



CITY OF PORTLAND ENVIRONMENTAL SERVICES



Columbia Blvd. Wastewater Treatment Plant, 5001 N. Columbia Blvd., Portland, OR 97203-2098
(503) 823-2400, FAX (503) 823-2409

15 December 1994

Lyle Christensen
Department of Environmental Quality
2020 SW Fourth, Suite 400
Portland OR 97201-4959

Dear Lyle,

We are missing 3 BOD values for November.

On November 14th, excessive blank depletion caused the influent value to be lost.

On November 25th, the glucose-glutamate being out of range caused both the influent and effluent values to be lost.

I am including the fourth quarter bioassay for 1994. All bioassay tests were under our instream dilution concentrations.

Please call me at 823-2318 if you have any questions.

Sincerely,

Larry Erickson
Public Works Manager
Tryon Creek Treatment Plant

inluent BOD mixture of Portland and Lake Oswego flows
TWAS and raw sludge hauled to Columbia Blvd WTP
semi-annual influent flow meter calibration performed on 22 Nov 94

Page 1									
Date	Plant Effluent Nutrients				Flow		Weather		
Dec-94	Total P	NH3-N	NO3 + NO2-N	TKN	Portland	Lake Oswego	Temperature		Precip
	mg/l	mg/l	mg/l	mg/l	mgd	mgd	Max o F	Min o F	"
12/1/94					5.88	10.99	52	43	0.25
12/2/94					3.38	8.00	45	34	0.19
12/3/94					2.93	6.73	42	31	0.02
12/4/94					2.63	5.87	38	27	0.00
12/5/94					2.34	5.34	38	29	0.00
12/6/94					2.41	5.27	40	29	0.34
12/7/94					2.45	5.45	46	34	0.14
12/8/94					2.13	4.87	46	34	0.00
12/9/94					2.32	5.11	50	37	0.25
12/10/94					2.41	5.39	50	36	0.25
12/11/94					3.00	6.39	43	38	0.75
12/12/94					3.81	7.24	46	39	0.00
12/13/94					4.20	6.08	46	30	0.00
12/14/94					4.03	5.55	46	33	0.20
12/15/94					4.15	5.53	50	42	0.30
12/16/94					6.07	8.72	54	46	1.35
12/17/94					7.57	11.08	57	49	0.40
12/18/94					6.12	8.89	57	47	0.14
12/19/94					5.16	7.32	60	45	0.07
12/20/94					5.00	6.86	62	45	0.47
12/21/94					5.19	7.29	56	42	0.15
12/22/94					4.52	6.39	50	42	0.00
12/23/94					3.24	5.93	51	40	0.00
12/24/94					3.99	5.67	51	36	0.10
12/25/94					3.76	5.13	47	38	0.30
12/26/94					5.48	6.85	55	43	0.80
12/27/94					6.69	9.37	59	48	0.20
12/28/94					4.82	6.90	50	34	0.00
12/29/94					4.66	6.44	46	31	0.00
12/30/94					4.35	5.75	46	39	0.00
12/31/94					4.70	5.53	44	36	0.00
Max	0.00	0.00	0.00	0.00	7.57	11.08	62	49	1.35
Min	0.00	0.00	0.00	0.00	2.13	4.87	38	27	0.00
Avg	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	4.17	6.71	49	38	0.22
Sum					129.39	207.93			6.67

