

**940355 Te Kauwhata Wastewater sewage treatment discharge 2008-2009**

**This consent authorises the Consent Holder to:** discharge 1080 cubic metres per day of treated wastewater via a rock seepage bed to Lake Waikare, at a site at or about NZMS 260 S13 009 195

	<b>Conditions</b>	<b>Comply Yes/No</b>	<b>Comments</b>
*	This consent authorises the Consent Holder to: discharge 1080 cubic metres per day of treated wastewater	No	<p>Regular Non compliance with this condition but especially during winter months.</p> <p>During July and August 2008 the North Island experienced significant and unusually heavy wet weather storm events that contributed to infiltration beyond the normal flow range of the treatment plant.</p> <p>The Median monthly maximum out flow was 1188 cubic metres per day over the total reporting period.</p> <p>The average monthly outflows for the reporting period are considerably higher than the previous period. This is to be expected as the 07-08 period was very dry.</p> <p>Maximum recorded daily total flow was 1723 m3/day in Aug 2008</p> <p>The Maximum average monthly flow was 1297 m3/day</p> <p>The 90<sup>th</sup> Percentile Maximum was 1613 m3/day</p> <p>The 90<sup>th</sup> Percentile Average Daily flow was 1048 m3/day</p> <p>The Median Average daily flow was 492 cubic metres per day over the reporting period.</p>
I	The treatment system comprising a two-oxidation pond system shall be modified to include a tertiary wetland and rock seepage bed, in accordance with the “Assessment of Environmental Effects – Te Kauwhata Oxidation Ponds”, prepared for Waikato District Council by Beca Steven, 28 June 1994 and from further information provided by Beca Steven. The modified plant shall be operated and maintained to maximise the treatment efficiency and to	Yes	The treatment upgrade was completed as proposed in resource consent application documents. This was completed in 1995 and has operated effectively since that time. A further upgrade was completed in May 2007

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	the satisfaction of the Waikato Regional Council.		
2	The consent holder shall retain appropriately experienced personnel to operate the treatment system.	Yes	The treatment plant is managed and operated by appropriately trained and experienced engineers and operators.
3	The consent holder shall forward for approval to the Waikato Regional Council copies of the proposed wetland design along with hydraulic flow and loading design criteria, proposed planting details as well as the planned timetable for installation, such material shall be provided prior to the commencement of site work.	Yes	Detail design approved by Environment Waikato and implemented by Waikato District Council.
4	The consent holder shall meet with the Richmond Meat works to establish clear criteria for effluent discharge that may be passed to the treatment system covered by this consent. Such criteria shall then be used to form the basis of a trade waste discharge agreement with this company that enables the consent holder to more effectively control the final effluent quality leaving its own treatment system.	n/a	There is currently no meat processing plant operating from the site of the old Richmond Plant
5	The consent holder shall erect signs on the boundary of the site to warn the public that the area is used for waste treatment.	Yes	A warning sign is located on the access gate to the sewage treatment area.
6	The consent holder shall retain a suitably qualified and experienced person to compile an operations and management manual for the treatment and discharge systems. This manual will detail how the systems are to be operated to ensure that effluent treatment is maximised at all times. As a minimum the manual shall address the following matters:	Yes	A new operations manual was created as part of the upgrade and provided to Environment Waikato in June 2007.
	(a) A description of the entire treatment system facility, comprising a two-pond system plus the proposed tertiary wetland and final rock seepage component.	Yes	A description is provided in the current manual.
	(b) Routine maintenance procedures to be undertaken.	Yes	Fortnightly inspections done.
	(c) Management procedures specific to the land based discharge system including responses to wind speed and direction, rainfall and frost conditions on the site.	Yes	The treatment system is managed and operated in accordance with a management plan.
	(d) Development, management and maintenance of the wetland area including plant infrastructure and buffer zones.	Yes	Council's Annual Plan requires fortnightly inspections. These are documented and filed.
	(e) Management of the treatment system to maximise removal of nitrogen	Yes	Wetlands are in operation. Nitrogen removal us being achieved

