0	90,610	45	33	0	79	789,587	811,629	0	1,601,216
15th	24	24	0	48	46,203	45,931	0	92,134	41	32	0	73	810,117	805,343	0	1,615,460
16th	22	24	0	46	35,375	39,403	0	74,778	40	37	0	77	653,887	728,331	0	1,382,218
17th	0	24	0	24	0	37,610	0	37,610	0	29	0	29	0	697,664	0	697,664
18th	2	14	10	27	3,293	22,891	17,914	44,098	32	31	25	87	61,611	428,329	335,194	825,134
19th	14	19	9	43	30,321	38,709	19,375	88,405	41	33	12	86	529,944	676,555	338,635	1,545,134
20th	24	24	0	48	48,091	47,826	0	95,916	42	30	0	72	824,843	820,303	0	1,645,146
21st	24	24	0	48	46,568	45,345	0	91,913	36	33	0	69	811,425	790,122	0	1,601,547
22nd	24	24	0	48	49,451	48,332	0	97,783	43	35	0	78	855,370	836,004	0	1,691,374
23rd	24	24	0	48	44,953	46,998	0	91,950	38	30	0	69	778,991	814,435	0	1,593,426
24th	0	24	0	24	0	36,527	0	36,527	0	34	0	34	0	689,538	0	689,538
25th	0	24	0	24	0	45,533	0	45,533	0	36	0	36	0	822,633	0	822,633
26th	17	24	0	41	33,894	46,445	0	80,338	30	24	0	54	598,564	820,214	0	1,418,778
27th	24	24	0	48	50,599	49,941	0	100,539	44	37	0	81	864,724	853,477	0	1,718,201
28th	24	24	0	48	51,040	51,013	0	102,052	37	30	0	67	855,656	855,199	0	1,710,855
29th	12	24	0	36	17,675	46,980	0	64,655	29	35	0	64	305,675	812,510	0	1,118,185
30th	19	24	0	43	38,994	46,214	0	85,208	42	32	0	73	684,871	811,663	0	1,496,534
Totals	523	431	209	1,163	1,008,459	816,617	389,308	2,214,385	1,015	651	428	2,094	17,698,778	14,382,919	6,934,631	39,016,328

Sum of Engines 1,163

Sum of Engines 2,214,385

Sum of Engines 2,094

Sum of Engines 39,016,328



September - 2023

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	0.02	226	4	24	73,572	1,302,378	0	0	42	42
2nd	0	0	2	19,221	84	24	80,360	1,414,196	0	0	24	24
3rd	0	0	2	22,068	191	24	77,442	1,382,514	18	241,145	7	25
4th	0.1	736	3	44,391	231	24	79,941	1,424,290	0.6	7,504	23	24
5th	0	0	13	282,348	564	24	81,015	1,415,615	0	0	36	36
6th	5	162,238	17	609,728	1,154	24	83,407	1,417,149	0	0	46	46
7th	0.03	422	9	287,599	842	24	81,910	1,401,148	0	0	48	48
8th	0.3	6,032	9	184,086	643	24	75,273	1,322,825	0	0	47	47
9th	0	0	0.1	1,290	8	24	74,058	1,293,533	0	0	43	43
10th	0	0	0.4	6,690	112	24	70,632	1,287,365	0	0	24	24
11th	0.2	2,794	6	122,701	457	24	78,741	1,419,596	0	0	35	35
12th	0.1	1,099	13	339,492	748	24	81,381	1,418,696	0	0	48	48
13th	0.1	1,502	16	349,502	688	24	82,258	1,428,366	0	0	49	49
14th	0.1	588	13	653,721	1,274	24	79,658	1,384,706	0	0	48	48
15th	0	0	12	347,389	906	24	79,729	1,373,053	0	0	48	48
16th	0	0	0.1	811	8	24	72,392	1,309,605	0	0	46	46
17th	0	0	0	0	0	24	66,746	1,213,676	0	0	24	24
18th	0.5	10,056	10	276,520	714	24	74,557	1,347,046	7	137,150	27	34
19th	0	0	16	524,468	810	24	81,554	1,410,088	0	0	43	43
20th	0	0	16	920,952	1,440	24	81,024	1,390,749	0	0	48	48
21st	0.1	1,307	9	362,554	1,157	24	79,918	1,372,938	0	0	48	48
22nd	0	0	17	531,163	1,131	24	83,352	1,447,561	0	0	48	48
23rd	0	0	11	226,091	597	24	81,686	1,401,297	0	0	48	48
24th	0	0	0	0	0	24	60,747	1,165,015	0	0	24	24
25th	0	0	4	90,274	475	24	80,694	1,463,967	0	0	24	24
26th	0.02	337	9	188,547	522	24	81,160	1,435,105	0	0	41	41
27th	4	116,387	18	1,239,229	1,841	24	81,870	1,419,972	0	0	48	48
28th	0	0	20	774,756	1,387	24	81,396	1,379,214	0	0	48	48
29th	6	213,928	14	803,706	1,710	24	78,451	1,337,402	2	51,246	36	38
30th	0	0	7	96,322	300	24	79,006	1,373,092	4	98,567	43	47
Totals	16	517,426	266	9,305,845		720	2,343,930	41,152,157	32	535,612	1,163	1,195
					Maximum						Maximum	
					1,841						49	



October - 2023

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	2	24	0	26	1,748	45,755	0	47,503	4	28	0	32	30,454	796,993	0	827,447
2nd	8	16	10	34	14,685	25,700	22,762	63,146	20	22	26	68	263,409	460,974	408,278	1,132,661
3rd	18	19	24	61	38,193	39,872	52,066	130,132	37	31	32	99	666,318	695,613	908,346	2,270,277
4th	24	24	24	72	48,767	49,329	50,829	148,925	50	25	14	89	836,555	846,190	871,931	2,554,676
5th	24	24	24	72	46,863	47,745	48,748	143,355	39	30	32	101	812,164	827,450	844,829	2,484,443
6th	23	24	23	70	49,022	49,139	50,210	148,372	53	24	32	110	844,721	846,740	865,193	2,556,654
7th	24	24	24	72	49,657	49,611	51,003	150,271	36	31	35	103	853,916	853,115	877,067	2,584,098
8th	24	24	5	53	47,557	47,336	6,067	100,960	33	27	6	66	844,666	840,745	107,764	1,793,175
9th	24	24	0.5	48	51,093	48,397	22	99,513	40	31	11	82	920,227	871,662	405	1,792,294
10th	24	24	0.1	48	51,133	49,550	10	100,693	33	27	5	65	903,130	875,179	173	1,778,482
11th	24	24	0	48	51,061	51,744	0	102,805	35	25	0	60	838,119	849,344	0	1,687,463
12th	24	24	0	48	51,039	51,581	0	102,620	35	31	0	66	849,914	858,932	0	1,708,846
13th	24	24	0.1	48	45,080	50,881	15	95,976	30	24	39	93	755,190	852,364	244	1,607,798
14th	0.6	24	0	25	635	50,680	0	51,315	45	36	0	80	10,674	851,767	0	862,441
15th	0	24	0	24	0	49,668	0	49,668	0	28	0	28	0	864,274	0	864,274
16th	0	24	0.7	25	0	48,940	770	49,709	0	22	37	59	0	852,154	13,403	865,557
17th	0	24	0	24	0	51,019	0	51,019	0	34	0	34	0	863,086	0	863,086
18th	12	24	0.3	36	27,031	51,756	83	78,870	80	26	13	119	444,407	850,911	1,370	1,296,688
19th	24	24	13	61	49,431	49,418	28,617	127,467	38	29	73	140	837,545	837,321	484,879	2,159,745
20th	24	24	24	72	51,198	51,565	52,655	155,418	37	29	73	138	856,762	862,893	881,137	2,600,792
21st	24	24	24	72	49,583	50,293	51,350	151,225	40	30	32	102	836,593	848,574	866,412	2,551,579
22nd	24	24	9	57	44,784	43,996	12,280	101,060	36	28	12	77	810,854	796,600	222,342	1,829,796
23rd	24	24	14	62	47,911	46,060	32,405	126,376	35	27	32	94	871,665	837,992	589,568	2,299,225
24th	24	24	24	72	51,267	50,784	52,881	154,932	38	29	34	102	872,691	864,469	900,177	2,637,337
25th	24	24	24	72	51,300	51,931	52,917	156,148	18	27	33	78	852,233	862,725	879,100	2,594,058
26th	24	24	24	72	51,212	51,900	52,833	155,945	39	32	32	103	862,108	873,682	889,403	2,625,193
27th	24	24	24	72	51,008	51,603	52,634	155,245	33	25	31	89	864,718	874,804	892,285	2,631,807
28th	24	24	24	72	49,372	50,036	50,974	150,382	40	33	27	100	833,671	844,870	860,716	2,539,257
29th	24	24	8	56	47,974	48,279	11,615	107,869	36	27	15	78	829,947	835,215	200,945	1,866,107
30th	24	24	14	62	48,772	47,823	28,619	125,214	41	30	27	98	862,794	846,004	506,281	2,215,079
31st	24	24	23	71	51,211	50,644	51,804	153,659	35	29	29	93	877,604	867,889	887,757	2,633,250
Totals	592	731	385	1,707	1,218,588	1,503,034	814,171	3,535,794	1,038	877	733	2,648	20,943,049	25,810,531	13,960,005	60,713,585

