

29 May 2009
File: WAR090066

Decision of Hearing Committee

IN THE MATTER OF The Resource Management Act 1991 (the Act).

AND Applications for resource consents made pursuant to
Section 88 of the Act, referenced as:

**WAR09066 [27160] [27161] [27162] [27163]
[27164] [27165] [27166] [27167] [27168] [27169]
[27170] [27171] [27172]**

TO Wellington Regional Council

BY Masterton District Council

IN RELATION TO The upgrade and continued operation of Masterton
Wastewater Treatment Plant incorporating the
discharge of contaminants to air, land and water,
works in the bed of the Ruamahanga River and the
diversion of a watercourse.

AT Masterton Wastewater Treatment Plant, Homebush,
Masterton at or about map references NZMS 260:
T26 2735346-6021812, T26 2736386-6020372, T26
2735477-6019847, T26 2734923-6020722

HEARING COMMITTEE Councillor Sally Baber (Chairman)

 Te Waari Carkeek

 Rob van Voorthuysen

DATE OF DECISION 29 May 2009

Ongoing consents:

WAR090066 (27160) - Discharge permit to discharge treated wastewater (effluent) to the Ruamahanga River.

WAR090066 (27161) - Discharge permit to discharge stormwater runoff from the wastewater irrigation land to the Ruamahanga River and Makoura Stream.

WAR090066 (27162) - Discharge permit to discharge treated wastewater (effluent) to land via an irrigation system.

WAR090066 (27163) - Discharge permit to discharge partially treated wastewater (effluent) to land and groundwater through the base of the existing oxidation ponds and new oxidation ponds.

WAR090066 (27164) - Discharge permit to discharge wastewater sludge and residual liquid to land from the sludge dewatering process and sludge landfill.

WAR090066 (27165) - Discharge permit to discharge odours and aerosols to air from the oxidation ponds, land irrigation system, and sludge dewatering process and landfill, and other activities from the site.

WAR090066 (27166) - Water permit to divert surface water in the Ruamahanga River during flood events by upgrading existing stopbanks.

WAR090066 (27167) - Water permit to permanently divert the Makoura Stream around the new oxidation ponds.

WAR090066 (27168) - Land use consent to construct, place, use, and maintain a structure (diffuser outfall) in the bed of the Ruamahanga River.

WAR 090066 (27169) - Land use consent to disturb the bed of the Ruamahanga River arising from construction and maintenance of the diffuser outfall and erosion protection works adjacent to the existing oxidation ponds.

One-off construction related consents:

WAR090066 (27170) - Discharge permit to discharge sediment-laden stormwater to the Ruamahanga River and Makoura Stream arising from bulk earthworks.

WAR090066 (27171) - Discharge permit to discharge any treated wastewater and groundwater to water arising from dewatering processes at various locations.

WAR090066 (27172) - Water permit to divert and take groundwater arising from dewatering processes from cut-off and drainage trenches during construction activities.

1. In our Interim Decision dated 21 April 2009 we issued our substantive findings on the above applications. For the reasons set out in that Interim Decision we allowed the parties to provide us with comments on the interim conditions.
2. We received comments from:
 - M Gardiner
 - A Stewart
 - J Wardell
 - Department of Conservation
 - R Ternent
 - Fish and Game NZ
 - B Perry
 - P and E Martin
 - D Holmes
 - A Wullems
 - S Forbes
 - Wellington Regional Council reporting officers
 - Masterton District Council as applicant
3. We had advised that we would not entertain submissions that sought to relitigate the substantive issues of contention upon which we had already made findings.
4. Unfortunately, but perhaps somewhat predictably, many of the comments we received sought to relitigate those substantive matters. We weighted those comments accordingly.
5. Some parties made comments on the Notice of Requirement (NOR) conditions but the NOR Decision was final and we did not invite comments on the NOR conditions.
6. Other comments provided helpful assistance on the precise wording of the conditions and we are grateful to the parties who provided such comments to us.
7. We note that some parties consider that further consent(s) may be required for the low bund adjacent to the Ruamahanga River proposed by the Applicant during the course of the hearing. The Applicant provided additional legal submissions and evidence in relation to this bund in response to our request for comments on the interim conditions. We make no finding on the matter of the need or otherwise for consent(s) for this bund.
8. If additional consent(s) is required then in our view that is a matter for the Masterton District Council or Wellington Regional Council officers to take up with the Applicant. Due process would follow thereafter.
9. However, we record that even if such consent(s) is required we did not consider it necessary to defer our proceedings in accordance with section 91(1)(b) of the Act. Namely, we did not consider that such a further consent application, if indeed required, was necessary for us to better understand the nature of the overall proposal.

10. In response to comments from the Applicant, the Wellington Regional Council reporting officers and several submitters, we have amended the monitoring regime to require the monitoring at Wardells' Bridge to continue for the duration of the consents. In that regard paragraph 270 of our Interim Decision is amended as follows:

“We make the following additional comments. We note that there is a long history of monitoring at Wardell’s Bridge. In our view the appropriate compliance point is the end of the zone of reasonable mixing which the parties agree is 300m downstream of the new diffuser. Receiving environment monitoring should therefore occur at that location. However, in response to the wishes of the Applicant, the reporting officers and various submitters, we will also require monitoring at Wardell’s Bridge to be undertaken for the duration of the consents.”

11. In terms of the monitoring regime generally, we note that we have amended the review conditions to enable the monitoring regime to be reviewed two yearly. We consider that to be preferable to amending the range of monitoring frequencies that we previously found to be appropriate in our Interim Decision. The exception to this is the groundwater monitoring frequency which we have amended to be two monthly in accordance with the original Wellington Regional Council officer recommendations. We accept that there is no need to monitor groundwater at the same monthly frequency as surface water.
12. We have carefully considered all of the comments and the final suite of consent conditions is attached.
13. The Decision in its entirety, namely both the substantive findings in our 21 April 2009 Interim Decision and the attached conditions, is now open for appeal in accordance with sections 120 and 121 of the Act.

DECISION DATED at Wellington this 29th day of May 2009.

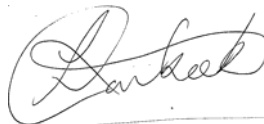
For the Wellington Regional Council:



Councillor Sally Baber
Chairman



Rob van Voorthuysen
Independent Commissioners



Te Waari Carkeek

ONGOING CONSENTS

Schedule 1: General Conditions applying to:

WAR090066 (27160) – Discharge permit to discharge treated wastewater (effluent) to the Ruamahanga River.

WAR090066 (27161) - Discharge permit to discharge stormwater runoff from the wastewater irrigation land to the Ruamahanga River and Makoura Stream.

WAR090066 (27162) - Discharge permit to discharge treated wastewater (effluent) to land via an irrigation system.

WAR090066 (27163) - Discharge permit to discharge partially treated wastewater (effluent) to land and groundwater through the base of the existing oxidation ponds and new oxidation ponds.

WAR090066 (27164) - Discharge permit to discharge wastewater sludge and residual liquid to land from the sludge dewatering process and sludge landfill.

WAR090066 (27165) - Discharge permit to discharge odours and aerosols to air from the oxidation ponds, land irrigation system, and sludge dewatering process and landfill, and other activities from the site.

WAR090066 (27166) - Water permit to divert surface water in the Ruamahanga River during flood events by upgrading existing stopbanks.

WAR090066 (27169) - Land use consent to disturb the bed of the Ruamahanga River arising from construction and maintenance of the diffuser outfall and erosion protection works adjacent to the existing oxidation ponds.

WAR090066 (27170) - Discharge permit to discharge sediment-laden stormwater to the Ruamahanga River and Makoura Stream arising from bulk earthworks.

Consent Duration

1. These consents shall be for a duration of 25 years following the date of commencement.

Works in accordance with application and plans

2. The location, design, implementation and operation of the activity shall be in general accordance with the consent application lodged with the Wellington Regional Council and plans in Appendix D of the AEE except where they are superseded by the wipe-off drain detail as presented in the Archer supplementary evidence 30 March 2009 (his revised Attachment D) and modified Drawing C625 for the gravel borrow areas, showing sightlines when hay bales are installed as a noise/dust control barrier, as included in the Archer supplementary evidence 12 March 2009 (his Attachment H).

3. In the event of any inconsistencies between the application and later information provided by the applicant, the most recent information applies. In the event of any inconsistencies between information provided by the applicant and conditions of the consent, the conditions apply.

