civil tech ltd

MANAGEMANT PLAN

SOUTH DAIRY LTD

373 O'SHANNESSY ROAD

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2. 373 O'SHANNESSY ROAD

SOUTH DAIRY LTD Contact: Mr D Alexander

Legal description of land owned by South Dairy Ltd:

Pt Sec 26, 46 & 47 and sec 49, 51,52 and 53 Blk I Winton HD and Sec 10 & 11 Blk II Winton HD

Consents Held:

204476	Discharge Permit + Appendix 1
204477	Water Permit

3. Attachments

Physiographic Zones Map
Aerial Photograph
Soil Type Map

There is a one recorded archeological site (E469) mapped on Plan 32 of the Southland District Council Proposed District Plan. This is 1200m west of the dairy platform boundary.

There is no indigenous vegetation on the property. There are no outstanding natural features or landscapes or visual amenity landscapes within the farm or on neigbouring farms.

4. Nutrient Budget

5. Good Management Practices

6. Riparian Management Plan

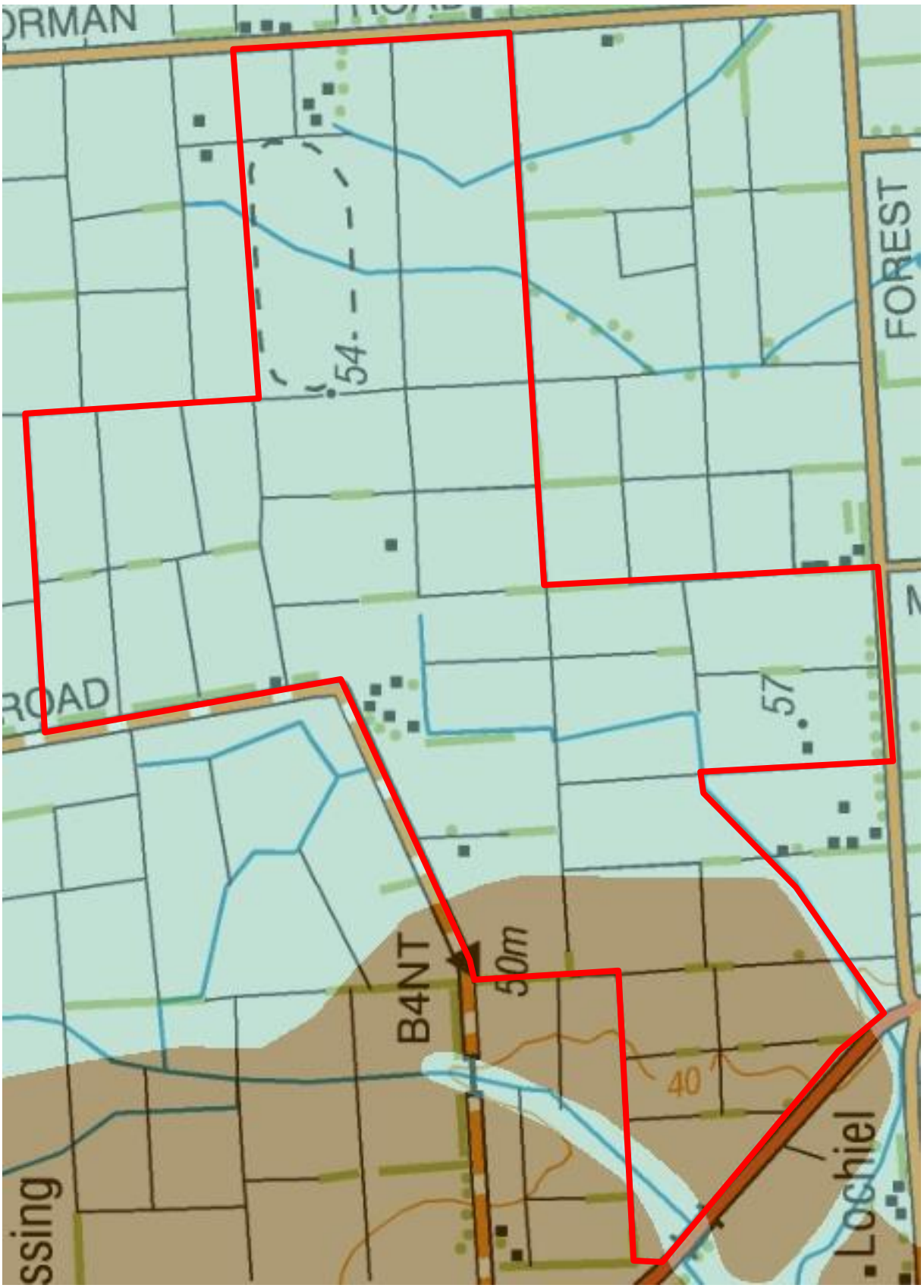
7. Cultivation

8. Intensive Winter Grazing

9. Collected Agricultural Effluent

Effluent Management Plan

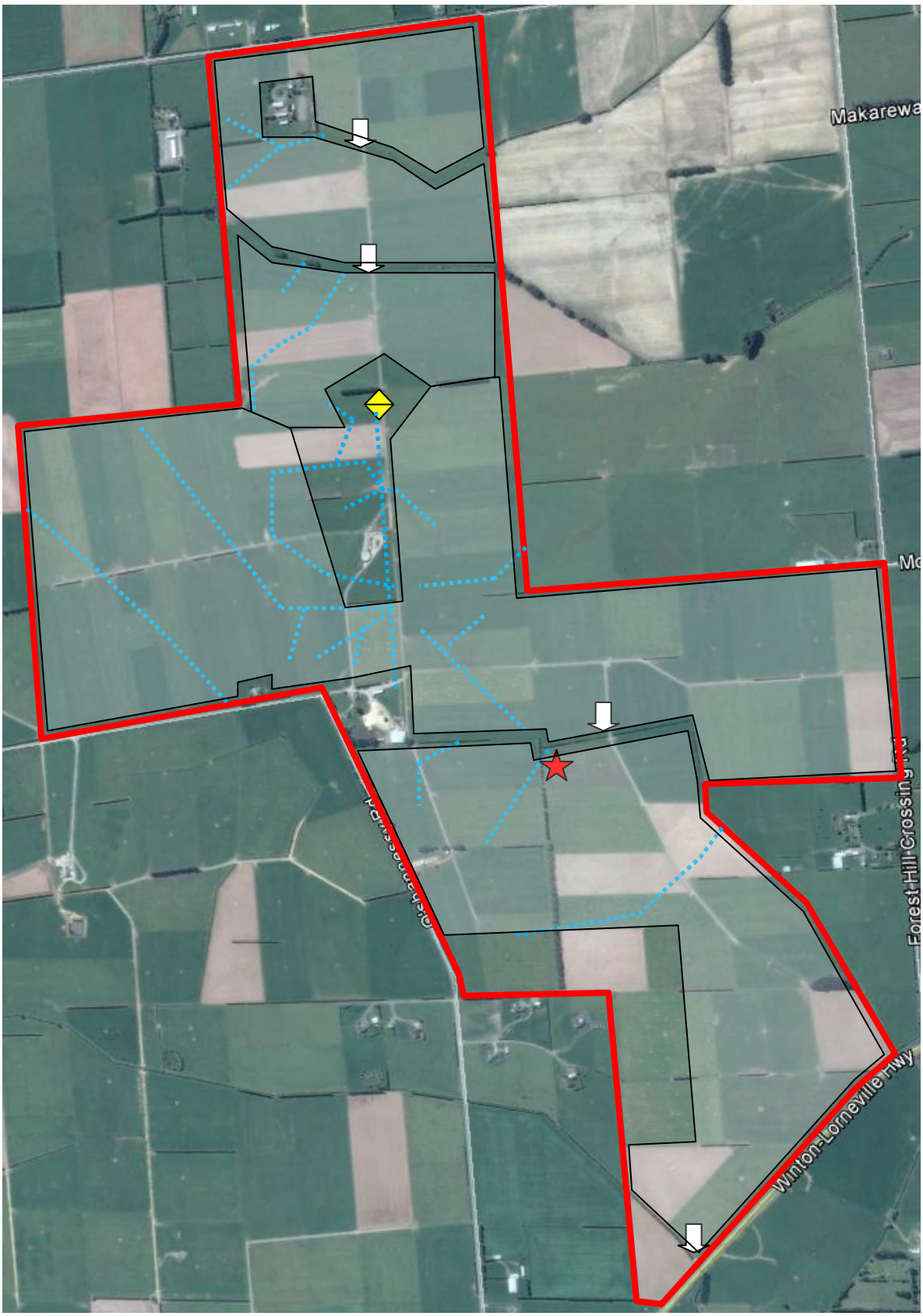
PHYSIOGRAPHIC MAP



Grey Brown

Gleyed Oxidising

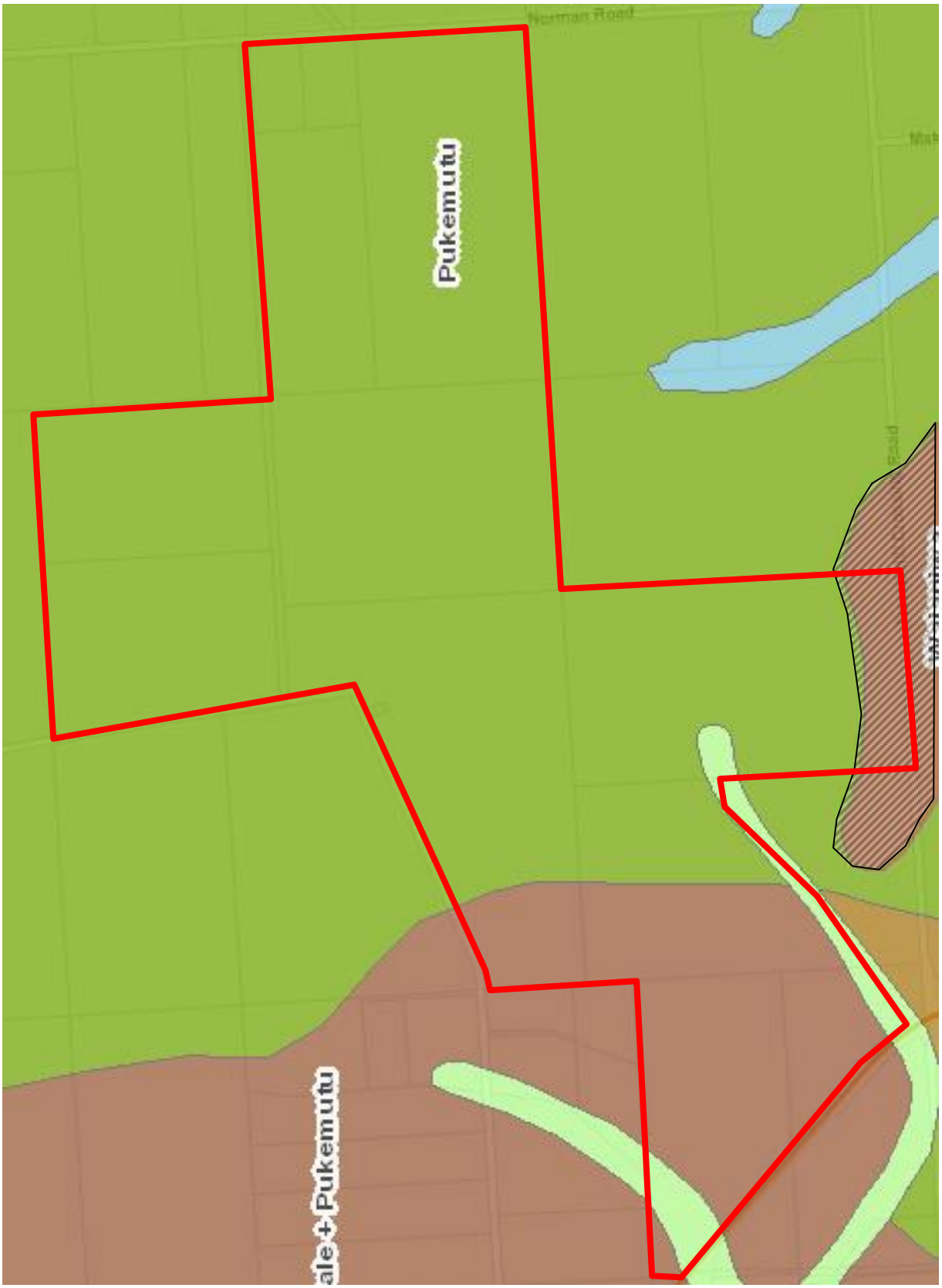
AERIAL MAP



Property boundary

Discharge area

SOIL MAP



Green	Pukemutu
Brown	Edendale
Brown hatched	Waianiwa
Light Green	Northope

4 NUTRIENT BUDGET

5 GOOD MANAGEMENT PRACTISES

Gleyed Physiographic Zone

Reducing the effects of artificial drainage by:

- Protecting soil structure, particularly in gullies and near stream areas.
- Reducing phosphorus use and loss.
- Reducing the accumulation of surplus nitrogen in the soil, particularly during autumn and winter.
- Avoiding preferential flow of effluent through drains.
- Capturing contaminants at drainage outflows.

Reducing the effects of overland flow:

- Protecting soil structure, particularly in gullies and near stream areas.
- Managing critical source areas.
- Reducing phosphorus use and loss.

The key transport pathways and contaminants for this physiographic zone is overland flow and artificial drainage

Oxidizing Physiographic Zone

Reducing the effects of artificial drainage by:

- Protecting soil structure, particularly in gullies and near stream areas.
- Reducing phosphorus use and loss.
- Reducing the accumulation of surplus nitrogen in the soil, particularly during autumn and winter.
- Avoiding preferential flow of effluent through drains.
- Capturing contaminants at drainage outflows.

Reducing the effects of overland flow:

