

Farm Environment Plan Audit Report



Farm:	Lincoln University Dairy Farm
Audit Date:	Wednesday 28th November 2018
Auditor:	David Ashby DARCL

Farm Environment Plan Audit Report

Farm Details	
Farm Name	Lincoln University Dairy Farm
Farm Address	1504 Shands Road Lincoln
Farm ID	
Farm type	Dairy
Person(s) present at the time of the audit	
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Position	Manager
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Person responsible for FEP implementation if different from person present at the audit	
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Position	Manager
Phone No.	274409285
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Office Use	
Audit Triggered by	Resource Consent
Audit Date	28th November 2018
Final Report Date	
Statement of Audit Practice	
<p><i>This audit has been undertaken in accordance with the standardised audit procedures as set in the Canterbury Farm Environment Plan Certified Auditor Manual</i></p>	
Auditor Signature	
Date	Wednesday 28th November 2018

Summary

Overall Grading

A

High Level of Confidence (LOC) of meeting objectives for all Management Areas

Re-audit in 4 years if part of an Irrigation Scheme or Principal Water Supplier (holding a consent with a Nutrient Discharge Allowance), HWRRP Collective or Approved Industry Delivery Programme; or
Re-audit in 3 years if individual consent holder.

Change in manager and/or significant farm system will trigger a re-audit in 1 year.

Management Area - Level of Confidence (LOC)

	Objective	Target Levels of Confidence						
		Overall LOC	T1	T1A	T2	T3	T4	
Irrigation	High	High	High	N/A	High	High	High	Check 
Nutrients (Objective 1)	High	High	High	High	High	High	N/A	Check 
Nutrients (Objective 2)	High	High	High	N/A	N/A	N/A	N/A	Check 
Soil	High	High	High	N/A	High	N/A	N/A	Check 
CollectedAnimalEffluent	High	High	High	N/A	High	High	High	Check 
Waterbody	High	High	High	N/A	High	N/A	High	Check 
PointSource	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Check 
WaterUse_NonIrrigation	High	High	High	N/A	N/A	N/A	N/A	Check 
Selwyn Waihora - Mahinga kai	High	High	High	N/A	High	High	N/A	Check 

Summary of Required Actions	Comments		
Irrigation Management		Timeframe	Done
Nutrient Management			Done
Soils Management Area			Done
Collected Animal Effluent Management			Done
Waterbody Management (riparian areas, drains, rivers, lakes, wetlands)			Done
Point Sources Management (offal pits, farm rubbish pits, silage pits)			Done
Water use Management (excl irrigation)			Done
Mahinga Kai Management - Selwyn Waihora			Done
Overall Comment			
<p>Overall Comment- Very impressive set up and good procedures and policies in place. Manager Peter Hancox in conjunction with support from LUDF and staff is doing a fantastic job and gets it. With over 60 lysimeters and various research projects being carried out including the Clear Tech Effluent project the farm is in a fortunate position to meet all the targets of their resource consent and then some with heaps of evidence to prove it. Peter has good systems in place and with the support of the University the farm achieves an A grade. The University recognises that the existing sprinklers result in high leaching in pivot corners and the inefficiencies of the previous corner arm hence the proposed upgrade and movement of the pivot point by 80m and replacement of corner arm by 2nd pivot with a 3rd planned. Likewise with the lack of effluent storage the ClearTech project answers this issue.</p>			

