



2022 ANNUAL COMPLIANCE REPORT
CRC184159 & CRC211511

1 DECEMBER 2022

QUALITY CONTROL SHEET

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CLIENT	Barrhill Chertsey Irrigation Limited
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Nick Daniels, CEO Barrhill Chertsey Irrigation Limited

EXECUTIVE SUMMARY

The Barrhill Chertsey Irrigation Limited (BCI) nitrogen discharge resource consents CRC184159 and CRC211511 commenced on the 14th of October 2021. The consents permit an Audited Self-Management (ASM) Programme requiring nearly 200 BCI and Acton Farmer Irrigation Co-operative (AFIC) shareholders to implement Farm Environment Plans, which are regularly independently audited, as well as comply with catchment nitrogen load limits, Advanced Mitigation achievement targets and a water quality monitoring programme.

This report summarises key outcomes of the BCI ASM programme for the period **1st July 2021 to 30th June 2022**.

BCI's Environmental Management Strategy (EMS) is the key document which sets out the systems and processes needed to effectively implement the Audited Self Management programme and comply with the discharge consent. The EMS promotes continuous improvement, compliance with our regulatory obligations and identifies actions needed to improve water quality outcomes within the catchment and was initially developed in 2015.

Our EMS has been updated to align with the requirements of the new resource consents. The updated EMS was prepared in consultation with Te Rūnanga o Arowhenua, submitted to Environment Canterbury for certification on the 13th of September 2022 and certified on the 28th November 2022. From 2023, we will be required to demonstrate to an external third party that we operate in accordance with our EMS.

Nitrogen losses from the BCI ASM programme are calculated using The Matrix methodology¹, which is a catchment N load calculator recognised as "equivalent" to Overseer by Environment Canterbury in April 2020. Property-specific farm system and irrigation data was estimated during the consent process and applied in a way that underestimated N losses where there was any uncertainty. Over the past 12 months, we have consulted all BCI and AFIC shareholders on the baseline farm and irrigation system assumptions used during the consent application process and collected and verified further information to support corrections.

Based on the corrected farm system and irrigation details obtained from shareholders, the Nitrogen Discharge Allowance (NDA) for Hekao/Hinds resource consent CRC184159 was calculated to be **558.1 T N**. Further reductions in N loss will apply from 2025. For the 2021-22 reporting season, BCI shareholders discharged **475.5 T N**, 85% of the current consented N load limit.

For properties consented under Ashburton zoned resource consent CRC211511, the revised consented NDA was calculated to be **2,167.1 T N**. For the 2021-22 reporting season, BCI and AFIC shareholders discharged **1,921 T N**, 89% of the consented N load limit.

Compliance with our consented N load limits reflect the improvements BCI and AFIC shareholders have made on their properties since the baseline period, with 91% of all shareholders audited as an "A" audit grade and many on track with achieving Advanced Mitigation.

BCI also invest significantly in an extension programme and work collaboratively with industry to support shareholders with methods to improve their resource use efficiency.

BCI's Environmental Monitoring Plan for resource consent CRC211511 was submitted to Environment Canterbury for review on the 14th April 2022, with the first year of reporting of groundwater and surface water due December 2022. Monitoring for resource consent CRC184159 was already initiated through the MHV Water Limited Environmental Monitoring Plan provided for their discharge consent CRC185857.

A risk assessment has been completed and peer reviewed by Pattle Delamore Partners for all 4 properties that overlap a Community Drinking Water Protection Zone (CDWPZ). Property-specific actions to address the risk to drinking water will be audited under the new consents to ensure they are being implemented.

Overall, there are no issues to report in relation to compliance of resource consents CRC184159 and CRC211511 for the first year of operation and BCI and AFIC are on track with implementing all requirements of these consents.

¹ Updated to Overseer version 6.4.3, calculated by Dr. Glen Treweek of Ground Sense Limited.

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INTRODUCTION

Barrhill Chertsey Irrigation Limited (BCI) are consented to take up to 17 m³/s of water from the Rakaia River, of which up to 3 m³/s is leased to Acton Farmers Irrigation Co-Operative (AFIC), east of Rakaia. Only 13.37m³/s of water was allocated to BCI and AFIC shareholders, with further development of the scheme planned in the future, provided environmental outcomes continue to be met within the catchment.

Nutrients discharged to groundwater from BCI and AFIC shareholders are permitted through resource consents CRC184159 and CRC211511, granted on the 14th October 2021 to manage the effects of farming land use activities onto over 58,000 ha within the Ashburton District.

CRC184159 covers over 10,000 ha within the Land and Water Regional Plan's (LWRP) Plan Change 2 (PC2) area, which is located south of the South Branch of the Ashburton River through to the Rangitata River. CRC211511 covers approximately 48,500 ha between the PC2 boundary north to the Rakaia River (LWRP's Plan Change 5 (PC5) area) (Figure 1). All land managed under resource consents CRC184159 and CRC211511 form the "BCI ASM Programme".

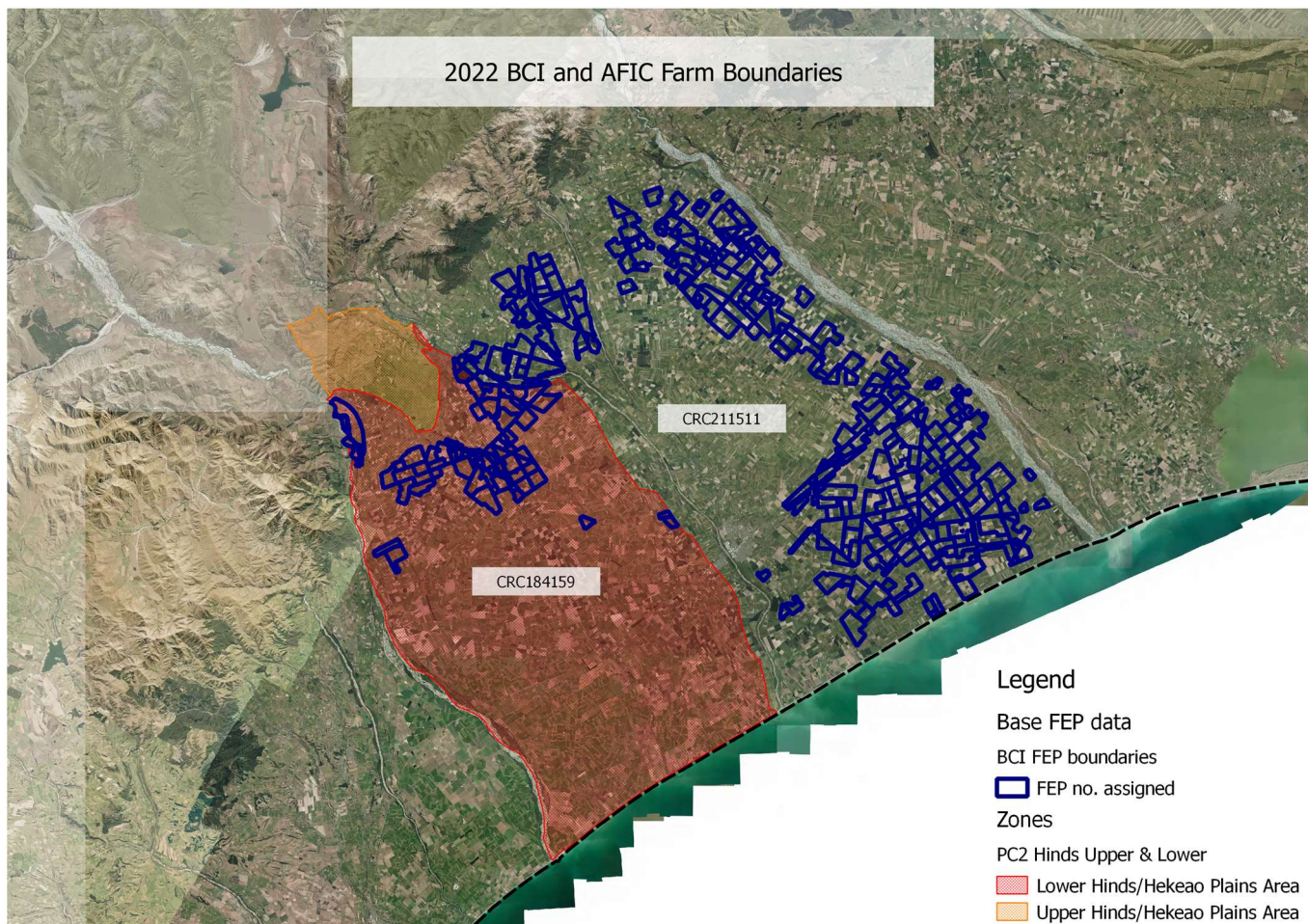


FIGURE 1: 2022 BCI AND AFIC FARM BOUNDARIES

This annual report is due 1st December each year to provide a summary of compliance with resource consent CRC184159 and CRC211511 for the period **1st July 2021 to 30th June 2022**.

Resource consent CRC162882 was applicable up until 14th October 2021, however no transitional adjustments to account for differences between the consents have been necessary for this reporting period.

AUDITED SELF-MANAGEMENT PROGRAMME SUMMARY

The BCI & AFIC Audited Self Management (ASM) programme was implemented in 2015 following the granting of CRC162882, to discharge nutrients onto and into land from farming activities. The fundamental principle of the ASM programme is to support our farmer shareholders to continually strive for improvements in farming practices to reduce their impact on the Ashburton catchment.

Resource consent CRC162882 was renewed in October 2021 and replaced with resource consents CRC211511 (Ashburton Zone) and CRC184159 (Hekaeo/Hinds Zone).

Our ASM programme requires all BCI and AFIC shareholders to implement Farm Environment Plans, which are regularly independently audited, as well as comply with catchment nitrogen load limits, supported by a water quality monitoring programme. As part of the ASM programme, the Enviro Collective Limited (ECL) Environmental team provide wrap-around environmental services to all BCI and AFIC shareholder farmers, which includes the following:

- Development of the Environmental Management Strategy;
- Preparation and annual updates of FEPs;
- Workshops (shareholders and staff);
- Resources explaining GMP, Advanced Mitigation and Scheme Policies
- Support to prepare for and follow up FEP Audits;
- Bucket testing; and
- General environmental support or advice to all shareholders and their staff.

Our programme utilises trained facilitators to deliver the information our farmers need to make the best decisions they can and has resulted in real improvements to on-farm practice to improve water quality in the catchment.

EXTENSION PROGRAMME

We understand our farmers' needs better than most and we have developed targeted workshops and resources to deliver the information they need, by people they trust, in the location, time and format that suits them. Examples of workshops we have delivered over the years include:

- Aiming for an 'A'; *Good Management Practice in Action*
- Irrigation Calibration & Maintenance;
- New Managers Introduction to Scheme & Environmental Programme;
- Irrigation Scheduling;
- Fertiliser Spreader Calibration; and
- Strategies to Reduce Nitrogen Use

We have also hosted large scale trade shows to highlight irrigation scheduling solutions and nitrogen fertiliser management options to farmers, where over 150 people attended each event. The high level of engagement our farmers have with our extension programme has resulted in higher levels of understanding and knowledge of strategies to implement Good Management Practices on-farm.

Under our previous consent, CRC162882, our extension programme was designed to target Good Management Practice, measured as an "A" audit grade in the FEP audits. Between the first season of FEP auditing and last season, our achievement rate of "A" audit grades improved significantly, from 10% in 2016 to 96% in 2022 (Figures 2 and 3). Over the whole BCI and AFIC schemes, 91% of shareholders have been audited as an "A" grade.

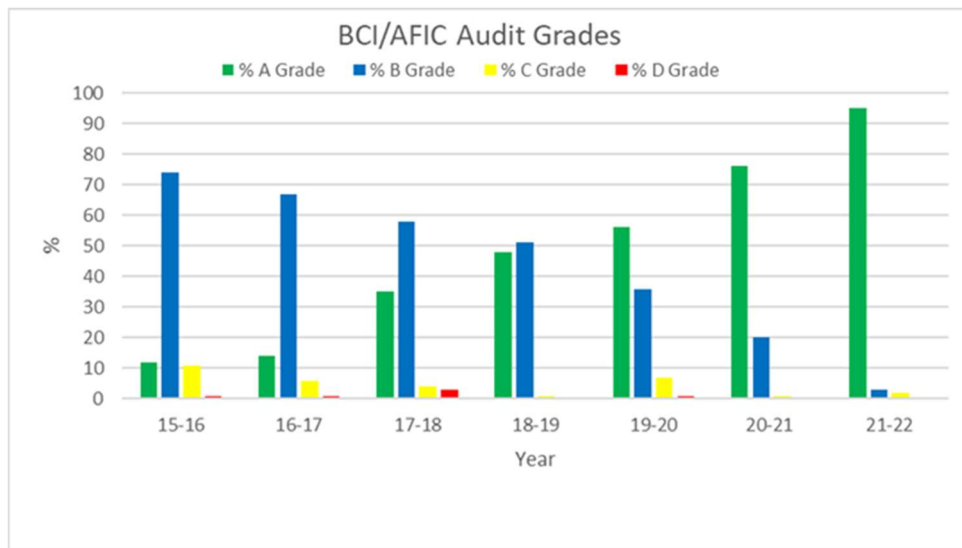


FIGURE 2: BCI AFIC AUDIT GRADE TRENDS FROM 2015/16 TO 2021/22

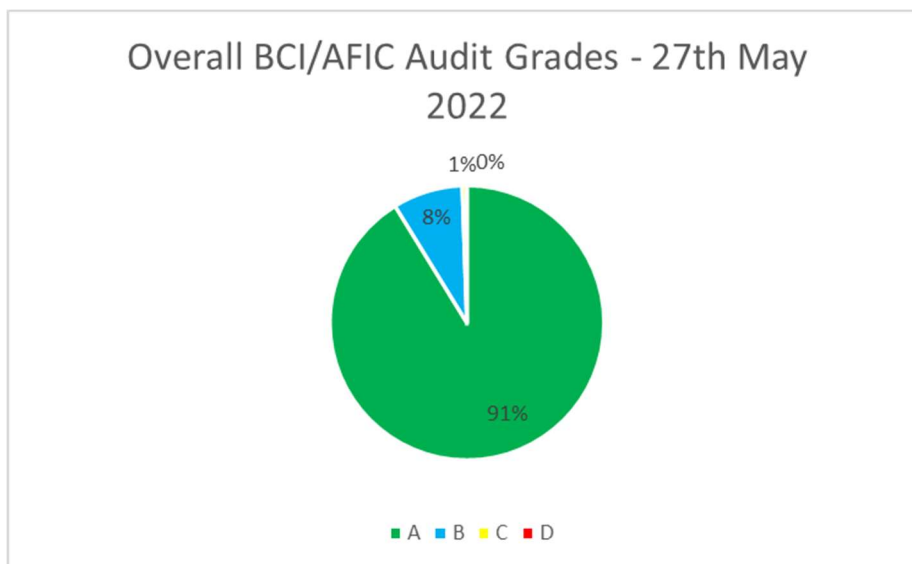


FIGURE 3: OVERALL BCI/AFIC AUDIT GRADES

Over the past 12 months, Covid-19 restrictions limited the scale and frequency of workshops and field days we could host, however we have continued to provide smaller, targeted events for shareholders where possible.

Going forward, our extension programme will have a strong focus on the implementation of Advanced Mitigation practices, intensive winter grazing and risk assessments and actions to protect community drinking water supplies, waterways and wetlands and sites of significance to Arowhenua. With Covid-19 restrictions largely lifted, we will resume our regular extension programme with targeted events for larger groups.

