Environment plan for Omarama Station

Farm name:	Omarama Station	Address:	59 Omarama Lindis Pass Rd, Omarama
Farm identifier:	OMA006	Farm size:	12027ha
Legal description:	Omarama Station	Farm enterprises:	Merino sheep, cattle, tourism, hydro
Annual crops:	Turnips, Rye-corn	Permanent crops:	Lucerne

Owner:	Richard and Annabelle Subtil
Phone:	[redacted]
Mobile:	[redacted]
Email:	[redacted]

Manager:	John Mathias
Phone:	[redacted]
Mobile:	[redacted]
Email:	[redacted]

Primary person:	Richard Subtil
Phone:	
Mobile:	
Email:	

Resource consents
CRC010693-1 Take Surface Water CRC010694 To Water - contam or water CRC011354.2 Divert surface water, take surface water CRC010727.2 Disturb or excavate bed, structure CRC102412 To water - contam or water CRC110202 To land - human effluent CRC 122382 To water - contam or water

Existing farm management policy
7500 ewes, 315 cows, 11,000 hoggets, 300 calves. Fattening all calves, sold by 18-22 months. Lambs all sold prime, except replacements, buy-in 3,000 lambs. Minimal (30ha) winter crop, small area of turnips each year. Rye-corn (200ha) also used in winter, lucerne area increasing. Minimal fertiliser inputs. Nitrogen used tactically. Super phosphate used on extensive country and developed flats bi-annually, RPR used on irrigation. 560ha under centre-pivot irrigation, 99% water efficient as demonstrated under lysimeter.

Weed species that require management on-farm	Pest species that require management on-farm
Wilding pines, barley grass, thistles, horehound, gorse, broom	Rabbits, pigs, possums, feral cats, deer, geese, small predators

Risk assessment

Soil types	
Recent/YGE/BGE	33
Sedimentary	66

General details	
How would you describe the natural drainage of soils on your property?	Moderately drained
Describe the artificial drainage on your property	Minimal artificial drainage
What is your/your family objective/s for this farm business?	Quality not quantity - Increase productivity from current stock as opposed to increasing stock numbers. Leave the land in better heart for the next generation Focusing on 'Is what you're doing today going to be sustainable in 100 years time?'
What is the approximate length of permanently flowing waterways (rivers, streams/ creeks, drains) on your property?	22000m
What percentage of waterways could have livestock permanently excluded?	80%
What percentage of waterways have you permanently excluded livestock from to date?	50%
How much did you spend last year on environmental works?	$10000
Do cattle or deer make up 20% or more of total stock numbers?	No
Is your farm located in a high rainfall area (>1500 mm/yr)?	No

Phosphorus risk	
Do current Olsen-P levels exceed optimum levels on any part of the farm?	Yes
Do you practice conventional cultivation or intense strip grazing?	Yes
Is more than half of the farm rolling, hilly or steep?	Yes
Are dominant soils hydrophobic?	No
You have High risk of phosphorus loss	

Erosion risk	
Visual evidence of erosion on farm	Is hard to find
The area of erosion is:	Only a very small area of the farm is affected
In the event of major erosion:	Highly unlikely to have a major erosion event even in the worst of storms.
You have a No risk of erosion	

Nitrogen risk	
Is your farm's stocking rate higher than 18 SU/ha?	No
Are N-fertilisers used in a risky way?	No
Are supplements used?	Yes
Do you use or are you planning to use irrigation on your farm?	Yes
Is cropping a significant enterprise (e.g. a mixed cropping farm)?	No
You have High risk of nitrogen loss	

Faecal bacteria risk	
Do cattle or deer have direct access to waterways, streams, or drains?	Yes
Does runoff from tracks and yards go directly into waterways?	No
You have Elevated risk of faecal bacteria	

Waste management	
Are offal or rubbish pits located where there is a risk of contamination to surface or groundwater?	No
Is there any risk of loss of leachate from silage pits?	No
Is there any risk of runoff from silage pits?	No
Are empty chemical containers or unwanted chemicals recycled?	Yes
Is silage wrap recycled?	No
You have an Elevated risk of contamination from your offal or rubbish pits	

