EAST BAY
MUNICIPAL UTILITY DISTRICT

July 29, 2022

TV Tracking #: 499

1. ☐ RECEIVED IN ENFORCEMENT: 07/29/2022

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

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 January 1, 2022 – June 30, 2022. No issues of non-compliance with the permit were identified in our data review.

Please note that the back-up emergency generator (S-50) has been decommissioned and removed from the facility and will not longer be included in this report. A new, replacement back-up emergency generator (S-59) was added to our Permit to Operate in July 2022 and will be reported on in future semi-annual reports since it will be added to the Title V permit as well.

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,

Donald M. Gray, Ph.D, P.E.
Interim Director of Wastewater

DMG:CD:bmy

Attachment

O:\WTD - Admin\Regulatory Compliance\BAAQMD\Transmittal letter Jan-June 2022.docx

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

for

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

Reporting Period: January 1, 2022 – June 30, 2022

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		Condition met. See Attachment 1 for boiler and engine data.
	3. Boiler gross heat input	20.41 MMBtu/hr	Condition met. See Attachment 2. Heat input ranged from 9.6-17.1 MMBtu/hr.
	5a. NOx emission from boiler 5b. CO emission from boiler	30ppm 50ppm	See 19 for test results if annual tests run in monitoring period
	18. Daily records of hours of operation, fuel consumption		See Attachment 1 for hours and gas consumption.
	19. Annual performance test for emission limits in 5		Condition met. Annual performance test completed in previous reporting period.
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	 1.25 g/hp-hr 0.6 g/hp-hr 3.0 g/hp-hr 0.085 g/hp-hr 70 ppmvd 2000 ppmvd	For items 6-11 see 19 for test results if annual tests run in monitoring period
	13. Thermal throughput per engine	25 MMBtu/hr	Condition met. See Attachment 2 for values.
	14. Combined hours of operation for S-37, S-38, and S-39	25,316 hours in any rolling 365 day period	Condition met. 16,840 hours in last year. See Attachment 2. Jan-Jun 2022: 8,382 hours Jul-Dec 2021: 8,458 hours
	15. Combined diesel consumption for S-37, S-38, and S-39	150,000 gallons in any rolling 365 day period	Condition met. 26,179 gallons in last year. See Attachment 2. Jan-Jun 2022: 11,405 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 in previous reporting period.
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 in previous reporting period.
	Condition 21663 Annual gasoline throughput	334,000 gal per year	Condition met. 26,641 gal in last year. See Attachment 4. Jan-June 2022: 14,627 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 did not operate in last 12 months. Refer to Attachment 5. Source removed 12/31/2021.
S-51 Diesel Engine Back-up Generator	**Condition 22850** 1. Hours of operation	50 hours/year reliability-related hours	Condition met. Generator ran 24.1 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 2.7 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	389,820 MMBtu in any 12-month period	Condition met. 171,164 MMBtu in last 12 months. Refer to Attachment 2. Jan-Jun 2022: 131,545 MMBtu Jul-Dec 2021: 39,619 MMBtu
	3. NOx emission limits	23 ppm (15-min) 34,400 lb (12-mo)	Emission limits met. Refer to Attachments 2 and 6. Annual mass emission: 3,996 lb
	4. CO emission limit and monitoring	100 ppm (15-min) 92,200 lb (12-mo)	Emission limits met. Refer to Attachments 2 and 6. Annual mass emission: 1,394 lb
	5. Daily monitoring of H2S to demonstrate compliance with SO2 limits	Daily monitoring per 40 CFR 60.4370	See Attachment 11 for readings.
	5. SO2 emission limit	150 ppmv	Emission limit met. Refer to Attachments 2 and 6.
	7. Annual turbine source test		Condition met. Last annual test was in previous reporting period.
	8. Monthly NOx and CO test		Condition met. 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 did not run 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 63 MGD influent. Maximum dry weather monthly flow was 47 MGD. See Attachment 7.

Source	Monitoring Requirement	Limit	Monitoring Results
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 1ppm.

Source	Monitoring Requirement	Limit	Monitoring Results
S-180 Anaerobic Digesters Note: A-194, A-195 are enclosed flares A-190, A-191, A-192, and A-193 are older "candlestick" flares	**Condition 18860** 2. Monthly inspection of digesters and gas management/venting prevention		Inspections conducted by Operations on daily rounds.
	3. Sulfur content of digester gas	<200 ppmv annual average	Condition met. Refer to Attachment 12 for the H2S gas sampling records.
	4. Combined digester gas flow rate to combustion sources	<3,400 scfm annual average	Condition met. See Attachment 13 for combined digester gas flow rates.
	5. Combustion zone temperature monitoring to A-194, A-195	>1,200F, after 15-min start-up	Condition met.
	6. Gas flow to A-194, A-195	<3,000 cfm, 1-hr average	Condition met.
	7. Source testing of A-194, A-195 (every 8,760 hours of use or 5 years)		Condition met. Source test conducted 4/27/22. Results included in Attachment 3.
	Emission limits for A-194, A-195 9. NOx limit 10. CO limit 11. H2S limit	 0.12 lb/MMBtu 0.20 lb/MMBtu 0.032 lb/hour	 Condition met. Source test conducted 4/27/22. Results included in Attachment 3.
	12. Daily sampling and testing of digester gas for H2S		Condition met. Refer to Attachment 11.
	13. Hours of flaring per day		Refer to Attachment 1 for the hours of flaring per day.

Attachment Index:

ATTACHMENT 1

COMBUSTION SOURCE AIR PERMIT DATA

(engines, turbine, boiler, flares)

DAILY REPORTS
JANUARY-JUNE 2022

January - 2022

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	45,032	45,615	46,496	137,143	19	33	33	85	801,765	812,145	827,830	2,441,740
2nd	4	24	21	49	5,641	42,425	34,844	82,910	28	27	29	85	102,590	771,561	633,689	1,507,840
3rd	24	24	15	63	48,645	49,295	32,298	130,238	22	33	29	84	861,791	873,307	572,189	2,307,287
4th	24	24	24	72	51,110	51,799	52,694	155,603	20	27	30	76	877,214	889,039	904,401	2,670,654
5th	24	24	24	72	51,240	51,949	52,854	156,043	27	31	32	90	874,259	886,356	901,797	2,662,412
6th	24	24	24	72	51,286	51,945	52,823	156,054	24	30	33	87	864,895	876,009	890,816	2,631,720
7th	24	24	24	72	51,295	51,974	52,783	156,052	22	27	27	76	857,936	869,293	882,824	2,610,053
8th	24	24	24	72	51,358	52,021	52,919	156,298	21	32	35	88	852,926	863,937	878,850	2,595,713
9th	24	18	24	66	45,248	33,342	46,676	125,266	29	21	30	79	789,179	581,524	814,085	2,184,788
10th	24	12	24	60	48,617	28,112	50,151	126,880	22	28	33	83	857,817	496,019	884,883	2,238,719
11th	23	24	24	71	51,278	51,848	52,763	155,889	19	30	31	80	864,605	874,216	889,644	2,628,465
12th	24	24	24	72	51,280	51,859	52,816	155,955	36	51	48	134	846,593	856,152	871,951	2,574,696
13th	24	24	24	72	50,484	49,183	50,281	149,948	22	35	37	94	844,766	822,996	841,369	2,509,131
14th	24	24	24	72	51,325	51,944	52,837	156,106	21	30	32	83	852,798	863,083	877,921	2,593,802
15th	24	24	24	72	51,453	52,017	52,918	156,388	23	14	30	67	862,461	871,915	887,017	2,621,393
16th	24	11	24	59	46,515	18,063	48,003	112,581	25	16	33	74	828,207	321,615	854,701	2,004,523
17th	24	16	24	64	48,109	35,210	49,760	133,079	21	27	30	78	857,522	627,603	886,950	2,372,075
18th	24	24	24	72	50,401	51,075	51,992	153,468	18	29	37	84	872,440	884,107	899,980	2,656,527
19th	24	24	24	72	51,281	51,951	52,878	156,110	29	34	31	94	864,221	875,513	891,135	2,630,869
20th	24	24	24	72	50,763	51,462	52,364	154,589	21	29	34	85	852,973	864,718	879,875	2,597,566
21st	24	13	24	61	49,333	27,482	50,957	127,772	23	23	32	78	840,594	468,271	868,266	2,177,131
22nd	16	0	24	40	24,291	0	43,298	67,589	25	0	31	57	440,502	0	785,181	1,225,683
23rd	0	0	7	7	0	0	11,365	11,365	0	0	13	13	0	0	204,917	204,917
24th	0	10	8	18	0	18,539	16,403	34,942	0	26	27	54	0	333,344	294,938	628,282
25th	13	11	24	48	24,824	20,416	46,512	91,752	24	19	32	75	443,988	365,149	831,887	1,641,024
26th	24	0	24	48	45,108	0	46,660	91,768	22	0	34	56	808,031	0	835,833	1,643,864
27th	24	0	24	48	49,412	0	50,965	100,377	29	0	31	60	849,206	0	875,897	1,725,103
28th	9	15	24	48	17,717	33,936	52,820	104,473	16	25	33	73	291,825	558,975	870,022	1,720,822
29th	0	24	24	48	0	51,843	52,772	104,615	0	17	30	46	0	855,439	870,769	1,726,208
30th	0	14	17	31	0	21,942	29,760	51,702	0	43	45	88	0	383,373	519,971	903,344
31st	9	0	9	18	20,606	0	20,435	41,041	14	0	17	30	365,367	0	362,335	727,702
Totals	578	528	677	1,783	1,183,652	1,097,247	1,413,097	3,693,996	621	739	977	2,337	20,326,471	18,745,659	24,291,923	63,364,053
		Sum of Engines	1,783			Sum of Engines	3,693,996			Sum of Engines	2,337			Sum of Engines	63,364,053	

January - 2022

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	6	126,048	690	0	0	0	0	0	72	72
2nd	0.1	776	7	120,481	612	0	0	0	21	354,411	49	70
3rd	0	0	8	128,847	318	0	0	0	8	125,788	63	71
4th	20	262,294	0	0	0	0	0	0	0	0	72	72
5th	21	364,141	1.5	105,735	1,224	0	0	0	0	0	72	72
6th	11	278,163	24	1,284,885	1,318	0	0	0	0	0	72	72
7th	17	420,132	24	1,187,826	1,546	0	0	0	0	0	72	72
8th	4	89,055	24	1,053,852	1,023	0	0	0	0	0	72	72
9th	2	18,353	0.4	6,522	109	0	0	0	7	117,356	66	73
10th	3	25,608	1.3	29,426	421	0	0	0	10	158,862	60	70
11th	1.0	19,852	24	1,305,917	1,518	0	0	0	0	0	71	71
12th	0	0	24	1,297,037	1,289	0	0	0	0	0	72	72
13th	1.1	33,825	24	1,178,020	1,242	0	0	0	0	0	72	72
14th	0	793	24	1,369,801	1,280	0	0	0	0	0	72	72
15th	1.0	8,822	19	396,231	570	0	0	0	0	0	72	72
16th	2	19,279	0.3	2,833	47	0	0	0	14	227,704	59	73
17th	0.8	8,953	0	0	0	0	0	0	7	107,627	64	71
18th	12	234,612	4	71,065	464	0	0	0	0	0	72	72
19th	0	0	24	1,070,282	1,290	0	0	0	0	0	72	72
20th	0	0	24	1,266,775	1,650	0	0	0	0	0	72	72
21st	10	205,160	9	167,782	510	9	24,064	434,198	2	41,472	61	63
22nd	0	154	5	50,396	165	24	70,912	1,242,653	8	152,047	40	48
23rd	3	24,351	0.03	266	4	24	89,754	1,496,858	24	483,641	7	31
24th	1.6	14,833	2	33,312	302	23	87,857	1,479,272	13	242,713	18	31
25th	11	229,193	10	274,624	746	23	73,933	1,265,648	0.6	11,827	48	49
26th	15	255,013	0	0	0	24	75,254	1,254,660	0	0	48	48
27th	24	598,426	0	0	0	24	74,349	1,234,466	0	0	48	48
28th	24	600,458	0	0	0	24	76,076	1,236,341	0	0	48	48
29th	18	212,751	0	0	0	24	75,494	1,223,063	0	0	48	48
30th	3	34,683	0	0	0	24	76,831	1,304,589	8	60,358	31	39
31st	0.3	2,456	18	474,537	692	24	87,570	1,437,711	15	118,259	18	33
Totals	206	3,962,136	306	13,002,500		247	812,094	13,609,459	139	2,202,065	1,783	1,922
				Maximum	1,650						Maximum	73

