



CITY OF PORTLAND ENVIRONMENTAL SERVICES

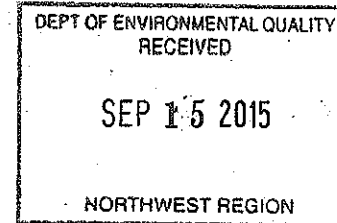


Columbia Boulevard Wastewater Treatment Plant

5001 N Columbia Boulevard, Portland, Oregon 97203 ■ Nick Fish, Commissioner ■ Michael Jordan, Director

September 15, 2015

State of Oregon
DEQ Northwest Region Office
700 NE Multnomah St.
Suite 600
Portland, OR 97232



COLUMBIA BOULEVARD WASTEWATER TREATMENT PLANT MONITORING REPORT AUGUST 2015

Attached is the August 2015 Monitoring Report for the City of Portland Columbia Boulevard Treatment Plant.

Please note that the Wet Weather BOD and TSS monthly averages were 110 mg/l and 46 mg/l respectively. The System-Based Performance Requirements in the permit indicate a target of 45 mg/l monthly. Additionally, the Wet Weather BOD weekly average was 137 mg/l for the week ending 29 August. This value exceeded the weekly System-Based Performance Requirement of 65 mg/l.

The combined mass loadings that were discharged to the Columbia River for all of the above were well within the Outfalls 001 and 003 Effluent Limitations as stated in the permit. Per conversations I had with Lyle Christensen in March of 2013, we are considering the System-Based Performance Requirements as an operating guideline and the Outfalls 001 and 003 Effluent Limitations as hard permitted levels as that is actually what is introduced into the environment.

We continue to try and find ways to improve our operating methodologies as well as equipment improvements with regard to the exceedances mentioned above.

All other parameters were within permit limitations during the month.

On page three, some columns have been added that denote the on and off times of CSO-related equipment such as Outfall 3 and CEPT. Although this information has been available in other documentation such as the Annual CSO Report, we wanted this data to be easily referenced in a more central location.

If you have any questions regarding these reports, please call me at 823-2438.

Sincerely yours,

Mike Ciolli
Wastewater Treatment Manager for Operations

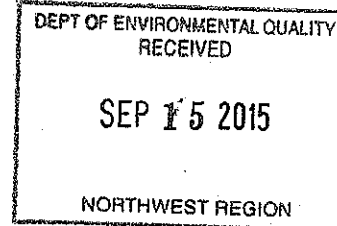
Ph: 503-823-2400 Fax: 503-823-2409 ■ www.portlandoregon.gov/bes ■ Using recycled paper ■ An Equal Opportunity Employer

The City of Portland complies with all non-discrimination laws including Title VI (Civil Rights) and Title II (ADA).
To request a translation, accommodation or additional information, please call 503-823-7740, or use City TTY 503-823-6868, or Oregon Relay Service: 711.

City of Portland
Sewage Release Report to DEQ
8/1/2015 to 8/31/2015

City System					
Incident Date	Location	Service Request #	Discharge (gal)	Cause	Destination:
8/2/2015	4611 NE PRESCOTT ST	163580	25	Debris	Inside Building - Unfinished Basement
8/2/2015	4625 NE PRESCOTT ST	163581	5	Debris	Inside Building - Unfinished Basement
8/3/2015	4900 N BASIN AVE	163592	1	Roots	Inside Building - First Floor
8/25/2015	3129 SE CRYSTAL SPRINGS BLVD	163681	20	Roots	Inside Building - Finished Basement
8/30/2015	619 SW 11TH AVE	163697	3115	Roots	Inside Building - Finished Basement
8/31/2015	9320 N ST JOHNS AVE	163698	30	Roots	Inside Building - Unfinished Basement

Private Responsibility or No Release		
Incident Date	Location	Service Request #
8/3/2015	733 SW 2ND AVE	163587
8/4/2015	619 SW 11TH AVE	163599
8/4/2015	4579 NE CULLY BLVD	163600
8/6/2015	10836 NE HALSEY ST	163607
8/7/2015	2010 NE THOMPSON ST	163615
8/7/2015	720 NE GRAND AVE	163610
8/9/2015	12517 SE RAMONA ST	163619
8/11/2015	1934 SE MARION ST	163628
8/11/2015	2501 SW TROY ST	163627
8/12/2015	3044 NW THURMAN ST	163635
8/14/2015	8829 N DWIGHT AVE	163642
8/14/2015	2897 SE DIVISION ST	163649
8/17/2015	4821 NE KILLINGSWORTH ST	163656
8/19/2015	10537 NW 2ND AVE	163660
8/20/2015	2207 NW FLANDERS ST	163664
8/21/2015	10818 NW ST HELENS RD	163673
8/23/2015	7407 SE ALDER ST	163674
8/26/2015	1853 SW JEFFERSON ST	163686
8/26/2015	5024 N ALBINA AVE	163687
8/30/2015	6805 NE SKIDMORE ST	163695
8/30/2015	2529 N ROSS AVE	163696
8/31/2015	1824 NE 116TH PL	163700



Private Responsibility or No Release - Previously unreported incidences that occurred prior to 8/1/2015		
5/30/2015	5126 NE 19TH AVE	163625

Columbia Boulevard Wastewater Treatment Plant Monitoring Report

City of Portland, Multnomah County
Permit No. 101505 (File 70725)

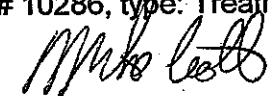
Population served 601,510

August 2015

Receiving Stream: Columbia River
Plant Type: Activated Sludge

Permit No. 101505 (File 10725) August 2015																								
Date	Plant Flows					Influent		Avg Rain	Plant Influent			Wastewater Treatment Plant												Notes
	Total	Peak	2 ^o	Wet Weather	% Wet Weather	Pump Station			pH	BOD	TSS	OF #1 Cl ₂	BOD	BOD mg/l	% BOD	Lbs. BOD	Lbs. BOD	TSS	TSS mg/l	% TSS	Lbs. TSS	Lbs. TSS		
Aug 2015	in MG	in MGD	in MG	in MG	% Total Flow	Total Flow in MG	Wet Well Max Inches	inches															mg/l	mg/l
1	47	59	47			0.00	154.3	0.00	7.4	327	308	0.6	5	7	98	1955	3139	7	11	98	2737	5448	Note 2	
2	48	69	48			0.00	154.9	0.00	6.8	342 *	363	0.5	5 *				8		98	3176				
3	53	78	53			0.00	156.1	T	7.0	334	304	0.5	10		97	4460		6		98	2676			
4	52	69	52			0.00	153.4	0.00	7.0	385	375	0.5	8		98	3499		8		98	3499			
5	51	66	51			0.00	150.5	0.00	6.8	346	328	0.5	5		99	2120		5		98	2120			
6	52	81	52			0.00	151.0	0.00	6.9	378	372	0.6	5		99	2170		5		99	2170			
7	53	80	53			0.08	154.0	0.00	6.8	391	355	0.5	5		99	2207		7		98	3089			
8	48	86	48			0.02	141.3	0.00	6.8	222	100	0.5	6	7	97	2378	2806	5	6	95	1982	2673		
9	47	82	47			0.02	135.4	0.00	6.9	348	364	0.5	5		99	1965		5		99	1965			
10	52	82	52			0.00	101.0	0.00	7.0	353	340	0.6	6		98	2612		6		98	2612			
11	52	71	52			0.00	120.2	0.00	7.1	532	348	0.5	6		99	2591		5		99	2159			
12	44	71	44			0.00	133.6	0.00	6.8	379	354	0.5	5		99	1849		4		99	1479			
13	58	83	58			0.00	137.5	0.00	6.8	487	355	0.5	8		98	3886		8		98	3886			
14	52	80	52			0.00	144.1	0.03	7.1	399	350	0.6	7		98	3040		8		98	3475			
15	48	68	48			0.00	147.4	T	6.8	430	370	0.5	6	6	99	2404	2621	7	6	98	2805	2626		
16	47	81	47			0.04	140.8	0.00	6.8	est.330	413	0.5	est.5					6		99	2365		Note 3	
17	52	90	52			0.00	76.8	0.00	6.9	366	332	0.6	7		98	3033		8		98	3467			
18	54	77	54			0.00	104.3	0.00	6.8	367	384	0.6	7		98	3125		8		98	3572			
19	53	86	53			0.00	142.2	0.00	7.0	364	385	0.6	7		98	3099		8		98	3541			
20	54	71	54			0.00	145.0	0.00	7.5	402	294	0.4	8		98	3631		6		98	2723			
21	54	79	54			0.00	144.1	0.00	6.7	345	310	0.5	9		97	4068		10		97	4519			
22	49	68	49			0.00	146.0	0.00	7.0	328	323	0.5	7	8	98	2870	3304	12	8	96	4920	3587		
23	48	71	48			0.00	147.8	0.00	7.0	340	352	0.6	7		98	2798		8		98	3197			
24	52	73	52			0.00	154.3	0.00	6.9	384	280	0.6	6		98	2604		12		96	5207			
25	51	111	51			0.00	155.5	0.00	6.8	403	362	0.6	8		98	3383		10		97	4229			
26	50	85	50			0.08	149.9	0.00	7.1	434	332	0.5	8		98	3311		7		98	2897			
27	57	103	57			0.00	140.8	0.00	6.9	348	492	0.5	8		98	3835		14		97	6711			
28	55	90	55			0.00	164.6	0.03	7.2	452	380	0.6	7		98	3185		10		97	4550			
29	82	237	81	1	1	5.12	183.0	0.33	6.6	320	347	0.5	12	8	96	8097	3888	12	10	97	8097	4984		
30	121	274	113	8	7	12.82	217.0	0.51	6.5	183	312	0.6	9		95	8467		21		93	19757			
31	53	69	53			0.00	167.0	0.01	7.0	354	331	0.7	4		99	1753		5		98	2191			
Max	121	274	113	8	7	12.82	217.0	0.51	7.5	532	492	0.7	12	8	99	8467	3888	21	11	99	19757	5448		
Min	44		44			0.00	76.8		6.5	183	100	0.4	4		95	1753		4		93	1479			
Sum	1689		1680	9		18.18		0.90								94395					121775			
Avg	54		54			0.59	145.6	0.03	6.9	369	342	0.5	7		98	3255		8		98	3928			