Effluent management

Biodiversity management	
Do stock have access to native bush blocks on your farm?	Yes
Do stock have access to streams and wetlands on your farm?	Yes
Do you have a regular pest animal control programme in place for possums, rats, mustelids, pigs and goats?	Yes
Do you undertake weed control on your property (in both pastoral and natural areas ?)	Yes
Do you routinely drain wet areas?	No
Do you have hung/perched culverts (where the outlet is elevated above the downstream water surface)?	No
There are things you can improve on	

Land management units

Pivot irrigation area	**508.362ha**
Description	River flats with centre pivot irrigation (8 pivots, 1 leased)
Strengths	Free draining, good moisture holding capacity due to river silts, productive, good fertility over-time, topsoil improving, efficient water-use
Limitations	High evapotranspiration during summer, no growth over winter due to climate
Uses	Grass-based system, conservation crops of baleage and silage, turnips, rye-corn, lambs post-weaning, hoggets over winter, cows for clean-up, fattening cattle
Conditions of use	Direct-drill, soil moisture monitors used to determine application rates, lysimeter used to monitor efficiency of irrigation and soil moisture in the root zone, minimal use over winter months.
Olsen P level	15 mg/L- 46 mg/L
N loss to water	18 kg/ha
P loss to water	0.1 kg/ha

K-line irrigation	**24.025ha**
Description	Holding paddocks close to woolshed
Strengths	Proximity to woolshed, high quality feed produced, free-draining, good topsoil.
Limitations	Shifting pods
Uses	Quality grazing during intensive farming operations (e.g. shearing, scanning, weaning etc)
Conditions of use	Water supplied from Old Omarama Town water supply and should they require it back it can be taken. This will be changed in near future hopefully.
Olsen P level	15 mg/L- 19 mg/L
N loss to water	2 kg/ha
P loss to water	0 kg/ha

The Islands	**2,016.732ha**
Description	Extensive River Flats alongside Ahuriri River
Strengths	Great cattle country, free draining
Limitations	Free draining, movement of river, cattle access to river
Uses	Cattle and sheep grazing - over the year, average of 1 SU/ha (315 cattle for calving).
Conditions of use	River needs to be monitored and stock moved in high rainfall events, 250ha receives 100kg/ha superG30 fertiliser bi-annually.
Olsen P level	18 mg/L- 33 mg/L
N loss to water	5 kg/ha
P loss to water	0 kg/ha

High Country	**4,520.713ha**
Description	High Country - 440m to 1550m altitude
Strengths	Mixed aspect, winter-safe, well sub-divided, good access to water, good fan soils, healthy populations of vegetation, great lambing country
Limitations	Sunny faces dry out, invasive species such as briar, introduced feral pigs increasingly prevalent.
Uses	Merino grazing, lambing blocks, cattle for pasture control
Conditions of use	Not over-grazing (helped by developing lower fans), walking access easement along boundary, in conservation covenant (un-fenced) in Cattle Gully Creek paddock, no spraying and no fertiliser (see features).
Olsen P level	15 mg/L- 37 mg/L
N loss to water	4 kg/ha
P loss to water	0.1 kg/ha

Dryland development	**606.695ha**
Description	Flats and fans with better soils
Strengths	Good soils, contour, free draining, croppable (relative absence of rocks!)
Limitations	Rocks in some paddocks
Uses	Rye corn (2 yrs), then into lucerne, lactating ewes and fattening lambs.
Conditions of use	Lucerne doesn't grow May to October so no grazing during this time.
Olsen P level	21 mg/L- 46 mg/L
N loss to water	7 kg/ha
P loss to water	0 kg/ha

Improved flats	**76.076ha**
Description	Marginal river flats
Strengths	Cultivatable, can be improved
Limitations	Aluminium pan, drought prone
Uses	Rye corn, sheep grazing
Conditions of use	No lucerne due to pan
Olsen P level	12 mg/L- 20 mg/L
N loss to water	10 kg/ha
P loss to water	0 kg/ha

Covenants	**3,802.707ha**
Description	High Country QEII and DoC covenants
Strengths	Environmental asset with managed grazing
Limitations	Pest control (particularly pigs), wilding pines
Uses	Managed summer-grazing with sheep, easement for public access 12 months of the year.
Conditions of use	No cattle, no spraying, burning or fertiliser, public access - no dogs, no guns, no vehicles.
Olsen P level	
N loss to water	2 kg/ha
P loss to water	0.1 kg/ha