February - 2022

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	51,173	0	52,841	104,014	26	0	45	71	880,245	0	908,936	1,789,181
2nd	24	0	24	48	50,770	0	52,421	103,191	27	0	33	60	856,111	0	883,951	1,740,062
3rd	24	0	24	48	51,127	0	52,862	103,989	28	0	43	72	868,638	0	898,115	1,766,753
4th	5	19	24	48	7,680	42,430	52,398	102,508	8	38	35	81	127,775	705,924	871,765	1,705,464
5th	0	24	24	48	0	42,792	43,785	86,577	0	85	79	164	0	748,197	765,560	1,513,757
6th	0	17	24	41	0	26,233	40,744	66,977	0	29	47	76	0	480,495	746,284	1,226,779
7th	0	24	24	48	0	42,339	43,354	85,693	0	42	42	85	0	761,073	779,318	1,540,391
8th	0	24	24	48	0	48,651	50,365	99,016	0	32	38	70	0	834,903	864,317	1,699,220
9th	0	24	24	48	0	49,933	51,737	101,670	0	40	39	80	0	820,670	850,320	1,670,990
10th	0	24	24	48	0	49,345	51,096	100,441	0	34	38	73	0	830,880	860,363	1,691,243
11th	0	24	24	48	0	49,134	50,934	100,068	0	40	38	78	0	825,734	855,984	1,681,718
12th	0	24	24	48	0	45,692	47,378	93,070	0	36	39	76	0	787,097	816,141	1,603,238
13th	0	17	24	41	0	26,479	42,480	68,959	0	30	36	66	0	477,646	766,284	1,243,930
14th	0	13	24	37	0	27,497	48,345	75,842	0	41	42	82	0	478,197	840,763	1,318,960
15th	0	23	20	43	0	51,797	44,808	96,605	0	34	44	78	0	862,449	746,079	1,608,528
16th	0	24	24	48	0	51,012	52,812	103,824	0	26	27	53	0	844,773	874,582	1,719,355
17th	0	24	24	48	0	51,886	52,874	104,760	0	19	19	38	0	836,868	852,804	1,689,672
18th	0	24	24	48	0	48,340	49,300	97,640	0	18	19	37	0	801,358	817,272	1,618,630
19th	0	17	24	41	0	31,265	47,197	78,462	0	14	21	34	0	540,350	815,700	1,356,050
20th	0	6	24	30	0	7,837	45,181	53,018	0	6	37	44	0	141,079	813,331	954,410
21st	0	14	24	38	0	27,782	44,850	72,632	0	14	23	37	0	494,709	798,637	1,293,346
22nd	0	24	24	48	0	50,249	51,255	101,504	0	16	16	32	0	848,013	864,991	1,713,004
23rd	0	24	24	48	0	51,871	52,844	104,715	0	21	22	43	0	851,047	867,010	1,718,057
24th	0	24	24	48	0	51,900	52,822	104,722	0	18	18	36	0	856,250	871,461	1,727,711
25th	0	24	24	48	0	51,923	52,881	104,804	0	17	18	35	0	856,338	872,138	1,728,476
26th	0	23	24	47	0	45,981	49,363	95,344	0	21	22	43	0	777,807	835,016	1,612,823
27th	0	7	24	31	0	10,640	42,321	52,961	0	7	29	36	0	194,898	775,213	970,111
28th	10	0	24	34	20,026	0	44,286	64,312	19	0	43	62	375,555	0	830,511	1,206,066
Totals	87	492	668	1,247	180,776	983,008	1,363,534	2,527,318	108	680	953	1,741	3,108,324	16,656,755	23,342,846	43,107,925
		Sum of Engines	1,247			Sum of Engines	2,527,318			Sum of Engines	1,741			Sum of Engines	43,107,925	

February - 2022

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	24	988,480	1,292	24	76,646	1,267,125	0	0	48	48
2nd	0	0	18	576,212	943	24	76,673	1,245,462	0	0	48	48
3rd	0	0	24	998,555	1,191	24	76,700	1,253,690	0	0	48	48
4th	1	17,857	13	266,273	645	24	76,759	1,254,252	0	0	48	48
5th	0.1	951	0.3	2,714	25	24	71,368	1,188,135	0	0	48	48
6th	0.7	6,767	2	50,705	364	24	68,091	1,166,517	7	128,611	41	48
7th	0.3	2,245	3	38,076	348	24	71,146	1,226,601	0	0	48	48
8th	0	0	18	1,216,594	1,560	24	76,379	1,290,981	0	0	48	48
9th	0	0	24	1,036,180	1,163	24	76,502	1,252,718	0	0	48	48
10th	0	0	24	935,248	1,207	24	76,452	1,277,009	0	0	48	48
11th	0	0	24	760,288	1,151	24	75,649	1,248,045	0.8	17,051	48	49
12th	0	0	24	481,786	911	24	75,816	1,251,555	0	0	48	48
13th	0	0	18	163,423	168	24	68,921	1,182,275	2	25,244	41	43
14th	0	0	19	766,827	1,003	24	77,798	1,353,302	11	147,817	37	48
15th	0.1	1,336	24	994,104	1,495	24	79,978	1,348,263	3	50,903	43	46
16th	0	0	24	1,661,560	1,884	24	77,842	1,289,593	0.3	5,480	48	48
17th	0	0	24	1,656,799	1,516	24	77,776	1,259,249	0	0	48	48
18th	0	0	24	544,450	716	24	73,939	1,226,004	0	0	48	48
19th	0	0	24	317,720	421	24	74,242	1,251,117	7	100,260	41	48
20th	0	0	24	235,058	269	24	72,226	1,232,942	16	223,125	30	46
21st	0	0	24	318,565	539	24	68,894	1,220,415	9	133,513	38	47
22nd	0	0	24	687,328	868	24	76,275	1,291,107	0	0	48	48
23rd	0	0	23	969,252	1,308	24	78,982	1,288,345	0	0	48	48
24th	0	0	24	808,897	964	24	78,879	1,292,688	0	0	48	48
25th	0	0	24	634,683	653	24	79,034	1,297,405	0	0	48	48
26th	0	0	24	365,281	372	24	76,982	1,297,157	2	23,861	47	49
27th	0	0	24	232,398	190	24	66,752	1,158,581	17	248,075	31	48
28th	0	0	24	233,715	275	24	68,062	1,226,581	13	183,295	34	47
Totals	3	29,156	570	17,941,171		672	2,094,763	35,137,114	88	1,287,235	1,247	1,335
				Maximum	1,884						Maximum	49

March - 2022

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	20	4	24	48	32,663	11,522	45,603	89,788	28	10	40	78	595,191	209,956	830,987	1,636,134
2nd	0	24	24	48	0	51,830	52,922	104,752	0	19	19	39	0	868,103	886,393	1,754,496
3rd	0	24	24	48	0	51,824	52,850	104,674	0	23	24	47	0	848,878	865,683	1,714,561
4th	0	24	24	48	0	51,909	52,900	104,809	0	23	23	46	0	847,563	863,743	1,711,306
5th	0	24	24	48	0	50,193	51,144	101,337	0	20	20	40	0	836,956	852,813	1,689,769
6th	0	16	23	39	0	22,381	36,705	59,086	0	18	30	48	0	406,198	666,167	1,072,365
7th	0	15	17	32	0	32,874	38,984	71,858	0	19	23	42	0	577,027	684,275	1,261,302
8th	13	11	24	48	29,959	19,471	50,789	100,219	20	13	35	68	522,219	339,401	885,309	1,746,929
9th	24	0	24	48	48,988	0	50,558	99,546	42	0	43	85	850,819	0	878,086	1,728,905
10th	24	0	24	48	51,223	0	52,831	104,054	36	0	37	72	881,577	0	909,252	1,790,829
11th	24	0	24	48	51,229	0	52,814	104,043	36	0	37	72	878,894	0	906,087	1,784,981
12th	24	0	24	48	50,743	0	52,281	103,024	42	0	43	85	874,014	0	900,506	1,774,520
13th	16	0	23	39	26,811	0	45,149	71,960	34	0	58	93	482,152	0	811,932	1,294,084
14th	17	0	24	41	38,993	0	52,628	91,621	26	0	35	62	687,896	0	928,439	1,616,335
15th	24	0	24	48	51,227	0	52,887	104,114	38	0	39	77	898,469	0	927,583	1,826,052
16th	24	0	24	48	51,232	0	52,845	104,077	34	0	35	69	863,176	0	890,353	1,753,529
17th	24	0	24	48	50,670	0	52,259	102,929	41	0	42	82	872,078	0	899,427	1,771,505
18th	24	0	24	48	51,233	0	52,863	104,096	38	0	39	77	877,673	0	905,596	1,783,269
19th	24	0	24	48	51,246	0	52,799	104,045	33	0	34	66	879,436	0	906,088	1,785,524
20th	23	0	24	47	44,143	0	50,274	94,417	47	0	53	100	781,481	0	890,021	1,671,502
21st	24	15	10	49	47,764	32,130	16,194	96,088	20	13	7	39	845,807	568,960	286,764	1,701,531
22nd	24	23	16	63	50,239	50,991	32,985	134,215	26	27	17	70	853,347	866,120	560,275	2,279,742
23rd	24	24	0	48	51,128	51,843	0	102,971	17	17	0	35	871,575	883,764	0	1,755,339
24th	24	24	0	48	51,251	51,957	0	103,208	15	16	0	31	849,972	861,681	0	1,711,653
25th	24	24	2	50	50,821	51,514	4,812	107,147	12	12	1	26	846,818	858,366	80,181	1,785,365
26th	24	24	0	48	50,084	50,630	0	100,714	17	17	0	33	857,237	866,582	0	1,723,819
27th	18	24	0	42	31,419	42,489	0	73,908	12	16	0	28	570,690	771,764	0	1,342,454
28th	15	24	0	39	33,240	47,324	0	80,564	12	18	0	30	584,956	832,806	0	1,417,762
29th	24	24	0	48	51,182	51,802	0	102,984	16	17	0	33	873,999	884,586	0	1,758,585
30th	24	24	0	48	45,937	46,606	0	92,543	14	14	0	28	802,619	814,308	0	1,616,927
31st	24	24	0	48	46,732	47,053	0	93,785	15	15	0	29	816,006	821,612	0	1,637,618
Totals	554	396	499	1,449	1,140,157	816,343	1,056,076	3,012,576	670	327	733	1,730	19,718,101	13,964,631	18,215,960	51,898,692
	Sum of Engines		1,449		Sum of Engines		3,012,576		Sum of Engines		1,730		Sum of Engines		51,898,692	

EBMUD

March - 2022

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	24	874,655	1,320	24	77,357	1,321,019	0	0	48	48
2nd	0.3	5,545	24	1,405,230	1,734	24	79,503	1,303,766	0	0	48	48
3rd	7	121,981	24	1,729,384	1,664	24	79,866	1,284,383	0	0	48	48
4th	0	0	24	1,050,520	1,415	24	80,671	1,288,782	0	0	48	48
5th	0	0	24	464,668	568	24	74,960	1,236,376	0	0	48	48
6th	0	0	24	252,106	194	24	65,411	1,189,043	7	116,442	39	46
7th	0	0	24	243,121	314	24	80,347	1,357,486	8	137,969	32	40
8th	0	0	24	1,004,112	1,181	24	74,384	1,265,647	0	0	48	48
9th	0	0	24	703,874	1,061	24	75,262	1,252,483	0	0	48	48
10th	0	0	24	1,587,261	1,429	24	76,701	1,277,903	0	0	48	48
11th	0	0	24	1,899,190	1,686	24	76,764	1,276,488	0	0	48	48
12th	0.1	2,225	24	863,101	930	24	75,643	1,231,501	0	0	48	48
13th	0	0	23	258,514	300	23	69,409	1,175,776	7	107,050	39	46
14th	0	0	24	977,147	1,107	24	78,601	1,317,948	6	76,694	41	47
15th	4	68,591	24	1,646,203	1,928	23	68,963	1,174,711	0	0	48	48
16th	5	100,878	24	1,795,074	1,647	24	74,240	1,201,770	6	78,794	48	54
17th	0	0	24	1,398,154	1,429	24	72,502	1,208,125	4	56,081	48	52
18th	3	41,362	24	1,864,161	1,599	23	68,678	1,164,786	0	0	48	48
19th	0	0	24	1,271,230	1,669	24	74,203	1,232,901	0	0	48	48
20th	0	0	24	288,410	465	24	71,054	1,213,795	1.2	20,469	47	48
21st	0	0	24	866,891	1,278	24	70,762	1,228,682	0	0	49	49
22nd	0	0	24	969,179	1,214	9	26,583	467,941	0	0	63	63
23rd	0	0	24	1,384,094	1,545	24	84,236	1,376,691	0	0	48	48
24th	0.7	8,623	24	1,694,376	1,448	24	91,223	1,463,283	0	0	48	48
25th	0.1	100	24	956,674	1,105	22	81,703	1,309,502	0	0	50	50
26th	0.1	1,355	24	553,024	664	24	79,198	1,316,879	0	0	48	48
27th	0	0	24	244,793	220	24	65,380	1,176,481	6	116,084	42	48
28th	0.5	2,618	24	831,103	1,139	24	72,039	1,224,688	8	150,022	39	47
29th	0	0	24	751,959	885	24	80,243	1,321,961	0	0	48	48
30th	0	0	24	514,154	932	21	67,106	1,121,720	6	169,841	48	54
31st	0	0	24	676,306	796	24	70,542	1,208,161	12	270,414	48	60
Totals	20	353,278	743	31,018,668		719	2,283,534	38,190,678	70	1,299,860	1,449	1,519
				Maximum	1,928						Maximum	63