Management Plans

4. Where a management plan is required to be submitted as a condition of consent it shall:
 - (a) be forwarded to the Manager Environmental Regulation, Wellington Regional Council;
 - (b) address the matters set out in the relevant condition; and
 - (c) be to the satisfaction of the Wellington Regional Council.

Advice note: The term "to the satisfaction of the Wellington Regional Council" means that the management plan shall be certified in writing by the Wellington Regional Council as meeting condition 4(b).

Pond lining and construction

5. The consent holder shall submit to the Manager Environmental Regulation, Wellington Regional Council, at least one month prior to the commencement of construction activities, a "Pond Lining Management Plan" that includes but is not limited to:
 - (a) identifying the source of pond lining material;
 - (b) the placing procedure for the lining material;
 - (c) a testing and quality control regime to demonstrate the attainment of the permeability set in condition 6; and
 - (d) remediation, including pond infilling.
6. Constructed ponds shall be lined with suitable material to ensure permeability does not exceed 5×10^{-9} m/s. Should an earthen liner be used, it shall be no less than 400mm in depth. Measures shall be taken to prevent cracking of the liner, including above the low water level in the wastewater ponds.
7. The wastewater ponds shall have a "live storage" capacity of no less than 275,000m³.

Progress reports

8. The consent holder shall provide to the Manager Environmental Regulation, Wellington Regional Council, an annual report detailing progress of the upgrade of the wastewater treatment plant. The first report shall be due twelve months after the commencement of these consents with subsequent reports provided at twelve monthly intervals thereafter until such time that all construction works are completed and commissioned. The annual report shall as a minimum include:
 - (a) a time line for the upgrade works and comment on any changes to the timeline;
 - (b) a list of works undertaken in the previous twelve months; and

- (c) a list and time line of proposed works for the forthcoming twelve months.

Inflow and Infiltration

- 9. The consent holder shall continue to take reasonable steps to reduce the influence of groundwater inflows and stormwater infiltration on wastewater flows entering the treatment plant. This shall include the preparation and implementation of a ten year “Inflows and Infiltration Reduction Management Plan”. That Plan shall be completed and provided to the Manager Environmental Regulation, Wellington Regional Council, within six months of the commencement of these consents.

Operations and Management Plan

- 10. No later than six months from commencement of the consent, the consent holder shall complete an “Operations and Management Plan” which sets out measures to enable the effective and efficient operation of the wastewater treatment and land discharge system. The Plan shall be provided to the Manager Environmental Regulation, Wellington Regional Council. The wastewater treatment and land discharge system shall be managed and operated in accordance with this Plan, which shall be updated within six months of the commissioning of the upgraded wastewater treatment system.

The Plan shall include as a minimum:

- (a) a brief description of the wastewater treatment and discharge system, including a site map showing as a minimum the location of the wastewater influent pipeline, the oxidation and maturation ponds and any other treatment devices, the diffuser to the Ruamahanga River, discharge points to the Makoura Stream, the layout of the border dyke land discharge system, infiltration beds for the wipe off drains, and monitoring sites;
- (b) operational management and control of the land discharge system including application locations, application depths, application return periods, and soil moisture monitoring;
- (c) on-site responsibilities, including operation and maintenance of the influent pipeline to the site;
- (d) how the wastewater diffuser to the Ruamahanga River will be maintained to ensure it remains intact, is positioned correctly, and how the diffuser outlets control the necessary dilution required to ensure compliance with conditions of these consents;
- (e) the proposed cut and carry pasture or crop regime, including recording of dry matter and nitrogen removal rates;
- (f) operational management and control of the oxidation and maturation ponds (new and existing) and the sludge drying and disposal operation;
- (g) daily, weekly and monthly maintenance checks;
- (h) monitoring procedures; and
- (i) contingency measures in the event of system malfunctions or breakdowns.

Records of maintenance, malfunctions and breakdowns shall be kept in a log and a copy of the log shall be made available to any Wellington Regional Council officer on request.

The Operations and Management Plan shall be reviewed annually during the first 7 years following the commencement of these consents and two yearly after that. Any amendments to the Plan shall be provided to the Manager Environmental Regulation, Wellington Regional Council.

Complaints

11. The consent holder shall keep a record of any complaints received regarding the construction or operation of the wastewater treatment and disposal system. The record shall contain the following details:
 - (a) name and address of the complainant;
 - (b) identification of the nature of the complaint;
 - (c) date and time of the complaint and of the alleged event;
 - (d) weather conditions at the time of the complaint; and
 - (e) any measures taken to address the cause of the complaint

The consent holder shall notify the Manager Environmental Regulation, Wellington Regional Council, of any complaints received within twenty-four hours of them being received by the consent holder, or the next working day.

The consent holder shall forward to the Manager Environmental Regulation, Wellington Regional Council, a copy of any complaints recorded in the annual report required by condition 13 of these General Conditions.

Monitoring Reports

12. The consent holder shall provide a report to the Manager Environmental Regulation, Wellington Regional Council, in electronic and written format, by no later than the last day of each calendar month incorporating the results (tabulated results and full analytical results) of all monitoring undertaken in accordance with conditions 7 to 17 of Schedule 2 of these consents for the preceding calendar month. The monthly report shall include copies of the laboratory analytical results and reasons for any non-compliance with standards imposed by consent conditions and subsequent actions undertaken to remedy the non-compliance.
13. The consent holder shall provide to the Manager Environmental Regulation, Wellington Regional Council, in electronic and written format, an annual monitoring report by 31 August each year summarising compliance with the conditions of these consents. The monitoring report shall cover the preceding 12 month period from 1 July to 30 June inclusive. The report shall include as a minimum:
 - (a) a summary of all monitoring undertaken in accordance with the conditions of these consents and a critical analysis of the monitoring information in terms of compliance with consent conditions;

- (b) a discussion of any trends or changes in environmental effects evident from the monitoring data, both within the annual reporting period and compared to previous years;
- (c) a summary of nitrogen application rates for any land discharge portion of the site and crop yields removed from the farm, both in kg N/ha/yr on a per border strip basis;
- (d) a summary of any groundwater inflow and stormwater infiltration reduction measures implemented in the preceding 12 months and a summary of planned measures for the coming 12 months;
- (e) commentary on the overall compliance with the conditions of these consents;
- (f) any reasons for non-compliance or difficulties in achieving compliance with the conditions of these consents;
- (g) any recommendations for alterations or additions to the monitoring programmes; and
- (h) any other issues considered important by the consent holder.

Warning signage, public information, and neighbour liaison

14. For the duration of these consents, the consent holder shall:
- (a) install and maintain appropriate signage on the true right river bank in the immediate vicinity of the wastewater diffuser (once the diffuser has been commissioned), at both ends of Wardell's Bridge, and at the public access track adjacent to the Ruamahanga River at the northern end of the site. The signage shall:
 - i. provide clear identification of the diffuser location and the nature of the discharge;
 - ii. advise that at low flows when the river appears clean the water quality is likely to be safe for swimming and other forms of contact recreation;
 - iii. advise that during a "fresh" when the river appears dirty the water quality is likely to be unsafe for swimming and other forms of contact recreation due to microbiological contamination;
 - iv. advise that swimming and other forms of contact recreation is not recommended for at least 24 hours after the river is again running clear after a "fresh" has receded;
 - v. provide a 24-hour contact phone number; and
 - vi. be visible to the public visiting the area from a distance of 10 metres.
 - (b) maintain appropriate signage on the formal access points to the site warning that partially treated wastewater is discharged to the land.

Written confirmation of the signage wording, size and placement shall be provided to the Manager Environmental Regulation, Wellington Regional Council, within three months of the commencement of these consents and again within three months following the installation of the diffuser outfall.

15. The consent holder shall develop and implement a public communication programme designed to educate the Masterton community about the public health risks posed by swimming and other forms of contact recreation when

there is a “fresh” in the Ruamahanga River and the river appears dirty. Written confirmation of the communication programme shall be provided to the Manager Environmental Regulation, Wellington Regional Council, within six months of the commencement of these consents.