Unimproved flats	**146.461ha**
Description	Marginal River flats
Strengths	Good shelter
Limitations	Doesn't grow much
Uses	Lambing block
Conditions of use	Low stocking rate due to limited available feed
Olsen P level	18 mg/L- 25 mg/L
N loss to water	6 kg/ha
P loss to water	0 kg/ha

Environmental Reserves	**92.114ha**
Description	Omarama Stream Scientific Reserve including springs, Omarama Stream fenced area, Vege Garden Pond, Galaxis Reserve
Strengths	Environmental Assets, biodiversity, a lot of rare native fish species present, ancient water mosses in Galaxis Reserve
Limitations	
Uses	Protection of threatened and endangered native fish species and eels, and flora, scientific research, iwi access.
Conditions of use	Some grazing allowed for weed and vegetation control.
Olsen P level	
N loss to water	2 kg/ha
P loss to water	0.1 kg/ha

Objectives

General management		
NEED TO DO	Stock exclusion plan underway or in place	Due on 30 Jun 2018
DOING	Staff and contractors are familiar with my environmental plan and operate accordingly	Repeats yearly every 1 year
DOING	Strategic tree planting to protect key infrastructure (fences, tracks, buildings, public roads).	Due on 30 Jun 2018
DONE	Annual assessment made of appropriateness of stock classes for land type across farm	Due on 30 Jun 2018

Nutrient management		
NEED TO DO	Use slow release P-fertiliser (e.g. RPR) where appropriate.	Repeats yearly every 1 year
DOING	Maintain Olsen-P at optimum levels.	Repeats yearly every 1 year
DOING	Overseer nutrient budget conducted with a qualified professional and I understand how this can be used in my farming system	Repeats yearly every 1 year
DOING	Avoid super-phosphate application when heavy rainfall is forecast (June through Sept).	Due on 30 Jun 2017
DOING	Lysimeters in place under irrigation, show 98-100% water efficiency under pivot, suggesting no N loss through profile.	Due between 10 Dec 2016 and 09 Aug 2017
DOING	Reducing weight of stock on at-risk country (e.g. replacing cattle with sheep or moving to a younger stock class of cattle).	Repeats yearly every 1 year
DOING	Avoid winter applications of nitrogen-based fertilisers	Repeats yearly every 1 year
DOING	Avoid applications when heavy rain is forecast.	Repeats yearly every 1 year
DOING	Avoid excessive N-fertiliser rates (>50 kg N/ application or >150 kg N /ha/yr).	Repeats yearly every 1 year
DOING	Ensure other nutrients are non-limiting (maximise N-uptake opportunity).	Repeats yearly every 1 year
DONE	Overseer nutrient budget conducted with a qualified professional and I understand how this can be used in my farming system	Completed on or before 07 May 2018

Livestock management		
DONE	Provide alternative sources of stock water in each paddock (e.g. reticulated water in troughs).	Completed on or before 28 May 2018
DONE	Exclude stock from at-risk streams with fences or other methods	Completed on or before 28 May 2018
DONE	Consider installing culverts or bridges at stock crossings.	Completed on or before 28 May 2018

Wetlands and riparian		
NEED TO DO	Fence streams to prevent stock access, leaving a good (e.g. 3-5m) riparian strip (buffer) either side.	Completed on or before 03 Feb 2018
NEED TO DO	Consider planting natives (e.g. cabbage trees and flax are easy to establish) in the riparian strips to shade the water and provide in-stream habitat for fish, as well as food sources for native birds.	Due on 30 Jun 2020
DOING	Avoid direct P-fertiliser application to open water or water channels	Due on 30 Jun 2018
DONE	Consider strategic vegetated-buffer areas where runoff converges	Completed on or before 28 May 2018
DONE	Consider riparian buffer strips around waterways.	Completed on or before 28 May 2018

