

Waikato District Council Wastewater Treatment Monitoring Results

Site: **Ngaruawahia**
 Consent number: **100972**
 Report date: **July 2010 - June 2011**

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	Consent value	Median	10 Percentile	90 Percentile	Average	Maximum	Jul 10	Aug 10	Sep 10	Oct 10	Nov 10	Dec 10	Jan 11	3 Feb 2011	17 Feb 2011	23 Feb 2011	1 Mar 2011	15 Mar 2011	Apr 11	May 11	Jun 11
				90 Percentile																			
				Maximum																			
pH between 6 - 9				7.15	7.04	7.3	7.2	7.47	7.16	7.18	7.08	7.02	7.25	7.31	7.47	7.08	7.12	7.15	7.25	7.15	7.24	7.08	6.91
Ammonia NH4-N (median from 10)	g/cum	10	15	8	1.58	14.90	7.6	14.90	11.2	11.4	1.7	12.2	11.6	14.9	5.9	8.5	7	8	8.2	6.8	4.6	1.5	0.32
Nitrate NO3 (median from 10)	g/cum	5	8	0.003	0.00	0.7	0.3	2.70	0.031	0.31	2.7	0.003	0.002	0.002	0.004	0.002	0.002	0.002	0.002	0.003	0.004	0.003	0.94
DRP	g/cum	5	10	4.9	3.38	6.1	4.8	6.60	3.7	3.3	3	4.1	4.7	6.6	6.2	5.6	5.1	5.5	5.6	4.9	4.6		
cBOD5 (median from 10)	g/cum	20	50	13	9.40	18.8	13.6	22.00	9	10	12.5	11	20	22	14	13	13	17	16	16	8	10	13
SS (median from 10)	g/cum	30	50	33	22.00	48.2	35.2	62.00	16	35	32	20	42	31	62	25	33	35	32	33	49	47	36
FC (median from 5)	MPN/100ml	3000		7450	2620	13700	9083	35000	2900	4100	4900	2500	6000	7900	35000	13000	9200	9400	14000	11000	7000		260

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

Parameter	Units	Median	10 Percentile	90 Percentile	Average	Maximum	Jul-10	Aug-10	Sep-10	Oct-10	Nov-10	Dec-10	Jan-11	3 Feb 2011	17 Feb 2011	23 Feb 2011	1 Mar 2011	15 Mar 2011	Apr 11	May 11	Jun 11	
Total P	g/cum	5.2	3.6	6.52	5.1	7.0	4.1	3.8	3.5	4.4	5.2	6.8	7	5.8	6	5.9	6.1	5.6	5	4.5	4.5	3.2
TKN	g/cum	13.6	6.5	16.90	12.9	22.0	13.6	15.1	4.4	14.8	18.1	22	14.3	14	12.7	14.6	12.4	12.3	11.5	8.3	5.3	
Temp	°C	16.1	11.7	23.46	18.1	24.9	10.8	11.4	12.2	16	16.1	23.4	22.8	21.8	24.9	23.5	22.2	21.6	15.8	16.1	12.6	
E Coli	MPN/100ml	6000	1680	15200	8950	48000	2100	2400	4900	1400	6000	7100	16000	2800	9200	2200	14000	11000	7000	48000	150	

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

Parameter	Units	1/7/10 @ 10.20	3/8/10 @ 10.15	1/9/10 @ 9.45	6/10/10 @ 9.50	2/11/10 @ 11.20	7/12/11 @ 1pm	11/1/11 @ 11.20	3/2/11 @ 10.35	1/3/11 @ 10.45am	6/4/11 @ 11am	3/5/11 @ 11am	15/6/11 @ 9.35
DO		1.91	8.62	11.00	6	11.01	4.92	5.60	2.45	0.85	6.75	3.62	3.51

4 Characterisation Values - Quarterly Tests from Oxidation Ponds Outlet

Parameter	Units	Median	10 Percentile	90 Percentile	Average	Maximum	Jul 2010	Aug 2010	Sep 2010	Oct 2010	Nov 2010	Dec 2010	Jan 2011	Feb 2011	Mar 2011	Apr 2011	May 2011	Jun 2011
cBOD5	g/cum	22	14.1	36.4	24.17	45	14	26	21	45	23	37	28	19	31	15	17	14
SS	g/cum	73.5	28.3	108.9	72.50	114	26	71	73	11	108	49	114	74	102	109	76	57
DRP	g/cum	4.1	3.25	5.58	4.24	6.3	3.5	3.3	2.8	3.4	3.9	6.3	5.5	4.6	4.8	4.3	4.5	3.3
TP	g/cum	4.6	3.6	6.36	4.83	6.9	4	4.2	3.6	4.8	6.4	6.9	5.9	6	4.7	4.5	3.3	
Ammonia NH4-N	g/cum	2.15	0.0136	12.83	5.08	14.4	12.2	14.4	0.01	10.2	6.8	12.9	0.092	3.2	1.1	0.019	0.013	0.028
TKN	g/cum	14.55	8.57	21.9	14.84	22	15.1	22	8.5	13.7	22	21	12.9	15.4	17.8	14	9.2	6.5
Nitrate NO3	g/cum	0.57	0.0044	4.31	1.67	9.2	0.23	0.8	9.2	0.65	0.49	0.008	0.143	0.002	0.004	1.46	2.6	4.5
pH	units	7.505	7.16	7.65	7.52	8.93	7.16	7.65	7.6	7.52	8.93	7.65	7.49	7.22	7.32	7.53	7.16	7.05
Temp	°C	16.95	12.55	22.26	17.28	23.6	10.8	12.5	13.1	16.8	18.2	21.9	23.6	21.4	22.3	17.1	16.6	13.0
FC	MPN/100ml	12000	2800	46000	19882	46000	15000	12000	46000	7000	5200	5000	41000	36000	46000	2800	2700	
EC	MPN/100ml	6400	1120	43600	13450	46000	9000	4000	46000	2200	5000	3600	22000	14000	46000	1000	7800	800