April - 2022

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	0	48	47,619	48,042	0	95,661	15	15	0	30	828,351	835,709	0	1,664,060
2nd	24	24	0	48	46,042	49,626	0	95,668	13	14	0	27	790,351	851,873	0	1,642,224
3rd	3	10	12	25	5,170	18,589	26,723	50,482	7	25	37	69	90,065	323,835	465,535	879,435
4th	9	0	18	27	20,950	0	37,484	58,434	23	0	41	64	375,710	0	672,224	1,047,934
5th	24	12	13	49	51,041	27,450	24,775	103,266	21	29	27	77	879,141	472,804	426,730	1,778,675
6th	24	24	0	48	51,306	51,934	0	103,240	22	30	0	52	858,876	869,389	0	1,728,265
7th	24	24	2	50	49,975	50,603	5,447	106,025	30	47	14	91	845,602	856,228	92,166	1,793,996
8th	24	24	0	48	51,204	51,855	0	103,059	25	28	0	52	856,582	867,472	0	1,724,054
9th	24	24	0	48	46,985	50,133	0	97,118	22	37	0	59	794,426	847,652	0	1,642,078
10th	0.4	24	0	24	670	45,612	0	46,282	50	34	0	84	11,381	774,764	0	786,145
11th	0	15	16	31	0	29,134	34,372	63,506	0	36	30	67	0	503,684	594,242	1,097,926
12th	0	24	24	48	0	50,041	51,257	101,298	0	39	32	71	0	854,091	874,846	1,728,937
13th	10	21	13	44	21,597	43,156	25,604	90,357	19	51	29	99	358,320	716,009	424,801	1,499,130
14th	24	24	0.1	48	51,203	51,913	18	103,134	22	37	6	65	855,063	866,920	301	1,722,284
15th	24	8	14	46	49,472	14,280	30,539	94,291	30	11	36	77	850,097	245,379	524,764	1,620,240
16th	23	0	23	46	51,180	0	52,885	104,065	27	0	36	63	899,531	0	929,498	1,829,029
17th	24	0	24	48	50,616	0	52,234	102,850	20	0	39	59	899,252	0	927,997	1,827,249
18th	24	0	24	48	49,441	0	51,130	100,571	27	0	32	59	897,075	0	927,720	1,824,795
19th	24	0	24	48	51,298	0	52,898	104,196	23	0	37	59	895,961	0	923,907	1,819,868
20th	24	0	24	48	48,735	0	50,288	99,023	37	0	53	90	828,942	0	855,357	1,684,299
21st	24	0	24	48	50,597	0	52,337	102,934	25	0	32	57	894,286	0	925,040	1,819,326
22nd	24	0	24	48	51,082	0	52,808	103,890	26	0	39	65	875,334	0	904,910	1,780,244
23rd	24	0	24	48	50,880	0	52,642	103,522	24	0	34	58	879,886	0	910,357	1,790,243
24th	6	0	22	28	8,431	0	45,458	53,889	8	0	41	50	149,111	0	803,975	953,086
25th	12	14	0	26	27,938	31,977	0	59,915	25	39	0	63	491,772	562,868	0	1,054,640
26th	24	24	0	48	51,277	51,925	0	103,202	26	30	0	56	863,145	874,053	0	1,737,198
27th	24	24	0	48	51,270	51,945	0	103,215	23	24	0	47	853,202	864,434	0	1,717,636
28th	24	24	0	48	51,227	51,823	0	103,050	23	37	0	59	859,334	869,332	0	1,728,666
29th	24	24	0	48	51,215	51,802	0	103,017	21	30	0	51	865,632	875,553	0	1,741,185
30th	24	24	0	48	51,238	51,851	0	103,089	26	30	0	56	866,219	876,582	0	1,742,801
Totals	567	416	325	1,308	1,189,659	873,691	698,899	2,762,249	658	623	595	1,876	20,412,647	14,808,631	12,184,370	47,405,648
		Sum of Engines	1,308			Sum of Engines	2,762,249			Sum of Engines	1,876			Sum of Engines	47,405,648	

April - 2022

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	24	676,014	1,089	24	77,056	1,291,093	0	0	48	48
2nd	0	0	24	409,190	457	24	77,664	1,312,519	1.5	32,705	48	50
3rd	0	0	24	306,162	474	24	79,409	1,320,268	14	306,040	25	39
4th	0.4	9,588	24	949,066	1,606	24	79,834	1,358,848	12	260,778	27	39
5th	0	0	24	827,389	1,126	24	82,721	1,368,652	0	0	49	49
6th	0	0	24	812,912	896	24	90,504	1,456,015	0	0	48	48
7th	1.1	10,896	24	1,455,905	1,737	21	72,549	1,187,236	0	0	50	50
8th	0	0	24	1,199,708	1,289	24	78,621	1,303,089	0	0	48	48
9th	0	0	24	375,166	427	24	80,320	1,328,883	2	19,632	48	50
10th	0	0	24	437,746	496	24	70,049	1,215,056	15	171,399	24	39
11th	0	0	24	523,090	834	23	74,789	1,235,238	12	183,639	31	43
12th	0.2	1,395	24	967,267	1,309	23	76,293	1,291,569	0	0	48	48
13th	0.8	7,373	24	1,092,304	1,204	24	95,466	1,505,089	1.0	26,111	44	45
14th	0.3	2,970	24	1,631,078	1,773	19	72,849	1,153,144	5	139,343	48	53
15th	0	0	24	1,388,065	1,538	0	0	0	24	738,345	46	70
16th	0	0	24	1,520,852	1,396	0	0	0	24	631,666	46	70
17th	0	0	22	679,985	740	0	0	0	24	620,527	48	72
18th	0	0	24	1,148,712	1,430	0	0	0	24	632,125	48	72
19th	10	306,744	15	1,261,926	2,153	10	36,392	617,411	13	357,218	48	61
20th	24	417,546	0.4	7,460	124	24	89,180	1,429,749	0.7	12,531	48	49
21st	19	507,683	4	164,275	821	21	73,672	1,210,036	2	48,375	48	50
22nd	24	498,500	0	0	0	24	90,512	1,441,506	0	0	48	48
23rd	12	143,403	0	0	0	24	87,677	1,417,734	0	0	48	48
24th	2	13,567	0	0	0	24	84,734	1,388,347	12	172,891	28	40
25th	5	68,583	14	457,676	849	24	88,185	1,464,569	9	174,646	26	35
26th	6	91,910	24	1,260,341	1,368	24	83,433	1,336,987	0	0	48	48
27th	15	295,065	14	598,060	1,099	24	83,969	1,336,328	0	0	48	48
28th	24	445,357	0.03	484	8	24	87,885	1,424,765	0	0	48	48
29th	19	331,684	0	0	0	24	90,239	1,466,195	0	0	48	48
30th	24	469,883	0.1	1,133	19	24	89,726	1,441,951	0	0	48	48
Totals	187	3,622,147	501	20,151,966		597	2,093,728	34,302,277	196	4,527,971	1,308	1,504
				Maximum	2,153						Maximum	72

May - 2022

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	0	48	41,366	41,844	0	83,210	23	31	0	54	745,814	754,433	0	1,500,247
2nd	24	23	0	47	45,384	43,253	0	88,637	54	50	0	103	810,355	772,305	0	1,582,660
3rd	23	24	0	47	50,934	51,501	0	102,435	24	33	0	56	855,272	864,793	0	1,720,065
4th	24	24	0	48	50,550	51,101	0	101,651	22	27	0	49	860,423	869,802	0	1,730,225
5th	24	24	0	48	51,250	51,806	0	103,056	26	29	0	55	875,812	885,314	0	1,761,126
6th	10	24	14	48	18,365	51,121	31,607	101,093	12	32	31	75	313,093	871,528	538,847	1,723,468
7th	0	24	24	48	0	50,802	51,683	102,485	0	28	36	64	0	847,600	862,299	1,709,899
8th	0	24	20	44	0	41,861	33,652	75,513	0	28	32	60	0	751,485	604,117	1,355,602
9th	1	24	18	43	433	48,225	37,060	85,718	12	32	29	72	7,618	848,444	652,013	1,508,075
10th	19	24	4	47	43,983	51,274	7,113	102,370	27	29	15	71	760,348	886,390	122,965	1,769,703
11th	24	24	0	48	51,179	51,788	0	102,967	26	27	0	53	866,427	876,736	0	1,743,163
12th	24	24	0	48	49,897	50,535	0	100,432	25	32	0	57	839,487	850,220	0	1,689,707
13th	24	24	0	48	51,187	51,754	0	102,941	22	29	0	51	863,505	873,070	0	1,736,575
14th	24	24	0	48	46,126	46,730	0	92,856	31	29	0	60	798,489	808,944	0	1,607,433
15th	24	7	0	31	39,546	9,473	0	49,019	27	11	0	38	733,813	175,780	0	909,593
16th	15	0	18	33	31,469	0	38,366	69,835	39	0	29	68	575,881	0	702,096	1,277,977
17th	24	0	24	48	49,982	0	51,409	101,391	26	0	44	69	872,956	0	897,880	1,770,836
18th	24	0	24	48	47,775	0	49,452	97,227	22	0	38	59	846,917	0	876,646	1,723,563
19th	24	0	24	48	48,300	0	47,347	95,647	30	0	31	61	844,920	0	828,250	1,673,170
20th	24	0	24	48	47,763	0	48,042	95,805	25	0	29	54	833,945	0	838,816	1,672,761
21st	24	0	23	47	48,279	0	45,647	93,926	16	0	42	57	841,745	0	795,856	1,637,601
22nd	24	0	0	24	49,489	0	0	49,489	26	0	0	26	882,633	0	0	882,633
23rd	15	0	16	31	26,941	0	31,201	58,142	36	0	33	70	492,547	0	570,431	1,062,978
24th	24	0	24	48	49,767	0	52,391	102,158	26	0	30	56	870,560	0	916,460	1,787,020
25th	24	0	24	48	51,132	0	52,847	103,979	35	0	40	75	898,668	0	928,809	1,827,477
26th	24	20	4	48	51,272	44,859	6,549	102,680	27	33	6	66	876,666	767,015	111,977	1,755,658
27th	22	21	0	43	44,234	44,662	0	88,896	46	38	0	85	750,341	757,602	0	1,507,943
28th	16	4	0	20	35,532	7,855	0	43,387	32	19	0	51	613,980	135,731	0	749,711
29th	24	0	0	24	49,219	0	0	49,219	30	0	0	30	877,716	0	0	877,716
30th	24	0	0	24	51,191	0	0	51,191	28	0	0	28	919,371	0	0	919,371
31st	24	0	10	34	50,094	0	22,223	72,317	29	0	43	72	893,203	0	396,248	1,289,451
Totals	625	387	295	1,307	1,272,639	790,444	606,589	2,669,672	804	536	507	1,847	22,222,505	13,597,192	10,643,710	46,463,407
	Sum of Engines		1,307		Sum of Engines		2,669,672		Sum of Engines		1,847		Sum of Engines		46,463,407	

