



# **APPENDIX L**

## **Proposed Consent Conditions**



# Appendix L

## Proposed Consent Conditions

Prepared for

**AFFCO New Zealand Limited**

Prepared by

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Environmental  
I m p a c t

March 2015



# Appendix L Proposed Consent Conditions

## AFFCO New Zealand Limited

This report has been prepared for AFFCO New Zealand Limited by Lowe Environmental Impact (LEI). No liability is accepted by this company or any employee or sub-consultant of this company with respect to its use by any other parties.

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# 1 GENERAL CONDITIONS

## DISCHARGE PERMIT NUMBERS (to water, to land, to air, and to groundwater.)

### AFFCO NEW ZEALAND LTD

### GENERAL CONDITIONS

#### Definitions:

In the following Conditions:

Activities	Means the activities authorised by Discharge Permits numbers ...
Land Treatment Area	Means the land identified in Plan Number ? to which treated wastewater will be applied.
Land Treatment System	Means the infrastructure by which treated wastewater is irrigated onto the land treatment area.
River Discharge System	Means the infrastructure by which treated wastewater is discharged to the Oroua River.
Treated wastewater	Means secondary treated wastewater derived from the Permit Holder's Manawatu Processing plant's wastewater treatment ponds.

#### General Requirements

1. The Permit Holder must undertake the activities in general accordance with the information supplied in the consent application, the Assessment of Environmental Effects dated 31 March 2015, including all concepts, parameters, drawings, activity specifications, proposed mitigation measures, methods concerning how the activity will be conducted and the scale, character and intensity of effects. Where the information is inconsistent with the requirements of specific consent conditions, the conditions prevail.

*[Reason: Standard condition.]*

2. The Permit Holder must ensure that all treated wastewater, water quality and soil sampling required under these Conditions and the Conditions of Discharge Permits (to water, to land, to air and to groundwater) is collected by a suitably experienced and/or qualified person and analysed by an appropriately accredited, independent laboratory. All analytical methods must be appropriate for treated meatworks effluent, water quality or soil analysis.

*[Reason: Standard condition.]*



## Management

3. No later than 3 months after the grant of this permit, the Permit Holder must submit to the Manawatu-Whanganui Regional Council's Regulatory Manager an Operation and Management Plan detailing (but not limited to) the following items:
  - a. A description of the land treatment system and the river discharge system, including a site map indicating the location of discharge infrastructure, the land treatment area, and monitoring sites;
  - b. Intended operation and maintenance procedures for the land treatment system and the river discharge system, including how the systems will be operated and maintained to comply with these Conditions and the Conditions of Discharge Permits (to water, to land, to air and to groundwater);
  - c. The procedures to be implemented to ensure that, where practicable, treated wastewater is discharged as a priority to land in accordance with the Discharge Permit (to land), including record-keeping procedures to demonstrate that the prioritisation has occurred;
  - d. A plan identifying the location and size of each management block within the land treatment area;
  - e. The measures to be implemented to control, regulate and record irrigation application, including application depths and details about how the management blocks within the land treatment area will be managed;
  - f. Pasture, grazing and harvesting management and maintenance procedures;
  - g. The frequency of flushing of the irrigation pipes and the circumstances under which pipe flushing will occur;
  - h. Measures to ensure the treated wastewater irrigated remains aerobic;
  - i. On-site responsibilities, including operation and maintenance of the wastewater treatment facilities and pipelines to the river and land discharge points;
  - j. Key operational matters, including daily, weekly and monthly maintenance checks, and the keeping of a maintenance register to record the details of all maintenance events and any system malfunctions;
  - k. Monitoring and reporting procedures required to demonstrate compliance with these Conditions and the Conditions of Discharge Permits (to water, to land, to air and to groundwater);
  - l. A description of any other on-farm operations affecting nutrient loading or leaching within the land treatment area (e.g. grazing, crops, fertiliser application);
  - m. A risk assessment plan and contingency plans in the event of system malfunctions or breakdowns;
  - n. Procedures for receiving, recording and responding to all complaints in accordance with Conditions (17 and 18);
  - o. A protocol for managing accidental discovery of artefacts of historic, archaeological or cultural significance during construction;
  - p. Mitigation and contingency measures for controlling odour, aerosols, ponding and run-off in and from the land treatment area;
  - q. Procedures for the wind speed shut-down required by Condition (5) of Discharge Permit (to air);
  - r. Details of how changes in wastewater composition and volume are to be managed; and
  - s. Measures to ensure that the activities do not result in any erosion or scouring of the bed or banks of the Oroua River.



*[Reason: Standard condition to require management plan.]*

4. The Permit Holder must not commence the activities which differ from those authorised by Discharge Permit numbers 4219, 4226, and 6191 until the Manawatu-Whanganui Regional Council's Regulatory Manager has certified in writing that the Operation and Management Plan fulfils the requirements of Condition 3.

*[Reason: Any changes and operational requirements need to be approved before being implemented, but the system should continue to operate based on the requirements of the previous consents.]*

5. The Permit Holder must annually review the Operation and Management Plan by 31 October of each year, commencing October 2016, to incorporate any proposed changes to the management of the activities. Following each review, the Operation and Management Plan, including any proposed changes must be submitted to the Manawatu-Whanganui Regional Council's Regulatory Manager for technical re-certification before 30 November of the same year.

*[Reason: Standard condition.]*

6. The Permit Holder must undertake the activities in accordance with the Operation and Management Plan that is most recently certified pursuant to Conditions 4 or 5.

**Advice Note:** The Regulatory Manager or team representative can be contacted on Freephone 0505 800 800 or by e-mail at [compliance.shared@horizons.govt.nz](mailto:compliance.shared@horizons.govt.nz).

*[Reason: Standard condition.]*

7. The Permit Holder must ensure that the physical infrastructure of the land treatment system and the land treatment area are inspected every week when operational, and the physical infrastructure of the river discharge system is inspected every month, and that relevant parts of the systems are also inspected whenever any alarms associated with the systems are activated.

*[Reason: To ensure that any malfunctions are detected. All infrastructure can deteriorate and be damaged over time, especially the parts adjacent to the river. This condition requires regular inspections to ensure quality management and operational systems are maintained.]*

8. If any blockages and/or breaks are identified in an inspection under Condition 7 or otherwise, the system affected must cease operation until the blockage and/or break is remedied, and the Permit Holder must notify Manawatu-Whanganui Regional Council's Regulatory Manager within 48 hours of identifying the blockage and/or break.

*[Reason: This condition allows for notification of problems so HRC is aware of issues first hand and not via a third party.]*

9. Records of the inspections made in accordance with Condition 7 and any resulting system maintenance must be kept and made available to the Manawatu-Whanganui Regional Council on request.



*[Reason: Evidence is needed to support and demonstrate inspections have been carried out.]*

10. By 1 July 2016 the Permit Holder must ensure that there is a minimum of 57,600 m<sup>3</sup> of storage capacity available for the storage of treated wastewater. This must be “live storage” (that is, storage that is not used for wastewater treatment purposes and which holds treated wastewater that can be used for discharge purposes when conditions allow) provided in addition to the existing treatment volume. At least 500 mm of freeboard must be provided in addition to the 57,600 m<sup>3</sup> capacity required for storage. The Permit Holder must irrigate the volume retained in the live storage as soon as practically possible.

*[Reason: Provision and use of storage is a fundamental design requirement of the proposed system. While a total of 64,500 m<sup>3</sup> is available, about 57,600 m<sup>3</sup> has been identified as a volume of dedicated storage. An additional 6,900 m<sup>3</sup> is available within the treatment ponds. The combined volume provides an optimum volume to manage irrigation and river discharges; allowing for no irrigation when soil conditions do not permit and avoidance of river discharges at time other than high flows.]*

## **Wastewater Quality**

11. The treated wastewater must meet the following standards prior to discharge to the land treatment area and the Oroua River:
- a. The concentration of Soluble Carbonaceous five day Biochemical Oxygen Demand (ScBOD<sub>5</sub>) must not exceed 29 g/m<sup>3</sup> in more than 8 out of 12 consecutive samples, or 74 g/m<sup>3</sup> in more than 2 out of 12 consecutive samples;
  - b. The concentration of Total Suspended Solids must not exceed 85 g/m<sup>3</sup> for more than 8 out of 12 consecutive samples, or 295 g/m<sup>3</sup> in more than 2 out of 12 consecutive samples;
  - c. The concentration of *Escherichia coli* must not exceed 9,500 cfu/100 mL for more than 8 out of 12 consecutive samples, or 20,000 cfu/100 mL in more than 2 out of 12 consecutive samples;
  - d. The concentration of Total Ammoniacal Nitrogen must not exceed 84 g/m<sup>3</sup> for more than 8 out of 12 consecutive samples, or shall it exceed 140 g/m<sup>3</sup> in more than 2 out of 12 consecutive samples; and
  - e. The concentration of Dissolved Reactive Phosphorus must not exceed 40 g/m<sup>3</sup> for more than 8 out of 12 consecutive samples, or 50 g/m<sup>3</sup> in more than 2 out of 12 consecutive samples.

