FARM ENVIRONMENT PLAN DETAILS

Farm Owner	A G Macgregor
Contact Details	C/- Kate Macgregor 027 277 4868
Person Responsible for implementation	Kate Macgregor
Contact Details	027 277 4868
Auditor Details	
Contact Details	
Audit Due Date	

Physical Address of Farm	159 Pukeuri – Oamaru Road, 1 KRD, Oamaru
Farm name/supply number	Glengyle Trust
Legal Description(s)	Property ID 1375178
Total Farm Area (ha)	124.0605
Effective Farm Area (ha)	120.4
Farm Type	Sheep and Beef
Irrigation	K Line

Overseer/Nutrient Budget	**2019-2020 Predictive**
Completed by (name and company)	Kate Macgregor
Date	20 May 2019 (updated to end February 2020)
N lost to water (kg/ha/year)	11kgN/ha/yr
P lost to water (kg/ha/year)	1.7kgP/ha/yr

If irrigated, or partially irrigated, complete the following (otherwise delete):

Irrigation Area (ha)	57.5ha
Irrigation type and area	K Line

Water Source	Lower Waitaki Irrigation Company

Commitment Statement

As owner/s of this farming business I/we are committed to ensuring that all activities on our property are undertaken in an environmentally sustainable and culturally sensitive manner. We agree to monitor our performance in meeting the management objectives and outcomes in this Plan, and take appropriate actions to address any areas where improvement is needed.

Name (Owner or owner representative) …….. Signature ……. Date:

Name (Person responsible for implementation) …….. Signature ……. Date:

2.0 FARM PLAN

Name key roads and show North direction, to enable farm to be located on a road map.

Show on map, if present:

- The boundary of the property;
- The land management units within the property (and these must align with Overseer);
- The location of permanent and intermittent rivers, streams, lakes, drains, ponds or wetlands (show which ones are permanent and which ones are intermittent);
- The location of riparian plantings, and/or vegetation;
- The location of all waterways where stock access or crossing occurs;
- The location of any areas within or adjoining the property that are **identified in a District Plan as "significant indigenous biodiversity"**
- The location of any offal pits.

3.0 LAND MANAGEMENT UNITS

To recognise and understand differences in the way parts of the property respond to different management practices, as well as recognising and understanding the environmental risks associated with these practices.

The property is made up of the following Farm Management Blocks (As shown on the Farm Plan)
THESE SHOULD IDEALLY LINE UP WITH THE BLOCKS IN OVERSEER. CAN GROUP DIFFERENT SOIL TYPES IF UNDER THE SAME MANAGEMENT TO MAKE IT SIMPLIER.

Land Management Unit A: K Line Areas Grouped								
Description: K Line Irrigated Area – Pukeuri						**Strengths**	**Weaknesses**	**Environmental risks**
Area (ha)	57.5ha					- Very good soil structure - Minimal soil and sediment loss - well planted with native shelter belts - Good winter growth -- Good Fertility - Good biodiversity with insects, birds and earthworm populations	- Can flood in winter if heavy rain, not common but can occur once every 4-5 years. - Can pug if heavily stocked in wet conditions hence no cattle over winter.	- High stocking rate therefore higher nutrient loss potential - High Olsen P levels therefore increased risk of P Loss - When floods damage to soil structure and P/sediment loss.
Soil type	Pukeuri, Mayfield + Timaru							
Current use	Lamb Fattening Lambing Hoggets Finishing Cattle Cut of balage							
Irrigation Type	K Line							
Contour	Flat	Rolling	Mod steep	Steep	V Steep			

Land Management Unit A:								
Description: Dryland						**Strengths**	**Weaknesses**	**Environmental risks**
Area (ha)	67.83ha					- Good fertility - Tussock provides natural shelter for lambing - Well subdivided	- Slips can occur in heavy rain on some steep faces - North facing areas are drought prone	- Risk of phosphate and sediment loss with slips. Planting 50-80 poplars annually in high risk areas.
Soil type	Brookstead							
Current use	Lambing Ewes Grazing of mixed age ewes and hoggets Grazing of cattle during wet periods							

Irrigation Type	None							
Contour	Flat	Rolling	Mod steep	Steep	V Steep			

Land Management Unit A: Forage Crops Grouped								
Description:Winter Rape + Kale						**Strengths**	**Weaknesses**	**Environmental risks**
Area (ha)	6ha					- Does not need a lot of water to grow - Critical source of feed during pinch periods - Lighter cattle class therefore easier to manage soil structure - Direct drill all crops to reduce need to cultivate.	- If grazing in wet conditions then pugging risk - High weed burden	- High stocking rate pre winter therefore higher risk of nutrient loss - Pugging in winter if wet
Soil type	Timaru							
Current use	Kale – winter R1 cattle Rape – winter Mixed Age Twinning ewes							
Irrigation Type	K Line – to strike the crop							
Contour	Flat	Rolling	Mod steep	Steep	V Steep			

4.0 ACCEPTIBILITY OF PRACTISES AND OVERALL FARM RISK RATING

Acceptability of practices are rated as follows:

Poor Generally inadequate or unacceptable
Basic Adequate for small blocks, or low intensity blocks
Good Desirable minimum
Excellent Optimum on farm practice.