Page 2																
	PRIMARY TREATMENT															
	INFLUENT										EFFLUENT					
	Date	Flow	Peak Q	Susp Sol.		BOD5		Pop	Temp	pH	Susp Sol.		BOD5		Det Time	No. Basins
	Dec-94															
		mgd	mgd	mg/l	lbs	mg/l	lbs	Equiv	oC		mg/l	lbs	mg/l	lbs	hrs	On
12/1/94	16.87	25.0	102	14351	80	11256	66210	14	6.9						1.7	5
12/2/94	11.38	14.4	82	7783	104	9871	58062	15	7.2						2.5	5
12/3/94	9.66	13.0	93	7492	100	8056	47391		7.2						2.9	5
12/4/94	8.50	12.0	118	8365					6.9						3.3	5
12/5/94	7.68	11.2	115	7366	136	8711	51241	15	7.2						3.7	5
12/6/94	7.68	9.6	140	8967	156	9992	58776	14	7.3						3.7	5
12/7/94	7.90	11.2	64	4217	88	5798	34106	14	7.3						3.6	5
12/8/94	7.00	10.7	114	6655	120	7006	41209		7.4						4.0	5
12/9/94	7.43	11.0	124	7684				13	7.3						3.8	5
12/10/94	7.80	11.5	115	7481	132	8587	50511	13	7.3						3.6	5
12/11/94	9.39	14.2	162	12687				13	7.2						3.0	5
12/12/94	11.05	13.5	141	12994	128	11796	69389		7.2						2.6	5
12/13/94	10.28	14.0	134	11489	128	10974	64554	14	7.4						2.8	5
12/14/94	9.58	13.0	177	14142	176	14062	82717	13	7.2						3.0	5
12/15/94	9.68	13.4	141	11383	132	10657	62685	14	7.7						2.9	5
12/16/94	14.79	23.0	148	18256	104	12828	75460	13	7.1						1.9	5
12/17/94	18.65	22.5	70	10888	80	12443	73196		7.0						1.5	5
12/18/94	15.01	18.0	179	22408	132	16524	97201		6.9						1.9	5
12/19/94	12.48	15.2	179	18631	148	15404	90614	16	7.1						2.3	5
12/20/94	11.86	14.5	183	18101	132	13056	76803	14	6.9						2.4	5
12/21/94	12.48	15.7	139	14468	96	9992	58776	14	7.2						2.3	5
12/22/94	10.91	14.0	86	7825	112	10191	59946	14	7.3						2.6	5
12/23/94	9.17	13.8	130	9942	132	10095	59383	12	7.1						3.1	5
12/24/94	9.66	14.0	114	9184	128	10312	60660	12	7.3						2.9	5
12/25/94	8.89	12.0	169	12530	160	11863	69781	13	7.2						3.2	5
12/26/94	12.33	20.5	210	21595	152	15630	91944	13	7.1						2.3	5
12/27/94	16.06	21.0	125	16743	96	12858	75637	13	7.0						1.8	5
12/28/94	11.72	15.0	137	13391	120	11729	68996	12	7.1						2.4	5
12/29/94	11.10	13.5	75	6943	80	7406	43564	12	7.1						2.5	5
12/30/94	10.10	12.9	127	10698	112	9434	55495	12	7.3						2.8	5
12/31/94	10.23	14	139	11859	148	12627	74277		7.2						2.8	5
Max	18.65		210	22408	176	16524	97201	16	7.7		0	0	0	0	4.0	5
Min	7.00		64	4217	80	5798	34106	12	6.9		0	0	0	0	1.5	5
Avg	10.88		130	11823	122	11041	64949	13			####	####	####	####	2.8	5
Sum	337.32			366516		309159					0		0			

Page 3												
	SECONDARY EFFLUENT											
	Date	Flow	Susp Sol.		BOD5		FCSS		SBD	RSSS	Ovr-flow Rate	No. Basins
Dec-94		mgd	mg/l	lbs	mg/l	lbs	mg/l	lbs	ft	mg/l	gpd / ft2	On
12/1/94	16.84						1898	28812	4.3		1117	2
12/2/94	11.35						1239	18808	1.7		753	2
12/3/94	9.64						1614	24501	2.3		639	2
12/4/94	8.48						1964	29814	2.4		563	2
12/5/94	7.66						1294	19643	1.7		508	2
12/6/94	7.67						1802	27354	2.0		509	2
12/7/94	7.87						1392	21131	2.0		522	2
12/8/94	6.96						1695	25730	2.2		462	2
12/9/94	7.40						1345	20417	1.9		491	2
12/10/94	7.78						1664	25260	2.7		516	2
12/11/94	9.38						2163	32834	3.0		622	2
12/12/94	11.02						2163	32834	3.9		731	2
12/13/94	10.25						2464	37404	3.1		680	2
12/14/94	9.55						2182	33123	2.6		633	2
12/15/94	9.64						1681	25518	2.3		639	2
12/16/94	14.76						1787	27127	2.9		979	2
12/17/94	18.65						3632	55134	4.6		1237	2
12/18/94	15.00						2400	36432	5.3		995	2
12/19/94	12.45						2411	36599	3.1		825	2
12/20/94	11.83						2609	39605	2.8		784	2
12/21/94	12.45						2386	36219	3.8		825	2
12/22/94	10.90						2387	36235	2.7		723	2
12/23/94	9.15						1892	28721	2.4		607	2
12/24/94	9.66						1606	24379	2.6		641	2
12/25/94	8.87						2907	44128	3.4		588	2
12/26/94	12.30						2864	43476	4.9		816	2
12/27/94	16.04						3063	46496	7.5		1064	2
12/28/94	11.70						2785	42276	5.6		776	2
12/29/94	11.06						2480	37646	4.2		734	2
12/30/94	10.06						2134	32394	3.4		667	2
12/31/94	10.23						2703	41032	3.8		678	2
Max	18.65	0	0	0	0		3632	55134	7.5	0	1237	2
Min	6.96	0	0	0	0		1239	18808	1.7	0	462	2
Avg	10.86	###	#####	###	#####		2149	32615	3.3	#DIV/O!	720	2
Sum	336.58		0		0							

