



AFFCO Rangiora Processing Plant – Resource Consent Applications

Pre-Hearing Meeting

The Orchard Church, Te Puke – 22 February 2022



Overview of Pre-Hearing Meeting Agenda

- » Welcome, Introductions & Apologies (BoPRC)
- » Purpose of Meeting (BoPRC)
- » Summary of Applications (AFFCO)
 - AFFCO Rangiora's Operation
 - Overview of Resource Consent Applications
 - Environmental Effects
 - Alternatives
 - Consultation Undertaken to Date
- » Issues Raised (Submitters)
- » Next Steps (BoPRC)

Pre-Hearing Meeting is followed by an opportunity to visit the AFFCO Rangiora site, if desired.



AFFCO's Rangiuru Operation

- » The facility has the capacity to process up to 90,000 beef, 230,000 calves and >1 million lambs annually.
- » AFFCO Rangiuru is one of the largest employers in the Te Puke area,
 - Employs up to 600 staff (peak season) not including sub-contractors and consultants.
 - Pays out approximately \$ 23 million in salaries and contract fees on an annual basis.
 - ~90% of this labour is sourced locally.
- » The facility has been in operation since December 1965, and has been considerably redeveloped and modernized since.
- » Over the past 10 years AFFCO has invested significant new capital at the Rangiuru Plant at a capital cost of \$11.7 million (including \$1.8 million for the rendering plant alone).



Resource Consent Applications

» Resource Consents being replaced:

Consent No.	Activity Authorised	Expiry	Renewal Lodged
24932	Discharge of treated wastewater from the meat processing plant to water (Kaituna River)	31-08-17*	24-02-17
63344	Discharge of treated wastewater to land via seepage	31-08-17*	24-02-17
60574	Discharge treated amenities wastewater to land	31-10-16*	14-04-16
02 4925	Discharge Stormwater and Defrost Water	30-06-20*	17-12-19
02 0194/01	Take water from the Kaituna River and from a bore	01-10-26	10-12-20

* Processing of application on hold under Section 92 of the RMA. AFFCO permitted to continue operating under Section 124(3) of the RMA.

» Delays in processing the application due to:

- Additional information sought by BoPRC (incl. extended period of environmental monitoring, further stakeholder consultation etc).
- BoPRC's wish to bundle consent applications together and process concurrently.

» Other existing Resource Consents (not due for replacement at this time or part of this application) include:

- Air Discharge Consent (expiry 30-11-47); Placement of outfalls in the Kaituna River (expiry 30-06-28); Place and use intake barge in the Kaituna River (expiry 31-10-36); and Discharge of anaerobic pond sludge to land (expiry 30-06-31)