EBMUD

May - 2022

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	0.8	8,075	0	0	0	24	74,385	1,244,803	0	0	48	48
2nd	15	414,722	3	143,738	1,139	24	87,381	1,450,465	0	0	47	47
3rd	4	124,633	20	1,351,833	1,311	24	90,699	1,452,550	0	0	47	47
4th	0	0	24	818,410	947	24	92,262	1,450,312	0	0	48	48
5th	0	0	24	841,628	1,022	24	92,396	1,500,105	0	0	48	48
6th	0.6	10,000	24	921,014	1,130	24	87,597	1,419,787	0.4	13,037	48	48
7th	0.5	8,601	18	743,358	1,193	24	87,743	1,406,508	0	0	48	48
8th	0	0	0.02	101	2	24	81,258	1,319,043	0	0	44	44
9th	0	0	10	199,718	486	24	87,729	1,476,402	0.3	6,573	43	43
10th	0.3	2,592	15	695,070	1,183	24	88,781	1,438,405	0	0	47	47
11th	0	0	24	1,408,273	1,589	24	92,487	1,483,895	0	0	48	48
12th	0	0	17	627,505	1,041	24	94,749	1,508,675	0	0	48	48
13th	0.1	995	24	1,093,597	1,307	24	91,305	1,484,917	0	0	48	48
14th	0	0	9	193,440	660	24	88,265	1,434,110	0	0	48	48
15th	0.1	423	0	0	0	24	76,768	1,299,214	18	224,189	31	49
16th	4	35,886	12	524,349	1,105	23	84,917	1,423,654	8	145,935	33	41
17th	8	162,258	16	611,646	1,114	24	85,427	1,366,300	0	0	48	48
18th	20	447,529	13	704,243	1,427	24	85,988	1,425,121	0	0	48	48
19th	10	163,965	24	1,360,480	1,465	24	83,931	1,376,559	0	0	48	48
20th	0.4	8,276	24	1,956,947	1,612	24	85,543	1,385,932	0	0	48	48
21st	0	0	18	626,082	826	24	87,572	1,423,747	1.4	22,167	47	48
22nd	0	0	0	0	0	24	81,429	1,364,809	24	280,832	24	48
23rd	0.0	605	21	765,700	895	22	79,229	1,323,630	12	272,888	31	43
24th	0	0	24	1,444,717	1,641	0	0	0	24	581,024	48	72
25th	0	0	24	1,504,506	1,621	0	0	0	24	678,564	48	72
26th	0.1	1,070	24	1,011,567	1,238	11	37,784	645,433	13	347,836	48	61
27th	0.2	2,208	23	844,828	1,761	24	87,770	1,436,648	3	42,524	43	46
28th	0.8	6,245	22	925,434	1,314	24	90,126	1,487,254	17	469,226	20	37
29th	1.3	10,078	0.1	398	7	24	81,799	1,365,746	24	660,263	24	48
30th	0	0	6	61,587	232	24	87,216	1,480,784	24	667,828	24	48
31st	0.03	384	12	303,760	879	24	83,638	1,403,946	13	372,339	34	47
Totals	66	1,408,545	473	21,683,929		677	2,456,174	40,278,754	207	4,785,225	1,307	1,514
				Maximum	1,761						Maximum	72

June - 2022

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	20	44	47,885	0	37,343	85,228	26	0	44	70	851,499	0	664,040	1,515,539
2nd	24	0	24	48	53,871	0	52,658	106,529	26	0	32	58	910,525	0	890,022	1,800,547
3rd	24	0	23	47	52,707	0	51,655	104,362	32	0	32	64	899,911	0	881,949	1,781,860
4th	24	0	24	48	49,593	0	48,350	97,943	26	0	31	58	859,294	0	837,757	1,697,051
5th	24	0	4	28	49,286	0	5,101	54,387	27	0	15	43	881,603	0	91,244	972,847
6th	24	0	8	32	46,642	0	15,968	62,610	26	0	15	41	869,238	0	297,586	1,166,824
7th	24	0	24	48	44,420	0	43,234	87,654	29	0	32	61	823,803	0	801,807	1,625,610
8th	24	0	24	48	47,178	0	45,967	93,145	25	0	37	63	846,897	0	825,159	1,672,056
9th	24	0	24	48	50,785	0	49,651	100,436	13	0	30	44	882,078	0	862,382	1,744,460
10th	24	0	24	48	49,618	0	48,503	98,121	28	0	34	62	862,357	0	842,978	1,705,335
11th	24	0	24	48	49,512	0	48,355	97,867	26	0	31	57	852,072	0	832,160	1,684,232
12th	24	0	8	32	49,071	0	13,717	62,788	16	0	24	40	863,711	0	241,437	1,105,148
13th	12	0	14	26	22,374	0	30,158	52,532	22	0	20	42	410,495	0	553,308	963,803
14th	24	0	24	48	43,493	0	45,040	88,533	26	0	32	58	801,376	0	829,880	1,631,256
15th	24	0	24	48	48,712	0	50,343	99,055	27	0	35	61	837,121	0	865,150	1,702,271
16th	24	0	24	48	48,747	0	50,326	99,073	30	14	32	76	837,975	0	865,119	1,703,094
17th	24	0	24	48	51,044	0	52,682	103,726	33	0	37	70	870,666	0	898,606	1,769,272
18th	24	0	24	48	49,087	0	50,590	99,677	26	0	31	58	845,973	0	871,876	1,717,849
19th	24	0	7	31	45,053	0	9,721	54,774	31	0	14	45	815,788	0	176,021	991,809
20th	19	0	14	33	30,443	0	25,198	55,641	27	0	29	57	578,216	0	478,596	1,056,812
21st	24	0	24	48	43,262	0	44,728	87,990	28	0	32	60	776,389	0	802,699	1,579,088
22nd	24	2	24	50	44,972	722	46,216	91,910	76	75	51	202	784,330	12,592	806,026	1,602,948
23rd	24	0	24	48	47,946	0	49,414	97,360	31	0	33	64	837,676	0	863,324	1,701,000
24th	21	0	24	45	38,173	0	45,752	83,925	38	0	33	71	682,530	0	818,041	1,500,571
25th	23	0	24	47	41,931	0	46,370	88,301	31	0	32	63	741,803	0	820,334	1,562,137
26th	0	0	24	24	0	0	50,308	50,308	0	0	38	38	0	0	881,860	881,860
27th	9	0	24	33	17,251	0	46,519	63,770	18	0	33	52	317,478	0	856,110	1,173,588
28th	24	12	12	48	40,790	22,295	20,673	83,758	26	17	20	64	742,421	405,793	376,270	1,524,484
29th	24	23	1	48	49,577	48,963	1,116	99,656	29	35	10	74	834,247	823,915	18,779	1,676,941
30th	24	24	0	48	47,254	47,809	0	95,063	28	31	0	59	799,181	808,568	0	1,607,749
Totals	660	61	567	1,288	1,300,677	119,789	1,125,656	2,546,122	830	172	872	1,874	22,916,653	2,050,868	19,850,520	44,818,041
	Sum of Engines		1,288		Sum of Engines		2,546,122		Sum of Engines		1,874		Sum of Engines		44,818,041	

EBMUD

June - 2022

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	11	283,012	9	441,142	997	24	85,237	1,429,215	0	0	44	44
2nd	18	442,233	10	473,089	1,083	24	86,924	1,398,476	0	0	48	48
3rd	5	112,569	24	1,231,279	1,521	19	63,665	1,055,087	4	113,853	47	51
4th	0	0	18	398,416	632	24	84,156	1,362,361	0	0	48	48
5th	0.8	4,956	0	0	0	24	77,985	1,310,453	4	130,711	28	32
6th	2	12,862	7	104,542	380	24	81,333	1,413,491	0	0	32	32
7th	1.0	9,455	15	648,565	1,275	24	86,064	1,428,442	0	0	48	48
8th	0.7	4,528	13	576,428	959	24	85,374	1,410,409	0	0	48	48
9th	0	0	24	1,277,159	1,412	24	85,661	1,405,423	0	0	48	48
10th	5	85,913	24	1,684,523	1,817	24	83,747	1,374,528	0	0	48	48
11th	0.1	644	20	1,050,372	1,330	24	83,957	1,382,428	0	0	48	48
12th	0.1	409	0.02	304	5	24	80,878	1,324,629	15	402,819	32	47
13th	0.1	978	13	413,926	931	17	57,782	985,441	16	328,622	26	42
14th	0	0	17	647,474	1,035	24	84,018	1,429,204	0	0	48	48
15th	8	182,443	21	1,091,090	1,131	24	87,593	1,420,528	0	0	48	48
16th	0	0	24	1,085,059	1,152	24	88,056	1,427,472	0	0	48	48
17th	8	135,370	22	1,068,479	1,534	14	51,622	832,746	9	257,843	48	57
18th	0.1	799	18	1,300,374	1,563	8	26,106	430,681	16	446,149	48	64
19th	0	0	0	0	0	24	77,050	1,289,577	0	0	31	31
20th	0	0	21	661,846	967	24	80,156	1,380,237	6	83,821	33	39
21st	0	0	24	1,457,633	1,437	24	82,769	1,375,481	0	0	48	48
22nd	0.02	57	24	916,353	1,077	24	84,846	1,367,146	0	0	50	50
23rd	0.2	2,306	24	1,152,557	1,684	19	68,631	1,117,558	5	161,464	48	53
24th	0	0	24	1,231,294	1,619	14	50,764	840,109	10	313,317	45	55
25th	0	0	10	202,975	435	24	83,828	1,378,136	0	0	47	47
26th	0	0	2	33,626	260	24	81,970	1,360,614	0	0	24	24
27th	0	0	9	151,958	385	24	79,422	1,334,364	0	0	33	33
28th	0	0	22	1,151,017	1,327	24	85,505	1,435,348	0	0	48	48
29th	0	0	24	1,892,061	1,755	24	86,987	1,409,587	0	0	48	48
30th	6	92,296	24	2,026,585	1,923	24	88,578	1,441,277	0	0	48	48
Totals	65	1,370,830	487	24,370,126		666	2,330,664	38,550,448	86	2,238,599	1,288	1,374
				Maximum	1,923						Maximum	64

Attachment 2 - Combustion Device Summaries **EBMUD Main Wastewater Plant** **January 1 - June 30, 2022**

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

Turbine Operation			Data Source	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Semi-annual Totals	Limits	
Run Time	Total	hrs	metered	247	672	719	597	677	666	3,578		
Digester Gas	Total	cu ft	metered	13,609,459	35,137,114	38,190,678	34,302,277	40,278,754	38,550,448	200,068,730		
Thermal Throughput[3]	Total	MMBTU		8,903	22,981	25,176	22,541	26,525	25,419	131,545	389,820	MMBTU HHV per 12-Month period
	Total	MMBTU/hr		36.0	34.2	35.0	37.8	39.2	38.2	x		
Nitrogen Oxide[4]	Max	ppm	sampled	6.5	6.1	6.5	6.8	6.0	5.0	x	23	ppm at any time
Carbon Monoxide[4]	Max	ppm	sampled	3.3	3.9	4.9	1.7	4.6	1.9	x	100	
Sulfur Dioxide[4]	Max	ppm	sampled	7.1	7.0	5.3	3.2	5.8	3.9	x	150	
Nitrogen Oxide	Total	lbs	calc'd	Based on last annual source test mass load rate (0.86 lbs/hr) x run time (1,068+3,578hrs)-->						3,996	34,400	lbs per 12-Month period
Carbon Monoxide	Total	lbs	calc'd	Based on last annual source test mass flow rate (0.3 lbs/hr) x run time (1,068+3,578hrs)---->						1,394	92,200	
Engine Operation												
Run Time	Eng #1	hrs	metered	578	87	554	567	625	660	3,071		
	Eng #2	hrs	metered	528	492	396	416	387	61	2,280		
	Eng #3	hrs	metered	677	668	499	325	295	567	3,031		
	Total	hrs	sum	1,783	1,247	1,449	1,308	1,307	1,288	8,382	25,316	hr/365 days
Diesel Fuel[1]	Eng #1	gal	calc'd	621	108	670	658	804	830	3,691		
	Eng #2	gal	calc'd	739	680	327	623	536	172	3,077		
	Eng #3	gal	calc'd	977	953	733	595	507	872	4,637		
	Total	gal	sum	2,337	1,741	1,730	1,876	1,847	1,874	11,405	150,000	gal/365 days
Digester Gas[2]	Eng #1	cu ft	metered	20,326,471	3,108,324	19,718,101	20,412,647	22,222,505	22,916,653	108,704,701		
	Eng #2	cu ft	metered	18,745,659	16,656,755	13,964,631	14,808,631	13,597,192	2,050,868	79,823,736		
	Eng #3	cu ft	metered	24,291,923	23,342,846	18,215,960	12,184,370	10,643,710	19,850,520	108,529,329		
	Total	cu ft	sum	63,364,053	43,107,925	51,898,692	47,405,648	46,463,407	44,818,041	297,057,766		
Thermal Throughput[3]	Eng #1	MMBTU/hr		23.2	23.5	23.6	23.8	23.6	23.1	x	25	MMBTU/hr
	Eng #2	MMBTU/hr		23.4	22.3	23.4	23.6	23.3	22.6	x	25	MMBTU/hr
	Eng #3	MMBTU/hr		23.7	23.1	24.3	24.9	24.0	23.3	x	25	MMBTU/hr
Natural Gas	Total	cu ft	metered	-	-	-	-	-	-	-		
Boiler Operation												
Run Time	Boiler	hrs	metered	139	88	70	196	207	86	786		
Digester Gas	Boiler	cu ft	metered	2,202,065	1,287,235	1,299,860	4,527,971	4,785,225	2,238,599	16,340,955		
Thermal Thruput[3]	Boiler	MMBTU/hr		10.4	9.6	12.2	15.2	15.2	17.1	x	20.41	MMBTU/hr
Flare Operation (A-190,191,192,193)												
Run Time	Flares	hrs	metered	206	3	20	187	66	65	546		
Digester Gas	Flares	cu ft	metered	3,962,136	29,156	353,278	3,622,147	1,408,545	1,370,830	10,746,092		
Thermal Thruput[3]	Flares	MMBTU/hr		12.6	7.4	11.8	12.7	14.0	13.9	x		
Flare Operation (A-194,195)												
Run Time	Flares	hrs	metered	306	570	743	501	473	487	3,079		
Digester Gas	Flares	cu ft	metered	13,002,500	17,941,171	31,018,668	20,151,966	21,683,929	24,370,126	128,168,360		
Thermal Thruput[3]	Flares	MMBTU/hr		27.8	20.6	27.5	26.4	30.2	33.0	x		
Max Total Flow	Flares	scfm	metered	1,650	1,884	1,928	2,153	1,761	1,923	x	3,000	scfm
Digester Gas HHV	12-mo Avg	BTU/scf	sampled	654	654	659	657	659	659	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..

