

**BEFORE THE CANTERBURY REGIONAL
COUNCIL**

UNDER The Environment
Canterbury (Temporary
Commissioners and
Improved Water
Management) Act 2010

AND

IN THE MATTER Submissions and Further
Submissions on
Proposed Plan Change 5
to the Canterbury Land
and Water Regional Plan

Evidence of **Daniel Joseph Hodgen** on Behalf of
JG & LM Murchison (Submitter No 67179) and **JWK Hoban & Others** 67198

Dated: 22nd July 2016

1. **INTRODUCTION:**

1.1 My name is Daniel Joseph Hodgen

1.2 I hold a Certificate in Agriculture from Telford. From a previous career I am also a Certified Financial Planner. In April of 2014 I was elected as the Meat & Fibre Chair for North Canterbury Federated Farmers and in April this year I was also elected as Senior Vice President. Since August of 2014 I have been working to encourage farmers to get involved in the regulatory process as without them we can't expect realistic or effective solutions. I was part of the Hurunui-Waiau Nutrient Working Group which aimed to advise the local Zone Committee. I have also been part of the leadership group working to form the North Canterbury Landcare Group.

1.3 I have worked in Agriculture for 18 years, the last 15 of which have been as a director and owner of Pyramid Valley Trading Co. Ltd. Before that I spent three years working on farms in the North Island as a shepherd before spending time in sales and financial planning.

1.4 I farm in a family partnership with my parents and sister. We own three properties and have recently leased a fourth, totalling 575 Hectares in the Upper Waipara Basin with a corner of one property in the Hurunui Catchment. My family has owned the three properties since 1924, 1935 and 2009 with the 40 hectare lease block added in May this year.

1.5 We farm 3500 Kelso/Romney ewes plus 800 ewe hogget's and up until last season have sold all our lambs prime to export market quality. Our aim has always been to finish lambs early with supply starting in November and only small numbers retained past Christmas due to regular summer dry. Last year we were asked to become a 'Pilot' farm for the Red Meat Profit Partnership. As part of this we have changed our sale policy and now sell all lambs at weaning either prime or store. This has moved our average sale date to Mid-November and meant no lambs are retained past December 17th. Normally we also carry 80 – 100 finishing cattle per year which we purchase at autumn weaner sales. This has not been possible due to the last two years drought.

1.6 Our farm is located within the area affected by Plan Change 5. Under the current rules in the Canterbury Land and Water Regional Plan our farm is a permitted activity because our N losses are less than 20kg/ha/yr.

2. SCOPE OF EVIDENCE

2.1 My evidence supports submissions made by JKW Hoban and Others, and JG & LMW Murchison on the following matters:

- (i) Nature of dryland farming & need for flexibility on our farm
- (ii) Our N loss estimates in Overseer
- (iii) Winter grazing of cattle on our farm
- (iv) Irrigation of our farm
- (v) Phosphorous & Sediment Risk Area maps
- (vi) Farm Portal

2.2 Attached to my evidence is the following documents:

- (1) *Dan Hodgen – Actual NB Reports*
- (2) *Dan Hodgen – Actual Farm Parameters*
- (3) *Dan Hodgen – Dairy Grazing NB Reports*
- (4) *Dan Hodgen – Dairy Grazing Farm Parameters*
- (5) *Dan Hodgen – Farm Portal Report*

2.3 Prior to addressing these issues, I would also like to make some brief observations about the issue of land use and water quality in general and Plan Change 5.

2.4 After two years of arguing that the burden and cost of regulation must be imposed on those who significantly contribute to the problem and not on those who don't it is pleasing to see that Environment Canterbury appears to be listening. In the main I believe Plan Change 5 reflects that view and the inclusion of 'triggers' for consent are a good start to achieving that aspiration. In discussions with Environment Canterbury staff during the development of Plan Change 5 they agreed that these 'triggers' (specifically 20 Ha of winter feed) were not right. Due to time constraints they were described as a 'starting point' for conversation.

- 2.5 Given the diversity of low nitrogen (N) emitting land uses I feel that one 'trigger' is never going to achieve their aim of removing 85% of farms from the consenting process while catching those higher N emitting practices which need to be controlled for environment outcomes to be met. Hence the 3 stage 'Drafting Gate' as suggested in my submission.

3. GENERAL COMMENTS:

- 3.1 I believe as farmers we have a responsibility, and in most cases a desire, to look after our land and environment. My aim has always been to provide financially for my family as well as enhance and protect my land to allow future generations the same opportunity. With regard to Sheep & Beef Farming I am firmly of the opinion that the only way to achieve these outcomes is to believe in them and use Good Management where practical.
- 3.2 No amount of regulation can make this happen and the reality is that Sheep Farming in particular is always going to have a low environmental impact. Onerous compliance costs in all reality have a negative impact. Given the complexity of Sheep & Beef operations the cost of completing a nutrient budget is generally high. Most farms have many different soil types, pasture and crops, stock classes and in some cases more than one rainfall band. This all leads to a very complex system and a difficult OverseerTM calculation.
- 3.3 Cost estimates I have seen are regularly over \$3000 per report. This cost would be acceptable if it wasn't for the fact that we can be sure that the impact is very low for almost all sheep and beef with N losses estimates in single figures. For me the only place to find this money is to take it from other areas of my budget. Spending money on unnecessary paperwork and compliance is likely to mean an end to my current environment enhancement work such as removing willows from a section of the Waipara River and no more fencing and planting of a couple of wetlands I have been working on voluntarily.

4. NATURE OF DRYLAND FARMING & NEED FOR FLEXIBILITY ON OUR FARM:

- 4.1 The only consistency with dryland farming systems is the complete lack of consistency. Unlike dairy systems 1 to 5, most other farming, particularly dryland farming varies dramatically. No two farms are the same and with stock classes, pasture types, crops and even fertiliser use varying as much as the names on the mailboxes. To maintain economic viability they must be allowed the flexibility to reflect this.
- 4.2 A prime example of this is the current drought still heavily impacting North and South Canterbury. In a normal year I import around 10 tonnes of supplementary feed and grow all the rest of my requirements myself. In the last two years I am over 460 tonnes and counting. Without the ability to import supplementary feed I would have been forced to destock even more than I have and the prospects for recovery when the drought eventually breaks would be difficult.
- 4.3 Given the current state of many pastures and the lower stocking rate many farmers now have as a result of the ongoing drought, trading stock, cropping, or a temporary shift to include some dairy support will be a significant part of farmer's recovery strategy. The ability to have some flexibility in these low emitting farming systems, while being mindful of environmental constraints, must be permitted.

5. OUR N LOSS ESTIMATES IN OVERSEER:

- 5.1 Including the Nutrient Budget I prepared for the Hearing Commissioners on the CLWRP I have now completed three nutrient budgets. These have shown N outputs of 4, 8, and now 5 kg/ha. All three budgets have shown an output of 0.1 kg/ha of phosphorus. The variation in the results is due to version changes of Overseer between budgets. As an aside I have also had a number of Ecan staff over my property including Ian Brown, Kevin Heays and Michael Bennett from the Zone implementation team. All have commented that they can't find much room for improvement in our system from an environmental perspective.

6. WINTER GRAZING OF CATTLE ON OUR FARM:

- 6.1 While winter grazing of dairy cattle has not been part of our operation in the past I do see it as a potential drought recovery strategy temporarily. During the Nutrient Working

Group process I modelled this with Rebecca Hyde from Ballance Agri-Nutrients to show the potential impact of land use change within a dryland system. Adding 39 hectares of Kale (7.3% of effective farm area) to winter 600 adult dairy cows and 300 year round dairy heifers our N loss lifted to 11 kg/Ha. Our P loss stayed at 0.1 kg/Ha. From all indications in other catchments these levels can still be considered sustainable, however the draft rules would prevent me from doing this activity.

- 6.2 I understand that I would be required to obtain a resource consent for winter cattle grazing on more than 20ha of fodder crop; and I would not be allowed to increase my N baseline from my current 5kg/ha/yr; which would be an unjustifiable cost given the outputs. Under the operative plan rules for the Red Zone, I would at least have the option of increasing my N losses to 10kg/ha/yr. I understand that if I was in the Red Zone in Selwyn Waihora or Hinds, I would have the option to increase my N losses to 15kg/ha/yr.

7. IRRIGATION ON OUR FARM

- 7.1 At present I do not have any irrigation. Since 2001 I have been a supporter of the Hurunui Water Project and now hold shares to partially irrigate my property. I see this as an opportunity to meet my goals of enhancing my farm both economically and environmentally. The last two years of drought have taken a huge toll both financially and personally. I have around 100 hectares that are now denuded of pasture and weeds are taking over. There will be large costs to remedy this as many of these areas will be difficult to regrass.
- 7.2 If the predictions of more dry periods for the East Coast are correct then irrigating a portion of my farm is going to be key to continuing to operate a viable business. This will also allow for 'resting' more vulnerable areas during stress periods. While I accept and believe that environmental limits must be respected the downsides of not allowing for some development will be disastrous in the long term. This is not the sort of irrigation that enables me to dramatically increase N losses, or to convert to dairy or other irrigation dependent land uses. It is irrigation that lessens the risk to dryland farming particularly during the spring and autumn growth seasons, and enables farmers to commit to contracts for finishing lambs, buying in stock on certain dates or to grow a specialist crop that helps to diversify income.

- 7.3 Unless you are already irrigating up to 50ha in the Red Zone, under Plan Change 5 rules a dryland farmer will not be allowed to irrigate more than 10ha, no matter how low their N losses. This is because while up to 50ha of irrigation is a permitted activity, if you are irrigating less than that now you can only increase by 10ha. Anything else is a restricted discretionary activity and under that rule you cannot increase your N baseline. Any irrigation is going to show a small increase in N baseline in Overseer, because it will mean an increase in long term average 'rainfall' on the property. Again, under the current rules I could increase my baseline to 10kg/ha/yr or 15kg/ha/yr if I am in Selwyn or Hinds Red zones. This seems to be a very high cost relative to the environmental benefit.

8. PHOSPHOROUS & SEDIMENT RISK AREA MAPS:

- 8.1 I see with some concern that all 4 of my properties contain areas considered to be in High Risk Phosphorous zones. Looking closely at these maps I struggle to understand how they have been developed. My flatter areas seem to be included and many steeper areas are not, despite the fact the P loss risk generally increases with slope. I can only assume they have been developed as an inaccurate desktop model.
- 8.2 As I have shown with my nutrient budgets my farms Phosphorus output is very low. Having to prepare a Farm Environment Plan to show how I intend to mitigate my phosphorous and sediment losses seems absurd because of an inaccurate mapping system and would be a totally unjustifiable cost and lead to negative economic and environmental outcomes as already discussed.

9. FARM PORTAL:

- 9.1 I have registered for and entered two of my properties in the Test version of the Farm Portal (see attachment 5). While it was not onerous I consider myself to be reasonably tech savvy and have no doubt many farmers would struggle with it. I have been unable to register one property as it crosses catchment boundaries into the Hurunui catchment.
- 9.2 According to the result my Good Management Practice (GMP) number is 13 kg/N/Ha. This is ridiculously inaccurate when Nutrient Budgeting shows my N loss to be 5 kg/N/Ha. To make it even worse the Dairy Support Nutrient Budget prepared by Ms

Hyde that I discuss in paragraph 6.1, is still 2 kg/N/Ha less than my GMP losses in the portal with my current Sheep only system. Once again from conversations with Environment Canterbury staff I have been told that the major aim of the portal is for catchment accounting purposes, you must question whether it is accurate enough to be useful.

9. CONCLUSIONS:

- 9.1 While I support the intention to use triggers or a 'drafting gate' to remove low impact farming systems from the requirement for consent as outlined I do not think one trigger allows for the diversity in farming systems. A multi trigger system seems to be the most effective.
- 9.2 Simply having an area as the trigger unfairly disadvantages larger farm's hence the suggestion of a % in my submission as well.
- 9.3 Adding Overseer as a third drafting gate allows for properties who are doing a larger area but still have a smaller N output to continue to have the flexibility that they require.
- 9.4 To continue to farm in a changing environment the ability to adapt must be available. As already stated environmental outcomes must be considered but allowing for up to 50 hectares of irrigation or 10% of a property as a permitted activity seems to me to be sensible and a way of both protecting and in some cases enhancing our environment.
- 9.5 The cost of compliance should reflect a farms negative impact on our environment. With dryland farming where we can be reasonably confident that the impact is low then it is hard to see justification for the costs of Farm Plans, Nutrient Budgeting and Consents.
- 9.6 The 'High Phosphorous Risk' maps are inaccurate as one would expect with desktop modelling of this type. The risk, once again, imposing unfair and unjustifiable cost on

farms and farmers who shouldn't be targeted. I would ask that they be left to Sub Regional processes to identify more accurately, as required.

