SLATER FARMS

Farm Environment Plan - Report Summary

Plan Name	SLATER FARMS
Plan Number	104.1
Approved Date	08/03/2016
Person responsible for implementing the plan:	Guy Slater & Lars Bendsen

Summary of Management Areas Covered

Management areas covered	Completed?	Reason (If not completed)
Irrigation Management	Yes	
Nutrient Management	Yes	
Effluent Management	No	n/a
Riparian/Wetland and Biodiversity Management	Yes	
Soil Management	Yes	

Summary of Actions

Irrigation Management			
Action	Bucket tests under all irrigators		
Comments			
Person Responsible:	Lars	**Completion Date**	On Going
Action	Records; applications, maintenance		
Comments			
Person Responsible:	Guy/Lars	**Completion Date**	On Going

Nutrient Management			
Action	Nutrient baseline; keep in current version of Overseer		
Comments			
Person Responsible:	Guy/Lars	**Completion Date**	On Going
Action	Annual nutrient budget		
Comments	Keep records for completion of annual year end budget for compliance		
Person Responsible:	Guy/Lars	**Completion Date**	On Going
Action	Accurate predictive nutrient budget		
Comments	May be required to ensure rolling 4 year average of actual NB remains compliant with rules/consent		
Person Responsible:	Guys/Lars	**Completion Date**	On Going

Riparian/Wetland and Biodiversity Management			
Action	Black Creek - planting		
Comments	Continue planting of Black Creek as time and finances allow		
Person Responsible:	Guy/Lars	**Completion Date**	On Going

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Action	Tile drain - complete map of locations and flow directions		
Comments			
Person Responsible:	Roger	**Completion Date**	31-12-2018

Soil Management			
Action	Leave buffer between crops and waterways		
Comments	Ensure any runoff events can be captured and filtered by buffers and captured in ponds		
Person Responsible:	Guy/Lars	**Completion Date**	On Going

SLATER FARMS

Part - 1: Farm

Section A: Property Details

1: Farm Plan Details

Plan Name	SLATER FARMS			**Status**	Approved
Plan Number	104.1	**Created Date**	07/03/2016 12:01:57	**Approved Date**	08/03/2016

Notes

Slater Farms is run in conjunction with Te Mara Ventures (also owned by Rodger & Guy Slater). They operate a 493 hectare farm growing wheat, barley, fescue and break crops including kale, brassicas, peas, radishes and other vegetable seeds.
The farm is largely under irrigated due to a lack of available water, but the focus is on each particular crop and its requirements. There are small areas of the farm which are not irrigated at all. Slater Farms owns 50 shares and Te Mara Ventures 25.
As the property is farmed with a regular crop rotation and is of mostly deep silt loam it was decided to classify under one land management unit only.

Resource Consents held for farming activities on property

No active consents - KIL water only

2: Property Details

Property Name	Slater Farms Limited
Farming Entity (Ind. / Org.)	N/A

Physical Address of Property

Street Address	272 Brentons Road	**Suburb/R.D.**	RD 21
City/Town	Geraldine	**Postcode**	7991

GPS Coordinates/Farm Identifier	NZTM: 1455526,5111642		
Total Area Covered By Plan (Ha)	492.6	**Effective Area (Ha)**	439.8
Annual Average Rainfall (mm)	N/A	**Elevation (masl)**	N/A

Land Parcels - legal description and area (Ha)

Part Lot 1 DP 795;Lot 1 DP 78190;Lot 2 DP 60707;RS 10966;Lot 1 DP 432828;Lot 2 DP 432828
Te Mara - RS 41062

Description of ownership

Slater Farms Limited

3: Is the postal address for the owner different from property details above? **Yes**

4: Postal Address

Street Address	[redacted]	**Suburb/R.D.**	[redacted]
City/Town	[redacted]	**Postcode**	[redacted]

5: Owner's Contact Details

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Phone No.	[redacted]	**Mobile No.**	[redacted]
Email	[redacted]		

6: Is any part of the property leased in or out? **No**

7: Details of Lease **N/A**

8: Is the Farm Manager / contact person different from the owner? **Yes**

9: Farm Manager Details

Name	Lars Bendsen	**Position**	N/A
Address	[redacted]	**Phone No.**	N/A
Email	N/A	**Mobile No.**	[redacted]