Management Area: Irrigation				
Objective	<i>The amount and timing of irrigation is managed to meet plant demands, minimise risk of leaching and runoff and ensure efficient water use.</i>		High	
Target 1	<i>New irrigation systems are designed and installed in accordance with industry codes of practice and standards.</i>		High	
Reasons <i>For</i> the Assessment		Evidence	Tick	Additional comments
<i>Design</i>			✓	
System has been designed with site specific knowledge of the soils, topography and crop requirements		System design specifications	✓	Commissioning documentation sighted and photographed
Irrigation system design meets the Irrigation New Zealand Codes of Practice and standards		Commissioning documentation	✓	Commissioning documentation sighted and photographed
<i>Installation</i>			✓	
All new irrigation infrastructure is installed in accordance with Installation Code of Practice for Piped Irrigation Systems		System design specifications	✓	Commissioning documentation sighted and photographed
Performance checks show that system performs to desired specifications for system capacity, application depth and distribution uniformity		Post installation check reports	✓	Post installation checks sighted and photographed
Reasons <i>Against</i> the Assessment			Tick	Additional comments
Target 2	<i>The performance of irrigation systems is assessed annually and irrigation systems are maintained and operated to apply irrigation water at optimal efficiency.</i>		High	
Reasons <i>For</i> the Assessment		Evidence	Tick	Additional comments
<i>System performance</i>			✓	
System monitoring completed to identify irrigation system efficiency improvements.		Evidence of actions taken to address system issues	✓	replacement of corner arm to improve irrigation efficiencies and reduce environmental impacts.
<i>Distribution uniformity and application depth</i>			✓	
Recent application depth and distribution uniformity checks (Bucket tests) have been undertaken on some or all irrigators on the property. Adjustments not required. (See additional comments)		Irrigation system audit	✓	bucket test carried out by DairyNZn to be sent to me
Recent application depth and distribution uniformity checks (Bucket tests) have been undertaken on some or all irrigators on the property. Adjustments required. (See additional comments)		Calibration test results	✓	bucket tests carried out by DairyNZ to be sent to me
Adjustments made to irrigation set up to correct issues identified through the bucket tests. (See additional comments)		Irrigation system audit	✓	sprinkler pack replaced-DairyNZ
<i>Maintenance</i>			✓	
Winter service maintenance checks undertaken on irrigators		Preseason maintenance records	✓	pivot gets a preseason check and oil changes every 2nd year and checked annually
Operational system checks and maintenance are undertaken on irrigators as required during the season.		Regular maintenance records	✓	Waterforce services annually invoices and service letter

Management Area: Irrigation				
Irrigation management plan includes a maintenance schedule with tasks and timeframes.		Regular maintenance records	✓	all staff INZ
Operation			✓	
Irrigation high run-off risk areas are clearly identified and systems are in place to manage the risks		Map showing high risk areas	✓	FEP includes risk maps and procedures
Irrigation applications to non-target areas are minimised. (e.g. tracks)		Procedures for the management of high risk areas	✓	included in FEP.
Buffers are in place between irrigated areas and sensitive sites, and identified mahinga kai value sites(e.g springs, wetlands, watercourses, drains, species and habitat).		Map showing high risk areas	✓	FEP includes risk maps and procedures
Irrigation system operated to avoid the overland flow & runoff of contaminants into springs, wetlands, watercourses, drains, species & habitats (areas with high mahinga kai value).		Procedures for the management of high risk areas	✓	Additional comments from Peter Hancox around system upgrades to 2 additional pivots to replace corner arm
Soil differences across the property are recognised and the irrigation system is managed taking into account these differences.		Farm system discussions	✓	soil moisture monitoring sites on different soils over property.
Run-off and/or ponding from irrigation is monitored and if it occurs action is taken to correct problem.		Incident records	✓	covered in induction sheet.
The property has an annual allocation and operates within this annual allocation		Water take records	✓	Compliance reports for irrigation provided and forwarded to Ecan
Precision application			✓	
GPS or other technology used to aid placement of irrigators		Water application records	✓	large water takes are measured(telemetry)
Variable irrigation depths are applied to recognise soil and crop variances to maximise water use efficiency.		Water application records	✓	ground conditions some sprinklers shifted twice per day.
Water is strategically applied according to crop requirements		Water application records	✓	no crop
Timers used to control amount of water applied		Timers on spray lines	✓	SCADA irrigation system used
Reasons <i>Against</i> the Assessment			Tick	Additional comments
Target 3	<i>The timing and depth of irrigation water applied takes account of crop requirements & is justified through soil moisture monitoring or soil water budgets & climatic information.</i>		High	
Reasons <i>For</i> the Assessment			Tick	Additional comments
Method of soil moisture monitoring used which is appropriate for the nature and scale of the farming operation.		Soil moisture monitoring records	✓	installed
Rainfall forecast, soil temperature and ET status monitored and used in decision making.		Climatic records	✓	sighted and photographed