Daniel Joseph Hodgen

Dan Hodgen

Rebecca Hyde

D & W Hodgen

Ballance Agri Nutrients

Client reference: Baseline

3.12.14

Farm name: Dan Hodgen - Actual (2012/2013)



Farm Nutrient Budget - Whole farm

	N	P	K	S	Ca	Mg	Na
	(kg/ha/yr)						
Nutrients added							
Fertiliser, lime & other	1	13	0	30	26	0	0
Rain/clover N fixation	57	0	2	4	2	4	17
Irrigation	0	0	0	0	0	0	0
Supplements imported	0	0	0	0	0	0	0
Nutrients removed							
As products	14	2	1	2	4	0	0
Exported effluent	0	0	0	0	0	0	0
As supplements	0	0	0	0	0	0	0
To atmospheric	19	0	0	0	0	0	0
To water	6	0.1	10	31	54	2	5
Change in internal pools							
Plant material	-7	-1	-9	0	-1	-1	0
Organic pool	3	8	0	1	0	0	0
Inorganic mineral	0	2	-20	0	-1	-2	-2
Inorganic soil pool	23	2	20	0	-28	5	14

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Dan Hodgen

D & W Hodgen

Client reference: Baseline

Farm name: Dan Hodgen - Actual (2012/2013)

Rebecca Hyde

Ballance Agri Nutrients

3.12.14

Block Nitrogen



Block name	Total N lost (kg N/yr)	N lost to water (kg N/ha/yr)	N in drainage * (ppm)	N surplus (kg N/ha/yr)	Added N ** (kg N/ha/yr)
Rolling Mt Hilton	35	7	5.1	42	0
Mt Hilton FLat ##	210	8	5.0	32	0
Rape	505	13	8.4	26	16
Ineffective	120	3	N/A		
Fenelon Flats ##	256	7	4.5	45	0
Fenelon Rolling	688	6	4.3	33	0
Pirimads Flat ##	504	7	5.4	59	0
Prymaids Rolling	1083	6	5.2	59	0
Prymiads Hill	30	3	N/A	34	0
Lucerne	20	3	2.5	-38	0
Other farm sources	7				
Whole farm	3457	6			
Less N removed in wetlands	0				
Farm output	3457	6			

* Estimated N concentration in drainage water at the bottom of the root zone. Maximum recommended level for drinking water is 11.3 ppm (note that this is not an environmental water quality standard).

** Sum of fertiliser and external factory effluent inputs.

N/A: N in drainage not calculated for easy and steep pastoral blocks, or for tree and shrubs, riparian, wetland or house blocks.

Has a fodder crop rotating though, results for pastoral block component only

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3.12.14



Block Phosphorus

Block name	Total P lost (kg P/yr)	P lost (kg P/ha/yr)	P loss categories		
			Soil	Fertiliser	Effluent
Rolling Mt Hilton	0	0.1	Low	Low	n/a
Mt Hilton FLat ##	1	0	Low	Low	n/a
Rape	2	0	n/a	n/a	n/a
Ineffective	4	0.1	n/a	n/a	n/a
Fenelon Flats ##	1	0	Low	Low	n/a
Fenelon Rolling	8	0.1	Low	Low	n/a
Pymads Flat ##	1	0	Low	Low	n/a
Pymads Rolling	12	0.1	Low	Low	n/a
Pymads Hill	1	0.1	Low	n/a	n/a
Lucerne	0	0	n/a	n/a	n/a
Other farm sources	31				
Whole farm	61	0.1			

Has a fodder crop rotating though, results for pastoral block component only

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Dan Hodgen
D & W Hodgen
Client reference: Baseline
Farm name: Dan Hodgen - Actual (2012/2013)

Rebecca Hyde
Ballance Agri Nutrients
3.12.14

Farm Nitrogen



	Units	Benchmark farm	Current farm
Inputs (farm average)			
Clover N	kg N/ha/yr		55
Fertiliser N	kg N/ha/yr		1
Other N added	kg N/ha/yr		2
Indices			
Average N loss to water	kg N/ha/yr	5-20	6
includes N lost as effluent	kg N/ha/yr		0
N ₂ O emissions	kg N/ha/yr		1.8
For pastoral area of farm:			
Farm N surplus	kg N/ha/yr	30-80	44
N conversion efficiency	%	15-25	25

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Farm name: Dan Hodgen - Actual (2012/2013)



Block Pasture

Block name	On-farm fresh pasture intake (kg DM/ha/yr)	Estimated utilisation (%)	Supplements removed (kg DM/ha/yr)	Pasture growth (kg DM/ha/yr)
Rolling Mt Hilton	6734	70	0	9621
Mt Hilton FLat	5738	70	1423	9621
Rape	1765	70	0	2521
Ineffective	0	0	0	0
Fenelon Flats	4714	70	0	6734
Fenelon Rolling	4714	70	0	6734
Pyrimads Flat	6734	70	0	9621
Prymaids Rolling	6734	70	0	9621
Prymiads Hill	3367	70	0	4810
Lucerne	0	0	8333	8333

This report gives an estimated animal intake for each block based on animal production and supplements brought on to farm information supplied. Estimated annual pasture growth is shown for the animal utilisation value shown. Note: the model is not sensitive to changes in utilisation.

It is recommended that a consultant or software such as StockPol is used to estimate farm pasture production.

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Dan Hodgen

D & W Hodgen

Client reference: Baseline

Farm name: Dan Hodgen - Actual (2012/2013)

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3.12.14

Other values for farm - Dan Hodgen - Actual



Percent male beef animals	53
Total liveweight brought (kg/ha grazed)	175
Total liveweight reared (kg/ha grazed)	190
Total liveweight sold (kg/ha grazed)	489
No fertiliser costs entered	
GHG: Allocation to wool - breeding mob	0.26
GHG: Allocation to wool - trading mob	0.01
Beef / dairy grazing stock rate (RSU)	394
Sheep stock rate (RSU)	4894

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Parameters



Farm details

Type	Farm type	Full range
Assessment	Assessment year	Not entered
Region	Region	High Country (> 300 m)

Farm blocks

Rolling Mt Hilton	Pastoral	5
Mt Hilton Flat	Pastoral	27.4
Fenelon Flats	Pastoral	38.7
Fenelon Rolling	Pastoral	115.5
Pyrimads Flat	Pastoral	73.5
Prymaids Rolling	Pastoral	180
Prymiads Hill	Pastoral	10
Rape	Fodder Crop	
Ineffective	Trees and Scrub	40
Lucerne	Cut and Carry	6
Total farm area declared in blocks	ha	535
Total farm area	ha	535
Non-productive area	ha	0

Farm animals

Stock numbers

Stock reconciliation - Beef / dairy grazing

Stock production

Calving percentage	%	Not entered
Percent replacements	%	Not entered
Mean calving date		Not entered
Mean weaning date		Not entered
Weaning weight	kg	Not entered

Stock numbers

Mob name	Class	Breed	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Steers	Steers	Angus	36	36	36	36	36	36	36	36	36	36	36	36
	Max weight (kg)	LW start (kg)	LW end (kg)	CW (kg)	Age (months)			Source	Fate	Sex		Mated		
	0	300	0	0	9			Brought	Sold to works	Castrated				
Steers	Steers	Angus	0	0	0	0	0	0	0	0	0	40	40	40
	Max weight (kg)	LW start (kg)	LW end (kg)	CW (kg)	Age (months)			Source	Fate	Sex		Mated		
	0	200	300	0	6			Brought	Remain on-farm	Castrated				
HeifersAndCows	HeifersAndCows	Angus	30	30	30	30	30	30	30	30	30	30	0	0
	Max weight (kg)	LW start (kg)	LW end (kg)	CW (kg)	Age (months)			Source	Fate	Sex		Mated		
	0	300	600	0	9			Brought	Sold to works	Female				

Stock reconciliation - Sheep

Stock production

Lambing percentage	%	135
Percent replacements	%	21
Mean lambing date		15 August

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Parameters

Mean lambing date	15 August
Mean weaning date	1 December
Weaning weight	kg Not entered
Wool production	kg/yr 19000

Stock numbers

Mob name	Class	Breed	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
BreedingEwesMixedAge	BreedingEwesMixedAge	Romney	2928	2928	2928	2928	2928	2620	2193	3190	3190	3190	3190	3190
	Max weight (kg)	LW start (kg)	LW end (kg)	CW (kg)	Age (months)		Source		Fate	Sex		Mated		
	75	0	0	0	0					Female				
Hoggets	Hoggets	Romney	800	800	800	800	800	800	800	0	0	0	0	0
	Max weight (kg)	LW start (kg)	LW end (kg)	CW (kg)	Age (months)		Source		Fate	Sex		Mated		
	0	50	0	0	11		On-farm			Female				
Lambs	Lambs	Romney	0	0	0	0	0	2218	1613	744	100	0	0	0
	Max weight (kg)	LW start (kg)	LW end (kg)	CW (kg)	Age (months)		Source		Fate	Sex		Mated		
	0	31	0	0	4		On-farm		Sold to works	MixedSex				
Rams	Rams	Dorset Down	35	32	32	32	40	40	40	40	40	40	35	35
	Max weight (kg)	LW start (kg)	LW end (kg)	CW (kg)	Age (months)		Source		Fate	Sex		Mated		
	0	120	120	0	24		Brought		Remain on-farm	Male				
Hoggets	Hoggets	Romney	0	0	0	0	0	700	700	650	650	650	650	650
	Max weight (kg)	LW start (kg)	LW end (kg)	CW (kg)	Age (months)		Source		Fate	Sex		Mated		
	0	40	0	0	4		On-farm			Female				

Animal excreta distribution

Relative productivity assessment method	Relative pasture yield
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Block relative productivity

Rolling Mt Hilton	1
Mt Hilton FLat	1
Fenelon Flats	0.7
Fenelon Rolling	0.7
Pyrimads Flat	1
Prymaids Rolling	1
Prymiads Hill	0.5
Ratio of stock on blocks can differ from the farm stock ratios	

Animal health supplements

Animal - Beef / dairy grazing

No animal supplementation has been entered

Animal - Sheep

No animal supplementation has been entered

Left over feeding

No left over feeding specified
No supplements from storage added to this farm

Imported supplements

Supplement information

Conservation type	Grains
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Dan Hodgen
D & W Hodgen
Client reference: Baseline
Farm name: Dan Hodgen - Actual (2012/2013)

Rebecca Hyde
Ballance Agri Nutrients
3.12.14

Parameters



Conservation type		
Name		Grains
Pasture type		Barley grain
Supplement amount		
Dry weight basis	T	15
Fed to animal: Sheep		
No feeding destinations found		
Block Information		
Block - Rolling Mt Hilton		
Block name		Rolling Mt Hilton
Block type		Pastoral
Area	ha	5
Relative productivity		1
Pasture block type		No
Topography		Rolling
Distance from coast	km	30
Cultivated in last 5 years		False
Climate		
Annual average rainfall	mm/yr	673
Mean annual temperature		11.2
Seasonal variation in rainfall		< 730 mm, Low
Annual potential evapotranspiration		651-800 mm/yr
Seasonal variation in PET		Moderate
Soil description		
Soil order (default)		Pallic
Soil group (default)		Recent/YGE/BGE
SMaps	Sibling	Danr_1a.1
Date downloaded		Unknown
Wilting point	0 - 30cm	15
	30 - 60cm	11
	> 60	8
Field capacity	0 - 30cm	32
	30 - 60cm	21
	> 60	15
Saturation	0 - 30cm	48
	30 - 60cm	30
	> 60	22
Top soil texture		Unknown
Is Stony		False
Maximum rooting depth	cm	74
Depth to impeded layer	cm	0
Soil texture group		Light
Non-standard layer		
Depth to non-standard layer	cm	0
Top soil horizon chemical and physical parameters		
ASC/PR		19

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Dan Hodgen
D & W Hodgen
Client reference: Baseline
Farm name: Dan Hodgen - Actual (2012/2013)

Rebecca Hyde
Ballance Agri Nutrients
3.12.14



Parameters

Sand	%	8
Natural drainage class		Moderately well
Bulk density	kg/m³	1220
Clay	%	24
Sub soil clay	%	24
Soil profile		
Compacted top soil		False
Stony top soil		False
Depth to impeded drainage layer		0
Maximum rooting depth	m	0.74
Top soil texture		Unknown
Soil drainage		
Profile drainage class		Moderately well
Hydrophobic condition		Use default
Drainage method		
Method		None
Soil settings		
K leaching (%s)		Low
N immobilisation status		Standard
Soil tests		
Olsen P	QT K	
19	11	
	QT Ca	
	13	
	QT Mg	
	26	
	QT Na	
	4	
Organic S		4
Anion storage capacity or phosphate retention		Not entered
TBK reserve K test		Not entered
K reserve status		Use default
Pasture		
Pasture type		Ryegrass/white clover
Clover levels		Low
Pasture utilisation	%	Not entered
Average annual pasture N content	%	Not entered
Supplements removed		
No supplements removed from this block		
Fertiliser application		
Fertiliser products - April		
Category		Ravensdown super
Product		Sulphur super 20
Amount		175
Irrigation		
No irrigation entered		