Sum of Engines 1,707

Sum of Engines 3,535,794

Sum of Engines 2,648

Sum of Engines 60,713,585



October - 2023

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	4	54,448	226	24	77,494	1,356,970	0	0	26	26
2nd	0.3	2,033	2	31,949	266	24	76,163	1,338,828	0	0	34	34
3rd	11	367,171	11	787,669	1,378	6	19,110	328,744	0	0	61	61
4th	17	629,435	18	1,218,625	1,471	0	0	0	0	0	72	72
5th	13	604,578	24	1,719,282	1,616	0	0	0	0	0	72	72
6th	14	559,203	18	1,046,051	1,454	0	0	0	0	0	70	70
7th	18	545,029	0	0	0	0	0	0	0	0	72	72
8th	6	89,093	0	0	0	0	0	0	0	0	53	53
9th	20	407,846	0	0	0	0	0	0	0	0	48	48
10th	24	1,093,833	12	522,242	831	0	0	0	7	161,424	48	55
11th	24	1,142,512	24	1,051,431	900	0	0	0	24	496,460	48	72
12th	21	1,038,035	24	1,562,623	1,700	0	0	0	24	505,766	48	72
13th	5	170,810	24	1,595,997	1,527	0	0	0	24	503,660	48	72
14th	17	507,558	7	292,914	962	0	0	0	24	525,926	25	49
15th	24	523,104	0	0	0	0	0	0	24	520,709	24	48
16th	24	1,033,338	0	0	0	0	0	0	24	522,327	25	49
17th	24	1,118,433	14	694,164	888	0	0	0	24	523,947	24	48
18th	24	897,175	21	891,307	883	0	0	0	23	495,191	36	60
19th	20	897,311	13	542,557	852	0	0	0	9	194,924	61	70
20th	15	521,023	13	909,694	1,570	0	0	0	0	0	72	72
21st	13	195,521	3	83,872	681	0	0	0	0	0	72	72
22nd	0.3	1,490	0	0	0	0	0	0	0	0	57	57
23rd	10	158,068	0	0	0	0	0	0	0	0	62	62
24th	18	642,634	14	985,421	1,605	0	0	0	0	0	72	72
25th	21	791,390	3	121,200	775	0	0	0	0	0	72	72
26th	20	832,315	0	0	0	0	0	0	0	0	72	72
27th	18	511,975	0	0	0	0	0	0	0	0	72	72
28th	16	486,803	0	0	0	0	0	0	0	0	72	72
29th	12	121,233	0	0	0	0	0	0	0	0	56	56
30th	13	216,038	1.2	11,573	153	0	0	0	0	0	62	62
31st	7	146,318	17	1,285,223	1,814	0	0	0	0	0	71	71
Totals	468	16,251,305	267	15,408,242		54	172,767	3,024,542	207	4,450,334	1,707	1,915
				Maximum	1,814						Maximum	72



November - 2023

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	24	24	24	72	50,800	51,268	52,488	154,555	21	16	20	58	856,312	864,201	884,777	2,605,290
2nd	24	24	24	72	51,274	51,904	52,932	156,110	21	17	15	52	852,390	862,864	879,955	2,595,209
3rd	24	24	24	72	51,263	51,857	53,003	156,122	20	15	21	56	853,976	863,871	882,967	2,600,814
4th	24	24	23	71	48,716	49,384	45,526	143,626	22	17	20	59	832,662	844,087	778,149	2,454,898
5th	25	25	0	50	53,380	52,651	0	106,031	22	15	0	37	922,679	910,077	0	1,832,756
6th	24	24	10	58	48,899	47,085	20,963	116,947	23	18	30	71	873,491	841,096	374,476	2,089,063
7th	24	24	3	51	51,187	51,341	6,030	108,558	18	15	10	43	870,091	872,719	102,503	1,845,313
8th	24	24	0	48	50,433	51,034	0	101,467	35	26	0	61	847,875	857,988	0	1,705,863
9th	24	24	0	48	51,039	51,839	0	102,878	30	17	0	47	832,935	845,979	0	1,678,914
10th	24	24	0	48	50,707	51,399	0	102,106	23	20	0	44	829,737	841,068	0	1,670,805
11th	24	2	0	26	50,391	1,918	0	52,309	21	0	0	21	849,211	32,324	0	881,535
12th	4	0	0	4	5,017	0	0	5,017	19	0	0	19	89,304	0	0	89,304
13th	11	13	7	31	24,852	27,036	15,987	67,874	14	13	20	48	433,668	471,778	278,970	1,184,416
14th	24	24	22	70	51,183	51,394	49,285	151,861	17	20	22	59	881,586	885,210	848,888	2,615,684
15th	24	24	24	72	51,219	51,936	52,868	156,023	24	15	16	55	861,064	873,105	888,778	2,622,947
16th	18	24	24	66	33,589	50,173	51,133	134,895	17	19	19	55	573,985	857,370	873,788	2,305,143
17th	0	24	24	48	0	44,907	46,061	90,968	0	17	20	37	0	806,572	827,291	1,633,863
18th	0	16	13	29	0	32,791	27,103	59,894	0	13	13	26	0	570,076	471,196	1,041,272
19th	0	0	16	16	0	0	25,169	25,169	0	0	16	16	0	0	476,474	476,474
20th	0	10	17	27	0	18,241	34,874	53,115	0	9	16	25	0	336,894	644,096	980,990
21st	0	19	24	43	0	36,344	48,279	84,623	0	20	22	42	0	642,076	852,933	1,495,009
22nd	0	24	24	48	0	48,842	50,180	99,022	0	15	17	33	0	851,321	874,656	1,725,977
23rd	0	24	22	46	0	45,905	39,197	85,103	0	18	15	34	0	799,575	682,739	1,482,314
24th	0	24	0	24	0	46,522	0	46,522	0	19	0	19	0	799,332	0	799,332
25th	0	7	0	7	0	12,374	0	12,374	0	10	0	10	0	215,495	0	215,495
26th	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27th	0	16	7	23	0	32,550	11,180	43,730	0	16	14	30	0	592,307	203,447	795,754
28th	0	24	14	38	0	49,656	32,249	81,905	0	19	22	40	0	852,043	553,360	1,405,403
29th	0	24	17	41	0	48,770	35,867	84,638	0	18	18	35	0	846,384	622,459	1,468,843
30th	0	24	24	48	0	47,868	48,815	96,683	0	16	17	33	0	830,370	846,789	1,677,159
Totals	346	564	387	1,297	723,946	1,156,987	799,191	2,680,124	348	436	382	1,166	12,260,966	19,866,182	13,848,691	45,975,839
	Sum of Engines			1,297	Sum of Engines			2,680,124	Sum of Engines			1,166	Sum of Engines			45,975,839



November - 2023

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	3	179,277	20	1,272,544	1,513	0	0	0	0	0	72	72
2nd	6	268,888	24	1,747,995	1,798	0	0	0	0	0	72	72
3rd	6	219,413	18	1,280,428	1,759	0	0	0	0	0	72	72
4th	14	231,190	1.3	39,613	557	0	0	0	0	0	71	71
5th	13	113,106	0	0	0	0	0	0	0	0	50	50
6th	20	558,525	0.7	9,485	147	0	0	0	5	115,024	58	63
7th	22	728,739	7	403,598	1,114	7	368	367,520	15	342,000	51	66
8th	16	542,022	11	811,524	1,742	24	1,420	1,420,007	0	0	48	48
9th	12	539,513	16	1,117,111	1,757	24	1,426	1,425,772	0.1	2,260	48	48
10th	17	591,008	4	156,235	854	24	1,382	1,382,191	0	0	48	48
11th	10	133,551	0	0	0	24	1,381	1,380,539	0	0	26	26
12th	13	149,615	0	0	0	24	1,388	1,387,565	21	297,924	4	25
13th	17	393,917	3	164,273	1,118	21	1,275	1,274,582	8	137,011	31	39
14th	21	885,920	6	427,047	1,729	0	0	0	1.4	25,104	70	71
15th	24	807,756	0	0	0	0	0	0	0	0	72	72
16th	19	897,946	6	242,839	812	4	170	170,099	3	56,836	66	69
17th	17	365,236	0	0	0	24	1,337	1,336,774	0	0	48	48
18th	16	259,642	0.2	5,067	66	24	1,388	1,387,838	0	4,089	29	29
19th	7	56,100	0	0	0	24	1,291	1,291,468	9	133,693	16	25
20th	16	229,222	0	0	0	24	1,414	1,414,162	9	124,878	27	36
21st	14	231,366	0	0	0	24	1,353	1,352,519	0	0	43	43
22nd	19	531,370	0	0	0	24	1,419	1,418,821	0	0	48	48
23rd	10	111,207	0	0	0	24	1,376	1,376,475	0	0	46	46
24th	11	128,706	0	0	0	24	1,325	1,325,450	2	32,773	24	26
25th	7	120,858	0	0	0	24	1,408	1,407,977	21	319,366	7	28
26th	3	24,041	0	0	0	24	1,429	1,429,146	24	341,279	0	24
27th	10	119,802	0	0	0	24	1,449	1,448,996	15	199,001	23	38
28th	14	157,952	0	0	0	24	1,424	1,424,110	1.3	18,462	38	39
29th	16	616,214	0	0	0	24	1,418	1,418,279	0	0	41	41
30th	19	608,761	0	0	0	24	1,402	1,402,206	0	0	48	48
Totals	413	10,800,863	117	7,677,759		488	28,242	28,242,496	136	2,149,700	1,297	1,433
				Maximum	1,798						Maximum	72



