

**General Condition Schedule APP-2010014267.02 – Woodville Wastewater Treatment  
Plant General Conditions Applying to all Consents  
Following discussions – 12 May – v03**

<b>Definitions</b>	
Emergency Response Plan	A plan that outlines actions that would be followed in response to emergency situations such as extreme weather events (such as flooding) and natural disasters (such as earthquakes).
Established / establishment (in the context of the wetlands)	The wetlands will be considered established when the wetland plants within the wetlands have reached two years of age.
Low flow	At least one week below half median flow.
Operational (in the context of the wetlands)	The wetlands are considered to be operational once the bulk earthworks are completed, weirs are constructed and can receive wastewater without compromising the wetlands' structural integrity.
Planting season	Refers to the optimal planting period for wetland species and is defined as the months of May and June.
Significant flood event	Significant flood event: an instantaneous river flow exceeding three times the median flow, defined as 2,016l/s as measured at "Manga-atua at Hopelands Road.
Wetland treatment system	This refers to the system comprising both the surface flow (SF) and vertical flow (VF) wetlands.
<b>ADVICE NOTE:</b> For the avoidance of doubt, the wetland treatment system is separate from the Wastewater Treatment Plant Upgrade.	

**Descriptive Specification**

- G1. The activity authorised by these consents must be undertaken in general accordance with the concepts, parameters, drawings, specifications, statement of intent, proposed mitigation measures and other information supplied in the application received on 27 August 2018 and supplementary documents received:
- a. On 20 December 2018, being a response to the s92 further information request of September 2018; and
  - b. On 23 March 2021, being a response to the s92 further information request of April 2019.

on the property legally described as Lot 1 DP 22349, Lot 6 DP 28374 (CT HB Y2/131) and Lot 1 DP 26734, Sec 31 Blk IV Woodville SD, Woodville Wastewater Treatment Plant, between Station Street and Troup Road West at approximate map reference NZTopo50 BM35:421-301 (hereafter referred to as the property).

Where the application is inconsistent with the requirements of the conditions, the conditions will prevail.

- G2. The wastewater discharge authorised by these consents must be limited to:
- a. A 12 month rolling median daily (midnight to midnight) discharge volume no greater than 2,000 cubic metres per day (m<sup>3</sup>/day);
  - b. A 12 month rolling 95<sup>th</sup> percentile daily (midnight to midnight) discharge volume no greater than 4,300 m<sup>3</sup>/day.

**ADVICE NOTE:** For the purposes of compliance, 12 month rolling refers to any continuous 12 month period. The median (or 95<sup>th</sup> percentile) statistic will then be calculated on the 365 individual daily discharge volumes for that period. That is then compared to the discharge threshold to see if it is exceeded.

#### *Pre-development assurance*

#### **WWTP Operations and Management Plan**

- G3. **Within one month** of commencement of these consents, the Consent Holder must prepare a plan detailing the final plant Structured Optimisation Programme (SOP) for the Woodville Wastewater Treatment Plant and submit it to Manawatū-Whanganui Regional Council's (MWRC) Regulatory Manager. The SOP plan must specify a suitably qualified operations technician who will implement the structured optimisation programme. The SOP plan must describe the measures and steps required to optimise the treatment plant components so that the treatment plant is able to meet the conditions of this consent and must specify a stepwise optimisation process of the Chemical dosing system, lamella clarifier operation (or alternative), and UV disinfection, which must be implemented as part of the optimisation programme and within the timeframes stipulated in the plan. The Treatment Plant will be optimised in accordance with the SOP within 12 months of commencement of these consents. For any additional upgrades, such as micro-filtration, the SOP shall be updated within one month of installation of new equipment with optimisation to be achieved within 12 months.
- G4. **Within six months** of commencement of these consents the Consent Holder must prepare, and forward to MWRC's Regulatory Manager or their agent, an Operation and Management Plan (OMP) for certification. The OMP must be prepared by a person

that the Regulatory Manager deems suitably qualified.<sup>1</sup> The OMP must include but not be limited to:

- a. Stating the treated wastewater quality to be met by these conditions;
- b. A description of the entire treatment system facility including a description of each of the respective system components and the type of flocculant to be used, if any;
- c. Plans of the treatment facility, including a revised **Plan LOC-000022228** showing final discharge and monitoring locations and the corresponding map references;
- d. A description of routine inspection and maintenance procedures to be undertaken with respect to the Treatment Plant and discharge components, including dates and times or approximate frequencies when inspections and maintenance is to be undertaken;
- e. Records of the commissioning and optimisation programme (in accordance with **condition G3**)
- f. Procedures for recording routine maintenance and all repairs that are undertaken;
- g. A description of monitoring, including methodology, locations and frequency, and record keeping of that monitoring, including a map showing details of monitoring locations;
- h. Details of the roles of personnel or organisations responsible for undertaking monitoring, including their contact details;
- i. Procedures for reporting for compliance purposes, including the dates when particular reports are to be completed, when they are to be provided to other parties and who those parties are;
- j. A description of procedures for reporting non-compliances to MWRC;
- k. Procedures for reviewing and updating the Operations and Management Plan;
- l. An Odour Operation and Management Plan (OOMP) prepared in accordance with **condition A1**; and
- m. Procedures and actions to be taken when monitored parameters exceed acceptable levels. This includes actions to be taken when DO levels reduce below those specified in **condition A6** of the discharge to air consent;
- n. An Emergency Response Plan; and
- o. **Actions required to manage nuisance pests and wildlife at the site.**

**ADVICE NOTE:** Operational Management Plan (OMP) means at any time, the latest version of the OMP prepared under condition G4, including any changes or updates to the OMP made by the Consent holder, including under **condition G5**.

- G5. Clauses (f), (k), and (l) of **condition G4** must be technically certified by the MWRC's Regulatory Manager or their agent. The Consent Holder may, on an interim basis, implement those parts of the OMP if the Consent holder is not advised within **20**

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<sup>1</sup> A suitably qualified person may be a member of TDC staff or an external provider

**working days** of MWRC's acknowledgment of receipt of the OMP that amendments are required, pursuant to **conditions G6** or **G9**.

- G6. If MWRC's Regulatory Manager advises the Consent Holder that clauses (f), (k) and (l) do not achieve technical certification, the Consent Holder must amend those parts of the OMP and re-submit the OMP to the Regulatory Manager within **20 working days** of being advised of the reasons why technical certification was withheld.
- G7. The Consent Holder must undertake all activities authorised by these consents in accordance with the certified OMP (certified as required by the conditions of these consents) and any amendments to the OMP in accordance with these conditions.
- G8. The Consent Holder must ensure that a copy of the OMP, including any amendments, is kept onsite. The OMP and any copy kept onsite must be amended within 5 working days of any amendments being made to the design, operation or management of the treatment system addressed by the OMP. Subject to **condition G9** below, any updates to the OMP must be forwarded to MWRC within two weeks of an amendment to the OMP.
- G9. Any amendments to the OMP that relate to clauses (f), (k) and (l) of **condition G5** must be certified by MWRC's Regulatory Manager or their agent, before the amendments are implemented.

**ADVICE NOTE:** If, within **20 working days** of acknowledgement of receipt of the amended OMP, the Consent Holder is not advised to the contrary by the Regulatory Manager or their agent, the consent holder may operate in accordance with the amendment on an interim basis

**G10. The Consent Holder must review the Operations Management Plan on an annual basis and update the Plan as necessary to ensure it continues to meet the requirements set out in Condition G4 including the effectiveness of managing nuisance pest and wildlife management actions and any intended improvements to those actions.**

**G11. Where there are changes made to the Operations and Risk Management Plan as a result of the annual review required under Condition G10, the Consent Holder must provide the Manawatū-Whanganui Regional Council with a copy of the updated Operations Management Plan within 20 working days of the update being completed.**

- G12. Within **five** years following commencement of these consents:
- a. the wetland authorised by ATH-2021204294.00 must be installed and operational; and
  - b. treated wastewater must flow through the wetland authorised by ATH-2021204294.00.