Section B: Enterprise Type

Arable and Hort Information

Crops Grown (ha)	439.8 ha

Crop type and standard crop rotation
80ha wheat 100ha barley 180ha fescue 110ha break crops - winter feed (kale), peas, radishes, brassicas, spinach, chard and other vege seeds Rotation: 1. wheat-barley-fescue-wheat OR to pasture
Additional Information
N/A

Section C: Irrigation Area & Type

1: Area Information

Total area covered by plan (ha)	492.6	**Effective Area (ha)**	439.8
Scheme irrigated area (ha)	432.5	**Other irrigated area (ha)**	N/A
Total irrigated area (ha)	432.5	**Total shares held**	75
Maximum pumping rate	30 l/s (slightly more depending)		

2: Type Information

Irrigation	Area Irrigated using OWL	Area Irrigated	OWL Scheme	Return Periods &

Type	scheme water (ha)	using other water (ha)	source	Application Depth
Gun	118.7		Kakahu	25-30mm - 30 days
Linear move	167.4		Kakahu	25-30mm - 30 days
Pivot	146.4		Kakahu	12mm - 3-4 days

Section D: Effluent

1: Effluent Storage

Storage time	N/A	**Area consented**	N/A
Storage type and/or volume	N/A	**Area applied**	N/A

2: Effluent Application

Effluent Irrigation Type	Area irrigated	Max application rate
N/A	N/A	N/A

Section E: Nutrient Management

1: Nutrient Allocation Zone

Red	Orange	Green	Light Blue	Lake
Yes	No	No	No	No

2: Is property part of a farming enterprise? **N/A**

3: Do you have a nutrient budget? **Yes**

4: Nutrient Budget Information

Nutrient Budget date	Current N loss to water (kgN/ha/yr)	N loss target if known (kgN/ha/yr)	Current P loss to water (kgN/ha/yr)	N loss target if known (kgN/ha/yr)
06-03-2019	37		0.3	

BudgetType	Overseer	**Overseer Version**	6.3.1

Contact Information who prepared nutrient budget

Name	Nicky Watt	**Company**	Irricon Resource Solu	**Phone No.**	021 220 1136

5: Has the nutrient budget been audited? **N/A**

6: Do you have a nutrient baseline? **Yes**

7: Nutrient Baseline Information

Baseline N loss to water (kgN/ha/yr)	30	**OVERSEER Version**	6.3.1

Contact Information who prepared nutrient baseline

Name	Rebecca Howe -Updated by	**Company**	Ballance	**Phone No.**	N/A

8: Has the nutrient baseline been audited?

No

Part - 2: Land Management Units

Land Unit: Heavy silt loam

1: Land Unit Information

Slope Type	N/A	**Irrigation type**	N/A
Block Area	433	**Predominant soil type**	Waitohi and Pahau deep silty loams
Effluent Type	N/A	**Stream(s) present?**	Yes
Natural Drainage	Poor	**Wetland(s) present?**	Yes
Predominant land use	Arable	**Artificial drainage**	N/A

Block Strengths
Good fertility, Olsen P 20-25, pH 6. Good water holding capacity. Always try to autumn sow. No livestock on blocks in winter
Block Weaknesses
In wet weather can be difficult.
Additional Notes
Cut and carry silage if theres a surplus. Sell baleage off farm. 50-60 kms of tile drains

2: Environmental Risks Assessment

Risk Category	Inherent Risk of problem occurring	Reason for for Risk Rating
N leaching	Low	Deep heavy soils
P loss	Low	Deep heavy soils
Runoff Contamination	Low	Flat terrain. Except in flood event
Erosion	Low	TIming of cultivation, flat contour, heavy soil
Soil Compaction	Medium	Heavy soils