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Parameters

No irrigation entered

Irrigation concentrations

N	P	K	S	Ca	Mg	Na	H
0	0	0	0	0	0	0	0

Animals on block

Animals grazing		
Sheep	%	100

Block intensity		
Merino		False

Animal grazing	
Sheep graze block all year round	

Effluent application	
Receives no liquid or solid effluents	

Block - Mt Hilton FLat

Block name		Mt Hilton FLat
Block type		Pastoral
Area	ha	35
Relative productivity		1
Pasture block type		Yes
Topography		Flat
Distance from coast	km	30
Cultivated in last 5 years		False

Climate		
Annual average rainfall	mm/yr	673
Mean annual temperature		11.2
Seasonal variation in rainfall		< 730 mm, Low
Annual potential evapotranspiration		651-800 mm/yr
Seasonal variation in PET		Moderate

Soil description		
Soil order (default)		Pallic
Soil group (default)		Recent/YGE/BGE
SMaps	Sibling	Danr_1a.1
Date downloaded		Unknown
Wilting point	0 - 30cm	15
	30 - 60cm	11
	> 60	8
Field capacity	0 - 30cm	32
	30 - 60cm	21
	> 60	15
Saturation	0 - 30cm	48
	30 - 60cm	30
	> 60	22
Top soil texture		Unknown

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Ballance Agri Nutrients
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Parameters

Top soil texture					Unknown
Is Stony					False
Maximum rooting depth	cm				74
Depth to impeded layer	cm				0
Soil texture group					Light
Non-standard layer					
Depth to non-standard layer	cm				0
Top soil horizon chemical and physical parameters					
ASC/PR					19
Sand	%				8
Natural drainage class					Moderately well
Bulk density	kg/m ³				1220
Clay	%				24
Sub soil clay	%				24
Soil profile					
Compacted top soil					False
Stony top soil					False
Depth to impeded drainage layer					0
Maximum rooting depth	m				0.74
Top soil texture					Unknown
Soil drainage					
Profile drainage class					Well
Hydrophobic condition					Use default
Drainage method					
Method					None
Soil settings					
K leaching (%)					Low
N immobilisation status					Standard
Soil tests					
Olsen P	QT K	QT Ca	QT Mg	QT Na	
19	11	13	26	4	
Organic S					4
Anion storage capacity or phosphate retention					Not entered
TBK reserve K test					Not entered
K reserve status					Use default
Pasture					
Pasture type					Ryegrass/white clover
Clover levels					Low
Pasture utilisation	%				Not entered
Average annual pasture N content	%				Not entered
Supplements removed					

Supplement information
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3.12.14



Parameters

Supplement information

Conservation type	Baleage
Name	
Pasture type	

Supplement amount

Dry weight basis	T	39
Supplements are distributed evenly across all pastoral blocks		
No feeding destinations found		

Fertiliser application

Fertiliser products - April

Category	Ravensdown super
Product	Sulphur super 20
Amount	175

Irrigation

No irrigation entered

Irrigation concentrations

N	P	K	S	Ca	Mg	Na	H
0	0	0	0	0	0	0	0

Animals on block

Animals grazing

Sheep	%	100
-------	---	-----

Block intensity

Merino	False
--------	-------

Animal grazing

Sheep graze block all year round

Effluent application

Receives no liquid or solid effluents

Block - Fenelon Flats

Block name	Fenelon Flats
Block type	Pastoral
Area	49.5 ha
Relative productivity	0.7
Pasture block type	Yes
Topography	Flat
Distance from coast	30 km
Cultivated in last 5 years	False

Climate

Annual average rainfall	mm/yr	671
-------------------------	-------	-----

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Client reference: Baseline
Farm name: Dan Hodgen - Actual (2012/2013)

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Ballance Agri Nutrients
3.12.14

Parameters



Mean annual temperature		11.2
Seasonal variation in rainfall		< 730 mm, Low
Annual potential evapotranspiration		651-800 mm/yr
Seasonal variation in PET		Moderate
Soil description		
Soil order (default)		Pallic
Soil group (default)		Recent/YGE/BGE
SMaps	Sibling	Danr_1a.1
Date downloaded		Unknown
Wilting point	0 - 30cm	15
	30 - 60cm	11
	> 60	8
Field capacity	0 - 30cm	32
	30 - 60cm	21
	> 60	15
Saturation	0 - 30cm	48
	30 - 60cm	30
	> 60	22
Top soil texture		Unknown
Is Stony		False
Maximum rooting depth	cm	74
Depth to impeded layer	cm	0
Soil texture group		Light
Non-standard layer		
Depth to non-standard layer	cm	0
Top soil horizon chemical and physical parameters		
ASC/PR		19
Sand	%	8
Natural drainage class		Moderately well
Bulk density	kg/m³	1220
Clay	%	24
Sub soil clay	%	24
Soil profile		
Compacted top soil		False
Stony top soil		False
Depth to impeded drainage layer		0
Maximum rooting depth	m	0.74
Top soil texture		Unknown
Soil drainage		
Profile drainage class		Moderately well
Hydrophobic condition		Use default
Drainage method		
Method		None
Soil settings		
K leaching (%s)		Low

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Parameters

N immobilisation status					Standard		
Soil tests							
Olsen P 19	QT K 11	QT Ca 13	QT Mg 26	QT Na 4			
Organic S					4		
Anion storage capacity or phosphate retention					Not entered		
TBK reserve K test					Not entered		
K reserve status					Use default		
Pasture							
Pasture type					Browntop		
Supplements removed							
No supplements removed from this block							
Fertiliser application							
Fertiliser products - April							
Category					Ravensdown super		
Product					Sulphur super 20		
Amount					175		
Irrigation							
No irrigation entered							
Irrigation concentrations							
N 0	P 0	K 0	S 0	Ca 0	Mg 0	Na 0	H 0
Animals on block							
Animals grazing							
Sheep				%		50	
Block intensity							
Merino					False		
Animal grazing							
Sheep graze block all year round							
Animals grazing							
Beef / dairy grazing				%		50	
Block intensity							
Finishing beef					False		
Water connectivity							
Direct access to streams					False		

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Dan Hodgen
D & W Hodgen
Client reference: Baseline
Farm name: Dan Hodgen - Actual (2012/2013)

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3.12.14

Parameters



False

Direct access to streams

Animal grazing

Beef / dairy grazing graze block all year round

Effluent application

Receives no liquid or solid effluents

Block - Fenelon Rolling

Block name

Fenelon Rolling

Block type

Pastoral

Area

ha

115.5

Relative productivity

0.7

Pasture block type

No

Topography

Rolling

Distance from coast

km

30

Cultivated in last 5 years

False

Climate

Annual average rainfall

mm/yr

677

Mean annual temperature

11.2

Seasonal variation in rainfall

< 730 mm, Low

Annual potential evapotranspiration

651-800 mm/yr

Seasonal variation in PET

Moderate

Soil description

Soil order (default)

Pallic

Soil group (default)

Recent/YGE/BGE

SMaps

Sibling

Danr_1a.1

Date downloaded

Unknown

Wilting point

0 - 30cm

15

30 - 60cm

11

> 60

8

Field capacity

0 - 30cm

32

30 - 60cm

21

> 60

15

Saturation

0 - 30cm

48

30 - 60cm

30

> 60

22

Top soil texture

Unknown

Is Stony

False

Maximum rooting depth

cm

74

Depth to impeded layer

cm

0

Soil texture group

Light

Non-standard layer

Depth to non-standard layer

cm

0

Top soil horizon chemical and physical parameters

ASC/PR

19

Sand

%

8

Natural drainage class

Moderately well

Bulk density

kg/m³

1220

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Farm name: Dan Hodgen - Actual (2012/2013)

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Ballance Agri Nutrients
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Parameters

Clay	%	24			
Sub soil clay	%	24			
Soil profile					
Compacted top soil		False			
Stony top soil		False			
Depth to impeded drainage layer		0			
Maximum rooting depth	m	0.74			
Top soil texture		Unknown			
Soil drainage					
Profile drainage class		Well			
Hydrophobic condition		Use default			
Drainage method					
Method		None			
Soil settings					
K leaching (s)		Low			
N immobilisation status		Standard			
Soil tests					
Olsen P	QT K	QT Ca	QT Mg	QT Na	
19	11	13	26	4	
Organic S					4
Anion storage capacity or phosphate retention					Not entered
TBK reserve K test					Not entered
K reserve status					Use default
Pasture					
Pasture type					Ryegrass/white clover
Clover levels					Low
Pasture utilisation			%		Not entered
Average annual pasture N content			%		Not entered
Supplements removed					
No supplements removed from this block					
Fertiliser application					
Fertiliser products - April					
Category					Ravensdown super
Product					Sulphur super 20
Amount					175
Irrigation					
No irrigation entered					
Irrigation concentrations					

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Parameters

N	P	K	S	Ca	Mg	Na	H
0	0	0	0	0	0	0	0

Animals on block

Animals grazing							
Sheep				%		50	

Block intensity							
Merino						False	

Animal grazing							
Sheep graze block all year round							

Animals grazing							
Beef / dairy grazing				%		50	

Block intensity							
Finishing beef						False	

Water connectivity							
Direct access to streams						False	

Animal grazing							
Beef / dairy grazing graze block all year round							

Effluent application							
Receives no liquid or solid effluents							

Block - Pyrimads Flat

Block name						Pyrimads Flat	
Block type						Pastoral	
Area				ha		94	
Relative productivity						1	
Pasture block type						Yes	
Topography						Flat	
Distance from coast				km		30	
Cultivated in last 5 years						False	

Climate							
Annual average rainfall				mm/yr		628	
Mean annual temperature						11.2	
Seasonal variation in rainfall						< 730 mm, Low	
Annual potential evapotranspiration						651-800 mm/yr	
Seasonal variation in PET						Moderate	

Soil description							
Soil order (default)						Pallic	
Soil group (default)						Recent/YGE/BGE	
SMaps				Sibling		Danr_1a.1	

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Parameters

Date downloaded		Unknown
Wilting point	0 - 30cm	15
	30 - 60cm	11
	> 60	8
Field capacity	0 - 30cm	32
	30 - 60cm	21
	> 60	15
Saturation	0 - 30cm	48
	30 - 60cm	30
	> 60	22
Top soil texture		Unknown
Is Stony		False
Maximum rooting depth	cm	74
Depth to impeded layer	cm	0
Soil texture group		Light
Non-standard layer		
Depth to non-standard layer	cm	0
Top soil horizon chemical and physical parameters		
ASC/PR		19
Sand	%	8
Natural drainage class		Moderately well
Bulk density	kg/m ³	1220
Clay	%	24
Sub soil clay	%	24
Soil profile		
Compacted top soil		False
Stony top soil		False
Depth to impeded drainage layer		0
Maximum rooting depth	m	0.74
Top soil texture		Unknown
Soil drainage		
Profile drainage class		Moderately well
Hydrophobic condition		Use default
Drainage method		
Method		None
Soil settings		
K leaching (%s)		Low
N immobilisation status		Standard
Soil tests		
Olsen P	QT K	QT Ca
19	11	13
		QT Mg
		26
		QT Na
		4
Organic S		4
Anion storage capacity or phosphate retention		Not entered
TBK reserve K test		Not entered

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Client reference: Baseline
Farm name: Dan Hodgen - Actual (2012/2013)

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Parameters

K reserve status	Use default						
Pasture							
Pasture type	Ryegrass/white clover						
Supplements removed							
No supplements removed from this block							
Fertiliser application							
Fertiliser products - April							
Category	Ravensdown super						
Product	Sulphur super 20						
Amount	175						
Irrigation							
No irrigation entered							
Irrigation concentrations							
N	P	K	S	Ca	Mg	Na	H
0	0	0	0	0	0	0	0
Animals on block							
Animals grazing							
Sheep	50						
Block intensity							
Merino	False						
Animal grazing							
Sheep graze block all year round							
Animals grazing							
Beef / dairy grazing	50						
Block intensity							
Finishing beef	False						
Water connectivity							
Direct access to streams	False						
Animal grazing							
Beef / dairy grazing graze block all year round							
Effluent application							
Receives no liquid or solid effluents							

Block - Prymaids Rolling

Block name Prymaids Rolling

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Parameters

Block name		Prymaids Kolling
Block type		Pastoral
Area	ha	180
Relative productivity		1
Pasture block type		No
Topography		Rolling
Distance from coast	km	30
Cultivated in last 5 years		False
Climate		
Annual average rainfall	mm/yr	628
Mean annual temperature		11.2
Seasonal variation in rainfall		< 730 mm, Low
Annual potential evapotranspiration		651-800 mm/yr
Seasonal variation in PET		Moderate
Soil description		
Soil order (default)		Pallic
Soil group (default)		Recent/YGE/BGE
SMaps	Sibling	Danr_1a.1
Date downloaded		Unknown
Wilting point	0 - 30cm	15
	30 - 60cm	11
	> 60	8
Field capacity	0 - 30cm	32
	30 - 60cm	21
	> 60	15
Saturation	0 - 30cm	48
	30 - 60cm	30
	> 60	22
Top soil texture		Unknown
Is Stony		False
Maximum rooting depth	cm	74
Depth to impeded layer	cm	0
Soil texture group		Light
Non-standard layer		
Depth to non-standard layer	cm	0
Top soil horizon chemical and physical parameters		
ASC/PR		19
Sand	%	8
Natural drainage class		Moderately well
Bulk density	kg/m ³	1220
Clay	%	24
Sub soil clay	%	24
Soil profile		
Compacted top soil		False
Stony top soil		False
Depth to impeded drainage layer		0
Maximum rooting depth	m	0.74
Top soil texture		Unknown

