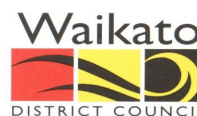


CONSENT MONITORING REPORT



Your Community Partner

Consent Name	Ngaruawahia Wastewater Treatment System
Consent	100972, 100973, 100974
Year	2009-10
File No.	55 06 26M / USV03
Date	28 September 2010

District Office
15 Galileo St, Private Bag 544
Ngaruawahia New Zealand
Ph 07 824 8633
Fax 07 824 8091
Call Free 0800 492 452
www.waikatodistrict.govt.nz

Area Offices
Huntly 07 828 7551
Raglan 07 825 8129

COMPLIANCE WITH NGARUAWAHIA RESOURCE CONSENTS 100972, 100973, 100974 – 2009-2010

The Waikato District Council holds the above resource consents associated with the treatment and discharge of wastewater from the Ngaruawahia sewage treatment plant located on the outskirts of the settlement. The resource consents issued by Environment Waikato include the following:

- 100972 To discharge up to 5000 cubic metres per day of treated wastewater from the plant after treatment subject to a number of conditions.
- 100973 To discharge contaminants to air from the wastewater treatment plant.
- 100974 To construct and maintain an outflow diffuser on the bed of the Waikato River for the discharge of treated domestic wastewater.

The Ngaruawahia wastewater treatment system generally showed some significantly improved performance, however difficulty continued in meeting the treatment discharge consent conditions, especially over the summer period. The proposed upgrades for the 2011-2012 period and proposed consent conditions address these issues.

Summary of Treatment Performance

Non-compliant Suspended Solids - Improved

The 90th Percentile target was 30.0 g/m³. The Target Maximum was 50 g/m³.

- Actual 90th Percentile was 46.0 g/m³. Down from 112 g/m³ in 2008-2009.
- Maximum recorded value was 79 g/m³ in February 2010. High SS values in summer are indicative of the increased algae levels that are typical in a pond system.
- Median value for the 2009-2010 year was 29 g/m³, down from 39 g/m³ in 2008-09.

Partially-compliant Dissolved Reactive Phosphorous - Improved

The 90th Percentile target was 5.0 g/m³. The Target Maximum was 10.0 g/m³.

- The 90th Percentile value was 5.7 g/m³ down from 6.1 g/m³ in 2008-2009.
- Maximum recorded value at 6.10 g/m³ on 24 March 2010 did not exceed the maximum limit
- Median value was 4.9 g/m³ for the 2009-2010 year, down from 5.4 g/m³ in 2008-2009. A 9% improvement.

Non-compliant Total Ammoniacal Nitrogen – Substantially Improved

The 90th Percentile target was 10.0 g/m³. The Target Maximum was 15.0 g/m³.

- The 90th Percentile value was 18 g/m³, down from 26.2 g/m³ in 2008-2009.
- The 90th Percentile value was 7.2 g/m³, for the period Nov 09 – Jun 10.
- Maximum recorded value was 26 g/m³, down from 33 g/m³ in 2008-2009
- Maximum recorded value was 8.7 g/m³, for the period Nov 09 – Jun 10
- Median value for the 2009-2010 year was 5.4 g/m³, down from 15 g/m³ in 2008-2009. This was a 64% reduction upon the previous year.
- The final effluent improvements appear to have been achieved once the treatment system settled down from the effects of the pond disturbance during upgrade.

Non-compliant Faecal Coliforms – Some Improvement

The 90th Percentile target was 3000 MPN/100mL.

- The 90th Percentile value was 22,600, down from 46,000 MPN per 100mL on the previous period 2008-2009.
- The Median for the period 4 Feb – 4 Mar 2009 was 23,400 MPN per 100mL.
- The Median for the period 25 Feb–31 Mar 2010 was 17,500 MPN per 100mL.
- The Median for the entire reporting period was 10,000 MPN per 100mL, similar to 9,750 MPN per 100mL for the previous period 2008-2009.
- Maximum recorded value was 37,000 MPN per 100mL, down from 104,000 MPN per 100mL on the previous period 2008-2009.