Soil management		
NEED TO DO	Wet soils are well-managed to avoid damage and winter cropping plan established to minimise run-off to waterways	Repeats yearly every 1 year
DOING	Consider direct drill or minimum tillage and timing of cultivation to avoid wind erosion at high risk times of the year.	Repeats yearly every 1 year
DOING	Identify critical source areas where sediment collects before leaving the paddock as runoff. Strategically graze towards these areas, rather than starting at them and working away (most commonly at the bottom of hills above waterways) to use remaining crop/pasture as a filter.	Repeats yearly every 1 year
DOING	Avoid over-grazing pastures prone to drying out.	Repeats yearly every 1 year
DONE	Retirement from grazing of the worst affected areas, particularly those with marginal production value. 2 QEII protected areas with 6 weeks of grazing under a management plan, only used if needed.	Completed on or before 25 May 2018
DONE	Design or locate tracks, fences, etc. in a way that minimises the risk of erosion damage.	Completed on or before 25 May 2018
DONE	Avoid strip grazing and cultivation of steeper slopes.	Completed on or before 25 May 2018
DONE	Ensure runoff from areas of high animal concentration (e.g. yards, frequently used tracks and stock camps) is discharged onto land rather than into waterways.	Completed on or before 25 May 2018

Offal pits, Silage pits and Waste Disposal		
DOING	Locate new offal pits or rubbish pits where there is no risk of leaching to groundwater or surface runoff to waterways.	Due on 30 Jun 2020
DOING	Offal pits covered and or fenced think of child safety and vermin	Completed on or before 25 Nov 2017
DOING	Recycling of waste through local scheme or AgRecovery	Repeats yearly every 1 year

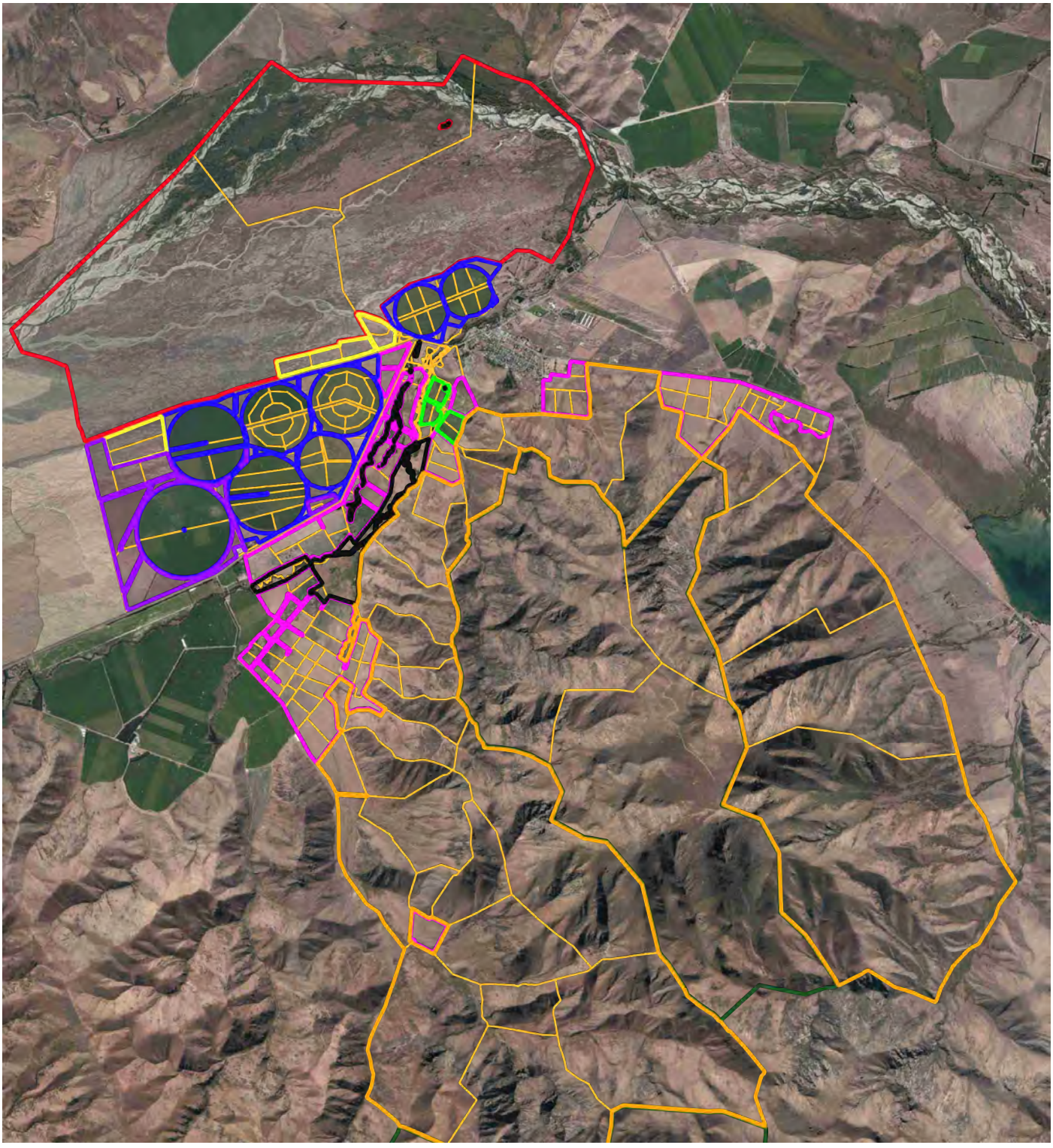
Biodiversity		
DOING	Undertake actions to protect Mahinga Kai	Repeats yearly every 1 year
DOING	Have a regular pest animal control programme in place to ensure healthy trees and flourishing bird life. If time is short, target your efforts to key times - such as baiting/trapping in winter when pests are more likely to be hungry and therefore ingest the bait, and in early spring just prior to when birds will be nesting.	Repeats yearly every 1 year
DOING	Install protection around newly installed culverts (to prevent scouring beneath the culvert outfall which will lead to hung culverts), or for existing culverts retrofit rock riprap in the outfall area as a 'ramp' from the streambed to the culvert lip.	Repeats yearly every 1 year
DOING	Undertake targeted weed control (both of existing bush blocks and wetlands and in the first few years post retirement/fencing) to ensure that native regeneration and plantings get off to a good start.	Repeats yearly every 1 year
DONE	Protect you biodiversity for the future-consider setting up a covenant on areas which should include financial support to do so. This could be done as a Nga Whenua Rahui, QEII covenant, local council covenant or others..	Completed on or before 25 May 2018
DONE	Retire and fence permanently wet areas rather than draining them. Some grazing with sheep for weed control and pasture maintenance.	Completed on or before 25 May 2018