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the persons who manage the system of those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name and Title: Mike Ciolli, Wastewater Treatment Manager for Operations
Certificate # 10286, type: Treatment, grade IV
Signature: 

*Values followed by an asterisk are not used in calculations.

Columbia Boulevard Wastewater Treatment Plant Monitoring Report

City of Portland, Multnomah County
Permit No. 101505 (File 70725)

Receiving Stream: Columbia River
Plant Type: Activated Sludge

August 2015

Wet Weather Treatment Facility													Combined Discharges: 001 + 003 (Combined Total Conc. is calculated using a flow weighted average.)										Notes			
													Total Pounds		Weekly Lbs. Avg.		Total Conc.		Weekly Conc. Avg.		Outfall					
Date	BOD	BOD mg/l	% BOD	Lbs. BOD	Lbs BOD	TSS	TSS mg/l	% TSS	Lbs. TSS	Lbs TSS	OF #3 CL2		Dry + Wet	Dry + Wet	Dry + Wet	Dry + Wet	Dry + Wet	Dry + Wet	Dry + Wet	Dry + Wet	OF # 1	OF # 3	OF # 1	OF # 3		
Aug 2015	mg/l	Weekly Avg	Removal	Discharged	Weekly Avg	mg/l	Weekly Avg	Removal	Discharged	Weekly Avg	Residual		BOD	TSS	BOD	TSS	BOD	TSS	BOD	TSS	E. Coli	E. Coli	pH	pH	See Page 4	
1													1955	2737	1955	2737	5	7	5	7	10		7.3		Note 2	
2														3176				8				<1		7.2		
3													4460	2676			10	6			3		7.2			
4													3499	3499			8	8			1		7.3			
5													2120	2120			5	5			3		7.4			
6													2170	2170			5	5			2		7.3			
7													2207	3089			5	7			2		7.6			
8													2378	1982	2806	2673	6	5	7	6	2		7.2			
9													1965	1965			5	5			2		7.3			
10													2612	2612			6	6			1		7.3			
11													2591	2159			6	5			2		7.3			
12													1849	1479			5	4			2		7.3			
13													3886	3886			8	8			17		7.4			
14													3040	3475			7	8			5		7.3			
15													2404	2805	2621	2626	6	7	6	6	13		7.3			
16														2365				6				3		7.1		
17													3033	3467			7	8			10		7.2			
18													3125	3572			7	8			5		7.3			
19													3099	3541			7	8			11		7.3			
20													3631	2723			8	6			8		7.3			
21													4068	4519			9	10			4		7.3			
22													2870	4920	3304	3587	7	12	8	8	5		7.3			
23													2798	3197			7	8			3		7.3			
24													2604	5207			6	12			2		7.4			
25													3383	4229			8	10			2		7.1			
26													3311	2897			8	7			<1		7.4			
27													3835	6711			8	14			3		7.2			
28													3185	4550			7	10			5		7.3			
29	137	137	57	1065	1065	56	56	84	435	435			9162	8533	4040	5046	13	13	8	10	4		7.4		Notes 1,4	
30	83		55	5768		36		88	2502		0.0		14235	22259			14	22			3	3	6.9	6.9	Note 1	
31											0.0		1753	2191			4	5			2		7.0			
Max	137	137	57	5768	1065	56	56	88	2502	435	0.0		14235	22259	4040	5046	14	22	8	10	17		7.6	6.9		
Min	83		55	1065		36		84	435				1753	1479			4	4			<1	3	6.9	6.9		
Sum				6832					2937				101227	124712												
Avg	110		70	3416	1065	46		87	1468	435	0.0		3491	4023			7	8			3	3	7.3	6.9	Note 5	

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the persons who manage the system of those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name and Title: Mike Ciolli, Wastewater Treatment Manager for Operations
Certificate # 10286, type: Treatment, grade IV
Signature: 

Columbia Boulevard Wastewater Treatment Plant Monitoring Report

City of Portland, Multnomah County
Permit No. 101505 (File 70725)

August 2015

Receiving Stream: Columbia River
Plant Type: Activated Sludge

Date	CSO Flows (Swan Island)		Plant			Temperatures			OF 003 online		CEPT	Notes
	Total Flow	Max	Effluent						start	end	hours online	
Aug 2015	in MG	Elev. In Feet	Alkalinity OF 1 Monthly, in mg/L	Alkalinity OF 3 Monthly, in mg/L	Cl2 used in Lbs Cl2	Effluent Daily Max, °C	Weekly Avg of Daily Max, °C	Thermal Load Million Kcal/day				See Page 4
1	1.40	2.9			1208	22.4	21.8	374.7				
2	1.28	2.9			980	21.8						
3	1.42	2.9	209		1037	21.9						
4	1.29	2.9			1154	22.1						
5	1.43	2.8			1224	22.1						
6	1.43	2.8			1337	22.1						
7	1.47	2.9			1324	22.2						
8	1.22	2.9			1127	22.3	22.1	398.3				
9	1.33	2.9			993	22.1						
10	1.43	2.9			1153	22.2						
11	1.45	2.9			1404	22.4						
12	7.57	9.2			1320	22.7						
13	13.60	9.2			1547	22.4						
14	1.45	2.9			1619	22.4						
15	1.14	2.8			1246	22.3	22.4	450.9				
16	1.43	2.9			1049	22.1						
17	4.63	3.2			1178	22.3						
18	6.80	2.9			1955	22.2						
19	7.30	2.9			1784	22.6						
20	7.51	3.2			1301	22.3						
21	8.36	3.0			1320	22.2						
22	7.56	3.0			1146	22.1	22.3	444.7				
23	4.97	3.0			1048	22.2						
24	7.80	3.1			988	22.1						
25	11.19	5.2			1278	22.2						
26	8.35	9.8			1285	22.9						
27	10.05	8.1			1389	22.5						
28	6.63	4.5			1557	22.6						
29	13.81	10.9			2076	22.5	22.4	512.5			3.4	
30	29.53	11.2		148	2403	21.8			7:07	23:59	10.3	
31	1.73	2.8			1084	21.5			0:00	7:28	0.0	
Max	29.53	11.2			2403	22.9	22.4	512.5				
Min	1.14				980			374.7				
Sum	176.56				41515							
Avg	5.70		209	148	1339		22.2	436.2				

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the persons who manage the system of those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name and Title: Mike Ciolli, Wastewater Treatment Manager for Operations
Certificate # 10286, type: Treatment, grade IV

Signature:



City of Portland, Multnomah County
Permit No. 101505 (File 70725)

Receiving Stream: Columbia River
Plant Type: Activated Sludge

Sample Date	4-Aug-15	11-Aug-15	18-Aug-15	25-Aug-15		Average	Max	MRL
NH ₃ - N (mg/l)	35.60	36.80	33.50	38.50		36.10	38.50	2.50
NO ₂ + NO ₃ -N (mg/l)	0.21	0.37	0.20	0.20		0.25	0.37	0.11
TKN (mg/l)	37.30	36.40	38.80	18.90		32.85	38.80	2.50
Total PO ₄ -P (mg/l)	0.85	0.90	1.06	1.99		1.20	1.99	0.15

Sample Date	29-Aug-15	30-Aug-15				Average	Max
NH ₃ - N (mg/l)	10.40	8.30				9.35	10.40
NO ₂ + NO ₃ -N (mg/l)	1.09	0.30				0.69	1.09
TKN (mg/l)	15.80	14.10				14.95	15.80
Total PO ₄ -P (mg/l)	1.61	1.45				1.53	1.61

[illegible]

Name and Title: Mike Ciolli, Wastewater Treatment Manager for Operations
Certificate # 10286, type: Treatment, grade IV
Signature: 