A description of each of these in relation to each FEP Element is found in the accompanying Farm Environment Plan Risk Assessment.
For a Poor rating, a score of 1 is given. For a Basic rating, a score of 2 is given. For a Good rating, a score of 3 is given, and for an Excellent or Full Compliance rating, a score of 4 is given. An overall farm rating will be given.

Irrigated, collects animal effluent	Not irrigated, collects animal effluent	Irrigated, does not collect animal effluent	Not irrigated, does not collect animal effluent
11 or less = poor	9 or less = poor	9 or less = poor	7 or less = poor
Between 12 & 22 = basic	Between 10 & 18 = basic	Between 10 & 18 = basic	Between 8 & 14 = basic
Between 23 & 33 = good	Between 19 & 27 = good	Between 19 & 27 = good	Between 15 & 21 = good
34 or more = excellent	28 or more = excellent	28 or more = excellent	22 or more = excellent

5.0 FEP ELEMENT – IRRIGATION MANAGEMENT (DELETE IF NOT RELEVANT)

Management Objective: To operate irrigation systems efficiently and ensuring that the actual use of water is monitored and efficient.

Acceptability of current practices	Current Practices	Additional actions proposed to meet outcomes & timeframes for completion	Evidence/Records Required for Compliance
Objective: 1.	**All irrigation applications are justified by monitoring and/or other assessment or information**		
	- Rainfall is measured and recorded with a rain gauge at the house, soil moisture is checked on both the house flats and top of hill flats by digging holes as well as an assessment of pasture growth. - Soils Temperatures are taken daily at the shoulders of the season to ensure plant growth and water applications are optimised. No water is applied until soil temperatures reach 10 degrees consistently.		- Rainfall and irrigation records. - Soil Temperature records. - K Line application rate measured with rain gauge. Confirmed 2 mil/hour applied
Objective: 2.	**Farm practices optimize water applications from irrigation system**		
	- Lines are checked daily for blocks and faults while running. Daily checks for ponding and runoff when shifting the lines as well as hydrant checks. - Time K Lines are run for and if they run is adjusted dependent on weather conditions. If sufficient rainfall then K Lines are turned off. - Amount of water applied is adjusted to field conditions by adjusting hours watered.		- LWIC Water orders - Irrigation maintenance records

Acceptability of current practices	Current Practices	Additional actions proposed to meet outcomes & timeframes for completion	Evidence/Records Required for Compliance
	- Nozzles have been adjusted on some areas to a lower application rate where over watering was an issue. - K lines replaced on flats in 2019-2020 season		

6.0 FEP ELEMENT – NUTRIENT & SOIL MANAGEMENT

Management Objectives: To maximize nutrient use efficiency while minimizing nutrient losses to water.
To maintain or improve the physical and biological condition of soils in order to minimize the movement of sediment, phosphorus and other contaminants to waterways.

Acceptability of current practices	Current Practices	Additional actions proposed to meet outcomes & timeframes for completion	Evidence for Compliance
Objective: 1. All sources and potential losses of nutrients, sediment and effluent are clearly identified			
	- NB updated annually and used as a key tool to determine nutrient inputs by management zone - All fertiliser applications are applied using a Spreadmark certified applicator with GPS mapping - Stock records kept and paddock activities recorded - Soil Tests are completed annually - Areas of high potential sediment runoff are not worked - Beef and Lamb FEP completed identifying critical areas	-	Overseer Nutrient Budget. Records including stock details, irrigation records, fertiliser records, cultivation records and any crop record. Figured used for Stock Numbers. Hawkeye used for Fertiliser applications.
Objective: 2. Nitrate loss target/s for property as set by Scheme and/or regional council are met or exceeded.			
	- Nitrogen application rates, timing and areas recorded in Hawkeye - During wet periods stock are removed from strip grazing to minimise damage - Minimal N use, 43kgN/ha budgeted 2019-2020 season - N applied during periods of active pasture growth at low application rates, always below 30kgN/ha/application.	-	Soil test results Fertiliser recommendations Fertiliser purchase records Fertiliser spreader records Supplements made