2022 CARB Annual Data, Engines, Flares, Boiler with mmBTU - Rolling Avg

(4) Monthly turbine exhaust check - ppm corrected to 15% O2

ATTACHMENT 3

ANNUAL SOURCE TEST RESULTS

- Enclosed Flares (A-194 and A-195) Source Test Summary, Blue Sky Environmental, 4/27/22

TABLE #1

East Bay Muicipal Utility District
Flare #1 (A-194)

Parameter	Run 1	Run 2	Run 3	Average Results	Permit Limits
Test Date	4/27/22	4/27/22	4/27/22		
Test Time	0801-0836	0904-0937	0953-1027		
Standard Temperature, °F	70	70	70	70	
Flare Temperature, °F	1,300	1,300	1,298	1,299	
Fuel:					
Fuel Flow Rate, DSCFM	445	438	439	441	
Fuel Heat Input, MMBtu/hr	17.67	17.55	17.53	17.58	
Stack Gas:					
Exhaust Flow Rate, DSCFM *(EPA Method 19)*	27,394	24,145	28,862	26,801	
Oxygen (O_2), % volume dry	18.9	18.6	19.0	18.8	
Carbon Dioxide (CO_2), % volume dry	1.4	1.7	1.5	1.5	
CO_2, lb/hr	2,681	2,758	3,008	2,816	
NO_X Emissions (reported as NO_2):					
NO_X, ppmvd	5.4	7.0	6.3	6.2	
NO_X, ppmvd @ 15% O_2	15.5	17.9	19.5	17.6	
NOx, lb/hr	1.05	1.20	1.31	1.18	
NOx, lb/day	25.1	28.8	31.4	28.4	
NOx, lb/MMBtu	0.059	0.068	0.075	0.067	0.12
CO Emissions:					
CO, ppmvd	7.7	8.0	7.4	7.7	
CO, ppmvd @ 15% O_2	22.3	20.6	22.7	21.9	
CO, lb/hr	0.92	0.84	0.93	0.90	
CO, lb/day	22.0	20.2	22.3	21.5	
CO, lb/MMBtu	0.052	0.048	0.053	0.051	0.2
THC Emissions (reported as CH_4):					
THC, ppmvd	5.52	6.09	6.09	5.90	
THC, lb/hr	0.375	0.365	0.436	0.392	
Methane (CH_4) Emissions:					
CH_4, ppmvd	5.52	6.09	6.09	5.90	
CH_4, lb/hr	0.375	0.365	0.436	0.392	
NMOC Emissions (reported as CH_4):					
NMOC, ppmvd	<5.52	<6.09	<6.09	<5.90	
NMOC, ppmvd @ 3% O_2	<48.4	<47.4	<56.8	<50.9	
NMOC, lb/hr	<0.375	<0.365	<0.436	<0.392	
Hydrogen Sulfide (H_2S) Emissions:					
Inlet H_2S, ppmvd	<0.073	35.1	42.1	38.6	
Outlet H_2S, ppmvd	<0.080	<0.076	<0.078	<0.077	
Outlet H_2S, lb/hr	<0.00019	<0.00018	<0.00018	<0.00018	0.032
Outlet H_2S, lb/MMBtu	<0.00001	<0.00001	<0.00001	<0.00001	
H_2S Destruction Efficiency, %	--	>99.78%	>99.81%	>99.80%	
Inlet Hydrocarbons (reported as CH_4):					
NMOC, ppmvd	934	938	1,130	1,001	
NMOC, lb/hr	1.03	1.02	1.23	1.09	
NMOC Destruction Efficiency, %	>63.63%	>64.21%	>64.57%	>64.13%	
CH_4, ppmvd	660,000	666,000	663,000	663,000	
CH_4, lb/hr	729	724	723	725	
CH_4 Destruction Efficiency, %	>99.95%	>99.95%	>99.94%	>99.95%	
THC, ppmvd as CH_4	660,934	666,938	664,130	664,001	
THC, lb/hr as CH_4	730	725	724	726	
THC Destruction Efficiency, %	>99.95%	>99.95%	>99.94%	>99.95%	

Values in red are outliers and were excluded from the average.

WHERE,

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 feet per minute

NO_X = oxides of nitrogen, reported as NO_2 (MW = 46)

CO = carbon monoxide (MW = 28)

CH_4 = methane (MW = 16)

THC = total hydrocarbons, reported as CH_4 (MW = 16)

NMOC = total non-methane organic compounds, reported as CH_4 (MW = 16)

CALCULATIONS,

15% O_2 Correction = ppm · 5.9 / (20.9 - %O_2)

3% O_2 Correction = ppm · 17.9 / (20.9 - %O_2)

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

lb/day = lb/hr · 24

lb/MMBtu = Fd · MW · ppm · 2.59E-9 · 20.9/(20.9 - %O_2)

Destruction Efficiency = (inlet, lb/hr - outlet, lb/hr) / inlet, lb/hr

<value = 2% of analyzer range

TABLE #2

East Bay Municipal Utility District
Flare #2 (A-195)

Parameter	Run 1	Run 2	Run 3	Average Results	Permit Limits
Test Date	4/27/22	4/27/22	4/27/22		
Test Time	1100-1135	1201-1236	1328-1403		
Standard Temperature, °F	70	70	70	70	
Flare Temperature, °F	1,237	1,245	1,236	1,239	
Fuel:					
Fuel Flow Rate, DSCFM	424	434	437	432	
Fuel Heat Input, MMBtu/hr	16.89	17.21	17.45	17.18	
Stack Gas:					
Exhaust Flow Rate, DSCFM *(EPA Method 19)*	9,227	9,589	9,614	9,477	
Oxygen (O_2), % volume dry	15.1	15.2	15.2	15.2	
Carbon Dioxide (CO_2), % volume dry	4.4	4.3	4.3	4.3	
CO_2, lb/hr	2,760	2,823	2,840	2,808	
NO_X Emissions (reported as NO_2):					
NO_X, ppmvd	22.2	22.0	21.7	22.0	
NO_X, ppmvd @ 15% O_2	22.5	22.9	22.3	22.6	
NOx, lb/hr	1.46	1.51	1.49	1.49	
NOx, lb/day	35.0	36.2	35.8	35.7	
NOx, lb/MMBtu	0.086	0.088	0.085	0.087	0.12
CO Emissions:					
CO, ppmvd	3.4	2.5	2.7	2.9	
CO, ppmvd @ 15% O_2	3.5	2.6	2.8	2.9	
CO, lb/hr	0.14	0.10	0.11	0.12	
CO, lb/day	3.3	2.5	2.7	2.8	
CO, lb/MMBtu	0.0082	0.0060	0.0064	0.007	0.2
THC Emissions (reported as CH_4):					
THC, ppmvd	<2.0	<2.0	<2.0	<2.0	
THC, lb/hr	<0.046	<0.048	<0.048	<0.047	
Methane (CH_4) Emissions:					
CH_4, ppmvd	<2.0	<2.0	<2.0	<2.0	
CH_4, lb/hr	<0.046	<0.048	<0.048	<0.047	
NMOC Emissions (reported as CH_4):					
NMOC, ppmvd	<2.0	<2.0	<2.0	<2.0	
NMOC, ppmvd @ 3% O_2	<6.2	<6.3	<6.2	<6.2	
NMOC, lb/hr	<0.046	<0.048	<0.048	<0.047	
Hydrogen Sulfide (H_2S) Emissions:					
Inlet H_2S, ppmvd	<0.074	<0.071	55.2	55.2	
Outlet H_2S, ppmvd	<0.086	<0.174	<0.075	<0.075	
Outlet H_2S, lb/hr	<0.00019	<0.00040	<0.00017	<0.00017	0.032
Outlet H_2S, lb/MMBtu	<0.000011	<0.000023	<0.000010	<0.000010	
H_2S Destruction Efficiency, %	--	--	>99.86%	>99.86%	
Inlet Hydrocarbons (reported as CH_4):					
NMOC, ppmvd	1,113	1,120	1,229	1,154	
NMOC, lb/hr	1.17	1.21	1.33	1.24	
NMOC Destruction Efficiency, %	>96.09%	>96.05%	>96.42%	>96.19%	
CH_4, ppmvd	662,000	659,000	663,000	661,333	
CH_4, lb/hr	697	710	719	709	
CH_4 Destruction Efficiency, %	>99.99%	>99.99%	>99.99%	>99.99%	
THC, ppmvd as CH_4	663,113	660,120	664,229	662,487	
THC, lb/hr as CH_4	698	711	721	710	
THC Destruction Efficiency, %	>99.99%	>99.99%	>99.99%	>99.99%	

Values in red are outliers and were excluded from the average.

WHERE,

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 feet per minute

NO_X = oxides of nitrogen, reported as NO_2 (MW = 46)

CO = carbon monoxide (MW = 28)

CH_4 = methane (MW = 16)

THC = total hydrocarbons, reported as CH_4 (MW = 16)

NMOC = total non-methane organic compounds, reported as CH_4 (MW = 16)

CALCULATIONS,

15% O_2 Correction = ppm · 5.9 / (20.9 - %O_2)

3% O_2 Correction = ppm · 17.9 / (20.9 - %O_2)

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

lb/day = lb/hr · 24

lb/MMBtu = Fd · MW · ppm · 2.59E-9 · 20.9/(20.9 - %O_2)

Destruction Efficiency = (inlet, lb/hr - outlet, lb/hr) / inlet, lb/hr

<value = 2% of analyzer range

Attachment 4
Gasoline Facility Throughput (S-48)

MAIN WASTEWATER TREATMENT PLANT
GASOLINE DISPENSING FACILITY
Maintenance Center (3,000 gallon gasoline compartment)
Year: 2022
As of June 30, 2022

MONTH	GALLONS RECEIVED	RECEIVED YR-TO-DATE	GALLONS ISSUED	ISSUED YR-TO-DATE	COMMENTS
JAN	2210	**2210**	2501	**2501**	
FEB	2253	**4463**	2221	**4722**	
MAR	3709	**8172**	2697	**7419**	
APR	2455	**10627**	2082	**9501**	
MAY	1500	**12127**	2494	**11995**	
JUN	2500	**14627**	2666	**14661**	
JUL					
AUG					
SEP					
OCT					
NOV					
DEC					
Total					

ATTACHMENT 5

Hours of Operation for Stand-by Emergency Generators

January 1, 2022 – June 30, 2022

Source	Location	Hours Meter Begin	Hours Meter End	Emergency Use Hours	Reliability-related Hours	Limit on reliability-related Hours
S-50	North of PGS	N/A	N/A	N/A	N/A	Removed 12/31/2021
S-51	Dechlorination	750.9	758.8	3.4	4.5	50
S-53	West of Admin Bldg	128.2	129.6	0	1.4	30
S-54	East Bayshore RWP	36	36	0	0	50
S-58	North of Maintenance	20.2	20.2	0	0	50

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

July 1, 2021 – June 30, 2022 (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	142.9	142.9	0	0	30
S-51	Dechlorination	734.7	758.8	16.1	8.0	50
S-53	West of Admin Bldg	126.9	129.6	0	2.7	30
S-54	East Bayshore RWP	36	36	0	0	50
S-58	North of Maintenance	20.2	20.2	0	0	50

ATTACHMENT 6

TURBINE MONTHLY TEST RESULTS

TABLE # 1

EBMUD-JAN-2022
DG TURBINE #1 (S-56)
3004 kW

RUN	1	LIMITS
Test Date	1/26/22	
Test Time	1239-1254	
PGS-2 Turbine kW	3,004	
PGS-2 Fuel Flow Rate, DSCFM	851	
Oxygen, O_2, %	17.0	
NOx, ppm	4.3	
NOx, ppm @ 15% O_2	**6.5**	**23**
CO, ppm	2.2	
CO, ppm @ 15% O_2	**3.3**	**100**
SO_2, ppm	4.7	
SO_2, ppm @ 15% O_2	**7.1**	**150**

WHERE,

ppm = Parts Per Million Concentration

NOx = Oxides of Nitrogen as NO_2 (MW = 46)

CO = Carbon Monoxide (MW = 28)

SO_2 = Sulfur Dioxide (MW= 64)

CALCULATIONS,

PPM @ 15% O_2 = ppm * 5.9 / (20.9 - %O_2)