### Monitoring Provision

- G13. Within one month following commencement of these consents, the Consent Holder must install and thereafter maintain signage, within a 50 metre radius of Reach A and Reach B as shown on **Plan LOC-000022228**, advising river users that treated wastewater is being discharged in the vicinity.
- G14. The Consent Holder must inspect the Wastewater Treatment Plant at least once weekly for the term of these consents for the purpose of attending to all operational requirements, monitoring and maintenance. A record of these visits and any maintenance undertaken must be kept in a log book, available to the MWRC's Consents Monitoring Officer upon request.
- G15. **By 31 October** of each year, the Consent Holder must provide to MWRC's Regulatory Manager; a representative of Rangitane o Tamaki nui-a-Rua; and a representative of Kahungunu ki Tamaki nui-a-rua, an Annual Environmental Report for the 12 month period ending the previous 30 June of that year. The report must include but must not be limited to;
- A summary of analyses and records collected in accordance with conditions of these consents, including all sampling conditions;
  - An assessment of the analyses and records of all monitoring and sampling required by the conditions;
  - A comment on any non-compliance and any additional monitoring or remedial action undertaken or planned;
  - A record of any complaints that are received relating to the operation of and resultant discharges from the Woodville Wastewater Treatment Plant;
  - A copy of the full quality assured data set for the period; and
  - Report on trends as a result of consent monitoring;
  - A copy of the current OMP and the register of certified changes to the OMP.

**ADVICE NOTE:** For remedial actions to be undertaken an overview on timing of actions, including reference to appropriate Asset Management Plans is required.

- G16. The Consent Holder shall commence an investigation into alternative methods and treatment and discharge (Alternatives Investigation) on or before (date to be determined). The Alternatives Investigation shall be undertaken in consultation with the relevant iwi authorities. The findings of the Alternatives Investigation shall be provided to the relevant iwi authorities and the Regulatory Manager of MWRC.
- G17. By (date to be determined), the Consent Holder shall submit to the MWRC's Regulatory Manager, a Future Directions Report confirming the best practicable option for future management and treatment of wastewater discharged from the Woodville wastewater treatment plant and the proposed pathway for implementing the option.  
The Future Directions Report shall:

**Commented [MT1]:** TM position submit the report 4-5 years prior to expiry

- a. be informed by the Alternatives Investigation undertaken in accordance with condition G16:
- b. specify a date by which a new application shall be lodged;
- c. be prepared in consultation with the relevant iwi authorities; and
- d. be provided to the relevant iwi authorities and the TDWF within two months of its completion.

**ADVICE NOTE:** The intention of the Future Directions Report is to provide a pathway for implementing a long-term (35-year) solution for the treatment and management of wastewater discharged from the Woodville wastewater treatment plant.

**TM Comment**

*Applicant offered condition. Mr Watson is currently discussing with representatives what would be the ideal date for completion of the report.*

- G18. The MWRC may, pursuant to section 128 of the Act, initiate a review of any conditions of these consents annually in the month of July. Without limiting section 128(1)(a)(i)-(ii) of the Act, any review must be for the following specified purposes:
- a. Assessing the adequacy of the monitoring programme; and/or
  - b. Assessing the effectiveness of the conditions in these consents in avoiding, remedying or mitigating any more than minor unanticipated adverse effects on the environment; and/or
  - c. Modification of the monitoring programme; and or
  - d. Deletion, addition or changes to the conditions of these consents.

**Duration**

- G19. Discharge to water consent **ATH-2008008883.03**, Discharge to air consent **ATH-2008011313.03**, Discharge to land consents **ATH-2018202176.00** and **ATH-2021204294.00** must expire on 1 July 2033.

- G19. Discharge to water consent **ATH-2008008883.03**, Discharge to air consent **ATH-2008011313.03**, Discharge to land consents **ATH-2018202176.00** and **ATH-2021204294.00** must expire on 1 July 2043.

**TM Comment**

*Remain of opinion that 1 July 2043 is appropriate. Agree with G20 that shorter term for earthworks consent.*

- G20. Land use consent **ATH-2014015265.01** must expire seven years from commencement.

Discharge to Water Condition Schedule ATH-2008008883.03 – Woodville Wastewater Treatment Plant

Definitions:	
cBOD5	Carbonaceous five days Biochemical Oxygen Demand
scBOD5	Soluble Carbonaceous five days Biochemical Oxygen Demand
NH4-N	Ammoniacal Nitrogen
NO <sub>x</sub> N	Total oxidised nitrogen
TN	Total Nitrogen
SIN	Soluble Inorganic Nitrogen
TSS	Total Suspended Solids
POM	Particulate Organic Matter. Also known as Volatile Suspended Solids (VSS)
DRP	Dissolved Reactive Phosphorous
<i>E.coli</i>	<i>Escherichia coli</i>
MPN/100 mL	Most Probable Number per 100 millilitre sample – statistical unit for <i>e.coli</i> measurement
g/m <sup>3</sup>	Grams per cubic metre
MCI	Macroinvertebrate Community Index
Rolling Annual Average	The unweighted average (generally mean unless otherwise stipulated) of the last n values, where n is defined in the condition.
Consecutive Samples	Samples that follow each other continuously without break. The period between samples, usually monthly, is stipulated in condition.
QMCI	Quantitative Macroinvertebrate Community Index
Equivalence testing at the 20% interval	Refer for <b>DSW8 h</b>
EPT	<i>Ephemeroptera</i> (Mayflies), <i>Plecoptera</i> (Stoneflies) and <i>Trichoptera</i> (Caddisflies)

Discharge Monitoring Point	<ul style="list-style-type: none"><li data-bbox="368 421 1058 501">i. <u>For effluent standards (compliance with DLW1-4) the sampling point is immediately downstream of the UV plant at the discharge monitoring sampling port.</u></li><li data-bbox="368 501 1058 582">ii. <u>For SIN load reductions (compliance with DLW10 and DLW12) the sampling point should be immediately downstream of the wetland treatment system, prior to the biodiversity wetland.</u></li></ul>
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### **Environmental Standards**

DSW1. **Until 24-48 months from commencement of these consents**, the treated wastewater must meet the following standards:

- a. The concentration of Ammoniacal-nitrogen (NH<sub>4</sub>-N) must not exceed 10 g/m<sup>3</sup> in more than 8 out of 12 consecutive samples, and no more than 14 g/m<sup>3</sup> in more than 2 out of 12 consecutive samples;
- b. The concentration of soluble carbonaceous BOD<sub>5</sub> (sCBOD<sub>5</sub>) must not exceed 6 g/m<sup>3</sup> in more than 8 out of 12 consecutive samples; and no more than 8 g/m<sup>3</sup> in more than 2 out of 12 consecutive samples;
- c. The concentration of total suspended solids must not exceed 100 g/m<sup>3</sup> in more than 8 out of 12 consecutive samples, and no more than 272 g/m<sup>3</sup> in more than 2 out of 12 consecutive samples.

**ADVICE NOTE:** ~~Compliance must be based on grab samples taken immediately downstream of the UV treatment plant~~

**TM Comment** – as outlined in the Further Information Response dated 22<sup>nd</sup> March, TDC have currently budgeted to design the further filtration system to address TSS in 2023 with physical upgrades in 2024/2025/26 financial year.

DSW2. **Until 12 months from commencement of these consents**, the treated wastewater must meet the following standards when the Manga-atua Stream as measured at “Manga-atua at Hopelands Road” flow recording station is at or below the 20<sup>th</sup> flow exceedance percentile flow:

- a. The concentration of *E.coli* must not exceed 300 MPN/100ml in more than 8 out of 12 samples, and no more than 1,000MPN/100ml in more than 2 out of 12 consecutive samples.
- b. The concentration of DRP must not exceed 1 g/m<sup>3</sup> in more than 8 out of 12 samples, and no more than 2 g/m<sup>3</sup> in more than 2 out of 12 consecutive samples.

**TM Comment** – the treatment systems for dealing with DRP are already installed, as noted by Mr Springer optimisation has largely been achieved to date. Accordingly, the date for this tightening of standards does not need to be reliant on any other upgrades.