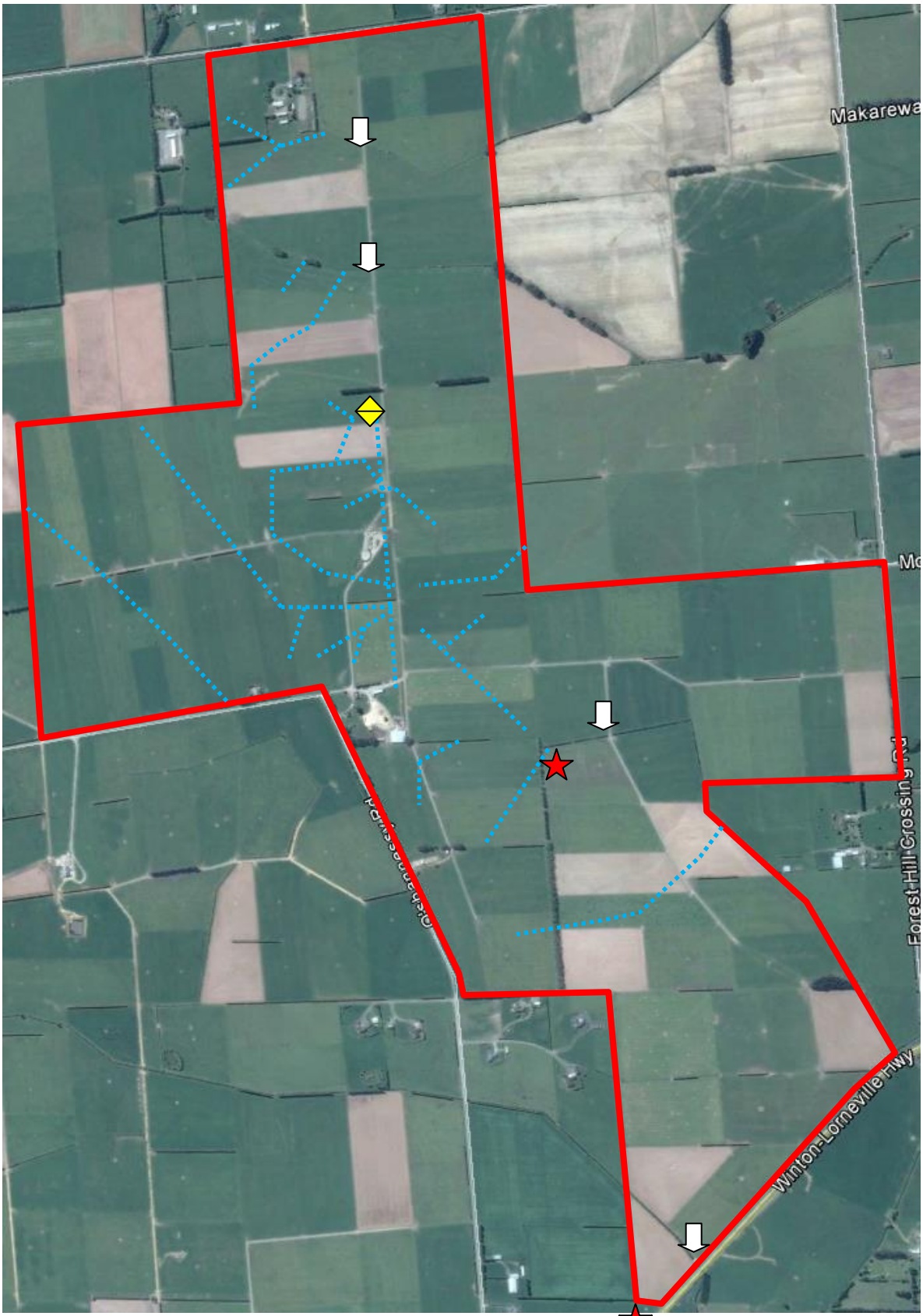
- Protecting soil structure, particularly in gullies and near stream areas.
- Managing critical source areas.
- Reducing phosphorus use and loss.

The key transport pathways and contaminants for this physiographic zone is overland flow and artificial drainage

The farm has 80% less than 7 degress and 20% greater than 7 degress. There will be significant artificial drainage on the farm. The farm has mostly 'high risk' soils so care with spreading depths is important. The farm has a Herd Home that will be used to keep stock off wet paddocks to protect soil structure.

Good Management Practices – 1 June 2016 to 31 May 2017

- Establish the new area into the dairy farm operating practices and effluent management systems.
- Identify tiles and mark the ends at entry to open drains.
- Identify additional critical source areas where storm water runs during heavy rain.
- Soil tests at least every second year and limited the use of fertilizer to bring the nutrient levels to optimum levels but not above agronomic optimum.
- The farm will check that the riparian strips are adequate.
- The Herd Home use will be monitored to mimimise pasture damage.

