

DOCKETED

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Description:	N/A
Filer:	Craig Chi
Organization:	Watson Cogeneration Company
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Watson Cogeneration Company

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VIA EMAIL

July 30, 2021

Mr. Anwar Ali
Compliance Project Manager
California Energy Commission
1516 9th Street, MS-2000
Sacramento, California 95814-5512

**Subject: Watson Cogeneration Company (Facility #06755)
 Quarterly Emissions Report – AQ 28 – 2nd Quarter 2021
 Submittal # 397**

Dear Mr. Ali:

Attached is Watson Cogeneration Company's (Facility #06755) Quarterly Emissions Report for the second quarter of 2021. The report contains a table of emission limits (Table 1), a table of daily fuel and ammonia usage (Table 2A), a table of daily emissions (Table 2B), and a table of emissions during start up mode (Table 2C) for each of the site's four gas turbines. A CEC permit has been issued for a fifth train, but it has been removed from Table 1 since the unit has not been built. Along with the quarterly emissions report, please find copies of the last sulfur content analysis in the quarter for our refinery fuel gas and butane.

During the second quarter of 2021, Watson Cogeneration Company (WCC) experienced zero breakdown / excess emissions incident as currently required by the SCAQMD.

If you have any questions concerning this report, please do not hesitate to contact the undersigned.

Sincerely,



Craig Chi
Watson Cogeneration Operations Engineer

bcc: Shelley Zhang, Marathon Los Angeles Refinery
 Jimmie Espie, WCC
 Mike Nour, WCC

Table 1**Emission Limits as required by the California Energy Commission Conditions of Certification**

Turbine Number	Concentration Limits (ppmv @ 15% O ₂)				Maximum Daily Emission Limits ⁴ (lbs/day)					Start-Up/Shutdown Emission Limits ⁵ (lbs/day)				
	NO _x	SO ₂	CO	NH ₃	NO _x	SO ₂	CO	PM	ROG	NO _x	SO ₂	CO	PM	ROG
1 - 4	8	2	2.5 ¹ 4.5 ²	20	2600	246	568	1244	531	2156	59	82	186	108
5		---	2.5 ³	20	209	10	64	95	18	449	8	296	92	32

Notes:

1. Limit applies when turbine is operated at or above 85% capacity, except during startup and shutdown.
2. Limit applies when turbine is operated below 85% capacity, except during startup and shutdown.
3. Limit applies when turbine is operated at or above 50% capacity.
4. Limits do not apply on days when a start-up or shutdown has occurred. Limits pertain to combined emissions from Units 1-4.
5. Limits apply only on days when a start-up or shutdown has occurred. Limits pertain to stack emissions from individual Units.

