

**APPLICATIONS FOR
SUBDIVISION AND LAND USE CONSENTS**

CC Otago Limited

**91 FORMBY STREET,
OUTRAM**

And

**99 FORMBY STREET,
OUTRAM**

Prepared By

Cubitt Consulting Ltd

May 2017

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FORM 9
APPLICATION FOR A RESOURCE CONSENT
UNDER SECTION 88 OF THE RESOURCE MANAGEMENT ACT,
1991

To: Manager-Resource Consents
Dunedin City Council
PO Box 5045
Dunedin 9058

CC Otago Ltd hereby applies for the resource consent described below:

1. The current owner of the site is:

CC Otago Ltd, the applicant

2. The location to which this application relates is:

This application relates to 99 Formby Street, Outram, Valuation Number 27931-16302, on the outskirts of Outram. This property is currently legally described as Part Section 1 Block V West Taieri SD (CFR OT264/53 Ltd) but is subject to a resource consent application to create an independent title for the existing dwelling within the property. This application relates to Lot 2 of that subdivision application.

3. The type of resource consent sought is:

Subdivision and land use consents

4. A description of the activity to which the application relates:

The property has a split zoning of Rural and Residential 5. Resource consent is sought subdivide Lot 2 of the previous subdivision (3.4-hectares) as follows:

Lot 1 – 1550m².

Lot 2 – 1090m².

Lot 3 – 1090m²

Lot 4 – 1090m²

Lot 5 – 1090m²

Lot 6 – 1090m²

Lot 7 – 1090m²

Lot 8 – 1090m²

Lot 9 – 2.6hectares

While the bulk of the allotments fronting Formby Street (lots 1 to 8) are located within the Residential 5 part of the property, there is some Rural zoned land within each of them. We assume Council may require an application for land use consent for the residential activity on these sites. Lot 9 will remain as an undersized rural allotment but consent is sought for a residential activity on this site.

The activity is fully described in the attached application at section 1.2.

5. The following additional resource consents are required in relation to this proposal and have been applied for:

None.

6. **We attach an assessment of effects that the proposed activity may have on the environment in accordance with Section 88 and the Fourth Schedule of the Act.**
7. **We attach other information required to be included in the application by the District Plan or Regional Plan or Regulations**
 - (a) Computer Freehold Registers
 - (b) A Statutory and District Plan Assessment is incorporated in the AEE.
 - (c) PSI for contaminated land.
 - (d) Subdivision plan
 - (e) Affected person's approvals

Dated at Dunedin on 16 May 2017



Signed _____

Allan Cubitt as Agent for CC Otago Ltd

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FORM 9
APPLICATION FOR A RESOURCE CONSENT
UNDER SECTION 88 OF THE RESOURCE MANAGEMENT ACT,
1991

To: Manager-Resource Consents
Dunedin City Council
PO Box 5045
Dunedin 9058

CC Otago Ltd hereby applies for the resource consent described below:

1. The current owner of the site is:

CC Otago Ltd, the applicant

2. The location to which this application relates is:

This application relates to 91 Formby Street, Outram, Valuation Number 27931-16301, located on the outskirts of Outram. This property is legally described as Lot 2 DP 7816 (CFR OT370/243 Ltd).

3. The type of resource consent sought is:

Land use consent

4. A description of the activity to which the application relates:

The property has a split zoning of Rural and Residential 5. It has an area of 1.63 hectares, with approximately 1000m² of the site zoned Residential 5. However, the preferred building site is located within the rural zoned part of the property. Hence land use resource consent is sought to enable a dwelling on the undersized rural zoned part of the property.

The activity is fully described in the attached application at section 1.2.

5. The following additional resource consents are required in relation to this proposal and have been applied for:

None.

6. We attach an assessment of effects that the proposed activity may have on the environment in accordance with Section 88 and the Fourth Schedule of the Act.

7. We attach other information required to be included in the application by the District Plan or Regional Plan or Regulations

(f) Computer Freehold Registers

(g) A Statutory and District Plan Assessment is incorporated in the AEE.

- (h) PSI for contaminated land.
- (i) Subdivision plan
- (j) Affected person's approvals

Dated at Dunedin on 16 May 2017



Signed _____

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1. Description of Proposals

1.1 Description of Sites

Both applications are dealt with together in this AEE given the two properties adjoin each other.

The two properties are located on the southern outskirts of Outram. The property at 91 Formby Street, Outram (Valuation Number 27931-16301) is legally described as Lot 2 DP 7816 (CFR OT370/243) and has an area of 1.63 hectares. The property at 99 Formby Street, Outram (Valuation Number 27931-16302) is legally described as Part Section 1 Block V West Taieri SD (CFR OT264/53 Ltd) and has an area of 3.64 hectares. However, this site is subject to a current subdivision application (SUB 2017-33) to create an independent title for the existing dwelling within the property. This application relates to Lot 2 of that subdivision application.

Both properties have access to Formby Street while 99 Formby Street also has legal frontage to Huntly Road.

Both properties were previously part of a market garden operation but are now used for grazing purposes. A dwelling is located within the northern corner of 99 Formby Street, at the street frontage, while 91 Formby Street is bare land.

Overhead electricity lines run across the Huntly Road frontage to 99 Formby Street, parallel to the road.

The residential area of Outram is located to the north of the properties. The Outram sports ground is located directly to the north east, across Formby Street. A strip of residential land is also located to the south east along Huntly Road. To the west of this area are a number of undersized rural properties which contain dwellings as follows:

- 39 Huntly Road – 0.5885ha
- 47 Huntly Road – 0.3241ha
- 53 Huntly Road – 9.1ha
- 54 Huntly Road
(85 Formby Street) – 6ha
- 60 Huntly Road – 10.7ha
- 63 Huntly Road – 0.93ha
- 76 Huntly Road – 10.56ha
- 102 Huntly road – 10.6ha.

The land further out is generally rural in nature, being a combination of larger pastoral farms and orchard/market garden properties.

1.2 Proposed Activities

Both the properties that have a split zoning of Rural and Residential 5. The zone boundary is located between 38 and 52m from the Formby Street road.

91 Formby Street

The property at 91 Formby Street has an area of 1.63 hectares, with approximately 1000m² of the site zoned Residential 5. However, the preferred building site is

located within the rural zoned part of the property. Hence land use resource consent is sought to enable a dwelling on the undersized Rural zoned part of the property. This proposal is essentially considered a transfer of the residential building right on the Residential 5 land to the rural zone land. No subdivision of this site is sought.

A 40x 30m building platform has been identified on this property. The preferred site does not comply with the 40m setback of the District Plan to the rear boundary (approximately 30m) or the northern side boundary at one point (approximately 35m). This dwelling will be self-serviced (except for water) and access will remain from the existing crossing point on Formby Street.

99 Formby Street

With respect to 99 Formby Street, resource consent is sought subdivide Lot 2 of the previous subdivision (3.4-hectares) as follows:

- Lot 1 – 1550m².
- Lot 2 – 1090m².
- Lot 3 – 1090m²
- Lot 4 – 1090m²
- Lot 5 – 1090m²
- Lot 6 – 1090m²
- Lot 7 – 1090m²
- Lot 8 – 1090m²
- Lot 9 – 2.6hectares

While the bulk of the allotments fronting Formby Street (lots 1 to 8) are located within the Residential 5 part of the property, there is some Rural zoned land within each of them. We assume Council may require an application for land use consent for the residential activity on these sites.

Lot 1 has been made slightly larger than the other allotments to provide the appropriate building set back to the overhead lines that traverse the site. All buildings must be set back 6 metres from these lines.

Lot 9 will remain as an undersized rural allotment but consent is sought for a residential activity on this site.

Access to all allotments will be to Formby Street.

1.3 Status of Activities

The properties have a split zoning of **Rural** and **Residential 5** in the operative Dunedin City District Plan. The Rural zone part of the properties are identified as containing high class soils. While Formby Street is a **Local Road** in the District Plan's Roading Hierarchy, Huntly Road appears to be **District Road**.

Subdivision in the Rural Zone of the ODP is a restricted discretionary activity provided that each resulting site has an area of at least 15ha [Rule 18.5.1(i)]. Subdivision in the Residential 5 zone is a restricted discretionary activity provided that each resulting site has an area of at least 1000m².

Likewise, Residential activity is only permitted in the Rural zone if the site has an area of at least 15 hectares [Rule 6.5.2(iii)] and complies with the bulk and location requirements.

The properties also have a split zoning in the proposed Dunedin City District Plan, being **Rural Taieri Plains** and **Township and Settlement** zone. The minimum site for subdivision in the Taieri Plains zone is 40 hectares while the minimum site density is 25 hectares. Non-compliance with this rule appears to be a **non-complying activity**.

The zone maps for that plan identify the sites as being within a Hazard 2 – Flood zone. New buildings in this zone are restricted discretionary activities. The Rural zone part of the properties are also identified as containing high class soils.

Where no reticulated wastewater is provided in the Township and Settlement zone, density and minimum subdivision site size is 1000m². The proposed District Plan has legal effect in terms of the subdivision minimum site sizes.

91 Formby Street

The proposed residential use of CFR OT370/243 is a **non-complying** activity in accordance with Rule 6.5.7(i) of the ODP.

99 Formby Street

Lots 1 to 8 of this subdivision comply with the relevant Residential 5 rules of both plans. However, because they also contain a small amount of rural zoned land, Council may consider this part of the proposal non-complying also, albeit only a technical non-compliance. Lot 9 and the associated dwelling are non-complying under both plans.

Overall, both proposals are a **non-complying activity**.

2. Assessment of Environmental Effects

2.1 Introduction

Both the Rural zone and the Residential zone, along with the Subdivision section 18.6.1 of the operative District Plan, contain a range of assessment criteria in respect to resource consent applications. Having regard to those matters and after considering all potential effects of the activity, the following are the main issues that would normally need to be addressed and assessed:

- Amenity values and character of the area
- Bulk and location
- Transportation
- Provision for water supply and disposal of stormwater and sewage
- Hazards
- High class soils and productive potential of rural land

However, despite being non-complying, the majority of proposed development of 99 Formby Street (Lots 1 to 8) is complying because there is enough residential 5 zoned land to achieve the outcome sought. The dwelling proposed for 91 Formby is considered relatively straightforward when the baseline or anticipated development outcomes for the property is considered. This property contains an area of Residential 5 land that complies with the 1000m² site area minimum and can therefore accommodate a dwelling.

In our view, the proposal should be considered in this context. Only one additional building site is being created over and above the density anticipated for the area.

2.2 *Amenity values and character of the area (Assessment Matters 6.7.3, 6.7.13, 6.7.17 and 18.6.1(q))*

99 Formby Street

As noted above, the majority of development at 99 Formby Street (lots 1 to 8) meet the minimum site size requirements of both plans and can accommodate residential development accordingly. Lot 1 has been made larger than the other allotments in recognition of the overhead power lines that traverse the property. All buildings must be set back a minimum of 6m from these lines and as a consequence Lot 1 has been made approximately 5 metres wider than the other allotments.

With respect to Lot 9, we note that the rural area directly adjoining the two properties to the south, is more rural residential in nature. As noted in section 1.1 above, the eight properties along Huntly Road to the south are all under the 15-hectare minimum, ranging from 3241m² up to 10.7 hectares. A dwelling on this 2.6-hectare parcel is not out of keeping with this environment and does not extend rural residential development into the wider rural environment.

With respect to the 99 Formby Street component of the proposal, we conclude that any adverse effects on the amenity values of private property and the wider character of the area, will be no more than minor.

91 Formby Street

With respect to 91 Formby Street, as we noted above, a rural zone building site has been specifically chosen for amenity reasons. Being set back off the road frontage and tucked behind the wooded access to 85 Formby Street, provides the building site with a rural residential amenity. The views from this site will be more rural while the noise and traffic associated with the street front site will not be so apparent.

This site will also have less impact on the amenity values of the surrounding residential properties, given it is set back from surrounding development a far greater distance than is required under the Residential 5 rules. We also note that the written approval of the owners of all adjoining properties, 83, 87 and 93 Formby Street, have provided their written approval to the proposal. Pursuant to section 104(3)(a)(ii), Council must not have any regard to effects on these properties.

Regardless of the foregoing, as we have noted above, the rural area directly adjoining the two properties to the south, is more rural residential in nature. A dwelling on this existing 1.63-hectare parcel is not out of keeping with this environment and does not extend rural residential development into the wider rural environment.

With respect to the 91 Formby Street component of the proposal, we conclude that any adverse effects on the amenity values of private property and the wider character of the area, will be less than minor.

2.3 *Bulk and location of structures (Assessment matters 6.7.9 and 18.6.1 (q), (h))*

91 Formby Street

The 40x 30m building platform that has been identified on 91 Formby Street does not comply with the 40m setback of the District Plan to the rear boundary (approximately 30m) or the northern side boundary at one point (approximately 35m). While there is scope within the platform to comply with these setbacks, consent is sought for a slight reduction to enable flexibility in the siting of the

dwelling. As noted above, all adjoining owners have consented to this so no adverse effect on them can be considered.

Regardless of this, the effect of the proposal on 87 and 93 Formby Street will be significantly less as the rural siting of the dwelling provides for far greater setbacks than the Residential 5 part of the property. With respect to 85 Formby Street, the building platform is over 80m from the dwelling on that site.

Again, any adverse effects of the bulk and location effects of the proposal will be de minimus. Taking into account the permitted baseline, they will in fact be positive.

99 Formby Street

The building platform on Lot 9 of 99 Formby Street has been positioned to ensure the compliance with the rural zone bulk and location standards. The relevant affected neighbours have provided their written approval to the proposal so bulk and location effects of this dwelling are considered less than minor.

Lots 1 to 8 comply with the Residential 5 minimum site area so will accommodate a dwelling in accordance with the Plans expectation. As already noted, Lot 1 has been designed to provide for the greater set back required to the overhead lines that traverse this allotment.

Again, any adverse effects of the bulk and location effects of the proposal will be de minimus.

2.4 Transportation (Assessment matters 6.7.24, 18.6.1(m), 20.6.1, 20.6.5, 20.6.7 and 20.6.10)

91 Formby Street

The existing access ways to the 91 Formby Street meets the appropriate Council standards and will continue to be used by the dwelling proposed for that site.

99 Formby Street

With respect to the 99 Formby Street development, any the traffic generation effects of the proposal will be similar to the anticipated development baseline for the area.

New access ways will need to be created and these will be constructed to the appropriate Council standard. Each of Lots 1 to 9 will have frontage to Formby Street with Lots 1 and 9 also having frontage to Huntly Road. Lots 1 – 8 will utilise Formby Street for their vehicle access while Lot 9 could use either Formby Street or Huntly Road. Formby Street has a 50 km/hr speed limit from Lot 7 northwards and 70km/hr from Lot 7 southwards to the intersection with Huntly Road. Huntly Road is also a 70 km/hr speed zone.

Lot 1 will need to use an entrance on its very northern boundary with Lot 2 to achieve 25m from the intersection with Huntly Road in compliance with Rule 20.5.7(iii).

Again, any adverse transportation effects of the proposal will be de minimus.

2.5 Provision of water supply and disposal of stormwater and sewage (Assessment matters 6.7.10, 18.6.1(n), (o), (p) and 21.6.5)

91 Formby Street

We understand that reticulated water is available to the boundary of 91 Formby Street. Given the site is partly zoned Residential 5, we anticipate the consent holder connecting the new house on this property to Council's water main located

within Formby Street. Waste water will be disposed of by way of septic tank and associated effluent field. Stormwater will be directed to the roadside drain or a soak pit, which we understand is quite common in Outram.

The proposal will not generate adverse environmental effects as a result of servicing the proposed dwelling.

99 Formby Street

Each of the lots can be supplied with reticulated water supply from the 100mm Council main in Formby Street. There are 2 fire hydrants in Formby Street & Huntly Road ensuring each of the lots will comply with the minimum distance of 135m from a hydrant for firefighting.

Foul sewage will need to be treated in individual septic tanks and disposed to ground by effluent field. Stormwater will also be best discharged to the roadside drain or to ground via a soak pit as is typical in the Outram area.

2.6 Hazards

The proposed District Plan identifies the area as a Hazard 2 – Flood zone. The proposed District Plan consider this a moderate risk (1:50 – 1:200 or AER range 0.5 to 2%) from natural hazards. While the rules relating to this have no legal effect, we note that this property is elevated land within Outram and considerably higher (1 – 2m) than the residential land to the north. Hence, we do not envisage the need for the specification of a minimum floor level.

As noted above, the site has been previously used as a market garden and as a consequence the previous owner has had a Preliminary Site Investigation carried out (attached) by Environmental Consultants Otago. The report finds contamination levels associated with its market garden use to be low and well within the Rural Residential Use criteria (most conservative). Hence the HAIL legislation does not restrict residential use of the property as proposed.

The report did note evidence of an old underground fuel storage tank on the site but advised that it was not possible to sample the soil in this location given timing issues. This is located within Lot 8 of the 99 Formby Street subdivision proposal. This issue can be addressed by way of the appropriate conditions requiring the removal of the tanks and any contaminated soil in accordance with the appropriate standards.

2.7 High Class Soil and Productive potential of rural land (Assessment matter 6.7.15)

The site is identified as containing high class soils and has been used for market garden purposes in the past. However, that is no longer economic and the site is now used for grazing.

91 Formby Street

With respect to 91 Formby Street, the relocation of the dwelling site from the Residential 5 land to the rural land will have little impact on the high-class soil resource. The reality is that the Residential 5 land contains the same soil as the rural land. Applying the baseline, the effect is therefore no different than developing the dwelling on the Residential 5 part of the property. In any event, no high-class soil will be removed from the site.

99 Formby Street

With respect to 99 Formby Street, again there will be little impact on the high-class soil resource within Lot 9. The area affected by building will be similar to that affected by farm buildings. No high-class soil will be removed from the site.

2.8 Conclusion

The above assessment leads us to conclude that the overall adverse effects of the two proposals will be no more than minor. The proposal is similar to the development existing within the environment and with the density of development anticipated by the District Plan for this location.

3. District Plan Policy Framework

The key sections of the District Plan are Sustainability, Rural and Residential Zones, and Subdivision. Each of these sections is considered below.