Mike Lott

Supplementary Data for Internal Use Only

DATE	FLOW						BOD				BOD POUNDS				TSS				TSS POUNDS				% REDUCTION				
	EFF		2"	BY-PASS	Rain Fall	HW	1"	1"	C12	HEADWORKS	BYPASS	PLANT	HW	1"	1"	C12	LBS.	BYPASS	LBS.	EFF	PRI	PLANT	PRI	EFF	TSS %		
	INF	MGD	MGD	MGD	inches																					INF	EFF
August 2015	MGD	MGD	MGD	MGD		INF	INF	INF	EFF	INF	INF	EFF	INF	INF	EFF	EFF	INF	INF	INF	EFF							
1	47	47	47	47	0.00	327		228		127850			308	110	7		120422		2737	30					64	98	
2	48	48	48	48	0.00	342 *		270 *					363	167	8		144105		3176						54	98	
3	53	53	53	53	T	334		262		148972			304	120	6		135591		2676	22					61	98	
4	52	52	52	52	0.00	385		306		168380			375	160	8		164006		3499	21					57	98	
5	51	51	51	51	0.00	346	373	266		146735			328	362	151	5		139101		2120	23					54	98
6	52	52	52	52	0.00	378	373	300		164089			372	380	130	5		161484		2170	21					65	99
7	53	53	53	53	0.00	391	437	316		172569			355	372	150	7		156860		3089	19					58	98
8	48	48	48	48	0.00	222	310	250		87982			100	312	147	5		39632		1982	-13					-47	95
9	47	47	47	47	0.00	348	327	254		136757			364	330	153	5		143045		1965	27					58	99
10	52	52	52	52	0.00	353	389	332		153678			340	345	167	6		148018		2612	6					51	98
11	52	52	52	52	0.00	532	380	270		229697			348	412	220	5		150253		2159	49					37	99
12	44	44	44	44	0.00	379	364	277		140121			354	450	120	4		130878		1479	27					66	99
13	58	58	58	58	0.00	487	467	334		236587			355	451	290	8		172461		3886	31					18	98
14	52	52	52	52	0.03	399	420	376		173305			350	402	178	8		152022		3475	6					49	98
15	48	48	48	48	T	430	390	374		172281			370	340	214	7		148242		2805	13					42	98
16	47	47	47	47	0.00	est.330 est.343		est.304					413	349	150	6		162818		2365						64	99
17	52	52	52	52	0.00	366	379	326		158605			332	417	140	8		143871		3467	11					58	98
18	54	54	54	54	0.00	367	369	>350		163844			384	367	388	8		171433		3572	5					-1	98
19	53	53	53	53	0.00	364	380	311		161138			385	370	240	8		170435		3541	15					38	98
20	54	54	54	54	0.00	402	412	288		182453			294	210	170	6		133436		2723	28					42	98
21	54	54	54	54	0.00	345	383	314		155921			310	320	167	10		140103		4519	9					46	97
22	49	49	49	49	0.00	328	336	266		134478			323	311	130	12		132428		4920	19					60	96
23	48	48	48	48	0.00	340	351	241		135882			352	300	160	8		140678		3197	29					55	98
24	52	52	52	52	0.00	384	413	365		168629			280	330	200	12		121500		3471	5					29	96
25	51	51	51	51	0.00	403	409	306		170437			362	475	156	10		153098		5075	24					57	97
26	50	50	50	50	0.00	434	403	330		179603			332	330	292	7		137392		4138	24					12	98
27	57	57	57	57	0.00	348	402	302		166825			492	453	190	14		235857		3356	13					61	97
28	55	55	55	55	0.03	452	504	296		205674			380	460	120	10		172912		6370	35					68	97
29	82	82	81	1	0.33	320	289	200	137	218415	1065	8097	347	350	133	12		236843	435	6825	38	96				62	97
30	121	121	113	8	0.51	183	195	168	83	184886	5768	8467	312	305	203	21		315216	2502	12124	8	95				35	93
31	53	53	53		0.01	354	390	284		155117			331	310	100	5		145039		9202	20					70	98
MAX	121	121	113	8	0.51	532		376	137	236587	5768	8467	492		388	21		315216	2502	12124	49	96				70	99
MIN	44	44	44	1	0.00	183		168	83	87982	1065	8097	100		100	4		39632	435	1479	-13	95				-47	93
SUM	1689	1689	1680	9	0.90					4798909	6832	16565						4818997	2937	118697							
AVG	54	54	54	4.6	0.03	369		293	7	165480	3416	8282	342		175	8		155452	1468	3829	19	98				47	98

*Aug. 2: BOD results are not reportable for regulatory purposes due to failed QC results (high blanks).

Aug. 16: BOD results should be considered estimates due to failed check standard results.

Supplementary Data for Internal Use Only

DATE:	Total Flow MGD	2° Flow MGD	SRT Days (7 days avg)	EFFL Turb	2° Cl ₂ TSS	2° Cl ₂ BOD	Effluent 12.5% Hypo Gals	Effluent Cl ₂ used in lbs	Process 12.5% Hypo Gals	SVI	MLSS	CTSS	Aers. online	Finals online	Aerator LBS.	Final Clarifier LBS	Total LBS.
August 2015																	
1	47	47	1.6	4	7	5	1948	1208		278	1376	542	6	6	125,316	39,598	164,914
2	48	48	1.5	4	8	5*	1580	980		241	1170	666	6	6	106,555	48,657	155,212
3	53	53	1.5	4	6	10	1673	1037		216	1261	382	6	6	114,843	27,908	142,751
4	52	52	1.5	4	8	8	1862	1154		235	1370	478	6	6	124,770	34,922	159,692
5	51	51	1.5	5	5	5	1974	1224		223	1477	564	6	6	134,515	41,205	175,719
6	52	52	1.6	5	5	5	2156	1337		241	1393	502	6	6	126,864	36,675	163,540
7	53	53	1.6	5	7	5	2135	1324		246	1326	479	6	6	120,763	34,995	155,758
8	48	48	1.6	5	5	6	1817	1127		219	1353	450	6	6	123,221	32,876	156,098
9	47	47	1.6	4	5	5	1601	993		264	1124	490	6	6	102,366	35,799	138,164
10	52	52	1.6	5	6	6	1859	1153		233	1183	350	6	6	107,739	25,570	133,310
11	52	52	1.7	6	5	6	2265	1404		234	1333	689	6	6	121,400	50,337	171,737
12	44	44	1.6	4	4	5	2129	1320		222	1480	525	6	6	134,788	38,856	173,143
13	58	58	1.6	6	8	8	2495	1547		233	1418	595	6	6	129,141	43,470	172,611
14	52	52	1.6	7	8	7	2612	1619		221	1453	463	6	6	132,329	33,826	166,155
15	48	48	1.6	5	7	6	2010	1246		255	1308	482	6	6	119,123	35,214	154,337
16	47	47	1.7	5	6	est.5	1692	1049		274	1211	534	6	6	110,289	39,013	149,302
17	52	52	1.7	6	8	7	1900	1178		245	1221	626	6	6	111,200	45,735	156,934
18	54	54	1.6	6	8	7	3154	1955		221	1295	756	6	6	117,939	55,232	173,171
19	53	53	1.6	6	8	7	2878	1784		272	1241	668	6	6	113,021	48,803	161,824
20	54	54	1.5	6	6	8	2099	1301		279	1203	522	6	6	109,561	38,136	147,697
21	54	54	1.5	8	10	9	2129	1320		322	1176	510	6	6	107,102	37,260	144,361
22	49	49	1.6	8	12	7	1848	1146		297	1203	526	6	6	109,561	38,429	147,989
23	48	48	1.6	6	8	7	1690	1048		247	1322	540	6	6	120,398	39,452	159,850
24	52	52	1.6	6	12	6	1594	988		257	1446	578	6	6	131,991	42,228	173,919
25	51	51	1.6	7	10	8	2062	1278		229	1362	850	6	6	124,041	62,100	186,141
26	50	50	1.6	6	7	8	2073	1285		267	1388	460	6	6	126,409	33,607	160,016
27	57	57	1.7	7	14	8	2241	1389		302	1425	555	6	6	129,779	40,547	170,326
28	55	55	1.7	6	10	7	2512	1557		380	1312	560	7	7	132,764	45,459	178,222
29	82	81	1.7	7	12	12	3348	2076		391	1124	674	8	8	136,488	65,655	202,143
30	121	113	1.7	8	21	9	3875	2403		454	1030	786	8	8	125,073	76,565	201,639
31	53	53	1.7	4	5	4	1749	1084		427	1251	547	8	8	151,909	53,284	205,193
MAX	121	113	1.7	8.2	21.0	12.0	3875	2403		454	1480	850	8	8	151,909	76,565	205,193
MIN	44	44	1.5	3.6	4.0	4.0	1580	980		216	1030	350	6	6	102,366	25,570	133,310
SUM	1689	1680					66,960	41,515									
AVG	54	54	1.6	5.6	8	7	2160	1339		272	1298	560	6	6	121,966	42,610	164,576

*Aug. 2: BOD results are not reportable for regulatory purposes due to failed QC results (high blanks).
Aug. 16: BOD results should be considered estimates due to failed check standard results.