DSW3. **From 24-48 months from commencement of these consents**, the treated wastewater must meet the following standards:

- a. The concentration of Ammoniacal-nitrogen (NH<sub>4</sub>-N) must not exceed 10 g/m<sup>3</sup> in more than 8 out of 12 consecutive samples, and no more than 14 g/m<sup>3</sup> in more than 2 out of 12 consecutive samples;
- b. The concentration of soluble carbonaceous BOD<sub>5</sub> (sCBOD<sub>5</sub>) must not exceed 6 g/ m<sup>3</sup> in more than 8 out of 12 consecutive samples; and no more than 8 g/m<sup>3</sup> in more than 2 out of 12 consecutive samples;
- c. The concentration of total suspended solids must not exceed 50 g/m<sup>3</sup> in more than 8 out of 12 consecutive samples, and no more than 135 g/m<sup>3</sup> in more than 2 out of 12 consecutive samples

**ADVICE NOTE:** Compliance must be based on grab samples taken immediately downstream of the UV treatment plant.

**TM Comment**

*No change to Ammoniacal-Nitrogen standard, so as to allow for growth and as discussed in evidence of Mr Springer.*

DSW4. **From 12 months from commencement of these consents**, the treated wastewater must meet the following standards when the Manga-atua Stream as measured at “Manga-atua at Hopelands Road” flow recording station is at or below the 20<sup>th</sup> flow exceedance percentile flow:

- a. The concentration of *E.coli* must not exceed 300 MPN/100ml in more than 8 out of 12 samples, and no more than 1000 MPN/100ml in more than 2 out of 12 consecutive samples.
- b. The concentration of DRP must not exceed 0.5 g/m<sup>3</sup> in more than 8 out of 12 samples, and no more than 0.6 g/m<sup>3</sup> in more than 2 out of 12 consecutive samples.

**ADVICE NOTE:** Compliance with condition DSW4 will be based on the flow when the “Manga-atua at Hopelands Road” flow recording station is less than 1,623 l/s. Compliance must be based on grab samples taken immediately downstream of the UV treatment plant.

DSW5. **From 24 months from commencement of these consents**, all wastewater discharged into the Manga-atua Stream must pass through the Treatment Plant as identified in the plans in **condition G3**, and must comply with the OMP as required by **condition G4**.

DSW6. The UV disinfection unit must be equipped with a UV sensor to monitor UV transmission or intensity through the wastewater during operation.

## Receiving Water Quality

DSW7. From 24 months from commencement of these consents, the treated wastewater discharge must not cause any of the following in the Manga-atua Stream, and after the reasonable mixing zone of [to be determined following confirmation of final discharge point] downstream (Site B) as shown on Plan LOC-0000022228:

- a. the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials; or
- b. bacterial and / or fungal slime growths visible to the naked eye as plumose growths or mats; or
- c. any emission of objectionable odour; or
- d. a change in horizontal visibility, defined as the horizontal sighting range of a black disc, by more than 30%; or
- e. the DO concentration to fall below 70 % saturation; or
- f. the ammoniacal nitrogen (NH<sub>4</sub>-N) concentration to exceed **an annual median of 0.24g/m<sup>3</sup> at any time, or to exceed an annual maximum of 0.40 g/m<sup>3</sup>** as a rolling annual average; or
- g. the rolling annual average POM concentration to exceed 5 g/m<sup>3</sup> at flows below 702 l/s as measured at the "Manga-atua at Hopelands Road" water level recording station; or
- h. the *Chlorophyll a*. to exceed 120 mg/m<sup>2</sup> on more than 8% of sampling occasions, on the basis of monthly measurements taken over a period of at least 36 months; or
- i. the cover of filamentous mats greater than 20 mm long to exceed 30% or cover of mats greater than 3mm thick to exceed 60%; or
- j. a reduction in QMCI of greater than 20%; or
- k. the rolling annual average soluble carbonaceous BOD<sub>5</sub> (scBOD<sub>5</sub>) concentration due to dissolved organic compounds (that is, material passing through a GF/C filter) to exceed 2 g/m<sup>3</sup> at flows below 1,623 l/s as measured at the "Manga-atua at Hopelands Road " water level recording station.

**ADVICE NOTE: Compliance with DSW7f should be undertaken after pH adjustment in accordance with Appendix 2a, Table 5 of the NPSFM 2020.**

DSW8. Compliance with **condition DSW7** must be assessed as follows:

- a. If **condition DSW7.d** (change in horizontal visibility of more than 30% between upstream and downstream of the discharge) is exceeded, the Consent Holder must:
  - i. immediately repeat the horizontal visibility measurement upstream and downstream of the discharge; and
  - ii. if a greater than 30% reduction in horizontal visibility is confirmed by the second measurement, the Consent Holder must assess whether the discharge is the cause for the reduction in horizontal visibility, based on the results of water quality analyses undertaken the same day under **condition**

- DSW17** of this Consent, and any additional measurements, other observations or photographs;
- b. If the Consent Holder is unable to comply with the limits in **condition DSW7 (f)** (ammoniacal nitrogen), **condition DSW7 (g)** (Particulate Organic Matter) or **condition DSW7 (k)** (ScBOD<sub>5</sub>) due to upstream exceedances, the Consent Holder must use a Wilcoxon Signed Rank test to determine if there are any statistically significant increases or decreases between upstream and downstream.
  - c. If it is determined that there are significant increases or decreases in accordance with the Wilcoxon Signed Rank test (p=0.05 or lower), the Consent Holder must undertake an investigation into the effects of the discharge from the Woodville WWTP compared with upstream to determine, if possible, the cause of the exceedance.
  - d. The Consent Holder must, within five working days of the result in clause a or c (above) being received by the Consent Holder, notify MWRC's Regulatory Manager of the exceedance; and
    - i. for exceedances of the ammoniacal nitrogen (NH<sub>4</sub>-N) concentration in the Manga-atua Stream above 0.4g/m<sup>3</sup>,<sup>2</sup>, provide the MWRC's Regulatory Manager with a written statement outlining mitigation measures taken and, if required, further proposed measures to remedy the problem, and a timeline for remediation within 10 working days after the notification; or
    - ii. for any other exceedances, provide the MWRC's Regulatory Manager with a written statement outlining mitigation measures and, if required, further proposed measures to remedy the problem, and a timeline for remediation within 20 working days after the notification.
  - e. The written statement must include but is not limited to mitigation proposed, and a timeline for proposed remediation.
  - f. The findings of investigations, actions taken and reporting under **clauses d and e** and, if required, further proposed measures to remedy the problem, and a timeframe for doing so, must be reported in the annual report required by condition **G15** of the general conditions and updated accordingly in the OMP as necessary.
  - g. If the limits in condition **DSW7 i** (periphyton cover) are exceeded downstream of the discharge, then the Consent Holder must assess whether the following triggers are exceeded:
    - i. if periphyton cover upstream of the discharge was less than 30% cover, the Consent Holder must assess whether a more than 10 point increase in the mean percentage cover by filamentous algae over 20 mm long or mat over 3mm thick has occurred between upstream and downstream of the discharge on that sampling occasion.

<sup>2</sup> Undertaken after pH adjustments (as per the NPS-FM 2020)

**Commented [FMH2]:** If the cover of filamentous algae greater than 20 mm long was less than 30% and the cover of mats greater than 3mm thick was less than 60% upstream of the discharge, the Consent Holder must assess whether a more than 10 point increase in the mean percentage cover by filamentous algae over 20 mm long or mat over 3mm thick has occurred between upstream and downstream of the discharge on that sampling occasion.

- ii. If periphyton cover upstream of the discharge was more than 30% cover, the Consent Holder must assess whether a more than 15 point increase in the mean percentage cover by filamentous algae over 20 mm long or mat over 3mm thick has occurred between upstream and downstream of the discharge on that sampling occasion.
- iii. If the triggers in i. or ii. above are exceeded, then the Consent Holder must analyse the last 36 measurements collected under condition DSW21 to assess whether there is a consistent increase (by use of a Wilcoxon signed ranked test) in the percentage cover by filamentous algae over 20 mm long or mat over 3 mm thick between upstream and downstream, and whether there is an increase in the frequency or severity of exceedances of the limit in condition **W8h**.
- iv. If the assessment concludes that there is both a consistent increase in the percentage cover by filamentous algae over 20 mm long or mat over 3mm thick between upstream and downstream, and an increase in the frequency or severity of exceedances of the limit in condition **DSW8h**, then the condition will be assessed as non-compliant.
- h. Compliance with the limit in **condition DSW7 (j) (QMCI)** must be determined using equivalence testing at the 20% interval.
- i. Compliance with condition **DSW7 (h)** (periphyton biomass) must be assessed on the basis of the last 36 monthly measurements collected under condition **DSW22**. Missing measurements as a result of inability to sample due to high flows shall be excluded.