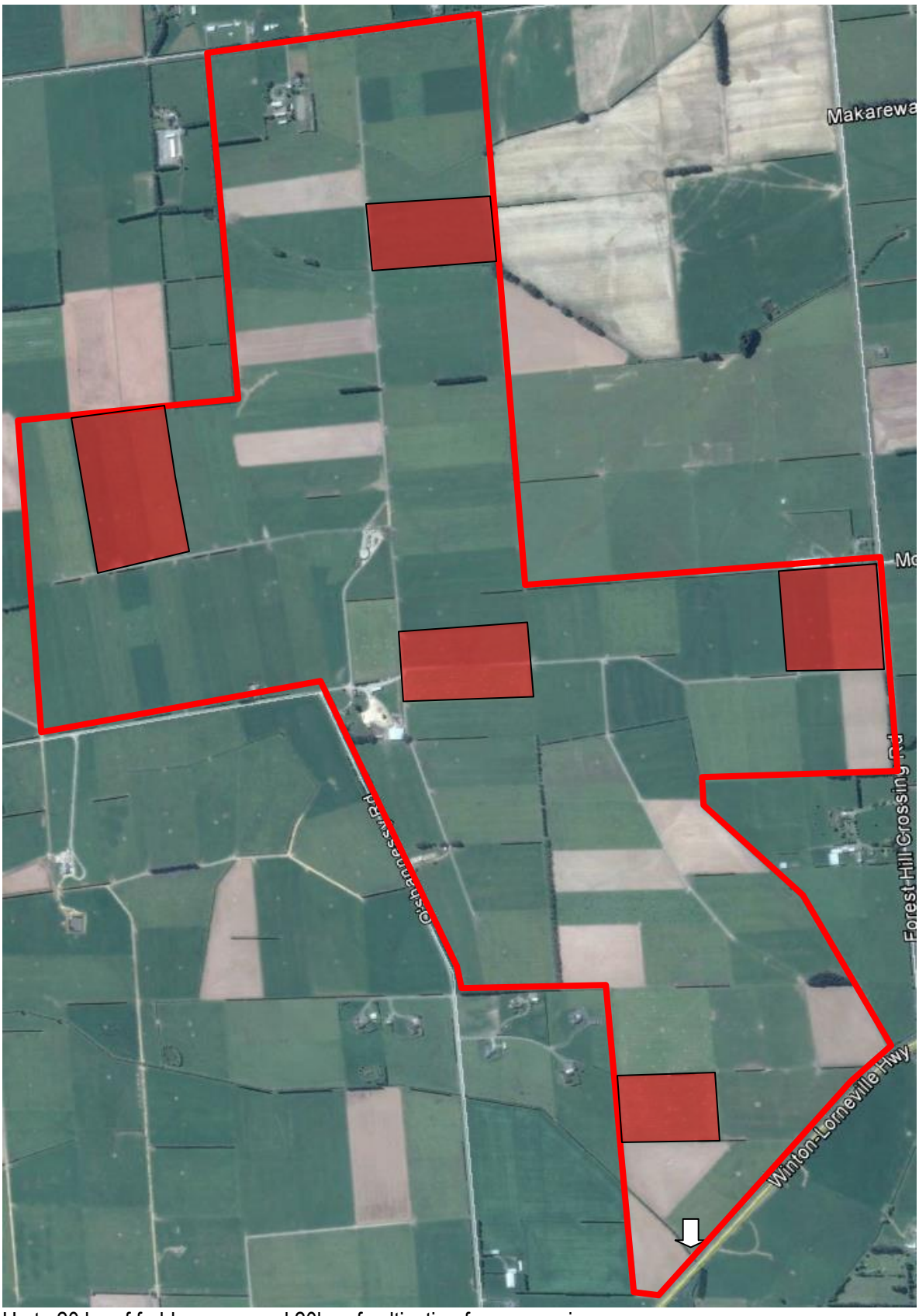

Makarewa
Forest Hill Crossing Rd
Winton-Lorneville Hwy
Property boundary
Discharge area
Open stream
Intermittent drain
Critical source area
Bridge or culvert
Bore
Tiles

- All open drains are fenced with two wire electric fences to exclude stock. All open drains have culverts for stock to cross.
- There are no sheep on the farm.
- Define the critical source areas and plan fencing of these.
- Riparian areas are well vegetated with pasture species and 50% planted. Noxious weeds will be controlled.
- There will be no grazing of riparian margins.
- The existing drains are no maintained by Environment Southland but can be accessed to clear if necessary

The plan for 1 June to 2016 to 31 May 2017

- Identify any tiles and outlets.
- Identify additional critical source areas where storm water runs in heavy rain.
- The farm will check that the riparian strips are adequate and that fences are the correct distance from waterways.
- Ensure all fences keep stock out of water.
- Fence known critical source areas temporarily initially to establish the optimum location for fences.