Table 2A
Daily Fuel & Ammonia Usage

Date	Unit Start-Up or Shutdown	Fuel Usage - By Unit (mmbtu/hr)					Fuel Usage - By Fuel Type (mmbtu/hr)			Ammonia Usage - By Unit (lbs/day)			
		GTG #1	GTG #2	GTG #3	GTG #4	Boiler #42	Natural Gas	Refinery Gas	Butane	GTG #1	GTG #2	GTG #3	GTG #4
4/1/21		1041	1910	1076	1082	0	2970	1230	910	2242	1557	2317	1711
4/2/21		1047	1902	1074	1082	0	3048	1120	936	2233	1431	1957	1657
4/3/21		1042	1920	1042	1064	0	3132	1017	920	2124	1439	2138	1648
4/4/21		1025	1902	1028	1056	0	3227	861	923	2119	1449	2313	1657
4/5/21		1034	1918	1052	1060	0	3340	801	923	2257	1328	2201	1680
4/6/21		1050	1924	1054	1072	0	3674	496	930	2273	1331	2112	1656
4/7/21		1040	1920	1048	1070	0	3738	413	928	2284	1299	2133	1593
4/8/21		1040	1922	1043	1065	0	3630	503	936	2228	1312	2044	1612
4/9/21	SD	1047	1810	1053	1076	0	3623	419	944	2215	1302	2117	1640
4/10/21		1144	890	1153	1189	0	3064	355	957	2362	3	2362	1876
4/11/21		1132	886	1142	1176	0	2935	430	972	2362	-123	2406	1899
4/12/21		1156	888	1192	1201	0	2751	709	975	2402	-124	2301	1909
4/13/21	SU	1084	1425	1091	1120	0	3004	766	949	2286	648	2380	1944
4/14/21		1061	1950	1076	1092	0	3472	762	944	2362	1439	2319	1817
4/15/21		1076	1959	1087	1095	0	3527	751	940	2370	1443	2296	1590
4/16/21		1068	1963	1072	1092	0	3575	681	939	2423	1404	2362	1604
4/17/21		1036	1936	1039	1062	0	3544	589	940	2362	1374	2362	1546
4/18/21		1026	1926	1043	1056	0	3513	593	945	2356	1404	2336	1592
4/19/21		1078	1980	1074	1103	0	3721	568	946	2288	1303	2190	1535
4/20/21		1083	1974	1097	1117	0	3921	382	969	2032	1367	2090	1498
4/21/21		1069	1972	1082	1091	0	4001	246	967	2125	1354	2212	1583
4/22/21		1076	1972	1091	1094	0	4150	132	951	2264	1395	2056	1594
4/23/21		1062	1958	1078	1084	0	4046	180	956	2416	1396	2026	1613
4/24/21		1052	1962	1051	1081	0	4138	61	948	2416	1374	2201	1565
4/25/21		1041	1952	1049	1070	0	4096	54	962	2411	1370	2208	1566
4/26/21		1060	1961	1073	1084	0	4091	127	960	2298	1398	2190	1606
4/27/21		1059	1968	1076	1081	0	3926	290	968	2195	1376	2185	1570
4/28/21		1035	1956	1042	1059	0	3718	410	963	2228	1333	2212	1593
4/29/21		1037	1962	1040	1060	0	3601	533	964	2174	1283	2148	1541
4/30/21		1021	1946	1037	1051	0	3875	214	966	2204	1249	1965	1524
5/1/21		1005	1930	1014	1038	0	3865	147	975	2174	1319	1933	1522
5/2/21		1006	1932	1018	1034	0	3839	174	979	2181	1335	2053	1549
5/3/21		1022	1952	1035	1054	0	3877	210	976	2116	1238	2024	1409
5/4/21		984	1830	994	1015	0	3646	159	1019	2112	1244	2007	1375
5/5/21		1001	931	1005	1033	0	2537	348	1086	2438	1792	2130	1439
5/6/21		1026	1044	1032	1054	0	3316	456	385	2253	1525	2261	1457
5/7/21		1033	1088	1040	1054	0	3591	536	88	2192	1324	2147	1521
5/8/21		1002	1061	1010	1032	0	3641	361	104	2264	1315	2143	1503
5/9/21		998	1057	1006	1025	0	3598	383	105	2306	1324	2178	1498
5/10/21		1017	1076	1036	1047	0	3789	277	110	2118	1251	1981	1416
5/11/21		1032	1086	1035	1058	0	3698	426	88	2084	1264	2165	1395
5/12/21		1046	1096	1041	1070	0	3739	429	84	2028	1256	2145	1402
5/13/21		1032	1079	1027	1052	0	3856	251	83	2151	1285	2174	1460
5/14/21		1030	1081	1033	1052	0	3739	362	94	2070	1243	2071	1415
5/15/21		1009	1068	1020	1038	0	3635	389	111	2175	1356	2245	1526
5/16/21		1012	1067	1016	1040	0	3706	335	94	2250	1365	2308	1537
5/17/21		1028	1076	1029	1051	0	3645	453	86	2179	1276	2180	1472
5/18/21		1049	1100	1050	1067	0	3729	459	78	1984	1193	1957	1357
5/19/21		1035	1089	1041	1060	0	3645	478	102	1987	1282	2020	1395
5/20/21		1040	1087	1048	1055	0	3561	575	95	2242	1355	2242	1512
5/21/21		1061	1111	1073	1081	0	3352	872	103	2365	1432	2336	1622
5/22/21		1046	1103	1053	1070	0	3416	761	95	2528	1435	2460	1592
5/23/21		1033	1086	1037	1061	0	3274	850	92	2422	1410	2384	1593
5/24/21		1055	1103	1058	1080	0	3607	608	81	2367	1329	2272	1491
5/25/21		1040	1091	1046	1063	0	3520	624	96	2335	1309	2276	1439
5/26/21		1038	1094	1050	1064	0	3500	637	109	2260	1246	2304	1394
5/27/21		1049	1101	1062	1065	0	3865	307	105	2186	1295	2240	1480
5/28/21		1043	1094	1058	1063	0	3848	317	94	2223	1272	2134	1420
5/29/21		1016	1073	1025	1039	0	3738	317	98	2257	1333	2189	1514