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	<p>in the land based discharge area.</p> <p>(f) Contingency measures in place to deal with unusual events.</p> <p>(g) Other actions necessary to comply with the provisions of this resource consent.</p> <p>(h) Procedures for improving and/or reviewing the management plan.</p>	<p>Yes</p> <p>Yes</p>	<p>Staff are on call 24 hours a day – contingency procedure is in manual. Telemetry monitors multiple plant elements and are alarmed to the on-call phone</p> <p>Review in progress and due for completion in near future.</p>
7	<p>The manual shall be written to a suitable standard and shall be forwarded to the Waikato Regional Council for its written approval prior to 1<sup>st</sup> November 1998.</p> <p>The consent holder shall update the manual at least once in every two (2) years that this resource consent is current and also within two (2) months of the completion of trade waste discharge agreements with the Richmond Meat works.</p> <p>Copy of the updated manual shall be forwarded to the Waikato Regional Council within one (1) month of any update being completed.</p>	No	The manual has not been updated since June 2007
8	The treatment and disposal systems shall be operated, maintained and managed in accordance with the operation and management manual.	Yes	Fortnightly visits and monthly sample collection are documented on inspection sheets.
9	<p>The activities authorised by this resource consent shall be undertaken in such a manner that they do not produce an objectionable odour at or beyond the outer boundary of the land to which this resource consent relates. For the purpose of this condition, the Waikato Regional Council will consider an odour that is objectionable or offensive to have occurred if any appropriately experienced officer of the Waikato Regional Council deems it so having regard to:</p> <p>(a) The frequency, intensity, duration, amount and location of the effect(s) of the offensiveness of an odour; and/or</p> <p>(b) A written declaration from no less than three individuals that the effect odour was objectionable or offensive. That declaration shall include the individuals' names; and</p> <p>(c) Addresses, the date and time that the nuisance event occurred and when it was detected. Where a declaration is made following a number of discharge events having objectionable or offensive effects, that declaration</p>	Yes	There have been no complaints received by the Council concerning objectionable odour during the 2008-09 year. Regular inspections have not detected any odours from the sewage treatment system that could be considered objectionable to neighbouring properties.

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	<p>shall provide details of the frequency, intensity, duration and location of those events. The individuals shall also state the circumstances that led to the declaration (for example, called upon by another individual, detected from a distance). The declaration shall be signed and dated; and/or</p> <p>(d) Relevant written advice or a report from an Environmental Health Officer of a territorial authority or Health Authority.</p>		
10	<p>Should an event occur which results in an objectionable or offensive odour, the consent holder shall, within 5 days of being advised of this event by the Waikato Regional Council, provide a written report to the Waikato Regional Council specifying:</p> <p>(a) The cause or likely cause of the event and any factors that influenced its severity.</p> <p>(b) The nature and timing of any measures implemented by the consent holder to avoid, remedy or mitigate any adverse effects.</p> <p>The steps to be taken in the future to prevent a recurrence of similar events.</p>	Yes	The Waikato District Council Corporate Services Customer First Team has received no complaints regarding the operation of the plant or discharge of treated effluent from the site during 2008/09.
11	<p>The consent holder shall retain an appropriately experienced person to develop an ongoing treatment system discharge quality-monitoring programme. As a minimum the monitoring programme shall include but not restricted to the following:</p> <p>(a) BOD<sub>5</sub>.</p> <p>(b) Suspended Solids (SS).</p> <p>(c) TKN.</p> <p>(d) Nitrate Nitrogen.</p> <p>(e) Ammonia Nitrogen.</p> <p>(f) Dissolved Reactive Phosphorus (DRP).</p>	Yes	<p>The monitoring programme is detailed in the approved operations manual and schedule supervised by Council's Plant Engineer.</p> <p>The monitoring programme is carried out according to the schedule.</p> <p>The results indicate the treatment system is has generally improved. The treatment system continued achieving an exceptionally high level of suspended solids control and having no more than a minor effect on receiving waters.</p> <p>The data shows the wetlands continue to contribute a significant improvement to the overall treatment performance.</p>



