TALLEY'S GROUP LIMITED

19 December 2024

109 WORKS ROAD

Plan Change Application
Infrastructure Servicing Report

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Infrastructure Servicing Report

Quality Control			
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Reviewed by	*Andrew Tisch*	Date Issued	*19 December 2024*
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e2environmental
CONSULTING CIVIL ENGINEERS

Executive Summary

Talley's Group Limited (Talley's) have engaged e2Environmental Ltd (e2) to prepare an infrastructure servicing report for a private plan change application at 109 Works Road - Lot 2 DP 413606.

The objective of this study is to establish appropriate infrastructure servicing options for a plan change application to develop the existing Talley's Fairfield Meat Works, from "Business Zone F" to "Business Zone E" under the Ashburton District Plan.

The site is currently serviced for water supply via on-site wells, for wastewater via a consented septic system and dispersal field, and for stormwater via soakpits from existing use rights.

A draft scheme plan was drafted based on an earlier draft version of this report. Lot yield estimation was based on total developable site area with an allocation for access roads and the provision of a range of development lot sizes from small (0.1 – 1 ha) to large (4 – 11 ha). A significant portion (~40%) of the plan change area is allocated to the Fairfield Freight Hub and a proposed Solar Farm, which will not require three waters servicing considered in this report.

Lot yields were then used to determine water supply and wastewater servicing requirements with commercial and industrial servicing requirements established using flows from Christchurch City Council infrastructure design standards. Ashburton District Council (ADC) have confirmed that water supply and wastewater can be serviced by connecting into the existing assets within the Ashburton Business Park, without any major impact on the existing network. The site does not fall within the extent of the ADC Global Stormwater Discharge Consent, so stormwater will be serviced via individual consents per lot, or by a global stormwater consent, similar to ADC's current global stormwater consent (CRC186263), which is the recommended option. Land owned by Talley's directly to the south of the site has been allocated as a designated SMA, with preliminary calculations estimating the required area is approximately one hectare.

Based on the outcomes of the onsite soakage testing, bearing capacity is likely to meet the definition of "good ground" in accordance with NZS3604. This outcome remains high level at this stage and is required to be confirmed by more detailed geotechnical investigations. Ground contamination related consents are not required under either the NESCS or CLWRP for the proposed plan change. Due to the close proximity of power and telecom infrastructure networks, servicing for this development is not expected to be an issue.

All servicing outcomes will be required to be confirmed with ADC, EA Networks and Chorus directly once more detailed information regarding the proposed commercial and industrial activities to be undertaken at this development are better understood.

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Project Personnel

Developer:

Talley's Group Limited	Sean Leonard Group Commercial Property and Development Manager

Principal Engineers:

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1 Introduction

Talley's Group Limited (Talley's) engaged e2Environmental Ltd (e2) to prepare an infrastructure servicing report to aid a plan change application for a commercial development on Lot 2 DP 413606.

This report covers servicing of:

- Water Supply
- Wastewater
- Stormwater
- Power
- Telecommunication
- Earthworks
- Roading

2 Background Information

Refer Appendix A – Background Information for further detail.

The site is located at 109 Works Road, Fairton, South Canterbury (Lot 2 DP 413606) as shown in Figure 1.

Figure 1 Development site location, 109 Works Road, Fairton, South Canterbury (Ref.: Canterbury Maps, 2024)

The entire 32.5 ha site is proposed to be part of the plan change area, with an assumption that only 19.4 ha requires three waters servicing. The remaining 13.1 ha is the existing Fairfield Freight Hub and proposed Solar Farm as shown in Figure 2. The outline development plan is shown in Appendix H.

Figure 2 Concept scheme plan

The site is currently the Talley's Fairfield Meat Works, zoned as Business Zone F under the Ashburton District Council's (ADC) Ashburton District Plan. The properties to the south are also owned by Talley's and are currently used for arable farming.

Further background summary:

- The site and surrounding land have a gentle fall of 0.60% - 0.65% from north to south.
- The site is currently serviced for water supply by six existing bores on site.
- There are multiple water races on site which are fed by the Winchmore Rakaia Stockwater Race network.
- There is an effluent pond on the site of the existing Talley's Fairfield meat works.
- Onsite observation[1] indicates groundwater on the development site is at 3.5 m below ground level (bgl).
- The site is in the ECan Land and Water Regional Plan (LWRP) Ashburton-Rakaia Zone which is a Nutrient Allocation "red zone"[2]. In this zone the NZ Drinking Water Standards for nitrate nitrogen are not being met.
- Across three test pits on site, silty and sandy gravel starts from 0.3 m – 0.7 m below ground level (bgl).
- The site has five active operational consents (discharge to air, discharge to land, septic tank effluent discharge to land, and groundwater take), and the neighbouring Fairton School site has one active consent (groundwater take).
- The ECan Listed Land User Register (LLUR) shows that the site has historically had or currently has hazardous activities and industries on it and is registered as a "HAIL – Hazardous Activities and Industries List."

[1] 01 September 2022, On-site soakage testing by e2

[2] Canterbury Maps Open Data, *LWRP – Nutrient Allocation Zones*

3 Proposed Development

This private plan change application seeks to change the existing zoning from “Business Zone F” to “Business Zone E”, under the ADC District Plan. This zoning will be similar to the Ashburton Business Park (ABP) on the west boundary of the site.

Lots in Business Zone E are limited to 75% maximum building coverage and require minimum 20% permeable area. The ADC District Plan does not specify minimum and maximum lot sizes for Business Zone E. However, lot sizes in the neighbouring ABP vary in size from 0.13 ha to 21.33 ha. ABP lot sizes have been characterised into three general size ranges according to their lot sizes.

Table 1 Ashburton Business Park lot sizes

Ashburton Business Park – General Lot Sizes	Lot Size Range (Ha)
Small	0.1 - 1
Medium	1 - 4
Large	4 - 11

The Applicant proposes a similar mix across this site, yielding 28 lots as summarised in Table 2.

Table 2 Proposed Development Lot Distribution

Development Area	Total Development Area (Ha)	Area for Access Roads (Ha)	Development Area (Ha)	High level lot distribution	
Plan Change Area	19.4	1.9	17.5	Small	24 Lots
				Medium	3 Lots
				Large	1 Lots
				Total	28 Lots

4 Water Servicing

4.1 Existing Water Supply

The development site is currently supplied with water through groundwater extraction under active Consent CRC211898 (expires 25 March 2033).

To the east of the site the surrounding blocks are serviced by direct connection into the existing DN63 PE80 and the DN50 uPVC watermains along Fairfield Road. These watermains are supplied by a DN100 uPVC watermain along Fairfield Avenue. The DN100 uPVC along Fairfield Avenue also services the Fairton Community Recycling Depot where it terminates.

To the west of the development sites, the eastern blocks of the ABP are serviced by a DN200 uPVC watermain along JB Cullen Drive. There has been a recent DN150 connection adjacent to the Fairfield Freight Hub that crosses JB Cullen Drive, installed on 20/02/2024.[3]

Figure 3 Existing Water Supply Infrastructure in the vicinity of the site (Ref.: ADC 3 Waters Utilities, 2024)

4.2 Proposed Development Water Supply

Development Water Supply Demand

A high-level assumption has been made in the absence of detailed information describing the commercial activities and their associated water demands for the development.

The Christchurch City Council (CCC) Infrastructure Design Standards (IDS) Part 7 Water Supply provides the following guidance for water servicing for commercial and industrial developments:

[3] Canterbury Maps and ADC GIS portal

Table 3 CCC IDS recommended parameters for water supply to business zones

Parameter	Flow	Clause
Flow to business zones in on-demand water supply areas	1.20 L/s/allotment	Cl. 7.5.2

Based on this parameter and the development lot yield (refer Section 0) of 28 lots, the development will have a demand of 33.6 L/s. The calculation is suitable for high level servicing but will need to be revised once future tenancies are established with their specific usage.

Water Supply Servicing Proposal

The Applicant proposes a direct connection to the ADC water supply network in the ABP with an internal network as shown in Figure 4. We have held discussions with ADC, and they have confirmed that the area can be serviced without significant impact on the remaining network[4].

Figure 4 Existing Water Supply Infrastructure and possible connection location (Ref.: ADC 3 Waters Utilities, 2024)

An option to service the proposed development from consent CRC211898 was considered but rejected due to drinking water treatment requirements and requiring 50% reduction in take volume for bore relocation.

[4] See Appendix G – Correspondence

4.3 Fire Fighting Protection

Fire protection for the development will need to be provided in accordance with *SNZ PAS 4505 - New Zealand Fire Service Firefighting Water Supplies Code of Practice*.

The Code of Practice assigns fire water supply classifications to buildings based on their architectural design elements including; whether the building has sprinklers, what the intended use of the buildings are and the floor area of the largest fire cell of the building.

In addition to servicing options discussed above, the proposed commercial and industrial future lot owners will need to do their own assessments to determine whether sprinklers or other infrastructure is required for their buildings.

Water supply network modelling may be required to confirm the development is able to be serviced for Fire Fighting Water Supply in accordance with the requirements of the Code.

5 Wastewater Servicing

5.1 Existing Wastewater Servicing

Refer Table 6 Consent Details

The site is currently serviced for wastewater by a consented onsite wastewater septic tank and discharge to land via subsurface irrigation under Consent CRC211869 (expires 19 June 2035). This consent only covers wastewater discharge from staff facilities and excludes disposal of works effluent.

There is currently no connection to the ADC wastewater network except for a DN150 connection adjacent to the Fairfield Freight Hub that crosses JB Cullen Drive, installed on 20/02/2024.[5]

Figure 5 Suspected location of the onsite wastewater septic tank and its associated dispersal field (Ref.: Email Correspondence, Tim Tarbotton)

[5] ADC online GIS portal

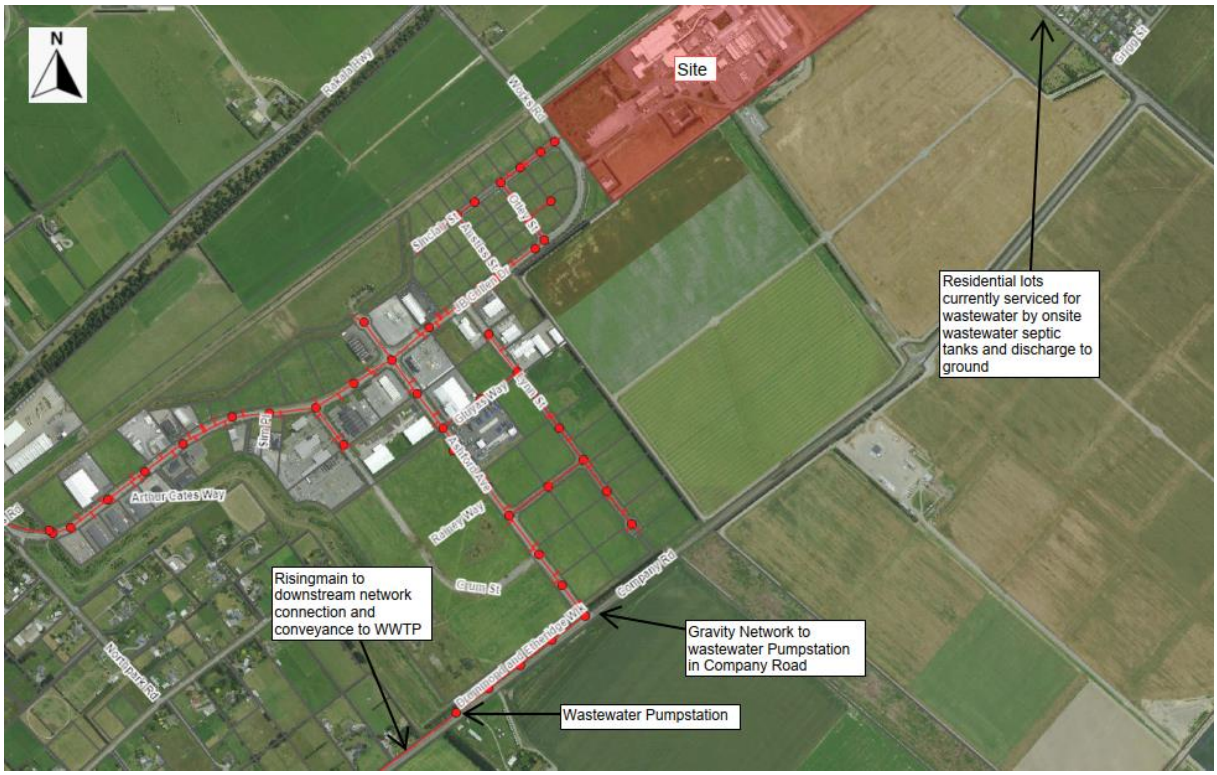


Figure 6 Existing Wastewater Infrastructure in the vicinity of the site (Ref.: ADC 3 Waters Utilities, 2024)

5.2 Development Wastewater Servicing

Development Wastewater Flows

A high-level assumption has been made in the absence of detailed information describing the commercial activities and their associated water demands for the development.

The CCC IDS Part 6 Wastewater Drainage Commercial and industrial activity descriptions from the CCC District Plan were matched with proposed development lots (Refer Section 0). Wastewater flows were assigned based on the yield in Table 4.

Table 4 Commercial/Industrial wastewater flow estimates for the plan change area

Area	High level lot distribution		Commercial and Industrial Zone as per CCC IDS	Total Develop. Area (ha)	Commercial and Industrial Flows as per CCC IDC (L/s/ha)		Total Flow (L/s)	
					ASF	MF	ASF	MF
Plan change area	Small	24 Lots	COR	5.82	0.15	0.75	0.87	4.37
	Medium	3 Lots	COR	5.82	0.15	0.75	0.87	4.37
	Large	1 Lots	IH	5.82	0.38	1.9	2.21	11.06
Totals		**28 Lots**		**17.5**			**3.96**	**19.79**

Development Wastewater Servicing Solution – Direct Connection to downstream ADC wastewater network

The Applicant proposes to connect to the existing DN150 or DN225 in the ABP as shown in Figure 7 below.

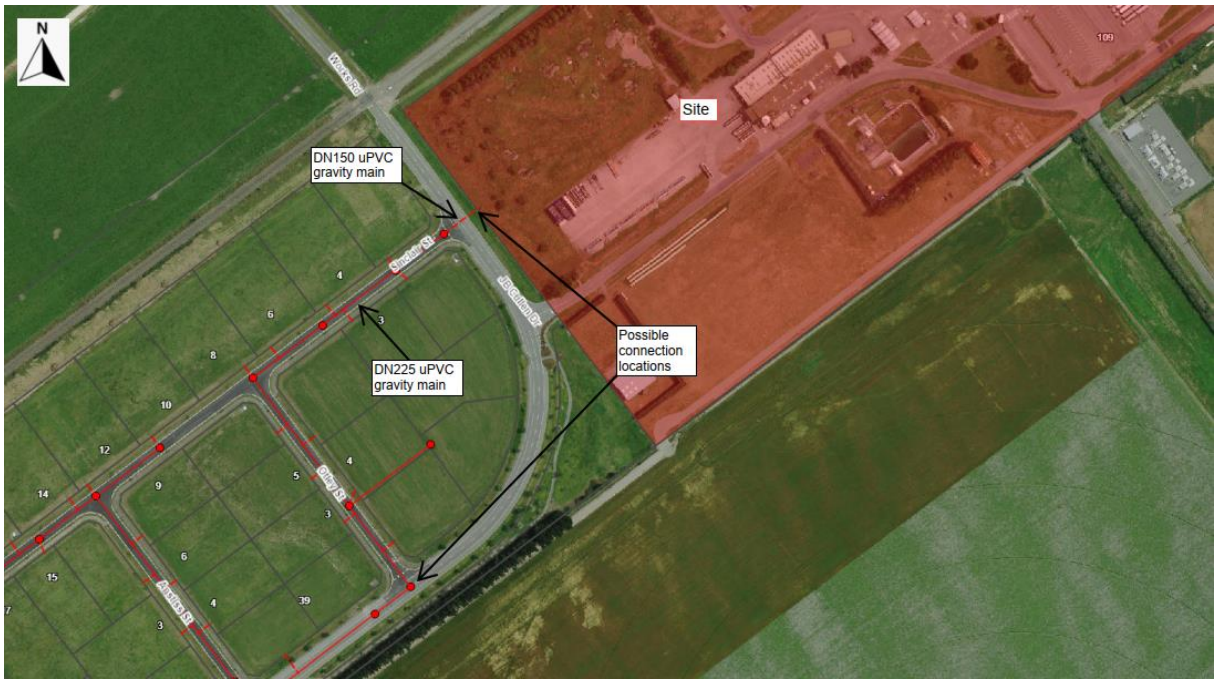


Figure 7 Existing Wastewater Infrastructure and possible connection locations (Ref.: ADC 3 Waters Utilities, 2024)

Refer Appendix G – Correspondence

ADC confirm[6] that the existing WWTP has capacity to treat 12,000 m³/day and is currently experiencing a base flow of 7,000 m³/day; and that the upstream wastewater network is subject to high inflow and infiltration (I & I) during peak rainfall events. Higher discharge flows in this network can trigger the requirement to bypass the aeration pond at WWTP.

Our calculations show that:

- The estimated average development flow is 3.96 L/s (342 m³/day), increasing to 7.13 L/s (616 m³/day) after applying a peak factor of 1.8.
- Adding this wastewater discharge to the current WWTP base flow of 7,000 m³/day would result in a new WWTP base flow of 7,616 m³/day – below its ultimate capacity of 12,000 m³/day under normal conditions.
- This increase in flow can be expected to exacerbate the network and WWTP capacity constraints due to I & I experienced during peak wet weather events, and is likely to mean a higher frequency and severity of aeration pond bypass during peak wet weather events.

Following a pre-application meeting with ADC, and after supplying ADC with the estimated average and maximum wastewater flows (as per Table 4), ADC have stated[7]

"*We don't believe that the extra demand will cause problems for the Company Rd WWPS, and might even help by adding a little more turnover in the rising main. At extreme wet weather flows we might get relatively high start counts, but should be manageable. Again, this all assumes no wet industry or significant trade waste loads.*"

[6] Email correspondence, Zani van der Westhuizen, Thursday 17 November 2022

[7] Email correspondence, Zani van der Westhuizen, Thursday 16 August 2024

Therefore, this solution is considered viable.

The Applicant accepts that no wet industry or significant trade waste loads can be discharged and will ensure that any tenant proposing a 'wet industry' will be required to provide pre-treatment for nitrate reduction and/or attenuation of flows prior to connection by prior agreement from ADC.

Other options considered and rejected:

1. *On-site wastewater treatment and discharge to land.* This is not viable because the existing consent (CRC211869) does not allow for an increase in discharge volume. Any future consent applications for onsite wastewater discharge to ground are not likely to be granted by ECan because the groundwater, which is a drinking water source, already has high nitrogen contamination and is likely to deteriorate further with effluent discharge (see Section 13.6.2).
2. *Connection to downstream ADC wastewater network – with nitrate reduction from pre-treatment*. This option is considered complicated but viable, but is not required by ADC.

6 Stormwater Servicing

6.1 Existing Stormwater Infrastructure

There is currently no connection into the downstream ADC stormwater infrastructure network.

There are no active operational stormwater discharge consents available for future development on site. The FFH and solar farm either already have or will get their own consents from Ecan. Talley's plant has a mix of consents and existing use rights.

The surrounding residential blocks to the east are serviced for stormwater by discharge to land under the ADC global consent CRC186263 (held by ADC) as is the ABP.

6.2 Legislative Requirements Specific to the Design

Stormwater discharge for the proposed development needs to be authorised by one of the approval options outlined below:

1. A rule in the Environmental Canterbury (ECan) Land and Water Regional Plan (LWRP). It is unlikely that any of the developed sites will be able to meet the rules in the LWRP, specifically Rule 5.96.
2. New consents for each property following successful plan change and subdivision.
3. A new global discharge consent from ECan. This is the recommended option. As this site is bounded directly by areas covered by the ADC global consent extent and that our soil investigation has shown similarities with, we have assumed that the stormwater treatment and attenuation conditions in the consent would also be appropriate for this site. Slightly different to CRC186263, a single stormwater management area (SMA) is proposed to treat all runoff from the plan change area, located just to the south of the proposed plan change area, on land also owned by Talley's. Individual lot owners will discharge roof runoff to ground.

6.3 Development Stormwater Servicing

Future stormwater servicing is likely to be similar to the ABP, as follows:

- Individual lot owners authorise their discharges via the global consent or get their own consents from Ecan if their activities cannot be covered by the global consent. In both cases the owners need to treat stormwater to the 'first flush[8]' standard and attenuate stormwater on their sites so that the site is hydraulically neutral in the 2% AEP event including climate change[9].
- The roading network owned by ADC has its own treatment, attenuation, and ground discharge system.

[8] First flush treatment involves treating the volume of runoff from the first 18mm of rain

[9] Peak runoff from the developed site in a range of storm durations for the 50-year average recurrence interval (ARI) return period (2% AEP) plus climate change effects (RCP 8.5 scenario for the years 2081 to 2100) does not exceed the runoff from the pre-developed site.

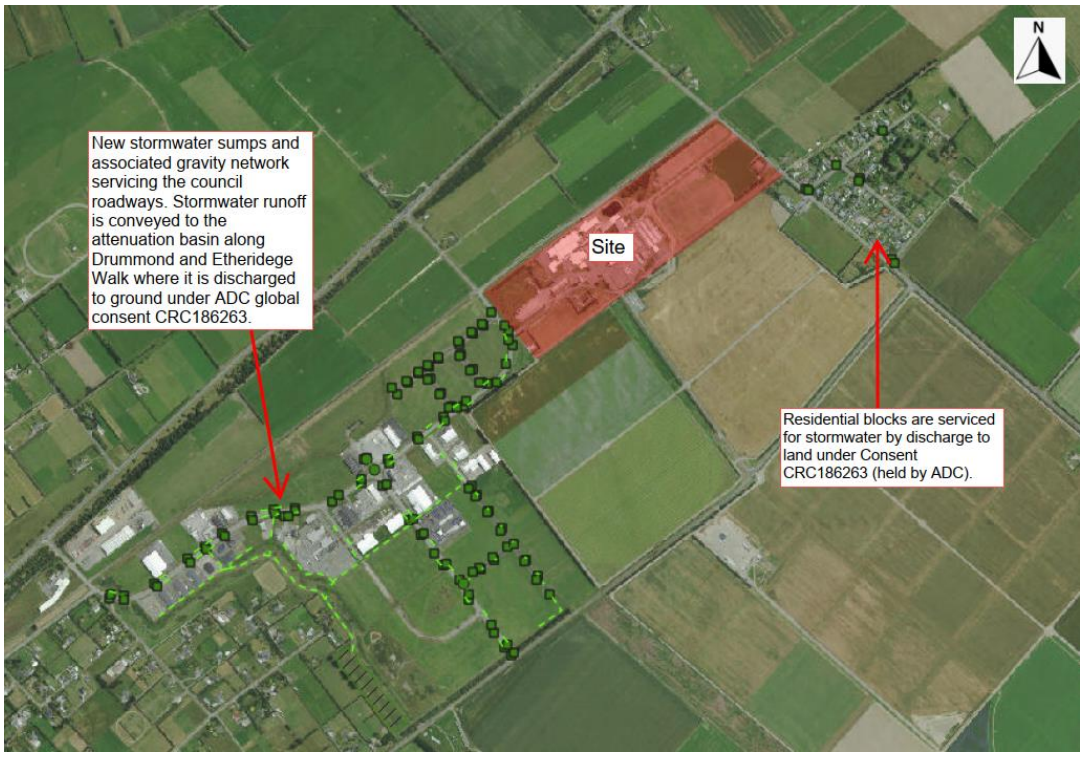


Figure 8 Neighbouring Gravity stormwater network servicing ABP

6.4 Stormwater Management Area (SMA)

All stormwater runoff, excluding the 10% AEP roof discharge will be treated and attenuated in a single designated SMA, located just to the south of the proposed plan change area. Discharge will be to ground via constructed pond and rapid soakage system – discussed below.

Pond Systems

The design of the stormwater management areas (SMA) will follow the process laid out in the WWDG (CCC, 2012). The SMA will consist of:

- A first flush / infiltration basin to capture and remove total suspended solids in the runoff generated by the first 18 mm of rainfall on the catchment (primary treatment);
- A detention basin to provide water quantity attenuation in large rainfall events greater than the first flush event, but up to the 2% AEP + climate change in all durations. This basin will be connected to the first flush basin via an overflow weir; and
- A large rapid soakage chamber under the detention basin to discharge stormwater to ground and provide additional storage within the voids of the chamber.

This is presented in a conceptual diagram in Figure 9 below.

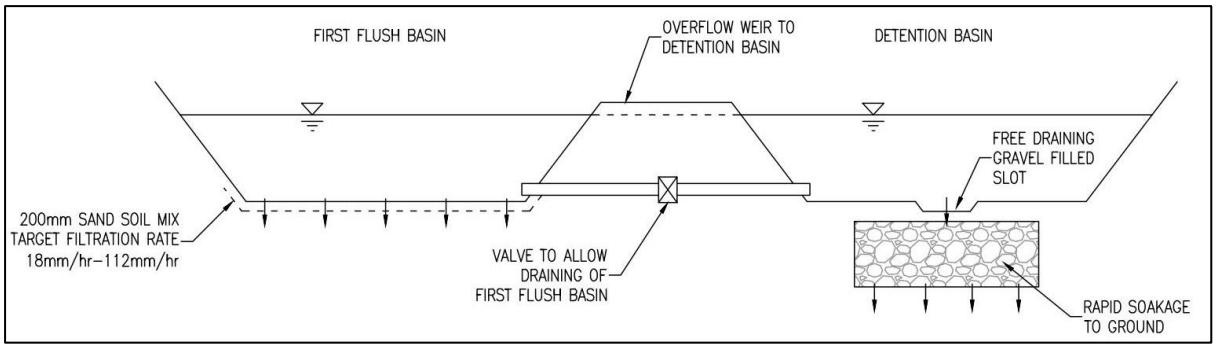


Figure 9 Conceptual stormwater management area (CCC WWDG)

Section 13.6.3 of this report highlights that there is a Community Drinking Water Protection Zone just to the southeast of the site. This will need to be considered in the ECan stormwater consent application and reinforces the need for robust stormwater treatment to avoid pollution of a community drinking water source.

Preliminary calculations estimate that the SMA will need to be approximately one hectare to accommodate all stormwater for the 19.4 ha serviced area. The approximate location of this basin is shown below in Figure 10, shaped to avoid the rain shadow of the irrigator. Information provided in Section 13.8 indicates there are HAIL activities close to the possible stormwater basin location. A detailed site investigation will be conducted to confirm any remediation of potentially contaminated land required prior to development on site or at the stormwater basin location.

Refer Appendix C – Technical Memo – Onsite Soakage Testing

On-site soakage testing shows that there are suitable gravels across the site, with good soakage available, up to 3,000 mm/hr. Groundwater was encountered at 3.5m depth.

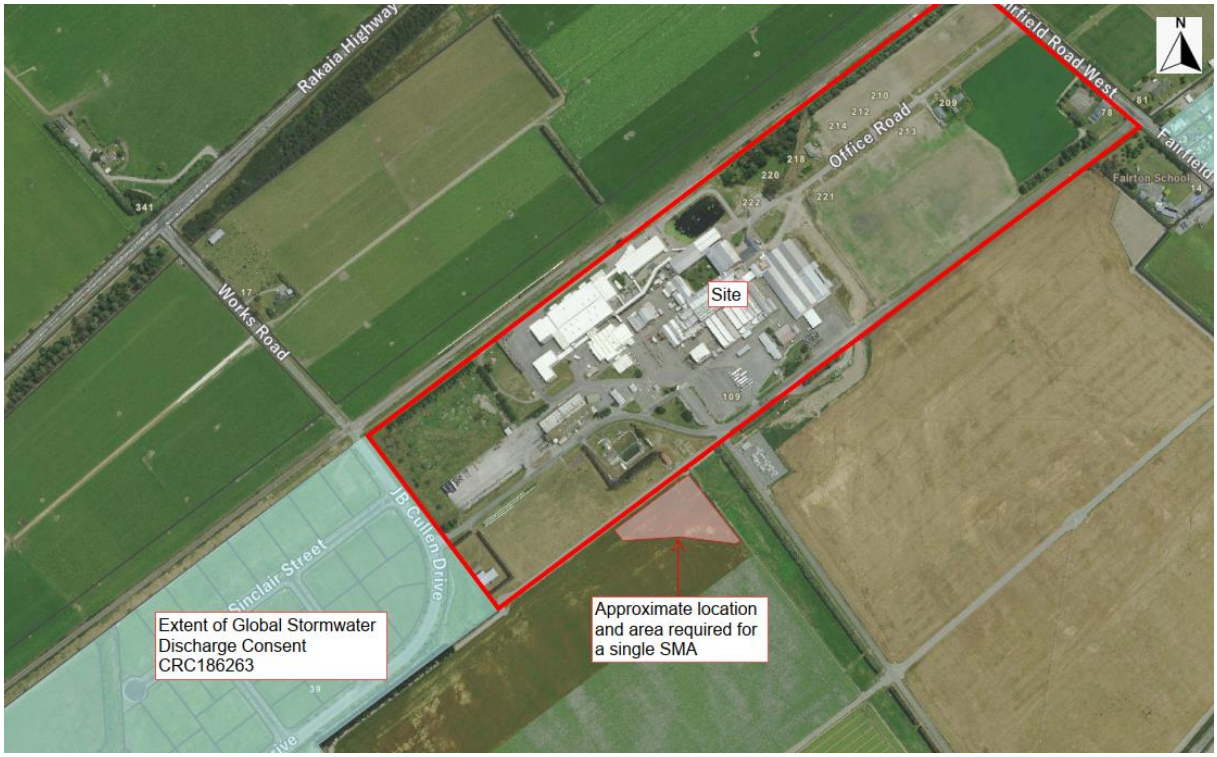


Figure 10 Approximate SMA area and location

7 Power Servicing

7.1 Existing Power Infrastructure

EA Networks confirm they have high-capacity power network assets currently supplying the site in addition to supplying the neighbouring residential and commercial developments in the vicinity of the site.

Information sourced from Dial-Before-You-Dig indicates there is an existing substation located just south of the site. Since this land is currently farmed, no power servicing is necessary.

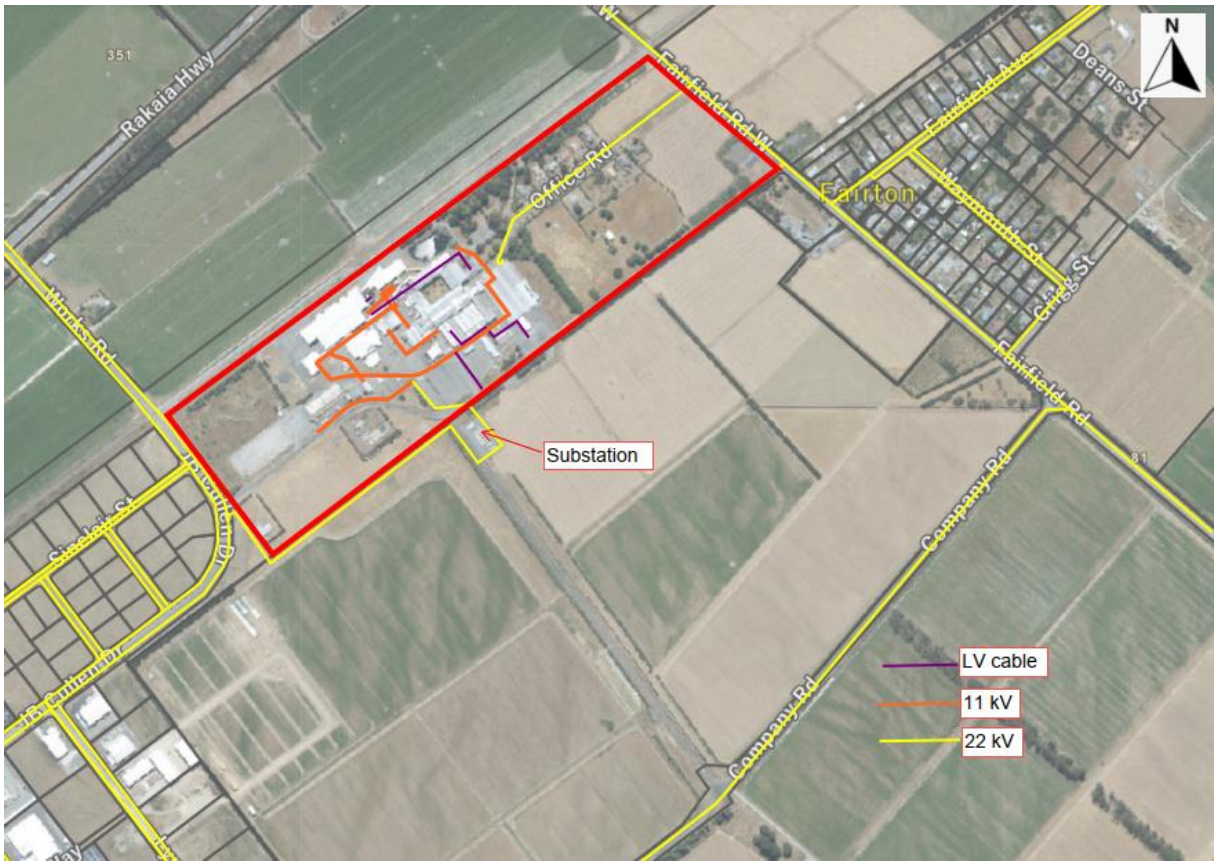


Figure 11 EA Networks Infrastructure Assets (alignment indicative) in the vicinity of the development sites (Ref.: Dial-Before-You-Dig, 2022)

7.2 Development Power Servicing

Due to the proximity of the site to the existing EA power network, power servicing for this development is not expected to be an issue.

8 Telecom Servicing

8.1 Existing Telecom Infrastructure

Chorus confirm they have a high-capacity fibre network near the site.

The site is currently serviced for telecom by Chorus.

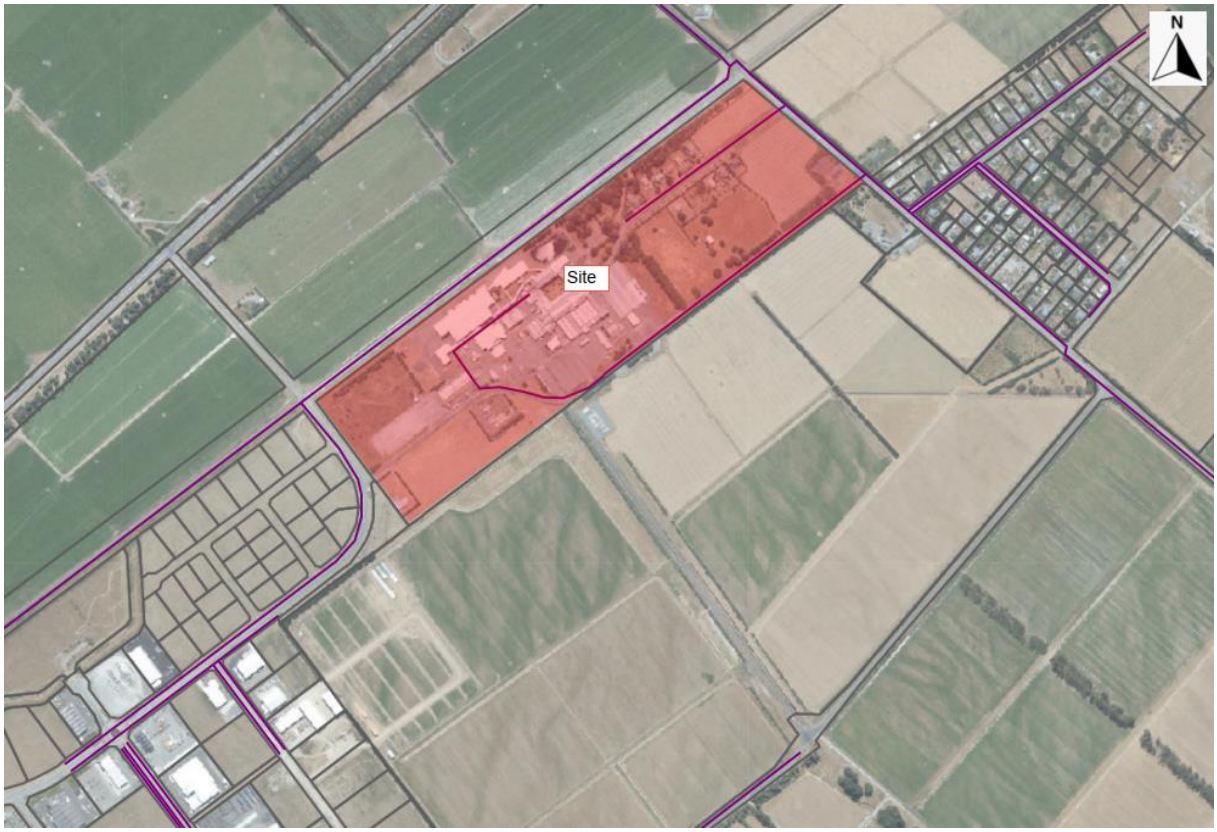


Figure 12 Chorus Telecom Network Infrastructure Assets (alignment indicative) in the vicinity of the development sites (Ref.: Dial-Before-You-Dig, 2022)

8.2 Development Telecom Servicing

Due to the proximity of the site to the existing Chorus telecom infrastructure network, telecom servicing for this development is not expected to be an issue.

9 Earthworks

Refer Appendix C – Technical Memo – Onsite Soakage Testing

Onsite soil soakage testing was undertaken by e2 on 1 September 2022.

Key findings from this investigation included:

1. The soil across the Fairfield Meat works Site (Stage 1 Development Site) typically consists of 300 to 400 mm of topsoil.
2. Silty gravel was found below the topsoil layer: 400 mm thick (STP3) to 1300 mm (STP1).
3. A layer of sandy gravel underlays the silty gravel. The sandy gravel varies in thickness from 1000 mm (southeast corner of existing meat works site) to 1600 mm (southwest corner of existing meat works site).

9.1 Ground Suitability for Development

Bearing capacity of the ground and liquefaction vulnerability of the site has not been established at this stage. Once a development plan is produced, more detailed geotechnical investigations will be required.

NZS3604:2011 – Timber-framed buildings specifies that foundations of buildings are required to be supported by 'good ground'. The definition of "good ground" in this context refers to (Cl. 3.1.2):

- Ground with an ultimate bearing capacity of 300 kPa (allowable bearing pressure of 100 kPa using a FoS of 3.0).
- Ground which shows no indication of buried services.
- Ground which shows no indication of land slips and/or surface creep and the absence of previous site fill.
- Excavation does not reveal buried organic topsoil, soft peat, very soft clay or expansive clay.

Apart from the presence of the 400 mm silt layer detected as part of the Test Pit 1 excavation, there is no other evidence of softer soils such as organic soils, soft peat and clays. Additionally, there is no evidence of land slips and/or creep were observed during the site investigation on 1 September 2022.

These outcomes suggest that land is likely to be "good ground", however this remains to be confirmed by more detailed geotechnical investigations.

9.1.1 Filling

More detailed geotechnical investigation outcomes will confirm whether the onsite soil will be suitable for both engineered filling (deeper than 300 mm) and non-engineered filling.

Given the depth of the observed groundwater table (3.5 m below ground level – Refer Appendix C – Technical Memo – Onsite Soakage Testing) and the observed soil layers during soakage testing, no dewatering, dig-outs of poor material, or consolidation is likely to be required.

9.1.2 Foundation Soils

As part of the Building Consent application, each lot will be required to undertake soil testing to establish the ground strength which will inform site specific foundation design.

9.1.3 Service Trenching

Given that the soils are expected to be silty gravels and sandy gravels, will not be in groundwater, and have a low liquefaction risk, it is expected that they will be suitable for service trenching.

9.1.4 Erosion, Sediment and Dust Control

An Erosion, Sediment and Dust Control plan will be required at the construction stage to mitigate the risks of sediment runoff and dust. At a high level, the plan is expected to address sediment-laden runoff and mitigation of airborne dust during earthworks operations.

9.2 Consent Requirements

Consent from both ECan and ADC may be required for earthworks at the site relating to any future subdivision construction due to proximity to a surface waterbody and groundwater.

10 Roading

A trunk roading network will be required in any future development. Roadside swales could be designed to provide pre-treatment of stormwater, and conveyance of stormwater and larger flows to the stormwater management area. The conveyance of larger flows to the stormwater management area may also be complimented by conveyance along the trunk roads in large flood events.

10.1 Road Pavement

The soils encountered in the onsite soakage testing study are likely to be suitable for road construction because:

- Groundwater is suitably deep, so dewatering will not be required during construction, neither will groundwater control be needed during the operational phase; and
- There is a low liquefication potential, so there will be no special pavement requirements to deal with that risk.

More detailed geotechnical investigations will confirm the bearing capacity of the ground and the basis of this the pavement depth requirement will be established.

11 Conclusions

This infrastructure servicing report has been created to aid a plan change application for a commercial development on Lot 2 DP 413606, to rezone from Business Zone F to Business Zone E. All servicing requirements are considered viable.

- Water can be supplied by the existing ADC water supply network that currently extends to the edge of the site via the ABP. ADC have confirmed that the area can be serviced without significant impact on the remaining network.

- Wastewater can be serviced by the existing ADC wastewater infrastructure network for ultimate treatment at the WWTP. ADC have stated they do not believe that the extra demand will cause problems for the Company Road WWPS.

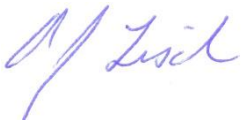
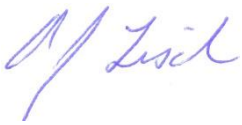
- Stormwater can be serviced via individual consents per lot, or by a global stormwater consent, similar to ADC's current global stormwater consent (CRC186263), which is the recommended option. Land owned by Talley's directly to the south of the site has been allocated as a designated SMA, with preliminary calculations estimating the required area is approximately one hectare.

- Based on the outcomes of the onsite soakage testing, bearing capacity is likely to meet the definition of "good ground" in accordance with NZS3604. This outcome remains high level at this stage and is required to be confirmed by more detailed geotechnical investigations. Due to the close proximity of power and telecom infrastructure networks, servicing for this development is expected to be straight forward.

- All servicing outcomes will be required to be confirmed with ADC, EA Networks and Chorus directly once more detailed information regarding the proposed commercial and industrial activities to be undertaken at this development are better understood.

12 Report Approvals

This report has been:

Task	Initial	Signature	Date
Prepared by:	Harry Petterson, e2		19 December 2024
Reviewed by:	Andrew Tisch, e2		19 December 2024
Approved by:	Andrew Tisch, e2		19 December 2024

Appendix A. Background Information

13.1 Site Location

The location and legal description are shown below in Figure 13.

Figure 13 Development site location, 109 Works Road, Fairton, South Canterbury (Ref.: Canterbury Maps, 2024)

The site is bounded by Fairfield Road West to the east, JB Cullen Drive to the west, and Works Road to the south. The northern boundary is bounded by the Kiwi Rail railway corridor.

The concept scheme plan is shown below in Figure 14. e2 previously provided a draft version of this report to Talley's that was used to refine the concept scheme plan into its current area. Initially, a two-stage approach was planned with a total area of 75.7 ha. Then, a maximum area of 20 ha was proposed due to preliminary integrated transport assessment (ITA) limits. In a pre-application meeting with ADC, it was agreed[10] that the full lot (Lot 2 DP 413606 – 32.5 ha), including the FFH and Solar Farm, could be part of the plan change area to avoid "spot zoning", given the FFH is already self-sustaining, and the Solar Farm is unlikely to utilise water/wastewater. Therefore, it was assumed that only 19.4 ha required three waters servicing.

[10] ADC, personal communication, 20 June 2024

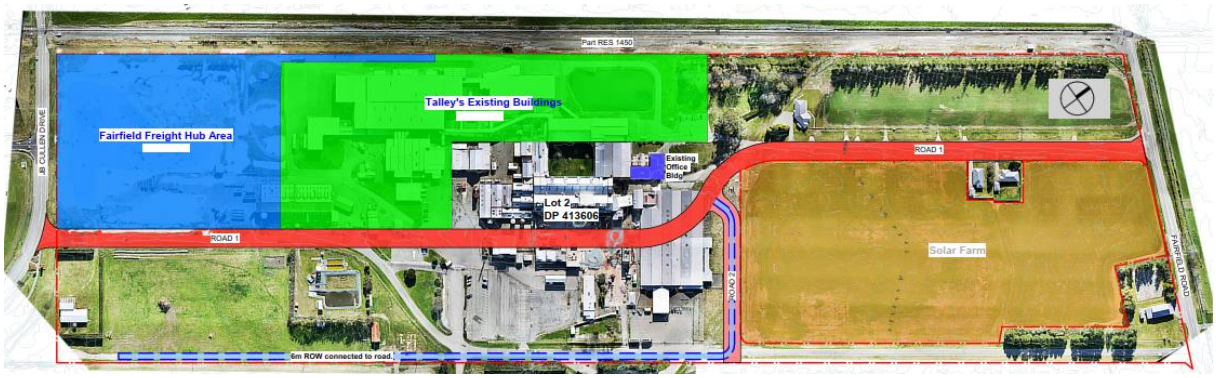


Figure 14 Concept scheme plan

13.2 General Site Description

The site is currently used for Talley's Fairfield Meat Works. The territorial authority is Ashburton District Council, and the regional council is Environment Canterbury (ECan). The properties to the south are also owned by Talley's, currently used for arable farming.

13.3 Site Zoning

The site is currently zoned as "Business Zone F" under the Ashburton District Plan.

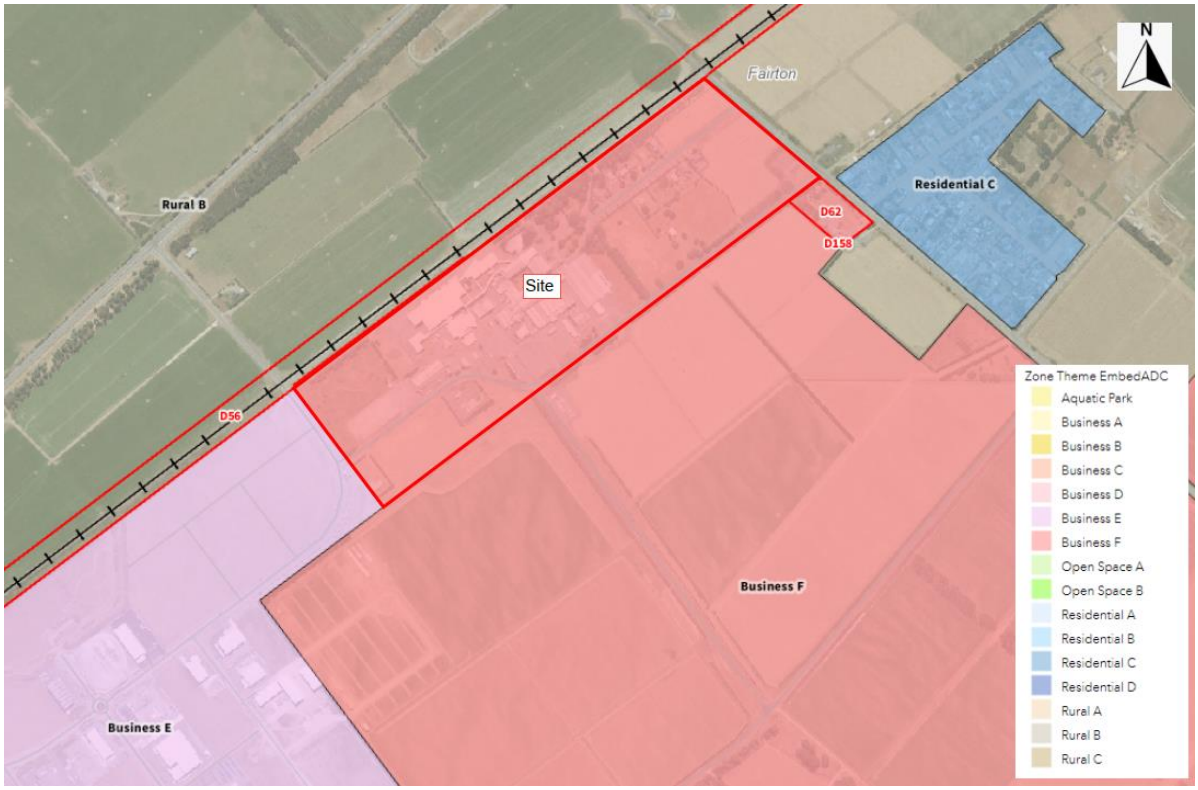


Figure 15 Current site zoning (Ref.: ADC District Plan, 2024)

Business Zone F provides for all activities related to:
"*...meat processing including the yarding and slaughtering of animals, the associated processing of meat (including by-product and co-product processing) rendering, fellmongery, tanning, casing and pelt processing; and the associated chilling, freezing, packaging and storage of meat and associated products. The Zone provides for the spreading of effluent on*

some defined areas where this activity has historically been carried out. The zone also provides for the processing of other food products." [11]

13.4 Surface Water

There are multiple water races (shown with the blue line in Figure 16) on the development site which are fed by the Winchmore Rakaia Stockwater Race network. There is also an effluent pond on the site of the existing Talley's Fairfield meat works.

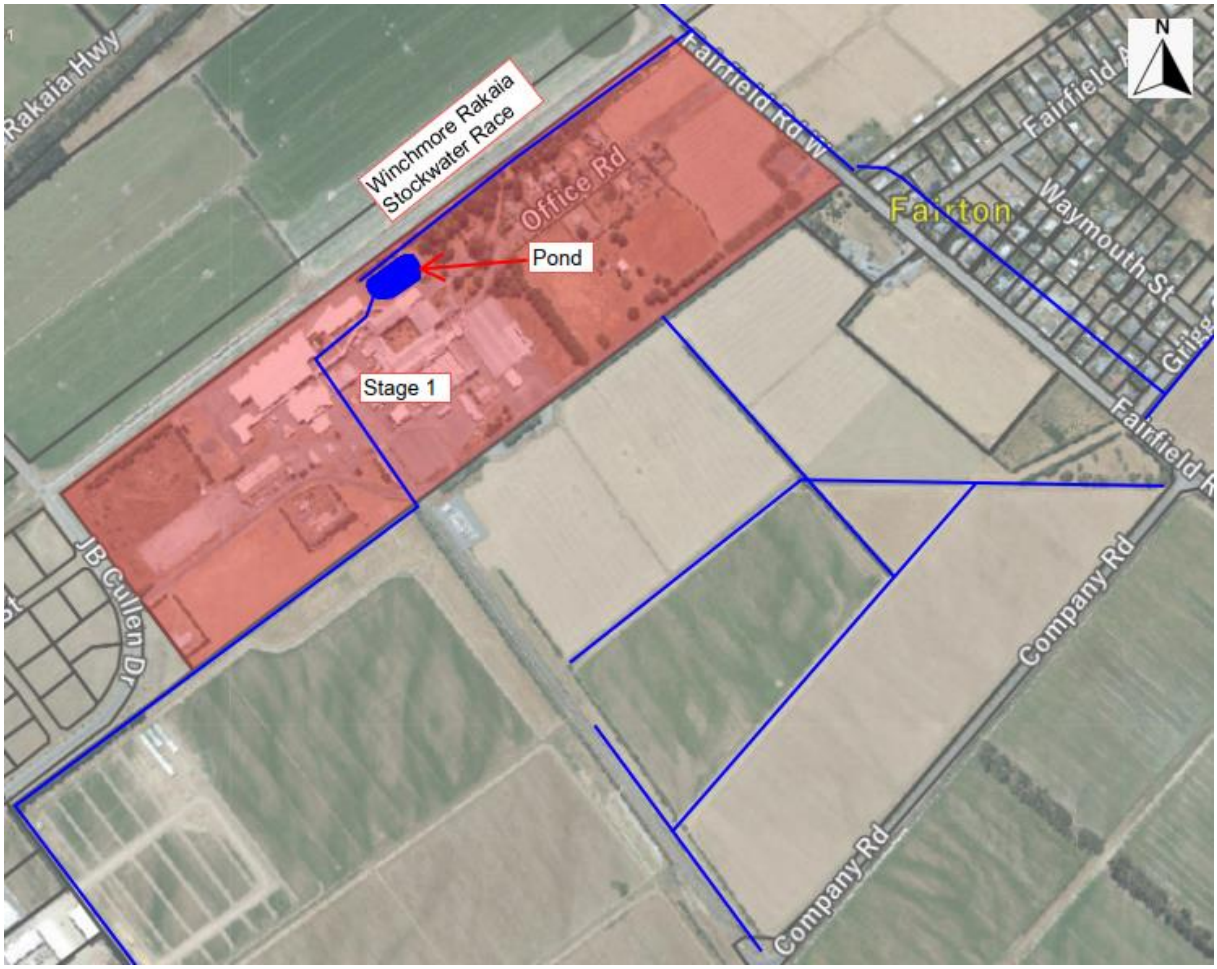


Figure 16 Surface water bodies on the development site (Ref.: Canterbury Maps, 2022)

13.5 Site Topography

Topographical survey has not yet been commissioned for the site, so we have used LiDAR and for this assessment. LiDAR information sourced from LINZ Data Service indicates that the site and surrounding land has a consistent, gentle fall of 0.60% - 0.65% from north to south.