Supplementary Data for Internal Use Only

DATE	Columbia Wasting				Total TWAS To D5, D6 ,D7, D8, D9 & D10						Digester TWAS Feed Distribution					
	Volume MGD	WAS Dry lbs	WAS Dry tons	WAS mg/L	Volume MGD	WAS Dry lbs	WAS Dry tons	Tot Solids %	Vol Solids %	% Volatile Solids	Dig5 gal x100	Dig 6 gal x100	Dig 7 gal x100	Dig 8 gal x100	Dig 9 gal x100	Dig 10 gal x100
August 2015																
1	2.131	110,190	55.09	6200	0.247	84,724	42.36	4.11	3.28	80	245	237	1618	244	248	245
2	1.894	102,674	51.34	6500	0.211	67,642	33.82	3.84	2.98	78	214	195	1557	209	213	214
3	1.792	92,661	46.33	6200	0.168	55,476	27.74	3.96	3.03	77	168	161	1245	160	162	168
4	1.777	84,475	42.24	5700	0.198	68,008	34.00	4.11	3.14	76	198	179	1634	185	186	198
5	1.958	93,079	46.54	5700	0.213	69,535	34.77	3.92	3.03	77	214	207	871	200	218	214
6	2.137	94,460	47.23	5300	0.260	80,510	40.25	3.72	2.92	78	259	256	2447	263	266	261
7	2.216	101,648	50.82	5500	0.262	76,394	38.20	3.50	2.73	78	260	248	1716	257	262	260
8	2.218	99,890	49.94	5400	0.254	74,221	37.11	3.50	2.75	79	275	266	1670	276	280	275
9	2.066	94,767	47.38	5500	0.223	74,539	37.27	4.00	3.07	77	213	210	1716	234	229	222
10	1.801	82,612	41.31	5500	0.254	81,396	40.70	3.84	2.95	77	183	176	1112	163	171	175
11	1.908	82,746	41.37	5200	0.215	73,740	36.87	4.11	3.20	78	212	200	1872	205	215	214
12	2.084	95,593	47.80	5500	0.234	72,474	36.24	3.71	2.93	79	214	231	1634	261	251	245
13	2.216	101,648	50.82	5500	0.326	101,679	50.84	3.74	2.94	79	228	230	1651	243	234	229
14	2.357	106,150	53.07	5400	0.244	92,534	46.27	4.55	3.69	81	244	249	1768	251	244	245
15	2.166	99,354	49.68	5500	0.238	80,812	40.41	4.07	3.36	83	230	221	1685	243	249	245
16	1.956	84,828	42.41	5200	0.198	62,884	31.44	3.81	3.15	83	198	211	1117	219	199	198
17	2.030	89,730	44.87	5300	0.237	74,823	37.41	3.78	3.03	80	243	253	1753	237	238	230
18	2.197	104,441	52.22	5700	0.237	73,771	36.89	3.74	3.04	81	245	233	1621	252	250	244
19	2.335	112,949	56.47	5800	0.230	82,008	41.00	4.27	3.39	79	229	245	1658	264	247	230
20	2.221	105,582	52.79	5700	0.174	57,777	28.89	3.98	3.19	80	404	297	992	205	79	198
21	2.017	99,249	49.62	5900	0.228	83,454	41.73	4.39	3.50	80	289	290	1158	311	112	123
22	1.806	81,335	40.67	5400	0.212	76,417	38.21	4.33	3.38	78	243	243	935	232	231	232
23	1.626	77,297	38.65	5700	0.171	60,906	30.45	4.28	3.31	77	182	183	751	200	200	192
24	1.987	101,087	50.54	6100	0.196	69,802	34.90	4.27	3.18	74	228	228	852	217	217	169
25	2.130	103,032	51.52	5800	0.223	86,518	43.26	4.66	3.61	77	244	244	1015	260	219	245
26	2.025	97,953	48.98	5800	0.204	70,946	35.47	4.16	3.21	77	228	228	904	235	223	229
27	2.069	100,082	50.04	5800	0.226	78,902	39.45	4.19	3.37	80	259	260	981	248	252	260
28	2.404	106,262	53.13	5300	0.239	74,021	37.01	3.71	2.96	80	321	322	1256	330	309	323
29	2.065	89,555	44.78	5200	0.240	65,552	32.78	3.28	2.67	81	260	260	1082	275	285	261
30	2.215	96,060	48.03	5200	0.330	73,165	36.58	2.66	2.14	80	368	370	1440	366	379	371
31	2.522	121,994	61.00	5800	0.361	88,137	44.07	2.93	2.30	78	399	401	1587	412	410	402
MAX	2.522	121,994	61.00	6500	0.361	101,679	50.84	4.66	3.69	83	404	401	2447	412	410	402
MIN	1.626	77297	38.65	5200	0.168	55,476	27.74	2.66	2.14	74	168	161	751	160	79	123
SUM	64.326	3,013,381	1506.69		7.252	2,332,767	1,166.38			79	7697	7534	43298	7657	7258	7317
AVG	2.075	97206	48.60	5623	0.234	75,251	37.63	3.91	3.08		248	243	1397	247	234	236

Beginning October 2013, Digester #7 is TWAS only digester

Supplementary Data for Internal Use Only

DATE	1° Sludge Volume MG	1° Sludge Mass Dry Tons	Primary Sludge Density			Dig. 5 Pri Feed gal X100	Dig. 6 Pri Feed gal X100	Dig. 8 Pri Feed gal X100	Dig. 9 Pri Feed gal X100	Dig. 10 Pri Feed gal X100	Loading lb/dayVS/1000 cu.ft. (DIG 5,6,8,9,10 COMBINED)
			Tot Sol %	Vol Sol %	% Vol Sol						
August 2015											
1	0.437	36.65	2.01	1.58	79	772	655	799	826	657	180
2	0.416	41.93	2.42	1.99	82	755	618	754	726	618	216
3	0.373	38.00	2.44	2.00	82	777	660	792	795	664	195
4	0.344	24.22	1.69	1.32	78	892	684	867	909	701	118
5	0.280	30.28	2.59	2.05	79	696	570	687	713	542	150
6	0.344	45.81	3.19	2.54	80	867	696	830	875	687	228
7	0.292	30.27	2.49	2.05	82	732	560	730	762	592	166
8	0.279	22.43	1.93	1.43	74	699	569	685	717	547	104
9	0.258	34.37	3.19	2.69	84	675	506	683	722	521	181
10	0.254	31.37	2.96	2.40	81	660	507	639	663	500	159
11	0.382	38.44	2.41	1.93	80	920	750	922	941	767	192
12	0.285	38.81	3.26	2.72	83	622	577	734	760	590	202
13	0.259	41.22	3.82	2.95	77	658	512	640	675	515	199
14	0.386	61.34	3.81	2.99	78	875	766	886	913	757	301
15	0.305	37.39	2.94	2.36	80	722	603	720	722	607	188
16	0.274	27.32	2.39	2.04	85	647	548	668	687	540	146
17	0.291	32.11	2.65	2.06	78	710	569	704	748	580	156
18	0.283	48.35	4.10	3.23	79	708	565	708	712	574	238
19	0.352	45.47	3.10	2.26	73	763	695	801	790	692	207
20	0.307	38.36	3.00	2.34	78	737	699	747	295	689	187
21	0.501	56.82	2.72	2.20	81	1269	1269	1323	535	558	287
22	0.277	29.95	2.59	2.02	78	1216	1244	1265	1253	1213	146
23	0.467	53.15	2.73	1.88	69	1022	1048	1088	1066	1026	229
24	0.394	48.74	2.97	2.17	73	877	894	910	911	883	223
25	0.305	40.94	3.22	2.48	77	814	827	848	791	818	197
26	0.325	40.33	2.98	2.37	80	816	830	865	794	820	200
27	0.402	54.64	3.26	2.46	75	794	795	805	802	799	258
28	0.414	50.19	2.91	1.99	68	967	989	1027	981	989	215
29	0.444	85.59	4.62	2.42	52	884	902	925	737	833	280
30	0.390	133.32	8.20	4.57	56	854	867	876	856	843	464
31	0.4020	85.15	5.08	3.35	66	779	788	821	813	797	351
MAX	0.5010	133.32	8.20	4.57	85	1269	1289	1323	1253	1213	464
MIN	0.2542	22.43	1.69	1.32	52	622	506	639	295	500	104
SUM	10.7208	1,422.95				25179	22,762	25749	24490	21919	
AVG	0.3458	45.90	3.15	2.35	76	812	735	831	790	707	211

Beginning October 2013, Digester #7 is TWAS only digester

DATE	Dig #1			Dig #2			Dig #5			Dig #6			Dig #7			Dig #8			Dig #9			Dig #10		
	% Total Solids	% Volatile Solids		% Total Solids	% Volatile Solids		% Total Solids	% Volatile Solids		% Total Solids	% Volatile Solids		% Total Solids	% Volatile Solids		% Total Solids	% Volatile Solids		% Total Solids	% Volatile Solids		% Total Solids	% Volatile Solids	
August 2015																								
1																								
2																								
3																								
4	1.40	0.80					1.64	0.99		1.73	1.00		2.14	1.43		1.88	1.12		1.70	1.00		1.82	1.09	
5																								
6																								
7																								
8																								
9																								
10																								
11	1.36	0.77					1.69	1.00		1.61	0.94		2.16	1.41		1.69	1.01		1.56	0.92		1.60	0.94	
12																								
13																								
14																								
15																								
16																								
17																								
18	1.57	0.91					1.93	1.11		1.63	0.95		2.22	1.44		1.83	1.10		1.60	0.95		1.66	0.97	
19																								
20																								
21																								
22																								
23																								
24																								
25	1.51	0.87					1.83	1.07		1.79	1.03		2.20	1.42		1.82	1.08		1.63	0.97		1.71	1.02	
26																								
27																								
28																								
29																								
30																								
31																								
MAX	1.57	0.91					1.93	1.11		1.79	1.03		2.22	1.44		1.88	1.12		1.70	1.00		1.82	1.06	
MIN	1.36	0.77					1.64	0.99		1.61	0.94		2.14	1.41		1.69	1.01		1.56	0.92		1.60	0.94	
AVG	1.46	0.84					1.77	1.04		1.69	0.98		2.18	1.43		1.81	1.08		1.62	0.96		1.70	1.00	

