

Consent No. WAR090066

Category:

WAR090066 [31947, 31949]
WAR090066 [31950, 31951, 32284]
WAR090066 [32285]
WAR090066 [32286, 32287]
WAR090066 [32288]
WAR090066 [32289]

Discharge permit – to water
Discharge permit – to land
Discharge permit – to air
Water permit – to divert
Land use - structure
Land use – bed disturbance

Change of schedule 2 condition 2a of WAR090066 [31947, 31949, 31950, 31951]

Pursuant to sections 104B, 108 and 127, and subject to all the relevant provisions of the Resource Management Act 1991 and any regulations made thereunder, a consent in respect of a natural resource is hereby granted to:

Name	Masterton District Council	
Address	Masterton Martinborough Road, Masterton	
Duration of consent	Effective: 8 December 2009 Variation to condition 2A Effective: 18 December 2013	Expires: 8 December 2034
Purpose for which right is granted	To change schedule 2 condition 2a WAR090066 for the discharge of wastewater and stormwater to water, specifically to the Ruamahanga River and the Makoura Stream, and to land via an irrigation system.	
Location	Masterton wastewater treatment plant at or about map reference NZMS 260: T26: 2735631 – 6020500	
Legal description of land	The Ruamahanga River adjoining Part Lot 5 DP 2412; The Makoura Stream adjoining Lot 1 DP 4333; Part Lot 1 & 2 DP 9928; Lots 1, 2, 3, 4 & 5 DP 351720; comprised in CT's WN11B/201; WN 48B/596; 212321, 212322, 212323, 212324, & 212325; Lot 1 DP 4333 and Part Lot 1 Application Plan 2698; Part Lots 1 & 2 DP 9928; Lots 1, 2, 4 & 5 DP 351720 comprised in CT's WN11B/301; 212321, 212324, & 212325; Part Lot 3 DP 5669; Lots 2&3 DP351720; Lots 1 & 3 DP 358970 comprised in CT's WN291/82; 212322; 2123232; 240139; 240141; Part Lots 4&5 DP 2412 comprised in CT's WN300/245; Part Lot 5 DP 2412; Part's Taumatakihuka B3 & B4 Blocks; Part Old River Bed SO 27745	
Conditions	Schedule 1 & 2	

For and on behalf of
WELLINGTON REGIONAL COUNCIL

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Team Leader, Environmental Regulation

Date:

Conditions to Resource Consent WAR090066 [31947, 31949, 31950, 31951, 32284, 32285, 32286, 32287, 32288, 32289]

Schedule 1: General Conditions applying to

WAR090066 [31947] - Discharge permit to discharge treated wastewater (effluent) to the Ruamahanga River.

WAR090066 [31949] - Discharge permit to discharge stormwater runoff from the wastewater irrigation land to the Ruamahanga River and Makoura Stream.

WAR090066 [31950] - Discharge permit to discharge treated wastewater (effluent) to land via an irrigation system.

WAR090066 [31951] - 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 [32284] - Discharge permit to discharge wastewater sludge and residual liquid to land from the sludge dewatering process and sludge landfill.

WAR090066 [32285] - 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 [32286] - Water permit to divert surface water in the Ruamahanga River during flood events by upgrading existing stopbanks.

WAR090066 [32287] - Water permit to permanently divert the Makoura Stream around the new oxidation ponds.

WAR090066 [32288] - 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 [32289] - Land use consent to construct, place, use, and maintain a structure (diffuser outfall) in the bed of the Ruamahanga River.

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

- 2¹. 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 Assessment of Environmental Effects (AEE), except where 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) and;

¹ Condition amended under section 127 of the Resource Management Act 1991 on 29 April 2013

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- The consent application to change or cancel resource consent conditions received on 13 April 2013; and
- Further information received on 30 April 2013 and 1 and 6 May 2013.

Where there may be contradiction or inconsistencies between the application and further information provided by the applicant, the most recent information applies. In addition, where there may be inconsistencies between information provided by the applicant and conditions of the consent, the conditions apply.