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

Parameter	Units	Median	3 Feb 11	17 Feb 11	23 Feb 11	1 Mar 11	15 Mar 11
cBOD5	g/cum	16	13	13	17	16	16
SS	g/cum	33	25	33	35	32	33
DRP	g/cum	6	5.6	5.1	5.5	5.6	4.9
TP	g/cum	6	5.8	6	5.9	6.1	5.6
Ammonia NH4-N	g/cum	8	8.5	7	8.0	8.2	6.8
TKN	g/cum	13	14	12.7	14.6	12.4	12.3
Nitrate NO3	g/cum	0	0.002	0.002	<0.002	<0.002	0.003
pH	units	7	7.08	7.12	7.15	7.25	7.15
Temp	°C	22	21.8	24.9	23.5	22.2	21.6
FC	MPN/100ml	11000	13000	9200	9400	14000	11000
EC	MPN/100ml	9200	2800	9200	2200	14000	11000

6 Characterisation Values - Daily Total In Flows

Consent limit cum/day	Median	10 Percentile	90 Percentile	Average	Maximum	Jul 10	Aug 10	Sep 10	Oct 10	Nov 10	Dec 10	Jan 11	Feb 11	Mar 11	Apr 11	May 11	Jun 11
Minimum Daily In Flow	1314	1222	1535	1333	1566	1319	1551	1566	1277	1234	1221	1213	1312	1315	1249	1344	1392
Average Daily In Flow	1688	1433	2159	1757	2454	1588	2129	2454	1459	1315	1432	1711	1437	1903	1664	1829	2162
Maximum Daily In Flow	3310	1741	5022	3427	5502	2557	2996	3623	2372	1586	2158	4621	1695	5067	5502	4485	4457
Total Monthly Influent Volume	51490	40645	65894	53474	73611	49229	66007	73611	45243	39438	44403	53051	40227	58981	49929	56698	64872

7 Characterisation Values - Daily Total Out Flows

Consent limit cum/day	Median	10 Percentile	90 Percentile	Average	Maximum	Jul 10	Aug 10	Sep 10	Oct 10	Nov 10	Dec 10	Jan 11	Feb 11	Mar 11	Apr 11	May 11	Jun 11
Minimum Daily Out Flow	1020	634	1857	1179	1926	1332	1703	1926	860	678	629	598	833	853	1180	1679	1874
Average Daily Out Flow	1849	1220	2862	1933	2990	2057	2487	2903	1478	869	1201	1671	1390	1999	1698	2453	2990
Maximum Daily Out Flow	3464	2834	3597	3165	3756	3599	2832	3463	2876	1321	2856	3756	3189	3506	3464	3537	3581
Total Monthly Effluent Volume	56884	37406	86095	58871	89687	63776	77111	87093	45826	26055	37239	51808	38907	61960	50950	76036	89687

8 Characterisation Values - Average Nutrient Loading Discharged to Waikato River

Parameter	Units	Median	10 Percentile	90 Percentile	Average	Maximum	Jul 10	Aug 10	Sep 10	Oct 10	Nov 10	Dec 10	Jan 11	Feb 11	Mar 11	Apr 11	May 11	Jun 11
Total Nitrogen	g/cum	13.82	7.22	17.83	13.14	22.00	13.63	15.41	7.10	14.8	18.10	22.00	14.30	14.0	12.3	11.5	8.3	6.2
Total Phosphorous	g/cum	4.75	3.53	6.70	4.91	7.00	4.10	3.80	3.50	4.4	5.20	6.80	7.00	5.8	5.6	5.0	4.5	3.2
Total Nitrogen	kg/day	21.25	18.74	27.88	23.13	38.33	28.04	38.33	20.61	21.9	15.72	26.43	23.91	19.46	24.6	19.5	20.4	18.7
Total Phosphorous	kg/day	8.97	6.66	11.18	8.94	11.70	8.43	9.45	10.16	6.50	4.52	8.17	11.70	8.06	11.2	8.5	11.0	9.6

9 Characterisation Values - Oxidation Ponds Outlet Comparison 2008-09, 2009-2010, 2010-11 Results

Parameter	Units	2007-08	2008-09	2009-10	2010-11 Jul-Sep	2010-11 Oct-Dec	2010-11 Jan-Mar	2010-11 Apr-Jun	2010-11
		Median	Median	Median	Median	Median	Median	Median	Median
cBOD5	g/m3	23	22.50	21	21	37	16	10	16
SS	g/m3	64	81.50	100	71	49	33	47	49
DRP	g/m3	7.1	4.65	4.6	3.3	3.9	5.5	4.6	4.6
TP	g/m3	8.2	5.95	5.9	4	4.8	5.9	4.5	4.8
Total Ammonia	g/m3	25.3	15	0.088	12.2	10.2	8	1.5	8
TKN	g/m3	32.5	24	13	15.1	21	12.7	8.3	15.1
Nitrate NO3-N	g/m3	0.01	0.10	1.2	0.80	0.49	0.003	0.004	0.49
FC	MPN/100ml	74500	34000	18000	15000	5200	11000	260	5200