D2 offline June 28, 2015

Beginning October 2013, Digester #7 is TWAS only digester

		Digester Temperature										Digester pH					Alkalinity					Volatile Acids										Where To	
DATE		D - 1	D - 2	D - 5	D - 6	D - 7	D - 8	D - 9	D - 10	D - 5	D - 6	D - 7	D - 8	D - 9	D - 10	D - 5	D - 6	D - 7	D - 8	D - 9	D - 10	D - 5	D - 6	D - 7	D - 8	D - 9	D - 10	Digester Distribution					
August 2015		temp.	temp.	temp.	temp.	temp.	temp.	temp.	temp.	pH	pH	pH	pH	pH	pH	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	Dry Tons	To T. Lake				
1		100		99	99	99	99	99	99	7.1	7.1	7.5	7.1	7.1	7.1	3720	3450	7170	3480	3250	3500	50	50	58	48	48	50	48.117	7.820				
2		100		99	99	99	99	99	99	7.2	7.1	7.5	7.2	7.2	7.2	3470	2950	6110	3620	3160	3290	52	32	55	35	38	32	51.309	7.888				
3		100		99	99	99	99	99	99	7.1	7.1	7.5	7.1	7.2	7.2	3420	3310	6280	3400	3130	3180	42	38	70	52	48	48	50.070	6.044				
4		100		99	99	99	99	99	99	7.2	7.1	7.6	7.1	7.1	7.1	3660	3250	7530	3290	3290	3520	42	40	58	38	42	38	49.286	8.806				
5		100		99	99	99	99	99	99	7.1	7.2	7.5	7.1	7.1	7.1	3340	3330	6320	3360	3090	3550	52	45	58	50	65	55	44.431	6.699				
6		100		99	99	99	99	99	99	7.1	7.1	7.5	7.2	7.1	7.1	3390	3200	6310	3490	3310	3290	60	48	80	62	35	40	54.329	18.441				
7		100		99	99	99	99	99	99	7.2	7.1	7.5	7.1	7.1	7.2	3190	2980	6300	3060	3190	3320	48	45	52	42	45	38	39.764	7.549				
8		100		99	99	99	99	99	99	7.1	7.1	7.6	7.1	7.1	7.1	3420	3040	7610	3400	3610	3360	48	35	60	40	48	40	46.619	8.611				
9		100		99	99	99	99	99	99	7.2	7.1	7.5	7.1	7.1	7.1	3110	3020	5630	3600	3240	3720	45	42	60	32	30	32	47.121	8.137				
10		100		99	99	99	99	99	99	7.1	7.3	7.5	7.2	7.1	7.1	3690	3070	5720	3200	3210	3250	38	28	48	30	35	38	50.149	5.984				
11		100		99	99	99	99	99	99	7.1	7.2	7.5	7.2	7.1	7.2	3380	3260	6790	3340	3100	3430	40	35	48	38	38	32	57.207	8.061				
12		100		99	99	99	99	99	99	7.1	7.1	7.5	7.1	7.1	7.1	3440	3060	7380	3240	3100	3290	45	40	58	55	55	50	20.478	28.730				
13		100		99	99	99	99	99	99	7.2	7.2	7.6	7.2	7.1	7.2	3710	3160	6970	3260	3240	3450	40	30	48	38	38	38	50.172	10.154				
14		100		99	99	99	99	99	99	7.2	7.2	7.4	7.2	7.2	7.2	3350	3200	7200	3280	3090	3370	38	40	52	48	42	42	50.878	8.475				
15		100		99	99	99	99	99	99	7.1	7.1	7.5	7.2	7.1	7.1	3360	3130	6980	3400	3210	3380	42	45	60	42	40	40	51.764	8.949				
16		101		99	99	99	99	99	99	7.2	7.1	7.5	7.2	7.1	7.2	3500	3310	6520	3210	3130	3330	40	38	55	35	42	35	39.192	8.423				
17		100		99	99	99	99	99	99	7.3	7.2	7.5	7.2	7.2	7.3	3390	3040	6020	3260	3070	3420	40	38	62	40	35	38	57.796	3.131				
18		99		99	99	99	99	99	99	7.2	7.2	7.6	7.2	7.2	7.2	3370	3110	6750	3280	3230	3530	42	42	52	45	40	40	56.329	0.000				
19		100		99	99	99	99	99	99	7.1	7.2	7.6	7.3	7.2	7.2	3560	3440	7140	3580	3370	3500	38	38	50	48	30	38	63.545	0.000				
20		100		99	99	99	99	99	99	7.1	7.2	7.6	7.2	7.2	7.2	3670	3100	7690	3440	3130	3390	45	48	48	45	38	42	39.113	4.516				
21		100		99	99	99	99	99	99	7.2	7.2	7.7	7.3	7.3	7.3	3600	3350	6330	3470	3580	3540	55	45	88	48	38	38	50.015	16.770				
22		100		99	99	99	99	99	99	7.1	7.2	7.6	7.2	7.2	7.3	3560	3400	6910	3410	3420	3440	40	35	55	38	35	35	75.897	7.233				
23		100		99	99	99	99	99	99	7.3	7.2	7.5	7.2	7.1	7.1	3330	3060	6270	3260	3360	3440	40	68	60	52	50	55	59.529	5.615				
24		100		99	99	99	99	99	99	7.2	7.2	7.5	7.3	7.2	7.2	3490	3340	6610	3540	3140	3630	45	25	38	28	32	32	41.694	18.524				
25		100		99	99	99	99	99	99	7.1	7.2	7.5	7.1	7.1	7.1	3410	3130	6580	3140	3050	3230	42	38	52	35	38	38	51.129	8.039				
26		100		99	99	99	99	99	99	7.1	7.1	7.6	7.1	7.1	7.1	3230	3180	7530	3240	3110	3180	42	38	52	40	40	40	52.031	6.104				
27		100		99	99	99	99	99	99	7.2	7.2	7.5	7.2	7.2	7.2	3390	2890	6500	3190	3080	3160	55	50	38	42	42	38	48.980	8.407				
28		100		99	99	99	99	99	99	7.2	7.2	7.6	7.3	7.2	7.2	3440	3270	6900	3390	3270	3470	45	45	55	40	38	38	64.078	9.386				
29		99		99	99	99	99	99	99	7.1	7.2	7.5	7.2	7.1	7.2	3230	3100	6800	3030	3000	3140	45	42	60	42	45	40	60.847	9.394				
30		99		99	99	99	99	99	99	7.1	7.2	7.5	7.2	7.1	7.2	3220	3090	5880	3370	3120	3430	35	32	40	42	52	45	61.733	10.613				
31		100		99	99	99	99	99	99	7.2	7.1	7.5	7.1	7.1	7.1	3300	3110	6590	3360	3380	3240	45	30	48	40	42	42	54.925	12.931				
MAX		101		99	99	99	99	99	99	7.3	7.3	7.7	7.3	7.3	7.3	3720	3450	7690	3620	3610	3720	60	68	88	62	65	55	75.897	28.730				
MIN		99		99	99	99	99	99	99	7.1	7.1	7.4	7.1	7.1	7.1	3110	2890	5630	3030	3000	3140	35	25	38	28	30	32	9.821	5.538				
SUM																												1588.529	279.434				
AVG		100		99	99	99	99	99	99	7.2	7.2	7.5	7.2	7.1	7.2	3430	3172	6688	3342	3215	3386	44	40	55	42	41	40	51.243	9.014				