Table 2A
Daily Fuel & Ammonia Usage

Date	Unit Start-Up or Shutdown	Fuel Usage - By Unit (mmbtu/hr)					Fuel Usage - By Fuel Type (mmbtu/hr)			Ammonia Usage - By Unit (lbs/day)			
		GTG #1	GTG #2	GTG #3	GTG #4	Boiler #42	Natural Gas	Refinery Gas	Butane	GTG #1	GTG #2	GTG #3	GTG #4
5/30/21		1005	1060	1011	1023	0	3730	281	89	2287	1335	2223	1509
5/31/21		1006	1066	1007	1024	0	3769	246	87	2298	1308	2223	1475
6/1/21		1041	1092	1041	1056	0	3863	292	75	2191	1235	2131	1382
6/2/21		1043	1090	1040	1054	0	3762	398	68	2184	1256	2254	1413
6/3/21		1040	1099	1056	1058	0	3618	533	101	2094	1218	2060	1381
6/4/21		1041	1098	1056	1061	0	3677	478	101	2127	1206	2047	1376
6/5/21		1032	1088	1033	1052	0	3495	621	89	2213	1355	2236	1526
6/6/21		1042	1104	1048	1062	0	3536	620	100	2339	1380	2255	1545
6/7/21		1066	1125	1089	1082	0	3614	638	111	2222	1294	2124	1491
6/8/21		1065	1118	1079	1083	0	3730	517	99	2183	1316	2152	1484
6/9/21		1071	1122	1089	1093	0	3682	599	94	2180	1301	2111	1518
6/10/21		1059	1113	1076	1083	0	3535	704	94	2371	1310	2260	1551
6/11/21		1082	1126	1086	1099	0	3715	586	91	2365	1312	2234	1486
6/12/21		1067	1068	1056	1041	0	3587	553	91	2287	1405	2132	1587
6/13/21		1052	1081	1069	1051	0	3519	640	93	2255	1360	1952	1544
6/14/21		1073	1112	1085	1085	0	3524	740	91	2163	1314	1946	1465
6/15/21		1068	1129	1089	1103	0	3556	746	86	2198	1278	2014	1422
6/16/21		1103	1131	1130	1125	0	3751	622	115	1953	1344	1791	1413
6/17/21		1098	1158	1119	1127	0	3766	624	112	1864	1238	1798	1367
6/18/21		1094	1145	1109	1112	0	3683	668	110	1977	1294	1884	1429
6/19/21		1060	1111	1061	1082	0	3626	598	91	2319	1345	2093	1559
6/20/21		1026	1077	1027	1043	0	3102	984	86	2346	1345	2099	1503
6/21/21	SD	1039	1030	1049	1060	0	3490	592	96	2092	1124	1917	1335
6/22/21		1207	24	1217	1237	0	3369	249	68	2398	-102	2210	1876
6/23/21		1220	26	1229	1248	0	3295	356	71	2553	-102	2293	2158
6/24/21	SU	1165	480	1176	1191	0	3559	374	79	2386	395	2322	2005
6/25/21		1068	1113	1077	1092	0	4034	228	88	2072	1248	2007	1463
6/26/21		989	1031	990	1009	0	3640	297	82	2195	1298	2059	1490
6/27/21		980	1034	990	1002	0	3636	262	109	2202	1274	2054	1424
6/28/21		1079	1128	1094	1102	0	4049	248	105	2042	1197	1856	1367
6/29/21		1060	1112	1077	1080	0	4029	192	108	1922	1191	1857	1378
6/30/21		1073	1121	1084	1092	0	4028	243	100	2098	1235	2036	1401

