

No.	Applicants proposed Condition	Horizons Condition and Comment																
	<p>Discharge to Water Conditions</p> <table border="1"> <tr> <td>River discharge location</td> <td>Means the location of the discharge structure identified in Plan No.</td> </tr> <tr> <td>Treated wastewater</td> <td>Means secondary treated wastewater derived from the Permit Holder's Manawatu Processing plant's wastewater treatment ponds.</td> </tr> <tr> <td>River discharge structure</td> <td>Means the structure on the true left bank of the Oroua River near the mouth of the Otoku Stream by which all discharges of treated wastewater to the Oroua River will be made.</td> </tr> <tr> <td>Kawa Wool Flow Monitoring Site</td> <td>Means the Manawatu-Whanganui Regional Council virtual flow monitoring site located in the Oroua River at approximate map reference NZTM: 1818686E, 5542099N.</td> </tr> <tr> <td>River flow</td> <td>Means the flow of the river as measured at the Kawa Wool flow monitoring site.</td> </tr> <tr> <td>20th Flow Exceedance Percentile (20th FEP)</td> <td>Means the river flow level which is exceeded for 20 % of the time</td> </tr> <tr> <td>Median Flow</td> <td>Means the 50th percentile river flow</td> </tr> <tr> <td>The Activity</td> <td>Means the activity authorised by this Discharge Permit as described in Condition 2.</td> </tr> </table>	River discharge location	Means the location of the discharge structure identified in Plan No.	Treated wastewater	Means secondary treated wastewater derived from the Permit Holder's Manawatu Processing plant's wastewater treatment ponds.	River discharge structure	Means the structure on the true left bank of the Oroua River near the mouth of the Otoku Stream by which all discharges of treated wastewater to the Oroua River will be made.	Kawa Wool Flow Monitoring Site	Means the Manawatu-Whanganui Regional Council virtual flow monitoring site located in the Oroua River at approximate map reference NZTM: 1818686E, 5542099N.	River flow	Means the flow of the river as measured at the Kawa Wool flow monitoring site.	20th Flow Exceedance Percentile (20th FEP)	Means the river flow level which is exceeded for 20 % of the time	Median Flow	Means the 50 th percentile river flow	The Activity	Means the activity authorised by this Discharge Permit as described in Condition 2.	
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1	Discharge Permit Number shall expire on 1 July 2049	No recommendation on term at the time of commenting on these conditions																
2	<p>The activity authorised by this Discharge Permit is restricted to the discharge of treated wastewater to the Oroua River (at approximate map reference NZTM (RE79ts) BM34:1819780E, 5543130N) under the following criteria:</p> <p>a) During the period 1 April to 30 November of any year:</p> <ol style="list-style-type: none"> When the river flow is below 7,590 L/s, there shall be no discharge of wastewater; or When the river flow is 7,590 L/s or greater, but less than 16,193 L/s, the discharge rate shall not exceed the lesser rate of 35 L/s or that determined by the equation $Q_{OR} * (0.005 * [DRP]_{ww})$ Where: Q_{OR} is the average daily river flow or instantaneous river flow (L/s) in the Oroua River measured at the Kawa Wool monitoring site; and $[DRP]_{ww}$ is the concentration of DRP (g/m³) in the treated wastewater from the most recent sample for which a DRP test result has been received by the Permit Holder; or When the river flow is 16,193 L/s or greater, the discharge rate shall not exceed 3,000 m³/d and 35 L/s. <p>b) During the period 1 December to 31 March of any year, when the river flow is greater than 20,913 L/s, the discharge shall not exceed 3,000 m³/d and 35 L/s.</p> <p>c) Compliance with river flow requirements shall be assessed at 9:00 am on the day of any discharge to the river for the following 24 hour period. Compliance with DRP requirements shall be based on most recent analysis results</p>	<p>The activity authorised by this Discharge Permit is restricted to the discharge of treated wastewater to the Oroua River (at approximate map reference NZTM (RE79ts) BM34:1819780E, 5543130N) under the following criteria:</p> <p>a) During the period 1 April to 30 November of any year:</p> <ol style="list-style-type: none"> When the river flow is below 7,590 L/s, there shall be no discharge of wastewater; or When the river flow is 7,590 L/s or greater, but less than 16,193 L/s, the discharge rate shall not exceed the lesser rate of 35 L/s or that determined by the equation $Q_{OR} * (0.005 * [DRP]_{ww})$ Where: Q_{OR} is the average daily river flow or instantaneous river flow (L/s) in the Oroua River measured at the Kawa Wool monitoring site; and $[DRP]_{ww}$ is the concentration of DRP (g/m³) in the treated wastewater from the most recent sample for which a DRP test result has been received by the Permit Holder; or When the river flow is 16,193 L/s or greater, the discharge rate shall not exceed 3,000 m³/d and 35 L/s. <p>b) During the period 1 December to 31 March of any year;</p> <ol style="list-style-type: none"> when the river flow is greater than 20,913 L/s, the discharge shall not exceed 3,000 m³/d and 35 L/s; and <u>when the river flow is below 20,913 L/s there shall be no discharge to the Oroua River</u> <p>c) Compliance with river flow requirements shall be assessed at 9:00 am <u>and checked every 6 hours following this</u> on the day of any discharge to the river for the following 24 hour period. Compliance with DRP requirements shall be based on most recent analysis results of treated wastewater.