**Commented [FMH3]:** If the cover of filamentous algae greater than 20 mm long was greater than 30% or the cover of mats greater than 3mm thick was greater than 60% upstream of the discharge, the Consent Holder must assess whether a more than 15 point increase in the mean percentage cover by filamentous algae over 20 mm long or mat over 3mm thick has occurred between upstream and downstream of the discharge on that sampling occasion

**ADVICE NOTE:** A statistically significant difference is defined as a P value equal to or less than 0.05.

**ADVICE NOTE:** The increase between upstream and downstream periphyton cover (**condition DSW8 (f)**) must be calculated as the difference between the % cover downstream minus the % cover upstream. For example, filamentous algae cover 40% upstream and 55% downstream represent a 15 point increase in filamentous algae cover.

DSW9. If the Consent Holder is unable to comply with any of the limits in **Condition DSW7** due to the upstream exceedances, the Consent Holder must use a Wilcoxon Signed Rank test to determine if there are any significant increases or decreases that are having adverse effects. If it is determined that there are significant adverse effects occurring, it will be considered as a non-compliance with the respective limit.

**ADVICE NOTE:** To perform the statistical test, analysis needs to be against a minimum of 12 upstream and downstream paired results from the monthly sampling.

## Wastewater Monitoring

DSW10. To enable the sampling of the treated wastewater, easy and safe access to the sampling port(s) must be provided by the Consent Holder. The sampling port location(s) must be identified in the OMP required by **condition G4**.

DSW11. The Consent Holder must take monthly grab samples of the treated wastewater at the sampling port referred to in condition **DSW10**. The samples must be analysed for the constituents and at the frequencies listed in Table 1 to assess compliance with **conditions DSW1 to DSW4** of this consent.

DSW12. The Consent Holder must ensure that a flow-meter is located and maintained on each of the inflow and outflow lines to and from the treatment plant. The flow meters must have a pulse counter output traceably calibrated to +/- 5 % or better. The flow meters must be capable of providing daily inflow and discharge volumes use as well as a pulse counter output. The flow meters must be positioned to measure the entire volume of treated wastewater discharge into the surface water of the Manga-atua Stream discharged under authorisation of these consents.

DSW13. The flow meters required by **condition DSW12** must be verified by a registered verifier upon installation and every five (5) years following commencement of this consent to ensure compliance with **condition DSW12**. The Consent Holder must provide evidence of the verification in writing to MWRC's Regulatory Manager within one month of the verification being completed.

**ADVICE NOTE:** Written verification can be sent to the Regulatory Manager via email consents.monitoring@[horizons.govt.nz](mailto:horizons.govt.nz) –OR– via mail addressed to: C/- The Regulatory Manager, Horizons Regional Council, Private Bag 11025, Manawatu Mail Centre, Palmerston North 4442.

DSW14. The Consent Holder must, for the duration of this consent, maintain in a fully operational condition, a GPRS data logger / telemetry unit compatible with the MWRC's Telemetry system on the discharge line traceable to +/- 5 % or better.

**ADVICE NOTE:** This unit, which is attached to the pulse counter output, will be monitored by the MWRC to ensure compliance with the resource consent conditions.

DSW15. Where telemetry equipment fails for reasons other than fair wear and tear, replacement or **repair** will be at the Consent Holder's expense and replacement will be required within seven days.

DSW16. With the **exception** of network power failure or network maintenance the Consent Holder must ensure that power supply is maintained at the site at all times.

**ADVICE NOTE:** If power supply is lost at the site due to Consent Holder negligence or abuse and telemetry units require recalibration by Manawatū-Whanganui Regional Council staff the costs associated will be recovered from the Consent Holder.

### **River Monitoring**

DSW17. The Consent Holder must take upstream (Reach A) and downstream (Reach B) samples from the Manga-atua Stream at approximately **[to be determined following confirmation of final discharge point]** and a sample of the discharge at the Discharge Point as shown on **Plan LOC-000022228** attached to and forming part of these consent conditions. The samples must be analysed for the constituents and at the frequency listed in Table 1 to assess compliance with **Condition DSW7** of these consents.

**Table 1: Wastewater and River Monitoring**

Constituent	Wastewater - Monthly	River - Monthly
cBOD <sub>5</sub>	X	X
scBOD <sub>5</sub>	X	X
Dissolved oxygen		X
NH <sub>4</sub> -N	X	X
Nitrogen-Nitrite (NO <sub>2</sub> -N)	X	X
Nitrogen-Nitrate (NO <sub>3</sub> -N)	X	X
TN	X	X
TSS	X	X
Turbidity		X
Horizontal visibility (black disc)		X
Particulate organic matter	X	X
DRP	X	X
Total Phosphorus	X	X
<i>E.coli</i>	X	X
pH		X
Conductivity		X
Temperature		X

**ADVICE NOTE:** pH, temperature, horizontal visibility and dissolved oxygen must be measured on site, directly in the River.

**ADVICE NOTE:** It is preferable that the downstream sample is collected before the upstream sample so that disturbed sediment does not impact the downstream sampling result.

DSW18. All wastewater and river water quality analysis must be undertaken by an appropriate accredited laboratory. All methodologies adopted must be appropriate for either wastewater or river water analyses respectively, and the soluble CBOD<sub>5</sub> (sCBOD<sub>5</sub>) must be GF/C filtered. The methodologies must be determined in consultation with the MWRC Regulatory Manager.

DSW19. The Consent Holder must have an appropriately experienced and qualified freshwater ecologist undertake macroinvertebrate sampling in the Manga-atua Stream. The macroinvertebrate assessment must be undertaken following a period of at least three weeks without a significant flood event (defined as an instantaneous river flow exceeding three times the median flow, defined as 2,016 l/s in the Manga-atua Stream as measured at "Manga-atua at Hopelands Road") and during a period of low flow (at least one week below ½ median flow in the Manga-atua Stream at Hopelands Road defined as 351 l/s).

DSW20. The locations of the assessments and sampling are shown on **Plan LOC-000022228** as Reach A and Reach B and as detailed below:

- a. the Manga-atua Stream at a site located in the reach 200 metres upstream of the discharge point to the Manga-atua Stream (Reach A); and
- b. The Manga-atua Stream at a site located in the reach 100 metres to 330 metres downstream of the discharge point to the Manga-atua Stream (Reach B); and
- c. The exact location of monitoring sites must be determined in consultation with the MWRC's Regulatory Manager to ensure, as much as practicable, that the upstream and downstream sites have comparable physical attributes (depth, velocity, shading and substrate size).

DSW21. **From 24 months from commencement of these consents:**

- a. The Consent Holder must have an appropriately experienced and qualified freshwater ecologist undertake macroinvertebrate sampling in the Manga-atua Stream. Macroinvertebrate sampling is to be undertaken **annually** between **January to April** inclusive. The macroinvertebrate sampling must follow Protocols C3 (Hard-bottomed quantitative), P3 (full count with sub-sampling option) and QC3 (Quality control for full count with sub-sampling option) from the Ministry for the Environment's "protocols for sampling macroinvertebrates in wadeable streams" (Stark et al. 2001), or any update of that protocol.
- b. The freshwater ecologist must ensure the physical characteristics (including but not limited to substrate, depth, velocity, shading) of the upstream and downstream sites must, as far as practicable, provide a similar/adequate match. The macroinvertebrate sampling must be undertaken following a period of at least three weeks without a significant flood event (defined as an instantaneous river flow exceeding three times the median flow, defined as 2,016 l/s in the Manga-atua at Hopelands Road) and during a period of low flow (at least one week below half median flow in the Manga-atua at Hopelands Road defined as 351 l/s).
- c. This must involve:
  - i. collection of five replicate 0.1 m<sup>2</sup> Surber samples at random within a 20 m section of riffle habitat at each sampling site;
  - ii. full count of the macroinvertebrate taxa within each replicate sample to the taxonomic resolution level specified for use of the Macroinvertebrate Community Index (MCI);
  - iii. enumeration of the results as taxa richness, MCI, QMCI, %EPT taxa and %EPT individuals; and
  - iv. analysis of the QMCI results using equivalence testing at the 20% interval.