CONDITION SUMMARY

CONDITION 1 (CRC184159 & CRC211511)

This consent authorises the discharge onto or into land where contaminants may enter water arising from farming activities on Properties:

- a. listed in Schedule CRC184159A/CRC211511A (as is to be completed by the Consent Holder and provided to the Regional Leader - Monitoring and Compliance, Canterbury Regional Council within one month of the Commencement Date, and as may be amended from time to time in accordance with Condition 8 (CRC184159)/Condition 7 (CRC211511)); and
- b. located within the area shown on Plan CRC184159A/CRC211511A as CRC184159/CRC211511 Nutrient Discharge Area,

and including the expansion of dairy support land and irrigated dairy farm land, the conversion of land to dairy farm land and the undertaking intensive winter grazing.

Advisory note: Schedule CRC184159A/CRC211511A as provided for in this resource consent at the Commencement Date is a template. It shall be completed and provided in accordance with this Condition 1 and may be updated from time to time in accordance with Condition 7. Any such replacement Schedule CRC184159A/CRC211511A shall apply for the purposes of compliance.

No comment required.

CONDITION 2 (CRC184159 & CRC211511)

Land Types

Dry Land	Land that is not irrigated but where nitrogen losses are managed under this consent.
Existing Scheme Irrigated Land	Land lawfully supplied with irrigation water supplied by an irrigation scheme or principal water supplier prior to 9 September 2013.
Lawfully Irrigated PC2 Land	Land that was previously not irrigated and which was first supplied with irrigation water by an irrigation scheme or principal water supplier under the authorisation of resource consent(s) CRC121664 or CRC162882 (or replacements and subsequent variations).
Lawfully Intensified (PC5) Land	Land which lawfully increased its nutrient losses above its baseline nitrogen loss rate between 31 December 2013 and 13 February 2016.
Other Irrigated Land	Land that is irrigated from any source and which is not Existing Scheme Irrigated Land or Lawfully Irrigated PC2 Land and which is on a Property that receives irrigation water from the Barrhill Chertsey irrigation scheme.

Advisory note: All land on a Property managed by the Consent Holder under this resource consent shall fall in one or more of the land types listed. All properties must be fully or partially irrigated with water from the Barrhill Chertsey irrigation scheme.

Other Definitions

Term	Definition
Advanced Mitigation	The undertaking of farming on a property that is consistent with the Advanced Mitigation targets described in Condition 18 (CRC211511).
Associated Properties	Properties which are not Authorised Properties and which do not receive irrigation water from the Barrhill Chertsey Irrigation Scheme, but which are Properties where the nutrient losses are managed by the Consent Holder.
Authorised Properties	Properties that the Consent Holder has elected to treat as Authorised Properties for the purposes of Condition 9 (CRC184159) and Condition 8 (CRC211511).
Certified Freshwater Farm Plan	A freshwater farm plan certified under section 217G of the Resource Management Act 1991 (as amended from time to time in accordance with section 217E(2) or (3)), or as provided for by the Resource Management (National Environmental Standards for Freshwater) Regulations 2020
CDWPZ Impacted Land	Land that is included in a Community Drinking Water Protection Zone, plus any other land within the same paddock where it not possible to treat such further land on a different management basis for the purposes of Condition 21 (CRC184159 & CRC211511). Advisory note: For example: - it will typically not be possible to provide differential stock grazing within the same paddock; and - it may be possible to provide differential management for a cropping or horticultural operation in the same paddock.
Commencement Date	The date that this resource consent (CRC184159) is given effect to, without limiting any amendment to the reporting requirements as may be agreed in accordance with Condition 32 (CRC184159 & CRC211511).
Community Drinking Water Protection Zone	A Community Drinking Water Protection Zone as identified in Schedule 1 of the Canterbury Land and Water Regional Plan.
Farming activity	All Agricultural and Horticultural land uses (whether irrigated or not) and including but not limited to dairy farming, dairy support, winter grazing, sheep and beef farming, deer, pig and goat farming.
Farm Environment Plan	A Farm Environment Plan in the form set out in Schedules CRC211511C and CRC184159C: - as may be amended following mutual agreement with the Regional Leader - Monitoring and Compliance, Canterbury Regional Council; or - should the use of a <i>Certified Freshwater Farm Plan</i> be required or available on the basis it is certified and available for use then the Consent Holder may, as may be mutually agreed with the Regional Leader - Monitoring and Compliance, Canterbury Regional Council elect to use such a plan (and which will then take the place of Schedules CRC211511C and CRC184159C).
HPZ gmp	The farming practices described in Schedule 24a of the operative Canterbury Land and Water Regional Plan (at the Commencement Date), taking into account: (a) the type of farming activity; and

Term	Definition
	(b) the drainage characteristics of the soils; and (c) the climatic conditions and topography of the Property; and the type of irrigation system used.
Good Management Practice (GMP)	The farming practices which are described in the document titled Industry Agreed Good Management Practices relating to water quality (2015).
Management Plan for Farming Activities	A Management Plan for Farming Activities in the form set out in Schedule CRC211511D: - as may be amended following mutual agreement with the Regional Leader - Monitoring and Compliance, Canterbury Regional Council; or - should the use of a Certified Freshwater Farm Plan be required or available on the basis it is certified and available for use then the Consent Holder may, as maybe mutually agreed with the Regional Leader - Monitoring and Compliance, Canterbury Regional Council elect to use such a plan (and which will then take the place of Schedule CRC211511D).
NES Equivalent Farm	A Property on which: (a) 20 hectares or more is in arable land use; or (b) 5 hectares or more is in horticultural land use; or (c) 20 hectares or more is in pastoral land use; or (d) 20 hectares or more is in a combination of any two or more of the land uses described above; provided that this definition shall not limit the consideration of, as a significant change application, any increase in the area used for dairy farming (being the use of land by milking dairy cows) by more than 10 hectares.
Nutrient Allocation Zone	A nutrient allocation zone within the area shown as CRC184159/CRC211511 Nutrient Discharge Area on Plan CRC184159A/CRC211511A.
Nutrient Discharge Allowance (NDA)	The Nutrient Discharge Allowance as determined by Condition 3 to Dr. Glen Treweek of Ground Sense Limited has calculated the 2022 nitrogen losses for land listed in schedules CRC184159A and CRC211511A in version 6.4.3 of Overseer using The Matrix method based on the farm system, irrigation and winter grazing area reported for the property for the 2021-22 season (Appendix B). In the Plan Change 2 area, the total nitrogen losses were 475.5 T N, 85% of the nitrogen discharge allowance for CRC184159. In the Plan Change 5 area, the total nitrogen losses were 1,921 T N, 89% of the nitrogen discharge allowance for CRC211511. Condition 7 (CRC184159)/Condition 6 (CRC211511).
Property	Any contiguous area of land, including land separated by a road or river, held in one or more than one ownership, that is utilised as a single operating unit, and may include one or more certificates of title.
Schedule 24A Plan	A <i>Schedule 24a Plan</i> in the form set out in Schedule CRC184159D: - as may be amended following mutual agreement with the Regional Leader - Monitoring and Compliance, CanterburyRegional Council; or - should the use of a <i>Certified Freshwater Farm Plan</i> be required or available on the basis it is certified and available for use then the Consent Holder may, as may be mutually agreed with the Regional Leader - Monitoring and Compliance, Canterbury Regional Council elect to use such

Term	Definition
	a plan (and which will then take the place of Schedule CRC184159D).
Sensitive Receptor	Areas of wetland, surface water bodies and riparian areas, sites of cultural significance (as may be further defined in consultation with Te Rūnanga o Arowhenua) and, in the case of any land located within a Community Drinking Water Protection Zone, the Community Drinking Water Supply.
Significant change	In relation to the farming activity on a Property means: (a) an increase in the area irrigated by more than 10 hectares; (b) an increase in the area used for dairy farming (being the use of land by milking dairy cows) (whether irrigated or not) by more than 10 hectares; (c) any increase in the area used for intensive winter grazing (being the grazing of livestock on annual forage crop at any time in the period 1 May to the following 30 September); and (d) any increase in the area on a property of dairy support land (being the farming of non-milking dairy cows, including heifers), as compared to the maximum area used on that Property in any year (being the period of 1 July to 30 June) in the period 1 July 2014 to 30 June 2019.

No comment required.

SCHEDULE OF PROPERTIES

CONDITION 3

Schedule CRC184159A/CRC211511A attached to and forming part of this consent, shall specify the Nutrient Allocation Zone(s) within which each Property is located; and

- a. the load that has been calculated or deemed for each Property in accordance with conditions 4 to 7 (CRC184159) and conditions 4 to 6 (CRC211511); and
- b. a total aggregated NDA for each Nutrient Allocation Zone, being the sum of the assessed nitrogen losses from all Properties provided for in Condition 4 (CRC211511)(a) and (b) and identified in the relevant part of Schedule CRC184159A/CRC211511A.

Advisory Note 1: Where a Property is located within more than one Nutrient Allocation Zone, the load shall be allocated on a pro rata basis against the relevant land area(s).

Advisory Note 2: Where a Property is also able to be managed under CRC211511A/CRC184159 (or any other nutrient discharge consent held by the Consent Holder) or is supplied water by more than one irrigation scheme which also holds a discharge consent, the load shall be allocated on a pro-rata basis proportionally on a contracted flow basis or on such other basis as may be determined in consultation with the Canterbury Regional Council while ensuring all losses are accounted for (and not double counted) as between resource consents or the schemes (as might apply).

Schedules CRC184159A and CRC211511A have been prepared by Dr. Glen Treweek of Ground Sense Limited for all land currently managed under the BCI ASM programme (See Appendix B).

NITROGEN DISCHARGE ALLOWANCE

CONDITION 4 (CRC184159)

The nitrogen losses for each Property listed in Schedule CRC184159A shall:

- a. For Existing Scheme Irrigated Land, Other Irrigated Land and Dry Land, be calculated on the basis of:
 - i. the farming activities which have been identified as occurring on the Property between 1 January 2009 and 31 December 2013; and
 - ii. with nitrogen losses from such land being further limited to HPZ gmp; and
 - iii. with nitrogen losses further reduced:
 - A. from 1 January 2025, by 15%; and
 - B. from 1 January 2030, by 25% provided that the further reductions provided for in Condition 4(a)(iii)(A) and (B) will not be required;
 - C. on any Property where the calculated nitrogen losses for that Property is less than 20 kilograms of nitrogen per hectare per year(kgN/ha/yr) when modelled with OVERSEER® version 6.0; or
 - D. when the nitrate-nitrogen concentration in any monitored river in the Lower Hinds/Hekeao Plains Area is below an annual median of 2.4 milligrams per litre (mg/L) and an annual 95th percentile of 3.5 mg/L, and the annual average nitrate concentration in groundwater in the Hinds/Hekeao Plains Area is at or below 6.9mg/L.
- b. For Lawfully Irrigated PC2 Land, be a deemed loss rate of 27 kg N/ha/year, when modelled with OVERSEER® version 6.0.3;
- c. For Authorised Properties, be listed in a separate part of Schedule CRC184159A with a nominal value of 'zero', as deemed in accordance with Conditions 9 and 10,

except that where a load is modelled using OVERSEER®, the current version of OVERSEER® shall be used and the inputs shall be updated where relevant to reflect the current OVERSEER® Best Practice Data Input Standards, but they must still describe the same baseline scenario.

Advisory Note 1: Where a Property meets more than one of the above criteria, the nitrogen losses for the Property are calculated on a weighted average of the parcels which form the Property.

Advisory Note 2: Authorised Properties are not subject to any individual nutrient loss limit (and nor do they contribute to or be deducted from the Scheme NDA for the purposes of Conditions 3 to 7). Their inclusion in Schedule CRC184159A is to ensure their inclusion and wider management by the Scheme is clear.

Advisory Note 3: The effect of Condition 4(c) is to ensure the load from Authorised Properties cannot be aggregated with Properties managed under Conditions 4(a) and (b).

Dr. Glen Treweek of Ground Sense Limited has calculated the Nitrogen Discharge Allowance (NDA) for CRC184159 in accordance with the consent (See Appendix B) in version 6.4.3 of Overseer.

The "Lawfully Irrigated PC2 Land" nitrogen loss rate was also updated to version 6.4.3 Overseer as 56 kg N/ha.

The overall nitrogen load limit for land listed in Schedule CRC184159A is **558.1 T N**.

Consented nitrogen loss reduction targets are not required to be demonstrated until 2025.

CONDITION 4 (CRC211511)

The nitrogen losses for each Property listed in Schedule CRC211511A shall:

- a. For Existing Scheme Irrigated Land, Other Irrigated Land and Dry Land, be calculated on the basis of:
 - i. the farming activities the which have been identified as occurring on the Property between 1 January 2009 and 31 December 2013; and
 - ii. with nitrogen losses from such land being further limited to GMP; and
 - iii. with nitrogen losses further reduced:
 - A. from 1 January 2025, by having 15% of Properties that require a Farm Environment Plan at Advanced Mitigation (representing at least 15% of the total land area of Properties under Condition 4(a)); and
 - B. from 1 January 2030, by having 30% of Properties that require a Farm Environment Plan at Advanced Mitigation (representing at least 30% of the total land area of Properties under Condition 4(a));
- b. For Lawfully Intensified Plan Change 5 Land, be a deemed loss rate of 27 kilograms of nitrogen per hectare per year (kg N/ha/yr), when modelled with OVERSEER® version 6.0.3,
- c. For Authorised Properties, be listed in a separate part of Schedule CRC211511A with a nominal value of 'zero', as deemed in accordance with Conditions 8 and 9;

except that where a load is modelled using OVERSEER®, the current version of OVERSEER® shall be used and the inputs shall be updated where relevant to reflect the current OVERSEER® Best Practice Data Input Standards, but they must still describe the same baseline scenario.

Advisory Note 1: *Where a Property meets more than one of the above criteria, the nitrogen losses for the Property are calculated on a weighted average of the parcels which form the Property.*

Advisory Note 2: *Authorised Properties are not subject to any individual nutrient loss limit (and nor do they contribute to or be deducted from the Scheme NDA for the purposes of Conditions 3 to 6). Their inclusion in Schedule CRC211511A is to ensure the inclusion and wider management by the Scheme is clear.*

Advisory Note 3: *The effect of Condition 4(c) is to ensure the load from Authorised Properties cannot be aggregated with Properties managed under Conditions 4(a) and(b).*

Dr. Glen Treweek of Ground Sense Limited has calculated the Nitrogen Discharge Allowance (NDA) for the Plan Change 5 area in accordance with the consent (See Appendix B) in version 6.4.3 of Overseer.

The "Lawfully Irrigated PC2 Land" nitrogen loss rate was also updated to version 6.4.3 Overseer as 56 kg N/ha.

The overall nitrogen load limit for land listed in Schedule CRC211511A is **2,167.1 T N**.

Consented nitrogen loss reduction targets are not required to be demonstrated until 2025.

CONDITION 5 (CRC184159)

For the purposes of Condition 4(a)(iii)(D) above, the 6.9 mg/L specified is the groundwater quality determined by the Canterbury Regional Council as the median concentration across the Canterbury Regional Council's quarterly groundwater monitoring bores (screened less than 30 metres below the ground level) being:

- a. at the Commencement Date of this resource consent, the monitoring bores within the Lower Hinds Plains Area are those referred to in Appendix A in Technical Report R13/93 Hinds Plains water quality modelling for the limit setting process (Technical Report R13/93); and
- b. any additional or alternative monitoring bore (*New Bore*) that the Canterbury Regional Council determines to use when assessing groundwater in the Hinds/Hekeao Plains Area subject to any transitional arrangements that might be agreed with the Canterbury Regional Council in relation to the use of the New Bore.