ADEQUACY OF CURRENT PRACTICES TO MANAGE RISK 1 = RISK NOT MANAGED, 5 = RISK FULLY MANAGED						
Risk Category	**Applies to Unit?**	**N Leaching**	**P Loss**	**Runoff Contamination**	**Erosion**	**Soil Compaction**
Stock Grazing	N/A					
Winter Grazing	N/A					
Fertilizer Application	Yes	3	3	4		
Irrigation	Yes	4	4	4	4	
Dariy Effluent	N/A					
Cultivation	Yes	4	4	4	4	4

Drain Cleaning	N/A					
Earth Works	N/A					

Land Unit: Non Productive Area and Trees

1: Land Unit Information

Slope Type	N/A	**Irrigation type**	N/A
Block Area	53	**Predominant soil type**	Waitohi and Pahau deep silty loams
Effluent Type	N/A	**Stream(s) present?**	Yes
Natural Drainage	Poor	**Wetland(s) present?**	No
Predominant land use	Other	**Artificial drainage**	Open
Block Strengths			
No Cropping or livestock or winter grazing Trees			
Block Weaknesses			
1 house			
Additional Notes			

2: Environmental Risks Assessment

Risk Category	Inherent Risk of problem occurring	Reason for for Risk Rating
N leaching	Low	No fertiliser, stock or cultivation
P loss	Low	no fertiliser, stock or cultivation
Runoff Contamination	Low	not cropped or grazed
Erosion	Low	Flat, no cropping
Soil Compaction	Low	no stock or cultivation

ADEQUACY OF CURRENT PRACTICES TO MANAGE RISK 1 = RISK NOT MANAGED, 5 = RISK FULLY MANAGED						
Risk Category	**Applies to Unit?**	**N Leaching**	**P Loss**	**Runoff Contamination**	**Erosion**	**Soil Compaction**
Stock Grazing	N/A					
Winter Grazing	N/A					
Fertilizer Application	N/A					
Irrigation	N/A					
Dariy Effluent	N/A					

Cultivation	N/A					
Drain Cleaning	N/A					
Earth Works	N/A					

Land Unit: Dryland Area

1: Land Unit Information

Slope Type	N/A	**Irrigation type**	N/A
Block Area	7	**Predominant soil type**	Waitohi and Pahau deep silty loams
Effluent Type	N/A	**Stream(s) present?**	Yes
Natural Drainage	Poor	**Wetland(s) present?**	Yes
Predominant land use	Arable	**Artificial drainage**	N/A

Block Strengths

Not irrigated, Good fertility, Olsen P 20-25, pH 6. Good water holding capacity. Always try to autumn sow. No livestock on blocks in winter

Block Weaknesses

Difficult to manage in wet weather

Additional Notes

2: Environmental Risks Assessment

Risk Category	Inherent Risk of problem occurring	Reason for for Risk Rating
N leaching	Low	Moderate PAW, Poorly Drained, not irrigated
P loss	Low	Flat land, not irrigated
Runoff Contamination	Low	Flat land
Erosion	Low	Flat, cropping
Soil Compaction	Medium	No stock grazing, heavy machinery managed where can

ADEQUACY OF CURRENT PRACTICES TO MANAGE RISK
1 = RISK NOT MANAGED, 5 = RISK FULLY MANAGED

Risk Category	Applies to Unit?	N Leaching	P Loss	Runoff Contamination	Erosion	Soil Compaction
Stock Grazing	N/A					
Winter Grazing	N/A					
Fertilizer Application	Yes	3	3	4		
Irrigation	N/A					

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Dariy Effluent	N/A					
Cultivation	Yes	4	4	4	4	4
Drain Cleaning	N/A					
Earth Works	N/A					

Part - 3: Practices

Management Area: Irrigation Management

OBJECTIVE: To ensure efficient on-farm water use that meets crop needs and minimises losses