December - 2023

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	20	44	0	47,456	36,563	84,019	0	32	40	71	0	828,181	638,089	1,466,270
2nd	0	24	23	47	0	51,298	52,727	104,025	0	26	30	56	0	898,167	923,174	1,821,341
3rd	0	24	24	48	0	48,644	50,894	99,538	0	33	37	70	0	876,459	917,001	1,793,460
4th	0	24	24	48	0	47,858	50,991	98,849	0	24	28	53	0	870,966	927,975	1,798,941
5th	0	24	18	42	0	49,748	33,036	82,784	0	35	71	106	0	871,893	578,993	1,450,886
6th	17	24	0.1	41	38,327	49,915	69	88,310	53	26	11	91	663,938	864,684	1,189	1,529,811
7th	24	24	0	48	49,298	49,809	0	99,107	39	28	0	66	846,505	855,285	0	1,701,790
8th	24	24	0	48	51,176	51,732	0	102,908	40	31	0	71	856,755	866,054	0	1,722,809
9th	24	24	0	48	48,983	49,567	0	98,551	30	24	0	54	821,400	831,194	0	1,652,594
10th	7	24	0	31	9,659	40,478	0	50,137	16	39	0	55	173,760	728,161	0	901,921
11th	1.0	15	0	16	1,154	29,380	0	30,534	87	61	0	149	19,470	495,664	0	515,134
12th	13	23	0	36	26,140	48,238	0	74,378	26	30	0	56	462,626	853,701	0	1,316,327
13th	24	24	0	48	50,494	50,486	0	100,980	44	27	0	71	878,488	878,361	0	1,756,849
14th	24	24	0	48	51,049	51,877	0	102,925	39	27	0	66	853,795	867,645	0	1,721,440
15th	24	24	0	48	50,914	51,569	0	102,483	34	35	0	68	858,513	869,550	0	1,728,063
16th	24	24	0	48	40,970	42,033	0	83,003	42	27	0	69	739,130	758,311	0	1,497,441
17th	1.0	24	0	25	0	38,058	0	38,058	0	32	0	32	0	729,323	0	729,323
18th	0	11	10	21	0	15,274	20,631	35,904	0	67	65	132	0	275,175	371,690	646,865
19th	15	0.01	23	38	32,623	0	48,622	81,245	30	5	45	80	577,053	0	860,068	1,437,121
20th	24	0	23	47	47,225	0	46,136	93,361	44	0	32	76	827,294	0	808,219	1,635,513
21st	24	23	15	62	51,113	21,149	30,862	103,124	34	17	28	79	866,726	358,626	523,335	1,748,687
22nd	24	10	0	34	51,140	50,620	0	101,760	40	31	0	71	883,118	874,138	0	1,757,256
23rd	20	24	0	44	37,957	46,867	0	84,824	39	27	0	67	674,822	833,229	0	1,508,051
24th	2	24	0	26	783	42,700	0	43,482	0	41	0	41	14,154	772,338	0	786,492
25th	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26th	10	6	0	16	21,233	17,749	0	38,982	40	22	0	62	390,725	326,621	0	717,346
27th	24	4	0	28	48,859	0	0	48,859	37	0	0	37	852,234	0	0	852,234
28th	24	22	0	46	51,129	47,276	0	98,405	42	30	0	72	899,495	831,722	0	1,731,217
29th	24	24	0	48	51,162	50,195	0	101,358	37	30	0	67	888,937	872,141	0	1,761,078
30th	16	24	0	40	24,798	42,275	0	67,073	21	15	0	36	450,678	768,315	0	1,218,993
31st	0	18	0	18	0	29,430	0	29,430	0	29	0	29	0	551,054	0	551,054
Totals	414	588	180	1,182	836,184	1,161,681	370,531	2,368,396	812	854	387	2,053	14,499,616	20,406,958	6,549,733	41,456,307
	Sum of Engines		1,182		Sum of Engines		2,368,396		Sum of Engines		2,053		Sum of Engines		41,456,307	



December - 2023

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	12	168,707	0	0	0	24	81,493	1,348,396	2	44,716	44	46
2nd	18	358,457	0	0	0	0	0	0	24	576,210	47	71
3rd	11	108,960	0	0	0	0	0	0	24	551,160	48	72
4th	19	485,879	0.03	321	5	0	0	0	24	494,663	48	72
5th	17	519,639	0	0	0	23	71,969	1,305,961	3	60,664	42	45
6th	18	441,748	0	1,849	31	24	80,025	1,399,083	5	124,702	41	46
7th	16	595,086	2	80,955	878	24	79,471	1,385,147	0	0	48	48
8th	23	1,015,487	0.5	4,810	71	24	84,930	1,439,007	0	0	48	48
9th	16	374,615	0	0	0	24	82,624	1,394,472	0	0	48	48
10th	1.2	9,473	0	0	0	24	74,991	1,331,008	0.7	14,853	31	32
11th	12	323,542	5	201,249	842	23	80,991	1,412,188	8	134,124	16	24
12th	10	157,224	0.5	17,566	234	24	80,656	1,367,992	0.6	16,028	36	37
13th	12	523,702	12	740,995	1,208	13	43,004	743,453	9	232,801	48	57
14th	24	822,249	0	0	0	24	85,640	1,437,214	0	0	48	48
15th	16	452,848	3	70,958	456	24	84,466	1,438,916	0	0	48	48
16th	1	12,571	0	0	0	24	73,801	1,297,252	0	0	48	48
17th	0	164	0	0	0	24	73,494	1,307,428	0	0	25	25
18th	16	238,195	0	0	0	24	78,484	1,380,046	14	205,263	21	35
19th	12	207,656	0	0	0	24	80,142	1,373,625	8	97,833	38	46
20th	17	440,024	0	0	0	24	80,420	1,362,372	0	0	47	47
21st	24	619,640	0	0	0	24	84,086	1,398,094	0	0	62	62
22nd	19	531,503	0	0	0	24	84,265	1,426,983	0	0	34	34
23rd	10	155,653	0	0	0	24	78,685	1,341,418	2	42,563	44	46
24th	0.5	4,102	0	0	0	24	73,931	1,290,257	1.5	24,227	26	27
25th	0	0	0	0	0	24	64,768	1,183,093	24	336,578	0	24
26th	7	132,458	0	0	0	24	72,691	1,344,233	13	167,249	16	29
27th	15	203,467	0	0	0	24	77,632	1,351,916	0	0	28	28
28th	20	273,929	0	0	0	24	81,311	1,408,462	0	0	46	46
29th	22	562,395	0	0	0	24	81,302	1,386,365	0	0	48	48
30th	2	15,019	0.03	181	3	24	72,164	1,268,444	0	0	40	40
31st	0.3	1,733	0	0	0	24	65,935	1,177,409	6	105,987	18	24
Totals	390	9,756,125	23	1,118,884		659	2,153,371	37,300,234	169	3,229,621	1,182	1,351

Maximum 1,208

Maximum 72

Attachment 2 - Combustion Device Summaries

EBMUD Main Wastewater Plant

July 1 - December 31, 2023

Turbine Operation			Data Source	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Semi-annual Totals	Limits
Run Time	Total	hrs	metered	717	693	720	54	488	659	3,331	
Digester Gas	Total	cu ft	metered	44,117,945	39,771,859	41,152,157	3,024,542	28,242,496	37,300,234	193,609,233	
Thermal Throughput ³	Total	MMBTU		29,455	26,586	27,522	2,020	18,863	24,795	129,242	389,820 MMBTU HHV per 12-Month period
Nitrogen Oxide ⁴	Total	MMBTU/hr		41.1	38.3	38.2	37.4	38.6	37.6	x	
Carbon Monoxide ⁴	Max	ppm	sampled	5.3	5.5	6.0	-	5.5	5.5	x	23 ppm at any time
Sulfur Dioxide ⁴	Max	ppm	sampled	5.8	4.6	4.7	-	4.6	4.7	x	100 ppm at any time
Nitrogen Oxide	Max	ppm	sampled	4.6	3.9	4.3	-	4.7	3.9	x	150 ppm at any time
Nitrogen Oxide	Total	lbs	calc'd	Based on last annual source test mass load rate (0.7 lbs/hr) x run time (3,966hrs+3,331hrs)-->						5,108	34,400 lbs per 12-Month period
Carbon Monoxide	Total	lbs	calc'd	Based on last annual source test mass load rate (0.65 lbs/hr) x run time (3,966hrs+3,331hrs)-->						4,743	92,200 lbs per 12-Month period
Engine Operation											
Run Time	Eng #1	hrs	metered	405	595	523	592	346	414	2,875	
	Eng #2	hrs	metered	-	1	431	731	564	588	2,315	
	Eng #3	hrs	metered	429	572	209	385	387	180	2,162	
	Total	hrs	sum	834	1,168	1,163	1,707	1,297	1,182	7,352	25,316 hr/365 days
Diesel Fuel ¹	Eng #1	gal	calc'd	657	934	1,015	1,038	348	812	4,804	
	Eng #2	gal	calc'd	-	36	651	877	436	854	2,854	
	Eng #3	gal	calc'd	616	832	428	733	382	387	3,378	
	Total	gal	sum	1,273	1,802	2,094	2,648	1,166	2,053	11,036	150,000 gal/365 days
Digester Gas ²	Eng #1	cu ft	metered	13,900,395	20,166,867	17,698,778	20,943,049	12,260,966	14,499,616	99,469,671	
	Eng #2	cu ft	metered	-	24,862	14,382,919	25,810,531	19,866,182	20,406,958	80,491,452	
	Eng #3	cu ft	metered	15,068,595	20,061,444	6,934,631	13,960,005	13,848,691	6,549,733	76,423,099	
	Total	cu ft	sum	28,968,990	40,253,173	39,016,328	60,713,585	45,975,839	41,456,307	256,384,222	
Thermal Throughput ³	Eng #1	MMBTU/hr		23.1	22.9	22.9	23.9	23.8	23.6	x	25 MMBTU/hr
	Eng #2	MMBTU/hr		-	21.6	22.5	23.7	23.6	23.3	x	25 MMBTU/hr
	Eng #3	MMBTU/hr		23.7	23.6	22.5	24.5	24.0	24.5	x	25 MMBTU/hr
Natural Gas	Total	cu ft	metered	-	-	-	-	-	-	-	
Boiler Operation											
Run Time	Boiler	hrs	metered	139	56	32	207	136	169	739	
Digester Gas	Boiler	cu ft	metered	2,089,114	938,809	535,612	4,450,334	2,149,700	3,229,621	13,393,190	
Thermal Thruput ³	Boiler	MMBTU/hr		10.0	11.3	11.2	14.3	10.6	12.7	x	20.41 MMBTU/hr
Flare Operation (A-190,191,192,193)											
Run Time	Flares	hrs	metered	198	97	16	468	413	390	1,581	
Digester Gas	Flares	cu ft	metered	3,819,883	3,019,726	517,426	16,251,305	10,800,863	9,756,125	44,165,328	
Thermal Thruput ³	Flares	MMBTU/hr		12.9	20.7	21.9	23.2	17.5	16.6	x	
Flare Operation (A-194,195)											
Run Time	Flares	hrs	metered	100	137	266	267	117	23	910	
Digester Gas	Flares	cu ft	metered	5,158,609	3,712,266	9,305,845	15,408,242	7,677,759	1,118,884	42,381,605	
Thermal Thruput ³	Flares	MMBTU/hr		34.5	18.1	23.4	38.5	43.8	33.0	x	
Max Total Flow	Flares	scfm	metered	1,712	1,175	1,841	1,814	1,798	1,208	x	3,000 scfm/1 hr avg
Digester Gas HHV	12-mo Avg	BTU/scf	sampled	668	668	669	668	668	665	x	12-month rolling avg