Advisory Note: *The Canterbury Regional Council's quarterly groundwater monitoring bores are those referred to or consistent with Policy 13.4.14 and Table 13(i) of the Canterbury Land and Water Regional Plan. If there are any changes to these monitoring bores, the Canterbury Regional Council will inform the Consent Holder and discuss transitional arrangements if the changes may affect compliance with reporting and monitoring obligations under this consent.*

Not applicable as the Environment Canterbury Hekeao/Hinds Plains annual concentration for 2022 is 11.2 mg/L (Appendix A).

CONDITION 6 (CRC184159)/CONDITION 5 (CRC211511)

The maximum annual amount of nitrogen that is lost to water from the Properties described in Condition 4(a) and (b) (CRC184159 & CRC211511) and listed in Schedule CRC184159A/CRC211511A shall not exceed the combined and aggregated NDA of those Properties.

Advisory Note: *Authorised Properties do not contribute to the load limits described in this Condition 6 (CRC184159)/Condition 5 (CRC211511).*

Dr. Glen Treweek of Ground Sense Limited has calculated the 2022 nitrogen losses for land listed in schedules CRC184159A and CRC211511A in version 6.4.3 of Overseer using The Matrix method based on the farm system, irrigation and winter grazing² area reported for the property for the 2021-22 season (Appendix B).

In the Plan Change 2 area, the total nitrogen losses were **475.5 T N**, 85% of the nitrogen discharge allowance for CRC184159.

In the Plan Change 5 area, the total nitrogen losses were **1,921 T N**, 89% of the nitrogen discharge allowance for CRC211511.

CONDITION 7 (CRC184159)/CONDITION 6 (CRC211511)

The NDA as to be determined in accordance with Conditions 4 and 6 (CRC184159)/7 (CRC211511):

- a. shall be calculated using the Matrix Method (as approved by the Chief Executive of the Canterbury Regional Council on 29 April 2020) and as included in Schedule CRC184159B/CRC211511B, or any other equivalent method approved by the Chief Executive of Environment Canterbury (together *Matrix Method*), provided that:
 - i. if OVERSEER[®] is used, the current version of OVERSEER[®] shall be used and the inputs shall be updated where relevant to reflect the current OVERSEER[®] Best Practice Data Input Standards, but they must still describe the same baseline scenario; and

² Winter grazing as defined by the Canterbury Land and Water Regional Plan

- ii. the nitrogen loss calculation for any dairy farming operation where a building consent and effluent discharge consent was granted for a new or upgraded dairy milking shed in the period 1 January 2009 to 31 December 2013, shall be on the basis that the dairy farming activity is operational.

Dr. Glen Treweek of Ground Sense Limited has calculated the Nitrogen Discharge Allowance (NDA) in accordance with the consents (See Appendix B) in version 6.4.3 of Overseer, which was the current version at the date this report was prepared.

- b. for land listed within Schedule CRC184159A/CRC211511A at the Commencement Date, may be updated within the 12 months following, provided that:
 - i. the update is consistent with the assessment methodology described for the Matrix Method;
 - ii. information on the changes (including information on the actual land use and irrigation system) is recorded to support each change, including confirmation that the change remains consistent with Condition 4 (CRC184159 & CRC211511);
 - iii. a revised Schedule CRC184159A/CRC211511A including any updates is to be provided to Regional Leader-Monitoring and Compliance, Canterbury Regional Council and any assessments undertaken are provided to the Canterbury Regional Council on request.

Property-specific farm system and irrigation data was estimated during the consent process and applied in a way that underestimated N losses where there was any uncertainty. Over the past 12 months, we have consulted all BCI and AFIC shareholders on the baseline details used by The Matrix to calculate the scheme Nitrogen Discharge Allowance and sought further information to correct assumptions made during the consent application. Farm system, winter grazing area and irrigation have now been confirmed and the revised Schedules CRC184159A and CRC211511A are attached in Appendix B.

Any changes to the original schedules have been verified and supporting information is available upon request.

CONDITION 8 (CRC184159)/CONDITION 7 (CRC211511)

Properties (or land) may be added or removed from Schedule CRC184159A/CRC211511A, provided:

- a. the Consent Holder provides the updated schedule by 1 December in any year that a change occurs to Schedule CRC184159A, to the Regional Leader - Monitoring and Compliance, Canterbury Regional Council and Te Rūnanga o Arowhenua, including:
 - i. the revision number of the schedule; and
 - ii. an updated consent wide map showing all Properties managed under this consent and the relevant Nutrient Allocation Zone boundary; and
 - iii. an electronic copy of the plan in Condition 8 (CRC184159)/Condition 7 (CRC211511) (a)(ii) above, in a commonly used Geographic Information System (GIS) format; and

Refer to Schedule CRC184159A and Schedule CRC211511A in Glen Treweek's report in Appendix B.

An electronic GIS copy of the farms managed under resource consents CRC184159 and CRC211511 has been provided with this report.

We note the revised schedules and GIS maps defined the land, farm system and irrigation type by property within the BCI ASM programme as at the commencement date of these consents.

- b. in the case of any Property (or land) joining the Scheme and described in Condition 4(a) and (b) (CRC184159 & CRC211511) and listed in Schedule CRC184159A/CRC211511A, the Consent Holder shall, unless Condition 10(a) (CRC184159) and condition 9(a) (CRC211511) applies, apply to the Matrix Method to the Property's (or land's) nitrogen baseline and make the assessment available to the Canterbury Regional Council on request.

No new land has been added to the BCI ASM programme between 1st July 2021 and 30th June 2022.

AUTHORISED PROPERTIES

CONDITION 9 (CRC184159)

Any Property that is:

- a. less than 5 hectares in area; or
- b. greater than 5 hectares, and where the nitrogen losses for the Property are less than 15 kg N/ha/year,

may be treated by the Consent Holder as an Authorised Property for the purposes of this consent.

The BCI ASM Programme does not currently manage any Authorised Properties under resource consent CRC184159.

CONDITION 8 (CRC211511)

Any Property that is:

- a. less than 10 hectares in area; or
- b. greater than 10 hectares, and where:
 - i. the area of the property authorised to be irrigated with irrigation water from any source is:
 - A. less than 50 hectares; and
 - B. for any property where irrigation was occurring as at 13 February 2016, the area of the property authorised to be irrigated has not increased by more than 10 hectares above that which was irrigated as at 13 February 2016; and
 - ii. the area used for winter grazing (as defined in the Canterbury Land & Water Regional Plan at the Commencement Date) is less than:
 - A. 10 hectares, for any property that is less than 100 hectares in area; or
 - B. 10% of the area of the property for any property between 100 hectares and 1000 hectares in area; or
 - C. 100 hectares, for any property that is greater than 1000 hectares in area, may be treated by the Consent Holder as an Authorised Property for the purposes of this consent.

A total of 20 BCI and AFIC shareholder properties managed under CRC211511 are defined as Authorised Properties in accordance with Conditions 8(a) and 8(b).

Seven Authorised Properties use BCI water for non-farming activities including irrigating sports fields and landscaping areas, dampening horse racing tracks, firefighting purposes and topping up thermal pools. Use of water for these activities are authorised under resource consent CRC205082, which was granted in October 2020.

CONDITION 10 (CRC184159)/CONDITION 9 (CRC211511)

In relation to any Property that the Consent Holder has elected to treat as an Authorised Property in accordance with:

- a. Condition 9(a) (CRC184159)/8(a) (CRC211511):
 - i. any nitrogen losses shall not contribute to or be deducted from the aggregated NDA for the properties listed in Schedule CRC184159A/CRC211511A for the purposes of Conditions 3 to 7 (CRC184159)/6 (CRC211511); and
 - ii. losses from that Property will be listed on Schedule CRC184159A/CRC211511A with a nominal nutrient discharge allowance of '0'.
- b. Condition 9(b) (CRC184159)/8(b) (CRC211511):
 - i. the Consent Holder shall require that each such Authorised Property maintain a *Schedule 24a Plan* or *Certified Freshwater Farm Plan* as required by Condition 18(b) (CRC184159)/17(b) (CRC211511);

- ii. any nitrogen losses shall not contribute to or be deducted from the aggregated NDA for the properties listed in Schedule CRC184159A/CRC211511A for the purposes of Conditions 3 to 7 (CRC184159)/6 (CRC211511); and
- iii. losses from that Property will be listed in Schedule CRC184159A/CRC211511A with an nominal nutrient discharge allowance of '0'.

Advisory note: *This resource consent enables the Consent Holder to supply water to Properties that would otherwise be able to be farmed as or in similar circumstances as permitted farming land use activities outside of the Audited Self-Management (ASM) programme under this resource consent. The nutrient losses from such Properties are authorised by this consent but the Consent Holder may choose to either manage the losses on the basis of being an Authorised Property or in accordance with Conditions 3 to 7 (CRC184159)/6 (CRC211511).*

All BCI and AFIC properties that meet Condition 9(a) and 9(b) of CRC184159 and Condition 8(a) and (8(b) of CRC211511 have a Farm Environment Plan, which meets the requirements for the Schedule 24a Plan or a *Management Plan for Farming Activities*. These properties are registered as a "0" nitrogen loss in schedules CRC184159A and CRC211511A.

ENVIRONMENTAL MANAGEMENT STRATEGY

CONDITION 11 (CRC184159)/CONDITION 10 (CRC211511)

From:

- a. the Commencement Date, the consent shall comply with the Audited Self- Management Programme (ASM), including Environmental Management Strategy (EMS) that was developed in accordance with resource consent CRC162882 and operative immediately prior to the Commencement Date. In complying with this Condition 11(a) (CRC184159)/10(a) (CRC211511), the Consent Holder shall consult with the Regional Leader - Monitoring and Compliance, Canterbury Regional Council to determine how compliance and the transitional regime for any replacement EMS as required by Condition 11(b) (CRC184159)/10(b) (CRC211511) are to be implemented (which shall then form part of the Conditions of this consent); and
- b. Within 12 months of the Commencement Date, the Consent Holder shall update and comply thereafter with the revised EMS that is to be prepared in accordance with Conditions 12 to 14 (CRC184159) and Conditions 11 to 13 (CRC211511).

The BCI Environmental Management Strategy (EMS) prepared to managed compliance with resource consents CRC184159 and CRC211511 was submitted to Environment Canterbury on the 13th September 2022. Environment Canterbury certified the BCI EMS on the 28th November 2022.

CONDITION 12 (CRC184159)

The EMS required by Condition 11(b) shall:

- a. identify the roles and responsibilities of the persons and entities involved in the management of the Barrhill Chertsey Irrigation environmental programme and the implementation of this resource consent;
- b. implement environmental objectives and targets and methods to ensure:
 - i. this resource consent CRC184159 is complied with;
 - ii. all Properties provided for in Conditions 4(a) and (b) implement HPZ gmp, and in the case of Properties provided for in Condition 4(a), the specified further reductions to achieve nitrogen loss reductions over time; and
 - iii. Properties required to hold a Farm Environment Plan are achieving or working towards the achievement of an 'A' Audit within a reasonable timeframe.
- c. ensure the Consent Holder has robust audit and reporting procedures in place, that meet the Canterbury Regional Councils Farm Environment Plan Audit Manual requirements, to ensure a high level of compliance with *Farm Environment Plans* and *Schedule 24a Plans* (as might apply);

- d. have appropriate procedures in place (through the EMS and each *Farm Environment Plan* and *Schedule 24a Plan*) to ensure the identification of effects on neighbouring sensitive receptors are appropriately avoided, remedied or mitigated;
- e. be consistent with the Environmental Monitoring Plan and associated requirements provided for in Conditions 22 to 29;
- f. require that any Properties wanting to undertake a significant change will first need to obtain the approval of the Consent Holder, with the EMS providing details on how applications for significant change are to be assessed, including procedures to ensure applications for significant change are only approved where:
 - i. in the case of any NES Equivalent Farm, contaminants loads in the catchment and concentrations of contaminants in receiving waterbodies are, as a result of the significant change, no greater than that occurring at 2 September 2020, having regard to:
 - A. any assessed nutrient loss; and
 - B. the controls set out in any Farm Environment Plan, Schedule 24a Plan or Certified Freshwater Farm Plan (as might apply);

provided that this Condition 12(f) shall not apply where the significant change application relates to an increase in irrigated area that is not used for dairy farming (being the use of land by milking dairy cows);

Advisory note: *Where a Property can demonstrate a significant change will not result in any increase in nitrogen losses from the Property, it is not expected catchment-scale modelling or assessments will be required.*

and

- ii. effects on local sensitive receptors are avoided, remedied or mitigated.
- g. provide reproducible methodology on:
 - i. how the nutrient load limits are calculated, and the rationale for the nutrient load applied; and
 - ii. how nutrients from all land subject to this resource consent will be accounted for, and
- h. provides detail on how the management of Properties joining or leaving the scheme is to occur (including the methodology for allocating nutrients).

CONDITION 11 (CRC211511).

The EMS required by Condition 10(b) shall:

- a. identify the roles of the persons and entities involved in the management of the Barrhill Chertsey Irrigation environmental programme and the implementation of this resource consent;
- b. implement environmental objectives and targets and methods to ensure:
 - i. this resource consent CRC211511 is complied with;
 - ii. all Properties provided for in Conditions 4(a) and (b) implement GMP;
 - iii. Sufficient Properties implement Advanced Mitigation to ensure the requirements of Condition 4(a)(iii) are met; and
 - iv. Properties required to hold a Farm Environment Plan are achieving or working towards the achievement of an A Audit grade within a reasonable timeframe, and to ensure Condition 4(a)(iii) is met, the required number of properties also achieving Advanced Mitigation.
- c. detail objectives, targets and methods for the achievement of Advanced Mitigation, including the review of any targets and methods to ensure objectives continue to be met;
- d. ensure the Consent Holder has robust audit and reporting procedures in place, that meet the Canterbury Regional Councils' Farm Environment Plan Audit Manual requirements, to ensure a high level of compliance with Farm Environment Plans and Management Plans for Farming Activities (as might apply);
- e. have appropriate procedures in place (through the EMS and each Farm Environment Plan and Management Plan for Farming Activities) to ensure the identification of effects on neighbouring sensitive receptors are appropriately avoided, remedied or mitigated;
- f. be consistent with the Environmental Monitoring Plan and associated requirements provided for in Conditions 22 to 29;

- g. require that any Properties wanting to undertake a significant change will first need to obtain the approval of the Consent Holder, with the EMS providing details on how applications for significant change are to be assessed, including procedures to ensure applications for significant change are only approved where:
 - i. in the case of any NES Equivalent Farm, contaminant loads in the catchment and concentrations of contaminants in receiving waterbodies are, as a result of the significant change, no greater than that occurring at 2 September 2020, having regard to:
 - A. any assessed nutrient loss; and
 - B. the controls set out in any Farm Environment Plan, Management Plan for Farming Activities or Certified Freshwater Farm Plan (as might apply);

provided that this Condition 11(g) shall not apply where the significant change application relates to an increase in irrigated area that is not used for dairy farming (being the use of land by milking dairy cows).