</p> <p>Comment – <i>minor wording changes added for clarity. Considered appropriate to check flows in the River at six hourly intervals given the changeable flow rates and noted that this could be automated</i></p>																
3	The treated wastewater must discharge to the Oroua River through the river discharge structure, as detailed on plan 4.	No Change																

4	<p>The maximum daily discharge of meatworks effluent to the Oroua River must not exceed 3,000 m³/day and must not exceed a maximum flow rate of 35 L/s</p>	<p>Delete – not required as flow volumes and rates determined by Condition 2</p>
5	<p><i>Signage</i></p> <p>The Permit Holder must, before commencing the activity at the new discharge location, erect a sign or signs, that are visible to river users, on the true left bank of the Oroua River adjacent to the discharge point advising of the presence of the treated wastewater discharge.</p> <p>The precise wording and location of the signage must be agreed with the Manawatu-Whanganui Regional Council's Regulatory Manager.</p> <p>The Permit Holder must maintain the signage for the duration of this Permit</p>	<p>The Permit Holder must, before commencing the activity at the new discharge location, erect a sign or signs, that are visible to river users, on the true left bank <u>on both banks</u> of the Oroua River adjacent to the discharge point advising of the presence of the treated wastewater discharge <u>when discharge to water is occurring</u>.</p> <p>The precise wording and location of the signage must be agreed with the Manawatu-Whanganui Regional Council's Regulatory Manager.</p> <p>The Permit Holder must maintain the signage for the duration of this Permit</p> <p>Comment – Considered appropriate to be visible on both sides of the bank to alert users to potential risk, as the actual risk arises when the discharge is occurring the signs would not be needed so could be removed/closed.</p>
6	<p>Receiving Water Quality Standards and Monitoring (Oroua River)</p> <p>The zone of reasonable mixing in the waters receiving the treated wastewater is defined as that reach of the Oroua River from the wastewater discharge structure to within a distance of 200 m downstream of the river discharge structure, as shown on Plan ? attached to and forming part of this consent</p>	<p>No Change other than will provide Plan with numbering to refer to</p>
7	<p>The discharge authorised by this Discharge Permit must not cause any of the following effects:</p> <ol style="list-style-type: none"> a. Any emission of objectionable odour; or b. Any of the following effects in the receiving waters, after a reasonable mixing distance of 200 metres: <ol style="list-style-type: none"> i. the production of any conspicuous oil or grease films, ii. scums or foams, or iii. floatable or suspended materials 	<p>The permit holder shall ensure that the discharge, after reasonable mixing at 200m downstream of the discharge point does not cause or breach any one or more of the following:</p> <ol style="list-style-type: none"> i. the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials; <p>or</p> <ol style="list-style-type: none"> ii. bacterial and / or fungal slime growths visible to the naked eye as plumose growths or mats; or iii. the receiving water to become unsuitable for consumption by farm animals; or iv. a reduction in horizontal visibility exceeding 30%; or v. a reduction in QMCI of greater than 20%; or vi. the DO concentration to fall below 70% saturation; or vii. the rolling annual average ammonia concentration to exceed 0.400 g/m³; or viii. the maximum ammonia concentration to exceed 2.1 g/m³; or ix. the Particulate Organic Matter concentration to exceed 5 g/m³ (an average over any 12 month period) when flows are below median flows; or x. the soluble carbonaceous BOD5 concentration due to dissolved organic compounds (that is, material passing through a GF/C filter) to exceed 2 grams per cubic metre at river flows below the 20th FEP; or xii. the maximum cover of visible streambed of periphyton as filamentous algae more than 2cm long to exceed 30% in a run habitat; or xiii. the maximum cover of visible streambed of periphyton as mat algae more than 0.3cm thick to exceed 60% in a run habitat <p>Comment – more specific and measureable standards in line with recent Feilding decision</p>