Table 2B
Daily Emissions

Date	Unit Start-Up or Shutdown	Total Mass Emissions - GTG's #1 - 4 Midnight - Midnight (lbs/day)				
		NOX	SO2	CO	PM ¹	ROG ¹
4/1/21		881.0	3.5	120.4	486.5	327.1
4/2/21		704.7	2.0	151.0	485.9	326.7
4/3/21		784.9	2.6	120.3	482.2	324.1
4/4/21		715.8	2.0	127.3	476.6	320.2
4/5/21		687.2	1.5	137.3	481.4	323.4
4/6/21		657.4	2.3	140.1	484.2	325.0
4/7/21		692.0	2.0	141.5	481.9	323.4
4/8/21		653.3	1.4	159.7	481.3	323.1
4/9/21	SD	630.8	4.1	131.2	473.3	317.7
4/10/21		730.8	1.1	63.2	415.6	279.0
4/11/21		701.8	0.8	76.6	412.0	276.7
4/12/21		722.9	2.5	67.7	422.0	283.6
4/13/21	SU	727.2	2.1	109.0	448.9	301.6
4/14/21		735.6	2.2	120.0	492.1	330.6
4/15/21		852.3	1.6	119.7	495.8	333.0
4/16/21		649.4	0.9	141.9	493.5	331.4
4/17/21		726.5	0.7	210.7	481.7	323.5
4/18/21		855.5	0.7	166.4	479.7	322.1
4/19/21		713.5	0.7	117.2	497.0	333.7
4/20/21		723.9	0.9	126.4	500.1	335.6
4/21/21		736.5	1.0	133.5	494.4	331.7
4/22/21		728.2	1.8	155.6	496.0	332.7
4/23/21		703.1	1.8	137.3	491.2	329.6
4/24/21		762.0	1.3	180.9	487.6	327.0
4/25/21		775.7	1.4	166.5	484.4	324.9
4/26/21		747.7	1.6	172.7	490.7	329.2
4/27/21		782.3	2.0	185.1	491.6	329.9
4/28/21		715.1	1.4	204.8	483.2	324.3
4/29/21		710.5	6.0	166.0	484.1	325.0
4/30/21		692.2	0.7	166.2	479.4	321.6
5/1/21		733.3	1.1	151.6	472.9	317.3
5/2/21		715.9	1.5	140.3	473.2	317.5
5/3/21		693.9	1.3	157.8	480.1	322.1
5/4/21		682.0	1.4	151.9	457.5	307.0
5/5/21		681.7	2.2	139.0	377.6	253.7
5/6/21		634.3	1.5	137.8	393.9	264.2

Table 2B
Daily Emissions

Date	Unit Start-Up or Shutdown	Total Mass Emissions - GTG's #1 - 4				
		Midnight - Midnight				
		(lbs/day)				
		NOX	SO2	CO	PM ¹	ROG ¹
5/7/21		606.5	1.7	133.7	398.9	267.4
5/8/21		725.7	1.5	133.1	388.3	260.2
5/9/21		735.0	1.4	140.9	386.5	259.0
5/10/21		727.6	1.7	169.6	394.7	264.4
5/11/21		700.9	1.6	169.6	398.3	266.9
5/12/21		748.0	1.5	155.6	402.2	269.5
5/13/21		667.2	1.0	168.1	395.9	265.2
5/14/21		693.7	1.1	169.9	396.6	265.8
5/15/21		712.1	1.1	162.3	391.1	262.1
5/16/21		681.8	1.0	156.8	390.9	261.9
5/17/21		716.1	1.1	164.2	395.8	265.3
5/18/21		876.7	1.2	135.5	403.5	270.4
5/19/21		747.4	0.8	155.6	399.7	267.9
5/20/21		729.1	1.4	138.8	400.5	268.5
5/21/21		753.3	2.4	129.8	410.2	275.2
5/22/21		744.9	1.5	124.7	404.8	271.5
5/23/21		733.1	5.3	136.5	399.7	268.1
5/24/21		708.1	3.1	126.4	406.7	272.7
5/25/21		562.6	2.2	122.1	401.5	269.2
5/26/21		547.8	1.9	127.5	402.0	269.6
5/27/21		665.1	3.0	141.1	404.3	270.9
5/28/21		710.0	1.7	146.1	402.6	269.7
5/29/21		719.4	1.7	131.8	392.6	263.0
5/30/21		690.5	1.9	127.4	387.5	259.6
5/31/21		690.5	1.2	132.1	387.6	259.6
6/1/21		622.7	1.6	156.8	399.7	267.8
6/2/21		620.6	3.3	146.9	399.8	267.9
6/3/21		679.5	3.0	181.1	402.5	269.8
6/4/21		675.3	1.6	131.5	402.7	269.9
6/5/21		726.9	2.2	122.5	398.2	267.0
6/6/21		747.7	4.1	117.4	403.0	270.2
6/7/21		725.4	3.6	121.7	413.1	277.0
6/8/21		698.5	4.0	127.8	411.2	275.6
6/9/21		707.9	2.8	138.0	414.1	277.6
6/10/21		707.3	3.4	141.9	410.4	275.2
6/11/21		706.7	1.7	147.1	415.7	278.7