Advisory note: *Where a Property can demonstrate a significant change will not result in any increase in nitrogen losses from the Property, it is not expected catchment-scale modelling or assessments will be required.*

and

- ii. effects on local sensitive receptors are avoided, remedied or mitigated
- h. provide reproducible methodology on:
 - i. how the nutrient load limits are calculated, and the rationale for the nutrient load applied;
 - ii. how nutrients from all land subject to this resource consent will be accounted for; and
 - iii. the assessment of how properties are achieving Advanced Mitigation and
- i. provides detail on how the management of Properties joining or leaving the scheme is to occur (including the methodology for allocating nutrients).

The BCI Environmental Management Strategy (EMS) was submitted to Environment Canterbury on the 13th of September 2022 and certified on the 28th November 2022.

Prior to submission for certification, the BCI EMS was peer reviewed by WM Environmental and Te Rūnanga o Arowhenua to ensure all conditions of both resource consents CRC184159 and CRC211511 were met.

CONDITION 13 (CRC184159)

The EMS shall provide for or require:

- a. effects on neighbouring sensitive receptors to be managed through further measures (in addition to Condition 12(b)), including:
 - i. requiring that stock are excluded from waterbodies in accordance with Regional Council rules, any granted resource consent(s) and the Resource Management (Stock Exclusion) Regulations 2020; and
 - ii. requiring the establishment of vegetated riparian strips to minimise nutrient, sediment and microbial pathogen loss to waterbodies.
- b. the management of nutrient losses on Properties (which are not Authorised Properties) through a *Farm Environment Plan* or *Certified Freshwater Farm Plan* (as might apply) and audit process in accordance with the Conditions of this resource consent.
- c. Properties provided for in Conditions 4(a) and (b) shall:
 - i. have their annual nutrient losses assessed in accordance with the Matrix Method identified in Schedule CRC184159B;

- ii. be subject to an audit procedure in accordance with Condition 19 and 20 (with the EMS being required to specify the steps that will be taken (including consequences to ensure future compliance) where the nitrogen loss reductions in Condition 4(a)(iii)(A) and (B) apply and are not being achieved);
- d. with the Farm Environment Plan audit records for each Property undertaken in accordance with this Condition 13(c) being kept and made available for the Canterbury Regional Council to inspect, upon request; procedures to enable each *Farm Environment Plan or Schedule 24a Plan* to be amended to address any changes that might be recommended following the preparation of a Remediation and Response Plan that is prepared in accordance with Condition 26.
- e. the monitoring and data required under this consent and the EMS to be collected and reported to the Canterbury Regional Council in accordance with Condition 30 (with a copy to be provided to Te Rūnanga o Arowhenua); and
- f. within 20 working days of the exit of any Property from Schedule CRC184159A (and the management of nutrient losses by the Consent Holder), the Consent Holder is to advise the Canterbury Regional Council of the authorised land use that is to apply to the departing Property.

CONDITION 12 (CRC211511)

The EMS shall provide for or require:

- a. effects on neighbouring sensitive receptors to be managed through further measures (in addition to Condition 11(b), including:
 - i. requiring that stock are excluded from waterbodies in accordance with Regional Council rules, any granted resource consent(s) and the Resource Management (Stock Exclusion) Regulations 2020; and
 - ii. requiring the establishment of vegetated riparian strips to minimise nutrient, sediment and microbial pathogen loss to waterbodies.
- b. the management of nutrient losses on Properties (which are not Authorised Properties) through a *Farm Environment Plan or Certified Freshwater Farm Plan* (as might apply) and audit process in accordance with the Conditions of this resource consent.
- c. a description of how Advanced Mitigation is to be implemented and reported on to ensure the achievement of Condition 4(a)(iii).
- d. Properties provided for in Conditions 4(a) and (b) shall:
 - i. have their annual nutrient losses assessed in accordance with the Matrix Method identified in Schedule CRC211511B; and
 - ii. be subject to an audit procedure in accordance with Condition 19 and 20 (with the EMS being required to specify the steps that will be taken (including consequences to ensure future compliance) for Properties where Condition 4(a)(iii) applies and is not being met);

with the Farm Environment Plan audit records for each Property undertaken in accordance with this Condition 12(d) being kept and made available for the Canterbury Regional Council to inspect, upon request; procedures to enable each Farm Environment Plan or Management Plan for Farming Activities to be amended to address any changes that might be recommended following the preparation of a Remediation and Response Plan that is prepared in accordance with Condition 26.

- e. the monitoring and data required under this consent and the EMS to be collected and reported to the Canterbury Regional Council in accordance with Condition 30 (with a copy to be provided to Te Rūnanga o Arowhenua); and
- f. within 20 working days of the exit of any Property from Schedule CRC211511A (and the management of nutrient losses by the Consent Holder), the Consent Holder is to advise the Canterbury Regional Council of the authorised land use that is to apply to the departing Property.

The BCI Environmental Management Strategy (EMS) was submitted to Environment Canterbury on the 13th of September 2022 and certified on the 28th November 2022.

Prior to submission for certification, the BCI EMS was peer reviewed by WM Environmental and Te Rūnanga o Arowhenua to ensure all conditions of both resource consents CRC184159 and CRC211511 were met.

FEP 8047 left the scheme in 2021-22. The property in question transferred their shares to another AFIC property (8003) and now operates under the South Rakaia Irrigation Partnership land use consent. Environment Canterbury was notified on 27th January 2022, in accordance with Condition 12(g) of CRC211511.

CONDITON 14 (CRC184159)/CONDITION 13 (CRC211511)

When preparing the EMS or seeking amendments to any of the matters listed in Conditions 12 and 13 (CRC184159) and Conditions 11 to 13 (CRC211511), the Consent Holder shall:

- a. engage with the Chair of Te Rūnanga o Arowhenua or their representative to discuss the finalisation of the EMS content listed in Condition 12 (CRC184159 & CRC211511). The purpose of the engagement is to consult with Te Rūnanga o Arowhenua and to enable Te Rūnanga o Arowhenua to participate in and have input into the preparation of the EMS or any amendment to the EMS. Subject to any alternative procedure that might be agreed with Te Rūnanga o Arowhenua and advised to the Regional Leader - Monitoring and Compliance, Canterbury Regional Council, the Consent Holder shall:
 - i. provide drafts of the EMS or amendments to the EMS along with any relevant supporting materials to Te Rūnanga o Arowhenua at least six weeks prior to the documents being submitted to the Canterbury Regional Council for certification;
 - ii. offer to meet with Te Rūnanga o Arowhenua representatives within the six week period referred to in Condition 14(a)(i) (CRC184159)/13(a)(i) (CRC211511), for the purposes of discussing the EMS or amendments to the EMS; and
 - iii. incorporate the comments or changes received from Te Rūnanga o Arowhenua into the EMS or the amended EMS, except that if the Consent Holder determines the comments or changes are not appropriate, it shall undertake further consultation with Te Rūnanga o Arowhenua to see if alternative further changes can be made. If the Consent Holder determines that further changes cannot be made, then it shall prepare a document that records the comments or changes that have not been included and the reasons for not including them;
- b. The updated EMS along with any document to be prepared in accordance with Condition 14(a) (CRC184159)/13(a) (CRC211511) are to be provided to Te Rūnanga o Arowhenua at the time of seeking certification from the Canterbury Regional Council in accordance with Condition 15 (CRC184159)/Condition 14 (CRC211511).

BCI has worked with Te Rūnanga o Arowhenua in the development of the Environmental Management Strategy.

The final draft EMS was sent to Te Rūnanga o Arowhenua for review on the 18th of August 2022, with a follow up meeting on the 26th August 2022. Te Rūnanga o Arowhenua reviewed the document and provided confirmation that they were satisfied with the content on the 29th of August 2022, with no requests for amendments (Appendix C).

CONDITION 15 (CRC184159)/CONDITION 14 (CRC211511)

The EMS or any amendment to the EMS that has been prepared in accordance with Conditions 12 to 14 (CRC184159)/Conditions 11 to 13 (CRC211511) shall be submitted to the Regional Leader - Monitoring and Compliance, Canterbury Regional Council for certification. The Regional Leader – Monitoring and Compliance of the Canterbury Regional Council shall confirm the certification decision within 20 working days. The EMS and any changes shall only be implemented following certification by the Regional Leader - Monitoring and Compliance, Canterbury Regional Council.

There have been no further amendments to the BCI Environmental Management Strategy since certification on the 28th November 2022.

CONDITION 16 (CRC184159)/CONDITION 15 (CRC211511)

- a. Prior to the 1 December:
 - i. immediately after the second anniversary of the Commencement Date of this resource consent; and
 - ii. immediately after the sixth anniversary of the Commencement Date of this resource consent; and
 - iii. for each year that is after the second anniversary of the Commencement Date but not provided for by Conditions 16(a)(i) and (ii) (CRC184159)/Conditions 15(a)(i) and (ii) (CRC211511),

(or such other time as may be agreed to by the Regional Leader - Monitoring and Compliance, Canterbury Regional Council), the Consent Holder shall engage a suitably qualified and independent expert to undertake a review of the EMS that shall include:

- iv. for the reviews to be undertaken in accordance with:
 - A. Condition 16(a)(i) and (ii) (CRC184159)/15(a)(i) and (ii) (CRC211511), a full review of the EMS;
 - B. Condition 16(a)(iii) (CRC184159)/15(a)(iii) (CRC211511), a review of at least one third of the EMS (to be rotated annually at each EMS review to ensure the full EMS is reviewed at least once every three years),

for the purpose of identifying and discussing the implementation of the EMS and any improvements that may be able to be made to better achieve the objectives developed in line with Condition 12(b) (CRC184159)/Condition 11(b) (CRC211511); and

- v. for all reviews:
 - A. a review of any changes made to the use of the property irrigation, land use and management standards as applied through the Matrix Method when calculating the scheme nitrogen losses; and
 - B. a review of the process undertaken to update any changes made to the nutrient budget reference files used to calculate scheme nitrogen load limits and losses into the most recent version of OVERSEER®;
 - C. a review of the extent to which Advanced Mitigation is being achieved (CRC211511);
- b. Following the review, the Consent Holder shall provide a copy of the review report to Te Runanga o Arowhenua and offer to meet for the purposes of discussing the findings of the review, and any amendments that might be made to the EMS; and
- c. A copy of the review shall be provided to the Regional Leader - Monitoring and Compliance, Canterbury Regional Council as a part of the annual report to be provided under Condition 30.

The first review of the EMS is due in 2023, with the outcome to be included in next year's annual compliance report.

CONDITION 17 (CRC184159)/CONDITION 16 (CRC211511)

In the event that a Property is excluded from the ASM programme then the Consent Holder shall notify Te Rūnanga o Arowhenua and the Regional Leader - Monitoring and Compliance, Canterbury Regional Council within 20 working days of the exclusion.

No properties have been excluded for the BCI ASM Programme in the 2021-2022 reporting year.

FARM ENVIRONMENT PLANS AND AUDITS

CONDITION 18 (CRC184159)

For all Properties where farming activities are undertaken, and unless Condition 10 (a) applies, the Consent Holder shall ensure that:

- a Properties provided for in Condition 4(a) and (b) maintain a *Farm Environment Plan*; and
- b Properties provided for in Conditions 4(c) and 9(b) maintain a *Schedule 24a Plan*.

BCI and AFIC use the Irrigo Farm Environment Plan Template, which was approved as meeting the requirements of Schedule CRC184159C and Schedule 7 of the Land & Water Regional Plan by Environment Canterbury on the 17th of September 2020.

There are no properties managed under CRC184159 less than five hectares or with a nitrogen loss less than 15 kg/ha/year.

Certified Freshwater Farm Plans are not yet available in Canterbury.

CONDITION 17 (CRC211511)

For all Properties where farming activities are undertaken, and unless Condition 8(a) applies, the Consent Holder shall ensure that:

- a. Properties provided for in Condition 4(a) and (b) maintain a *Farm Environment Plan*;
- b. Properties provided for in Conditions 4(c) and 8(b) maintain a *Management Plan for Farming Activities*.

All FEP's with more than 50 hectares of irrigation and 10 hectares of winter grazing have been completed on the approved Irrigo Farm Environment Plan template or through Synlait's Lead with Pride Programme, both of which meet the requirements of Schedule CRC211511C.

Authorised Properties that meet 8(b) of CRC211511 have also complete a Farm Environment Plan using the Irrigo template, which meet the requirements of a *Management Plan for Farming Activities*.

Certified Freshwater Farm Plans are not yet available in Canterbury.

CONDITION 18 (CRC211511)

In implementing Condition 17(a), a property shall be deemed to be operating at Advance Mitigation when it is achieving the requirements in Table CRC211511-1 (being targets that are additional to those targets provided for in Schedule CRC211511C or, where relevant, which may be additional to the requirements of a *Certified Freshwater Farm Plan*):

Table CRC211511-1 – Additional requirements for Advanced Mitigation

<i>Irrigation Management</i>	
1.	<i>To minimise water use and drainage during times of high nitrogen loss risk, irrigation water is applied so that the timing and depth targets crop requirements and optimises capture of rainfall to minimise drainage.</i>
2.	<i>The irrigation manager(s) understands the relationship between the irrigation system, soil and climate in order to achieve the Irrigation Management requirement (a)</i>
<i>Nutrient Management</i>	
1.	<i>To lower soil nitrogen surplus from higher risk land use activities and to reduce leaching of nitrogen fertiliser is applied based on the variability of soils and crop health throughout the season both within paddocks and between paddocks.</i>
2.	<i>To improve N fertiliser utilisation, reduce soil nitrogen surplus and lower the risk of nitrogen leaching and increase nitrogen uptake from the soil by optimising pasture and crop growth.</i>
<i>Point Source</i>	
1.	<i>Point source discharges from critical source areas such as on farm silage, offalpit, rubbish dumps, animal holding areas, soakholes, fuel and agrichemical storage, consumable waste and well head security are managed to prevent as much as practicable contaminants from entering ground or surface waters.</i>

Resources explaining Advanced Mitigation, including preparation of guidance notes agreed to by Te Rūnanga o Arowhenua, Environment Canterbury, other irrigation schemes and industry have been developed to support the consistent application of Advanced Mitigation grades by FEP Auditors. All FEP Auditors have also attended on-farm training and regular discussion groups to improve their familiarity of the Advanced Mitigation targets and how they are assessed during a FEP Audit.

FEP and Audit Reports have been updated to capture and report on achievement of Advanced Mitigation from the 2022-23 audit season onwards.

CONDITION 19 (CRC184159 & CRC211511)

All Farm Environment Plans as required by Condition 18(a) (CRC184159)/Condition 17(a) (CRC211511) shall be audited within the frequency determined by either:

- a. the audit grade received in the previous audit, as provided for in Table CRC184159-1/CRC211511-2 below:

Table CRC184159-1/CRC211511-2

Audit Grade	Audit Frequency	
	<i>No change in management or significant change</i>	<i>Change in management or significant change</i>
Advanced Mitigation	4 years	1 year
A	4 years	1 year
B	2 years	1 year
C	1 year	In the following year
D	6 months	Within 6 months
A "year" is the period from 1 July to the following 30 June.		

provided that the Consent Holder may consult with the Regional Leader - Monitoring and Compliance, Canterbury Regional Council for the purposes of developing an agreed transitional regime for the audit frequencies provided for in Table CRC184159-1/CRC211511-2 (given the 10 September to the following 9 September reporting date being implemented by the Consent Holder at the Commencement Date). Any agreed transitional regime will apply in place of Table CRC184159-1/CRC211511-2;

The 2021-22 FEP Audit season was assessed from 1st of July 2021 to the 30th of June 2022, aligning to the requirements set out in CRC184159 and CRC211511. There was no change in consented audit frequency between CRC162882 and CRC184159/CRC211511, therefore no transitional requirements are necessary.

or

- b. in the case of Properties added to Schedule CRC184159A/CRC211511-2, within 1 year of the Property being added to that Schedule; or

No new shareholders have been added to the BCI ASM programme in 2021-2022 season.