8	<p>The Permit Holder must monitor the following parameters in samples of water from the Oroua River at two sampling locations, comprising one located 200 m upstream of the discharge point, and the second located 200 m downstream of the discharge point:</p> <ol style="list-style-type: none"> a. ScBOD₅; b. Total Suspended Solids; c. Nitrate Nitrogen (NO₃-N); d. Nitrite Nitrogen (NO₂-N); e. Total Ammoniacal-Nitrogen (NH₄-N); f. Dissolved Reactive Phosphorus (DRP); g. <i>Escherichia coli</i>; and h. Turbidity. <p>Sampling must be undertaken 3-monthly during the period of discharge (1 April to 30 November)</p>	<p>The Consent Holder must monitor the following parameters in samples of water from the Oroua River at two sampling locations, comprising one located 200 m upstream of the discharge point, and the second located 200 m downstream of the discharge point:</p> <ol style="list-style-type: none"> i. pH (field measurement); ii. Temperature (field measurement); iii. Dissolved oxygen (field measurement); iv. Total Suspended Solids; v. scBOD₅ (Dissolved carbonaceous biochemical oxygen demand being material passed through a GF/C filter); vi. Total Nitrogen; vii. Nitrate Nitrogen; viii. Ammoniacal Nitrogen; ix. Nitrite-Nitrogen; x. Dissolved Reactive Phosphorus; xi. Total Phosphorus; xii. Particulate Organic Matter; xiii. E.coli

		<p><u>Sampling must be undertaken monthly</u></p> <p>Comment – to allow for more detailed assessment and allow for potential relationships to be determined. This monitoring frequency is consistent with Horizons Regional Council monitoring</p>
9	<p>The Permit Holder must have an appropriately qualified and experienced freshwater ecologist undertake macroinvertebrate sampling in the Oroua River. The macroinvertebrate assessment must be undertaken following a period of at least three weeks without a flood event and during a period of low flow. The timing of the monitoring must be confirmed by Manawatu-Whanganui Regional Council's Regulatory Manager prior to the commencement of the monitoring.</p> <p>The locations of the assessments and sampling shall be:</p> <ol style="list-style-type: none"> upstream of the discharge point in the first riffle upstream within 100 m of the discharge point; downstream of the discharge point in the first riffle within 400 m of the discharge point. <p>Advice Note: A flood event is considered to be when the Oroua River is at 16.08 m³/s and low flow is defined as half median flow at the Kawa Wool site</p>	<p>The Permit Holder must have an appropriately qualified and experienced freshwater ecologist undertake macroinvertebrate sampling in the Oroua River. The macroinvertebrate assessment must be undertaken following a period of at least three weeks without a flood event and during a period of low flow <u>stable flow and when the discharge has been occurring for at least two weeks</u>. The timing of the monitoring must be confirmed by Manawatu-Whanganui Regional Council's Regulatory Manager prior to the commencement of the monitoring.</p> <p>The locations of the assessments and sampling shall be:</p> <ol style="list-style-type: none"> upstream of the discharge point in the first riffle upstream within 100 m of the discharge point; downstream of the discharge point in the first riffle within 400 m of the discharge point. <p>Advice Note: A flood event is considered to be when the Oroua River is at 16.08 m³/s and low flow is defined as half median flow at the Kawa Wool site</p> <p>Comment – Changes to required flow conditions and to ensure that potential effects are being picked up (e.g. discharge has been operating).</p>
10.	<p>The Permit Holder must ensure that the macroinvertebrate sampling referred to in Condition 9 above is to be undertaken annually between April and May inclusive beginning during the first year following commencement of the consent. The macroinvertebrate sampling must follow Protocols C3 (Hard-bottomed quantitative), P3 (full count with subsampling option) and QC3 (Quality control for full count with subsampling option) from the Ministry for the Environment's "protocols for sampling macroinvertebrates in wade-able streams" (Stark et al. 2001). This shall involve:</p> <ol style="list-style-type: none"> Collection of 7 replicate 0.1 m² Surber samples at random within a 20 m section of riffle habitat at each sampling site; 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 Enumeration of the results as taxa richness, MCI, QMCI, %EPT taxa and %EPT individuals. <p>Advice Note: Should annual monitoring show no adverse effects, then the Permit Holder may seek a variation to reduce the frequency of monitoring</p>	<p>No Change</p>