All irrigation applications are justified by monitoring and/or other assessment or information		
Holes dug to check soil moisture	Basic	
Soil moisture assessed through occasional use of hand held probe (e.g. electric fence standard or soil moisture probe)	Basic	
Rainfall forecasts monitored & used in decision making	Basic	**Yes**
Soil temperature monitored & used in decision making	Basic	**Yes**
Decision rules used.(i.e. No irrigation after 10mm rain etc.)	Basic	**Yes**
Water take consent complies with national water metering regulations (where relevant)	Basic	**Yes**
Soil temperature measured, recorded and used in decision making	Good	**Yes**
Rainfall measured, recorded and used in decision making	Good	**Yes**
Soil moisture regularly assessed using buried sensors	Good	**Yes**
Soil moisture regularly assessed using scheduling service	Good	**Yes**
Soil moisture regularly assessed using hand held probe	Good	
Soil moisture regularly assessed using water balance	Good	
Plant sensors used as aid to scheduling	Good	
Crop irrigation scheduling model used	Good	**Yes**
All points of take, on-farm are measured with compliant water meters	Good	**Yes**
Irrigation scheduling records kept and demonstrate how soil moisture levels are managed between field capacity and irrigation trigger point; use of deficit irrigation	Premium	
Real time sensor records used to schedule irrigation	Premium	
Farm-wide water balance model used using climate and soil moisture data.	Premium	
Additional Practices and Other Comments		
rain gauges used to measure irrigation uniformity		
annual check and calibration by Waterforce		
Neutron probes used		
Climate station has been installed and helps with scheduling via SM monitoring		
irrigation applications recorded and reports generated from climate station.		

Farm practices optimise water applications from irrigation system - application efficiency targets achieved		
Spray systems		
Daily checks for excessive runoff/ponding	Good	**Yes**

System closed down if runoff and/or ponding occurs	Good	**Yes**
Daily checks for irrigation problems (e.g. block nozzles, leaking hydrants or hoses) and problems fixed	Good	**Yes**
Systems in place for staff to report / fix problems	Good	**Yes**
Application to non-target areas (e.g. tracks, impermeable surfaces, waterways) is minimised	Good	**Yes**
Rotation / irrigator speeds adjusted according to ET, soil moisture status and rainfall	Good	**Yes**
Application rate checks with buckets or rain gauge pre-season	Good	**Yes**
Annual audit of system completed to identify efficiency improvements (e.g. DIY irrigation evaluation)	Good	**Yes**
Audit upgrades identified in work plan with timelines for completion	Good	
Monitor pasture/crop growth and development	Good	**Yes**
Pivot: Wetted width widened on outer spans on long pivots or on slopes (e.g. by fitting boom backs or clipping hoses over truss rods and fitting wide spray sprinklers)	Good	
Pivot: Lines shut down where effluent irrigation is being applied	Good	
Spray line: lines moved to cover any dry patches that occur	Good	
Spray line: shifts made to suitable plan (e.g. GPS on bike; follow map)	Good	
Application depth & uniformity checks pre-season, & through season	Premium	**Yes**
System evaluation by certified evaluator 5 yearly	Premium	
Program to remedy problems in 5 yearly evaluation implemented	Premium	
Variable rate irrigation together with soil EM mapping used to maximise water use efficiency	Premium	
Annual water use checklist completed	Premium	
Borderdyke		
Monitor indicator points/areas are setup and clocks adjusted accordingly (based on ET, soil moisture status, rainfall and length of grass)	Good	
Border dyke gate seals maintained	Good	
Border dyke sills cleaned regularly	Good	
Head races hard grazed	Good	
Borders maintained and any holes repaired	Good	
Systems in place for staff to report / fix problems	Good	
Placement of bunds for stream protection	Good	
Wider laser levelled border dyke upgrades	Good	
Micro/drip		
Pre-season calibration of at least	Basic	
System layout plan and control points available at system on/off control station	Good	

Pre-season calibration check of each block. Re-run adjustment factors applied	Good	
Regular readings of operating pressure and flow logged by block	Good	
System flushing at least annually	Good	
Determine cause of and manage identified wet or dry spots	Good	
System maintenance plan in place and records kept	Premium	
System evaluation by certified evaluator 5 yearly	Premium	
Program to remedy problems in 5 yearly evaluation implemented	Premium	
Annual water use checklist completed	Premium	
Additional Practices and Other Comments		
N/A		

All staff involved in the operation and maintenance of the irrigation system are suitably trained		
Staff understand resource consent conditions	Good	**Yes**
Staff with irrigation management duties well trained with respect to their responsibilities	Good	**Yes**
System supervisor trained to INZ system operator standard (e.g. Irrigation Manager training course)	Premium	
Additional Practices and Other Comments		
N/A		