3.1 Sustainability

The proposal is not considered inconsistent with the policy framework of the Sustainability section of the plan. These provisions seek to ensure that infrastructure is sufficient to cater for the activity without compromising the demands of future generations. They also encourage the protection of the natural and physical resources and the maintenance or enhancement of amenity values. Policy 4.3.8 seeks to avoid the mixing of incompatible activities.

The proposal is considered a sustainable use of the land within the property and is compatible with the surrounding land uses. There will be no impact on the City's reticulated infrastructure or the high-class soil on the site over and above the anticipated development level for the area.

3.2 Rural zones

The relevant objectives and policies of the Rural Zones section chiefly seek to protect the productive potential of the zone, public infrastructure, and rural character and amenity values.

The productive value of the site will not be significantly impacted on by the proposal while there will be no greater effect on the soils of the site than anticipated by the District Plan. No high-class soil will be removed from the site. The proposal is in keeping with surrounding development and any new effects on the amenity values of the area will be negligible. There will be little conflict with the other activities in this location.

In summary, we consider the proposal consistent with all relevant objectives and policies of the Rural Zones.

3.3 Residential zones

The relevant objectives and policies of the Residential Zones section chiefly seek to protect the special amenity values of rural townships and ensure that development of them does not exceed the design capacity of the infrastructure servicing them. The policies also seek to maintain the rural views from these settlements.

The effects assessment above confirms that amenity values of the Outram township will not be compromised by the proposal and that the development will not impact on public infrastructure. The siting of the dwellings on 91 Formby Street and Lot 9 99 Formby Street will have limited impact on rural views from the township.

In summary, we consider the proposal to support all relevant objectives and policies of the Residential Zones.

3.4 Subdivision

The objectives and policies of the Subdivision section seek to ensure that subdivision is coordinated and sustainable, with physical limitations and potential land uses taken into account to ensure that adverse effects are avoided, remedied or mitigated. All necessary infrastructure should be provided by the developer to avoid the need for unsustainable upgrades of public services [Objective 18.2.7 and Policy 18.3.7].

The physical limitations are discussed in the assessment of effects and it has been determined that there is no impediment to the development of the site as proposed. There will be no adverse effects on public services or roading infrastructure.

The proposal is consistent with the objectives and policies of the Subdivision section.

3.6 Conclusion – Objectives and Policies

Having considered the relevant objectives and policies of the District Plan, it is concluded that the proposal is not inconsistent with the policy framework.

4. Proposed District Plan

The proposed District Plan was notified on the 26th September 2015 and submissions closed on the 24th of November 2015. Hearings are currently being held but decisions are some way off. There are numerous submissions on the provisions of the proposed District Plan. Hence very little weight can be given to the provisions of that plan. However, some regard must be given to the policy framework of the proposed plan.

The proposed District Plan zones the site 'Rural Taieri Plains' and 'Township and Settlement' zones. There are a number of objectives and policies relevant to the proposal. The residential policy framework focusses on amenity values and the proposal is consistent with the outcomes sought. With respect to residential activity in rural zones, the policies seek to limit this to the extent that it directly supports farming or which is associated with papakāika. Policy 16.2.1.7 is to "Avoid residential activity in the rural zones on a site that does not comply with the density standards for the zone, unless it is the result of a surplus dwelling subdivision." The site doesn't comply with the density standard of the zone but overall the proposal is similar to the density sought for the location by the plan. Policy 16.2.3.2 is to "Require residential activity to be at a density that maintains the rural character values and visual amenity of the rural zones" and as we have concluded above, the proposal achieves this for this particular area.

5. Section 104D of the Act and the notion of 'True Exception'

Given the proposal's non-complying status, consideration must be given to the provisions of section 104D of the Resource Management Act. That section requires an application for a non-complying activity to pass one of two thresholds in order to be considered for approval, namely the environmental effects must be no more than minor or the proposal must be consistent with the objectives and policies of the District Plan. Our assessment above suggests to us that the proposal in fact meets

both of these provisions and we therefore encourage Council to consider granting consent to the application on that basis.

In addition, we expect that Council might turn its mind to whether the proposal is a true exception, as has been described in one division of the Environment Court. We consider it not entirely appropriate here given that the proposal is consistent with the objectives and policies of the Plan and the majority of the non-compliance is largely of a technical nature. The sites are unique because of their split zoning and density, overall, is not dissimilar to what is anticipated in the location and is consistent with the surrounding environment. Consent to this proposal will not compromise the integrity of the District Plan.

6. Affected Persons and Notification

Section 95A (1) of the Resource Management Act (hereafter 'the Act') provides that a consent authority may, in its discretion, decide whether to publicly notify an application for a resource consent. Section 95A (2) states that the consent authority must publicly notify an application if the applicant requests public notification of the application, or if a rule or National Environmental Standard (NES) requires public notification of the application. However, in this instance the applicant has not requested that the application be publicly notified and there is no District Plan rule or NES that requires public notification of the application.

Section 95C of the Act provides that a consent authority must publicly notify an application, if before the notification decision has been taken, the applicant does not provide any further information requested before the deadline for doing so, or refuses to provide this information, or likewise refuses to agree or respond to a consent authority's request to commission a report. In this instance, Section 95C does not apply.

Section 95A of the Act requires that the consent authority must publicly notify an application if it decides under Section 95D of the Act that the activity will have or is likely to have adverse effects on the environment that are more than minor.

The only exception to this is when a rule or NES precludes public notification of the application and that there are no special circumstances in relation to the application that would warrant such a rule or NES to be dispensed with. However, in this instance there is no rule or NES that precludes public notification of the application and therefore the 'more than minor effect on the environment' test provided by Section 95D of the Act applies.

In deciding whether an activity will have adverse effects on the environment that are more than minor, Section 95D of the Act states that a consent authority must disregard:

- any effects on persons who own or occupy the site or adjacent land;
- trade competition and its effects;
- any effects on persons who had given written approval of the application;
- any adverse effect that does not relate to a matter which a rule or NES reserves control or restricts discretion.

Section 95D also states that a consent authority may disregard any adverse effect if a rule or NES permits an activity with that effect.

In our view the adverse effects of this proposal are minor at worst.

If a consent authority does not notify an application for resource consent, Section 95B of the Act states that it must decide whether there are any affected persons or affected order holders in relation to the activity. The exception to this is that if there is a rule or NES that precludes limited notification of the application. In this instance, there is no rule or NES that precludes limited notification of the application.

Section 95E states that a person is 'affected' if the adverse effects of an activity on a person are minor or more than minor (but not less than minor). In deciding this, section 95E (2) of the Act states that a consent authority:

- may disregard any adverse effect if a rule or NES permits an activity with that effect;
- must disregard any adverse effect that does not relate to a matter which a rule or NES reserves control or restricts discretion;
- must have regard to any relevant statutory acknowledgement;
- must disregard any effects on persons who have given written approval of the application.

In our view the adverse effects of the proposal are minor and written approvals have been sought and received from the neighbours at 83, 87 and 93 Formby Street. Only these persons could be affected and they are attached to the application.

As a consequence, we request that the application be processed on a non-notified basis.

Section 95A(4) of the Act gives Council a discretion to notify an application if it decides that special circumstances exist. The Courts have held that special circumstances are unusual or exceptional but may be less than extraordinary or unique. Furthermore, it is not mandatory to consider whether special circumstances exist.

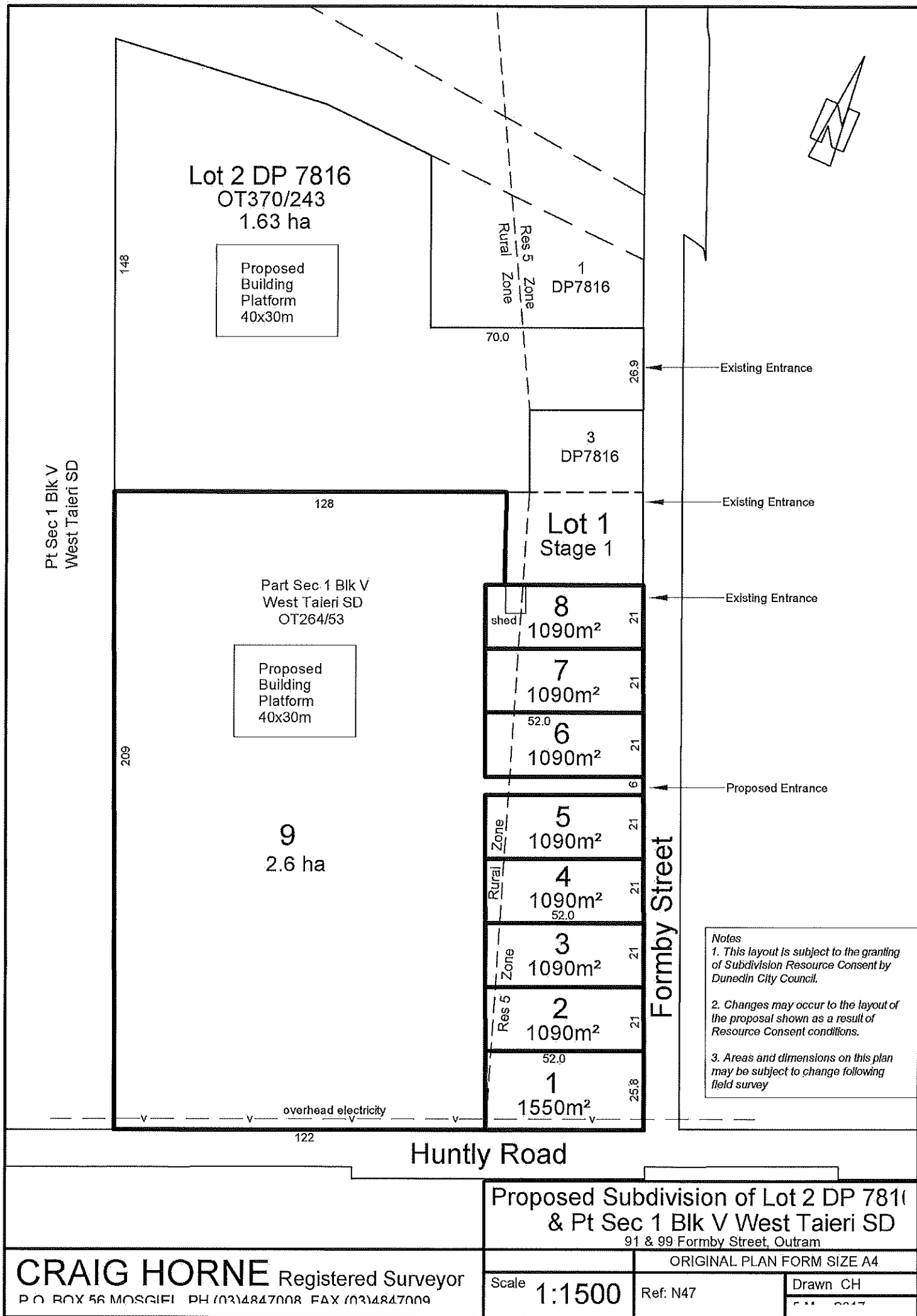
In our view, there are no special circumstances that would warrant any form of notification. Council staff have indicated that 'plan integrity' could be considered a special circumstance. However, we disagree as 'plan integrity' is a matter for consideration as part of the substantive assessment under section 104. The decision *The Fuller Group Limited v Auckland RC* [1999] NZRMA 439 decision seems to support this position and indicates that if there are no significant adverse effects, then there are hardly likely to be special circumstances.

In any event, our view is that the Plans integrity is not under threat for the reasons set out in Section 5 above.

Hence, we respectfully request that the proposal be processed on a non-notified basis.

7. Conclusion

We are confident that any adverse effects arising from this proposal will be no more than minor and the proposal will readily coexist alongside the existing activities in the vicinity. Some positive effects may result. We are of the view that the proposal promotes the purpose of the Act, being the sustainable management of the natural and physical resources.



**Preliminary Site Investigation for
Ground Contamination at a
Proposed Residential and Rural-Residential Development
At 99 Formby Street & 498 Allanton Road, Outram**

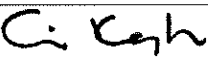
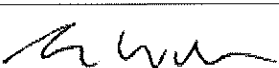
**Report prepared for:
Mrs L Choie**

**Report prepared by:
Environmental Consultants Otago Ltd
November 2015**



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Executive Summary

Mrs Lynda Choie is considering options to develop former market garden land at 99 Formby Street and 498 Allanton Road Outram as a mixed Residential and Rural-Residential development. Dunedin City Council (DCC) records note that the site has been used for a purpose on the hazardous activities and industries list (HAIL, market gardening).

This report is a Preliminary Site Investigation and Report (PSI) with soil sampling investigations prepared to assess whether an activity or industry described in the Ministry for the Environment's (MfE's) Hazardous Activities and Industries List (HAIL) is being, or has been, undertaken on a property or whether the property has been affected by known HAIL activity on a neighbouring site. If this is found to be so then the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (hereafter the NES), apply when soil disturbance, subdivision or change of use take place at the property.

A Property Site History Search has been provided by Dunedin City Council (DCC). The search indicates that the DCC has records confirm that the site was used as a market garden. The historic record indicates that site has been used as a market garden from some time prior to 1947, and this activity continues to the present. Part of the land is zoned Residential and the remaining land is zone Rural; much of the land to the north and east has been converted to residential use over the past two decades.

From the use history, the primary HAIL activity is that the site was a market garden for a period of at least seventy years. The neighbouring land also has a history of use for market gardening and a block 200metres to the east has also been an orchard until it was developed as a residential area. The site also has associated HAIL activities related to the use and storage of agricultural chemicals and bulk fuel storage. The focus of this report is on the possible effects of this land use and how potential for contamination at the site might affect its proposed future use for Residential and Rural-Residential development.

The report finds that the site exhibits low levels of DDT (and isomers) contamination and slightly elevated levels of cadmium from superphosphate use. These are well within the Rural-Residential use criteria (most conservative). However, during the site inspection, the potential for contamination from past fuel storage activities was noted, prominently in that an underground (fuel) storage tank or UST was discovered to remain on the Formby Road Site. As it was not possible to alter the sampling and analysis plan on an ad hoc basis in a manner that would sufficiently meet the requirements of investigation of such a feature, the status of soils with respect to contamination from UST leakage and some refractory fuel spillage from another tank will have to be addressed at some future time. While the remainder of the site is suitable for Residential and Rural-Residential development with respect to the disposition of soil contaminants at site, the suitability of areas potentially affected by hydrocarbons from past fuel storage for development is as yet uncertain.

1 Introduction

1.1 Background and Objectives

Environmental Consultants Otago Ltd (EC Otago) has been commissioned by Mrs Lynda Choie to undertake a preliminary site investigation (PSI) with limited soil sampling and analysis for soil contamination at two lots in Outram, one at 99 Formby Street and the second at 498 Allanton Road, Outram. Investigation is required to facilitate assessment of the effects of past activities to ascertain suitability of the site for soil disturbance related to a proposed mixed Residential and Rural-Residential development of the site. This PSI was undertaken in accordance with our proposal of the 8th October, 2015.

1.2 Scope of Work

Consistent with the MfE Guidelines ¹ for PSIs of potentially contaminated land, the following scope of work was undertaken:

- Source and review all relevant information available. Sources were as follows:
 - Dunedin City Council (DCC) HAIL Property Report of activities on the land;
 - Landowner interview on 2 November regarding the use of the land;
 - Historic aerial photographs dating from 1947 obtained from the DCC Archive, New Zealand Aerial Mapping Archive, Whites Aviation Collection in the New Zealand National Archive², the VC Browne Archive³, and Google Earth;
- Carry out a site walkover to verify site conditions and inspect for indicators of potential site contamination;
- Conduct soil sampling with subsequent analysis for heavy metals and PAH;
- Prepare this report, which summarises our findings and is compliant with MfE reporting Guidelines⁴, inclusive of all work having been undertaken, managed and reviewed by suitably qualified and experienced practitioners as defined in the NES. Specifically, this report assesses the following:
 - Whether previous and/or current activities on the site had or have the potential to cause contamination;
 - The likely nature of any contamination;
 - The risks to future users from any contamination;
 - The disposition of the site with respect to the NES; and
 - The requirement for further investigations to define the degree or extent of any contamination within the site.

¹ <https://www.mfe.govt.nz/issues/managing-environmental-risks/contaminated-land/managing/guidelines.html>

² <http://natlib.govt.nz/photos?text=dunedin+whites+aviation>

³ <http://www.vcbrowne.com/VCBHome.aspx>

⁴ <http://www.mfe.govt.nz/publications/hazardous/contaminated-land-mgmt-guidelines/>

1.3 Limitations

Services for this project have been performed in accordance with current professional standards for environmental site assessments, and the persons undertaking, managing reviewing and certifying this PSI are suitably qualified and experienced practitioners as defined in the NES. No guarantees are either expressed or implied. This report does not attempt to fulfil the requirements of legal due diligence.

There is no investigation that is thorough enough to preclude the presence of materials at the site that presently, or in the future, may be considered hazardous. As regulatory criteria are subject to change, a site status with respect to contamination that is presently considered to be acceptable may, in the future, become subject to different regulatory standards that cause the site to become unacceptable for existing or proposed land use activities.

Any recommendations, opinions or findings stated in this report are based on circumstances, facts and assessment criteria as they existed at the time that we performed the work and on data obtained from the investigations and observations as detailed in this report. Opinions and judgments expressed in this report, which are based on an understanding and interpretation of assessment standards, should not be construed as legal opinions. This report and the information it contains have been prepared solely for the use of Mrs Lynda Choie. Any reliance on this report by other parties shall be at such party's own risk without prior agreement to the contrary.

2 Site Overview

2.1 Site Identification

The properties subject of this investigation are located on the rural margins of Outram at 99 Formby Street Outram and 498 Allanton Road, Outram, as shown in Figure 1. The block at 99 Formby Street is listed as PT LOT 2 DP 7816, PT SEC 1 BLK V SO 65 WEST TAIERI SD with an area of 1.33 Ha and the land at 498 Allanton Road is listed as LOTS 1 and 2 DP 27378 with an area of 15.04 Ha (refer Appendix A Certificates of Title).

