Amuri Irrigation Company Limited
Nitrogen Management:
"Nutrient" Policy

May 2019

Our Vision: "Water and nutrients are used efficiently to minimise environmental impacts"

1 Policy Statement:

Amuri Irrigation Company Limited ("**AIC**") holds a Land Use Consent CRC153154 ("**Land Use Consent**"), authorising land use for farming activities and providing a maximum allocation of nitrogen which may be leached to the environment. This Nitrogen Management "Nutrient" Policy (the **"Policy**") sets out how AIC will manage the nitrogen load and account for changes in land use and associated nitrogen losses.

The Land Use Consent provides for a command area (the "**Land Use Consented Area**").

2 Nitrogen Management Commitments:

Our commitments are:

- Nitrogen will be managed to ensure efficient use across the Land Use Consented Area for the collective benefit of all shareholders;
- Whilst AIC management has consent accountability across the scheme, individual properties have a responsibility to use nutrients efficiently;

The nitrogen allocation is held and managed by AIC on behalf of individual shareholders to enable land uses (**"Land Use")** on the Scheduled Properties that result in a loss of nitrogen to water within the nutrient loss limits provided for in AIC's Land Use Consent;

- Farm Environment Plans (**FEPs**) and FEP Audits will guide nutrient management decisions;
- Changes in Land Use and changes to farming systems which lead to an increase in nitrogen loss will be accommodated where possible but the efficient use of nutrients on farm will need to be demonstrated using Overseer nutrient budget modelling; and
- Shareholders will be given a reasonable period of time (three years) to implement approved changes in Land Use or changes to farming systems which lead to an increase in nitrogen loss.

3 Purpose of this Policy:

This Policy has been developed to encompass the principles of best practice nitrogen management while meeting the needs of AIC's shareholders for a simple, flexible, and efficient management system.

This Policy provides the framework under which AIC's nitrogen load and any nitrogen surplus (the "**Nitrogen Surplus**") can be accounted for and managed. The purpose of this Policy is to ensure that nitrogen management decisions:

- Meet the business objectives of AIC;
- Reward good practice and provide incentive for improved practices;
- Provide for expansion of the irrigation area and full utilisation of water permits;
- Effectively manage any consent compliance risk;
- Will withstand public scrutiny;
- Will not adversely impact AIC's brand or reputation;

- Will not hinder or adversely effect, where possible, existing shareholder infrastructure investments and farm systems operating at or above industry agreed Good Management Practice (GMP); and
- Will comply with relevant legislation, consents, regulations, codes of practice and industry standards.

4 Scope and Fit:

This Policy applies to all properties identified in Schedule CRC153154, which includes all the land in AIC shareholder properties that is less than 15 degrees in slope.

This policy is a corporate policy requiring the approval of the AIC Board. For further information on the application of this Policy, refer to the conditions of Consent CRC153154 and the requirements under Section 6 of this Policy.

5 Responsibilities:

The AIC Board is responsible for approving this Policy and may review, amend and change this Policy from time to time.

AIC staff are responsible for complying with the requirements of this Policy.

Scheduled Properties to the Land Use Consent (CRC153154) are responsible for complying with the requirements of AIC.

6 Nitrogen Management Process:

Surplus Nitrogen

All AIC shareholders in the Land Use Consented Area of CRC153154 will be included within the schedule of the Land Use Consent, with the ability to include other properties within the Land Use Consented Area at AIC's invitation. The Land Use Consented Area and invited properties from the scheduled properties to the Land Use Consent this Policy applies to (the "**Scheduled Properties**").

AIC may further enter into arrangements from time to time with parties owning land outside the Land Use Consented Area (with relevant number of shares attached).

Surplus Nitrogen is calculated as the difference between the Scheduled Properties current total nitrogen loss and the total scheme nitrogen loss authorised by the Land Use Consent, using the Brown / Lilburne look up table methodology attached to the Land Use Consent.