[11] Ashburton District Council, (2022 February), *Ashburton District Council District Plan Section 5: Business Zones*.

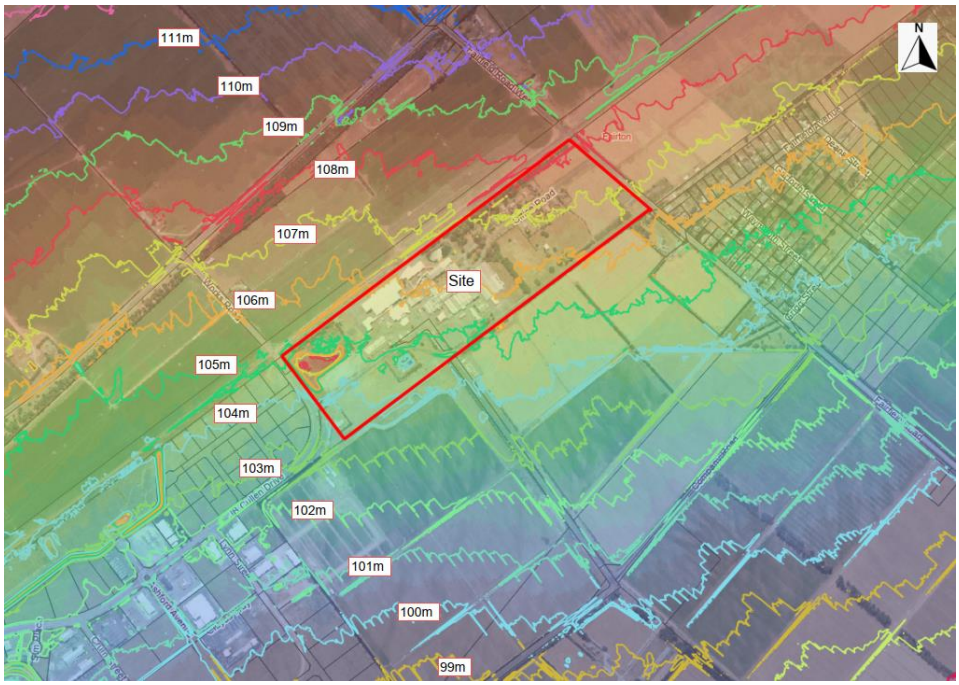


Figure 17 Development site ground contour levels (Ref.: LiDAR, LINZ Data Service)

13.6 Site Hydrogeology

13.6.1 Groundwater

The site is currently serviced for water supply by six existing bores onsite.

Refer Appendix B – ECan Bore Summary

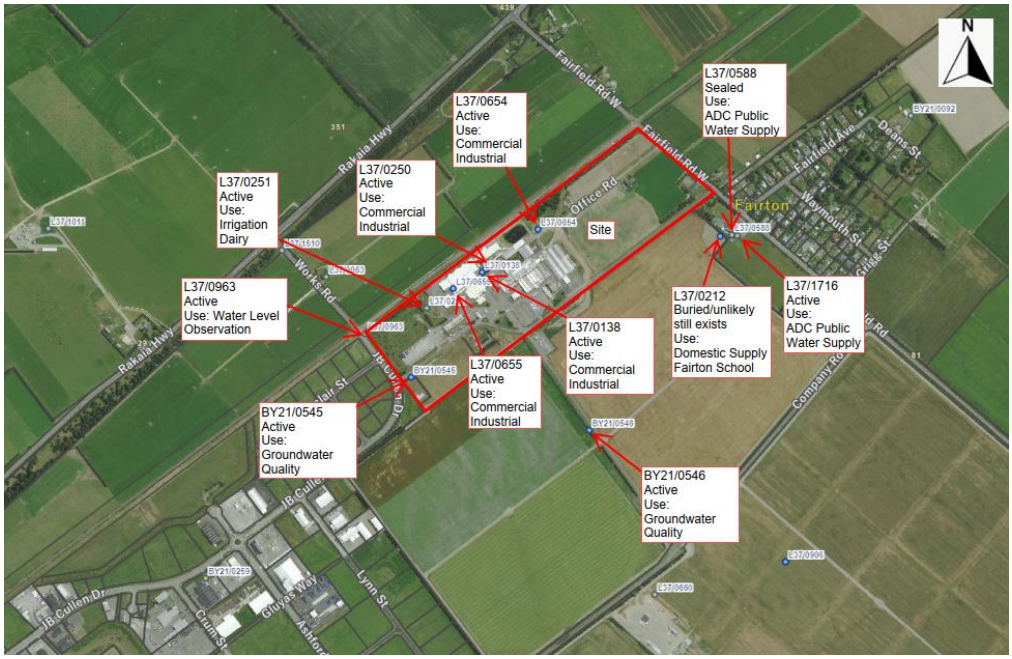


Figure 18 Location and details of existing bores on/near site (Ref.: Canterbury Maps. 2024)

Table 5 below provides more detail on the existing bores on/near the site. Bores L37/0654, L37/0250 and L37/0655 were associated with the Silver Fern Farms Limited meat works operation at this site which was closed and sold to Talley's Limited in 2016.

Table 5 Details of existing bores on/near site (Ref.: Canterbury Maps, 2022, ECan, 2024)

Consent #	Consent Holder	Well	Well Status	Owner	Use	Bore Diameter (mm)	Bore Depth (m)	GWL Depth – Depth below ground level (m)	Max Flow (L/s)	Max. Volume (m^3/week)	Groundwater Allocation Zone	Consent Expiry
CRC211898	Talley's Limited	L37/0654	Active	Previously Silver Fern Farms Limited, now Talley's Limited	Commercial Industrial	300	91.58	-27.00	264.00	159,667	Ashburton-Lyndhurst	25-Mar-33
		L37/0250				200	97.54	-31.09				
		L37/0655				250	97.80	-33.50				
		L37/0138		Talley's Limited		300	108.40	-31.08				
		L37/0251			Irrigation, Dairy Use	250	108.50	-28.04				
CRC010759	Silver Fern Farms Limited	L37/0963	Active	Primary Producers Co-operative Society	Water Level Observation	100	35.20	-18.98	N/A	N/A		9-Nov-03
CRC980747.1	Ashburton District Council	L37/0588	Sealed	Ashburton District Council	Public Water Supply	150	39.50	-24.51	7.50	4,536		3-Dec-32
		L37/1716	Active		Public Water Supply	300	101.20	-32.45				
Unknown	N/A	L37/0212	Buried/unlikely still exists	Fairton School	Domestic Supply	150	39.32	-31.70	N/A	N/A		N/A
CRC232138	Talley's Limited	BY21/0545	Active	Talley's Limited	Groundwater Quality	50	38.11	N/A	N/A	N/A		5-Apr-2048
		BY21/0546				50	38.01	N/A				

Bore log information from active bores (with information), within 2 km of the site, indicates that the depth of groundwater varies between 13.6 m (L37/1597) below ground level southwest of the site, to 45.90 m (L37/1496) below ground level to the northeast of the site. The average groundwater depth across the 25 analysed bores is 24.97 m below ground level.

Refer Appendix C – Technical Memo – Onsite Soakage Testing

Onsite observation indicates groundwater on the development site is at 3.5 m below ground level (bgl). This outcome indicates that groundwater depths from existing bores on and surrounding the development site, are from much deeper aquifer(s). Water from the aquifers shown in Figure 20 is therefore relevant to the discussion on water takes – Refer Section 4.10, while the shallow water depth of 3.5m bgl is relevant to the discussion on available ground soakage – Refer Section 6.

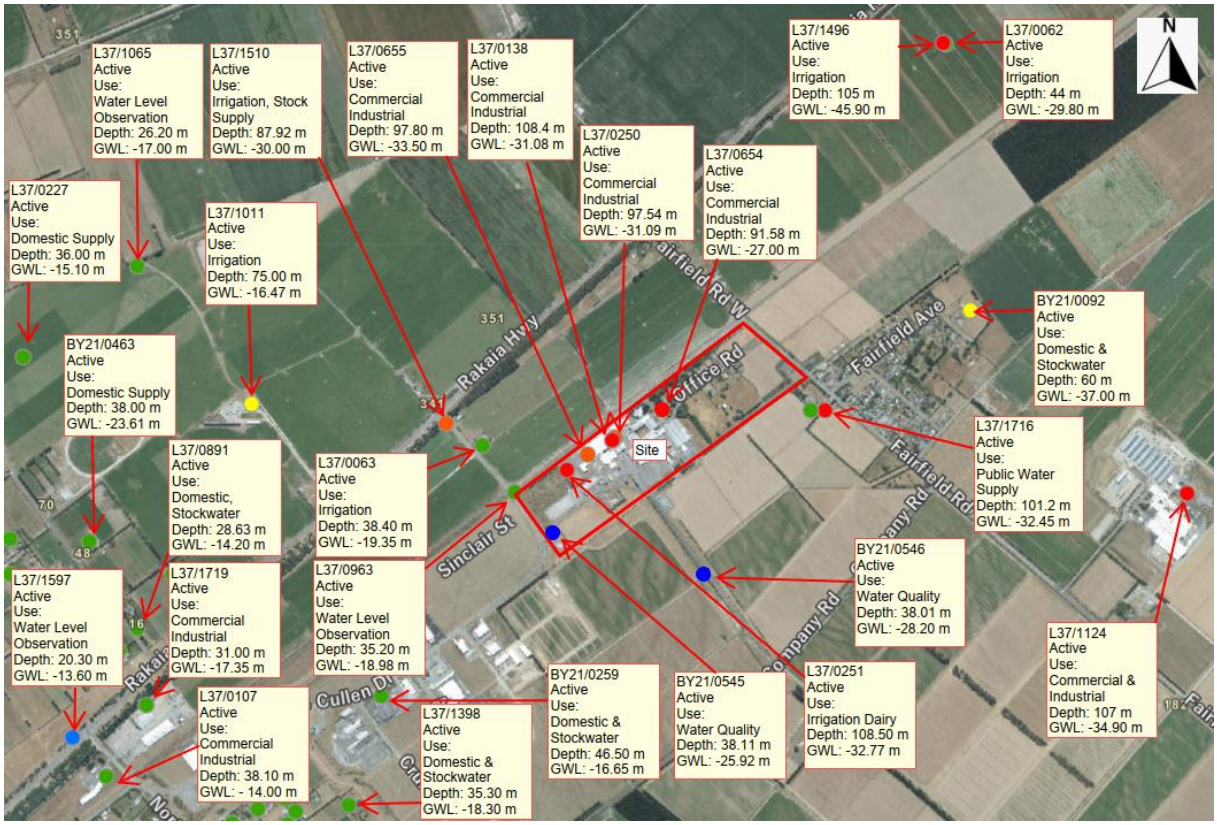


Figure 19 Bore log information for bores within 2km of development site (Ref.: Canterbury Maps, 2024). Note: Depth of ground water indicated is below ground level.

Available groundwater piezometric data for this area is outdated (most recent recording being 2011). The information which is available suggests that generally the piezometric contours in the area are falling from northwest to southeast. The recorded depth of these piezometric contours is considerably deeper than the ground water level depth of the current active bores in the vicinity of the site, as well as the observed ground water depth on the development site.

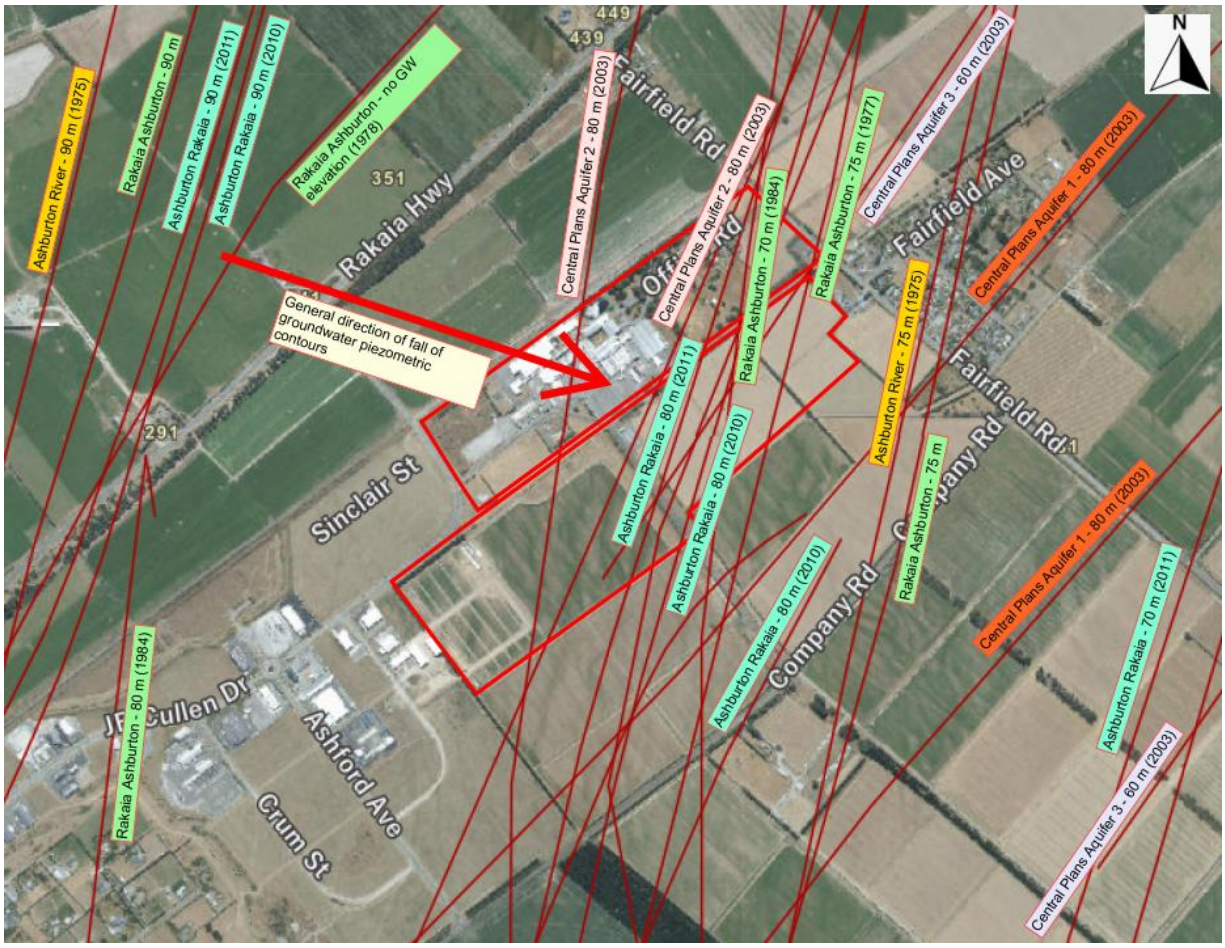


Figure 20 Piezometric Groundwater Contours (Ref.: Canterbury Maps, 2022)

13.6.2 Existing Ground Water Nitrate Nitrogen Concentration

The site is in the Canterbury Maps Land and Water Regional Plan (LWRP) Ashburton-Rakaia Zone which is a Nutrient Allocation "red zone"[12]. This is a zone in the Canterbury region where the NZ Drinking Water Standards, nitrate nitrogen outcomes are not currently being met.

The LAWA (Land, Air, Water Aotearoa) website shows that nitrate nitrogen readings from nearby wells have elevated readings of nitrate nitrogen, with the distribution suggesting that concentrations increase to the south in the general direction of the fall of the groundwater piezometric contour levels as shown in Figure 21 and Figure 22.

[12] Canterbury Maps Open Data, *LWRP – Nutrient Allocation Zones*

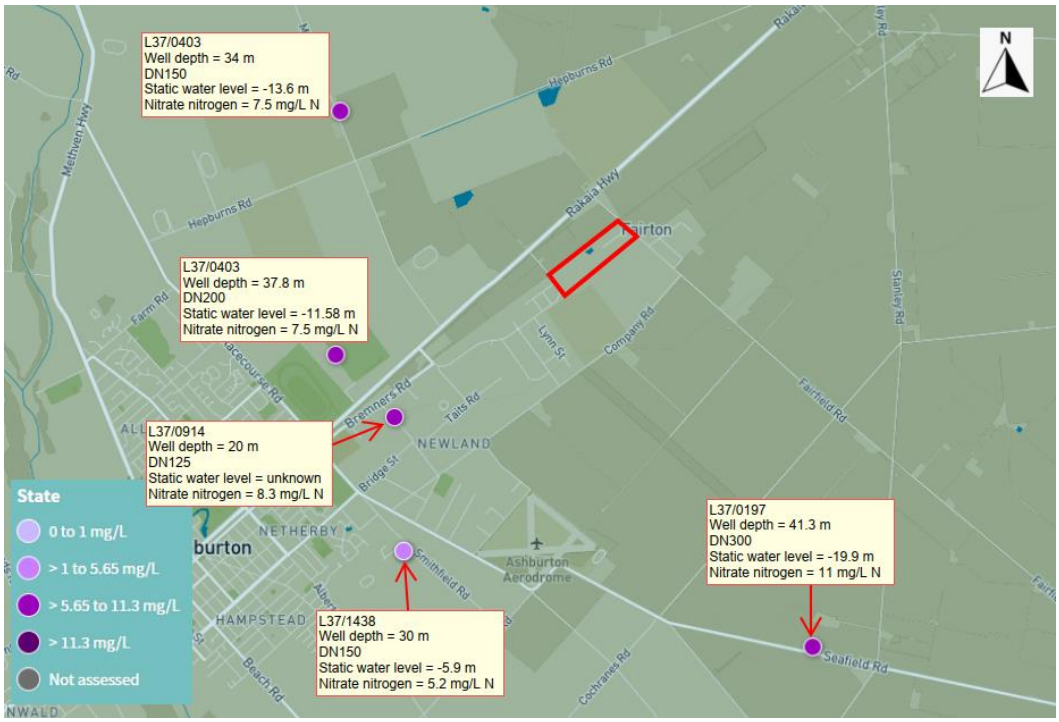


Figure 21 Measured nitrate concentration in groundwater wells in the vicinity of the site (Ref.: LAWA, 2024)

13.6.3 Environment Canterbury Drinking Water Protection Zone

There is an ECan Community Drinking Water Protection Zone just southeast of the proposed plan change area and solar farm.

The protection zone is set up to manage and protect the quality of water extracted from Bore L37/1716 at the site of the neighbouring Fairton School, which extracts groundwater for the purpose of suppling drinking water to the community. Any discharges to ground will have to take the downgradient effects on this protection zone into account.

Figure 22 Extent of ECan Community Drinking Water Protection Zone around Bore L37/1716

13.6.4 Site Geology

Refer Appendix C – Technical Memo – Onsite Soakage Testing

A geotechnical investigation will be undertaken for future planning purposes. It will detail liquefaction risk, ground bearing strength, the underlying geology and any other site-specific considerations.

For the purpose of this report, test pitting and soil soakage testing was undertaken by e2 on 01 September 2022. As part of this investigation 3 soakage test pits (STP) were excavated (1 - Pilot Test Pit and Soakage Test Pit, 2 & 3 - just Soakage Test Pits) as shown in Figure 23.

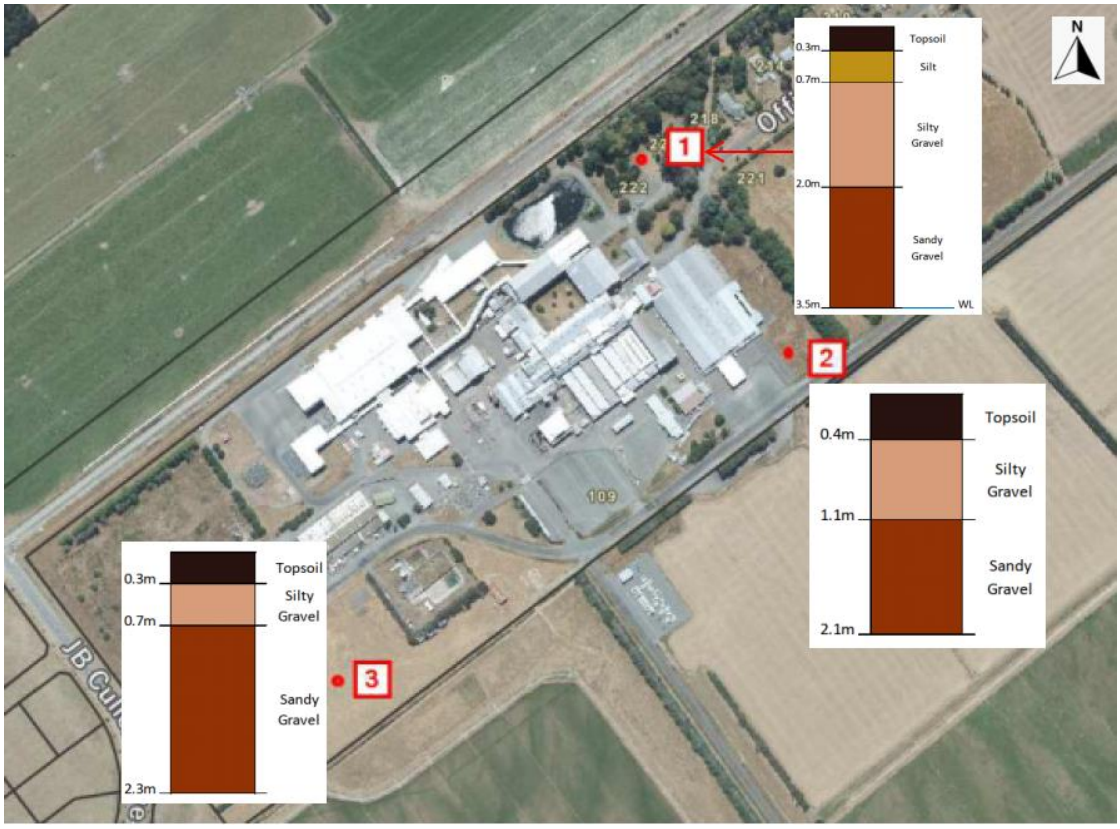


Figure 23 Onsite soakage test pit locations and associated soil profiles (Ref.: Appendix 4 – Technical Memo – Onsite Soakage Testing)

In summary:

1. The soil across the Fairfield Meat Works site typically consists of 300 to 400 mm of topsoil.
2. Silty gravel was found below the topsoil layer: 400 mm thick (STP3) to 1300 mm thick (STP1).
3. A layer of sandy gravel underlays the silty gravel. The sandy gravel varies in thickness from 1000 mm (southeast corner of existing meat works site) to 1600 mm (southwest corner of existing meat works site). Bore logs in the area indicate that the gravel extends well below the base of each test pit.

Refer Appendix B – ECan Bore Summary

ECan's bore log summaries generally align with the key findings above.

13.7 Existing Consents

Refer Appendix D – Consent Details

The plan change area (Talley's Fairfield Meat Works) has five active operational consents:

- CRC211850
- CRC211869
- CRC211898
- CRC232138
- CRC232139

The neighbouring Fairton School site has one active consent:

- CRC980747.1

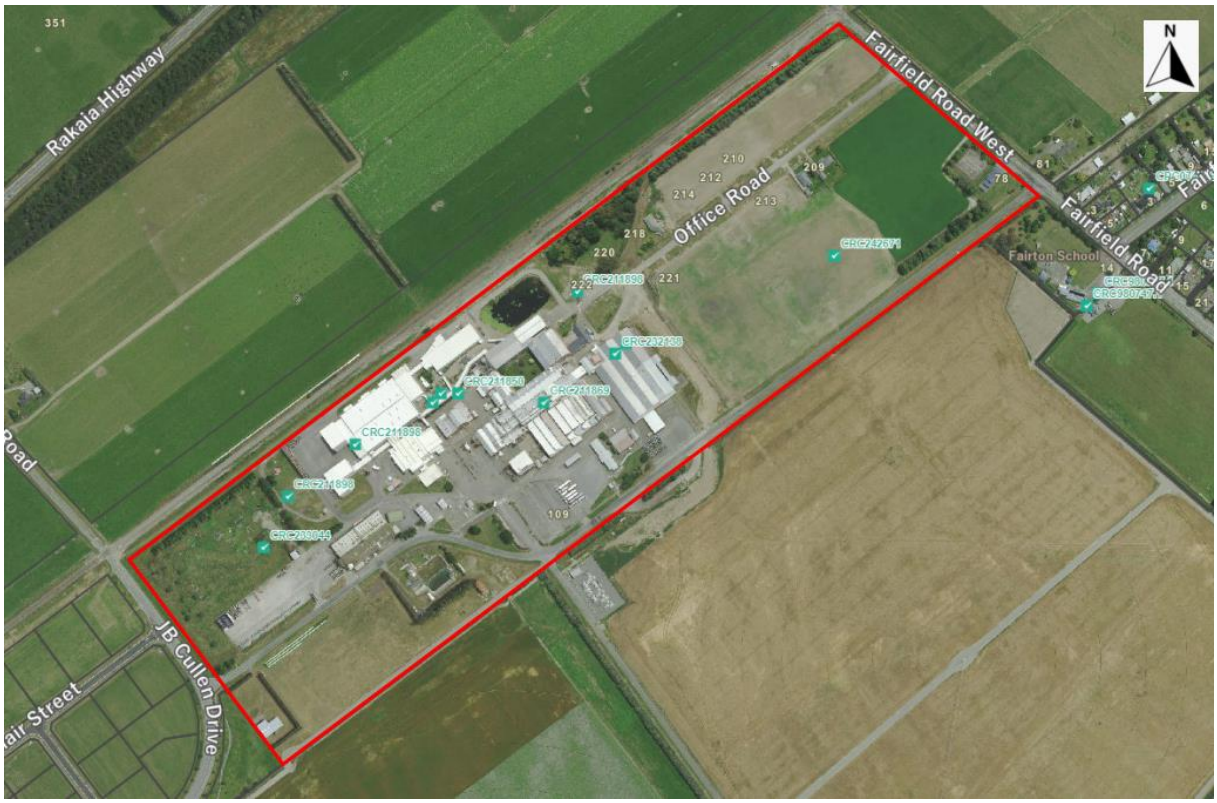


Figure 24 Existing Consents across the Development Site

See Table 6 for specific consent information. This information provides activity details and their associated conditions for each consent. We have used this information to develop water, wastewater and stormwater servicing options for the proposed development.

Table 6 Consent Details (Ref.: Canterbury Maps, ECan 2024)

RMA Authorisation No.	Consent Status	Commence	Expiry	Client Name	Activity	Details
CRC211850	Issued - Active	19 Jun 2000	19 Jun 2035	Talley's Limited	To discharge contaminants into air from two 4.2 MW and one 11 MW coal fired boilers, a rendering plant, a blood processing plant, a fellmongery and pelthouse, a pelthouse effluent storage pond, livestock holding yards and general factory ventilation	The discharges authorised by this consent shall only be from the rendering and processing of animal products, pelt processing, boiler operation, and associated activities from the operation of a meat processing plant.
CRC211869	Issued-Active	19 Jun 2000	19 Jun 2035		To discharge up to 36.5 cubic metres per day of septic tank effluent into land from staff facilities.	The discharge shall only be sewage tank effluent. Effluent shall be treated via collection in septic tanks, screened, and discharged via pump dosing into a subsurface irrigation system. The disposal of the septic tank effluent shall be into land, not otherwise used for the disposal of other works effluent. Sludge from the septic tanks and filtration system shall be removed to an authorised sanitary waste treatment or disposal facility.
CRC211898	Issued-Active	23 Oct 2020	25 Mar 2033		To take/use groundwater.	The combined rate at which water is taken from bores L37/0654, L37/0250, L37/0138, L37/0655, and L37/0251, shall not exceed 264 litres per second, with a combined volume not exceeding 159,667 cubic metres in any period of seven consecutive days.
CRC232138	Issued-Active	5 Apr 2024	5 Apr 2048		To discharge contaminants to land.	The activity shall be limited to the discharge of Arsenic and metal contaminants arising from metal contaminated fill materials at 109 Works Road, Ashburton.
CRC232139	Issued-Active	5 Apr 2024	5 Apr 2028		To discharge construction-phase stormwater to land.	The activity authorised by this resource consent shall be limited to the discharge of sediment laden stormwater …
CRC980747.1	Issued-Active	15 Mar 2020	03 Dec 2032	ADC	To take/use groundwater.	The combined rate at which water is taken from bore L37/0588, and bore L37/1716, shall not exceed 7.5 litres per second, with a volume not exceeding 648 cubic metres per day.

13.8 Land Contamination

Refer Appendix E – Listed Land Use Register (LLUR)

The ECan LLUR shows that the site has historically had or currently has hazardous activities and industries on it and is registered as a "HAIL – Hazardous Activities and Industries List."

Proposed Plan Change Area:

- HAIL activity A17 (storage tanks or drums for fuel, chemicals or liquid waste) and HAIL activity G3 (Landfill sites) have been identified on this land.

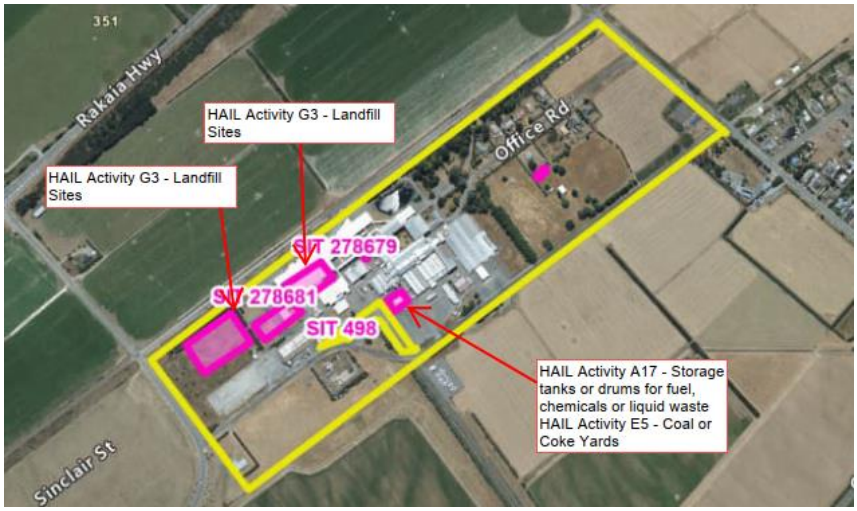


Figure 25 Listed HAIL activities on DP 413606 (Ref.: ECan, 2022)

Site to the south which may contain stormwater basins:

- HAIL activity B4 (Power Stations, substations or switchyards) and HAIL activity G3 (Landfill sites) have been identified on this land.
- HAIL activity G5 (Waste disposal to land) has been identified very close to the southern boundary of the neighbouring lot.

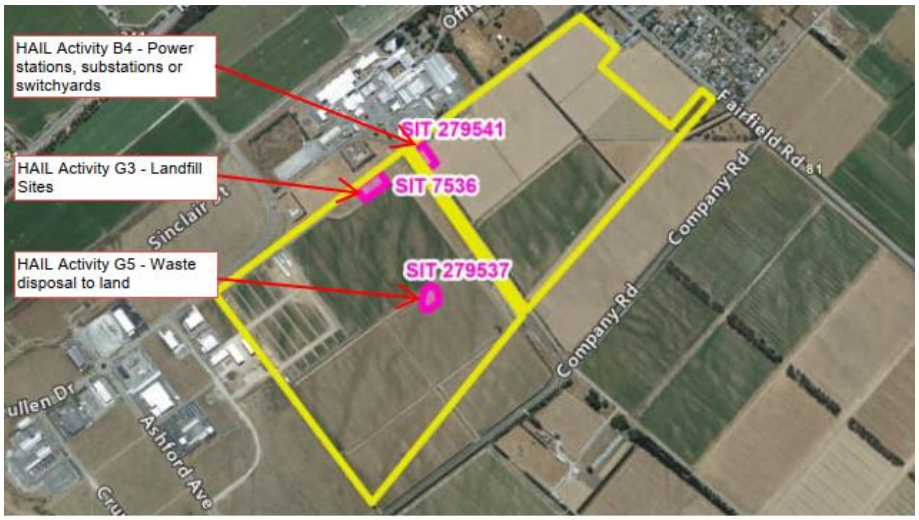


Figure 26 Listed Hail activities on DP1018 (Ref.: ECan, 2022)

A preliminary site investigation (PSI) was prepared by Williamson Water & Land Advisory (WWLA) in August 2024 with limited sampling to support Talley's with the rezoning of land at 109 Works Road[13]. The PSI key findings are:

- An evaluation of past activities confirm HAIL activities have occurred on the site.
- Only the concentrations of asbestos exceed the relevant guidelines for the protection of human health under commercial / industrial land use.
- A conceptual site model was developed to show if there are potential ground contamination risks in the context of the proposed plan change, in summary no unacceptable risks are indicated.
    - Future redevelopment or disturbance of the site will likely require further testing.
- Ground contamination related consents are not required under either the NESCS or CLWRP for the proposed plan change.
- Where it is not already covered, or will be exposed by future works, either remediation or management (covering) of fill containing elevated concentrations of asbestos will be required.

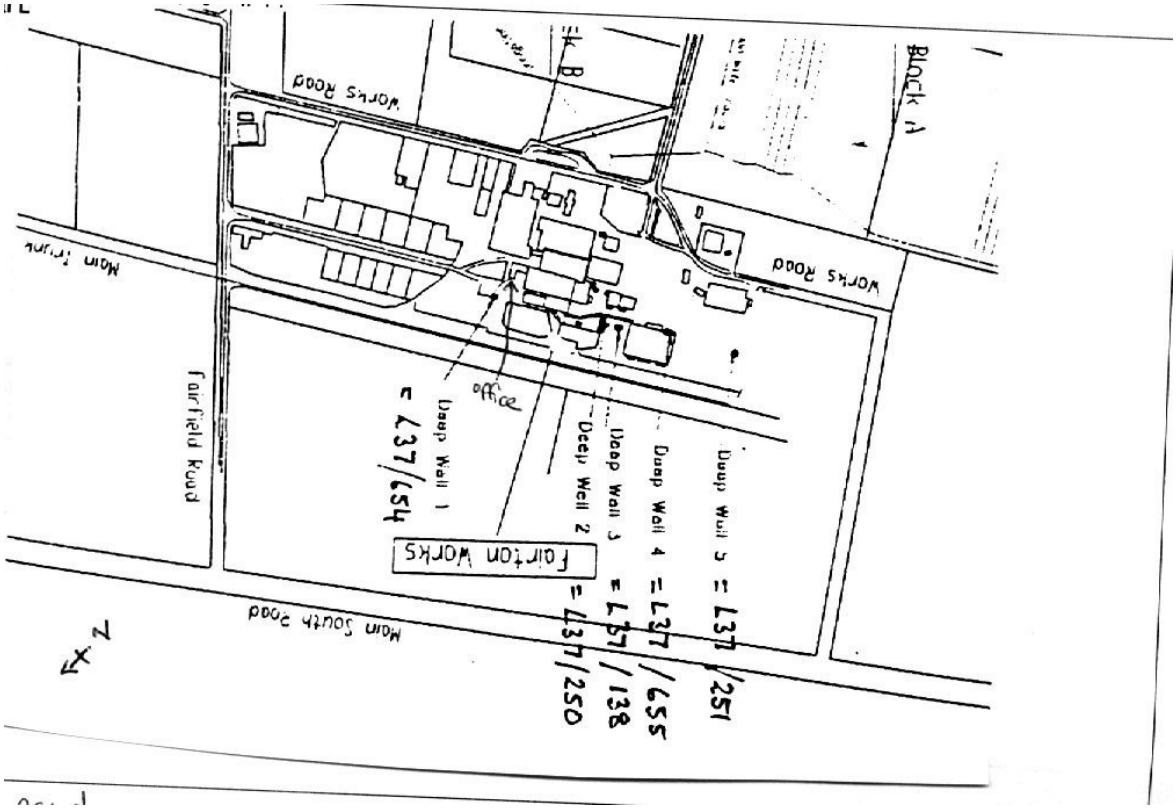
[13] 109 Works Road, Fairton, Ashburton, Preliminary Site Investigation (Ground Contamination), Williamson Water & Land Advisory (30 August 2024)

Appendix B. ECan Bore Summary

Bore or well number	L37/0138
Well name	WORKS ROAD
Owner	Talleys Limited

Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

Well number	L37/0138	File number	CO6C/13175
Owner	Talleys Limited	Well status	Active (exist, present)
Street/road	WORKS ROAD	NZTM grid reference	BY21:04094-41683
Locality	Fairfield	NZTM X and Y	1504094 - 5141683
Location description	MIDDLE WELL ON PLANT. ABOVE GROUND	Location accuracy	2 - 15m
CWMS zone	Ashburton	Use	Commercial / Industrial,
Groundwater allocation zone	Ashburton Lyndhurst	Water level monitoring	--
Depth	108.40m	Water level count	0
Diameter	300mm	Initial water level	31.08m below MP
Measuring point description	Unable to measure water level	Highest water level	
Measuring point elevation	106.63m above MSL (Lyttelton 1937)	Lowest water level	
Elevation accuracy	< 0.5 m	First reading	
Ground level	0.00m above MP	Last reading	
Strata layers	6	Calc min 80%	41.42m below MP (Estimated)
Aquifer name		Aquifer tests	0
Aquifer type	Semi-Confined	Yield drawdown tests	1
Drill date	29 Aug 1985	Max tested yield	61 l/s
Driller	McMillan Drilling Ltd	Drawdown at max tested yield	8 m
Drilling method	Rotary/Percussion	Specific capacity	7.51 l/s/m
Casing material	STEEL	Last updated	29 Jun 2023
Pump type	Submersible	Last field check	17 Aug 2022
Water use data	Yes		



Screens

SCREEN NO.	SCREEN TYPE	TOP (M)	BOTTOM (M)	SLOT SIZE (MM)	SLOT LENGTH (MM)	DIAMETER (MM)	LEADER LENGTH (MM)
1	Stainless steel	87.4	103.4				

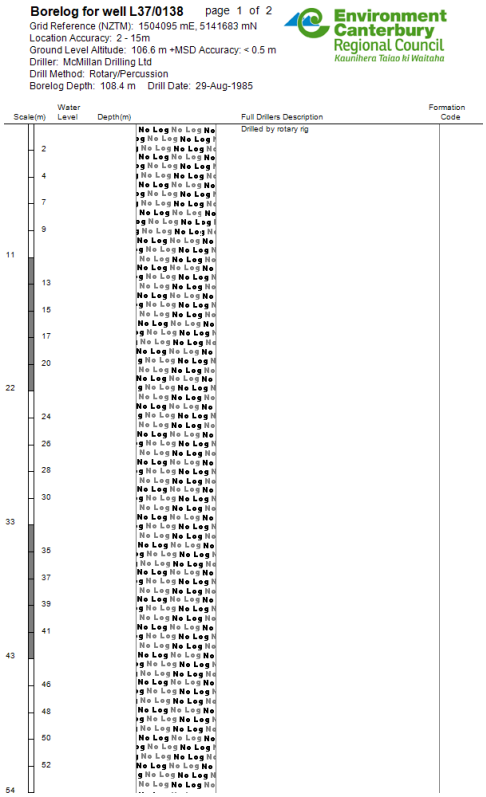
Step tests

STEP TEST DATE	STEP	YIELD	YIELD GPM	DRAWDOWN	STEP DURATION
29 Aug 1985	1	60.8	802.4496	8.1	5

Comments

COMMENT DATE	COMMENT
	PUMP CAPACITY 92L/SEC,15M DD
17 Dec 1999	Contact Martin Woolf, Plant Technologist
26 Feb 2002	Gridref changed from: L37:1404-0328
21 Jul 2011	Previous owner PPCS FAIRTON
11 Aug 2022	Previous owner Silver Fern Farms Ltd
10 Jan 2023	Reference Level updated using LiDAR imagery in Dec 2022. The existing RL was 107. and the QAR RL was 3. The method of calculating the original RL was: Estimated off a topo map. If GL from MP is updated in future please assess if RL also needs to be updated.
10 May 2023	Dec 2022 Reference Level update using LiDAR was in NZVD 2016, rather than Lyttelton 1937. Rectified in May 2023 by using the previously determined LiDAR elevation value and LINZ conversion tool to calculate Lyttelton 1937 elevation and update Reference Level field. Reference Level updated from 106.258m to 106.632m.

Bore log



Borelog for well L37/0138 page 1 of 2

Grid Reference (NZTM): 1504095 mE, 5141683 mN
Location Accuracy: 2 - 15m
Ground Level Altitude: 106.6 m +MSD Accuracy: < 0.5 m
Driller: McMillan Drilling Ltd
Drill Method: Rotary/Percussion
Borelog Depth: 108.4 m Drill Date: 29-Aug-1985

Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

Scale(m)	Water Level	Depth(m)	Full Drillers Description	Formation Code
			Drilled by rotary rig	

Bore or well number	L37/0212
Well name	FARIFIELD ROAD
Owner	FAIRTON SCHOOL

Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

Well number	L37/0212	File number	
Owner	FAIRTON SCHOOL	Well status	Buried / unlikely still exists
Street/road	FARIFIELD ROAD	NZTM grid reference	BY21:04824-41793
Locality	Fairton	NZTM X and Y	1504824 - 5141793
Location description		Location accuracy	50 - 300m
CWMS zone	Ashburton	Use	Domestic Supply,
Groundwater allocation zone	Ashburton Lyndhurst	Water level monitoring	--
Depth	39.32m	Water level count	0
Diameter	150mm	Initial water level	31.70m below MP
Measuring point description		Highest water level	
Measuring point elevation	106.00m above MSL (Lyttelton 1937)	Lowest water level	
Elevation accuracy	< 2.5 m	First reading	
Ground level	0.00m above MP	Last reading	
Strata layers	6	Calc min 80%	38.93m below MP (Estimated)
Aquifer name		Aquifer tests	0
Aquifer type	Semi-Confined	Yield drawdown tests	0
Drill date		Max tested yield	0 l/s
Driller	McMillan T T	Drawdown at max tested yield	0 m
Drilling method	Cable Tool	Specific capacity	
Casing material		Last updated	29 Jun 2023
Pump type	Submersible	Last field check	
Water use data	No		

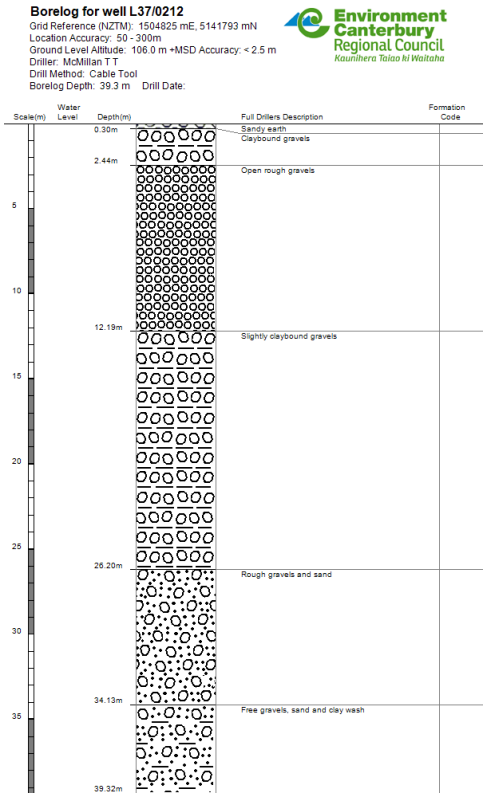
No screen data for this well

No step tests for this well

Comments

COMMENT DATE	COMMENT
10 Jan 2023	Reference Level updated using LiDAR imagery in Dec 2022. The existing RL was 106.87 and the QAR RL was 4. The method of calculating the original RL was: Interpolated DTM. If GL from MP is updated in future please assess if RL also needs to be updated.
10 May 2023	Dec 2022 Reference Level update using LiDAR was in NZVD 2016, rather than Lyttelton 1937. Rectified in May 2023 by using the previously determined LiDAR elevation value and LINZ conversion tool to calculate Lyttelton 1937 elevation and update Reference Level field. Reference Level updated from 105.625m to 105.998m.

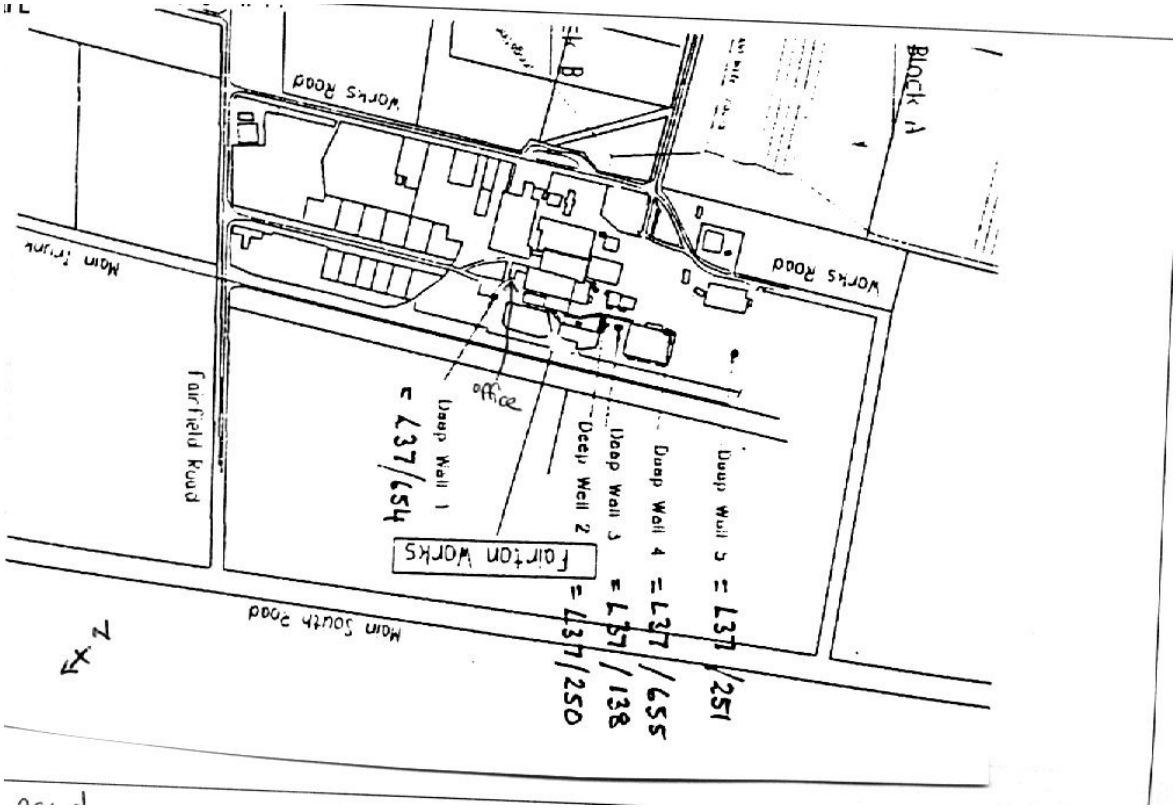
Bore log


Borelog for well L37/0212
Grid Reference (NZTM): 1504825 mE, 5141793 mN
Location Accuracy: 50 - 300m
Ground Level Altitude: 106.0 m +MSD Accuracy: < 2.5 m
Driller: McMillan T T
Drill Method: Cable Tool
Borelog Depth: 39.3 m Drill Date:
Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha
Scale(m)
Water Level
Depth(m)
Full Drillers Description
Formation Code
0.30m
Sandy earth
Claybound gravels
2.44m
Open rough gravels
12.19m
Slightly claybound gravels
26.20m
Rough gravels and sand
34.13m
Free gravels, sand and clay wash
39.32m
5
10
15
20
25
30
35

Bore or well number	L37/0250
Well name	WORKS ROAD
Owner	Silver Fern Farms Limited

Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

Well number	L37/0250	**File number**	CO6C/13175
Owner	Silver Fern Farms Limited	**Well status**	Active (exist, present)
Street/road	WORKS ROAD	**NZTM grid reference**	BY21:04104-41693
Locality	Fairfield	**NZTM X and Y**	1504104 - 5141693
Location description	2ND NORTHERN MOST WELL ON SITE, IN PIT.	**Location accuracy**	50 - 300m
CWMS zone	Ashburton	**Use**	Commercial / Industrial,
Groundwater allocation zone	Ashburton Lyndhurst	**Water level monitoring**	--
Depth	97.54m	**Water level count**	0
Diameter	200mm	**Initial water level**	31.09m below MP
Measuring point description	Unable to measure water level	**Highest water level**	
Measuring point elevation	106.75m above MSL (Lyttelton 1937)	**Lowest water level**	
Elevation accuracy	< 2.5 m	**First reading**	
Ground level	0.00m above MP	**Last reading**	
Strata layers	18	**Calc min 80%**	41.98m below MP (Estimated)
Aquifer name		**Aquifer tests**	0
Aquifer type	Semi-Confined	**Yield drawdown tests**	1
Drill date	19 Apr 1947	**Max tested yield**	13 l/s
Driller	Stewart J M	**Drawdown at max tested yield**	6 m
Drilling method	Cable Tool	**Specific capacity**	2.19 l/s/m
Casing material	STEEL	**Last updated**	29 Jun 2023
Pump type	Submersible	**Last field check**	16 Dec 1999
Water use data	Yes		



Screens

SCREEN NO.	SCREEN TYPE	TOP (M)	BOTTOM (M)	SLOT SIZE (MM)	SLOT LENGTH (MM)	DIAMETER (MM)	LEADER LENGTH (MM)
1	Slotted Casing	92.66	97.54				

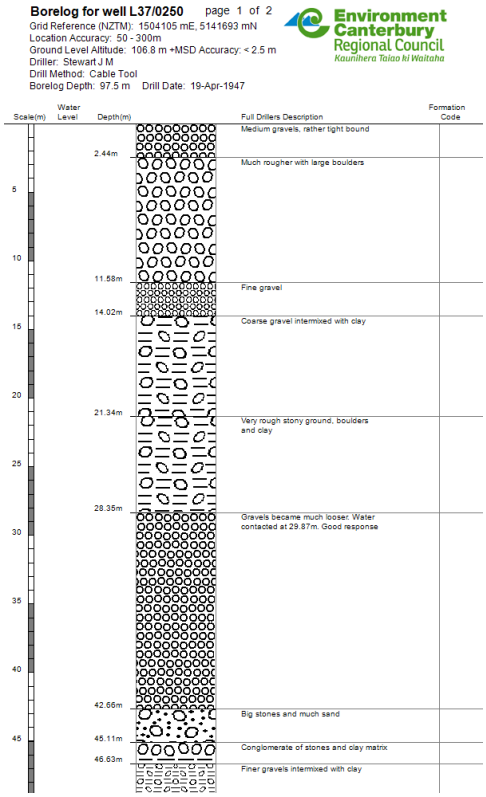
Step tests

STEP TEST DATE	STEP	YIELD	YIELD GPM	DRAWDOWN	STEP DURATION
19 Apr 1947	1	12.666667	167.177	5.79	0

Comments

COMMENT DATE	COMMENT
	PUMP CAPACITY 24L/SEC,9.0M DD Static level dropped 2.4m from 1947-May 1952. Drawdown 1947 - 3.96 @ 200gpm, 1952 - 4.26m @ 150gpm. Developed and test pumped by McMillans, 16.72 l/s 5.33m dd.
17 Dec 1999	Contact Marint Woolf, Plant Technologist.
17 Dec 1999	Pump removed for repair at time of field visit, but is intented to be replaced.
21 Jul 2011	Previous owner PPCS FAIRTON
10 Jan 2023	Reference Level updated using LiDAR imagery in Dec 2022. The existing RL was 107.13 and the QAR RL was 4. The method of calculating the original RL was: Interpolated DTM. If GL from MP is updated in future please assess if RL also needs to be updated.
10 May 2023	Dec 2022 Reference Level update using LiDAR was in NZVD 2016, rather than Lyttelton 1937. Rectified in May 2023 by using the previously determined LiDAR elevation value and LINZ conversion tool to calculate Lyttelton 1937 elevation and update Reference Level field. Reference Level updated from 106.372m to 106.746m.