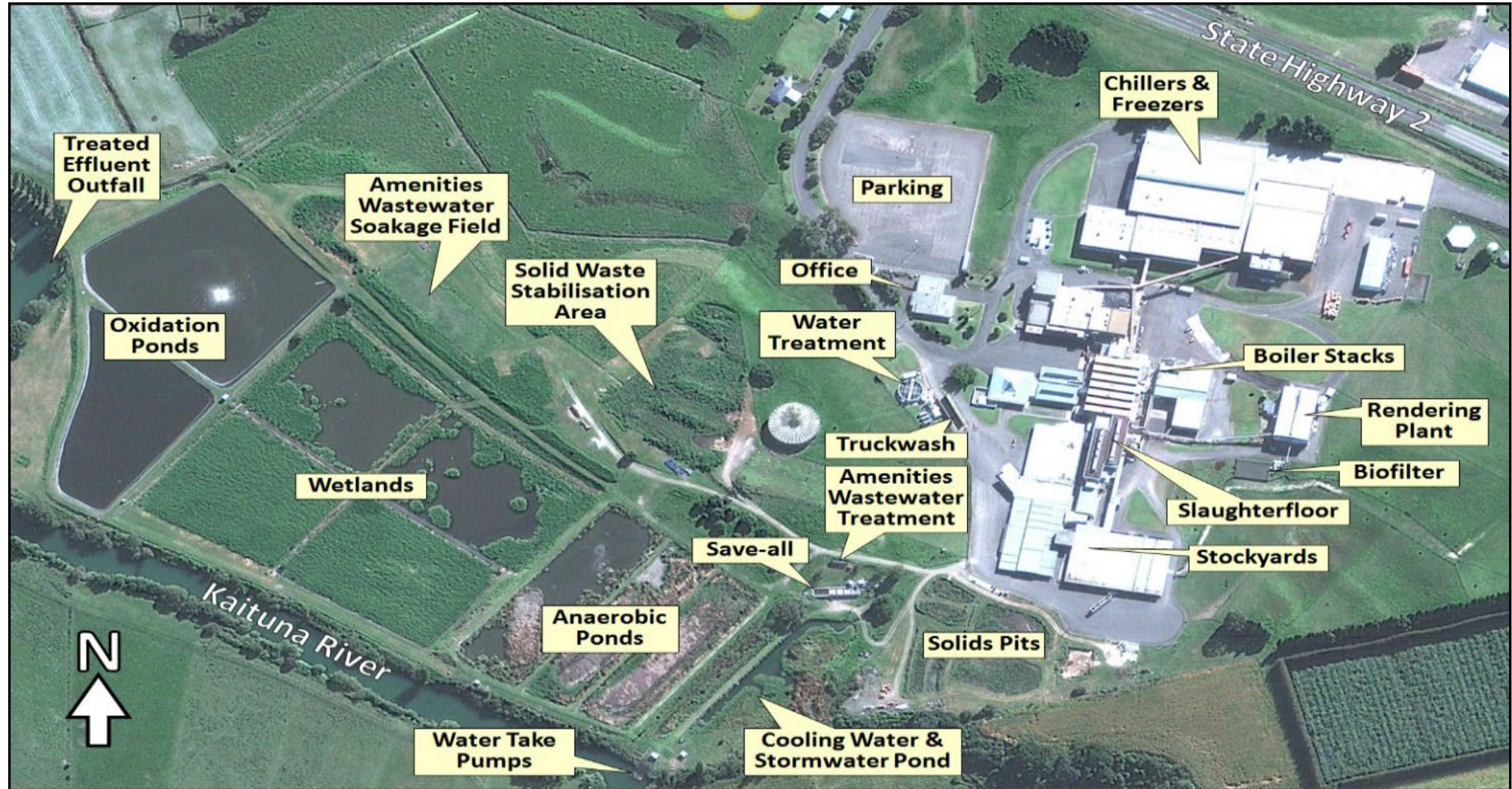
Resource Consent Applications

» Discharge of treated meat processing wastewater to the Kaituna River (Consent No. 24932)

- Processing plant operates up to 7 days per week; around 48 weeks per year.
- Treated effluent discharged to the Kaituna River at a maximum permitted discharge volume of 6,500 m³ per day (dry-weather).
- The process effluent treatment process includes:
 - Initially treated by screening, dissolved air floatation or sedimentation (in a 'save all' and or 'solids pit') or various combinations of these treatments, depending on the source.
 - Recovered solids are rendered, or after digestion in solids pit, stabilized and dewatered in a solids stabilization area.
 - Wastewater is then biologically treated in 3x anaerobic ponds, 2x oxidation ponds and 4x wetlands (with a total surface area of 5.5 ha).
- The treatment system was upgraded in 2005/2006, and consent limits for nutrients (incl. TP and TN load) were reduced at this time.
- Post-upgrade the discharge nutrient load showed noticeable improvement.
- All consent limits (including discharge volume, BOD, TN load, TP load and *enterococci*) have been adhered to and in many cases are well below the consent limits.



Resource Consent Applications



Resource Consent Applications

» Pond Seepage (Consent No. 63344)

- Consent to discharge a daily volume of to 152 m³ for seepage from the base of the recently constructed oxidation ponds, and changes to existing constructed wetlands associated with the treatment system for Kaituna River Discharge Consent (No. 24932).
- Consent was granted in 2003 for a period expiring 31 August 2017 to coincide with the expiry of Consent 24932.
- Losses from pond seepage accounts for a very small proportion of the contaminant load discharged to the River particularly as it undergo additional treatment as the effluent passes through the soil.