Management Area: Irrigation				
Regular measurements of soil moisture status taken using a quantitative measure to assist in scheduling process		Soil moisture monitoring records	✓	sighted and photographed
Irrigation decision rules used . (e.g. No irrigation if >20mm rainfall is forecast)		Irrigation decision rule procedures	✓	discussed
Deficit irrigation used with soil moisture trigger points		Crop scheduling records	✓	discussed
Reasons <i>Against</i> the Assessment			Tick	Additional comments
Target 4	<i>Staff are trained in the operation, maintenance and use of irrigation systems.</i>		High	
Reasons <i>For</i> the Assessment		Evidence	Tick	Additional comments
<i>Systems and procedures</i>			✓	
Irrigation system procedures developed and staff are required to operate the system according to these procedures.		Staff training records	✓	sighted and photographed including training plan
<i>Staff training</i>			✓	
Staff with irrigation management responsibilities are well trained with respect to their responsibilities.		Staff training records	✓	sighted and photographed including training plan
Staff with irrigation management responsibilities have attended at least one formal irrigation management training programme.		Discussion with Manager	✓	training plan and register through as well as worker induction
Staff with irrigation management responsibilities have a good understanding of management requirement when irrigating near sites with high mahinga kai value.		Discussion with staff	✓	policies and mahinga kai values and staff acknowledge
Reasons <i>Against</i> the Assessment			Tick	Additional comments
Required Actions			Tick	Additional comments
Actions to consider (A Grades or for High LOC Objective and Targets Only)			Tick	

Management Area: Nutrient			
Objective 1	<i>To use nutrients efficiently and minimise nutrient losses to water.</i>		High
Objective 2	<i>Nutrient losses do not exceed permitted or consented nitrogen limits</i>		High
Target 1	<i>Nitrogen losses from farming activities are at or below the farms nitrogen discharge allowance</i>		High
Target 1a	<i>Additional nitrogen loss mitigation measures (excl. those associated with irrigation, fertiliser or effluent) are implemented.</i>		High
Reasons <i>For</i> the Assessment		Evidence	Tick
N Loss at or below the required N loss rate for the property		Nutrient budget plus NDA loss rate data	✓
Reasons <i>Against</i> the Assessment			Tick
Target 2	<i>Phosphorus and sediment losses from farming activities are minimised.</i>		High
Reasons <i>For</i> the Assessment		Evidence	Tick
<i>P and sediment loss risks</i>			✓
High risk phosphorus and sediment loss farming practices identified. Measures in place to mitigate risks.		Identified high risk P and sediment loss activities	✓
Critical source areas clearly identified and the nutrient and sediment losses from these area are appropriately managed		Records of measures taken to mitigate P and sediment loss risks from activities	✓
<i>P fertiliser applications</i>			✓
Soil nutrient status, specifically Olsen P, is maintained at or around the agronomic optimum levels		Olsen P test results	✓
Phosphorus fertiliser applied at a time when losses from runoff are likely to be minimal.		Fertiliser usage records	✓
<i>Cultivation</i>			✓
Minimum or no till cultivation techniques are used when high risk of run-off or flooding of cultivated paddocks.		Cultivation records	✓
Minimum or no till cultivation techniques are used when high risk of wind erosion.		Cultivation records	✓
Vegetated riparian margins of sufficient width are left to adequately filter any runoff from cultivated paddocks.		Field observation	✓
			no waterways

Drains are maintained with good shape and vegetation	Drain management records	✓	All waterways(only present on boundary) and wetlands are permanently fenced so stock cannot enter flowing water.
Measures in place to minimise the need for drain cleaning.	Drain management records	✓	All waterways are fenced with a setback distance of 3m with Carex planted on banks to avoid erosion of banks.
Drain margins are planted to shade drain and reduce weed growth.	Drain management records	✓	A large area of strategic native planting has been undertaken along waterways to reduce runoff and sediment loss to waterways.
Phosphorus and sediment control practices in place in-sensitivity sites with mahinga kai value (springs, wetlands, watercourses, drains, species, and habitat)	Field observation	✓	N and P risk maps in FEP but no specific reference to mahinga kai
No winter grazing of mahinga kai value waterways/body margins in times of high ground and surface water levels	Field observation	✓	no winter grazing on property
Reasons <i>Against</i> the Assessment		Tick	Additional comments
Target 3	<i>Manage the amount, timing and application of fertiliser inputs to match the predicted plant requirements and minimise nutrient losses.</i>		High
Reasons <i>For</i> the Assessment		Evidence	Tick
Fertiliser rates			✓
Nutrient budget used as a tool for determining fertilizer requirements	Nutrient budget	✓	soil test results indicate fertiliser applications in line with optimum levels
Plant analysis is used as an aid to determining crop requirements and fertiliser needs.	Plant analysis results	✓	Ravensdown last year
Regular soil tests undertaken as aid to determining fertiliser needs	Soil test results	✓	annually
Fertilizer application rates based on advisor's recommendations	Advisors recommendations	✓	annually
Industry approved tools (e.g. crop calculator) used to determine fertilizer rates	Advisors recommendations	✓	annually
Nitrogen applications to dairy effluent blocks take into account the nitrogen content in effluent	Advisors recommendations	✓	fertiliser is applied as per advisors recommendation
Fertiliser spreading & placement			✓
Contractors used for fertiliser spreading are 'Spreadmark' certified	Contractors Spreadmark Certificate	✓	all contractors spreadmark
Equipment used for spreading fertiliser is calibrated according to design specifications appropriate for the product used.	Fertiliser spreader calibration records	✓	all fertiliser spread by contractor and all contractors spreadmark
Appropriate measures are taken to ensure that there are no direct fertiliser applications into waterways	GPS fertiliser spreading records	✓	all GPS and recorded on Tracmap