Note: Any change from the location, design concepts and parameters, implementation and/or operation may require a new resource consent or a change of consent conditions pursuant to section 127 of the Resource Management Act 1991.

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.

Continued Conditions to Resource Consent WAR090066 [31947, 31949, 31950, 31951, 32284, 32285, 32286, 32287, 32288, 32289]

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 stormwater inflows and groundwater 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 nine months from commencement of the consent, the consent holder shall complete an "Operations and Management Plan" which sets out measures to ensure the operation of the wastewater treatment system and discharge to land system, in a manner that will not breach any consent condition. 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 or such other land disposal system as may be adopted, infiltration beds for the wipe off drains, and monitoring sites (provided that if the consent holder decides to proceed with a centre pivot system the information regarding the land disposal system need not be provided if that system is subject to separate consents);
 - aa) a discharge protocol as described in condition 3A, Schedule 2.
 - b) operational management and control of the land discharge system including application locations, application depths, application return periods, and soil moisture monitoring;
 - c) onsite 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;
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- 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.

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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 and (if the discharge to land border strip system proceeds) on a per border strip basis;
 - d) a summary of any stormwater inflow and groundwater infiltration reduction measures implemented in the preceding 12 months and a summary of planned measures for the coming 12 months;
 - e) a summary of occasions where the discharge protocol (condition 3A, Schedule 2) was not met and reasons/causes for any variation from the discharge protocol;
 - f) commentary on the overall compliance with the conditions of these consents;
 - g) any reasons for non-compliance or difficulties in achieving compliance with the conditions of these consents;
 - h) any recommendations for alterations or additions to the monitoring programmes; and
 - i) 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;

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- (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.
 - c) to address any non-compliance with the surface water quality receiving environment standards set in conditions 20, 20A and 20B, Schedule 2, which result in adverse effects on the environment.

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.

Continued Conditions to Resource Consent WAR090066 [31947, 31949, 31950, 31951, 32284, 32285, 32286, 32287, 32288, 32289]

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 three 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 three 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.
23. The Masterton District Council (MDC) shall within 12 months of the commencement of the consents, in consultation with Kahungunu ki Wairarapa and Rangitane o Wairarapa, develop a process for Kahungunu ki Wairarapa and Rangitane o Wairarapa to provide advice to MDC about the impacts of its sewage treatment scheme and disposal system on the mauri of the Ruamahanga river and on the relationship of Wairarapa Maori and their culture and traditions to the ancestral waterway. This process shall also provide for consultation with Kahungunu ki Wairarapa and Rangitane o Wairarapa in relation to any potential changes to the scheme and in relation to the reviews required by condition (24) below.
24. During the 1st year following commencement of these consents and thereafter, during the 8th and 16th years following commissioning of the land treatment component of the scheme (whether border strip or other treatment such as centre pivot) the MDC shall carry out a review of options for additional discharge to land, including the option of eliminating all but emergency discharges to the river.

The review shall consider:

- Any options to further reduce or eliminate discharges to the river. (whether by way of discharge to MDC land or private land)
 - the effects of the discharge to river on the relationship of Maori to the river
 - the views of tangata whenua as to the benefits of options to further reduce discharge to the river
 - any environmental cost and benefits of such options (including the relationship of Maori to the river and benefits of beneficial reuse of waste water)
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- the conclusions of any prior review required by this consent and any matters which have changed since that review

The review shall also consider:

- the effectiveness and effects of the existing land treatment scheme
- the effects of the discharge to the river on the instream values of the river (including values for trout fishing and other recreation)
- monitoring results upstream and downstream of the river discharge
- any practical or technical risks associated with such options
- estimates of the economic costs and benefits of such options
- the ability of the community to afford such options where the additional costs are significantly greater than the costs of the consented scheme
- possible mechanisms to minimise the costs to the MDC of such options
- the results of any integrated catchment management study
- progress by the Regional Council in reducing other sources of contamination to the river
- the results of the previous technical review and any matters which have changed since that review
- any relevant objective, policies or standards in the Regional Policy Statement or any regional plan
- any other relevant matter

To assist it with considering such options, the MDC will commission a technical review carried out by appropriately qualified persons. The technical review will be an examination of additional options but need not include a detailed assessment of environmental effects or costs and benefits.