DSW22. **From 24 months from the commencement of these consents**, the Consent Holder must have an appropriately experienced and qualified freshwater ecologist undertake monthly assessments of the percentage cover, biomass, chlorophyll a, AFDW and

community composition of periphyton, filamentous algae and cyanobacterial mats in riffle habitat, as close as possible to the sites selected under **condition DSW20** above regardless of flows. The periphyton and algae assessment is to include:

- a. a visual assessment of the percentage cover of both filamentous algae and algal mats (to the nearest 5%) at five points across each of four transects encompassing riffle habitat and extending across the width of the river at each sampling site. The visual monitoring methods must follow the protocols outlined in Appendix 2 of "A periphyton monitoring plan for the Manawatū-Whanganui Region" (Kilroy et al. 2008). Reported estimates must include:
  - i) percentage cover of visible stream or river bed by bacterial and/or fungal growths (sewage fungus) visible to the naked eye;
  - ii) percentage cover of visible stream or river bed by filamentous algae more than 20 mm long;
  - iii) percentage cover of visible stream or river bed by diatoms or cyanobacteria mats more than 3mm thick;
  - iv) percentage cover of visible stream or river bed by diatoms less than 3mm thick; and
  - v) percentage cover of visible stream or river bed that is clean.
- b. If flow and/or visual clarity conditions in the Manga-atua Stream render the visual periphyton cover assessment unsafe and/or unfeasible, the river flow and clarity conditions must be documented (e.g. by way of flow record and/or photographic evidence) and included in the report required under **condition G15**. The periphyton cover monitoring requirement will be considered complied with, and compliance with **condition DSW7(h)** will not be assessed for that sampling occasion.
- c. The collection of a periphyton sample at the same established monitoring sites and transects as defined in condition **DSW19** above, using method QM-1b from the Stream Periphyton Monitoring Manual (Biggs & Kilroy 2000). A minimum of 10 samples must be collected at each site. All samples collected at each site must be pooled for analysis. Analysis of periphyton samples must follow the Biggs & Kilroy (2000) guidelines for *Chlorophyll a* and Ash Free Dry Weight analysis.

DSW23. The Consent Holder must advise the MWRC's Regulatory Manager if the absence of low flow conditions prevent the monitoring required by **conditions DSW20 or DSW21** within five days of a decision being made that the monitoring cannot be undertaken.

DSW24. **[DISSOLVED OXYGEN PLACEHOLDER CONDITION, ALIGNED TO THE REQUIREMENTS OF THE NPS-FM 2020, A REPORT AND THE INCLUSION OF A FEEDBACK LOOP]**

### **Operational Restrictions**

DSW25. **Within three months** of commencement of these consents, the Consent Holder must arrange safe access to sampling sites consistent with the requirements of **Conditions DSW17 and DSW19** of these consents. Such safe access must be maintained at all times for the duration of these consents, with the exclusion of times when high flows in the River may render access hazardous.

### **Post-Development Assurance**

DSW26. At least once every five years, or earlier if there is an unexplained increase in flows, the Consent Holder must review records of wastewater flows received at the treatment plant to ensure there has been no unexplained increase in flows (based on a five year running average) that could adversely affect treatment plant performance. The results of the review must be included in the next annual monitoring report to the Regulatory Manager as required by **condition G15**. In the event that the review shows that unexplained increased flows could result in adverse effects on treatment plant performance, the Consent Holder must investigate the reasons for the unexplained increased flows and **put in place remedial works as necessary**. In the event there is disagreement between the Consent Holder and consent authority in relation to the need for investigations and/or remedial works, the Consent Holder must commission an independent review by a suitably qualified expert acceptable to the Consent Authority.

**ADVICE NOTE:** Extracts from appropriate Asset Management documents may be used to help form the basis of information to demonstrate compliance with this condition

DSW27. By 31 October in years 2025, 2030, 2035 and 2040 the Consent Holder shall provide to MWRC's Regulatory Manager, details of inflow and infiltration investigations undertaken in the previous two financial years. Details of any forward works programme for repairs or upgrades to the Council network must be included. Any such works must be undertaken in general accordance with the principles of the Infiltration and Inflow Control Manual, Water New Zealand, 2015 (or relevant updates).

**ADVICE NOTE:** Extracts from appropriate Asset Management documents may be used to help form the basis of information to demonstrate compliance with this condition

### **TM COMMENT**

*Discussed further with TDC, happy to accept DSW26 but recommend inclusion of advice note to make clear can use existing works undertaken by applicant. As noted by Mr Watson the applicant has an active asset management strategy including I&I investigations.*

DSW28. The Consent Holder must notify the MWRC's Consents Monitoring Team within two working days of any non-compliance occurring or when it becomes certain that a breach of consent conditions is about to occur. For conditions requiring compliance with a particular water quality standard, notification is required within two working days of receipt of the water quality analysis from the Laboratory.

#### **Monitoring Provision**

DSW29. The Consent Holder must make results of monitoring undertaken required by **conditions DSW17 and DSW19** of these consents available to the MWRC's Regulatory Manager on request, and data records for each three month period ending March, June, September and December must be forwarded to MWRC's Regulatory Manager in a suitable electronic format, within 14 days after the end of each three monthly period.

DSW30. By 31 October each year, the Consent Holder must prepare a report that summarises and assesses all of the monitoring information required under **conditions DSW17, DSW18, DSW20, DSW21, DSW22 and DSW24** of these consents. This report should be included in the Annual Environmental Report required by **condition G15** of the general conditions.

### **Definitions**

**Established / Establishment** (in the context of the treatment wetland): The treatment wetland will be considered established when the wetland plants within the wetland have reached two years of age.

**Planting Season:** This refers to the optimal planting period for wetland species and is defined as the months of May and June.

**Operational** (in the context of the wetland): The wetland is considered to be operational once the bulk earthworks are completed, weirs are constructed and can receive wastewater without compromising the wetland's structural integrity.

### **Environmental Standards**

#### **Groundwater Monitoring Provision**

**DLW1. Within three months** of the date of commencement of this consent, the Consent Holder must commence a quarterly monitoring programme of BH1, BH2, BH3, BH4, BH5 and the pond 2 Manhole as specified on **Plan LOC-000022228**.

**DLW2. The Consent Holder must take samples from all bores identified in condition DLW1 in accordance with the most recent version of the MfE Groundwater sampling protocols (2006) or an equivalent industry recognised monitoring methodology. Sampling must be undertaken quarterly in the months of January, April, July and October for a period of two years following commencement of consent, thereafter reducing to twice a year in January and July.**

**DLW3. Samples collected under condition DLW2 must be analysed for the following parameters:**

- a. Total Phosphorus (TP)
- b. Dissolved Reactive Phosphorus (DRP)
- c. Total Nitrogen (TN)
- d. Nitrate Nitrogen (NO<sub>3</sub>-N)
- e. Nitrite Nitrogen (NO<sub>2</sub>-N)
- f. Escherichia coli (E. coli)
- g. Dissolved oxygen (field measurements)
- h. Electrical Conductivity (EC) (field measurements)

- i. Chloride
- j. Static water level
- k. pH (field measurement and laboratory measurement)
- l. Soluble Carbonaceous Biological Oxygen Demand (ScBOD<sub>5</sub>)

DLW4. **By 1 July 2023**, the Consent Holder must submit a report to the MWRC's Regulatory Manager prepared by an independent and suitably experienced and qualified water quality scientist(s), which must include but not be limited to:

- a. An assessment of the effects of the **discharge from the ponds** on both groundwater and surface water as is able to be determined from the analyses and records collected in accordance with conditions of these consents;
- b. A comment on **whether the** discharge from the existing ponds is causing, or contributing to, (outside the uncertainty of measurement for the sample) any exceedance of One Plan Schedule E targets in the Manga-atua Stream.
- c. Should more than minor effects of pond seepage on surface and/or groundwater quality be identified, an assessment of options (BPO) to mitigate any more than minor adverse effects, including an assessment from an independent IPENZ Chartered geotechnical engineer as to whether relining existing wastewater ponds to a permeability standard of  $1 \times 10^{-9}$  m/s is practicable (this must include an economic assessment).