(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

- S-37, Engine #1, 8/31/2023, Blue Sky Environmental
- S-39, Engine #3, 8/31/2023, Blue Sky Environmental
- S-38, Engine #2, 9/29/2023, Blue Sky Environmental
- S-55, Boiler, 11/7/2023, Blue Sky Environmental
- S-56, Turbine, 12/5/2023, Blue Sky Environmental

TABLE #1

**East Bay Municipal Utility District
Engine #1 (S-37)**

Parameter	Run 1	Run 2	Run 3	Average Results	Permit Limits
Test Date	8/31/23	8/31/23	8/31/23		
Test Time	1002-1035	1045-1115	1126-1156		
Standard Temperature, °F	70	70	70		
Process Parameters:					
Generator, kW	2,126	2,133	2,132	2,131	
Engine, BHp	2,849	2,858	2,857	2,855	
Fuel:					
Fuel Flow Rate, SCFM	615.7	615.7	613.7	615.0	
Heat Input, MMBtu/hr <i>(calculated)</i>	22.4	22.4	23.7	22.8	
Stack Gas:					
Flow Rate, DSCFM <i>(EPA Method 19)</i>	9,528	9,443	10,041	9,671	
Oxygen (O ₂), % volume dry	13.5	13.4	13.4	13.4	
Carbon Dioxide (CO ₂), % volume dry	4.89	4.94	4.94	4.92	
NO_x Emissions:					
NO _x , ppmvd	31.4	32.1	32.3	32.0	
NO _x , ppmvd @ 15% O ₂	24.9	25.3	25.5	25.2	70
NO _x , lb/hr	2.14	2.16	2.32	2.21	
NO _x , lb/day	51.3	51.9	55.6	52.9	
NO _x , g/BHp-hr	0.340	0.344	0.368	0.350	
CO Emissions:					
CO, ppmvd	337	335	338	337	
CO, ppmvd @ 15% O ₂	267	264	267	266	2,000
CO, lb/hr	13.9	13.8	14.7	14.1	
CO, lb/day	334	330	354	339	
CO, g/BHp-hr	2.22	2.18	2.34	2.25	

WHERE:

ppmvd = parts per million concentration by volume expressed on a dry gas basis
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:

ppm @ 15% O₂ = ppm · 5.9 / (20.9 · %O₂)
lb/hr = ppm · 8.223 E-05 · DSCFM · MW / Tstd. °R
lb/day = lb/hr · 24
g/BHp-hr = lb/hr · 453.6 / BHp
Engine BHp = Generator kW · 1.34

TABLE #2

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

Parameter	Run 1	Run 2	Run 3	Average Results	Permit Limits
Test Date	8/31/23	8/31/23	8/31/23		
Test Time	0734-0807	0815-0846	0857-0927		
Standard Temperature, °F	70	70	70		
Process Parameters:					
Generator, kW	2,204	2,203	2,210	2,205	
Engine, BHP	2,953	2,952	2,961	2,955	
Fuel:					
Fuel Flow Rate, SCFM	623.3	621.6	619.8	621.5	
Heat Input, MMBtu/hr <i>(calculated)</i>	24.8	24.7	24.4	24.6	
Stack Gas:					
Flow Rate, DSCFM <i>(EPA Method 19)</i>	10,257	10,454	10,395	10,369	
Oxygen (O ₂), % volume dry	13.3	13.4	13.5	13.4	
Carbon Dioxide (CO ₂), % volume dry	4.87	4.83	4.80	4.83	
NO_x Emissions:					
NO _x , ppmvd	43.4	42.8	42.9	43.0	
NO _x , ppmvd @ 15% O ₂	33.5	33.8	34.1	33.8	70
NO _x , lb/hr	3.18	3.19	3.18	3.18	
NO _x , lb/day	76.2	76.7	76.3	76.4	
NO _x , g/BHP-hr	0.488	0.491	0.487	0.489	
CO Emissions:					
CO, ppmvd	269	266	266	267	
CO, ppmvd @ 15% O ₂	208	210	212	210	2,000
CO, lb/hr	12.0	12.1	12.0	12.0	
CO, lb/day	288	290	288	289	
CO, g/BHP-hr	1.84	1.86	1.84	1.85	

WHERE:

ppmvd = parts per million concentration by volume expressed on a dry gas basis
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:

ppm @ 15% O₂ = ppm · 5.9 / (20.9 · %O₂)
lb/hr = ppm · 8.223 E-05 · DSCFM · MW / Tstd. °R
lb/day = lb/hr · 24
g/BHP-hr = lb/hr · 453.6 / BHP
Engine BHP = Generator kW · 1.34

Table #1

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

Parameter	Run 1	Run 2	Run 3	Average Results	Permit Limits
Test Date	9/29/23	9/29/23	9/29/23		
Test Time	1028-1100	1121-1151	1207-1237		
Standard Temperature, °F	70	70	70		
Process Parameters:					
Generator, kW	2,009	1,930	1,947	1,962	
Engine, BHp	2,692	2,586	2,609	2,629	
Stack Gas:					
Flow Rate, DSCFM (EPA Method 2)	9,041	9,083	9,003	9,042	
Oxygen (O ₂), % volume dry	12.5	12.5	12.5	12.5	
Carbon Dioxide, CO ₂ , % volume dry	6.5	6.5	6.5	6.5	
NO_x Emissions:					
NO _x , ppmvd	42.9	41.3	41.8	42.0	
NO _x , ppmvd @ 15% O ₂	29.9	28.9	29.3	29.4	
NO _x , lb/hr	2.77	2.68	2.69	2.71	
NO _x , lb/day	66.4	64.3	64.5	65.1	
NO _x , g/BHp-hr	0.466	0.470	0.467	0.468	1.25
CO Emissions:					
CO, ppmvd	386.1	395.0	392.6	391.2	
CO, ppmvd @ 15% O ₂	269.6	276.5	274.8	273.6	
CO, lb/hr	15.16	15.59	15.35	15.37	
CO, lb/day	363.9	374.1	368.5	368.8	
CO, g/BHp-hr	2.555	2.734	2.670	2.653	3.0
Hydrocarbon Emissions (reported as CH₄):					
THC, ppmvd	3,310	3,509	2,904	3,241	
THC, lb/hr	74.29	79.1	64.9	72.8	
Methane (CH ₄), ppmvd	3,299	3,665	2,866	3,277	
POC, ppmvd (THC-CH ₄)	<100.0	<100.0	<100.0	<100.0	
POC, ppmvd @ 15% O ₂	<69.8	<70.0	<70.0	<69.9	
POC, lb/hr	<2.24	<2.25	<2.23	<2.24	
POC, lb/day	<53.9	<54.1	<53.6	<53.9	
POC, g/BHp-hr	<0.38	<0.40	<0.39	<0.39	0.6

WHERE:

ppmvd = parts per million concentration by volume expressed on a dry gas basis

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 calculated as CH₄ (MW = 16)

POC = precursor organic compounds (nonmethane organic compounds) calculated as CH₄ (MW = 16)

CALCULATIONS:

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

lb/hr = ppm · 8.223 E-05 · DSCFM · MW / Tstd. °R

lb/day = lb/hr · 24

g/BHp-hr = lb/hr · 453.6 / BHp

Engine BHp = Generator kW · 1.34

< value = 1% of analyzer range

Table #2
Total Particulate Results

EBMUD
Engine #2 (S-38)

Parameter	Run 1	Run 2	Run 3	Average Results	Permit Limits
Test Date	09/29/23	09/29/23	09/29/23	--	
Test Time	1144-1248	1335-1440	1504-1604	--	
Standard Temperature, °F	68	68	68	--	
Sample Volume, DSCF	35.78	36.41	36.30	36.17	
Process Parameters:					
Engine (Generator) kW	2,009	1,930	1,947	1,962	
Engine BHp	2,692	2,586	2,609	2,629	
Isokinetic, %	102.0	103.3	103.9	103.0	
Duct Temperature, °F	390.3	391.3	392.6	391.4	
Velocity, ft/sec	91.7	91.8	92.1	91.9	
Stack Gas:					
Exhaust Flow Rate, ACFM	15,871	15,899	15,938	15,903	
Exhaust Flow Rate, DSCFM	9,041	9,083	9,003	9,042	
Moisture (H ₂ O), % volume	8.6	8.1	9.0	8.6	
Oxygen (O ₂), % volume dry	12.5	12.5	12.5	12.5	
Carbon Dioxide (CO ₂), % volume dry	6.5	6.5	6.5	6.5	
Filterable Particulate Emissions:					
Filterable Particulate, mg	2.86	1.57	2.08	2.17	
Filterable Particulate, gr/DSCF	0.00123	0.00067	0.00088	0.00093	
Filterable Particulate, lb/hr	0.0955	0.0519	0.0683	0.0719	
Filterable Particulate, g/hp-hr	0.01609	0.00910	0.01187	0.01235	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
 Correction to 12% CO₂ = gr/DSCF * 12% / Actual CO₂%
 MMBTUH = BTU/CF * DSCFM_{fuel} * 60min/hr * 10⁻⁶
 g/BHp/hr = lbs/hr * 453.6 / BHp