The technical review and any officer recommendations shall be presented to the MDC for its consideration. MDC, after considering the technical review and the matters set out above, shall decide whether to further investigate or pursue any particular option. In carrying out its review and before reaching its decision, the MDC will consult with the proponents of any land discharge options, kaitiaki, the Department of Conservation, Fish and Game, Public Health, and the Wellington Regional Council and any other interest groups. Sustainable Wairarapa is covered by any other interest groups

A copy of the technical review, any other reports to the MDC, and the MDC's decision shall be provided to the Wellington Regional Council and to any persons or parties who have been consulted as part of the review exercise.

Advice notes: For the purposes of this condition, the MDC's review of potential options for greater land based discharge than is required by the conditions of these consents which is to be carried out during the first quarter of 2010 (including options of centre pivot irrigation on the Homebush site and nearby land) shall be deemed to be the 1st year review. The scope of each subsequent review, including the technical review component, will be guided by the conclusions of any previous review and will focus on matters which have changed since that previous review.

This condition does not fetter the MDC's discretion under the Local Government Act.

25. The Wellington Regional Council may during the 10th and 17th years, following commissioning of the land disposal component of the sewage system, serve notice on the consent holder under section 128 (1) of the Resource Management Act 1991 of its intention to review the conditions of this consent in terms of their adequacy in avoiding, remedying or mitigating the effects of the activities authorised by this consent on the relationship of Maori to the waters of the Ruamahanga River and may, if appropriate to achieve the purpose and principles of the Resource Management Act, amend those conditions or add further conditions.

Advice note: Nothing in this condition limits the ability of the consent holder to oppose such a review and/or any amendments proposed in such a review.

Schedule 2: Specific Resource Consent Conditions

WAR090066 [31947] – Discharge permit to discharge treated wastewater (effluent) to the Ruamahanga River.

WAR090066 [31949] - Discharge permit to discharge stormwater runoff from the wastewater irrigation land to the Ruamahanga River and Makoura Stream.

WAR090066 [31950] - Discharge permit to discharge treated wastewater (effluent) to land via an irrigation system.

WAR090066 [31951] - 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 or such other land disposal system as may be consented, 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 700 litres/second.

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

- 2A². The full land discharge area (whether this be the border strip system or such other land disposal system as may be consented) shall be operational ~~within five years of the commencement of these consents~~ no later than 31 October 2015.
- 2B. For the purposes of Section 125(1) of the Resource Management Act 1991, consent WAR090066 (27162) shall not lapse for a period of 15 years from the commencement of these consents.

Advice Note: If the consent holder implements centre pivot irrigation instead of border strip irrigation this consent will still authorise a reversion to border strip irrigation.

3. Following the commissioning of the diffuser to the Ruamahanga River, treated wastewater shall only 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 6.15m³/s and less than 300m³/s;
 - b) following the full land discharge area becoming operational (whether this be the border strip system or such other land disposal system as may be consented):
 - (i) during 1 November to 30 April inclusive, when the mean hourly river flow at Wardell's Bridge gauge station is greater than 12.3m³/s and less than 300m³/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 6.15m³/s and less than 300m³/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

² Condition amended under section 127 of the Resource Management Act 1991 on 18 December 2013

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- d) at all times up to a maximum instantaneous discharge rate of 1200 l/s.

Discharge protocol

- 3A. The operation and management plan (condition 10, Schedule 1) shall set out a discharge protocol to be followed by the operator to manage the occurrence, duration, and rates of discharge to the Ruamahanga River. The discharges shall so far as is reasonably practicable (within the constraints of the proposed storage, required pond residence times and consented and available discharge to land at the Homebush site) be operated in accordance with this protocol.