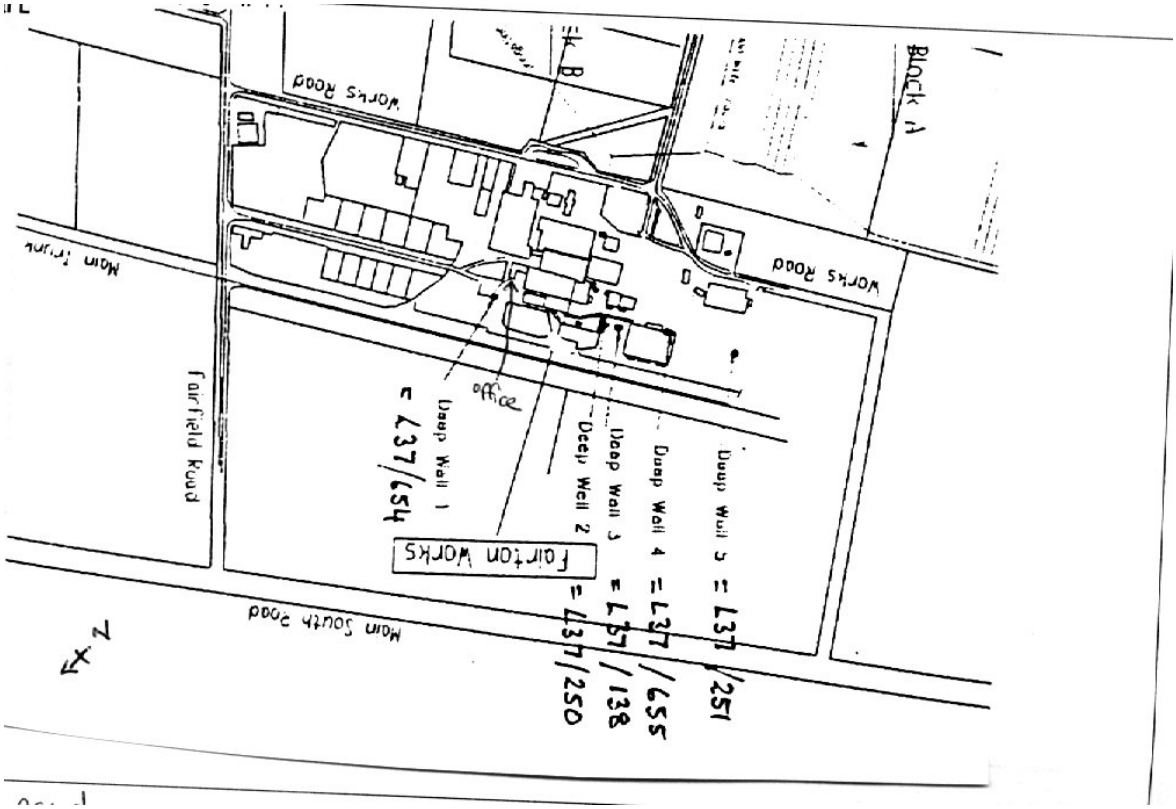
Bore log


Borelog for well L37/0250 page 1 of 2
Grid Reference (NZTM): 1504105 mE, 5141693 mN
Location Accuracy: 50 - 300m
Ground Level Altitude: 106.8 m +MSD Accuracy: < 2.5 m
Driller: Stewart J M
Drill Method: Cable Tool
Borelog Depth: 97.5 m Drill Date: 19-Apr-1947
Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha
Scale(m)
Water Level
Depth(m)
Full Drillers Description
Formation Code
Medium gravels, rather tight bound
2.44m
Much rougher with large boulders
11.58m
Fine gravel
14.02m
Coarse gravel intermixed with clay
21.34m
Very rough stony ground, boulders and clay
28.35m
Gravels became much looser. Water contacted at 29.87m. Good response
42.66m
Big stones and much sand
45.11m
Conglomerate of stones and clay matrix
46.63m
Finer gravels intermixed with clay

Bore or well number	L37/0251
Well name	WORKS ROAD
Owner	Talleys Limited

Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

Well number	L37/0251	File number	CO6C/13175
Owner	Talleys Limited	Well status	Active (exist, present)
Street/road	WORKS ROAD	NZTM grid reference	BY21:03925-41573
Locality	Fairfield	NZTM X and Y	1503925 - 5141573
Location description		Location accuracy	50 - 300m
CWMS zone	Ashburton	Use	Irrigation, Dairy Use
Groundwater allocation zone	Ashburton Lyndhurst	Water level monitoring	--
Depth	108.50m	Water level count	14
Diameter	250mm	Initial water level	32.77m below MP
Measuring point description		Highest water level	28.04m below MP
Measuring point elevation	105.62m above MSL (Lyttelton 1937)	Lowest water level	33.00m below MP
Elevation accuracy	< 2.5 m	First reading	30 Jun 1975
Ground level	0.00m above MP	Last reading	01 Jan 1991
Strata layers	33	Calc min 80%	32.61m below MP (Estimated)
Aquifer name		Aquifer tests	0
Aquifer type	Semi-Confined	Yield drawdown tests	1
Drill date	05 Jun 1973	Max tested yield	38 l/s
Driller	McMillan Drilling Ltd	Drawdown at max tested yield	7 m
Drilling method	Cable Tool	Specific capacity	5.18 l/s/m
Casing material	STEEL	Last updated	29 Jun 2023
Pump type	Submersible	Last field check	17 Aug 2022
Water use data	Yes		



Screens

SCREEN NO.	SCREEN TYPE	TOP (M)	BOTTOM (M)	SLOT SIZE (MM)	SLOT LENGTH (MM)	DIAMETER (MM)	LEADER LENGTH (MM)
1	Stainless steel	105.45	108.5				

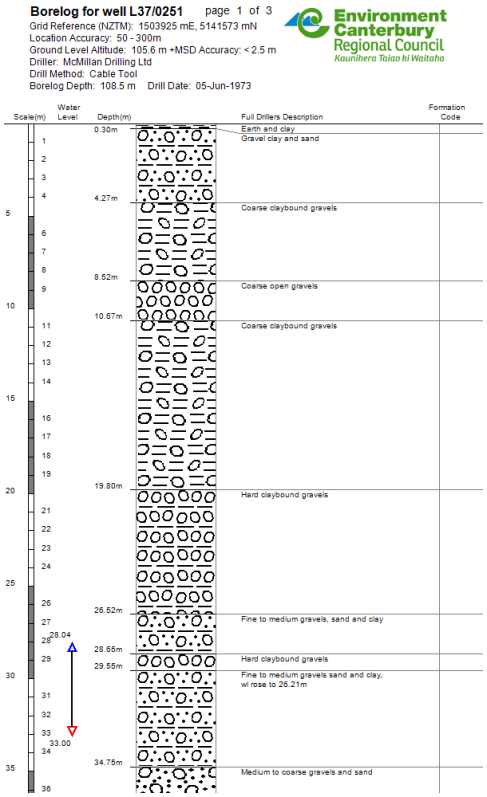
Step tests

STEP TEST DATE	STEP	YIELD	YIELD GPM	DRAWDOWN	STEP DURATION
05 Jun 1973	1	37.8333321	499.331268	7.31	0

Comments

COMMENT DATE	COMMENT
	PUMP CAPACITY 36 L/SEC 5M DD Additional Bisley Well Log in file, 50m deep drilled in 1976
20 Sep 2005	SCCB well AR 89
21 Jul 2011	Previous owner CFM FAIRTON
11 Aug 2022	Former owner Silver Fern Farms
10 Jan 2023	Reference Level updated using LiDAR imagery in Dec 2022. The existing RL was 107. and the QAR RL was 3. The method of calculating the original RL was: Estimated off a topo map. If GL from MP is updated in future please assess if RL also needs to be updated.
10 May 2023	Dec 2022 Reference Level update using LiDAR was in NZVD 2016, rather than Lyttelton 1937. Rectified in May 2023 by using the previously determined LiDAR elevation value and LINZ conversion tool to calculate Lyttelton 1937 elevation and update Reference Level field. Reference Level updated from 105.247m to 105.621m.

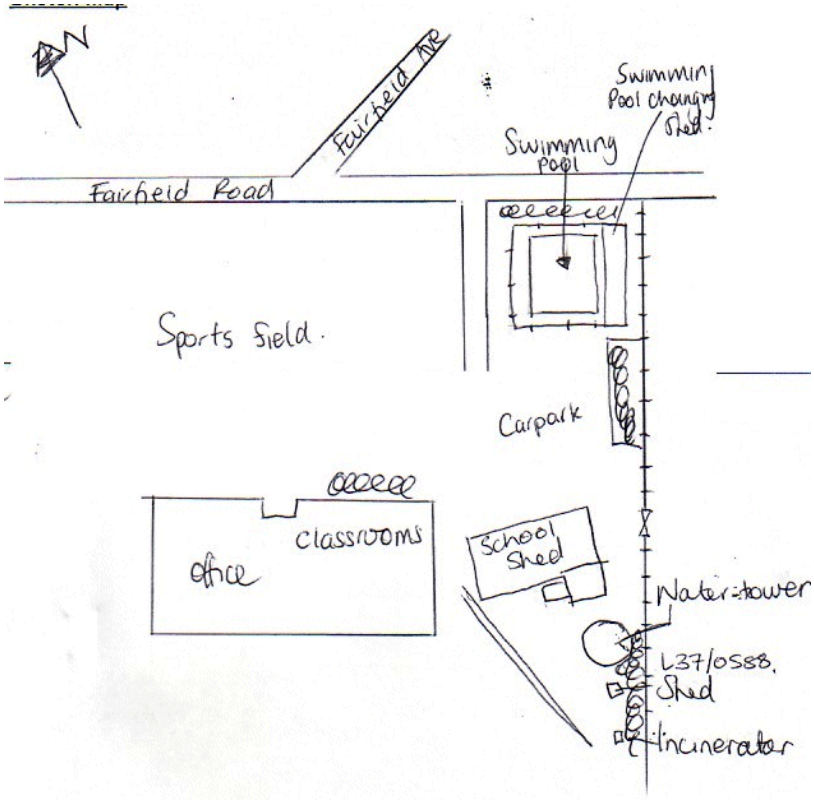
Bore log


Borelog for well L37/0251 page 1 of 3
Grid Reference (NZTM): 1503925 mE, 5141573 mN
Location Accuracy: 50 - 300m
Ground Level Altitude: 105.6 m +MSD Accuracy: < 2.5 m
Driller: McMillan Drilling Ltd
Drill Method: Cable Tool
Borelog Depth: 108.5 m Drill Date: 05-Jun-1973
Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha
Scale(m)
Water Level
Depth(m)
Full Drillers Description
Formation Code
0.30m
Earth and clay
Gravel clay and sand
4.27m
Coarse claybound gravels
8.52m
Coarse open gravels
10.67m
Coarse claybound gravels
19.80m
Hard claybound gravels
26.52m
Fine to medium gravels, sand and clay
28.04
28.65m
Hard claybound gravels
29.55m
Fine to medium gravels sand and clay, wl rose to 26.21m
33.00
34.75m
Medium to coarse gravels and sand

Bore or well number	L37/0588
Well name	FAIRFIELD ROAD
Owner	Ashburton District Council

Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

Well number	L37/0588	File number	CO6C/09635
Owner	Ashburton District Council	Well status	Sealed / Grouted up
Street/road	FAIRFIELD ROAD	NZTM grid reference	BY21:04861-41796
Locality	Fairton	NZTM X and Y	1504861 - 5141796
Location description	SE BOUNDARY OF FAIRTON SCHOOL GROUNDS	Location accuracy	2 - 15m
CWMS zone	Ashburton	Use	Public Water Supply,
Groundwater allocation zone	Ashburton Lyndhurst	Water level monitoring	--
Depth	39.50m	Water level count	1
Diameter	150mm	Initial water level	28.40m below MP
Measuring point description		Highest water level	24.51m below MP
Measuring point elevation	106.08m above MSL (Lyttelton 1937)	Lowest water level	24.51m below MP
Elevation accuracy	< 0.5 m	First reading	27 Jun 2009
Ground level	0.00m above MP	Last reading	27 Jun 2009
Strata layers	0	Calc min 80%	26.97m below MP (Estimated)
Aquifer name		Aquifer tests	0
Aquifer type	Unknown	Yield drawdown tests	1
Drill date		Max tested yield	7 l/s
Driller	Not Known	Drawdown at max tested yield	6 m
Drilling method	Unknown	Specific capacity	1.13 l/s/m
Casing material		Last updated	29 Jun 2023
Pump type	Submersible	Last field check	27 Jun 2009
Water use data	Yes		



No screen data for this well

Step tests

STEP TEST DATE	STEP	YIELD	YIELD GPM	DRAWDOWN	STEP DURATION
07 Jun 2002	1	6.8	89.74765	6	0

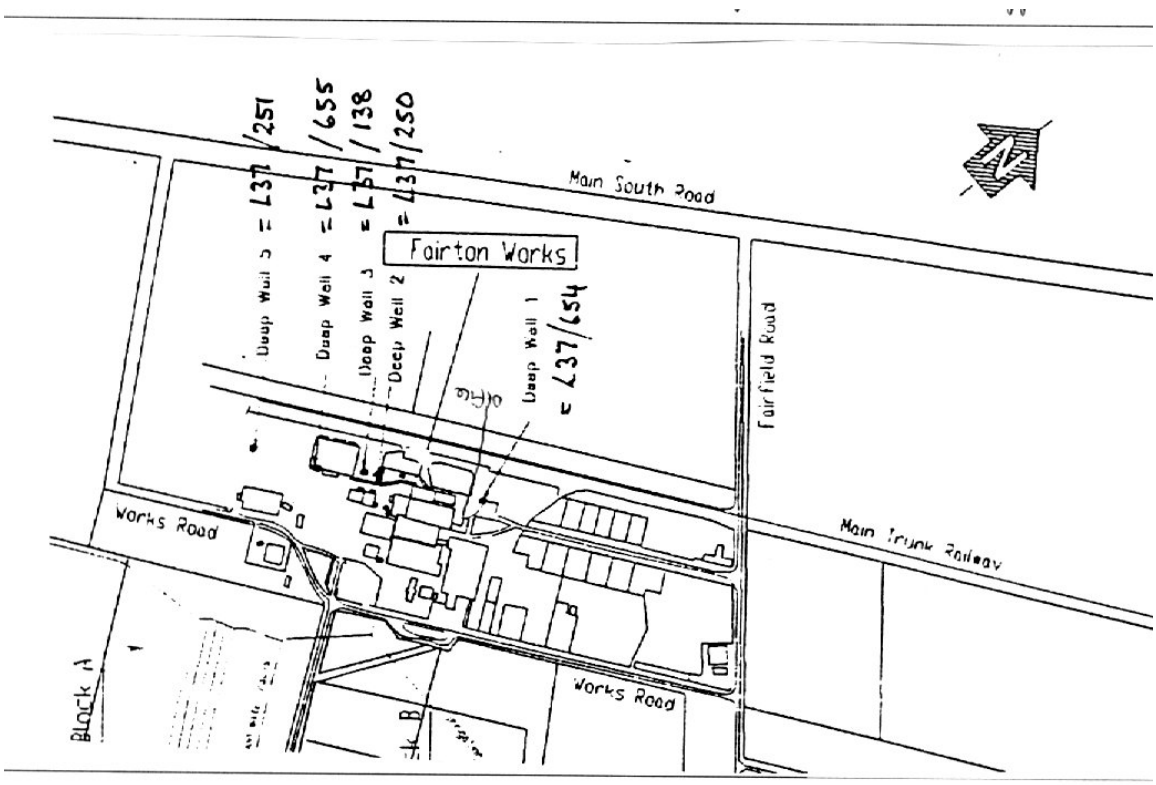
Comments

COMMENT DATE	COMMENT
	FROM OLD CWS DB Located on the SE boundary of Fairton School grounds, behind school shed. Is also pump shed & water tower.
29 Mar 2000	FROM OLD CWS DB Surrounding area school grounds, classrooms & toilets. School swimming pool approx. 50 m NE of well. GRID REF: L37:14839-03404.
16 Mar 2001	Previous grid ref L37:1483-0341, updated using GPS 29/03/00.
19 Nov 2019	Changed status from Active to Not used. Informed by Euan Cox from ADC that it is not being used and will soon be removed from the Drinking Water Register. Well L37/1716 is being used instead (since about 2008).
10 Nov 2021	Well decommissioned by McMillan Drilling. Filled in with grout with a cement seal 0.00-0.50m. C2021C/235699
10 Jan 2023	Reference Level updated using LiDAR imagery in Dec 2022. The existing RL was 107. and the QAR RL was 3. The method of calculating the original RL was: Estimated off a topo map. If GL from MP is updated in future please assess if RL also needs to be updated.
10 May 2023	Dec 2022 Reference Level update using LiDAR was in NZVD 2016, rather than Lyttelton 1937. Rectified in May 2023 by using the previously determined LiDAR elevation value and LINZ conversion tool to calculate Lyttelton 1937 elevation and update Reference Level field. Reference Level updated from 105.706m to 106.079m.

Bore or well number	L37/0654
Well name	FAIRFIELD ROAD
Owner	Silver Fern Farms Limited

Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

Well number	L37/0654	File number	CO6C/13175
Owner	Silver Fern Farms Limited	Well status	Active (exist, present)
Street/road	FAIRFIELD ROAD	NZTM grid reference	BY21:04264-41813
Locality	Fairton	NZTM X and Y	1504264 - 5141813
Location description	NORTHERNMOST WELL ON PLANT, IN PIT	Location accuracy	50 - 300m
CWMS zone	Ashburton	Use	Commercial / Industrial,
Groundwater allocation zone	Ashburton Lyndhurst	Water level monitoring	--
Depth	91.58m	Water level count	0
Diameter	300mm	Initial water level	27.00m below MP
Measuring point description	Unable to measure water level	Highest water level	
Measuring point elevation	106.90m above MSL (Lyttelton 1937)	Lowest water level	
Elevation accuracy	< 2.5 m	First reading	
Ground level	0.00m above MP	Last reading	
Strata layers	0	Calc min 80%	42.46m below MP (Estimated)
Aquifer name		Aquifer tests	1
Aquifer type	Unknown	Yield drawdown tests	1
Drill date	01 Dec 1979	Max tested yield	51 l/s
Driller	McMillan Drilling Ltd	Drawdown at max tested yield	13 m
Drilling method	Cable Tool	Specific capacity	4.05 l/s/m
Casing material	STEEL	Last updated	29 Jun 2023
Pump type	Submersible	Last field check	16 Dec 1999
Water use data	Yes		



Screens

SCREEN NO.	SCREEN TYPE	TOP (M)	BOTTOM (M)	SLOT SIZE (MM)	SLOT LENGTH (MM)	DIAMETER (MM)	LEADER LENGTH (MM)
1	Stainless steel	88.58	91.58				

Step tests

STEP TEST DATE	STEP	YIELD	YIELD GPM	DRAWDOWN	STEP DURATION
01 Dec 1979	1	51	673.107361	12.6	0

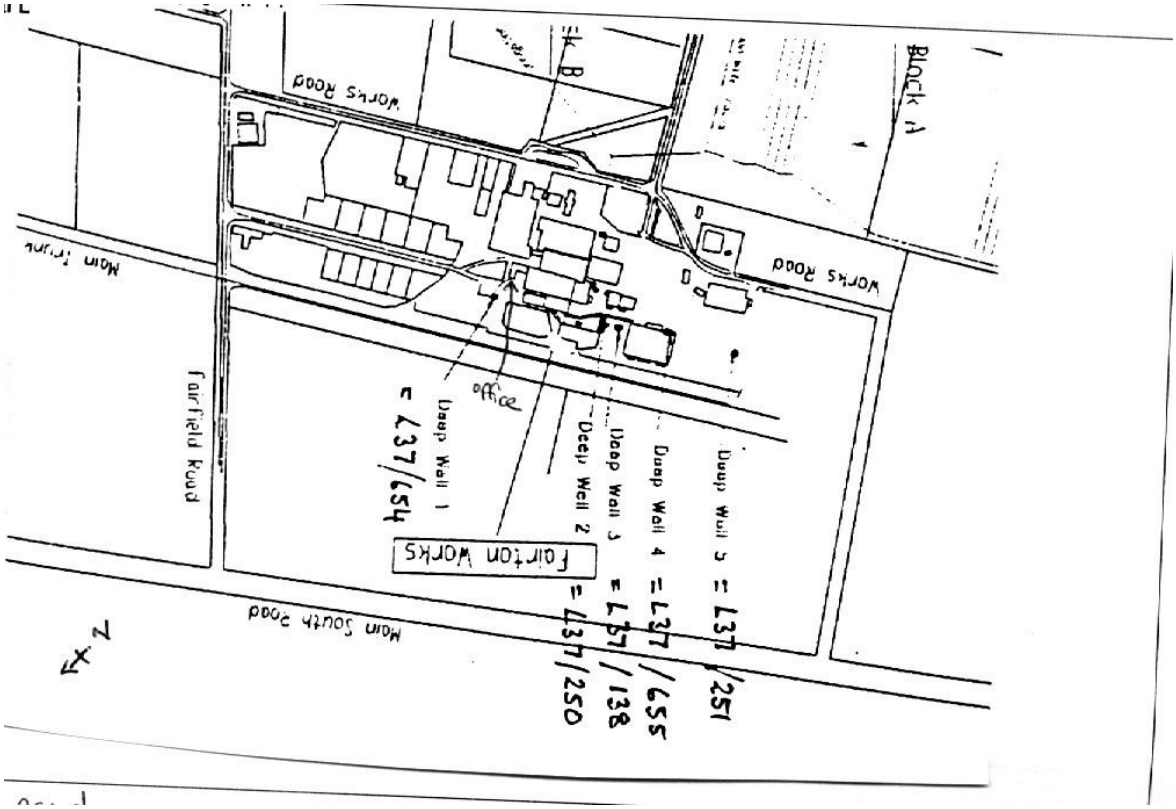
Comments

COMMENT DATE	COMMENT
	NO 1 WELL.WELL LATER FITTED WITH A LARGER PUMP 78 L/SEC,22.5M DD. FORMERLY CANTERBURY FROZEN MEAT COMPANY LTD.
20 Dec 1999	Contact Martin Woolf, Plant Technologist.
21 Jul 2011	Previous owner PPCS FAIRTON
10 Jan 2023	Reference Level updated using LiDAR imagery in Dec 2022. The existing RL was 107.67 and the QAR RL was 4. The method of calculating the original RL was: Interpolated DTM. If GL from MP is updated in future please assess if RL also needs to be updated.
10 May 2023	Dec 2022 Reference Level update using LiDAR was in NZVD 2016, rather than Lyttelton 1937. Rectified in May 2023 by using the previously determined LiDAR elevation value and LINZ conversion tool to calculate Lyttelton 1937 elevation and update Reference Level field. Reference Level updated from 106.525m to 106.899m.

Bore or well number	L37/0655
Well name	FAIRFIELD ROAD
Owner	Silver Fern Farms Limited

Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

Well number	L37/0655	File number	CO6C/13175
Owner	Silver Fern Farms Limited	Well status	Active (exist, present)
Street/road	FAIRFIELD ROAD	NZTM grid reference	BY21:04005-41633
Locality	Fairton	NZTM X and Y	1504005 - 5141633
Location description	2ND SOUTHERN-MOST WELL, IN PIT	Location accuracy	50 - 300m
CWMS zone	Ashburton	Use	Commercial / Industrial,
Groundwater allocation zone	Ashburton Lyndhurst	Water level monitoring	--
Depth	97.80m	Water level count	0
Diameter	250mm	Initial water level	33.50m below MP
Measuring point description	Unable to measure water level	Highest water level	
Measuring point elevation	106.17m above MSL (Lyttelton 1937)	Lowest water level	
Elevation accuracy	< 2.5 m	First reading	
Ground level	0.00m above MP	Last reading	
Strata layers	34	Calc min 80%	41.70m below MP (Estimated)
Aquifer name		Aquifer tests	0
Aquifer type	Unknown	Yield drawdown tests	1
Drill date	01 Jul 1961	Max tested yield	34 l/s
Driller	A M Bisley & Co	Drawdown at max tested yield	8 m
Drilling method	Cable Tool	Specific capacity	4.53 l/s/m
Casing material	STEEL	Last updated	29 Jun 2023
Pump type	Submersible	Last field check	16 Dec 1999
Water use data	Yes		



Screens

SCREEN NO.	SCREEN TYPE	TOP (M)	BOTTOM (M)	SLOT SIZE (MM)	SLOT LENGTH (MM)	DIAMETER (MM)	LEADER LENGTH (MM)
1	Slotted Casing	87.1	97.8				

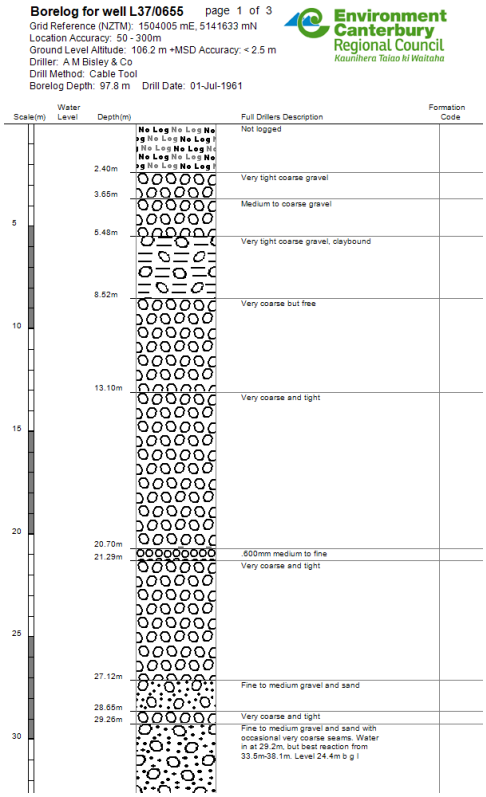
Step tests

STEP TEST DATE	STEP	YIELD	YIELD GPM	DRAWDOWN	STEP DURATION
01 Jul 1961	1	34	448.738251	7.5	0

Comments

COMMENT DATE	COMMENT
	NO 4 WELL. THE 152.4MM CASING WAS LIFTED 27.4M AND 38.1MM LOWERED 91.44M IN THE 152.4MM FOR AIR LIFT PURPOSES. FORMERLY CANTERBURY FROZEN MEAT COMPANY LTD.
17 Dec 1999	Contact Martin Woolf, Plant Technologist.
21 Jul 2011	Previous owner PPCS FAIRTON
10 Jan 2023	Reference Level updated using LiDAR imagery in Dec 2022. The existing RL was 107. and the QAR RL was 3. The method of calculating the original RL was: Estimated off a topo map. If GL from MP is updated in future please assess if RL also needs to be updated.
10 May 2023	Dec 2022 Reference Level update using LiDAR was in NZVD 2016, rather than Lyttelton 1937. Rectified in May 2023 by using the previously determined LiDAR elevation value and LINZ conversion tool to calculate Lyttelton 1937 elevation and update Reference Level field. Reference Level updated from 105.792m to 106.165m.

Bore log



Borelog for well L37/0655 page 1 of 3
Grid Reference (NZTM): 1504005 mE, 5141633 mN
Location Accuracy: 50 - 300m
Ground Level Altitude: 106.2 m +MSD Accuracy: < 2.5 m
Driller: A M Bisley & Co
Drill Method: Cable Tool
Borelog Depth: 97.8 m Drill Date: 01-Jul-1961

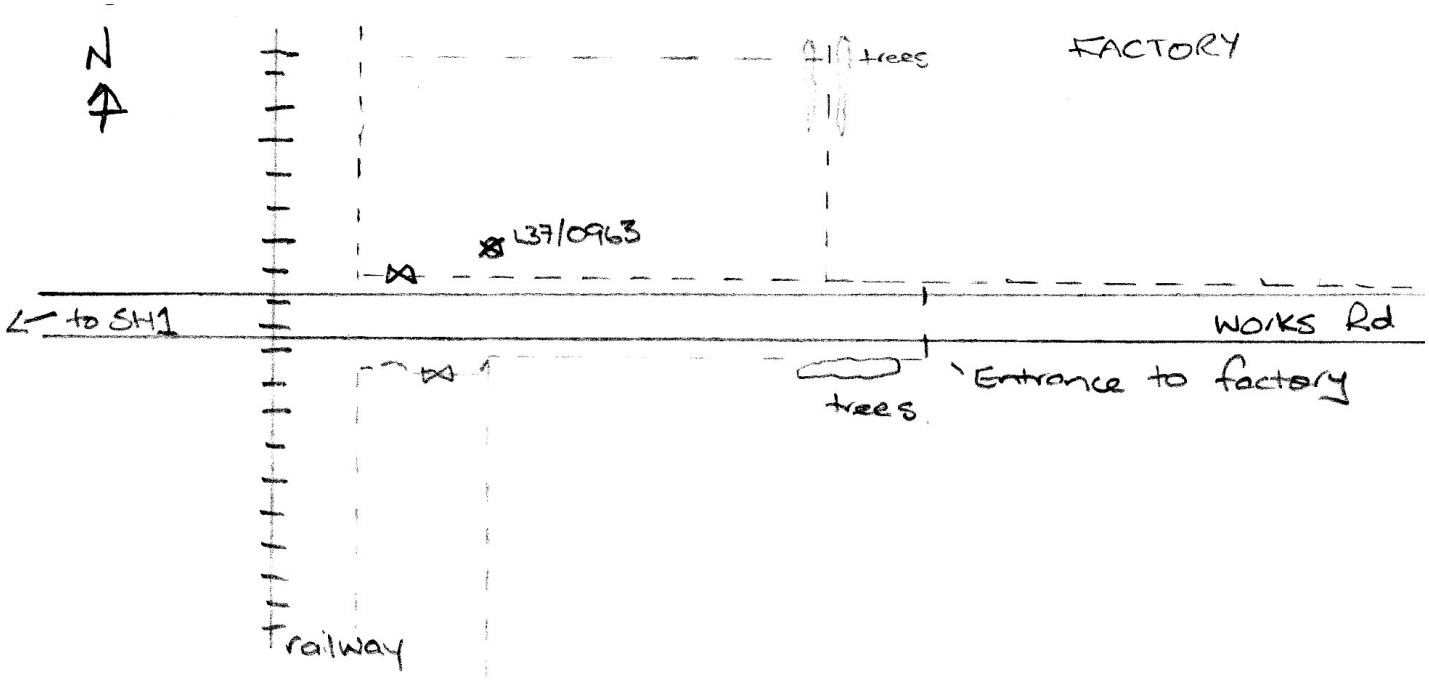
Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

Scale(m)	Water Level	Depth(m)	Full Drillers Description	Formation Code
			Not logged	
		2.40m		
			Very tight coarse gravel	
		3.65m		
			Medium to coarse gravel	
5		5.48m		
			Very tight coarse gravel, claybound	
		8.52m		
			Very coarse but free	
10				
		13.10m		
			Very coarse and tight	
15				
20		20.70m		
		21.29m	600mm medium to fine	
			Very coarse and tight	
25				
		27.12m		
			Fine to medium gravel and sand	
		28.65m		
		29.26m	Very coarse and tight	
30			Fine to medium gravel and sand with occasional very coarse seams. Water in at 29.2m, but best reaction from 33.5m-38.1m. Level 24.4m b g l	

Bore or well number	L37/0963
Well name	Works Road
Owner	Primary Producers Co-operative Society

Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

Well number	L37/0963	File number	CO6C/9989
Owner	Primary Producers Co-operative Society	Well status	Active (exist, present)
Street/road	Works Road	NZTM grid reference	BY21:03735-41493
Locality	Fairton	NZTM X and Y	1503735 - 5141493
Location description	near fenceline east of railway line	Location accuracy	2 - 15m
CWMS zone	Ashburton	Use	Water Level Observation,
Groundwater allocation zone	Ashburton Lyndhurst	Water level monitoring	--
Depth	35.20m	Water level count	12
Diameter	100mm	Initial water level	19.00m below MP
Measuring point description	ToC	Highest water level	18.98m below MP
Measuring point elevation	106.44m above MSL (Lyttelton 1937)	Lowest water level	28.27m below MP
Elevation accuracy	< 0.5 m	First reading	03 Jul 2002
Ground level	0.75m below MP	Last reading	12 Jan 2017
Strata layers	6	Calc min 80%	21.94m below MP (Estimated)
Aquifer name		Aquifer tests	0
Aquifer type		Yield drawdown tests	0
Drill date	13 Dec 2000	Max tested yield	
Driller	McMillan Drilling Ltd	Drawdown at max tested yield	
Drilling method	Rotary/Percussion	Specific capacity	
Casing material	PVC	Last updated	05 Jul 2023
Pump type	None Installed	Last field check	12 Jan 2017
Water use data	No		



Screens

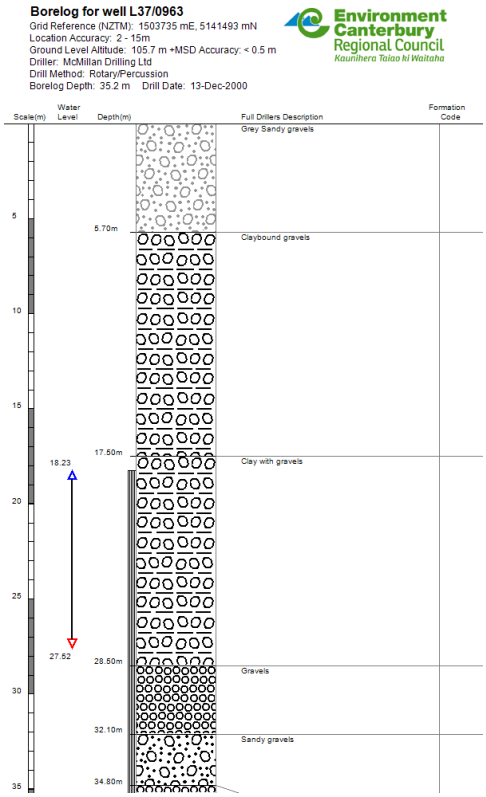
SCREEN NO.	SCREEN TYPE	TOP (M)	BOTTOM (M)	SLOT SIZE (MM)	SLOT LENGTH (MM)	DIAMETER (MM)	LEADER LENGTH (MM)
1	Slotted PVC	18.2	35.2				

No step tests for this well

Comments

COMMENT DATE	COMMENT
03 Aug 2001	slot size 4mm
09 Jul 2002	Gridref changed from: L37:1374-0310
22 Jan 2004	<Note Added from Squalarc> PPCS Fairton upstream monitoring well. Access from works Road.
10 Jan 2023	Reference Level updated using LiDAR imagery in Dec 2022. The existing RL was 107.44 and the QAR RL was 4. The method of calculating the original RL was: Interpolated DTM. If GL from MP is updated in future please assess if RL also needs to be updated.
10 May 2023	Dec 2022 Reference Level update using LiDAR was in NZVD 2016, rather than Lyttelton 1937. Rectified in May 2023 by using the previously determined LiDAR elevation value and LINZ conversion tool to calculate Lyttelton 1937 elevation and update Reference Level field. Reference Level updated from 106.063m to 106.437m.

Bore log


Borelog for well L37/0963
Grid Reference (NZTM): 1503735 mE, 5141493 mN
Location Accuracy: 2 - 15m
Ground Level Altitude: 105.7 m +MSD Accuracy: < 0.5 m
Driller: McMillan Drilling Ltd
Drill Method: Rotary/Percussion
Borelog Depth: 35.2 m Drill Date: 13-Dec-2000
Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha
Scale(m)
Water Level
Depth(m)
Full Drillers Description
Formation Code
Grey Sandy gravels
5.70m
Claybound gravels
17.50m
Clay with gravels
18.23
27.52
28.50m
Gravels
32.10m
Sandy gravels
34.80m
5
10
15
20
25
30
35

Bore or well number	L37/1716
Well name	FAIRFIELD ROAD
Owner	Ashburton District Council

Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

Well number	L37/1716	File number	CO6C/29690
Owner	Ashburton District Council	Well status	Active (exist, present)
Street/road	FAIRFIELD ROAD	NZTM grid reference	BY21:04877-41795
Locality	Fairton	NZTM X and Y	1504877 - 5141795
Location description	With pump sheds and tank, beside school grounds.	Location accuracy	2 - 15m
CWMS zone	Ashburton	Use	Public Water Supply,
Groundwater allocation zone	Ashburton Lyndhurst	Water level monitoring	--
Depth	101.20m	Water level count	1
Diameter	200mm	Initial water level	32.94m below MP
Measuring point description	ToC	Highest water level	32.45m below MP
Measuring point elevation	106.60m above MSL (Lyttelton 1937)	Lowest water level	32.45m below MP
Elevation accuracy	< 0.5 m	First reading	24 Jun 2009
Ground level	0.50m below MP	Last reading	24 Jun 2009
Strata layers	7	Calc min 80%	35.70m below MP (Estimated)
Aquifer name		Aquifer tests	2
Aquifer type		Yield drawdown tests	5
Drill date	09 Jun 2009	Max tested yield	25 l/s
Driller	McMillan Drilling Ltd	Drawdown at max tested yield	5 m
Drilling method	Rotary/Percussion	Specific capacity	9.64 l/s/m
Casing material	Steel	Last updated	29 Jun 2023
Pump type		Last field check	08 Dec 2015
Water use data	No		

Screens

SCREEN NO.	SCREEN TYPE	TOP (M)	BOTTOM (M)	SLOT SIZE (MM)	SLOT LENGTH (MM)	DIAMETER (MM)	LEADER LENGTH (MM)
1	Stainless steel	98.2	101.2			180	1150

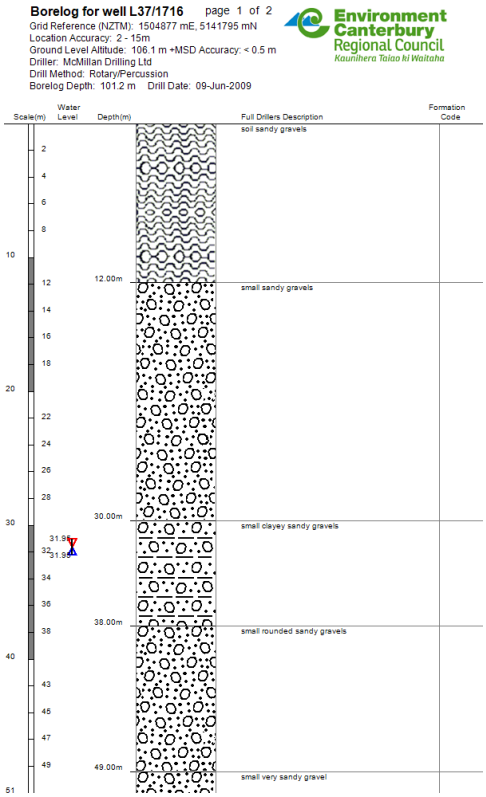
Step tests

STEP TEST DATE	STEP	YIELD	YIELD GPM	DRAWDOWN	STEP DURATION
09 Jun 2009	1	5.4	71.270195	0.56	0
09 Jun 2009	2	8.6	113.504387	0.81	0
09 Jun 2009	3	12.9	170.256561	1.37	0
09 Jun 2009	4	15.8	208.531311	1.93	0
09 Jun 2009	5	25.30651	333.999969	4.86	0

Comments

COMMENT DATE	COMMENT
09 Sep 2009	Gridref changed from: L37:1483-0340
16 Dec 2009	Gridref changed from: to L37:14850-03417
28 Sep 2010	Bore compliance report and drillers log received.
28 Jul 2016	NZTM Easting/Northing updated from:1504874-5141810 shifted 5m. From CDWS field QA summer 2015/2016. Other CDWS and well details updated where required.
29 Jul 2016	Surrounding landuse from CDWS field QA: Residential, school grounds and agricultural.
18 Nov 2016	NZTM Easting/Northing updated from:1504878-5141806 shifted 10m. Updated location as previous update was not entirely correct.
18 Nov 2016	CDWS Protection zone updated Nov 2016 based on location coordinate update for well.
10 Jan 2023	Reference Level updated using LiDAR imagery in Dec 2022. The existing RL was 107.37 and the QAR RL was 4. The method of calculating the original RL was: Interpolated DTM. If GL from MP is updated in future please assess if RL also needs to be updated.
10 May 2023	Dec 2022 Reference Level update using LiDAR was in NZVD 2016, rather than Lyttelton 1937. Rectified in May 2023 by using the previously determined LiDAR elevation value and LINZ conversion tool to calculate Lyttelton 1937 elevation and update Reference Level field. Reference Level updated from 106.229m to 106.602m.

Bore log


Borelog for well L37/1716 page 1 of 2
Grid Reference (NZTM): 1504877 mE, 5141795 mN
Location Accuracy: 2 - 15m
Ground Level Altitude: 106.1 m +MSD Accuracy: < 0.5 m
Driller: McMillan Drilling Ltd
Drill Method: Rotary/Percussion
Borelog Depth: 101.2 m Drill Date: 09-Jun-2009
Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha
Scale(m)
Water Level
Depth(m)
Full Drillers Description
Formation Code
soil sandy gravels
12.00m
small sandy gravels
30.00m
small clayey sandy gravels
31.98
31.38
38.00m
small rounded sandy gravels
49.00m
small very sandy gravel

Bore or well number	BY21/0545
Well name	JB Cullen Drive
Owner	Talley's Limited

Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

Well number	BY21/0545	File number	
Owner	Talley's Limited	Well status	Active (exist, present)
Street/road	JB Cullen Drive	NZTM grid reference	BY21:03877-41360
Locality	Ashburton	NZTM X and Y	1503877 - 5141360
Location description		Location accuracy	10 - 50m
CWMS zone	Ashburton	Use	Groundwater Quality,
Groundwater allocation zone	Ashburton Lyndhurst	Water level monitoring	--
Depth	38.11m	Water level count	0
Diameter	50mm	Initial water level	25.92m below MP
Measuring point description	Top of Casing	Highest water level	
Measuring point elevation		Lowest water level	
Elevation accuracy		First reading	
Ground level	0.47m below MP	Last reading	
Strata layers	5	Calc min 80%	
Aquifer name		Aquifer tests	0
Aquifer type		Yield drawdown tests	0
Drill date	13 Jun 2023	Max tested yield	
Driller	McMillan Drilling Ltd	Drawdown at max tested yield	
Drilling method	Rotary Rig	Specific capacity	
Casing material	PVC	Last updated	10 Apr 2024
Pump type		Last field check	
Water use data	No		

Screens

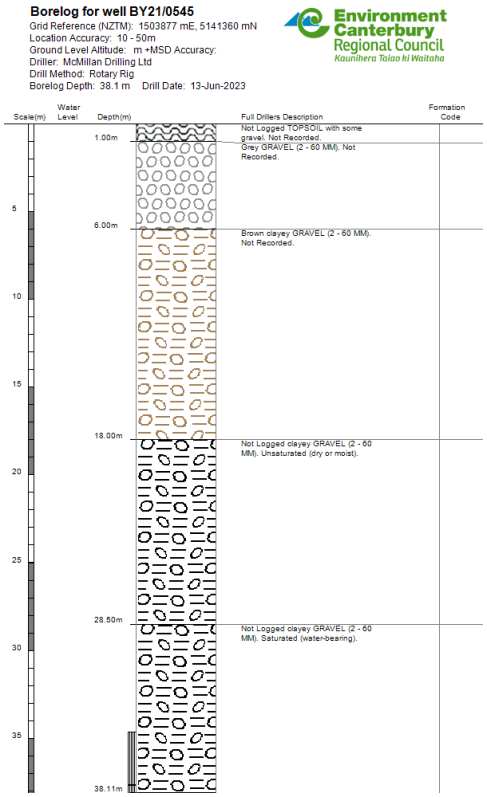
SCREEN NO.	SCREEN TYPE	TOP (M)	BOTTOM (M)	SLOT SIZE (MM)	SLOT LENGTH (MM)	DIAMETER (MM)	LEADER LENGTH (MM)
1	Slotted PVC	34.59	37.6	0.5		50	
2	Sump	37.6	38.11			50	

No step tests for this well

Comments

COMMENT DATE	COMMENT
20 Jun 2023	AGS Upload file C23C/132752

Bore log


Borelog for well BY21/0545
Grid Reference (NZTM): 1503877 mE, 5141360 mN
Location Accuracy: 10 - 50m
Ground Level Altitude: m +MSD Accuracy:
Driller: McMillan Drilling Ltd
Drill Method: Rotary Rig
Borelog Depth: 38.1 m Drill Date: 13-Jun-2023
Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha
Scale(m)
Water Level
Depth(m)
Full Drillers Description
Formation Code
1.00m
Not Logged TOPSOIL with some gravel. Not Recorded.
Grey GRAVEL (2 - 60 MM). Not Recorded.
6.00m
Brown clayey GRAVEL (2 - 60 MM). Not Recorded.
18.00m
Not Logged clayey GRAVEL (2 - 60 MM). Unsaturated (dry or moist).
28.50m
Not Logged clayey GRAVEL (2 - 60 MM). Saturated (water-bearing).
38.11m
5
10
15
20
25
30
35

Bore or well number	BY21/0546
Well name	Company Road
Owner	Talley's Limited

Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

Well number	BY21/0546	File number	
Owner	Talley's Limited	Well status	Active (exist, present)
Street/road	Company Road	NZTM grid reference	BY21:04424-41199
Locality	Ashburton	NZTM X and Y	1504424 - 5141199
Location description		Location accuracy	10 - 50m
CWMS zone	Ashburton	Use	Groundwater Quality,
Groundwater allocation zone	Ashburton Lyndhurst	Water level monitoring	--
Depth	38.01m	Water level count	0
Diameter	50mm	Initial water level	28.20m below MP
Measuring point description	Top of Casing	Highest water level	
Measuring point elevation		Lowest water level	
Elevation accuracy		First reading	
Ground level	0.50m below MP	Last reading	
Strata layers	6	Calc min 80%	
Aquifer name		Aquifer tests	0
Aquifer type		Yield drawdown tests	0
Drill date	08 Jun 2023	Max tested yield	
Driller	McMillan Drilling Ltd	Drawdown at max tested yield	
Drilling method	Rotary Rig	Specific capacity	
Casing material	PVC	Last updated	10 Apr 2024
Pump type		Last field check	
Water use data	No		

Screens

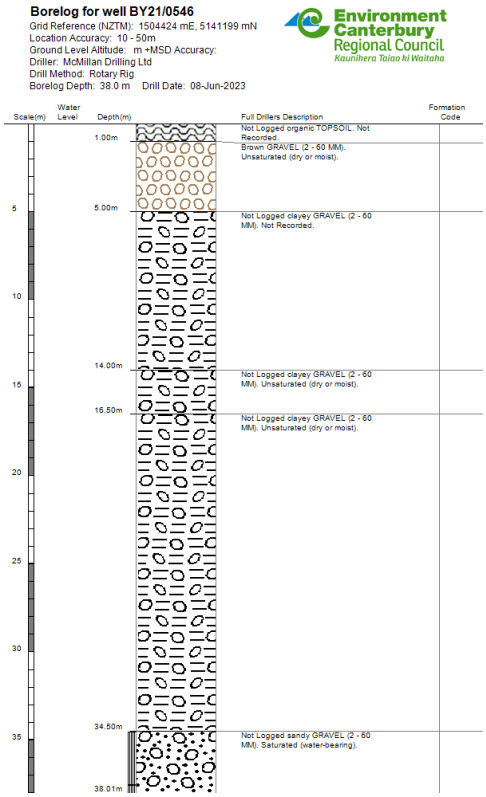
SCREEN NO.	SCREEN TYPE	TOP (M)	BOTTOM (M)	SLOT SIZE (MM)	SLOT LENGTH (MM)	DIAMETER (MM)	LEADER LENGTH (MM)
1	Slotted PVC	34.49	37.5	0.5		50	
2	Sump	37.5	38.01			50	

No step tests for this well

Comments

COMMENT DATE	COMMENT
20 Jun 2023	AGS Upload file C23C/132770

Bore log


Borelog for well BY21/0546
Grid Reference (NZTM): 1504424 mE, 5141199 mN
Location Accuracy: 10 - 50m
Ground Level Altitude: m +MSD Accuracy:
Driller: McMillan Drilling Ltd
Drill Method: Rotary Rig
Borelog Depth: 38.0 m Drill Date: 08-Jun-2023
Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha
Scale(m)
Water Level
Depth(m)
Full Drillers Description
Formation Code
1.00m
Not Logged organic TOPSOIL. Not Recorded.
Brown GRAVEL (2 - 60 MM). Unsaturated (dry or moist).
5.00m
Not Logged clayey GRAVEL (2 - 60 MM). Not Recorded.
14.00m
Not Logged clayey GRAVEL (2 - 60 MM). Unsaturated (dry or moist).
16.50m
Not Logged clayey GRAVEL (2 - 60 MM). Unsaturated (dry or moist).
34.50m
Not Logged sandy GRAVEL (2 - 60 MM). Saturated (water-bearing).
38.01m

Appendix C. Technical Memo – Onsite Soakage Testing

Memo

To:	Talley's Limited	From:	Harry Petterson
		Reviewed by:	Cecylia Karcz
		Approved by:	Andrew Tisch
Cc:		Date:	26 October 2022
Subject:	Fairton Servicing – Onsite Soakage Testing Memo		

Introduction

e2Environmental Ltd (e2) have been engaged by Talley's Limited to provide an infrastructure and servicing report to support future development of sites Lot 2 DP 413606 (109 Works Road) and partial development of Pt Lot 1 DP 3868 (342 Company Road).

This memo documents the findings of three soakage tests done onsite, all of which were falling head tests. The information contained in this memo will inform the stormwater servicing and the capacity of the site to support soakage to ground of stormwater runoff.

Pilot Test Pit

An initial hole was excavated by a digger to check the soil profile and groundwater depth. Groundwater was found at 3.5 m below ground. See the soil profile and photos in the figures below.

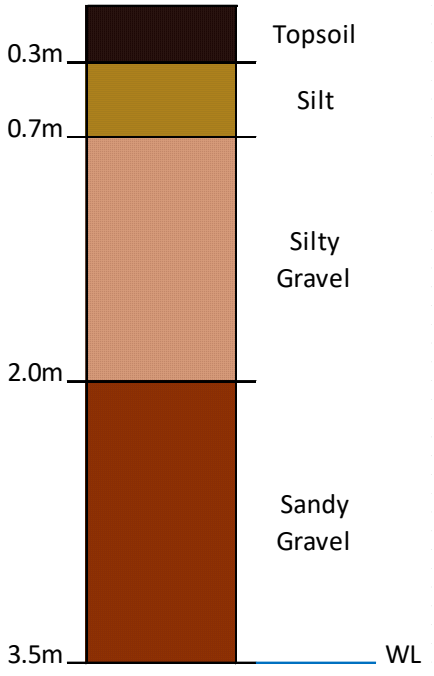


Figure 1. Soil Profile for Test Pit 1.

Figure 2. Test Pit 1 with Piezometer installed.

This pilot test pit indicated the soakage test should be approximately 3 m deep, so that the soakage would be occurring in the most free draining gravel strata.
A location plan of the three soakage tests is shown in Figure 3. The first soakage test location was close (within 5m) to the pilot test pit location.

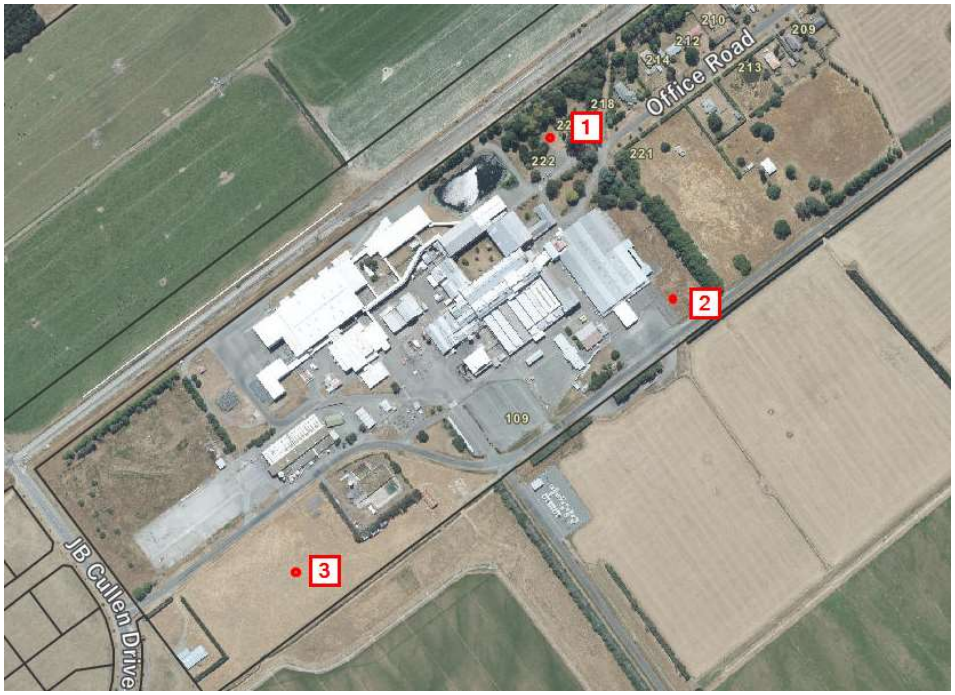


Figure 3. Plan view of the three soakage test locations.