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Client reference: Baseline
Farm name: Dan Hodgen - Actual (2012/2013)

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Parameters

Soil drainage							
Profile drainage class				Moderately well			
Hydrophobic condition				Use default			
Drainage method							
Method				None			
Soil settings							
K leaching (%)				Low			
N immobilisation status				Standard			
Soil tests							
Olsen P	QT K	QT Ca	QT Mg	QT Na			
19	11	13	26	4			
Organic S				4			
Anion storage capacity or phosphate retention				Not entered			
TBK reserve K test				Not entered			
K reserve status				Use default			
Pasture							
Pasture type				Ryegrass/white clover			
Supplements removed							
No supplements removed from this block							
Fertiliser application							
Fertiliser products - April							
Category				Ravensdown super			
Product				Sulphur super 20			
Amount				175			
Irrigation							
No irrigation entered							
Irrigation concentrations							
N	P	K	S	Ca	Mg	Na	H
0	0	0	0	0	0	0	0
Animals on block							
Animals grazing							
Sheep				%		50	
Block intensity							
Merino				False			
Animal health							

Animal grazing
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Dan Hodgen
D & W Hodgen
Client reference: Baseline
Farm name: Dan Hodgen - Actual (2012/2013)

Rebecca Hyde
Ballance Agri Nutrients
3.12.14



Parameters

Animal grazing
Sheep graze block all year round

Animals grazing
Beef / dairy grazing % 50

Block intensity
Finishing beef False

Water connectivity
Direct access to streams False

Animal grazing
Beef / dairy grazing graze block all year round

Effluent application
Receives no liquid or solid effluents

Block - Prymiads Hill

Block name		Prymiads Hill
Block type		Pastoral
Area	ha	10
Relative productivity		0.5
Pasture block type		No
Topography		Steep hill
Distance from coast	km	30
Cultivated in last 5 years		False

Climate		
Annual average rainfall	mm/yr	628
Mean annual temperature		11.2
Seasonal variation in rainfall		< 730 mm, Low
Annual potential evapotranspiration		651-800 mm/yr
Seasonal variation in PET		Moderate

Soil description		
Soil order (default)		Pallic
Soil group (default)		Recent/YGE/BGE
SMaps	Sibling	Danr_1a.1
Date downloaded		Unknown
Wilting point	0 - 30cm	15
	30 - 60cm	11
	> 60	8
Field capacity	0 - 30cm	32
	30 - 60cm	21
	> 60	15
Saturation	0 - 30cm	48
	30 - 60cm	30
	> 60	22
Top soil texture		Unknown
Is Stony		False
Maximum rooting depth	cm	74

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Ballance Agri Nutrients
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Parameters

Maximum rooting depth	cm	74
Depth to impeded layer	cm	0
Soil texture group		Light
Non-standard layer		
Depth to non-standard layer	cm	0
Top soil horizon chemical and physical parameters		
ASC/PR		19
Sand	%	8
Natural drainage class		Moderately well
Bulk density	kg/m ³	1220
Clay	%	24
Sub soil clay	%	24
Soil profile		
Compacted top soil		False
Stony top soil		False
Depth to impeded drainage layer		0
Maximum rooting depth	m	0.74
Top soil texture		Unknown
Soil drainage		
Profile drainage class		Moderately well
Hydrophobic condition		Use default
Drainage method		
Method		None
Soil settings		
K leaching (%s)		Low
N immobilisation status		Standard
Soil tests		
Olsen P	QT K	QT Ca
19	11	13
		QT Mg
		26
		QT Na
		4
Organic S		4
Anion storage capacity or phosphate retention		Not entered
TBK reserve K test		Not entered
K reserve status		Use default
Pasture		
Pasture type		Browntop
Supplements removed		
No supplements removed from this block		
Fertiliser application		
No fertiliser application applied on block		
Irrigation		

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Ballance Agri Nutrients
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Parameters

No irrigation entered

Irrigation concentrations

N	P	K	S	Ca	Mg	Na	H
0	0	0	0	0	0	0	0

Animals on block

Animals grazing

Sheep % 100

Block intensity

Merino False

Animal grazing

Sheep graze block all year round

Effluent application

Receives no liquid or solid effluents

Block - Rape

Block name		Rape
Block type		Fodder Crop
Area	ha	39
Cultivated area	% of area	0
Headland area	% of area	0
Other area	% of area	0
Distance from coast	km	30
Final grid month		March
Irrigation system		No Irrigation

Climate

Annual average rainfall	mm/yr	649
Mean annual temperature		11.2
Seasonal variation in rainfall		< 730 mm, None to weak
Annual potential evapotranspiration		651-800 mm/yr
Seasonal variation in PET		Moderate

Monthly climate data

January	RainFall	58
February	RainFall	41
March	RainFall	60
April	RainFall	55
May	RainFall	59
June	RainFall	52
July	RainFall	46
August	RainFall	51
September	RainFall	50
October	RainFall	66
November	RainFall	51
December	RainFall	60

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Parameters

December	Kalmar	ou
	PET	Temperature
January	112	21
February	86	20
March	72	17
April	48	11
May	29	6
June	13	3
July	10	2
August	17	3
September	38	7
October	70	11
November	94	15
December	110	19
Soil description		
Soil order (default)		Pallic
Soil group (default)		Recent/YGE/BGE
SMaps	Sibling	Fodder Block Average
Date downloaded		Unknown
Wilting point	0 - 30cm	15
	30 - 60cm	11
	> 60	8
Field capacity	0 - 30cm	32
	30 - 60cm	21
	> 60	15
Saturation	0 - 30cm	48
	30 - 60cm	30
	> 60	22
Top soil texture		Unknown
Is Stony		False
Maximum rooting depth	cm	0
Depth to impeded layer	cm	0
Soil texture group		Light
Non-standard layer		
Depth to non-standard layer	cm	0
Top soil horizon chemical and physical parameters		
ASC/PR		Not entered
Sand	%	Not entered
Natural drainage class		Use default
Bulk density	kg/m³	Not entered
Clay	%	Not entered
Sub soil clay	%	Not entered
Soil profile		
Compacted top soil		False
Stony top soil		False
Depth to impeded drainage layer		0
Maximum rooting depth	m	0
Top soil texture		Unknown

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Rebecca Hyde
Ballance Agri Nutrients
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Parameters

Soil settings					
K leaching (‰s)					Low
Soil tests					
Olsen P	QT K	QT Ca	QT Mg	QT Na	
23.916666666	7	7.8333333333	19.333333333	8	
6667		3333	3333		
Anion storage capacity or phosphate retention					Not entered
TBK reserve K test					Not entered
K reserve status					Use default
Crop block history					
Years in pasture					0
Prior history					Grazed pasture
Source of animal information					
Animal source					
Crop information					
Previous assesment year					
April					Grazed pasture
May					Grazed pasture
June					Grazed pasture
July					Grazed pasture
August					Grazed pasture
September					Grazed pasture
October					Grazed pasture
November					Grazed pasture
December					Grazed pasture
January					Grazed pasture
February					Grazed pasture

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Dan Hodgen
D & W Hodgen
Client reference: Baseline
Farm name: Dan Hodgen - Actual (2012/2013)

Rebecca Hyde
Ballance Agri Nutrients
3.12.14

Parameters



March	Grazed pasture	
Current assessment year 2012/2013		
April	Grazed pasture	
May	Grazed pasture	
June	Grazed pasture	
July	Grazed pasture	
August	Grazed pasture	
September	Grazed pasture	
October	Rape	
Crop management Fertiliser or lime added - details are listed below	See details below	Crop sown
November	Rape	
December	Rape	
January	Rape	
Crop management	See details below	Defoliation
February	Rape	
Crop management	See details below	Defoliation
March	Grazed	
Crop management	See details below	Crop sown
Crop sowing information - October of the Current assessment year 2012/2013		
Crop category		Fodder
Crop type		Rape

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Dan Hodgen
D & W Hodgen
Client reference: Baseline
Farm name: Dan Hodgen - Actual (2012/2013)

Rebecca Hyde
Ballance Agri Nutrients
3.12.14

Parameters



Product yield	tonnes/ha	5	4
Cultivation practice at sowing			Direct drilled
Defoliation information - January of the Current assessment year 2012/2013			
Defoliation method			Grazed in-situ
Source of animal			Farm stock - see Enterprise numbers panes
Generalised animal type			
Defoliation information - February of the Current assessment year 2012/2013			
Defoliation method			Grazed in-situ
Source of animal			Farm stock - see Enterprise numbers panes
Generalised animal type			
Crop sowing information - March of the Current assessment year 2012/2013			
Crop category			Permanent pasture
Crop type			Grazed
Source of animals			
Fertiliser application			
Fertiliser products - Current assessment - October			
Category			Ballance cropping
Product			Cropzeal boron boost
Amount			100
Effluent application			
Receives no liquid or solid effluents			
Block - Ineffective			
Block name			Ineffective
Block type			Trees and Scrub
Area	ha	40	
Rainfall	mm/yr	677	
Distance from coast	km	30	
Bush type			Native
Block - Lucerne			
Block name			Lucerne
Block type			Cut and Carry
Area	ha	6	
Pasture block type			Lucerne
Distance from coast	km	30	
Climate			
Annual average rainfall	mm/yr	671	
Mean annual temperature		11.2	
Seasonal variation in rainfall		< 730 mm, Low	
Annual potential evapotranspiration		651-800 mm/yr	

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Dan Hodgen
D & W Hodgen
Client reference: Baseline
Farm name: Dan Hodgen - Actual (2012/2013)

Rebecca Hyde
Ballance Agri Nutrients
3.12.14

Parameters



651-800 mm/yr
Moderate

Annual potential evapotranspiration					651-800 mm/yr
Seasonal variation in PET					Moderate
Soil description					
Soil order (default)					Pallic
Soil group (default)					Recent/YGE/BGE
SMaps					Danr_1a.1
Date downloaded					Unknown
Wilting point					0 - 30cm
					30 - 60cm
					> 60
Field capacity					0 - 30cm
					30 - 60cm
					> 60
Saturation					0 - 30cm
					30 - 60cm
					> 60
Top soil texture					Unknown
Is Stony					False
Maximum rooting depth					cm
Depth to impeded layer					cm
Soil texture group					Light
Non-standard layer					
Depth to non-standard layer					cm
Top soil horizon chemical and physical parameters					
ASC/PR					19
Sand					%
Natural drainage class					Moderately well
Bulk density					kg/m³
Clay					%
Sub soil clay					%
Soil profile					
Compacted top soil					False
Stony top soil					False
Depth to impeded drainage layer					0
Maximum rooting depth					m
Top soil texture					Unknown
Soil settings					
K leaching (%s)					Low
Soil tests					
Olsen P	QT K	QT Ca	QT Mg	QT Na	
19	11	13	26	4	
Organic S					4
Anion storage capacity or phosphate retention					Not entered
TBK reserve K test					Not entered
K reserve status					Use default

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Dan Hodgen
D & W Hodgen
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Rebecca Hyde
Ballance Agri Nutrients
3.12.14

Parameters



Supplements removed

Supplement information

Conservation type	Baleage
Name	
Pasture type	

Supplement amount

Dry weight basis	T	50
Fed to animal: Sheep		
No feeding destinations found		

Fertiliser application

Fertiliser products - April

Category	Ravensdown super
Product	Sulphur super 30
Amount	175

Irrigation

No irrigation entered

Irrigation concentrations

N	P	K	S	Ca	Mg	Na	H
0	0	0	0	0	0	0	0

Effluent application

Receives no liquid or solid effluents

Report settings

Greenhouse gas emission report units: CO2 equivalents (kg/ha)
Target N application rate as effluent: kg N/ha/yr

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Dan Hodgen
D & W Hodgen

Client reference: Baseline

Farm name: Dan Hodgen - Dairy Grazing (2012/2013)

Rebecca Hyde
Ballance Agri Nutrients
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Farm Nutrient Budget - Whole farm



	N	P	K	S	Ca	Mg	Na
	(kg/ha/yr)						
Nutrients added							
Fertiliser, lime & other	5	14	0	30	26	0	0
Rain/clover N fixation	55	0	2	4	2	4	17
Irrigation	0	0	0	0	0	0	0
Supplements imported	3	0	6	1	1	1	0
Nutrients removed							
As products	23	5	1	3	9	0	1
Exported effluent	0	0	0	0	0	0	0
As supplements	0	0	0	0	0	0	0
To atmospheric	18	0	0	0	0	0	0
To water	11	0.1	10	30	58	2	5
Change in internal pools							
Plant material	-5	-1	-8	1	0	-1	0
Organic pool	3	8	1	0	0	0	0
Inorganic mineral	0	2	-18	0	-1	-2	-2
Inorganic soil pool	12	0	22	0	-38	5	14

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Dan Hodgen

D & W Hodgen

Client reference: Baseline

Farm name: Dan Hodgen - Dairy Grazing (2012/2013)

Rebecca Hyde

Ballance Agri Nutrients

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Block Nitrogen



Block name	Total N lost (kg N/yr)	N lost to water (kg N/ha/yr)	N in drainage * (ppm)	N surplus (kg N/ha/yr)	Added N ** (kg N/ha/yr)
Rolling Mt Hilton	33	7	4.8	45	0
Mt Hilton FLat ##	199	7	4.7	34	0
Kale	2936	75	47.4	15	71
Ineffective	120	3	N/A		
Fenelon Flats ##	250	6	4.9	40	0
Fenelon Rolling	769	7	4.9	30	0
Pirimads Flat ##	566	8	6.1	53	0
Prymaids Rolling	1222	7	5.9	52	0
Prymiads Hill	28	3	N/A	35	0
Lucerne	20	3	2.5	-38	0
Other farm sources	7				
Whole farm	6150	11			
Less N removed in wetlands	0				
Farm output	6150	11			

* Estimated N concentration in drainage water at the bottom of the root zone. Maximum recommended level for drinking water is 11.3 ppm (note that this is not an environmental water quality standard).