16. The consent holder shall in September of each year for the duration of these consents convene and host a meeting of the landowners located on the western side of the Ruamahanga River immediately adjoining the wastewater treatment plant site boundary and the Manager Environmental Regulation, Wellington Regional Council. The purpose of the meeting shall be to communicate the findings of the annual report required under condition 13 and to provide the adjoining neighbours with the opportunity to raise concerns they may have regarding effects arising from the construction or operation of the wastewater treatment and disposal system. The meeting shall be held in Masterton and the consent holder shall take minutes of the meeting (including any actions agreed to in response to meeting participant concerns) and shall circulate these minutes, within 10 working days following the meeting, to all landowners immediately adjoining the wastewater treatment plant site boundary, all landowners adjacent to the Ruamahanga River immediately across the river from the wastewater treatment site, and the Manager Environmental Regulation, Wellington Regional Council.

Breakdowns and emergency notification

17. The consent holder shall provide a 24 hour contact number to the Manager Environmental Regulation, Wellington Regional Council, in case emergency contact is required.
18. The consent holder shall notify the Manager Environmental Regulation, Wellington Regional Council, as soon as practicable and, as a minimum requirement, within 48 hours of any accidental discharge, plant breakdown or other contingency which is likely to result in an exceedance of the discharge standards of these consents.

Review and charges

19. Wellington Regional Council may review any or all conditions of these consents by giving notice of its intention to do so pursuant to section 128 of the Resource Management Act 1991, at any time within three months of 31 August for each year for the term of these consents, for any of the following reasons:
 - (a) to address any adverse effects on the environment arising from the exercise of these consents;
 - (b) to avoid, remedy or mitigate any significant adverse effect on the environment arising from the discharges authorised by these consents.

The review of conditions shall allow for the deletion or amendment of conditions of these consents; and the addition of any such new conditions as are shown to be necessary to avoid, remedy or mitigate any significant adverse effects on the environment.

20. Wellington Regional Council may review any or all conditions of these consents by giving notice of its intention to do so pursuant to section 128 of the Resource Management Act 1991, at the following times and for the following reasons:
- (a) within three months of 31 August two years after the commencement of a discharge from the diffuser to the Ruamahanga River and every two years thereafter to amend the frequency of groundwater and surface water monitoring and the constituents and parameters sampled;
 - (b) within three months of 31 August two years after the commencement a discharge from the diffuser to the Ruamahanga River and every two years thereafter to amend (either up or down) or add to or delete from the numerical wastewater discharge standards imposed by these consents;
 - (c) within three months of a regional plan becoming operative which sets rules relating to minimum standards of water quality, and in the Wellington Regional Council's opinion it is appropriate to review the conditions of these consents in order to enable the standards set by the plan to be met.

The review of conditions shall allow for the deletion or amendment of conditions of these consents; and the addition of any such new conditions as are shown to be necessary to avoid, remedy or mitigate any significant adverse effects on the environment.

21. The Wellington Regional Council shall be entitled to recover from the consent holder the costs of the conduct of any review, calculated in accordance with and limited to that Council's scale of charge in force and applicable at that time pursuant to Section 36 of the Resource Management Act 1991.
22. A resource management charge, set in accordance with Section 36(2) of the Resource Management Act 1991 shall be paid to the Regional Council for the carrying out of its functions in relation to the administration, monitoring and supervision of resource consents and for the execution of its functions under Section 35 (duty to gather information, monitor and keep records) of the Act.

Schedule 2: Specific Resource Consent Conditions

WAR 090066 (27160) – Discharge permit to discharge treated wastewater (effluent) to the Ruamahanga River.

WAR 090066 (27161) - Discharge permit to discharge stormwater runoff from the wastewater irrigation land to the Ruamahanga River and Makoura Stream.

WAR 090066 (27162) - Discharge permit to discharge treated wastewater (effluent) to land via an irrigation system.

WAR 090066 (27163) - Discharge permit to discharge partially treated wastewater (effluent) to land and groundwater through the base of the existing oxidation ponds and new oxidation ponds.

These consents shall be exercised subject to the following conditions together with those conditions specified in Schedule 1: General Conditions.

Commissioning of the diffuser to the Ruamahanga River

1. The diffuser to the Ruamahanga River shall be commissioned as soon as practicable following the construction of the new oxidation and maturation ponds and the discharge to land border strip system and in any event no later than 31 October 2012.

Discharge regime prior to the commissioning of the diffuser to the Ruamahanga River

2. From the commencement of these consents until the commissioning of the diffuser to the Ruamahanga River treated wastewater shall be discharged to Makoura Stream up to a maximum instantaneous discharge rate of 700l/s.

Discharge regime after the commissioning of the diffuser to the Ruamahanga River

- 2A The full land discharge area (including the area of the existing ponds which is to be converted to border strips) shall be operational within five years of the commencement of these consents.
3. Following the commissioning of the diffuser to the Ruamahanga River treated wastewater shall be discharged to the Ruamahanga River:
 - (a) prior to the full land discharge area becoming operational when the mean hourly river flow at Wardell's Bridge gauge station is greater than $6.15\text{m}^3/\text{s}$ and less than $300\text{m}^3/\text{s}$;
 - (b) following the full land discharge area becoming operational (including the area of the existing ponds which is to be converted to border strips):
 - (i) during 1 November to 30 April inclusive, when the mean hourly river flow at Wardell's Bridge gauge station is greater than $12.3\text{m}^3/\text{s}$ and less than $300\text{m}^3/\text{s}$; or

- (ii) during 1 May to 31 October inclusive, when the mean hourly river flow at Wardell's Bridge gauge station is greater than $6.15\text{m}^3/\text{s}$ and less than $300\text{m}^3/\text{s}$; and
- (c) at all times when the instantaneous flow in the river at Wardell's Bridge gauge station is at least 30 times the instantaneous wastewater discharge rate; and
- (d) at all times up to a maximum instantaneous discharge rate of 1200l/s .

Discharge standards prior to the commissioning of the diffuser to the Ruamahanga River

- 4. From the commencement of these consents until the commissioning of the diffuser to the Ruamahanga River treated wastewater discharged to Makoura Stream shall comply with the relevant wastewater discharge standards in Table 1. The condition 4 standards in Table 1 are a rolling geometric mean and shall be calculated based on the last 12 consecutive sample results from monitoring undertaken in accordance with condition 8.

Discharge standards following the commissioning of the diffuser to the Ruamahanga River

- 5. Following the commissioning of the diffuser to the Ruamahanga River the treated wastewater discharged to the Ruamahanga River and to land shall comply with the wastewater discharge standards set out in the columns labelled "Condition 5 standards" in Table 1.

Ternent water supply

- 6. Following the commissioning of the diffuser to the Ruamahanga River, the consent holder shall provide additional storage capacity for the Ternent river intake supply to enable sufficient water to be taken from the river during periods when there is no discharge occurring from the diffuser.

Wastewater quantity monitoring

- 7. The consent holder shall continuously measure and maintain records of the daily wastewater flows entering the treatment plant and the instantaneous discharge rate of the treated wastewater discharged to the Makoura Stream, the Ruamahanga River and the land discharge area. The flow measuring devices shall be capable of continuously measuring wastewater flows of magnitudes up to and beyond the maximum instantaneous discharge rate and shall be maintained to ensure that measurement error is no more than $\pm 5\%$. The consent holder shall ensure all flow measuring devices are adequately maintained and calibrated and shall have their accuracy independently verified every five years or more frequently if recommended by the manufacturer. The independent verifications shall be provided to the Manager Environmental Regulation, Wellington Regional Council.

Advice Note: There shall be no requirement to monitor the volume or rate of stormwater discharged to the Makoura Stream from the land discharge area.

Wastewater quality monitoring prior to the commissioning of the diffuser to the Ruamahanga River

8. From the commencement of these consents until the commissioning of the diffuser to the Ruamahanga River the discharge of treated wastewater and general climatic conditions shall be monitored for the parameters in column 2¹ and at the detection limits and frequencies set in columns 3 and 4 of Table 2.

Wastewater quality monitoring following the commissioning of the diffuser to the Ruamahanga River

9. Following the commissioning of the diffuser to the Ruamahanga River the treated wastewater discharged to the Ruamahanga River and to land and general climatic conditions shall be monitored for all of the parameters in Table 2 at the detection limits and frequencies set in columns 3 and 4 of Table 2.