Nitrogen is not allocated to Scheduled Properties as an individual load or allowance. AIC holds and manages the total nitrogen load authorised by the Land Use Consent on behalf of all shareholders. The land use and farming system and associated nitrogen losses of all Scheduled Properties is recorded and monitored by AIC. Changes to Land Use or changes in farming systems (Farm System Change) that may increase associated nitrogen losses is managed and approved by AIC. Reductions in nitrogen losses to water created at the property level through efficiency gains or farm system changes, are not retained by Scheduled Properties, but remain part of the AIC nitrogen load available for use by shareholders. Any reduction in nitrogen loss associated with efficiency gains or farm system changes is irreversible, e.g. borderdyke changed to spray irrigation.

The application to purchase new shares must be accompanied with a statement of intended Land Use that is facilitated by new irrigation. The issue of shares represents approval for the development of the

farm to the intended Land Use. If that Land Use development has not been implemented within three years, the approval for the intended Land Use will lapse and the Land Use of the farm will be recorded as the Land Use at the time of the lapse date. If after the lapse date the farmer still wishes to change Land Use, then a Farm System Change application will need to be made.

Any change of Land Use that has been approved by AIC through its Farm System Change process must be completed within three years. If the change in Land Use has not been completed, then the approval will lapse. If after the lapse date the farmer still wishes to change Land Use then a new Farm System Change application will need to be made. In the event that a Scheduled Property that has previously made system changes that reduced nitrogen loss, wishes to make further system changes that may increase losses at a later date, they must follow the same process as any other shareholder seeking approval for system changes that may increase nitrogen loss. However, in the case of Force Majeure (where a significant reduction in stock numbers, change in land use or systems has to be made because of a major natural event, such as an earthquake or flood or where the farm is subject to biosecurity measures) then the Scheduled Property's land use and systems will be recorded as that before the Force Majeure, for a period of up to three years. In such cases, the shareholder will not be required to apply for a Farm System Change to restock or return to the land use and systems in place before the Force Majeure event. AIC has sole discretion over the definition of a Force Majeure event.

In implementing this Policy, AIC will also give consideration to any observed trends in the measured nitrogen load and/or concentration recorded in the Waiau and Hurunui Rivers and tributaries and groundwater and how the measured nitrogen loads, and concentrations have changed over time.

At a property level, AIC will use the 2015 land use practices as recorded in Farm Environment Plans (FEPs) to establish each property's initial Nitrogen Baseline load using the Brown/Lilburne look up table methodology. Any significant increase in nitrogen loss from a property relative to the 2015 nitrogen loss will be managed by AIC under this Policy.

For Scheduled Properties purchasing shares after 2015, the recorded land use will be that intended at the time of purchase.

AIC will record, maintain and monitor approved land uses and farm systems (AIC Recorded Farm Systems) through FEPs.

Farm System Change and Surplus Nitrogen Management Process

1. AIC will annually determine any Surplus Nitrogen across the scheme by comparing the Scheduled Properties' farming systems and associated nitrogen losses and the loss authorised under the Land Use Consent. The Scheduled Properties FEP will be used to establish the current year's land use and associated nitrogen losses to assess the available nitrogen load and to account for total nitrogen loss.

2. When determining the Surplus Nitrogen, AIC will consider measured nitrogen and phosphorus loads and concentrations in the Waiau and Hurunui Rivers and their tributaries, trends in OVERSEER nitrogen loss estimates across Scheduled Properties, and the reasonable future need for nitrogen within the Land Use Consent Area.

3. AIC will annually advise shareholders if Surplus Nitrogen is available to enable Farm System Changes that may increase nitrogen loss on the Scheduled Properties.

Farm System Change Approval Process

To make a Farm System Change that may increase nitrogen loss, the shareholder must make an application to AIC. An application must be made for any **Significant Change** that may increase nitrogen loss from the property. See Appendix 1 for definition of Significant Change.

The following guidelines apply to applications by owners of the Scheduled Properties:

1. Consideration will be given to the FEP Audit grade and report and scheme headroom available after any application is granted.

2. An application is required for AIC approval for any Significant Farm System Change to increase the potential nitrogen loss from the property.

3. Properties wishing to make Farm System Changes that may increase nitrogen losses shall provide AIC with a report detailing the proposed change in land use, including Overseer nutrient budgets for the current and proposed land use and identify any mitigations to be included in the proposed Farm System Change to reduce nitrogen losses.

4. OVERSEER nutrient budgets prepared to support Farm System Change applications must be prepared on the relevant OverseerFM Farm Account, to which AIC has been granted access, and by an AIC approved consultant.