Soakage Test 1

The test hole dimensions were 2.5 m x 1.1 m x 2.9 m deep as shown in Figure 4.

Figure 4. Soakage Hole 1.

The falling head test for this soakage hole resulted in a bulk soakage rate of 150 mm/hr. Details of this test are shown in Attachment A, summarised in Figure 5. This soakage rate was less than expected given the gravel strata. To ensure this wasn't due to proximity to groundwater depth, the following two tests were to be conducted closer to a depth of 2 m, rather than 3 m.

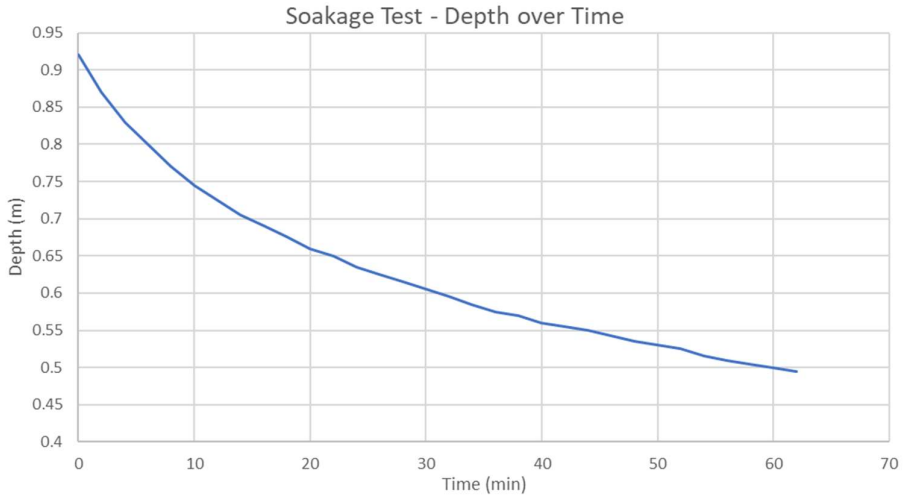


Figure 5. Falling head test results for soakage test 1.

A 4m long piezometer tube (protruding 0.31 m out of the ground) was installed in the pilot test pit instead of soakage hole 1, since the pilot test pit was deeper than the soakage hole. Given the close proximity of the two holes and the similarity of the soil profile, we expect the groundwater to be similar in either location.

Soakage Test 2

A 3.4 m x 1.1 m x 2.1 m deep test hole was excavated, as shown in Figure 6 and 7.

Figure 6. Soakage Hole 2.

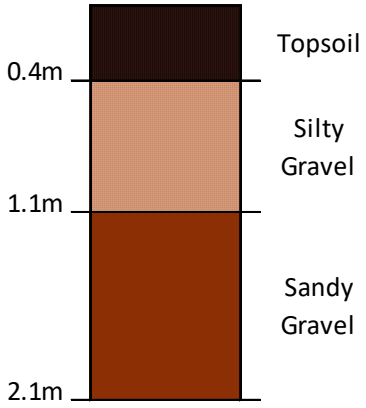


Figure 7. Soil Profile for Soakage Hole 2.

The falling head test for this soakage hole resulted in a soakage rate of 500 mm/hr. Details of this test are shown in Attachment B, summarised below in Figure 8. A 3m long piezometer (protruding 0.37 m out of the ground) was installed in the soak hole 2.

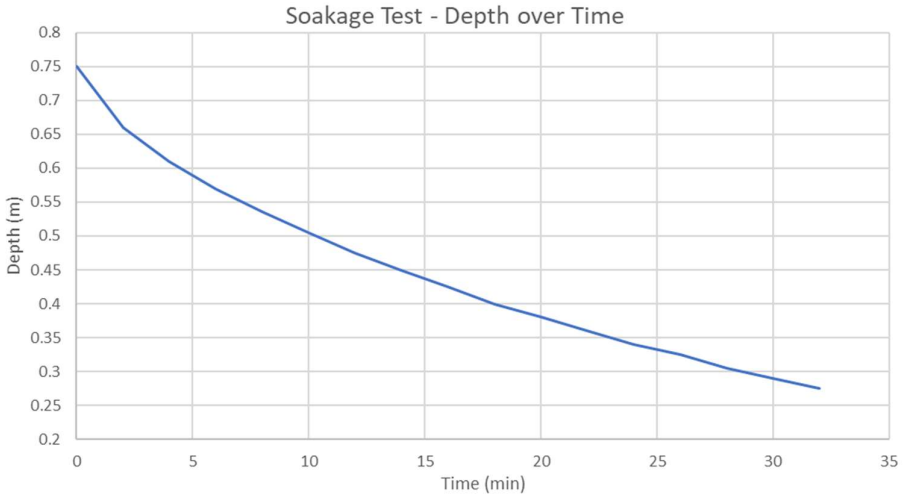


Figure 8. Falling head test results for soakage test 2.

Soakage Test 3

The soil profile and photos for the 3.3 m x 1.1 m x 2.3 m deep test hole are shown in Figures 9 and 10.

Figure 9. Soakage Hole 3.

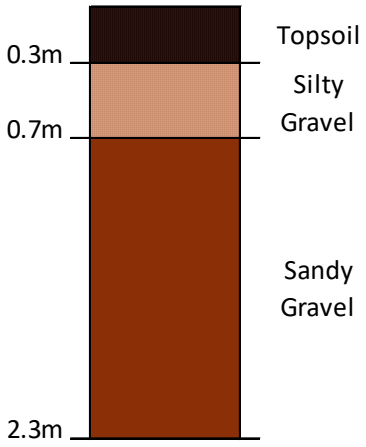


Figure 10. Soil Profile for Soakage Hole 3.

The falling head test for this soakage hole resulted in a soakage rate of 3,000 mm/hr. Details of this test are shown in Attachment C, summarised below in Figure 11. A 3.09m long piezometer (protruding 0.12 m out of the ground) was installed in the soak hole 3.

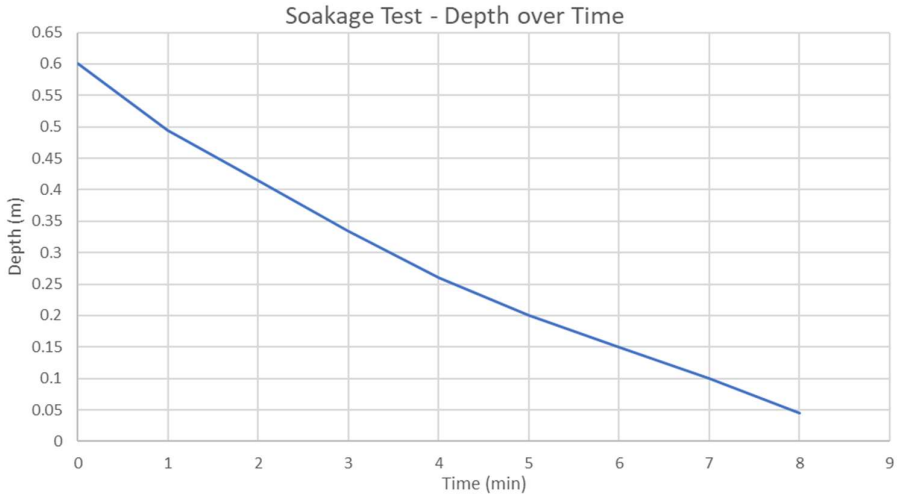


Figure 11. Falling head test results for soakage test 3.

Attachment A – Soakage Test 1 Results

Table A1. Falling head test results for Soak Hole 1.
Note figures in green represent steady state.

Time (min)	Depth (m)	Change (mm/min)
0	0.92	
2	0.87	25
4	0.83	20
6	0.8	15
8	0.77	15
10	0.745	12.5
12	0.725	10
14	0.705	10
16	0.69	7.5
18	0.675	7.5
20	0.66	7.5
22	0.65	5
24	0.635	7.5
26	0.625	5
28	0.615	5
30	0.605	5
32	0.595	5
34	0.585	5
36	0.575	5
38	0.57	2.5
40	0.56	5
42	0.555	2.5
44	0.55	2.5
48	0.535	3.75
50	0.53	2.5
52	0.525	2.5
54	0.515	5
56	0.51	2.5
58	0.505	2.5
60	0.5	2.5
62	0.495	2.5

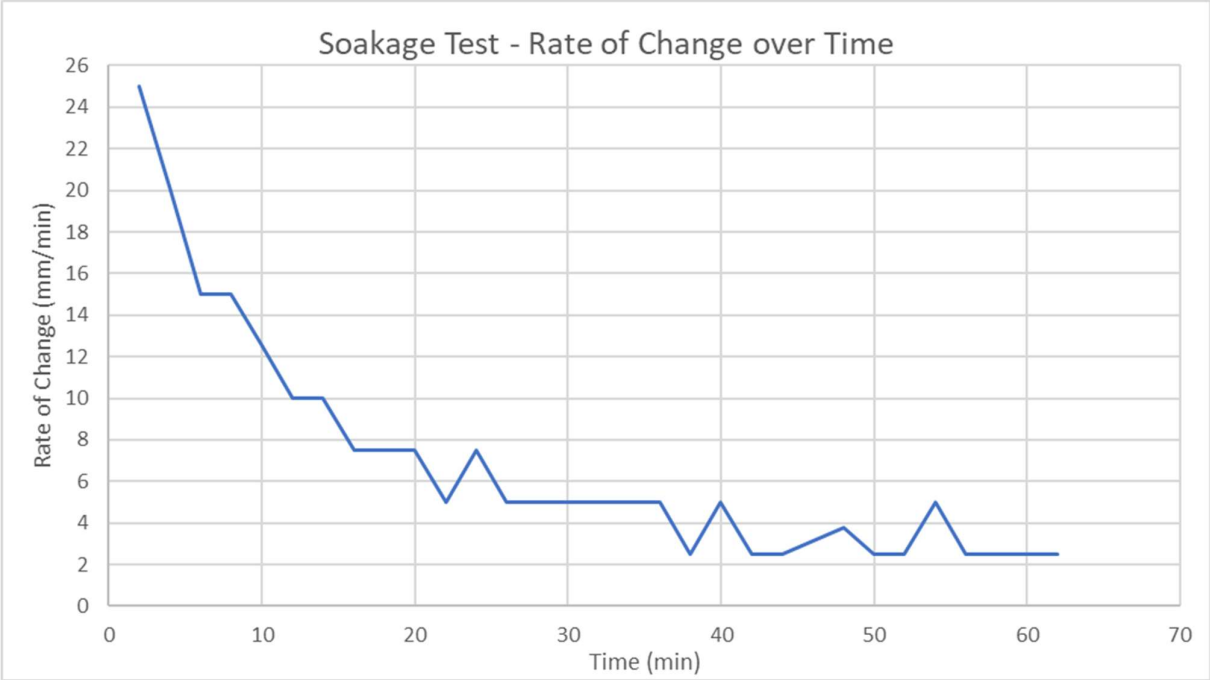


Figure A1. Falling head test results for Soak Hole 1.

Attachment B – Soakage Test 1 Results

Table B1. Falling head test results for Soak Hole 2.
Note figures in green represent steady state.

Time (min)	Depth (m)	Change (mm/min)
0	0.75	
2	0.66	45
4	0.61	25
6	0.57	20
8	0.535	17.5
10	0.505	15
12	0.475	15
14	0.45	12.5
16	0.425	12.5
18	0.4	12.5
20	0.38	10
22	0.36	10
24	0.34	10
26	0.325	7.5
28	0.305	10
30	0.29	7.5
32	0.275	7.5

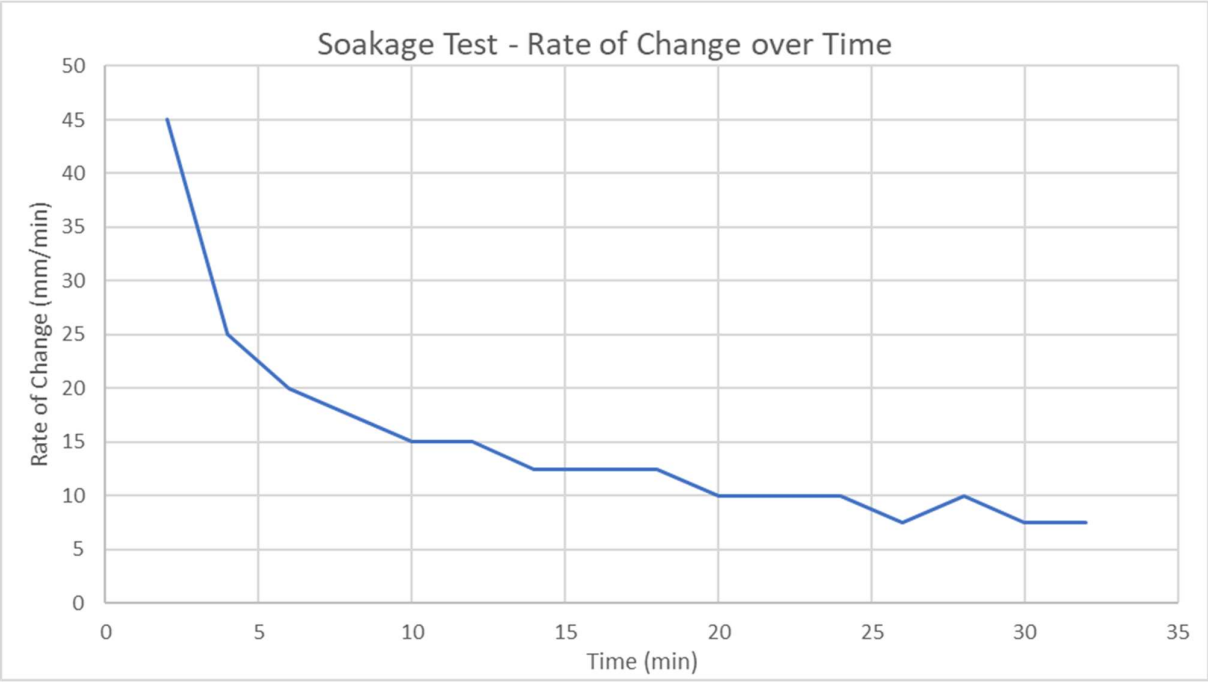


Figure B1. Falling head test results for Soak Hole 2.

Attachment C – Soakage Test 1 Results

Table C1. Falling head test results for Soak Hole 3.
Note figures in green represent steady state.

Time (min)	Depth (m)	Change (mm/min)
0	0.6	
1	0.495	105
2	0.415	80
3	0.335	80
4	0.26	75
5	0.2	60
6	0.15	50
7	0.1	50
8	0.045	55
9	<0	

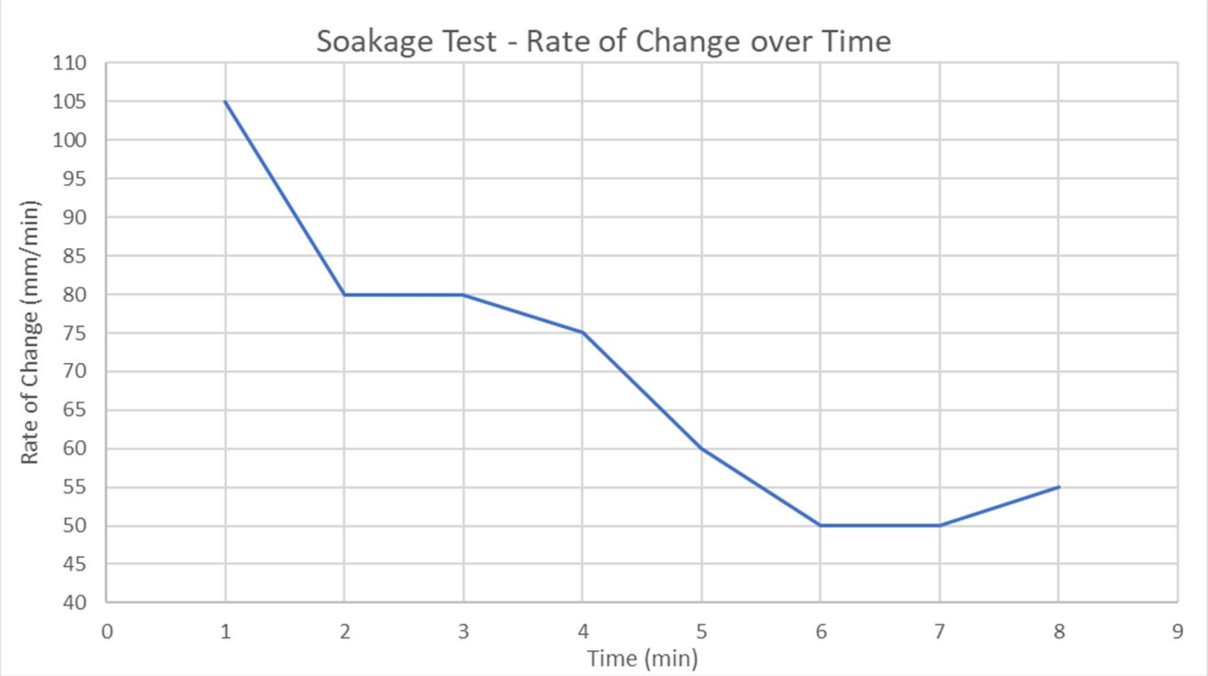


Figure C1. Falling head test results for Soak Hole 3.

Appendix D. Consent Conditions

RESOURCE CONSENT CRC211850

Pursuant to Section 104 of the Resource Management Act 1991

The Canterbury Regional Council (known as Environment Canterbury)

GRANTS TO:	Talley's Limited
A DISCHARGE PERMIT (S15):	to discharge contaminants into air from two 4.2 MW and one 11 MW coal fired boilers, a rendering plant, a blood processing plant, a fellmongery and pelthouse, a pelthouse effluent storage pond, livestock holding yards and general factory ventilation
COMMENCEMENT DATE:	19 Jun 2000
DATE CONSENT NUMBER ISSUED:	23 Oct 2020
EXPIRY DATE:	19 Jun 2035
LOCATION:	Works Road, FAIRTON

SUBJECT TO THE FOLLOWING CONDITIONS:

1 The discharges authorised by this consent shall only be from the rendering and processing of animal products, pelt processing, boiler operation, and associated activities from the operation of a meat processing plant.

2 The Canterbury Regional Council shall be informed at least one month prior to any proposed changes to:

a. the type, nature and specification of the processes or the scale of operations; and
b. the operation or specifications of any control equipment; that are likely to affect compliance with this consent.

3 As from six months from the date of commencement of this consent there shall be no odour;

a. At the boundary of any township or residential zone or the area of land designated for Fairton school as shown in the Proposed Ashburton District Council Plan maps as amended by decision of the Ashburton District Council dated 23 July 1997, and
b. Except as set out in condition 3(c), within 20 metres of any existing dwelling or existing factory building in a rural zone as shown in the Proposed Ashburton District Plan maps as amended by decision of Ashburton District Council dated 23 July 1997 as at the date of commencement of this consent; and
c. Beyond a line 25 metres inside the boundary of the property currently owned by Talleys Fisheries Limited being comprised in Certificate of Title Volume 29A Folio 1094 (Canterbury Registry) and legally described as Lot 1 on Deposited Plan 49973 containing 69.5900 hectares and Certificate of Title Volume 29A Folio 1095 (Canterbury Registry) and legally described as Lot 5 and part Lot 2 on Deposited Plan 1018 and Lots 181, 182, 183, 184 and 185 Deposited Plan 1483, and Lot 2 on Deposited Plan 49973 containing 162.7471 hectares.

4 The processes undertaken at the site shall not cause suspended particulate or deposited particulate beyond the property boundary of the consent holder which in the opinion of an enforcement officer is noxious, offensive or objectionable to such an extent that it has or is likely to have adverse effects on the environment.

5 The Canterbury Regional Council may inspect at any time, on request, any records kept by the consent holder as a requirement of conditions of this consent.

6 The maximum combined coal burning rate in the Anderson boilers shall not exceed 1700 kilograms of coal per hour. The maximum coal burning rate in the Maxitherm boiler shall not exceed 2000 kilograms of coal per hour.

7 Records shall be kept of:

a. The boilers in operation each week;
b. The sulphur content and source (mine) of coal used each week in the boilers; and
c. The quantity of coal used each week in the boilers.

8 The discharge into air from the Anderson boilers shall occur via a chimney stack at a height of at least 30 metres above ground level. The discharge into air from the Maxitherm boiler shall occur via a chimney stack at a height of at least 36 metres above ground level. The discharges shall be directed vertically into the air and shall not be impeded by an obstruction above the chimney stacks.

9

a. When the consent holder is operating only one or both of the Anderson boilers the maximum sulphur content of the coal used shall not exceed 2.5 per cent by weight.
b. When the Maxitherm boiler is operating the maximum sulphur content of coal used in any of the boilers in operation shall not exceed 2.0 per cent by weight.

10 The Coal Research Association of New Zealand's Analysis of New Zealand Industrial Coals, for the type of coal used in the boilers shall be accepted as representative of the sulphur content of coal used for the purposes of condition (9).

11 The concentration of suspended particulate in the coal-fired boiler chimney stacks immediately prior to the point of discharge shall not exceed 500 milligrams per cubic metre of air, adjusted to 0 degrees Celsius, 101.3 kilopascals, 12 percent carbon dioxide on a dry gas basis.

12 The concentration of total suspended particulate, efflux velocity and efflux temperature in the exhaust gas stream from the boilers shall be measured annually. Measurement of the discharge shall occur when the boilers are operating at greater than 90 percent of the maximum fuel burning rate. Measurement of the Anderson boilers shall be made when both boilers are operating at greater than 90 percent capacity.The method of sampling and analysis shall be ASTM D 3675-78, ISO 9096:1992, BS3405:1983 (1989) or an equivalent method. A description of any equivalent method to be used shall be provided to the Canterbury Regional Council. Results shall be adjusted to zero degrees Celsius, 101.3 kilopascals, 12 percent CO2 on a dry gas basis. The results shall be provided to the Canterbury Regional Council within five working days of receipt by the consent holder. The laboratory carrying out the analysis shall be accredited for that analysis to a standard equivalent to ISO Guide 25.

13 The opacity of the emissions from the fuel burning equipment shall not exceed 20 percent as measured on a Ringlemann chart according to BS 2744 (1969) except:

a. In the case of a cold start, for a period not exceeding 30 minutes in the first hour of operation; and
b. For a period not exceeding four minutes in each succeeding hour or operation.

14 All chilled meat and bone material shall be processed in the rendering plant within 72 hours of production, and all other material shall be processed within 16 hours of production, unless that offal is stabilised or preserved in such a manner that minimises odour risk.

15 A log is to be kept of the raw material received for rendering. This log shall include details on the approximate age, type, quantity, and source of raw material.

16 All gases discharged from the cookers shall be ducted to the boilers and incinerated.

17 If the rendering plant is increased in capacity above 6 tonnes per hour, a biofilter or chemical scrubbing system to the satisfaction of the Canterbury Regional Council shall be installed to treat odorous air discharged from the plant and equipment. Any proposed air discharge treatment system shall be peer reviewed by a person competent in the design and implementation of the proposed air collection and treatment system. The designs and peer reviews shall be provided to the Regional Council prior to constructions or extensions to the rendering plant commencing.

18 Within six months from the date of commencement of this consent, all air extracted from the pelt processing drums shall be treated by a biofilter or chemical scrubbing system before discharge to air. The air discharge treatment system to be installed shall be peer reviewed by a person competent in the design and implementation of that air collection and treatment system. The designs and peer review of the system shall be provided to the Regional Council prior to construction commencing.

19 The consent holder shall maintain a weather station at a suitable location to record wind strength and direction.

20 Records shall be maintained of all odour complaints received by the consent holder. These records shall include:

a. Location of complainant where odour was detected;
b. Date, time and duration of odour detection;
c. Estimated wind speed and direction when odour detected;
d. Weather conditions at the slaughtering facility when odour detected;
e. Any possible cause of odour complained of;(f) Any corrective action taken.These records shall be provided to the Canterbury Regional Council on request.

21 The consent holder shall provide a written report to the Canterbury Regional Council by the 31 July each year. The report shall:

a. Summarise the performance of the plant for the previous twelve months in relation to activities discharging contaminants into air; and
b. Summarise the data collected as required by other conditions of this consent; and
c. Summarise the odour complaint record for the previous twelve months; and
d. Provide test results from annual boiler surveys; and
e. Review effectiveness of mitigation measures installed in the previous 12 months.

22 The Canterbury Regional Council may annually, on the last working day of August, serve notice of its intention to review the conditions of this consent for the purposes of:

a. dealing with any adverse effects which may arise from the exercise of this consent and which it is appropriate to deal with later; or
b. requiring the adoption of the best practicable option to remove or reduce any adverse effect on the environment; or
c. complying with the requirements of a relevant rule in an operative regional plan.

23 Charges, set in accordance with section 36 of the Resource Management Act 1991, shall

be paid to the Regional Council for the carrying out of its functions in relation to the administration, monitoring and supervision of resource consents and for the carrying out of its functions under section 35 of the Act.

Issued at Christchurch on 29 October 2020

Canterbury Regional Council

RESOURCE CONSENT CRC211869

Pursuant to Section 104 of the Resource Management Act 1991

The Canterbury Regional Council (known as Environment Canterbury)

GRANTS TO:	Talley's Limited
A DISCHARGE PERMIT (S15):	to discharge up to 36.5 cubic metres per day of septic tank effluent into land from staff facilities
COMMENCEMENT DATE:	19 Jun 2000
DATE CONSENT NUMBER ISSUED:	23 Oct 2020
EXPIRY DATE:	19 Jun 2035
LOCATION:	Fairfield Road, FAIRTON

SUBJECT TO THE FOLLOWING CONDITIONS:

1 The discharge shall only be sewage tank effluent.

2 Effluent shall be treated via collection in septic tanks, screened, and discharged via pump dosing into a subsurface irrigation system.

3 The disposal of the septic tank effluent shall be into land, not otherwise used for the disposal of other works effluent.

4 Sludge from the septic tanks and filtration system shall be removed to an authorised sanitary waste treatment or disposal facility.

5 The faecal coliform bacteria concentration of a representative sample of the discharge, measured at a point no further than three metres from the point of discharge from the distribution pipe shown on the attached diagram ST1, shall be less than 1000 per 100 millilitre sample.

6 There shall be no discharge of effluent within:

a. 1,000 metres up-gradient (in relation to the direction of groundwater flow) and 200 metres in any other direction of any bore from which more than 20 cubic metres per day of water is taken for community supply purposes; and
b. 200 metres up-gradient (in relation to the direction of groundwater flow) and 50 metres in any other direction of any bore from which less than 20 cubic metres per day of water is taken for community supply purposes; and
c. 50 metres up-gradient (in relation to the direction of groundwater flow) and 30 metres in any other direction of any bore not used for community supply purposes; and
d. within 20 metres of any surface water body.

7 Design plans for the sewage effluent and disposal system shall be reviewed by a person competent in the design and implementation of the proposed system. Design plans and

peer reviews shall be forwarded to the Canterbury Regional Council, prior to the construction of the system. The design shall ensure compliance with condition (5) of this consent.

8 A certificate signed by a competent person shall be provided to the Canterbury Regional Council, within one month of the construction of the treatment and disposal system, certifying that the sewage treatment and disposal system is constructed in accordance with the design plans submitted pursuant to condition (7).

9 A maintenance service contract which provides for annual inspection of the sewage effluent treatment and disposal system shall be maintained with a competent person. The contract shall include a requirement to take action to ensure that the sewage effluent treatment and disposal system is operated and maintained in accordance with the designer's instructions. Copies of the field service reports shall be maintained and provided to the Canterbury Regional council on request.

10 The Canterbury Regional Council may annually, on the last working day of March, serve notice of its intention to review the conditions of this consent for the purposes of:

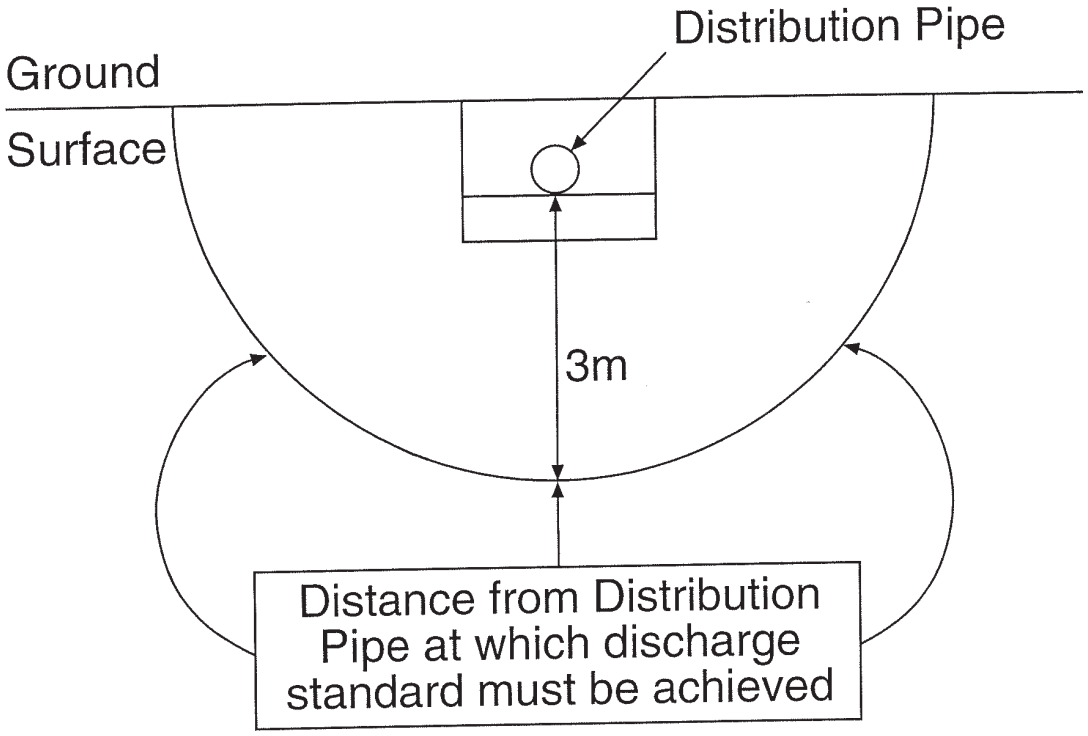
a. dealing with any adverse effects which may arise from the exercise of this consent and which it is appropriate to deal with later; or
b. requiring the adoption of the best practicable option to remove or reduce any adverse effect on the environment; or
c. complying with the requirements of a relevant rule in an operative regional plan.

11 Charges, set in accordance with section 36 of the Resource Management Act 1991, shall be paid to the Regional Council for the carrying out of its functions in relation to the administration, monitoring and supervision of resource consents and for the carrying out of its functions under section 35 of the Act.

Issued at Christchurch on 30 October 2020

Canterbury Regional Council

Diagram ST 1


Distribution Pipe
Ground
Surface
3m
Distance from Distribution Pipe at which discharge standard must be achieved

RESOURCE CONSENT CRC211898

Pursuant to Section 104 of the Resource Management Act 1991

The Canterbury Regional Council (known as Environment Canterbury)

GRANTS TO:	Talley's Limited
A WATER PERMIT (S14):	to take groundwater at or about map references L37:1423-0342, L37:1408-0329, L37:1404-0328, L37:1398-0323 and L37:1390-0317
COMMENCEMENT DATE:	27 Mar 1998
DATE CONSENT NUMBER ISSUED:	23 Oct 2020
EXPIRY DATE:	25 Mar 2033
LOCATION:	Fairfield Road, FAIRTON

SUBJECT TO THE FOLLOWING CONDITIONS:

1 The combined rate at which water is taken from bores L37/0654, 300 millimetres diameter and 92.5 metres deep and L37/0250, 200 millimetres diameter and 98.5 metres deep, and L37/0138, 300 millimetres diameter and 108.4 metres deep, and L37/0655, 250 millimetres diameter and 98.5 metres deep and L37/0251, 250 millimetres diameter and 109 metres deep, shall not exceed 264 litres per second, with a combined volume not exceeding 159,667 cubic metres in any period of seven consecutive days.

2 This consent shall not be exercised concurrently with consent SCY690129.

3 When requested in writing by the Canterbury Regional Council, the hours and rate at which water is taken shall be recorded to within an accuracy of 10 percent. A copy of the records shall be provided to the Canterbury Regional Council when requested.

4 The Canterbury Regional Council may annually, on the last working day of May, serve notice of its intention to review the conditions of this consent for the purposes of:

a. dealing with any adverse effect on the environment which may arise from the exercise of the consent and which is appropriate to deal with at a later stage; or
b. complying with the requirements of a relevant rule in an operative regional plan.

5 Charges, set in accordance with section 36 of the Resource Management Act 1991, shall be paid to the Regional Council for the carrying out of its functions in relation to the administration, monitoring and supervision of resource consents and for the carrying out of its functions under section 35 of the Act.

Issued at Christchurch on 2 November 2020

Canterbury Regional Council

21 June 2023

Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

Customer Services
P. 03 353 9007 or 0800 324 636
200 Tuam Street
PO Box 345
Christchurch 8140
E. ecinfo@ecan.govt.nz
www.ecan.govt.nz

Talley's Limited
Attn To: Sean Leonard
PO Box 244
Ashburton 7740

Dear Sean,

Correction to Resource Consent Decision

Record Number: CRC232138
Applicant Name: Talley's Limited
Activity Description: To discharge contaminants to land.

It has come to our attention that there were some errors in the above consent. As such, please destroy the documents currently in your possession and replace them with the enclosed corrected decision documents.

Errors Identified

Condition 2 currently reads:

An updated Long Term Management Plan (LTMP) shall be prepared and submitted to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, within 3 months of issue of this consent, for certification that it complies with the conditions of this resource consent and contains the information required under condition 3.

Condition 2 has been amended to read:

An updated Long Term Management Plan (LTMP) shall be prepared and submitted to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, within 1 month of completion of earthworks, for certification that it complies with the conditions of this resource consent and contains the information required under condition 3.

Condition 9 currently reads:

A review of the biannual monitoring programme shall occur two years after completion of works where the need for continued biannual or a move to annual monitoring will be reviewed by the SQEP. Any proposed changes to the biannual program shall be approved by CRC.

Condition 9 has been amended to read:

A review of the biannual monitoring programme shall occur two years after completion of works where the need for continued biannual, change to annual or cessation of monitoring will be reviewed by the SQEP. Any proposed changes to the initial biannual program shall be approved by CRC.

Condition 10 currently reads:

A monitoring report shall be provided to the Canterbury Regional Council, Attention: Regional Leader – Monitoring and Compliance at an interval of:

a. Within 6 months of completion of containment structures, including at least one round of containment integrity and groundwater monitoring results;

b. Once per year when samples are being taken biannually.

Condition 10 has been amended to read:

A monitoring report shall be provided to the Canterbury Regional Council, Attention: Regional Leader – Monitoring and Compliance at the interval specified in the LTMP. An additional monitoring shall occur within 6 months of completion of containment structures, including at least one round of containment integrity and groundwater monitoring results.

Queries

For all queries please contact our Advisory Team quoting your CRC number above.

Yours sincerely,

Hannah Neverman
Regulatory Support Administrator

cc:
Williamson Water and Land Advisory Limited
Attn To: Laila Alkamil
10/1 Putaki Drive
Kumeu

RESOURCE CONSENT CRC232138

Under Section 104 of the Resource Management Act 1991

The Canterbury Regional Council (known as Environment Canterbury)

GRANTS TO:	Talley's Limited
A DISCHARGE PERMIT (S15):	To discharge contaminants to land.
COMMENCEMENT DATE:	05 Apr 2023
DATE CONSENT NUMBER ISSUED:	05 Apr 2023
EXPIRY DATE:	05 Apr 2048
LOCATION:	109 Works Road, Ashburton

SUBJECT TO THE FOLLOWING CONDITIONS:

LIMITS

1 The activity shall be limited to the discharge of Arsenic and metal contaminants arising from metal contaminated fill materials at 109 Works Road, Ashburton, legally described as Lot 2 DP413606 as shown on Plan CRC232138, attached to, and forming part of this resource consent.

LONG TERM MANAGEMENT PLAN

2 An updated Long Term Management Plan (LTMP) shall be prepared and submitted to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, within 1 month of completion of earthworks, for certification that it complies with the conditions of this resource consent and contains the information required under Condition 3.

3 The Long Term Management Plan required under condition (2) must include, but not be limited to, the following:

a. Details of the site and responsible parties, including the owner, occupier and party undertaking the monitoring, including their contact details;

b. Details of the locations of all monitoring wells, the locations of which are to be approved by CRC prior to installation;

c. Specification of the sampling methodology and analytical procedures, as well as monitoring parameters, trigger values and sampling frequency;

d. Response measures to exceedance of the trigger values including actions to be taken to reverse any declining trends in groundwater quality;

e. Reporting procedures;

A copy of the management plan shall also be held by the consent holder along with a copy of this consent.

4 a. The LTMP may be reviewed and amended at any time to ensure that the document remains relevant and applicable to the site conditions and monitoring requirements. Any amendments must be:

i. to reflect circumstances which may require modification of the LTMP; or

ii. for the purpose of improving the efficacy of the LTMP; or

iii. to ensure consistency with the conditions of this resource consent.

b. Any amendments to the LTMP must be submitted in writing to the Canterbury Regional Council, Attention: Regional Leader – Compliance Monitoring (via ECInfo@ecan.govt.nz) and the Canterbury Regional Council, Attention: Team Leader – Contaminated Sites (via ContaminatedLand@ecan.govt.nz) for certification prior to any amendment being implemented.

GROUNDWATER MONITORING

5 Groundwater monitoring must be undertaken by a Suitably Qualified and Experienced Person (SQEP) and occur in accordance Conditions (6) to (9) of this resource consent and as detailed in the Long Term Management Plan (LTMP).

6 Groundwater monitoring must occur at the following frequencies:

a. Baseline monitoring from all wells identified in the approved monitoring plan prior to earthworks commencement.

b. Biannual monitoring during works, and for a two-year period on completion of the works. Monitoring shall coincide with the projected maximum water table (winter) and minimum water table (summer).

7 Samples taken from the groundwater monitoring wells under Condition (3) must be analysed for:

a. Total Petroleum Hydrocarbons (TPH);

b. Arsenic;

c. Cadmium;

d. Chromium;

e. Copper;

f. Lead;

g. Nickel;

h. Zinc.

8 If a sample indicates exceedance of the trigger values outlined in the LTMP then the collection point must be resampled for confirmation. If the resampling confirms trigger values are exceeded a meeting shall be requested with the Canterbury Regional Council, Attention Regional Leader – Compliance Monitoring within 10 days of receipt of the sampling results. The meeting shall be to discuss the exceedances identified in accordance with condition (7) and to agree on any necessary mitigation, other actions and the timeframes for implementation.

9 A review of the biannual monitoring programme shall occur two years after completion of works where the need for continued biannual, change to annual or cessation of monitoring will be reviewed by the SQEP. Any proposed changes to the initial biannual program shall be approved by CRC.

REPORTING

10 A monitoring report shall be provided to the Canterbury Regional Council, Attention: Regional Leader – Monitoring and Compliance at the interval specified in the LTMP. An additional monitoring shall occur within 6 months of completion of containment structures, including at least one round of containment integrity and groundwater monitoring results.

ADMINISTRATION

11 The Canterbury Regional Council may annually, on the last working day of May or November, serve notice of its intention to review the conditions of this resource consent for the purposes of:

a. Dealing with adverse effect on the environment which may arise from the exercise of this resource consent, and which is not appropriate to deal with at a later stage; or

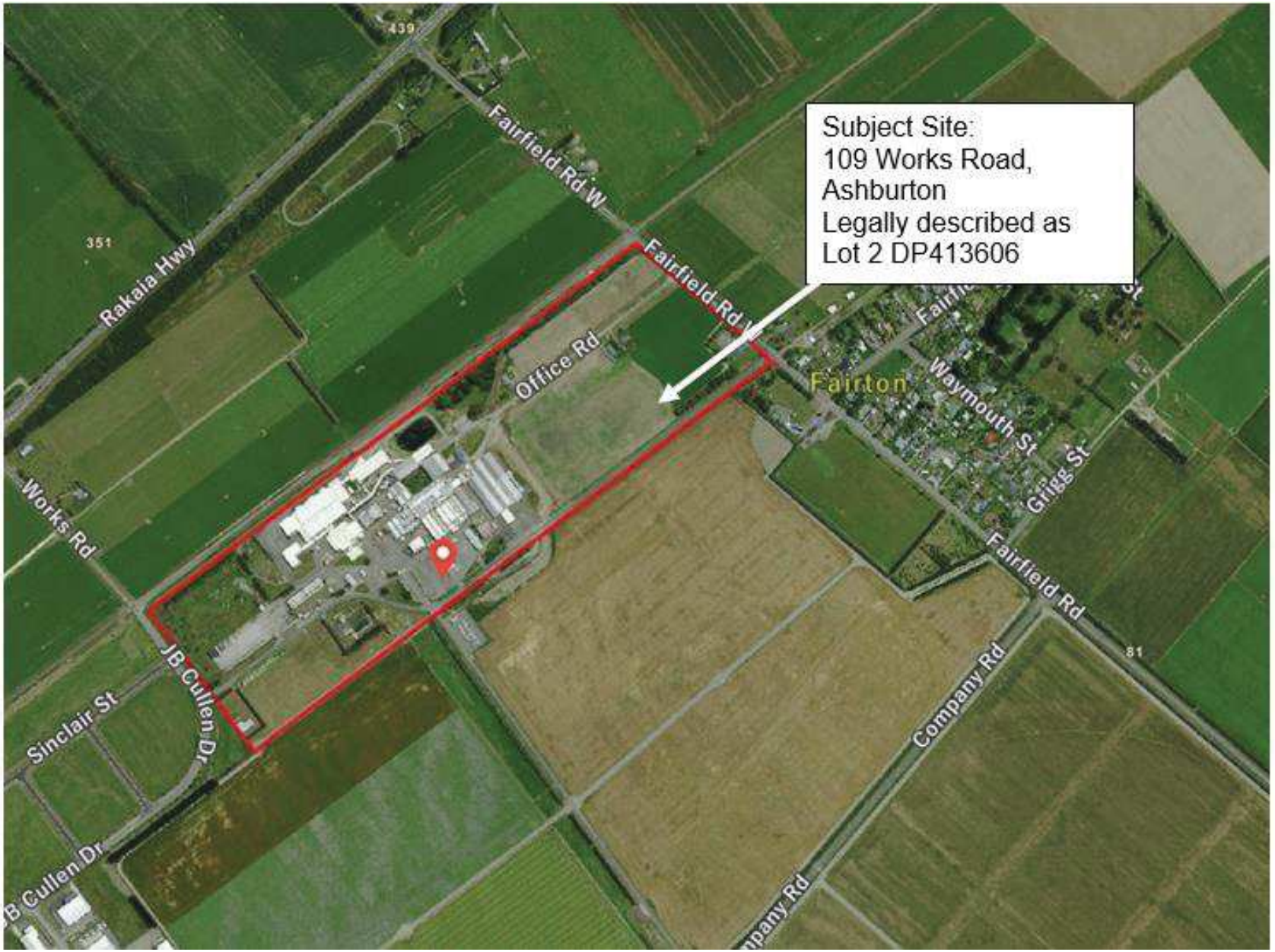
b. Requiring the adoption of the best practicable option to remove or reduce any adverse effect on the environment.

12 If this resource consent is not exercised before 30th June 2028, it must lapse in accordance with Section 125 of the Resource Management Act 1991.

Advice Note:
'Exercised' is defined as implementing any requirements to operate this consent and undertaking the activity as described in these conditions and/or application documents.

Issued at Christchurch on 21 June 2023

Canterbury Regional Council



Plan CRC232138

Exercising of Resource Consent CRC232138

It is important that you notify Environment Canterbury when you first start using your consent.

GRANTED TO:	Talley's Limited
A DISCHARGE PERMIT (S15):	To discharge contaminants to land.
LOCATION:	109 Works Road, Ashburton

Even if the consent is replacing a previous consent for the same activity, you need to complete and return this page.

A consent can only be made active after the activity has commenced and all pre-requisite conditions have been fulfilled e.g. installation of water meter and/or fish screen. If you require further advice, please contact our Advisory Team on 0800 324 636 or by email at ecinfo@ecan.govt.nz.

Providing this information will:

- Validate your consent through to its expiry date
- Minimise compliance monitoring charges
- Help provide an accurate picture of the state of the environment.

If consent CRC232138 is not used before 30 June 2028 this consent will lapse and no longer be valid.

Declaration:

I have started using this resource consent.

Action taken (e.g. pasture irrigated, discharge from septic tank/boiler/spray booth etc):

_____

Date I started using this resource consent (Note: this date cannot be in the future): _____

Signed: _____ **Date:** _____

Full name of person signing (please print**):** _____

Please return to:

Environment Canterbury
PO Box 345
Christchurch 8140

Fax: (03) 365 3194
Email: ecinfo@ecan.govt.nz

File: CRC232138
Customer No: EC131299

21 June 2023

Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

Customer Services
P. 03 353 9007 or 0800 324 636
200 Tuam Street
PO Box 345
Christchurch 8140
E. ecinfo@ecan.govt.nz
www.ecan.govt.nz

Talley's Limited
Attn To: Sean Leonard
PO Box 244
Ashburton 7740

Dear Sean,

Correction to Resource Consent Decision

Record Number: CRC232139
Applicant Name: Talley's Limited
Activity Description: To discharge construction-phase stormwater to land.

It has come to our attention that there were some errors in the above consent. As such, please destroy the documents currently in your possession and replace them with the enclosed corrected decision documents.

Errors Identified

Condition 7 currently reads:

Construction works shall be undertaken in accordance with the Remediation Action and Site Management Plan (Ground Contamination) dated 29th August 2022 (WWLA0655 Rev.2). Should the provisions of the Remediation Action and Site Management Plan (Ground Contamination) and the conditions of this consent be in conflict, the consent conditions must prevail.

Condition 7 has been amended to read:

Construction works shall be undertaken in accordance with the Remediation Action and Site Management Plan (Ground Contamination) dated 29th August 2022 (WWLA0655 Rev.2), or any revisions approved by CRC. Should the provisions of the Remediation Action and Site Management Plan (Ground Contamination) and the conditions of this consent be in conflict, the consent conditions must prevail.

Condition 14 currently reads:

a. The ESCP must be submitted to the Canterbury Regional Council, Attention: Regional Leader – Compliance Monitoring, at least ten working days prior to works commencing, for certification that it complies with the ESCT and the conditions of this resource consent.

b. The earthworks shall not commence until certification has been received from the Canterbury Regional Council that the ESCP is consistent with the ESCT or equivalent industry guideline as per the requirements under Condition 11(b)(ii), and the conditions of this resource consent.

c. Notwithstanding Condition (13)(a), if the ESCP has not been reviewed and/or certified within ten working days of the Regional Leader – Compliance Monitoring receiving the ESCP, the discharge may commence.

Condition 14 has been amended to read:

a. The ESCP must be submitted to the Canterbury Regional Council, Attention: Regional Leader – Compliance Monitoring, at least ten working days prior to works commencing, for certification that it complies with the ESCT and the conditions of this resource consent.

b. The earthworks shall not commence until certification has been received from the Canterbury Regional Council that the ESCP is consistent with the ESCT or equivalent industry guideline as per the requirements under Condition 12(b)(ii), and the conditions of this resource consent.

c. Notwithstanding Condition (14)(a), if the ESCP has not been reviewed and/or certified within ten working days of the Regional Leader – Compliance Monitoring receiving the ESCP, the discharge may commence.

Queries

For all queries please contact our Advisory Team quoting your CRC number above.

Yours sincerely,

Hannah Neverman
Regulatory Support Administrator

cc:
Williamson Water and Land Advisory Limited
Attn To: Laila Alkamil
10/1 Putaki Drive
Kumeu

RESOURCE CONSENT CRC232139

Under Section 104 of the Resource Management Act 1991

The Canterbury Regional Council (known as Environment Canterbury)

GRANTS TO:	Talley's Limited
A DISCHARGE PERMIT (S15):	To discharge construction-phase stormwater to land.
COMMENCEMENT DATE:	05 Apr 2023
DATE CONSENT NUMBER ISSUED:	05 Apr 2023
EXPIRY DATE:	05 Apr 2028
LOCATION:	109 Works Road, Ashburton

SUBJECT TO THE FOLLOWING CONDITIONS:

LIMITS

1 The activity authorised by this resource consent shall be limited to the discharge of sediment laden stormwater from exposed areas associated with:

a. Earthworks activities on a 3-hectare piece of land being prepared for lease for the Fairfield Freight Hub; and

b. The creation of two stormwater soakpits

at 109 Works Road, Ashburton legally described as Lot 2 DP 413606 as shown on the attached Plans CRC232139 A and B, which forms part of this resource consent.

2 Construction phase stormwater shall be discharged:

a. In accordance with the Erosion and Sediment Control Plan required by conditions (12) to (17).

b. Onto and/or into land within the excavations on the site labelled as “FFH” and “Soakpit”, as shown on Plan CRC232139B.

PRIOR TO COMMENCEMENT OF WORKS

3 Prior to commencement of the works described in Condition (1), all personnel working on the site must be made aware of, and have access to, the following:

a. The contents of this resource consent document and all associated documents;

b. The Erosion and Sediment Control Plan (ESCP) to be submitted under Condition (12);

4 All erosion and sediment control measures detailed in the ESCP required by Condition (12) of this resource consent shall be installed prior to the commencement of any earthworks on the site.

5 At least five working days prior to the commencement of works on site, the consent holder must request a pre-construction site meeting with the Canterbury Regional Council, Attention: Regional Leader – Compliance Monitoring (via ECInfo@ECan.govt.nz), and all relevant parties, including the primary contractor. At a minimum, the following shall be covered at the meeting:

a. Scheduling and staging of the works;

b. Responsibilities of all relevant parties, including confirmation that the persons implementing the RAP and ESCP on the site are suitably trained and/or experienced;

c. Contact details for all relevant parties;

d. Expectations regarding communication between all relevant parties;

e. Procedures for implementing any amendments;

f. Site inspection; and

g. Confirmation that all relevant parties have copies of the contents of this resource consent document and all associated erosion and sediment control plans and any other discharge treatment methodologies employed.

DURING WORKS

6 All practicable measures must be taken to:

a. Minimise soil disturbance and prevent soil erosion;

b. Avoid placing excavated material in a position where it may enter any neighbouring site.

REMEDIAL ACTION PLAN

7 Construction works shall be undertaken in accordance with the Remediation Action and Site Management Plan (Ground Contamination) dated 29th August 2022 (WWLA0655 Rev.2), or any revisions approved by CRC. Should the provisions of the Remediation Action and Site Management Plan (Ground Contamination) and the conditions of this consent be in conflict, the consent conditions must prevail.

8 The Remediation Action and Site Management Plan (Ground Contamination) may be amended at any time. Any amendments shall be:

a. Only for the purpose of improving the efficacy of the management of contaminated soil and shall not result in an increase of sediment being discharged from the site; and

b. Consistent with the conditions of this resource consent; and

c. Submitted in writing to the Canterbury Regional Council, Attention: Regional Leader – Compliance Monitoring, prior to any amendment being implemented.

CONTAMINATED MATERIAL

9 Contaminated soil shall be managed in accordance with the recommendations of the Remediation Action and Site Management Plan (Ground Contamination) Section 4.2. If deviations from this plan are required, the SQEP must inform ECan's Contaminated Land team in writing to contaminated.land@ecan.govt.nz within 10 working days.

10 Stockpiling of contaminated material or soils must not occur outside of the proposed hardstand footprint.

11 Contaminated material removed from the site must be disposed to a facility licensed to accept such material;

EROSION AND SEDIMENT CONTROL

12 The earthworks authorised under Condition (1) must occur in accordance with the ESCP. The ESCP must:

a. Detail best practicable sediment control measures that will be taken to ensure compliance with this resource consent.

b. Be prepared by a suitably qualified person with experience in erosion and sediment control in accordance with:

i. Canterbury Regional Council's "Erosion and Sediment Control Toolbox for the Canterbury Region" (ESCT), which can be accessed under http://esccanterbury.co.nz/; or

ii. an equivalent industry guideline. If an alternative guideline is used, the ESCP shall provide details of the relevant alternative methods used and an explanation of why they are more appropriate than the ESCT.

c. Be signed by an engineer with experience in erosion and sediment control, confirming that the erosion and sediment control measures for the site are appropriately sized and located in accordance with the ESCT.