Surface water quality monitoring

10. From the commencement of these consents until their expiry (25 years from commencement) the consent holder shall undertake monitoring of the Makoura Stream for the parameters and detection limits set in Table 3. The monitoring frequency shall be quarterly other than for *E.coli* which shall be monitored fortnightly in the summer and monthly in the winter. The locations of the sampling shall be:
 - (a) Makoura Stream, upstream of the oxidation pond discharge and proposed land discharge area, at or about Map Reference NZMS 260 T26:353-217
 - (b) Makoura Stream, downstream of the existing (as at 2009) oxidation pond discharge at or about Map Reference NZMS 260 T26:353-197
11. To coincide with the quarterly monitoring undertaken in accordance with condition 10, the consent holder shall measure (spot gauge) the flow in the Makoura Stream at the locations set in condition 10. The flow gauging shall be carried out by a suitably qualified or experienced person and the flow gauging error shall be no more than $\pm 10\%$.
12. From the commencement of these consents until their expiry the consent holder shall undertake monitoring of the Ruamahanga River for the parameters and at the detection limits set in Table 3. The monitoring frequency shall be monthly other than for *E.coli* which shall be monitored fortnightly in the summer and monthly in the winter. The monitoring shall, as far as is practicable, be undertaken when there is a discharge occurring from the diffuser outfall to the Ruamahanga River. The locations of the sampling shall be:
 - (a) upstream of the wastewater outfall to the Ruamahanga River (downstream of the influence of the Whangaehu River confluence and upstream of the diffuser outfall at a precise location determined in consultation with the Manager Environmental Regulation, Wellington Regional Council);

¹ The relevant parameters are denoted by a large dot in column 2 of Table 2.

- (b) 300 m downstream of the diffuser location (at or about Map Reference NZMS 260 T26:353-197); and
- (c) at Wardell's Bridge (at or about Map Reference NZMS 260 T26:346-190).

Advice Note: This condition requires all three sites to be monitored on a permanent basis. However, Condition 20(a) allows the monitoring regime to be reviewed every two years. This will allow the efficacy of retaining all three sites to be regularly reassessed.

13. From the commencement of these consents until their expiry once during the period 1 September to 30 November and once during the period 1 February to 30 April, and following at least a two week period without a significant flood event (defined as an instantaneous river flow exceeding 37 m³/s), the consent holder shall have an appropriately experienced and qualified freshwater ecologist undertake macroinvertebrate sampling and an assessment of the percentage cover and biomass of filamentous algae and cyanobacterial mats. The locations of the assessments and sampling shall be:
- (a) upstream of the wastewater outfall to the Ruamahanga River (downstream of the influence of the Whangaehu River confluence and upstream of the diffuser outfall at a precise location determined in consultation with the Manager Environmental Regulation, Wellington Regional Council);
 - (b) 300 m downstream of the diffuser location (at or about Map Reference NZMS 260 T26:353-197);
 - (c) at Wardell's Bridge (at or about Map Reference NZMS 260 T26:346-190).

The periphyton and algae assessment shall include:

- (d) an assessment of the percentage cover of both filamentous algae and algal mats (to the nearest 5%) at 10 points across each of four transects encompassing both riffle and run habitat and extending across the width of the river at each sampling site;
- (e) collection of a composite periphyton sample from riffle and run habitat (a composite of scrapings from 10 rocks, 5 from a riffle and 5 from a run) across each sampling site using method QM-1a from the Stream Periphyton Monitoring Manual (Biggs & Kilroy 2000); and
- (f) analysis of periphyton samples for community composition and abundance using the Biggs & Kilroy (2000) relative abundance method, ash free dry weight and chlorophyll *a*.

The macroinvertebrate sampling shall follow Protocols C3 and P3 from the Ministry for the Environment's report on protocols for sampling macroinvertebrates in wadeable streams (Stark et al. 2001). This shall involve:

- (g) collection of 5 replicate 0.1m² Surber samples at random within a 20m section of riffle habitat at each sampling site;
- (h) full count of the macroinvertebrate taxa within each replicate sample to the taxonomic resolution level specified for use of the Macroinvertebrate Community Index (MCI); and

- (i) enumeration of the results as taxa richness, MCI, QMCI, %EPT taxa and %EPT individuals.

The results of the sampling and assessments shall be provided to the Manager Environmental Regulation, Wellington Regional Council, by 31 January and 30 June each year.

Groundwater quality monitoring

- 14. From the period six months prior to the commencement of the discharge to land and until the expiry of these consents the consent holder shall undertake monitoring of the groundwater for the parameters and at the detection limits set in Table 4. The monitoring frequency shall be two monthly. The consent holder shall collect representative groundwater samples in accordance with the Wellington Regional Council groundwater sampling protocol. The locations of the monitoring bores shall be as follows and as shown on Plan 1 attached to and forming part of these consents:
 - (a) HB2
 - (b) HB3
 - (c) HB4
 - (d) HB11
 - (e) HB13
 - (f) New well west of HB13 and the Makoura Stream
 - (g) HB16
 - (h) HB21
 - (i) Two new wells west of HB21 and the Makoura Stream

The final locations of wells (f) and (i) shall be to the satisfaction of Manager Environmental Regulation, Wellington Regional Council.

- 15. From the commencement of these consents and for five years after the commencement of the discharge to land the consent holder shall undertake six monthly monitoring of the domestic bores on the properties of M Gardiner, P Martin and A Wullems for *E.coli* and nitrate nitrogen in the months March and September. The monitoring required by this condition need not occur if the landowners concerned deny access to the bores.

Soil monitoring

- 16. The consent holder shall characterise the quality and variability of the physical and chemical properties across the land discharge area. Unless otherwise approved in writing by the Manager Environmental Regulation, Wellington Regional Council, the consent holder shall undertake soil monitoring during June or July of each year. Testing shall be from each soil type (Greytown sandy loam and Greytown silt loam) which shall be divided into three separate areas from which a representative composite sample shall be taken and the following parameters reported upon:
 - (a) infiltration capacity (measured under saturated conditions insitu) at two sites within the three separate areas of each soil type as nominated above.

- Monitoring shall start one year after land discharge has started and then every three years thereafter;
- (b) bulk density, pH, exchangeable sodium, Olsen phosphorus, total nitrogen%, organic carbon%, C:N ratio, anion storage capacity, cation exchange capacity. Analyses shall be undertaken on composite samples for each soil type at sampling depths of: 0-75 mm and 75-150mm. Monitoring shall be annually every year, starting the year before land discharge commences; and
 - (c) in conjunction with the testing above, the consent holder shall test for the elements Total As, Cd, Co, Cr, Cu, Fe, Hg, Mn, Ni, Pb and Zn in both the irrigated and non-irrigated soils, within the 0-75 mm soil depth. Monitoring shall be every 5 years, starting the year before land discharge commences.

Advice Note: A composite sample shall be made up of five core samples spaced at no closer than 20 metres. Where possible, samples in successive years shall be at similar locations.

Crop monitoring

17. The consent holder shall record crop management practices across the site, including:
- (a) crop renovation areas, species used and reasons for the renovation;
 - (b) dry matter content removed from the site;
 - (c) the nitrogen and phosphorus content of batches of all dry matter removed from the site;
 - (d) any fertiliser application, including type and amount applied; and
 - (e) records of any grazing undertaken.

Sampling and analysis

18. All sampling techniques employed in respect of the conditions of these consents shall be to the technical satisfaction of the Manager Environmental Regulation, Wellington Regional Council. Unless specifically approved otherwise in writing by the Manager Environmental Regulation, Wellington Regional Council, all analytical testing undertaken in connection with these consents shall be performed by a laboratory that is IANZ accredited for the analytical tests.