Irrigation management		
NEED TO DO	Regular reviews of irrigation system to ensure operating as per system requirements.	Due on 30 Jun 2018
DOING	Rainfall forecasts and soil temperature monitored and used in decision making	Repeats yearly every 1 year
DOING	Deficit irrigation used within soil moisture trigger points	Repeats yearly every 1 year
DOING	Daily checks for irrigation problems and problems fixed	Due on 30 Jun 2018
DOING	System closed down if runoff and/or ponding occurs	Due on 30 Jun 2018
DOING	Soil moisture assessed-detail method and frequency	Due on 30 Jun 2018
DOING	System meets flow meter, flow rate, volume and area irrigated requirements	Due on 30 Jun 2018
DONE	Commissioning tests show that system performs to desired specifications for: system capacity, application depth, intensity and uniformity and return interval.	Completed on or before 25 May 2008
DONE	All new irrigation infrastructure is installed in accordance with Installation Code of Practice for Piped Irrigation Systems (Irrigation NewZealand, January 2012)	Completed on or before 25 May 2018
DONE	Post installation checks of application rate and distribution uniformity undertaken	Completed on or before 25 May 2018
DONE	Independent evaluation of irrigation design undertaken before development	Completed on or before 25 May 2018
DONE	System designed with site specific knowledge of soil, climate and crop needs	Completed on or before 25 May 2018

Weed and Pest Management		
NEED TO DO	Continue to work with DOC, Regional and District Councils to remove the source of weeds and pests	Repeats yearly every 1 year
DOING	Regular night shooting over whole property for all pest species.	Repeats yearly every 1 year
DOING	Monitoring all weed populations and spraying, grubbing accordingly.	Repeats yearly every 1 year

Water-use efficiency		
NEED TO DO	Monitor pivot efficiency and review installation of VRI when required	Repeats yearly every 1 year
DOING	Regular maintenance of water systems including fixing leaks quickly, checking pressures to ensure pumps are working well, and checking and clearing blockages.	Repeats yearly every 1 year
DOING	Monitoring water use and use of this data in decision-making	Repeats yearly every 1 year
DONE	Installed lysimeters and moisture probes to monitor application rates	Completed on or before 25 May 2018
DONE	Improving efficiency of reticulation e.g. moving from open waterways to piped to reduce evapotranspiration and seepage. Upgraded from border dyke system to spray irrigation. All stock water piped	Completed on or before 25 May 2018