#### **Wetland Design, Development and Construction**

DLW5. **Within 12-24 months** of commencement of this consent, the Consent Holder must submit to the MWRC Regulatory Manager, a construction design plan for the development phase of both the treatment and biodiversity wetlands. The wetlands are to be designed by an appropriately qualified and experienced expert, and in consultation with relevant iwi authorities and located in general accordance with **Plan LOC-000022228** attached to and forming part of this consent. The construction design plan must include but not be limited to information demonstrating the following matters –

##### **Construction and Establishment phase of treatment wetland system**

- a. Construction design of the wetlands:
  - i. The design shall demonstrate that, once constructed, the average water depth of the vertical flow wetland shall not be less than 1.25m and for the surface flow wetland shall not exceed 300mm and the maximum water depth shall not exceed 500mm.
  - ii. A functional explanation of the hydraulic structures (weirs) that will be utilised to ensure the depths are not exceeded shall be provided.
  - iii. Details of reinforced flood sills for the upstream and downstream ends.
  - iv. A surface flow wetland width to length ratio of ideally between 1:3 and 1:5 and not more than 1:10.

- v. The total wetland surface area shall be not less than 9,416m<sup>2</sup>, comprising 3,242m<sup>2</sup> for the vertical flow wetland and 6,174m<sup>2</sup> for the surface flow wetland.
- b. Final details of design of the weirs:
  - i. Each weir shall be built with a reinforced spillway:
- c. Information demonstrating that 50% of the expected maximum treated wastewater flow shall be retained in the surface flow wetland for not less than 24 hours.
- d. The construction design plan shall contain a specific planting plan to demonstrate how the vegetation shall be planted in the earliest planting season following bulk earthworks.
- e. Planting in the surface flow wetland shall be at a density of two (2) plants per square metre and the entire base of the wetland shall be planted.
- f. If clay lining of the surface flow wetland is necessary to achieve a level of permeability that does not exceed 1.4x10<sup>-7</sup> m/s, details shall be provided of the source of clay material to be used to line the top 70% of the surface flow wetland and anticipated permeability of that lining to be achieved once constructed. This is to include confirmation that the source of clay is not 'dispersive' in nature.
- g. The construction design plan shall demonstrate that the topsoil stripped to allow for the formation of the surface flow wetland shall be re-laid in the wetland prior to planting.
- h. The construction design plan shall include information demonstrating how the wastewater treatment plant shall be managed so as to allow for gradual introduction of the treated wastewater to the treatment wetlands to allow for planted seedlings to adapt to the fully saturated conditions.
- i. The construction design plan shall demonstrate how the formation of preferential flow paths will be prevented within the surface flow wetland, and if preferential flow paths do develop, the process that will be followed to address them.
- j. The construction design plan shall include details of fencing to exclude livestock from the treatment wetlands.

**ADVICE NOTE:** While a width to length ratio of between 1:3 and 1:5 is optimal for the purposes of design, a ratio of up to 1:10 is acceptable and may be necessary in portions of the surface flow wetland depending on local ground conditions, such as substrate encountered

**Construction and Establishment phase of biodiversity wetland**

- k. Final details of the biodiversity wetland including construction of bunds to prevent the discharge of treated wastewater down lateral drains;
- l. Construction of final culvert or weir structure at the outlet;
- m. Details of erosion resistant structure linking the treatment wetland with the biodiversity wetland;
- n. Details of fencing to exclude stock from the wetland;

- o. A specific planting plan to demonstrate how the vegetation in the biodiversity wetland shall be; and
- p. Requirements for minimum area of biodiversity wetland.

**ADVICE NOTE:** The final outlet structure from the biodiversity wetland may require Land Use Consent.

- DLW6. Within three months of the construction and planting of the treatment wetland required by **condition DLW5** the Consent Holder must submit to the MWRC Regulatory Manager:
- a. the construction design plan required by **condition DLW5** (a)-(e) (in relation to the treatment wetland only), to be submitted as an 'As Built' plan; and
  - b. a management plan detailing annual inspection and maintenance requirements of the treatment wetland for certification. The plan must include but not be limited to details regarding triggers for pruning, replacement of plants and weeding as identified by the annual inspection. The plan must be prepared by an appropriately qualified and experienced expert.

#### **Monitoring the Performance and Remedial Management Plan for Treatment Wetland**

- DLW7. To monitor the efficient functioning of the treatment wetland, the Consent Holder must take monthly grab samples from the inflow and outflow of the treatment wetland and have them analysed for the following management parameters:
- a. Total Phosphorus (TP)
  - b. Nitrate Nitrogen (NO<sub>3</sub>-N)
  - c. Ammoniacal Nitrogen (NH<sub>4</sub>-N)
  - d. E.coli
  - e. Nitrite Nitrogen (NO<sub>2</sub>N)

**ADVICE NOTE:** SIN will be calculated using the samples taken for Nitrate Nitrogen, Nitrite Nitrogen and Ammoniacal Nitrogen

- DLW8. Such monitoring must commence once the treatment wetland has been established and all treated wastewater flows through it.

#### **TM Comment**

*Added in ammoniacal nitrogen to be able to monitor and assess performance of individual wetlands if overall SIN reduction is not achieving design target (discussion with Mr MacGibbon)*

- DLW9. Once 12 consecutive monitoring samples have been collected, the results from the outflow of the treatment wetland system shall be compared with those collected at the inflow of the wetland using equivalence testing, and a rolling average shall be calculated from that point. These results shall be reported in the Annual Environmental Report under **G15**.

**ADVICE NOTE:** The purpose of this condition is to monitor the management of the treatment wetland system only and, in the event of diminished performance below the management parameters, to review the treatment wetland system to ensure it is performing as designed.

DLW10. Once the wetland treatment system is established, the treated wastewater passing through the wetland treatment system must achieve a not less than 25% SIN load reduction on an annual basis.

**ADVICE NOTE:** Compliance will be determined by analysis of reduction of SIN, comparing of SIN loads from inflow and outflow of the wetland treatment system.

**ADVICE NOTE:** This condition only applies when wastewater entering the wetland has a SIN concentration above 1g/m<sup>3</sup>, as efficacy of removal of SIN through wetland is reduced when SIN levels are below 1g/m<sup>3</sup>.

**ADVICE NOTE:** Because it is expected that there will be variable seepage through the base of the lower section of the surface flow wetland, calculation of SIN load exiting the surface flow wetland will be derived from the inflow volume meter with corrections made for evapotranspiration and rainfall using the nearest and most appropriate weather data.

#### **TM Comment**

Condition to have performance standard on wetland as suggested by Mr Patterson and Mr MacGibbon. *This set uses most recent condition as has been developed for Eketāhuna and Pahiatua*

DLW11. In the event that the rolling averages of the last 12 monitoring samples indicate that there was:

- a. less than a 25% decrease in SIN concentration between inflow and outflow; or
- b. an increase in TP between inflow and outflow of more than 20%; or
- c. an increase between inflow and outflow in E.coli concentration of more than 50% and exceeds 550 MPN at the outflow,

then:

- d. within 30 working days the Consent Holder must have completed a survey the treatment wetland. The survey must be completed and reported by a suitably qualified and experienced independent expert and will:
  - i. assess whether 95% vegetative cover is achieved;
  - ii. assess the vigour of existing plants;
  - iii. assess for invasive weeds;
  - iv. assess for excessive build-up of fine solids (sludge) in the treatment wetland cells;

- v. assess for hydraulic problems such as short circuiting or uneven inlet distribution; and
- vi. assess the wetland for compliance against the management plan in **condition DLW6 (b)**, in order to determine if remedial maintenance is required.

**ADVICE NOTE:** The purpose of this condition is to monitor the management of the treatment wetland only and, in the event of diminished performance below the management parameters, to review the treatment wetland system to ensure it is performing as designed.

DLW12. In the event that the survey undertaken under **Condition DLW11d** shows defects such as those listed in the sub-clauses i) to vi), or other defects, then within two weeks, the Consent Holder shall submit a timeline with details regarding when all, remedial maintenance using a suitably qualified and experienced independent expert will be completed. Maintenance may include but not be limited to:

- a. infill and/or replacement planting of plants of diminished vigour and removal of invasive weeds;
- b. removal of sludge; and
- c. unless the maintenance requires a material change to the treatment wetland system as designed, in which case the Consent Holder shall promptly inform the Manawatū-Whanganui Regional Council Regulatory Manager.