TABLE #1

**East Bay Municipal Utility District
Boiler (S-55)**

Parameter	Run 1	Run 2	Run 3	Average Results	Permit Limits
Test Location	Outlet	Outlet	Outlet		
Test Date	11/7/23	11/7/23	11/7/23		
Test Condition	1029-1059	1118-1148	1202-1232		
Standard Temperature, °F	70	70	70		
Process Parameters:					
Boiler Rating, MMBtu/hr	20.925	20.925	20.925		
Operating Load, MMBtu/hr	12.5	11.8	11.5	11.9	
Firing Rate, % Capacity	60%	56%	55%	57%	
Stack Gas:					
Flow Rate, DSCFM (<i>EPA Method 19</i>)	3,206	3,104	3,031	3,113	
Oxygen (O ₂), % volume dry	8.5	8.7	8.7	8.6	
NO_x Emissions:					
NO _x , ppmvd	15.3	15.4	16.0	15.6	
NO _x , ppmvd @ 3% O ₂	22.1	22.6	23.6	22.8	30
NO _x , lb/MMBtu	0.0268	0.0274	0.0286	0.0276	
NO _x , lb/hr	0.350	0.342	0.347	0.346	
CO Emissions:					
CO, ppmvd	16.7	21.6	21.0	19.8	
CO, ppmvd @ 3% O ₂	24.1	31.6	30.9	28.8	50
CO, lb/MMBtu	0.0178	0.0233	0.0228	0.0213	
CO, lb/hr	0.232	0.292	0.276	0.267	

DEFINITIONS:

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)

 < value = 2% of analyzer range

TABLE # 1

**East Bay Municipal Utility District
DG Turbine #1 (S-56)**

Parameter	Run 1	Run 2	Run 3	Average Results	Permit Limits
Test Date	12/5/23	12/5/23	12/5/23		
Test Time	1146-1221	1247-1317	1335-1405		
Standard Temperature, °F	70	70	70		
Turbine kW	3,405	3,301	3,379	3,362	
Fuel:					
Fuel Flow Rate, DSCFM	993	990	988	990	
Fuel Flow Rate, MMBtu/hr	35.3	37.7	37.7	36.9	
Stack Gas:					
Flow Rate, DSCFM (<i>EPA Method 19</i>)	26,311	27,386	27,906	27,201	
Oxygen (O ₂), % volume dry	16.6	16.5	16.6	16.6	
Carbon Dioxide (CO ₂), % volume dry	3.2	3.2	3.2	3.2	
NO_x Emissions (reported as NO₂):					
NO _x , ppmvd	3.5	3.4	3.4	3.5	
NO _x , ppmvd @ 15% O ₂	4.9	4.6	4.7	4.7	23
NO _x , lb/hr	0.7	0.7	0.7	0.7	
NO _x , lb/yr	5,837	5,859	5,997	5,898	
NO _x , lb/MMBtu	0.019	0.018	0.018	0.018	
CO Emissions:					
CO, ppmvd	11.16	1.03	4.45	5.55	
CO, ppmvd @ 15% O ₂	15.44	1.4	6.1	7.6	100
CO, lb/hr	1.276	0.12	0.54	0.65	
CO, lb/yr	11178	1079	4727	5661	
CO, lb/MMBtu	0.0362	0.0033	0.0143	0.0179	
SO₂ Emissions:					
SO ₂ , ppmvd	11.6	12.5	13.5	12.5	
SO ₂ , ppmvd @ 15% O ₂	16.1	16.8	18.6	17.2	150
SO ₂ , lb/hr	3.04	3.40	3.76	3.40	
SO ₂ lb/yr	26,635	29,815	32,901	29,784	
SO ₂ , lb/MMBtu	0.086	0.090	0.100	0.092	
Hydrocarbon Emissions (reported as CH₄):					
THC, ppmvd	7.1	<1.0	6.5	4.9	
CH ₄ , ppmvd	5.4	2.8	1.1	3.1	
NMOC, ppmvd	1.7	<2.8	5.5	3.3	
NMOC, ppmvd @ 15% O ₂ (<i>EPA Method 25C</i>)	77.4	70.8	66.1	71.4	
NMOC, lb/hr	0.111	0.190	0.378	0.226	
NMOC, lb/yr	972	1668	3309	1983	
NMOC, lb/MMBtu	0.0031	0.0051	0.0100	0.0061	

DEFINITIONS:

ppmvd = 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:

ppmvd @ 15% O₂ = ppmvd · 5.9 / (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 4A

GDF STATIC PRESSURE TEST



Technician	Balch Petroleum 930 Ames Avenue Milpitas, CA 95035	Balch@BalchPetroleum.com (408) 942-8686
Rolando Urbina		
Certification	Certification #	Certification Expiration Date
Healy	1004483713	12/3/2023
VST	A-10738	9/13/2024
Morrison Brothers	1003320	8/9/2027
Phil-Tite	1004483713	12/3/2023
ICC	8009631-UT	8/15/2025

STATIC BACK PRESSURE TEST (AST)

SOURCE INFORMATION		FACILITY PARAMETERS		
	GDF Representative and Title Chris Dembiczak, EHSS GDF Phone #: (510) 287-0509	PHASE II SYSTEM TYPE (Check One)		
GDF Name and Address <small>EBMUD - Main Wastewater Treatment Plant</small> <hr/> 2020 Wake Ave. <hr/> Oakland, CA 94607	Source: GDF Vapor Recovery System GDF # 9008 A/C # _____	Balance <input checked="" type="checkbox"/> Hirt <input type="checkbox"/> Red Jacket <input type="checkbox"/> Hasstech <input type="checkbox"/> Healy <input type="checkbox"/> Other <input type="checkbox"/>	Manifolder? No	
Operating Parameters Number of Nozzles Served by Tank #1 <u> 2 </u> Number of Nozzles Served by Tank #3 _____ Number of Nozzles Served by Tank #2 _____ Number of Nozzles Served by Tank #4 _____				
Source Test Results and Comments <u>Tank #:</u>				
	1	2	3	4
1. Product Grade	<u> 87 </u>	_____	_____	_____
2. Actual Tank Capacity, gallons	<u> 3000 </u>	_____	_____	_____
3. Gasoline Volume	<u> 1374 </u>	_____	_____	_____
4. Ullage, gallons (#2-#3)	<u> 1626 </u>	_____	_____	_____
5. Initial Pressure, inches H ₂ O	<u> 2.00 </u>	_____	_____	_____
6. Pressure After 1 Minute, inches H ₂ O	<u> 1.99 </u>	_____	_____	_____
7. Pressure After 2 Minutes, inches H ₂ O	<u> 2.01 </u>	_____	_____	_____
8. Pressure After 3 Minutes, inches H ₂ O	<u> 1.99 </u>	_____	_____	_____
9. Pressure After 4 Minutes, inches H ₂ O	<u> 1.98 </u>	_____	_____	_____
10. Final Pressure After 5 Minutes, inches H ₂ O	<u> 1.99 </u>	_____	_____	_____
11. Allowable Final Pressure	<u> 1.74 </u>	_____	_____	_____
Test Conducted by: Rolando Urbina	Test Company: Balch Petroleum	Date of Test: 9/18/2023		

**Attachment 4b
Gasoline Facility Throughput (S-48)**

**MAIN WASTEWATER TREATMENT PLANT
GASOLINE DISPENSING FACILITY
Maintenance Center (3,000 gallon gasoline compartment)
Year: 2023
As of December 31, 2023**

MONTH	GALLONS RECEIVED	RECEIVED YR-TO-DATE	GALLONS ISSUED	ISSUED YR-TO-DATE	COMMENTS
JAN	4,100	4,100	3,316	3,316	
FEB	2,268	6,368	2,294	5,610	
MAR	2,178	8,546	2,616	8,226	
APR	2,202	10,748	2,400	10,626	
MAY	3,102	13,850	2,385	13,011	
JUN	2,000	15,850	2,267	15,278	
JUL	3,814	19,664	2,735	18,013	
AUG	10,228	29,892	11,558	29,571	
SEP	11,166	41,058	9,756	39,327	
OCT	10,676	51,734	11,983	51,310	
NOV	10,002	61,736	10,019	61,329	
DEC	10,093	71,829	9,884	71,213	
<u>Total</u>	71,829		71,213		

ATTACHMENT 5

Hours of Operation for Stand-by Emergency Generators

July 1, 2023 – December 31, 2023

Source	Location	Hours Meter Begin	Hours Meter End	Emergency Use Hours	Reliability-related Hours	Limit on reliability-related Hours
S-53	West of Admin Bldg	136.4	136.4	0	0	30
S-54	East Bayshore RWP	36	37	0	1	50
S-58	North of Maintenance	20.4	20.4	0	0	50
S-59	North of PGS	14.8	20.4	0	5.6	50
S-60	Dechlorination	13.6	18.8	0	5.2	50

January 1, 2023 – June 30, 2023

Source	Location	Hours Meter Begin	Hours Meter End	Emergency Use Hours	Reliability-related Hours	Limit on reliability-related Hours
S-51	Dechlorination*	763.1	763.7	0	0.6	50
S-53	West of Admin Bldg	134.0	136.4	0	2.4	30
S-54	East Bayshore RWP	36	36	0	0	50
S-58	North of Maintenance	20.2	20.4	0	0.2	50
S-59	North of PGS	6.3	14.8	7.7	0.8	50
S-60	Dechlorination*	9.9	13.6	0	3.7	50

