Discharge of Treated Wast	ewater and Pond Solids to Land – Cond	litions		
No. Applicants Proposed Cond	ditions		Horizons Condition and Comment	Formatted Table
Definitions:	anono		TIONEONS CONTRACTOR AND CONTRACTOR	I dillianda i abio
In the following conditions:				
Land treatment area	Means the land identified in Plan Number ? to			
Treated wastewater	Means secondary treated wastewater derived			
Developite	Processing plant's wastewater treatment and			
Pond solids	Processing plant's wastewater treatment pon-	een retained in the Permit Holder's Manawatu		
Paunch solids	Means undigested gut contents removed from			
Treated organic solids	Means pond solids or paunch solids or a mixt			
The Activities	Means the activities authorised by this permit			
Consent Duration				
1 Discharge Permit Number sh	hall expire on 1 July 2049.			Formatted Table
Authorised Discharge Activ	ivities			
	nis Discharge Permit are restricted to:		No comments	Formatted Table
	treated wastewater by irrigation onto or into land in	the land treatment area; and		
	treated wastewater by irrigation onto or into land in treated organic solids onto or into land in the land t			
	n accordance with Condition 2 shall occur on land le	egally described as:	No comments	
Legal Description	Owner DICT Prophered Line the d			
Part Section 225 Sbdn A Ma	,			
Section 5 Block XIV Oroua S	Byreburn Limited SD Byreburn Limited			
Lot 2 DP 89128	Byreburn Limited 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 Or				
Part Section 13 Clock XIV K				
Lot 28 DP 2688	AFFCO New Zealand Limited			
Lot 24 DP 2688 Lot 23 DP 2688	AFFCO New Zealand Limited AFFCO New Zealand Limited			
Lot 23 DP 2688	AFFCO New Zealand Limited AFFCO New Zealand Limited			
Lot 21 DP 2688	AFFCO New Zealand Limited 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			
4 The maximum daily discharge	ge of treated wastewater to the land treatment area	shall not exceed 3,000 m3/ day.		
5 The maximum daily dischard	ge of treated organic solids to the land treatment ar	res shall not be restricted by volume, but by nitroge		
loading, which is limited in Co		ea shall not be restricted by volume, but by mirroge	The consent holder shall ensure the maximum daily discharge of treated organic solids is undertaken in a	= use the dealine
locality, willow to militar in a	Action 15.		manner that complies with the nitrogen and phosphorus loading limits specified in condition 11.	Formatted: Underline
			multion that dompines than the introgen and pricepricial leading milities appeared in contains.	Formatted: Tab stops: 4.84
			Advise Note: the N and P limits only apply to those areas which are not harvested or cropped.	cm, Left
			Total Control of the	Formatted: Underline
			Comment – Minor changes to refer to conditions that specify nutrient loading limits	Formatted. Ordenine
General Requirements			1 , ,	
	dertake the activities in general accordance with the	information cumplied in the consent application, the	_	Formatted Table
	dertake the activities in general accordance with the tal Effects dated 31 March 2015 including all conce		e	Formatted rapie
	res, methods concerning how the activity will be con-			
proposed miligation measure	es, methods concerning now the activity will be con	iddeled and the scale, character and intensity of		ı

ο.	Applicants Proposed Conditions	Horizons Condition and Comment	4	Formatted T
	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.			
	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.	Comment – is this condition better to be on the general conditions?		
	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.			
	Maximum Application Rates and Application Restrictions			
	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.			Formatted T
	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.			
	The Permit Holder must ensure that the rate, frequency and method of the discharge of wastewater onto and into land does not result in: a) any noticeable contamination of groundwater (when measured between the upstream and downstream monitoring sites as required by Condition 17); b) run-off to surface water or subsurface drains; or c) any ponding on the soil surface (defined as a depth of wastewater greater than 25 mm [covering a continuous area exceeding 10 m2 or a combined area greater than 20 m2] during and following irrigation, or any treated wastewater on the soil surface five hours after irrigation has occurred).	The Consent Holder must ensure that the rate, frequency and method of the discharge of treated wastewater onto and into land does not result in: a) any noticeable contamination of groundwater (when measured between the upstream and downstream monitoring sites as required by Condition 17), noticeable contamination is defined as a change greater than xxxx; b) run-off to surface water or subsurface drains; or c) any ponding on the soil surface (defined as a depth of wastewater greater than 25 mm [covering a continuous area exceeding 10 m2 or a combined area greater than 20 m2] 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.	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.		
		Comment – need to establish an appropriate parameter to define 'noticeable', noted that there are currently background or up gradient effects. Invite the applicant to suggest a suitable measureable standard		
	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.	Prior to the application of treated wastewater to land, the Consent Holder must measure soil moisture levels in representative areas of the land treatment area to ensure that treated wastewater is only applied to land so that at the completion of irrigation a soil water deficient of 5mm remains on LMU 1 to 3 and at least 1mm remains on LMU 4.		
		Comment – Changes in wording to better reflect management criteria stated in the application		
	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:	No comment other than for consistency refer to treated organic solids	-	Formatted 7