The protocol shall include:

- a) Measures to minimise the occurrence and/or duration of winter (May to October) discharges at flows below 12.3m³/s;
- b) Measures to, so far as is practicable, maintain the minimum river water to wastewater ratio above 40:1 during winter (May to October) when flows are below 12.3m³/s;
- c) Measures to, so far as is practicable, maintain the minimum river water to wastewater ratio above 50:1 when flows are between 12.3m³/s and 15m³/s and above 40:1 when flows are between 15m³/s and 20m³/s;
- d) Measures to maintain the minimum river water to wastewater ratio above 30:1 at all times;
- e) Measures to, so far as it is practicable, minimise the occurrence, and/or duration of discharges of wastewater to the river during the river flow recession period following river freshwater during summer (November to April) as flows recede from 20m³/s;
- f) Measures to, so far as is practicable, limit the occurrence of discharges of wastewater to fresh events which are predicted to exceed 6 hours duration, based on the Mt Bruce flow recorder early warning. A "fresh event" is any event which exceeds the discharge flow threshold specified in condition 3(b), Schedule 2.

Records shall be maintained of all instances where the actual occurrence, duration, or rate of discharge of wastewater to the Ruamahanga River does not follow the discharge protocol set out in Condition 3A and the causes for these occurrences shall be identified. These records shall be provided to the Manager, Environmental Regulation, Wellington Regional Council, upon request. A summary of these records shall be documented in the annual monitoring report required in Condition 13, Schedule 1.

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.

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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.
- 5A A higher frequency of sampling (fortnightly) shall be undertaken for a period of one continuous year once the new ponds are commissioned for the following parameters: BOD₅, filtered BOD, suspended solids, dissolved reactive phosphorus, nitrate nitrogen, ammonia-nitrogen, Escherichia coli. (Note: Only monthly monitoring data (the first sample in each month) shall be used to assess compliance against conditions 4 and 5. The additional data is to be used for pond performance comparison with historical data.)
- 5B Wellington Regional Council may, by written notice given one month before the expiry of the one year period in condition 5A, require the consent holder to continue the higher frequency of sampling (fortnightly) under condition 5A for an additional 6 months if there is significant variance in the results, that is not consistent with historical seasonal performance of the existing ponds.

Table 1: Wastewater discharge standards (see conditions 4 and 5)

Parameter	Condition 4 standards	Condition 5 standards		
		Compliance standard	Sampling frequency/Number of samples	Compliance (Exceedances over period)
BOD ₅ (g/m ³)	32	42	Monthly samples per 12 months period	No more than 3 over any consecutive 12 samples
Filtered BOD (g/m ³)		28	Monthly samples per 12 months period	No more than 3 over any consecutive 12 samples
Suspended solids (g/m ³)	42	91	Monthly samples per 12 months period	No more than 3 over any consecutive 12 samples
Total phosphorus (g/m ³)	3.3			
Dissolved reactive phosphorus (g/m ³)		4.0	Monthly samples per 12 months period	No more than 3 over any consecutive 12 samples
Total Nitrogen (g/m ³)	13	20	Monthly samples per 12 months period	No more than 3 over any consecutive 12 samples
Nitrate Nitrogen (g/m ³)		7.	Monthly samples per 12 months period	No more than 3 over any consecutive 12 samples
Nitrite Nitrogen (g/m ³)		2.0	Monthly samples per 12 months period	No more than 3 over any consecutive 12 samples
Ammonia-Nitrogen (g/m ³)	2.0 (summer)	14	Monthly samples per 6 months period	No more than 2 over any consecutive 6 samples
Ammonia-Nitrogen (g/m ³)	7.0 (winter)	16	Monthly samples per 6 months period	No more than 2 over any consecutive 6 samples
<i>Escherichia coli</i> cfu/100 mL)	1200 (summer)	330	Monthly samples per 6 months period	No more than 5 over any consecutive 6 samples
<i>Escherichia coli</i> cfu/100 mL)	1200 (summer)	1800	Monthly samples per 6 months period	No more than 1 over any consecutive 6 samples
<i>Escherichia coli</i> (cfu/100 mL)	1200 (winter)	1,000	Monthly samples per 6 months period	No more than 5 over any consecutive 6 samples