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	(c) To arrange an annual meeting between the Fish and Game Council, Department of Conservation and the Waikato Regional Council, to discuss the results of this monitoring, any trends emerging and respective treatment system upgrades that are planned, such meetings shall be within one month of the latest sampling and monitoring reports that have been circulated.	No	An annual meeting has not been conducted  Lake Waikare Average of 4 sample sites results <table border="1"> <thead> <tr> <th></th> <th>26-Aug-08</th> <th>29-Jan-09</th> </tr> </thead> <tbody> <tr> <td>BOD</td> <td>5.30</td> <td>8.80</td> </tr> <tr> <td>SS</td> <td>72.00</td> <td>82.00</td> </tr> <tr> <td>TKN</td> <td>2.18</td> <td>4.30</td> </tr> <tr> <td>NO3-N</td> <td>0.47</td> <td>0.010</td> </tr> <tr> <td>TAN</td> <td>0.07</td> <td>0.008</td> </tr> <tr> <td>DRP</td> <td>0.00</td> <td>&lt;0.004</td> </tr> <tr> <td>FC</td> <td>1125.00</td> <td>120.00</td> </tr> </tbody> </table>		26-Aug-08	29-Jan-09	BOD	5.30	8.80	SS	72.00	82.00	TKN	2.18	4.30	NO3-N	0.47	0.010	TAN	0.07	0.008	DRP	0.00	<0.004	FC	1125.00	120.00
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14	The consent holder shall compile an annual monitoring report for the year ending 1998 and for each year that this resource consent is current. As a minimum the report shall:  (a) Include all the data collected as required under conditions 11 and 17 of this resource consent. (b) Critically analyse the information collected, in terms of compliance and actual or potential effects. (c) Compare data with previously collected results and identify and comment on any emerging trends. (d) Make recommendations on alterations or additions to the monitoring programme, if required. (e) Any other issue considered important by the consent holder.	Yes  Yes  Yes  Yes  Yes	Data is recorded for Environment Waikato. All the recorded data is supplied with this annual report in complete form.  Report for period July 08 to June 09 attached																								
15	The report shall be to a standard acceptable to the Waikato Regional Council and shall be forwarded to the Waikato Regional Council by March 31 <sup>st</sup> for each year that this resource consent is current.	Yes	A change in consent condition was granted through s127 change to 30 September each year.																								
16	The consent holder shall give effect to the mitigation measures agreed between the Auckland/Waikato Fish and Game Council in collaboration with the Department of Conservation (Waikato Region) and specifically for the consent holder to provide stock proof fencing on Department of Conservation land along the margin of Lake Waikare as shown on a marked up map which accompanied the agreement with the Fish and Game Council.	Yes																									

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17	<p>When the consent holder decides that leachate from the adjacent Te Kauwhata landfill is to be passed into the treatment system covered by this consent then the following actions shall be undertaken prior to such decision being given effect to:</p> <p>(a) Provide the Waikato Regional Council with three (3) months written notice of the decision.</p> <p>(b) Provide a written report on the following:</p> <p>(i) Potential effects of the leachate on both the tertiary wetland and the receiving waters of Lake Waikare.</p> <p>(ii) Proposed mitigations for any adverse effects that is potentially significant.</p> <p>(c) Enact a revision to the treatment system management plan as set down under condition 7 above.</p> <p>(c) Enact a revision to the monitoring programmes as set down under conditions 18 and 21 above.</p> <p>(e) Such revision to the monitoring programme under condition 18 above shall include in addition to all other requirements:</p> <p>(i) The installation of three (3) piezometers to monitor the effects of the system on groundwater quality.</p> <p>(ii) Piezometers installed to monitor the effects of the leachate component in the treated wastewater discharge on ground. Wetland and lake water quality shall be placed in an area likely to be representative of the effects of the discharge.</p> <p>(iii) An additional one (1) piezometer shall be installed and maintained in the vicinity of the treatment site, but in a location unlikely to be affected by the discharge.</p> <p>(iv) The consent holder shall advise the Waikato Regional Council of the number, location and depth of these piezometers, and the reasons for selecting a particular location.</p> <p>(v) Groundwater levels shall be measured in all the piezometers on a quarterly basis, in such a manner so as to ensure that the piezometer does not become contaminated prior to sampling.</p>	<p>Yes</p>	<p>The Waikato District Council is not aware of any non-compliance with this condition of consent.</p> <p>Incorporated in manual approved by Environment Waikato.</p>