		Land – Conditions		
No.	Applicants Proposed Conditions		Horizons Condition and Comment	
	LMU 1	LMU 2	LMU 3	
-	Max N Load (/year) 250 kg N/ha	250 kg N/ha	250 kg N/ha	
	Max P Load (/year) 50 kg P/ha	50 kg P/ha	50 kg P/ha	
	Advice Note: LMU means Land Management Unit, which March 2015 and shown on Plan? attached.	are defined in the Assessment of Envir	ronmental Effects, dated 31	
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.			
	removal. The efficacy of the additional removal shall be dem	ce Note: Nutrient loading over and above the grazed maximum requires harvesting as hay or silage, or some form of crop val. The efficacy of the additional removal shall be demonstrated by recording the mass of herbage or crop removed and its ent concentration. The details of this harvesting regime shall be detailed in the Operation and Management Plan as required condition 3 of the General Conditions.		
13	Meeting the requirements of Conditions 11 and 12 shall be d treated wastewater. The nutrient loading will be based on the General Conditions (treated wastewater monitoring) and a repaddock.	results of monitoring required in accordan	nce with Condition 13 of the	Comment – have added testing in to Condition 13 of the general conditions otherwise was nothing to measure for the organic solids
14	The permit holder must ensure that treated wastewater is not discharged to land closer than:			The permit holder must ensure that treated wastewater or treated organic solids are is not discharged to
	 a) 20 m from any watercourse, whether flowing conti 	nuously or intermittently, including any on	en drain:	land closer than:
	b) 20 m from any property boundary where there are	no buildings; or	ori didiri,	a) 20 m from any watercourse, whether flowing continuously or intermittently, including any
	c) 200 m from any dwelling house, milking shed or o	her building on any property bordering th	ne land treatment area when	open drain;
	that building is directly downwind		b) 20 m from any property boundary where there are no buildings; or	
				c) 200 m from any dwelling house, milking shed or other building on any property bordering the
	Advice Note: this condition does not apply to dwellings and b	wildings within the application site		land treatment area when that building is directly downwind
	Advice Note. this condition does not apply to dwellings and b	undings within the application site.		
				Advice Note: this condition does not apply to dwellings and buildings within the application site.
				Comment – buffer distances need to refer to organic solids as well
15	The Permit Holder must not discharge treated wastewater to l	and:		Comment – include treated organic solids
	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 p	previous 24 hour period as recorded at the	e WWTP.	
	Soil Sampling			·
16	The Permit Holder must take annual composite soil samp			The Consent Holder must take annual composite soil samples from any Land Management Unit that has
	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;			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. Samples has be taken from a minimum of 3
				paddocks in each Land Management Area. A minimum of ten 75 mm depth composite samples must be
	b) Exchangeable Sodium (Na);			obtained from each paddock, and must be analysed for the following:
	c) Exchangeable Sodium percentage (Na);			_ a) pH;
	d) Exchangeable Potassium (K);		b) Exchangeable Sodium (Na);	
	e) Exchangeable Magnesium (Mg); f) Exchangeable Calcium (Ca);		c) Exchangeable Sodium percentage (Na); d) Exchangeable Potassium (K);	
	g) Phosphorus (Olsen);			e) Exchangeable Magnesium (Mg);
	h) Sulphate-S;			f) Exchangeable Calcium (Ca);
	i) Total Nitrogen; and			g) Phosphorus (Olsen);
	j) Cation Exchange Capacity.			h) Sulphate-S;
				i) Total Nitrogen; and
				j) Cation Exchange Capacity.

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lo. Applicants Proposed Conditions	Horizons Condition and Comment
	16a The Consent Holder must take soil samples from all Land Management Units in 2022 and 2027, a minimum of 3 paddocks in each Land Management shall be sampled. A minimum of ten composite sample collected at a 200-300mm depth must be collected from each paddock and 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. Comment: Need to ensure sufficient composites are sampled per paddock to ensure sampling is representative. Sampling further down the profile at longer intervals gives assurance as to potential effects
	further down the profile.
Groundwater Monitoring Groundwater quality and level shall be monitored at bores identified on Plan ? attached to and forming part of these conditions.	The Consent Holder shall monitor groundwater quality measured in seven locations. Monitoring shall be undertaken from three existing monitoring bores (325413, 325416B, 325016 and 325411) and three new monitoring bores establish in accordance with Condition xx below. Comment – additional monitoring bores are recommended based on advice of Mr Thomas to better capture potential effects.
	17a Within six months of the date of commencement of this consent, the consent holder shall install three new groundwater monitoring wells on the site at or as near as practicable at the locations specified in Appendix 1 and to the following specifications: a) The monitoring wells shall have a diameter of not less than 50/100 millimetres / of a sufficient size to enable samples to be taken and shall be installed at the locations identified in xxxx plan
	 b) The wells shall be drilled to a depth of up to 10 metres below the summer low ground level and shall be screened across the full depth of the water table/aquifer, with a screen length of no more than xxx metres.
	c) The borehole casing shall be constructed of polyvinyl chloride (PVC) or a similar inert material and shall be capped and secured to prevent entry of surface water.
	d) A concrete pad at least 0.3 metres radius shall be constructed around the bore head of the monitoring well at ground level, to prevent leakage around the casing. The concrete pad shall slope away from the bore.
	e) The wells shall be installed by a suitable qualified person(s) and constructed in accordance with the New Zealand Standard for Drilling Rock and Soil NZS 4411:2001.
	Advice Note: Any new bore requires a controlled activity land use consent under Rule 16-14 of the One Plan (2014)
	17b. The Consent Holder shall notify the Manawatu-Wanganui Regional Council's Consents Monitoring Team of the installation, location and depth of any monitoring well's installed under Condition *17a.
	Advice Note: The Consents Monitoring Team can be notified via 0508 800 800 or compliance.shared@horizons.gov.nz