**Advice Note:** *Compliance will be demonstrated based on the samples required by Condition 13 below. There is the potential that water use improvements may result in the same mass being discharged but possibly at a higher concentration. If this occurs then there may be a need for these standards to be revised.*

*[Reason: Imposing effluent quality standards helps to ensure that mass loads given in the consent application are adhered to when a discharge occurs. Note that the concentration is set as being the same for the land discharge system and the river discharge, as it is unlikely that effluent quality will vary between the two discharges.]*





*Discussion: The discharge to water is controlled by the mass load of DRP at river flows between MF and 20 FEP, and NH<sub>4</sub>-N at flows above 20 FEP. This negates the need for wastewater quality limits since the discharge volume is calculated on the basis of the discharge causing an effect in the river that is no more than minor. Over time AFFCO has improved its water use and treatment process and further changes are expected in the future. For this reason it is considered that the inclusion of discharge quality standards may discourage or restrict future wastewater quality improvements. However, making compliance officers aware of the issue of increasing concentrations while the mass loading remains the same is important, hence the advice note.]*

## **Monitoring of Treated Wastewater**

12. Prior to the commencement of the activities, the Permit Holder must install and maintain a sampling port in the pipeline to the land treatment system and the river discharge system.

*[Reason: Treated wastewater quality requires monitoring. This condition provides a location for taking a sample.]*

13. From the commencement of the activities, the Permit Holder must take samples of treated wastewater from the sampling port (installed in accordance with Condition 12), once per month in any month that a discharge to the land treatment area or the Oroua River occurs, and while the discharge is occurring. The sample must be analysed for:
- a. Soluble Carbonaceous five day Biochemical Oxygen Demand (ScBOD<sub>5</sub>);
  - b. Total Suspended Solids;
  - c. Total Nitrogen;
  - d. Nitrate Nitrogen (NO<sub>3</sub>-N);
  - e. Ammoniacal-Nitrogen (NH<sub>4</sub>-N);
  - f. Nitrite Nitrogen (NO<sub>2</sub>-N);
  - g. Total Phosphorus;
  - h. Dissolved Reactive Phosphorus (DRP);
  - i. Sodium (Na);
  - j. Potassium (K);
  - k. Magnesium (Mg);
  - l. Calcium (Ca);
  - m. *Escherichia coli*; and
  - n. Particulate Organic Matter.

*[Reason: Standard condition to nominate parameters to be tested for. It is appropriate to assess and regularly check that the wastewater composition is within the range used in developing the system design and developing the assessment of environmental effects.]*

14. Prior to the commencement or continuation of the activities, the Permit Holder must install flow meters to measure and record the treated wastewater volume discharged to the land treatment area and the Oroua River. The flow meters must be calibrated to an accuracy of plus or minus 5 % or better and must be maintained at this level of accuracy for the term of Discharge Permits (to water, to land, to air, to groundwater).

*[Reason/relevance: Standard condition. A number of reporting requirements depend on accurate flow records to be kept.]*



15. Within three months of the grant of this permit, and every 5 years thereafter for the duration of Discharge Permits (to water, to land, to air, and to groundwater), the Permit Holder must have the flow meters required by Condition 14 verified in accordance with the manufacturer's specifications to ensure compliance with Condition 14. The Permit Holder must provide to the Manawatu-Whanganui Regional Council's Environmental Protection Manager, an in-situ flow meter verification certificate confirming the validity of the meters within one month of the verification being completed.

*[Reason/relevance: Standard condition.]*

16. Within three months of the grant of this permit, the Permit Holder must provide the Manawatu-Whanganui Regional Council's Regulatory Manager with near real-time treated wastewater discharge information recorded and collected from the flow meters referred to in Condition 14. This information must be recorded at 15 minute intervals and be provided automatically on a daily basis in a format compatible with the Manawatu-Whanganui Regional Council's database.

*[Reason: Standard condition.]*

## **Complaints and Incidents**

17. The Permit Holder must maintain and make available to the Manawatu-Whanganui Regional Council's Regulatory Manager on request, a record of complaints which lists all complaints received alleging adverse effects attributable to the activities. The record must include but not be limited to the following:
- a. Name and address of the complainant (if given);
  - b. The nature and duration of the effect;
  - c. The date and time the effect was detected;
  - d. The location where the effect was detected;
  - e. The prevailing weather conditions e.g. wind speed and direction;
  - f. The likely cause of the effect detected; and
  - g. Any measures taken to avoid and mitigate the alleged effect.

*[Reason: Standard condition.]*

18. The Permit Holder must notify the Manawatu-Whanganui Regional Council's Regulatory Manager of any complaints within 72 hours of the complaint being received.

*[Reason: Standard condition.]*

19. The Permit Holder must immediately notify the Manawatu-Whanganui Regional Council's Regulatory Manager of, and keep a record of, any spillage of material into the wastewater collection system, the wastewater treatment plant, the land treatment system or the river discharge system that causes any damage to pasture in the land treatment area or creates any objectionable odour beyond the property boundary.

*[Reason: Standard condition.]*

## **Monitoring Report**



20. By 31 October of each year (commencing 31 October 2016) the Permit Holder must provide the Manawatu-Whanganui Regional Council's Regulatory Manager, an annual monitoring report for the 12 month period ending the previous 30 September. The annual monitoring report must include (but not be limited to):
- a. A summary and interpretation of analyses and records collected in accordance with these Conditions and the Conditions of Discharge Permits (to water, to land, to air, and to groundwater);
  - b. A comment on compliance with each of these Conditions and the Conditions of Discharge Permits (to water, to land, to air, and to groundwater);
  - c. A summary of inspections made on the physical infrastructure in accordance with Condition 7;
  - d. Results of soil sampling required by Condition 16 of Discharge Permit (to land) and an analysis to determine whether any material change in soil quality has occurred and actions taken to remedy any nutrient deficiency or excess;
  - e. Results of groundwater monitoring required by Conditions 17 and 18 of Discharge Permit (to land) and Condition 12 of Discharge Permit (to groundwater), including an assessment of whether there has been a decline in groundwater quality due to the activities;
  - f. Results of surface water monitoring required by Conditions 8 to 11 of Discharge Permit (to water) including an assessment against the One Plan Schedule E water quality targets, focusing on the soluble inorganic nitrogen concentrations;
  - g. A copy of the complaints register required by Condition 17;
  - h. The number, duration and volume of discharges to the Oroua River; and
  - i. A copy of the wind speed shut-off level review required by Condition 6 of Discharge Permit (to air).

*[Reason: Standard condition requiring an annual monitoring report. Note, only **one** annual monitoring report required.]*

### **Neighbourhood Consultation**

21. The Permit Holder will consult with neighbours in regards to any changes in its consents or management of its consents that may impact the neighbours. AFFCO Manawatu will provide an opportunity to meet with neighbours to discuss matters relevant to the activities at least once per year.

*[Reason: Not a standard condition, but considered prudent best practice to avoid unnecessary surprises later. Also helps to foster and maintain a relationship with neighbours.]*

### **Accidental Discovery Protocol**

22. In the event of an archaeological site, waahi tapu or koiwi being discovered or disturbed during the activities, the Permit Holder must immediately cease further work in the immediate area and inform Ngati Kauwhata, Tanenuiarangi Manawatu Incorporated, the Manawatu-Whanganui Regional Council's Regulatory Manager, Heritage New Zealand and (in the event that human remains are found) the New Zealand Police. Further work at the site must be suspended while Iwi carry out their procedures for the removal of Taonga. The Manawatu-Whanganui Regional Council's Regulatory Manager will advise the Permit Holder when work can resume.