											Fecal Coliform				
											Count	G Ave			
Page 4	PLANT EFFLUENT										5				
Date	FLOW	SUS SOL			BOD5			CL2			2		DO	Ph	FLOW
Dec-94	mgd	mg/l	lbs	% Rem	mg/l	lbs	% Rem	Contact	Feed	Res	7		mg/l	SU	mgd
								hrs	lbs/day	mg/l	3				
12/1/94	16.84	12	1685	88	18	2528	78	1.0	90	0.59			7.9	7.0	0.00
12/2/94	11.35	10	946	88	13	1230	88	1.5	242	0.54			7.2	7.1	0.00
12/3/94	9.64	10	804	89	11	885	89	1.7	160	0.66		5	7.2		0.00
12/4/94	8.48	10	707	92				2.0	157	0.60			7.1		0.00
12/5/94	7.66	8	511	93	18	1150	87	2.2	160	0.82	3		7.6	7.1	0.00
12/6/94	7.67	6	384	96	13	831	92	2.2	110	0.70	2		6.8	7.2	0.00
12/7/94	7.87	9	591	86	15	985	83	2.1	110	0.56	20		7.4	7.2	0.00
12/8/94	6.96	9	523	92	15	871	88	2.4	100	0.28			7.2		0.00
12/9/94	7.40	8	494	94				2.3	40	0.41			7.2	7.3	0.00
12/10/94	7.78	6	389	95	18	1168	86	2.2	80	0.34		5	7.1	7.2	0.00
12/11/94	9.38	10	782	94				1.8	140	0.41			6.9	7.1	0.00
12/12/94	11.02	10	919	93	14	1286	89	1.5	140	0.48	2		7.3		0.00
12/13/94	10.25	12	1026	91	16	1367	88	1.6	150	0.44	4		7.8	7.3	0.00
12/14/94	9.55	9	717	95	13	1035	93	1.8	150	0.50	2		7.4	7.2	0.00
12/15/94	9.64	8	643	94	14	1126	89	1.7	170	0.40			7.4	7.5	0.00
12/16/94	14.76	12	1477	92	17	2092	84	1.1	150	0.40			7.3	7.1	0.00
12/17/94	18.65	11	1711	84	16	2489	80	0.9	160	0.33		3	7.0		0.00
12/18/94	15.00	6	750	97	13	1626	90	1.1	160	0.49			7.0		0.00
12/19/94	12.45	9	934	95	16	1661	89	1.4	130	0.53	2		7.8	7.2	0.00
12/20/94	11.83	9	888	95	18	1775	86	1.4	130	0.56	3		7.8	7.1	0.00
12/21/94	12.45	10	1038	93	19	1972	80	1.4	150	0.31	8		7.6	7.2	0.00
12/22/94	10.90	9	818	90	16	1454	86	1.5	180	0.51			7.2	7.2	0.00
12/23/94	9.15	10	763	92	14	1069	89	1.8	160	0.81			7.1	7.1	0.00
12/24/94	9.66	10	806	91	17	1370	87	1.7	160	0.54		4	7.2	7.3	0.00
12/25/94	8.87	10	740	94	16	1184	90	1.9	150	0.48			6.9	7.2	0.00
12/26/94	12.30	8	820	96	19	1948	88	1.4	170	0.74	6		7.7	7.2	0.00
12/27/94	16.04	8	1070	94	16	2141	83	1.0	170	0.54	5		7.1	7.1	0.00
12/28/94	11.70	12	1171	91	11	1074	91	1.4	150	0.44	2		7.5	7.2	0.00
12/29/94	11.06	8	738	89	8	738	90	1.5	150	0.44			7.3	7.2	0.00
12/30/94	10.06	12	1007	91	8	671	93	1.7	240	0.47			7.2	7.3	0.00
12/31/94	10.23	12	1024	91	13	1109	91	1.6	190	0.47		4	7.2		0.00
Max	18.65	12	1711	97	19	2528	93	2.4	242	0.82	20.0	4.9	7.9	7.5	0.00
Min	6.96	6	384	84	8	671	78	0.9	40	0.28	2.0	2.5	6.8	7.0	0.00
Avg	10.86	9	867	93	15	1387	88	1.6	148	0.51	3.6	4.0	7.4		0.00
Sum	336.58		26877			38835			4599						0.00