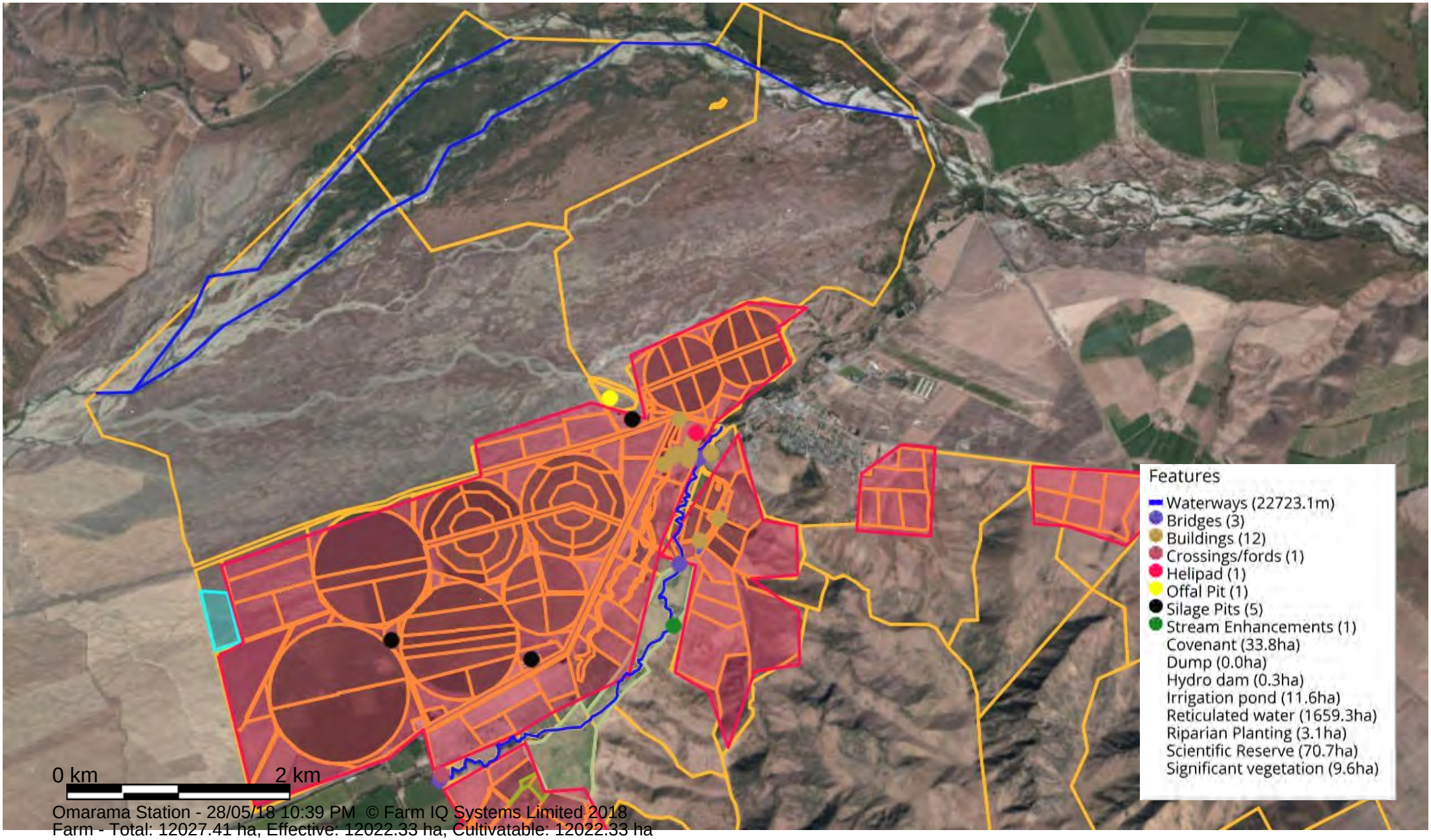
Land Management Units



Omarama Station - 28/05/18 10:39 PM

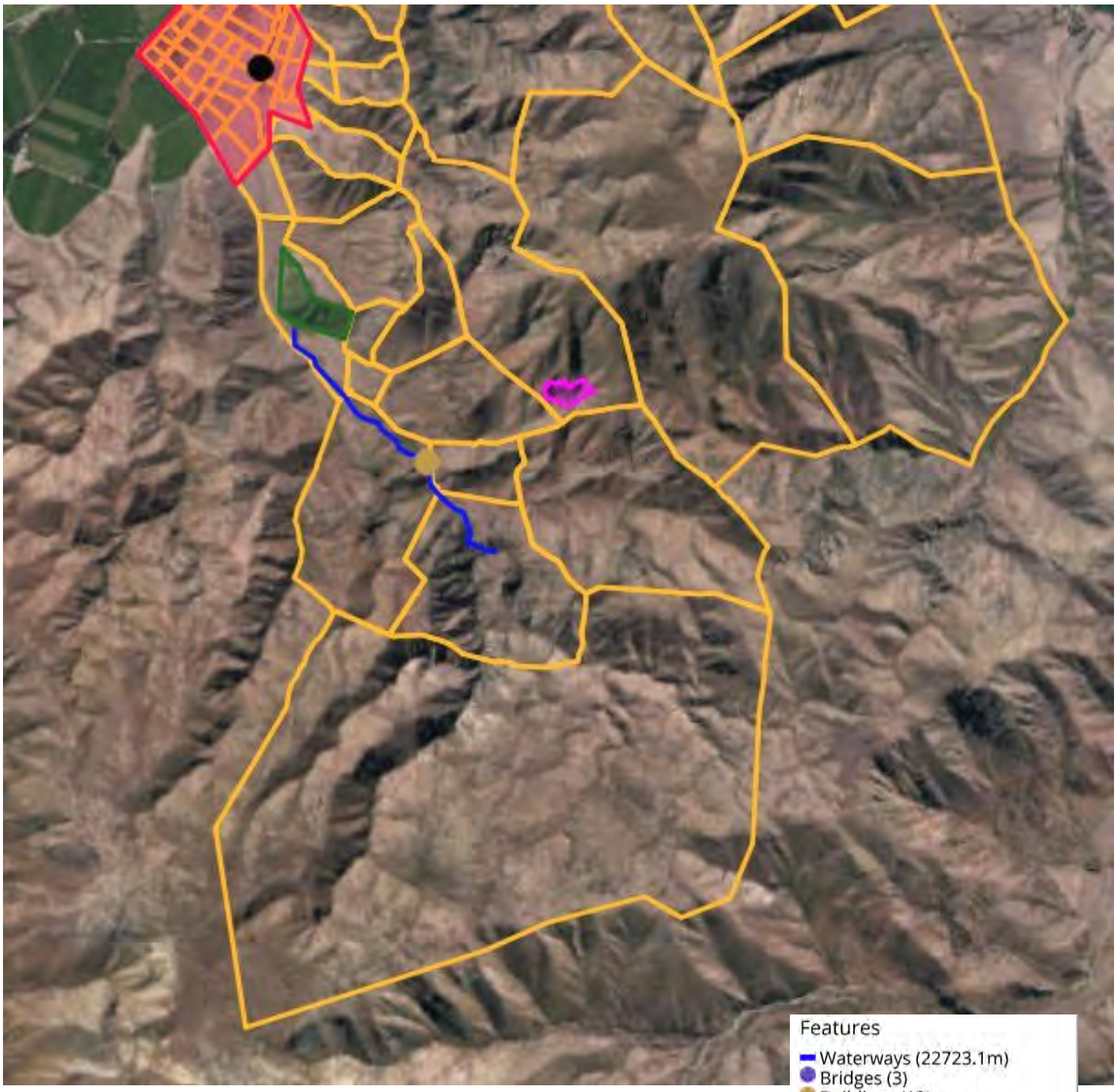
Farm - Total: 12027.41 ha, Effective: 12022.33 ha, Cultivatable: 12022.33 ha

Features Flats (1 of 2)



Omarama Station - 28/05/18 10:39 PM
Farm - Total: 12027.41 ha, Effective: 12022.33 ha, Cultivatable: 12022.33 ha

Features Hill (2 of 2)



0 km 2 km

Farm - Total: 12027.41 ha, Effective: 12022.33 ha, Cultivatable: 12022.33 ha