** Sum of fertiliser and external factory effluent inputs.

N/A: N in drainage not calculated for easy and steep pastoral blocks, or for tree and shrubs, riparian, wetland or house blocks.

Has a fodder crop rotating though, results for pastoral block component only

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Dan Hodgen
D & W Hodgen

Client reference: Baseline

Farm name: Dan Hodgen - Dairy Grazing (2012/2013)

Rebecca Hyde
Ballance Agri Nutrients
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Block Phosphorus

Block name	Total P lost (kg P/yr)	P lost (kg P/ha/yr)	P loss categories		
			Soil	Fertiliser	Effluent
Rolling Mt Hilton	0	0.1	Low	Low	n/a
Mt Hilton FLat ##	1	0	Low	Low	n/a
Kale	3	0.1	n/a	n/a	n/a
Ineffective	4	0.1	n/a	n/a	n/a
Fenelon Flats ##	3	0.1	Low	Low	n/a
Fenelon Rolling	8	0.1	Low	Low	n/a
Pymads Flat ##	1	0	Low	Low	n/a
Pymads Rolling	12	0.1	Low	Low	n/a
Pymads Hill	1	0.1	Low	n/a	n/a
Lucerne	0	0	n/a	n/a	n/a
Other farm sources	30				
Whole farm	62	0.1			

Has a fodder crop rotating though, results for pastoral block component only

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Dan Hodgen
D & W Hodgen

Client reference: Baseline

Farm name: Dan Hodgen - Dairy Grazing (2012/2013)

Rebecca Hyde
Ballance Agri Nutrients
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Farm Nitrogen



	Units	Benchmark farm	Current farm
Inputs (farm average)			
Clover N	kg N/ha/yr		53
Fertiliser N	kg N/ha/yr		5
Other N added	kg N/ha/yr		5
Indices			
Average N loss to water	kg N/ha/yr	5-20	11
includes N lost as effluent	kg N/ha/yr		0
N ₂ O emissions	kg N/ha/yr		2
For pastoral area of farm:			
Farm N surplus	kg N/ha/yr	30-80	40
N conversion efficiency	%	15-25	37

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Dan Hodgen

D & W Hodgen

Client reference: Baseline

Farm name: Dan Hodgen - Dairy Grazing (2012/2013)

Rebecca Hyde

Ballance Agri Nutrients

3.12.14

Block Pasture



Block name	On-farm fresh pasture intake (kg DM/ha/yr)	Estimated utilisation (%)	Supplements removed (kg DM/ha/yr)	Pasture growth (kg DM/ha/yr)
Rolling Mt Hilton	6344	70	0	9063
Mt Hilton FLat	5347	70	1423	9063
Kale	0	0	0	0
Ineffective	0	0	0	0
Fenelon Flats	4441	70	0	6344
Fenelon Rolling	4441	70	0	6344
Pyrimads Flat	6344	70	0	9063
Prymaids Rolling	6344	70	0	9063
Prymiads Hill	3172	70	0	4531
Lucerne	0	0	8333	8333

This report gives an estimated animal intake for each block based on animal production and supplements brought on to farm information supplied. Estimated annual pasture growth is shown for the animal utilisation value shown. Note: the model is not sensitive to changes in utilisation.

It is recommended that a consultant or software such as StockPol is used to estimate farm pasture production.

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Dan Hodgen
D & W Hodgen

Client reference: Baseline

Farm name: Dan Hodgen - Dairy Grazing (2012/2013)

Rebecca Hyde
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3.12.14

Other values for farm - Dan Hodgen - Dairy C



Percent male beef animals	8
Total liveweight brought (kg/ha grazed)	295
Total liveweight reared (kg/ha grazed)	145
Total liveweight sold (kg/ha grazed)	921
No fertiliser costs entered	
GHG: Allocation to wool - breeding mob	0.24
GHG: Allocation to wool - trading mob	0.04
Beef / dairy grazing stock rate (RSU)	2030
Sheep stock rate (RSU)	3241

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Dan Hodgen
D & W Hodgen
Client reference: Baseline
Farm name: Dan Hodgen - Dairy Grazing (2012/2013)

Rebecca Hyde
Ballance Agri Nutrients
3.12.14

Parameters



Farm details

Type	Farm type	Full range
Assessment	Assessment year	Not entered
Region	Region	High Country (> 300 m)

Farm blocks

Rolling Mt Hilton	Pastoral	5
Mt Hilton Flat	Pastoral	27.4
Fenelon Flats	Pastoral	38.7
Fenelon Rolling	Pastoral	115.5
Pyrimads Flat	Pastoral	73.5
Prymaids Rolling	Pastoral	180
Prymiads Hill	Pastoral	10
Kale	Fodder Crop	
Ineffective	Trees and Scrub	40
Lucerne	Cut and Carry	6
Total farm area declared in blocks	ha	535

Farm animals

Stock numbers

Stock reconciliation - Beef / dairy grazing

Stock production

Calving percentage	%	Not entered
Percent replacements	%	Not entered
Mean calving date		Not entered
Mean weaning date		Not entered
Weaning weight	kg	Not entered

Stock numbers

Mob name	Class	Breed	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Steers	Steers	Angus	36	36	36	36	36	36	36	36	36	36	36	36
	Max weight (kg)	LW start (kg)	LW end (kg)	CW (kg)	Age (months)		Source	Fate	Sold to works	Sex	Castrated	Mated		
	0	300	300	0	9		Brought							
Steers	Steers	Angus	0	0	0	0	0	0	0	0	0	36	36	36
	Max weight (kg)	LW start (kg)	LW end (kg)	CW (kg)	Age (months)		Source	Fate	Remain on-farm	Sex	Castrated	Mated		
	0	200	300	0	6		Brought							
HeifersAndCows	HeifersAndCows	Angus	30	30	30	30	30	30	30	30	30	30	0	0
	Max weight (kg)	LW start (kg)	LW end (kg)	CW (kg)	Age (months)		Source	Fate	Sold to works	Sex	Female	Mated		
	0	300	600	0	9		On-farm							
DairyReplacements	DairyReplacements	Friesian X jersey	300	300	300	300	300	300	300	300	300	300	300	0
	Max weight (kg)	LW start (kg)	LW end (kg)	CW (kg)	Age (months)		Source	Fate	Sold to store	Sex	Female	Mated		
	0	250	0	0	10		On-farm							
DairyMilking	DairyMilking	DairyCross	600	0	0	0	0	0	0	0	0	0	0	600
	Max weight (kg)	LW start (kg)	LW end (kg)	CW (kg)	Age (months)		Source	Fate		Sex	Female	Mated		
	450	0	0	0	0									
HeifersAndCows	HeifersAndCows	Angus	0	0	0	0	0	0	0	0	0	30	30	30
	Max weight (kg)	LW start (kg)	LW end (kg)	CW (kg)	Age (months)		Source	Fate	Remain on-	Sex	Female	Mated		
	0	280	0	0	0		Brought							

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Dan Hodgen
D & W Hodgen
Client reference: Baseline
Farm name: Dan Hodgen - Dairy Grazing (2012/2013)

Rebecca Hyde
Ballance Agri Nutrients
3.12.14

Parameters



U	28U	U	U	U	Brought	Remain on- female farm									
DairyReplacements	DairyReplacements	Friesian X jersey	0	0	0	0	0	0	0	0	0	0	0	0	300
Max weight (kg)	LW start (kg)	LW end (kg)	CW (kg)	Age (months)	Source Brought	Fate Remain on- farm	Sex Female	Mated							
0	240	0	0	0											

Stock reconciliation - Sheep

Stock production

Lambing percentage	%	135
Percent replacements	%	21
Mean lambing date		15 August
Mean weaning date		1 December
Weaning weight	kg	Not entered
Wool production	kg/yr	19000

Stock numbers

Mob name	Class	Breed	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
BreedingEwesMixedAge	BreedingEwesMixedAge	Romney	2500	2500	2500	2500	2500	2200	2200	2500	2500	2500	2500	2500
Max weight (kg)	LW start (kg)	LW end (kg)	CW (kg)	Age (months)	Source	Fate	Sex Female	Mated						
75	0	0	0	0										
Rams	Rams	Dorset Down	35	32	32	32	40	40	40	40	40	40	35	35
Max weight (kg)	LW start (kg)	LW end (kg)	CW (kg)	Age (months)	Source Brought	Fate Remain on- farm	Sex Male	Mated						
0	120	120	0	24										

Animal excreta distribution

Relative productivity assessment method	Relative pasture yield
---	------------------------

Block relative productivity

Rolling Mt Hilton	1
Mt Hilton FLat	1
Fenelon Flats	0.7
Fenelon Rolling	0.7
Pyrimads Flat	1
Prymaids Rolling	1
Prymiads Hill	0.5
Ratio of stock on blocks can differ from the farm stock ratios	

Animal health supplements

Animal - Beef / dairy grazing

No animal supplementation has been entered

Animal - Sheep

No animal supplementation has been entered

Left over feeding

No left over feeding specified

No supplements from storage added to this farm

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Parameters



Imported supplements		
Supplement information		
Conservation type		Grains
Name		Barley grain
Pasture type		
Supplement amount		
Dry weight basis	T	15
Fed to animal: Sheep		
No feeding destinations found		
Supplement information		
Conservation type		Straws
Name		Barley straw
Pasture type		
Supplement amount		
Dry weight basis	T	204
Fed to animal: Beef / dairy grazing		
No feeding destinations found		
Block Information		
Block - Rolling Mt Hilton		
Block name		Rolling Mt Hilton
Block type		Pastoral
Area	ha	5
Relative productivity		1
Pasture block type		No
Topography		Rolling
Distance from coast	km	30
Cultivated in last 5 years		False
Climate		
Annual average rainfall	mm/yr	673
Mean annual temperature		11.2
Seasonal variation in rainfall		< 730 mm, Low
Annual potential evapotranspiration		651-800 mm/yr
Seasonal variation in PET		Moderate
Soil description		
Soil order (default)		Pallic
Soil group (default)		Recent/YGE/BGE
SMaps	Sibling	Darn_1a.1
Date downloaded		Unknown
Wilting point	0 - 30cm	15
	30 - 60cm	11
	> 60	8
Field capacity	0 - 30cm	32
	30 - 60cm	21

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Parameters



	0 - 30cm	22
	> 60	15
Saturation	0 - 30cm	48
	30 - 60cm	30
	> 60	22
Top soil texture		Unknown
Is Stony		False
Maximum rooting depth	cm	74
Depth to impeded layer	cm	0
Soil texture group		Light
Non-standard layer		
Depth to non-standard layer	cm	0
Top soil horizon chemical and physical parameters		
ASC/PR		19
Sand	%	8
Natural drainage class		Moderately well
Bulk density	kg/m ³	1220
Clay	%	24
Sub soil clay	%	24
Soil profile		
Compacted top soil		False
Stony top soil		False
Depth to impeded drainage layer		0
Maximum rooting depth	m	0.74
Top soil texture		Unknown
Soil drainage		
Profile drainage class		Moderately well
Hydrophobic condition		Use default
Drainage method		
Method		None
Soil settings		
K leaching (%s)		Low
N immobilisation status		Standard
Soil tests		
Olsen P	QT K	
19	11	
	QT Ca	
	13	
	QT Mg	
	26	
	QT Na	
	4	
Organic S		4
Anion storage capacity or phosphate retention		Not entered
TBK reserve K test		Not entered
K reserve status		Use default
Pasture		
Pasture type		Ryegrass/white clover
Clover levels		Low
Pasture utilisation	%	Not entered
Average annual pasture N content	%	Not entered