**Advice Note:** *In accordance with Section 14(1) of the Coroners Act 2006, in the event that human remains are found the NZ Police should be contacted immediately and all works in the immediate vicinity will cease until advice is given that works can recommence.*



## 2 DISCHARGE TO GROUNDWATER

### DISCHARGE PERMIT NUMBER AFFCO NEW ZEALAND LTD DISCHARGE OF WASTEWATER TO GROUND BY SEEPAGE CONDITIONS

#### Definitions:

In the following Conditions:

The activity	Means the activity authorised by this Discharge Permit and described in Condition 2.
Ponds	Means the ponds for wastewater treatment and storage at the AFFCO New Zealand Manawatu plant.
Wastewater	Means the wastewater discharged to, treated in and discharged from the Permit Holder's Manawatu Processing plant's wastewater treatment and storage ponds.

#### Consent Duration

1. Discharge Permit Number shall expire on 1 July 2049.

*[Reason: Setting an expiry date is a requirement of a consent decision. The applicant prefers a term of 35 years, or as close to that as catchment anniversaries will enable. A large investment has been made in developing the proposed discharge regime which has resulted in a revamp of existing and new infrastructure and a long term consent is appropriate to reflect the level of investment. AFFCO provides a livestock processing facility and employment, both of which are crucial components of the local and regional economy. Certainty of the right to operate will remain a pre-requisite for continued investment in this plant, and a long term consent is appropriate to reflect this. The plant effects are considered no more than minor and there is a good compliance record for this activity.]*

#### Authorised Discharge Activities

2. The activity authorised by this Discharge Permit is restricted to:
  - a. The discharge of wastewater components by seepage into land in the vicinity of the ponds identified on Plan Number attached to and forming part of this consent; and
  - b. Any discharge undertaken in accordance with this Discharge Permit must occur on land legally described as: Lot 3, DP 89045 (16.7295 ha).

*[Reason: Standard condition to identify the location of the discharge, and the legal titles of the land to be used.]*

#### General Requirements



3. The Permit Holder must undertake the activities in general accordance with the information supplied in the consent application, the Assessment of Environmental Effects dated 31 March 2015 including all concepts, parameters, drawings, activity specifications, proposed mitigation measures, methods concerning how the activity will be conducted and the scale, character and intensity of effects. Where the information is inconsistent with the requirements of specific consent conditions, the conditions prevail.

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

*[Reason: Standard condition.]*

## Management

4. No later than 3 months following the granting of this permit, the Permit Holder must submit to the Manawatu-Whanganui Regional Council's Regulatory Manager for technical certification an Operation and Management Plan detailing (but not limited to) the following items:
  - a. A description of the ponds (wastewater treatment and storage system), including a site map identifying the location ponds and monitoring sites;
  - b. Monitoring procedures covering all aspects of this Discharge Permit to demonstrate compliance with these Conditions;
  - c. A methodology for desludging the ponds and procedures for avoiding damage of the existing clay liner; and
  - d. Procedures to ensure that reporting requirements are met.

*[Reason: Standard condition.]*

5. The Permit Holder must annually review the Operation and Management Plan by 31 October of each year, commencing October 2016, to incorporate any proposed changes to the management of the activities. Following each review, the Operation and Management Plan, including any proposed changes must be submitted to the Manawatu-Whanganui Regional Council's Regulatory Manager for technical re-certification before 30 November of the same year.

*[Reason: Standard condition.]*

6. The Permit Holder must undertake the activities in accordance with the Operation and Management Plan that is most recently certified pursuant to Conditions 4 or 5.

**Advice Note:** The Regulatory Manager or team representative can be contacted on Freephone 0505 800 800 or by e-mail at [compliance.shared@horizons.govt.nz](mailto:compliance.shared@horizons.govt.nz).

*[Reason: Standard condition.]*

7. The Permit Holder must ensure that the physical infrastructure of the pond system is inspected every month. Any damage to pond embankments, or signs of pond seepage must be identified, noted and fixed as soon as practicably possible.



*[Reason: All infrastructure, including pond liners (clay for ANZ) can deteriorate and be compromised over time. This condition requires regular inspections to ensure quality management and operational systems are maintained.]*

8. Records of the inspections carried out in accordance with Condition 7 and any resulting system modifications must be kept and made available to the Manawatu-Wanganui Regional Council's Regulatory Manager on request.

*[Reason: Evidence is needed to support and demonstrate inspections have been carried out.]*

### **Monitoring of Wastewater**

9. The Permit Holder must establish a site for sampling each of:
  - a. Aerated pond effluent;
  - b. Anaerobic pond effluent; and
  - c. Final (discharged) wastewater.

Each sample location must be representative of that effluent type and be close to the discharge point of that pond.

*[Reason: Discharged wastewater quality requires monitoring. This condition provides locations for taking samples which are representative of wastewater that may seep from the pond. The sample sites correspond to existing monitoring locations.]*

10. The Permit Holder must ensure that samples of wastewater are taken from the locations described in Condition 9 in the months of January, April, July, and October and tested for:
  - a. Nitrate/nitrite Nitrogen (NO<sub>x</sub>-N) - (Not required for anaerobic effluent sample);
  - b. Ammoniacal-Nitrogen (NH<sub>4</sub>-N);
  - c. Dissolved Reactive Phosphorus (DRP);
  - d. Acid soluble Sodium (Na); and
  - e. Chloride (Cl<sup>-</sup>)

*[Reason: Standard conditions. It is appropriate to assess and regularly check the treated wastewater composition to provide a comparison with groundwater monitoring results.]*

### **Groundwater Monitoring**

11. Groundwater quality must be measured at 5 locations from bores identified on Plan ? attached and forming part of these conditions.

*[Reason: Pond seepage, where it occurs, is to the groundwater. The preferred method to detect seepage is by direct measurement of up-gradient and down-gradient groundwater quality. Based on monitoring to date, the potential seepage from the ponds is not expected to cause a significant increase in groundwater concentrations of key contaminants at the property boundary. This condition provides a means to continue the assessment of groundwater quality as may be influenced by pond seepage.]*



12. The Permit Holder must take quarterly groundwater samples in the months of January, April, July, and October in accordance with Condition 12 above and the samples must be analysed for the following:
- Nitrate/nitrite Nitrogen (NO<sub>x</sub>-N);
  - Ammoniacal-Nitrogen (NH<sub>4</sub>-N);
  - Dissolved Reactive Phosphorus (DRP);
  - Sodium (Na); and
  - Chloride (Cl<sup>-</sup>).

*[Reason: The impact of seepage can be assessed by considering the quality of groundwater. Monitoring the composition of key groundwater parameters will assist with detecting the presence and scale of seepage from the pond. As changes are not likely to be rapid, as demonstrated by groundwater monitoring to date, a quarterly sampling regime is considered appropriate.]*

13. Groundwater quality must be measured in the following neighbouring bores which are identified on Plan Number attached and forming part of these conditions and monitored for the analytes listed in Condition 13.

*[Reason: Pond seepage, where it occurs is to the groundwater. The preferred method to detect seepage is by direct measurement of up-gradient and down-gradient groundwater quality. Neighbouring property owners have expressed a concern about the impact of the activity on groundwater they abstract. This monitoring provides an opportunity to demonstrate whether and to what extent there is an impact on their bores caused by ANZ. The number of bores monitored may be reduced over time with agreement from the bore owner.]*

## Review

14. The Manawatu-Whanganui Regional Council may, under Section 128 of the Act initiate a review of these conditions every 5 years in the month of July, commencing in July 2018, for the duration of this 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.

The review must allow for the consideration of the following matters:

- The deletion or amendment of these Conditions;
- The modification of the monitoring program required by these 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; or
- The adoption of Best Practicable Option to prevent or minimise adverse effects from the exercise of this Discharge Permit.

*[Reason: Standard condition.]*

*Relevance: It is considered appropriate that the Regional Council have the opportunity to undertake reviews at five yearly intervals. There should also be the ability to consider the extent to which pond seepage can be shown to cause adverse effects, and whether or not the installation of synthetic pond liners would significantly mitigate those effects.]*





### 3 DISCHARGE TO SURFACE WATER

#### DISCHARGE PERMIT NUMBER

#### AFFCO NEW ZEALAND LTD DISCHARGE OF TREATED WASTEWATER TO SURFACE WATER

#### CONDITIONS

##### Definitions:

In the following Conditions;

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 <sup>th</sup> percentile river flow
The Activity	Means the activity authorised by this Discharge Permit as described in Condition 2.