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WAR090066 [31947, 31949, 31950, 31951]**

Parameter	Condition 4 standards	Condition 5 standards		
		Compliance standard	Sampling frequency/Number of samples	Compliance (Exceedances over period)
<i>Escherichia coli</i> (cfu100 mL)	1200 (winter)	4,000 (MDC)	Monthly samples per 6 months period	No more than 1 over any consecutive 6 samples
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.

Mixing zone verification following commissioning of diffuser to the Ruamahanga River

- 5C. Within 12 months of the commissioning of the diffuser to the Ruamahanga River, the consent holder shall conduct in-situ investigations by an appropriately qualified and experienced person upstream of the discharge and at 300 metres and 800 metres downstream of the diffuser, to confirm the extent of mixing and dilution at median and half median flow, as listed in Table 31 of the AEE attached as Appendix I to these consents.

Ternent water supply

- 6³. Following the commissioning of the diffuser to the Ruamahanga River, the consent holder shall either:
 - 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 or;
 - implement a mutually acceptable alternative solution with the landowner (Roger Ternent) that provides for continuity of supply of stock water.

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.

³ Condition amended under section 127 of the Resource Management Act 1991 on 29 April 2013

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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, other than visual observations of flow conditions in all drains to the Makoura Stream that are required under condition 11, Schedule 2.

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 and at the detection limits and frequencies set in Table 2A.

Table 2A: Wastewater discharge monitoring prior to commissioning of the diffuser to the Ruamahanga River

Parameter	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
Total 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
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

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 and at the detection limits and frequencies set in Table 2B.

Table 2B: Wastewater discharge monitoring following the commissioning of the diffuser to the Ruamahanga River

Parameter	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

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Parameter	Measurement unit and detection limit	Frequency
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

Surface water quality and biological monitoring – Makoura Stream

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 3A. The monitoring frequency shall be quarterly unless otherwise required in condition 10A. 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.
- 10A. Following the commissioning of the full discharge to land system, the consent holder shall monitor at a two monthly frequency the locations identified in condition 10 and parameters and detection limits set in Table 3A for a period of three years to assess the effects of the discharge to land system on the Makoura Stream.

Table 3A: Surface water monitoring parameters in the Makoura Stream

Parameter	Measurement unit and detection limit
<i>Escherichia coli</i>	10 cfu/100 mL
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
Parameter	Measurement unit and detection limit

Water temperature	0.1 °C
Turbidity	0.05 NTU
Dissolved Oxygen (absolute and percentage saturation)	0.1 g/m ³ and 1 % saturation
pH	0.1 pH
Electrical conductivity	0.1 µS/cm

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 ± 10%. Visual observations of flow conditions in all drains to the Makoura Stream from the site shall also be recorded.

11A. From the commencement of these consents until their expiry during the period 1 February to 30 April, and following at least a two week period without a significant flood event, the consent holder shall have an appropriately experienced and qualified freshwater ecologist undertake macroinvertebrate sampling, macrophyte cover and stream physical habitat assessment at the frequency outlined below:

- Once prior to the commissioning of the discharge to land system but following the commissioning of the diffuser to the Ruamahanga River;
- Once after the commissioning of the discharge to land system; and
- Every three years thereafter.

The exact locations of the assessment and sampling and protocols for macrophyte cover and stream physical habitat assessments shall be to the satisfaction of the Manager, Environmental Regulation, Wellington Regional Council, and shall be determined to ensure that as far as practicable, both locations present similar/comparable physical stream habitat features, including local stream channel morphology, water velocity, stream bed substrate (size and composition) and shading.

The macroinvertebrate sampling shall follow Protocols C2 ("soft-bottomed, semi-quantitative") and P2 from the Ministry for the Environment's report on protocols for sampling macroinvertebrates in wadeable streams (Stark et al 2001).