13 The ESCP shall:

a. Include a map showing the location of all works;

b. Detailed plans showing the location of sediment control measures, on-site catchment boundaries, and sources of runoff;

c. Detail how best practicable measures are taken to minimise discharges of construction-phase stormwater run-off beyond the boundaries of the site;

d. Include drawings and specifications of designated sediment control measures, if these are not designed and installed in accordance with the ESCT;

e. Include a confirmation that the erosion and sediment control devices have been sized appropriately in accordance with the ESCT;

f. Include a programme of works, including a proposed timeframe for each stage of the works and the earthworks methodology;

g. Detail the management of any stockpiled material;

h. Detail inspection and maintenance of the sediment control measures;

i. Detail sampling procedures and protocols;

j. Detail the methodology for stabilising the site if works are abandoned; and

k. Detail the methodology for stabilising the site and appropriate decommissioning of all erosion and sediment control measures after works have been completed.

14 a. The ESCP must be submitted to the Canterbury Regional Council, Attention: Regional Leader – Compliance Monitoring, at least ten working days prior to works commencing, for certification that it complies with the ESCT and the conditions of this resource consent.

b. The earthworks shall not commence until certification has been received from the Canterbury Regional Council that the ESCP is consistent with the ESCT or equivalent industry guideline as per the requirements under Condition 12(b)(ii), and the conditions of this resource consent.

c. Notwithstanding Condition (14)(a), if the ESCP has not been reviewed and/or certified within ten working days of the Regional Leader - Compliance Monitoring receiving the ESCP, the discharge may commence.

15 The ESCP may be amended at any time. Any amendments shall be:

a. Only for the purpose of improving the efficacy of the erosion and sediment control measures and shall not result in reduced discharge quality; and

b. For the purpose of applying best practicable measures to mitigate sediment transport off-site;

c. Consistent with the conditions of this resource consent; and

d. Submitted in writing to the Canterbury Regional Council, Attention: Regional Leader Compliance Monitoring, prior to any amendment being implemented.

16 Erosion and sediment control measures must be inspected at least once per day, as well as following any rainfall event that results in more than five millimetres of rainfall at the site. Any accumulated sediment shall be removed, and repairs made, as necessary, to ensure effective functioning of measures and devices. Records of any inspections shall be kept and provided to the Canterbury Regional Council on request.

17 If the consent holder abandons work on-site, adequate preventative and remedial measures must be taken to control sediment discharged from exposed or unconsolidated surfaces. These measures must be maintained for so long as necessary to prevent sediment discharges from the earth worked areas.

ACCIDENTAL DISCOVERY OF CONTAMINANTS

18 In the event that any unexpected, contaminated soil or material is uncovered by the works, an accidental discovery protocol must be implemented, including but not limited to the following steps:

a. Earthworks within ten metres of the encountered contaminants must cease immediately;

b. All practicable steps must be taken to prevent the contaminated material becoming entrained in stormwater. Immediate steps must include, where practicable:

i. diverting any stormwater runoff from surrounding areas away from the contaminated material; and

ii. minimising the exposure of the contaminated material, including covering the contaminants with an impervious cover.

c. Notification of the Canterbury Regional Council, Attention: Contaminated Sites Manager and Regional Leader – Compliance Monitoring, within 24 hours of the discovery;

d. Earthworks within ten metres of encountered contaminants must not recommence until a suitably qualified and experienced contaminated land practitioner (SQEP) confirms to Canterbury Regional Council, Attention: Regional Leader – Compliance Monitoring that continuing works does not represent a significant risk to the environment;

e. All records and documentation associated with the discovery shall be kept and copies must be provided to the Canterbury Regional Council upon request.

19 Any material removed from the site during the works that is potentially or confirmed as contaminated, must be disposed of at a facility authorised to receive such material.

SPILLS

20 All practicable measures must be taken to avoid spills of fuel or any other hazardous substances within the site. These measures must include:

a. Refuelling of machinery and vehicles must not occur within 20 metres of:

i. open excavations;

ii. exposed groundwater; and

iii. stormwater devices.

b. A spill kit must be kept on site that is capable of absorbing the quantity of oil and petroleum products that may be spilt on site at any one time, remains on site at all times;

c. In the event of a spill of fuel or any other hazardous substance, the spill must be cleaned up as soon as practicable, the stormwater system must be inspected and cleaned, and measures taken to prevent a recurrence;

d. The Canterbury Regional Council, Attention: Regional Leader – Compliance Monitoring, must be informed within 24 hours of a spill event exceeding five litres and the following information provided:

    i. the date, time, location and estimated volume of the spill;

    ii. the cause of the spill;

    iii. the type of hazardous substance(s) spilled;

    iv. clean up procedures undertaken;

    v. details of the steps taken to control and remediate the effects of the spill on the receiving environment;

    vi. an assessment of any potential effects of the spill; and

    vii. measures to be undertaken to prevent a recurrence.

ACCIDENTAL DISCOVERY OF ARCHAEOLOGICAL MATERIAL

21 In the event of any discovery of archaeological material the consent holder must immediately:

a. Cease earthmoving operations in the affected area and mark off the affected area; and

b. Advise the Canterbury Regional Council of the disturbance; and

c. Advise Heritage New Zealand Pouhere Taonga (HNZPT) of the disturbance.

Advice Note: *Affected area means the whole or any part of any site known or reasonably suspected to be an archaeological site, and which could be disturbed or otherwise impacted by any works.*

Advice Note: *This condition may be in addition to any agreements that are in place between the consent holder and the Papatipu Runanga. (Cultural Site Accidental Discovery Protocol).*

Advice Note: *Under the Heritage New Zealand Pouhere Taonga Act 2014 an archaeological site is defined as any place associated with pre-1900 human activity, where there is material evidence relating to the history of New Zealand. For sites solely of Maori origin, this evidence may be in the form of accumulations of shell, bone, charcoal, burnt stones, etc. In later sites, artefacts such as bottles or broken glass, ceramics, metals, etc. may be found or evidence of old foundations, wells, drains, tailings, races or other structures. Human remains/koiwi may date to any historic period. It is unlawful for any person to destroy, damage, or modify the whole or any part of an archaeological site without the prior authority of Heritage New Zealand Pouhere Taonga. This is the case regardless of the legal status of the land on which the site is located, whether the activity is permitted under the District or Regional Plan or whether a resource or building consent has been granted. The Heritage New Zealand Pouhere Taonga Act 2014 provides for substantial penalties for unauthorised damage or destruction.*

22 a. If accidentally discovered material is suspected to be Koiwi Tangata (human bones), taonga (treasured artefacts) or a Maori archaeological site:

i. the consent holder must immediately advise the office of the Kaitiaki Runanga (office contact information can be obtained from the Canterbury Regional Council) of the discovery; and

ii. the nature of the material must be confirmed by a qualified archaeologist appointed by the Kaitiaki Runanga and HNZPT.

b. If the archaeological material is determined to be Koiwi Tangata (human bones) by a qualified archaeologist, the consent holder must:

i. immediately advise the New Zealand Police of the disturbance;

ii. consult with the Kaitiaki Runanga on any matters of tikanga (protocol) that are required in relation to the discovery and prior to the commencement of any investigation; and

iii. treat the area with utmost discretion and respect and manage the koiwi in accordance with both statutory obligations under the HNZPT Act 2014 and tikanga, as guided by the Kaitiaki Runanga.

c. Works in the site area must not recommence until authorised by the Kaitiaki Runanga, HNZPT (and the NZ Police in the case of koiwi) and any other authority with statutory responsibility, to ensure that all statutory and cultural requirements have been met.

23 If accidentally discovered material is not suspected or confirmed to be Koiwi Tangata (human bones), taonga (treasured artefacts) or a Maori archaeological site, work may recommence once Heritage New Zealand Pouhere Taonga Trust advises the consent holder that work can recommence.

ADMINISTRATION

24 The Canterbury Regional Council may annually, on any of the last five days of May or November, serve notice of its intention to review the conditions of this consent with the purposes of:

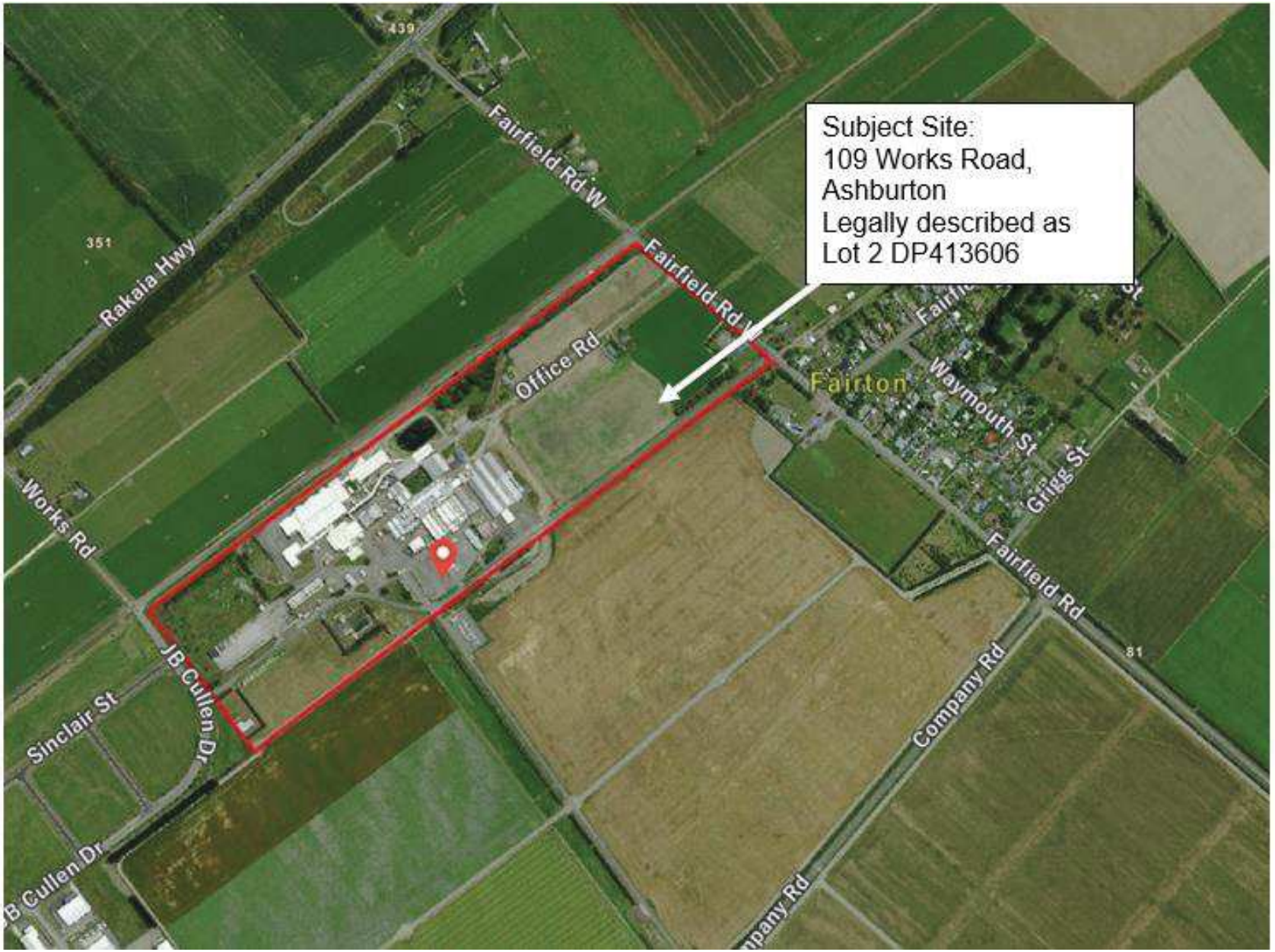
a. Dealing with any adverse effect on the environment which may arise from the exercise of this consent; or

b. Requiring the consent holder to carry out monitoring and reporting instead of, or in addition to, that required by the consent.

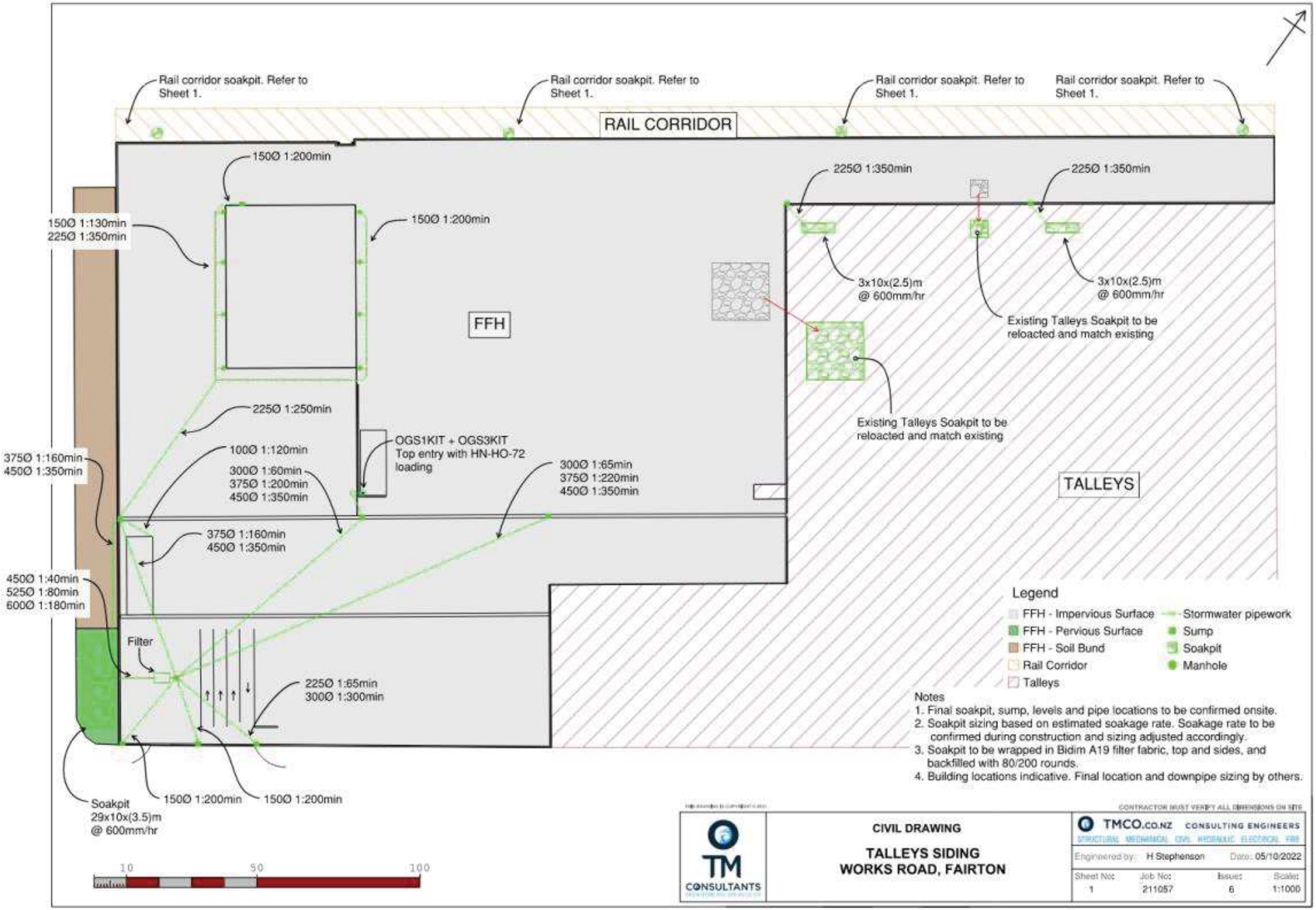
25 If this consent is not exercised before 5th April 2028 it shall lapse in accordance with section 125 of the Resource Management Act 1991.

Issued at Christchurch on 21 June 2023

Canterbury Regional Council



Plan CRC232139A



Plan CRC232139B

Exercising of Resource Consent CRC232139

It is important that you notify Environment Canterbury when you first start using your consent.

GRANTED TO:	Talley's Limited
A DISCHARGE PERMIT (S15):	To discharge construction-phase stormwater to land.
LOCATION:	109 Works Road, Ashburton

Even if the consent is replacing a previous consent for the same activity, you need to complete and return this page.

A consent can only be made active after the activity has commenced and all pre-requisite conditions have been fulfilled e.g. installation of water meter and/or fish screen. If you require further advice, please contact our Advisory Team on 0800 324 636 or by email at ecinfo@ecan.govt.nz.

Providing this information will:

- Validate your consent through to its expiry date
- Minimise compliance monitoring charges
- Help provide an accurate picture of the state of the environment.

If consent CRC232139 is not used before 05 April 2028 this consent will lapse and no longer be valid.

Declaration:

I have started using this resource consent.

Action taken (e.g. pasture irrigated, discharge from septic tank/boiler/spray booth etc):

_____

Date I started using this resource consent (Note: this date cannot be in the future): _____

Signed: _____ **Date:** _____

Full name of person signing (please print**):** _____

Please return to:

Environment Canterbury
PO Box 345
Christchurch 8140

Fax: (03) 365 3194
Email: ecinfo@ecan.govt.nz

File: **CRC232139**
Customer No: **EC131299**

Environment Canterbury
Your regional council

58 Kilmore Street, Christchurch 8013 PO Box 345, Christchurch 8140
General enquiries: 03 365 3828 Customer services: 03 353 9007
Fax: 03 365 3194 or: 0800 EC INFO (0800 324 636)
Email: ecinfo@ecan.govt.nz Website: www.ecan.govt.nz

15 March 2010

Ashburton District Council
Attn: Ms Tamara Page
PO Box 94
Ashburton 7740

Dear Ms Page

NOTICE OF RESOURCE CONSENT DECISION(S)
NUMBER(S): CRC980747.1
NAME: Ashburton District Council

The decision of Environment Canterbury is to grant your application(s) on the terms and conditions specified in the attached resource consent document(s). Your resource consent(s) commences from the date of this letter advising you of the decision. The reasons for the decision are:

1) Any adverse effects on the environment as a result of the change in condition (1) will be minor.

2) There are no persons, who have not provided written approval who are considered to be adversely affected by the granting of this proposal.

For some activities a report is prepared, with officer recommendations, to provide information to the decision makers. If you require a copy of the report please contact our Customer Services section.

If you do not agree with the consent authority decision, you may object to the whole or any part. Notice of any objection must be in writing and lodged with Environment Canterbury within 15 working days of receipt of this decision.

Alternatively you may appeal to the Environment Court, PO Box 2069, Christchurch. The notice of appeal must be lodged with the Court within 15 working days of receipt of this decision, with a copy forwarded to Environment Canterbury within the same timeframe. If you appeal this decision, the commencement date will then be the date on which the decision on the appeal is determined. If you are in any doubt about the correct procedures, you should seek legal advice.

Environment Canterbury takes every measure to improve both applications and processes, and we appreciate your feedback as an important component in ensuring this occurs. You can complete a consents survey on-line at http://www.ecan.govt.nz/services/resource-consents/pages/surveys.aspx. Alternatively, you can call our Customer Services Section on 0800 EC INFO who will be happy to complete the survey with you.

Charges, set in accordance with section 36 of the Resource Management Act 1991, shall be paid to the Regional Council for the carrying out of its functions in relation to the administration, monitoring and supervision of resource consents and for the carrying out of its functions under section 35 of the Act.

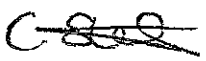
Our Ref: ***CO6C/09635***
Your Ref:
Contact: ***Customer Services***

RMOG
Rev May 2008

Thank you for helping us make Canterbury a great place to live.

For all queries please contact our Customer Services Section by telephoning (03) 353 9007, 0800 ECINFO (0800 324 636), or email ecinfo@ecan.govt.nz quoting your CRC number above.

Yours Sincerely



Carly Steers
TEAM LEADER CONSENTS OPERATIONS
on behalf of the Canterbury Regional Council

Enc

Opus International Consultants Ltd, Christchurch
Attn: Ms Stephanie Brown
PO Box 1482
Christchurch 8140

RESOURCE CONSENT CRC980747.1

Pursuant to Section 104 of the Resource Management Act 1991

The Canterbury Regional Council (known as Environment Canterbury)

GRANTS TO:	Ashburton District Council
A WATER PERMIT:	To take and use groundwater
DATE DECISION:	12 March 2010
EXPIRY DATE:	3 December 2032
LOCATION:	FAIRTON TOWNSHIP

SUBJECT TO THE FOLLOWING CONDITIONS:

1) The combined rate at which water is taken from bore L37/0588, 150 millimetres diameter and 39.5 metres deep, and bore L37/1716, 300 millimetres diameter and 95.8 metres deep, shall not exceed 7.5 litres per second, with a volume not exceeding 648 cubic metres per day.

2) When requested in writing by the Canterbury Regional Council, the hours and rate at which water is taken shall be recorded to within an accuracy of 10 percent. A copy of the records shall be provided to the Canterbury Regional Council when requested.

3) The Canterbury Regional Council may annually, on the last working day of June, serve notice of its intention to review the conditions of this consent for the purposes of:
   (a) dealing with any adverse effect on the environment which may arise from the exercise of the consent and which is appropriate to deal with at a later stage; or
   (b) complying with the requirements of a relevant rule in an operative regional plan.

4) Charges, set in accordance with section 36 of the Resource Management Act 1991, shall be paid to the Regional Council for the carrying out of its functions in relation to the administration, monitoring and supervision of resource consents and for the carrying out of its functions under section 35 of the Act.

Issued at Christchurch on 15 March 2010

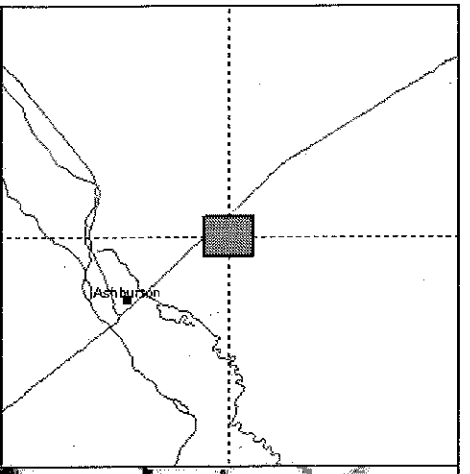
Carly Steers
TEAM LEADER CONSENTS OPERATIONS
on behalf of the Canterbury Regional Council

Consent Plan CRC980747.1

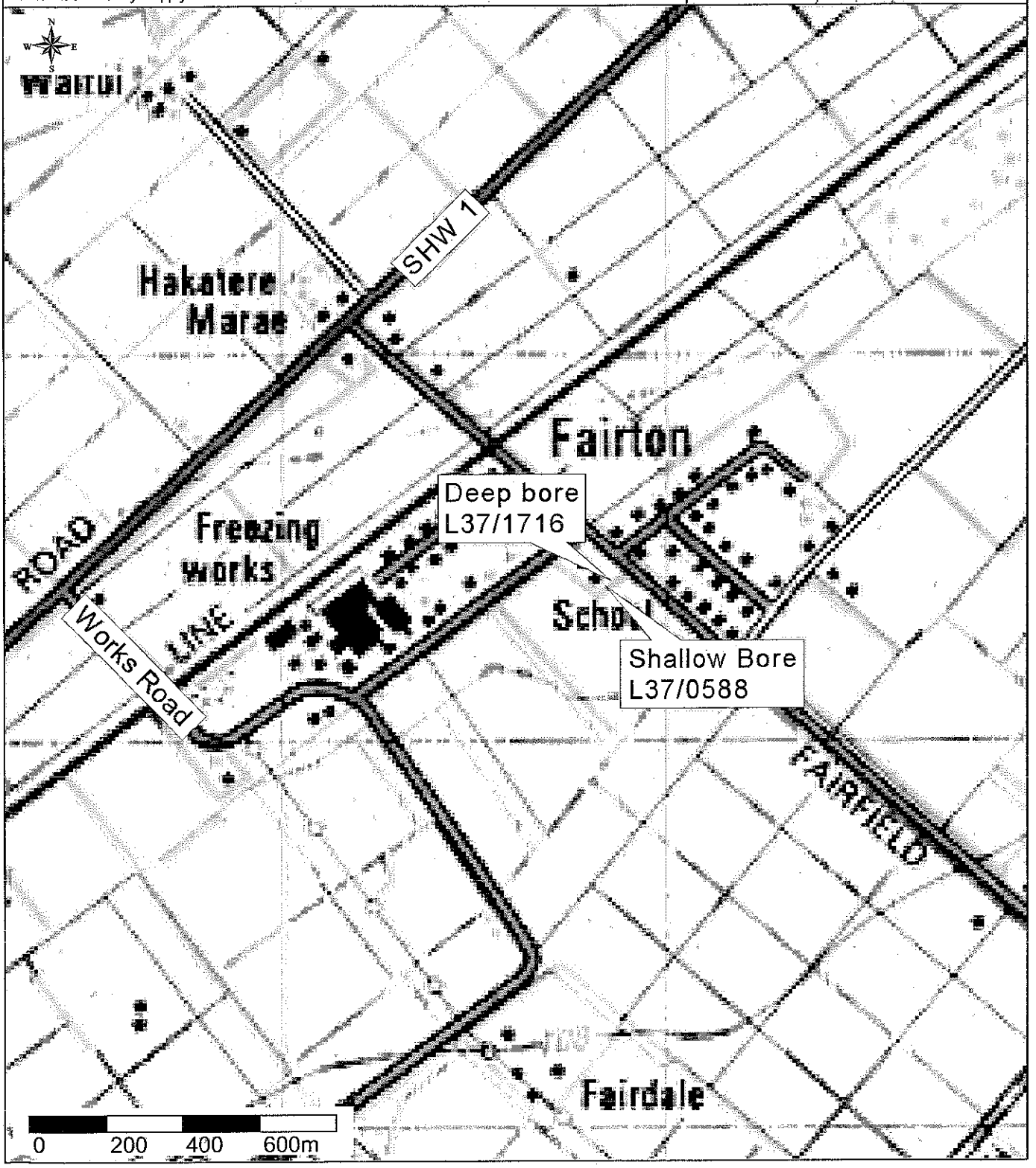
Ashburton District Council

Produced by: melaniep
Date: 5/03/2010 11:43:16 a.m.

Environment Canterbury
58 Kilmore Street
PO Box 345
Christchurch
Ph: [03] 365-3828
Fax: [03] 365-3194



Fairton Community Supply bores



Appendix E. Listed Land Use Register

Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

Customer Services
P. 03 353 9007 or 0800 324 636

PO Box 345
Christchurch 8140

P. 03 365 3828
F. 03 365 3194
E. ecinfo@ecan.govt.nz

www.ecan.govt.nz

Dear Sir/Madam

Thank you for submitting your property enquiry from our Listed Land Use Register (LLUR). The LLUR holds information about sites that have been used or are currently used for activities which have the potential to cause contamination.

The LLUR statement shows the land parcel(s) you enquired about and provides information regarding any potential LLUR sites within a specified radius.

Please note that if a property is not currently registered on the LLUR, it does not mean that an activity with the potential to cause contamination has never occurred, or is not currently occurring there. The LLUR database is not complete, and new sites are regularly being added as we receive information and conduct our own investigations into current and historic land uses.

The LLUR only contains information held by Environment Canterbury in relation to contaminated or potentially contaminated land; additional relevant information may be held in other files (for example consent and enforcement files).

Please contact Environment Canterbury if you wish to discuss the contents of this property statement.

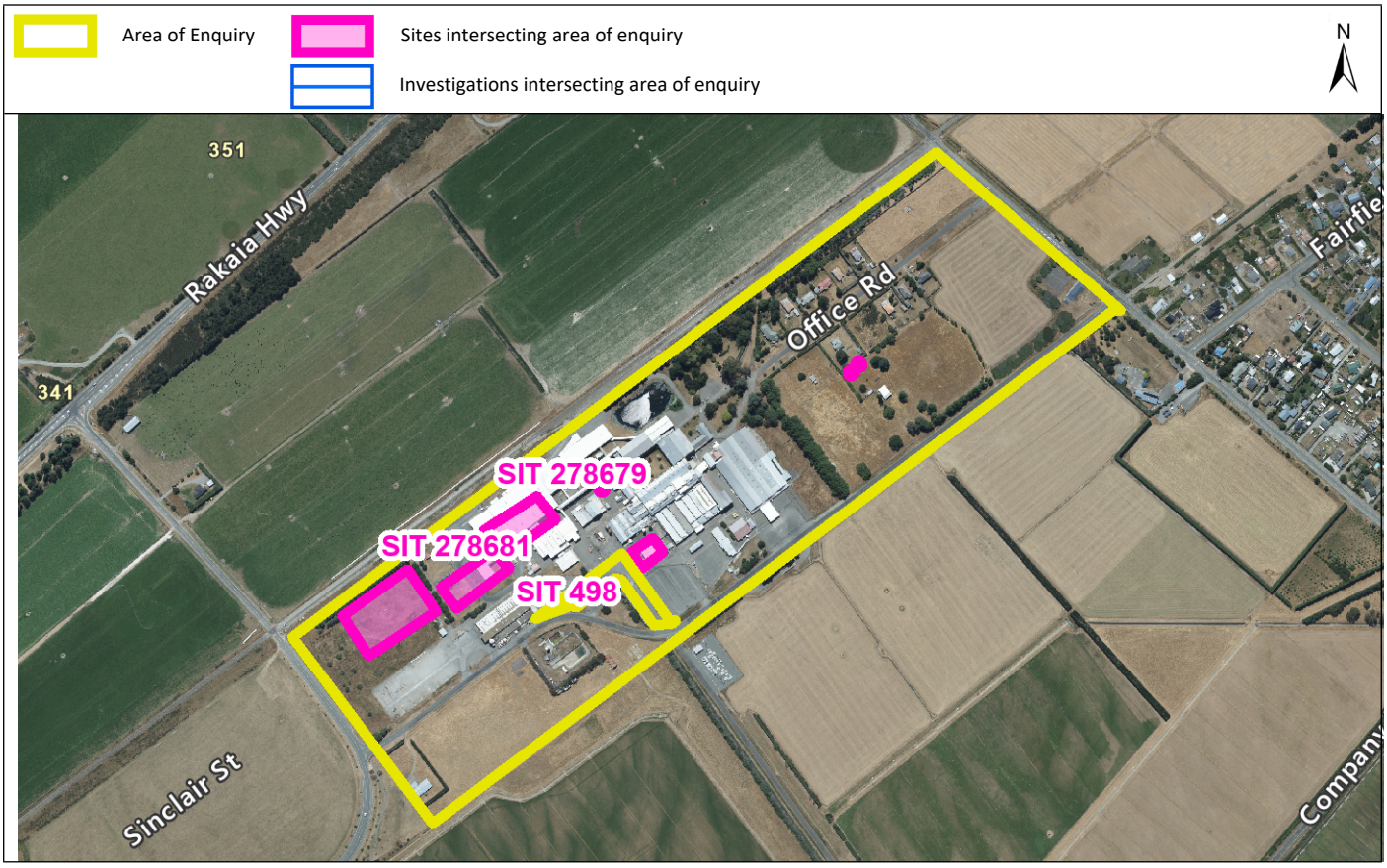
Yours sincerely

Contaminated Sites Team

Property Statement
from the Listed Land Use Register

Visit ecan.govt.nz/HAIL for more information or
contact Customer Services at ecan.govt.nz/contact/ and quote ENQ328187

Date generated: 28 September 2022
Land parcels: Lot 2 DP 413606
RS 39780



The information presented in this map is specific to the property you have selected. Information on nearby properties may not be shown on this map, even if the property is visible.

Sites at a glance

Sites within enquiry area

Site number	Name	Location	HAIL activity(s)	Category
498	Primary Producers Co-operative Society (PPCS)	Fairton, No 2, RD, Ashburton	A17 - Storage tanks or drums for fuel, chemicals or liquid waste;E5 - Coal or Coke Yards;	Not Investigated
278679	Lot 2 DP 413606	Lot 2 DP 413606	G3 - Landfill sites;	Not Investigated
278681	Lot 2 DP 413606	Lot 2 DP 413606	G3 - Landfill sites;	Not Investigated

More detail about the sites

Site 498: Primary Producers Co-operative Society (PPCS) (Intersects enquiry area.)

Category: Not Investigated
Definition: Verified HAIL has not been investigated.

Location: Fairton, No 2, RD, Ashburton
Legal description(s): Pt Res 1774

HAIL activity(s):

Period from	Period to	HAIL activity
1972 (poss 1959)	1998	Storage tanks or drums for fuel, chemicals or liquid waste
1952	1984	Coal or Coke Yards
1976	Present	Coal or Coke Yards

Notes:

22 Jan 1998 * The meat works takes up many pieces of land, but this is the one where the USTs are. Tanks have been there since at least 1972. They may have been there since 1959, according to old information (see paper file).

6 Oct 2020 A pile of coal (ACT 265059) was noted in a 1976 Retrolens photograph (Run/Photo Number: A/3). A boiler house (ACT 265060) was also noted in latest aerial photographs reviewed. In the 1976 Retrolens photographs (A/3), wagons were present near the coal pile and appear to be transporting coal to the boiler house.

Investigations:

There are no investigations associated with this site.

Site 278679: Lot 2 DP 413606 (Intersects enquiry area.)

Category: Not Investigated
Definition: Verified HAIL has not been investigated.

Location: Lot 2 DP 413606
Legal description(s): Lot 2 DP 413606

HAIL activity(s):

Period from	Period to	HAIL activity
1941	1961	Landfill sites

Notes:

18 Sep 2020 A pit was noted in aerial photographs reviewed in 1941. The pit appeared to be filled with unidentified material in a 1961 Retrolens photograph (Run/Photo Number: C/10).

18 Sep 2020 This record was created as part of the Ashburton District 2020 HAIL identification project.

Investigations:

There are no investigations associated with this site.

Site 278681: Lot 2 DP 413606 (Intersects enquiry area.)

Category: Not Investigated
Definition: Verified HAIL has not been investigated.

Location: Lot 2 DP 413606
Legal description(s): Lot 2 DP 413606

HAIL activity(s):

Period from	Period to	HAIL activity
1981	Post-1995	Landfill sites

Notes:

18 Sep 2020 A pit was noted in aerial photographs reviewed in 1981. The pit appeared to have been filled with material in aerial photographs reviewed post-1995.

18 Sep 2020 This record was created as part of the Ashburton District 2020 HAIL identification project.

Investigations:

There are no investigations associated with this site.

Disclaimer

The enclosed information is derived from Environment Canterbury’s Listed Land Use Register and is made available to you under the Local Government Official Information and Meetings Act 1987.

The information contained in this report reflects the current records held by Environment Canterbury regarding the activities undertaken on the site, its possible contamination and based on that information, the categorisation of the site. Environment Canterbury has not verified the accuracy or completeness of this information. It is released only as a copy of Environment Canterbury's records and is not intended to provide a full, complete or totally accurate assessment of the site. It is provided on the basis that Environment Canterbury makes no warranty or representation regarding the reliability, accuracy or completeness of the information provided or the level of contamination (if any) at the relevant site or that the site is suitable or otherwise for any particular purpose. Environment Canterbury accepts no responsibility for any loss, cost, damage or expense any person may incur as a result of the use, reference to or reliance on the information contained in this report.

Any person receiving and using this information is bound by the provisions of the Privacy Act 1993.

Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

Listed Land Use Register

What you need to know

Everything is connected

What is the Listed Land Use Register (LLUR)?

The LLUR is a database that Environment Canterbury uses to manage information about land that is, or has been, associated with the use, storage or disposal of hazardous substances.

Why do we need the LLUR?

Some activities and industries are hazardous and can potentially contaminate land or water. We need the LLUR to help us manage information about land which could pose a risk to your health and the environment because of its current or former land use.

Section 30 of the Resource Management Act (RMA, 1991) requires Environment Canterbury to investigate, identify and monitor contaminated land. To do this we follow national guidelines and use the LLUR to help us manage the information.

The information we collect also helps your local district or city council to fulfil its functions under the RMA. One of these is implementing the National Environmental Standard (NES) for Assessing and Managing Contaminants in Soil, which came into effect on 1 January 2012.

For information on the NES, contact your city or district council.

How does Environment Canterbury identify sites to be included on the LLUR?

We identify sites to be included on the LLUR based on a list of land uses produced by the Ministry for the Environment (MfE). This is called the Hazardous Activities and Industries List (HAIL)[1]. The HAIL has 53 different activities, and includes land uses such as fuel storage sites, orchards, timber treatment yards, landfills, sheep dips and any other activities where hazardous substances could cause land and water contamination.

We have two main ways of identifying HAIL sites:

- We are actively identifying sites in each district using historic records and aerial photographs. This project started in 2008 and is ongoing.
- We also receive information from other sources, such as environmental site investigation reports submitted to us as a requirement of the Regional Plan, and in resource consent applications.

[1] The Hazardous Activities and Industries List (HAIL) can be downloaded from MfE's website www.mfe.govt.nz, keyword search HAIL

How does Environment Canterbury classify sites on the LLUR?

Where we have identified a HAIL land use, we review all the available information, which may include investigation reports if we have them. We then assign the site a category on the LLUR. The category is intended to best describe what we know about the land use and potential contamination at the site and is signed off by a senior staff member.

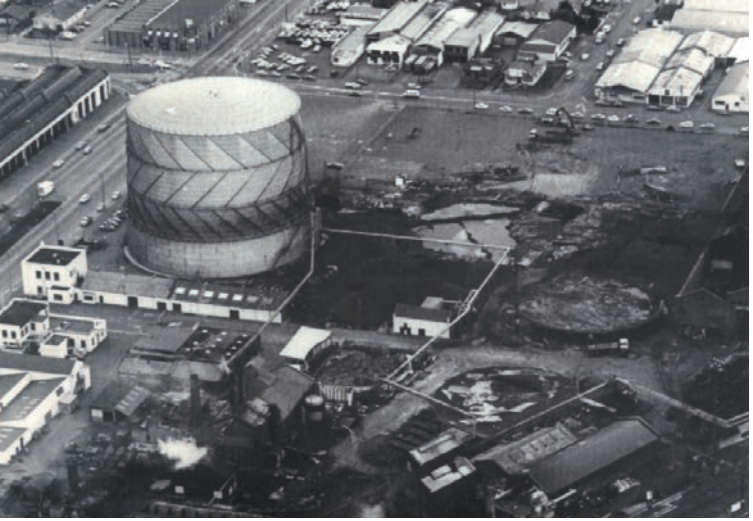
Please refer to the Site Categories and Definitions factsheet for further information.

What does Environment Canterbury do with the information on the LLUR?

The LLUR is available online at www.llur.ecan.govt.nz. We mainly receive enquiries from potential property buyers and environmental consultants or engineers working on sites. An inquirer would typically receive a summary of any information we hold, including the category assigned to the site and a list of any investigation reports.

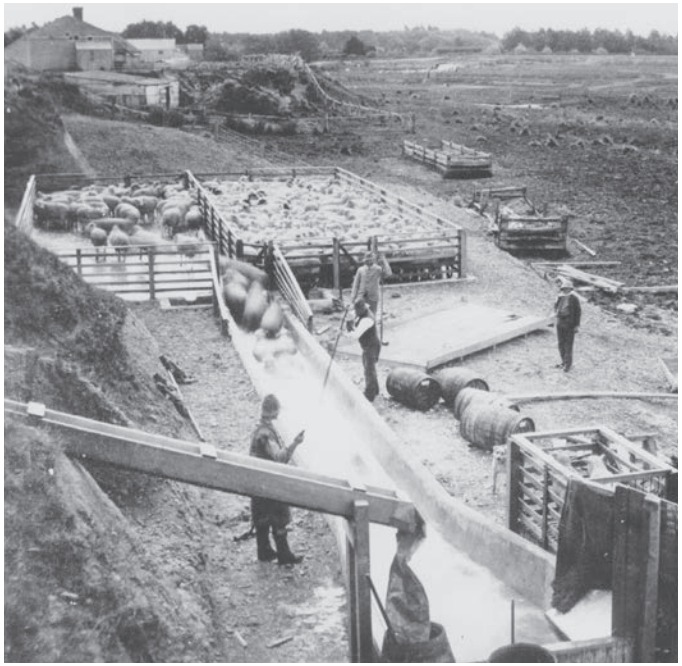
We may also use the information to prioritise sites for further investigation, remediation and management, to aid with planning, and to help assess resource consent applications. These are some of our other responsibilities under the RMA.

If you are conducting an environmental investigation or removing an underground storage tank at your property, you will need to comply with the rules in the Regional Plan and send us a copy of the report. This means we can keep our records accurate and up-to-date, and we can assign your property an appropriate category on the LLUR. To find out more, visit www.ecan.govt.nz/HAIL.



IMPORTANT!

The LLUR is an online database which we are continually updating. A property may not currently be registered on the LLUR, but this does not necessarily mean that it hasn't had a HAIL use in the past.



Sheep dipping (ABOVE) and gas works (TOP) are among the former land uses that have been identified as potentially hazardous. (Photo above by Wheeler & Son in 1987, courtesy of Canterbury Museum.)

My land is on the LLUR – what should I do now?

IMPORTANT! Just because your property has a land use that is deemed hazardous or is on the LLUR, it doesn't necessarily mean it's contaminated. The only way to know if land is contaminated is by carrying out a detailed site investigation, which involves collecting and testing soil samples.

You do not need to do anything if your land is on the LLUR and you have no plans to alter it in any way. It is important that you let a tenant or buyer know your land is on the Listed Land Use Register if you intend to rent or sell your property. If you are not sure what you need to tell the other party, you should seek legal advice.

You may choose to have your property further investigated for your own peace of mind, or because you want to do one of the activities covered by the National Environmental Standard for Assessing and Managing Contaminants in Soil. Your district or city council will provide further information.

If you wish to engage a suitably qualified experienced practitioner to undertake a detailed site investigation, there are criteria for choosing a practitioner on www.ecan.govt.nz/HAIL.

I think my site category is incorrect – how can I change it?

If you have an environmental investigation undertaken at your site, you must send us the report and we will review the LLUR category based on the information you provide. Similarly, if you have information that clearly shows your site has not been associated with HAIL activities (eg. a preliminary site investigation), or if other HAIL activities have occurred which we have not listed, we need to know about it so that our records are accurate.

If we have incorrectly identified that a HAIL activity has occurred at a site, it will be not be removed from the LLUR but categorised as Verified Non-HAIL. This helps us to ensure that the same site is not re-identified in the future.

Contact us

Property owners have the right to look at all the information Environment Canterbury holds about their properties.

It is free to check the information on the LLUR, online at www.llur.ecan.govt.nz.

If you don't have access to the internet, you can enquire about a specific site by phoning us on (03) 353 9007 or toll free on 0800 EC INFO (32 4636) during business hours.

Contact Environment Canterbury:

Email: ecinfo@ecan.govt.nz

Phone:
Calling from Christchurch: (03) 353 9007
Calling from any other area: 0800 EC INFO (32 4636)

Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

Everything is connected

Promoting quality of life through balanced resource management.

www.ecan.govt.nz E13/101

Listed Land Use Register

Site categories and definitions

When Environment Canterbury identifies a Hazardous Activities and Industries List (HAIL) land use, we review the available information and assign the site a category on the Listed Land Use Register. The category is intended to best describe what we know about the land use.

If a site is categorised as **Unverified** it means it has been reported or identified as one that appears on the HAIL, but the land use has not been confirmed with the property owner.

If the land use has been confirmed but analytical information from the collection of samples is not available, and the presence or absence of contamination has therefore not been determined, the site is registered as:

Not investigated:

- A site whose past or present use has been reported and verified as one that appears on the HAIL.
- The site has not been investigated, which might typically include sampling and analysis of site soil, water and/or ambient air, and assessment of the associated analytical data.
- There is insufficient information to characterise any risks to human health or the environment from those activities undertaken on the site. Contamination may have occurred, but should not be assumed to have occurred.

If analytical information from the collection of samples is available, the site can be registered in one of six ways:

At or below background concentrations:

The site has been investigated or remediated. The investigation or post remediation validation results confirm there are no hazardous substances above local background concentrations other than those that occur naturally in the area. The investigation or validation sampling has been sufficiently detailed to characterise the site.

Below guideline values for:

The site has been investigated. Results show that there are hazardous substances present at the site but indicate that any adverse effects or risks to people and/or the environment are considered to be so low as to be acceptable. The site may have been remediated to reduce contamination to this level, and samples taken after remediation confirm this.

Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

Managed for:

The site has been investigated. Results show that there are hazardous substances present at the site in concentrations that have the potential to cause adverse effects or risks to people and/or the environment. However, those risks are considered managed because:

- the nature of the use of the site prevents human and/or ecological exposure to the risks; and/or
- the land has been altered in some way and/or restrictions have been placed on the way it is used which prevent human and/or ecological exposure to the risks.

Partially investigated:

The site has been partially investigated. Results:

- demonstrate there are hazardous substances present at the site; however, there is insufficient information to quantify any adverse effects or risks to people or the environment; or
- do not adequately verify the presence or absence of contamination associated with all HAIL activities that are and/or have been undertaken on the site.

Significant adverse environmental effects:

The site has been investigated. Results show that sediment, groundwater or surface water contains hazardous substances that:

- have significant adverse effects on the environment; or
- are reasonably likely to have significant adverse effects on the environment.

Contaminated:

The site has been investigated. Results show that the land has a hazardous substance in or on it that:

- has significant adverse effects on human health and/or the environment; and/or
- is reasonably likely to have significant adverse effects on human health and/or the environment.

If a site has been included incorrectly on the Listed Land Use Register as having a HAIL, it will not be removed but will be registered as:

Verified non-HAIL:

Information shows that this site has never been associated with any of the specific activities or industries on the HAIL.

Please contact Environment Canterbury for further information:

(03) 353 9007 or toll free
on 0800 EC INFO (32 4636)
email ecinfo@ecan.govt.nz

Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

E13/102

Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

Customer Services
P. 03 353 9007 or 0800 324 636

PO Box 345
Christchurch 8140

P. 03 365 3828
F. 03 365 3194
E. ecinfo@ecan.govt.nz

www.ecan.govt.nz

Dear Sir/Madam

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The LLUR statement shows the land parcel(s) you enquired about and provides information regarding any potential LLUR sites within a specified radius.

Please note that if a property is not currently registered on the LLUR, it does not mean that an activity with the potential to cause contamination has never occurred, or is not currently occurring there. The LLUR database is not complete, and new sites are regularly being added as we receive information and conduct our own investigations into current and historic land uses.

The LLUR only contains information held by Environment Canterbury in relation to contaminated or potentially contaminated land; additional relevant information may be held in other files (for example consent and enforcement files).

Please contact Environment Canterbury if you wish to discuss the contents of this property statement.

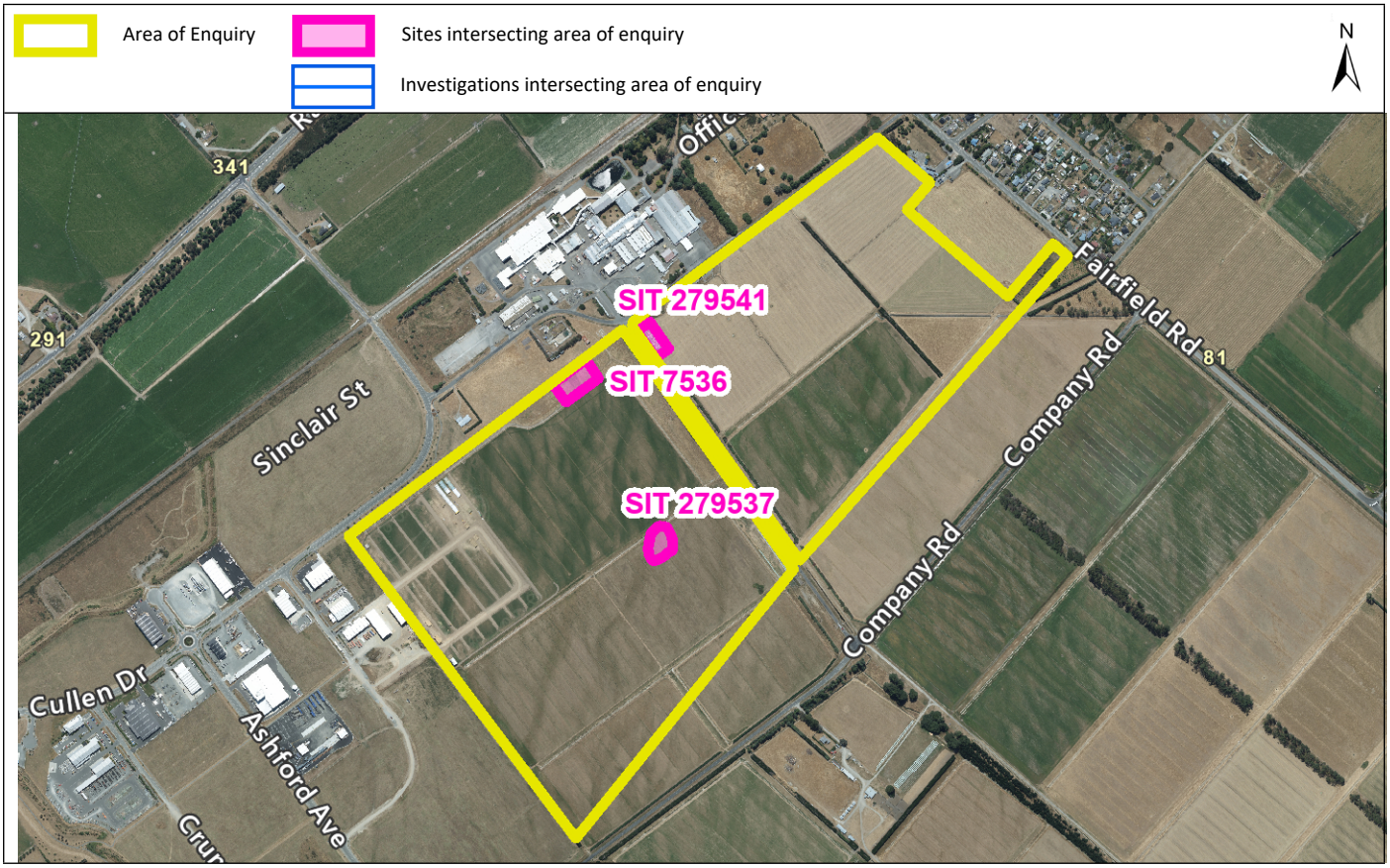
Yours sincerely

Contaminated Sites Team

Property Statement
from the Listed Land Use Register

Visit ecan.govt.nz/HAIL for more information or
contact Customer Services at ecan.govt.nz/contact/ and quote ENQ328190

Date generated: 28 September 2022
Land parcels: Part Lot 3 DP 1018



The information presented in this map is specific to the property you have selected. Information on nearby properties may not be shown on this map, even if the property is visible.

Sites at a glance

Sites within enquiry area

Site number	Name	Location	HAIL activity(s)	Category
7536	Silver Ferns Farms (Fairton) Landfill	Fairfield Road, Fairton	G3 - Landfill sites;	Not Investigated
279537	342 Company Road	Part Lot 3 DP 1018	G5 - Waste disposal to land;	Not Investigated
279541	342 Company Road	Part Lot 3 DP 1018	B4 - Power stations, substations or switchyards;	Not Investigated

More detail about the sites

Site 7536: Silver Ferns Farms (Fairton) Landfill (Intersects enquiry area.)

Category: Not Investigated
Definition: Verified HAIL has not been investigated.

Location: Fairfield Road, Fairton
Legal description(s): Part Lot 3 DP 1018

HAIL activity(s):

Period from	Period to	HAIL activity
Early 1900s	2010	Landfill sites

Notes:

22 Feb 2011 See the file re discussions with Daryn Jemmett from Silver Fern Farms, extracts below:

A landfill has operated at Silver Fern Farms lamb processing site at Fairton since the plant started over 100 years ago. In November 2009 as part of a environmental review of all our operations, it was identified whilst the Fairton landfill had ceased being utilised for the disposal of site wastes it had however developed into a communal dump for the community at large to dispose of 'farm waste', namely tree cuttings, metal drums, and wooden pallets these were generally set alight several times a year in line with general farm practice exhibited across the district. A closure sequence was immediately initiated; this entailed: closing the use of the pit, banning any fires, locking all access gates to avoid communal dumping, clearing community wastes from the pit as much as possible, and arranging appropriate disposal. However, capping of the old landfill face and rehabilitation of the site in general is yet to be carried out, this is what was discussed with Nathan [Dougherty from ECan] at the end of 2010.

26 May 2011 Site changed to 'Not Investigated'. Return email received on 20 May 2011 from Ali Johnstone, Environmental Officer for Silver Fern Farms. Ali noted that the location, acitivity and dates are correct and added the following information:

· The landfill was used for the disposal of general site waste with the practice ceasing a good number of years ago
· Hard/clean fill disposal became the primary use
· The landfill has been used for wooden pallet and green waste disposal, of which were set alight in line with general farm practice exhibited across the district
· Latterly there were issues with fly tipping of "farm type waste" (green waste, pallets and drums), most probably from the local community
· A fire ban was instituted by head office late 2009
· The site was closed and locked up in October 2010 with no new material added
· Rehabilitation was discussed with Nathan Dougherty of ECan late 2010
· Safely accessible items including pallets, drums, scrap metal were removed and alternative disposal arranged
· Capping of the landfill face and rehabilitation of the site has yet to be carried out

Investigations:

There are no investigations associated with this site.