TABLE # 1

EBMUD-FEB-2022
DG TURBINE #1 (S-56)
3287 kW

RUN	1	LIMITS
Test Date	2/24/22	
Test Time	1418-1433	
PGS-2 Turbine kW	3,287	
PGS-2 Fuel Flow Rate, DSCFM	903	
Oxygen, O_2, %	17.1	
NOx, ppm	3.9	
NOx, ppm @ 15% O_2	**6.1**	**23**
CO, ppm	2.5	
CO, ppm @ 15% O_2	**3.9**	**100**
SO_2, ppm	4.5	
SO_2, ppm @ 15% O_2	**7.0**	**150**

WHERE,

ppm = Parts Per Million Concentration
NOx = Oxides of Nitrogen as NO_2 (MW = 46)
CO = Carbon Monoxide (MW = 28)
SO_2 = Sulfur Dioxide (MW= 64)

CALCULATIONS,

PPM @ 15% O_2 = ppm * 5.9 / (20.9 - %O_2)

TABLE # 1

EBMUD-MAR-2022
DG TURBINE #1 (S-56)
3287 kW

RUN	1	LIMITS
Test Date	3/25/22	
Test Time	1358-1413	
PGS-2 Turbine kW	3,287	
PGS-2 Fuel Flow Rate, DSCFM	903	
Oxygen, O_2, %	17.2	
NOx, ppm	4.1	
NOx, ppm @ 15% O_2	**6.5**	**23**
CO, ppm	3.1	
CO, ppm @ 15% O_2	**4.9**	**100**
SO_2, ppm	3.3	
SO_2, ppm @ 15% O_2	**5.3**	**150**

WHERE,

ppm = Parts Per Million Concentration

NOx = Oxides of Nitrogen as NO_2 (MW = 46)

CO = Carbon Monoxide (MW = 28)

SO_2 = Sulfur Dioxide (MW= 64)

CALCULATIONS,

PPM @ 15% O_2 = ppm * 5.9 / (20.9 - %O_2)

TABLE # 1

EBMUD-APR-2022
DG TURBINE #1 (S-56)
3497 kW

RUN	1	LIMITS
Test Date	4/26/22	
Test Time	1412-1427	
PGS-2 Turbine kW	3,497	
PGS-2 Fuel Flow Rate, DSCFM	1,023	
Oxygen, O_2, %	16.5	
NOx, ppm	5.1	
NOx, ppm @ 15% O_2	**6.8**	**23**
CO, ppm	1.3	
CO, ppm @ 15% O_2	**1.7**	**100**
SO_2, ppm	2.4	
SO_2, ppm @ 15% O_2	**3.2**	**150**

WHERE,

ppm = Parts Per Million Concentration

NOx = Oxides of Nitrogen as NO_2 (MW = 46)

CO = Carbon Monoxide (MW = 28)

SO_2 = Sulfur Dioxide (MW= 64)

CALCULATIONS,

PPM @ 15% O_2 = ppm * 5.9 / (20.9 - %O_2)

TABLE # 1

EBMUD-MAY-2022
DG TURBINE #1 (S-56)
3774 kW

RUN	**1**	**LIMITS**
Test Date	5/28/22	
Test Time	1424-1439	
PGS-2 Turbine kW	3,774	
PGS-2 Fuel Flow Rate, DSCFM	1,041	
Oxygen, O_2, %	16.9	
NOx, ppm	4.1	
NOx, ppm @ 15% O_2	**6.0**	**23**
CO, ppm	3.1	
CO, ppm @ 15% O_2	**4.6**	**100**
SO_2, ppm	3.9	
SO_2, ppm @ 15% O_2	**5.8**	**150**

WHERE,

ppm = Parts Per Million Concentration
NOx = Oxides of Nitrogen as NO_2 (MW = 46)
CO = Carbon Monoxide (MW = 28)
SO_2 = Sulfur Dioxide (MW= 64)

CALCULATIONS,

PPM @ 15% O_2 = ppm * 5.9 / (20.9 - %O_2)

TABLE # 1

EBMUD-JUN-2022
DG TURBINE #1 (S-56)
3597 kW

RUN	1	LIMITS
Test Date	6/22/22	
Test Time	1531-1546	
PGS-2 Turbine kW	3,597	
PGS-2 Fuel Flow Rate, DSCFM	988	
Oxygen, O_2, %	16.5	
NOx, ppm	3.7	
NOx, ppm @ 15% O_2	**5.0**	**23**
CO, ppm	1.4	
CO, ppm @ 15% O_2	**1.9**	**100**
SO_2, ppm	2.9	
SO_2, ppm @ 15% O_2	**3.9**	**150**

WHERE,

ppm = Parts Per Million Concentration

NOx = Oxides of Nitrogen as NO_2 (MW = 46)

CO = Carbon Monoxide (MW = 28)

SO_2 = Sulfur Dioxide (MW= 64)

CALCULATIONS,

PPM @ 15% O_2 = ppm * 5.9 / (20.9 - %O_2)

ATTACHMENT 7

MAIN WASTEWATER TREATMENT PLANT FLOWS

East Bay Municipal Utility District
MONTHLY WASTEWATER MONITORING SUMMARY JUNE 2022

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. Avg	Max Daily Avg	Min Daily Avg	3-mo Dry Season Avg	Mo. Avg	Max Daily Avg	Min Daily Avg	Inf (INF-001) mg/L Month Avg	Eff mg/L Month Avg	Eff mg/L Max Week Avg	# excs/ # of Analyses Mo. Avg	# excs/ # of Analyses Week Avg	% Removal Month Avg	Inf mg/L Month Avg	Eff mg/L Month Avg	Eff mg/L Max Week Avg	# excs/ # of Analyses Mo. Avg	# excs/ # of Analyses Week Avg	% Removal Month Avg	Eff mg/L Month Avg	Eff mg/L Daily Max
Limits:				**120**					**25**	**40**			**Min 85**		**30**	**45**			**Min 85**	**10**	**20**
																				4x/year	
Jan	63	99	51		57	95	47	232	7	10	0/ 1	0/ 5	97%	319	8	9	0/ 1	0/ 5	97%		
Feb	53	57	49		48	53	45	314	9	12	0/ 1	0/ 4	97%	373	10	14	0/ 1	0/ 4	97%	E 1.6	E 1.6
Mar	51	64	45		47	54	43	319	6	7	0/ 1	0/ 4	98%	394	10	10	0/ 1	0/ 4	98%		
Apr	52	67	41		48	63	39	328	9	11	0/ 1	0/ 5	97%	443	11	12	0/ 1	0/ 5	98%		
May	47	52	42		44	48	42	344	6	7	0/ 1	0/ 4	98%	393	8	10	0/ 1	0/ 4	98%	< 1.3	< 1.3
Jun	46	53	41		43	49	39	421	7	9	0/ 1	0/ 4	98%	716	9	11	0/ 1	0/ 4	98%		
Jul																					
Aug																					
Sep																					
Oct																					
Nov																					
Dec																					
Avg	52	65	45		48	60	43	326	7	9			98%	440	9	11			98%	E 1.6	E 1.6
Max	63	99	51		57	95	47	421	9	12			98%	716	11	14			98%	E 1.6	E 1.6
Min	46	52	41		43	48	39	232	6	7			97%	319	8	9			97%	< 1.3	< 1.3
Exc/Analyses				0/0							0/ 6	0/ 26	0/6				0/ 6	0/ 26	0/6	0/2	0/2

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-Jan-22	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
02-Jan-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
03-Jan-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
04-Jan-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
05-Jan-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
06-Jan-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
07-Jan-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
08-Jan-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
09-Jan-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Jan-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11-Jan-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12-Jan-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13-Jan-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14-Jan-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15-Jan-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16-Jan-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17-Jan-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18-Jan-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19-Jan-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20-Jan-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21-Jan-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22-Jan-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23-Jan-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24-Jan-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25-Jan-22	0.0	0.0	0.0	4.3	0.0	0.0	0.0	9.9
26-Jan-22	0.0	0.0	0.0	8.5	0.0	0.0	0.0	9.9
27-Jan-22	0.0	0.0	0.0	0.5	0.0	0.0	0.0	9.9
28-Jan-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29-Jan-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30-Jan-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31-Jan-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Monthly Avg	0.0	0.0	0.0	0.4				
Monthly Max					0.1	0.0	0.0	9.9

	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-Feb-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
02-Feb-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
03-Feb-22	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0
04-Feb-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
05-Feb-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
06-Feb-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
07-Feb-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
08-Feb-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
09-Feb-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Feb-22	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0
11-Feb-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12-Feb-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13-Feb-22	0.3	0.0	0.0	0.0	3.0	0.0	0.0	0.0
14-Feb-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15-Feb-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16-Feb-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17-Feb-22	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0
18-Feb-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19-Feb-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20-Feb-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21-Feb-22	0.0	0.0	0.0	0.0	0.0	0.0	2.3	0.0
22-Feb-22	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
23-Feb-22	0.0	0.0	0.0	0.0	0.1	0.0	1.6	0.0
24-Feb-22	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
25-Feb-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26-Feb-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27-Feb-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28-Feb-22	0.0	0.0	0.0	0.0	0.0	6.6	0.0	0.0
Monthly Avg	0.0	0.0	0.0	0.0				
Monthly Max					3.0	6.6	2.3	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-Mar-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
02-Mar-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
03-Mar-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
04-Mar-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
05-Mar-22	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
06-Mar-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
07-Mar-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
08-Mar-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
09-Mar-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Mar-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11-Mar-22	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0
12-Mar-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13-Mar-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14-Mar-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15-Mar-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16-Mar-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17-Mar-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18-Mar-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19-Mar-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20-Mar-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21-Mar-22	0.0	0.0	0.0	0.0	3.1	0.0	0.0	0.0
22-Mar-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23-Mar-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24-Mar-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25-Mar-22	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0
26-Mar-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27-Mar-22	0.1	0.0	0.0	0.0	1.7	0.0	0.0	0.0
28-Mar-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29-Mar-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30-Mar-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31-Mar-22	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					3.1	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-Apr-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
02-Apr-22	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0
03-Apr-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
04-Apr-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
05-Apr-22	0.2	0.0	0.0	0.0	1.7	0.0	0.0	0.0
06-Apr-22	0.2	0.0	0.0	0.0	2.3	4.7	0.0	0.0
07-Apr-22	0.4	0.0	0.0	0.0	2.8	0.0	0.0	0.0
08-Apr-22	0.2	0.0	0.0	0.0	3.6	0.0	0.0	0.0
09-Apr-22	0.7	0.0	0.0	0.0	3.3	0.0	0.0	0.0
10-Apr-22	0.2	0.0	0.0	0.0	1.7	0.0	0.0	0.0
11-Apr-22	0.4	0.0	0.0	0.0	3.3	0.0	0.0	0.0
12-Apr-22	0.1	0.0	0.0	0.0	2.8	0.0	0.0	0.0
13-Apr-22	0.5	0.0	0.0	0.0	4.2	0.0	1.5	0.0
14-Apr-22	0.7	0.0	0.0	0.0	2.9	0.0	0.0	0.0
15-Apr-22	0.1	0.0	0.0	0.0	2.8	0.0	0.0	0.0
16-Apr-22	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0
17-Apr-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18-Apr-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19-Apr-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20-Apr-22	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0
21-Apr-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22-Apr-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23-Apr-22	0.1	0.0	0.0	0.0	3.3	0.0	0.0	0.0
24-Apr-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25-Apr-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26-Apr-22	0.1	0.0	0.0	0.0	2.2	0.0	1.5	0.0
27-Apr-22	0.1	0.0	0.0	0.0	1.7	0.0	0.0	0.0
28-Apr-22	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0
29-Apr-22	0.1	0.0	0.0	0.0	2.2	0.0	0.0	0.0
30-Apr-22	0.3	0.0	0.0	0.0	2.6	0.0	0.0	0.0
Monthly Avg	0.2	0.0	0.0	0.0				
Monthly Max					4.2	4.7	1.5	0.3