##### Consent Duration

1. Discharge Permit Number shall expire on 1 July 2049.

*[Reason: Setting an expiry date is a requirement of a consent decision. The applicant prefers a term of 35 years, or as close to that as catchment anniversaries will enable. A large investment has been made in developing the proposed discharge regime which has resulted in a revamp of existing and new infrastructure and a long term consent is appropriate to reflect the level of investment. AFFCO provides a livestock processing facility and employment, both of which are crucial components of the local and regional economy. Certainty of the right to operate will remain a pre-requisite for continued*



*investment in this plant, and a long term consent is appropriate to reflect this. The plant effects are considered no more than minor and there is a good compliance record for this activity.]*

## **Authorised Discharge Activities**

2. 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:
- a) During the period 1 April to 30 November of any year:
    - i. When the river flow is below 7,590 L/s, there shall be no discharge of wastewater; or
    - ii. 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/m<sup>3</sup>) in the treated wastewater from the most recent sample for which a DRP test result has been received by the Permit Holder; or
    - iii. When the river flow is 16,193 L/s or greater, the discharge rate shall not exceed 3,000 m<sup>3</sup>/d and 35 L/s.
  - 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 m<sup>3</sup>/d and 35 L/s.
  - 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.

*[Reason: There is a need to manage the discharge of treated wastewater to the river so that adverse environmental effects are avoided and cultural and recreational expectations are met. Considerable effort has been put into developing a discharge regime that minimizes the impact of any surface water discharge. The resulting criteria, as described above, provide for that minimal impact, with an obvious preference to only discharge during higher flows and not during the warmer summer months when there is greater use of the river. The intent is the mass discharged is based on the average flow record of the previous day (the alternative is a mass discharged based on a 9 am flow value).*

*The decision regarding the ability to discharge needs to be related to river flows at a regional council flow monitoring site. This site is currently Oroua River at Kawa Wool but in time may change to Oroua River at Almadale Slackline, possibly with a corresponding change in flows for the nominated triggers.*

*The river flow measurement to be used in the formula in this condition is to be that posted at 9:00 am on Horizons Regional Council's website, and this is to apply to the following 24 hour interval, at the end of which the new 9:00 am flow measurement will be applied. Similarly with DRP concentration, the figure to be used in the formula in this condition will be that from the most recent laboratory effluent analysis for which results are available to the Permit Holder. There is a comparatively slow rate at which declining river flow rates*



fall, and a large volumetric buffering capacity of the wastewater storage ponds from which wastewater will be discharged. This means that variations in river flow rate or DRP concentration **after** the readings have been taken for inclusion in the formula under this condition, and **before** the next reading is taken, will not lead to significant effects of the discharge on the river receiving environment.]

3. The treated wastewater must discharge to the Oroua River through the river discharge structure, as detailed on plan 2.

*[Reason: The discharge location is to be shifted from a drain that passed into an unnamed stream that then went into the Oroua River. The discharge will now be directly into the Oroua River through and over a structure that provides for land passage. This system and the structure has been developed in consultation with iwi with several iterations of ideas helping to scope its design.]*

4. The maximum daily discharge of meatworks effluent to the Oroua River must not exceed 3,000 m<sup>3</sup>/day and must not exceed a maximum flow rate of 35 L/s.

**Advice Note:** No maximum number of days has been set in these conditions as the assessment of effects shows that on any day when the discharge occurs and the nominated flow conditions exist, the effects of that discharge will be no more than minor.

*[Reason: There is the potential for cumulative effects from multiple days of discharges. This is typically is during lower flow conditions. By limiting surface water discharges to above median flow, the cumulative effects are less or can be avoided. There is no need to consider the cumulative effects of multiple days discharge and there is no technical basis to limit the number of days of discharge providing the discharge occurs during high flows as proposed.]*

## Signage

5. 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.

The precise wording and location of the signage must be agreed with the Manawatu-Whanganui Regional Council's Regulatory Manager.

The Permit Holder must maintain the signage for the duration of this Permit.

*[Reason: Standard condition for discharge to water.]*

## Receiving Water Quality Standards and Monitoring (Oroua River)

6. 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 2 attached to and forming part of this consent.
7. The discharge authorised by this Discharge Permit must not cause any of the following effects:
  - 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:
  - i. the production of any conspicuous oil or grease films,
  - ii. scums or foams, or
  - iii. floatable or suspended materials.

*[Reason: Standard condition to meet s107 requirements. Other specific parameters (BOD, SS, etc), have been removed since the increase in concentration of these parameters after complete mixing can be calculated accurately from the river flow and the treated effluent discharge rate and quality. Also, a detectable effect is not expected due to high dilution factor, especially at flows above 20 FEP. Furthermore, due to discharge only occurring during predominantly high flow conditions the activity of sampling carries a high risk for health and safety of the sampler. While these additional parameters could be included, no monitoring is proposed to assess compliance, hence their exclusion.]*

*Typical parameters not included are:*

- 1) bacterial and / or fungal slime growths visible to the naked eye as plumose growths or mats;
- 2) the receiving water to become unsuitable for consumption by farm animals;
- 3) a reduction in horizontal visibility exceeding 30%;
- 4) a temperature change of greater than 3 degrees Celsius;
- 5) a pH change of greater than 0.5 units;
- 6) the DO concentration to fall below 70% saturation;
- 7) the maximum ammonia concentration to exceed 2.1 g/m<sup>3</sup>;
- 8) the Particulate Organic Matter concentration to exceed 5 g/m<sup>3</sup> (an average over any 12 month period) when flows are below median flows;
- 9) the chlorophyll a concentration (mg/m<sup>2</sup>) to exceed 200 mg/m<sup>2</sup> on more than 1 occasion during 12 consecutive samples; and
- 10) the soluble carbonaceous BOD<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>.

*This condition ensures no reduction in water quality values of the river.]*

8. 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:
  - a. ScBOD<sub>5</sub>;
  - b. Total Suspended Solids;
  - c. Nitrate Nitrogen (NO<sub>3</sub>-N);
  - d. Nitrite Nitrogen (NO<sub>2</sub>-N);
  - e. Total Ammoniacal-Nitrogen (NH<sub>4</sub>-N);
  - f. Dissolved Reactive Phosphorus (DRP);
  - g. *Escherichia coli*; and
  - h. Turbidity.

Sampling must be undertaken 3-monthly during the period of discharge (1 April to 30 November).

*[Reason: Condition to provide data to determine effects of the discharge on river water quality.]*



*Relevance: Water quality data is necessary to demonstrate the effect of the discharge on the river. If water quality data shows no change in concentration, or if ecological monitoring indicates there is no effect due to the discharge a case may be put forward to reduce or cease monitoring when the consent is reviewed.]*

9. 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.

The locations of the assessments and sampling shall be:

- a. upstream of the discharge point in the first riffle upstream within 100 m of the discharge point;
- b. downstream of the discharge point in the first riffle within 400 m of the discharge point.

**Advice Note:** *A flood event is considered to be when the Oroua River is at 16.08 m<sup>3</sup>/s and low flow is defined as half median flow at the Kawa Wool site.*

*[Reason: It is common practice for recent resource consents for discharges to water to include an ecological monitoring condition. Ecological monitoring provides a direct measurement of river health, and therefore effects of activities on the river. It is standard practice to carry out monitoring during low flow periods with a long biomass accumulation period prior to sampling. There will be no discharge of treated wastewater during these flow conditions, or this time of year unless river flow exceeds 3 x median flow, in which case the river bed will be mobile and no biomass accumulation will occur. As a result ecological monitoring is not expected to measure any effects due to the discharge.]*

10. 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:
- a) Collection of 7 replicate 0.1 m<sup>2</sup> Surber samples at random within a 20 m section of riffle habitat at each sampling site;
  - b) 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
  - c) Enumeration of the results as taxa richness, MCI, QMCI, %EPT taxa and %EPT individuals.

**Advice Note:** *Should annual monitoring show no adverse effects, then the Permit Holder may seek a variation to reduce the frequency of monitoring.*

*[Relevance/Reason: Biological monitoring data was identified as a limitation in the assessment of effects for the consent application. Collecting this data is important for future assessments. The adoption of April/May for sampling represents the latter extent*



*of the suitable monitoring period and is the only period within the monitoring period in which discharge to water occurs by ANZ]*

11. 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.
12. 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:
  - a. Percentage cover of visible stream or river bed by bacterial and/or fungal growths (sewage fungus) visible to the naked eye;
  - b. Percentage cover of visible stream bed by filamentous algae more than 2 cm long;
  - c. Percentage cover of visible stream bed by filamentous algae less than 2 cm long;
  - d. Percentage cover of visible stream bed by diatoms or cyanobacteria mats more than 0.3 cm thick;
  - e. Percentage cover of visible stream bed by diatoms less than 0.3 cm thick; and
  - 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.