Acceptability of current practices	Current Practices	Additional actions proposed to meet outcomes & timeframes for completion	Evidence for Compliance
Objective: 3. Phosphate (P) & sediment losses to groundwater and waterways are minimised and critical source areas managed.			
	- Crops and Grass are Direct Drilled rather than cultivated. If cultivation is required then this is minimum tillage. - Phosphate is applied in January/February outside the period of high rainfall potential - Phosphate is applied to maintain optimum fertility, and sub-maintenance is applied where Olsen P levels are above optimum to reduce the risk of P loss. - Stock are removed from pastoral areas when soil damage risk is high. - Poplars are planted through areas of high risk of slips - Shelter belts offer a Riparian Buffer on some areas. - Steep areas are planted in Pine Trees	-	Soil test results Fertiliser recommendations Fertiliser purchase records Fertiliser spreader records Supplements made Overseer Nutrient Budget 60 Poplars planted in 2019 winter New shelter belts fenced to help with stock shelter, wind erosion.
Objective: 4. Soils are well-managed to optimise infiltration and minimise runoff			
	- VSA carried out twice annually on pastoral areas and on all cropped ground - Irrigation rates and frequency have been adjusted to suit paddocks to ensure minimal runoff and maximum pasture production.		

7.0 FEP ELEMENT – LIVESTOCK MANAGEMENT

Management Objective: To manage wetlands and water bodies so that stock are excluded as far as practicable from water, to avoid damage to the bed and margins of a water body, and to avoid direct input of nutrients, sediment and microbial pathogens.

Acceptability of current practices	Current practices	Additional actions proposed to meet outcomes & timeframes for completion	Evidence for Compliance
Objective: 1. Stock damage to waterways and wetlands minimised			
	- No streams on farm, gullies tend to collect water at periods of higher rainfall. Man-made drains have culverts for stock crossings.		3 culverts/stock crossings visible No cattle grazing Northern CSA at any time as too high risk
Objective: 2. Farm practices minimise soil, nutrient and faecal contamination of waterways			
	- Drains maintained to ensure flooding of paddocks does not occur - Buffer zone is left when cultivating flats near the drains. - Culverts in place on main tracks. - Drains fenced off from cattle access. When gullies flow no cattle grazed in them.		

8.0 FEP ELEMENT – OFFAL PITS

Management Objective: To manage the number and location of pits to minimize risks to health and water quality.

Acceptability of current practices	Current practices	Additional actions proposed to meet outcomes & timeframes for completion	Evidence for Compliance
Required outcome: 1. Ensure that the location of the pits complies fully with LWRP rules			
	- Offal pits are not close to Drains or areas at risk of flooding. - Offal pits are dug in areas of Clay rather than free draining soils		

9.0 SUMMARY OF FARM RISK ASSESSMENT

Topography – flat and easy-steep hill

Soils – a mixture of shallow to deep

Waterways –
There are no natural waterways on farm. Runoff from the gullies during periods of high rainfall can cause flooding on the flats therefore drains have been dug to manage this runoff.

Fertiliser use –

Average whole farm N fertiliser application	43kgN/ha/yr
Average whole farm P fertiliser application	31kgP/ha/yr

Cultivated areas – conventional cultivation methods are used where landscaping of paddocks is required, where possible direct drilling is used.

Stock crossing through waterways – culverts have been installed through tracks where stock cross through drains

Irrigation –

<TO BE COMPLETED>
The farm has low inputs, low stocking rate and an owner-operator structure. However, it is heavy soils on rolling hills, with new irrigation, and therefore, the farm is considered to be a
MEDIUM ENVIRONMENTAL RISK.

10.0 OVERALL FARM RATING FROM RISK ASSESSMENT

Farm Score from Risk Assessment
Overall farm rating

11.0 SUMMARY OF ACTIONS REQUIRED AND TIMEFRAME FOR COMPLETION

FEP Element	Action	Timeframe

12.0 FARM ENVIROMENT PLAN AUDIT REQUIREMENTS

1. The Farm Environment Plan must be audited by a Farm Environment Plan Auditor who is independent of the farm being audited (i.e. not a professional advisor for the property) and has not been involved in the preparation of the Farm Environment Plan.

2. The farming activity on the property will be audited against the following minimum criteria:

    2.1 An assessment of the performance against the objectives, targets, good practices and timeframes in the Farm Environment Plan;
    2.2 An assessment of the robustness of the nutrient budget/s;
    2.3 An assessment of the efficiency of water use (if irrigated).

13.0 AUDITOR DETAILS

The auditor appointed for this farm is <insert auditors name>.

<Auditors name> has had no involvement in the preparation of this FEP, and is independent from the farm.