**S-51 removed 1/25/2023 and replaced with S-60*

January 1, 2023 – December 31, 2023 (last 12 months total)

Source	Location	Hours Meter Begin	Hours Meter End	Emergency Use Hours	Reliability-related Hours	Limit on reliability-related Hours
S-51	Dechlorination*	763.1	763.7	0	0.6	50
S-53	West of Admin Bldg	134.0	136.4	0	2.4	30
S-54	East Bayshore RWP**	36	37	0	1	50
S-58	North of Maintenance	20.2	20.4	0	0.2	50
S-59	North of PGS	6.3	20.4	7.7	6.4	50
S-60	Dechlorination*	9.9	18.8	0	8.9	50

**S-51 removed 1/25/2023 and replaced with S-60*

ATTACHMENT 6

TURBINE MONTHLY TEST RESULTS

TABLE # 1

**EBMUD-JUL-2023
DG TURBINE #1 (S-56)
3525 kW**

RUN	1	LIMITS
Test Date	7/19/23	
Test Time	1111-1126	
PGS-2 Turbine kW	3,525	
PGS-2 Fuel Flow Rate, DSCFM	1,054	
Oxygen, O ₂ , %	16.9	
NO _x , ppm	3.6	
NO_x, ppm @ 15% O₂	5.3	23
CO, ppm	3.9	
CO, ppm @ 15% O₂	5.8	100
SO ₂ , ppm	3.1	
SO₂, ppm @ 15% O₂	4.6	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,

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

TABLE # 1

**EBMUD-AUG-2023
DG TURBINE #1 (S-56)
3525 kW**

RUN	1	LIMITS
Test Date	8/22/23	
Test Time	1123-1138	
PGS-2 Turbine kW	3,525	
PGS-2 Fuel Flow Rate, DSCFM	997	
Oxygen, O ₂ , %	16.7	
NO _x , ppm	3.9	
NO_x, ppm @ 15% O₂	5.5	23
CO, ppm	3.3	
CO, ppm @ 15% O₂	4.6	100
SO ₂ , ppm	2.8	
SO₂, ppm @ 15% O₂	3.9	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-SEP-2023
DG TURBINE #1 (S-56)
3378 kW**

RUN	1	LIMITS
Test Date	9/19/23	
Test Time	1021-1036	
PGS-2 Turbine kW	3,378	
PGS-2 Fuel Flow Rate, DSCFM	992	
Oxygen, O ₂ , %	16.9	
NO _x , ppm	4.1	
NO_x, ppm @ 15% O₂	6.0	23
CO, ppm	3.2	
CO, ppm @ 15% O₂	4.7	100
SO ₂ , ppm	2.9	
SO₂, ppm @ 15% O₂	4.3	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-2023
DG TURBINE #1 (S-56)
3371 kW**

RUN	1	LIMITS
Test Date	11/10/23	
Test Time	1409-1424	
PGS-2 Turbine kW	3,371	
PGS-2 Fuel Flow Rate, DSCFM	957	
Oxygen, O ₂ , %	16.9	
NO _x , ppm	3.7	
NO_x, ppm @ 15% O₂	5.5	23
CO, ppm	3.1	
CO, ppm @ 15% O₂	4.6	100
SO ₂ , ppm	3.2	
SO₂, ppm @ 15% O₂	4.7	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-DEC-2023
DG TURBINE #1 (S-56)
3521 kW**

RUN	1	LIMITS
Test Date	12/14/23	
Test Time	1204-1219	
PGS-2 Turbine kW	3,521	
PGS-2 Fuel Flow Rate, DSCFM	983	
Oxygen, O ₂ , %	16.8	
NO _x , ppm	3.8	
NO_x, ppm @ 15% O₂	5.5	23
CO, ppm	3.3	
CO, ppm @ 15% O₂	4.7	100
SO ₂ , ppm	2.7	
SO₂, ppm @ 15% O₂	3.9	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,

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

ATTACHMENT 7

MAIN WASTEWATER TREATMENT PLANT FLOWS

East Bay Municipal Utility District ANNUAL WASTEWATER MONITORING SUMMARY 2023

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	Dry Season Avg	Mo.	Daily Avg	Daily Avg	Inf	Eff	# excs/ # of Analyses	% Removal	Inf	Eff	# excs/ # of Analyses	% Removal	Eff	Eff				
							(INF-001) mg/L	mg/L			mg/L	mg/L					Month	Month	Month	Month
3-mo							Month	Month	Week	Month	Month	Week	Month	Month	Week	Month	Month			
Limits:				120			25	40		Min 85	30	45		Min 85	10	20				
Jan	122	230	61				187	8	13	0/ 1	0/ 4	96%	462	13	21	0/ 1	0/ 4	97%		
Feb	68	120	56				252	4	4	0/ 1	0/ 4	98%	396	6	6	0/ 1	0/ 4	99%	< 1.3	< 1.3
Mar	108	201	74				177	10	15	0/ 1	0/ 4	94%	381	17	24	0/ 1	0/ 4	96%		
Apr	64	83	55				357	5	6	0/ 1	0/ 5	99%	762	7	10	0/ 1	0/ 5	99%		
May	57	72	47				381	6	9	0/ 1	0/ 4	98%	588	8	9	0/ 1	0/ 4	99%	E 2.8	E 2.8
Jun	50	54	47				565	7	7	0/ 1	0/ 4	99%	870	10	10	0/ 1	0/ 4	99%		
Jul	46	48	42				366	7	10	0/ 1	0/ 5	98%	391	12	13	0/ 1	0/ 5	97%		
Aug	45	49	42	47			516	6	6	0/ 1	0/ 3	99%	767	10	13	0/ 1	0/ 4	99%	< 1.3	< 1.3
Sep	46	50	41				388	7	9	0/ 1	0/ 5	98%	446	12	14	0/ 1	0/ 5	97%		
Oct	47	51	44				379	6	8	0/ 1	0/ 3	98%	451	10	12	0/ 1	0/ 4	98%		
Nov	48	61	41				369	7	11	0/ 1	0/ 4	98%	384	11	15	0/ 1	0/ 4	97%	< 1.3	< 1.3
Dec	59	127	47				359	7	8	0/ 1	0/ 5	98%	381	9	10	0/ 1	0/ 5	98%		
Avg	63	96	50				358	7	9			98%	523	10	13			98%	E 1.7	E 1.7
Max	122	230	74				565	10	15			99%	870	17	24			99%	E 2.8	E 2.8
Min	45	48	41				177	4	4			94%	381	6	6			96%	< 1.3	< 1.3
Exc/Analyses	0/1									0/ 12	0/ 50	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

(A-462 is Fine Screen Room Scrubber, A-463,A-464 are Course Screen Room/IPS Scrubbers)

	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-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
02-Jul-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
03-Jul-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
04-Jul-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
05-Jul-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
06-Jul-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
07-Jul-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
08-Jul-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
09-Jul-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Jul-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11-Jul-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12-Jul-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13-Jul-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14-Jul-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15-Jul-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16-Jul-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17-Jul-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18-Jul-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19-Jul-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20-Jul-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21-Jul-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22-Jul-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23-Jul-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24-Jul-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25-Jul-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26-Jul-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27-Jul-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
28-Jul-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29-Jul-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30-Jul-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31-Jul-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Monthly Avg 0.0 0.0 0.0 0.0
 Monthly Max 0.0 0.0 0.0 0.3

	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-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
02-Aug-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
03-Aug-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
04-Aug-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
05-Aug-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
06-Aug-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
07-Aug-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
08-Aug-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
09-Aug-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Aug-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11-Aug-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12-Aug-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13-Aug-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14-Aug-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15-Aug-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16-Aug-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17-Aug-23	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0
18-Aug-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19-Aug-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20-Aug-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21-Aug-23	0.7	0.0	0.0	0.0	4.0	0.0	0.0	0.0
22-Aug-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23-Aug-23	0.9	0.0	0.0	0.0	5.1	0.0	0.0	0.0
24-Aug-23	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0
25-Aug-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26-Aug-23	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0
27-Aug-23	0.1	0.0	0.0	0.0	2.0	0.0	0.0	0.0
28-Aug-23	0.4	0.0	0.0	0.0	3.2	0.0	0.0	0.0
29-Aug-23	0.2	0.0	0.0	0.0	5.0	0.0	0.0	0.0
30-Aug-23	0.2	0.0	0.0	0.0	4.5	0.0	0.0	0.0
31-Aug-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Monthly Avg 0.1 0.0 0.0 0.0
 Monthly Max 5.1 0.0 0.0 0.0

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-Sep-23	0.0	0.0	0.0	0.0	3.2	0.0	0.0	0.0
02-Sep-23	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0
03-Sep-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
04-Sep-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
05-Sep-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
06-Sep-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
07-Sep-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
08-Sep-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
09-Sep-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Sep-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11-Sep-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12-Sep-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13-Sep-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14-Sep-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15-Sep-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16-Sep-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17-Sep-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18-Sep-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19-Sep-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20-Sep-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21-Sep-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22-Sep-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23-Sep-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24-Sep-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25-Sep-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26-Sep-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27-Sep-23	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0
28-Sep-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29-Sep-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30-Sep-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31-Sep-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Monthly Avg 0.0 0.0 0.0 0.0
 Monthly Max 3.2 0.0 0.0 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-Oct-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
02-Oct-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
03-Oct-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
04-Oct-23	0.5	0.0	0.0	0.0	5.0	0.0	0.0	0.0
05-Oct-23	0.2	0.0	0.0	0.0	1.7	0.0	0.0	0.0
06-Oct-23	0.0	0.0	0.0	0.0	2.1	0.0	0.0	0.0
07-Oct-23	0.6	0.0	0.0	0.0	3.3	0.0	0.0	0.0
08-Oct-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
09-Oct-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Oct-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11-Oct-23	0.1	0.0	0.0	0.0	2.1	0.0	0.0	0.0
12-Oct-23	1.2	0.0	0.0	0.0	5.8	0.0	0.0	0.0
13-Oct-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14-Oct-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15-Oct-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16-Oct-23	0.2	0.0	0.0	0.0	3.5	0.0	0.0	0.0
17-Oct-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18-Oct-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19-Oct-23	0.2	0.0	0.0	0.0	3.1	0.0	0.0	0.0
20-Oct-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21-Oct-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22-Oct-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23-Oct-23	0.2	0.0	0.0	0.0	2.7	0.0	0.0	0.0
24-Oct-23	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0
25-Oct-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26-Oct-23	0.8	0.0	0.0	0.0	4.6	0.0	0.0	0.0
27-Oct-23	0.2	0.0	0.0	0.0	3.7	0.0	0.0	0.0
28-Oct-23	0.1	0.0	0.0	0.0	1.7	0.0	0.0	0.0
29-Oct-23	1.3	0.0	0.0	0.0	3.7	0.0	0.0	0.0
30-Oct-23	1.2	0.0	0.0	0.0	9.5	0.0	0.0	0.0
31-Oct-23	1.1	0.0	0.0	0.0	4.3	0.0	0.0	0.0