This shall involve:

- a) Use of long-handled D-net and sieve fitted with 0.5mm mesh to collect macroinvertebrate samples from an area of approximately 3m³ from each of four replicate samples from each of these two sites as specified by protocols;
- b) Use of a 200 individual fixed count method, with a scan for rare taxa for each macroinvertebrate samples;
- c) Enumeration of the results as taxa richness, MCI, Semi Quantitative Macroinvertebrate Community Index (SQMCI), %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 August for the year the results are obtained.

Surface water quality and biological monitoring – Ruamahanga River

12. From the commencement of these consents until the commissioning of the diffuser to the Ruamahanga River, the consent holder shall undertake monitoring of the Ruamahanga River for the parameters and at the detection limits set in Table 3B under condition 12A. The monitoring frequency shall be quarterly. The locations of the sampling shall be:

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- 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) at Wardell's Bridge (at or about Map Reference NZMS 260 T26:346-190).

12A. From the commissioning of the diffuser to the Ruamahanga River, the consent holder shall undertake monitoring of the Ruamahanga River for the parameters and at the detection limits set in Table 3B. The monitoring frequency shall be monthly on the first Monday of each calendar month, or if the river is in flood (defined as at or above 37m³/s) as soon thereafter as practicable. 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);
- b) 300 m downstream of the downstream end of the diffuser (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).

The monitoring required at location (b) 300 m downstream of the downstream end of the diffuser will occur for the first three years following the commissioning of the diffuser, and for one full year (i.e. 12 samples over 12 consecutive months) every five years thereafter. In the event that the monitoring at the 300m site identifies adverse effects, the Regional Council may request the applicant to continue monthly monitoring at that point and may if appropriate review the monitoring required in accordance with condition 20, Schedule 1.

The consent holder shall ensure that dissolved oxygen monitoring results are collected prior to 9am on the day of sampling when the flow in the Ruamahanga River is below 12.3 m³/second. If this cannot be achieved for practical reasons on the day of sampling, separate measurements shall be taken as soon as practicable following the completion of sampling.

Table 3B: Surface water monitoring parameters in the Ruamahanga River

Parameter	Measurement unit and detection limit
<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 3B 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.

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) 300m 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:

- e) 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;
- f) 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
- g) 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:

- h) collection of 5 replicate 0.1m² Surber samples at random within a 20m section of riffle habitat at each sampling site;
- i) 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
- j) 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 August each year.

Groundwater quality monitoring

14. From the period six months prior to the commencement of the discharge to land and until three years after the commissioning of the full discharge to land system the consent holder shall undertake monitoring of the groundwater for the parameters and at the detection limits set in Table 4.

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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.

14A. From the period of three years after the commissioning of the full discharge to land system 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 quarterly. 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