- c. in the case of a Property located within a Community Drinking Water Protection Zone where the risk level increased, within one year of the completion of the updated risk assessment; or

No new shareholders have been added to the BCI ASM programme in 2021-2022 season that farm within a community drinking water protection zone nor have there been any changes where the risk level of the farming activity has increased.

- d. where there are exceptional circumstances, and the Consent Holder is able to obtain an approved exemption (in writing) from the Regional Leader - Monitoring and Compliance, Canterbury Regional Council from the frequencies of audits identified in Conditions 19(a) and (b) (CRC184159 & CRC211511). For the purposes of this Condition 'exceptional circumstances' may include any event or action that reasonably prevents an audit being undertaken - including but not limited to any event of *force majeure*, the death or serious illness of a shareholder or shareholder's representative(s) or their dependents, biosecurity or natural hazards or recent Property sales or lease changes; or

No audits were postponed due to exceptional circumstances in the 2021-22 reporting year.

- e. should a *Certified Freshwater Farm Plan* be certified and available for use then the Consent Holder shall comply with the required timings for audits provided for in that plan (and if no audit process is provided for then the Consent Holder shall comply with timeframes for audit set out in the Conditions 19(a) to (d)) (CRC184159 & CRC211511).

Certified Freshwater Farm Plans currently not available in Canterbury.

CONDITION 20 (CRC184159 & CRC211511)

- a. (CRC184159) Farm Environment Plans audits shall be conducted in accordance with the '*Certified Farm Environment Plan Auditor Manual*', May 2020, or such other methodology (including any subsequent version of the '*Certified Farm Environment Plan Auditor Manual*', May 2020) as may be mutually agreed with the Regional Leader-Monitoring and Compliance, Canterbury Regional Council, including the timing and implementation of such other methodology;
- a. (CRC211511) Farm Environment Plans shall be conducted in accordance with (as may apply);
 - i. the '*Certified Farm Environment Plan Auditor Manual*', May 2020, or such other methodology (including any subsequent version of the '*Certified Farm Environment Plan Auditor Manual*', May 2020) as may be mutually agreed with the Regional Leader - Monitoring and Compliance, Canterbury Regional Council, including the timing and implementation of such other methodology; and
 - ii. any manual or such other methodology that describes the audit and determination of Advanced Mitigation as may be mutually agreed with the Regional Leader - Monitoring and Compliance, Canterbury Regional Council, including the timing and implementation of such methodology.

All Farm Environment Plan audits for the 2021-22 season were conducted in accordance with the '*Certified Farm Environment Plan Auditor Manual*', May 2020

The Advance Mitigation Auditor Guidance document was compiled and included in BCI's Environmental Management Strategy which was certified for use on the 28th November 2022. All audits for the 2022-23 audit season will be assessed under this framework.

- b. The audit of Certified Freshwater Farm Plan shall be undertaken in accordance with any associated guidance manual, or if no audit process is provided for, or no such guidance material available, the audits shall be undertaken on the basis of applying the '*Certified Farm Environment Plan Auditor Manual*' with any necessary modifications as may be mutually agreed with the Regional Leader - Monitoring and Compliance, Canterbury Regional Council.

Certified Freshwater Farm Plans currently not available in Canterbury.

- c. If requested by the Regional Leader - Monitoring and Compliance, Canterbury Regional Council, the Consent Holder shall facilitate the Canterbury Regional Council undertaking spot checks of any Farm Environment Plan Auditors previously approved by Canterbury Regional Council. This shall include providing copies any audits and the relevant supporting information that are available to the Consent Holder.

Environment Canterbury has not requested any spot checks of audits completed in the 2021-22 audit season.

COMMUNITY DRINKING WATER

CONDITION 21 (CRC184159 & CRC211511)

For any Property falling partly or wholly within a Community Drinking Water Protection Zone, the Consent holder shall ensure:

- a. Discharges from the Property are assessed and managed in discussion with the impacted shareholder(s) and the Community Drinking Water Supplier in accordance with Schedule CRC184159E/CRC211511E, and in a manner that is consistent with the Resource Management (National Environmental Standard for Sources of Human Drinking Water) Regulations 2007, with the assessment completed:
 - i. within three months of the Commencement Date for all properties managed by the Scheme and falling partly or wholly within a Community Drinking Water Protection Zone at that date;
 - ii. at least once every three years for Properties with existing Community Drinking Water Protection Zone risk assessments;
 - iii. within three months of a Property within a Community Drinking Water Protection Zone being added to Schedule CRC184159A/CRC211511A (including a new Community Drinking Water Protection Zone being added to Schedule 1 of the Canterbury Land and Water Regional Plan) that have not been previously assessed in accordance with Schedule CRC184159E/CRC211511E);
 - iv. within three months of the Consent Holder becoming aware of information that may materially impact on any assessment previously undertaken; and
 - v. within three months of any change to the area of an existing Community Drinking Water Supply Protection Zone taking formal effect for the purposes of Schedule 1 of the Canterbury Land and Water Regional Plan;

All BCI shareholding properties which overlap a Community Drinking Water Protection Zone have completed a risk assessment in accordance with Schedules CRC184159E/CRC211511E and submitted to Environment Canterbury on 17th February 2022.

All risk assessments were peer reviewed by Peter Callander of Pattle Delamore Partners Limited and water suppliers consulted prior to submission to Environment Canterbury.

- b. Where a Community Drinking Water Protection Zone Risk Assessment identifies the Property as:
 - i. *'Low Risk'*; there shall be no further management actions required in relation to the farming activities able to occur on the CDWPZ Impacted Land (subject to compliance with this resource consent and permitted activity rules related to Community Drinking Water Protection Zones)
 - ii. *'Medium Risk'*; the farming activities able to occur on the CDWPZ Impacted Land shall be managed to (in addition to compliance with this resource consent and permitted activity rules related to Community Drinking Water Protection Zones):
 - A. avoid the discharge of solid or liquid effluent (including animal based manures) within 20 metres of the Community Drinking Water Protection Zone;

- B. ensure all irrigation on the CDWPZ Impacted Land in the Community Drinking Water Protection Zone is undertaken using good management practice to minimise drainage to groundwater; and
- C. implement any other site specific recommendations that are consistent with managing Medium Risk activities and that are identified in the Community Drinking Water Protection Zone Risk Assessment;
- iii. *'High Risk'*; the farming activities able to occur on the CDWPZ Impacted Land shall be managed to (in addition to compliance with this resource consent and permitted activity rules):
 - A. avoid the discharge of solid or liquid effluent (including animal based manures) within 20 metres of the Community Drinking Water Protection Zone;
 - B. avoid any winter grazing (as defined in the Canterbury Land and Water Regional Plan at the Commencement Date) within the CDWPZ Impacted Land;
 - C. ensure all irrigation on the CDWPZ Impacted Land in the Community Drinking Water Protection Zone is undertaken using good management practice to minimise drainage to groundwater;
 - D. ensure there is no increase in stocking rate or fertiliser application on the CDWPZ Impacted Land in the Community Drinking Water Protection Zone; and
 - E. implement any other specific recommendations that are consistent with managing *'Medium'* and/or *'High Risk'* activities and that are identified in the Community Drinking Water Protection Zone Risk Assessment.

CDWPZ Risk assessments were prepared in accordance with this condition and peer reviewed by Peter Callander of Pattle Delamore Partners.

- c. All new Community Drinking Water Protection Zone Risk Assessments prepared after the Commencement Date are to be reviewed by a suitably qualified and experienced individual prior to implementation of the required actions set out in the risk assessment for the Property.

No Community Drinking Water Protection Zone Risk Assessments have been prepared after commencement date.

- d. Where a Community Drinking Water Protection Zone Risk Assessment review increases the risk status of a Property compared to previous assessments, the assessments are to be provided to the Regional Leader - Monitoring and Compliance, Canterbury Regional Council prior to the implementation of the required actions set out in the risk assessment for the Property.

Not applicable for the 2021-22 reporting year. There have been no material change to properties or water supplies which will trigger a review of the CDWPZ risk assessments.

- e. as a part of the Farm Environment Plan, Schedule 24a Plan or Certified Freshwater Farm Plan/Farm Environment Plan, Managed Plan for Farming Activities or Certified Farm Plan (as might apply) for any Property located within the Community Drinking Water Protection Zone, there shall be additional requirements:
 - i. to include an objective that seeks to ensure land located within the Community Drinking Water Protection Zone is managed to prevent deterioration of drinking water from activities occurring on that land; and
 - ii. for the Property Owner to maintain records to demonstrate all agreed minimum actions are being implemented;

The Farm Environment Plan Template and FEP Audit Report templates have been updated to include the above additional targets. Farm Environment Plan and Audit Process documents detailed in the Environmental Management Strategy specify how these requirements will be documented and assessed to ensure actions

specified in the CDWPZ risk assessments are implemented. All four BCI and AFIC shareholders with land located within a CDWPZ have had their farm environment plans updated and engaged in multiple one on one meetings to ensure they understood their responsibilities.

FEP audits from the 2022-23 season will check the actions identified in the risk assessments are being implemented.

- f. without limiting Condition 21(b) (CRC184159 & CRC211511), the Consent Holder shall, as soon as practicable, and in all cases within two working days, notify relevant Community Drinking Water Supplier, and the Regional Leader - Monitoring and Compliance, Canterbury Regional Council, if it becomes aware of an “Event” that may have an adverse effect on the quality of the water in the community supply bore, with an “Event” for the purposes of this consent meaning, but not limited to, an incident within the well protection zones of the relevant community supply bore that may contaminate the water supply from the community supply bore - such as accidental release of pollutants or excessive stock access, combined with the saturation of soil beyond the water retaining capacity (e.g. over-irrigation).

Advisory note: the level of mitigation required should apply based on which ever contaminant has the highest risk rating.

All landowners are aware of their requirements to notify BCI or AFIC and Environment Canterbury if an “Event” occurs. No events were noted for the 2021-22 season.

WATER QUALITY MONITORING

CONDITION 22 (CRC184159 & CRC211511)

Within six months of the Commencement Date, the Consent Holder shall submit to the Regional Leader - Monitoring and Compliance, Canterbury Regional Council, an Environmental Monitoring Plan that satisfies Conditions 23 and 24 (CRC184159 & CRC211511) and which has been prepared by suitably qualified and experienced person(s).

The Environmental Monitoring Plan (EMP) for CRC211511 was prepared by Jeremy Sanson of Pattle Delamore Partners Limited and submitted to Environment Canterbury for review on the 14th of April 2022 following extensive consultation with the Environment Canterbury groundwater science team.

The EMP for CRC184159 was prepared by MHV Water Limited and submitted to Environment Canterbury on 13th October 2021 as part of their own EMP required by their discharge consent CRC185857.

CONDITION 23 (CRC184159 & CRC211511)

The objectives of the Environmental Monitoring Plan shall be to:

- a. obtain water quality information that may assist in better understanding the effects of nutrient discharges from properties within Schedule CRC184159A/CRC211511A:
 - i. on groundwater nitrate-nitrogen over time; and
 - ii. surface water quality over time; and
- b. require the reporting of any water quality information gathered to the Canterbury Regional Council for the purpose of better informing future water resource management in in the CRC184159/CRC211511 Nutrient Discharge Area;
- c. require the Consent Holder to investigate and respond to changes in water quality attribute state(s) or band(s) (as might apply) for certain contaminants as to be identified based on five years of data in accordance with Condition 24(b) and 26(b) (CRC184159 & CRC211511) (a ‘Deterioration’) as specified in Table CRC184159-2/CRC211511-3; and
- d. to require the Consent Holder to prepare a Remediation and Response Plan in consultation with Te Rūnanga o Arowhenua following any identified Deterioration that includes:

- i. requiring the Consent Holder to manage nutrient losses that are determined to be contributing to any identified Deterioration in a manner that is consistent with improving water quality over time; and
- ii. reviewing individual Property Farm Environment Plans through the EMS programme where it is determined those farming activities are contributing to any identified Deterioration.

The Environmental Monitoring Plan (EMP) for CRC211511 was prepared by Jeremy Sanson of Pattle Delamore Partners Limited to meet the requirements of this condition and submitted to Environment Canterbury for review on the 14th of April 2022.

The EMP for CRC184159 was prepared by MHV Water Limited and submitted to Environment Canterbury on 13th October 2021 as part of their own EMP required by their discharge consent CRC185857.

CONDITION 24 (CRC184159 & CRC211511)

Catchment Groundwater Monitoring

- a. Subject to Condition 27 (CRC184159 & CRC211511), the Consent Holder shall undertake (either directly or through a catchment group) water quality sampling under the supervision of a suitably qualified person on a minimum of six bores, with all bores being sampled quarterly for nitrate-nitrogen in accordance with the requirements of the *National Environmental Monitoring Standards Water Quality – Part 1 Groundwater* dated March 2019.

Localised surface water monitoring

- b. Subject to Condition 27 (CRC184159 & CRC211511), the Consent Holder shall undertake (either directly or through a catchment group) surface water quality monitoring under the supervision of suitably qualified person in the following waterbodies with the final monitoring site in each waterbody to be determined in consultation with Te Rūnanga o Arowhenua and the Regional Leader - Monitoring and Compliance, Canterbury Regional Council:
 - i. Oakdale Drain (CRC184159);
 - ii. Harris Drain (CRC184159);
 - iii. the Hinds River (CRC184159);
 - iv. Taylors Stream (CRC211511);
 - v. Bowyers Stream (CRC211511);
 - vi. the South braid of the Rakaia River, provided that monitoring under this Condition 24(b)(iii) shall only occur to the extent it is safe and practical to do so (as to be determined through the consultation process provided for by this condition) (CRC211511); and
 - vii. any further or alternative location(s) that may be determined through the view of the Environmental Monitoring Plan that is to be undertaken in accordance with Condition 27 (CRC184159 & CRC211511),

and such surface water monitoring shall include monitoring of the contaminants listed in Table CRC184159-2/CRC211511-3, with:

- A. monitoring to occur at the frequencies included in column 2 of Table CRC184159-2/CRC211511-3; and
- B. where specified in column 3 of Table CRC184159-2/CRC211511-3, monitoring being undertaken for contaminants to determine a Base Attribute State, calculated for each monitoring site at the commencement of the consent for monitoring sites where adequate water quality data already exists, or after five years of monitoring (to commence on the provision of the Environmental Monitoring Plan) where no current water quality data exists.