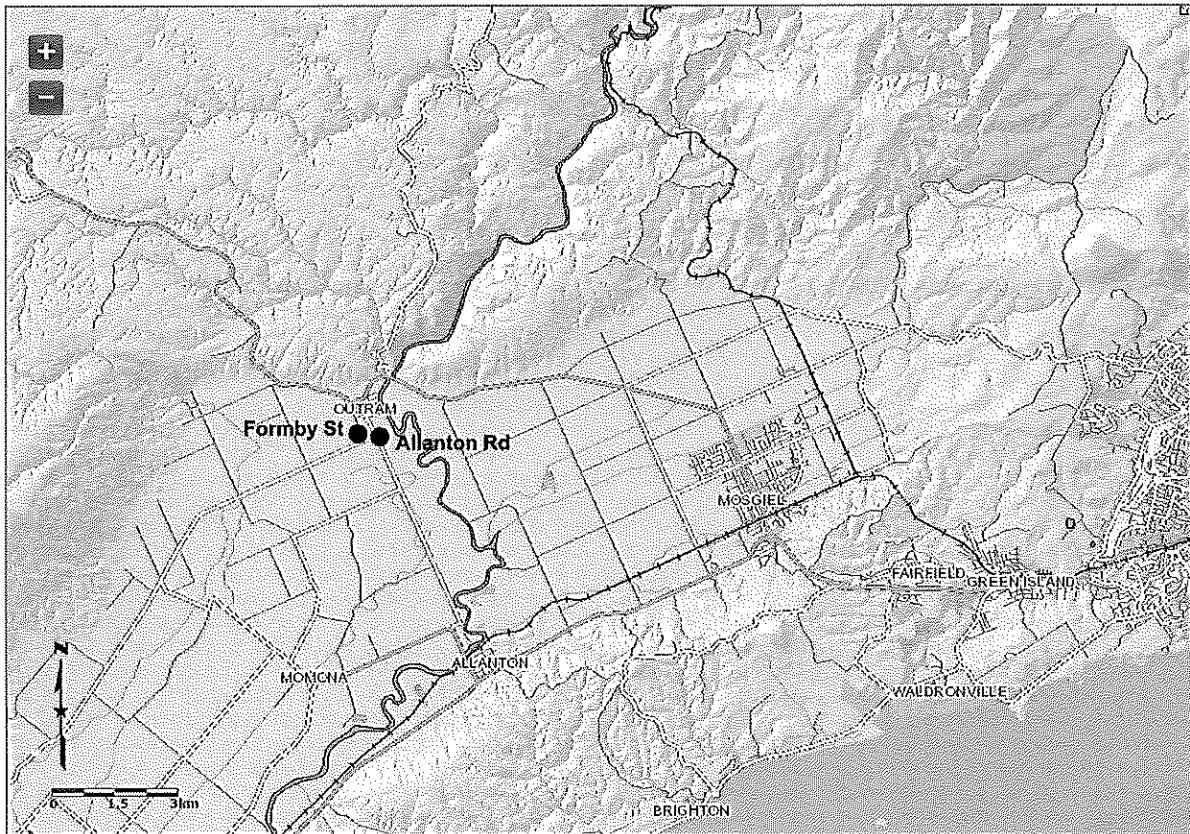


Figure 1: General location of site.

The site extent is shown in Figure 2. The site is two separate properties that are managed as a part of one the same market gardening enterprise. Both properties have been operated as market gardens since at least 1947. The properties are on the southern and south western rural margin of the township of Outram on the northern edge of the Taieri Plains. For the purposes of this report, references to the site refer explicitly to the area shown in Figure 2.



Figure 2: Site extent; the site boundary is outlined with yellow dashed line.

2.2 Site Ownership and Use History

The site has been in the Choie family since Mrs Lynda Choie and her late husband purchased the site properties in the 1970's as operational market gardens from the owner at that time. The use of the land as market gardens is well known from the information provided by Mrs Choie, the Dunedin City records, and from the photographic records at least since 1947. The earliest photo of the site found in this investigation dates to 1947 and is shown in Figure 3; this shows a clear view of both properties with sufficient clarity to determine the location of buildings and the clear evidence of crop cultivation on both blocks of land.

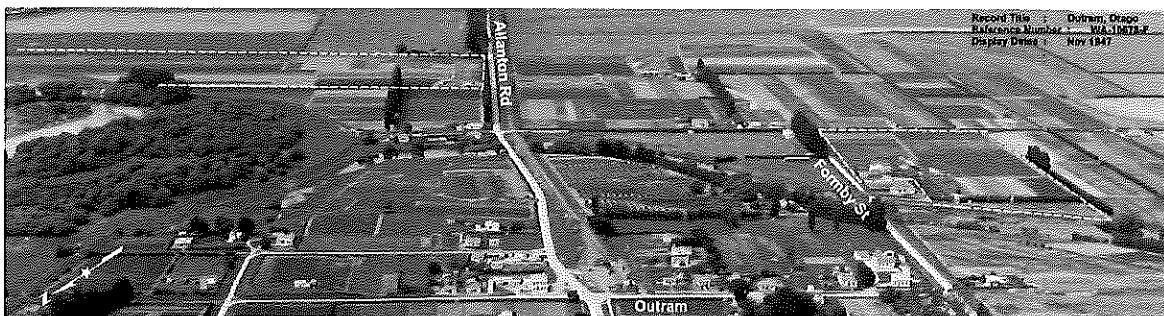


Figure 3: The site extent and site environs in 1947 outlined in yellow dashed line. The pattern of cultivation at both properties shows clear indications of vegetable crop production (Source Whites Aviation Collection, National Archive).

Figures 4 and 5 show enlargements of the 1947 image in order to see each of the two properties in detail. Figure 4 shows the land at 99 Formby Street. In this image the existing dwelling is present and there is a cluster of utility buildings or sheds behind the house including one near the centre of the block. The DCC archivist (see DCC HAIL Property Report in Appendix B) notes in an email of 5.11.15 that the electricity records note a connection was made for "brooder plugs" made to connect these sheds to the household supply and observes that it is likely that the sheds were production hen houses. As noted, the patterns of cultivation indicate that the land is being used for producing vegetable crops. There are shelterbelts present near the northern (lower) and western (right hand) boundary. Figure 5 shows the Allanton Road land in 1947, which also shows evidence of crop cultivation. There are two sheds located in the north-western (lower right hand) corner of the block in the same location as the sheds presently on the site. The site is otherwise devoid of any structures or features.

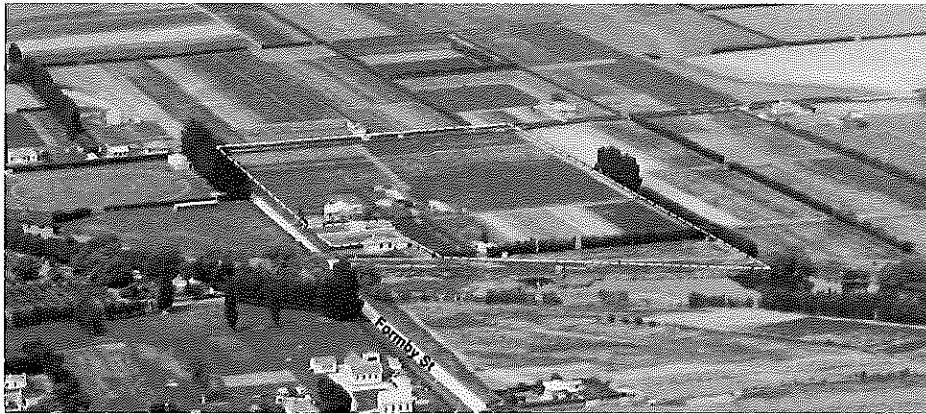


Figure 4: Detail from Figure 3 showing the land at 99 Formby Street in 1947. There are several sheds evident within the body of the block, located in the photo to the right of the dwelling, which the council record indicate are poultry sheds (Source Whites Aviation Collection, National Archive).



Figure 5: Detail from Figure 3 showing the land at 498 Allanton Road in 1947. The sheds in the lower right hand corner of the photo appear to be the same as two of the three that are in this area at present (Source Whites Aviation Collection National Archive).

The image in Figure 6 shows the site and surrounds in 1956 (top) and a similar perspective based on Google Earth imagery from 2015. The images show that little substantial has changed in the 59-year period between the two images. The poultry sheds are no longer present, having been removed between an image taken in 1959 when they were present and in an aerial photo provided by DCC from 1970 (see Appendix B for these photos) when they had been removed. The council consent record notes that consent was granted for the construction of an implement shed at 99 Formby in 1971.

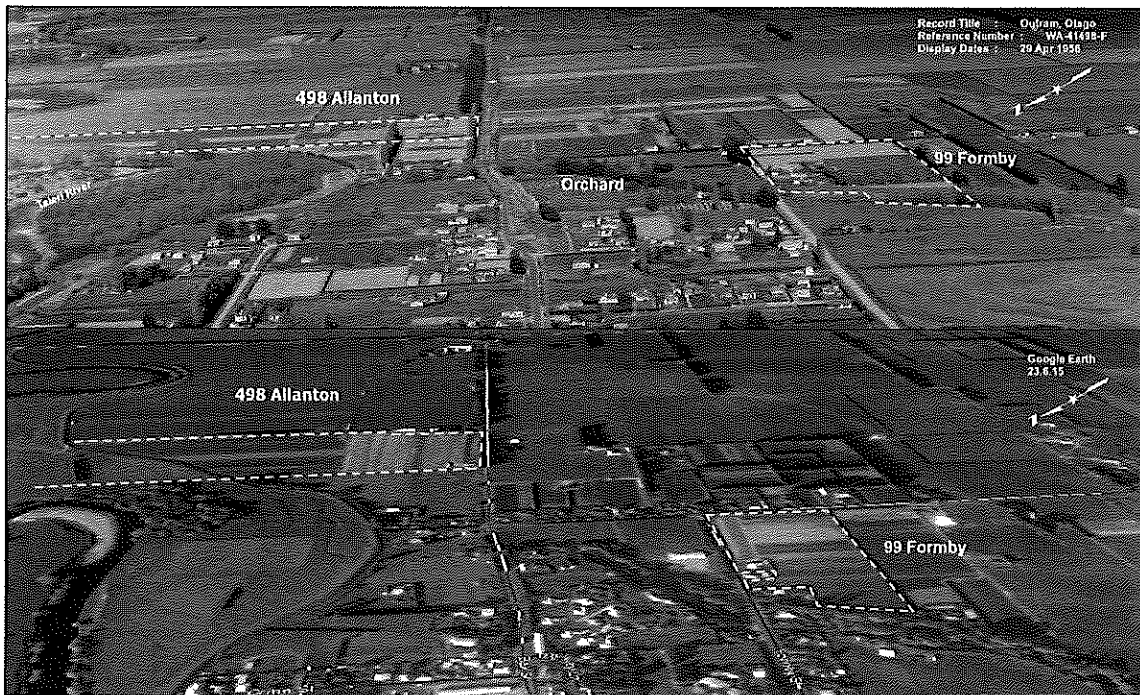


Figure 6: The site (outlined in yellow) and the site surrounds comparison between 1956 and 2015. (Source Whites Aviation & Google Earth).

2.3 Historic Use of Land Adjacent to Site

The two blocks forming the site and their immediate surrounds have been rural land on the periphery of the town of Outram. The site and its surrounds are shown in comparative images from 1956 and 2015 in Figure 6. The patterns of cultivation of the adjoining land in 1956 suggest that much of the immediate surrounds were at that time in use for market gardening, while by 2015 the land was all in pasture. An orchard 200m or more to the northeast of the part of the site at 99 Formby Street that was in orchard in 1956 has been replaced by housing and more housing has been established along Formby Road to the north of the site. All activities on the surrounding land were of the same in nature as the activity on the site and there is no indication from the site inspection or the council consent record that any potentially contaminating activities other than those covered by HAIL Category A10 Market Gardening have occurred.

2.4 Previous and Associated Investigations

There are no known previous or associated investigations relating to the site. Periodic analysis of the market garden crops is conducted byASUREQuality to assess whether any pesticide residues are evident within leaf materials. A copy of the most recent analysis is attached as Appendix C; this shows no residue is present at or above the level of detection.

2.5 Current and Proposed Future Use

The site is presently a horticultural property with one dwelling, and its proposed future use, yet to be finalised, is for mixed Residential and Rural-Residential development.

2.6 Potential for Contamination

The site has been subject to several activities that give rise to its identification as a HAIL site. The principal HAIL activity being market gardening with the storage and application of pesticides being a component of that activity along with the storage of bulk fuel in tanks on the property. This activity has occurred over a period in excess of seventy years. This extensive history includes the era when persistent pesticides such as DDT and Dieldrin were in use. Lead arsenate and DDT could have been expected to be applied to the nearby orchard in this era, if this had any effect on the site it would be detected in the soil sampling program.

The site is in an area where much of the surrounding land has been used for market gardening and orcharding and this also has the potential to act as a source of contamination to the land. This external activity is consistent with the HAIL activity that is being investigated and the sampling undertaken for the site will address any anticipated external source of contamination. There are no other activities identified in the adjoining environment that have the potential to cause contamination of the land.

Table 1: Summary of HAIL Land Use and Potential Associated Contaminants.

Land Use	HAIL Code and Description	Potential Contaminants
Agrichemicals store	A1. Agrichemicals including commercial premises used by spray contractors for filling, storing or washing out tanks for agrichemical application.	Arsenic, lead, copper; wide range of organic agrichemicals including organochlorine pesticides, organophosphate pesticides, herbicides, fungicides, carbamates, and synthetic pyrethroids; compounds may be mixed with diesel before spraying
Market gardening	A10. Persistent pesticide bulk storage or use including sport turfs, market gardens, orchards, glass houses or spray sheds	Arsenic, lead, copper; wide range of organic agrichemicals including organochlorine pesticides, organophosphate pesticides, herbicides, fungicides, carbamates, and synthetic

		pyrethroids; compounds may be mixed with diesel before spraying
Farm fuel tanks	A17. Storage tanks or drums for fuel, chemicals or liquid waste	Hydrocarbons including BTEX, PAHs, and solvents; lead and other metals, particularly if waste oil handled

2.7 Integrity Assessment

A continuous and relatively specific picture of site use is encapsulated in the information above. The quantity and quality of information confers a good degree of data integrity, but as with many sites, whether all activities at the site have been discovered, cannot be answered with confidence. Soil testing, discussed below, is an excellent method to test or substantiate the desktop site model and increases the integrity of the overall assessment of the site.

3 Site Condition and Surrounding Environment

3.1 Site Inspection

A site walkover inspection was undertaken on the 3rd of November, 2015 in conjunction with soil sample collection. The purpose of the walkover was to gather general information on topography and land use (both on the site and the surrounding area), to interview the land owner (Mrs Lynda Choie), as well as to make observations for evidence of potential ground contamination, including evidence from the soil sampling. Relevant observations made at the time of the inspection are summarised in this section. The 99 Formby Street block at it appeared at the time of site inspection is shown in Figure 7.

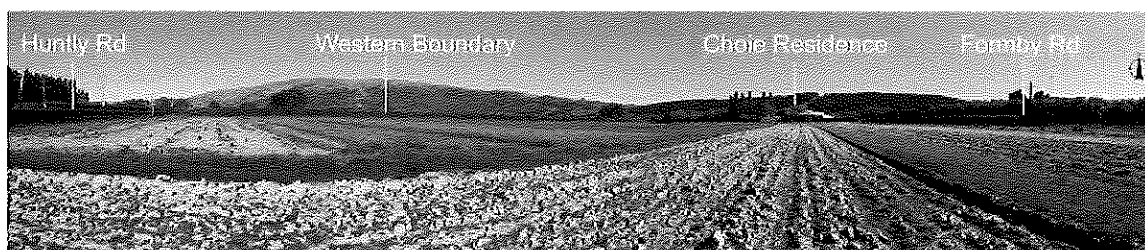


Figure 7: The Formby Road Block panorama view from near the Huntly Road (southern) boundary of block with dwelling at centre right of photo and Formby Rd Boundary on the right.

This block is in the greater part cultivated land with a house, three bay vehicle shed, and a chemical store the only structures. The location of these is shown in detail in Figure 8. The site walkover with the owner identified a disused 500gallon underground petrol tank (underground storage tank or UST) located beside the three bay vehicle shed as shown in Figure 9. The UST was discovered during the site walkover when a tank breather was observed on the southern wall of the shed that was erected in 1971; on questioning, the owner (Lynda Choie) confirmed

that there was a UST present, use of which had been discontinued because of petrol thefts. There had been no reference to this UST in the DCC HAIL report.

A 3m by 3m metal shed is located behind the house, which is used to store pesticides used on crops. The interior of this shed is shown in Figure 10. At the time of the site visit the shed was in an orderly state, with no evidence of any chemical spills. All pesticide containers were double banded through the use of bins to separately store each container and the shed floor is lined with a heavy PVC tarpaulin as a secondary containment for any spillage.

There was neither evidence of vegetative stress indicating soil toxicity nor was any odour evident indicating chemical or fuel spillage within the vicinity of the buildings. The entire site presented in an orderly condition with no loose empty containers evident.



Figure 8: The Choie homestead and its immediate site environs in 2013 showing the location of the agricultural chemicals store, vehicle shed and location of the disused underground petrol tank (Source DCC).

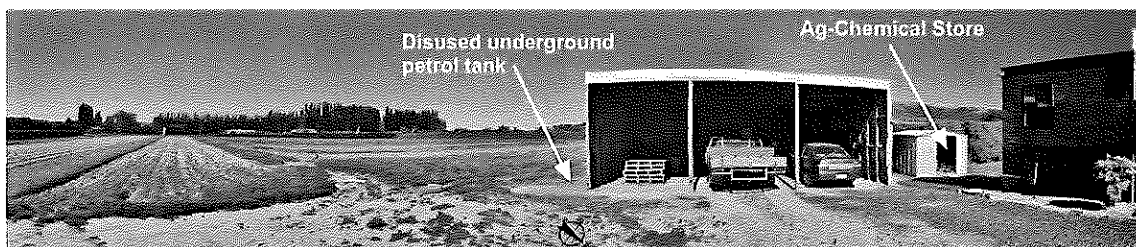


Figure 9: : Site inspection photo showing the Choie residence at 99 Formby on the right with the chemical store in the small shed at its rear and beside the three bay vehicle shed near the centre of the image. A 500gallon underground petrol tank (now disused) is located on the left hand side of the vehicle shed.



Figure 10: The interior of the chemical store shed showing a tarpaulin placed as a secondary spill containment, with individual containers stored within plastic bins for primary containment of any leak or spill.