New irrigation infrastructure is designed and installed to meet industry best practice standards		
System designed with site specific knowledge of soil, climate & crop needs	Basic	
System meets flow meter, flow rate , volume & area irrigated requirements	Basic	**Yes**
Post installation checks of application rate and distribution uniformity undertaken (e.g. using DIY evaluation or certified evaluator)	Basic	
All new on-farm irrigation infrastructure is designed in accordance with Design Standards for Piped Irrigation Systems in NZ (INZ, Oct 2012), and the Code of Practice for the Design of Piped Irrigation systems in New Zealand (INZ, Oct 2012)	Good	**Yes**
All new irrigation infrastructure is installed in accordance with Installation Code of Practice for Piped Irrigation Systems (INZ, Jan 2012);	Good	**Yes**
Independent evaluation of design undertaken	Good	
Commissioning tests show that system performs to desired specifications for: System capacity, application depth, intensity and uniformity (>85%) & return interval.	Good	
Operation and maintenance manuals obtained.	Good	
Comprehensive evaluation and decision-making process used (e.g. INZ Decision support process).	Premium	
Additional Practices and Other Comments		

N/A

Outcome Action(s)			
Action	Bucket tests under all irrigators		
Comments			
Person Responsible:	Lars	**Completion Date**	On Going
Action	Records; applications, maintenance		
Comments			
Person Responsible:	Guy/Lars	**Completion Date**	On Going
Action	Nutrient baseline; keep in current version of Overseer		
Comments			
Person Responsible:	Guy/Lars	**Completion Date**	On Going
Action	Annual nutrient budget		
Comments	Keep records for completion of annual year end budget for compliance		
Person Responsible:	Guy/Lars	**Completion Date**	On Going
Action	Accurate predictive nutrient budget		
Comments	May be required to ensure rolling 4 year average of actual NB remains compliant with rules/consent		
Person Responsible:	Guys/Lars	**Completion Date**	On Going

Required Evidence	
Rainfall records	**Yes**
Soil moisture monitoring records (moisture probe, neutron probe, aquaflex)	**Yes**
Irrigation application records and/or water order records	**Yes**
Application depth and uniformity records (e.g. bucket test results)	**Yes**
System design report where applicable	
System commissioning report/certificate where applicable	
Additional Evidence	
Soil temperature monitoring records	
Water budget	
Water use checklist	
Irrigation run-off records	
Irrigation system performance evaluation records (DIY or certified)	
Upgrade plan with actions taken	
Records of irrigation incidents and actions taken	**Yes**
Records of mechanical failure/repair	**Yes**
Irrigation maintenance records	**Yes**

Soil type and infiltration rate mapping	
Staff training programme &/or records	**Yes**
Staff questioning of irrigation scheduling and operation	
Irrigation scheduling and management information is available to staff	
Independent evaluation report where applicable	
Operation and maintenance manuals where applicable	
Other Records & Comments	
rain gauges used to measure irrigation uniformity, annual check and calibration by Waterforce. All irrigation info kept in crop diary for GAP certification	

Management Area: Nutrient Management

OBJECTIVE: To minimise nutrient and sediment losses from farming activities to ground and surface water

All sources and potential areas of loss of nutrients, sediment and effluent are clearly identified		
OVERSEER (or approved alternative) nutrient budget prepared for farm & for each LMU/block	Good	**Yes**
Nutrient budget reviewed annually & revised if necessary.	Good	**Yes**
Key sites for P and sediment losses identified (Critical Source Areas)	Good	**Yes**
Nutrient budget used in assessment of options for minimising nutrient loss & maximising nutrient use efficiency.	Premium	
Additional Practices and Other Comments		
N/A		