DLW13. The Consent Holder shall ensure that all remedial measures are undertaken as promptly as practical, with any replanting to be undertaken within the soonest following planting season and when plants are available.

DLW14. These remedial measures must be implemented within 12 months of the survey described in **Condition DLW11d**.

DLW15. The sampling results and any vegetation survey results and recommendations under **Condition DLW11d**, and the maintenance undertaken by the Consent Holder under **Condition DLW11**, shall be included in the next annual report under **Condition G15**.

**ADVICE NOTE:** The purpose of this condition is to monitor the management of the treatment wetland only and, in the event of diminished performance below the management parameters, to review the treatment wetland system to ensure it is performing as designed.

### ***Post-development Assurance***

DLW16. **Within three months** of the construction of the treatment wetland required by **condition DLW5** the Consent Holder must submit to the MWRC Regulatory Manager

a management plan detailing annual inspection and maintenance requirements of the treatment wetland for certification. The plan must include but not be limited to details regarding triggers for pruning, replacement of plants and weeding as identified by the annual inspection. The plan must be prepared by an appropriately qualified and experienced expert.

DLW17. The Management Plan required by **condition DLW16** must be certified by the MWRC's Regulatory Manager or their agent. The Consent Holder may implement the Management Plan if the Consent holder is not advised within **20 working days** of MWRC's acknowledgment of receipt of the Plan that amendments are required.

DLW18. Once established the vegetation within the treatment wetland must be pruned not less than once every five years. Material that is pruned must be removed off site and disposed at an appropriate facility.

DLW19. Weeding of the treatment wetland must be undertaken manually.

DLW20. In-fill planting must be undertaken annually during the management phase to replace plants of low vigour that have died to maintain vegetative cover of 95% in the Treatment Wetland.

#### **Management of the biodiversity wetland**

DLW21. Weed removal must be undertaken annually within the biodiversity wetland to prevent the establishment of invasive weed species including, but not confined to, willows.

DLW22. In-fill planting must be undertaken annually for at least the first three years following planting to replace plants that have died.

DLW23. All wastewater and bore water quality analyses must be undertaken by an appropriate accredited laboratory.

DLW24. Results of the monitoring required by **condition DLW3** of this consent must be transferred within ten working days of their receipt to the MWRC in a format compatible with the MWRC systems.

DLW25. The results from the monitoring required by **condition DLW3** of this consent must be collated, analysed and interpreted and included in the Annual Report, as required by **condition G15** in the General Conditions to these consents.

**Pre-Development Assurance**

- A1. **Within two months** of the granting of this consent, the Consent Holder must provide an Odour Operation and Management Plan (OOMP) for certification to the Regulatory Manager of the MWRC. The purpose of the OOMP must be to detail the measures the Consent Holder intends to take to avoid and mitigate the potential for odour from the wastewater treatment plant and ponds. The OOMP must include, but not be limited to the following:
- a. Details of regular inspections, plant maintenance and cleaning as required to avoid offensive odours;
  - b. Responsibilities of on-site staff;
  - c. Monitoring procedures, including reporting procedures for measuring dissolved oxygen (DO);
  - d. Contingency procedures in the event of equipment failures;
  - e. A complaints procedure including:
    - i. Provision of a 24 hour telephone contact number,
    - ii. A stated commitment by the Consent Holder to respond to odour complaints within a specified time period,
    - iii. Immediate notification after receiving the complaint to Horizons' Pollution Hotline 0508 800 800.
    - iv. Actions to be taken by the Consent Holder to verify complaints.
    - v. Provision for recording the responses made by the Consent Holder to complaints, and
    - vi. Records of actions taken by the Consent Holder to address the sources of any verified odour
  - f. Management procedures for storage and handling of primary screenings and other solid wastes handling; and
  - g. Procedures for monitoring and managing pond sludge levels to minimize the risk of upset conditions in the ponds resulting in offensive odours.

**Environmental Standards**

- A2. The discharge to air authorised by this consent must not cause the emission of odour that, in the opinion of the Manawatū-Whanganui Regional Council's Consents Monitoring Officer, is offensive or objectionable at or beyond the property boundary of the Woodville Wastewater Treatment Plant site.

**ADVICE NOTE:** When considering the objectionableness of odour, the Manawatū-Whanganui Regional Council will take into consideration the FIDOL factors: frequency, intensity, duration, offensiveness and location.

- A3. The Consent Holder must keep a complaint register to record complaints relating to discharges of odour or contaminant gases to air arising from the Wastewater Treatment Plant. The register must include:
- a. The details of the complainant if given, including if details should remain private;
  - b. The location of where the contaminant, e.g. odour, was detected;
  - c. A description of the wind speed and direction when the alleged adverse effect was detected by the complainant;
  - d. The date and time of the detection;
  - e. The most likely cause of the discharge detected;
  - f. The dissolved oxygen levels in both ponds; and
  - g. If applicable, any corrective action undertaken by the Consent Holder to avoid, remedy or mitigate the adverse environmental effect detected by the Complainant, and
  - h. A comment regarding when and what feedback was provided to the Complainant to explain the odour.
- A4. The Consent Holder must advise the MWRC Consents Monitoring Team immediately as per A1(i)(iii) of any complaints relating to air discharges being received.
- A5. A copy of information recorded in the complaints register must be included in the Annual Environmental Report required by **condition G15** of the General Conditions. The Annual Environmental Report must be provided to the Regulatory Manager by **31 October** of each year.
- A6. The Consent Holder must continuously monitor Dissolved Oxygen in the wastewater treatment ponds, near the discharge, and ensure that the Dissolved Oxygen concentration is at or above 0.5 mg/L. An information logging rate of once per 15 minutes or less, out to the SCADA and data storage systems, must be adopted.
- A7. In the event that any dissolved oxygen measurement is less than 0.5 mg/L, the Consent Holder must take appropriate action to raise the dissolved oxygen as necessary to avoid the occurrence of an incident likely to cause non-compliance with condition A2.

*Earthworks Condition Schedule ATH-2014015265.01 – Woodville Wastewater Treatment Plant*

**Environmental Standards**

- EW1. The Consent Holder must be responsible for all contracted operations related to the exercise of this resource consent, and must ensure contractors are made aware of the conditions of these resource consents and ensure compliance with those conditions.
- EW2. A copy of this consent must be kept onsite at all times that physical works authorised by these resource consents are being undertaken and must be produced without unreasonable delay upon request from a servant or agent of the MWRC.

**ADVICE NOTE:** An electronic version on a smartphone or tablet is acceptable.

- EW3. Prior to activities commencing as authorised by this resource consent, the Consent Holder must appoint a representative(s) who will be the MWRC's principal contact person(s) in regard to matters relating to resource consent **ATH-2014015265.01**. The Consent Holder must inform the MWRC's Regulatory Manager of the representative's name and how they can be contacted, five working days prior to the resource consent being exercised. Should that person(s) change during the term of these resource consents, the Consent Holder must immediately inform the MWRC's Regulatory Manager and must also give written notice to the MWRC's Regulatory Manager of the new representative's name and how they can be contacted.
- EW4. The Consent Holder must arrange and conduct a pre-construction site meeting and invite the MWRC's Regulatory Manager, the site representative(s) nominated under **Condition EW3** of this consent, the contractor, and any other party representing the consent holder prior to any work authorised by this consent commencing on site.