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Parameters

Average annual pasture N content							%	Not entered
Supplements removed								
No supplements removed from this block								
Fertiliser application								
Fertiliser products - April								
Category							Ravensdown super	
Product							Sulphur super 20	
Amount							175	
Irrigation								
No irrigation entered								
Irrigation concentrations								
N	P	K	S	Ca	Mg	Na	H	
0	0	0	0	0	0	0	0	
Animals on block								
Animals grazing								
Sheep							%	100
Block intensity								
Merino								False
Animal grazing								
Sheep graze block all year round								
Effluent application								
Receives no liquid or solid effluents								
Block - Mt Hilton FLat								
Block name								Mt Hilton FLat
Block type								Pastoral
Area							ha	35
Relative productivity								1
Pasture block type								Yes
Topography								Flat
Distance from coast							km	30
Cultivated in last 5 years								False
Climate								
Annual average rainfall							mm/yr	673
Mean annual temperature								11.2
Seasonal variation in rainfall								< 730 mm, Low
Annual potential evapotranspiration								651-800 mm/yr
Seasonal variation in PET								Moderate

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Parameters

Organic S									4
Anion storage capacity or phosphate retention									Not entered
TBK reserve K test									Not entered
K reserve status									Use default
Pasture									
Pasture type									Ryegrass/white clover
Clover levels									Low
Pasture utilisation					%				Not entered
Average annual pasture N content					%				Not entered
Supplements removed									
Supplement information									
Conservation type									Baleage
Name									
Pasture type									
Supplement amount									
Dry weight basis					T				39
Supplements are distributed evenly across all pastoral blocks									
No feeding destinations found									
Fertiliser application									
Fertiliser products - April									
Category									Ravensdown super
Product									Sulphur super 20
Amount									175
Irrigation									
No irrigation entered									
Irrigation concentrations									
N	P	K	S	Ca	Mg	Na	H		
0	0	0	0	0	0	0	0		
Animals on block									
Animals grazing									
Sheep					%				100
Block intensity									
Merino									False
Animal grazing									
Sheep graze block all year round									
Effluent application									
Receives no liquid or solid effluents									

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Parameters

Receives no liquid or solid effluents

Block - Fenelon Flats

Block name		Fenelon Flats
Block type		Pastoral
Area	ha	49.5
Relative productivity		0.7
Pasture block type		Yes
Topography		Rolling
Distance from coast	km	30
Cultivated in last 5 years		False

Climate

Annual average rainfall	mm/yr	671
Mean annual temperature		11.2
Seasonal variation in rainfall		< 730 mm, Low
Annual potential evapotranspiration		651-800 mm/yr
Seasonal variation in PET		Moderate

Soil description

Soil order (default)		Pallic
Soil group (default)		Recent/YGE/BGE
SMaps	Sibling	Darn_1a.1
Date downloaded		Unknown
Wilting point	0 - 30cm	15
	30 - 60cm	11
	> 60	8
Field capacity	0 - 30cm	32
	30 - 60cm	21
	> 60	15
Saturation	0 - 30cm	48
	30 - 60cm	30
	> 60	22
Top soil texture		Unknown
Is Stony		False
Maximum rooting depth	cm	74
Depth to impeded layer	cm	0
Soil texture group		Light
Non-standard layer		
Depth to non-standard layer	cm	0

Top soil horizon chemical and physical parameters

ASC/PR		19
Sand	%	8
Natural drainage class		Moderately well
Bulk density	kg/m³	1220
Clay	%	24
Sub soil clay	%	24

Soil profile

Compacted top soil		False
Stony top soil		False

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Parameters



Stony top soil										False
Depth to impeded drainage layer										0
Maximum rooting depth									m	0.74
Top soil texture										Unknown
Soil drainage										
Profile drainage class										Moderately well
Hydrophobic condition										Use default
Drainage method										
Method										None
Soil settings										
K leaching (‰)										Low
N immobilisation status										Standard
Soil tests										
Olsen P	QT K	QT Ca	QT Mg	QT Na						
19	11	13	26	4						
Organic S										4
Anion storage capacity or phosphate retention										Not entered
TBK reserve K test										Not entered
K reserve status										Use default
Pasture										
Pasture type										Browntop
Supplements removed										
No supplements removed from this block										
Fertiliser application										
Fertiliser products - April										
Category										Ravensdown super
Product										Sulphur super 20
Amount										175
Irrigation										
No irrigation entered										
Irrigation concentrations										
N	P	K	S	Ca	Mg	Na	H			
0	0	0	0	0	0	0	0			
Animals on block										
Animals grazing										
Sheep									%	50
Block intensity										

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Parameters

Block intensity		
Merino		False
Animal grazing		
Sheep graze block all year round		
Animals grazing		
Beef / dairy grazing	%	50
Block intensity		
Finishing beef		False
Water connectivity		
Direct access to streams		False
Animal grazing		
Beef / dairy grazing graze block all year round		
Effluent application		
Receives no liquid or solid effluents		
Block - Fenelon Rolling		
Block name		Fenelon Rolling
Block type		Pastoral
Area	ha	115.5
Relative productivity		0.7
Pasture block type		No
Topography		Rolling
Distance from coast	km	30
Cultivated in last 5 years		False
Climate		
Annual average rainfall	mm/yr	677
Mean annual temperature		11.2
Seasonal variation in rainfall		< 730 mm, Low
Annual potential evapotranspiration		651-800 mm/yr
Seasonal variation in PET		Moderate
Soil description		
Soil order (default)		Pallic
Soil group (default)		Recent/YGE/BGE
SMaps	Sibling	Darn_1a.1
Date downloaded		Unknown
Wilting point	0 - 30cm	15
	30 - 60cm	11
	> 60	8
Field capacity	0 - 30cm	32
	30 - 60cm	21
	> 60	15
Saturation	0 - 30cm	48
	30 - 60cm	30

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Parameters



	0.0 - 0.00 cm	0.0
	> 60	22
Top soil texture		Unknown
Is Stony		False
Maximum rooting depth	cm	74
Depth to impeded layer	cm	0
Soil texture group		Light
Non-standard layer		
Depth to non-standard layer	cm	0
Top soil horizon chemical and physical parameters		
ASC/PR		19
Sand	%	8
Natural drainage class		Moderately well
Bulk density	kg/m ³	1220
Clay	%	24
Sub soil clay	%	24
Soil profile		
Compacted top soil		False
Stony top soil		False
Depth to impeded drainage layer		0
Maximum rooting depth	m	0.74
Top soil texture		Unknown
Soil drainage		
Profile drainage class		Well
Hydrophobic condition		Use default
Drainage method		
Method		None
Soil settings		
K leaching (%s)		Low
N immobilisation status		Standard
Soil tests		
Olsen P	QT K	QT Ca
19	11	13
		QT Mg
		26
		QT Na
		4
Organic S		4
Anion storage capacity or phosphate retention		Not entered
TBK reserve K test		Not entered
K reserve status		Use default
Pasture		
Pasture type		Ryegrass/white clover
Clover levels		Low
Pasture utilisation	%	Not entered
Average annual pasture N content	%	Not entered

Supplements removed

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Parameters

No supplements removed from this block

Fertiliser application

Fertiliser products - April

Category	Ravensdown super
Product	Sulphur super 20
Amount	175

Irrigation

No irrigation entered

Irrigation concentrations

N	P	K	S	Ca	Mg	Na	H
0	0	0	0	0	0	0	0

Animals on block

Animals grazing

Sheep	%	50
-------	---	----

Block intensity

Merino	False
--------	-------

Animal grazing

Sheep graze block all year round

Animals grazing

Beef / dairy grazing	%	50
----------------------	---	----

Block intensity

Finishing beef	False
----------------	-------

Water connectivity

Direct access to streams	False
--------------------------	-------

Animal grazing

Beef / dairy grazing graze block all year round

Effluent application

Receives no liquid or solid effluents

Block - Pyrimads Flat

Block name	Pyrimads Flat
Block type	Pastoral
Area	94 ha
Relative productivity	1
Pasture block type	Yes
Topography	Flat

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Parameters

Distance from coast	km	30
Cultivated in last 5 years		False
Climate		
Annual average rainfall	mm/yr	628
Mean annual temperature		11.2
Seasonal variation in rainfall		< 730 mm, Low
Annual potential evapotranspiration		651-800 mm/yr
Seasonal variation in PET		Moderate
Soil description		
Soil order (default)		Pallic
Soil group (default)		Recent/YGE/BGE
SMaps	Sibling	Darn_1a.1
Date downloaded		Unknown
Wilting point	0 - 30cm	15
	30 - 60cm	11
	> 60	8
Field capacity	0 - 30cm	32
	30 - 60cm	21
	> 60	15
Saturation	0 - 30cm	48
	30 - 60cm	30
	> 60	22
Top soil texture		Unknown
Is Stony		False
Maximum rooting depth	cm	74
Depth to impeded layer	cm	0
Soil texture group		Light
Non-standard layer		
Depth to non-standard layer	cm	0
Top soil horizon chemical and physical parameters		
ASC/PR		19
Sand	%	8
Natural drainage class		Moderately well
Bulk density	kg/m ³	1220
Clay	%	24
Sub soil clay	%	24
Soil profile		
Compacted top soil		False
Stony top soil		False
Depth to impeded drainage layer		0
Maximum rooting depth	m	0.74
Top soil texture		Unknown
Soil drainage		
Profile drainage class		Moderately well
Hydrophobic condition		Use default

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Parameters

Drainage method							
Method	None						
Soil settings							
K leaching (%)	Low						
N immobilisation status	Standard						
Soil tests							
Olsen P	QT K	QT Ca	QT Mg	QT Na			
19	11	13	26	4			
Organic S							4
Anion storage capacity or phosphate retention							Not entered
TBK reserve K test							Not entered
K reserve status							Use default
Pasture							
Pasture type	Ryegrass/white clover						
Supplements removed							
No supplements removed from this block							
Fertiliser application							
Fertiliser products - April							
Category							Ravensdown super
Product							Sulphur super 20
Amount							175
Irrigation							
No irrigation entered							
Irrigation concentrations							
N	P	K	S	Ca	Mg	Na	H
0	0	0	0	0	0	0	0
Animals on block							
Animals grazing							
Sheep	%					50	
Block intensity							
Merino							False
Animal grazing							
Sheep graze block all year round							
Animals grazing							
Beef / dairy grazing	%					50	

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Dan Hodgen
D & W Hodgen
Client reference: Baseline
Farm name: Dan Hodgen - Dairy Grazing (2012/2013)

Rebecca Hyde
Ballance Agri Nutrients
3.12.14

Parameters



Block intensity		
Finishing beef		False
Water connectivity		
Direct access to streams		False
Animal grazing		
Beef / dairy grazing graze block all year round		
Effluent application		
Receives no liquid or solid effluents		
Block - Prymaids Rolling		
Block name		Prymaids Rolling
Block type		Pastoral
Area	ha	180
Relative productivity		1
Pasture block type		No
Topography		Rolling
Distance from coast	km	30
Cultivated in last 5 years		False
Climate		
Annual average rainfall	mm/yr	628
Mean annual temperature		11.2
Seasonal variation in rainfall		< 730 mm, Low
Annual potential evapotranspiration		651-800 mm/yr
Seasonal variation in PET		Moderate
Soil description		
Soil order (default)		Pallic
Soil group (default)		Recent/YGE/BGE
SMaps	Sibling	Darn_1a.1
Date downloaded		Unknown
Wilting point	0 - 30cm	15
	30 - 60cm	11
	> 60	8
Field capacity	0 - 30cm	32
	30 - 60cm	21
	> 60	15
Saturation	0 - 30cm	48
	30 - 60cm	30
	> 60	22
Top soil texture		Unknown
Is Stony		False
Maximum rooting depth	cm	74
Depth to impeded layer	cm	0
Soil texture group		Light
Non-standard layer		
Depth to non-standard layer	cm	0

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Dan Hodgen
D & W Hodgen
Client reference: Baseline
Farm name: Dan Hodgen - Dairy Grazing (2012/2013)

Rebecca Hyde
Ballance Agri Nutrients
3.12.14



Parameters

Top soil horizon chemical and physical parameters					
ASC/PR					19
Sand			%		8
Natural drainage class					Moderately well
Bulk density			kg/m ³		1220
Clay			%		24
Sub soil clay			%		24
Soil profile					
Compacted top soil					False
Stony top soil					False
Depth to impeded drainage layer					0
Maximum rooting depth			m		0.74
Top soil texture					Unknown
Soil drainage					
Profile drainage class					Moderately well
Hydrophobic condition					Use default
Drainage method					
Method					None
Soil settings					
K leaching (%s)					Low
N immobilisation status					Standard
Soil tests					
Olsen P	QT K	QT Ca	QT Mg	QT Na	
19	11	13	26	4	
Organic S					4
Anion storage capacity or phosphate retention					Not entered
TBK reserve K test					Not entered
K reserve status					Use default
Pasture					
Pasture type					Ryegrass/white clover
Supplements removed					
No supplements removed from this block					
Fertiliser application					
Fertiliser products - April					
Category					Ravensdown super
Product					Sulphur super 20
Amount					175
Irrigation					
No irrigation entered					

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Dan Hodgen
D & W Hodgen
Client reference: Baseline
Farm name: Dan Hodgen - Dairy Grazing (2012/2013)

