

Waikato District Council Wastewater Treatment Monitoring Results

Site: Ngaruawahia  
 Consent number: 100972  
 Report date: Jul 09 to Feb 10

Discharge Transgression	
Discharge Limit Exceeded	
nr = no recorded data	
suspect / estimated value	
Value actually < number shown	

1 Discharge Limits - Monthly Tests from Wetland/Rockfilter Outlet

Parameter	Unit	Consent value 90 Percentile	Consent value Maximum	Median	10 Percentile	90 Percentile	Average	Maximum	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09	Jan-10	8-Feb-10	25-Feb-10	3-Mar-10	10-Mar-10	16-Mar-10
pH between 6 - 9				7.21	7.39	7.4	7.2	7.51	7.51	7.28	7.4	7.24	7.12	7.16	7.13	7.11	7.31	7.18	7.11	7.26
Ammonia NH4-N (median from 10)	g/cum	10	15	8.1	21.50	21.5	10.4	26.00	16	21	26	10	8.7	4.3	4.6	0.017	7.5	6.2		
Nitrate NO3 (median from 10)	g/cum	5	8	0.0136	3.29	3.3	3.0	29.00	0.43	0.035	29	0.02	0.006	0.05	0.002	0.002	0.0072	0.0026		
DRP	g/cum	5	10	4.25	5.11	5.1	4.4	5.20	3.6	3.8	4	3.7	3.9	4.5	4.8	4.9	5.2	5.1		
cBOD5 (median from 10)	g/cum	20	50	16.5	22.50	22.5	16.3	27.00	20	9.2	11	13	19	8.6	16	22	27	17		
SS (median from 10)	g/cum	30	50	31.5	49.30	49.3	31.7	79.00	46	5.8	13	16	20	36	30	79	33	38		
FC (median from 5)	MPN/100ml	3000		10000	16000	16000	8965	21000	4500	120	2600	12000	3300	3100	14000	12000	16000	10000	21000	

2 Characterisation Values - Monthly Tests from Wetland/Rock Filter Outlet

Parameter	Units	Median	10 Percentile	90 Percentile	Average	Maximum	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09	Jan-10	8-Feb-10	25-Feb-10	3-Mar-10	10-Mar-10	16-Mar-10	
Total P	g/cum	5.05	4.2	5.80	5.05	5.80	4.4	4.2	4.5	4.2	4.6	5.5	5.8	5.8	5.7	5.8	5.8	5.8	
TKN	g/cum	14.5	9.5	22.70	16.36	29.00	19	20	29	22	14	9.6	9	12	15	14			
Temp	°C	19.45	12.1	22.30	18.43	24.10	12	11.9	15.8	13.2	20.2	20.6	22.3	21.9	24.1	18.2	18.7		
E Coli	MPN/100ml	4500	1000	14000	7329	21000	4500	120	2600	12000	3300	3100	14000	12000	1000	7000	21000		

3 Characterisation Values - Weekly Sample from Oxidation Ponds - Grab Sample

Parameter	Units	4/07/09 @ 2.20pm	4/08/09 @ 13.50pm	2/9/09 @ 14.10pm	6/10/09 @ 14.00pm	4/11/09 @ 13.50pm	1/12/09 @ 14.50pm	11/1/10 @ 12.20pm	8/2/10 @ 9.45am	25/3/10 @ 9.30am	2/3/10 @ 13.00pm	10/3/10 @ 9.00am	16/3/10 @ 11.20am
DO		3.85	3.47	12.50	11.62	7.2	12	12	4.11	4.32	3.45	2.02	1.62

4 Characterisation Values - Quarterly Tests from Oxidation Ponds Outlet

Parameter	Units	Median	10 Percentile	90 Percentile	Average	Maximum	Jul 2009	Aug 2009	Sep 2009	Oct 2009	Nov 2009	Dec 2009	Jan 2010	8-Feb-2010	25-Feb-10	3-Mar-10	10-Mar-10	16-Mar-10
cBOD5	g/cum	21.5	16.8	35.7	24.80	42	32	17	17	15	29	42	35	18	21	22		
SS	g/cum	83	28.4	110	72.00	110	70	14	30	47	44	99	110	96	110	100		
DRP	g/cum	4.1	3.48	4.62	4.03	4.8	3.5	3.6	4.1	3.3	3.6	4.3	4.4	4.1	4.6	4.8		
TP	g/cum	4.95	4.17	6.13	5.18	6.4	4.7	4.2	4.8	3.9	4.8	5.9	6.4	5.1	5.9	6.10		
Ammonia NH4-N	g/cum	1.985	0.0474	19.8	8.71	27	17	19	27	19	3.4	0.04	0.57	0.048	0.56	0.46		
TKN	g/cum	14	10.9	24	17.20	33	23	22	33	22	12	11	10	11	13	15		
Nitrate NO3	g/cum	0.495	0.06454	1.62	0.81	2.7	0.24	0.07	0.14	0.18	1.5	2.7	1.2	1.3	0.75	0.01		
pH	units	7.55	7.234	8.284	7.74	8.34	8.23	7.5	8.34	8.18	7.6	8.21	8.29	7.21	7.46	7.23	7.40	7.27
Temp	°C	19.9	12.62	23.19	18.73	24.3	12	12.5	15.6	13.7	18.7	21.0	20.9	24.3	23.1	23.2	20.7	19.1
FC	MPN/100ml	18000	3500	32000	16318	33000	32000	400	20000	33000	3600	3500	18000	26000	22000	13000	8000	
EC	MPN/100ml	12000	3500	32000	15136	33000	32000	400	20000	33000	3600	3500	16000	26000	12000	12000	8000	