11.	<p>No later than three years after the granting of this Discharge Permit, the Permit Holder must engage an appropriately experienced and qualified freshwater ecologist to undertake an assessment of the percentage cover, biomass, chlorophyll a and community composition of periphyton, filamentous algae and cyanobacterial mats in runs. This sampling must be undertaken monthly beginning when the discharge to land commences and shall continue for a 12 month period.</p>	<p>The Consent Holder must engage an appropriately experienced and qualified freshwater ecologist to undertake an assessment of the percentage cover, biomass, chlorophyll a and community composition of periphyton, filamentous algae and cyanobacterial mats in runs.</p> <p><u>Sampling shall be undertaken monthly for 3 consecutive years commencing in 2017 following commencement of discharge to land. An annual report must be submitted to the Manawatu-Whanganui Regional Councils Regulatory Manager by 1 November each year and a final report detailing all results within three months of the final sampling survey.</u></p> <p>This sampling must be undertaken monthly beginning when the discharge to land commences and shall continue for a 12 month period.</p> <p>Comment – To better identify potential effects around periphyton growth a longer sampling period is considered appropriate</p>
12	<p>The sampling required by Condition 11 of this Discharge Permit must include a visual assessment of the percentage cover of both filamentous algae and algal mats (to the nearest 5%) at 5 points across each of four transects encompassing run 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 Manawatu-Wanganui Region" (Kilroy et al. 2008). Reported estimates must include:</p> <ol style="list-style-type: none"> Percentage cover of visible stream or river bed by bacterial and/or fungal growths (sewage fungus) visible to the naked eye; Percentage cover of visible stream bed by filamentous algae more than 2 cm long; Percentage cover of visible stream bed by filamentous algae less than 2 cm long; Percentage cover of visible stream bed by diatoms or cyanobacteria mats more than 0.3 cm thick; Percentage cover of visible stream bed by diatoms less than 0.3 cm thick; and 	<p>No Change</p>

	f. Percentage cover of visible stream bed that is clean	
13.	The collection of a periphyton sample must be at the same established monitoring sites and transects as defined in Condition 9 above, using method QM-1b from the Stream Periphyton Monitoring Manual (Biggs & Kilroy 2000). Analysis of periphyton samples must follow the protocols outlined in Appendix 3 of 'A periphyton monitoring plan for the Manawatu-Wanganui Region' (Kilroy et al 2008) and shall involve extraction of chlorophyll a by ethanol.	
14.	<p>Review</p> <p>The Manawatu-Whanganui Regional Council may, under Section 128 of the Act, initiate a review of the Conditions of this Discharge Permit in July 2018 and every 5 years thereafter in the month of July for the duration of this Discharge Permit. The review must be for the purposes of avoiding, remedying or mitigating any adverse effects on the environment, which may arise from the exercise of this Discharge Permit.</p> <p>The review must allow for consideration of the following matters:</p> <ol style="list-style-type: none"> The deletion or amendment of these Conditions; Evaluation and modification of these Conditions to ensure that discharges to land authorised by Discharge Permit (to land) are used preferentially over discharges to the Oroua River under this Discharge Permit, to the extent practicable; The modification of the monitoring program required by the General Conditions; The amendment or addition of new Conditions as necessary to avoid, remedy or mitigate any adverse effects on the environment, including but not limited to Conditions to mitigate adverse effects attributed to any breach of any conditions; and The adoption of the Best Practicable Option to prevent or minimise significant adverse effects from the exercise of this Discharge Permit 	<p>Review</p> <p>The Manawatu-Whanganui Regional Council may, under Section 128 of the Act, initiate a review of the Conditions of this Discharge Permit <u>annually in July commencing July 2019 the duration of this Discharge Permit</u>. The review must be for the purposes of avoiding, remedying or mitigating any adverse effects on the environment, which may arise from the exercise of this Discharge Permit.</p> <p>The review must allow for consideration of the following matters:</p> <ol style="list-style-type: none"> The deletion or amendment of these Conditions; Evaluation and modification of these Conditions to ensure that discharges to land authorised by Discharge Permit (to land) are used preferentially over discharges to the Oroua River under this Discharge Permit, to the extent practicable; The modification of the monitoring program required by the General Conditions; The amendment or addition of new Conditions as necessary to avoid, remedy or mitigate any adverse effects on the environment, including but not limited to Conditions to mitigate adverse effects attributed to any breach of any conditions; and The adoption of the Best Practicable Option to prevent or minimise significant adverse effects from the exercise of this Discharge Permit
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