Table CRC184159-2/CRC211511-3

Contaminant	Frequency of sampling	Base Attribute State	Deterioration
Nitrate toxicity NO ₃ - N mg/L	Monthly	Median and 95 th percentile of previous five years of data.	Where the annual (1 July to 30 June) median and/or 95 th percentile NO ₃ - N mg/L are greater than the calculated base attribute state.
Dissolved reactive phosphorous DRP mg/L	Monthly	Median and 95 th percentile of previous five years of data.	Where the annual (1 July to 30 June) median and/or 95 th percentile DRP mg/L are greater than the calculated base attribute state.
Escherichia coli E. coli/100ml	Monthly	The attribute band as calculated in accordance with the Table 9 of the NPSFM 2020 (August 2020) and using five years of data.	Where the attribute band (as per the NPSFM 2020) is worse than the calculated base attribute state (using 5-year rolling data).
Macroinvertebrates (percentage cover)	Annually between December and March (inclusive) (QMCI or MCI using NEMS2020 methodology)	The median attribute band as calculated in accordance with Table 14 of the NPSFM 2020 (August 2020) and using five years of data.	Where the attribute band (as per the NPSFM 2020) is worse than the calculated base attribute state (using annual data)
Deposited fine sediment (percentage cover)	Monthly	The attribute band as calculated in accordance with Table 16 of the NPSFM 2020 (August 2020) and using five years of data.	Where the attribute band (as per the NPSFM 2020) is worse than the calculated base attribute state (using 5-year rolling data).
Periphyton (percentage cover and chlorophyll-a)	Monthly	Not applicable for percentage cover For Chlorophyll-a: the attribute band as calculated using five years of data in accordance with Table 2 of the NPSFM 2020 (August 2020).	Not applicable for percentage cover For Chlorophyll-a: where the attribute band (as per the NPSFM 2020) is worse than the calculated base attribute state (using 5-year rolling data).
Macrophytes (percentage cover)	Monthly	Not applicable	Not applicable

Advisory Note 1: The Base Attribute State(s) are based on the attribute bands and attribute states in Appendix 2A of the National Policy Statement for Freshwater Management 2020 (August 2020).

Advisory Note 2: Where water quality sampling is undertaken as part of a catchment group, members of the group may seek to rely on the same groundwater monitoring bores or surface water monitoring sites as part of their respective consent requirements.

Advisory Note 3: The 'Base Attribute State' (numeric) for nitrate will be calculated as the maximum of annual median and the maximum of annual 95 percentiles from the first 5 years of numeric attribute states calculated from monthly data.

Water quality monitoring for the 2022-23 reporting year has started and will first be reported on in December 2023.

CONDITION 25 (CRC184159 & CRC211511)

The Consent Holder shall implement the Environmental Monitoring Plan within 12 months of the Commencement Date. Following its implementation, the Consent Holder shall provide a summary within the annual report by 1 December 2022 and then annually thereafter that sets out the results of all sampling undertaken (including both surface water and groundwater monitoring) over the previous 12 month period, including a discussion in the case of surface water on:

- a. the extent to which there has been an identified Deterioration; and
- b. for contaminants where a Deterioration is not defined (being Periphyton and Macrophytes percent covers), the nature of any changes over time, including any unexpected declines.

The Environmental Monitoring Plan was certified for implementation on 28th November 2022. Water quality monitoring for the 2022-23 reporting year has started and will first be reported on in December 2023, once 12 months of sampling data is available.

CONDITION 26 (CRC184159 & CRC211511)

In the event that there is a Deterioration that is identified as a part of the water monitoring required under Condition 24(b) (CRC184159 & CRC211511), the Consent Holder (either directly or through a catchment group) shall, within one month of the Deterioration being identified, engage a suitably qualified and experienced person to prepare a Remediation and Response Plan. The Remediation and Response Plan shall:

- a. discuss the potential causes of the Deterioration, and the extent to which they might be attributable to the activities on farmland under the management of this resource consent;
- b. advise on any changes that might be made to a *Farm Environment Plan* or *Schedule 24a Plan* for the Properties included in Schedule CRC184159A and *Farm Environment Plan* or *Management Plan for Farming Activities* for the Properties included in Schedule CRC211511A, on the basis that any changes will be proportionate to the relative contributions of those Properties to the deterioration;
- c. advise how nutrient discharges may be further managed to ensure improving surface water quality over time;
- d. advise on any further or amended monitoring that may be required to better understand the Deterioration (and the timeframes for that monitoring); and
- e. remain in place and be subject to regular reviews for the duration of any Deterioration, as might be identified through further monitoring.

The Remediation and Response Plan shall be prepared in consultation with Te Rūnanga o Arowhenua and shall be completed within six months of the Deterioration being identified (or such other time as may be agreed to by the Regional Leader - Monitoring and Compliance, Canterbury Regional Council) and the Consent Holder shall implement any recommendations. A copy of the completed Remediation and Response Plan shall be provided to Te Rūnanga o Arowhenua and to the Regional Leader - Monitoring and Compliance, Canterbury Regional Council as a part of the annual reporting required under Condition 30 (CRC184159 & CRC211511).

The Environmental Monitoring Plan was first implemented in November 2022. Deteriorating trends can be identified once five years of monitoring data has been collected.

CONDITION 27 (CRC184159 & CRC211511)

The Consent Holder shall undertake a review of the groundwater and surface water monitoring required under Condition 24 (CRC184159 & CRC211511):

- a. within the six month period that begins on the date that is five years after the Commencement Date, being the date which the Base Attribute State has been determined for all listed contaminants in Table CRC184159-2/CRC211511-3; or
- b. at any other time that may be determined by the Consent Holder; or
- c. on making any change to Schedule CRC184159A/CRC211511A that results in increasing the area managed by the scheme on a Property or adjoining Properties for each additional 1,000 hectares (CRC184159)/200 hectares (CRC211511) over that occurring at the Commencement Date, provided that in the case of a review under this Condition 27(c) (CRC184159 & CRC211511), the review shall be limited to the effects of the change and the need to consider further groundwater and/or surface water monitoring sites.

The Environmental Monitoring Plan was first certified by Environment Canterbury on 28th November 2022. The Environmental Management Strategy document *Land Joining and Leaving* details how BCI will account for the total area of new land joining the scheme ASM programme by consent to initiate a review of the EMP if necessary as summarised in Table 4 below.

TABLE 4: SUMMARY OF NEW LAND CRC184159 AND CRC211511

Reporting Year	PC2 (CRC184159)		PC5 (CRC211511)	
	Total (ha)	Change from 14 th October 2022 (ha)	Total (ha)	Change from 14 th October 2022 (ha)
2021-22	10,128	0ha	48,580	0ha

CONDITION 28 (CRC184159 & CRC211511)

If the Consent Holder is required to or elects to undertake such a review under Condition 27(c) (CRC184159 & CRC211511), the Consent Holder will engage a suitably qualified and experienced person to:

- a. Advise on any changes that might be made to add, remove or amend:
 - i. groundwater monitoring bores;
 - ii. surface water monitoring sites;
 - iii. contaminants;
 - iv. how a Deterioration is determined; and
 - v. sampling frequency;
- b. Prepare a Water Monitoring Amendment Report that:
 - i. outlines the reasons for the change(s) proposed; and
 - ii. confirms that the additional, removal or amendment will continue to enable the Consent Holder to meet the objectives set out in Condition 23 (CRC184159 & CRC211511);
 - iii. Consult with the Regional Leader - Monitoring and Compliance, Canterbury Regional Council in the preparation of the Water Quality Monitoring Amendment Report;
 - iv. Provide a copy of the Water Quality Monitoring Amendment Report to the Regional Leader - Monitoring and Compliance, Canterbury Regional Council for certification that any change(s) meet the requirements of this Condition 28 and the objectives outlined in Condition 23.

No changes have been made to the Environmental Monitoring Program as compared with what was submitted to Environment Canterbury on April 14th 2022 and certified 28th November 2022.

CONDITION 29 (CRC184159 & CRC211511)

The Consent Holder shall only implement the change(s) proposed to the monitoring required in Condition 24 if written certification is provided by the Regional Leader – Monitoring and Compliance, Canterbury Regional Council.

No changes have been made to the Environmental Monitoring Program as compared with what was submitted to Environment Canterbury on April 14th 2022 and certified 28th November 2022.

GENERAL REPORTING

CONDITION 30 (CRC184159 & CRC211511)

The Consent Holder shall prepare an annual report describing the results of the ASM programme and the audits that have been conducted each year. The report shall include a summary of the FEP Auditing programme based on the audit reporting requirements in the *Certified Farm Environment Plan Auditor Manual* for the completed year preceding the reporting period, including the following:

- the name of the FEP auditor(s);
- a summary of the audit performance grading, including the predominant farming system on the properties graded;
- the number of Properties receiving each audit grade (including Advanced Mitigation);
- the number of properties which have received repeated fail grades (being 'C' or 'D' grades in relation to a *Farm Environment Plan* or any fail grade as may be determined in consultation with the Regional Leader - Monitoring and Compliance, Canterbury Regional Council in relation to any *Certified Freshwater Farm Plan*) in the past five years including a summary of the reasons and actions taken);

A total of 58 audits were conducted between 1st July 2021 to 30th June 2022. Auditors who completed FEP audits for BCI and AFIC last season include:

- Ali Van Polanen (EnviroPlan);
- Leah Gorman (EnviroPlan);
- Dave Lucock (The Agribusiness Group);
- Julie Lambie (The Agribusiness Group); and
- Belinda Mears (Irricon)
- Asure Quality (Synlait's Lead with Pride Programme)

All FEP Auditors are certified by Environment Canterbury and the FEP Audits were completed in accordance with the Environment Canterbury *'Certified Farm Environment Plan Auditor Manual'*, May 2020.

Table 5 shows the audit grades for the 2021-22 season by land use.

TABLE 5: BCI 2021-22 FEP AUDIT GRADES BY LAND USE

Land Use	A	B	C	D	Total
Arable	22	1			23
Dairy	20				20
Dairy Support	10				10
Beef	2				2
Other	2		1		3

Grades for the 2021-22 season are shown in Table 6 below. Overall, 96% of the audits were awarded an 'A', 2% a 'B' and 2% a 'C'

TABLE 6: BCI 2020-21 FEP AUDIT GRADES AUDITED

Grade	A	B	C	D	Total
Number of Properties	56	1	1	0	58
%	96	2	2	0	100

No BCI or AFIC properties received repeated fail grades. The one property graded a “C” was reaudited as a “B” at their next audit and sold.

The auditing framework to assess Advanced Mitigation was only certified on 28th November 2022, therefore no property was graded “Advanced Mitigation” in the 2021-22 reporting season. All audits for the 2022-23 audit season will be assessed under this framework.

- i. the total annual calculated loss of nitrogen from all Properties within the CRC184159/CRC211511 Nutrient Discharge Area over the reported year, in accordance with the method outlined in Schedule CRC184159B/CRC211511B, and including information on:
- ii. the load that has been calculated or deemed for each Property in accordance with Conditions 3 to 7 (CRC184159)/6 (CRC211511);
- iii. the total aggregated NDA for each Nutrient Allocation Zone, being the sum of the assessed nitrogen losses from all Properties provided for in Conditions 4(a) and (b) and identified in the relevant part of Schedules CRC184159A/CRC211511A;
- iv. the implementation of Advanced Mitigation (CRC211511)
- e. predicted changes in average nitrogen concentrations beyond the root zone.

Nitrogen losses and concentrations for the 2021-22 reporting period were calculated using The Matrix methodology by Dr. Glen Treweek of Ground Sense Limited in Overseer version 6.4.3 (Appendix B) and summarised in Tables 7 and 8 below.

TABLE 7: CRC184159 NUTRIENT ALLOCATION ZONE NITROGEN LOSSES (TREWEEK, GROUND SENSE) v6.4.3

	Lower Hinds-Hekeao Plains NAZ	Upper Hinds-Hekeao Plains NAZ	CRC184159 Total
2022 NDA (t N/yr)	558.1	0	558.1
2022 N load (t N/yr)	475.5	0	475.5
2022 PPM	16.4	0	16.4

TABLE 8: CRC211511 NUTRIENT ALLOCATION ZONE NITROGEN LOSSES (TREWEEK, GROUND SENSE) v6.4.3

	Ashburton - Rakaia NAZ	Ashburton NAZ	Rakaia NAZ	CRC211511 Total
2022 NDA (t N/yr)	1,738.2	422.7	6.1	2,167.1
2022 N load (t N/yr)	1,531.6	382.8	6.6	1,921
2022 PPM	12.5	16.2	10.7	13.1

No trends in nitrogen concentration losses from the BCI ASM programme can be determined this year as only 1 year has been calculated.

- f. the reporting on environmental monitoring required in accordance with Condition 24 (CRC184159 & CRC211511);

The Environmental Monitoring Plan for CRC211511 was submitted to Environment Canterbury in April 2022 and certified 28th November 2022.

The EMP for CRC184159 was implemented with MHV Water's water quality monitoring programmed required for CRC185857.

Monitoring will be undertaken monthly and in accordance with BCI Health and Safety protocols and the first annual results will be reported in the 2022-23 compliance report and annually thereafter.

- g. a summary of any significant change applications considered in accordance with Condition 12 (CRC184159)/11 (CRC211511);

One significant change application was assessed in the 2021-22 reporting year. Significant Change applications were assessed in accordance with the BCI Interim Nutrient Management Policy adopted by the BCI Board in November 2021. The final Nutrient Management Policy was updated and included in the BCI EMS for certification in September 2022. A summary of all Significant Change applications are detailed in Table 9 below.

TABLE 9: SIGNIFICANT CHANGES THAT OCCURRED IN THE 2021-22 SEASON

Applicant	Status	Change Requested	Assessment
9018	Approved	Change in land use from arable to dairy support adjacent to a sensitive receptor.	Complied with regulatory and scheme requirements Catchment contaminant loads and concentrations less than what occurred in September 2020 Effects on sensitive receptors avoided, remedied or mitigated Approval from Te Rūnanga o Arowhenua received

In addition to the above Significant Change applications, a further 6 applications for changes in farm system or new irrigation were assessed in accordance with BCI's Nutrient Management Policy.

- h. the performance of Properties in the scheme in meeting the environmental targets and objectives as specified in the Farm Environment Plans required by Condition 18(a) (CRC184159)/17(a) (CRC211511); and

Level of Confidence grading provided by FEP Auditors in the audits are collated and reported. BCI and AFIC are only given overall grades for the Synlait Lead with Pride grades so are unable to determine the Level of Confidence (LOC) for the Objectives and Targets and are therefore excluded from this analysis.

Figure 4 shows the Level of Confidence analysis for the 2021-22 audit season for BCI and AFIC.

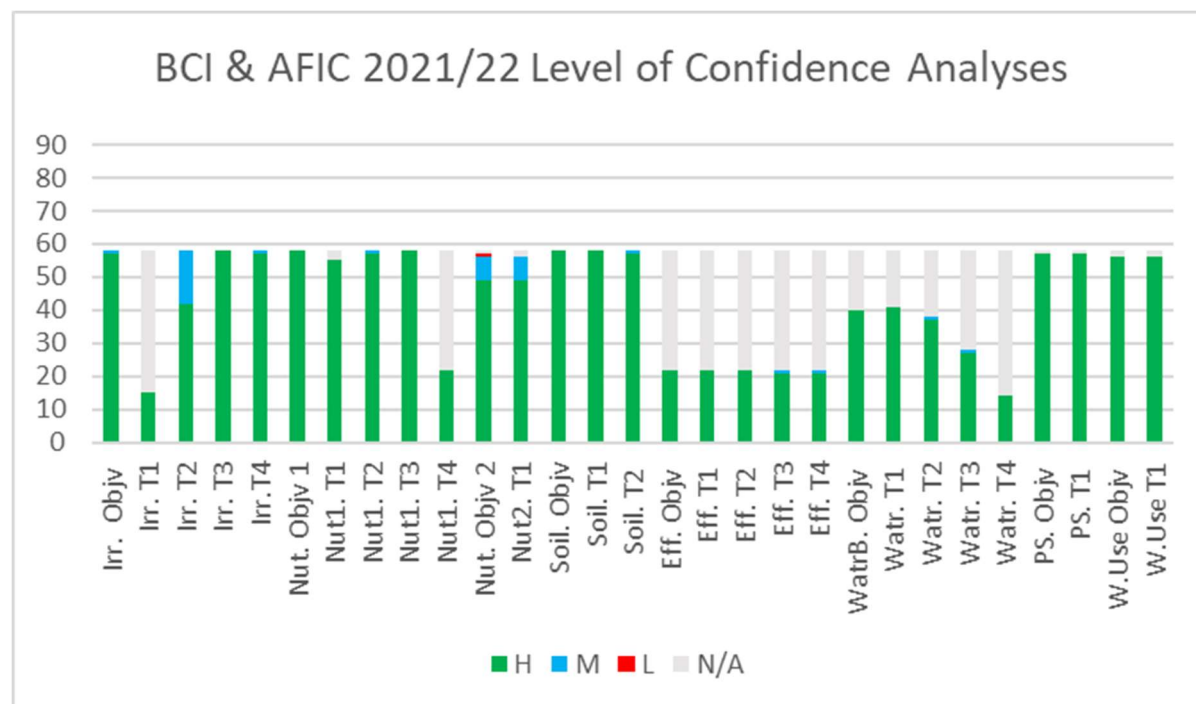


FIGURE 4: BCI & AFIC 2021/22 LEVEL OF CONFIDENCE ANALYSIS

While auditing, auditors sometimes pick up minor discrepancies that are awarded a medium confidence level when the overall grade is still awarded an A, indicating the property was still meeting environmental Objectives despite minor discrepancies for a Target. The most common reason to issue a “Medium” Level of Confidence was related to the extent of irrigation calibration assessments undertaken on the property. Of the 21 FEP targets only Irrigation Target 2 and Nutrient 2 Target 1 received less than 95% “High” (H) LOC.