GPS technologies are used for the placement of fertiliser		GPS fertiliser spreading records	✓	all GPS and recorded on Tracmap
GPS technologies are used to minimise risk of adverse fertiliser placement to waterways		Proof of placement records	✓	sighted and photographed
Precision Ag technologies are used to improve fertiliser placement		Proof of placement records	✓	sighted and photographed
Appropriate buffers applied between fertiliser application activities and sites with mahinga kai value (springs, wetlands, watercourses, drains, species, and habitat)		Field observation	✓	sighted and photographed
Fertiliser timing			✓	
No phosphorus fertiliser is applied in high risk months		Fertiliser application records	✓	all summer applications
No nitrogen fertiliser is applied in the high risk months of May, June and July.		Fertiliser application records	✓	farm too wet
Fertiliser is not applied when soils are at field capacity and/or soil temperatures are below 6 degrees		Fertiliser application records	✓	farm too wet and cold
Reasons <i>Against</i> the Assessment			Tick	Additional comments
Target 4	<i>Store and load fertiliser to minimise the risk of spillage, leaching and loss into waterbodies</i>		N/A	
Reasons <i>For</i> the Assessment			Tick	Additional comments
Fertiliser storage sites are designed and managed to avoid nutrient leaching loss to any water body.		Field observation		
Fertiliser is loaded in a way that minimises the risk of spillage resulting in leaching and losses to waterbodies.		Field observation		
Reasons <i>Against</i> the Assessment			Tick	Additional comments
Clear evidence that fertiliser storage sites pose a risk of leaching and loss to waterbodies.				
Clear evidence that fertiliser is loaded in such a way as it poses a risk of nutrient losses to waterbodies.				
Required Actions			Tick	Additional comments
Actions to consider (A Grades or for High LOC Objective and Targets Only)			Tick	

Management Area: Cultivation and soil structure			
Objective	<i>The physical and biological condition of soils is maintained or improved in order to minimise the movement of sediment, phosphorus and other contaminants to waterways.</i>		High
Target 1	<i>Farming activities are managed so as to not exacerbate erosion.</i>		High
Reasons <i>For</i> the Assessment		Evidence	Tick
<i>Erosion resulting from management of the irrigation system</i>			✓
Little or no evidence of unmanaged soil erosion from the operation of the irrigation system	Field observation	✓	no erosion from irrigation system
Remedial action is taken to manage erosion caused through the application of irrigation water	Record of actions taken to address erosion problems	✓	drains along boundary planted with Carex(photo)
<i>Erosion resulting from cultivation practices</i>			✓
Appropriate measures are taken to minimise wind erosion risk when paddocks are cultivated	Farm system discussions	✓	not a problem on these soils due to structure and texture.
Direct drilling and/or minimum tillage is used where there is a high risk of erosion or sediment run-off	Farm system discussions	✓	all direct drill or minimum tillage
Direct drilling and/or minimum tillage is used where there is a high risk of flooding	Cultivation records	✓	paddock selection and timing limits this
Reasons <i>Against</i> the Assessment			Tick
Target 2	<i>Farming practices are implemented that optimise infiltration of water into the soil profile and minimise run-off of water, sediment loss and erosion.</i>		High
Reasons <i>For</i> the Assessment		Evidence	Tick
<i>Risk identification</i>			✓
High soil compaction risk areas have been identified and management practices have been adjusted to minimise the risk (specify)	Map showing high risk soil compaction areas	✓	
Presence of a wet weather grazing management plan to identify high risk areas on the property, minimise soil damage, and avoid sediment losses off farm during the wet season.	Management plan for managing high risk soil compaction areas	✓	no winter grazing on property or crop
<i>Soil compaction</i>			✓
Differences in soil susceptibility to compaction damage are recognised and farming practices are managed to minimise damage (specify)	Farm system discussions	✓	no winter or autumn crop
High risk soil compaction areas are identified and regular checks for compaction are undertaken on these areas. Where necessary appropriate measures taken (specify)	Farm system discussions	✓	Visual soil assessments carried out during weekly pasture walks
Passage of heavy machinery over high compaction risk soils is limited or avoided to minimise compaction risk	Farm system discussions	✓	no winter grazing nor heavy feedout equipment generallyt all grass system.