## **Review**

14. 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.

The review must allow for consideration of the following matters:

- a. The deletion or amendment of these Conditions;
- b. 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;
- c. The modification of the monitoring program required by the General Conditions;



- d. 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
- e. The adoption of the Best Practicable Option to prevent or minimise significant adverse effects from the exercise of this Discharge Permit.

*[Reason: Standard condition. It is considered appropriate that the Regional Council have the opportunity to undertake reviews at five yearly intervals. There should also be the ability to consider the appropriateness of the management of the river and land application regime and whether the split of treated wastewater to each environment is appropriate to manage and mitigate effects.]*



## 4 DISCHARGE TO AIR

### DISCHARGE PERMIT NUMBER

### AFFCO NEW ZEALAND LTD DISCHARGE OF DISCHARGE OF AEROSOLS AND ODOUR TO AIR

### CONDITIONS

#### Definitions:

In the following Conditions:

Land treatment area	Means the land identified in Plan Number ? to which treated wastewater will be applied.
Treated wastewater	Means secondary treated wastewater derived from the Permit Holder's Manawatu Processing plant's wastewater treatment and storage ponds.
Pond solids	Means the solids that have settled out and been retained in the Permit Holder's Manawatu Processing plant's wastewater treatment ponds.
Paunch solids	Means undigested gut contents removed from slaughtered livestock.
Treated organic solids	Means pond solids or paunch solids or a mixture of both types of solid material.
The Activities	Means the activities authorised by this permit as described in Condition 2.

#### Consent Duration

1. Discharge Permit Number shall expire on 1 July 2049.

*[Reason: Setting an expiry date is a requirement of a consent decision.]*

*Relevance: The applicant prefers a term of 35 years, or as close to that as catchment anniversaries will enable. A large investment has been made in developing the proposed discharge regime which has resulted in a revamp of existing and new infrastructure and a long term consent is appropriate to reflect the level of investment. AFFCO provides a livestock processing facility and employment, both of which are crucial components of the local and regional economy. Certainty of the right to operate will remain a pre-requisite for continued investment in this plant, and a long term consent is appropriate to reflect this. The plant effects are considered no more than minor and there is a good compliance record for this activity.]*

#### Authorised Discharge Activity





- The activity authorised by this Discharge Permit is restricted to the discharge of aerosols and odour to air associated with the discharge of treated wastewater, pond solids and paunch solids to land.

*[Reason/Relevance: Standard condition to identify the location of the discharge.]*

- Any discharge undertaken in accordance with Condition 2 shall occur on land legally described as:

<b>Legal Description</b>	<b>Owner</b>
Part Section 225 Sbdn A Manchester DIST	Byreburn Limited
Lot 191 DP 100	Byreburn Limited
Section 5 Block XIV Oroua SD	Byreburn Limited
Lot 2 DP 89128	Byreburn Limited
Lot 1 DP 57580	Byreburn Limited
Lot 1 DP 89045	Byreburn Limited
Lot 2 DP 89045	Byreburn Limited
Lot 30 DP 2688	Byreburn Limited
Lot 31 DP 2688	Byreburn Limited
Lot 3 DP 89045	AFFCO New Zealand Limited
Sbdn 1 Sec 12 Block XIV Oroua SD	AFFCO New Zealand Limited
Part Section 13 Clock XIV Kairanga SD	AFFCO New Zealand Limited
Lot 28 DP 2688	AFFCO New Zealand Limited
Lot 24 DP 2688	AFFCO New Zealand Limited
Lot 23 DP 2688	AFFCO New Zealand Limited
Lot 22 DP 2688	AFFCO New Zealand Limited
Lot 21 DP 2688	AFFCO New Zealand Limited
Part Aorangi 1C Block	Dalcam Company Limited
Lot 19 DP 2688	Dalcam Company Limited
Lot 18 DP 2688	Dalcam Company Limited

## **Odour and Aerosol Management**

- The Permit Holder must ensure that the activity does not result in offensive or objectionable odour or spray drift at or beyond the property boundary.

**Advice Note:** *An odour or spray drift will only be considered objectionable after a Manawatu-Whanganui Regional Council officer has considered the Frequency, Intensity Duration, Offensive and Location of the odour or spray drift (i.e. the FIDOL Factors).*

*[Reason: Standard condition; is appropriate at this site.]*

- The Permit Holder must ensure the activity automatically ceases when the 10 minute average wind speed at the maximum height of the sprayed treated wastewater exceeds 12 m/s or higher from a direction whereby the irrigation is within 200 m of the property boundary. The activity can resume 30 minutes after the wind speed drops below the nominated threshold or the wind direction changes.



*[Reason: While not a standard condition, such a condition is often used when there are sensitive receptors downwind of the land application area. It is in line with the Shannon decision. Avoiding the drift of aerosols onto neighbouring properties is appropriate. This can be achieved by a wind speed related shut off requirement, such as proposed.]*

6. The Permit Holder must review the adequacy of the wind speed shut-down level and direction in Condition 5 on an annual basis, commencing 1 October 2016. The results of this review must be provided to Manawatu-Whanganui Regional Council's Regulatory Manager in the monitoring report required by General Condition 20.

**Advice Note:** *If the current wind speed shut-down level and wind direction is deemed inadequate to avoid odour or spray drift onto adjacent properties following a review under Condition 6, a variation to Condition 5 by way of s127 may be required.*

7. Prior to commencing the activity, the Permit Holder must install a climate station near the AFFCO wastewater treatment plant that is capable of continuous real time monitoring of wind speed and direction, air temperature and rainfall. Monitoring must be undertaken in accordance with the Good Practice Guide for Air Quality Monitoring and Data Management, Ministry for the Environment, 2009.

*[Reason: An onsite climate station is needed to allow the wind restriction condition to apply. While not at the irrigation site, it is considered that the conditions at the treatment plant will be representative of the irrigation area and it also allows for easy connection to the irrigation controller.]*

8. The climate station required by Condition 7 must be able to:
  - a. Be remotely accessed via a telemetered link; and
  - b. Be connected to the irrigation controller and be able to shut down automatically when wind conditions described in Condition 5 occur.

## **Review**

9. The Manawatu-Whanganui Regional Council may, under Section 128 of the Act initiate a review of the Conditions of this discharge Permit every 5 years in the month of July, commencing in July 2018, 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.

The review must allow for the consideration of the following matters:

- a. The deletion or amendment of these Conditions;
- b. 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
- c. The adoption of Best Practicable Option to prevent or minimise adverse effects from the exercise of this Discharge Permit.



*[Reason: Standard condition. It is considered appropriate that the Regional Council have the opportunity to undertake reviews at five yearly intervals. There should also be the ability to consider the appropriateness of the management of the river and land application regime and whether the split of treated wastewater to each environment is appropriate to manage and mitigate effects.]*



## 5 DISCHARGE TO LAND

### DISCHARGE PERMIT NUMBER

### AFFCO NEW ZEALAND LTD DISCHARGE OF TREATED WASTEWATER AND POND SOLIDS TO LAND

### CONDITIONS

#### Definitions:

In the following Conditions:

Land treatment area	Means the land identified in Plan Number ? to which treated wastewater will be applied.
Treated wastewater	Means secondary treated wastewater derived from the Permit Holder's Manawatu Processing plant's wastewater treatment and storage ponds.
Pond solids	Means the solids that have settled out and been retained in the Permit Holder's Manawatu Processing plant's wastewater treatment ponds.
Paunch solids	Means undigested gut contents removed from slaughtered livestock.
Treated organic solids	Means pond solids or paunch solids or a mixture of both types of solid material.
The Activities	Means the activities authorised by this permit as described in Condition 2.

#### Consent Duration

1. Discharge Permit Number shall expire on 1 July 2049.

*[Reason: Setting an expiry date is a requirement of a consent decision. The applicant prefers a term of 35 years, or as close to that as catchment anniversaries will enable. A large investment has been made in developing the proposed discharge regime which has resulted in a revamp of existing and new infrastructure and a long term consent is appropriate to reflect the level of investment. AFFCO provides a livestock processing facility and employment, both of which are crucial components of the local and regional economy. Certainty of the right to operate will remain a pre-requisite for continued investment in this plant, and a long term consent is appropriate to reflect this. The plant effects are considered no more than minor and there is a good compliance record for this activity.]*

#### Authorised Discharge Activities

2. The activities authorised by this Discharge Permit are restricted to:



- a. the discharge of treated wastewater by irrigation onto or into land in the land treatment area; and
- b. the discharge of treated organic solids onto or into land in the land treatment area.

