

Waikato District Council Wastewater Treatment Monitoring Results
 Site Te Kauwhata
 Consent number 940355
 Report period July 2010 - June 2011

Discharge Limit Transgression		
Minor transgression		
Suspect/Missing Sample		
Value actually < number shown i.e <2 MPN/100mL		
Resource Consent requirement *		

Parameter	Unit	Consent value Maximum	Consent value Median	Monthly Data																	
				Median	10 Percentile	90 Percentile	Average	Maximum	Minimum	Jul-10	Aug-10	Sep-10	Oct-10	Nov-10	Dec-10	Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11
Average TN applied to wetland area (using In flow)	kg/ha/day	50		6.00	4.00	8.00	6.09	8.00	3.00	8	7	7	5	6	3	6	8	8	5	4	
SS (median from 10 pa)	g/cum	50		1.75	0.52	7.40	2.93	10.80	0.29	1.4	10.8	1.9	3.8	7.8	2	1.6	1.4	1.4	0.42	0.29	2.4
Ammonia NH4-N (median from 10pa)	g/cum	30		420	203	782	616	2900	190	370	800	420	190	320	620	2900	420	500	200	230	420
FC (median from 5 samples in 30 days)	MPN/100mL	5000																			

Parameter	Units	Consent value Maximum	Consent value Median	Monthly Data																	
				Median	10 Percentile	90 Percentile	Average	Maximum	Minimum	Jul-10	Aug-10	Sep-10	Oct-10	Nov-10	Dec-10	Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11
E Coli	MPN/100mL			275	163	595	413	1900	150	370	300	160	190	320	620	1900	250	310	150	190	200
cBOD5	g/cum			2.30	1	4.14	5.32	38.00	1.10	1.8	3.6	1.8	1.2	2.5	2.6	4.2	2.1	3.6	1.1	1.3	38.0
TKN	g/cum			3.75	2.71	9.11	4.90	12.20	1.62	3	12.2	3.3	4.9	9.3	4.1	3.9	3	3.6	2.7	1.6	7.4
Nitrate NO3-N	g/cum			0.21	0.01	2.12	0.65	2.50	0.00	1.38	2.5	2.2	0.42	0.031	0.013	0.013	0.004	0.039	0.036	0.79	0.39
Nitrite NO2-N	g/cum			0.045	0.007	0.275	0.227	2.000	0.002	0.064	0.29	0.086	0.025	0.014	0.013	0.002	0.006	0.144	0.011	0.074	2.0
Total Nitrogen	g/cum			4.19	2.75	9.75	5.69	14.99	2.48	4.44	14.99	5.59	4.25	9.35	4.13	3.92	2.81	3.78	2.75	2.48	9.79
DRP	g/cum			2.95	1.54	5.15	3.17	5.60	1.04	1.98	1.63	1.04	1.53	4.2	5.6	4.7	3.8	3.2	2.7	2.5	
TP	g/cum			2.70	1.60	4.74	2.96	5.30	1.34	2.1	1.93	1.34	1.67	4.6	5.3	4.7	3.8	3.2	2.7	2.5	
pH				6.92	6.76	6.94	6.92	7.51	6.75	6.92	7.51	6.77	6.82	6.76	6.94	6.93	6.91	6.92	6.93	6.88	6.75
Temp	°C			16	12	21	16	22	11	11.8	10.9	13.5	13	17.2	20	21.7	21.1	18.1	17	15.4	11.7

Parameter	Units	Consent value Maximum	Consent value Median	Monthly Data																	
				Median	10 Percentile	90 Percentile	Average	Maximum	Minimum	Jul-10	Aug-10	Sep-10	Oct-10	Nov-10	Dec-10	Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11
SS	g/cum			17	9.20	23.8	16.7	25	8	17	16	24	15	9	14	25	18	22	11	21	8
cBOD5	g/cum			7.2	4.3	9.9	7.3	14.0	2.5	7	7.4	7	10.1	4.3	2.5	7.8	8.5	14	6.4	8.1	4.4
COD	g/cum			46	39	55	46	56	34	43						53	56	34	46	45	
Total Ammoniacal Nitrogen	g/cum			0.7	0.0	16.6	6.2	25.0	0.0	5.9	16.7	8.8	16.1	25	1.4	0.032	0.022	0.057	0.04	0.015	0.017
TKN	g/cum			5.5	2.7	18.6	9.2	27.0	2.0	8.8	18.7	11.9	17.4	27	4	3.7	4.1	6.8	1.95	2.7	2.9
NO3-N	g/cum			7.6	5.1	12.5	8.1	16.1	4.2	6	5.5	10.5	8.1	5.6	7.5	6.1	4.2	8	12.7	16.1	
NO2-N	g/cum			0.930	0.456	5.132	1.732	6.000	0.300	0.590	1.810	0.890	0.97	1.26	0.68	0.51	0.45	5.5	0.3	1.82	6
TN	g/cum			16.9	10.4	26.4	19.0	33.9	9.7	15.4	26.0	23.3	26.5	33.9	10.3	12.2	11.8	9.7	16.5	10.3	25.0
DRP	MPN/100mL			3.7	2.2	4.6	3.4	4.6	1.9	2.4	2.3	1.94	2.2	4.5	4.6	4.4	3.5	4.6	3.8	4	2.7
TP	MPN/100mL			3.9	2.8	4.8	3.9	4.8	2.8	3.2	2.9	2.8	2.8	4.7	4.5	4.8	4.1	4.8	3.7	4.3	3.6
pH	g/cum			7.7	7.2	8.0	7.6	8.4	6.6	7.48	7.95	7.31	7.79	7.81	7.38	8.41	7.95	7.52	7.98	7.18	6.57
Alkalinity	g/cum			100	95	103	99	104	94	94						104		100			
Conductivity	g/cum			551	46	600	454	754	7	393	425	391	600	754	7.33	7.17	580	598	586	578	524
Faecal Coli	g/cum			2550	282	4790	2733	6000	120	4200	2300	4500	4700	120	420	2400	270	2700	390	4800	6000
Ecoli	g/cum			1400	246	4560	2107	4700	120	4200	1300	2600	4700	120	420	1300	240	1500	300	4000	4600