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-May-22	0.1	0.0	0.0	0.0	1.6	0.0	0.0	0.0
02-May-22	0.2	0.0	0.0	0.0	3.8	0.0	0.0	0.0
03-May-22	0.1	0.0	0.0	0.0	2.3	0.0	0.0	0.0
04-May-22	0.3	0.0	0.0	0.0	3.0	0.0	0.0	0.0
05-May-22	0.5	0.0	0.0	0.0	3.6	0.0	0.0	0.0
06-May-22	1.1	0.0	0.0	0.0	7.5	0.0	2.0	0.0
07-May-22	0.2	0.0	0.0	0.0	3.1	0.0	0.0	0.0
08-May-22	0.1	0.0	0.0	0.0	1.9	0.0	0.0	0.0
09-May-22	0.9	0.0	0.0	0.0	3.6	0.0	0.0	0.0
10-May-22	0.7	0.0	0.0	0.0	3.8	0.0	0.0	0.0
11-May-22	1.7	0.0	0.0	0.0	8.3	0.0	3.5	0.0
12-May-22	0.9	0.0	0.0	0.0	4.3	0.0	0.0	0.0
13-May-22	1.7	0.0	0.0	0.0	4.7	0.0	0.0	0.0
14-May-22	2.9	0.0	0.0	0.0	10.6	0.0	1.7	0.0
15-May-22	1.2	0.0	0.0	0.0	9.0	0.0	0.0	0.0
16-May-22	1.2	0.0	0.0	0.0	7.7	0.0	0.0	0.0
17-May-22	1.6	0.0	0.0	0.0	7.6	0.0	0.0	0.0
18-May-22	2.2	0.0	0.0	0.0	9.0	0.0	0.0	0.0
19-May-22	3.0	0.0	0.0	0.0	10.8	0.0	0.0	0.3
20-May-22	3.6	0.0	0.0	0.0	9.2	0.0	0.0	0.0
21-May-22	2.6	0.0	0.0	0.0	7.8	0.0	0.0	0.0
22-May-22	2.0	0.0	0.0	0.0	6.5	0.0	0.0	0.0
23-May-22	2.7	0.0	0.0	0.0	11.1	0.0	0.0	0.0
24-May-22	3.7	0.0	0.0	0.0	14.0	0.0	0.0	0.0
25-May-22	4.0	0.0	0.0	0.0	16.7	0.0	0.0	0.0
26-May-22	2.9	0.0	0.0	0.0	8.1	0.0	0.0	0.0
27-May-22	4.3	0.0	0.0	0.0	9.3	0.0	0.0	0.0
28-May-22	3.3	0.0	0.0	0.0	14.3	0.0	0.0	0.0
29-May-22	2.6	0.0	0.0	0.0	11.3	0.0	0.0	0.0
30-May-22	2.4	0.0	0.0	0.0	8.0	0.0	0.0	0.0
31-May-22	2.7	0.0	0.0	0.0	9.3	0.0	0.0	0.0
Monthly Avg	1.9	0.0	0.0	0.0				
Monthly Max					16.7	0.0	3.5	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-Jun-22	3.6	0.0	0.0	0.0	16.7	0.0	0.0	0.0
02-Jun-22	5.8	0.0	0.0	0.0	17.5	0.0	0.0	0.0
03-Jun-22	5.2	0.0	0.0	0.0	11.8	0.0	0.0	0.0
04-Jun-22	3.8	0.0	0.0	0.0	12.4	0.0	0.0	0.0
05-Jun-22	2.1	0.0	0.0	0.0	7.1	0.0	0.0	0.0
06-Jun-22	1.8	0.0	0.0	0.0	5.8	0.0	0.0	0.0
07-Jun-22	3.6	0.0	0.0	0.0	18.3	0.0	0.0	0.0
08-Jun-22	4.8	0.0	0.0	0.0	14.0	0.0	1.5	0.0
09-Jun-22	4.6	0.0	0.0	0.0	18.2	0.0	2.0	0.0
10-Jun-22	4.9	0.0	0.0	0.0	15.5	0.0	0.0	0.0
11-Jun-22	3.4	0.0	0.0	0.0	17.3	0.0	0.0	0.0
12-Jun-22	3.8	0.0	0.0	0.0	15.8	0.0	0.0	0.0
13-Jun-22	4.0	0.0	0.0	0.0	15.2	0.0	0.0	0.0
14-Jun-22	3.5	0.0	0.0	0.0	11.5	0.0	0.0	0.0
15-Jun-22	4.8	0.0	0.0	0.0	21.4	0.0	0.0	0.0
16-Jun-22	4.9	0.0	0.0	0.0	13.7	0.0	0.0	0.0
17-Jun-22	4.7	0.0	0.0	0.0	16.3	0.0	0.0	0.0
18-Jun-22	5.2	0.0	0.0	0.0	22.3	0.0	0.0	0.0
19-Jun-22	3.1	0.0	0.0	0.0	9.9	0.0	0.0	0.0
20-Jun-22	2.9	0.0	0.0	0.0	17.5	0.0	4.5	0.0
21-Jun-22	4.0	0.0	0.0	0.0	12.6	0.0	0.0	0.0
22-Jun-22	3.8	0.0	0.0	0.0	22.1	0.0	3.3	0.0
23-Jun-22	6.3	0.0	0.0	0.0	17.5	0.0	0.0	0.0
24-Jun-22	4.5	0.0	0.0	0.0	23.7	0.0	0.0	0.0
25-Jun-22	4.1	0.0	0.0	0.0	13.5	0.0	0.0	0.0
26-Jun-22	3.3	0.0	0.0	0.0	23.9	0.0	0.0	0.0
27-Jun-22	4.3	0.0	0.0	0.0	20.3	0.0	4.4	0.0
28-Jun-22	5.0	0.0	0.0	0.0	13.6	0.0	9.1	0.0
29-Jun-22	5.1	0.0	0.0	0.0	16.3	0.0	0.0	0.0
30-Jun-22	4.5	0.0	0.0	0.0	13.1	0.0	0.0	0.0
Monthly Avg	4.2	0.0	0.0	0.0				
Monthly Max					23.9	0.0	9.1	0.0

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

Influent Pump Station Odor Scrubber Outage Table

Start	Finish	Duration	Reason
07-Jan-22 07:04	07-Jan-22 07:08	0:04	Maintenance inspection A462 (EF-09)
25-Jan-22 11:21	25-Jan-22 11:32	0:11	Power failure multiple locations at IPS including A462, A463/A464
07-Apr-22 07:42	07-Apr-22 13:09	5:27	Coarse scrubber PM, grease/mist eliminator service for A642
12-Apr-22 12:51	12-Apr-22 12:57	0:06	Power work at plant. Intermittent pumping while scrubber down.
12-Apr-22 13:04	12-Apr-22 13:18	0:14	Power work at plant. Intermittent pumping while scrubber down.
22-Apr-22 14:48	22-Apr-22 14:53	0:05	Power failure multiple locations at IPS including A462, A463/A464
02-May-22 08:06	02-May-22 08:49	0:43	Blown fuse on startup after PLC reset A463/A464
04-May-22 13:59	04-May-22 14:07	0:08	Not logged, Power glitch A462
05-May-22 10:24	05-May-22 10:27	0:03	Not logged, Power glitch A462
	Total Down Time	7:01	

Attachment 9

Odor Scrubber Mainteance Records for S-110 (IPS, W-12, W-30) and S-170 (Sludge Handling, W-25)

Area	Wonum	Description	Assetnum	Req Dept	Resp Dept	Status	Type	Report Date	Reported By
W-12	2022000073	IPS BTF Odor Scrubber PLC is asking for a password and will not function without it. Need Password	W-12-FA-BIO-101	PO	IN	COMP	CM	CAMAN	1/19/2022
W-30	2022021931	Odor scrubber hypo line leaking (see long description) Odor scrubber's hypo line is leaking near the eyewash. Leak appears to be coming from the vent valve as well as a nearby union.	W-30-TKS-301-00	PO	MEN	COMP	CM	MMYEE	2/20/2022
W-12	2022035236	Carbon Scrubber #1 pressure differential transmitter (see long) Carbon Scrubber #1's differential pressure transmitter isdisplaying an "ANALOG SAT" error. The reading has been flatlining as a negative value.	W-12-FA-SBR-301	PO	IN	COMP	CM	MMYEE	3/4/2022
W-12	2022035368	Odor scrubber Grease/Mist Eliminator gauge is maxed out at 4in h2o. Possible plugged filter.	W-12-FA-FLT-002	PO	MEN	COMP	CM	DGARCIA	3/22/2022
W-12	2022035369	Biotrickling Filter #1+2 irrigation water PH meters need calibration.	W-12-IRR-AIT-128	PO	IN	COMP	CM	DGARCIA	3/22/2022
W-12	2022050226	Biotrickling filter exhaust fan #2 belt squealing/ burning	W-12-FA-EF-202	PO	MEN	COMP	CM	RHELMERS	4/12/2022
W-12	2022050362	fine-screen and rag room possible bad LEL sensor	W-12-INS-MSA-02	PO	IN	COMP	CM	ZTPAYNE	4/26/2022
W-25	2022050203	Dewater odor scrubber south unit (closer to Op Center) hypo rotometer has a hypo drip at bottom	W-25-MISC-000-00	PO	MEN	COMP	BD	KDUONG	4/7/2022

ATTACHMENT 10 -- S-170 Waste Activated Sludge Throughput

2022 January - June Gravity Belt Thickener Summary Flow Table

Note: Kgal=1,000 gallons

Daily Flows	January Kgal	February Kgal	March Kgal	April Kgal	May Kgal	June Kgal
1st	1,234	771	980	1,229	886	910
2nd	1,220	882	724	1,287	766	1,308
3rd	1,925	1,008	795	1,287	820	1,122
4th	1,062	991	722	1,219	888	1,151
5th	1,192	1,202	724	1,438	1,022	1,125
6th	1,184	1,212	714	1,096	1,065	1,133
7th	1,216	945	734	976	1,060	1,157
8th	1,182	734	601	817	1,063	1,120
9th	1,313	874	871	764	1,044	1,090
10th	1,161	805	975	719	1,001	1,155
11th	1,102	802	900	712	927	1,140
12th	1,188	796	985	702	793	1,130
13th	1,137	790	904	636	797	1,105
14th	1,009	779	941	655	823	1,072
15th	859	648	932	428	811	1,082
16th	906	850	934	510	781	1,011
17th	980	734	924	1,029	1,059	953
18th	995	710	1,100	689	1,071	946
19th	925	788	1,320	1,303	1,228	962
20th	872	726	1,301	1,105	1,073	465
21st	751	789	1,383	791	1,053	0
22nd	768	767	1,259	727	1,012	921
23rd	844	726	943	732	1,006	1,012
24th	837	731	940	712	743	660
25th	731	727	829	721	830	958
26th	822	729	858	717	819	725
27th	822	767	1,006	721	1,094	842
28th	885	580	1,495	768	1,104	841
29th	912		1,429	886	850	1,004
30th	876		1,090	790	1,100	980
31st	1,021		1,261		1,099	
Monthly Total	31,930	22,861	30,573	26,163	29,685	29,077
Semi-Annual Total	170,289					

Gravity Belt Thickener and Dewatering Centrifuge Odor Scrubber Outage Table

Start	Finish	Duration	Reason

Total Down Time, DWB 0:00

ATTACHMENT 11

2022 January - June Blend Tank Summary Flow Table

Daily Flows	January Kgal	February Kgal	March Kgal	April Kgal	May Kgal	June Kgal
1st	632	848	990	857	745	754
2nd	578	883	823	953	896	778
3rd	533	990	901	820	1,068	730
4th	645	797	781	873	1,035	738
5th	827	864	831	1,081	938	540
6th	874	801	661	915	972	692
7th	808	822	791	948	872	794
8th	765	872	860	1,003	824	742
9th	650	714	867	827	909	722
10th	640	899	1,019	854	977	801
11th	858	761	935	906	823	773
12th	817	706	977	1,032	739	678
13th	836	649	813	860	868	661
14th	816	787	927	945	756	753
15th	745	780	942	642	625	835
16th	548	885	959	1,089	835	755
17th	691	879	916	900	869	772
18th	823	697	1,041	1,046	919	601
19th	800	835	905	1,159	904	471
20th	778	680	710	1,000	888	588
21st	791	757	771	990	792	629
22nd	703	850	803	967	734	853
23rd	690	824	843	866	840	865
24th	752	851	921	699	764	541
25th	931	818	849	874	796	667
26th	819	783	944	1,043	821	484
27th	868	726	871	991	909	721
28th	815	784	945	1,030	848	889
29th	850		941	1,080	645	820
30th	628		844	947	680	915
31st	805		885		706	
Monthly Total	23,317	22,541	27,268	28,197	25,998	21,562
Semi-Annual Total	148,884					

ATTACHMENT 12 - DIGESTER GAS SAMPLING DATA

EBMUD Biogas H2S
January - June 2022

2022	Cogen Feed H2S (ppm)	365 Day Avg H2S (ppm)
1/1/2022	153	132
1/2/2022	71	132
1/3/2022	104	132
1/4/2022	170	132
1/5/2022	106	132
1/6/2022	162	132
1/7/2022	216	133
1/8/2022	132	133
1/9/2022	83	133
1/10/2022	66	133
1/11/2022	84	133
1/12/2022	82	132
1/13/2022	94	132
1/14/2022	96	132
1/15/2022	112	132
1/16/2022	59	132
1/17/2022	74	131
1/18/2022	79	131
1/19/2022	70	131
1/20/2022	87	131
1/21/2022	100	130
1/22/2022	100	130
1/23/2022	77	130
1/24/2022	68	130
1/25/2022	80	130
1/26/2022	81	129
1/27/2022	109	129
1/28/2022	83	129
1/29/2022	87	129
1/30/2022	90	129
1/31/2022	60	129
2/1/2022	86	128
2/2/2022	77	128
2/3/2022	99	128
2/4/2022	108	128
2/5/2022	101	128
2/6/2022	77	128
2/7/2022	79	128
2/8/2022	126	128
2/9/2022	141	128
2/10/2022	134	128
2/11/2022	100	128
2/12/2022	151	128
2/13/2022	99	128
2/14/2022	89	128
2/15/2022	105	128
2/16/2022	237	128
2/17/2022	141	128
2/18/2022	148	128
2/19/2022	153	128
2/20/2022	115	128
2/21/2022	102	128
2/22/2022	206	129
2/23/2022	161	129
2/24/2022	189	129
2/25/2022	225	129
2/26/2022	261	130
2/27/2022	146	129
2/28/2022	109	130

Carbon vessels swapped on 6/29
so 6/30 reading is zero breakthrough.