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Field Code Changed

Dis	scharge of Treated Wastewater and Pond Solids to Land – Conditions		
No.	Applicants Proposed Conditions	Horizons Condition and Comment	Formatted Table
18	Condition 17 above and the samples must be analysed for the following: a) Total Phosphorus (TP); b) Dissolved Reactive Phosphorus (DRP);	The Consent Holder shall take samples monthly from all bores identified in Condition 17 until 1 July 2019 and thereafter in the months of January, April, July and October for the remaining duration of the permit. Samples shall be collected in accordance with the MfE Groundwater sampling protocols (2006) or updated protocols document	Formatted: Numbered + Level: 1 + Numbering Style: -, -, = + Start at: 1 + Alignment: Left + Aligned at: 0 cm + Indent at: 0 cm
	c) Total Nitrogen (TN); d) Nitrate Nitrogen (NO3-N) e) Ammoniacal-Nitrogen (NH4-N) f) Chloride (Cl-); g) Escherischia coli; and h) Static water level	18a The Consent Holder shall measure and record the static water level in the bore prior to purging and sampling. Samples collected under Condition 12 shall be analyses for the following parameters: a. Temperature b. pH c. electrical conductivity d. chloride e. nitrate-nitrogen f. ammonia-nitrogen g. nitrite-nitrogen h. dissolved reactive phosphorus	
		 i. E.Coli 18b Results of monitoring collected in accordance with Condition 18a shall be transferred within ten working days of their receipt to the Manawatu-Wanganui Regional Council in a format compatible with the Manawatu-Wanganui Regional Council systems. 	
		Comment – more detailed sample collection is recommended initially, this will assist with the assessment of effects from the discharge to land activity as well as help identify likelihood of groundwater plumes containing elevated nutrient concentration entering the Oroua River. Three years should be sufficient to establish a pattern and then sampling frequency reduces.	Formatted: Font: Bold
	Surface Water Monitoring		
	No Condition is proposed to address this.	•	Formatted Table
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	The Consent Holder must maintain a record of all irrigation activities authorised by this resource consent that opccur within the land treatment area. This record must include but not be limited to:	Formatted Table
	a) The date, time, location and volume of each irrigation_application;	a) The date, time, location and volume of each irrigation <u>and solids</u> application;	Formatted: Underline
	 b) The date, time, location, volume and nitrogen loading of any nitrogenous and phosphorus material applied; and c) The date and time of pipeline flushes when they occur. 	 b) The date, time, location, volume and nitrogen loading of any nitrogenous <u>and phosphorus</u> material applied; and c) The date and time of pipeline flushes when they occur. 	Formatted: Underline
		Records shall be reported in the annual report as required by Condition 20 of the general conditions	
20	record must include the date, time, stock numbers, number of bales and mass of harvested material.	The Consent 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.	
		Records shall be reported in the annual report as required by Condition 20 of the general conditions	
	Review		
21		The Manawatu-Whanganui Regional Council may, under Section 128 of the Act initiate a review of these	Formatted Table
۷.	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.	conditions <u>annually</u> in the month of July, commencing in July 201 <u>9</u> , for the duration of this permit. The review must be for the purposes of avoiding, remedying or mitigating any adverse effects on the	Tornation rand
	The review must allow for the consideration of the following matters:	environment, which may arise from the exercise of this Discharge Permit.	
	 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; 	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 ?;	

No.	Applicants Proposed Conditions	Horizons Condition and Comment		
	 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. 	d) The amendment or addition of new Conditions as necessary to avoid, remedy or mitigate an adverse effects on the environment, including but not limited to conditions to mitigate advers		
		Comment – Suggest annual reviews at this stage, so can consider findings of the various reports that are required and refinement of operation system once more data is collected.		

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