[illegible]

ater When Digesters Are Back On Line (Delete Heading Row In EL7)

Page 7 Date Dec-94	SLUDGE PROCESSING													
	Thickened Primary Sludge				WAS			Gravity Belt			TWAS			TPS + Twas
	Dig Feed gal	Tot Sol %	Vol Sol %	Vol Content %	Flow mgd	Susp. Sols mg/l lbs	Capture %	Filtrate mg/l	Poly lbs	Total Sols. %	lbs	Gal Hauled	Sludge Disp Off Site MGD	
12/1/94					0.047	12950	5091				5.04	6200	14750	0.0328
12/2/94					0.050	15560	6487				5.39	5925	13180	0.0312
12/3/94					0.000		0					0	0	0.0180
12/4/94		5.11	3.92	76.7	0.000		0					0	0	0.0180
12/5/94					0.000	16840	0				5.45	0	0	0.0180
12/6/94					0.000		0					0	0	0.0120
12/7/94					0.036	18700	5660				5.90	5359	10890	0.0289
12/8/94					0.081		#####					#####	18010	0.0360
12/9/94					0.045	18687	6974				4.53	5735	15180	0.0332
12/10/94					0.000		0					0	0	0.0180
12/11/94					0.000		0					0	0	0.0120
12/12/94		5.04	4.35	86.4	0.052	15112	6604				5.51	6967	15160	0.0332
12/13/94					0.057	19676	9295				6.00	7481	14950	0.0330
12/14/94					0.049	16960	6907				6.60	8669	15750	0.0338
12/15/94					0.062	16032	8234				4.63	8090	20950	0.0390
12/16/94					0.050	18707	7770				4.90	5909	14460	0.0325
12/17/94					0.000		0					0	0	0.0000
12/18/94					0.000		0					0	0	0.0120
12/19/94		5.89	4.95	84.1	0.051	15273	6463				5.99	8408	16830	0.0348
12/20/94					0.050	19630	8176				5.67	7155	15130	0.0331
12/21/94					0.046	19580	7585				6.13	7832	15320	0.0333
12/22/94					0.042	20920	7310				5.95	7399	14910	0.0149
12/23/94					0.000	18784	0				6.71	0	0	0.0180
12/24/94					0.000		0					0	0	0.0000
12/25/94					0.000		0					0	0	0.0180
12/26/94		6.01	5.11	85.0	0.048	19240	7779				6.28	8207	15670	0.0337
12/27/94					0.000	15090	0				4.75	0	0	0.0180
12/28/94					0.000	16940	0				5.54	0	0	0.0180
12/29/94					0.062	15372	7896				4.55	7551	19900	0.0379
12/30/94		6.37	5.46	85.7	0.047	17192	6791				5.78	8609	17860	0.0359
12/31/94					0.000		0					0	0	0.0000
Max	0	6.37	5.46	86.4	.081	20920	#####	0.00	0		6.71	#####	20950	0.039
Min	0	5.04	3.92	76.7	.000	12950	#####	0.00	0		4.53	#####	0	0.000
Avg	#DIV/0!	5.68	4.76	83.6	.028	17362	#####	#DIV/0!	#DIV/0!		5.57	#####	8674	0.024
Sum	0				.875		#####					#####	268900	0.737