Rebecca Hyde
Ballance Agri Nutrients
3.12.14

Parameters



Irrigation concentrations							
N	P	K	S	Ca	Mg	Na	H
0	0	0	0	0	0	0	0
Animals on block							
Animals grazing							
Sheep				%		50	
Block intensity							
Merino						False	
Animal grazing							
Sheep graze block all year round							
Animals grazing							
Beef / dairy grazing				%		50	
Block intensity							
Finishing beef						False	
Water connectivity							
Direct access to streams							
						False	
Animal grazing							
Beef / dairy grazing graze block all year round							
Effluent application							
Receives no liquid or solid effluents							
Block - Prymiads Hill							
Block name						Prymiads Hill	
Block type						Pastoral	
Area				ha		10	
Relative productivity						0.5	
Pasture block type						No	
Topography						Steep hill	
Distance from coast				km		30	
Cultivated in last 5 years						False	
Climate							
Annual average rainfall				mm/yr		628	
Mean annual temperature						11.2	
Seasonal variation in rainfall						< 730 mm, Low	
Annual potential evapotranspiration						651-800 mm/yr	
Seasonal variation in PET						Moderate	
Soil description							
Soil order (default)						Pallic	

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Dan Hodgen
D & W Hodgen
Client reference: Baseline
Farm name: Dan Hodgen - Dairy Grazing (2012/2013)

Rebecca Hyde
Ballance Agri Nutrients
3.12.14

Parameters



Organic S
Anion storage capacity or phosphate retention
TBK reserve K test
K reserve status

Not entered
Not entered
Use default

Pasture
Pasture type

Browntop

Supplements removed
No supplements removed from this block

Fertiliser application
No fertiliser application applied on block

Irrigation
No irrigation entered

Irrigation concentrations

N	P	K	S	Ca	Mg	Na	H
0	0	0	0	0	0	0	0

Animals on block

Animals grazing		
Sheep	%	100

Block intensity	
Merino	False

Animal grazing
Sheep graze block all year round

Effluent application
Receives no liquid or solid effluents

Block - Kale

Block name	Kale
Block type	Fodder Crop
Area	ha39
Cultivated area	% of area0
Headland area	% of area0
Other area	% of area0
Distance from coast	km30
Final grid month	September
Irrigation system	No Irrigation

Climate	
Annual average rainfall	mm/yr649
Mean annual temperature	11.2
Seasonal variation in rainfall	< 730 mm, None to weak
Annual potential evapotranspiration	651-800 mm/yr
Seasonal variation in PET	Moderate

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Dan Hodgen
D & W Hodgen
Client reference: Baseline
Farm name: Dan Hodgen - Dairy Grazing (2012/2013)

Rebecca Hyde
Ballance Agri Nutrients
3.12.14



Parameters

Seasonal variation in PET

Moderate

Monthly climate data

January	RainFall	58
February	RainFall	41
March	RainFall	60
April	RainFall	55
May	RainFall	59
June	RainFall	52
July	RainFall	46
August	RainFall	51
September	RainFall	50
October	RainFall	66
November	RainFall	51
December	RainFall	60
	PET	Temperature
January	112	21
February	86	20
March	72	17
April	48	11
May	29	6
June	13	3
July	10	2
August	17	3
September	38	7
October	70	11
November	94	15
December	110	19

Soil description

Soil order (default)		Pallic
Soil group (default)		Recent/YGE/BGE
SMaps	Sibling	Fodder Block Average
Date downloaded		Unknown
Wilting point	0 - 30cm	15
	30 - 60cm	11
	> 60	8
Field capacity	0 - 30cm	32
	30 - 60cm	21
	> 60	15
Saturation	0 - 30cm	48
	30 - 60cm	30
	> 60	22
Top soil texture		Unknown
Is Stony		False
Maximum rooting depth	cm	0
Depth to impeded layer	cm	0
Soil texture group		Light
Non-standard layer		
Depth to non-standard layer	cm	0

Top soil horizon chemical and physical parameters

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Dan Hodgen
D & W Hodgen
Client reference: Baseline
Farm name: Dan Hodgen - Dairy Grazing (2012/2013)

Rebecca Hyde
Ballance Agri Nutrients
3.12.14



Parameters

ASC/PR						Not entered
Sand				%		Not entered
Natural drainage class						Use default
Bulk density				kg/m³		Not entered
Clay				%		Not entered
Sub soil clay				%		Not entered
Soil profile						
Compacted top soil						False
Stony top soil						False
Depth to impeded drainage layer						0
Maximum rooting depth				m		0
Top soil texture						Unknown
Soil settings						
K leaching (%s)						Low
Soil tests						
Olsen P	QT K	QT Ca	QT Mg	QT Na		
33.416666666	7	8.8333333333	17.333333333	8		
6667		3333	3333			
Anion storage capacity or phosphate retention						Not entered
TBK reserve K test						Not entered
K reserve status						Use default
Crop block history						
Years in pasture						0
Prior history						Grazed pasture
Source of animal information						
Animal source						
Crop information						
Previous assesment year						
October						Grazed pasture
November						Grazed pasture
December						Grazed pasture
January						Grazed pasture
February						Grazed pasture
March						Grazed pasture

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Dan Hodgen
D & W Hodgen
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Farm name: Dan Hodgen - Dairy Grazing (2012/2013)

Rebecca Hyde
Ballance Agri Nutrients
3.12.14

Parameters



April	Grazed pasture	
May	Grazed pasture	
June	Grazed pasture	
July	Grazed pasture	
August	Grazed pasture	
September	Grazed pasture	
Current assessment year 2012/2013		
October	Kale	
Crop management	See details below	Crop sown
Fertiliser or lime added - details are listed below		
November	Kale	
Fertiliser or lime added - details are listed below		
December	Kale	
January	Kale	
February	Kale	
March	Kale	
April	Kale	
May	Kale	
June	Kale	
Crop management	See details below	Defoliation

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Dan Hodgen
D & W Hodgen
Client reference: Baseline
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Rebecca Hyde
Ballance Agri Nutrients
3.12.14



Parameters

July	Kale	
Crop management	See details below	Defoliation
August	Bare ground	
September	Grazed	
Crop management	See details below	Crop sown
Crop sowing information - October of the Current assessment year 2012/2013		
Crop category		Fodder
Crop type		Kale
Product yield	tonnes/ha 5	9
Cultivation practice at sowing		Conventional
Defoliation information - June of the Current assessment year 2012/2013		
Defoliation method		Grazed in-situ
Source of animal		Farm stock - see Enterprise numbers panes
Generalised animal type		
Defoliation information - July of the Current assessment year 2012/2013		
Defoliation method		Grazed in-situ
Source of animal		Farm stock - see Enterprise numbers panes
Generalised animal type		
Crop sowing information - September of the Current assessment year 2012/2013		
Crop category		Permanent pasture
Crop type		Grazed
Source of animals		
Fertiliser application		
Fertiliser products - Current assessment - October		
Category		Ballance cropping
Product		Cropzeal boron boost
Amount		150
Fertiliser products - Current assessment - November		
Category		Ballance other
Product		N-rich urea
Amount		100
Effluent application		
Receives no liquid or solid effluents		

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Rebecca Hyde
Ballance Agri Nutrients
3.12.14



Parameters

Block - Ineffective

Block name		Ineffective
Block type		Trees and Scrub
Area	ha	40
Rainfall	mm/yr	677
Distance from coast	km	30
Bush type		Native

Block - Lucerne

Block name		Lucerne
Block type		Cut and Carry
Area	ha	6
Pasture block type		Lucerne
Distance from coast	km	30

Climate

Annual average rainfall	mm/yr	671
Mean annual temperature		11.2
Seasonal variation in rainfall		< 730 mm, Low
Annual potential evapotranspiration		651-800 mm/yr
Seasonal variation in PET		Moderate

Soil description

Soil order (default)		Pallic
Soil group (default)		Recent/YGE/BGE
SMaps	Sibling	Darn_1a.1
Date downloaded		Unknown
Wilting point	0 - 30cm	15
	30 - 60cm	11
	> 60	8
Field capacity	0 - 30cm	32
	30 - 60cm	21
	> 60	15
Saturation	0 - 30cm	48
	30 - 60cm	30
	> 60	22
Top soil texture		Unknown
Is Stony		False
Maximum rooting depth	cm	74
Depth to impeded layer	cm	0
Soil texture group		Light
Non-standard layer		
Depth to non-standard layer	cm	0

Top soil horizon chemical and physical parameters

ASC/PR		19
Sand	%	8
Natural drainage class		Moderately well
Bulk density	kg/m ³	1220
Clay	%	24
Sub soil clay	%	24

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Rebecca Hyde
Ballance Agri Nutrients
3.12.14



Parameters

Sub soil clay		70		24			
Soil profile							
Compacted top soil		False					
Stony top soil		False					
Depth to impeded drainage layer		0					
Maximum rooting depth		m		0.74			
Top soil texture		Unknown					
Soil settings							
K leaching (%s)		Low					
Soil tests							
Olsen P	QT K	QT Ca	QT Mg	QT Na			
19	11	13	26	4			
Organic S		4					
Anion storage capacity or phosphate retention		Not entered					
TBK reserve K test		Not entered					
K reserve status		Use default					
Supplements removed							
Supplement information							
Conservation type		Baleage					
Name							
Pasture type							
Supplement amount							
Dry weight basis		T		50			
Fed to animal: Sheep							
No feeding destinations found							
Fertiliser application							
Fertiliser products - April							
Category		Ravensdown super					
Product		Sulphur super 30					
Amount		175					
Irrigation							
No irrigation entered							
Irrigation concentrations							
N	P	K	S	Ca	Mg	Na	H
0	0	0	0	0	0	0	0
Effluent application							
Receives no liquid or solid effluents							

Report settings

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Dan Hodgen
D & W Hodgen
Client reference: Baseline
Farm name: Dan Hodgen - Dairy Grazing (2012/2013)

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Ballance Agri Nutrients
3.12.14

Parameters



Greenhouse gas emission report units: CO2 equivalents (kg/ha)
Target N application rate as effluent: kg N/ha/yr

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FARM PORTAL NUTRIENT LOSS REPORT

Dan Hodgen Farm 599 for period 2014-2015

Prepared 21/07/2016 5:26:31 p.m.

Portal Version: 1.0.5886.28510



Farm Portal
farmportal.ecan.govt.nz

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You can find out more about Industry agreed good management practices relating to water quality at <http://ecan.govt.nz/GET-INVOLVED/MGMPROJECT/Pages/matrix-good-management.aspx>

All users important notice

This document was generated from a test version of the Farm Portal. The proposed planning rules that determine if your farm will likely require a consent or your farm would likely be a permitted activity **do not** apply at the time of production of this document. These proposed rules will most likely become operative sometime in **2017**.

Farm Description

This section outlines a description of the farm based on the land parcels that have been identified.

Farm Name:	Dan Hodgen Farm 599
Farm Location:	Not specified
Size of farm	215.7 ha
Principal Water Supplier:	Not part of a scheme
Farm ID:	599

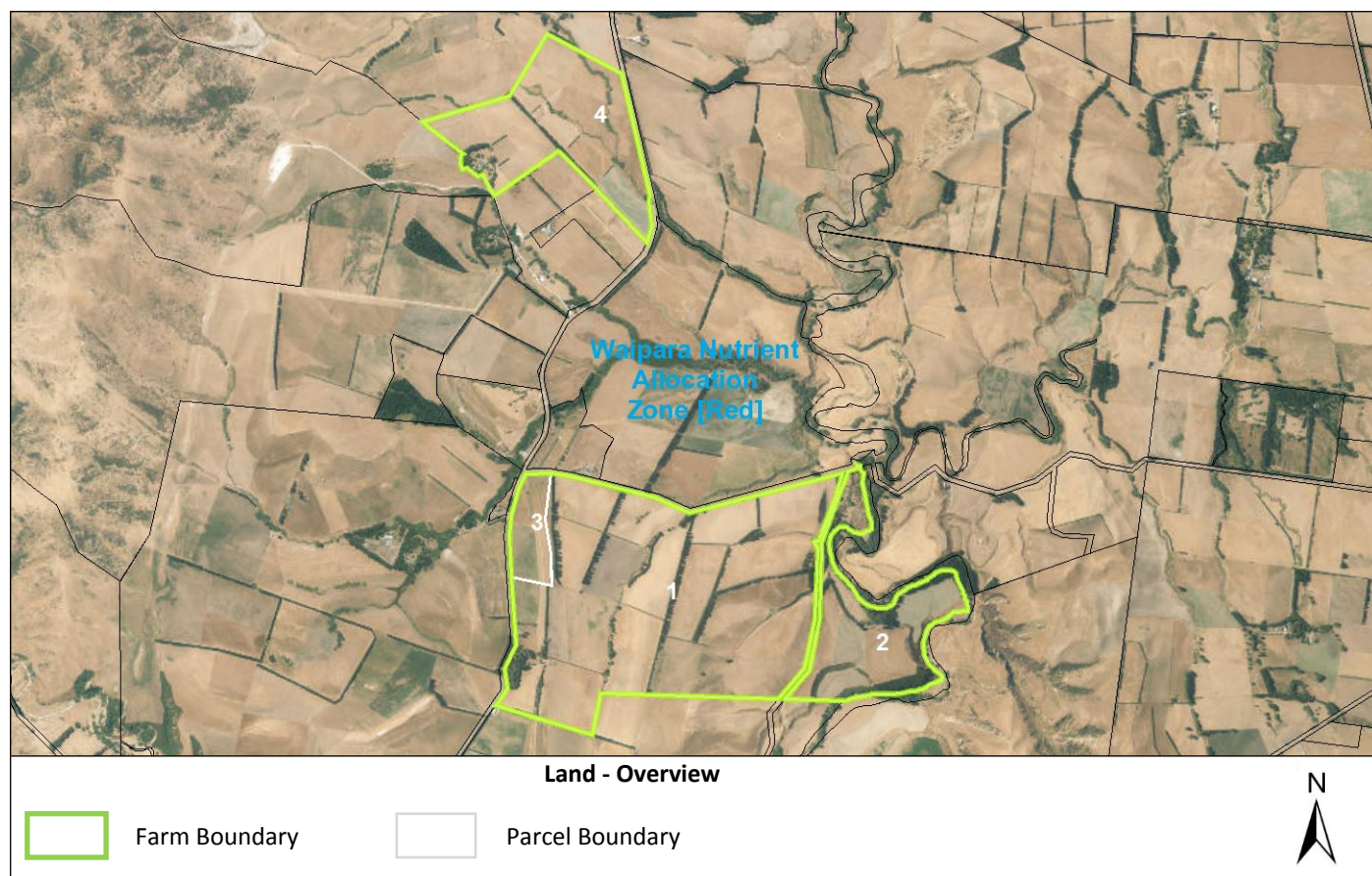


Table 1 Land Parcels

ID	Parcel Legal Description	Area (ha)
1	Lot 1 DP 29539	129.6
2	Lot 2 DP 29539	34.1