Non-compliant Biochemical Oxygen Demand – Partial Compliance, Much Improved

The 90th Percentile target was 20.0 g/m³. The Target Maximum was 50.0 g/m³.

- The 90th Percentile achieved was 20.8 g/m³, down from 26 g/m³ in the previous 2008-09 period. A 20% reduction.
- Maximum recorded value was 27 g/m³ in Feb 2010, down from 60 g/m³ in the 2008-2009 period. A 55% reduction.
- Median value for the 2009-2010 year was 13 g/m³ down from 16 g/m³ in 2008/2009. An 18% reduction.

Summary of Nutrient load discharged to Waikato River

Total Nitrogen –

- Median value for the 2009-2010 year was 12.2 g/m³
- Median value for the 2009-2010 year was 19.1 kg/day.
- Median summer value Dec-May for the 2009-2010 year was 13 kg/day.
- The 90th Percentile value was 51.65 kg/day.
- Maximum recorded monthly total was 55.18 kg/day in Oct 2009.
- Minimum recorded monthly total was 5.01 kg/day in Mar 2010.

- Proposed future Median to December 2012 – 30 g/m³
- Proposed future Median after December 2012 – 25 g/m³
- Proposed future summer Median after December 2012 – 20 g/m³
- Summer December to May nominal maximum 28.5 kg/day (combined Huntly & Nga load to not exceed 57 kg/day)

Total Phosphorous

- Median value for the 2009-2010 year was 5.5 g/m³
- Median summer value Dec-May for the 2009-2010 year was 8.9 kg/day.
- The 90th Percentile value was 11.63 kg/day.
- Maximum recorded monthly total was 12.43 kg/day in Mar 2010.
- Minimum recorded monthly total was 5.65 kg/day in November 2009.

- Proposed future Median to December 2012 – 8 g/m³
- Proposed future Median after December 2012 – 8 g/m³
- Proposed future summer Median after December 2012 – 8 g/m³
- Summer December to May nominal maximum 8.65 kg/day (combined Huntly & Nga load to not exceed 17.3 kg/day)

Summary of Effects of Treatment Plant Upgrade

A significant upgrade project for the Ngaruawahia wastewater treatment ponds has been largely completed. The treatment upgrade steps implemented include desludging of the pond, addition of automatic primary screening, additional influent aeration and curtains in the oxidation pond to prevent short circuiting. Septic tank trucks are no longer received at the Ngaruawahia WWTP and are diverted to the Huntly WWTP which reduces influent load.

Initial problems with ragging of the new aspirating aerators at the inlet end of the pond have settled down. It was expected that the turbulence caused by the aspirating action will eventually cease to lift older rags from the pond floor and these aerators will be able to be used appropriately, this appears to have occurred.

The high Suspended Solids originating in the oxidation pond due to the disturbance of the pond floor during the upgrade process have decreased and the remaining SS is again at levels typical of oxidation pond algal biomass growth over summer.

The Wetland and Rock filter continues to contribute to the overall improvement of the discharge quality. The attached data tables demonstrate there is a significant quality improvement from the pond outlet and the wetland outlet sample values recorded for BOD, SS and to some extent Faecal Coliforms. The wetland also contributes to buffering of the final discharge pH thereby ensuring the toxic NH₃ form of the Total Ammonia in the discharge plume to the river remains lower.

Ongoing maintenance of the wetland plants and bund plus sludge removal remains problematic due to the physical limitations of the site. The proposed consent conditions see the removal of the wetland and replacement of the subsurface rock filter with a rock lined “stream” as requested by Tainui Hapu.

An ultraviolet steriliser following treatment is planned for 2011-2012 as agreed with a submitter to the consent renewal to reduce the final discharge pathogen levels.

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H Cameron
PLANTS ENGINEER

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R Bax
GENERAL MANAGER WATER & FACILITIES