*[Reason: Standard condition to identify the location of the discharge.]*

3. Any discharge undertaken in accordance with Condition 2 shall occur on land legally described as:

<b>Legal Description</b>	<b>Owner</b>
Part Section 225 Sbdn A Manchester DIST	Byreburn Limited
Lot 191 DP 100	Byreburn Limited
Section 5 Block XIV Oroua SD	Byreburn Limited
Lot 2 DP 89128	Byreburn Limited
Lot 1 DP 57580	Byreburn Limited
Lot 1 DP 89045	Byreburn Limited
Lot 2 DP 89045	Byreburn Limited
Lot 30 DP 2688	Byreburn Limited
Lot 31 DP 2688	Byreburn Limited
Lot 3 DP 89045	AFFCO New Zealand Limited
Sbdn 1 Sec 12 Block XIV Oroua SD	AFFCO New Zealand Limited
Part Section 13 Clock XIV Kairanga SD	AFFCO New Zealand Limited
Lot 28 DP 2688	AFFCO New Zealand Limited
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Lot 22 DP 2688	AFFCO New Zealand Limited
Lot 21 DP 2688	AFFCO New Zealand Limited
Part Aorangi 1C Block	Dalcam Company Limited
Lot 19 DP 2688	Dalcam Company Limited
Lot 18 DP 2688	Dalcam Company Limited

*[Reason: Standard condition to set out the legal titles of the land to be used.]*

4. The maximum daily discharge of treated wastewater to the land treatment area shall not exceed 3,000 m<sup>3</sup>/ day.

*[Reason: Setting a maximum volume to be discharged avoids over-application. It should be noted that setting a hydraulic application limit achieves the same purpose as setting a daily volume limit. However, specifying a volumetric limit is a standard requirement for most Regional Councils. The maximum application rate will be largely dictated by irrigation infrastructure's capability to pump and reticulate the daily flow. It is worth noting that the maximum rate in this condition is greater than the average pond outflow (842 m<sup>3</sup>/day), thereby allowing as much as possible to be applied to land, potentially using any volume in storage up to 3,000 m<sup>3</sup>/day.]*

5. The maximum daily discharge of treated organic solids to the land treatment area shall not be restricted by volume, but by nitrogen loading, which is limited in Condition 19.

*[Reason: Limiting the nutrient loading minimises the risk of nutrient leaching to water. As the solids will be 'solid' in nature, setting a daily hydraulic application limit is somewhat irrelevant. The maximum application rate will be largely dictated by the practicality of applying the material over a nominated land area, with the limitation being a nitrogen loading rate (covered in Condition 19 below) and physical ability to transport the volume on any given day.]*



## General Requirements

6. The Permit Holder must undertake the activities in general accordance with the information supplied in the consent application, the Assessment of Environmental Effects dated 31 March 2015 including all concepts, parameters, drawings, activity specifications, proposed mitigation measures, methods concerning how the activity will be conducted and the scale, character and intensity of effects. Where the information is inconsistent with the requirements of specific consent conditions, the conditions prevail.

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

*[Reason: Standard condition.]*

7. The Permit Holder must ensure at all times that the discharge and management of treated wastewater is prioritised in the following order:
- a. Irrigation to land;
  - b. Storage and buffering; and
  - c. Discharge to the Oroua River in accordance with Discharge Permit Number.

**Advice note:** This condition is to show the intent of the Permit Holder to discharge as much as practically possible to land. It reflects the desire of the community and undertaking of the Permit Holder to maximise land application.

*[Reason: The intention of the AFFCO Manawatu plant's treated wastewater discharge system is to allow discharges to both land and water, but maximise land application and only utilise river discharges during high flows. The discharge to the river during high flows would only occur once a residual 10,000 m<sup>3</sup> capacity has been reached in the storage system.]*

## Maximum Application Rates and Application Restrictions

8. The Permit Holder must ensure the application rate of treated wastewater onto land or into land does not exceed:
- a. Travelling boom irrigator:
    - i. 37 mm/h; and
    - ii. 34 mm in any one application.
  - b. Sprinkler irrigators:
    - iii. 4 mm/h; and
    - iv. 12 mm in any one application.

**Advice Note:** A hydraulic limit for solids is not appropriate as direct leaching and run off will not occur. Setting an application depth is problematic due to the potential variability of the material and the application method. Consequently limiting the application of material through a nitrogen and phosphorus limit, as proposed in Condition 11, has been adopted.



*[Reason: Standard conditions. While drainage may occur following application, the application rate and depth has been specified to control and avoid excessive drainage following an irrigation event and to avoid a high rate of application which may result in bypass/preferential flow. The discrepancy between application limits of 12 mm for sprinklers and 34 mm for a traveling boom irrigator reflects the acceptance of the irrigation regime that has operated without known adverse effects for many years, and the conservative preference for a lower application rate where the deployment of new infrastructure will enable that to be achieved.]*

9. The Permit Holder must ensure that the rate, frequency and method of the discharge of wastewater onto and into land does not result in:
- any noticeable contamination of groundwater (when measured between the upstream and downstream monitoring sites as required by Condition 17);
  - run-off to surface water or subsurface drains; or
  - any ponding on the soil surface (defined as a depth of wastewater greater than 25 mm [covering a continuous area exceeding 10 m<sup>2</sup> or a combined area greater than 20 m<sup>2</sup>] during and following irrigation, or any treated wastewater on the soil surface five hours after irrigation has occurred).

**Advice Note:** *To establish if there is noticeable contamination of groundwater as a result of treated wastewater being discharged to the site, the results of a minimum of three groundwater monitoring events will be analysed.*

*[Reason: This is a standard condition and is used to prohibit runoff and limit the duration of ponding. It is vital that runoff and prolonged ponding does not occur. The application rates have been developed based on a detailed soil investigation and are less than the saturated hydraulic conductivity rates observed at the site. The rates are based on a matrix flow which avoids high rates of water passage through the soil's macro pores; therefore runoff and ponding should not occur. There may be some minor ponding for short periods of time, up to 3 hours following application, but this will be localised and should not lead to or contribute to overland flow.]*

10. Prior to the application of treated wastewater to land, the Permit Holder must measure soil moisture levels in representative areas of the land treatment area to ensure that treated wastewater is only applied to land when there is a soil deficit of 2 mm or greater prior to application.

*[Reason: Requiring soil moisture to be monitored can assist with managing soil wetness and avoiding runoff from sloping soils. The application rates have been developed based on a detailed soil investigation and are less than the saturated hydraulic conductivity rates observed at the site. The rates are based on a matrix flow which avoids high rates of water passage through the soil's macro pores; therefore runoff and ponding should not occur. There may be some minor ponding for short periods of time, up to 3 hours following application, but this will be localised and should not lead to or contribute to overland flow.]*

11. The Permit Holder must ensure that the nutrient loading resulting from the discharge of treated wastewater and solids onto and into land, does not exceed the following criteria when applied to pasture that is not harvested or areas that are not cropped:

	LMU 1	LMU 2	LMU 3	LMU 4
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<b>Max N Load (/year)</b>	250 kg N/ha	250 kg N/ha	250 kg N/ha	100 kg N/ha
<b>Max P Load (/year)</b>	50 kg P/ha	50 kg P/ha	50 kg P/ha	20 kg P/ha

**Advice Note:** LMU means Land Management Unit, which are defined in the Assessment of Environmental Effects, dated 31 March 2015 and shown on Plan ? attached.

*[Reason: The predominant offsite effect from a land application system is a deterioration of groundwater and surface water as a result of excessive nitrogen and phosphorus application. Nitrogen can also act as an indicator of potential effects of other contaminants. A combined nitrogen limit encompassing all forms of nitrogen application is becoming best practice for land treatment operations. The application of treated wastewater alone is expected to be on average 142 kg N/ha/y across the site.]*

12. Should the nutrient loading rates in Condition 11 be exceeded, the equivalent additional mass of nutrient loading over and above that in Condition 11 shall be removed from the area to which it is applied in harvested material.

**Advice Note:** Nutrient loading over and above the grazed maximum requires harvesting as hay or silage, or some form of crop removal. The efficacy of the additional removal shall be demonstrated by recording the mass of herbage or crop removed and its nutrient concentration. The details of this harvesting regime shall be detailed in the Operation and Management Plan as required by Condition 3 of the General Conditions.