Table 1

Parameter	Condition 4 standards	Condition 5 standards		
		Percentile compliance standard	Sampling frequency/Number of samples	Compliance (Exceedances over period)
BOD ₅ (g/m ³)	32	42 (90%ile)	Monthly/12	No more than 3 over any consecutive 12 months
Filtered BOD (g/m ³)		28 (90%ile)	Monthly/12	No more than 3 over any consecutive 12 months
Suspended solids (g/m ³)	42	91 (90%ile)	Monthly/12	No more than 3 over any consecutive 12 months
Total phosphorus (g/m ³)	3.3			

Dissolved reactive phosphorus (g/m ³)		4.0 (90%ile)	Monthly/12	No more than 3 over any consecutive 12 months
Total Nitrogen (g/m ³)	13	20 (90%ile)	Monthly/12	No more than 3 over any consecutive 12 months
Nitrate Nitrogen (g/m ³)		7.5 (90%ile)	Monthly/12	No more than 3 over any consecutive 12 months
Nitrite Nitrogen (g/m ³)		2.0 (90%ile)	Monthly/12	No more than 3 over any consecutive 12 months r
Ammonia-Nitrogen (g/m ³)	2.0 (summer) 7.0 (winter)	14 (90%ile) 16 (90%ile)	Monthly/6 Monthly/6	No more than 2 over any consecutive 6 months No more than 2 over any consecutive 6 months
<i>Escherichia coli</i> cfu100 mL)	1200 (summer)	330 median 1800 (95%ile)	Monthly/6	No more than 5 above 330 over any consecutive 6 months No more than 1 above 1800 over any consecutive 6 months
<i>Escherichia coli</i> (cfu100 mL)	1200 (winter)	1,000 median	Monthly/6	No more than 5 above 1000 over any consecutive 6 months
Metals		ANZECC (2000)	Annually	See note 2 below
TPH, PAHs, SVOCs, VOCs		ANZECC (2000)	Annually	See note 2 below

Advice Notes:

1. 'Summer' is defined as the period 1 November to 30 April inclusive and 'Winter' is defined as the period 1 May to 31 October inclusive
2. Compliance for metals and TPH, PAHs, SVOCs, VOCs shall be achieved if no sample exceeds more than 20 times the relevant freshwater toxicity trigger values (for the 95% level of species protection) in Table 3.4.1 of the Australian and New Zealand Environmental and Conservation Council (ANZECC, 2000) Water Quality Guidelines.

Table 2

Parameter	Condition 8 parameters	Measurement unit and detection limit	Frequency
Rainfall	•	0.5 mm	Daily
Pond temperature	•	0.1 °C	Weekly
Dissolved oxygen	•	0.1 g/m ³	Weekly
pH	•	0.1 pH	Monthly
Electrical conductivity		10 uS/cm	Monthly
Colour		Visual observation	Monthly
Foam and Scum		Visual observation	Monthly
Total BOD ₅	•	1 g/m ³	Monthly
Soluble BOD ₅		1 g/m ³	Monthly
Total suspended solids	•	1 g/m ³	Monthly
<i>Escherichia coli</i>	•	10 cfu/100 mL	Monthly
Ammoniacal nitrogen	•	0.1 g/m ³	Monthly

Nitrite nitrogen		0.1 g/m ³	Monthly
Nitrate nitrogen		0.1 g/m ³	Monthly
Total kjeldahl nitrogen	•	0.1 g/m ³	Monthly
Total nitrogen (by calculation)	•	0.1 g/m ³	Monthly
Dissolved reactive phosphorus		0.1 g/m ³	Monthly
Total phosphorus	•	0.1 g/m ³	Monthly
Sodium		0.05 g/m ³	Six monthly
Calcium		0.05 g/m ³	Six monthly
Chloride		0.5 g/m ³	Six monthly
Total Potassium		0.05 g/m ³	Six monthly
Total recoverable arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver and zinc		0.001 g/m ³	Annually in February or March
Alkalinity & hardness		0.1 g/m ³	Annually in February or March
Semi-volatile organic compounds		0.001 g/m ³	Annually in February or March
Volatile organic compounds		0.001 g/m ³	Annually in February or March

Table 3

Parameter	Measurement unit and detection limit	Makoura	Ruamahanga
<i>Escherichia coli</i>	10 cfu/100 mL	•	•
Total organic carbon	0.5 g/m ³		•
Ammoniacal nitrogen	0.01 g/m ³	•	•
Nitrite nitrogen	0.002 g/m ³	•	•
Nitrate nitrogen	0.002 g/m ³	•	•
Total nitrogen	0.01 g/m ³	•	•
Dissolved reactive phosphorus	0.004 g/m ³	•	•
Total phosphorus	0.004 g/m ³	•	•
Water temperature	0.1 °C	•	•
Colour	Munsell scale		•
Visual clarity (horizontal black disc)	0.1 m		•
Turbidity	0.05 NTU		•
Periphyton cover	See Note below		•
Dissolved Oxygen (absolute and percentage saturation)	0.1 g/m ³ and 1 % saturation	•	•
pH	0.1 pH	•	•
Electrical conductivity	0.1 µS/cm	•	•

Advice Note: The Table 3 periphyton cover monitoring shall involve an assessment of the percentage cover of both filamentous algae and cyanobacterial mats (to nearest 5%) at 10 points across each of four transects encompassing both riffle and run habitat and extending across the width of the river at each sampling site listed in condition 13.

Table 4

Parameter	Measurement unit and detection limit
Water level	0.01 m
Dissolved Reactive Phosphorus	0.004 g/m ³
Ammoniacal nitrogen	0.01 g/m ³
Nitrate nitrogen	0.002 g/m ³
Nitrite nitrogen	0.002 g/m
Soluable iron	0.001 g/m ³
pH	0.1 g/m ³
Electrical conductivity	0.1 µS/cm
<i>Escherichia coli</i>	1 cfu/100 mL

Surface water quality receiving environment standards

19. The consent holder shall operate the outfall diffuser in the Ruamahanga River to ensure that the discharge is reasonably mixed 300 m downstream of the diffuser in conformance with the half median river flow (66% mixed) and median river flow (70% mixed) values listed in Table 31 of the AEE attached as Appendix 1 to these consents.
20. Following the commissioning of the diffuser to the Ruamahanga River the treated wastewater discharged to the Ruamahanga River and to land shall not give rise to any of the following effects in the Ruamahanga River 300 m downstream of the diffuser location (at or about Map Reference NZMS 260 T26:353-197):
- the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
 - any conspicuous change in the colour of the river;
 - a reduction in horizontal visibility greater than 33% (black disc measurement) compared with upstream of the discharge;
 - any emission of objectionable odour;
 - the rendering of fresh water unsuitable for consumption by farm animals;
 - any significant adverse effects on aquatic life;
 - the maximum cover of the bed by periphyton as filamentous growths (more than 2cm long) to exceed 30%;
 - The maximum cover of the bed by periphyton as diatom or cyanobacteria mats (more than 0.3cm thick) to exceed 60%; and
 - The biomass of periphyton as filamentous growths or mats on the bed to exceed 120mg chlorophyll *a*/m² over a representative reach.

The receiving water standards in (g) to (i) shall not be considered to be breached if the standards are already breached at the upstream site identified in condition 13(a), except where it can be demonstrated that the upstream site only marginally exceeds the standards (no more than 5% above) and the downstream site significantly exceeds the standards (more than 20% above).

Land discharge requirements

21. The discharge of treated wastewater to land shall not result in the following:
- an annual application depth exceeding 2,500mm;

- (b) the application depth over the length of an irrigation bay exceeding an average of 100 mm during a single application;
- (c) the average daily application rate exceeding 10mm over summer (including rainfall);
- (d) the distribution efficiency being less than 75% during any single application as observed by visual assessment of the wetted front;
- (e) the application uniformity being less than 50% during any single application;
- (f) any significant surface water, including ponding, on the irrigation or wipe-off areas, as a result of irrigation, for a period of more than 24 hours after application; and
- (g) wastewater being applied to land by border strip irrigation within 50m of any neighbouring property boundary.

Advice Notes:

Compliance with (b) above shall be determined by a volumetric calculation over the area potentially irrigated.

Compliance with (d) above shall be determined by ensuring that preferential flow does not result and there is a visual coverage (area that is wetted) of at least 75% of each bay irrigated on any given day.

Compliance with (e) above shall be determined by visual assessment and in particular ensuring that the duration of active water application at a point 25% of the distance down a bay is no more than 50% longer than a point 75% down the same bay on any given day.

22. No treated wastewater shall be discharged to land where:

- (a) the annual nitrogen loading of wastewater will exceed 300kg/ha/yr;
- (b) the mass of nitrogen and phosphorus applied annually as fertiliser and effluent exceeds 100kg/ha and 30kg/ha respectively more than that removed in the harvested biomass;
- (c) there is surface water ponding on any irrigation area;
- (d) anaerobic conditions exist at the soil surface;
- (e) prior to discharge a wheeled tractor cannot be driven over the area to be irrigated without leaving wheel rutting;
- (f) there is bare land, including weeds, covering more than 15% of the area to be irrigated;
- (g) pasture, or a crop, has less than 4 weeks of growth after being replanted or sown, except in dry weather conditions where the pasture or crop is under stress; or
- (h) the wipe-off volume exceeds 20% of the applied volume.