Monthly Avg 0.3 0.0 0.0 0.0
 Monthly Max 9.5 0.0 0.0 0.0

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-Nov-23	1.4	0.0	0.0	0.0	9.4	0.0	0.0	0.0
02-Nov-23	1.5	0.0	0.0	0.0	7.4	0.0	0.0	0.0
03-Nov-23	1.1	0.0	0.0	0.0	5.7	0.0	0.0	0.0
04-Nov-23	0.3	0.0	0.0	0.0	4.0	0.0	0.0	0.0
05-Nov-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
06-Nov-23	0.6	0.0	0.0	0.0	5.9	0.0	0.0	0.0
07-Nov-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
08-Nov-23	1.1	0.0	0.0	0.0	5.3	0.0	0.0	0.0
09-Nov-23	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0
10-Nov-23	0.9	0.0	0.0	0.0	4.9	0.0	0.0	0.0
11-Nov-23	0.8	0.0	0.0	0.0	5.3	0.0	0.0	0.0
12-Nov-23	0.8	0.0	0.0	0.0	3.9	0.0	0.0	0.5
13-Nov-23	0.5	0.0	0.0	0.0	6.2	0.0	0.0	0.0
14-Nov-23	2.0	0.0	0.0	0.0	6.2	0.0	0.0	0.0
15-Nov-23	2.0	0.0	0.0	0.0	6.6	0.0	0.0	0.0
16-Nov-23	1.5	0.0	0.0	0.0	6.2	0.0	0.0	0.0
17-Nov-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18-Nov-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19-Nov-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20-Nov-23	2.3	0.0	0.0	0.0	7.7	0.0	0.0	0.0
21-Nov-23	1.0	0.0	0.0	0.0	7.8	0.0	0.0	0.0
22-Nov-23	0.7	0.0	0.0	0.0	4.3	0.0	0.0	0.0
23-Nov-23	1.3	0.0	0.0	0.0	6.6	0.0	0.0	0.0
24-Nov-23	2.3	0.0	0.0	0.0	4.5	0.0	0.0	0.0
25-Nov-23	1.1	0.0	0.0	0.0	3.2	0.0	0.0	0.0
26-Nov-23	1.1	0.0	0.0	0.0	7.0	0.0	1.5	0.6
27-Nov-23	1.4	0.0	0.0	0.0	6.3	0.0	0.0	0.0
28-Nov-23	1.4	0.0	0.0	0.0	9.6	0.0	0.0	0.0
29-Nov-23	0.6	0.0	0.0	0.0	4.1	0.0	0.0	0.0
30-Nov-23	0.4	0.0	0.0	0.0	5.5	0.0	0.0	0.0

Monthly Avg 0.9 0.0 0.0 0.0
 Monthly Max 9.6 0.0 1.5 0.6

	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-Dec-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
02-Dec-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
03-Dec-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
04-Dec-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
05-Dec-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
06-Dec-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
07-Dec-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
08-Dec-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
09-Dec-23	0.2	0.0	0.0	0.0	1.7	0.0	0.0	0.0
10-Dec-23	0.4	0.0	0.0	0.0	3.8	0.0	0.0	0.0
11-Dec-23	0.0	0.0	0.0	0.0	1.7	0.0	0.0	0.0
12-Dec-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13-Dec-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14-Dec-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15-Dec-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16-Dec-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17-Dec-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18-Dec-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19-Dec-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20-Dec-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21-Dec-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22-Dec-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23-Dec-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24-Dec-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25-Dec-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26-Dec-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27-Dec-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28-Dec-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29-Dec-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30-Dec-23	0.2	0.0	0.0	0.0	1.7	0.0	0.0	0.0
31-Dec-23	0.4	0.0	0.0	0.0	3.8	0.0	0.0	0.0

Monthly Avg 0.0 0.0 0.0 0.0
 Monthly Max 3.8 0.0 0.0 0.0

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

pg 4 of 4

Influent Pump Station Odor Scrubber Outage Table

Start	Finish	Duration	Reason
19-Oct-23 17:04	19-Oct-23 22:07	5:03	Belts snapped on A463 at 1704, no alarms, A464 turned on at 2207
27-Oct-23 12:14	27-Oct-23 12:27	0:13	Belt replacement A463
	Total Down Time	<u>5:03</u>	

Attachment 9

Odor Scrubber Maintenance Records for S-110 (IPS, W-12) and S-170 (Sludge Handling, W-30)

S-110, Influent Pump Station Odor Control Unit Maintenance Records

Area	Wonum	Description	Assetnum	Req Dept	Resp Dept	Status	Type	Reported By	Report Date
W-12	2023083067	Odor Scrubber Screen locked out Odor scrubber screen has been locked out and needs to be logged into for control of the HMI	W-12-MSL-OCS-01	PO	IN	COMP	CM	MHARDIN	7/16/2023
W-12	2023096688	New odor control differential pressure alarm PDI301. Local readout "Analog Sat". HMI displaying high differential pressure for BTF 2 (Carbon scrubber). Local display readout Analog Sat	W-12-MSL-OCS-01	PO	IN	COMP	CM	JFROLICK	8/20/2023
W-12	2023096731	Bio trickling filter #2 digital pressure gauge not reading pressures.	W-12-FA-PDIT-208	PO	IN	COMP	CM	DGARCIA	8/23/2023
W-12	2023107060	Bio trickling filter #2 digital pressure gauge not reading pressures.	W-12-FA-PDIT-208	PO	IN	COMP	CM	DGARCIA	9/27/2023
W-12	2023121123	Grease/mist eliminator pressure differential reading ~4,	W-12-FA-BIO-101	PO	MEN	COMP	CM	MEDWARDS	10/12/2023
W-12	2023121151	Odor Control Fan 1 squealing from under belt guard. A loud squealing sound is coming from under the belt guard. Suspect one of the belts is broken.	W-12-FA-EF-102	PO	MEN	COMP	BD	ZTHIEME	10/17/2023
W-12	2023121173	Unable to see display reading, display is on but pixeled out	W-12-FA-AIT-001	PO	IN	COMP	CM	JOCHOA	10/19/2023
W-12	2023121188	BTF Fan 1 threw its belts	W-12-FA-BIO-101	PO	MEN	COMP	BD	RELWARD	10/19/2023
W-12	2023134421	pH meter on BTF 1 Irrigation Panel (AIT-128) reading above actual and needs calibration	W-12-INS-PHM-01	PO	IN	COMP	CM	ACHISHOL	11/22/2023

S-170, Sludge Handling Odor Control Unit Maintenance Records

Area	Wonum	Description	Assetnum	Req Dept	Resp Dept	Status	Type	Reported By	Report Date
W-30	2023069993	DWB side...left side when facing panels. Hypo Drain valve isn't holding and needs to be replaced	W-30-BLW-330-00	PO	MEN	COMP	BD	SZUBRZYC	7/1/2023
W-30	2023083092	South odor scrubber control panel - hypo psi gauge is showing signs of leak. South odor scrubber control panel - hypo psi gauge is showing signs of leak. There are crystallization and droplet of seeping hypo. please inspect and advise.	W-30-TKS-301-00	PO	MEN	COMP	CM	DDO	7/17/2023
W-30	2023083096	hypo leak at psi gauge south	W-30-TKS-301-00	PO		CAN	CM	KCHILDRE	7/18/2023
W-30	2023083107	Odor Scrubber making lots of noise	W-30-TKS-301-00	MEP	MEN	CLOSE	CM	JDUARTE	7/19/2023
W-30	2023083115	Belts are broken	W-30-FAN-301-00	PO	MES	COMP	BD	SZUBRZYC	7/20/2023
W-30	2023107044	West sump pump for odor scrubber overflow has a blown hose.	W-30-PMP-001-06	PO	MEN	COMP	BD	RELWARD	9/24/2023
W-30	2023107056	Odor scrubber fan #2 has broken belts	W-30-FAN-301-00	PO	MEN	COMP	BD	BTONEY	9/27/2023
W-30	2023121074	small droplet hypo leak at odor scrubber north panel (LD) WO # 2023121074 - small droplet hypo leak at odor scrubber north panel at psi gauge upstream of hypo rotameter and at isolation valve downstream of hypo rotameter.	W-30-TKS-301-00	PO	MEN	COMP	CM	DDO	10/7/2023
W-30	2023141385	Odor scrubber sump pump #2 is not pumping and the PRV is leaking water	W-30-PMP-001-06	PO	MEN	COMP	BD	SZUBRZYC	12/1/2023
W-30	2023157194	DWB/TWB Odor Scrubber sump pumps regularly lose prime. See long description. Suspect leaky on check ball. Please investigate and repair.	W-30-PMP-001-06	PO	MEN	COMP	CM	RHELMERS	12/27/2023