	Conditions	Comply Yes/No	Comments
	<p>(vi) Groundwater samples shall be taken and analysed from all the piezometers for leachate contaminants on a quarterly basis for conductivity, nitrate-N, chloride, COD, ammonium-N, total zinc and total iron.</p> <p>(f) The consent holder shall make the results of all sampling undertaken available to the Waikato Regional Council at all reasonable times. And shall include under condition 23 an overview of the sampling analysis and any actual or potential effects due to any contaminants from the leachate.</p>	<p>Yes</p> <p>Yes</p>	
18	The consent holder shall notify the Waikato Regional Council as soon as practicable and, as a minimum requirement, within 12 hours, of the consent holder becoming aware of any exceedence of the limits of this resource consent and of any accidental discharge, plant breakdown, or other circumstances which is likely to result in an exceedence of the limits of this resource consent. The consent holder shall, within seven (7) days of the incident occurring, provide a written report to the Waikato Regional Council, identifying the breach, possible causes and steps to ensure future compliance.	Yes	<p>There were no accidental discharges or major breakdowns during the 2008-09 year.</p> <p>During winter months discharge flows exceeded the consent limit due to increased influent volumes associated with heavy rainfall. This did not compromise treatment performance.</p>
19	The consent holder shall keep a record of all complaints lodged regarding the treatment system. The records shall include the complainants name (if this is given), the nature of the complaint, date, and time of the alleged incident and action taken by the consent holder in response to the complaint. The action shall also include steps to be taken to ensure a similar incident does not reoccur.	Yes	No complaints have been received from potentially affected people during the 2008-09 year. Customer First staff at the Waikato District Council keeps the complaint log.
20	The consent holder shall be responsible for any erosion control works that become necessary as a result of the exercise of this resource consent.	Yes	<p>The Waikato District Council undertakes erosion control works as and when necessary to protect the integrity of the wastewater treatment system.</p> <p>No erosion control works were necessary during the reporting period.</p>
21	Bare soil surfaces shall be re-vegetated at the completion of each stage of the upgrade.	Yes	
22	There shall be no visible discharge of oil or grease into or out of the wetland system.	Yes	There have been no reports of any instances that may consider this condition to be breached. Fortnightly checks are done on the wastewater

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			<p>treatment system and any problems noted for the attention of the council's Plants Engineer.</p> <p>Periodically the primary screen receives noticeable fats and grease but no visible discharge of oil or grease into or out of the wetland system has been observed.</p>
23	<p>The Waikato Regional Council may, under section 128 of the Resource Management Act, initiate a review of the conditions of this resource consent during the term of this consent for any of the following purposes:</p> <ul style="list-style-type: none"> <li>(i) To generally review the effectiveness of the conditions of this resource consent in avoiding or mitigating any adverse effects on the environment from the operation and if considered appropriate by the Waikato Regional Council to deal with such effects by way of further or amended conditions;</li> <li>(ii) If necessary and appropriate, to require the holder of this resource consent to adopt the best practicable option to remove or reduce adverse effects on the surrounding environment due to contaminant discharge to Lake Waikare; and</li> <li>(iii) To review the adequacy of and the necessity for monitoring undertaken by the consent holder.</li> </ul>	N/A	There are no issues arising from the exercise of the resource consent during the 2008-09 year that suggest a review of conditions under section 128 would be required.
24	The consent holder shall pay to the Waikato Regional Council any administrative charge fixed in accordance with section 36 of the Resource Management Act 1991, or any charge prescribed in accordance with regulations made under section 360 of the Resource Management Act.	Yes	The Waikato District Council pays an annual fee to Environment Waikato for the reasonable cost of administration and auditing of the resource consent.
	<b>The following conditions shall be enforced from the 1 July 2000 to the expiry of this consent.</b>		