The land at 498 Allanton Road is a flat large rural block as shown in Figure 11. The operational area of this block of land is confined to a small area in the north-western corner of the block adjoining the site entrance from Allanton Road. Figure 12 shows the area of the sheds on this block and the immediate shed curtilage with annotations showing the location of the two multi-bay sheds for storing tractors and implements and a large shed for garaging a truck. Figure 13 shows the sheds and their immediate surrounds. There is a 2000l diesel tank on a tank stand and two bins for storing plastic rubbish prior to disposal as shown in Figure 14, and a boom sprayer stored in one of the multi-bay sheds as shown in Figure 15. The historical photos show that the sheds on the site have been present since the earliest photograph in 1947.



Figure 11: Site visit photo of the Allanton Road block viewed from the top of the Taieri River flood bank at the eastern end of the block.

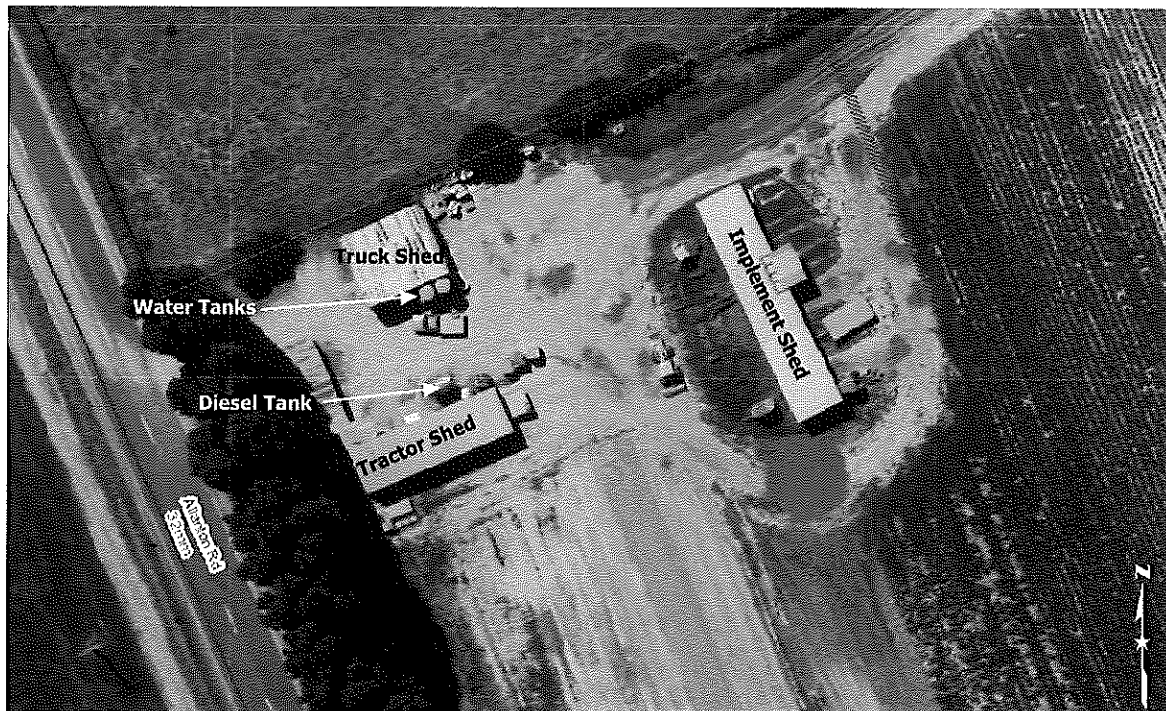


Figure 12: The utility buildings area in the north-western corner of the Allanton Road block (Source DCC).



Figure 13: Site visit photo showing the operational buildings on the Allanton Road block. These are used to shelter tractors, harvesters and implements including a tractor mounted boom sprayer, with the building by the water tanks serving as garaging for a truck.



Figure 14: Diesel tank beside tractor shed at 498 Allanton Road. The tank is not bunded and localised diesel staining is evident in the ground at the base of the tank stand. Two bins for storing plastic rubbish prior to disposal are located beside the tank stand.

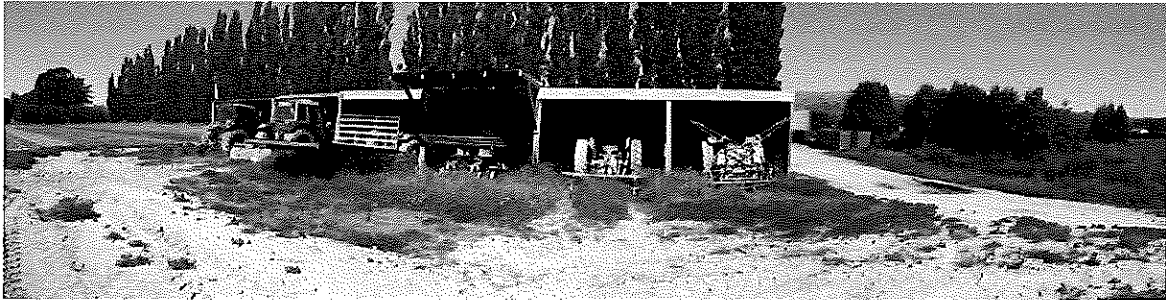


Figure 15: Implement and tractor shed at 498 Allanton Rd; note boom sprayer in right hand bay.

3.2 Conditions at Site Boundaries

The Formby Road block property is bounded by rural land to the south and west with Rural-Residential and Residential land to the north and east. The Allanton Road block is in a rural setting with an agricultural contractor's depot on its southern boundary contractors.

3.3 Signs of Contamination

The site surface and buildings provide no indication of any potential sources of contamination other than those already described. The site is in the greater part cultivated and there are no signs of vegetative stress suggesting any concentration of toxic material. The properties contain two fuel tanks as already discussed. The diesel tank exhibits evidence of localised minor spillage within the immediate vicinity of the tank. There is no visible evidence of wastes or rubbish having been burnt on either block.

3.4 Geology and Hydrology

The shallow geology of the site determines its capacity to absorb and retain contaminants. It also indicates the degree to which the site has been disturbed or subject to filling. The local geology is dominated by sediment deposited by the Taieri River. The land is within the active floodplain of the Taieri but is now protected by the flood bank to the east of Allanton Road. The soils are silts and sandy silts and these will overlie bedded gravels with the schist bedrock at depth. Groundwater was not evident during investigations and the 1m deep boundary drains did not contain standing water at the time of the site inspection indicating that the groundwater is at a greater depth than the base of the drain. It is expected that the local water table will be determined by the level of the nearby Taieri River which is estimated to be between 2 and 3m below ground level.

3.5 Sensitive receptors

The site itself is proposed to be a Residential subdivision and Rural-Residential subdivision once the development is complete, and the site soils will need to meet the Rural-Residential SCS allowing for up to 25% food production. The primary potential for contact with any contaminants on the site will be from household recreation, garden cultivation, and garden produce consumption. Additionally, exposure might occur subsequent to the site's development and during site development as a result of activities such as excavation, cartage and disposal of material excavated from the site.

4 Soil Sampling and Analysis for Contamination

4.1 Overview

According to the MfE's Guidelines for contaminated land investigations, sampling and analysis are considered to be optional in a PSI, with information on this to be provided "as available". Ultimately, however, the disposition of any contamination can only be confirmed with results from field sampling and analysis for contaminants. This study included sampling, analysis, and interpretation of results to provide an evidentiary basis from which to assess the site's status with respect to the HAIL, and associated potential risks for human exposure, per the NES.

4.2 Sampling and Analysis Plan

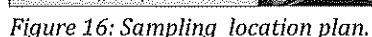
For this PSI, the sampling plan was a hybrid distributed-judgemental approach with the primary sampling undertaken on a spatially distributed pattern of mixed individual and composite samples to provide cost effective but sufficiently dense sampling coverage of the entire site. Each set of composite samples on the Formby Road part of the site were clustered with one individual sample and three samples composited to a single sample. The reason for this is that any contamination of the cultivated areas is anticipated to be relatively uniform due to the processes of application and the individual samples will provide a reference measure with the composite samples. Two of the four individual samples (1 and 7) were targeted to areas where potentially contaminating activity has been concentrated as was composite sample set 6A-6C. Sample 1 was located in the immediate vicinity of the underground petrol tank and vehicle shed at 99 Formby and sample 7 and composites 6A - 6C were distributed in the vicinity of the implement sheds at 497 Allanton Rd. The remaining samples were located on a distributed pattern across the cultivated land

Nineteen sampling locations were distributed across the two blocks as shown in Figure 16. EC Otago personnel collected one sample from each location, as described below, on November 3rd, 2015. Samples were collected from the top 10cm of the site soils.

As noted above, a disused UST was discovered during the site inspection and sampling. Sample location 1 was relocated ad-hoc to the filling point precinct as a result however this will only address possible surface spillage and not leakage from the tank. The tank itself will need to be subject of a separate investigation when it is removed.

Information about the site indicates that HAIL associated use has occurred, hence HAIL compounds associated with this use were chosen for analysis (as outlined in Section 2.7). The relevant HAIL Codes (A1. Agrichemicals including commercial premises used by spray contractors for filling, storing or washing out tanks for agrichemical application; A10. Persistent pesticide bulk storage or use including sport turfs, market gardens, orchards, glass houses or spray sheds; A17. Storage tanks or drums for fuel, chemicals or liquid waste) are associated with a wide group of analytes, per the MfE Guideline. However, this list is intended to cover the widest range of contaminants. This site has been used for the horticulture and for limited fuelling and storage of vehicles used on the property. The range of analytes was selected to

According to the original plan, four samples were analysed individually and fifteen were composited (n=3) into five samples in the laboratory. The method of analysis scheduled for the contaminants of interest, as well as limits of detection and other relevant details, are included in the results for certified analysis, are summarised in Table 2 and presented in full in Appendix D.



4.3 Sampling Methods

All shallow soil samples were collected with a freshly gloved hand from sods dug with a spade from the top 10cm of the site soil. Clean contaminant free containers provided by the testing laboratory were filled with soil samples and placed into a chilly bin cooled with icepacks immediately. During sampling, photographic logs were taken of samples collected including their date and time of collection and their location was recorded on a field sampling plan. Containers labelled with sample name, date and time on both label and lid as samples are taken. Chain of custody forms were completed during field operations, and samples were dispatched to the analytical laboratory on the day of collection.

5 Results from Sampling and Analysis

5.1 Soil Acceptance Criteria

As part of the process of assessing risk from potential contaminants, results from analysis must be compared to Soil Guideline Values (SGVs), which reflect appropriate levels of contamination in soil for different use scenarios⁵). The site investigated here is zoned as a mix of Rural and Residential by the Dunedin City Council, and though the part fronting Formby Road is intended for development for Residential use, the mixed zonation requires the more conservative Rural-Residential (25% produce consumption) standard be applied. For some analytes, the MfE has not established SGVs; in the case, SGVs from another source may be used according to an established hierarchy specified by the MfE⁶. For all analytes or contaminants recognized as so-called priority contaminants by the MfE, i.e. contaminants with a high or specific toxicity of concern, recently developed Soil Contaminants Standards (SCSs) that are targeted to human health risks in a New Zealand context must be used. All of the analytes considered herein have an applicable SCS.

5.2 Results of Analysis

Results for analysis for heavy metals and DDT (all isomers) are given in Table 2 below. The results for the remaining OCNP results have not been included as all were at or below the limit of detection. A copy of the certified lab results is given in Appendix D. All results are well below the relevant acceptance criteria. A low level of DDT is present across both blocks and cadmium is present at a slightly elevated level likely as a result of the application of cadmium contaminated phosphate fertilisers and lead at Sampling site 1 is very slightly above the lead results from the remainder of the site which indicates that fuel dispensing from the UST may have had some localised effect in the vicinity of the tank.

⁵ <https://www.mfe.govt.nz/publications/rma/proposed-nes-managing-contaminants-in-soil/page8.html>

⁶ <http://www.mfe.govt.nz/publications/hazardous/contaminated-land-mgmt-guidelines-no2/>

Table 2 Summary of laboratory results from soils analysis.¹

Sample:	Arsenic	Cadmium	Lead	Mercury	DDT/Isomers
1 (<10cm)	5	0.21	27	<0.10	0.08
2 (<10cm)	7	0.21	13.3	<0.10	0.25
3 (<10cm)	8	0.25	15.2	<0.10	0.38
4A-C (<10cm)	7	0.17	11.8	<0.10	0.19
5A-C (<10cm)	6	0.18	12.5	<0.10	0.25
6A-C (<10cm)	6	0.15	12.9	<0.10	0.17
7 (<10cm)	6	0.23	13.7	<0.10	0.27
8A-C (<10cm)	7	0.17	11.6	<0.10	0.34
9A-C (<10cm)	6	0.17	11.1	<0.10	0.25
SCS - Rural Residential +25% produce consumption	17 ²	0.8 ²	160 ²	200 ²	45 ²

1. All results in mg/kg. Locations for samples are given in Figure 16, and values in parentheses are the sampling depth.
2. MfE, 2012. Users' Guide, National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health. Wellington.

6 Site Characterisation

6.1 Type of Environmental Contamination

Sampling and analysis for most applicable HAIL contaminants was conducted, and there is no evidence from this of contamination being present in the site soils by the terms of the New Zealand NES. An important caveat to this is that the UST and vicinity thereof has not been investigated, and therefore the disposition of hydrocarbon contaminants that might potentially result from this fuel storage activity are unknown.

6.2 Extent of Environmental Contamination

As no evidence of contamination was found for most applicable HAIL activities, per the approach to assess same as stipulated by the MfE and discussed above, the extent of contamination at site is non-applicable, however, comments in Section 6.1 caveating the UST apply.

6.3 Potential for Degradation or Interaction

Nonapplicable, in accord with comments in subsection 6.2 above except for the comments in Section 6.1 caveating the UST.

6.4 Exposure Routes and Risks to Exposed Populations

A source of contamination is a prerequisite to development of a conceptual site model. This investigation found no evidence on which to base or justify a supposition of contamination at this site for most of the applicable HAIL uses. However, due to the discovery of the UST at site, there is one HAIL use that remains uninvestigated.

7 Conclusions and Recommendations

7.1 Summary and Conclusions

Environmental Consultants Otago Ltd preliminary investigation is summarised as follows:

- Historical evidence of HAIL land use is confirmed as follows:
 - A1. Agrichemicals including commercial premises used by spray contractors for filling, storing or washing out tanks for agrichemical application.
 - A10. Persistent pesticide bulk storage or use including sport turfs, market gardens, orchards, glass houses or spray sheds
 - A17. Storage tanks or drums for fuel, chemicals or liquid waste.
- No record of previous sampling or analysis was found, and one round of sampling and analysis was performed in the course of this investigation;
- Nineteen soil samples were collected at nineteen locations representing the shallow (<10cm) soils across the site, and these were analysed for arsenic, mercury cadmium and lead and the full pesticide suite.
- There were no instances of any of the analytes approaching or exceeding the Rural-Residential + 25% food production (most conservative) criteria.
- During the site inspection, it was discovered that there is an UST at the Formby Street part of the site; the presence of the UST had not been uncovered during the desk-top study, and hence it was not possible to perform ad hoc alterations of the sampling and analysis plan to investigate the disposition of contamination to soil that might have arisen in the past from the UST. As such, the site is not fully investigated and caveats apply, as noted below.
- Refractory hydrocarbon spillage was also noted at the Allanton Road portion of the site during the site inspection; it would be a suitable precaution to verify the hydrocarbons status of this area via soil testing at such time that the UST is investigated, and prior to full site development.

7.2 Recommendations

Based on the findings herein, EC Otago recommends that, with respect to the disposition of contamination at the site, the proposed development activity may be undertaken with provisos as follows:

- The UST at 99 Formby Street will need to be removed prior to any residential subdivision and a tank removal investigation would need to be conducted at that time.
- The diesel tank and its immediate surrounds at 498 Allanton Road exhibit signs of diesel contamination, and this area and the immediate locale of the sheds would warrant further soil testing to verify that the most toxic fraction of persistent hydrocarbons do not exceed permissible levels at such time as the sheds and tank are to be removed.