ATTACHMENT 10 -- S-170 Waste Activated Sludge Throughput

2023 July - December Gravity Belt Thickener Summary Flow Table

Daily Flows	July	August	September	October	November	December
	Kgal	Kgal	Kgal	Kgal	Kgal	Kgal
1st	1,391	991	1,728	1,749	1,880	1,650
2nd	1,388	709	1,763	2,091	1,851	1,764
3rd	1,512	1,031	1,827	2,048	1,741	1,724
4th	1,690	1,150	1,843	1,910	1,681	1,664
5th	1,685	1,152	1,844	2,224	1,755	1,720
6th	1,618	1,166	1,794	1,987	1,723	1,661
7th	1,566	1,247	1,833	1,980	1,823	1,621
8th	1,557	1,079	1,826	2,007	1,745	1,733
9th	1,608	1,154	1,893	1,825	1,765	1,602
10th	1,642	1,207	1,865	1,809	1,749	1,690
11th	1,641	1,282	1,861	1,738	1,698	1,603
12th	1,075	1,381	1,982	1,888	1,653	1,781
13th	662	1,341	1,994	1,832	1,677	1,700
14th	735	1,357	1,916	1,851	1,869	1,712
15th	673	1,139	1,694	1,887	655	1,662
16th	667	1,403	1,650	1,870	1,836	1,535
17th	668	1,465	1,619	1,963	1,889	1,809
18th	692	1,450	1,561	2,063	2,008	1,801
19th	710	1,804	1,494	2,017	2,025	1,836
20th	739	1,651	1,612	1,881	1,840	1,737
21st	306	1,636	1,535	1,995	1,440	1,794
22nd	666	1,614	1,164	2,024	1,622	1,815
23rd	1,091	1,721	1,301	1,764	1,611	1,830
24th	1,202	1,606	1,020	1,922	1,737	1,808
25th	1,219	1,691	1,601	1,821	1,727	1,818
26th	1,226	1,671	1,719	1,748	1,730	1,828
27th	1,098	1,763	1,798	1,780	1,728	1,813
28th	1,177	1,517	1,777	1,861	1,646	1,819
29th	1,449	2,021	1,692	1,913	1,759	1,969
30th	1,546	1,873	1,704	1,863	1,778	2,043
31st	1,596	1,910		1,933		1,904
Monthly Total	36,493	44,180	50,909	59,242	51,641	54,446
Semi-Annual Total	296,910					

Gravity Belt Thickener and Dewatering Centrifuge Odor Scrubber Outage Table

Start	Finish	Duration	Reason
01-Jul-23 08:45	01-Jul-23 10:45	2:00	Hypo drain valve not holding, isolated and repaired.
20-Jul-23 06:00	20-Jul-23 10:00	4:00	Belts broken, cross-over opened, WO issued
21-Jul-23 07:20	21-Jul-23 07:50	0:30	Belt replacment
09-Oct-23 08:38	09-Oct-23 09:18	0:40	Hypo leak repair

ATTACHMENT 11

2023 July - December Blend Tank Summary Flow Table

	July	August	September	October	November	December
Daily Flows	Kgal	Kgal	Kgal	Kgal	Kgal	Kgal
1st	652	658	732	693	930	697
2nd	571	747	688	716	1,056	706
3rd	524	745	505	914	999	593
4th	572	747	624	916	802	776
5th	689	655	794	857	662	755
6th	685	618	929	885	825	792
7th	631	654	955	835	832	790
8th	601	665	912	679	917	938
9th	455	836	770	715	928	739
10th	549	836	571	912	785	732
11th	724	746	827	879	690	819
12th	780	600	892	895	605	797
13th	755	570	855	888	824	801
14th	621	739	782	699	875	882
15th	587	687	765	695	805	822
16th	481	925	704	797	991	723
17th	492	804	503	822	882	628
18th	657	829	809	794	773	788
19th	678	712	791	949	619	704
20th	733	553	894	969	748	894
21st	610	695	850	834	782	845
22nd	611	835	807	609	884	767
23rd	553	938	810	744	820	697
24th	664	788	570	900	729	546
25th	779	782	811	937	700	390
26th	745	679	894	950	607	590
27th	653	552	969	900	631	746
28th	744	689	869	746	796	877
29th	670	771	968	665	861	959
30th	630	857	829	756	837	659
31st	630	830		917		643
Monthly Total	19,727	22,744	23,677	25,464	24,198	23,096
Semi-Annual Total	138,907					

ATTACHMENT 12 - DIGESTER GAS SAMPLING DATA

**EBMUD Biogas H2S
July - December 2023**

2023	Cogen Feed H2S (ppm)	365 Day Avg H2S (ppm)
7/1/2023	191	136
7/2/2023	189	137
7/3/2023	226	137
7/4/2023	250	137
7/5/2023	328	138
7/6/2023	207	138
7/7/2023	303	139
7/8/2023	292	139
7/9/2023	304	140
7/10/2023	273	140
7/11/2023	280	141
7/12/2023	225	141
7/13/2023	190	141
7/14/2023	188	142
7/15/2023	133	142
7/16/2023	186	142
7/17/2023	232	142
7/18/2023	292	143
7/19/2023	196	143
7/20/2023	295	143
7/21/2023	306	144
7/22/2023	274	144
7/23/2023	192	145
7/24/2023	244	145
7/25/2023	210	145
7/26/2023	222	146
7/27/2023	252	146
7/28/2023	177	146
7/29/2023	146	146
7/30/2023	135	146
7/31/2023	186	147
8/1/2023	170	147
8/2/2023	188	147
8/3/2023	244	148
8/4/2023	144	148
8/5/2023	182	148
8/6/2023	145	149
8/7/2023	160	149
8/8/2023	148	149
8/9/2023	211	149
8/10/2023	150	149
8/11/2023	125	149
8/12/2023	117	149
8/13/2023	121	149
8/14/2023	266	150
8/15/2023	128	150
8/16/2023	135	150
8/17/2023	142	150
8/18/2023	95	150
8/19/2023	169	151
8/20/2023	156	151
8/21/2023	189	152
8/22/2023	225	152
8/23/2023	256	153
8/24/2023	254	153
8/25/2023	162	154
8/26/2023	196	154
8/27/2023	207	155
8/28/2023	306	155
8/29/2023	275	156
8/30/2023	229	157
8/31/2023	283	157

Rolling 365-Day limit: 200 ppm

2023	Cogen Feed H2S (ppm)	365 Day Avg H2S (ppm)
9/1/2023	195	158
9/2/2023	130	158
9/3/2023	148	158
9/4/2023	142	158
9/5/2023	193	158
9/6/2023	185	158
9/7/2023	258	159
9/8/2023	198	159
9/9/2023	168	160
9/10/2023	169	160
9/11/2023	195	160
9/12/2023	1	160
9/13/2023	182	160
9/14/2023	276	160
9/15/2023	220	161
9/16/2023	258	161
9/17/2023	84	162
9/18/2023	257	162
9/19/2023	378	163
9/20/2023	265	164
9/21/2023	313	164
9/22/2023	218	164
9/23/2023	201	165
9/24/2023	230	165
9/25/2023	189	165
9/26/2023	216	165
9/27/2023	170	166
9/28/2023	177	166
9/29/2023	172	166
9/30/2023	181	166
10/1/2023	139	166
10/2/2023	265	167
10/3/2023	114	167
10/4/2023	180	167
10/5/2023	109	167
10/6/2023	147	167
10/7/2023	158	167
10/8/2023	189	167
10/9/2023	204	168
10/10/2023	133	169
10/11/2023	178	169
10/12/2023	147	169
10/13/2023	116	169
10/14/2023	124	169
10/15/2023	241	169
10/16/2023	543	170
10/17/2023	253	170
10/18/2023	247	170
10/19/2023	119	170
10/20/2023	104	170
10/21/2023	180	170
10/22/2023	173	170
10/23/2023	205	171
10/24/2023	350	171
10/25/2023	171	171
10/26/2023	105	171
10/27/2023	207	171
10/28/2023	226	171
10/29/2023	182	171
10/30/2023	203	171
10/31/2023	236	171

Carbon vessels swapped on 9/12 resulting in minimal detect

2023	Cogen Feed H2S (ppm)	365 Day Avg H2S (ppm)
11/1/2023	145	171
11/2/2023	149	171
11/3/2023	199	171
11/4/2023	155	171
11/5/2023	105	171
11/6/2023	121	171
11/7/2023	179	171
11/8/2023	263	171
11/9/2023	360	172
11/10/2023	372	172
11/11/2023	246	173
11/12/2023	236	173
11/13/2023	516	174
11/14/2023	218	174
11/15/2023	134	174
11/16/2023	298	175
11/17/2023	212	175
11/18/2023	180	175
11/19/2023	161	175
11/20/2023	407	175
11/21/2023	246	176
11/22/2023	250	176
11/23/2023	234	176
11/24/2023	223	177
11/25/2023	170	177
11/26/2023	209	177
11/27/2023	240	178
11/28/2023	229	178
11/29/2023	192	178
11/30/2023	183	178
12/1/2023	146	178
12/2/2023	66	178
12/3/2023	174	178
12/4/2023	225	178
12/5/2023	317	179
12/6/2023	342	179
12/7/2023	276	180
12/8/2023	174	180
12/9/2023	180	180
12/10/2023	367	181
12/11/2023	327	181
12/12/2023	298	182
12/13/2023	251	183
12/14/2023	190	183
12/15/2023	144	183
12/16/2023	110	183
12/17/2023	109	184
12/18/2023	126	184
12/19/2023	108	184
12/20/2023	138	184
12/21/2023	98	184
12/22/2023	113	184
12/23/2023	123	184
12/24/2023	92	184
12/25/2023	117	184
12/26/2023	64	184
12/27/2023	58	184
12/28/2023	72	184
12/29/2023	62	184
12/30/2023	52	184
12/31/2023	62	184