Management Area: Cultivation and soil structure			
Objective	<i>The physical and biological condition of soils is maintained or improved in order to minimise the movement of sediment, phosphorus and other contaminants to waterways.</i>	High	
Reasons Against the Assessment		Tick	Additional comments
Required Actions		Tick	Additional comments
Actions to consider (A Grades or for High LOC Objective and Targets Only)		Tick	

Management Area: Animal Effluent & Solid Waste			
Objective	<i>Animal effluent and solid animal waste is managed to minimise nutrient leaching and run-off</i>	High	
Target 1	<i>Effluent systems meet industry Codes of Practice or an equivalent standard.</i>	High	
Reasons <i>For</i> the Assessment		Evidence	Tick
All farm dairy effluent storage installed on the property are designed in accordance with the Effluent Design Code of Practice		Field observation	✓
No effluent is spread, over drains or water races, within 50m of bore, within 20m of public road, within 150m of residential dwelling		Effluent spreading records	✓
No effluent is applied within 20 metres of a rivers, streams, or drains.		Effluent spreading records	✓
All effluent from dairy sheds, yards, feed pads, and other collection areas are collected for land application		Dairy effluent design code records	✓
Reasons <i>Against</i> the Assessment			Tick
Target 2	<i>The timing and rate of <u>application of effluent</u> and solid animal waste to land is managed so as to minimise the risk of contamination of groundwater or surface water bodies.</i>		High
Reasons <i>For</i> the Assessment		Evidence	Tick
<i>Risk identification and emergency management</i>			✓
Key effluent management risks identified and appropriate management is in place for the management of identified risks		Effluent management procedures	✓
Effluent management operated to avoid the overland flow and runoff into area with mahinga kai values		Effluent management incident records	✓
Immediate action taken when incidents occur. Includes rectifying problem, cleaning up and putting in place actions to reduce risk of recurrence.		Effluent management procedures	✓
Emergency management – major risks identified & emergency procedures in place		Effluent management procedures	✓
<i>Effluent irrigation system</i>			✓
Effluent system is capable of delivering the correct amount of effluent for soil type and slope		Effluent system discussions	✓
Effluent is applied at depths/rates that do not lead to ponding or runoff		Effluent application records plus soil moisture records	✓
Effluent is not applied when soils are saturated or near field capacity		Effluent application records plus soil moisture records	✓