» Amenities Wastewater (Consent No. 60574)

- Authorises the discharge of up to 35 m³ per day of treated amenities wastewater (e.g. human waste from ablution facilities and food waste from site kitchens) to a soakage field, after treatment in a package treatment plant where it is treated by an activated sludge process.
- Mean daily flow rate over the past 10 years has been 15.4 m³ per day, and avg. loading rate of 13 mm/day well within 30-50 mm/day recommended by Standards.
- The soakage field consists of five groups of 10 soakage trenches. The field is mounded to ensure that stormwater falling outside the area of the soakage field is diverted away from the soakage field.
- Soil infiltration tests have shown capacity of soil in soakage field is acceptable, an extensive buffer area around disposal area, and groundwater flows towards the wastewater treatment ponds.



Resource Consent Applications

» Discharge Stormwater & Defrost Water (Consent No. 24925)

- Authorises discharge of stormwater (3.2 m³/s except where a 1 in 50 year storm event is exceeded), cooling water and defrost water (0.345 m³/s) to the River.
- Stormwater:
 - Generated from roofs, paved surfaces and small grassed area (total surface area 81,837 m²) at the site.
 - Directed to the cooling and stormwater pond for treatment, prior to discharge to River
- Cooling Water:
 - Water abstracted from the Kaituna River is pumped to the Plant where it passes through the condenser cooling system and is discharged to the cooling water pond.
 - There are no additives and the discharged water is essentially heated river water.
 - The pond is 120 m long x 60 m wide (at its widest point) and treats via settling and heat dissipation prior to discharge.
 - Minimal loss of water through the system and water take volumes are very close to the discharge volumes.
- Defrost Water:
 - Generated when work is required to be undertaken on a chiller or a chiller has iced up (i.e. occurs intermittently).
 - There are no additives, and the discharged water is essentially clean water.



Resource Consent Applications

» Kaituna River & Bore Water Takes (Consent No. 02 0194/01)

- Authorises AFFCO to take water from the Kaituna River and from a bore for use in an abattoir in relation to the AFFCO Rangiora Meat Processing Plant
- Kaituna River Take:
 - Consented take limit: 27,270 m³ (max daily volume) and 400L/s (max rate).
 - Actual take volume and rate (between Feb 2017 and Nov 2020) well below this (~61% of max limit, and ~51% of max rate).
 - Majority of water abstracted used as refrigeration plant condenser cooling water, single pass use and returned to River
 - Minimal loss of water through the system and consequently the volumes and rates of take are very close to the cooling water discharge volumes.
 - Max take under worst-case conditions equates to 0.14% of River MALF, with 95% of this returning to the River close to intake point.
 - Therefore, in real terms, the AFFCO Rangiora Take represents **zero net take** from the River.
- Bore Take:
 - Consented take limit: 1,636 m³ (max daily volume) and 37.9 L/s (max rate).
 - Was the original plant water supply, and is currently used as **emergency supply**.
 - No change in use proposed.



Environmental Effects

» A range of studies have been undertaken since 2005 at sites along the River and Maketu Estuary including general water quality, effects on recreation and bathing water quality, aquatic flora and fauna, etc.

» Water Quality Studies

- No significant differences observed for majority of physical parameters (temp, DO, pH, turbidity, TSS, cBOD₅), nutrients (TKN, TON, DRP) and bacteria (*E.coli*, *enterococci*, faecal coliforms) upstream and downstream of discharge.
- However, there is an increase in concentrations immediately downstream of the discharge for some nutrients (NH₃-N, TN and TP) before returning close to background at sites further downstream.
- Based on ANZECC default trigger values and NPS-FW Attribute States criteria, ammonia concentrations in the discharge would not result in a more than minor environmental effect.
- TN concentrations exceed the ANZECC default trigger value. However, as a large proportion of the TN is organic nitrogen, no adverse effects are anticipated.
- TP concentrations also exceed the trigger value at sites upstream and downstream of the discharge.