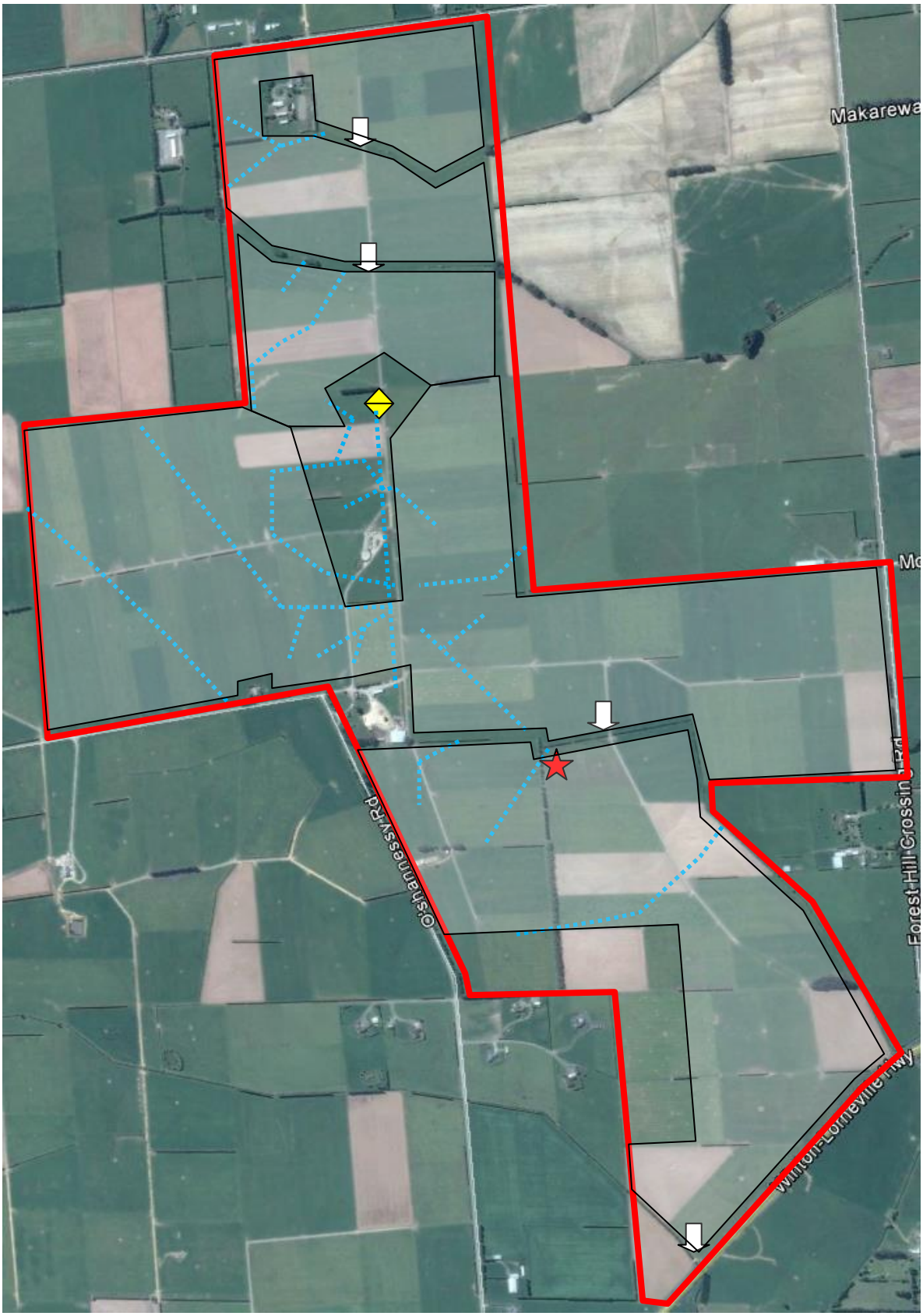
7 and 8 CULTIVATION and WINTER GRAZING



Up to 20 ha of fodder crops and 20ha of cultivation for re-grassing.

1 June 2017to 31 May 2018

9 COLLECTED AGRICULTURAL EFFLUENT



This map is to be marked up each time effluent is applied. For each effluent application record the date, depth and application rate.

Also refer to the Collect Agricultural Effluent Management Plan and Appendix 1 to confirm all separation distances to drains boundaries and bores.