Effluent management is based on terrain & drainage patterns on the property, soil moisture levels & water holding capacity, to avoid run off into waterbodies of mahinga kai value	Effluent system discussions	✓	soil moisture probe under pivot and in effluent paddock
Effluent spreading			
Effluent is spread over the whole of the available area	Effluent application records	✓	
Effluent application area of at least 8ha/100 cows is available for spreading	Effluent application records	✓	
Appropriate buffers between effluent discharge activities and streams, rivers, drains, springs, wetlands and the lake of mahinga kai value	Effluent application records	✓	
Effluent and fertiliser applications			
Fertiliser applied to the effluent block is calculated and implemented taking into consideration the timing and amount of effluent applied	Fertiliser and effluent application records	✓	
Effluent application and technology			
Appropriate fail safe installed on effluent irrigator	Equipment inspection	✓	
Reasons <i>Against</i> the Assessment		Tick	Additional comments
Target 3	<i>Sufficient and suitable storage is available to enable animal effluent and washdown water to be stored when soil conditions are unsuitable for application.</i>	High	
Reasons <i>For</i> the Assessment		Tick	Additional comments
Effluent storage is the greater of the regulatory requirement or the calculated storage using the Dairy Effluent Storage Calculator	Dairy effluent storage calculator data	✓	ClearTech effluent system recycles effluent wash water and doubles the effective effluent
Liquid storage facilities are likely constructed from materials that prevent effluent contaminating surface or ground water	Dairy effluent consent requirements	✓	All concrete
Sufficient storage capacity is available to ensure that effluent does not need to be applied when soil conditions are near field capacity.	Dairy effluent storage calculator data	✓	ClearTech effluent system recycles effluent wash water and doubles the effective effluent
Effluent storage is managed to ensure effluent is only stored when required and level kept as low as practical, maximising storage availability	Effluent application records	✓	Runs on underslung under pivot
Effluent solids are stored on an impermeable surface	Dairy effluent consent requirements	✓	All concrete
Ponds are managed in such a way to ensure solids are not accumulating and becoming anaerobic in the pond	Effluent application records	✓	all in dairy dairy and photographed
Reasons <i>Against</i> the Assessment		Tick	Additional comments
Target 4	<i>Staff are trained in the operation, maintenance and use of effluent storage and application systems.</i>	High	
Reasons <i>For</i> the Assessment		Tick	Additional comments

Staff are trained to operate the effluent system to the requirements of their role	Staff training records	✓	Full training records sighted and signed by all staff
Staff are trained to ensure they understand the management of the system and appropriate decision making process for when and where to apply effluent.	Staff training records	✓	Full training records sighted and signed by all staff
Reasons <i>Against</i> the Assessment		Tick	Additional comments
Required Actions		Tick	Additional comments
Actions to consider (A Grades or for High LOC Objective and Targets Only)		Tick	

Management Area: Waterbody			
Objective	<i>Wetlands, riparian areas and the margins of surface waterbodies are managed to avoid damage to the bed and margins of the water body, and to avoid the direct input of nutrients, sediment, and microbial pathogens.</i>	High	
Target 1	<i>Stock is excluded from waterbodies in accordance with regional council rules or any granted resource consent.</i>	High	
Reasons <i>For</i> the Assessment		Evidence	Tick
Stock are excluded from waterways in accordance with Regional Council requirements		Field observation	✓ all included in FEP
Reasons <i>Against</i> the Assessment			Tick
Target 2	<i>Vegetated riparian margins of sufficient width are maintained to minimise nutrient, sediment and microbial pathogen losses to waterbodies.</i>	High	
Reasons <i>For</i> the Assessment		Evidence	Tick
Vegetated buffer strips are maintained along all waterways (including drains and wetlands) on the property		Map showing paddock low points and management measures	✓ All in FEP plan
Riparian margins are of sufficient width to adequately filter runoff of nutrients, sediment and pathogens		Riparian planting programme	✓
Sections of the waterway margins on the property are strategically planted with appropriate riparian species to enhance stream habitat		Riparian planting programme implementation	✓ 2-3m setback each side
Appropriately riparian margins are left along waterways to capture run off from land, stabilise banks, control the growth of aquatic weeds, and increase habitat value		Riparian planting programme	✓
Riparian margins provide habitat requirements for mahinga kai species		Map showing paddock low points and management measures	✓
Reasons <i>Against</i> the Assessment			Tick
Targets 3	<i>Farm tracks, gateways, water troughs, self-feeding areas, stock camps wallows and other farming activities that are potential sources of sediment, nutrient and microbial loss are located so as to minimise the risks to surface water quality.</i>	N/A	
Reasons <i>For</i> the Assessment		Evidence	Tick
Reasons <i>Against</i> the Assessment			Tick
Targets 4	<i>Mahinga kai values are protected as a result of measures taken to protect and enhance water quality and stream health</i>	High	

Management Area: Waterbody			
Objective	<i>Wetlands, riparian areas and the margins of surface waterbodies are managed to avoid damage to the bed and margins of the water body, and to avoid the direct input of nutrients, sediment, and microbial pathogens.</i>	High	
Reasons <i>For</i> the Assessment		Evidence	Tick
Clear evidence that measures have been taken to protect and/or enhance sites on the property with Mahinga Kai values		Field observation	✓
Reasons <i>Against</i> the Assessment		Tick	Additional comments
Clear evidence that no action has been taken to protect and/or enhance Mahinga kai value sites on the property.			
Required Actions		Tick	Additional comments
Actions to consider (A Grades or for High LOC Objective and Targets Only)		Tick	