5. AIC will use the current land use and future land use to determine the change in the AIC nitrogen load using the Brown/Lilburne look up table method.

6. Applications for increases in nitrogen loss on a shareholder property will be considered quarterly in March, June, September and December.

7. The AIC Board will consider applications for Farm System Change at their discretion using the following guiding criteria:

    a. Only properties with a FEP Audit grading of 'A' or 'B' will be eligible to apply for a Farm System Change;
    b. Priority will be given to AIC shareholders within the Land Use Consented Area;
    c. Nitrogen loss per hectare will be considered so that the nitrogen load maximises the area irrigated; and
    d. Previous history of Farm System Change applications.

8. When Surplus Nitrogen does not exist, no applications for Farm System Change that may increase nitrogen losses can be granted and, reductions in nitrogen loss across all Scheduled Properties may be required.

AIC may in its absolute discretion receive applications from shareholders owning properties outside the Land Use Consented Area.

Over-allocation Nitrogen Reduction Process

If AIC identifies during the annual determination of the Surplus Nitrogen across the scheme that the loss of nitrogen from Scheduled Properties exceeds that authorised under the Land Use Consent, a reduction in nitrogen loss will be required. AIC will determine the reduction in nitrogen loss required for each property to ensure consent compliance (at its discretion) using the following guiding criteria:

- AIC shareholding
- FEP audit score and history;
- Ability of the property to improve nitrogen use practice.

Policy Information Table

Name	Nitrogen Management "Nutrient" Policy (the "**Policy**")
Description	This Policy has been developed to encompass the principles of best practice nitrogen allocation while meeting the needs of AIC's shareholders for simplicity, flexible, and efficient allocation system. This Policy provides the framework under which AIC's allocation decisions and Surplus Nitrogen can be managed.
Type	Corporate Policy
Owner	CEO
Approval	Amuri Irrigation Company Limited Board
Last Approval Date	May 2019
Review Frequency	Yearly
Next Review Date	May 2020
Applies To	All parties involved in AIC
Linked Policies, Guidelines, Consents, Processes and Procedures	Land use consent CRC153154, AIC's Irrigation Scheme Management Plan, AIC's Audit Self-Management programme
File reference	

Appendix – Definitions

Term	Definition
Land Use Consented Area	The land use consented area is the area of land that has been defined in the appendix of Land Use Consent CRC153154
Scheduled Properties	Scheduled properties are the properties set out in Schedule 1 of Land Use Consent CRC153154.
Land Use	The Land Use of any Scheduled Property is determined using the definitions in the Brown/Lilburne look up table methodology used to calculate AIC's nitrogen load.
Surplus Nitrogen	Surplus Nitrogen is the amount of nitrogen available for use for farm development by shareholders covered by the Land Use Consent (or approved properties). It is calculated as the difference between the Scheduled Properties current total nitrogen loss and the total scheme nitrogen loss authorised by the Land Use Consent.
Significant Change	For the purposes of this policy a significant change is when (a) a change in land use or farm practices which will increase the long-term average release of nitrogen from land by greater than 10% from a properties' nitrogen baseline as record in AIC's system. (b) if the increase in irrigated area is more than 10ha.
Nitrogen Baseline	Nitrogen baseline is the amount of nitrogen discharged below the root zone, as modelled with OVERSEER® (where the required data is inputted into the model in accordance with OVERSEER® Best Practice Data Input Standards), for the AIC recorded farm system. Changes in land use or farm practices are compared to the Nitrogen baseline using the same version of OVERSEER®.
Farm Environmental Plan (FEP)	Farm Environment Plans (FEPs) are the principle tool for the delivery of the objectives sought from AIC's Irrigation Scheme Management Plan. A farm environment plan includes general farm information, identification of environmental risks, recorded good management practices and actions for improvement under six key topic areas: • Irrigation management; • Soils management; • Nutrient management; • Waterway, native vegetation and riparian management; • Collected animal effluent management; and • Environmental hotspots (point source risks)

FEP audit	FEPs are audited to assess the performance of a farming activity against the objectives and targets of a Farm Environment Plan and to assess if the farm is operating at Good Management Practice (GMP) across a number of management areas.