*[Reason: Within application areas there is the potential for targeted nutrient loading rates to be exceeded, thereby increasing the risk of groundwater contamination in those areas. The effect of such exceedance can be mitigated by increasing the nutrient removal rate from that area. In some areas a greater portion of treated wastewater and solids could be applied. When these rates exceed that of grazed pasture there is a requirement to remove the equivalent mass of nutrients over and above that of the nominated grazed pasture rate.]*

13. Meeting the requirements of Conditions 11 and 12 shall be determined by calculating the nutrient loading to each block receiving treated wastewater. The nutrient loading will be based on the results of monitoring required in accordance with Condition 13 of the General Conditions (treated wastewater monitoring) and a record of the volume of treated wastewater or solids applied to each paddock.

*[Reason: There needs to be a method for determining compliance with a nominated maximum application rate. Regular monitoring of the composition of material applied and a record of the volume applied will determine the nutrient loading rate.]*

14. The permit holder must ensure that treated wastewater is not discharged to land closer than:
- 20 m from any watercourse, whether flowing continuously or intermittently, including any open drain;
  - 20 m from any property boundary where there are no buildings; or
  - 200 m from any dwelling house, milking shed or other building on any property bordering the land treatment area when that building is directly downwind





**Advice Note:** *this condition does not apply to dwellings and buildings within the application site.*

*[Reason: Standard conditions; applicable at this site. ]*

15. The Permit Holder must not discharge treated wastewater to land:
- a. Within 48 hours after the application of fertiliser;
  - b. Within 24 hours after any harvesting activity;
  - c. Within 48 hours prior to any harvesting activity; or
  - d. When 50 mm or more rainfall has occurred in the previous 24 hour period as recorded at the WWTP.

*[Reason: To avoid excessive nutrient loss due to washing fertiliser out of plant rooting zone and for the protection of soil physical quality and to ensure no loss of infiltration capacity occurs due to compaction. Also to prevent saturated flow of applied treated wastewater and corresponding lack of removal of treated wastewater constituents.]*

## **Soil Sampling**

16. The Permit Holder must take annual composite soil samples from any Land Management Area that has received treated wastewater and solids within the previous 12 month period (starting 1 October and ending 30 September) for the duration of this Discharge Permit. A minimum of ten 75 mm depth composite samples must be obtained, and must be analysed for the following:
- a. pH;
  - b. Exchangeable Sodium (Na);
  - c. Exchangeable Sodium percentage (Na);
  - d. Exchangeable Potassium (K);
  - e. Exchangeable Magnesium (Mg);
  - f. Exchangeable Calcium (Ca);
  - g. Phosphorus (Olsen);
  - h. Sulphate-S;
  - i. Total Nitrogen; and
  - j. Cation Exchange Capacity.

*[Reason: Standard condition. The proposed loading rates are sufficiently low that nutrient build up will not occur. However, monitoring of soil health is considered appropriate to demonstrate that this is the case. It is also a sound farm management practice to routinely monitor soil fertility to identify if there are nutrient and mineral deficiencies. A robust methodology should be used that enables repeatability of techniques and location, and long term trends to be characterised.]*

## **Groundwater Monitoring**

17. Groundwater quality and level shall be monitored at bores identified on Plan ? attached to and forming part of these conditions.

*[Reason: The land application system has the potential to impact on groundwater quality. The proposed loading rates and management is not expected to impact on*



*groundwater quality. To demonstrate that this is the case bores up-gradient and down-gradient of the site require monitoring.]*

18. The Permit Holder must take quarterly groundwater samples in the months of January, April, July, and October in accordance with Condition 17 above and the samples must be analysed for the following:
- a. Total Phosphorus (TP);
  - b. Dissolved Reactive Phosphorus (DRP);
  - c. Total Nitrogen (TN);
  - d. Nitrate Nitrogen (NO<sub>3</sub>-N)
  - e. Ammoniacal-Nitrogen (NH<sub>4</sub>-N)
  - f. Chloride (Cl-);
  - g. Escherischia coli; and
  - h. Static water level.

*[Reason: The efficacy and impact of a land treatment system can be assessed by considering the quality of groundwater. Monitoring the composition of key groundwater parameters will assist with determining the efficacy of the land treatment operation. As changes are not likely to be rapid, as demonstrated by groundwater monitoring to date, a quarterly sampling regime is considered appropriate.]*

## **Surface Water Monitoring**

**No Condition is proposed to** address this.

*[Reason: Standard condition used when there is likely to be an effect that needs to be monitored. The Condition has deliberately been left out here because there is no surface water site that could be monitored that would provide an unequivocal reflection of an effect resulting from land discharge.]*

*Surface water monitoring is often used at land application sites where there is a high nitrogen loading from the applied treated wastewater and it has the potential to reach surface water. As with groundwater, in this case the nitrogen loading is on average estimated to be 142 kg N/ha/yr and the potential for significant masses of treated wastewater derived contaminants to be leached is minimal. Also, the assessments undertaken suggest that any nitrogen leaching will be less than that of the current farming operation. Further, the surface water assessment of effects has shown that at a worst case leaching rate (which is unlikely) there will be noticeable effect on surface water. Any impact from the land treatment area is likely to be indistinguishable from background and surrounding land use activities.]*

## **Irrigation and Harvest Records**

19. The Permit Holder must maintain a record of all irrigation activities within the land treatment area. This record must include but not be limited to:
- a. The date, time, location and volume of each irrigation application;
  - b. The date, time, location, volume and nitrogen loading of any nitrogenous material applied; and
  - c. The date and time of pipeline flushes when they occur.

*[Reason: Standard condition to ensure the treated wastewater is distributed evenly over the entire area so as to avoid excessive loading on any one area. Requirements*



*are applicable, as well as the additional requirement to record the type and rate of any other material applied.]*

20. The Permit Holder must maintain a record of all harvest and stock grazing events that occur within the land treatment area. This record must include the date, time, stock numbers, number of bales and mass of harvested material.

*[Reason: Such a condition is not often used, unless in circumstances where high rates of treated wastewater are applied (i.e. more than 400 kg N/ha/y). For areas receiving a rate of nitrogen in excess of that needed for pastoral grazing, there a record of harvest to determine the amount of nitrogen removed.]*

## **Review**

21. The Manawatu-Whanganui Regional Council may, under Section 128 of the Act initiate a review of these conditions every 5 years in the month of July, commencing in July 2018, for the duration of this 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.

The review must allow for the consideration of the following matters:

- a. The deletion or amendment of these Conditions;
- b. Evaluation and modification of these Conditions to ensure that discharges to land are optimised over discharges to the Oroua River under Discharge Permit Number ?;
- c. The modification of the monitoring program required by these Conditions;
- d. 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;
- e. The adoption of Best Practicable Option to prevent or minimise adverse effects from the exercise of this Discharge Permit.

*[Reason: Standard condition. It is considered appropriate that the Regional Council have the opportunity to undertake reviews at five yearly intervals. There should also be the ability to consider the appropriateness of the management of the river and land application regime and whether the split of treated wastewater to each environment is appropriate to manage and mitigate effects.]*



## 6 RIVER DISCHARGE STRUCTURE

### LAND USE CONSENT NUMBER

### AFFCO NEW ZEALAND LTD ERECTION AND MAINTENANCE OF RIVER DISCHARGE STRUCTURE AND BED LEVEL CONTROL

### CONDITIONS

#### Definitions:

In the following Conditions:

ESCP	Means Erosion and Sediment Control Plan.
Treated Wastewater	Means secondary treated wastewater derived from the Permit Holder's Manawatu Processing plant's wastewater treatment ponds.
The Activities	Means the activities authorised by this consent as described in Condition 1.

#### General Requirements

1. The activities authorised by this Land Use Consent are restricted to :
  - a) The installation, operation, and maintenance, of pipelines and an outlet structure (at approximate map reference NZTopo50 BM34: 1819765E, 5543130N), within 8 metres of the true left bank of the Oroua River and Otoku Stream to convey treated wastewater;
  - b) The installation, operation and maintenance of a bed level control structure in the bed of the Otoku Stream at and immediately upstream from its confluence with the Oroua River; and
  - c) The associated temporary discharge of sediment during construction,

on the property legally described as "legal river", ID 4105837 (47.2899 ha), being part of the Oroua River bed adjacent to and west of AFFCO New Zealand Ltd site.