Appendix A: Certificates of Title



COMPUTER FREEHOLD REGISTER UNDER LAND TRANSFER ACT 1952 Limited as to Parcels

Search Copy



R. W. Muir
Registrar-General
of Land

Identifier **OT264/53**
Land Registration District **Otago**
Date Issued 20 January 1934

Prior References DI W644

Estate	Fee Simple
Area	3.6422 hectares more or less
Legal Description	Part Section 1 Block V West Taieri Survey District

Proprietors
Lynda May Lin Choie and Nie Sun Wan

Interests

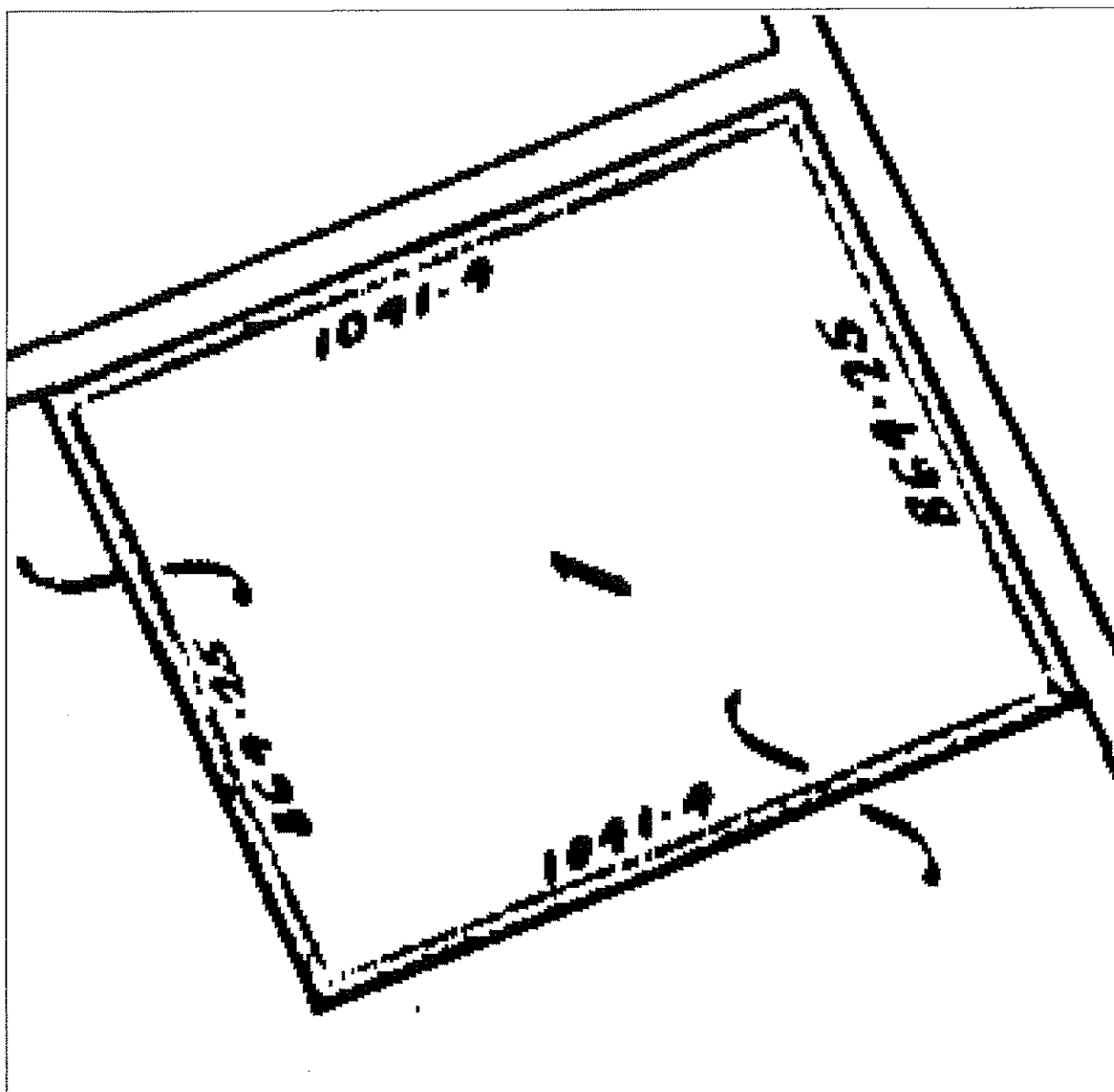
2782 Order in Council exempting the roads fronting the above described land from the provisions of Section 117 of The Public Works Act 1908 - 4.5.1915 at 10.00 am

2781 Order in Council exempting the roads fronting the above described land from the provisions of Section 117 of The Public Works Act 1908 - 4.5.1915 at 10.00 am

978418.4 Mortgage to The National Bank of New Zealand Limited - 16.11.1999 at 3.20 pm

Identifier

OT264/53





COMPUTER FREEHOLD REGISTER UNDER LAND TRANSFER ACT 1952



Search Copy


R.W. Muir
Registrar-General
of Land

Identifier **OT370/243**
Land Registration District **Otago**
Date Issued 30 March 1954

Prior References
OT264/54

Estate	Fee Simple
Area	1.6389 hectares more or less
Legal Description	Lot 2 Deposited Plan 7816

Proprietors

Lynda May Lin Choie and Nie Sun Wan

Interests

2781 Order in Council exempt Formby Street frontage from the provisions of Section 128 Public Works Act 1928 - 4.5.1915 at 10.00 am

2782 Order in Council exempt Formby Street frontage from the provisions of Section 128 Public Works Act 1928 - 4.5.1915 at 10.00 am

978418.4 Mortgage to The National Bank of New Zealand Limited - 16.11.1999 at 3.20 pm

LAND TRANSFER ACT, 1915. L.C.S. N31

Land Transfer Office
Received: 18/16
Title Ref. 18/16/100
Referred to Draughtsman, J. E. R. B.
O.T.C. 1781 17/16 exempt
for in by 18

I hereby consent to the northern and western boundaries as existing hereto
— Donaldson —
Date 18/16/1953

Deposited this 18/16 day
of January 1954
District Land Registrar

Total Area - 4a.3r.3673p.

Approved Survey
Chief Surveyor
L.T. Draughtsman
Received: 17/16/54
Reference plan 18/16/100
Field book 18/16/100
Examiners 18/16/100
Recorded 18/16/100
Correct 18/16/100

Subdn. of part of Section 1
Comprised in C.T. 264/54/100
SURVEY DIST. BLK. BLOCK V. WEST TRIER DISTRICT
LAND DIST. Otara LOCAL BODY. Outram Town Board
Scale: 80 links to an inch Surveyed by R.J.M. Lean Date June 1953
I, Robert John Lean, of Dunedin, Registered Surveyor and a holder of an actual practicing certificate, do solemnly and sincerely declare that this plan has been made from surveys carried by me, that both plan and survey are correct, and have been made in accordance with the regulations under the Surveyors Act, 1913.
And I make this solemn declaration conscientiously believing the same to be true and by virtue of the Oath of the Peace Act, 1917.
Declared at Dunedin this 18th day of January 1954
Before me: James R. B. Nichols
Justice of the Peace (or Solicitor or Notary Public)

Approved,
W. B. D. D.
Applicant (or Registered Owner)
7816



DUNEDIN CITY
COUNCIL
Kaunihera-a-rohe o Otago

Appendix B: DCC HAIL Property Report

50 The Octagon, PO Box 5045, Moray Place
Dunedin 9058, New Zealand
Telephone: 03 477 4000, Fax: 03 474 3488
Email: dcc@dcc.govt.nz
www.dunedin.govt.nz

13 November 2015

Environmental Consultants Otago Ltd
PO Box 5522
Dunedin 9058

Attn: Mr Claran Keogh

Dear Claran

HAIL-2015-101 99 Formby Street, Outram

Please find enclosed the results of the Hazardous Activities and Industries List (HAIL) Property Search lodged on 3 November 2015. This HAIL property search details the information which is documented on Council records for the site at 99 Formby Street, Outram. Please note the attached documentation only includes information that is available on the Council's records and the Council does not necessarily hold comprehensive records of the historic land use of this site.

The site is a possible HAIL site because of its use for horticultural purposes.

A10 – Persistent pesticide bulk storage or use.

It is recommended that further investigation of the historic land use be undertaken through other means including consulting with any former land owners and checking with the Otago Regional Council.

This information does not constitute a Preliminary Site Investigation in terms of the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011.

Yours sincerely

Phil Marshall
Senior Planner
474 3348

Phil Marshall

From: Chris Scott
Sent: Thursday, 5 November 2015 04:24 p.m.
To: Phil Marshall
Cc: Resource Consents Front Counter; Lea Reid
Subject: RE: HAIL-2015-101, 99 Formby Street Outram, HAIL application lodged
Attachments: 99 Formby 1952.jpg; 99 Formby 1970.jpg; 99 Formby 1974.jpg; 99 Formby 1990.jpg; 99 Formby 2000.jpg

** POSSIBLE HAIL SITE - SEE ATTACHED.*

Hi Phil,

I have examined the existing archival records relating to this site, and have found little evidence to suggest HAIL ~~activity~~ activity there. The address seems to have been used for horticultural purposes, and is adjacent to the former Willowbank Orchard situated on the opposite side of Formby Street.

The electricity supply records show brooder plugs connected to the house supply; structures visible in the 1952 aerial photo may be hen houses. In 1954 a supply was attached to a workshop on the property, which is recorded as having a portable electric welder in it.

The neighbouring property at 87 Formby Street appears to have existed by 1914, and appears to have been residential in character. Both 93 and 85 Formby Street appear to have horticultural uses according to the property records.

The available aerial photos are attached; if you require anything further, please let me know.

Regards,

Chris Scott
Archivist, Information Solutions
Dunedin City Council

50 The Octagon, Dunedin; PO Box 5045, Moray Place, Dunedin 9058, New Zealand

Telephone: 03 477 4000; Fax: 03 474 3694

Email: <mailto:chris.scott@dcc.govt.nz>; <http://www.dunedin.govt.nz> P Please consider the environment before printing this e-mail

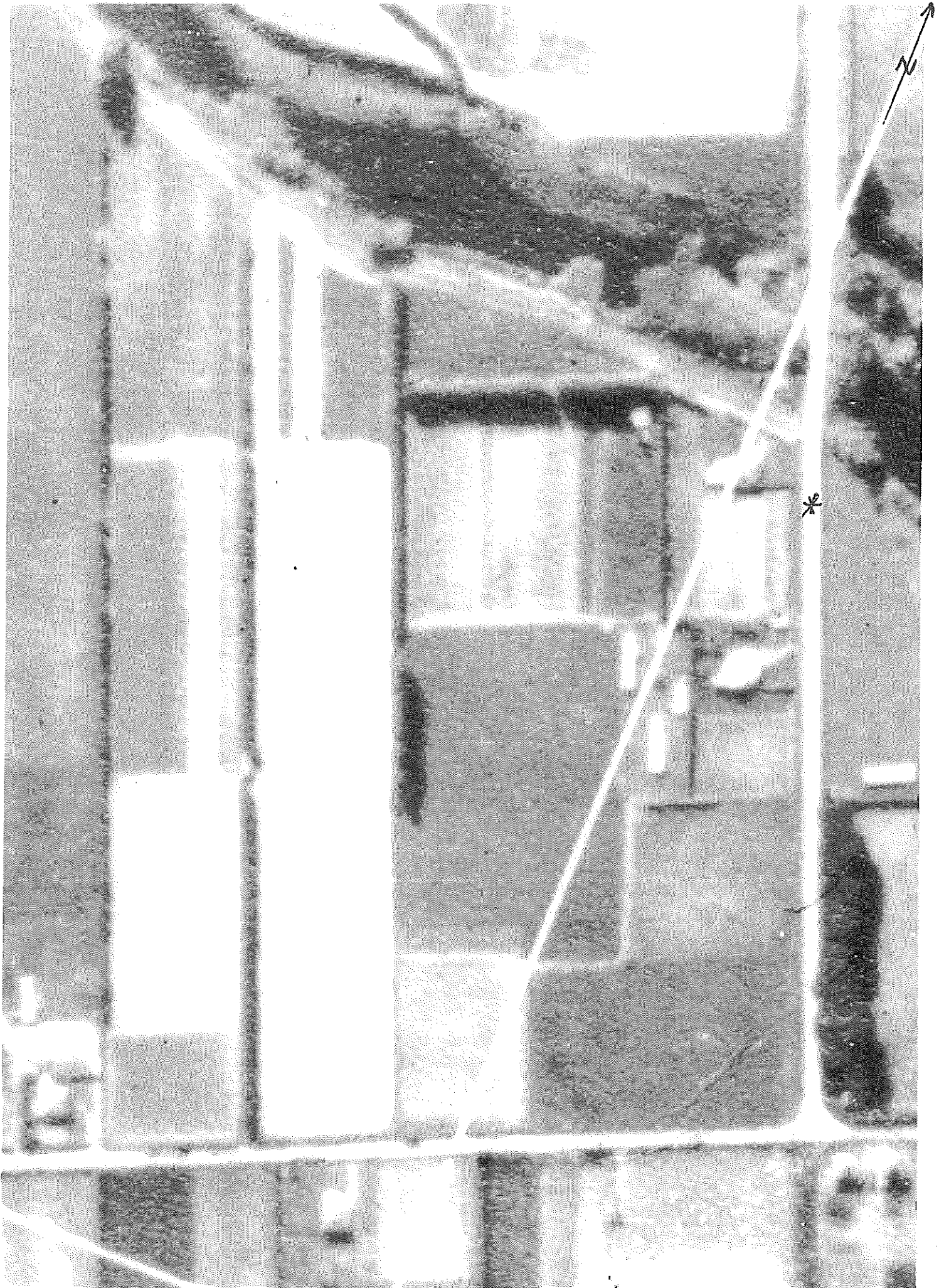
-----Original Message-----

From: Paula Myers
Sent: Wednesday, 4 November 2015 7:42 a.m.
To: Information Solutions - Archives
Subject: HAIL-2015-101, 99 Formby Street Outram, HAIL application lodged

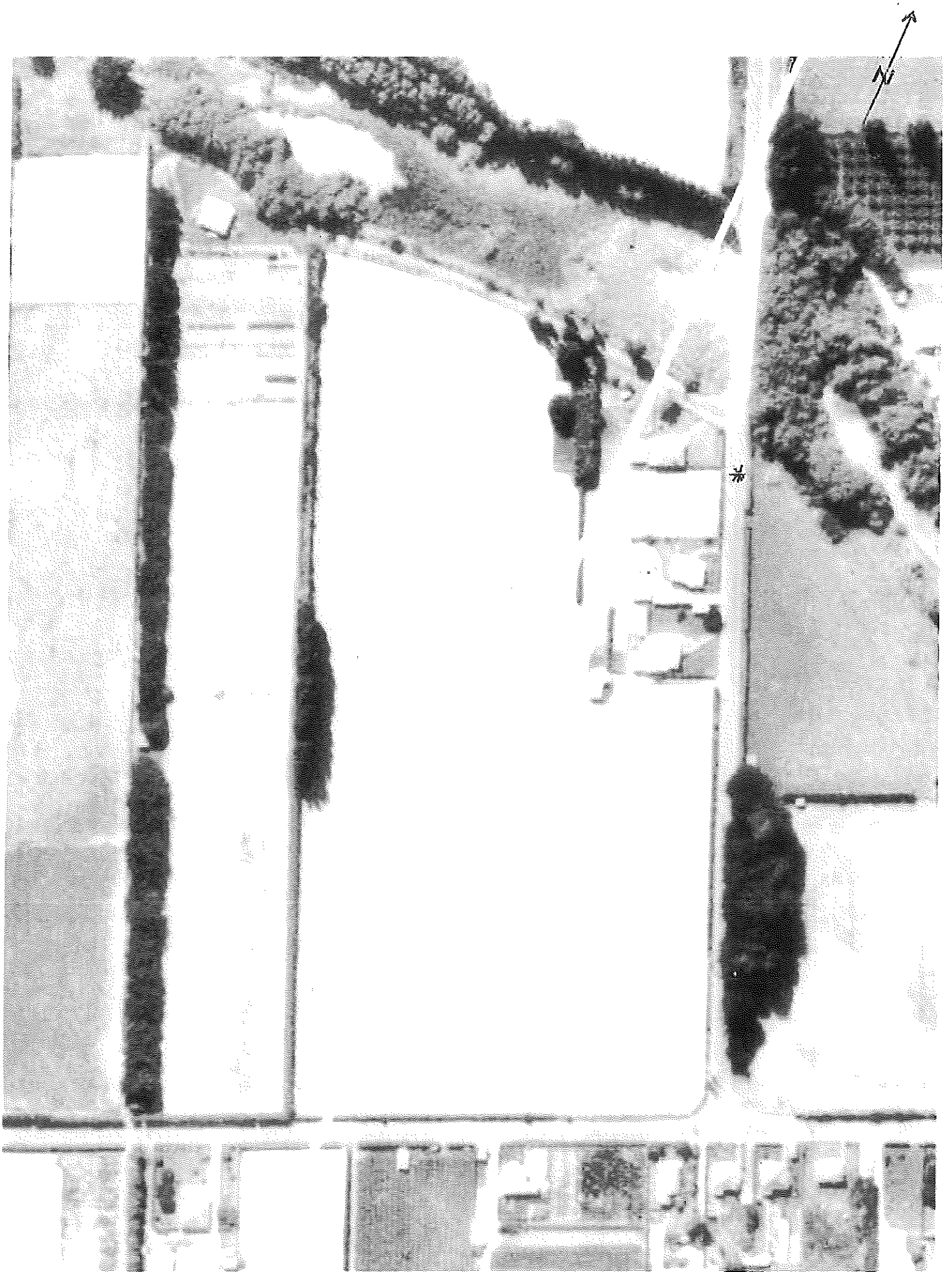
Please do the archival search

Additional Info:

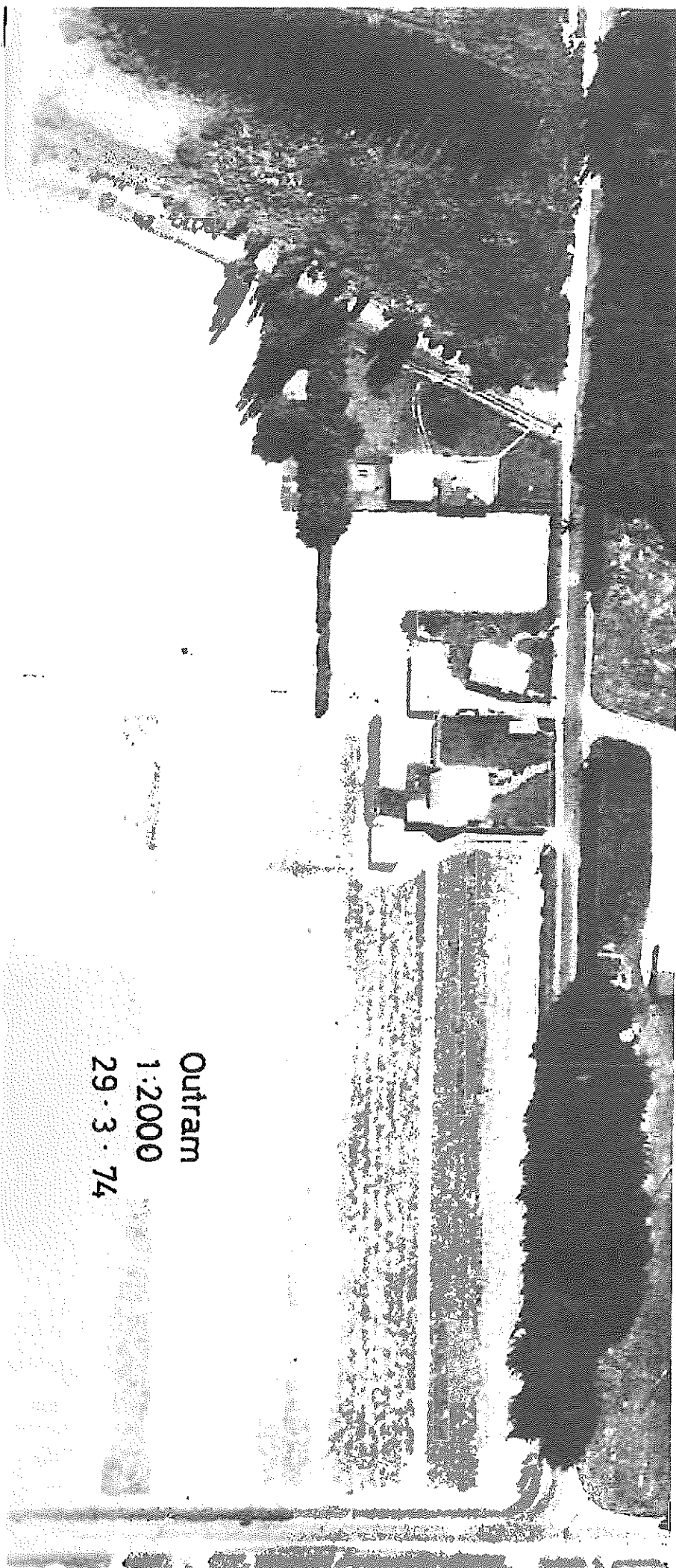
Attachment links to HAIL-2015-101, 99 Formby Street Outram



DATE 1952.