Table 2B
Daily Emissions

Date	Unit Start-Up or Shutdown	Total Mass Emissions - GTG's #1 - 4 Midnight - Midnight (lbs/day)				
		NOX	SO2	CO	PM ¹	ROG ¹
6/12/21		710.4	1.6	119.1	400.5	268.5
6/13/21		709.5	1.6	133.8	402.6	269.9
6/14/21		677.6	2.7	161.8	412.6	276.7
6/15/21		698.1	3.7	136.3	415.7	278.8
6/16/21		750.5	3.2	107.8	424.9	284.9
6/17/21		789.1	2.8	106.2	426.2	285.8
6/18/21		763.2	4.7	113.9	422.3	283.2
6/19/21		728.9	3.5	118.5	408.5	273.8
6/20/21		757.7	8.3	133.2	395.8	265.7
6/21/21	SD	680.9	4.8	157.6	395.5	265.2
6/22/21		700.5	2.2	84.7	348.4	233.4
6/23/21		696.5	1.8	111.5	352.0	235.9
6/24/21	SU	739.8	2.3	169.3	379.3	254.2
6/25/21		735.1	2.7	155.5	411.0	275.3
6/26/21		683.9	1.5	170.9	379.8	254.5
6/27/21		671.2	2.9	164.8	378.7	253.7
6/28/21		742.9	2.7	184.6	416.0	278.6
6/29/21		823.9	2.1	159.8	409.0	273.9
6/30/21		663.6	1.7	174.5	413.0	276.6

1. PM & ROG emission estimates were calculated using fuel based emission factors and fuel usage data.

Fuel	PM	ROG
Natural Gas:	0.00393	0.00263
Refinery Gas:	0.00402	0.00272
Butane:	0.00402	0.00272

The foregoing fuel based emission factors have been updated based on 1997 & 1998 stack testing.

Table 2C
Daily Emissions for Individual Units during Startup

Date	Unit	Total Mass Emissions - GTG's #1				
	Start-Up	Midnight - Midnight				
	or Shutdown	(lbs/day)				
		NOX	SO2	CO	PM 1	ROG 1
None						

Date	Unit	Total Mass Emissions - GTG's #2				
		Midnight - Midnight				
		(lbs/day)				
		NOX	SO2	CO	PM 1	ROG 1
4/9/2021	SD	82.3	3.1	30.6	172.8	116.3
4/13/2021	SU	102.9	0.8	20.7	136.6	92.1
6/21/2021	SD	124.4	1.6	40.7	97.5	65.4
6/24/2021	SU	84.0	0.9	27.5	45.4	30.4

Date	Unit	Total Mass Emissions - GTG's #3				
		Midnight - Midnight				
		(lbs/day)				
		NOX	SO2	CO	PM 1	ROG 1
None						

Date	Unit	Total Mass Emissions - GTG's #4				
		Midnight - Midnight				
		(lbs/day)				
		NOX	SO2	CO	PM 1	ROG 1
None						

Unit	Cogeneration Unit
Sample Point	Eff.Before Compress

Profile #	9007
Date	6/28/2021
Time	06:00
Sample No.	1868444
Status	Complete

H2S - SCD-HiLvl	<1.0	ppm
COS - SCD-HiLvl	2	ppm
MeSH - SCD-HiLvl	<1.0	ppm
EtSH - SCD-HiLvl	<1.0	ppm
DMDS - SCD-HiLvl	<1.0	ppm
Other S Compds-SCD-HiLvl	<1.0	ppm
Sulfur (sum)-SCD-Calc	3	ppm

Unit	Cogeneration Unit
Sample Point	Eff.Before Compress

Profile #	9010
Date	6/28/2021
Time	06:00
Sample No.	1868445
Status	Complete

H2S - SCD-LoLvl	<1.0	ppm
COS - SCD-LoLvl	<1.0	ppm
MeSH - SCD-LoLvl	<1.0	ppm
EtSH - SCD-LoLvl	1.7	ppm
DMDS - SCD-LoLvl	<1.0	ppm
Other S Compds-SCD-LoLvl	1.4	ppm
Sulfur (sum)-SCD-Calc	3.1	ppm