Site 279537: 342 Company Road (Intersects enquiry area.)

Category: Not Investigated
Definition: Verified HAIL has not been investigated.

Location: Part Lot 3 DP 1018
Legal description(s): Part Lot 3 DP 1018

HAIL activity(s):

Period from	Period to	HAIL activity
1940	1989	Waste disposal to land (excluding where biosolids have been used as soil conditioners)

Notes:

22 Jan 2021 Unidentified material disposed on the land is noted in aerial photographs between 1940 and 1989

22 Jan 2021 This record was created as part of the Ashburton District 2020 HAIL identification project.

Investigations:

There are no investigations associated with this site.

Site 279541: 342 Company Road (Intersects enquiry area.)

Category: Not Investigated
Definition: Verified HAIL has not been investigated.

Location: Part Lot 3 DP 1018
Legal description(s): Part Lot 3 DP 1018

HAIL activity(s):

Period from	Period to	HAIL activity
2017	Present	Power stations, substations or switchyards.

Notes:

24 Jan 2021 A substation is identified in aerial photographs between 2017 and present

24 Jan 2021 This record was created as part of the Ashburton District 2020 HAIL identification project.

Investigations:

There are no investigations associated with this site.

Disclaimer

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Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

Listed Land Use Register

What you need to know

Everything is connected

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For information on the NES, contact your city or district council.

How does Environment Canterbury identify sites to be included on the LLUR?

We identify sites to be included on the LLUR based on a list of land uses produced by the Ministry for the Environment (MfE). This is called the Hazardous Activities and Industries List (HAIL)[1]. The HAIL has 53 different activities, and includes land uses such as fuel storage sites, orchards, timber treatment yards, landfills, sheep dips and any other activities where hazardous substances could cause land and water contamination.

We have two main ways of identifying HAIL sites:

- We are actively identifying sites in each district using historic records and aerial photographs. This project started in 2008 and is ongoing.
- We also receive information from other sources, such as environmental site investigation reports submitted to us as a requirement of the Regional Plan, and in resource consent applications.

[1] The Hazardous Activities and Industries List (HAIL) can be downloaded from MfE's website www.mfe.govt.nz, keyword search HAIL

How does Environment Canterbury classify sites on the LLUR?

Where we have identified a HAIL land use, we review all the available information, which may include investigation reports if we have them. We then assign the site a category on the LLUR. The category is intended to best describe what we know about the land use and potential contamination at the site and is signed off by a senior staff member.

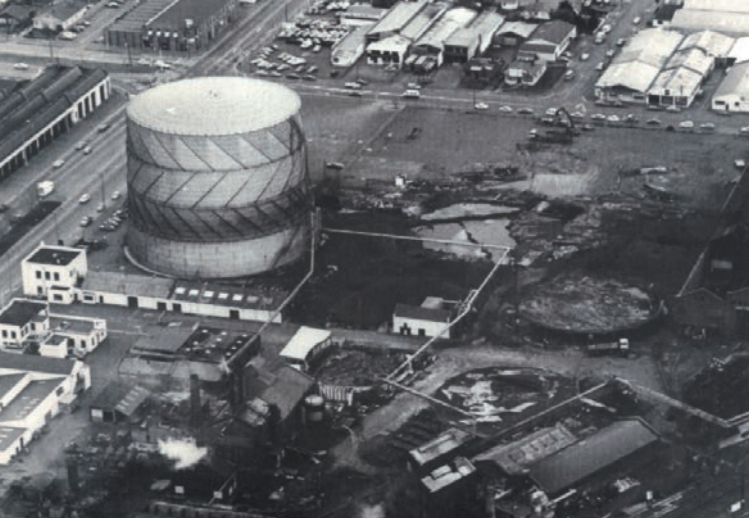
Please refer to the Site Categories and Definitions factsheet for further information.

What does Environment Canterbury do with the information on the LLUR?

The LLUR is available online at www.llur.ecan.govt.nz. We mainly receive enquiries from potential property buyers and environmental consultants or engineers working on sites. An inquirer would typically receive a summary of any information we hold, including the category assigned to the site and a list of any investigation reports.

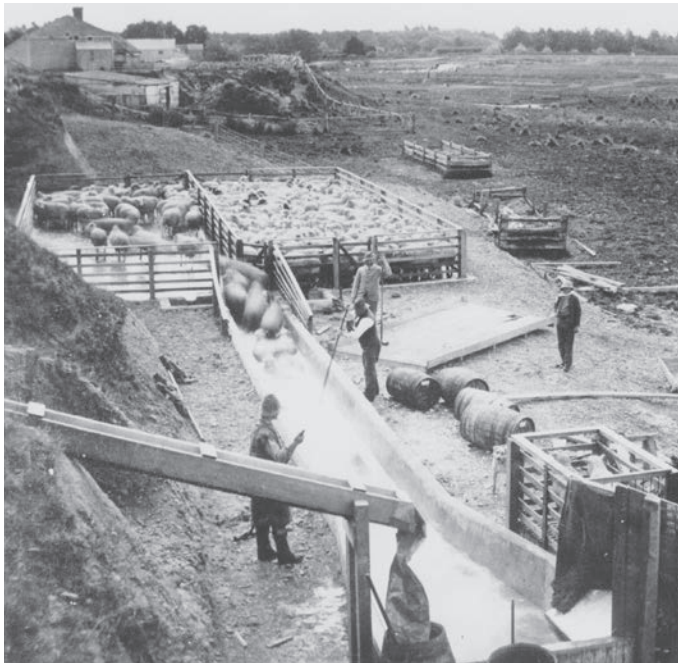
We may also use the information to prioritise sites for further investigation, remediation and management, to aid with planning, and to help assess resource consent applications. These are some of our other responsibilities under the RMA.

If you are conducting an environmental investigation or removing an underground storage tank at your property, you will need to comply with the rules in the Regional Plan and send us a copy of the report. This means we can keep our records accurate and up-to-date, and we can assign your property an appropriate category on the LLUR. To find out more, visit www.ecan.govt.nz/HAIL.



IMPORTANT!

The LLUR is an online database which we are continually updating. A property may not currently be registered on the LLUR, but this does not necessarily mean that it hasn't had a HAIL use in the past.



Sheep dipping (ABOVE) and gas works (TOP) are among the former land uses that have been identified as potentially hazardous. (Photo above by Wheeler & Son in 1987, courtesy of Canterbury Museum.)

My land is on the LLUR – what should I do now?

IMPORTANT! Just because your property has a land use that is deemed hazardous or is on the LLUR, it doesn't necessarily mean it's contaminated. The only way to know if land is contaminated is by carrying out a detailed site investigation, which involves collecting and testing soil samples.

You do not need to do anything if your land is on the LLUR and you have no plans to alter it in any way. It is important that you let a tenant or buyer know your land is on the Listed Land Use Register if you intend to rent or sell your property. If you are not sure what you need to tell the other party, you should seek legal advice.

You may choose to have your property further investigated for your own peace of mind, or because you want to do one of the activities covered by the National Environmental Standard for Assessing and Managing Contaminants in Soil. Your district or city council will provide further information.

If you wish to engage a suitably qualified experienced practitioner to undertake a detailed site investigation, there are criteria for choosing a practitioner on www.ecan.govt.nz/HAIL.

I think my site category is incorrect – how can I change it?

If you have an environmental investigation undertaken at your site, you must send us the report and we will review the LLUR category based on the information you provide. Similarly, if you have information that clearly shows your site has not been associated with HAIL activities (eg. a preliminary site investigation), or if other HAIL activities have occurred which we have not listed, we need to know about it so that our records are accurate.

If we have incorrectly identified that a HAIL activity has occurred at a site, it will be not be removed from the LLUR but categorised as Verified Non-HAIL. This helps us to ensure that the same site is not re-identified in the future.

Contact us

Property owners have the right to look at all the information Environment Canterbury holds about their properties.

It is free to check the information on the LLUR, online at www.llur.ecan.govt.nz.

If you don't have access to the internet, you can enquire about a specific site by phoning us on (03) 353 9007 or toll free on 0800 EC INFO (32 4636) during business hours.

Contact Environment Canterbury:

Email: ecinfo@ecan.govt.nz

Phone:
Calling from Christchurch: (03) 353 9007
Calling from any other area: 0800 EC INFO (32 4636)

Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

Everything is connected

Promoting quality of life through balanced resource management.

www.ecan.govt.nz E13/101

Listed Land Use Register

Site categories and definitions

When Environment Canterbury identifies a Hazardous Activities and Industries List (HAIL) land use, we review the available information and assign the site a category on the Listed Land Use Register. The category is intended to best describe what we know about the land use.

If a site is categorised as **Unverified** it means it has been reported or identified as one that appears on the HAIL, but the land use has not been confirmed with the property owner.

If the land use has been confirmed but analytical information from the collection of samples is not available, and the presence or absence of contamination has therefore not been determined, the site is registered as:

Not investigated:

- A site whose past or present use has been reported and verified as one that appears on the HAIL.
- The site has not been investigated, which might typically include sampling and analysis of site soil, water and/or ambient air, and assessment of the associated analytical data.
- There is insufficient information to characterise any risks to human health or the environment from those activities undertaken on the site. Contamination may have occurred, but should not be assumed to have occurred.

If analytical information from the collection of samples is available, the site can be registered in one of six ways:

At or below background concentrations:

The site has been investigated or remediated. The investigation or post remediation validation results confirm there are no hazardous substances above local background concentrations other than those that occur naturally in the area. The investigation or validation sampling has been sufficiently detailed to characterise the site.

Below guideline values for:

The site has been investigated. Results show that there are hazardous substances present at the site but indicate that any adverse effects or risks to people and/or the environment are considered to be so low as to be acceptable. The site may have been remediated to reduce contamination to this level, and samples taken after remediation confirm this.

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Managed for:

The site has been investigated. Results show that there are hazardous substances present at the site in concentrations that have the potential to cause adverse effects or risks to people and/or the environment. However, those risks are considered managed because:

- the nature of the use of the site prevents human and/or ecological exposure to the risks; and/or
- the land has been altered in some way and/or restrictions have been placed on the way it is used which prevent human and/or ecological exposure to the risks.

Partially investigated:

The site has been partially investigated. Results:

- demonstrate there are hazardous substances present at the site; however, there is insufficient information to quantify any adverse effects or risks to people or the environment; or
- do not adequately verify the presence or absence of contamination associated with all HAIL activities that are and/or have been undertaken on the site.

Significant adverse environmental effects:

The site has been investigated. Results show that sediment, groundwater or surface water contains hazardous substances that:

- have significant adverse effects on the environment; or
- are reasonably likely to have significant adverse effects on the environment.

Contaminated:

The site has been investigated. Results show that the land has a hazardous substance in or on it that:

- has significant adverse effects on human health and/or the environment; and/or
- is reasonably likely to have significant adverse effects on human health and/or the environment.

If a site has been included incorrectly on the Listed Land Use Register as having a HAIL, it will not be removed but will be registered as:

Verified non-HAIL:

Information shows that this site has never been associated with any of the specific activities or industries on the HAIL.

Please contact Environment Canterbury for further information:

(03) 353 9007 or toll free
on 0800 EC INFO (32 4636)
email ecinfo@ecan.govt.nz

Environment Canterbury Regional Council
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E13/102

Appendix F. ADC Global SW Consent CRC186263 Decision Documents

19 June 2019

Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

Ashburton District Council
Attn To: Andrew Guthrie
PO Box 94
Ashburton 7740

Customer Services
P. 03 353 9007 or 0800 324 636
200 Tuam Street
PO Box 345
Christchurch 8140
E. ecinfo@ecan.govt.nz
www.ecan.govt.nz

Dear Sir/Madam

Notice of Resource Consent Decision

Record Number(s): CRC186263
Applicant Name: Ashburton District Council
Activity Description: To discharge stormwater to land and water from existing and future urban areas.
Decision: Granted

Decision

The decision of Environment Canterbury is to grant your application on the terms and conditions specified in the attached resource consent document. The reasons for the decision are:

1. The activity will achieve the purpose of the Resource Management Act 1991.

2. Any adverse effects on the environment of the activity will be minor.

Commencement of consent

Your resource consent commences from the date of this letter advising you of the decision.
If you object to or appeal this decision, the commencement date will then be the date on which the decision on the appeal is determined.

Lapsing of consent

This resource consent will lapse if the activity is not established or used before the lapse date specified on your consent document. Application may be made under Section 125 of the Resource Management Act 1991 to extend this period.

Your rights of objection and appeal

- **Objection to Decision**
  If you do not agree with the decision of the consent authority, you may object to the whole or any part in accordance with Section 357A(1)(g) of the Resource Management Act 1991 (RMA).

Notice of any objection must be in writing and lodged with Environment Canterbury **within 15 working days** of receipt of this decision in accordance with Section 357C(1) of the RMA.

- **Right to Appeal**
  You may appeal the decision of the consent authority to the Environment Court in accordance with section 120 of the RMA. The notice of appeal must be lodged with the Court within 15 working days of receipt of this decision, at PO Box 2069, Christchurch. A copy of the appeal should also be forwarded to Environment Canterbury within the same timeframe.

If you are in any doubt about the correct procedures, you should seek legal advice.

- **Objection to Costs**
  Section 357B of the RMA allows you to object to costs. Your objection must be received **within 15 working days** of the date on which you receive your invoice. Your objection must be in writing and should clearly explain the reasons for your objection as detailed in section 357C of the RMA.

Monitoring of conditions

It is important that all conditions of consent are complied with, and that the consent holder continues to comply with all conditions, to ensure that the activity remains lawfully established.
You can find online Information regarding the monitoring of your consent at www.ecan.govt.nz/monitoringconsent.pdf.

Charges, set in accordance with section 36 of the Resource Management Act 1991, shall be paid to the Regional Council for the carrying out of its functions in relation to the administration, monitoring and supervision of resource consents and for the carrying out of its functions under section 35 of the Act.

Further information about your consent

For some activities a report is prepared, with officer recommendations, to provide information to the decision makers. If you require a copy of the report please contact our Customer Services section. You can find online information about your consent document at www.ecan.govt.nz/yourconsent.pdf.

Queries

For all queries please contact Customer Services Section quoting your CRC number noted above.

Thank you for helping us make Canterbury a great place to live

Yours sincerely

Consents Planning Section

cc:
Opus International Consultants Ltd, Christchurch
Attn To: Brent Hamilton
PO Box 1482
Christchurch 8140

RESOURCE CONSENT CRC186263

Pursuant to Section 104 of the Resource Management Act 1991

The Canterbury Regional Council (known as Environment Canterbury)

GRANTS TO:	Ashburton District Council
A DISCHARGE PERMIT (S15):	To discharge stormwater to land and water from existing and future urban areas.
COMMENCEMENT DATE:	17 Jun 2019
EXPIRY DATE:	17 Jun 2044
LOCATION:	Ashburton, Tinwald & Fairton

SUBJECT TO THE FOLLOWING CONDITIONS:

Definitions/Abbreviations

For the purpose of this consent the following definitions and abbreviations apply to all conditions:

ANZECC refers to the Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000 The Guidelines, Paper No. 4, Volume 1, Chapters 1-7, or any successor to this document.

Annual Exceedance Probability (AEP) is the chance of a storm event of a given intensity / depth or flood occurring being in any one year, usually expressed as a percentage. For example, if a 24-hour duration storm event with a depth of 102 millimetres or more has an AEP of five percent (5%), it means there is a 5% chance (i.e. one-in-twenty) of this magnitude storm event and resulting flood flows occurring or being exceeded in any one year. AEP is the inverse of return period expressed as a percentage.

area of disturbance means an area where site clearance or earthworks are actively taking place and where the land has not been stabilised.

brownfield urban development means the redevelopment of more than 5,000 square metres of existing residential, business or industrial land.

capture zone is the distance (in all directions due to mounding) from a mitigation facility that discharges into land that it is expected that the concentration of *Escherichia coli* (*E. coli*) within an aquifer will need to travel such that the concentration will meet the Drinking Water Standards for New Zealand 2005 (revised 2018), which is 1 MPN/100ml.

critical duration means the rainfall duration (time) at which it takes peak water levels to be reached in the reticulated system or urban and rural catchments and is based on the most up-to-date information or modelling.

commercial site means any premises that is used for a commercial and community activity as defined in the operative Ashburton District Plan dated June 2014. It excludes industrial sites which are separately defined.

community supply means a drinking-water supply that provides no fewer than 501 people with drinking water for not less than 60 days each calendar year.

design storm is the theoretical rainfall event that the analysis is based on for a particular probability. The design storm is based on certain assumptions, including rainfall depth, intensity, and storm rainfall profile shape for the time of concentration or critical duration. For example, in the case of the Ashburton SMP/Mill Creek catchment, one of the design storms is the 2% AEP 48-hour duration event.

development area means any individual area within a site or sites that is undergoing development and construction activities.

domestic supply means a drinking-water supply that provides one or more people with drinking water but not more than 24 people.

greenfields urban development means the construction of subdivisions, buildings, roads and associated network services on previously undeveloped land, such as land previously used for agricultural purposes.

group supply means a drinking-water supply that provides no fewer than 25 people with drinking water for not less than 60 days each calendar year.

HAIL means the Ministry for the Environment's Hazardous Activities and Industries List) October 2011 or any update to this list or successor document.

industrial site means:

a. Any premises used for any industrial or trade purpose being the manufacturing, assembly, wholesaling or storage of products or the processing of raw materials and other ancillary activities; or

b. Any premises used for the storage, transfer, treatment, or disposal of waste materials or for other waste-management purposes, or used for composting organic materials; or

c. Any other premises from which a contaminant is discharged in connection with any industrial or trade process—

but does not include any production land.

mitigation facility means a stormwater management facility comprised of devices to mitigate water quality and quantity effects associated with stormwater that may include, for example, an off-line first flush basin followed by an attenuation basin.

partial attenuation or retention means attenuating (to surface water) or retention (to land) the stormwater generated in excess of what would otherwise have run off under design storm conditions for a site or multiple sites land use that existed at the commencement of the consent.

piece of land is defined by section 7 of the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011.

protection zone means the default protection zone for group or community drinking water supplies in semi-confined or unconfined aquifers as determined in Schedule 1 of the operative Canterbury Land and Water Regional Plan or any updated site-specific protection zone.

residential site/area/development means a land use in which housing predominates.

reticulated stormwater network means drains, the reticulated piped network, kerb and channel, sumps, pipes, manholes, soakage chambers and any stormwater conveyance and mitigation facilities, for which Ashburton District Council are responsible for the operation and maintenance.

site means an allotment title and any balance of land or adjacent land or allotment titles held by the same owner or ownership with an affiliated interest, for example a family trust or company.

SMP means Stormwater Management Plan for Ashburton, Tinwald and Fairton.

SMA means Stormwater Management Area covered by the resource consent application includes the existing and future urban catchments of Ashburton and Tinwald, and the town of Fairton (for simplicity herein referred to as 'Ashburton').

stabilised means an area sufficiently covered by erosion-resistant material such as a good cover of grass, mulch, weed matting, bark, aggregate, or paving by asphalt or concrete etc, in order to prevent erosion of the underlying soil.

stage of development means the phase of development of any one development area which is completed prior to any other stage of development commencing. A stage of development is deemed to be finished following the completion of construction activities and when the development area has been 'stabilised'.

stormwater means runoff that has been channelled, diverted, intensified or accelerated by human modification of the land surface or runoff from the external surface of any structure as a result of precipitation and may contain contaminants. This definition excludes discharges of spilled or deliberately released hazardous substances and/or washdown activities, and groundwater taken for the purposes of land drainage

Stormwater Design Guidelines means the "*Stormwater Design Guidelines for the Ashburton and Timaru Districts*" dated [tbc] 2018, or any revisions to, or successor to, to this document.

time of concentration is a hydrological term that describes the response time of a catchment to rainfall. It represents the time period required for run-off from the furthest point of the catchment to reach a given point.

Description

1 The discharge shall be only stormwater from the area identified as the Ashburton Stormwater Management Area (SMA) as shown on Plan CRC186263, which forms part of this consent, that:

a. Enters the Ashburton District Council reticulated stormwater network and is subsequently discharged to surface water or onto or into land in circumstances where it may enter groundwater; or

b. Is generated from development areas and is discharged into the reticulated stormwater network and onto or into land or into surface water within the SMA, but excludes discharges from the areas specified in Condition (2); or

c. Is generated from residential and commercial roofs and hardstanding areas that discharge onto or into land or to surface water within the SMA, but not via the reticulated stormwater network, and that existed prior to the commencement of this consent; or

d. Is generated from new roofs and hardstand areas from individual residential and commercial properties within the SMA that discharge to surface water, or onto or into land but not via the reticulated stormwater network, and in the case of discharges onto and into land is where ground conditions are demonstrated to be suitable for soakage and the system design is in accordance with the Stormwater Design Guidelines.

Exclusions

2 There shall be no discharge of stormwater from any stage of development for a site with a total area of land disturbance greater than two hectares at any one time.

3 There shall be no discharge of stormwater onto or into land or to surface water from any development area or mitigation facility that HAIL activities have occurred (a piece of land) unless either:

a. The soil has been analysed for the appropriate contaminants as determined by Canterbury Regional Council and has been shown to be below the ANZECC high interim sediment quality guidelines (ISQG-high) or any updates or successors to these guidelines; or

b. The risk associated with the discharge has been agreed by the Ashburton District Council and the Canterbury Regional Council to be acceptable based on factors including, but not limited to:

i. Contaminant characteristics or known concentrations on a site;

ii. The likelihood of contaminated sediment becoming entrained in stormwater and migrating off-site or into groundwater;

iii. Site management practices and treatment systems;

iv. The degree of separation between a HAIL site and an ecological receptor and drinking supply well.

4 There shall be no discharge of stormwater from a soakage mitigation facility after commencement of this consent, for an existing reticulated stormwater network, for a new development discharging via a reticulated stormwater network, or for a commercial site greater than 5,000 square metres that does not discharge via a reticulated stormwater network, where it does not meet the requirements of Condition 20 and its associated schedule.

5 Any site that represents an unacceptable risk to achieving the receiving environment objectives set out in the attached Schedule 2 which forms part of this consent may also be excluded. The exclusion of these sites from this resource consent can occur via either of the following processes in consultation with the Canterbury Regional Council:

a. Written disconnection of a site by Ashburton District Council via a Local Government Act process; or

b. The surrendering of a site(s) respective land parcels from this consent by Ashburton District Council and the Canterbury Regional Council issues a notice of acceptance of that partial surrender pursuant to 138 of the Resource Management Act 1991; or

c. Another mechanism agreed between the Ashburton District Council and the Canterbury Regional Council.

The consent holder shall maintain a Schedule 1 titled “Sites excluded from the Ashburton, Tinwald and Fairton SMP Consent” which forms part of this consent.

Advice note*: The purpose of Condition (5) is where sites are identified that has stormwater quality or other discharges entering the Ashburton District Council reticulated stormwater network that may compromise the outcomes that this consent seeks to achieve and, where feasible, discourage such discharges. If such discharges cannot be avoided and a separate consent is required and sought, the consent process provides the applicants with the opportunity to demonstrate that their discharge will not compromise the objectives of this consent.*

Receiving Environment Objectives

6 The consent holder shall use best practicable options to achieve the water quantity, water quality, ecosystem health, social and cultural impact, objectives set out in the attached Schedule 2 with respect to effects arising from exercising this consent.

Stormwater Management Plan

7 A Stormwater Management Plan (SMP) shall be prepared and maintained for the duration of this consent. The purpose of the SMP is to detail the options to manage the stormwater discharges authorised by this consent so that the receiving environment objectives and targets set out in Schedule 2 of this consent will be met. The SMP shall include but not be limited to:

a. Details of measures that will be used to manage discharges of stormwater authorised by this consent; and

b. How the discharges of stormwater authorised by this consent will meet the receiving environment targets and objectives required by this consent; and

c. Details of the management of stormwater from sites involving the use, storage or disposal of hazardous substances; and

d. Demonstration of a commitment to progressively improve the quality of the discharges to meet the receiving environment objectives and targets required by this consent.

Design

Water Quality (First flush treatment)

8 For greenfields urban development occurring after commencement of this consent, all water quality mitigation facilities constructed shall incorporate best practicable options and be designed to capture and treat on average at least 80% of annual run-off from impervious areas of the site.

9 For brownfield urban development or retrofitted water quality mitigation facilities constructed after commencement of this consent, where practicable water quality mitigation facilities constructed shall be designed to capture and treat on average up to 80% of annual run-off from impervious areas of the site.

Water Quantity

10 For greenfields and brownfield urban development occurring after commencement of this consent that directly discharge stormwater via the reticulated stormwater network to the Hakatere/Ashburton River, all water quantity mitigation facilities constructed shall provide partial attenuation of the critical design storm events to ensure no adverse hydraulic effects on the reticulated stormwater network, overland flow paths, or areas of flood risk.

Advice note: *For the purpose of this condition, "no adverse hydraulic effects" should ensure that stormwater discharges are managed so that they do not cause or exacerbate the risk of inundation, erosion or damage to property or infrastructure downstream or risks to human safety above an acceptable level, determined by the water quantity objectives and targets set out in Schedule 2, attached to this consent.*

11 For greenfields and brownfields urban development occurring after commencement of this consent that discharge to Mill Creek, Carters Creek and Lagmhor Creek, all water quantity mitigation facilities shall provide:

a. For facilities that primarily discharge stormwater to surface water, partial attenuation for the critical duration 2% AEP storm event.

b. For facilities that primarily discharge stormwater into land, provide partial retention of all storms up to and including the critical duration 2% AEP event.

12 For greenfields and brownfields urban development occurring after commencement of this consent that discharge stormwater into land, all water quantity mitigation facilities shall be designed and located to avoid adverse effects of groundwater mounding on the facilities' performance and on other land, for all storms up to and including the critical duration 2% AEP event.

13 Secondary flow paths downstream of water quantity mitigation facilities constructed after the commencement of this consent to convey flows in excess of the 2% AEP design storm shall be identified and shall avoid dwellings, and maintained and protected from future development that would adversely affect the flow paths' capability to convey the design flows.

***Advice note**: Refer to the Stormwater Design Guidelines for rainfall depths or intensities, and site investigation and design requirements depending on type of facility to achieve compliance with the above design conditions.*

General

14 The mitigation facilities constructed after commencement of this consent shall include best practice design features that capture and contain as much as practically possible any spills of contaminants contained within stormwater entering the facility.

15 Wherever practicable, mitigation facilities shall be designed and/or have sufficient additional land area to allow up-scaling to respond to climatic uncertainty and changing land use patterns.

16 For design of water quantity mitigation facilities, detailed hydraulic analysis shall be required, including computer modelling for development areas greater than 20 hectares. Assessments shall be made available to Canterbury Regional Council if requested. The outlet hydrograph for the 2% AEP critical duration design storm generated by modelling the final design for these facilities shall then be used in the water quantity model for Ashburton and Tinwald to confirm compliance with Condition (10).

17 The consent holder shall consult with Te Runanga o Arowhenua at concept design stage of the mitigation facility regarding landscaping and choice of plant species.

18 The reticulated stormwater systems shall be maintained in accordance with the attached Schedule 3 which forms part of this consent.

Drinking-water Supply Protection

19 As a result of exercising this consent the Drinking-water Standards for New Zealand 2005 (revised 2018) or any revisions or successors to this document shall not be exceeded in drinking-water supply wells.

20 Prior to the establishment of each soakage mitigation facility after the commencement of this consent for an existing reticulated stormwater network, or for a new development discharging via a reticulated stormwater network, or for a commercial site greater than 5,000 square metres that does not discharge via a reticulated stormwater network, the:

a. Investigation, avoidance, or mitigation of any established or proposed drinking-water supply wells; and

b. Investigation, mitigation of any properties which is reasonably foreseeable that a permitted groundwater take for drinking water (which includes bore installation) would be established;

shall occur in accordance with the methodology described in the attached Schedule 4 which forms part of this consent.

Industrial Site Management

21 Within two years of commencement of this consent, the consent holder shall undertake, and report on the outcomes of, identification of existing operational industrial sites that discharge under the consent. The following minimum requirements shall apply:

a. The identification of sites shall include:

i. Review of Ashburton District Council and Canterbury Regional Council databases for listing of HAIL activities;

ii. Review of trade waste permits issued by the Ashburton District Council;

iii. Review of applicable and current resource consents issued by the Ashburton District Council and Canterbury Regional Council; an

iv. A site visit if lawfully allowed.

b. A report shall be prepared and submitted to the Canterbury Regional Council, Attention: Regional Leader – Monitoring and Compliance that sets out the process used to identify all industrial sites and include a discussion of the parameters used to rank sites for risk relative to stormwater discharge and identify the industrial sites that pose the highest risk to surface water, groundwater and/or soil quality.

c. The report shall also include a programme for prioritisation and scheduling for auditing the industrial sites that pose the highest risk identified during the identification study. This shall include:

    i. A process to maintain an up to date, risk-ranked inventory of industrial sites as urbanisation of the catchment progresses;

    ii. A process and schedule for periodically re-auditing and re-evaluating the identification of high-risk sites for compliance with the consent holder's stormwater monitoring and on-site contaminant isolation, treatment and maintenance requirements;

    iii. A process for consulting with the Canterbury Regional Council's Pollution Prevention Officers as necessary to address difficult sites; and

    iv. A process for periodic review of this programme by the consent holder.

22 The industrial site auditing of high-risk sites under Condition (21) shall identify:

a. Site environmental practices, including spill prevention/control, minimisation or elimination of contaminants at source;

b. Any data on discharge quality, or on the need for the site owner (and/or site occupier) to carry out monitoring of their stormwater discharge;

c. Adequacy of the site's stormwater system including stormwater treatment; and

d. The time frames available for the site occupier and/or land owner to undertake site improvements if required.

23 The programme developed to comply with Condition (21) shall:

a. As a minimum, within three years of the commencement of this consent, a suitably qualified person with experience in assessing contamination risk shall undertake the auditing of the top 10 highest risk operational industrial sites within the SMA;

b. The remainder shall be completed within ten years of the commencement of this consent; and

c. Include repetition of the audits regularly to ensure that any changes to the risk posed by the stormwater discharges on surface water, groundwater and/or soil quality are captured.

Advice Note: *An Ashburton District Council trade waste officer would be a suitably qualified person under the above conditions requirements.*

24 If at any stage during a site visit, audit or monitoring of a site it is determined that a site is presenting an unacceptable risk to achieving the receiving environment objectives, the consent holder shall notify the Canterbury Regional Council, Attention: Regional Leader - Monitoring and Compliance within 20 working days.

25 All sites that present an unacceptable risk to achieving the receiving environment objectives may be excluded from this consent in accordance with Condition (5).

Erosion and Sediment Control

26 An Erosion and Sediment Control Plan (ESCP), prepared in general accordance with Canterbury Regional Council's Erosion and Sediment Control Toolbox for the Canterbury Region or successor document, shall be prepared and implemented for any development area for which the construction-phase stormwater discharge is authorised by this consent.

27 Copies of ESCPs prepared for or by the consent holder shall be made available to Canterbury Regional Council on request.

Implementation

28 Within two years of the commencement of this consent, the consent holder shall scope, draft and approve a stormwater bylaw under the Local Government Act that allows the consent holder to regulate and control, audit and sample discharges of stormwater from existing and future sites discharging stormwater under this consent, and provide mechanisms for the operation and enforcement of the bylaw. The bylaw-making at a later date, or a different mechanism to achieve the same outcomes as a bylaw, may occur as agreed with the Canterbury Regional Council.

29 The consent holder shall notify Canterbury Regional Council when a greenfield or brownfield urban development site has been issued an authorisation from the Ashburton District Council under this consent.

30 The consent holder shall maintain records including, but not limited to, detailed design drawings, details of site specific assessments undertaken, maps and any engineering design and construction certificates issued for any water quality or quantity mitigation facilities constructed. These records shall be made available to Canterbury Regional Council on request.

Modelling Updates

31 The water quantity model for the Ashburton and Tinwald shall:

a. Be re-validated and calibrated following a 5% AEP rainfall event or greater that results in material flooding in the catchments and SMA using best available field measurements from river flows, flood levels, rainfall, land use information, and other hydraulic data, using the latest modelling techniques. The impact of infilling of stockwater races should also be considered.

b. Have a full model review and runs at least once in every five years.

32 A report on the results of the water quantity model review referred to in Condition (31) shall be provided to the Canterbury Regional Council, Attention: Regional Leader - Monitoring and Compliance within two months of the completion of the report.

Ecological Enhancement

33 Any Mill Creek, Carters Creek and Lagmhor Creek works undertaken by the Ashburton District Council relating to stormwater outlets and waterway channel erosion, substrate improvement works, and riparian margin works that is either a permitted activity or authorised under a resource consent that does not have the following criteria, shall incorporate 'where practicable' an ecologically suitable design as recommended by a suitably qualified and experienced ecologist. These criteria shall include, but not be limited to:

a. Provision for fish cover;

b. Appropriate in-stream habitat complexity, including varied flow sequences;

c. Planting of ecologically sensitive riparian vegetation; and

d. Material used to form new margins, banks and substrate shall be clean, uncontaminated rock, gravel, sand, or soil.

Advice Note: *Where a s14 water permit, s9 or s13 land use consent has been granted by the Canterbury Regional Council to Ashburton District Council post commencement of this consent relating to works in waterways that include undertaking ecological enhancement works in waterways the relevant conditions in these consents shall prevail.*

'where practicable' means that ecological enhancement cannot be at the expense of an increase in the risk of flooding, loss of property, or the loss of significant trees.

Monitoring Programme

34 The consent holder shall undertake monitoring in accordance with the attached Monitoring Programme for the Ashburton, Tinwald and Fairton Stormwater Management Plan Version 1.0 ('Monitoring Programme') or any subsequent revisions to the Monitoring Programme that have been certified by the Canterbury Regional Council in accordance with Condition (36).

35 The purpose of the Monitoring Programme is to investigate the effects of stormwater discharges on surface water quality, groundwater quality, tangata whenua values, stream sediment quality, the ecology of surface waterways, surface water levels, groundwater levels and soil quality within the SMA. The Monitoring Programme or any revisions to the Monitoring Programme shall also:

a. Be sufficient to detect any trends in achieving tangata whenua values, groundwater quality, surface water quality, stream sediment quality, the ecology of surface waterways and soil quality.

b. For surface water monitoring programmes, be sufficient to measure compliance with the surface water quality, aquatic sediment quality, aquatic ecology and tangata whenua objectives set out in the attached Schedule 2.

c. For groundwater quality monitoring programmes, be sufficient to measure compliance with the drinking water quality objectives set out in the attached Schedule 2.

d. Adopt any changes to relevant national standards or guidelines for surface water, groundwater and/or soil quality.

36 Any amendments to the Monitoring Programme may not replace the previous version until the Monitoring Programme has been certified by the Canterbury Regional Council: Regional Leader - Monitoring and Compliance as complying with the requirements of Condition (35).

Responses to Monitoring

37 If the monitoring results identify that the objectives set out in the attached Schedule 2 are not being met, the consent holder shall investigate the reason for this by following the steps set out in the Monitoring Programme. Where adverse effects are a result of the discharges authorised by this consent, the consent holder shall review its implementation and shall use all reasonably practicable measures to meet the objectives or achieve progressive improvements towards meeting the objectives in Schedule 2.

Reporting

38 The consent holder shall provide an annual report to the Canterbury Regional Council, Attention: Regional Leader - Monitoring and Compliance, and Te Runanga o Arowhenua, by 30 September each year. The report shall include, where appropriate:

a. A summary of the results of monitoring carried out under Condition (34) and any responses carried out under Condition (37). The annual report shall:

i. be prepared in accordance with the reporting requirements of the Monitoring Programme; and

ii. report on the adherence to, and progress on, achieving the receiving environment objectives set out in Schedule 2.

b. An update on progress with the high-risk industrial site audit programme under Conditions (21) and (22), including an updated Schedule 1 of excluded sites pursuant Condition (5).

c. An update on the timetable for construction and activation of any Ashburton District Council funded mitigation facilities or works.

d. Any waterway or community enhancement programmes undertaken within the catchment and plans for funding of future enhancement projects that may result in improvements to ecological, cultural and amenity values of the waterways.

e. Comment on consultation with Te Runanga o Arowhenua and report on any activities relating to the protection or enhancement of cultural values.

f. Any additional monitoring or investigations undertaken beyond those specified in the Monitoring Programme, and including those undertaken on industrial sites, that have been initiated to inform the consent holder on stormwater management effectiveness, such as contaminant source investigations or stormwater treatment performance monitoring.

g. Any other significant matters which may have a positive or negative impact on the receiving environment in the future.

Review

39 The consent holder shall:

a. Review and revise (if required) the SMP at least every 10 years after commencement of this consent.

b. Make revisions to the SMP which shall be clearly identifiable with a revision number and date on the front cover or if a section has only been amended a revision number and date in its footer or header content.

c. Submit any amended SMP to the Canterbury Regional Council, Attention: Regional Leader - Monitoring and Compliance within one month of the revision being adopted with an explanation of the changes that have occurred.

40 After consultation with the consent holder, the Canterbury Regional Council may request the SMP be reviewed under the following conditions:

a. Upon the release of any amendment to the Resource Management Act 1991, or any document accepted as a New Zealand Guideline or Standard, which addresses stormwater management or water quality; or

b. Any changes to relevant national, and/or regional planning documents including those that result of the Canterbury Land and Water Regional Plan (LWRP) sub-regional chapter development process; or

c. The results of monitoring, including any investigations or outcomes in relation to the responses to modelling and monitoring; or

d. The use of new technologies, new opportunities for mitigation treatment and source control.

41 The Canterbury Regional Council may, on any of the last five days of March or September each year, serve notice of its intention to review the conditions of this consent for the purposes of:

a. Dealing with any adverse effect on the environment which may arise from the exercise of this consent and which it is appropriate to deal with at a later stage; or

b. Requiring the adoption of the best practicable option to remove or reduce any adverse effect on the environment.

c. Complying with the requirements of a relevant rule in an operative regional plan.

d. Achieving consistency of this resource consent in regard to catchment management planning and stormwater management with the provisions of the Ashburton Sub-regional Section of the LWRP within five years of the notification of the sub-regional section.

Administration

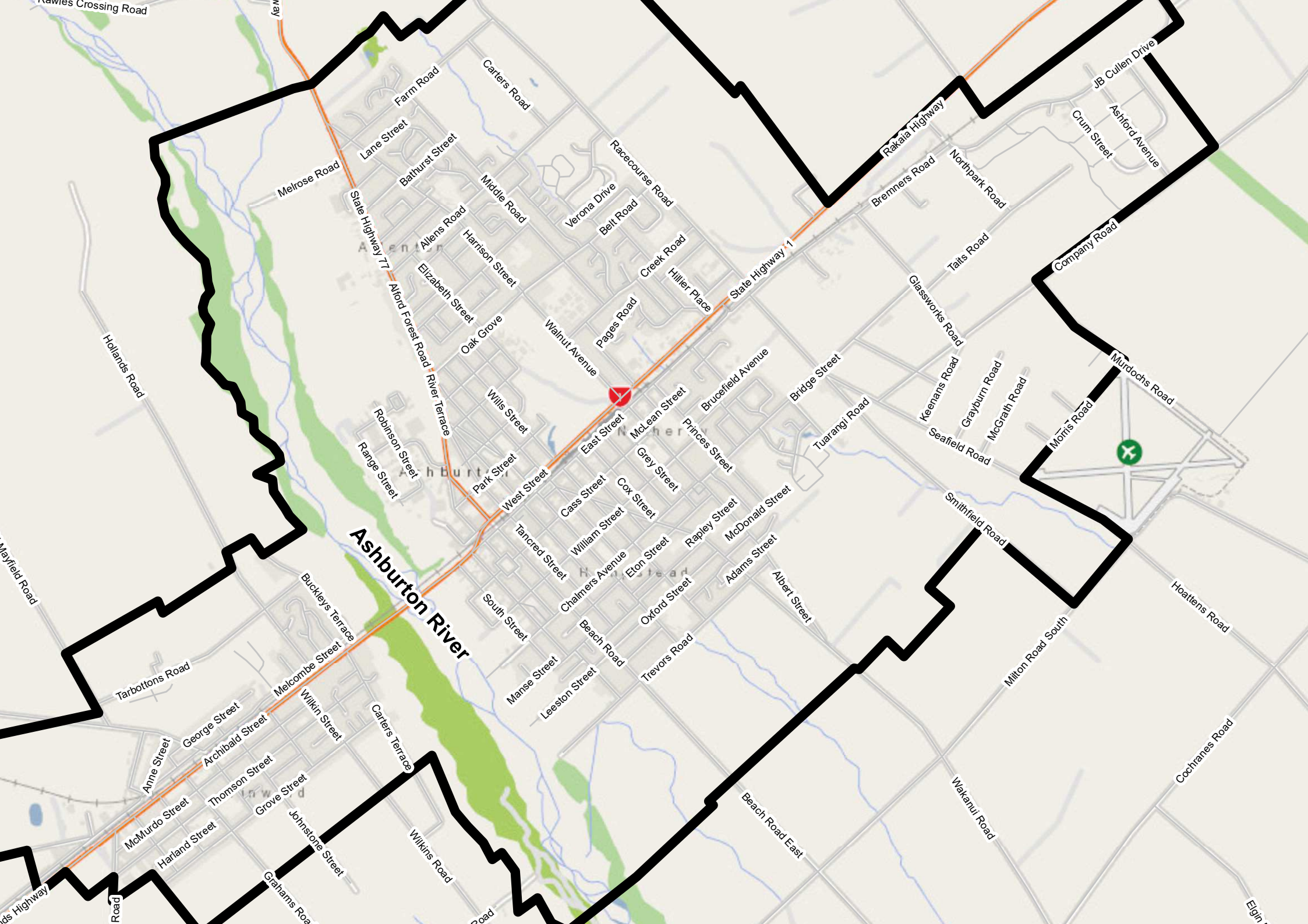
42 Consents CRC000893.1, CRC051184.1, CRC070615, CRC070687.2, CRC070799.1, CRC081415, CRC103476, CRC136679, CRC084594.1 and CRC084675 shall be surrendered before the first exercise of this consent.

43 If this consent is not exercised before 30 June 2024 then it shall lapse in accordance with Section 125 of the Resource Management Act 1991.

Advice note: *'Exercised' is defined as implementing any requirements to operate this consent and undertaking the activity as described in these conditions and/or application documents.*

Issued at Christchurch on 19 June 2019

Canterbury Regional Council


Rawles Crossing Road
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Carters Road
Lane Street
Bathurst Street
Racecourse Road
Melrose Road
State Highway 77
Middle Road
Verona Drive
Belt Road
Allens Road
Harrison Street
Creek Road
Hillier Place
Elizabeth Street
Alford Forest Road
River Terrace
Oak Grove
Walnut Avenue
Pages Road
State Highway 1
Rakaia Highway
JB Cullen Drive
Crum Street
Ashford Avenue
Bremners Road
Northpark Road
Taits Road
Company Road
Glassworks Road
Hollands Road
Wills Street
Robinson Street
Range Street
Park Street
West Street
East Street
McLean Street
Brucefield Avenue
Bridge Street
Tuarangi Road
Keenans Road
Grayburn Road
McGrath Road
Seafield Road
Morris Road
Murdochs Road
Princes Street
Grey Street
Cass Street
Cox Street
William Street
Tancred Street
Rapley Street
McDonald Street
Smithfield Road
Chalmers Avenue
Eton Street
Adams Street
Albert Street
Hoattens Road
Ashburton River
Buckleys Terrace
Mayfield Road
South Street
Oxford Street
Beach Road
Trevors Road
Manse Street
Leeston Street
Milton Road South
Tarbottons Road
Melcombe Street
George Street
Archibald Street
Wilkin Street
Carters Terrace
Anne Street
Thomson Street
Grove Street
McMurdo Street
Harland Street
Johnstone Street
Wilkins Road
Grahams Road
Beach Road East
Wakanui Road
Cochranes Road

Schedule 1: Sites excluded from the Ashburton, Tinwald and Fairton SMP Consent

Site Name	Physical Location	Legal Description	Main Type of Activity	Date Added to Schedule	Reasons Why Site Excluded
Ashburton Meat Processors	170 Bridge Street	CB24/A579 & CB24/A581	Commercial – meat processing	08/10/2018	Majority of site will discharge to land. Appears to have its own soakage systems and stormwater consent. Part of site has an industrial activity occurring on site (composting)

Schedule 2: Objectives for water quantity, water quality, ecosystem health, social and cultural impacts

	Objective	*Source*	*Performance Measure*	*Target to be applied on commencement unless a different duration is specified*
Water Quantity	Provide protection from flooding for private properties	LTP 2018-28 Part Four, Stormwater, levels of service	Number of flooding events resulting from stormwater overflows incidents (and for each flooding event the number of habitable floors affected, expressed per 1,000 properties connected to the stormwater system)	nil
	The majority of residents are satisfied with our stormwater services	LTP 2018-28 Part Four, Stormwater, levels of service	Customers satisfaction with stormwater services	≤5 complaints per 1,000 connections
	Provide efficient and sustainable stormwater services / Use stormwater efficiently in urban areas	LTP 2018-28 Part Four, Stormwater, levels of service & ZIP 4.2.2	Compliance with resource consents (measured by the number of abatement notices, infringement notices, enforcement orders or convictions received by Council) Percentage of new developments with stormwater managed to meet greenfields/pre-developed runoff Reduction in impervious area	nil 100% new developments do not exceed pre-developed runoff rates All council roading and re-development projects to incorporate a reduction in impervious area, where feasible
Water Quality	Manage pollution sources and urban stormwater for improved water quality in receiving creeks and rivers	ZIP 3.2.6, LWRP	Dry weather water quality monitoring results compared to: LWRP 2014 freshwater outcomes (Table 1a) and standards (Schedule 5 - Table S5a) for spring-fed plains; and chronic ANZECC 95% species level of protection for metal toxicants. 95% levels can be adjusted using values of hardness, pH and dissolved organic carbon (DOC) in accordance with the ANZECC 2000 guidelines or any revisions or successors to this document Wet weather toxicant water quality to be compared to any adopted acute national guideline values	Within 5 years of the establishment of the dry weather baseflow mean water quality concentrations, maintain if not improve downstream baseline water quality and /or towards upstream (control) values, and reduce the number of dry weather exceedances (if any) of LWRP outcomes and standards for spring-fed plains, ANZECC 95% species Wet weather flows to meet any national acute guideline values within 15 years of the guideline being published.
	Avoid widespread adverse effects on shallow groundwater quality and to protect drinking water quality	ZIP 3.2.5, LWRP, NESDW	Electrical conductivity is to be used as an indicator for identifying any general changes in groundwater quality related to recharge. Long term groundwater quality at monitoring wells is undertaken by Canterbury Regional Council. Concentrations in groundwater at drinking supply wells are not to: » Exceed ¼ of a toxicant Maximum Acceptable Value (MAV) and Guideline Value (GV) from the Drinking Water Standards for New Zealand 2005 (revised 2018), or any revisions or successors to this document. » Be equal to or exceed the MAV for *Escherichia coli* (*E.coli*). When background concentrations are already exceeding the performance measures the replacement performance measure is to be: No statistically significant increase in the concentrations of toxicants or *E.coli*	No statistically significant increase in electrical conductivity Zero recorded incidents of a drinking supply well exceeding the performance measure .
Ecosystem Health	i) Integrate biodiversity into the working landscape and all new reconfigured developments ii) Protect remaining biodiversity iii) Integrate and facilitate community based restoration iv) Improve drainage management v) Protect and enhance spring-fed streams of the Ashburton River	ZIP 2.2.2 ZIP 2.2.10 ZIP 2.2.11 ZIP 2.2.12 ZIP 1.2.1, LWRP	Aquatic monitoring of: » Habitat » Macroinvertebrates » Sediment With comparison of habitat and macroinvertebrate data against ecosystem health indicators in Table 1a of the LWRP 2014 for spring fed- plains. Comparison of sediment quality against ANZECC Interim Sediment Quality Guidelines low and high or any updates or successors to these guidelines	Within 25 years: » Increase in macroinvertabrate species score (statistical increase in QMCI score from baseline) » Increase in number of current fish species » Creation of ecological corridors, where practicable » Reduction in fine sediment » Reduction in macrophyte and periphyton cover (if nutrients in springfed sources have not increased due to rural land use activities) No decreasing statistical trend in sediment quality
Social and Cultural Impact	i) Improve water quality for mahinga kai gathering and the protection of wahi taonga ii) Improve water quality for recreational opportunities	ZIP 3.2.3, LWRP ZIP 3.2.4	Impact on mahinga kai and wahi taonga sites as a result of stormwater discharges to the Hakatere / Ashburton River. Cultural Health Indicator (CHI) scores for Mill Creek, Carters and Laghmor Creek Impact on recreational activities as a result of stormwater discharges	Within 10 years improvement towards target Cultural Health Indicator Scores Provision of public access to urban streams with enhanced amenity and landscape value for all new developments on margins

Schedule 3 – Maintenance of reticulated stormwater network infrastructure

Feature	*Maintenance Required*
Roads/paved areas	Street sweeping
Sumps	6-monthly inspections and removal of visible litter, sediment and hydrocarbons.
Pipelines	Annual inspection of known problem areas and jetting as necessary
Stormwater basins, ponds, swales, raingardens, etc.	Regular inspection, removal of litter and replant vegetation as required
Drains / waterways	Regular inspection, removal of litter and silt, vegetation clearance or replanting as necessary
Infiltration/soakage based systems	Periodic testing of infiltration capacity (e.g. 5-yearly)
Proprietary treatment devices (e.g. hydrodynamic separators, oil and grit interceptors)	6-monthly inspections and removal of visible litter, sediment and hydrocarbons.

Schedule 4 - Drinking-water Supply Protection

Overview

Utilising ground soakage for stormwater disposal where feasible, is a key stormwater management focus of the SMP and design guidelines. These discharges will migrate into the underlying shallow semi-confined and unconfined aquifer present in the SMP Area.

This following methodology applies to soakage mitigation facilities installed after commencement of this consent for an existing reticulated stormwater network, or for a new development discharging via a reticulated stormwater network, or for a commercial site greater than 5,000 square metres that does not discharge via a reticulated stormwater network.

Group or Community Supplies

Existing protection zones for group or community drinking water supply wells will be used as a management tool for identifying existing and proposed wells that may be impacted by a soakage mitigation facilities discharge into land. Refer to the definition on the consent for determining the protection zone.

Protection of Domestic Supply and Informing Property Owners.

Capture zones for new soakage mitigation facilities will be used for domestic supply wells as a management tool for identifying: existing and proposed drinking supply wells; and any property which is reasonably foreseeable that a permitted groundwater take for drinking water (which includes bore installation) would be established.

Table 1 provides the methodology for establishing a capture zone around a soakage mitigation facility to identify potentially impacted domestic drinking-water supply wells and any impacted properties. Figure 1 provides an example of a capture zone for a soakage mitigation facility of a certain design and shape.

Investigation

It is proposed that at the concept stage, being pre-subdivision consent, resource consent or building consent application, that an investigation of the existing active and proposed drinking-supply wells that could be impacted is undertaken. This investigation will include:

- A review of any existing protection zones for group and community drinking water supply wells that intersect the mitigation facility extent.

- Mapping of the capture zone around the soakage mitigation facilities extent to identify potentially impacted domestic drinking water supply wells.

- Using the capture zone method to also identify any property located within the capture zone of the mitigation facility on which it is reasonably foreseeable that a permitted groundwater take (which includes bore installation) can be established and will not have an available reticulated water supply.

  Note: For example, adjacent rural-residential zoned land, but not high density residential or rural zoned land that already has a dwelling and separate drinking water supply.

This will identify the numbers (if any) of group, community and domestic drinking-water supply wells that are potentially affected by the concept soakage mitigation facilities location. Should any group or community drinking-supply wells protection zones be intersected or domestic drinking - supply wells, and it is unlikely reticulated supply will be made available via the development or

additional extension to the water network supply, then alternative mitigation facility locations should be considered.

If no group or community drinking-supply well protection zones are intersected, or domestic supply wells are captured, then the applicant can proceed to lodging the consent application to ADC with only a schedule of impacted properties (if any).

Prior to any subdivision consent, resource consent or building consent application to the Ashburton District Council, a firm soakage mitigation facility location would have been established. The applicant shall have confirmed the active or proposed status of the identified (if any) group and community drinking-water supply wells and have also undertaken a door to door survey of the domestic drinking-supply wells identified. This will establish, with ground truthing, those domestic wells still used for drinking-water supply. This protection zone, capture zone and ground truthing process will allow a schedule of group, community and domestic drinking-water supply wells, and affected properties, to be prepared and provided to Ashburton District Council.