Advice Notes:

A bay is defined by the wetted area between two borders and its length is from the pop up valve (water source) to the furthestmost wetted extent in that bay.

Surface ponding is deemed to be continuous surface water covering an area of more than 10 square metres or saturated soil conditions which cause an adverse effect on grass growth.

23. The annual nitrogen loading as a consequence of:
- (a) the exercise of these consents;
 - (b) the application of nitrogen based fertiliser; and
 - (c) the application of any other material.
- shall not exceed a maximum of 600 kilograms per hectare per year.

Land discharge management

24. The consent holder shall appoint a suitably experienced Irrigation Operator to manage the site.

Advice Note: A suitably experienced person would be considered as someone with a farming background and irrigation experience.

25. The Irrigation Operator shall:
- (a) ensure that the land discharge area is used primarily as a cut and carry operation;
 - (b) allow the occasional grazing of sheep on the borders;
 - (c) not allow the grazing of cattle or horses on the borders;
 - (d) allow the application of fertilisers to optimise pasture or crop growth;
 - (e) allow the growing of crops other than pasture; and
 - (f) provide a 2 day withholding period following wastewater discharge and prior to any animal grazing.
26. The consent holder shall inspect the site at monthly intervals and as soon as practicable after heavy rainfall events, to record the presence of seepages, developing wet areas, changes in pasture or crop growth, and any other physical change to the site which may adversely impact on the performance of the land discharge system. Records shall be kept of those inspections and made available to the Manager Environmental Regulation, Wellington Regional Council, upon request.
27. The application of wastewater to buffer areas using drip irrigation shall comply with the requirements of conditions 21(a) and (c), 22(a) and (d), and 23.
28. Wipe-off drains shall be managed so that they:
- (a) do not intercept or collect groundwater;
 - (b) do not allow the direct or immediate passage (through less than 5m of soil) to surface water drainage which enters the Makoura Stream or Ruamahanga River; and
 - (c) do not allow groundwater to be returned to the treatment ponds.
29. After a period of 24 months operation of at least 50ha of the land discharge area, the consent holder may, subject to the satisfaction of the Manager Environmental Regulation, Wellington Regional Council, increase the average daily wastewater application rate to 20mm over summer (including rainfall) and the annual application depth to 4,000mm, provided that:
- (a) condition 21(d) to (g) is complied with;
 - (b) condition 22(c) to (h) is complied with;

- (c) condition 23 is complied with;
- (d) the increase in application rates is limited to irrigation areas to the east of the Makoura Stream;
- (e) the application depth over the length of an irrigation bay does not exceed an average of 200mm during a single application; and
- (f) the consent holder can demonstrate that the increased wastewater application rate and depth will not cause any additional adverse effects on groundwater quality.

WAR090066 (27164) - Discharge permit to discharge wastewater sludge and residual liquid to land from the sludge dewatering process and sludge landfill.

This consent shall be exercised subject to the following conditions together with those conditions specified in Schedule 1: General Conditions.

Works in accordance with application

1. This consent authorises the landfilling of sludge to the area identified as “Sludge Landfill (~0.7 ha)” on plan Proposed Pond Layout Plan 3202216-560-C602 that formed part of the application.
2. No discharge of wastewater shall occur over the sludge landfill area.

Landfill lining and management plan

3. The sludge landfill shall be lined with suitable material to ensure permeability does not exceed 5×10^{-9} m/s. Should an earthen liner be used, it shall be no less than 400mm in depth.
4. The consent holder shall submit, at least one month prior to any placement of sludge in the landfill, a “Landfill Management Plan” which includes, but is not limited to:
 - (a) design and installation of lining material;
 - (b) design and installation of capping material;
 - (c) design and management of leachate retention and handling facilities;
 - (d) moisture content requirements for placed sludge;
 - (e) management of subsidence and slumping;
 - (f) management of landfill gases;
 - (g) identifying the source of the sludge landfill lining material;
 - (h) the placing procedure for the lining material; and
 - (i) a testing and quality control regime to demonstrate the attainment of the nominated permeability.
5. The consent holder shall ensure sufficient and appropriate rock armouring is used to protect the exterior of the sludge landfill wall from river erosion.

Dewatering and sludge drying

6. The drying of sludge from the base of the existing wastewater treatment ponds shall be undertaken in accordance with the following requirements:
 - (a) Sludge shall be relocated within the base of the existing ponds to facilitate drying and avoid contact with groundwater;
 - (b) Sumps shall be created to assist with dewatering, with ‘clean’ water being pumped to the Makoura Stream and contaminated water to the new wastewater ponds;
 - (c) Sludge with a moisture content of more than 95%, as measured on a dry weight basis, (i.e. less than 5% solids) may be pumped to the new wastewater ponds;

- (d) No sludge is to be dried or stored, including temporarily, on land which is outside the existing wastewater ponds or the new sludge landfill site. This includes not allowing sludge to be stored on the surface of any remediated pond area; and
- (e) All sludge shall be removed from the base of the existing wastewater ponds within 24 months of wastewater influent discharge to the new ponds commencing.

Advice Note: If dried sludge is to be used as a soil conditioner, or there is a need for temporary storage outside the base of the existing pond, then an additional consent may be required.

- 7. No residual pond sludge, to within practical excavation limits, shall remain in the base of existing ponds following remediation.

Advice Note: For the purpose of this condition, practical excavation limits refer to not having material in clumps or layers which are greater than 25 mm in depth.

Landfill operation

- 8. The operation of the sludge landfill shall comply with the following requirements:
 - (a) Only sludge from the dewatering of the existing wastewater treatment ponds may be placed in the landfill;
 - (b) Only sludge that has a moisture content of no greater than 65%, as measured on a dry weight basis (i.e. 35% solids), may be placed in the landfill;
 - (c) Leachate from the sludge landfill shall be collected and discharged to the new wastewater treatment ponds; and
 - (d) Stormwater from the landfill shall be collected and discharged to ground soakage. It shall not contain any sludge material or leachate.

WAR090066 (27165) - Discharge permit to discharge odours and aerosols to air from the oxidation ponds, land irrigation system, and sludge dewatering process and landfill, and other activities from the site.

This consent shall be exercised subject to the following conditions together with those conditions specified in Schedule 1: General Conditions.

1. There shall be no discharges to air that are noxious, dangerous, offensive or objectionable resulting from the operation of the Masterton wastewater treatment plant and land discharge system at or beyond the boundary of the plant site as designated in the District Plan.
2. Within six months of the commencement of these consents the consent holder shall develop and implement an Odour Management Plan to address odour arising from operations. The Odour Management Plan shall include but not be limited to the recording of events which create objectionable odours or aerosols and measures and maintenance regimes to prevent objectionable odours or aerosols.
3. The Odour Management Plan shall be provided to the Manager Environmental Regulation, Wellington Regional Council, upon request.

WAR090066 (27166) - Water permit to divert surface water in the Ruamahanga River during flood events by upgrading existing stopbanks.

This consent shall be exercised subject to the following conditions together with those conditions specified in Schedule 1: General Conditions.

1. The consent holder shall notify the Manager Environmental Regulation, Wellington Regional Council, at least 48 hours prior to commencement of any works, and upon completion of works so that compliance inspections may be arranged.
2. The consent holder shall implement the following procedures if archaeological artefacts or koiwi remains are discovered:
 - (a) work is to cease immediately;
 - (b) the consent holder shall contact the Manager Environmental Regulation, Wellington Regional Council, Rangitaane o Wairarapa, Ngati Kahungunu o Wairarapa and the New Zealand Historic Places Trust immediately;
 - (c) Representatives of Rangitaane o Wairarapa and/or Ngati Kahungunu o Wairarapa and the New Zealand Historic Places Trust are to be given sufficient time to carry out an investigation of the site determine any cultural issues and an appropriate course of action. At the discretion of Manager Environmental Regulation, Wellington Regional Council, this action may include a permanent or temporary cessation of work on the site; and
 - (d) Works shall not recommence until all necessary approvals have been obtained from the New Zealand Historic Places Trust.
3. Prior to works commencing the consent holder shall provide appropriate information to contractors and operational staff regarding the nature of koiwi remains and archaeological artefacts so that if they are uncovered they will be recognised as such.
4. The consent holder shall, within 3 months of completion of the work authorised by this consent, submit a completion certificate prepared by a person suitably qualified in river engineering and stopbank construction which confirms that the work has been undertaken in accordance with the application and all associated plans.
5. Any substantial damage to the stopbank structure arising from causes other than flood events shall be repaired by the consent holder as soon as practicable.
6. The consent holder shall regrass the realigned stopbank and any borrow areas as soon as practicable following the completion of works.
7. During the period of construction, the consent holder, shall to the extent practicable, clear plant, equipment and any hazardous materials from the bed of the Ruamahanga River on receipt of a “Heavy Rain Warning” via the Meteorological Service providing for the possibility of a flood event likely to equal or exceed a 2-year return period.