D2 offline June 20, 2015

Beginning October 2013, Digester #7 is TVWAS only digester

Supplementary Data for Internal Use Only

Digester 5-10 Daily Gas Production

DATE	Dig #5 scf	Dig #6 scf	Dig #7 scf	Dig #8 scf	Dig #9 scf	Dig #10 scf	August-2015	scf	% of total
August 2015							Dig 1-10 Production	45,534,825	100.0
1	332	332	276	329	232	220	Dig 5-10 Production	52,041,000	114.3
2	319	361	288	316	196	208			
3	237	309	177	248	166	166			
4	358	368	199	345	204	215			
5	324	334	203	293	195	196			
6	348	351	298	351	221	222			
7	341	342	327	330	206	187			
8	328	342	327	320	218	176			
9	297	340	317	297	194	174			
10	265	325	220	282	176	167			
11	354	376	241	368	225	198			
12	312	332	260	331	201	170			
13	337	307	306	338	187	172			
14	357	331	331	356	256	200			
15	345	345	287	345	237	187			
16	340	339	316	340	188	171			
17	361	360	333	361	193	181			
18	331	332	326	332	194	170			
19	344	343	342	343	212	178			
20	331	332	326	332	194	170			
21	360	399	295	359	118	174			
22	344	383	283	342	225	223			
23	264	295	229	263	198	181			
24	265	292	230	266	202	185			
25	296	323	264	294	230	212			
26	311	335	254	304	236	227			
27	330	362	265	323	260	245			
28	345	371	254	325	275	258			
29	343	369	242	303	289	261			
30	339	357	264	324	273	247			
31	315	333	269	301	242	228			
MAX	361	399	342	368	289	261			
MIN	237	292	177	248	118	166			
SUM	10,073,000	10,646,000	8,549,000	9,961,000	6,643,000	6,169,000			
AVG	325	343	276	321	214	199			

Supplementary Data for Internal Use Only

Natural Gas and Sewer Gas; daily usage and monthly totals (in scf)

DATE	TUYE south meter #1	DCB east (boiler #2) meter #2	DCB west (boiler #1) meter #3	SLPR boiler #1	SLPR boiler #2	Malarkey	Waste Gas Burner	Co-gen	microturbine (x100)	Natural Gas (x1000)
August 2015										
1	777186	22552	0	79438	0	324700	662707	611000		5
2	0	14592	0	121885	0	445600	688438	674000		9
3	1456915	0	0	13606	0	318100	270484	527000		4
4	963149	0	0	70980	0	404200	656704	595000		5
5	756014	0	8354	78371	0	325700	466195	621000		6
6	812525	18312	0	52191	0	469600	576741	653000		6
7	836764	3680	19	48378	70	349600	608925	643000		6
8	845865	0	0	89030	0	184300	811013	644000		5
9	671508	0	0	72401	0	208500	676252	652000		6
10	855145	0	0	68290	0	381100	509709	555000		6
11	855054	0	0	59468	0	329900	635379	592000		6
12	828256	0	602	85142	0	404800	628509	535000		5
13	772714	0	0	66662	0	381800	563154	581000		6
14	884830	121842	0	29316	0	0	703643	596000		6
15	916200	119134	0	115889	0	590500	978694	455000		6
16	649524	5664	0	28626	0	215500	667728	589000		5
17	810317	0	0	0	0	386700	502000	670000		7
18	1799215	0	0	119207	124	353700	602175	576000		7
19	0	0	0	69700	0	376800	697991	578000		4
20	857525	0	0	67929	0	369700	777527	593000		6
21	819153	142624	0	62733	0	314900	607429	653000		6
22	877967	155320	0	86990	0	192700	805560	689000		7
23	551512	104784	0	0	0	210700	549958	587000		5
24	752608	141640	0	151157	0	337000	386165	617000		6
25	1708416	0	17765	64850	0	298200	526102	669000		7
26	0	0	26999	90911	0	343300	686723	630000		5
27	880992	0	15615	70537	0	361700	705538	659000		6
28	904291	0	38231	77907	0	448200	824699	625000		6
29	930809	16	130813	85631	9	361500	882185	462000		5
30	768634	0	99928	106760	0	250600	825946	648000		6
31	830604	0	21647	88257	0	358600	729463	632000		5
MAX	1,799,215	155320	130,813	151,157	124	590,500	978,694	692,000	0	9
MIN	0	0	0	0	0	0	270,484	455,000	0	4
SUM	25,413,692	850,160	359,973	2,222,242	203	10,298,200	20,213,736	18,911,000	0	180
AVG	819,797	27425	11,612	71,685	7	332,200	652,056	610,032	0	6

August-2015

Dig 1-10 Production

Used in Co-gen

Used in DCB

Used in SLPR

Malarkey

Waste Gas Burner

scf

% of total

45,534,825

18,911,000

1,210,133

2,222,445

10,298,200

20,213,736

100.0

41.5

2.7

4.9

22.6

44.4

one cogen unit uses 232 cuft/min
or 13,934 cuft/hour for 1 unit
as per manufacturer

one micro turbine uses 750 cuft / hour
4 units total

Supplementary Data for Internal Use Only

DATE	# OF PRESSES	TOTAL PUMP HRS.	FEED			FILTRATE			WET TONS TO TRUCK	CAKE		LBS. USED	POLYMER	
			GALLONS X 1000	% SOLIDS	DRY TONS	% SOLIDS COMPOSITE	DRY TONS	% CAPTURE		% SOLIDS	DRY TONS TO TRUCK		LBS POLY / FEED DRY TONS	LBS POLY / CAKE DRY TONS
August 2015														
1	3	74.1	866	1.45	52.4				209.44	20.19	42.29	1269	24	30
2	4	59.9	748	1.12	34.9				209.33	20.22	42.33	1108	32	26
3	3	57.5	685	1.82	52.0				175.09	20.90	36.59	920	18	25
4	4	60.3	689	1.77	50.8	0.17	4.9	90	209.21	19.30	40.38	924	18	23
5	3	71.0	784	1.76	57.6				209.50	19.68	41.23	1145	20	28
6	3	56.4	627	2.38	62.3				209.41	23.66	49.55	948	15	19
7	4	59.9	720	1.60	48.0				209.37	19.93	41.73	1079	22	26
8	3	49.5	683	1.75	49.9				209.41	18.79	39.35	1003	20	25
9	3	55.6	740	1.47	45.4				209.14	18.23	38.13	1063	23	28
10	3	56.0	721	1.52	45.7				209.00	19.46	40.67	968	21	24
11	4	72.3	812	1.47	49.8	0.15	5.1	90	209.12	19.22	40.19	1100	22	27
12	3	52.3	529	2.13	47.0				209.34	21.31	44.61	772	16	17
13	4	54.4	699	1.78	51.9				209.47	19.78	41.43	941	18	23
14	4	74.7	821	1.60	54.8				209.38	19.37	40.56	3660	67	90
15	3	69.8	807	1.57	52.8				209.38	19.72	41.29	1075	20	26
16	4	64.3	786	1.53	50.1				209.53	19.10	40.02	1110	22	28
17	3	61.9	749	1.55	48.4				209.19	19.55	40.90	1079	22	26
18	3	60.1	732	1.53	46.7	0.19	5.8	88	209.24	19.49	40.78	1055	23	26
19	3	59.9	696	1.48	43.0				209.17	17.70	37.02	985	23	27
20	4	56.2	629	1.73	45.4				208.59	17.31	36.11	868	19	24
21	3	67.4	690	1.76	50.6				208.55	17.50	36.50	1059	21	29
22	3	64.9	674	1.67	46.9				209.25	17.85	37.35	1115	24	30
23	3	55.1	558	1.65	38.4				209.47	18.84	39.46	871	23	22
24	3	50.9	604	1.54	38.8				174.59	22.60	39.46	944	24	24
25	3	67.4	808	1.94	65.3	0.17	5.7	91	208.76	21.68	45.26	1198	18	26
26	4	75.0	863	1.92	69.1				209.02	23.27	48.64	1268	18	26
27	4	67.3	748	1.70	53.0				208.95	22.30	46.60	991	19	21
28	3	76.4	871	1.78	64.6				209.00	19.98	41.76	1014	16	24
29	4	62.7	755	1.77	55.7				243.32	19.11	46.50	916	16	20
30	3	69.9	824	1.81	62.2				173.72	18.25	31.70	1352	22	43
31	3	47.1	589	1.59	39.0				173.70	20.02	34.77	919	24	26
MAX	4	76.4	871	2.38	69.1	0.19	5.8	91	243.32	23.66	49.55	3660	67	90
MIN	3	47.1	529	1.12	34.9	0.15	4.9	88	173.70	17.31	31.70	772	15	17
SUM		1930.2	22508		1572.7		21.5		6379.64		1263.14	34721	692	
AVG	3	62.3	726	1.68	50.7	0.17	5.4	90	205.79	19.82	40.75	1120	22	28