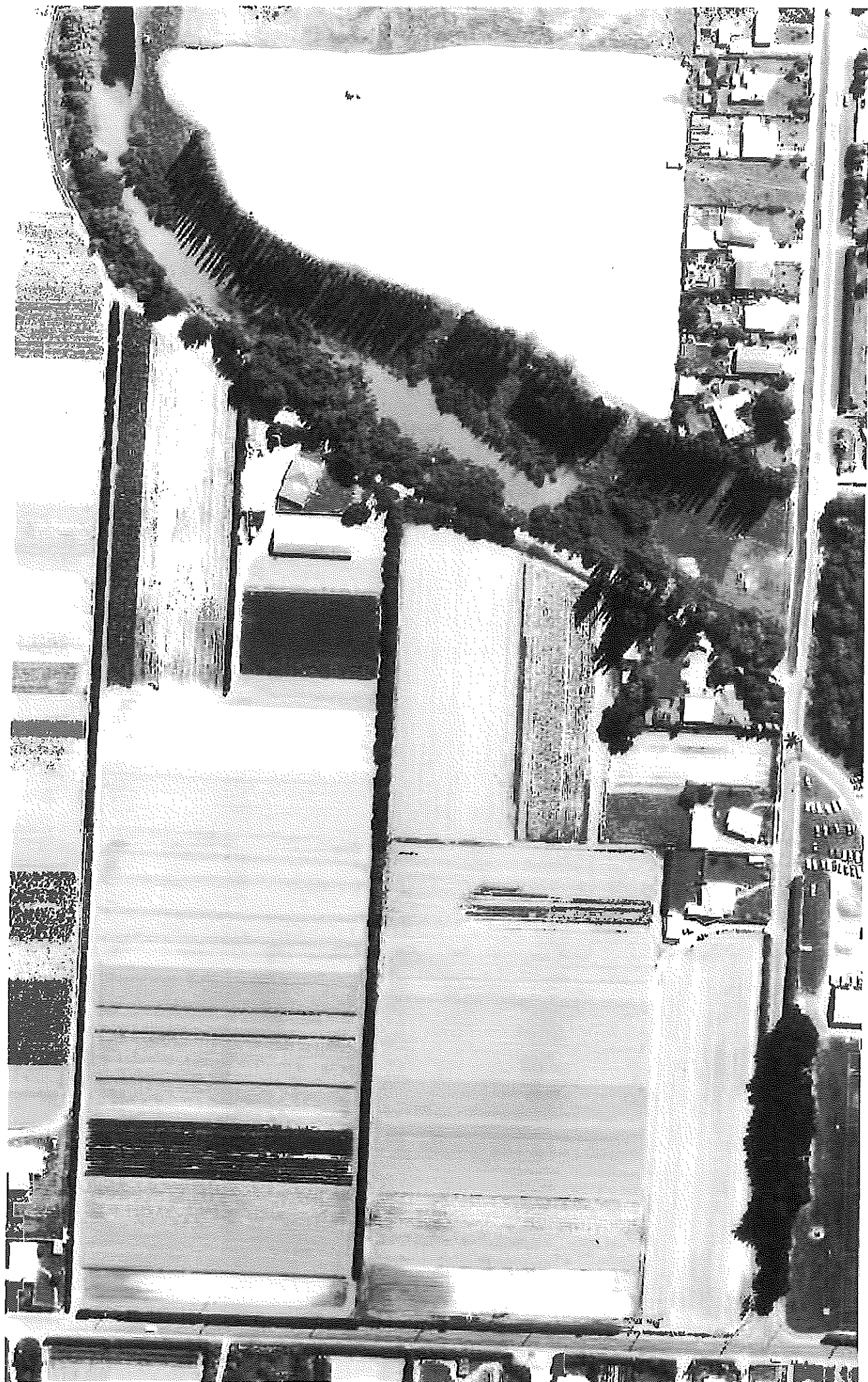


DATE 1970.



Outram
1:2000
29-3-74

DATE 1974.



DATE 1990.



DATE 2000.

POSSIBLE HAIL SITE

1. LOCATION DETAILS

Property Key: 5052493
Address: 99 Formby Street Outram

2. ASSESSMENT

Evidence Source: See attachments
HAIL Classification: A10.Persistent pesticide bulk storage or use
Choose second HAIL category if relevant
Choose third HAIL category if relevant
Existence: Still exists on site
Extent of HAIL: Presumed entire site
Contamination Status: Possible HAIL Site
Conclusion: Unverified HAIL Site

3. SPECIFIC FIELDS FOR DCC HAZARD INFORMATION MANAGEMENT SYSTEM (HIMS)

Precis: The history of land use on this site has been compared against the Ministry for the Environment's Hazardous Activities and Industries List (HAIL) dated October 2011. Information has been found that suggests an activity or industry described in the HAIL is or has been undertaken on the site; however, this information has not been fully assessed. The status of this site is Unverified HAIL Site.
Hazard: Contaminated Land
Class: Contaminated Land
Sub Class: Persistent pesticide bulk storage or use
Source: Preliminary HAIL Assessment completed 23 January 2015
Risk: Potential
Notes: nil

4. SIGNOFF

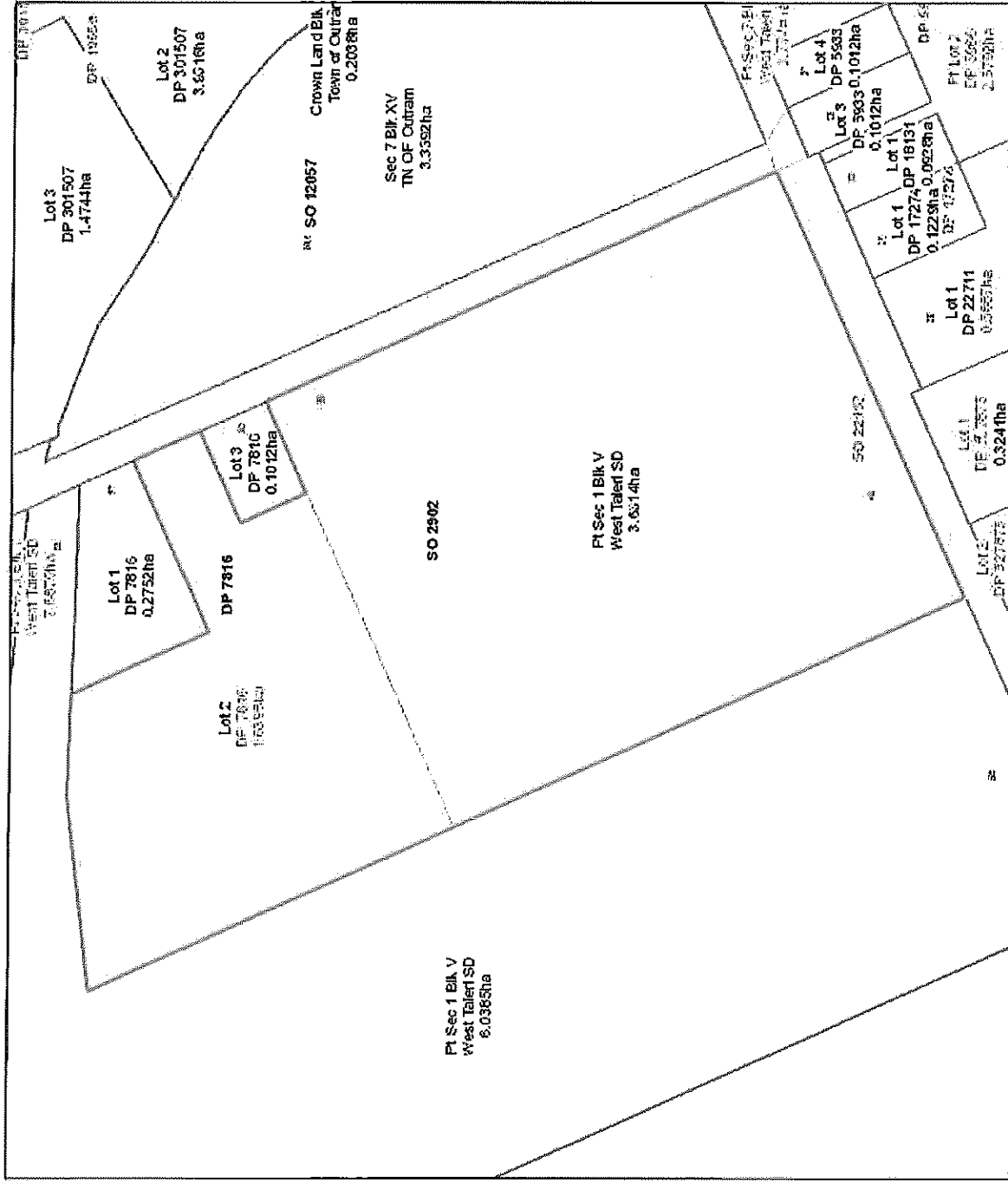
Completed By: Peter Webb

Signature:



Date: 23/1/2015

Extent of possible HAIL activity shown in blue – Map only the outer extent of this in HIMS



Summary of information suggesting possible HAIL activity:

- Aerial photo from 1952 obtained from Archives
- Aerial photo from 1963 obtained from Archives
- Aerial photo from 2006/7 indicating market garden activity
- Aerial photo from 2013 indicating market garden activity
- Google Maps images from October 2012 showing crops
- Real estate listing from

http://webcache.googleusercontent.com/search?q=cache:eSofTfUfQ0cJ:www.pgqwire.co.nz/property.cfm%3FpropertyId%3D2726268%26origin%3Drealenz_co_nz+%&cd=6&hl=en&ct=clink&gl=nz showing current use as market garden

- Certificate of Title OT370/243 for Lot 2 DP 7816 listing owners' occupation as market gardener
- Certificate of Title OT264/53 for Pt Sec 1 Blk V West Taiari SD listing owners' occupation as market gardener

No information found confirming actual storage or use of persistent pesticides.

1952 aerial photo



1963 aerial photo



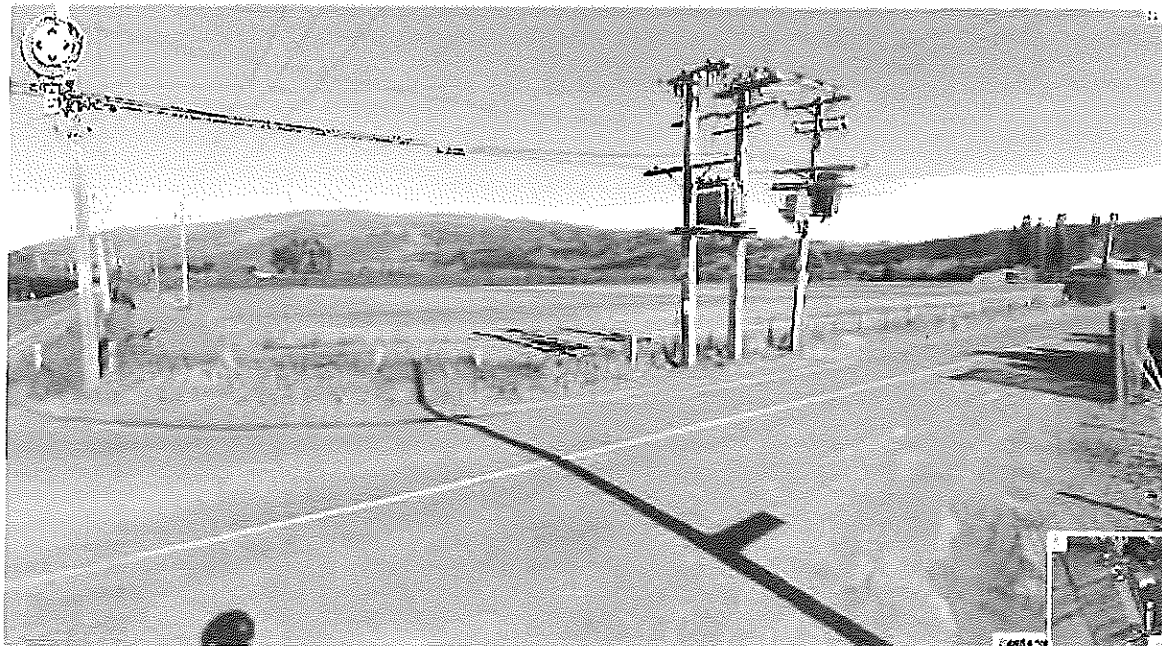
2006/7 aerial photo



2013 aerial photo



Google Maps images from October 2012

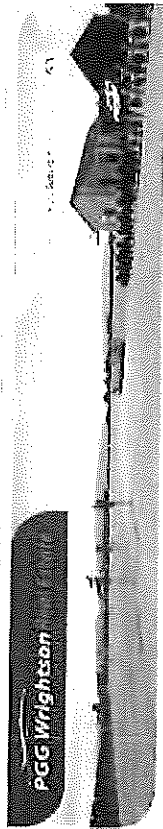


Real estate listing

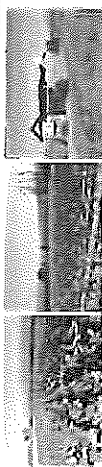
© 2009 Penny Street, Ltd. 100% PC & Windows® Real-time bandwidth limit and file size. New Code Windows Internet Explorer.

This is Google's cache of <http://www.foxnews.com/story/0,2933,144444,000000,00.html>. To quickly find your search term on this page, press Ctrl or ⌘ (Mac) and use the find bar.

It is a screenshot of the page as it appeared on Oct 20 16 10:56:57 GMT. The content might have changed in the meantime. Learn more

[illegible]

Yi Kung-shan "Keng-shan". OUTLINES.



Developers Dream Location:
Tender Closing 12pm Monday 10
November Plus GST, if applicable
For Sale

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[The following text is extremely faint and largely illegible due to poor scan quality. It appears to be a list or index of names and titles.]

1. The first of these is the fact that the majority of the population of the United States is now living in urban areas. This is a result of the process of urbanization, which has been going on since the beginning of the 20th century. The population of the United States has increased from about 100 million in 1900 to over 200 million in 1950, and the majority of this increase has been in urban areas. This has led to a concentration of population in a few large cities, which has in turn led to a number of problems, such as overcrowding, pollution, and traffic congestion.

... ..

$$1. \text{ 1990 } (2000 - 10) = 1000$$


6-22-78
 DEPT. OF AGRICULTURE
 WASHINGTON, D.C. 20250



1
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5
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7
8
9
10
11
12

Identifier

OT264/53

Map of New Zealand
by the
Geographical
Institute of New Zealand

NEW ZEALAND



CERTIFICATE OF TITLE UNDER LAND TRANSFER ACT.

REGISTERED: 14.10.1953

1. The Certificate, and the...
2. The Certificate, and the...
3. The Certificate, and the...

4. The Certificate, and the...
5. The Certificate, and the...
6. The Certificate, and the...

Block IV West Tailor's D

34. 01. 00.
EQUIVALENT METRIC
AREA 13.44.12



Scale: 1 inch = 100 feet

Identifier

OT264/53

1. The Certificate, and the...
2. The Certificate, and the...
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13. The Certificate, and the...
14. The Certificate, and the...
15. The Certificate, and the...

16. The Certificate, and the...
17. The Certificate, and the...
18. The Certificate, and the...

Building and Planning Consents for 99 Formby Street, Outram.

Building Application	EDMS	OK	Status	Description	Lodge Date
H-1983-283422 GEMS ID AAS19830757		✓	Historical Record	AAS19830757 B052995 - Install McKay Belmac heater into existing fireplace, plan (Chole)	05/10/1983
H-1971-275049 GEMS ID AAS19710245		✓	Historical Record	AAS19710245 C027992 - Erect implement shed, plan (Chole)	31/03/1971

Planning Application	Dwx	OK	Status	Description	Lodge Date	Applicant	LUC
HAIL-2015-101 GEMS ID			HAIL request lodged	99 Formby Street and 498 Allanton Road	03/11/2015	479884 Environmental Consultants Otago Limited	

RESOURCE CONSENTS WITHIN 50 METRES OF 99 FORMBY STREET OUTRAM

870 R Huntly Road Outram

[LUC-2013-513](#) Land Use Consent temporary signs for fundraising event (Mardi Gras). The outcome was Granted on 03/02/2014.

[RMA-1989-354627](#) Resource Management Act (Historical Data) SUBDIVISION SILVER PEAKS / App: D C C ELECTRICITY WORKS CONS.PR.BAG DN (Notified - Non Complying). The outcome was Declined on 14/12/1989.

5052478 82 Formby Street Outram

[SUB-2011-88](#) Subdivision Consent subdivision creating 3 lots. There has been no outcome yet.

[SUB-2001-364803](#) Subdivision Consent Stage 5. The outcome was Staged Subdivision on 29/06/2001.

[SUB-2001-364803](#) Subdivision Consent Stage 4. The outcome was Staged Subdivision on 29/06/2001.

[SUB-2001-364803](#) Subdivision Consent Stage 3. The outcome was Staged Subdivision on 29/06/2001.

[SUB-2001-364803](#) Subdivision Consent Stage 2. The outcome was Staged Subdivision on 29/06/2001.

[SUB-2001-364803](#) Subdivision Consent Stage 1. The outcome was Staged Subdivision on 29/06/2001.