» Treated Effluent Mixing / Dispersion Studies

- Mixing / dispersion study was undertaken in 2019 to confirm dilutions being achieved by the diffuser.
- Study designed to determine the 'worst-case' potential for mixing (i.e. low tide and MALF).
- Effluent is fully mixed 100 m downstream of discharge.



Environmental Effects

» Freshwater Ecology (Macroinvertebrates)

- Studies on the macroinvertebrate communities in the Kaituna River at sites located upstream and downstream of the discharge in 2005, 2007, 2012, 2016 and 2018/2019.
- 2018/19 survey confirmed that there was no difference in mean macroinvertebrate abundances, numbers of species and mean MCI scores between upstream and downstream sites.
- The macroinvertebrate survey results indicate that the discharge is resulting in no more than minor effect.

» Freshwater Ecology (Fish)

- Fish survey undertaken in Kaituna River and nearby tributaries in December 2018.
- Fish species identified included longfin eel (*Anguilla dieffenbachia*), short-finned eel (*Anguilla australis*), inanga (*Galaxias maculatus*), common bully (*Gobiomorphus cotidianus*), common smelt (*Retropinna retropinna*) and mosquito fish (*Gambusia affinis*).
- Survey did not identify any differences in the type of species present or their abundances in River or tributaries indicating the discharge is unlikely to be affecting fish communities in the River.

Environmental Effects

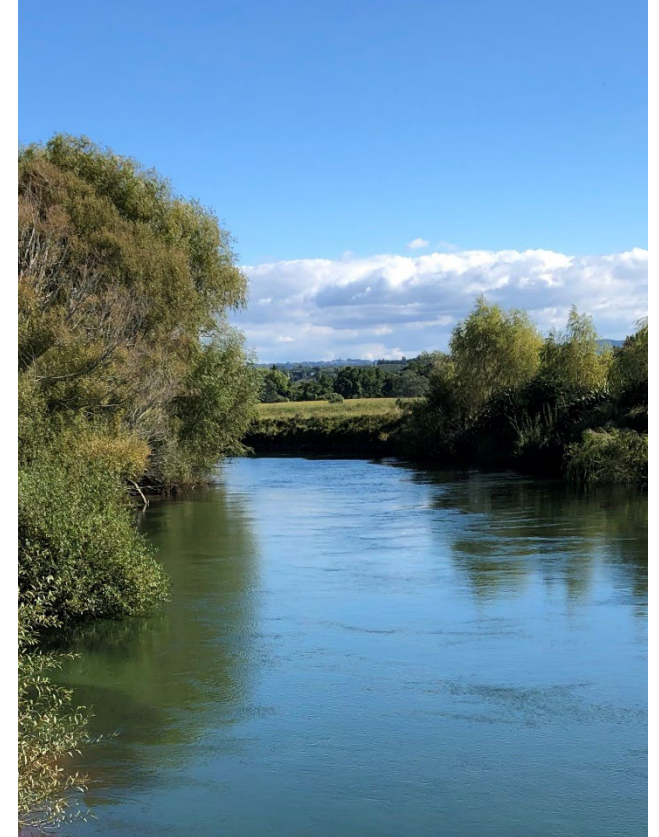
» Groundwater Quality (via Pond Seepage)

- Groundwater monitoring, focusing on nutrients and bacteria, is undertaken quarterly at three monitoring bores in the vicinity of the treatment system. Nutrient and faecal bacteria levels appear not to be significantly affected.
- Groundwater flow is towards the Kaituna River so any groundwater quality effects will be localised to a small area beneath the ponds and between the ponds and River on AFFCO's property. There are no groundwater abstractions that could potentially be affected by this discharge.
- Groundwater monitoring shows that additional treatment (beyond that provided by the ponds and wetlands) occurs as the effluent passes through the soil. Contaminant loadings will therefore be lower in the seepage than for the same volume discharged direct to the River.
- Seepage accounts for a very small proportion of the contaminant load discharged to the River. Overall, any potential adverse effects on River water quality, biota, water abstractions and recreational activities are considered less than minor.