Supplementary Data for Internal Use Only

DATE		Plant Flow MGD	Plant Flow Temperatures						Dry Weather Primaries		Volatile Acids		
			Influent Temperature °F			Effluent Temperature °F			Tanks in service	Detention Time hours	Headworks	Primary Effluent	Chlorinated Effluent
			A-shift	B-shift	C-shift	A-shift	B-shift	C-shift					
August 2015	1	47	70	71	70	71	71	72	71	71	1.4		
	2	48	68	71	71	71	71	71	71	1.4	60	52	10
	3	53	70	71	70	71	71	71	71	1.3			
	4	52	70	71	70	71	72	71	71	1.3			
	5	51	70	70	70	71	72	71	71	1.3			
	6	52	70	70	71	70	72	71	71	1.3	52	62	12
	7	53	71	71	71	71	72	72	72	1.3			
	8	48	71	72	71	71	71	72	71	1.4			
	9	47	70	70	69	70	71	71	71	1.4	48	40	10
	10	52	70	72	71	71	72	71	71	1.3			
	11	52	70	72	71	71	72	72	72	1.3			
	12	44	70	71		72	73		72	1.5			
	13	58	70	71	70	72	72	73	72	1.2	72	65	10
	14	52		72	71		72	72	72	1.3			
	15	48	70	71	71	71	71	72	72	1.4			
	16	47	70	71	69	70	71	71	71	1.4	60	38	10
	17	52	69	72	71	71	72	71	71	1.3			
	18	54	70	71	72	71	72	71	72	1.3			
	19	53	70	71	69	70	72	72	72	1.3			
	20	54	72	71	70	71	72	72	72	1.2	78	55	10
	21	54	70	71	70	70	72	72	72	1.2			
	22	49	70	72	71	71	71	72	71	1.4			
	23	48	69	70	70	69	71	71	71	1.4	35	32	10
	24	52	69	70	70	70	71	72	71	1.5			
	25	51	68	71	70	70	71	72	71	1.3			
	26	50	71	70	71	71	72	73	72	1.4			
	27	57	73	73	70	72	71	72	71	1.4	100	80	12
	28	55	72	72	73	72	72	73	72	1.4			
	29	82	69	71	71	70	72	70	73	1.6			
	30	121	67	69	71	69	69	68	71	1.1	32	25	10
	31	53	71	70	70	70	70	69	70	2.6			
	MAX	121	73	73	73	72	72	73	73	4	100	80	12
	MIN	44	67	69	69	69	69	69	69	2	32	25	10
	SUM	1689											
	AVG	54	70	71	70	70	71	71	71	2.2	60	50	10

Supplementary Data for Internal Use Only

		FEED				FILTRATE			TWAS			POLYMER			
DATE	#	TOTAL BELT HOURS	GALLONS IN MGD	% SOLIDS (WAS)	DRY TONS	% Total Solids (composite)	Dry Tons	Estimated Capture Rate %	GALLONS X 100	% SOLIDS	TOTAL DRY TONS	LBS. USED	LBS POLY / FEED DRY TONS	LBS POLY / TWAS DRY TONS	
August 2015															
1	3	69.1	2.13	0.61	54.2				247173	4.46	4597.0	444	8.2	0.10	
2	3	83.0	1.89	0.67	52.9				211212	4.23	3725.6	402	7.6	0.11	
3	3	66.6	1.79	0.48	35.9				167975	4.26	2983.9	332	9.3	0.11	
4	3	67.3	1.78	0.52	38.5	0.05	3.71	90	198406	4.20	3474.9	335	8.7	0.10	
5	3	79.1	1.96	0.57	46.5				212691	4.08	3618.6	395	8.5	0.11	
6	3	68.3	2.14	0.56	49.9				259501	4.18	4523.3	390	7.8	0.09	
7	3	72.4	2.22	0.57	52.7				261712	3.77	4114.3	432	8.2	0.11	
8	3	78.3	2.22	0.53	49.0				254269	4.30	4559.3	431	8.8	0.09	
9	3	67.8	2.07	0.56	48.2				223439	3.94	3671.1	411	8.5	0.11	
10	3	69.5	1.80	0.51	38.3				254160	4.29	4546.7	343	8.9	0.08	
11	3	69.6	1.91	0.51	40.6	0.05	3.98	90	215128	4.38	3929.2	374	9.2	0.10	
12	3	77.4	2.08	0.63	54.7				234230	4.15	4053.5	427	7.8	0.11	
13	3	68.7	2.22	0.48	44.4				325982	4.00	5437.4	418	9.4	0.08	
14	3	68.3	2.36	0.54	53.1				243850	4.36	4433.5	493	9.3	0.11	
15	3	74.5	2.17	0.45	40.6				238075	4.32	4288.8	431	10.6	0.10	
16	3	69.0	1.96	0.59	48.1				197903	4.39	3622.9	468	9.7	0.13	
17	3	60.2	2.03	0.52	44.0				237344	4.36	4315.2	336	7.6	0.08	
18	3	74.2	2.20	0.73	66.9	0.04	3.66	95	236508	4.30	4240.8	444	6.6	0.10	
19	3	73.6	2.34	0.46	44.8				230282	4.42	4244.4	456	10.2	0.11	
20	3	68.1	2.22	0.57	52.8				174062	4.13	2997.7	423	8.0	0.14	
21	3	70.2	2.02	0.58	48.8				227939	4.65	4419.9	394	8.1	0.09	
22	3	72.5	1.81	0.55	41.4				211609	4.37	3856.1	392	9.5	0.10	
23	3	67.6	1.63	0.55	37.3				170628	4.60	3273.0	360	9.6	0.11	
24	3	60.4	1.99	0.70	58.0				196008	4.90	4005.0	407	7.0	0.10	
25	3	70.9	2.13	0.51	45.3	0.04	3.55	92	222615	4.94	4585.8	444	9.8	0.10	
26	3	75.2	2.03	0.54	45.6				204489	4.10	3496.1	441	9.7	0.13	
27	3	68.4	2.07	0.53	45.7				225793	4.41	4152.3	396	8.7	0.10	
28	3	77.4	2.40	0.47	47.1				239231	3.95	3940.5	506	10.7	0.13	
29	3	72.1	2.07	0.51	43.9				239631	3.83	3827.2	410	9.3	0.11	
30	3	76.7	2.22	0.52	48.0				329802	3.16	4345.9	620	12.9	0.14	
31	3	67.1	2.52	0.74	77.8				360682	3.13	4707.7	569	7.3	0.12	
MAX	3	83.0	2.52	0.74	77.8	0.05	3.98	95	360682	4.94	5437.4	620	13	0	
MIN	3	60.2	1.63	0.45	35.9	0.04	3.55	90	167975	3.13	2983.9	332	7	0	
SUM		2203.5	64.33		1495.2				7252329		125987.5	13126		3	
AVG	3	71.1	2.08	0.56	48.2	0.05	3.73	92	233946	4.21	4064.1	423	9	0	

Supplementary Data for Internal Use Only

Date August 2015	BP % Total Solids	Cake to Trucks (wet tons)	Cake to Trucks (Dry Tons)	Lagoon to		Estimated Capture Rate	Digesters to		Solids to	
				Press Feed (Dry Tons)	Belt Press Feed (Dry Tons)		Press Feed (Dry Tons)	Lagoon (Dry Tons)	Madison Ranch (Dry Tons)	
1	20.19	209.44	42.3	6.6	52.4	81	45.8	7.8	42.3	
2	20.22	209.33	42.3	10.1	34.9		24.9	7.9	42.3	
3	20.90	175.09	36.6	25.3	52.0	70	26.7	6.0	36.6	
4	19.30	209.21	40.4	0.0	50.8	79	50.8	8.8	40.4	
5	19.68	209.50	41.2	0.0	57.6	72	57.6	6.7	41.2	
6	23.66	209.41	49.5	0.0	62.3	80	62.3	18.4	49.5	
7	19.93	209.37	41.7	26.3	48.0	87	21.8	7.5	41.7	
8	18.79	209.41	39.3	12.0	49.9	79	37.8	8.6	39.3	
9	18.23	209.14	38.1	6.8	45.4	84	38.5	8.1	38.1	
10	19.46	209.00	40.7	16.1	45.7	89	29.6	6.0	40.7	
11	19.22	209.12	40.2	0.0	49.8	81	49.8	8.1	40.2	
12	21.31	209.34	44.6	46.0	47.0	95	1.0	28.7	44.6	
13	19.78	209.47	41.4	20.3	51.9	80	31.6	10.2	41.4	
14	19.37	209.38	40.6	31.5	54.8	74	23.3	8.5	40.6	
15	19.72	209.38	41.3	18.5	52.8	78	34.3	8.9	41.3	
16	19.10	209.53	40.0	14.3	50.1	80	35.8	8.4	40.0	
17	19.55	209.19	40.9	0.0	48.4	84	48.4	3.1	40.9	
18	19.49	209.24	40.8	0.0	46.7	87	46.7	0.0	40.8	
19	17.70	209.17	37.0	0.0	43.0	86	43.0	0.0	37.0	
20	17.31	208.59	36.1	20.1	45.4	80	25.3	4.5	36.1	
21	17.50	208.55	36.5	17.4	50.6	72	33.2	16.8	36.5	
22	17.85	209.25	37.4	18.1	46.9	80	28.8	7.2	37.4	
23	18.84	209.47	39.5	27.4	38.4		11.0	5.6	39.5	
24	22.60	174.59	39.5	29.6	38.8		9.2	18.5	39.5	
25	21.68	208.76	45.3	35.4	65.3	69	29.9	8.0	45.3	
26	23.27	209.02	48.6	68.3	69.1	70	0.8	6.1	48.6	
27	22.30	208.95	46.6	7.5	53.0	88	45.5	8.4	46.6	
28	19.98	209.00	41.8	40.3	64.6	65	24.4	9.4	41.8	
29	19.11	243.32	46.5	3.6	55.7	83	52.1	9.4	46.5	
30	18.25	173.72	31.7	5.7	62.2	51	56.6	10.6	31.7	
31	20.02	173.70	34.8	12.8	39.0	89	26.3	12.9	34.8	
Max	23.66	243.3	49.5	68.3	69.1	95	62.3	28.7	49.5	
Min	17.31	173.7	31.7	0.0	34.9	51	0.8	0.0	31.7	
Std	1.60	13.8	3.9	16.1	8.2	9	15.8	5.5	3.9	
Sum	614.31	6379.6	1263.1	519.9	1572.7		1052.7	279.4	1263.1	
Avg	19.82	205.8	40.7	16.8	50.7	79	34.0	9.0	40.7	