WAR090066 (27168) - Land use consent to construct, place, use, and maintain a structure (diffuser outfall) in the bed of the Ruamahanga River.

AND

WAR090066 (27169) - Land use consent to disturb the bed of the Ruamahanga River arising from construction and maintenance.

These consents shall be exercised subject to the following conditions together with those conditions specified in Schedule 1: General Conditions.

1. The consent holder shall notify the Manager Environmental Regulation Wellington Regional Council, at least 48 hours prior to commencement of any works, and upon completion of works so that compliance inspections may be arranged.
2. No construction works shall be carried out in the wetted channel of the Ruamahanga River during the trout-spawning period (1 June to 31 August) or within the indigenous fish migration period (1 September to 30 November).
3. The consent holder shall take all practicable steps to minimise sedimentation and increased turbidity of the Ruamahanga River during the construction, implementation and maintenance of the works, including:
 - (a) completing all works in the minimum time practicable; and
 - (b) minimising the area of disturbance at all times.
4. The consent holder shall ensure that:
 - (a) all machinery is thoroughly cleaned of unwanted vegetation (e.g. weeds), seeds or contaminants prior to entering the site;
 - (b) no contaminants (including but not limited to oil, petrol, diesel, hydraulic fluid) shall be released into water from equipment being used for the works;
 - (c) all machinery is regularly maintained in such a manner so as to minimise the potential for leakage of contaminants; and
 - (d) no machinery is cleaned, stored or refuelled within 10 metres of the river.
5. The works shall remain the responsibility of the consent holder and be maintained so that:
 - (a) any erosion, scour or instability of the stream bed that is attributable to the works carried out as part of this consent is remedied by the consent holder; and
 - (b) the structural integrity of the structure authorised by this consent remain sound.
6. During the period of construction, the consent holder, shall to the extent practicable, clear plant, equipment and any hazardous materials from the bed of the Ruamahanga River on receipt of a "Heavy Rain Warning" via the Meteorological Service providing for the possibility of a flood event likely to equal or exceed a 2-year return period.

WAR090066 (27167) - Water permit to permanently divert the Makoura Stream around the new oxidation ponds.

This consent shall be exercised subject to the following conditions together with those conditions specified in Schedule 1: General Conditions.

1. The consent holder shall notify the Manager Environmental Regulation, Wellington Regional Council, at least 48 hours prior to commencement of any works, and upon completion of works so that compliance inspections may be arranged.
2. A riparian management plan consistent with Wellington Regional Council's 'Restoration Planting: A Guide to Planning Restoration Projects in the Wellington Region' shall be prepared. The Plan shall be submitted to the Manager Environmental Regulation, Wellington Regional Council, no less than 2 months prior to this consent being exercised.
3. A minimum riparian buffer of 5 metres surrounding the new stream channel shall be permanently retired from farming and riparian planting undertaken consistent with the conceptual planting diagram attached in Appendix C of the AEE (Boffa Miskell Makoura Stream Diversion: Indicative Planting Plan), unless constrained by embankment and flood protection works.
4. In diverting the bed of Makoura Stream the consent holder shall ensure that:
 - (a) The new channel is sized to ensure that the hydraulic capacity of the channel can contain a 50 year flow event;
 - (b) The new stream bed is consistent with the natural meander and flow environment of the existing channel;
 - (c) The bed of the new channel is constructed in a way that ensures that there is a minimal reduction in the base flow or transport capacity of as result of the diversion;
 - (d) The work necessary to carry out the diversion is done in the dry prior to flows being diverted into the new channel;
 - (e) Water shall be diverted in stages over several hours to allow fish to escape the falling water level in the old stream channel;
 - (f) Fish stranded by the diversion shall be recovered and transferred to the new channel as soon as practicable;
 - (g) Bed disturbance shall not damage any riverbank or cause any flooding or erosion;
 - (h) All reasonable steps shall be taken to minimise the release of sediment during the disturbance;

CONSTRUCTION RELATED CONSENTS

Schedule 3: General conditions applying to:

WAR090066 (27170) - Discharge permit to discharge sediment-laden stormwater to the Ruamahanga River and Makoura Stream arising from bulk earthworks.

WAR090066 (27171) - Discharge permit to discharge any treated wastewater and groundwater to water arising from dewatering processes at various locations.

WAR090066 (27172) - Water permit to divert and take groundwater arising from dewatering processes from cut-off and drainage trenches during construction activities.

Consent Duration

1. These consents shall be for a duration of 7 by border strip irrigation years following the date of their commencement.

Procedures prior to commencement of works

2. The consent holder shall notify the Manager Environmental Regulation, Wellington Regional Council, at least 48 hours prior to commencement of each phase of works, and upon completion of each phase works so that compliance inspections may be arranged.
3. The consent holder shall ensure that a copy of these consents is kept on site at all times and presented to any Wellington Regional Council officer on request.
4. The consent holder shall provide a copy of these consents and any documents relating to these consents, to each operator or contractor undertaking works authorised by these consents, before that operator or contractor starts any works.

Advice Note: It is recommended that the consent holder verbally brief the operators or contractors regarding the conditions of these consents, prior to works commencing.

Procedures subsequent to commencement of works

5. Should any materials from construction or earthworks works enter the Ruamahanga River channel as a result of the works including such materials washed from the site by flood events, the consent holder shall recover those materials to be extent practicable as soon as possible or otherwise ensure they do not cause a hazard.

Review and charges

6. The Wellington Regional Council may review any or all conditions of this consent by giving notice of its intention to do so in accordance with Section 128 of the Resource Management Act 1991 at any time within three months of 31 August for each year for the term of this consent to deal with any adverse effects on the

receiving environment which may arise from the exercise of this consent and which it is appropriate to deal with at a later stage.

5. The Wellington Regional Council shall be entitled to recover from the consent holder the costs of the conduct of any review, calculated in accordance with and limited to that Council's scale of charge in force and applicable at that time pursuant to Section 36 of the Resource Management Act 1991.
6. A resource management charge, set in accordance with Section 36(2) of the Resource Management Act 1991 shall be paid to the Regional Council for the carrying out of its functions in relation to the administration, monitoring and supervision of resource consents and for the execution of its functions under Section 35 (duty to gather information, monitor and keep records) of the Act.

Schedule 4: Specific Resource Consent Conditions

WAR090066 (27170) - Discharge permit to discharge sediment-laden stormwater to the Ruamahanga River and Makoura Stream arising from bulk earthworks.

This consent shall be exercised subject to the following conditions together with those conditions specified in Schedule 3: General Conditions.

1. The discharge shall only be stormwater from earthworks associated with the construction of the Masterton Wastewater Treatment Plant and Disposal System Long-Term Upgrade.
2. The consent holder shall submit to the Manager Environmental Regulation, Wellington Regional Council, at least one month prior to the commencement of construction activities, an Erosion and Sediment Control Plan outlining the construction activities and all practices and procedures to be adopted in the construction of the Masterton Wastewater Treatment Plant and Disposal System Long-Term Upgrade.

The Erosion and Sediment Control Plan (ESCP) shall be prepared in accordance with Wellington Regional Council's Erosion and Sediment Control Guideline 2002, and shall:

- (a) Clearly define the sediment and erosion control measures to be implemented for each stage of the works. The Plan shall include, but not be limited to:
 - (i) a locality map detailing as a minimum the location of roads, property boundaries, surface waterways, the direction of stormwater flows, and the erosion and sediment and control devices;
 - (ii) a detailed programme of works identifying:
 - (a) each stage of construction;
 - (b) an estimate of the maximum area of bare ground (cumulative total) exposed at each stage of construction;
 - (c) the volume of earthworks proposed.
 - (iii) drawings and specifications of all designated erosion and sediment control measures selected from the Erosion and Sediment Control Guidelines, including contingency measures, on-site catchment boundaries, and off-site sources of runoff
 - (iv) a programme for managing exposed areas including progressive stabilisation and minimising areas of exposed soil by:
 - (a) ensuring that any earthworks and/or vegetation clearance should where practicable, be limited to the footprint of the works; and
 - (b) staging of the construction.
 - (v) A schedule outlining the frequency and methods of inspection, monitoring and maintenance of all erosion and sediment control measures.
 - (vi) Details of any proposed monitoring as is adequate to demonstrate the effectiveness of the proposed measures.