Public Health Effects

- » Monitoring of treated wastewater indicates that the microbiological quality of the discharge has improved over the years (1997-2020) due to treatment system upgrades with no associated consent limit exceedances.
- » Indicator bacteria (e.g., *E. coli*) concentrations in the River can at times be higher than that of the discharge indicating that other catchment sources contribute to contaminant load in the River (especially following heavy rain events).
- » Monitoring for a range of common bacteria and pathogens (including salmonella, campylobacter, giardia, cryptosporidium, *E. coli* 157, yersinia & leptospira) in the wastewater was undertaken between Feb 2014 – March 2017 to inform a quantitative microbial risk assessment (QMRA).
- » A QMRA prepared to evaluate the risk to recreational users and shellfish harvesting in the River indicates very low risk of illness as a result of the discharge.



Alternatives

- » Only valid alternative to a river discharge for the AFFCO Rangiuru facility would be complete discharge to land. Access to a large parcel of contiguous land would be required. AFFCO does not own any additional land which would be suitable for land disposal.
- » Acquiring a suitable area for land disposal of treated wastewater would take considerable time and expense, and would incur a need for a change of land use to allow the activity.
- » Based on the expected annual nitrogen loading the irrigation land required for the current consented discharge volume could be as much as 350 ha (including buffer zones). No such area of land is available in close proximity to the AFFCO Rangiuru facility. Further storage of the wastewater would also be required during wet weather when irrigation is not practicable.
- » Whilst no specific costing has been applied to a land disposal scheme indicative capital costs could be in the order of \$10-15 million, including both infrastructure and land acquisition. There would also be significant ongoing operational costs. Such an arrangement would be uneconomic. Plant would likely close in this case.



Consultation Undertaken to Date

- » AFFCO have undertaken consultation with key stakeholders and local tāngata whenua between 2016 and 2019 regarding these applications.
- » Local tāngata whenua consulted with, as directed and agreed by BoPRC, include:
 - Ngāti Pikiao
 - Ngāti Rangiwewehi
 - Tapuika Iwi Authority
 - Ngāti Pūkenga
 - Ngāi Te Rangi
 - Waitaha
 - Te Maru O Kaituna River Authority
- » Other key stakeholders consulted included BoPRC and the Kaituna Maketū Freshwater Community Group (which includes a broad range of representatives including local residents, iwi, businesses, councilors, industry, agency, recreation and environmental groups).
- » Consultation included a range of correspondence (email and letter), phone calls, and meetings (incl. video conferences and in-person meetings both on the marae and at the AFFCO Rangiora site).



Summary

- » AFFCO is a key industry and employer for the region.
- » The AFFCO Rangiuru facility has undergone significant investment, including treatment improvements in recent years.
- » Current monitoring of the discharge and receiving environment does not indicate any exceedance of consent limits, or a more than minor impact on the environment as a result of the existing resource consents.
- » No change in existing consents or nature of operation are proposed.
- » This Pre-Hearing Meeting provides an opportunity for AFFCO and the submitters to discuss and work through any points of disagreement and misunderstanding.
- » **We welcome any comments and/or elaboration on points of submission by Submitters present.**



Technical Issues Raised by Submitters

Key Technical Topics/Themes of Submission

- Independent Commissioner/Māori Commissioner on the Hearing Panel.
- Cultural Environment Monitoring Committee/Independent Monitoring Regime.
- Short term consent
- Land based discharge including irrigation beyond international best practice.
- Context of Rangiuru Business Park and Te Puke Wastewater Treatment plant.
- Significant improvements in quality of discharge
- Independent review of current system.
- Adopt remedies in TMOK report by Terry Long to align with international best practice. (Next Slide).

Technical Issues Raised by Submitters

» Wastewater Discharge

- Increase aeration capacity
- Improved wetland cover / other wetland treatment options
- Maturation cell (deep pond) or a filter
- Storage of treated wastewater/ irrigate on nearby farmland or unused part of site/ only excess to river
- Only discharge when river has moderate to high flows
- Periodically conduct sludge surveys and when required desludge the ponds
- Regular review monitoring reports with various stakeholders

» Seepage

- Sealing/lining to prevent the migration of contaminants to groundwater.

» Amenities WW

- Upgrade treatment plant to achieve secondary treatment standard
- Increase land area for disposal
- Dosing system/rotation