Identified Wells

No new discharges to land, from a soakage mitigation facility that intersects a Group or Community drinking-supply protection zone or a captured domestic drinking well is to occur unless, prior to a consent application being lodged, the:

- Written permission from the owner(s) and user(s) of the well is provided; and
- A site-specific assessment is undertaken that demonstrates that the stormwater discharged to land from the proposed mitigation facility will not exceed the Drinking-water Standards for New Zealand 2005 (revised 2018) or any revisions or successors to this document in the identified domestic, group or community drinking water supply wells: and
- The Canterbury Regional Council (CRC) certifies that the stormwater discharge to land from the proposed mitigation facility will not exceed the Drinking-water Standards for New Zealand 2005 (revised 2018) or any revisions or successors to this document in the identified domestic, group or community drinking water supply wells.

A copy of the written approvals and site-specific assessment for certification shall be provided to Canterbury Regional Council, Attention: Regional Leader – Monitoring and Compliance, prior to the lodgement of any consent to the ADC.

If certification is provided by the CRC all documentation including the written approvals obtained, schedule of affected wells and properties, and the CRC certification shall be included in the consent application to ADC.

If this certification cannot be provided by the CRC, and the applicant wishes to proceed with the proposal then the discharge of stormwater via the proposed mitigation facility shall be excluded from this resource consent (stormwater discharge permit) and the authorisation for the discharge shall be obtained via a separate discharge permit application process.

Affected Properties

Any affected properties shall be given written notice by Ashburton District Council as to the general risk of microbiological contamination (and nitrate nitrogen) in the area and that it is highly advisable that any screen for a well installed for drinking-water supply within the property or in particular the basins capture zone, is installed at a suitable depth to avoid contamination of the drinking water, and such advice is to be placed on the properties LIM.

Affected Drinking-supply Well Monitoring and Response

If the certification is provided by the CRC prior to the establishment of any new soakage mitigation facilities, those identified wells within either a protection or a capture zone still affected that cannot be provided with an alternative source of drinking-water (e.g. reticulation) ADC shall after commissioning of the soakage mitigation facility monitor these group, community, and domestic drinking-water supply wells as below:

- Once every quarter.
- Where feasible, this sampling will occur within two days of a storm event of at least 18 mm. When such wet weather sampling is not feasible, these quarterly samples will be collected during periods of dry weather and will provide a point of comparison
- Wells must be sampled in a manner which is representative of the way in which the water supply is normally used for drinking water purposes
- Samples will be analysed for *Escherichia coli* (*E. coli*)
- Samples will be analysed for potential toxicants if up to date information indicates there is an unexpected risk
- All analysis is to be undertaken by a laboratory accredited for that method of analysis by International Accreditation New Zealand or an equivalent authority. The samples must be collected and delivered to the testing laboratory in accordance with the protocols required by the testing laboratory.

If at any time the monitoring of water from a drinking-water supply well identifies the following 'exceedances':

- *E. coli* equal to or exceeding 1 MPN/100ml; or
- A toxicant exceeding ½ the Maximum Acceptable Value (MAV) and Guideline Value (GV) from the Drinking Water Standards for New Zealand 2005 (revised 2018), or any revisions or successors to this document;

then ADC shall immediately notify the owners and users of the affected well.

For an exceedance within a community supply well operated by the ADC the applicable Water Safety Plan under the Health Act 1956 or successor legislation shall be followed.

For an exceedance in relation to a community supply well not operated by ADC, or a group or domestic drinking-supply well when the sampling occurred within two days of a rainfall event, ADC as soon as reasonably practicable shall:

- Inform the CRC and the Canterbury District Health Board of the exceedance and shall investigate the reason for the exceedance by following the steps set out in the "Response to Monitoring" Section of the Monitoring Programme that forms part of this resource consent; and
- Provide a temporary alternative potable drinking water supply arrangement and/or adequate treatment of the affected well for the affected owners, users and occupiers.

Advice note: By ADC providing an alternative supply this does not infer liability as to the actual cause of an exceedance. Shallow groundwater in the SMP Area is also impacted from microbiological contamination from on-site wastewater discharges and rural activities that also causes detections and spikes of *E.coli* to be regularly monitored in shallow groundwater in the area, especially following ground saturation from wet weather events. Also sample contamination and lab reporting errors may also occur.

If further investigations determine that the exceedance was derived from the discharge from a reticulated stormwater network soakage mitigation facility; then ADC shall provide a permanent alternative potable drinking-water supply and/or treatment method that shall be confirmed with CRC prior to it being arranged and provided.

Table 1: Capture zones for wells around soakage mitigation facilities

Soakage Mitigation Facility Design	Capture Zone Distance (m)
Soil Lined: First Flush and 50-year Capacity Basin (or combined single basin)	200
Soil Lined First Flush Basin with Rapid Soakage Overflow System	365

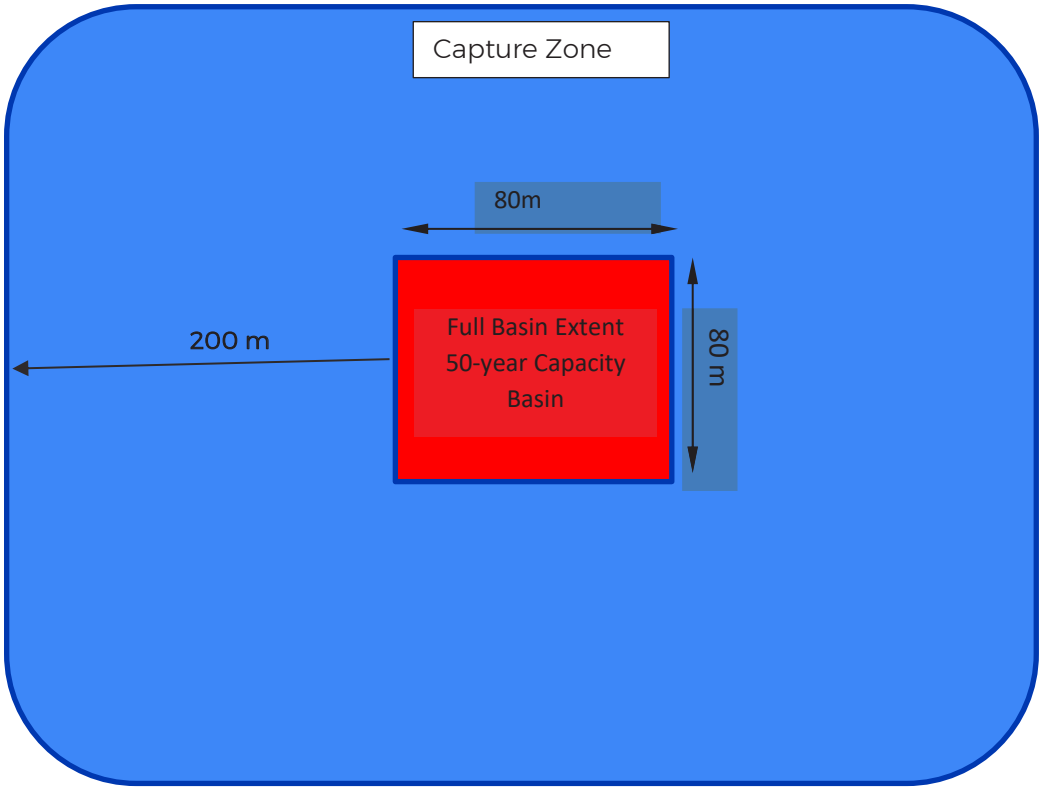
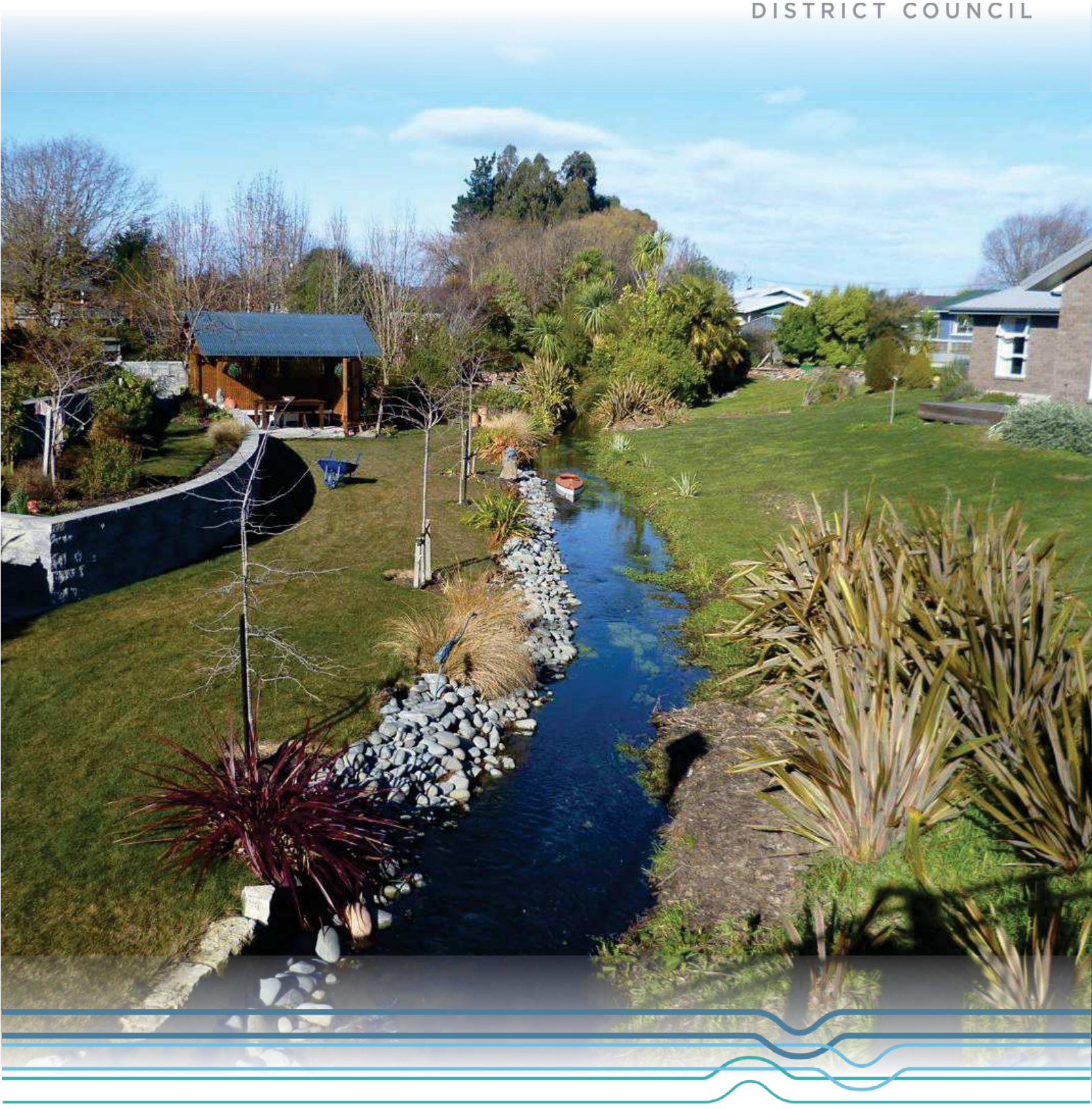


Figure 1: Example Capture Zone for a square soil lined combined first flush and 50-year capacity basin

Ashburton
DISTRICT COUNCIL



Monitoring Programme

for Stormwater Management Plan -
Ashburton, Tinwald & Fairton

Monitoring Programme

for Stormwater Management Plan – Ashburton, Tinwald and Fairton

Version No:	1.0
Revision Date:	June 2019
Status:	For Consent Commencement
Prepared by:	WSP Opus
Approved by:	Andrew Guthrie, Assets Manager Ashburton District Council

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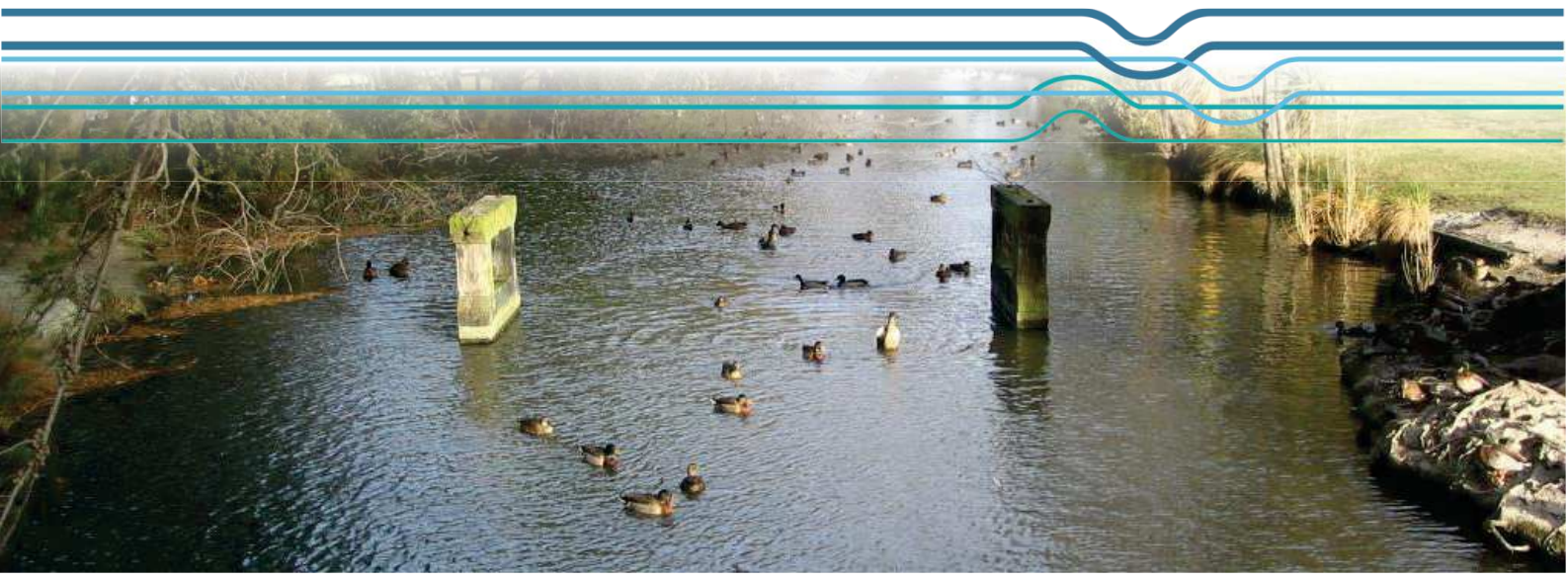


Contents

Glossary

Annual Exceedance Probability (AEP)	The chance of a storm event of a given intensity / depth or flood occurring in any one year, usually expressed as a percentage. For example, if a 24 hour duration storm event with a depth of 102 millimetres or more has an AEP of five percent (5%), it means there is a 5% chance (i.e. one-in-twenty) of this magnitude storm event and resulting flood flows occurring in any one year. AEP is the inverse of return period expressed as a percentage.
Area of disturbance	An area where site clearance or earthworks are actively taking place and where the land has not been stabilised.
Attenuation	The gradual loss in intensity of any kind of flux through a medium.
Brownfield urban development	The redevelopment of more than 5,000 square metres of existing residential, business or industrial land..
Critical duration	The rainfall duration (time) at which it takes peak water levels to be reached in the reticulated system or urban and rural catchments and is based on the most up-to-date information or modelling.
Design storm	The theoretical rainfall event that the analysis is based on for a particular probability. The design storm is based on certain assumptions, including rainfall depth, intensity, and storm rainfall profile shape for the time of concentration or critical duration. For example, in the case of the Ashburton SMP/Mill Creek catchment, one of the design storms is the 2% AEP 48 hour duration event.
Catchment Area	An area of land where surface water from rain and melting snow or ice converges to a single point at a lower elevation, usually where the waters joins another waterbody. E.g.: a river, lake, reservoir, estuary, wetland, sea, or ocean.
Critical Duration	The time at which it takes peak water levels to be reached as agreed by Ashburton District Council and based on the most up-to-date information or modelling.
Design Storm	The theoretical rainfall event that the analysis is based on for a particular probability. The design storm is based on certain assumptions, including rainfall depth and intensities, and storm rainfall profile shape for the critical duration.
Development Area	Any individual area within a site or sites that is undergoing development and construction activities.
Greenfield urban development	The construction of subdivisions, buildings, roads and associated network services on previously undeveloped land, such as land previously used for agricultural purposes.
Industrial site	a. Any premises used for any industrial or trade purposes; or b. Any premises used for the storage, transfer, treatment, or disposal of waste materials or for other waste-management purposes, or used for composting organic materials; or c. Any other premises from which a contaminant is discharged in connection with any industrial or trade process— but does not include any production land.
mbgl	metres below ground level

Mitigation facility	A stormwater management facility comprised of basins and/or proprietary devices to mitigate water quality and quantity effects associated with stormwater that may include, for example, an off-line first flush basin followed by an attenuation basin.
Partial attenuation or retention	Attenuating (to surface water) or retention (to land) the stormwater generated in excess of what would otherwise have run off under design storm conditions for a site or multiple sites land use that existed at the commencement of the consent.
Piece of land	Defined by section 7 of the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health Regulations 2011.
QMCI	Quantitative Macroinvertebrate Community Index.
Site	An allotment title and any balance of land or adjacent land or allotment titles held by the same owner or ownership with an affiliated interest, for example a family trust or company.
Stabilised	An area sufficiently covered by erosion-resistant material such as a good cover of grass, mulch, weed matting, bark, sand/aggregate, or paving by asphalt or concrete etc. in order to prevent erosion of the underlying soil.
Stage of development	The phase of development of any one development area which is completed prior to any other stage of development commencing. A stage of development is deemed to be finished following the completion of construction activities and when the development area has been 'stabilised'.
SMP	The Stormwater Management Plan for Ashburton, Tinwald and Fairton
Stormwater	Runoff that has been channelled, diverted, intensified or accelerated by human modification of the land surface or runoff from the external surface of any structure as a result of precipitation and may contain contaminants. This definition excludes discharges of spilled or deliberately released hazardous substances and/or washdown activities, and groundwater taken for the purposes of land drainage
Reticulated Stormwater Network	Drains, the reticulated piped network, kerb and channel, sumps, pipes, manholes, soakage chambers and any stormwater conveyance and mitigation facilities, for which Ashburton District Council are responsible for operation and maintenance.
Time of concentration	A hydrological term that describes the response time of a catchment to rainfall. It represents the time period required for run-off from the furthest point of the catchment to reach a given point.

1 Introduction

1.1 PURPOSE

The purpose of this Monitoring Programme is to investigate the effects of stormwater discharges on groundwater levels, surface water and ground water quality, takata whenua values, stream sediment quality, the ecology of surface waterways, surface water levels, soil quality within the Stormwater Management Plan (SMP) area, Ashburton, Tinwald and Fairton. This Monitoring Programme or any revisions shall also:

a. Be sufficient to detect any trends in achieving takata whenua values, surface water quality, stream sediment quality, the ecology of surface waterways and soil quality.
b. For surface water monitoring programmes, be sufficient to measure compliance with the water quality, sediment quality, aquatic ecology and takata whenua objectives set out in Table 1-1.
c. For groundwater quality monitoring programmes, be sufficient to measure compliance with the groundwater objectives set out in Table 1-1.

1.2 RECEIVING ENVIRONMENT OBJECTIVES

Ashburton District Council (ADC) is to use best practicable options to achieve the water quantity, water quality, ecosystem health, cultural and social impact, objectives in Appendix 1 with respect to effects arising from an urban area and its associated reticulated stormwater network and the exercising of discharge permit CRC186263.

1.3 BACKGROUND

Ashburton District Council commissioned EOS Ecology to undertake a baseline ecological assessment of the receiving environment in 2013. The Monitoring Programme was founded on this assessment work and through amendments during the discharge permit application process. The rationale behind a standalone Monitoring Programme that sits alongside, but separate to, the consent conditions was to allow Ashburton District Council some degree of flexibility (e.g., in the location of some monitoring sites, development of trigger levels and adoption of new guidelines) while satisfying Environment Canterbury that the monitoring programme is robust enough to determine compliance with stormwater discharge consent conditions.

The Monitoring Programme includes monitoring of the following parameters:

- Groundwater levels
- Groundwater quality
- Water quantity
- Water quality
- Ecosystem health
- Soil quality (for stormwater filtration systems)
- Industrial sites
- Social and cultural impacts

The specific monitoring sites and frequency for each parameter are detailed in this document.

1.4 PROVISION FOR AMENDMENTS

The Monitoring Programme can also be reviewed and updated, subject to relevant approvals, without necessitating a review of the SMP or resource consent. Any amendments to this Monitoring Programme may not replace the previous version until the Monitoring Programme has been certified by the RMA Compliance and Enforcement Manager of the Canterbury Regional Council as complying with the requirements of the discharge permit.

1.5 QUALIFICATION OF PERSONS

The Monitoring Programme is to be undertaken by person who has at least a tertiary science or engineering qualification and post-qualification at least two years environmental investigation work experience.

2 Groundwater Levels

Three shallow groundwater bores have been installed in the SMP Area at various locations within wastewater pump stations. The bores have been set up to provide continuous groundwater level monitoring. The location of the groundwater level monitoring sites is detailed in Table 2-1.

Table 2-1: Groundwater level well monitoring locations

Well Name	Location	Easting (X) (NZTM)	Northing (Y) (NZTM)
BH01	10 Geoff Geering Drive (Ashburton North)	1501121	5137833
BH02	Hanrahan Street (Ashburton South)	1499848	5139946
BH03	Millibrook Place (Tinwald)	1498025	5136357

3 Groundwater Quality

3.1 PURPOSE

Monitoring of groundwater quality in this section is to be initially limited to a study of an existing representative stormwater basin to assess localised changes in groundwater quality as a result of soakage system use.

Should any new subdivision or commercial/industrial development establish a soakage facility for stormwater disposal, associated with collection of hardstand runoff, and a drinking water supply well is within its capture zone, and that property cannot be provided with an alternative source of drinking water (e.g. reticulation), then sampling requirements for that well may be added to this Monitoring Programme. The methodology for establishing capture zones for drinking supply wells, within and downgradient of the Ashburton Stormwater Management Area, is detailed in the resource consent and ADC Stormwater Design Guidelines.

Should an incident of groundwater contamination occur that was thought to be linked to a reticulated stormwater discharge, then this can be investigated appropriately using existing shallow wells already

present or investigation specific wells. Where wells do not exist that would meet investigation requirements, new shallow wells will be installed that will meet investigative needs.

3.2 SAMPLING SITES

A background monitoring well (upgradient), discharge monitoring well (downgradient edge of basin) is to be installed into the shallow water table at a modern residential subdivision, to provide information on the largest infiltration basin operating for the development. The 50-year capacity infiltration basin is within Lot 501 DP 471289 within the Braebrook subdivision. In addition, a downgradient monitoring well is to be installed at the edge of the infiltration basins capture zone at a 200 m radius.

All shallow groundwater monitoring wells will be at least 50 mm in diameter and will have a single screen that spans the range of the shallow groundwater level variation, which would appear to be 1 mbgl to 5 mbgl in this local area. The wells measuring points elevations shall also be surveyed.

Tentative groundwater quality monitoring locations are illustrated in Figure 3-1 and listed in Table 3-1.

Prior to the three shallow groundwater monitoring bores (BHA, BHB and BHC) being installed, the location and design (i.e. screen depth intervals) of the groundwater monitoring bores shall be reviewed and certified by Canterbury Regional Council.

Figure 3-1: Possible location of groundwater quality study monitoring sites at Braebrook Subdivision

Table 3-1: Possible location of groundwater quality study monitoring sites at Braebrook Subdivision

Well	Location	Easting (X) (NZTM)	Northing (Y) (NZTM)
BHA: Control (upgradient)	Park Reserve – opposite 18 Braebrook Drive	1501302	5138344
BHB: Braebrook Subdivision South Basin	Basin edge at downgradient boundary – near 39 Redhaven Rise	1501567	5138195
BHC: Capture Zone Radius Extent	TBC (200 m downgradient of basin)	TBC	TBC

If the landowner does not provide permission to install the downgradient bore BHC in their property at all or a suitable alternative location cannot be established the monitoring of an alternative infiltration basin could be considered. The process for this revision to the sampling sites would be undertaken through the process specified Section 1.4.

3.3 SAMPLING PARAMETERS

Groundwater quality monitoring will include initially the monitoring of the parameters listed in Table 3-2.

Table 3-2: Water quality parameters

Parameter
E.coli
Dissolved Copper (g/m^3)
Dissolved Zinc (g/m^3)

Water levels at the time of sampling shall also be recorded, to assist in assessing in infiltrating mounding impacts.

3.4 SAMPLING FREQUENCY AND PROTOCOL

Sampling of monitoring wells will be conducted within three months of commencement of the consent. Wells will be sampled a minimum of once every three months and after storm events when possible, being when observable ponding of stormwater in the infiltration basin is occurring.

Sampling is to occur for at least two years. After two years the frequency and duration of the sampling shall be determined in consultation with Canterbury Regional Council after considering the previous sampling results.

Sampling of the wells shall be undertaken using the most appropriate scientifically recognised and accredited methods, which in summary includes purging 3 times the volume of the wells, followed by sampling from within the screened interval and as close as practicable to within 0.3 metres of the water table using a bailer or a low-flow sampling technique.

Samples shall be field filtered and be dispatched in bottles prepared by an International Accreditation New Zealand (IANZ) accredited laboratory and as such will follow a Quality Assurance Plan. Samples shall be immediately stored on ice and delivered to the laboratory within 24 hours. A completed chain of custody shall accompany all samples dispatched to an external testing laboratory.

3.5 COMPARISON OF RESULTS

Table 3-3 has the expected concentrations in groundwater at the basin (BHB), and a trigger level for the capture zone extent at BHC. If the contaminant concentrations in shallow groundwater at BHC exceed the applicable trigger level on two consecutive occasions, then a broader groundwater quality investigation of the effects of the consented activity on groundwater quality should be undertaken.

The broader groundwater quality investigation should include but not be limited to:

- Engaging a suitably qualified and experienced professional to assess:
    - If the exceedances are attributable to the basin discharge when taking into account the concentrations observed at BHB;
    - The risks to shallow (<30 m) drinking supply wells; and
    - Undertake a desktop study to determine if all or some of the deeper wells (>30 m) can be eliminated as not being at risk based on results of previous aquifer tests which indicate a "cutoff" depth (i.e. depth at which tests show pumping from the deeper well at a typical domestic supply rate and duration does not affect upper zones).
- Consideration of the locations of other existing stormwater infiltration basins in relation to drinking water supply wells.
- If required undertake water quality monitoring in any drinking supply wells or other suitable wells within capture distances of other infiltration basins.

The proposed broader groundwater quality investigation methodology shall be developed in consultation with the Canterbury Regional Council and the results need to be reviewed and agreed to.

Table 3-3: Expected groundwater quality and trigger levels

Parameter	***Expected concentrations in groundwater at BHB (basin) above BHA (background)***	***Specified trigger level for BHC (located at capture zone extent)***
E.coli (MPN/100ml sample)	≤ 14	1 (MAV) or *
Dissolved Copper (g/m^3)	≤ 0.005	1 (½ MAV) or *
Dissolved Zinc (g/m^3)	≤ 0.2	1.5 (GV) or *
Any other organic or inorganic determinand (g/m^3)	≤ MAV	½ MAV or *
Table Notes: * The reported background concentration at BHA applies when it is greater than the specified trigger level in this table **Table Acronyms:** MAV means Maximum Acceptable Values - Drinking-water Standards for New Zealand 2005 (Revised 2008) GV means Guideline Values for Aesthetic Determinands - Drinking-water Standards for New Zealand 2005 (Revised 2008)		

4 Surface Water Quantity

4.1 HYDRAULIC MODEL UPDATE

Surface water quantity will be monitored through updates to the hydraulic model. The model predicts stream flows and the extent of surface flooding in SMP area. The effect of network upgrades and land use changes on stream flows and the extent of flooding will be monitored through periodic updates to the model.

The model shall be re-validated and calibrated using available field measurements from river flows, flood levels, rainfall, land use information, changes to the reticulated stormwater network and other hydraulic data, using the latest modelling techniques. The frequency of model review and runs shall be at least every five years in particular following a 5% AEP rainfall event or greater that results in material flooding in the catchments and SMA.

Should the model predict an increase in the extent or frequency of flooding following a model review, then a further investigation shall be carried out to determine the cause and appropriate mitigation measures recommended and implemented.

4.2 CUSTOMER SATISFACTION SURVEY

The percentage of customers satisfied that reticulated stormwater networks are adequate for customers' needs is measured in ADC's annual customer satisfaction survey. Should there be a reduction in customer satisfaction of greater than 10% over two consecutive years, then a further investigation shall be carried out to determine the cause and appropriate mitigation measures recommended and implemented.

5 Surface Water Quality

5.1 PURPOSE

5.1.1 DRY WEATHER

The overall objective of the surface water monitoring is to focus on dry weather sampling in the waterways to determine if continuous chronic impact on surface water quality is occurring from either non-stormwater sources or migration impacts from soakage systems for existing development and new development:

Non-stormwater related sources: There may be discharges from wastewater leaks, frequent wash-down of hardstand areas of commercial and industrial sites, discharges of condensate that all have the potential to be entering the environment through the reticulated stormwater system or private potentially unlawful pipes or drains. This monitoring will also assist in validating any industrial site audit improvements to industrial sites environmental practices as a result of the ADC auditing programme.

Migration: Soakage systems for stormwater management are best practice (replicates recharge) and provides for removal and recovery of contaminants. However, residual dissolved contaminants from multiple systems can potentially cause cumulative effects on the shallow groundwater quality. This shallow groundwater quality may be source of the baseflows in the Creeks. Attenuation of contaminants will occur

in the shallow aquifer so it is not necessarily the case that surface water quality will respond immediately to soakage system discharges.

5.1.2 WET WEATHER

Limited wet weather sampling (when stormwater is entering the waterbodies) will also occur to allow a comparison against the dry weather receiving environment water quality and to inform any reporting on the impacts from any exceedances of trigger limits or adverse trends It is understood that there is currently a NIWA-funded project underway to collate existing acute toxicity data and develop provisional national acute guidelines. Wet-weather monitoring data gathered can be compared against nationally adopted acute receiving environment surface water quality guideline values when these become available.

Note the actual, potential and cumulative impacts on the aquatic ecosystem and ecology of the intermittent stormwater discharges directly to the receiving environment is primarily being determined by the aquatic sediment and biofilm quality and macroinvertebrate monitoring (ecosystem health).

5.2 SAMPLING SITES

Surface water quality monitoring locations are illustrated in Figure 5-1 and listed in Table 5-1.

Each of the three urban streams has a monitoring site near the upstream extent of the urban area, and near the downstream extent. This is necessary to determine whether the contaminants found are likely to originate from the urban area or whether they are being carried downstream from the upstream rural catchment. As the urban areas extend through development southwards (beyond the current downstream monitoring location) and to the current district plan limits the surface water downstream monitoring sites for Carters Creek and Laghmor Creek may need to be moved to the SMP Area southern boundary if accessible through being made public/ council land. Given that Mills Creek at its current downstream monitoring point subsequently splits into a stockwater races no extension of the current downstream monitoring point is likely to be considered.

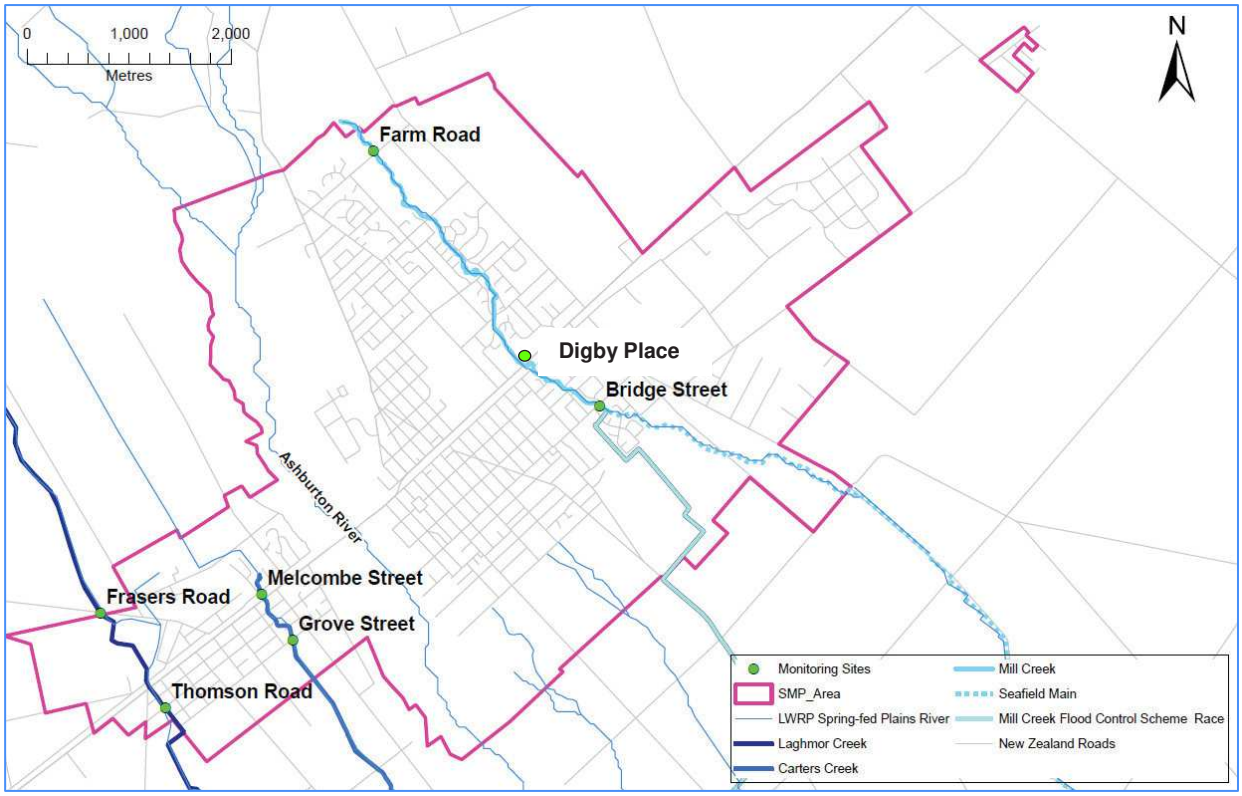


Figure 5-1: Location of current surface water quality monitoring sites in the Ashburton SMP Area

Table 5-1: Surface water monitoring locations recommended for this monitoring programme

Waterway	Location	Easting (X) (NZTM)	Northing (Y) (NZTM)
Mill Creek (MC1) - upstream	Farm Road (Ashburton)	1498873	5141025
Mill Creek (MC2) – mid stream	7 Digby Place (Ashburton)	1500198	5139092
Mill Creek (MC3) - downstream	Bridge Street (Ashburton)	1501090	5138525
Carters Creek (CC1) - upstream	Melcombe Street (Tinwald)	1497780	5136681
Carters Creek (CC2) - downstream	Millibrook Place (Tinwald)	1498085	5136234
Lagmhor Creek (LC1) - upstream	Frasers Road (Tinwald)	1496199	5136497
Lagmhor Creek (LC2) - downstream	Thomson Road (Tinwald)	1496837	513557

5.3 SAMPLING PARAMETERS

The water quality monitoring programme will include monitoring of the parameters listed in Table 5-2.

Table 5-2: Water quality parameters

Parameter
pH
Water Temperature (C)
Dissolved Oxygen (%)
Dissolved organic carbon
Hardness (g/m^3 as $CaCO_3$)
Dissolved Copper (g/m^3)
Dissolved Lead (g/m^3)
Dissolved Zinc (g/m^3)
Dissolved inorganic nitrogen
Dissolved reactive phosphorus

5.4 SAMPLING PROTOCOL

Surface water samples are to be collected from the centre of the creek assuming the flow is representative.

An extendable sampling pole with a spring-loaded grasp to hold sample bottles (e.g. a 'Mighty Gripper') would be preferable and probably necessary at the Carters Creek downstream monitoring point. Samples may be collected in a bucket before transferral to the appropriate correctly labelled bottles, providing the bucket is rinsed twice beforehand with river water. Clean sampling techniques as described by ANZECC (2000) shall be followed to prevent contamination of samples.

Bottles (and lids) that do not have preservative should be rinsed with a small amount of water from the creek immediately prior to sample collection, and the reinstate discarded away from the sampling site. Any bottles with preservative in them must not be rinsed, nor filled to overflowing as the preservative will be lost.

Surface water quality samples shall be dispatched in bottles prepared by an International Accreditation New Zealand (IANZ) accredited laboratory[1] and as such will follow a Quality Assurance Plan. Samples shall be immediately stored on ice and delivered to the laboratory within 24 hours. A completed chain of custody shall accompany all samples dispatched to an external testing laboratory.

At each site location, observations and *in situ* measurements (including pH, temperature and dissolved oxygen) shall be recorded[2].

Note: Monitoring protocols should be updated upon the release of the "*National Environmental Monitoring Standard for Discrete Water Quality*" (currently in draft).

5.5 ANALYTICAL METHODS AND DETECTION LIMITS

The surface water samples will be analysed by an IANZ accredited laboratory. Detection limits for each parameter shall be suitable to enable comparison of the results with relevant guidelines and trigger levels

[1] Such as the Analytica, Eurofin or RJ Hill laboratories

[2] Consideration should be given to ensuring a "standard" or otherwise relatively consistent creek condition exists at the time of observation/sampling to assist in respect of inter-sample comparisons.

for reporting purposes. For dry-weather receiving environment sampling an ultra-trace metal/mineral analysis (the lowest detection limit) is required, the water samples present should be very clean/clear.

5.6 FREQUENCY

5.6.1 ESTABLISHING A BASELINE

Monthly dry weather in-stream water sampling is to be conducted at each sampling location for the first two years of the consent. At least 12 hours should have passed since cessation of a rainfall event to allow for draw down of any full attenuation basins, before sampling. Late afternoon sampling may be best to capture any unknown source discharges that may occur from industries.

Wet-weather monitoring is to occur at least once per year, preferably after a dry period. A rainfall event that is having or forecast to, have an intensity of 2mm/hr or more, or at least 10 mm has fallen over the previous 12 hours or less, is preferable.

5.6.2 ONGOING MONITORING

Dry weather in-stream water sampling is to be conducted at each sampling location four times per year of the consent. Wet weather sampling is to occur at least once per year. Refer above sub-section for timing of sampling.

5.7 LIMITS TO MEET OBJECTIVES

Table 5-3 and Table 5-4 have the limits to be applied to the dry weather (chronic) receiving environment quality monitored.

Table 5-3: Dry weather physical surface water quality trigger levels

Parameter	***Limits – Any sample***
Dissolved Organic Carbon	Change (upstream to downstream) shall be less than 2.0 g/m^3
Water Temperature (C)	Average change (upstream to downstream) in temperature shall not exceed 2°C
pH	Shall be between 6.5-8.5

Table 5-4: Dry weather toxicant water quality trigger levels

Parameter	***Standards*** [A]	***Provisional: Baseline Mean +1SD*** [B]
	The 95th percentile of annual downstream samples (when higher in concentration than the upstream sample) exceeds:	Three consecutive downstream sampling events (when higher in concentration than the upstream sample) exceeds:
Dissolved copper (g/m^3)	0.0014	Mill Creek - TBC Carters Creek - TBC

		Laghmor Creek - TBC
Dissolved lead (g/m³)	0.0034	Mill Creek - TBC Carters Creek - TBC Laghmor Creek - TBC
Dissolved zinc (g/m³)	0.008	Mill Creek - TBC Carters Creek - TBC Laghmor Creek - TBC
Tables Notes: [A] LWRP 95% level of protection (% species) standard. Limit applies on commencement of consent and for full duration of consent. These standard limits above can be adjusted using observed values of hardness, pH and dissolved organic carbon (DOC) in accordance with the ANZECC 2000 guidelines or any subsequent revisions. [B] Mean of the 24 dry weather baseline samples taken over 2 years plus one standard deviation of this mean added. Limit applies after two years of commencement in addition to the standard limit.		

The provisional nature of the 'Baseline Mean +1SD' triggers for is to reduce the risk of inappropriate triggers being set that are either too lenient or too strict. The trigger can be amended if required once the full baseline dataset has been obtained.

6 Ecosystem Health

6.1 OVERVIEW

Monitoring the health of the receiving ecosystem gives an overall picture about the state of the environment. Different species of invertebrates have varying levels of pollution tolerance. Therefore, a certain assemblage of species can indicate if the ecosystem is in good health. Other aspects of the ecosystem including algae, channel substrate and macrophytes, as well as invertebrates are affected by the cumulative impact of water quality and quantity.

6.2 SAMPLING SITES AND FREQUENCY

Except for sediment sampling, aquatic ecology monitoring sites shall be sampled within a year commencement of the consent and every two years thereafter, in March during base flow conditions at the locations listed in Table 5-1.

6.3 SAMPLING PARAMETERS

The ecological monitoring programme will include monitoring of the indicators listed in Table 6-1 for comparison against LWRP freshwater outcomes (Table 1a) for spring-fed plains.

Table 6-1: Ecological health indicators

Indicator	*LWRP targets*
QMCI	min score 5
Emergent macrophytes	max 30% cover of bed

Total macrophytes	max 50% cover of bed
Fine sediment <2mm diameter	max 20% cover of bed
Filamentous algae >20mm	max 30% cover of bed

6.4 SAMPLING PROTOCOL

6.4.1 INVERTEBRATES

The aquatic benthic invertebrate community shall be assessed by collecting a single kicknet sample from five transects set up at every survey site. Samples shall be collected by disturbing the substrate across an approximate 1.5 m width and within a 0.3 m band immediately upstream of a conventional kicknet (0.5 mm mesh). Refer to the semi-quantitative approaches C1 and C2 from Stark et al. (2001) for details of sampling methods for hard-bottomed and soft-bottomed streams.

All invertebrate samples will be preserved in the field before being analysed in a laboratory to identify the invertebrates. Invertebrates will be counted and identified to the lowest practical level as set out in Appendix B of Stark et al. (2001). If the sample contains a particularly large number of invertebrates, sub-sampling may be utilised, where a percentage of the sample is completely processed, and the rest of the sample is scanned for rare taxa. Refer to Stark et al. (2001) for more details on dealing with very large samples.

Data will be summarised into a set of standard indices used in New Zealand. These indices are:

- Taxa richness;
- Total abundance;
- Ephemeroptera-Plecoptera-Trichoptera (EPT) taxa richness and percent EPT (%EPT), and;
- Macroinvertebrate Community Index (MCI) and Quantitative MCI (QMCI)

Details of these indices can be found in Collier and Winterbourn (2000).

6.4.2 HABITAT

At each of the five transects used to collect the invertebrate samples, habitat characteristics will also be assessed. These will include:

- Water velocity;
- Water depth;
- Fine sediment depth;
- Macrophyte cover and depth; and
- Composition of the substrate.

There will also be visual assessment of the riparian habitat including ground cover and vegetation type, assessment of bank height and slope, percent stream shading, presence of woody debris, and the presence of in-stream characteristics such as riffles, runs and pools. A photographic record will also be taken.

When assessing substrate composition, each transect should be split into at least five equidistant points and the composition of each one evaluated. At each point, the substrate should be determined by allocating the substrate to one of five classes: silt/sand (<2 mm); gravel (2-16 mm); pebbles (17-64 mm); small cobbles (65-

128 mm); or large cobbles (<128 mm). The same points should be used to determine the depth of the water, macrophytes and fine sediment depth.

6.4.3 MACROPHYTES

Macrophytes will be assessed qualitatively. This should be assessed over the length of the five transects and should detail the following:

- Visual estimate of percent stream bed cover;
- Identification of the dominant species present; and
- Identification of the type present (emergent of submerged).

6.4.4 PERIPHYTON

A qualitative visual assessment of periphyton cover will be made at each site, again using the five transects already established. Types of periphyton will be recorded according the groups set out in Biggs and Kilroy (2000), shown in Table 6-2.

Table 6-2 Summary of periphyton classification

Periphyton Group	*Colour*
Thin mat/film (<0.5 mm thick)	Green
	Light brown
	Black/dark brown
Medium mat (0.5-3 mm thick)	Green
	Light brown
	Black/dark brown
Thick mat (>3 mm thick)	Green/light brown
	Black/dark brown
Filaments, short (<20 mm long)	Green
	Brown/reddish
Filaments, long (>20 mm long)	Green
	Brown/reddish

6.4.5 SEDIMENT AND BIOFILM

Aquatic sediment and biofilm will be sampled at all six sites, this will only take place within a year of commencement then every three years. Each composite sediment samples shall be from five samples within

a five square metre area. GPS coordinates shall be taken at each location to ensure accuracy of repeat sampling.

The sediment and biofilm samples collected shall be analysed in mg/kg for the following contaminants and

- Total Copper
- Total Lead
- Total Zinc
- Polycyclic Aromatic Hydrocarbons

The sediment and biofilm results will be compared against baseline levels to determine any trends and assessed against the Interim Soil Quality Guidelines (ISQG - high and low) in the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC 2000), or any update to these guideline values.

Sediment monitoring undertaken prior to commencement of the consent was all below ANZECC 2000 ISQG Low, with biofilm samples above Low but not above High.

7 Soil Quality and Performance (for Stormwater Filtration Systems)

7.1 OVERVIEW

Filtration stormwater treatment systems function by filtering stormwater through a constructed soil/media mix. As the stormwater passes through to be disposed of to land or collected for disposal to land, most contaminants will be trapped or adsorbed in the soil/media of the basin. This process will result in the accumulation of certain contaminants in the treatment media. The general purpose of the soil quality monitoring is to protect human health from contact with soils in dry basins from maintenance and when they are also used for amenity purposes, as well as drinking water quality of the underlying aquifers.

The sites, locations, frequency and analysis outlined in the following sections are considered to be a basic framework, and the approach should be adaptive. Further consideration when determining the approach for a new device or existing device should include:

- Contaminants of concern likely to be generated from the catchment area served by the basin;
- Likelihood of human interaction with potentially contaminated media in the basin.
- The physical layout of the basin (e.g. number of low points, spatial extent, sediment accumulation rate);
- The age of the basin; and
- Findings of historical monitoring if any.

7.2 SAMPLING SITES AND FREQUENCY

The stormwater filtration devices soil quality monitoring programme shall test a range of parameters which are representative of a variety of stormwater treatment systems, land uses and ages.

Soil quality sampling sites are listed in Table 7-1. The monitoring programme for the industrial catchments and control residential catchment shall analyse samples at 5 yearly intervals.

Table 7-1 Soil quality sampling sites and parameter

Location	Type of stormwater treatment system	Land use
Ashburton Business Estate (Company Rd)	Infiltration basin	Industrial
Bridge St (Stage 2-5)	First flush infiltration basin	Residential

This will be coupled with a rotational monitoring programme of stormwater filtration devices for other existing and future residential developments. Any new stormwater filtration devices for other industrial developments will be added to the 5 -yearly monitoring regime as required.

7.3 SAMPLING PROTOCOL

A representative sample of the soil shall be collected from the relevant stormwater filtration treatment system. The sample shall be collected from a depth of between zero and 50 millimetres below the ground surface at the point of lowest elevation. Sampling procedures should be in general accordance with quality assurance protocols provided in Ministry for the Environment Contaminated Land Management Guideline No. 5, these procedures are broadly described below.

All samples shall be collected using a pre-cleaned (phosphate free detergent) stainless steel trowel and transferred immediately into jars or containers provided by the laboratory. Field personnel shall war gloves at all times during sampling.

A completed chain of custody shall accompany all samples dispatched to an external testing laboratory. Samples shall be stored in a chilly bin on ice until delivery to the laboratory. At each sampling location a field sheet shall be completed describing the site characteristics and photographs taken of the basin surface.

7.4 ANALYTICAL METHODS AND DETECTION LIMITS

Analysis of soil adsorption basin samples shall occur through an IANZ accredited laboratory accredited for the methods described below. Detection limits for each parameter shall be suitable to enable comparison of the results with relevant guidelines and trigger levels for reporting purposes.

The following contaminants to be monitored are typical stormwater contaminants. Additional parameters may need to be monitored should the catchment contributing to the soil adsorption basin include a current or previous HAIL activity that has a high risk of hazardous substances being entrained in the stormwater entering the ADC reticulated stormwater network.

Soil samples shall be analysed for the following contaminants in milligrams per litre (mg/L) using the United States Environmental Protection Agency method 1312, Synthetic Precipitation Leaching Procedure (SPLP), using reagent water:

- Copper

- Lead
- Zinc

Soil samples shall also be tested for the following contaminants in milligrams per kilogram (mg/kg) using total matrix method:

- Copper
- Lead
- Zinc
- Benzo(a)pyrene
- Naphthalene
- Pyrene

The following documents will be assessed as to their suitability for comparison with the results:

- Soil Contaminant Standards (SCS) detailed in the MfE's Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011, Users' Guide.
- Guidelines for Assessing and Managing Petroleum Hydrocarbon Contaminated Sites in New Zealand (MfE 1999)
- Drinking water Standards for New Zealand (MoH 2005 (revised 2008), Maximum Allowable Values (MAV) and Guideline Values (GV)

The results of analyses undertaken will be compared against the following trigger concentrations: Contaminant Leachate Trigger Concentration (milligrams per litre)

- Total Copper [1] 40
- Total Lead [1] 0.2
- Total Zinc [2] 30

Contaminant concentration (milligrams per kilogram)

- Copper, Lead and Zinc SCS, and any other metals, metalloids SCS for any high-risk industries that are in the urban stormwater catchment of the basin
- Naphthalene [3] 0.28
- Pyrene [3] 7.9
- Benzo(a)pyrene [3, 4] 5.7

(1) 20 x MAV for determinand of health significance

(2) 20 x GV for aesthetic determinand

(3) Guideline value from MfE Oil Industry Guidelines 1999 (Table 4.20)

(4) Benzo[a]pyrene refers to Benzo[a]pyrene only (not Benzo[a]pyrene equivalent concentration).

Following the industrial site audits this may determine a wider range of contaminants present in stormwater from these sites, that could increase the range of soil analysis to include all heavy metals or other organic compounds. The above SCS or 20 x MAV trigger limits in the DWSNZ would be used as trigger limits for additional contaminant analysis and results.

Any changes to the guidelines and trigger levels used for comparing the soil sample results will be accompanied by a justification for their use and suitability.

7.5 SOIL INFILTRATION RATE MONITORING

Infiltration basins shall be inspected annually within 48 to 72 hours after cessation of a rainfall event of no less than 20 mm. Should ponding still be visible, then a further investigation shall be carried out to determine the cause and appropriate mitigation measures recommended and implemented.

Infiltration testing shall be carried out using the double ring infiltrometer test; or a flooded basin test. Where a design infiltration rate has not been documented for a particular basin, the minimum acceptable infiltration rates shall be:

- 50 mm per hour as determined using a double ring infiltrometer test; or
- 25 mm per hour as determined using a flooded basin test.

8 Industrial Site Management

It is noted that the industrial sites audit programme will be developed within two years of granting of the consent and is therefore not part of this version of the Monitoring Programme.

9 Social and Cultural Impact Monitoring

The waterways receive stormwater from an urban environment and have the potential to be used for recreational and mahinga kai activities. Monitoring their ability to support these activities in a safe and healthy manner ensures their availability for use. There is also the potential for flooding and impact on private and public property. Monitoring actual and modelled flooding events allows the impact of floods to be quantified.

9.1 RECREATION AND AMENITY

The urban streams are not intended for contact recreation. Given waterfowl presence within the creeks and in any downstream environments used for recreation (e.g. Lake Hood), and rural environment contributions of microbiological contamination, *E. coli* sampling is not being used as an indicator of suitability for contact recreation or for the purposes of establishing any long-term trends.

Amenity value will be monitored during the monthly monitoring as riparian vegetation is assessed.

9.2 ECOMOMIC

Any occasions where the waterways spill out of their channel and cause damage to infrastructure or property will be recorded.

9.3 CULTURAL HEALTH

ADC is to provide the opportunity for Te Rūnanga o Arowhenua to undertake a COMAR assessment ("the initial assessment") of the relevant reach of the Hakatere, and of Mill Creek, Laghmor Creek, and Carters Creek. Sites will be selected in consultation with Te Rūnanga o Arowhenua, with a minimum of 5 sites (2 for Hakatere) to be used. This is to be completed within one year of the consents commencement.

Note at present there is no reticulated discharges to the former Wakanui waterway that's headwater is at Trevors Road (between Beach Road East and Wakanui Road), however in the unlikely event new development was to create a new discharge (in less than a 50-year event) to Wakanui then this shall be added to the cultural health monitoring programme.