Nitrate losses from the property are minimised, and targets met.		
Application decisions		
Nitrogen risks noted and farm practices address any issues.	Basic	**Yes**
Nitrogen fertiliser application rates consistent with those derived through nutrient budget	Good	**Yes**
N fert application rates based on Advisors recommendations	Good	**Yes**
N fert application rates based on soil testing	Good	**Yes**
N fert application rates based on deep soil N tests for crops	Good	**Yes**
N fert application rates based on industry crop models e.g. wheat calculator	Good	**Yes**
N fert application rates based on assessment of pasture quality	Good	
N fert application rates based on plant analysis	Good	**Yes**
Application techniques and timing		
Equipment used for N application is suitably calibrated (e.g. meets Spreadmark standards)	Good	**Yes**

N fert application rates set to match growth cycle of pasture or crop	Good	**Yes**
N fert applied when soil temperature above 6 degrees and rising	Good	**Yes**
Maximum N single appl rates set. i.e. 50kgN/ha - pasture, 80 kg N/ha - crops	Good	
Pasture is at least 25mm high (1000kg DM/Ha) before nitrogen is applied	Good	
Nitrogen is not applied when soils are at field capacity as measured using soil moisture equipment	Good	**Yes**
Nitrogen is not applied to severely compacted soils	Good	**Yes**
Nitrogen is not applied during May, June and July	Good	**Yes**
GPS technology used for precise application of all N fertiliser spread (e.g. ravtrak, trakmap)	Premium	**Yes**
Liquid urea used and applied through precision equipment	Premium	
Other management practices to reduce N losses		
Crop rotations adjusted to maximise the use of residual N in the soil	Good	**Yes**
Cultivation practices and timing adjusted to minimise N losses.	Good	**Yes**
Supplements harvested and export from property to reduce N losses.	Good	**Yes**
Lower N supplements (e.g. maize) used instead of N fert to reduce N losses	Good	
N targets partially achieved through maximising per stock unit production	Premium	
N targets partially achieved through reducing replacement rates	Premium	
N targets partially achieved through the use of mixed pasture species.	Premium	
Stock wintering managed and adjusted to minimise nutrient losses	Premium	
Additional Practices and Other Comments		
Max N application 92 kg/ha, depending on crop type		
Woodleys used to apply lime, all other done by own spreader - calibrated		
Deep N tests late winter or early spring - 40-80		
Own spreader has weigh cells and is calibrated each season		

Phosphate (P) & sediment losses and waterways are minimised and critical source areas managed		
Application decisions		
Phosphate risks noted and farm practices address any issues.	Basic	**Yes**
Phosphate fertiliser application rates consistent with those derived through nutrient budget	Good	**Yes**
P fert application rates based on Advisors recommendations	Good	**Yes**
P fert application rates based on soil testing	Good	**Yes**
P fert application rates based on assessment of pasture quality	Good	**Yes**
P fert application rates based on plant analysis	Good	**Yes**

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Application techniques and timing		
Equipment used for P application is suitably calibrated (e.g. meets Spreadmark standards)	Good	**Yes**
Maximum P single application rates set; split applications where necessary	Good	**Yes**
P fert is not applied when soils at field capacity as measured using soil moisture equipment	Good	**Yes**
P fert is not applied to severely compacted soils	Good	**Yes**
P fert is not applied June, July, Aug	Good	**Yes**
P application separation distances from waterways maintained (>1-2m on flat land and >5m on sloping land)	Good	**Yes**
Slow release P fertilisers used to reduce P run-off where necessary	Premium	
GPS technology used for precise application of all P fertiliser spread.	Premium	**Yes**
Other management practices to reduce P losses		
Plan in place to reduce P & sediment looses from Critical Source Areas	Good	
Additional Practices and Other Comments		
Variable phosphate and potassium application dependent on crops		

Demonstrated plans in place to minimise nutrient and sediment losses from winter grazing of forage crops		
Cattle grazed on and off fodder block (e.g. stock stood off block for at least 4 hours)	Good	
Straw bales place in low spots to adsorb runoff from fodder crop block	Good	
Strip next to riparian margin grazed last when break feeding winter feed crops.	Good	
Maize crops grown following fodder crops to utilise excess nutrients.	Good	
Additional Practices and Other Comments		
N/A		