Management area: Point Source - offal pits, farm rubbish, silage pits etc.			
Objective	<i>The number and location of pits are managed to minimise risks to health and water quality.</i>	N/A	
Target 1	<i>All on-farm silage, offal pit and rubbish dump discharges are managed to avoid direct discharges of contaminants to groundwater or surface water.</i>	N/A	
Reasons For the Assessment	Evidence	Tick	Additional Comments
Reasons Against the Assessment		Tick	
Required Actions		Tick	
Actions to consider (A Grades or for High LOC Objective and Targets Only)		Tick	

Management Area: Water use (excluding irrigation water)			
Objective	<i>To use water efficiently ensuring that actual; use of water is monitored and efficient.</i>		High
Target 1	<i>Actual water use is efficient for the end use.</i>		High
Reasons <i>For</i> the Assessment		Evidence	Tick
Annual water use checklist completed		Farm system discussions	✓
All water use on the farm is measured and monitored (excluding for houses/domestic use)		Water meter data	✓
Water meter data is used to help improve irrigation efficiency on-farm		Water use checklist	✓
Efficient use of water in the dairy shed		Farm system discussions	✓
Dairy shed water use is measured		Water meter data	✓
Reticulated water system is managed and maintained to avoid wasted water		Farm system discussions	✓
Reasons <i>Against</i> the Assessment			Tick
Required Actions			Tick
Actions to consider (A Grades or for High LOC Objective and Targets Only)			Tick

Management area: Māhinga kai (Selwyn-Waihora)			
Objective	<i>To protect mahinga kai and manage waterways and drains recognising their cultural and ecological sensitivity to discharges of contaminants within the Cultural Landscape Values Management Area</i>		High
Target 1	<i>Mahinga kai values are protected by implementing all other Farm Environment Plan Objectives and Targets taking mahinga kai values into account</i>		High
Reasons <i>For</i> the Assessment		Evidence	Tick
Irrigation Management Objective receive a High Level of Confidence		Irrigation LOC rating	✓
Nutrient Management Objectives receives a High Level of Confidence		Nutrients LOC rating	✓
Soil Management Objective receives a High Level of Confidence		Soils LOC rating	✓
Collected Animal Effluent Management Objective receives a High Level of Confidence		Collected animal effluent LOC rating	✓
Waterbody Management Objective receives a High Level of Confidence		Waterbodies LOC rating	✓
Point source Objective receives a High Level of Confidence		Point source LOC rating	✓
Water use receives a High Level of Confidence		Water use LOC rating	✓
Reasons <i>Against</i> the Assessment			Tick
Target 2	<i>Mahinga kai species and habitats are protected when drain management and vegetation clearance occurs.</i>		High
Reasons <i>For</i> the Assessment		Evidence	Tick
Practices are consistent with Selwyn-Waihora: A guide to managing your drains (Waihora Ellesmere Trust).		Drain clearance records	✓
Reasons <i>Against</i> the Assessment			Tick
Target 3	<i>Mahinga kai habitats and species are sustained through the management of remnant native vegetation and wetlands</i>		High
Reasons <i>For</i> the Assessment		Evidence	Tick
Identified ways to enhance on farm biodiversity.		Field observation	✓
Reasons <i>Against</i> the Assessment			Tick

Management area: Māhinga kai (Selwyn-Waihora)			
Objective	<i>To protect mahinga kai and manage waterways and drains recognising their cultural and ecological sensitivity to discharges of contaminants within the Cultural Landscape Values Management Area</i>	High	
Target 4	<i>Properties within Selwyn District Council Drainage Scheme comply with any District Council Discharge of Land Drainage Water resource consent</i>	N/A	
Reasons <i>For</i> the Assessment		Evidence	Tick
Property compliant with District Council Discharge of Land Drainage Water resource consent			Additional comments
Reasons <i>Against</i> the Assessment			Tick
Property non-compliant with District Council Discharge of Land Drainage Water resource consent			Additional comments
Required Actions			Tick
Actions to consider (A Grades or for High LOC Objective and Targets Only)			Tick