The COMAR report prepared will include a Cultural Health Indicator (CHI) scores, and recommendations as to how these scores can be improved within the scope of the SMP.

The recommendations provided in the COMAR report shall be incorporated into the next review of the SMP with the agreement of both ADC and Te Rūnanga o Arowhenua.

Once the COMAR report has been prepared, Te Rūnanga o Arowhenua shall be given the opportunity to undertake further cultural health monitoring in accordance with the CHI Toolkit, Te Rūnanga o Arowhenua shall be given the opportunity to undertake this monitoring if it has not been undertaken in the previous 5 years.

If monitoring undertaken at least every five years, after the initial assessment shows that CHI scores are not meeting the target scores set in the revised SMP, the ADC will identify what amendments are needed either to the SMP or the Stormwater Design Guidelines to ensure that the targets are met.

Note further amendments to the management of stormwater do not apply if:

a. The decrease in CHI scores is demonstrated to be unrelated to the discharge of stormwater; or

b. The decrease is unrelated to waterway enhancement actions identified under the SMP or the waterway management responsibilities that ADC undertakes under its SMP; or

c. The decrease is related to a temporary event that ADC is rectifying using the methods identified in the SMP; and

d. The reason for the exclusion is recorded and included in previous annual reporting.

ADC is to pay for reasonable costs to undertake the cultural monitoring identified above. In the event that Te Rūnanga o Arowhenua and ADC do not agree on what is reasonable, ADCs hourly fee for persons of similar experience will be used.

10 Response to Monitoring

10.1 OVERVIEW

In the event that monitoring results identify that the objectives set out in Table 1-1 are not being met, or specific trigger levels detailed in each section above have been exceeded, ADC shall investigate the reason for this by following the steps:

- Engage with the Canterbury Regional Council about conducting an investigation into whether not meeting the outcomes/targets is due to the effects of stormwater discharges authorised under this resource consent, with site investigations prioritised for areas with high levels of contaminant concentrations, or with sensitive or high-value receiving environments;
- Carry out an investigation and compile the results of such an investigation into a report to be submitted to the Canterbury Regional Council and Rūnanga;
- The report shall include, at a minimum:

    - » An evaluation of whether or not the monitoring results are due to stormwater discharges authorised under this resource consent;
    - » An assessment of options for correction/remediation if effects are likely due to stormwater discharges authorised under this resource consent; and
    - » A timeline of implementation of corrective action/remediation if effects are a result of discharges authorised under this resource consent.

Where adverse effects are a rsult of the discharges authorised by this consent, the Ashburton District Council will review its implementation and will use reasonable practicable measures to meet the objectives or achieve progressive improvements towards meeting the objectives in Table 1-1.

If the further investigation identified a need for a review of the Monitoring Programme and/or SMP the proposed approach would be for the Ashburton District Council to notify the Canterbury Regional Council of such a review, and for on-going consultation to occur throughout the process.

11 Reporting

11.1 BASELINE REPORTING

The dry weather surface water receiving environment calculated mean baseline value and the one standard to the mean to be added to the mean value to from a trigger level, shall be provided to the Canterbury Regional Council within one month of the baseline sampling programme 's completion. Included shall be a completed *Table 5-3: Dry weather toxicant water quality trigger level.*

11.2 EXCEEDANCE REPORTING

Any exceedance of a limit shall be reported to the Canterbury Regional Council within 10 days of ADC becoming aware of the exceedance.

Responses to exceedances shall be reported in the next annual report if it is not within 3 months of the exceedance occurring.

11.3 ANNUAL REPORTING

An annual report to the Canterbury Regional Council, Attention: Regional Leader - Monitoring and Compliance, and Te Rūnanga o Arowhenua, shall be provided by 30 September each year. Refer Condition (35) of the consent for further details.

12 References

ANZECC, 2000, Australian Guidelines for Water Quality Monitoring and Reporting', Australian and New Zealand Environment and Conservation Council.

Ashburton District Council, 2017, Stormwater Management Plan Ashburton, Tinwald and Fairton.

WSP Opus, 2017, Stormwater Design Guidelines, Ashburton and Timaru Districts.

Bartram, J. & Ballance, R. (eds), 1996, 'Water Quality Monitoring - A Practical Guide to the Design and Implementation of Freshwater Quality Studies and Monitoring Programmes', United Nations Environment Programme and World Health Organisation.

Biggs, B. J. F. & Kilroy, C., 2000, 'Stream Periphyton Monitoring Manual', Ministry for the Environment, Wellington.

Christchurch City Council, 2013, Monitoring Programme for Styx River/Pūrākaunui Stormwater Management Plan.

Collier, K. J. & Winterbourn, M. J. (eds), 2000, 'New Zealand stream invertebrates: ecology and implications for management', New Zealand Limnological Society, Christchurch.

Environment Canterbury Regional Council (2017) *Canterbury Land and Water Regional Plan.*

EOS Ecology (James, A) (2013) *Ashburton Stormwater Management Plan – Stream Assessment*, EOS Ecology Report No. 12021-OPU01-01.

WMO, 2013, 'Planning of Water-Quality Monitoring Systems', World Meteorological Organization, Technical Report Series No. 3, Geneva.

Appendix 1

Receiving Environment Objectives

Schedule 2: Objectives for water quantity, water quality, ecosystem health, social and cultural impacts

	Objective	*Source*	*Performance Measure*	*Target to be applied on commencement unless a different duration is specified*
Water Quantity	Provide protection from flooding for private properties	LTP 2018-28 Part Four, Stormwater, levels of service	Number of flooding events resulting from stormwater overflows incidents (and for each flooding event the number of habitable floors affected, expressed per 1,000 properties connected to the stormwater system)	nil
	The majority of residents are satisfied with our stormwater services	LTP 2018-28 Part Four, Stormwater, levels of service	Customers satisfaction with stormwater services	≤5 complaints per 1,000 connections
	Provide efficient and sustainable stormwater services / Use stormwater efficiently in urban areas	LTP 2018-28 Part Four, Stormwater, levels of service & ZIP 4.2.2	Compliance with resource consents (measured by the number of abatement notices, infringement notices, enforcement orders or convictions received by Council) Percentage of new developments with stormwater managed to meet greenfields/pre-developed runoff Reduction in impervious area	nil 100% new developments do not exceed pre-developed runoff rates All council roading and re-development projects to incorporate a reduction in impervious area, where feasible
Water Quality	Manage pollution sources and urban stormwater for improved water quality in receiving creeks and rivers	ZIP 3.2.6, LWRP	Dry weather water quality monitoring results compared to: LWRP 2014 freshwater outcomes (Table 1a) and standards (Schedule 5 - Table S5a) for spring-fed plains; and chronic ANZECC 95% species level of protection for metal toxicants. 95% levels can be adjusted using values of hardness, pH and dissolved organic carbon (DOC) in accordance with the ANZECC 2000 guidelines or any revisions or successors to this document Wet weather toxicant water quality to be compared to any adopted acute national guideline values	Within 5 years of the establishment of the dry weather baseflow mean water quality concentrations, maintain if not improve downstream baseline water quality and /or towards upstream (control) values, and reduce the number of dry weather exceedances (if any) of LWRP outcomes and standards for spring-fed plains, ANZECC 95% species Wet weather flows to meet any national acute guideline values within 15 years of the guideline being published.
	Avoid widespread adverse effects on shallow groundwater quality and to protect drinking water quality	ZIP 3.2.5, LWRP, NESDW	Electrical conductivity is to be used as an indicator for identifying any general changes in groundwater quality related to recharge. Long term groundwater quality at monitoring wells is undertaken by Canterbury Regional Council. Concentrations in groundwater at drinking supply wells are not to: » Exceed ¼ of a toxicant Maximum Acceptable Value (MAV) and Guideline Value (GV) from the Drinking Water Standards for New Zealand 2005 (revised 2018), or any revisions or successors to this document. » Be equal to or exceed the MAV for *Escherichia coli* (*E.coli*). When background concentrations are already exceeding the performance measures the replacement performance measure is to be: No statistically significant increase in the concentrations of toxicants or *E.coli*	No statistically significant increase in electrical conductivity Zero recorded incidents of a drinking supply well exceeding the performance measure .
Ecosystem Health	i) Integrate biodiversity into the working landscape and all new reconfigured developments ii) Protect remaining biodiversity iii) Integrate and facilitate community based restoration iv) Improve drainage management v) Protect and enhance spring-fed streams of the Ashburton River	ZIP 2.2.2 ZIP 2.2.10 ZIP 2.2.11 ZIP 2.2.12 ZIP 1.2.1, LWRP	Aquatic monitoring of: » Habitat » Macroinvertebrates » Sediment With comparison of habitat and macroinvertebrate data against ecosystem health indicators in Table 1a of the LWRP 2014 for spring fed- plains. Comparison of sediment quality against ANZECC Interim Sediment Quality Guidelines low and high or any updates or successors to these guidelines	Within 25 years: » Increase in macroinvertabrate species score (statistical increase in QMCI score from baseline) » Increase in number of current fish species » Creation of ecological corridors, where practicable » Reduction in fine sediment » Reduction in macrophyte and periphyton cover (if nutrients in springfed sources have not increased due to rural land use activities) No decreasing statistical trend in sediment quality
Social and Cultural Impact	i) Improve water quality for mahinga kai gathering and the protection of wahi taonga ii) Improve water quality for recreational opportunities	ZIP 3.2.3, LWRP ZIP 3.2.4	Impact on mahinga kai and wahi taonga sites as a result of stormwater discharges to the Hakatere / Ashburton River. Cultural Health Indicator (CHI) scores for Mill Creek, Carters and Laghmor Creek Impact on recreational activities as a result of stormwater discharges	Within 10 years improvement towards target Cultural Health Indicator Scores Provision of public access to urban streams with enhanced amenity and landscape value for all new developments on margins

Exercising of resource consent CRC186263

It is important that you notify Environment Canterbury when you first start using your consent.

GRANTED TO:	Ashburton District Council
A DISCHARGE PERMIT (S15):	To discharge stormwater to land and water from existing and future urban areas.
LOCATION:	Ashburton, Tinwald & Fairton

Even if the consent is replacing a previous consent for the same activity, you need to complete and return this page.

A consent can only be made active after the activity has commenced and all pre-requisite conditions have been fulfilled e.g. installation of water meter and/or fish screen. If you require further advice, please contact our Customer Services section on 0800 324 636 or by email at ecinfo@ecan.govt.nz.

Providing this information will:

- Validate your consent through to its expiry date
- Minimise compliance monitoring charges
- Help provide an accurate picture of the state of the environment.

If consent CRC186263 is not used before 30 June 2024 this consent will lapse and no longer be valid.

Declaration:

I have started using this resource consent.

Action taken (e.g. pasture irrigated, discharge from septic tank/boiler/spray booth etc):

_____

Date I started using this resource consent (Note: this date cannot be in the future): _____

Signed: _____ **Date:** _____

Full name of person signing (please print**):** _____

Please return to:

Business Support
Environment Canterbury
PO Box 345
Christchurch 8140

Fax: (03) 365 3194
Email: ecinfo@ecan.govt.nz

File: **CRC186263**
Customer No: **EC117558**

Appendix G. Correspondence

From: Zani van der Westhuizen <Zani.vanderWesthuizen@adc.govt.nz>
Sent: Friday, 16 August 2024 1:30 pm
To: Andrew Tisch; Chris Stanley
Cc: Sean Leonard; Harry Petterson; Ian Hyde
Subject: RE: Talley's Plan Change - Water and wastewater demand

Follow Up Flag: Follow up
Flag Status: Completed

Hi Andrew,

We finally got the modelling report from Beca.

The conclusions are –

Water - the area can be serviced without significant impact on the remaining network, even with the ABE being fully developed (assuming no water-intensive industries) and with the peri-urban network extensions included.

Sewer - we don't believe that the extra demand will cause problems for the Company Rd WWPS, and might even help by adding a little more turnover in the rising main. At extreme wet weather flows we might get relatively high start counts, but should be manageable. Again, this all assumes no wet industry or significant trade waste loads.

Kind regards
Zani

From: Andrew Tisch <andrew.tisch@e2environmental.com>
Sent: Friday, July 12, 2024 4:39 PM
To: Chris Stanley <Chris.Stanley@adc.govt.nz>
Cc: Zani van der Westhuizen <Zani.vanderWesthuizen@adc.govt.nz>; Sean Leonard <Sean.Leonard@affco.co.nz>; Harry Petterson <harry.petterson@e2environmental.com>; Ian Hyde <Ian.Hyde@adc.govt.nz>
Subject: Re: Talley's Plan Change - Water and wastewater demand

Hi Chris
Could I please urgently get a response to the email below.

Thanks

Andrew Tisch
021 90 65 38
andrew.tisch@e2environmental.com
andrew.tisch@e2e.co.nz

From: Andrew Tisch <andrew.tisch@e2environmental.com>
Sent: Thursday, July 4, 2024 09:36
To: chris.stanley@adc.govt.nz <chris.stanley@adc.govt.nz>
Subject: Re: Talley's Plan Change - Water and wastewater demand

Hi Chris
Hope you are well?

Could you please give me a call for a couple of brief questions on 021 90 65 38
Thanks

Andrew Tisch – Principal Engineer and Director
021 90 65 38
andrew.tisch@e2e.co.nz
I work Monday to Thursday

From: Harry Petterson <harry.petterson@e2environmental.com>
Date: Tuesday, 2 July 2024 at 14:44
To: chris.stanley@adc.govt.nz <chris.stanley@adc.govt.nz>
Cc: Andrew Tisch <andrew.tisch@e2environmental.com>, Zani van der Westhuizen <zani.vanderwesthuizen@adc.govt.nz>, Andrew Guthrie <andrew.guthrie@adc.govt.nz>, Sean Leonard <Sean.Leonard@affco.co.nz>, David Harford (david@dhconsulting.co.nz) <david@dhconsulting.co.nz>, ian.hyde@adc.govt.nz <ian.hyde@adc.govt.nz>
Subject: Talley's Plan Change - Water and wastewater demand

Kia ora,

Thank you for the pre-app meeting on the 20th of June regarding Talley's plan change application. As discussed in the meeting, we have estimated the water supply and wastewater demand for a possible yield scenario for the 19.4 ha plan change area. These figures are summarised below:

Yield:

The Ashburton Business Park (ABP) adjacent to our site has lots that vary in size from 0.13 ha to 21.33 ha. ABP lot sizes have been characterised into 3 general size ranges according to their lot sizes.

Lot Classification	Lot Size Range (ha)
Small	0.1 – 1
Medium	1 - 4
Large	4+

Allocating 10% of the 19.4 ha plan change area to road access, the assumed yield will have small, medium, and large lots - allocated 5.82 ha each – which is a similar allocation proportion to ABP. This results in 28 lots total:

- 24 small lots,
- 3 medium lots,
- 1 large lot

Water demand:

The Christchurch City Council (CCC) Infrastructure Design Standards (IDS) Part 7 Water Supply provides the following guidance for water servicing for commercial and industrial developments:
Peak flow of 1.20 L/s/allotment for flow to business zones in on-demand water supply areas (Clause 7.5.2). This results in a **peak water demand flow of 33.6 L/s** for 28 lots.

Wastewater Flows:

The CCC IDS Part 6 Wastewater Drainage Commercial and industrial activity descriptions from the CCC District Plan were matched with proposed development lots. Based on these assumed land uses, wastewater flows were assigned according to the area of the lot sizing in accordance with the IDS (Clause 6.4.5 - Table 3).

Lot type	Commercial and Industrial Zone as per CCC IDS	Total Developable Area (ha)	Commercial and Industrial Flows as per CCC IDS (L/s/ha)		Total Flow (L/s)	
			Average Sewerage Flow	Maximum Flow	Average Sewerage Flow	Maximum Flow
Small	Commercial Core	5.82	0.15	0.75	0.87	4.37
Medium	Commercial Core	5.82	0.15	0.75	0.87	4.37
Large	Industrial Heavy	5.82	0.38	1.9	2.21	11.06
				Total	**3.96**	**19.79**

Ngā mihi nui,

Harry Petterson Civil Engineer

ph **022 522 8787** (new number)
e2Environmental Ltd
46 Acheron Drive, Riccarton, Christchurch
PO Box 31159, Ilam, Christchurch 8444
www.e2Environmental.com

My normal work hours are 9am – 5:30pm, Tuesday – Friday

Zani van der Westhuizen | **Development Engineer**

DDI 033077859 | **M** 0273267291

Ashburton DISTRICT COUNCIL

2 Baring Square East, Ashburton 7700 PO Box 94, Ashburton 7740 **P** (03) 307 7700 www.ashburtondc.govt.nz

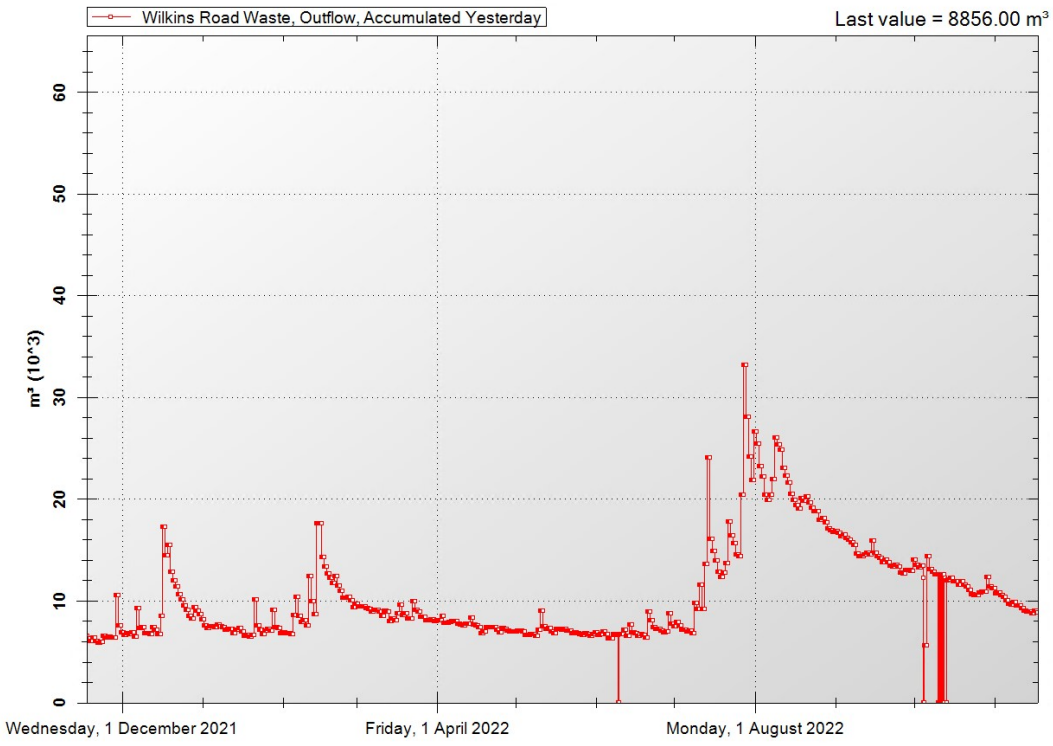
Cecylia Karcz

From: Zani van der Westhuizen <Zani.vanderWesthuizen@adc.govt.nz> on behalf of Zani van der Westhuizen
Sent: Thursday, 17 November 2022 2:09 pm
To: Cecylia Karcz
Subject: RE: Fairton - Wastewater Servicing for proposed development

Hi Cecylia,

This is quite a big area in question, and the answers that follow are probably very rough and not very definitive given the size and number of variables.

WWTP Quantity - the treatment plant is set up to handle up to 12,000m³ per day before we start to bypass the aeration pond. This is intended to be used during wet weather, not normal wastewater flows.
When we're not suffering unusual I&I, we currently receive a base flow of around 7000m³/day. If we assume your peak (but not storm peak) flow is 2100m³/day (13.82L/s * 1.8) that puts us to around 9000m³/day. That's workable, but it depends on how that peak is made up.
Below is the last 12 months of flow at the WWTP, and you can see how affected we are by rain and I&I. We're still recovering from July and August –



WWTP Quality – Modelling would be required to determine the effect on our discharge consent.

Downstream capacity – I believe we would be hit all the way through - the sewer indicated below flows to the Company Rd pump station which would need upgrades (of I assume the pump and wet well size/include additional storage) as well as the rising main may require upsizing. The discharge point, the ARS (Ashburton Relief Sewer) in Bridge St, does look like it will be able to handle the increased flow, even with the peak.

Hopefully that gives you something to work with for now.

Kind regards
Zani

From: Cecylia Karcz <cecylia.karcz@e2environmental.com>
Sent: Thursday, 17 November 2022 09:31
To: Zani van der Westhuizen <Zani.vanderWesthuizen@adc.govt.nz>
Subject: RE: Fairton - Wastewater Servicing for proposed development

Hi Zani

Just following up, I can't delay issue of the report to the client beyond today, is there any chance we'll be able to include ADC's feedback in this?

Regards,

Cecylia Karcz | Senior Civil Engineer
M: 022 033 0640
e2Environmental Ltd
Unit 1, 46 Archeron Drive, Christchurch
PO Box 31159, Christchurch
www.e2Envronmental.com

From: Cecylia Karcz <cecylia.karcz@e2environmental.com>
Sent: Monday, 14 November 2022 9:06 am
To: 'Zani van der Westhuizen' <Zani.vanderWesthuizen@adc.govt.nz>
Subject: RE: Fairton - Wastewater Servicing for proposed development

Hi Zani

Hope you are well and had a good weekend.
No worries at all, thanks so much for looking into this
Let me know if you need any other info from my side.

Chat soon,

Cecylia Karcz | Senior Civil Engineer
M: 022 033 0640
e2Environmental Ltd
Unit 1, 46 Archeron Drive, Christchurch
PO Box 31159, Christchurch
www.e2Envronmental.com

From: Zani van der Westhuizen <Zani.vanderWesthuizen@adc.govt.nz>
Sent: Monday, 14 November 2022 8:36 am

To: Cecylia Karcz <cecylia.karcz@e2environmental.com>; Andrew Guthrie <Andrew.Guthrie@adc.govt.nz>
Cc: Andrew Tisch <andrew.tisch@e2environmental.com>
Subject: RE: Fairton - Wastewater Servicing for proposed development

Hi Cecylia,

My apologies, I have not had a chance to look at this yet, I will endeavour to get something back to you in the next day or two.

Kind regards
Zani

From: Cecylia Karcz <cecylia.karcz@e2environmental.com>
Sent: Wednesday, 9 November 2022 09:11
To: Andrew Guthrie <Andrew.Guthrie@adc.govt.nz>; Zani van der Westhuizen <Zani.vanderWesthuizen@adc.govt.nz>
Cc: Andrew Tisch <andrew.tisch@e2environmental.com>
Subject: RE: Fairton - Wastewater Servicing for proposed development

Hi Andrew and Zani

Hope things are well
Just wanted to follow up on this to ask if ADC had any feedback for this?
On my side we were hoping to finish up this work and would really appreciate ADC's input into our report.

Please let me know if you need any other info from my side.

Regards,

Cecylia Karcz | Senior Civil Engineer
e2environmental CONSULTING CIVIL ENGINEERS
M: 022 033 0640
e2Environmental Ltd
Unit 1, 46 Archeron Drive, Christchurch
PO Box 31159, Christchurch
www.e2Envronmental.com

From: Cecylia Karcz <cecylia.karcz@e2environmental.com>
Sent: Thursday, 27 October 2022 11:57 am
To: 'andrew.guthrie@adc.govt.nz' <andrew.guthrie@adc.govt.nz>; 'Zani van der Westhuizen' <Zani.vanderWesthuizen@adc.govt.nz>
Cc: Andrew Tisch (andrew.tisch@e2environmental.com) <andrew.tisch@e2environmental.com>
Subject: Fairton - Wastewater Servicing for proposed development

Hi Andy & Zani

I am looking for feedback from ADC re wastewater servicing for a proposed commercial development.
At this stage we are just trying to establish servicing options. A plan change application may follow

The site proposed for development is the existing Talley's processing works in Fairton:

Questions

If we were to pump into the ADC wastewater pipe at the ex-MH ASH2021WWMH3018 in Sinclair Street or ex-MH ASH2021WWMH3013 in JB Cullen Drive (see image below), and if we attenuate so that there are no pipe capacity issues in the Business Park and downstream pipes:

1. Is there capacity at the WWTP for peak flow of 69.02 L/s (5964 m^3/day) for domestic type wastewater plus some tradewaste?
2. Ditto question 1 but with Total Nitrates reduced to less than 5mg/L?
3. Just out of interest, are there any known capacity issues in the downstream pipework that you know of? Noting that we will do our capacity calculations, or commission pipe modelling

Background

We would be looking to decommission the existing meat works, zoned as “Business Zone F”, and apply for change to “Business Zone E”, under the ADC District Plan.
I understand that the neighbouring Ashburton Business Park is zoned as “Business Zone E” under the ADC District Plan.
The details of the proposed commercial and industrial activities for this proposed development are not known at this stage.

For the proposed development I have based the development wastewater flows on CCC IDS commercial and industrial flows using the CCC District Plan zoning as a guideline.
The calculated average total flow is 14 L/s.

Commercial and Industrial	General Description	Average Sewerage Flow (ASF) – L/s/ha	Maximum Flow – L/s/ha	Clause
Commercial Local (CL)	Convenience Shops Community Facilities	0.09	0.45	Cl. 6.4.5 Table 3
Commercial Core (COR)	Office Park Areas	0.15	0.75	
Central City Business (CCB)	Entertainment and Recreational	2.00	10.0	
Central City Mixed Use (CCMU)	Retail, Office and Commercial	2.00	10.0	
Industrial General (IG) – suburban	Industrial – buffer to residential areas and Industrial Heavy Zone	0.15	0.75	
Industrial General (IG) – inner city		0.38	1.90	
Industrial Heavy (IH)	Industrial activities that generate potentially significant noise, odour and heavy traffic	0.38	1.90	

Based on the lot sizes proposed in Section 3, the following commercial and industrial flows have been identified

Stage	High level lot distribution		Commercial and Industrial Zone as per CCC IDS	Total Develop. Area (ha)	Commercial and Industrial Flows as per CCC IDC (L/s/ha)		Total Flow (L/s)	
					ASF	MF	ASF	MF
Stage 1	Small	37 Lots	COR	9.90	0.15	0.75	1.49	7.43
	Medium	4 Lots	COR	9.90	0.15	0.75	1.49	7.43
	Large	2 Lots	IG – suburban	9.90	0.15	0.75	1.49	7.43
					Total Flows for Stage 1:		**4.47**	**22.29**
Stage 2	Small	58 Lots	COR	23.4	0.15	0.75	3.51	17.55
	Medium	0 Lots	-	-	-	-	-	-
	Large	2 Lots	IH	15.36	0.38	1.90	5.84	29.18
					Total Flows for Stage 2:		**9.35**	**46.73**
						Total flow:	**13.82**	**69.02**

Thanks Andy and Zani for your time and consideration, please get in touch if there is any other info that you need from my side.

Regards,

Cecylia Karcz | Senior Civil Engineer

M: 022 033 0640
e2Environmental Ltd
Unit 1, 46 Archeron Drive, Christchurch
PO Box 31159, Christchurch
www.e2Envronmental.com

Zani van der Westhuizen | **Development Engineer**
DDI 03 307 7859 | **M** 0273267291

5 Baring Square West, Ashburton 7700 PO Box 94, Ashburton 7740 **P** (03) 307 7700 **www.ashburtondc.gov**

Cecylia Karcz

From: Jacob Millar <Jacob.Millar@ecan.govt.nz> on behalf of Jacob Millar
Sent: Wednesday, 2 November 2022 12:15 pm
To: Cecylia Karcz
Subject: RE: Fairton - Clarification of consents Email-052501459

Kia ora Cecylia,

I'm sorry it has taken me a while to look into this query for you.

I cannot see any resource consent for the operational phase stormwater discharge at the property. The operation phase stormwater at the section will need to be complaint with our permitted activity rules for stormwater discharge within our Canterbury Land and Water Regional Plan.

Please let me know if you would like me to send more information about these rules through to you.

Kind regards,
Jacob Millar

From: Cecylia Karcz <cecylia.karcz@e2environmental.com>
Sent: Monday, 31 October 2022 1:43 pm
To: Jacob Millar <Jacob.Millar@ecan.govt.nz>
Subject: RE: Fairton - Clarification of consents Email-052501459

Hi Jacob

Thanks for the info below.
I have read through the *Assessment of Environmental Effects – Fairfield Fright Hub – Soil Disturbance and Construction Phase Stormwater Discharge*, *21 October 2022*.
My understanding is that this covers the consents required for the SW discharge during construction.

3. Description of Proposed Activity

3.1 Overview

The proposed works involve the following:

- Removal of all equipment and structures on site;
- Earthworks to level the site and removal of stockpiled materials and topsoil, specifically levelli Hill (approximately 26,500 m^3 of soil removal required);
- Removal, and replacement/ compaction of fill in the former gravel pit (Tim's Bottom); and
- Construction of two contaminant bunds – one within the FFH lease area and the second one eastern side of the former meat works within the same land parcel.

Can you let me know if there are any operational (outside of construction) which allows for the consented discharge to ground of SW runoff across the site?

I.e. Do they have a consent to discharge SW to ground currently?

Thanks Jacob,

Cecylia Karcz | Senior Civil Engineer

M: 022 033 0640
e2Environmental Ltd
Unit 1, 46 Archeron Drive, Christchurch
PO Box 31159, Christchurch
www.e2Envronmental.com

From: Jacob Millar <Jacob.Millar@ecan.govt.nz>
Sent: Friday, 28 October 2022 3:26 pm
To: Cecylia Karcz <cecylia.karcz@e2environmental.com>
Subject: RE: Fairton - Clarification of consents Email-052501459

Kia ora Cecylia

Thank you for your email yesterday about clarification for resource consents:
CRC232138
CRC232139
CRC231094
CRC231095

Below is a Dropbox link to access a copy of the application for these resource consents This document should clarify what these proposed resource consents are for.

Link: https://www.dropbox.com/s/smzh5sizxz7w9kj/CRC232138%2C%20CRC232139%20-%20CRC231094%20CRC231095%20-%20Application%20DW%20DL%20Resubmission%20-%20109%20Works%20Road%2C%20Ashburton.PDF?dl=0

If you have any further enquiries, please reply to this email or call Customer Services (details below).

How did we do today?
Give us your feedback here.

Ngā mihi

Jacob Millar

CUSTOMER SERVICES
Environment Canterbury

PO Box 345, Christchurch 8140, N
Zeala

ecinfo@ecan.govt.nz

Customer Services: 0800 324 6

---------- Original Message ----------
From: Cecylia Karcz <cecylia.karcz@e2environmental.com>;
Received: Thu Oct 27 2022 14:08:12 GMT+1300 (New Zealand Daylight Time)
To: ECINFO <ecinfo@ecan.govt.nz>;
Subject: Fairton - Clarification of consents

Hi Jacob
I'm wondering if you can please help me to understand some of the other consents that the site has.
Namely;

- CRC232138
- CRC232139

The ECan website does not appear to offer any information which indicates what their consented acitivity is.
The only info I can find indicates these consent applications are on hold and they are resubmission to CRC231094 and CRC231095.
ECan consent search of CRC231094 returns info that the application has been completed, but again no details provided.

Can you please provide some clarity around what these 4 consents are for, what their conditions are and whether they are still active.

Thank you Jacob for your time and help with this, am very grateful.

Regards,

Cecylia Karcz | Senior Civil Engineer
e2environmental CONSULTING CIVIL ENGINEERS
M: 022 033 0640
e2Environmental Ltd
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Cecylia Karcz

From: Dean Robinson <Dean.Robinson@talleys.co.nz> on behalf of Dean Robinson
Sent: Tuesday, 1 November 2022 10:53 am
To: cecylia.karcz@e2environmental.com
Subject: FW: Fairton Servicing - Existing services onsite

Hi Cecylia, I hope this helps answer your questions.

Thanks Dean

From: Nicola McDougall <Nicola.McDougall@talleys.co.nz>
Sent: Tuesday, 1 November 2022 10:20 AM
To: Dean Robinson <Dean.Robinson@talleys.co.nz>
Subject: RE: Fairton Servicing - Existing services onsite

Hi Dean

As far as I'm aware all staff facilities are directed the septic waste system then out to the discharge field (dripline).

If I'm understanding the question correctly, which I believe refers to any other effluent from the onsite industrial operations.

This would be for example the wastewater from the Meat Work Processing facility however this is no longer occurring as the meat works processing plant is now decommissioned along with all the associated meat works processing activities.

A small stock truck wash is active on the adjacent land, this water is contained and then discharged (to the green highlighted areas) to land via a permitted activity (see map below).

No industrial processes that generate any effluent or discharge is occurring onsite apart from the domestic wastewater from the staff facilities and the stock truck wash.

Hope this helps.

Nicola

Regards
Nicola McDougall
Environmental Compliance Coordinator

A: 222 Office Road, Fairton, PO Box 196, Ashburton
P: +64 21 790510

FAIRFIELD FARMS

From: Dean Robinson <Dean.Robinson@talleys.co.nz>
Sent: Tuesday, 1 November 2022 9:26 am
To: Nicola McDougall <Nicola.McDougall@talleys.co.nz>
Subject: FW: Fairton Servicing - Existing services onsite

Hi Nicola, any chance you can help me answer this email.

Thanks Dean

From: Cecylia Karcz <cecylia.karcz@e2environmental.com>
Sent: Monday, 31 October 2022 5:12 PM
To: Dean Robinson <Dean.Robinson@talleys.co.nz>
Subject: FW: Fairton Servicing - Existing services onsite

> You don't often get email from cecylia.karcz@e2environmental.com. Learn why this is important

Hi Dean

I'm wondering if perhaps you can help me with some info re existing services onsite at the site of the Fairfield Meat Works.
Our work in undertaking to complete a servicing report for this site includes gaining an understanding of the existing wastewater infrastructure onsite.
The site is currently serviced for wastewater site by onsite wastewater septic tank treatment system with discharge to ground.
This is under active consent CRC211869.
This consent only covers discharge from the "staff facilities" – would you mind please confirming how the effluent from the onsite industrial operations is managed?

Wrt to the onsite wastewater septic tank treatment system for the "staff facilities" I have confirmed the location of the dispersal field is on the southern neighbouring site:

Would you mind please confirming the location of the septic tank facility?

Thank you Dean for your time and consideration, if you need any other info from my side please let me know.

Regards,

Cecylia Karcz | Senior Civil Engineer
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From: Tim Tarbotton <tim@tarbotton.co.nz>
Sent: Monday, 31 October 2022 3:32 pm
To: Cecylia Karcz <cecylia.karcz@e2environmental.com>
Cc: Dean Robinson <dean.robinson@talleys.co.nz>
Subject: RE: Fairton Servicing - Existing services onsite

Hi Cecylia,

I am sorry but we don't have much information on this, I think you would be best to speak to someone at Talleys?

Dean Robinson seems to know a bit about the site, have you tried reaching out to him?

dean.robinson@talleys.co.nz

Cheers,

Tim Tarbotton
Business Development

Phone: 03 307 7065 **Mobile**: 027 201 2789
203 Frasers Road, PO Box 5072, Tinwald, Ashburton 7741
Facebook | LinkedIn | Instagram
tarbotton.co.nz

Tarbotton Land & Civil

From: Cecylia Karcz <cecylia.karcz@e2environmental.com>
Sent: Monday, 31 October 2022 1:55 pm
To: Tim Tarbotton <tim@tarbotton.co.nz>
Subject: RE: Fairton Servicing - Existing services onsite

Hi Tim

Thanks so much, I really appreciate the info.
The consent info indicates that this onsite septic tank system treats only discharge from "staff activities" onsite and therefore would not cover any effluent from the works itself.

CRC211869	Issued-Active	1	19 June 2000	19 June 2035		To discharge up to 36.5 cubic metres per day of septic tank effluent into land from staff facilities.	Effluent disch The Sludge to a

If you don’t mind, can you confirm how the effluent from the factory is treated?

Thanks again Tim,

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From: Tim Tarbotton <tim@tarbotton.co.nz>
Sent: Monday, 31 October 2022 12:25 pm
To: Cecylia Karcz <cecylia.karcz@e2environmental.com>
Subject: RE: Fairton Servicing - Existing services onsite

Hi Cecylia,

I just spoke with Stuart and the team and below is what we know. We are not entirely sure on where this tank is though?

We know drip lines exist next to the hedge (see below) which we assume is for septic waste? See below. We also know there is some sort of aeration pit near the old chemical ponds but unsure if this is linked to the septic waste?

Apart from that we don’t really know much else about the septic waste for the freezing works site. We will keep asking others that worked on the site many years ago and let you know if we find out any more info.

Cheers,

Tim Tarbotton
Business Development

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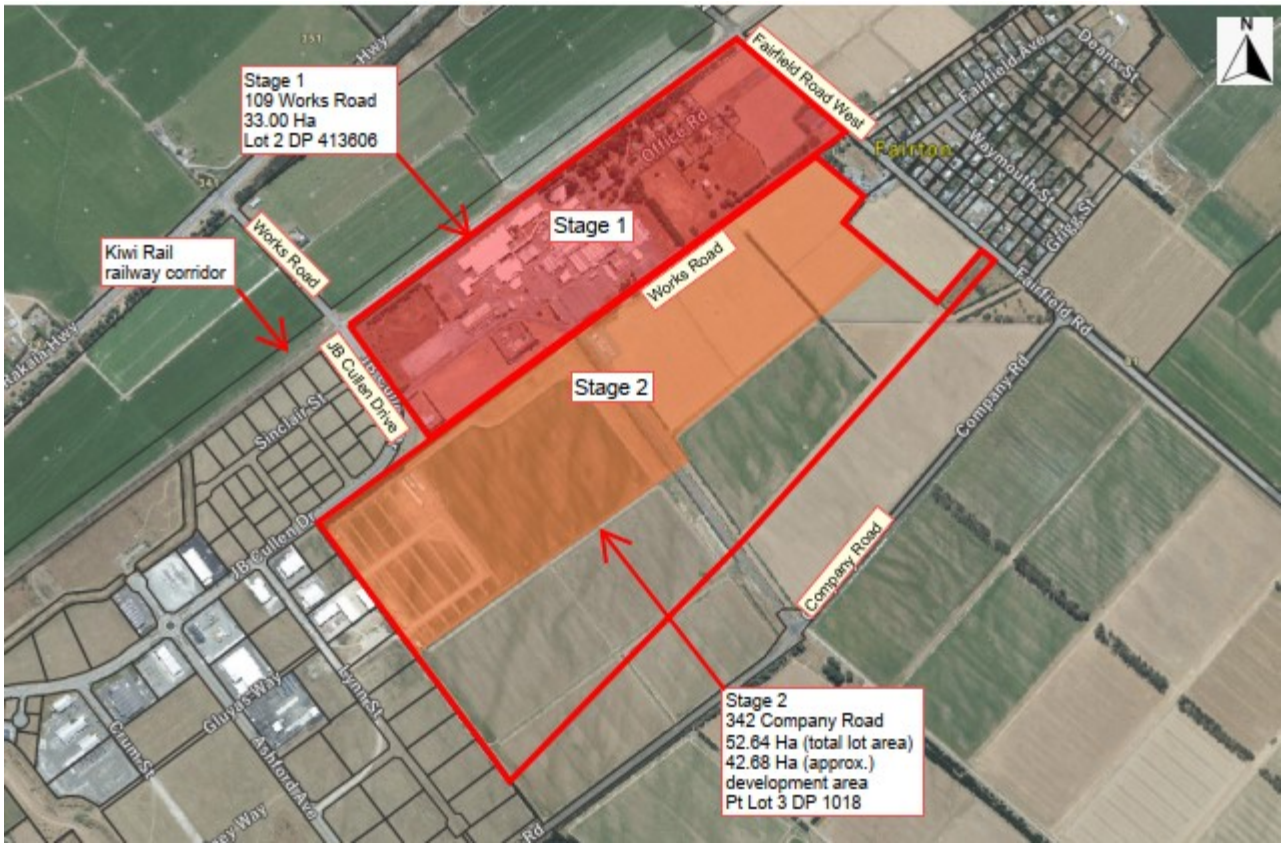
Tarbotton Land & Civil

From: Cecylia Karcz <cecylia.karcz@e2environmental.com>
Sent: Monday, 31 October 2022 11:29 a.m.
To: Peter Leonard <peter@tarbotton.co.nz>
Subject: Fairton Servicing - Existing services onsite

Hi Peter

Am not sure if you remember me but I am in the process of undertaking an infrastructure servicing investigation for the Talley's sites below.
We undertook onsite soakage testing on the 01 September 2022.



As part of my investigation I have determined that the Fairfield Meat works site is currently serviced for wastewater by onsite wastewater septic tank treatment systems with discharge to ground.
This is under active consent CRC211869.
Unfortunately there is no public record of where the tank(s) and their associated dispersal field is located.
Would you be able to please provide us with some information which details this?

Thanks so much Peter for your time, please don't hesitate to get in touch if you need any other info from my side.

Regards,

Cecylia Karcz | Senior Civil Engineer

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Cecylia Karcz

From: Kelly Walker <Kelly.Walker@ecan.govt.nz> on behalf of Kelly Walker
Sent: Tuesday, 1 November 2022 8:39 am
To: Cecylia Karcz
Subject: RE: CRC211869, query re consent

Yes multiple owners would also be acceptable

From: Cecylia Karcz <cecylia.karcz@e2environmental.com>
Sent: Monday, 31 October 2022 3:22 PM
To: Kelly Walker <Kelly.Walker@ecan.govt.nz>
Subject: RE: CRC211869, query re consent

Thanks so much Kelly this is most helpful, very appreciative.
Re ownership, would it be acceptable for the system to be owned by multiple owners?

Cecylia Karcz | Senior Civil Engineer
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From: Kelly Walker <Kelly.Walker@ecan.govt.nz>
Sent: Monday, 31 October 2022 2:21 pm
To: Cecylia Karcz <cecylia.karcz@e2environmental.com>
Subject: RE: CRC211869, query re consent

Hi Cecylia,

It can be owned by a single owner but they will have full responsibility for the consent and therefore any compliance issues.

I found this location diagram in a compliance report:

Kind regards,
Kelly.

From: Cecylia Karcz <cecylia.karcz@e2environmental.com>
Sent: Monday, 31 October 2022 11:38 AM
To: Kelly Walker <Kelly.Walker@ecan.govt.nz>
Subject: RE: CRC211869, query re consent

Hi Kelly

Thank you for the clarification, very much appreciated.

If you don't mind please also confirming;

1. Will ECan require the tank and it's dispersal field owned by a single owner (as it currently is), or can they be owned by multiple new owners?
2. Does ECan have any details regarding where the location of the tank and the dispersal field are – nothing specific is available on the ECan website.

Thanks Kelly again for your help.

Regards,

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From: Kelly Walker <Kelly.Walker@ecan.govt.nz>
Sent: Monday, 31 October 2022 8:40 am

To: Cecylia Karcz <cecylia.karcz@e2environmental.com>
Subject: RE: CRC211869, query re consent

Hi Cecylia,

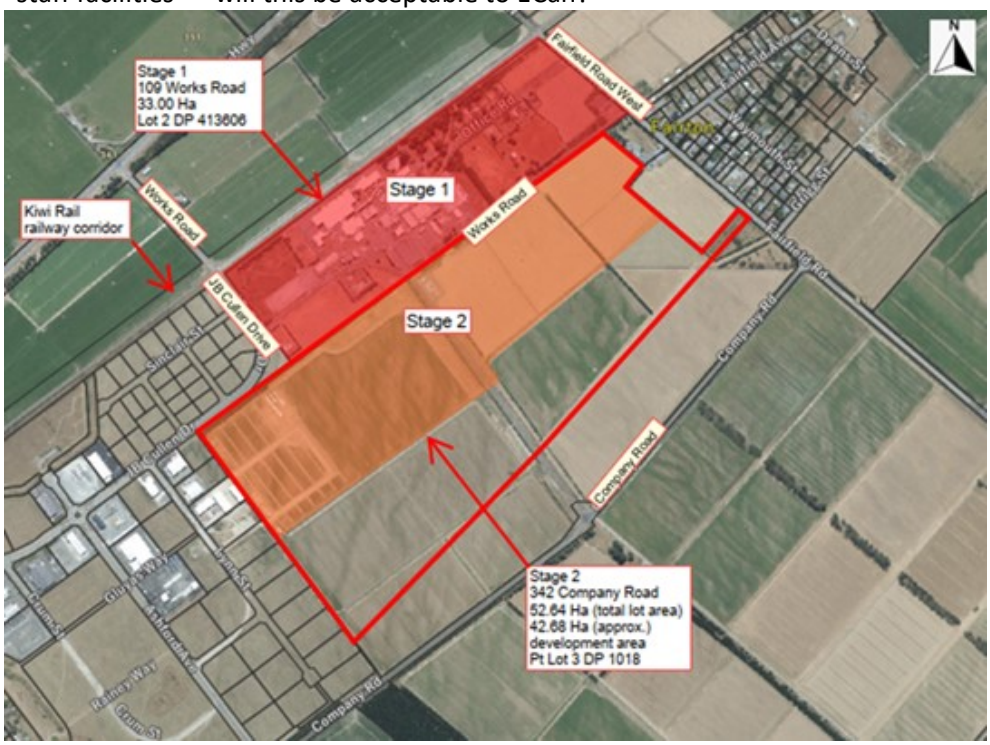
Yes it can be full transferred provided it is still from staff facilities (presume so as commercial not residential), the volume won't be increased and the discharge is still occurring on the same lot.

Kind regards,
Kelly.

From: Cecylia Karcz <cecylia.karcz@e2environmental.com>
Sent: Friday, 28 October 2022 4:14 PM
To: Kelly Walker <Kelly.Walker@ecan.govt.nz>
Cc: Jacob Millar <Jacob.Millar@ecan.govt.nz>
Subject: RE: CRC211869, query re consent

Hi Kelly

Thanks so much for getting back to me.
Just tried to ring but appreciate you may be busy.
I understand that the consent is able to be transferred provided it still adheres to the same consent conditions.
The issue is that this site (and the neighbouring site – see pic below) is going to be redeveloped into a commercial/industrial development and the effluent may be coming from new commercial sites rather than the existing "staff facilities" – will this be acceptable to ECan?



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From: Kelly Walker <Kelly.Walker@ecan.govt.nz>
Sent: Friday, 28 October 2022 11:54 am
To: cecylia.karcz@e2environmental.com
Cc: Jacob Millar <Jacob.Millar@ecan.govt.nz>
Subject: CRC211869, query re consent

Hi Cecylia,

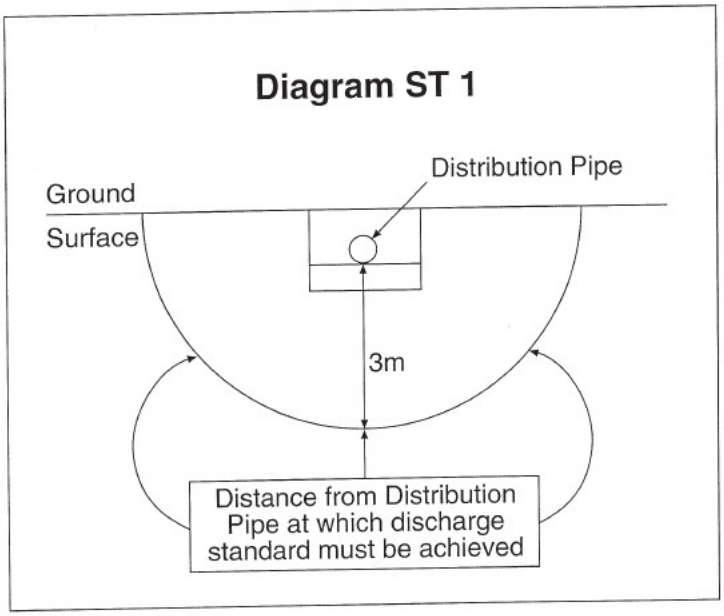
Jacob Millar has passed your query onto me.

CRC211869, currently owned by Talleys, allows for discharge of 36.5 m3/day of human effluent from staff facilities to land on Lot 2 DP 413606. This is an active consent.

You have asked if this consent can be transferred to a new industrial/commercial subdivision. Yes, provided it is still discharge from staff facilities, located on the same lot, and not exceeding this volume. It must also meet all the other conditions of this consent.

If a new system is installed as part of the redevelopment, the discharge must be on the lot currently specified, and met the conditions regarding separation distances to bores, as it does not specify that these must have been existing at the time the consent was granted.

The following diagram is included with the consent conditions, regarding condition 5:



Let me know if you have any further questions.

Kind regards,
Kelly.

Kelly Walker
Principal Consents Planner
Environment Canterbury
Timaru Office

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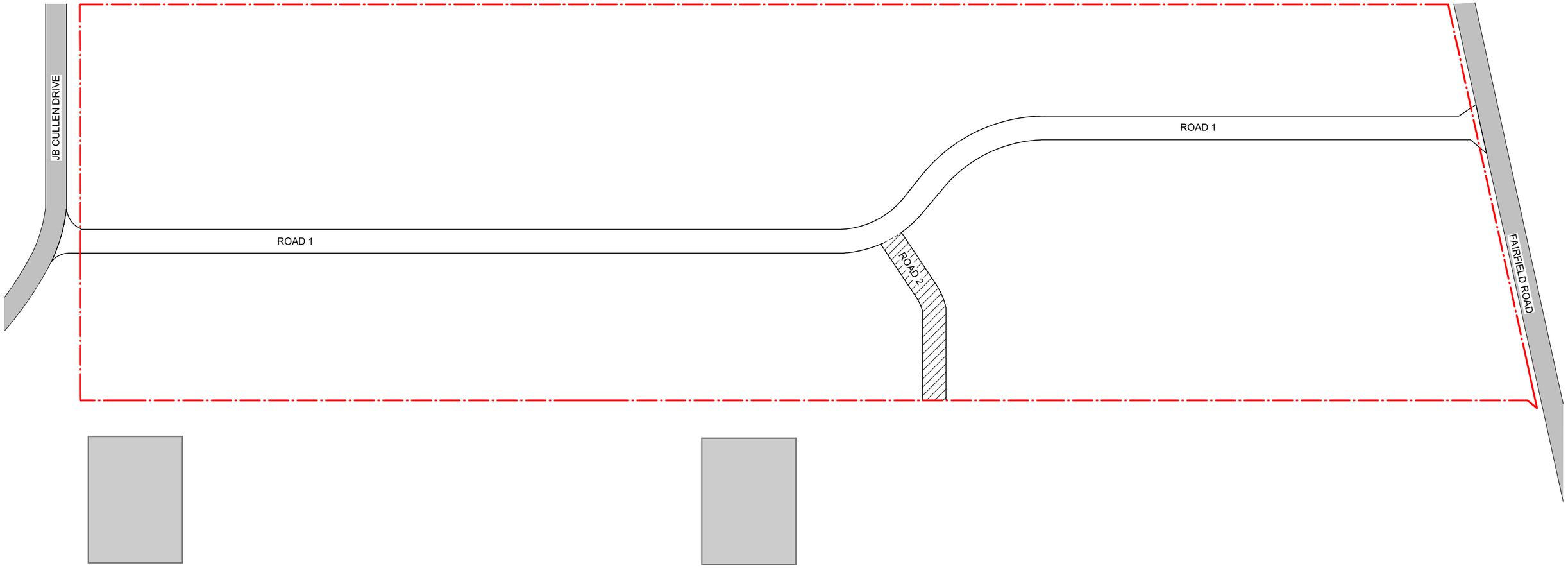
Appendix H. Outline Development Plan



LEGEND:

- Outline Development Plan Boundary.
- Road 1
- Road 2 - Future Connection
- Indicative stormwater detention location

REV	DATE	REVISION DETAILS
1	23.09.24	Site Base Dev

PRINTED 23/09/2024 3:10:55 PM
Autodesk Docs://2407 Fairfield Bus Park Ashburton/2407 Fairfield Bus Park Ashburton R23.rvt

CONSULTANTS

CLIENT
Owner

PROJECT
Fairfield Bus Park Ashburton

ADDRESS
220 Office Road, Fairton, Ashburton

PH: 09 9666 999 www.wa.co.nz
LEVEL 2, 25 DACRE ST
NEWTON, AUCKLAND 1010

PROJECT LEADER

WILLIAMS

SHEET TITLE
OUTLINE DEVELOPMENT PLAN

PROJECT No. **2407**
PROJECT NAME **Fairfield Bus Park Ashburton**

ISSUED FOR **BASE CONCEPT 1**

0m 0m 0m 0m

C005 REV **1**

SCALE @ A1 **1 : 1500**
SCALE @ A3 **1:3000**
REV DATE **23.09.24**