[RMA-2006-370165](#) Resource Management Act (Historical Data) EXTENSION OF TIME FOR RMA20010131 & RMA20010132 (Other). The outcome was Granted on 19/05/2006.

[RMA-2000-364430](#) Resource Management Act (Historical Data) SUBDIVISION CREATING FIVE ALLOTMENTS (Non-Notified - Non Complying). The outcome was Granted on 11/12/2000.

[RMA-2001-364642](#) Resource Management Act (Historical Data) ESTABLISH MULTIPLE RESIDENTIAL UNITS SEE SUB FOR FEES (RMA 20010131) (Non-Notified - Non Complying). The outcome was Granted on 08/05/2001.

[RMA-2001-364641](#) Resource Management Act (Historical Data) UNIT TITLE SUBDIVISION see 20010295 (sec 357 obj)-water cond stgs1,2-units17,18&15,16;stg3-7,14,19;stg4- 6and8 (Non-Notified - Restricted Discretionary). The outcome was Granted on 08/05/2001.

RMA-2001-364803 Resource Management Act (Historical Data) OBJECTION TO CONDITION REQUIRING BACKFLOW PREVENTER ON WATER (Other). The outcome was Granted on 29/06/2001.

5052490 85 Formby Street Outram

RMA-1990-350571 Resource Management Act (Historical Data) Subdivision Ownr:GILMORE / App: K.G. Harford Private Bag (Non-Notified - Non Complying).

RMA-1989-350552 Resource Management Act (Historical Data) Subdivision Ownr:GILMORE / App: K.G. Harford Private Bag (Non-Notified - Non Complying).

5052497 25 Huntly Road Outram

RMA-1992-354936 Resource Management Act (Historical Data) ER GARAGE Ownr:HELLIWELL / App: HELLIWELL 32 HUNTLY RD OUTRAM (Non-Notified - Non Complying). The outcome was Granted on 01/04/1992.

5052526 53 Huntly Road Outram

RMA-2002-366090 Resource Management Act (Historical Data) SUBDIVIDE THE SUBJECT PROPERTY (Non-Notified - Non Complying). The outcome was Granted on 28/11/2002.

5052528 47 Huntly Road Outram

RMA-2005-368955 Resource Management Act (Historical Data) ACCESSORY BUILDING WITHIN THE REAR YARD (Non-Notified - Non Complying). The outcome was Granted on 11/05/2005.

RMA-2002-366090 Resource Management Act (Historical Data) SUBDIVIDE THE SUBJECT PROPERTY (Non-Notified - Non Complying). The outcome was Granted on 28/11/2002.

RMA-2002-366288 Resource Management Act (Historical Data) Sec 357 - objection to condition (3)(i) on 20020763 (Other). The outcome was Granted on 24/01/2003.

RMA-1998-361989 Resource Management Act (Historical Data) Erect dwelling on new lot 1 cheque/Mcarthurs Berry Farm Hazards Comments: (Notified - Non Complying). The outcome was Granted on 13/08/1998.

RMA-1998-361988 Resource Management Act (Historical Data) Boundary adjustment between C/Ts 316/184 and 15A/619 & erect dwelling on new lot 1. Hazards Comments: (Notified - Non Complying). The outcome was Declined on 13/08/1998.

5052529 39 Huntly Road Outram

RMA-1992-357625 Resource Management Act (Historical Data) Subdivision Boundary Adjustment Ownr:YOUNG T.J. / App: N.B. Pitts PO Box 1083 (Non-Notified - Non Complying). The outcome was Granted on 02/07/1992.

RMA-1989-354599 Resource Management Act (Historical Data) SUBDIVIDE LAND Ownr:PHILIP YOUNG / App: P YOUNG 81 HIGH ST, BULLS (Notified - Non Complying). The outcome was Granted on 29/06/1989.

RMA-1993-355152 Resource Management Act (Historical Data) Ownr:YOUNG / App: PATERSON PITTS (Non-Notified - Non Complying). The outcome was Granted on 12/06/1993.

RMA-1995-350521 Resource Management Act (Historical Data) Subdivision Ownr:YOUNG P. / App: P.M. Haddon PO Box 235 (Non-Notified - Non Complying). The outcome was Granted on 22/11/1989.

5052530 31 Huntly Road Outram

RMA-1993-355813 Resource Management Act (Historical Data) ER DWG IN ASSOC WITH HORT OPERATION Ownr:R E DOHERTY / App: R E DOHERTY C/- COOK ALLAN GIBSON (Notified - Non Complying). The outcome was Granted on 20/10/1993.

5052707 39A Formby Street Outram

SUB-2014-69 Subdivision Consent subdivision creating 37 lots. The outcome was Granted on 16/09/2014.

RMA-1989-350535 Resource Management Act (Historical Data) Subdivision creating Lot 1 DP 21471 plus easement in favour of Lot 6 DP 15163 Ownr:GILMORE / App: K.G. Harford Private Bag (Non-Notified - Non Complying). The outcome was Granted on 05/03/1990.

5069447 81 Formby Street Outram

RMA-2000-363855 Resource Management Act (Historical Data) TO RELOCATE A DWELLING (Non-Notified Controlled). The outcome was Granted on 05/04/2000.

RMA-1995-358542 Resource Management Act (Historical Data) Subdivision Stage 1 & Consent N Sealed 2/10/97 Hazard : CONSENT NOTICE FOR BUILDING PLATFORMS (Non-Notified - Non Complying). The outcome was Granted on 09/09/1996.

RMA-1989-350535 Resource Management Act (Historical Data) Subdivision creating Lot 1 DP 21471 plus easement in favour of Lot 6 DP 15163 Ownr:GILMORE / App: K.G. Harford Private Bag (Non-Notified - Non Complying). The outcome was Granted on 05/03/1990.

5104930 102 Formby Street Outram

RMA-1992-354876 Resource Management Act (Historical Data) LIQUOR LICENCE/EXT HOURS Ownr:DUNEDIN CITY COUNCIL / App: WEST TAIERI RUGBY CL BOX 143 DUNEDIN (Non-Notified - Non Complying). The outcome was Granted on 16/04/1992.



Holt Place, Hastings
Private Bag 9007
Hastings 4156, New Zealand

T 64 6 878 7125
F 64 6 876 0757
W www.asurequality.com

QA01007
Spring Gardens
99 Formby Street
OUTRAM 9019

Appendix C: Assure Quality Pesticide Residue Analysis (Oct 2015)

28th October 2015

Dear Lynda

As part of the NZGAP Programme, random samples of Approved Suppliers produce are collected from wholesale markets and subjected to a Standard Pesticide Screen by GC-MS/MS & LC-MS/MS (PS-MRGL02/01-GC_Default).

A sample of your produce was recently collected as part of this programme.

Results of the test on your produce are as follows:

Market	Grower	Date of Sample	Product	Grade	Result (mg/kg)	Maximum residue level (mg/kg)
MG Marketing – Dunedin	Spring Gardens 01007	21/10/15	Cabbage – Line No: M664:8602	Tag 1	No residues detected	N/A

These results indicate that the levels of residue detected are below the MRL's set.

This is an acceptable result.

Attached is a copy of the Laboratory Certificate of Analysis for your reference.

Thank you for your support of this New Zealand GAP quality programme.

Yours sincerely

Greg Hodges
NZGAP Programme Manager
AssureQuality Limited

Certificate of Analysis

Submission Reference: NZGOCT1505
Final ReportGreg Hodges
AsureQuality Ltd Hastings - NZGAP
PO Box 9007
Hastings 4156
New Zealand

PO Number: NZGOCT1505

Report issued: 28-Oct-2015

AsureQuality Reference: 15-155854

Sample(s) Received: 22-Oct-2015 08:00

Results

The tests were performed on the samples as received.

Customer Sample Name: NZGOCT1505
Sample Type: (Cabbage - Green Cabbage) **AsureQuality ID:** 15-155854-1**Batch No./Grade:** Tag 1 **Sample Condition:** Acceptable **PPIN/Block/Run No.:** M664:8602 MG
21 grower
Grower Name: Spring Garden **RPIN/Grower No.:** 01007 **Market Name:** MG Marketing Dunedin
Market No.: 00234

Test	Result	Unit	Method Reference
Multiresidue Pesticides In Fruit and Vegetables by GC-MS/MS and LC-MS/MS - AsureQuality method (GC-MS/MS + LC-MS/MS)			

No residues were detected.

Analysis Summary

Wellington Laboratory

Analysis	Method	Accreditation	Authorised by
Multiresidue Pesticides In Fruit and Vegetables by GC-MS/MS and LC-MS/MS			
PS-MRGL02, 01-DEFAULT	AsureQuality method (GC-MS/MS + LC-MS/MS)	IANZ	Andrew Steedman

Andrew Steedman
Scientist

Accreditation

Wellington Laboratory



AsureQuality has used reasonable skill, care, and effort to provide an accurate analysis of the sample(s) which form(s) the subject of this report. However, the accuracy of this analysis is reliant on, and subject to, the sample(s) provided by you and your responsibility as to transportation of the sample(s). AsureQuality's standard terms of business apply to the analysis set out in this report.

Appendix

Analyte LOR Summary

Multiresidue Pesticides In Fruit and Vegetables by GC-MS/MS and LC-MS/MS - AsureQuality method (GC-MS/MS + LC-MS/MS)

Analyte	LOR (mg/kg)	Analyte	LOR (mg/kg)	Analyte	LOR (mg/kg)
Abamectin	0.010	Acephate	0.010	Acetamiprid	0.010
Acetochlor	0.010	Acibenzolar acid	0.010	Acibenzolar-S-methyl	0.010
Acrinathrin	0.010	Alachlor	0.010	Aldrin	0.010
Allidochlor	0.010	Ametoctradin	0.010	Ametryn	0.010
Anillofos	0.010	Anthraquinone	0.010	Atrazine	0.010
Azaconazole	0.010	Azinphos-methyl	0.010	Azoxystrobin	0.010
Benalaxyl	0.010	Bendiocarb	0.010	Benfluralin	0.010
Benodanil	0.010	Benoxacor	0.010	Benzalkonium chloride ^(b)	0.010
BifenoX	0.010	Bifenthrin	0.010	Bioresmethrin	0.010
Bitertanol	0.010	Boscalid	0.010	Bromacil	0.010
Bromobutide	0.010	Bromophos	0.010	Bromophos-ethyl	0.010
Bromopropylate	0.010	Bupirimate	0.010	Buprofezin	0.010
Butachlor	0.010	Butafenacil	0.010	Butamifos	0.010
Cadusafos	0.010	Captan	0.020	Carbaryl	0.010
Carbendazim ^(b)	0.010	Carbofuran	0.010	Carboxin	0.010
Carfentrazone-ethyl	0.010	Chlorantraniliprole	0.010	cis-Chlordane	0.010
trans-Chlordane	0.010	Chlorfenapyr	0.010	Chlorfenvinphos	0.010
Chloridazon	0.010	Chlorobenzilate	0.010	Chlorothalonil	0.010
Chlorpropham	0.010	Chlorpyrifos	0.010	Chlorpyrifos-methyl	0.010
Chlorthal-dimethyl	0.010	Chlorthiophos	0.010	Chlzolinate	0.010
Clethodim	0.010	Clodinafop-propargyl	0.010	Clofentezine	0.010
Clomazone	0.010	Cloquintocet-mexyl	0.010	Clothianidin	0.010
Coumaphos	0.010	Cyanazine	0.010	Cyanophos	0.010
Cyflufenamid	0.010	Cyfluthrin	0.010	Cyhalofop-butyl	0.010
Cyhalothrin	0.010	Cymoxanil	0.010	Cypermethrin	0.010
Cyproconazole	0.010	Cyprodinil	0.010	o,p'-DDD	0.010
p,p'-DDD	0.010	o,p'-DDE	0.010	p,p'-DDE	0.010
o,p'-DDT	0.010	p,p'-DDT	0.010	Deltamethrin	0.010
Demeton-S-methyl	0.010	Diazinon	0.010	Dichlobenil	0.010
Dichlofenthion	0.010	Dichlofluanid	0.010	Dichlorvos	0.010
Diclobutrazol	0.010	Diclofop-methyl	0.010	Dicloran	0.010
Dicofol	0.010	2,4'-Dicofol	0.010	Dicrotophos	0.010
Didecyldimethylammonium chloride	0.010	Dieldrin	0.010	Diethofencarb	0.010
Difenoconazole	0.010	Diflubenzuron	0.010	Diflufenican	0.010
Dimepiperate	0.010	Dimethenamid	0.010	Dimethoate	0.010
Dimethomorph	0.010	Dimethylvinphos	0.010	Dioxabenzofos	0.010
Diphenamid	0.010	Diphenylamine	0.010	Disulfoton	0.010
Dithiopyr	0.010	Diuron	0.010	Dodine	0.010
Edifenphos	0.010	Emamectin	0.010	α-Endosulfan	0.010
β-Endosulfan	0.010	Endosulfan sulfate	0.010	Endrin	0.010
Endrin ketone	0.010	EPN	0.010	Epoxiconazole	0.010

Multiresidue Pesticides in Fruit and Vegetables by GC-MS/MS and LC-MS/MS - AsureQuality method (GC-MS/MS + LC-MS/MS) - continued...

Analyte	LOR (mg/kg)	Analyte	LOR (mg/kg)	Analyte	LOR (mg/kg)
EPTC	0.010	Esprocarb	0.010	Ethalfuralin	0.010
Ethiofencarb	0.010	Ethion	0.010	Ethofumesate	0.010
Ethoprophos	0.010	Ethoxyquin	0.020	Etiozazole	0.010
Etridiazole	0.010	Etrinfos	0.010	Famphur	0.010
Fenamidone	0.010	Fenamiphos	0.010	Fenarimol	0.010
Fenbuconazole	0.010	Fenchlorphos	0.010	Fenhexamid	0.010
Fenitrothion	0.010	Fenobucarb	0.010	Fenoxanil	0.010
Fenoxaprop-ethyl	0.010	Fenoxycarb	0.010	Fenpiclonil	0.010
Fenpropathrin	0.010	Fenpropimorph	0.010	Fenpyroximate	0.010
Fensulfothion	0.010	Fenthion	0.010	Fenthion-ethyl	0.010
Fenvalerate	0.010	Fipronil	0.010	Fipronil sulfide	0.010
Fipronil sulfone	0.010	Flamprop-methyl	0.010	Fluacrypyrim	0.010
Fluazifop-P-butyl	0.010	Flucythrinate	0.010	Fludioxonil	0.010
Flumiclorac-pentyl	0.010	Flumioxazin	0.010	Fluopicolide	0.010
Fluquinconazole	0.010	Flusilazole	0.010	Flutolanil	0.010
Flutriafol	0.010	Fluvalinate	0.010	Folpet	0.020
Fonofos	0.010	Forchlorfenuron	0.010	Formetanate hydrochloride	0.010
Fosthiazate	0.010	Furalaxyl	0.010	Furathiocarb	0.010
Haloxypop-etotyl	0.010	Haloxypop-methyl	0.010	α -HCH	0.010
β -HCH	0.010	Lindane (γ -HCH)	0.010	δ -HCH	0.010
Heptachlor	0.010	Heptachlor endo-epoxide	0.010	Heptachlor exo-epoxide	0.010
Heptenophos	0.010	HCB	0.010	Hexaconazole	0.010
Hexazinone	0.010	Hexythiazox	0.010	Imazalil	0.010
Imidacloprid	0.010	Indoxacarb	0.010	Iprobenfos	0.010
Iprodione	0.010	Iprovalicarb	0.010	Isazofos	0.010
Isofenphos	0.010	Isoprocab	0.010	Isoprothiolane	0.010
Isopyrazam	0.010	Jodfenphos	0.010	Kresoxim-methyl	0.010
Lactofen	0.010	Leptophos	0.010	Linuron	0.010
Lufenuron	0.010	Malathion	0.010	Mandipropamid	0.010
Mepronil	0.010	Metaxyl	0.010	Methabenzthiazuron	0.010
Methacrifos	0.010	Methamidophos	0.010	Methidathion	0.010
Methiocarb	0.010	Methomyl	0.010	Methoxychlor	0.010
Methoxyfenozide	0.010	Metolachlor	0.010	Metrafenone	0.010
Metribuzin	0.010	Mevinphos	0.010	Milbemycin A3	0.010
Milbemycin A4	0.010	Mirex	0.010	Molinate	0.010
Napropamide	0.010	Myclobutanil	0.010	Nitrothal-isopropyl	0.010
Nitrofen	0.010	Norflurazon	0.010	Novaluron	0.010
Oryzalin	0.010	Ocethillone	0.010	Oxadixyl	0.010
Oxadiazon	0.010	Oxamyl	0.010	Oxyfluorfen	0.010
Paclobutrazol	0.010	Parathion	0.010	Penconazole	0.010
Parathion-methyl	0.010	Pencycuron	0.010	Pendimethalin	0.010
Penthiopyrad	0.010	PeCB	0.010	Phenthoate	0.010
Permethrin	0.010	2-Phenylphenol	0.010	Phorate	0.010
Phorate sulfone	0.010	Phorate sulfoxide	0.010	Phosmet	0.010
Phosalone	0.010	Phosphamidon	0.010	Picolinafen	0.010

Multiresidue Pesticides in Fruit and Vegetables by GC-MS/MS and LC-MS/MS - AsureQuality method (GC-MS/MS + LC-MS/MS) - continued...