MONTHLY REPORT SUMMARY

PRIMARY TREATMENT

Influent			Effluent		Rem	Primary		
	mg/l	lbs/ day	mg/l	lbs/ day	%	Feed Sludge		
S S	130	11823	#DIV/O!	#DIV/O!	#DIV/O!	Flow gal/ day	Total Solids %	Volatile Content %
BOD5	122	11041	#DIV/O!	#DIV/O!	#DIV/O!	#DIV/O!	5.68	83.6
Detent Time hrs		Population Equivalent		Flow mgd	Precip "			
2.8		64949		10.88	6.673	Detention Time days	Loading lbs VS / ft3 /day	

SECONDARY TREATMENT

Influent		Effluent		Rem %				
mg/l	lbs/day	mg/l	lbs/day		Total Solids %	Volatile Content %		Vol Sol Reduct %
S S	130	11823	9	867	93	#DIV/0!	#DIV/0!	#DIV/0!
BOD5	122	11041	15	1387	88			
F/M		SVI	SRT days	MLSS mg/l				
#DIV/0!		141	####	1454		Total Solids (TWS) %	Capture %	Filtrate Solids mg/l
	RAS Flow mgd		CL2 Res mg/l	CL2 Feed lbs/day	5.57		#DIV/0!	#DIV/0!
	0.76		0.5	148		Sludge Hauled gal/day lbs /day lbs/mo		
			Aerator					
	WAS Flow mgd		Detention Time hrs	Aerator DO mg/l	Digst	15097	#DIV/0!	#DIV/0!
	.028		3.2	1.5	TWS	8674	4026	0
					Total	23771	#DIV/0!	#DIV/0!

CITY OF
PORTLAND OREGON
 BUREAU OF ENVIRONMENTAL SERVICES
LABORATORY ANALYSIS REPORT
 TRYON CREEK TREATMENT PLANT
INFLUENT - EFFLUENT TOXICS

ALL VALUES IN mg/l

PARAMETERS	10-Oct-94		11-Oct-94		12-Oct-94		AVERAGE		REMOVAL
	Influent	Effluent	Influent	Effluent	Influent	Effluent	Influent	Effluent	
Ag	0.0020	0.0020	0.0030	0.0020	0.0020	0.0020	0.0023	0.0020	14.29%
As	0.0040	0.0040	0.0040	0.0040	0.0040	0.0040	0.0040	0.0040	0.00%
Cd	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.00%
Cr	0.0030	0.0030	0.0030	0.0030	0.0030	0.0030	0.0030	0.0030	0.00%
Cu	0.1080	0.0040	0.0800	0.0040	0.0560	0.0040	0.0813	0.0040	95.08%
Hg	0.0005	0.0005	0.0005	0.0005	0.0008	0.0005	0.0006	0.0005	16.67%
Ni	0.0040	0.0040	0.0040	0.0040	0.0040	0.0040	0.0040	0.0040	0.00%
Pb	0.0200	0.0200	0.0200	0.0200	0.0200	0.0200	0.0200	0.0200	0.00%
Zn	0.2500	0.0360	0.1620	0.0400	0.1470	0.0380	0.1863	0.0380	79.61%
	3-Oct-94		4-Oct-94		5-Oct-94		AVERAGE		
	Influent	Effluent	Influent	Effluent	Influent	Effluent	Influent	Effluent	
ACIDICS (PHENOLS)	0.0250	0.0250	0.0250	0.0250	0.0250	0.0250	0.0250	0.0250	0.00%
CN-T	0.0100	0.0100	0.0100	0.0100	0.0100	0.0110	0.0100	0.0103	-3.33%

Larry A. Erickson