**ADVICE NOTE:** In the case that any of the invited parties, other than the site representative does not attend this meeting, the consent holder will have complied with this condition, provided the invitation requirement is met

- EW5. **At least 20 working days** prior to the commencement of the activities authorised by this resource consent, the Consent Holder must provide to the MWRC's Regulatory Manager for certification a copy of the design and specification of all works, as prepared by an appropriately qualified and experienced Engineer.
- EW6. **At least 20 working days** prior to the commencement of the activities authorised by these resource consents, the Consent Holder must provide to the MWRC's Regulatory Manager a revised and **updated** "Erosion and Sediment Control Plan" (ESCP) for certification. The ESCP must be based upon and include, specific principles and practices which are appropriate for the activities authorised by this consent and

contained within the Greater Wellington Regional Council document titled "Erosion & Sediment Control - Guidelines for the Wellington Region dated February 2021". The updated ESCP must address the following aspects relating to the works:

- a. Details of all principles, procedures and practices that will be implemented to undertake erosion and sediment control to minimise the potential for sediment discharge from the site, including flocculation;
- b. The design criteria and dimensions of all key erosion and sediment control structures
- c. A site contour plan of a suitable scale to identify;
  - i. The location of waterways;
  - ii. The extent of soil disturbance and vegetation removal;
  - iii. Any "no go" and/or buffer areas to be maintained undisturbed adjacent to watercourses;
  - iv. Areas of cut and fill;
  - v. Locations of topsoil stockpiles;
  - vi. All key erosion and sediment control structures;  
The boundaries and area of catchments contributing to all stormwater impoundment structures;
  - vii. The locations of all specific points of discharge to the environment; and
  - viii. Any other relevant site information.
- d. Construction timetable for the erosion and sediment control works and the bulk earthworks proposed.
- e. Timetable and nature of progressive site rehabilitation and re-vegetation proposed;
- f. Maintenance, monitoring and reporting procedures;
- g. Rainfall response and contingency measures including procedures to minimise adverse effects in the event of extreme rainfall events and/or the failure of any key erosion and sediment control structures;
- h. Procedures and timing for review and/or amendment to the ESCP; and
- i. Identification and contact details of personnel responsible for the operation and maintenance of all key erosion and sediment control structures.

EW7. The Consent Holder must undertake all earthworks authorised by this consent in accordance with the certified ESCP.

EW8. Any changes proposed to the ESCP required by **Conditions EW6** must be confirmed in writing by the consent holder and certified in writing by the MWRC's Regulatory Manager or his agent acting in a technical certification capacity, prior to the implementation of any changes proposed.

EW9. The Consent Holder must ensure that a copy of the certified ESCP including any certified amendments, is kept onsite and this copy is updated within five working days of any amendments being certified.

EW10. The Consent Holder must contact the MWRC's Regulatory Team five working days prior to the commencement of the construction, installation and disturbance works authorised by these consents and on completion of the works.

**ADVICE NOTE:** The Regulatory Team can be contacted on 0508 800 800, OR [consents.monitoring@horizons.govt.nz](mailto:consents.monitoring@horizons.govt.nz).

### ***Operational Restrictions***

EW11. The Consent Holder must ensure that the soluble aluminium concentration of any discharge from a sediment retention pond or decanting earth bund that is treated with an aluminium based flocculant must not exceed 0.2 grams per cubic metre.

EW12. The Consent Holder must ensure that the pH of any discharge from and sediment control structure treated with any flocculant must be no less than 5.5 or greater than 8.5 pH units.

EW13. The Consent Holder must ensure that the suspended solids concentration of any discharge from any sediment control device, including but not limited to sediment retention ponds, decanting earth bunds does not exceed 150 grams per cubic metre.

**ADVICE NOTE:** The above suspended solids consent limit does not apply during storm events where silt laden stormwater is discharging over the emergency spillway.

EW14. The Consent Holder must ensure that sediment losses discharged from the site during storm events greater than the 5 per cent Annual Exceedance Probability are minimised by adhering to the ESCP.

EW15. The Consent Holder must ensure that all cleanfill material deposited at the site is free of pest plants identified in the MWRC Pest Plant Strategy, combustible, putrescible (except that cleanfill material may contain up to 5% by weight putrescible matter), degradable or leachable components, hazardous substances products or materials derived from hazardous waste treatment, hazardous waste stabilisation or hazardous waste disposal practices, materials that may present a risk to human health, or liquid waste.

EW16. The Consent Holder must ensure that sediment losses to surface water arising from the exercise of these resource consents are minimised for the duration of the works and for the term of this consent. In this regard, erosion and sediment control measures must be established and maintained in accordance with the certified ESCP.

EW17. All earthmoving machinery, pumps, generators and ancillary equipment must be operated in a manner, which ensures spillages of fuel, oil and similar contaminants are prevented, particularly during refuelling and machinery servicing and maintenance.

Refuelling and lubrication activities must be carried out away from any water body, ephemeral water body, or overland flow path, such that any spillage can be contained so that it does not enter surface water.

EW18. The Consent Holder must ensure that, as far as practicable, all clean water run-off from stabilised surfaces including catchment areas above the site must be diverted away from the exposed areas via a stabilised system to prevent erosion. The Consent Holder must also ensure the outfall(s) of these systems are protected against erosion.

EW19. The Consent Holder must ensure that all sediment laden run-off from the site is treated by sediment retention structures. These structures are to be fully operational before bulk earthworks commence and must be maintained to perform at least at 80% of their operational capacity and be designed in accordance with the certified ESCP.

EW20. The Consent Holder must ensure that all erosion and sediment control structures are inspected on a weekly basis and within 24 hours of each rainstorm event that is likely to impair the function or performance of the controls.

EW21. The Consent Holder must carry out monitoring and maintenance of erosion and sediment controls in accordance with the conditions of these resource consents and must maintain records detailing:

- a. The date, time and results of the monitoring undertaken; and
- b. The erosion and sediment controls that required maintenance; and
- c. The date and time when the maintenance was completed.

These records must be provided to the MWRC's Regulatory Manager at all reasonable times and within 72 hours of a written request to do so.

EW22. Earthworks must not be conducted during the period **1 May to 30 September** inclusive during any year that these resource consents are current, apart from necessary maintenance works, unless certified in writing by the MWRC's Regulatory Manager.

**ADVICE NOTE:** Maintenance is defined in the One Plan 2016 (Change 1).

EW23. Requests to undertake earthworks during the period 1 May to 30 September inclusive, for any year that these resource consents are current, must be submitted in writing to the MWRC by 1 April and must be in the form of amendments to the certified ESCP in accordance with **Condition EW8** of this consent.

**ADVICE NOTE:** In considering a request for the continuation of winter earthworks, the MWRC will consider a number of factors; including:

- a. The nature of the site and the winter soil disturbance works proposed;
- b. The quality of the existing/proposed erosion and sediment controls;
- c. The compliance history of the site/operator;
- d. Seasonal/local soil and weather conditions;

- e. Soil moisture content and runoff/ponding potential;
- f. Effects on the cultural values of tangata whenua;
- g. Sensitivity of the receiving environment; and
- h. Any other relevant factor.

EW24. The works must remain the responsibility of the Consent Holder and be maintained to ensure that:

- a. any erosion, scour or instability of the stream bed or banks that is attributable to the works carried out as part of this consent is remedied by the Consent Holder within **10 working days**;
- b. fish passage is not impeded as a result of the works; and
- c. the works must not adversely affect the ability of the stream to convey flood flows or floating or flood borne debris and must remain substantially free of debris.

#### ***Post-development Assurance***

EW25. **One month** following completion of wetland construction, the Consent Holder must ensure that the wetland is fenced off and remains stock proof for the duration of this consent.

EW26. Notwithstanding **Condition EW30**, the Consent Holder must ensure those areas of the site where earthworks have been completed must be stabilised against erosion as soon as practically possible and within a period not exceeding 14 days after completion of any works authorised by these resource consents. Stabilisation must be undertaken by providing adequate measures (vegetative and/or structural) that will minimise sediment runoff and erosion to the satisfaction of the MWRC acting in a technical certification capacity. The Consent Holder must monitor and maintain the site until vegetation is established to such an extent that it prevents erosion and prevents sediment from entering any water body.

EW27. The removal of any erosion and sediment control measures from any area where soil has been disturbed as a result of the exercise of these resource consents must only occur after consultation and technical certification has been obtained from the MWRC. In this respect, the main issues that will be considered include:

- a. the quality of the soil stabilisation and/or covering vegetation;
- b. the quality of the water discharged from the rehabilitated land; and
- c. the quality of the receiving water.

EW28. Re-vegetation and/or stabilisation of all disturbed areas is to be completed in accordance with the measures detailed in the certified ESCP.

EW29. The works must remain the responsibility of the Consent Holder and must be maintained so that any erosion, scour or instability of the works that is attributable to the works carried out as part of this consent is remedied by the Consent Holder within **ten** working days.

EW30. The Consent Holder must ensure that the site is appropriately stabilised by **30 April** of each year unless otherwise certified in writing by the MWRC. Stabilisation must be undertaken by providing adequate measures (vegetative and/or structural and including, pavement, metalling, hydro-seeding, re-vegetation and mulching) that will minimise erosion of exposed soil to the extent practical.