All on-farm silage and offal pit & rubbish dump discharges are appropriately managed		
Risks of leachate from silage pits identified and managed	Basic	
No runoff of leachate from silage pits to waterways including drains.	Good	
Silage stack bunker is sealed to meet standards	Good	
Offal pits located in areas where there is no risk of contamination of groundwater	Good	
Farm rubbish dumps located in an area where there is no risk of contamination of groundwater	Good	
Additional Practices and Other Comments		
N/A		

Outcome Action(s)	
Action	Black Creek - planting

Comments	Continue planting of Black Creek as time and finances allow		
Person Responsible:	Guy/Lars	**Completion Date**	On Going
Action	Tile drain - complete map of locations and flow directions		
Comments			
Person Responsible:	Roger	**Completion Date**	31-12-2018
Action	Leave buffer between crops and waterways		
Comments	Ensure any runoff events can be captured and filtered by buffers and captured in ponds		
Person Responsible:	Guy/Lars	**Completion Date**	On Going

Required Evidence	
Nutrient budget	**Yes**
Soil test results, recommended fertiliser programme &/or Nutrient Management Plan	**Yes**
Fertiliser application records (N and P fert)	**Yes**
Critical source area (P and sediment) map	
Records of supplements imported/exported	**Yes**
Additional Evidence	
Stocking rates and detail of stock management	
Production/yield records	**Yes**
Spreading company name/Spreadmark certificate	**Yes**
Proof of Placement records	**Yes**
Other Records & Comments	
All details of fert application etc kept in crop diary for GAP certification	

Management Area: Effluent Management

OBJECTIVE: To manage the operation of the effluent system to avoid adverse effects on water quality

Effluent management and discharge comply fully with all regional council requirements 365 days / year		
Effluent consent is current	Good	
Effluent system is fully compliant with the consent conditions	Good	
Additional Practices and Other Comments		
N/A		

Effluent applied at correct rates and timing to avoid contamination of ground & surface water		
All potential effluent system risks identified and management plans in place to manage risks.	Good	
Effluent irrigation system is capable of delivering the correct amount of effluent for soil type and slope.	Good	

Effluent is applied to match specific soil types and slopes	Good	
Effluent is applied at rates that does not lead to ponding and/or runoff.	Good	
Backflow preventer install in system and certified	Good	
Sufficient storage capacity is available at all times to ensure that effluent is not applied when soil conditions are near field capacity.	Good	
Effluent produced is minimised by careful yard management and minimised water use in the shed	Good	
An area of at least 8ha/100 cows is used as designated effluent area	Good	
Effluent is spread evenly over the whole of the designated area.	Good	
Nutrient loading from effluent meets Ecan's nutrient loading limit. (i.e. 200kgN/ha/yr & no more than 100kgN/ha/3 mths)	Good	
Effluent system is set up to ensure no effluent is spread over waterways, roads, reserves or boundaries.	Good	
Immediate action, (fix, clean-up & future proof), is taken if incidents or breakdowns occur.	Good	
Staff who are involved in the management of the effluent system are fully trained in the use of the system.	Good	
Proof of placement technology used to identify areas of effluent application	Premium	
Fail safe systems such as Gator-buddy and variable rate irrigation to minimize risk of incidents, and application of effluent to high risk areas.	Premium	
Additional Practices and Other Comments		
N/A		

Outcome Action(s)
N/A

Required Evidence
N/A
Additional Evidence
N/A
Other Records & Comments
N/A

Management Area: Riparian/Wetland and Biodiversity Management

OBJECTIVE: To manage waterways, wetlands and their margins to avoid stock damage and minimise inputs of nutrients, sediment and faecal contamination

Stock damage to waterways and wetlands minimised		
Stock excluded from all waterways and wetlands in accordance with ECAN rules	Good	**Yes**

All regular stock crossings have bridge or culvert	Good	
All stock crossings have bridge or culvert	Premium	
Approaches to stock crossings are managed to avoid runoff to waterways	Premium	

Additional Practices and Other Comments
All land not cropped is planted in trees
regular crossings are bridged for machinery, no stock present but all waterways fenced
No stock on farm and all waterways and wetland areas are fenced protecting mahinga kai and recognizing their cultural and ecological senstivity to the Cultural Landscape management area