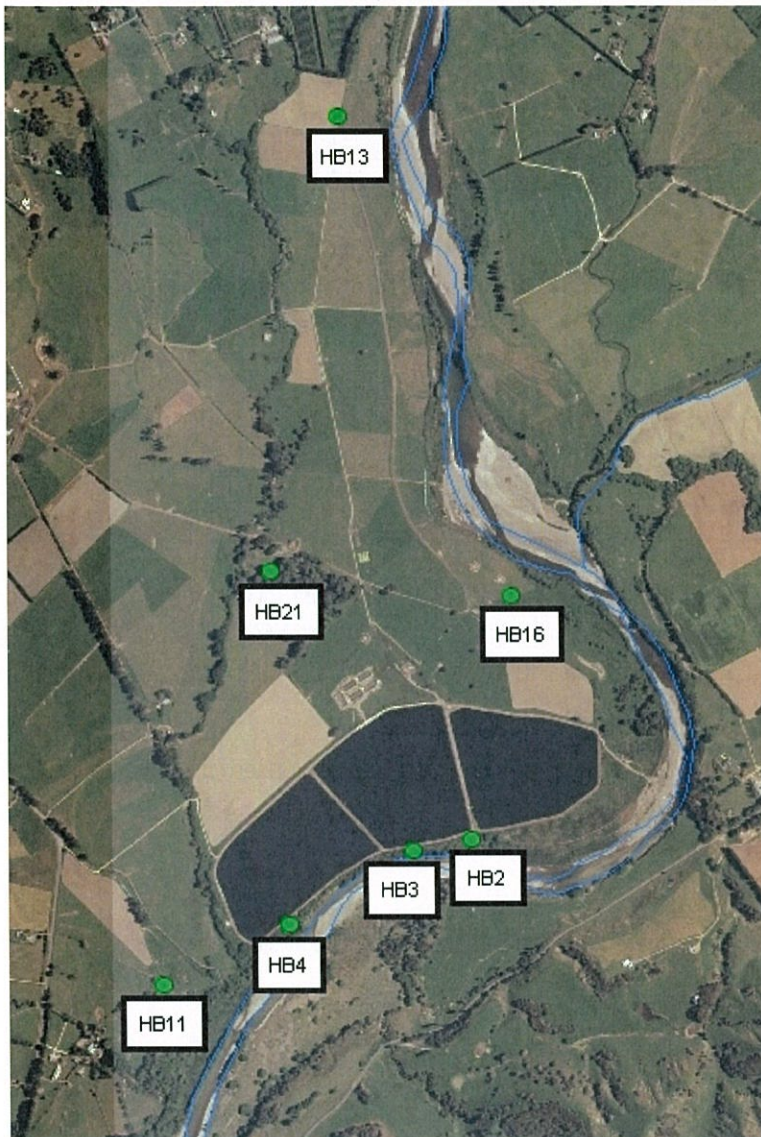
The final locations of wells (f) and (i) shall be to the satisfaction of Manager, Environmental Regulation, Wellington Regional Council. In the event that the quarterly monitoring identifies adverse effects, the Regional Council may request the applicant to undertake two monthly monitoring and may if appropriate review the monitoring required in accordance with condition 20, Schedule 1.

Table 4: Groundwater monitoring parameters

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
Soluble iron	0.001 g/m ³
pH	0.1
Electrical conductivity	0.1 µS/cm
<i>Escherichia coli</i>	10 cfu/100 mL

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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

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

- 16.4. 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 of July of each year.

⁴ Condition amended under section 127 of the Resource Management Act 1991 on 29 April 2013

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Testing shall be from irrigation zones K and L as identified on the Overall Site Wall Chart (rev 1 Nov. 2010) prepared by Beca and Titled, 'Masterton Waste Water Treatment Plant Upgrade,' each zone shall be divided into three separate areas from which a representative composite sample shall be taken and the following parameters reported on:

- a) Infiltration capacity (measured under saturated conditions in situ) at two sites within the three separate areas of each irrigation zone 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 irrigation zone as nominated above at sampling depths of 0-75 mm and 75-150mm. Monitoring shall start prior to the commencement of the land discharges and thereafter annually.
- c) In conjunction with the testing above, the consent holder shall test for elements Total As, Cd, Co, Cr, Cu, Fe, Hg, Mn, Ni, Pb and Zn in each irrigation zone as nominated above within the 0-75mm soil depth. Monitoring shall start prior to the commencement of the land discharges and thereafter every five years.

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.

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 300m 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 cause any of the following effects in the Ruamahanga River 300m

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downstream of the diffuser location (at or about Map Reference NZMS 260 T26:353-197) or at Wardells Bridge (at or about Map Reference NZMS 260 T26: 346-190):