ID	Parcel Legal Description	Area (ha)
3	Lot 2 DP 21430	8.3
4	Lot 1 DP 42944	43.8

Sub Regions that this farm intersects:

Nutrient allocation zones this farm intersects:

- Does not intersect any Sub Regions
- Waipara [Red]

Farm Soil Details Summary

This section summarises known information about the soils that lie within the boundary of the farm as defined in this document. The information is sourced from Landcare Research Ltd.'s S-map soils database (<http://smap.landcareresearch.co.nz/>).



Table 2 Farm Soils

ID	Data Source	Slope		Topography	S-map Soil Polygon ID	Area (ha)
1	LRI	B		Flat	CanterburyLRI*14b	0.0
	S-map Name	Proportion	MGM Nitrate Loss Category	Relative Bypass Flow	PAW (60cm)	PAW (1m)
	Culv_2a.1	100%	VL	Medium	64.2	69.3

ID	Data Source	Slope		Topography	S-map Soil Polygon ID	Area (ha)
2	LRI	C		Rolling	CanterburyLRI*15e	23.8
	S-map Name	Proportion	MGM Nitrate Loss Category	Relative Bypass Flow	PAW (60cm)	PAW (1m)
	Waip_1a.1	100%	F2	Medium	94.9	100.8

ID	Data Source	Slope		Topography		S-map Soil Polygon ID	Area (ha)
3	LRI	D		Easy hill		CanterburyLRI*16a	103.8
	S-map Name	Proportion	MGM Nitrate Loss Category	Relative Bypass Flow	PAW (60cm)	PAW (1m)	
	Darn_10a.1	100%	S3	Medium	59	64	

ID	Data Source	Slope		Topography	S-map Soil Polygon ID	Area (ha)
4	LRI	C		Rolling	CanterburyLRI*71d	1.2
	S-map Name	Proportion	MGM Nitrate Loss Category	Relative Bypass Flow	PAW (60cm)	PAW (1m)
	Tuap_11a.1	100%	L	High	70.7	106.9

ID	Data Source	Slope		Topography	S-map Soil Polygon ID	Area (ha)
5	S-map	S		Steep	DryGW\DryGW-L-S	0.6
	S-map Name	Proportion	MGM Nitrate Loss Category	Relative Bypass Flow	PAW (60cm)	PAW (1m)
	Glenr_5b.1	60%	S2	Medium	61.9	92.5
	Omrk_8a.1	20%	S3	Low	29.7	29.7

	Glenr_5a.2	20%	S3	Medium	61.9	78
--	----------------------------	-----	----	--------	------	----

ID	Data Source	Slope		Topography	S-map Soil Polygon ID	Area (ha)
6	S-map	S		Steep	DryGW\DryGW-L-W/N/E	3.2
	S-map Name	Proportion	MGM Nitrate Loss Category	Relative Bypass Flow	PAW (60cm)	PAW (1m)
	Omrk_8a.1	65%	S3	Low	29.7	29.7
	Glenr_5a.2	35%	S3	Medium	61.9	78

ID	Data Source	Slope		Topography	S-map Soil Polygon ID	Area (ha)
7	LRI	A		Flat	PandD\n026	47.5
	S-map Name	Proportion	MGM Nitrate Loss Category	Relative Bypass Flow	PAW (60cm)	PAW (1m)
	Darn_1a.1	50%	L	High	79.8	89.8
	Darn_7a.1	30%	VL	High	53.6	57.7
	Paha_31a.1	20%	L	High	79.3	106

ID	Data Source	Slope		Topography	S-map Soil Polygon ID	Area (ha)
8	LRI	A		Flat	PandD\n044	35.6
	S-map Name	Proportion	MGM Nitrate Loss Category	Relative Bypass Flow	PAW (60cm)	PAW (1m)
	Eyre_3a.1	40%	L	Low	70.5	80.3
	Eyre_1a.1	30%	M	Low	113	122.6
	Rang_32a.2	20%	VL	Medium	51.6	59
	Rang_18b.1	10%	XL	Medium	30.5	32.4

Landcare Research has compiled the maps and factsheets available on the S-map site from information derived from numerous sources. The information may not be complete, correct or up to date. Landcare Research Ltd. do not accept responsibility for any actions taken in reliance on it or consequences arising from the use of it.

Farm Climate Details Summary

This section summarises climate information used in calculating the nutrient losses for farm as defined in this document. For calculation purposes areas with similar climate characteristics have been grouped together to form 11 clusters. Representative values for Mean Annual Temperature (in degrees Celsius), Mean Annual Total Rainfall (in mm) and Average Annual Potential Evapotranspiration (in mm) have been assigned to each cluster. The following table outlines the climate details for the farm. If the farm overlaps more than one of the climate cluster groups, the details for each group (and the relative amount of the total farm area) are displayed.

Table 3 Farm Climate

Cluster ID	Mean Annual Temperature	Mean Annual Total Rainfall	Average Annual Potential Evapotranspiration	Rainfall Range Seasonality Pattern	Seasonal PET Variation	Area (ha)
7	10 °C	755 mm	740 mm	731-1450 mm, Low	Use default	215.6
6	11 °C	651 mm	798 mm	< 730 mm, Low	Use default	0.1

Authorisation Type: May Be Permitted Activity

This farming enterprise may be classified as a **Permitted Activity** based on the information provided and/or because of the planning rules related to the location of the farm and its boundary.

Activities specified as permitted activities within the rules of regional plans can occur 'as of right' without the need to obtain a resource consent, provided they comply with the conditions stated in the rule. A permitted activity can be carried out without the need for a resource consent so long as it complies with any requirements, conditions and permissions specified in the Resource Management Act, in any regulations, and in any applicable plans or proposed plans.

Calculated Nutrient Losses for Good Management Practices

This section summarises the typical nutrient loss values expected for this farming enterprise based on the information provided about the activities undertaken on the farm. A summary of the information provided about the farming activities is available in the next section of this document.

Permitted Activity Details Summary

This section summarises the details of the farming enterprise in relation to being a permitted activity under the rules of the proposed Canterbury Land and Water Regional Plan (pLWRP).

Other Livestock

The following outlines the specific information provided about non-dairying livestock activities undertaken on this farm.

Annual Average Number of Sheep:	1,800
Area of land used specifically for non-dairying livestock:	200.0 ha
Some or all of the livestock area is irrigated:	No

Resource Consented Activities (areas)

This section outlines a description of the active consented activities that intersect the farm. **Note:** The conditions associated with some resource consents grant the consent holder the ability to undertake that activity over a large area that may encompass the farm. These global consents may be included in this summary even though they do not relate specifically to the farming enterprise. Please take this into consideration when reviewing these details. Where possible, global consents have been filtered from the result set.

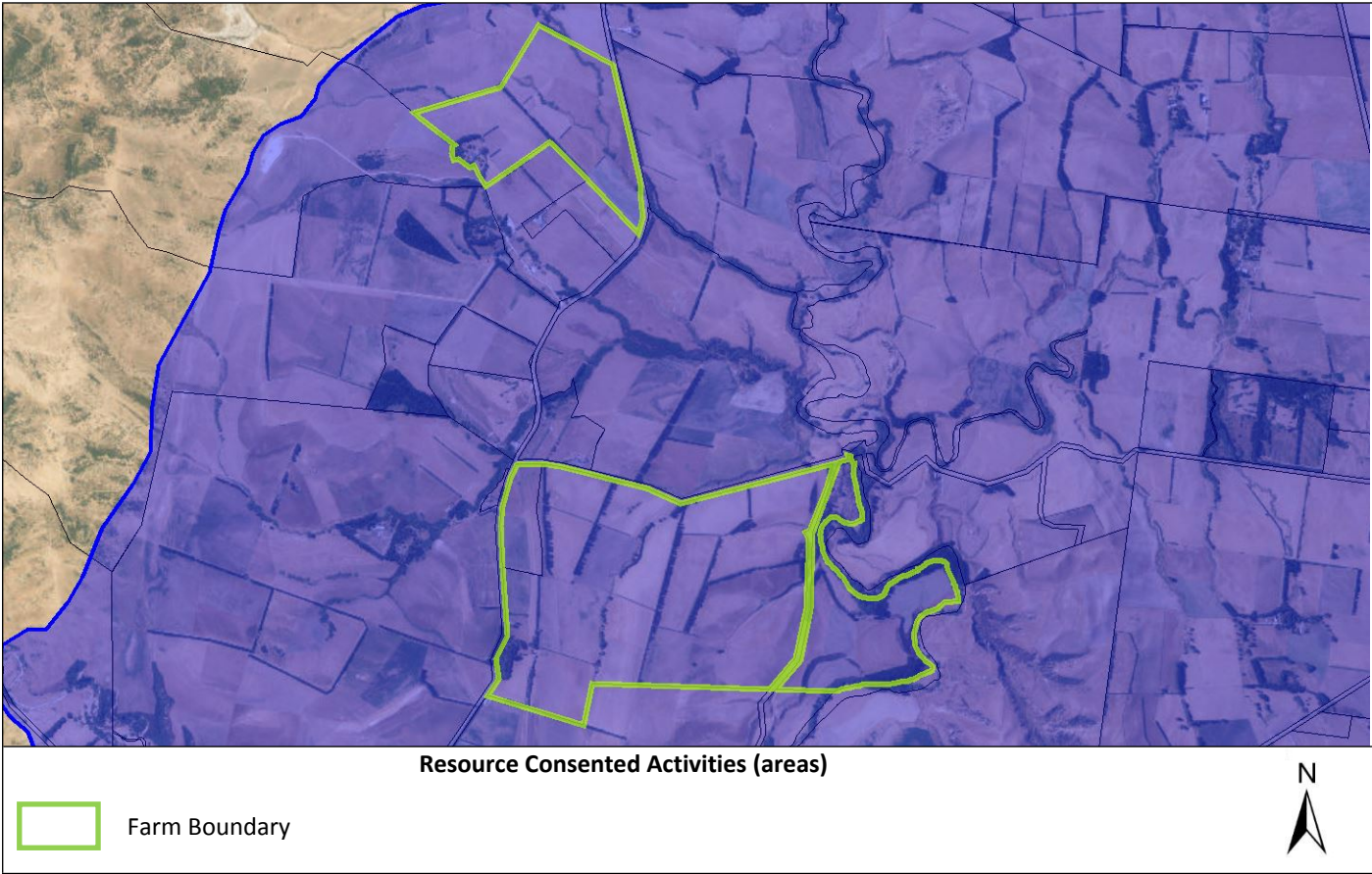


Table 4 Resource Consented Activities (areas)

Consent No	Consent Type	Activity	Activity Type	Consent Holder	Status	Expires
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CRC120675	Water Permit	Use Surface Water	Water Take/Use	Hurunui Water Project Limited	Issued - Inactive	10 Aug 2050
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Wells & Bores

This section outlines a description of any wells or bores that lie within the boundary of the farm.



Table 5 Wells & Bores

Well No	Type	Status	Consent No	Use(s)	Has Water Meter
M33/0132	Bore or Well	Not Used			No

You can find out more details about the specified wells on the Environment Canterbury web site by going to <http://ecan.govt.nz/services/online-services/tools-calculators/pages/well-card.aspx> and entering the well id number into the search box.