3. The Erosion and Sediment Control Plan may be amended at any time during the construction phase. Any amendments shall be:
 - (a) only for the purpose of improving the efficiency of the erosion and sediment control measures and shall not result in reduced discharge quality into the receiving environment;
 - (b) consistent with the conditions of these consents; and
 - (c) submitted in writing to the Manager, Environmental Regulation, Wellington Regional Council, prior to any amendment being implemented.
4. All erosion and sediment control measures shall be installed prior to the commencement of any earthworks, for each stage.
5. All erosion and sediment control measures shall remain the responsibility of the consent holder, and be installed, operated and maintained efficiently and in accordance with Wellington Regional Council's Erosion and Sediment Control Guidelines for the Wellington Region (dated September 2002), and to the satisfaction of the Manager, Environmental Regulation, Wellington Regional Council.
6. The consent holder shall ensure that the site is audited by an appropriately qualified person on a monthly basis to ensure that the erosion and sediment control methods are being maintained in accordance with the Erosion and Sediment Control Plan.
7. The monthly audits of site with respect to the Erosion and Sediment Control Plan as required by condition 6 shall include, but not be limited to, the following information:
 - (a) Date;
 - (b) Name of auditor;
 - (c) Site condition;
 - (d) Weather conditions;
 - (e) Sediment management (identification of areas of potential sediment generation and review of sediment control measures);
 - (f) Runoff control;
 - (g) Condition of sediment control measures, including silt fences, contour drains and sediment retention ponds;
 - (h) Maintenance required and the date this will be completed by; and
 - (i) General comments.

The results of the monthly audits as required by condition 6 shall be forwarded to the Manager Environmental Regulation Wellington Regional Council on request.

WAR090066 (27171) - Discharge permit to discharge any treated wastewater and groundwater to water arising from dewatering processes at various locations.

This consent shall be exercised subject to the following conditions together with those conditions specified in Schedule 3: General Conditions.

Discharge quality and quantity limits

1. The discharge from the dewatering process to Makoura Stream shall not exceed 500 litres per second.
2. The discharge from the dewatering process to Makoura Stream shall not exceed the following standards which are a rolling geometric mean and shall be calculated based on the last 12 consecutive sample results from monitoring undertaken in accordance with condition 8 in Schedule 2: Specific Resource Consent Conditions.

Parameter	Unit	Standard
E. coli	cfu/100 ml	1200
BOD ₅	g/m ³	32
Suspended Solids	g/m ³	42
Total Nitrogen	g/m ³	13
Ammonia-N	g/m ³	7.0
Total Phosphorus	g/m ³	3.3

Notification of dewatering

3. The consent holder shall notify the Manager Environmental Regulation, Wellington Regional Council, no later than 12 hours prior to any pumping of water from the existing ponds to the Makoura Stream. The consent holder shall also notify the Manager Environmental Regulation, Wellington Regional Council, of when pumping ceases, within 24 hours of the pumping ceasing.

Keeping of records

4. The consent holder shall keep a record of the dates, times and volumes of all pumping from the existing wastewater ponds to the Makoura Stream. The records shall be forwarded to the Manager Environmental Regulation, Wellington Regional Council, on request.

WAR090066 (27172) - Water permit to divert and take groundwater arising from dewatering processes from cut-off and drainage trenches during construction activities.

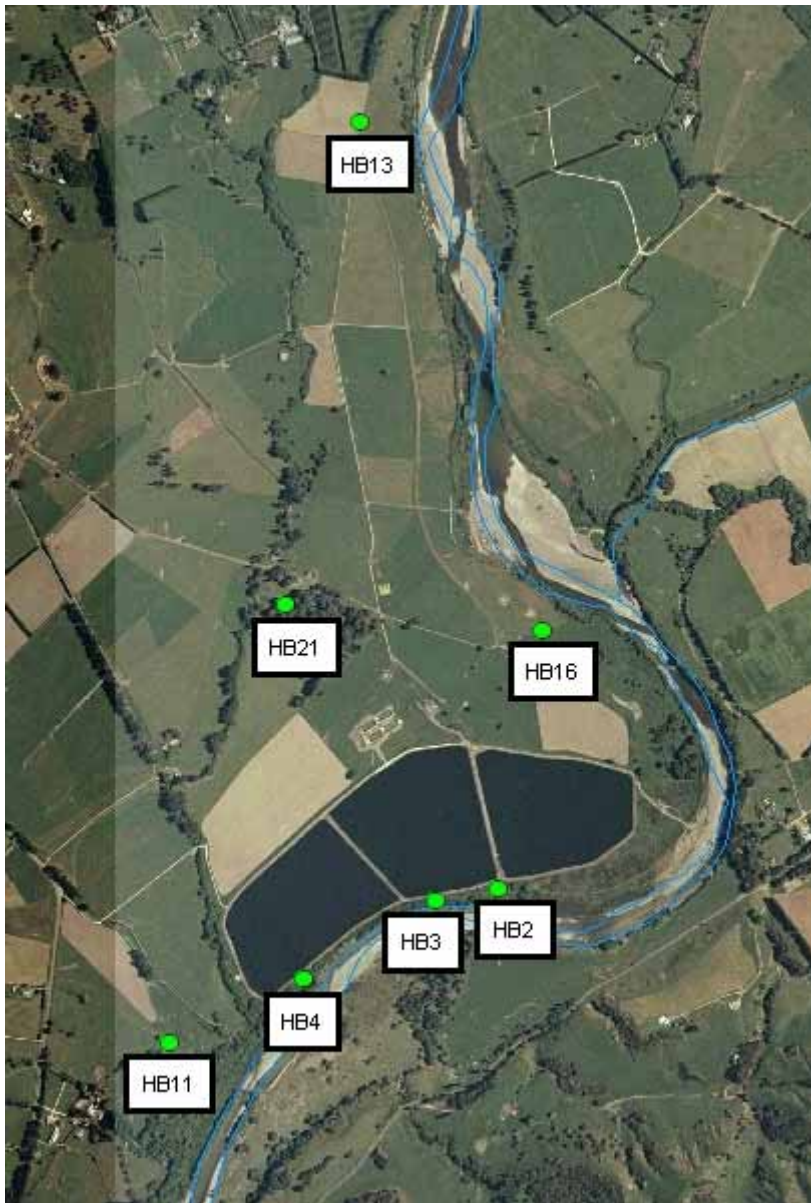
This consent shall be exercised subject to the following conditions together with those conditions specified in Schedule 3: General Conditions.

1. The consent holder shall submit to the Manager Environmental Regulation Wellington Regional Council, at least one month prior to the commencement of construction activities a Dewatering Management Plan outlining the dewatering activities, practices and procedures to be adopted in the construction of the Masterton Wastewater Treatment Plant and Disposal System Long-Term Upgrade.

The dewatering management plan shall include details of:

- (a) the extent of construction activities in relation to the areas where dewatering will be required;
- (b) the types of dewatering methods to be adopted and details of where water will be directed and disposed of;
- (c) a programme including timetable, sequence of events and duration;
- (d) mitigation measures to be adopted; and
- (e) contact details for the person in charge of site works.

Plan 1 – Groundwater Monitoring Bore Locations



Note there are to be additional wells added as follows:

- (a) New well west of HB13 and Makoura Stream
- (b) Two new wells west of HB21 and Makoura Stream

Appendix 1 – Table 31 from the Applicant’s AEE

Table 31 Effluent Dilutions Downstream for Half-Median and Median River Flows

Distance Downstream from Discharge Point (m)	Half Median River Flow (%mixed)	Median River Flow (%mixed)	Nominal Dilution
200	16.4 (55%)	17.6 (59%)	17
300	19.8 (66%)	21.1 (70%)	20
400	22.5 (75%)	25.0 (83%)	24
600	27.3 (91%)	29.1 (97%)	28
800	30.0 (100%)	30.0 (100%)	30