2. The Consent Holder must undertake the activities in general accordance with the information supplied in the consent application, the Assessment of Environmental Effects dated 31 March 2015 including all concepts, parameters, drawings, activity specifications, proposed mitigation measures, methods concerning how the activity will be conducted and the scale, character and intensity of effects. Where the information is inconsistent with the requirements of specific consent conditions, the conditions prevail.
3. The Consent Holder must complete the construction and commissioning of the works authorised by condition 1(a)-(c) within 4 years from commencement of this consent.

#### Design and Construction



4. The Consent Holder must ensure the proposed pipeline, outfall structure and bed level control structure is designed in accordance with the Manawatu-Whanganui Regional Council's engineering requirements.

### **Pre-Construction requirements**

5. At least 20 working days prior to commencement of the activities, the Consent Holder must provide to the Manawatu-Whanganui Regional Council's Regulatory Manager for certification a copy of the design and specification of all works, as prepared by an appropriately qualified and experienced Engineer. No work may commence until the Manawatu-Whanganui Regional Council's Regulatory Manager certifies in writing that the work may proceed in accordance with the design and specification provided.
6. At least 20 working days prior to commencement of the activities, the Consent Holder must provide to the Manawatu-Whanganui Regional Council's Regulatory Manager for technical certification an Erosion and Sediment Control Plan (ESCP) to address erosion and sediment control for the land disturbance and vegetation clearance authorised by this Consent. The ESCP must be developed in accordance with the "Greater Wellington Regional Council Guidelines – Guidelines for the Wellington Region 2002 and reprint 2006" and include as a minimum, but not be limited to:
  - a) Details of principles, procedures and practices that will be implemented to minimise the potential for sediment to enter surface water bodies (including drains);
  - b) Provision of a construction timetable for bulk earth disturbance works and establishment of the erosion and sediment control structures;
  - c) Provision of a timetable for progressive site rehabilitation, re-vegetation and stabilisation;
  - d) Rainfall response and contingency measures for managing the stability of the disturbed or excavated areas to prevent sediment release into surface water bodies during high rainfall events;
  - e) A site plan showing:
    - a. the location of surface water bodies (including drains);
    - b. extent of proposed soil disturbance (including borrow areas), vegetation clearance, and cut and fill areas; and
    - c. any temporary or permanent stockpile areas;
  - f) Methods and measures to ensure sediment entering surface water bodies is minimised between 1 December to 28 February (includes contact recreation season); and
  - g) Identification and contact details of personnel responsible for the operation and maintenance of the key erosion and sediment control measures.
7. The Consent Holder must ensure that no earthworks authorised by this Land Use Consent commence until the Manawatu-Whanganui Regional Council's Regulatory Manager certifies in writing that the ESCP satisfies the requirements of Condition 6.
8. The Consent Holder must submit any proposed changes to the ESCP to Manawatu-Whanganui Regional Council's Regulatory Manager for technical certification prior to the implementation of any proposed changes.
9. The Consent Holder must undertake the activities in accordance with the ESCP most recently certified pursuant to Condition 7 or 8.



10. At least 20 working days prior to undertaking any maintenance works associated with the activities, the Consent Holder must provide to Manawatu-Whanganui Regional Council's Regulatory Manager, details of the proposed works and a methodology for undertaking the works, including provision for compliance with these Conditions.
11. At least 20 working days prior to commencing the activities, the Consent Holder must submit a flood contingency plan to Manawatu-Whanganui Regional Council's Regulatory Manager. The flood contingency plan must include:
  - a) Mechanisms for advance flood warning;
  - b) Provision of relevant contact phone numbers; and
  - c) Methods for removal of machinery, should this be necessary.
12. The Consent Holder must complete the construction of the authorised structures as quickly as possible and ensure that all equipment and materials required to complete construction are present on site prior to any works commencing.
13. The Consent Holder may only commence works where:
  - a) There is at least four days of settled and/or dry weather forecast by the New Zealand Meteorological service (MetService) for the Oroua River catchment; and,
  - b) The Consent Holder has notified the Manawatu-Whanganui Regional Council's Regulatory Manager and the Area Engineer Central at least two working days prior to the planned commencement of the works.

**Advice note:** *The Regulatory Manager and Area Engineer – Central can be contacted on Freephone 0508 800 800.*

### **Water Quality and Sediment Control**

14. The Consent Holder must ensure that activities which may result in the release of sediment to the Oroua River do not occur between **15 August** and **30 November** (inclusive).
15. The Consent Holder must ensure that any excavated as a result of the activities is lifted clear of all surface water bodies and disposed of in a location where sediment cannot be washed back into surface water.
16. The Consent Holder must ensure that all bare areas are stabilised within 10 working days of completion of the relevant work.
17. The Consent Holder must ensure that no holes or mounds are left within any part of the bed of the Oroua River after the completion of the activities.

**Advice Note:** *for the purposes of this condition, any raising of ground levels to construct the authorised structures are not a 'mound'.*

18. The activities must not result in the discharge of contaminants that are toxic to aquatic ecosystems.

**Advice note:** *This includes leakage of fuel, oil and other contaminants from machinery used for the activities.*



19. The Consent Holder must ensure that the activities do not result in suspended sediment being conspicuous during Saturdays, Sundays and public holidays during 1 December to 28 February (inclusive).
20. During **1 December to 14 August** (inclusive) the Consent Holder must ensure that any of the activities causing the discharge of sediment to the Oroua River must not be undertaken for more than 24 hours in total across any given five consecutive days.

**Advice Note:** *Sediment release is not permitted between 15 August and 30 November due to the dotterel nesting habitats present within the Oroua River.*

### **Contaminant Management**

21. The Consent Holder must ensure that:
  - a) Machinery or vehicles entering any water body have had a stand down period of at least 48 hours since being in contact with another water body other than a water body in the upstream catchment of the Oroua River;
  - b) Following use any machinery or vehicles must have a stand down period of at least 48 hours prior to use in any catchment, other than a water body in the upstream catchment of the Oroua River; and
  - c) Standard check, clean or dry procedures are used for any vehicles, equipment, clothing or footwear that has been in contact with a water body other than a water body in the upstream catchment of the Oroua River within the past 48 hours.
22. The Consent Holder must comply with all notices and guidelines issued by Biosecurity New Zealand in relation to avoiding spreading the Pest Organism *Didymosphenia geminata*, known as "Didymo" (refer to [www.biosecurity.govt.nz/didymo](http://www.biosecurity.govt.nz/didymo)).

### **Cement Management**

23. The Consent Holder must ensure that no uncured cement or cement based products enter the flowing water in any surface water body (including drains) within the application site during the activities. Any uncured cement placed in or near a watercourse must be placed in such a manner that no concrete or cement leaches out and enters the watercourse. Such measures may include:
  - a) Working during summer low flow conditions; or
  - b) Containing the concrete in a watertight form work.

### **Dust Management**

24. The Consent Holder must ensure that the activities do not cause any objectionable deposition of dust at or beyond the boundary of the site.

**Advice Note:** *A deposition of dust will only be considered objectionable after a Manawatu-Whanganui Regional Council officer has considered the Frequency, Intensity, Duration, Offensiveness and Location of the deposited dust (i.e. the FIDOL factors).*

### **Accidental Discovery Protocol**



25. In the event of an archaeological site, waahi tapu or koiwi being discovered or disturbed during the activities, the Consent Holder must immediately cease further work in the immediate vicinity and inform Ngati Kauwhata, Tanenuiarangi Manawatu Incorporated, the Manawatu-Whanganui Regional Council's Regulatory Manager, Heritage New Zealand and (in the event that human remains are found) the New Zealand Police. Further work at the site must be suspended while iwi carry out their procedures for removal of taonga. The Manawatu-Whanganui Regional Council's Regulatory Manager will advise the Consent Holder when work at the site can resume.

***Advice Note:*** *In accordance with Section 14(1) of the Coroners Act 2006, in the event that human remains are found the police should be contacted immediately and all works in the immediate vicinity will cease until advice is given that works can recommence.*

### **Maintenance and Reinstatement**

26. Any structures constructed by the activities will remain the responsibility of the Consent Holder and must be maintained so that:
- a) Any erosion, scour or instability of the river bed or banks that is attributable to the structures is remedied by the Consent Holder within 10 working days, and
  - b) The structural integrity of the structures remains sound.
27. In the event that any damage is caused to any Manawatu-Whanganui Regional Council stopbank or river protection works as a result of the activities, the Consent Holder must immediately contact the Manawatu-Whanganui Regional Council's Area Engineer Central and repair the damage to the standard required by the Area Engineer.