5 Characterisation Values - Annual Tests from Wetland/Rock Filter Outlet

Continuous Feb - Mar 5 tests over 30days continuous period

Parameter	Units	Median	25 Feb 2010	03 Mar 2010	10 Mar 2010	16 Mar 2010
cBOD5	g/cum	22	27	17		
SS	g/cum	36	33	38		
DRP	g/cum	5	5.2	5		
TP	g/cum	6	5.7	6		
Ammonia NH4-N	g/cum	7	7.5	6.2		
TKN	g/cum	15	15	14		
Nitrate NO3	g/cum	0	0.007	0.0026		
pH	units	7.22	7.31	7.18	7.11	7.26
Temp	°C	20.30	21.9	24.1	18.2	18.7
FC	MPN/100ml	16000	16000	10000	21000	
EC	MPN/100ml	7000	1000	7000	21000	

6 Characterisation Values - Daily Total In Flows

Consent limit cum/day	Median	10 Percentile	90 Percentile	Average	Maximum	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09	Jan-10	Feb-10	Mar-10
Minimum Daily Flow	1248	1126	1345	1244	1463	1463	1291	1163	1282	1213	1205	1041	1294	
Average Daily Flow	1549	1389	1895	1602	2021	2021	1522	1610	1840	1311	1576	1422	1514	
Maximum Daily Flow	3325	1723	3957	3087	4079	3398	1844	3105	3671	1442	4079	3252	3904	
Total Monthly Volume	47739	41468	58731	48728	62645	62645	47178	48299	57053	39341	48854	44075	42379	

7 Characterisation Values - Daily Total Out Flows

Consent limit cum/day	Median	10 Percentile	90 Percentile	Average	Maximum	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09	Jan-10	Feb-10	Mar-10
Minimum Daily Flow	965	660	1211	926	1263	387	1188	984	1263	1002	863	777	946	
Average Daily Flow	1596	1227	2549	1754	2643	2643	1677	1598	2508	1228	1560	1224	1594	
Maximum Daily Flow	3096	1997	3549	2867	3793	3793	2200	3033	3444	1523	3159	2389	3394	
Total Monthly Volume	48147	37613	79013	53424	81940	81940	51981	47926	77759	36851	48367	37940	44626	

8 Characterisation Values - Average Nutrient Loading Discharged to Waikato Rive

Parameter	Units	Median	10 Percentile	90 Percentile	Average	Maximum	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09	Jan-10	Feb-10	Mar-10
Total Nitrogen	kg/day	27.73	13.35	52.71	31.43	55.18	51.65	33.61	46.54	55.2	17.20	21.84	11.02	14.35	
Total Phosphorous	kg/day	7.18	6.62	10.86	8.20	11.63	11.63	7.04	7.19	10.5	5.65	7.18	7.10	9.24	

9 Characterisation Values - Oxidation Ponds Outlet Comparison 2008-09 to 2009-2010 Result:

Parameter	Units	2007-08	2008-09	2009-10 Qtr 1	2009-10 Qtr 2	2009-10 Qtr 3	2007-08	2008-09	2009-10 Qtr 1	2009-10 Qtr 2	2009-10 Qtr 3	2007-08	2008-09	2009-10 Qtr 1	2009-10 Qtr 2	2009-10 Qtr 3
cBOD5	g/m3	23	22.50	21.5	29	29	42.20	35	35.7	39.4	39.4	27.50	24.29	24.80	28.67	28.67
SS	g/m3	64	81.50	83	47	47	130	160	110	88.6	88.6	77.80	88.73	38	63.33	63.33
DRP	g/m3	7.1	4.65	4.1	3.6	3.6	8.80	5.37	4.62	4.16	4.16	6.80	4.57	3.73	3.73	3.73
TP	g/m3	8.2	5.95	4.95	4.8	4.8	10.90	7.04	6.13	5.68	5.68	8.30	5.80	4.57	4.87	4.87
Total Ammonia	g/m3	25.3	15	1.985	3.4	3.4	32.40	25.70	19.8	15.88	15.88	33.20	13.25	21	7.48	7.48
TKN	g/m3	32.5	24	14	11	11	40.00	33.10	24	20	20	33.20	23.21	26	15	15
Nitrate NO3-N	g/m3	0.01	0.10	0.50	1.50	1.50	0.02	0.85	1.62	2.46	2.46	0.01	0.35	0.15	1.46	1.46
FC	MPN/100ml	74500	34000	18000	3600	3600	1103000	65400	32000	27120	27120	295025	31550	16318	13367	13367