While there were a number of properties which achieved a “M” LOC for irrigation calibration and maintenance, 100% were able to demonstrate the overall Irrigation Management Objective was met, indicating issues identified were minor. As a scheme, we continue to provide workshops and support to shareholders to ensure irrigation systems are maintained and operated to work efficiently.

In the 2021-2022 season, Auditors were also requested to assess farm systems against an Authorised Land Use (ALU) under Nutrient Objective 2 (*compliance with nitrogen baseline, GMP loss rates or consented N loss rates*). The Authorised Land Use (ALU) is a document prepared by BCI for each property which describes the permitted farm system and identifies the intensification activities at high risk of having effects on the environment. Both properties which did not receive an “A” audit grade in the 2021-22 season were downgraded for operating outside of their Authorised Land Use. We note Nutrient Objective 2 is no longer required by Schedules CRC184159C and CRC211511C and so will not have an impact on overall audit grades going forward.

- i. results of the review required by Condition 16(CRC184159)/15(CRC211511).

First review of the Environmental Management Strategy and Matrix parameters will be due 1st December 2023.

CONDITION 31 (CRC184159 & CRC211511)

A copy of the annual report required under Condition 30 (CRC184159 & CRC211511) shall be provided to Te Rūnanga o Arowhenua and the Regional Leader - Monitoring and Compliance, Canterbury Regional Council, by 1 December 2022 and annually thereafter.

The annual report was submitted to Te Rūnanga o Arowhenua and to the Regional Leader – Monitoring and Compliance, Canterbury Regional Council on the 1st of December 2022.

CONDITION 32 (CRC184159 & CRC211511)

The reporting requirements in Condition 31 (CRC184159 & CRC211511) may be altered with the agreement of the Regional Leader - Monitoring and Compliance, Canterbury Regional Council to:

- a. reflect the timing of the consent implementation between this consent and existing consent CRC162882; or
- b. incorporate reporting of both CRC184159 and CRC211511 (or any other nutrient discharge consent held by the Consent Holder) together.

Advisory Note: *The intention of Condition 32(a) is to ensure that the Consent Holder is able to rely on resource consent CRC162882, this consent, or a combination of the two for a transitional period, as might be agreed, for the purposes of ensuring the Consent Holder can avoid unnecessary duplication of reporting requirements and where necessary, complete or dispense with annual reporting requirements where they may be covered by one of more resource consent(s). The intention of Condition 32(b) is to allow the Consent Holder to combine reporting requirements.*

No transitional requirements have been necessary for this past reporting season.

CONDITION 33 (CRC184159)

Within six months of the Commencement Date, the Consent Holder shall ensure that as a part of any water supply agreement between the Consent Holder and any Property provided for in Conditions 4(a) and (b) and where reductions are required in accordance with 4(a)(iii)(A) to (C), the water supply agreement shall specify that the Property owner be required to enter a legally binding obligation running with the land to secure the obligations set out in Condition 4(a)(iii)(A) to (C).

The BCI Water Agreement has been updated and now applies to all Shareholders managed under the BCI ASM programme. The updates to the water agreement establishes a clear legal obligation to Shareholders to ensure consent requirements (including nitrogen loss reductions where applicable) are met. Water agreements relate to specific titles owned by the Shareholder, therefore reduction expectations also apply to the land subject to the Water Agreement.

CONDITION 34 (CRC184159)/CONDITION 33 (CRC211511)

The Canterbury Regional Council may once per year, on any of the last five working days of May or November, serve notice of its intention to review the Conditions of this consent for the purposes of:

- a. dealing with any adverse effect on the environment which may arise from the exercise of the consent; or
- b. addressing the failure of any Remediation and Response Plan to achieve the improvements anticipated in the plan in relation to water quality.

No comment required.

CONDITION 35 (CRC184159)/CONDITION 34 (CRC211511)

The Consent Holder may, in consultation the Regional Leader - Monitoring and Compliance, Canterbury Regional Council combine the obligations in this resource consent with any other resource consent held by the Consent Holder that provides for similar or the same obligations.

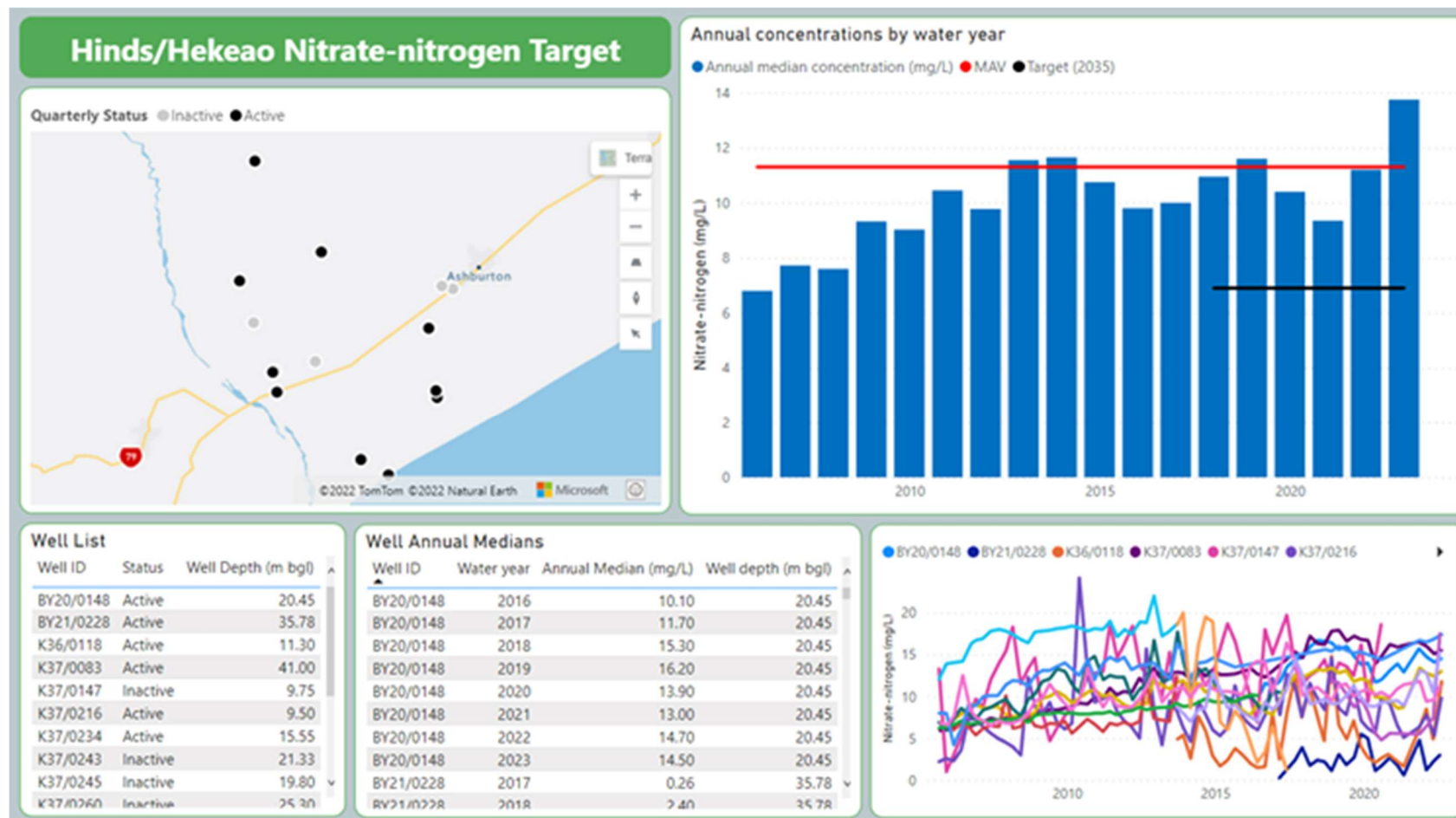
Further Advisory Notes:

Addition and removal of Properties to and from the Schedule CRC184159A/CRC211511A is at the sole discretion of the Consent Holder.

The Environmental Management Strategy and this compliance report have been prepared to ensure compliance with both resource consents CRC184159 and CRC211511 are met.

APPENDIX A - ENVIRONMENT CANTERBURY HEKEAO/HINDS PLAINS ANNUAL CONCENTRATION

(sourced from Lisa Scott, Senior Scientist: Groundwater, Environment Canterbury)



APPENDIX B – NITROGEN LOAD REPORT 2022 (GROUNDSense LIMITED)

Memorandum

Investigation: 2022 Annual Reporting CRC184159 & CRC211511

Prepared by: Dr Glen Treweek

Prepared for: Barrhill Chertsey Irrigation Ltd

Date: November 2022

Document status: Final

Document version: V2

Summary

Barrhill Chertsey Irrigation Ltd. (BCI) holds resource consents CRC184159 & CRC211511 to discharge onto or into land contaminants from farming activities. Condition 3 of CRC184159 & CRC211511 require a schedule specifying the permitted nitrogen loss for each farm authorised by CRC184159 & CRC211511. Condition 4, 6 & 7 of CRC184159 & condition 4, 5 & 6 of CRC211511 specify how the Nitrogen Discharge Allowance (NDA) is to be calculated and complied with. The Nitrogen Load was calculated using The Matrix method, in accordance with CRC184159 & CRC211511. The requirements of conditions 4, 6 & 7 of CRC184159 & condition 4, 5 & 6 of CRC211511 are detailed below.

Review of Baseline Information

During the application process for CRC184159 & CRC211511, conservative estimates were made regarding farm system and irrigation practices on BCI/AFIC & associated farms during the baseline (2009-2013) period. Consequently, condition 7(b) was inserted into CRC184159 and 6(b) into CRC211511 which allowed up to 12 months from the date of issue of the consent for the core irrigation and farm system information to be updated.

In the 12 months following the granting of resource consents CRC211511 and CRC184159, Barrhill Chertsey Irrigation Limited consulted all shareholders with land listed on Schedules CRC211511A and CRC184159A to confirm baseline farm system and irrigation information. Updated schedules reflective of the verified baseline information are located at the end of this document.

Calculated Nitrogen Discharge Allowance

Condition 4 of CRC184159 & CRC211511 require methods used to calculate the NDA and Nitrogen Load to be calculated using the current version of Overseer, which, at the time of writing, was v6.4.3. Accordingly, all Nitrogen loss values used in The Matrix method for this assessment were updated to v6.4.3

Conditions 9 & 10 of CRC184159 & conditions 8 & 9 of CRC211511 enables BCI to supply irrigation water to Properties that would otherwise be able to be farmed as or in similar circumstances as permitted farming land use activities outside the scheme Audited Self-Management (ASM) programme without any contribution to the nitrogen discharge allowance. These properties are termed Authorised Properties in CRC184159 & CRC211511.

The farmed area included in Table 1 and Table 2 presented in Table 3 and Table 4 below includes all farmland included in the BCI Audited Self-Management (ASM) Programme, including Authorised Properties. Nitrogen losses from all farmland included in the BCI Audited Self-Management (ASM) Programme are presented in Table 3 and Table 4, but losses from Authorised Properties are allocated a “0” kg N loss in accordance with CRC184159 & CRC211511.

Table 1: Farm area for Hinds-Hekeao Plains (PC2) Nutrient Allocation Zones (NAZ) for Properties included in the BCI Audited Self-Management programme authorised by CRC184159, and Authorised properties.

	Lower Hinds-Hekeao Plains NAZ	Upper Hinds-Hekeao Plains NAZ	BCI Total
	Area (ha)	Area (ha)	Area (ha)
NDA	10,128	0	10,128
Authorised	0	0	0

Table 2: Farm area for Ashburton & Rakaia (PC5) Nutrient Allocation Zones (NAZ) for Properties included in the BCI Audited Self-Management programme authorised by CRC211511 contributing to the BCI NDA, and Authorised properties

	Ashburton - Rakaia NAZ	Ashburton NAZ	Rakaia NAZ	BCI Total
	Area (ha)	Area (ha)	Area (ha)	Area (ha)
NDA	38,647	8,309	182	47,138
Authorised	1,411	0	31	1,442

Table 3: Calculated Nitrogen Discharge Allowance and Nitrogen Load for the 2022 year for BCI farms in the Hinds-Hekeao Plains (PC2) zones authorised by CRC184159 (Overseer V6.4.3).

	Lower Hinds-Hekeao Plains NAZ	Upper Hinds-Hekeao Plains NAZ	BCI Total
	N load (t N/yr)	N load (t N/yr)	N load (t N/yr)
NDA	558.1	0	558.1
2022	475.5	0	475.5

Table 4: Calculated Nitrogen Discharge Allowance and Nitrogen Load for the 2022 year for BCI farms in the Ashburton & Rakaia (PC5) zones authorised by CRC211511 (Overseer v6.4.3).

	Ashburton - Rakaia NAZ	Ashburton NAZ	Rakaia NAZ	BCI Total
	N load (t N/yr)	N load (t N/yr)	N load (t N/yr)	N load (t N/yr)
NDA	1,738.2	422.7	6.1	2,167.1
2022	1,531.6	382.8	6.6	1,921

Condition 8 (a) of CRC184159 and condition 7 (a) of CRC211511 require a scheme-wide map showing all properties managed under the consent, and the relevant nutrient allocation zone. Those maps are below (Figure 1, Figure 2) and supplied electronically.

Condition 30 (e) of CRC184159 & condition 30 (e) (iv) of CRC211511 requires BCI to provide information on the predicted changes in average nitrogen concentrations beyond the root zone. Estimates of root-zone drainage nitrogen concentration for the current year are presented in Table 5 and Table 6. However, CRC162882 did not require BCI to report on root-zone nitrogen concentration estimates, and the flow-proportional methodology used for reporting in 2021 would not enable reasonable comparisons to be made with the current year.

Table 5: Calculated Nitrogen concentration for the 2022 year for BCI farms in the Hinds-Hekeao Plains (PC2) zones authorised by CRC184159 (Overseer V6.4.3).

	Lower Hinds-Hekeao Plains NAZ	Upper Hinds-Hekeao Plains NAZ	BCI Total
	mg N/L	mg N/L	mg N/L
2022	16.4	0	16.4

Table 6: Calculated Nitrogen concentration for the 2022 year for BCI farms in the Ashburton & Rakaia (PC5) zones authorised by CRC211511 (Overseer v6.4.3).