- a) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
- b) any conspicuous change in the colour of the river;
- c)
 - (i) a reduction in horizontal visibility greater than 33% at the 300m monitoring site and 20% at the Wardells monitoring site (black disc measurement) compared with upstream of the discharge following the commissioning of the full discharge to land system.
 - (ii) a reduction in horizontal visibility greater than 33% at the 300m monitoring site and the Wardells monitoring site (black disc measurement) compared with upstream of the discharge following the commissioning of the diffuser but prior to the commissioning of the full discharge to land system (interim period). Any black disc measurements taken during the interim period when the Ruamahanga River is between 6.15 m³/second and 12.3 m³/second (as provided for in condition 3(a), Schedule 2) will not be considered for compliance purposes.
- d) any emission of objectionable odour;
- e) the rendering of fresh water unsuitable for consumption by farm animals;
- f) any significant adverse effects on aquatic life;
- g) the QMCI to be reduced by more than 1 point compared with upstream of the discharge;
- h) the maximum cover of the bed by periphyton as filamentous growths (more than 2cm long) to exceed 30%;
- i) the maximum cover of the bed by periphyton as diatom or cyanobacteria mats (more than 0.3cm thick) to exceed 60%;
- j) the biomass of periphyton as filamentous growths or mats on the bed to exceed 120mg chlorophyll a/m² over a representative reach;
- k) the concentration of total ammonia-nitrogen to exceed 0.9 g/m³; and
- l) the dissolved oxygen to be below 80% saturation.

Advice notes:

- 1 The above condition 20(h) to 20(l) shall be considered to be breached only when:
 - (i) the concentration or any parameter recorded or measured at the downstream site is above the standards set in condition 20(h) to 20(l); and
 - (ii) the increase between the upstream and downstream concentration (calculated in Formula 1 below) is equal to or exceeds 20%.

Formula 1: Percentage of increase = $100 \times [(downstream\ result - upstream\ result)/upstream\ result]$

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- 20A. In the event of horizontal visibility (black disc measurement) exceeding 20% but being less than 33% at the 300m site at any time, or exceeding 33% at any time at either downstream site, the consent holder shall investigate the reasons for the recorded measurements and include an appropriate analysis with the annual monitoring report required under condition 13, Schedule 1.
- 20B. Following the commissioning of the diffuser to the Ruamahanga River the treated wastewater discharged to land shall not cause any of the following effects in the Makoura Stream (at or about Map Reference NZMS 260 T26:353-197):
- a) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
 - b) any conspicuous change in the colour of the river;
 - c) any emission of objectionable odour;
 - d) the rendering of fresh water unsuitable for consumption by farm animals;
 - e) any significant adverse effects on aquatic life;
 - f) the concentration of total ammonia-nitrogen to exceed 0.9 g/m³; and
 - g) the dissolved oxygen to be below 80% saturation.

Land discharge requirements

21. The discharge of treated wastewater to land shall not result in the following:
- a) 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 or such other land disposal system as may be consented within 50m of any neighbouring property boundary.

Advice Notes:

1. Compliance with (b) above shall be determined by a volumetric calculation over the area potentially irrigated.
 2. 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.
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3. 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:

- 1. 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.
- 2. 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;

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- 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.
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WAR090066 [32284] - 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

15. This consent authorises the landfilling of sludge to the area identified as "Sludge Landfill" on Proposed sludge Landfill Plan, Proposed Sludge Landfill Cross Sections, Typical Section – Sludge Landfill embankment prepared by Hopper Construction Ltd dated 25/07/2013. (~~0.7ha~~)⁵ 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;

⁵ Condition amended under section 127 of the Resource Management Act 1991 on 23 September 2013

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Continued Conditions to Resource Consent WAR090066 [32284]

- 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 25mm 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 [32285] - 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.

Continued Conditions to Resource Consent WAR090066 [32287]

WAR090066 [32287] - 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 two 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;

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WAR090066 [32286] - 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, Rangitane o Wairarapa, Kahungunu ki Wairarapa and the New Zealand Historic Places Trust immediately;
 - c) Representatives of Rangitane o Wairarapa and/or Kahungunu ki 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.

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Continued Conditions to Resource Consent WAR090066 [32288] & [32289]

WAR090066 [32288] - Land use consent to construct, place, use, and maintain a structure (diffuser outfall) in the bed of the Ruamahanga River; and

WAR090066 [32289] - 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.

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