Volatile Solids Loading

Columbia Blvd. Wastewater Treatment Plant

Supplementary Data for Internal Use Only

[illegible]

Beginning October 2013, Digester #7 is TWAS only digester

DATE	Aug 2015	All		Primary Sludge				TWAS			PS			TWAS			D5						D6						D7								
		VS %	Feed	VS %	Red	TS %	VS %	Vol %	TS %	VS %	Vol %	Feed	Total	Feed	Total	PS	Feed	Vol %	TS %	VS %	Vol %	Red %	Feed %	Vol %	TS %	VS %	Vol %	Red %	Feed %	Vol %	TS %	VS %	Vol %	Red %			
1		79				2.01	1.58	79	4.11	3.28	80	437,238	247,173	772	245	79	655	237	79	1618	80																
2		81				2.42	1.89	82	3.84	2.98	78	415,544	211,212	755	214	81	618	195	81	1557	78																
3		80				2.44	2.00	82	3.96	3.03	77	373,452	167,975	777	168	81	680	161	81	1245	77																
4		77	63			1.69	1.32	78	4.11	3.14	78	343,696	198,406	892	198	78	684	179	78	173	1	58	61	1634	76	2.14	1.43	67	38								
5		78				2.59	2.05	79	3.92	3.03	77	280,332	212,691	696	214	79	570	207	79					871	77												
6		79				3.19	2.54	80	3.72	2.92	78	344,376	259,501	867	259	79	696	256	79					2447	78												
7						2.49	2.05	82	3.50	2.73	78	281,524	261,712	732	260	81	580	248	81					1716	78												
8		78				1.93	1.43	74	3.50	2.75	79	278,708	254,269	699	275	75	589	266	76					1670	79												
9		81				3.19	2.69	84	4.00	3.07	77	259,352	223,439	675	213	83	506	210	82					1716	77												
10		79				2.96	2.40	81	3.84	2.95	77	254,160	254,160	660	183	80	507	176	80					1112	77												
11		79	67			2.41	1.93	80	4.11	3.20	78	382,460	215,128	920	212	80	750	200	80	1.61	0.94	58	64	1872	78	2.16	1.41	65	47								
12		81				3.26	2.72	83	3.71	2.93	79	285,494	234,230	622	214	82	577	231	82					1634	79												
13		78				3.62	2.95	77	3.74	2.94	78	286,738	325,982	658	228	79	512	230	78					1851	79												
14		79				3.81	2.99	78	4.55	3.69	81	386,108	243,950	875	244	79	766	249	79					1768	81												
15		81				2.94	2.35	80	4.07	3.36	83	305,017	236,075	722	230	81	603	221	81					1885	83												
16		84				2.39	2.04	85	3.81	3.15	83	274,124	197,903	847	198	85	548	211	85					1117	83												
17		79				2.65	2.06	78	3.78	3.03	80	290,580	237,344	710	243	78	599	253	78					1753	80												
18		80	66			4.10	3.23	79	3.74	3.04	81	282,796	236,508	708	245	79	565	233	80	1.63	0.95	58	64	1621	81	2.22	1.44	65	57								
19		75				3.10	2.26	73	4.27	3.39	79	351,756	230,282	763	229	74	695	245	75					1658	79												
20		79				3.00	2.34	78	3.98	3.19	80	306,625	174,062	737	404	79	699	297	79					992	80												
21		81				2.72	2.20	81	4.39	3.50	80	500,960	227,939	1269	289	81	1299	290	81					1158	80												
22		78				2.59	2.02	78	4.33	3.38	78	277,308	211,609	1216	243	78	1244	243	78					935	78												
23		71				2.73	1.88	69	4.28	3.31	77	466,840	170,628	1022	182	70	1048	183	70					751	77												
24		74				2.97	2.17	73	4.27	3.16	74	393,547	196,006	877	228	73	894	228	73					652	74												
25		77	66			3.22	2.48	77	4.65	3.61	77	304,895	222,615	814	244	77	827	244	77	1.79	1.03	58	60	1015	77	2.20	1.42	65	47								
26		79				2.98	2.37	80	4.16	3.21	77	324,508	204,489	816	228	79	830	228	79					904	77												
27		77				3.26	2.46	75	4.19	3.37	80	401,920	225,793	794	259	77	795	260	77					981	80												
28		73				2.91	1.99	68	3.71	2.95	80	413,599	239,231	967	321	71	989	322	71					1256	80												
29		63				4.62	2.42	52	3.28	2.67	81	444,280	239,631	884	260	59	902	260	59					1082	81												
30		67				8.20	4.57	56	2.66	2.14	80	399,906	329,802	854	368	63	867	370	63					1440	80												
31		72				5.08	3.35	66	2.93	2.30	78	401,953	360,682	779	399	70	788	401	70					1587	78												
MAX		84	67			8.20	4.57	85	4.86	3.69	83	500,960	360,682	1269	404	85	1289	401	85	1.79	1.03	58	64	2447	83	2.22	1.44	67	57								
MIN		63	63			1.69	1.32	52	2.86	2.14	74	254,160	167,975	622	168	59	506	161	59	1.61	0.94	58	60	751	74	2.14	1.41	65	38								
SUM												10,720,808	7,252,329	26179	7697		22,782	7,534					43,298														
AVG		77	63			3.15	2.35	75	3.91	3.08	79	345,832	233,946	812	248	77	735	243	75.62	1.69	0.98	58	56	1397	79	2.18	1.43	65	49								

Beginning October 2013, Digester #7 is TWAS only digester

DATE	D8						D9						D10						D1						D2						Belt Press Feed							
	Aug 2015	PS Feed	TWAS Feed	TS %Vol	VS %	Vol %	Vol Red %	PS Feed	TWAS Feed	TS %Vol	VS %	Vol %	Vol Red %	PS Feed	TWAS Feed	TS %Vol	VS %	Vol %	Vol Red %	Feed %Vol	TS %	VS %	Vol %	Vol Red %	Feed %Vol	TS %	VS %	Vol %	Vol Red %	Feed %Vol	TS %	VS %	Vol %	Vol Red %	TS %	VS %	Vol %	Vol Red %
1		799	244	79				826	248	79																												
2		754	209	81				726	213	81																												
3		792	160	81				795	162	81																												
4		867	185	78	1.88	1.12	60	58	909	186	78	1.7	1	59	59	701	198	78	1.82	1.06	58	60	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	
5		697	200	79				713	218	79						542	214	79																				
6		830	263	79				875	266	79						687	261	79																				
7		730	257	81				762	262	81						592	280	81																				
8		695	276	75				717	280	75						547	275	76																				
9		663	234	82				722	229	83						521	222	82																				
10		899	183	80				663	171	80						500	175	80																				
11		922	205	80	1.69	1.01	60	62	941	215	80	1.56	0.92	59	63	767	214	80	1.6	0.94	59	63	59	59	59	59	59	59	59	59	59	59	59	59	59	59		
12		734	261	82				760	251	82						590	245	82																				
13		640	243	78				675	234	78						515	229	78																				
14		866	251	79				913	244	79						757	245	79																				
15		720	243	81				722	249	81						607	245	81																				
16		698	219	85				697	199	85						540	198	85																				
17		704	237	78				748	238	78						580	230	78																				
18		708	252	79	1.83	1.1	60	61	712	250	79	1.6	0.95	59	62	574	244	80	1.66	0.97	58	64	59	59	59	59	59	59	59	59	59	59	59	59	59	59		
19		801	264	75				790	247	74						692	230	75																				
20		747	205	78				295	79	78						689	198	78																				
21		1323	311	81				535	112	81						558	123	81																				
22		1266	232	78				1253	231	78						1213	232	78																				
23		1098	200	70				1066	200	70						1028	192	70																				
24		910	217	73				911	217	73						883	169	73																				
25		848	260	77	1.82	1.08	59	57	791	219	77	1.63	0.97	60	56	818	245	77	1.71	1.02	60	56	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	
26		885	235	79				794	223	79						820	229	79																				
27		805	248	77				802	252	77						799	260	77																				
28		1027	330	71				981	309	71						989	323	71																				
29		925	275	59				737	265	60						833	261	59																				
30		876	366	63				856	379	63						843	371	63																				
31		821	412	70				813	410	70						797	402	70																				
MAX		1323	412	85	1.88	1.12	60	62	1253	410	85	1.70	1.00	60	63	1213	402	85	1.82	1.06	60	64	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	
MIN		699	160	59	1.69	1.01	59	57	295	79	60	1.56	0.92	59	56	500	123	59	1.60	0.94	58	56	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	
SUM		25,749	7,657					24,490	7,268					21,919	7,317																							
AVG		831	247	76	1.81	1.08	60	62	790	234	77	1.62	0.96	59	57	707	236	77	1.70	1.00	59	58	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	

D1 offline March 3 - June 28, 2015

D2 offline June 29 - Sept 9, 2015