2022	Cogen Feed H2S (ppm)	365 Day Avg H2S (ppm)
3/1/2022	108	130
3/2/2022	117	130
3/3/2022	164	130
3/4/2022	159	130
3/5/2022	173	130
3/6/2022	105	130
3/7/2022	166	131
3/8/2022	194	131
3/9/2022	97	131
3/10/2022	193	131
3/11/2022	244	131
3/12/2022	214	132
3/13/2022	154	132
3/14/2022	224	132
3/15/2022	178	132
3/16/2022	158	132
3/17/2022	190	132
3/18/2022	191	133
3/19/2022	167	133
3/20/2022	150	133
3/21/2022	169	133
3/22/2022	107	133
3/23/2022	166	133
3/24/2022	154	133
3/25/2022	162	133
3/26/2022	29	133
3/27/2022	96	133
3/28/2022	94	133
3/29/2022	168	133
3/30/2022	171	133
3/31/2022	153	134
4/1/2022	172	134
4/2/2022	209	134
4/3/2022	180	134
4/4/2022	176	135
4/5/2022	155	135
4/6/2022	159	135
4/7/2022	188	135
4/8/2022	157	135
4/9/2022	149	135
4/10/2022	149	135
4/11/2022	114	135
4/12/2022	134	135
4/13/2022	205	136
4/14/2022	142	136
4/15/2022	168	136
4/16/2022	138	136
4/17/2022	119	136
4/18/2022	98	136
4/19/2022	201	136
4/20/2022	282	137
4/21/2022	195	137
4/22/2022	172	137
4/23/2022	163	137
4/24/2022	155	137
4/25/2022	129	137
4/26/2022	195	138
4/27/2022	192	138
4/28/2022	192	138
4/29/2022	174	138
4/30/2022	195	138

2022	Cogen Feed H2S (ppm)	365 Day Avg H2S (ppm)
5/1/2022	140	138
5/2/2022	87	138
5/3/2022	156	138
5/4/2022	142	138
5/5/2022	156	138
5/6/2022	339	139
5/7/2022	144	139
5/8/2022	190	139
5/9/2022	140	139
5/10/2022	129	139
5/11/2022	152	139
5/12/2022	147	139
5/13/2022	159	139
5/14/2022	133	139
5/15/2022	83	139
5/16/2022	79	139
5/17/2022	149	139
5/18/2022	140	140
5/19/2022	145	140
5/20/2022	152	140
5/21/2022	149	140
5/22/2022	111	140
5/23/2022	147	140
5/24/2022	86	140
5/25/2022	84	140
5/26/2022	131	140
5/27/2022	160	140
5/28/2022	96	140
5/29/2022	116	140
5/30/2022	167	140
5/31/2022	150	140
6/1/2022	103	141
6/2/2022	117	141
6/3/2022	105	141
6/4/2022	85	141
6/5/2022	124	141
6/6/2022	114	141
6/7/2022	120	141
6/8/2022	75	141
6/9/2022	92	141
6/10/2022	93	141
6/11/2022	89	141
6/12/2022	108	141
6/13/2022	86	142
6/14/2022	90	142
6/15/2022	61	142
6/16/2022	69	142
6/17/2022	74	142
6/18/2022	64	142
6/19/2022	73	141
6/20/2022	85	141
6/21/2022	161	142
6/22/2022	69	141
6/23/2022	84	141
6/24/2022	37	141
6/25/2022	52	141
6/26/2022	91	141
6/27/2022	69	140
6/28/2022	100	140
6/29/2022	127	140
6/30/2022	0	140

ATTACHMENT 13 - TOTAL DIGESTER GAS COMBUSTION

EBMUD Biogas to Combustion Devices
January - June 2022

2022	Total Combustion, SCFM		
	Daily Max	Daily Avg	365-Day Avg
1/1/2022	2,598	1,783	2,437
1/2/2022	1,961	1,377	2,437
1/3/2022	2,336	1,779	2,438
1/4/2022	2,131	2,037	2,438
1/5/2022	3,179	2,175	2,437
1/6/2022	3,590	2,913	2,439
1/7/2022	3,484	2,929	2,440
1/8/2022	3,079	2,596	2,441
1/9/2022	2,242	1,616	2,440
1/10/2022	2,363	1,703	2,441
1/11/2022	3,430	2,746	2,443
1/12/2022	3,284	2,689	2,443
1/13/2022	3,150	2,584	2,444
1/14/2022	3,249	2,753	2,444
1/15/2022	2,462	2,102	2,443
1/16/2022	1,918	1,566	2,442
1/17/2022	1,964	1,728	2,442
1/18/2022	2,457	2,057	2,443
1/19/2022	3,268	2,570	2,444
1/20/2022	3,564	2,684	2,445
1/21/2022	3,280	2,101	2,444
1/22/2022	2,316	1,855	2,443
1/23/2022	1,885	1,535	2,442
1/24/2022	2,359	1,666	2,442
1/25/2022	2,952	2,377	2,445
1/26/2022	2,562	2,190	2,445
1/27/2022	2,693	2,471	2,446
1/28/2022	2,738	2,471	2,446
1/29/2022	2,358	2,196	2,444
1/30/2022	2,335	1,600	2,443
1/31/2022	2,807	1,917	2,444
2/1/2022	3,568	2,809	2,447
2/2/2022	3,175	2,473	2,448
2/3/2022	3,547	2,791	2,449
2/4/2022	2,794	2,253	2,449
2/5/2022	2,136	1,879	2,447
2/6/2022	2,362	1,791	2,446
2/7/2022	2,535	1,950	2,447
2/8/2022	3,802	2,921	2,450
2/9/2022	3,325	2,750	2,451
2/10/2022	3,414	2,711	2,451
2/11/2022	3,371	2,574	2,452
2/12/2022	3,133	2,317	2,452
2/13/2022	2,214	1,816	2,451
2/14/2022	3,218	2,491	2,453
2/15/2022	3,610	2,780	2,456
2/16/2022	4,121	3,247	2,459
2/17/2022	3,677	3,198	2,460
2/18/2022	2,887	2,354	2,460
2/19/2022	2,529	2,101	2,457
2/20/2022	2,183	1,837	2,457
2/21/2022	2,744	2,060	2,458
2/22/2022	3,073	2,563	2,460
2/23/2022	3,558	2,761	2,460
2/24/2022	3,233	2,659	2,461
2/25/2022	2,871	2,542	2,459
2/26/2022	2,622	2,291	2,458
2/27/2022	2,106	1,812	2,457
2/28/2022	2,569	1,979	2,458

3,400 Annual Average Limit

2022	Total Combustion, SCFM		
	Daily Max	Daily Avg	365-Day Avg
3/1/2022	3,615	2,661	2,459
3/2/2022	3,974	3,103	2,460
3/3/2022	3,863	3,368	2,463
3/4/2022	3,683	2,813	2,463
3/5/2022	2,809	2,355	2,462
3/6/2022	2,156	1,827	2,461
3/7/2022	2,463	2,083	2,462
3/8/2022	3,579	2,789	2,464
3/9/2022	3,282	2,559	2,464
3/10/2022	3,667	3,233	2,463
3/11/2022	3,941	3,445	2,464
3/12/2022	3,451	2,688	2,464
3/13/2022	2,576	2,055	2,463
3/14/2022	3,365	2,770	2,466
3/15/2022	4,243	3,275	2,470
3/16/2022	4,091	3,424	2,473
3/17/2022	3,743	3,079	2,474
3/18/2022	3,662	3,371	2,475
3/19/2022	3,903	2,979	2,476
3/20/2022	2,601	2,218	2,476
3/21/2022	3,484	2,637	2,479
3/22/2022	3,258	2,581	2,481
3/23/2022	3,882	3,136	2,484
3/24/2022	3,779	3,387	2,486
3/25/2022	3,938	2,814	2,486
3/26/2022	2,965	2,497	2,486
3/27/2022	2,346	2,000	2,485
3/28/2022	3,488	2,518	2,487
3/29/2022	3,128	2,661	2,488
3/30/2022	3,369	2,377	2,488
3/31/2022	3,198	2,634	2,488
4/1/2022	3,478	2,522	2,487
4/2/2022	2,742	2,359	2,487
4/3/2022	2,513	1,953	2,487
4/4/2022	4,160	2,519	2,490
4/5/2022	3,609	2,760	2,492
4/6/2022	3,238	2,776	2,493
4/7/2022	3,782	3,089	2,496
4/8/2022	3,611	2,935	2,499
4/9/2022	2,656	2,337	2,499
4/10/2022	2,268	1,813	2,499
4/11/2022	2,803	2,111	2,500
4/12/2022	3,597	2,770	2,501
4/13/2022	3,707	2,869	2,503
4/14/2022	4,024	3,228	2,505
4/15/2022	3,497	2,602	2,506
4/16/2022	3,300	2,765	2,506
4/17/2022	2,605	2,172	2,505
4/18/2022	3,240	2,504	2,507
4/19/2022	4,025	3,030	2,509
4/20/2022	2,722	2,467	2,509
4/21/2022	3,320	2,604	2,509
4/22/2022	2,767	2,584	2,510
4/23/2022	2,559	2,327	2,510
4/24/2022	2,087	1,756	2,509
4/25/2022	3,237	2,236	2,510
4/26/2022	3,614	3,074	2,513
4/27/2022	3,337	2,741	2,513
4/28/2022	2,830	2,499	2,512
4/29/2022	2,711	2,458	2,511
4/30/2022	2,751	2,539	2,511

2022	Total Combustion, SCFM		
	Daily Max	Daily Avg	365-Day Avg
5/1/2022	2,392	1,912	2,509
5/2/2022	3,012	2,495	2,510
5/3/2022	3,916	3,229	2,514
5/4/2022	3,279	2,777	2,514
5/5/2022	3,416	2,849	2,515
5/6/2022	3,583	2,838	2,516
5/7/2022	3,542	2,686	2,516
5/8/2022	2,073	1,857	2,515
5/9/2022	2,824	2,216	2,516
5/10/2022	3,533	2,712	2,518
5/11/2022	3,956	3,219	2,520
5/12/2022	3,457	2,657	2,521
5/13/2022	3,667	2,997	2,522
5/14/2022	2,989	2,247	2,522
5/15/2022	2,190	1,690	2,520
5/16/2022	3,467	2,367	2,522
5/17/2022	3,665	2,716	2,524
5/18/2022	3,923	2,986	2,527
5/19/2022	3,907	3,177	2,529
5/20/2022	3,848	3,489	2,532
5/21/2022	3,157	2,576	2,531
5/22/2022	1,906	1,756	2,528
5/23/2022	3,514	2,380	2,529
5/24/2022	3,282	2,648	2,531
5/25/2022	3,525	2,785	2,531
5/26/2022	3,305	2,612	2,532
5/27/2022	3,299	2,663	2,532
5/28/2022	3,138	2,527	2,531
5/29/2022	2,319	2,024	2,529
5/30/2022	2,603	2,173	2,530
5/31/2022	3,129	2,340	2,532
6/1/2022	3,383	2,548	2,533
6/2/2022	3,421	2,857	2,534
6/3/2022	3,807	2,982	2,535
6/4/2022	2,914	2,401	2,534
6/5/2022	2,519	1,680	2,532
6/6/2022	2,460	1,873	2,532
6/7/2022	3,693	2,578	2,534
6/8/2022	3,249	2,544	2,535
6/9/2022	3,697	3,074	2,536
6/10/2022	4,172	3,368	2,538
6/11/2022	3,720	2,859	2,538
6/12/2022	2,144	1,968	2,536
6/13/2022	2,662	1,870	2,535
6/14/2022	3,212	2,575	2,536
6/15/2022	3,538	3,053	2,538
6/16/2022	3,498	2,928	2,538
6/17/2022	3,445	2,822	2,537
6/18/2022	3,419	2,705	2,538
6/19/2022	2,035	1,584	2,535
6/20/2022	3,122	2,211	2,535
6/21/2022	3,534	3,064	2,538
6/22/2022	3,570	2,699	2,539
6/23/2022	3,565	2,871	2,539
6/24/2022	3,497	2,698	2,538
6/25/2022	2,688	2,183	2,537
6/26/2022	1,977	1,581	2,534
6/27/2022	2,369	1,847	2,532
6/28/2022	3,543	2,855	2,535
6/29/2022	3,963	3,457	2,538
6/30/2022	4,245	3,589	2,540