	Conditions	Comply Yes/No	Comments
25	The total nitrogen-loading rate into the wetland system shall not exceed 50 kilograms per hectare per day.	Yes	<p>Compliant.</p> <p>Monthly data indicated that the Maximum Total Nitrogen average daily loading into the wetland was 7.52 kg/ha/day+6 during October 2008.</p> <p>During the 2008-09 period we have changed our method of calculation to utilise the monthly average daily Inflow volumes. In previous year we used the monthly average daily outflow from the wetland. Using the old method the value was 9.04 kg/ha/day.</p> <p>Based on 30 June 2009 estimated TN 17.3 mg/L for the month, max Inflow of 1970 m3 on the day and the approximate area of the wetland as 2 Ha, the peak total nitrogen load applied to the wetland in 2008-09 was 17 kg/Ha. This was down from the peak daily value of 21.13 kg/Ha estimated for 10 July 2007 in the previous reporting period.</p> <p>The data table annual summary shows the nutrient load discharge average monthly values for Total Nitrogen and Total Phosphorous.</p> <p>Total Nitrogen applied to the Wetland;</p> <p style="padding-left: 40px;">The 90<sup>th</sup> Percentile value was 6.69 kg/ha/day</p> <p style="padding-left: 40px;">Median value for the 2008/09 year was 2.94 kg/ha/day</p> <p style="padding-left: 40px;">Minimum 0.85 kg/ha/day in February 09</p> <p style="padding-left: 40px;">Mean 3.48 kg/ha/day</p> <p>Total Nitrogen discharged to Lake Waikare;</p> <p style="padding-left: 40px;">The 90<sup>th</sup> Percentile value was 3.6 kg/day</p> <p style="padding-left: 40px;">Median value for the 2008/09 year was 1.81 kg/day</p>

	Conditions	Comply Yes/No	Comments
			<p>Maximum recorded monthly total was 4.1 kg/day in October 08</p> <p>Minimum 0.77 kg/day in September 08</p> <p>Mean 1.98 kg/day</p> <p>Total Phosphorous discharged to Lake Waikare;</p> <p>The 90<sup>th</sup> Percentile value was 2.59 kg/day</p> <p>Median value for the 2008/09 year was 1.58 kg/day</p> <p>Maximum recorded monthly total was 2.65 kg/day in August 08</p> <p>Minimum 0.94 kg/day in November 08</p> <p>Mean 1.71 kg/day</p>
26	The concentration of suspended solids in discharged from the wetland shall not exceed 50 grams per cubic metre for more than 10 per cent of the samples taken on an annual basis. The frequency of this monitoring shall be as detailed in the consent holders monitoring programme as required by condition 15 of this consent.	Yes	<p>Compliant. Much the same as the previous period.</p> <p>The Maximum SS was <del>11</del> 9.3 g/m<sup>3</sup>.</p> <p>The Median Suspended Solids result obtained from the wetland outlet during the <del>2007-08</del> 2008-09 year was 6.6 g/m<sup>3</sup></p>
27	The concentration of ammoniacal nitrogen in the discharge shall not exceed 30 grams per cubic metre.	Yes	<p>Compliant. Improved on the previous period.</p> <p>The Maximum value obtained was <del>3.74</del> 5.2 g/m<sup>3</sup>.</p> <p>The Median Total Ammoniacal Nitrogen result was 0.62 grams/cubic metre.</p> <p><del>The median result was 1.3 grams/cubic metre.</del></p>
28	<p>The concentration of faecal coliforms in the discharge shall not exceed a daily median of 5,000 MPN (Most Probable Number) per 100 millilitres.</p> <p>The median shall be determined from five samples collected during 30</p>	Yes	<p>Compliant. Improved on previous period. The sampling of 5 samples in 30 days from the wetland outlet was not achieved due to a scheduling oversight.</p>

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	consecutive days.		<p>However sampling of the Pond outlet to meet this frequency did occur between July and October.</p> <p>The median FC result in the Pond 2 discharge between 2 Jul 08 and 30 Jul 08 was <del>+85</del> <u>10000</u> MPN/100 mL.</p> <p>The median FC result in the Pond 2 discharge between 30 Jul 08 and 27 Aug 08 was <del>+85</del> <u>2000</u> MPN/100 mL.</p> <p>The median FC result in the Pond 2 discharge between 4 Sep 08 and 2 Oct 08 was <del>+85</del> <u>30</u> MPN/100 mL.</p> <p>The median FC result in the Pond 2 discharge between 2 Oct 08 and 29 Oct 08 was <del>+85</del> <u>90</u> MPN/100 mL.</p> <p>The median FC result in the wetland discharge for the entire reporting period was <del>+85</del> <u>150</u> MPN/100 mL. An improvement on 2007-08.</p> <p>The Maximum recorded FC for the reporting period was <del>400</del> <u>1000</u> MPN/100 mL</p> <p>The 90 Percentile was 700 MPN/100 mL for the reporting period</p>