Farm practices minimise soil, nutrient and faecal contamination of waterways		
Riparian margins are of sufficient width to adequately filter any run-off (1-10m)	Good	**Yes**
Wider riparian buffers provided at low points to filter any run-off.	Good	
Minimum or no-till cultivation techniques used when high risk of run-off from cultivated blocks.	Good	**Yes**
Runoff from stock races and tracks does not flow directly into waterways.	Good	
Runoff from stock tracks and races incepted and filtered through riparian buffer prior to discharge	Good	
Riparian margins planted with appropriate native species	Premium	
Riparian planting programme prepared and implemented.	Premium	
Permanently or frequently wet areas within paddocks are managed to avoid contamination from stock or fertiliser	Premium	
Legally protected wetlands on farm identified and protected	Premium	

Additional Practices and Other Comments
N/A

Areas of indigenous biodiversity on the farm are protected		
Legally protected areas of indigenous biodiversity on farm identified and protected	Premium	
Weeds and pests within protected areas are managed	Premium	
Enhancement programme in place for identified areas of indigenous biodiversity	Premium	
Gorse gullies are fenced out and left to regenerate naturally if there is a native seed source nearby	Good	
Native vegetation retained in gullies, steep and higher country to regulate runoff, retain water quality, reduce soil movements and filter prior to water entering streams	Good	
Old trees are kept on farm for potential bat habitat	Good	
Fish screens are installed on all water takes, with screening size appropriate for any native fish present	Good	
Pests and weeds are controlled on farm	Good	**Yes**
Drain cleaning is undertaken in a way that minimises risk to whitebait and eel habitat	Good	**Yes**

Stone heaps are left on farm as potential lizard habitat	Good	
Culverts are constructed carefully and maintained to enable or disable fish passage, appropriate to the species present	Good	**Yes**
Native plantings across the farm provide a corridor for native bird species	Good	
Low native shelter is planted under / around centre pivots	Good	

Additional Practices and Other Comments
Tile drains discharge into irrigation pond at bottom of farm where any other runoff is also captured, none leaves property
Mahinga Kai - is considered and acknowledged by improving the planting and management of waterways/tile drains on the property
Grass buffer helps to filter and remove nutrients from runoff where historically it was sprayed off

Outcome Action(s)
N/A

Required Evidence
N/A
Additional Evidence
N/A
Other Records & Comments
N/A

Management Area: Soil Management

OBJECTIVE: To maintain or improve the physical and biological condition of the soil

Erosion caused through land use activities is minimized		
Direct drilling and/or minimum tillage used in preference to conventional cultivation in high erosion risk situations	Good	**Yes**
Regularly checks undertaken for erosion from channelled runoff, (i.e. from wheel ruts, tracks etc), and if found remedial action immediately taken	Good	**Yes**
Eroding areas on the property identified and appropriate management applied	Good	
Deer mobs separated to reduce pacing and erosion on fence lines	Good	
Fence lines planted to reduce deer pacing behaviour and erosion	Good	
Areas of stream bank erosion are identified and controlled.	Good	
Drains cleaning is undertaken in a manner that minimises sediment losses.	Good	**Yes**

Additional Practices and Other Comments
Subsoiling carried out every 12 months
Minimum tillage 100%

Cultivation events are recorded, straw baled and removed from farm and other residue burnt

Soils are well-managed to optimise infiltration and minimise runoff		
Regular checks for soil compaction undertaken for high risk soils	Good	**Yes**
Differences is soil susceptibility to compaction recognised and managed to minimise compaction damage	Good	**Yes**
Stock grazing managed to minimise soil compaction	Good	
Significant soil compaction managed through soil aeration	Good	
Crop residue left in the soil to improve soil structure	Good	**Yes**
Heavy machinery restricted to specified pathways	Good	**Yes**
Regular Visual Soil Assessments (VSA) undertaken and records kept	Premium	
Additional Practices and Other Comments		
N/A		

Outcome Action(s)
N/A

Required Evidence	
N/A	
Additional Evidence	
Field observation	**Yes**
Soil compaction test records	
Records of management induced erosion events.	
Soil health testing results or photos	
Soil aeration records	**Yes**
Visual Soil Assessment (VSA) records	
Other Records & Comments	
N/A	