	Ashburton - Rakaia NAZ	Ashburton NAZ	Rakaia NAZ	BCI Total
	mg N/L	mg N/L	mg N/L	mg N/L
2022	12.5	16.2	10.7	13.1

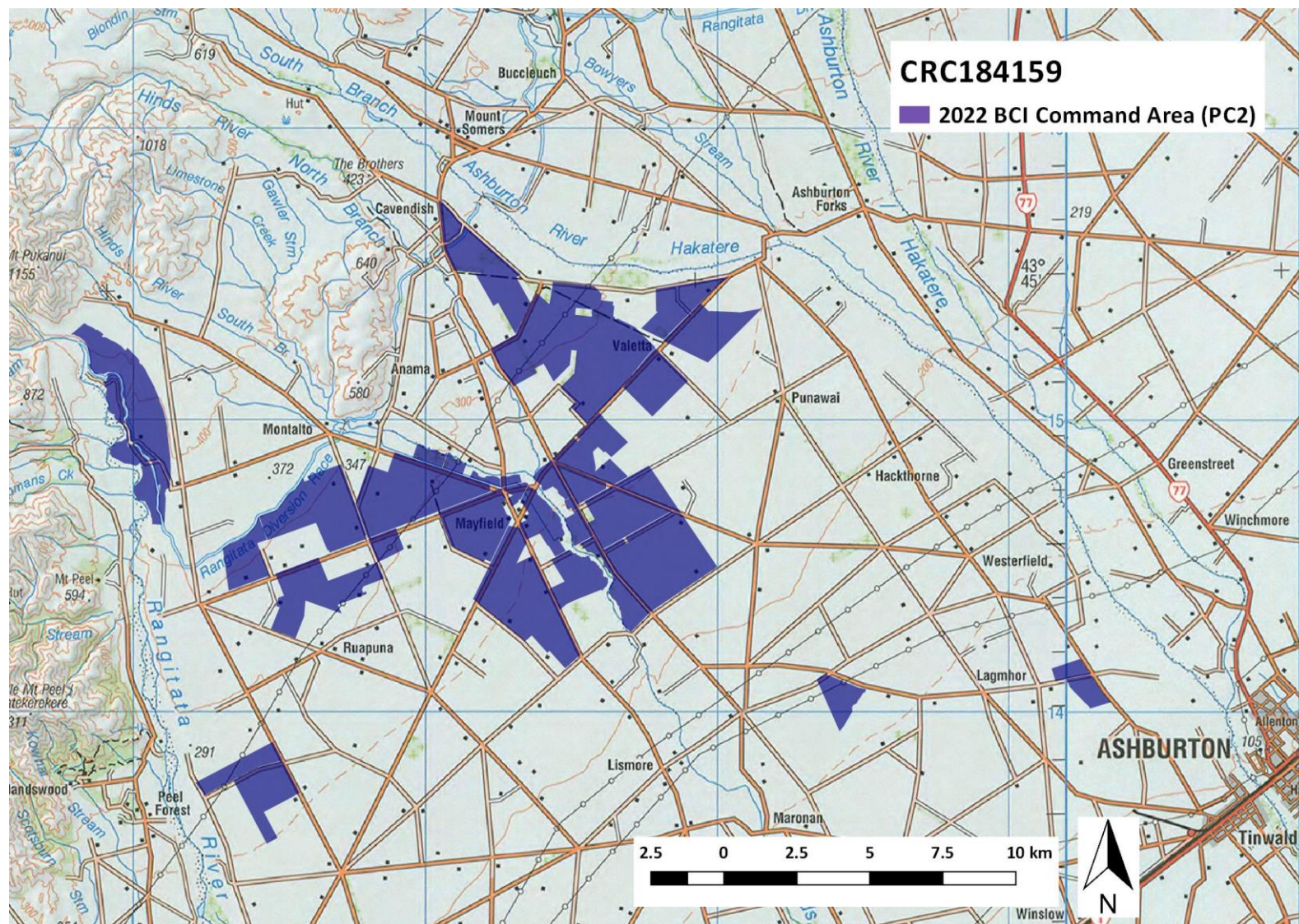


Figure 1: Map of Properties authorised by CRC184159 for the year 2022

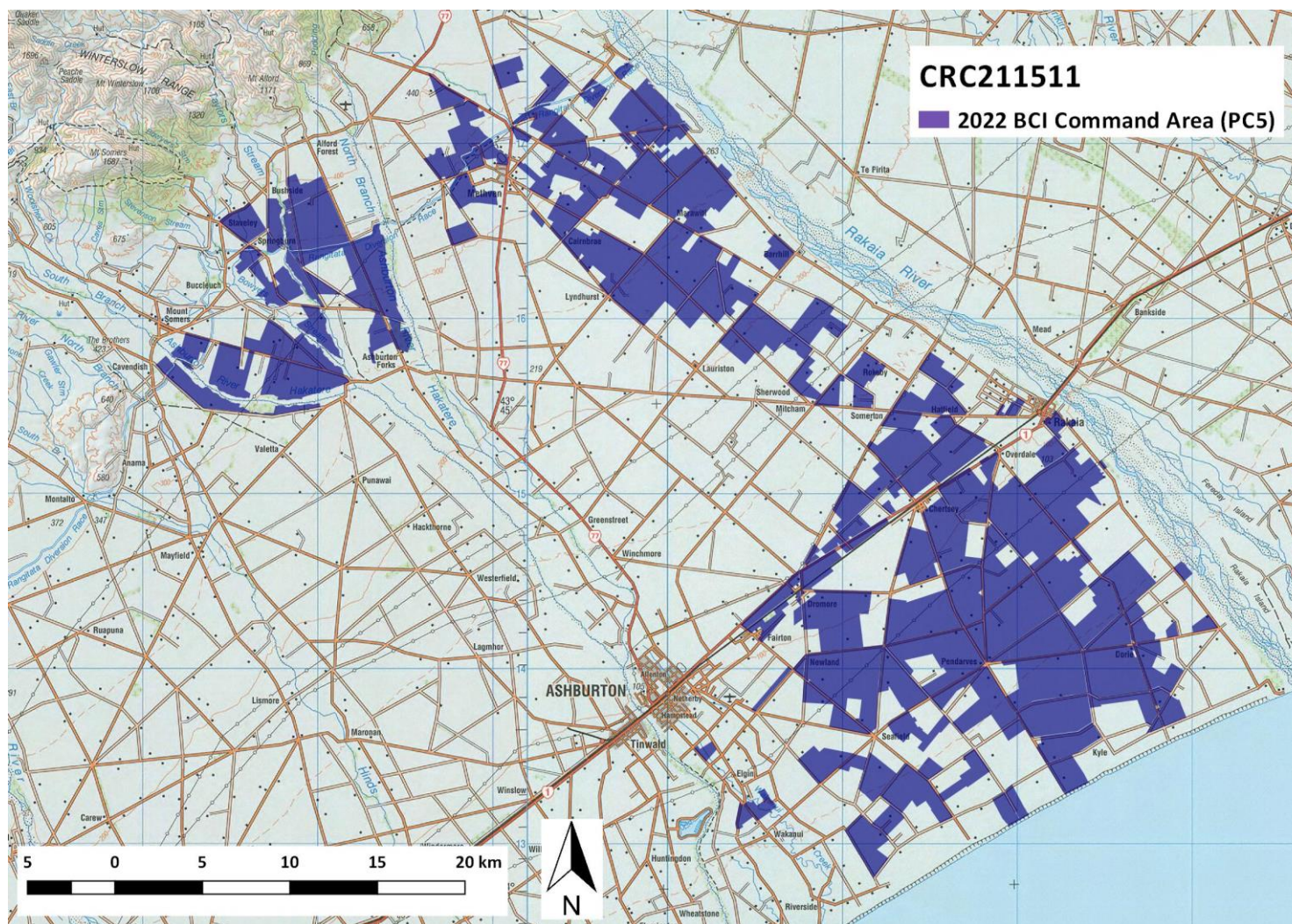


Figure 2: Map of Properties authorised by CRC211511 for the year 2022

Farm Identifier	NDA – Lower Hinds-Hekeao Plains Nutrient Allocation Zone (kg N/yr)	NDA – Upper Hinds-Hekeao Plains Nutrient Allocation Zone (kg N/yr)
116	19,072	0
454	8,971	0
348	10,308	0
138	29,193	0
502	5,124	0
866	18,965	0
766	2,185	0
743	14,500	0
957	16,658	0
114	3,300	0
162	21,195	0
399	19,769	0
549	4,117	0
716	16,195	0
820	13,211	0
630	23,694	0
400	12,096	0
730	8,447	0
687	2,907	0
754	3,320	0
361	19,333	0
547	9,977	0
833	13,955	0
225	2,725	0
49	17,344	0
344	19,784	0
864	21,275	0
70	20,489	0
683	16,705	0
115	21,170	0
358	7,760	0
33	1,042	0
507	0	0
231	37,683	0
250	20,179	0
295	8,772	0
340	6,447	0
554	8,525	0

Farm Identifier	NDA – Lower Hinds-Hekeao Plains Nutrient Allocation Zone (kg N/yr)	NDA – Upper Hinds-Hekeao Plains Nutrient Allocation Zone (kg N/yr)
823	7,752	0
206	5,716	0
24	12,161	0
314	14,378	0
576	918	0
325	6,491	0
159	4,321	0
Total	558,129	0

Schedule CRC211511A v22 – November 2022 (Overseer version 6.4.3)

Farm Identifier	NDA – Ashburton - Rakaia Nutrient Allocation Zone (kg N/yr)	NDA – Ashburton Nutrient Allocation Zone (kg N/yr)	NDA – Rakaia Nutrient Allocation Zone (kg N/yr)
FarmID	Ashburton - Rakaia (Red)	Ashburton (Orange)	Rakaia (Green)
881	0	0	0
694	15,019	0	0
986	11,587	0	0
77	11,985	0	0
662	26,252	0	0
315	10,439	0	0
686	8,503	0	0
722	10,634	0	647
261	17,507	2,663	0
91	12,095	0	0
701	11,660	0	0
105	6,236	0	0
485	2,431	0	314
939	11,032	0	0
991	25,200	0	0
89	11,280	0	0
562	12,744	0	0
641	11,474	0	0
442	13,819	0	0
558	13,236	0	0
629	10,184	0	0
174	22,492	0	0
514	19,311	0	0
339	22,130	0	0
724	16,343	0	0
130	50,677	0	0
619	26,747	0	0
209	1,960	0	0
428	14,706	0	0
255	10,430	0	0
229	108,224	0	0
996	7,582	0	0
609	10,300	0	0

Farm Identifier	NDA – Ashburton - Rakaia Nutrient Allocation Zone (kg N/yr)	NDA – Ashburton Nutrient Allocation Zone (kg N/yr)	NDA – Rakaia Nutrient Allocation Zone (kg N/yr)
964	10,207	0	0
505	48,818	0	0
500	30,648	0	0
628	20,201	0	0
974	18,885	0	0
281	36,448	0	0
959	29,816	0	0
154	17,100	0	0
984	13,320	0	0
848	13,555	0	0
913	41,285	0	0
393	21,406	0	0
332	24,447	0	0
402	22,133	0	0
58	0	0	0
356	2,238	0	0
411	11,041	0	0
348	0	1,850	0
6	17,754	0	0
134	18,153	0	0
755	0	8,549	0
698	0	13,504	0
863	10,720	0	0
9	12,481	0	0
236	7,804	0	3,655
592	0	11,534	0
846	0	3,356	0
302	33,035	0	0
781	4,841	13,636	0
296	0	15,862	0
759	22,265	0	0
8	16,266	0	0
904	0	12,897	0
25	19,061	0	0
577	3,927	0	0
530	13,401	0	0
922	0	0	0
664	0	14,849	0

Farm Identifier	NDA – Ashburton - Rakaia Nutrient Allocation Zone (kg N/yr)	NDA – Ashburton Nutrient Allocation Zone (kg N/yr)	NDA – Rakaia Nutrient Allocation Zone (kg N/yr)
804	0	28,750	0
757	7,718	0	0
663	5,818	0	0
44	19,210	0	0
28	22,599	0	0
21	11,199	0	0
453	7,756	0	0
247	16,564	0	918
956	13,434	0	0
277	0	0	0
973	0	11,586	0
379	54,321	0	0
708	0	21,117	0
542	9,525	0	0
401	0	4,611	0
85	0	79,918	0
630	0	73	0
57	11,224	0	0
156	18,971	0	0
31	13,617	0	0
969	3,944	0	0
503	2,814	0	0
570	0	31,591	0
493	7,317	0	0
501	5,320	0	0
47	0	8,500	0
23	4,534	0	20
512	6,065	0	0
272	0	0	0
334	13,371	0	0
841	3,553	0	0
319	0	14,427	0
153	8,986	0	541
432	0	7,689	0
492	0	0	0
859	10,193	0	0
365	11,716	0	0
941	6,812	0	0

Farm Identifier	NDA – Ashburton - Rakaia Nutrient Allocation Zone (kg N/yr)	NDA – Ashburton Nutrient Allocation Zone (kg N/yr)	NDA – Rakaia Nutrient Allocation Zone (kg N/yr)
374	3,193	0	0
729	6,539	0	0
50	9,238	0	0
417	3,922	0	0
788	89,529	0	0
717	5,799	0	0
15	0	14,914	0
283	0	12,875	0
607	3,064	0	0
611	47,597	0	0
301	0	19,128	0
463	10,225	0	0
246	11,494	0	0
799	13,202	0	0
901	0	10,979	0
353	0	11,782	0
397	15,620	0	0
238	0	0	0
491	3,489	0	0
758	0	0	0
362	14,939	12,572	0
515	8,046	5,580	0
744	18,045	0	0
692	1,873	0	0
256	0	0	0
891	0	0	0
507	0	11,873	0
900	0	15,907	0
824	0	0	0
231	0	1	0
645	0	0	0
448	9,076	0	0
14	0	0	0
929	23,322	0	0
280	5,910	0	0
921	0	0	0
24	0	137	0
513	0	0	0

Farm Identifier	NDA – Ashburton - Rakaia Nutrient Allocation Zone (kg N/yr)	NDA – Ashburton Nutrient Allocation Zone (kg N/yr)	NDA – Rakaia Nutrient Allocation Zone (kg N/yr)
972	0	0	0
19	9,401	0	0
249	22,664	0	0
436	0	0	0
845	0	0	0
968	0	0	0
Total	1,738,249	422,710	6,095

APPENDIX C – EMS FEEDBACK FROM TE RŪNANGA O AROWHENUA

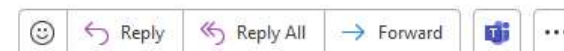
BCI EMS 2022 - Amendments



Treena Davidson <treenadavidson@aecitd.co.nz>

To: Richard Bowman; Eva Harris

Cc: Ally Crane



Mon 29/08/2022 1:48 pm

Kia ora kōrua

Thank you both for making time last week to meet with me and run through the final drafts of the BCI EMS 2022. Following on from the meeting and one final sweep through the relevant parts of the EMS I have not found any amendments that need to be made.

AEC appreciates the approach that BCI has taken to ensure that the Te Rūnanga o Arowhenua is able to be engaged in and respond matters with the BCI command area.

Ngā mihi

Treena Davidson

Senior Environmental Policy Advisor (MNZPI)

Aoraki Environmental Consultancy Limited

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