Parameter	Units	Consent value Maximum	Consent value Median	Monthly Data																	
				Median	10 Percentile	90 Percentile	Average	Maximum	Minimum	Jul-10	Aug-10	Sep-10	Oct-10	Nov-10	Dec-10	Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11
Average TN applied to wetland area (using In-Flow)	kg/ha/day	50		5.61	2.77	10.98	6.45	12.33	2.40	4.67	12.33	10.45	6.97	8.25	2.73	4.23	2.40	5.25	3.10	5.97	11.04
Average TN applied to Lake Waikare (using Out-Flow)	kg/day			2.61	1.63	10.85	5.06	20.44	1.44	3.90	20.44	7.12	2.24	3.57	1.61	2.47	1.44	2.75	1.86	2.07	11.27
Average TP applied to wetland area (using In-Flow)	kg/ha/day			1.20	0.98	1.58	1.25	1.72	0.74	0.97	1.37	1.26	0.74	1.14	1.01	1.72	1.02	1.53	1.12	1.49	1.59
Average TP applied to Lake Waikare (using Out-Flow)	kg/day			2.24	1.71	2.63	2.20	3.80	0.88	1.84	2.63	1.71	0.88	2.24	2.51	3.80	2.33	2.42	1.93	1.87	

nb: TN = TKN+nitrate+nitrite.
 Value of TN applied to wetland is taken from average calculated TN data from pond 2 outlet x average daily inflow / 2Ha wetland area (Old method used Out Flow and is shown for comparison)
 Value of TN and TP applied to Lake Waikare calculated with average daily outflow volume

Flow	Units	Consent limit	Monthly Data																	
			Median	10 Percentile	90 Percentile	Average	Maximum	Minimum	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	cum/day		415	363	486	429	540	355	422	540	433	408	402	359	355	403	459	399	487	478
Average Daily In Flow	cum/day		622	488	896	662	948	448	607	948	897	527	448	717	497	636	605	693	883	
Maximum Daily In Flow	cum/day		1449	677	2229	1541	3574	577	1230	1547	1350	886	676	577	3574	681	1741	2238	2143	1851
Monthly Total In Flow	cum/day		19278	13978	26872	20040	28447	13894	18828	28447	26914	15802	14617	13894	22230	13907	19727	18135	21484	26493

Flows	Consent limit	Monthly Data																	
		Median	10 Percentile	90 Percentile	Average	Maximum	Minimum	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	1080 cum/day	364	243	711	432	791	172	474	791	755	338	301	239	172	275	287	389	543	617
Average Daily Out Flow	1080	702	402	1261	779	1364	382	878	1364	1274	528	382	390	631	512	726	679	832	1151
Maximum Daily Out Flow	1080	1611	989	1857	1494	1874	775	1628	1750	1514	989	775	989	1869	1515	1741	1594	1692	1874
Monthly Total Out Flow	1080	21508	12302	37844	23762	42274	11471	27231	42274	38213	15850	11471	12076	20516	14340	22499	20364	25767	34525

Parameter	Units	Annual Comparison							
		2007-08	2008-09	2009-10	2010-11 Jul-Sep	2010-11 Oct-Dec	2010-11 Jan-Mar	2010-11 Apr-Jun	2010-11
cBOD5	g/cum	7.40	2.10	7.4	7.0	4.3	3.6	6.4	4.3
SS	g/cum	24.00	21	23	17	14	8	11	11
DRP	g/cum	3.60	3.2	3.05	2.3	4.5	4.7	3.8	3.8
TP	g/cum	3.42	4.0	3.55	2.9	4.5	4.0	3.7	4.0
Total Ammoniacal Nitrogen	g/cum	0.08	0.018	0.02	8.8	16.1	1.4	0.017	8.8
TKN	g/cum	3.88	3.7	3.2	11.9	17.4	3.6	2.7	11.9
NO3-N	g/cum	4.64	5.0	6.65	6.0	7.5	0.01	12.7	6.0
Faecal coliforms	MPN/100mL	1200	480	695	4200	420	500	4800	4200