Analyte	LOR	Analyte	LOR	Analyte	LOR
	(mg/kg)		(mg/kg)		(mg/kg)
Piperonyl butoxide	0.010	Piperophos	0.010	Pirimiphos-methyl	0.010
Pirimicarb	0.010	Pretilachlor	0.010	Prochloraz	0.010
Profenofos	0.010	Procymidone	0.010	Promecarb	0.010
Prometryn	0.010	Propargite	0.010	Propachlor	0.010
Propetamphos	0.010	Propazine	0.010	Propham	0.010
Propiconazole	0.010	Propoxur	0.010	Propyzamide	0.010
Prothiofos	0.010	Proquinazid	0.010	Pymetrozine	0.010
Pyraclufos	0.010	Pyraclostrobin	0.010	Pyraflufen-ethyl	0.010
Pyrethrins	0.010	Pyrazophos	0.010	Pyridaben	0.010
Pyributicarb	0.010	Pyrimethanil	0.010	Pyridaphenthion	0.010
Pyrimidifen	0.010	(E)-Pyriminobac-methyl	0.010	Pyriproxyfen	0.010
(Z)-Pyriminobac-methyl	0.010	Quinoclamine	0.010	Quinalphos	0.010
Quinoxifen	0.010	Quintozene	0.010	Quizalofop-ethyl	0.010
Sebuthylazine	0.010	Simazine	0.010	Sethoxydim	0.010
Simeconazole	0.010	Simetryn	0.010	Spinetoram	0.010
Spinosad	0.010	Spiromesifen enol	0.010	Spiromesifen	0.010
Spirotetramat enol	0.010	Spirotetramat	0.010	Spirotetramat-keto-hydroxy	0.010
Spirotetramat enol-glucoside	0.010	Spirotetramat-mono-hydroxy	0.010	Sulfentrazone	0.010
Tebuconazole	0.010	Tebuconazole	0.010	Tecnazene	0.010
Tebuconazole	0.010	Tefluthrin	0.010	Tepraloxymid	0.010
Terbacil	0.010	Terbufos	0.010	Terbutryn	0.010
Terbutylazine	0.010	Tetrachlorvinphos	0.010	Tetraconazole	0.010
Tetradifon	0.010	THPI	0.020	Thiabendazole	0.010
Thenylchlor	0.010	Thiamethoxam	0.010	Thiacloprid	0.010
Thiometon	0.010	Thiobencarb	0.010	Tolclofos-methyl	0.010
Tolylfluanid	0.010	Transfluthrin	0.010	Tralkoxydim	0.020
Triadimenol	0.010	Triadimefon	0.010	Tri-allate	0.010
Triazophos	0.010	Tribufos	0.010	Trichlorfon	0.010
Triflurufen	0.010	Trifloxystrobin	0.010	Trifluralin	0.010
Trifluralin	0.010	Trifluoromethyl	0.010	Uniconazole	0.010
XMC	0.010	Vinclozolin	0.010		

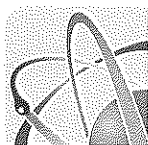
^(a)Benzalkonium chloride = sum of benzyldimethyldodecylammonium chloride, benzyldimethyldodecylammonium chloride, benzyldimethyltetradecylammonium chloride, benzyldimethylhexadecylammonium chloride and benzyldimethyloctadecylammonium chloride

Carbendazim = includes benomyl, thiophanate and thiophanate-methyl

LOR = Limit of Reporting

LOD = Limit of Detection

NR = Not Reportable



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BETTER TESTING BETTER RESULTS

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Appendix D: Hill Laboratories Analysis Results

Page 1 of 4

Client:	Environmental Consultants Otago Limited	Lab No:	1496176	SPv1
Contact:	Ciaran Keogh	Date Registered:	04-Nov-2015	
	C/- Environmental Consultants Otago Limited	Date Reported:	11-Nov-2015	
	PO Box 5522	Quote No:	72516	
	Moray Place	Order No:		
	DUNEDIN 9058	Client Reference:	Formby	
		Submitted By:	Ciaran Keogh	

Sample Type: Soil						
Sample Name:		1 02-Nov-2015 10:55 am	2 02-Nov-2015 10:32 am	3 02-Nov-2015 10:09 am	7 02-Nov-2015 12:12 pm	Composite of 4A, 4B and 4C
Lab Number:		1496176.1	1496176.2	1496176.3	1496176.13	1496176.20
Individual Tests						
Dry Matter	g/100g as rcvd	81	88	91	87	-
Total Recoverable Arsenic	mg/kg dry wt	5	7	8	6	7
Total Recoverable Cadmium	mg/kg dry wt	0.21	0.21	0.25	0.23	0.17
Total Recoverable Lead	mg/kg dry wt	27	13.3	15.2	13.7	11.8
Total Recoverable Mercury	mg/kg dry wt	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Organochlorine Pesticides Screening in Soil						
Aldrin	mg/kg dry wt	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
alpha-BHC	mg/kg dry wt	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
beta-BHC	mg/kg dry wt	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
delta-BHC	mg/kg dry wt	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
gamma-BHC (Lindane)	mg/kg dry wt	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
cis-Chlordane	mg/kg dry wt	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
trans-Chlordane	mg/kg dry wt	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Total Chlordane [(cis+trans)* 100/42]	mg/kg dry wt	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04
2,4'-DDD	mg/kg dry wt	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
4,4'-DDD	mg/kg dry wt	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
2,4'-DDE	mg/kg dry wt	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
4,4'-DDE	mg/kg dry wt	0.019	0.049	0.100	0.059	0.041
2,4'-DDT	mg/kg dry wt	< 0.010	0.015	0.022	0.017	0.012
4,4'-DDT	mg/kg dry wt	0.063	0.183	0.26	0.195	0.134
Total DDT Isomers	mg/kg dry wt	0.08	0.25	0.38	0.27	0.19
Dieldrin	mg/kg dry wt	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Endosulfan I	mg/kg dry wt	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Endosulfan II	mg/kg dry wt	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Endosulfan sulphate	mg/kg dry wt	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Endrin	mg/kg dry wt	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Endrin aldehyde	mg/kg dry wt	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Endrin ketone	mg/kg dry wt	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Heptachlor	mg/kg dry wt	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Heptachlor epoxide	mg/kg dry wt	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Hexachlorobenzene	mg/kg dry wt	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Methoxychlor	mg/kg dry wt	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Organonitro&phosphorus Pesticides Screen in Soil by GCMS						
Acetochlor	mg/kg	< 0.06	< 0.06	< 0.06	< 0.06	-
Alachlor	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	-
Atrazine	mg/kg	< 0.06	< 0.06	< 0.06	< 0.06	-
Atrazine-desethyl	mg/kg	< 0.06	< 0.06	< 0.06	< 0.06	-



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ACCREDITED LABORATORY

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The tests reported herein have been performed in accordance with the terms of accreditation, with the exception of tests marked *, which are not accredited.

Sample Type: Soil						
Sample Name:		1 02-Nov-2015 10:55 am	2 02-Nov-2015 10:32 am	3 02-Nov-2015 10:09 am	7 02-Nov-2015 12:12 pm	Composite of 4A, 4B and 4C
Lab Number:		1496176.1	1496176.2	1496176.3	1496176.13	1496176.20
Organonitro&phosphorus Pesticides Screen in Soil by GCMS						
Atrazine-desisopropyl	mg/kg	< 0.12	< 0.11	< 0.11	< 0.11	-
Azaconazole	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	-
Azinphos-methyl	mg/kg	< 0.12	< 0.11	< 0.11	< 0.11	-
Benalaxyl	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	-
Bitertanol	mg/kg	< 0.12	< 0.11	< 0.11	< 0.11	-
Bromacil	mg/kg	< 0.06	< 0.06	< 0.06	< 0.06	-
Bromopropylate	mg/kg	< 0.06	< 0.06	< 0.06	< 0.06	-
Butachlor	mg/kg	< 0.06	< 0.06	< 0.06	< 0.06	-
Captan	mg/kg	< 0.12	< 0.11	< 0.11	< 0.11	-
Carbaryl	mg/kg	< 0.06	< 0.06	< 0.06	< 0.06	-
Carbofuran	mg/kg	< 0.06	< 0.06	< 0.06	< 0.06	-
Chlorfluazuron	mg/kg	< 0.06	< 0.06	< 0.06	< 0.06	-
Chlorothalonil	mg/kg	< 0.06	< 0.06	0.09	< 0.06	-
Chlorpyrifos	mg/kg	< 0.06	< 0.06	< 0.06	< 0.06	-
Chlorpyrifos-methyl	mg/kg	< 0.06	< 0.06	< 0.06	< 0.06	-
Chlortoluron	mg/kg	< 0.12	< 0.11	< 0.11	< 0.11	-
Cyanazine	mg/kg	< 0.06	< 0.06	< 0.06	< 0.06	-
Cyfluthrin	mg/kg	< 0.07	< 0.07	< 0.07	< 0.07	-
Cyhalothrin	mg/kg	< 0.06	< 0.06	< 0.06	< 0.06	-
Cypermethrin	mg/kg	< 0.14	< 0.14	< 0.13	< 0.13	-
Deltamethrin (including Tralomethrin)	mg/kg	< 0.06	< 0.06	< 0.06	< 0.06	-
Diazinon	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	-
Dichlofluanid	mg/kg	< 0.06	< 0.06	< 0.06	< 0.06	-
Dichloran	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2	-
Dichlorvos	mg/kg	< 0.09	< 0.09	< 0.09	< 0.09	-
Difenoconazole	mg/kg	< 0.09	< 0.09	< 0.09	< 0.09	-
Dimethoate	mg/kg	< 0.12	< 0.11	< 0.11	< 0.11	-
Diphenylamine	mg/kg	< 0.12	< 0.11	< 0.11	< 0.11	-
Diuron	mg/kg	< 0.06	< 0.06	< 0.06	< 0.06	-
Fenpropimorph	mg/kg	< 0.06	< 0.06	< 0.06	< 0.06	-
Fluazifop-butyl	mg/kg	< 0.06	< 0.06	< 0.06	< 0.06	-
Fluometuron	mg/kg	< 0.06	< 0.06	< 0.06	< 0.06	-
Flusilazole	mg/kg	< 0.06	< 0.06	< 0.06	< 0.06	-
Fluvalinate	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	-
Furalaxyl	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	-
Haloxypop-methyl	mg/kg	< 0.06	< 0.06	< 0.06	< 0.06	-
Hexaconazole	mg/kg	< 0.06	< 0.06	< 0.06	< 0.06	-
Hexazinone	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	-
IPBC (3-Iodo-2-propynyl-n-butylcarbamate)	mg/kg dry wt	< 0.3	< 0.3	< 0.3	< 0.3	-
Kresoxim-methyl	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	-
Linuron	mg/kg	< 0.06	< 0.06	< 0.06	< 0.06	-
Malathion	mg/kg	< 0.06	< 0.06	< 0.06	< 0.06	-
Metalaxyl (Mefenoxam)	mg/kg	< 0.06	< 0.06	< 0.06	< 0.06	-
Methamidophos	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	-
Metolachlor	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	-
Metribuzin	mg/kg	< 0.06	< 0.06	< 0.06	< 0.06	-
Molinate	mg/kg	< 0.12	< 0.11	< 0.11	< 0.11	-
Myclobutanil	mg/kg	< 0.06	< 0.06	< 0.06	< 0.06	-
Naled	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	-
Norflurazon	mg/kg	< 0.12	< 0.11	< 0.11	< 0.11	-
Oxadiazon	mg/kg	< 0.06	< 0.06	< 0.06	< 0.06	-
Oxyfluorfen	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	-
Paclobutrazol	mg/kg	< 0.06	< 0.06	< 0.06	< 0.06	-
Parathion-ethyl	mg/kg	< 0.06	< 0.06	< 0.06	< 0.06	-

Sample Type: Soil						
Sample Name:		1 02-Nov-2015 10:55 am	2 02-Nov-2015 10:32 am	3 02-Nov-2015 10:09 am	7 02-Nov-2015 12:12 pm	Composite of 4A, 4B and 4C
Lab Number:		1496176.1	1496176.2	1496176.3	1496176.13	1496176.20
Organonitro&phosphorus Pesticides Screen in Soil by GCMS						
Parathion-methyl	mg/kg	< 0.06	< 0.06	< 0.06	< 0.06	-
Pendimethalin	mg/kg	< 0.06	< 0.06	< 0.06	< 0.06	-
Permethrin	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	-
Pirimicarb	mg/kg	< 0.06	< 0.06	< 0.06	< 0.06	-
Pirimiphos-methyl	mg/kg	< 0.06	< 0.06	< 0.06	< 0.06	-
Prochloraz	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	-
Procymidone	mg/kg	< 0.06	< 0.06	< 0.06	< 0.06	-
Prometryn	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	-
Propachlor	mg/kg	< 0.06	< 0.06	< 0.06	< 0.06	-
Propanil	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2	-
Propazine	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	-
Propiconazole	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	-
Pyriproxyfen	mg/kg	< 0.06	< 0.06	< 0.06	< 0.06	-
Quizalofop-ethyl	mg/kg	< 0.06	< 0.06	< 0.06	< 0.06	-
Simazine	mg/kg	< 0.06	< 0.06	< 0.06	< 0.06	-
Simetryn	mg/kg	< 0.06	< 0.06	< 0.06	< 0.06	-
Sulfentrazone	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	-
TCMTB [2-(thiocyanomethylthio) benzothiazole, Busan]	mg/kg dry wt	< 0.12	< 0.11	< 0.11	< 0.11	-
Tebuconazole	mg/kg	< 0.06	< 0.06	< 0.06	< 0.06	-
Terbacil	mg/kg	< 0.06	< 0.06	< 0.06	< 0.06	-
Terbufos	mg/kg	< 0.06	< 0.06	< 0.06	< 0.06	-
Terbumeton	mg/kg	< 0.06	< 0.06	< 0.06	< 0.06	-
Terbutylazine	mg/kg	0.10	< 0.03	< 0.03	< 0.03	-
Terbutylazine-desethyl	mg/kg	< 0.06	< 0.06	< 0.06	< 0.06	-
Terbutryn	mg/kg	< 0.06	< 0.06	< 0.06	< 0.06	-
Thiabendazole	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	-
Thiobencarb	mg/kg	< 0.06	< 0.06	< 0.06	< 0.06	-
Tolylfluanid	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	-
Triazophos	mg/kg	< 0.06	< 0.06	< 0.06	< 0.06	-
Trifluralin	mg/kg	< 0.06	< 0.06	< 0.06	< 0.06	-
Vinclozolin	mg/kg	< 0.06	< 0.06	< 0.06	< 0.06	-
Sample Name:		Composite of 5A, 5B and 5C	Composite of 6A, 6B and 6C	Composite of 8A, 8B and 8C	Composite of 9A, 9B and 9C	
Lab Number:		1496176.21	1496176.22	1496176.23	1496176.24	
Individual Tests						
Total Recoverable Arsenic	mg/kg dry wt	6	6	7	6	-
Total Recoverable Cadmium	mg/kg dry wt	0.18	0.15	0.17	0.17	-
Total Recoverable Lead	mg/kg dry wt	12.5	12.9	11.6	11.1	-
Total Recoverable Mercury	mg/kg dry wt	< 0.10	< 0.10	< 0.10	< 0.10	-
Organochlorine Pesticides Screening in Soil						
Aldrin	mg/kg dry wt	< 0.010	< 0.010	< 0.010	< 0.010	-
alpha-BHC	mg/kg dry wt	< 0.010	< 0.010	< 0.010	< 0.010	-
beta-BHC	mg/kg dry wt	< 0.010	< 0.010	< 0.010	< 0.010	-
delta-BHC	mg/kg dry wt	< 0.010	< 0.010	< 0.010	< 0.010	-
gamma-BHC (Lindane)	mg/kg dry wt	< 0.010	< 0.010	< 0.010	< 0.010	-
cis-Chlordane	mg/kg dry wt	< 0.010	< 0.010	< 0.010	< 0.010	-
trans-Chlordane	mg/kg dry wt	< 0.010	< 0.010	< 0.010	< 0.010	-
Total Chlordane [(cis+trans)* 100/42]	mg/kg dry wt	< 0.04	< 0.04	< 0.04	< 0.04	-
2,4'-DDD	mg/kg dry wt	< 0.010	< 0.010	< 0.010	< 0.010	-
4,4'-DDD	mg/kg dry wt	< 0.010	< 0.010	0.014	0.020	-
2,4'-DDE	mg/kg dry wt	< 0.010	< 0.010	< 0.010	< 0.010	-
4,4'-DDE	mg/kg dry wt	0.065	0.032	0.086	0.089	-
2,4'-DDT	mg/kg dry wt	0.015	0.010	0.020	0.012	-

Sample Type: Soil						
Sample Name:		Composite of 5A, 5B and 5C	Composite of 6A, 6B and 6C	Composite of 8A, 8B and 8C	Composite of 9A, 9B and 9C	
Lab Number:		1496176.21	1496176.22	1496176.23	1496176.24	
Organochlorine Pesticides Screening in Soil						
4,4'-DDT	mg/kg dry wt	0.173	0.128	0.21	0.130	-
Total DDT Isomers	mg/kg dry wt	0.25	0.17	0.34	0.25	-
Dieldrin	mg/kg dry wt	< 0.010	< 0.010	< 0.010	< 0.010	-
Endosulfan I	mg/kg dry wt	< 0.010	< 0.010	< 0.010	< 0.010	-
Endosulfan II	mg/kg dry wt	< 0.010	< 0.010	< 0.010	< 0.010	-
Endosulfan sulphate	mg/kg dry wt	< 0.010	< 0.010	< 0.010	< 0.010	-
Endrin	mg/kg dry wt	< 0.010	< 0.010	< 0.010	< 0.010	-
Endrin aldehyde	mg/kg dry wt	< 0.010	< 0.010	< 0.010	< 0.010	-
Endrin ketone	mg/kg dry wt	< 0.010	< 0.010	< 0.010	< 0.010	-
Heptachlor	mg/kg dry wt	< 0.010	< 0.010	< 0.010	< 0.010	-
Heptachlor epoxide	mg/kg dry wt	< 0.010	< 0.010	< 0.010	< 0.010	-
Hexachlorobenzene	mg/kg dry wt	< 0.010	< 0.010	< 0.010	< 0.010	-
Methoxychlor	mg/kg dry wt	< 0.010	< 0.010	< 0.010	< 0.010	-

SUMMARY OF METHODS

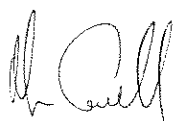
The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively clean matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis.

Sample Type: Soil			
Test	Method Description	Default Detection Limit	Sample No
Environmental Solids Sample Preparation	Air dried at 35°C and sieved, <2mm fraction. Used for sample preparation. May contain a residual moisture content of 2-5%.	-	1-3, 13, 20-24
Organochlorine/nitro&phosphorus Pests Screen in Soils, GCMS	Sonication extraction, Dilution cleanup, GC-MS analysis. Tested on as received sample	-	1-3, 13
Organochlorine Pesticides Screening in Soil	Sonication extraction, SPE cleanup, dual column GC-ECD analysis (modified US EPA 8082).. Tested on dried sample	0.010 - 0.06 mg/kg dry wt	20-24
Dry Matter (Env)	Dried at 103°C for 4-22hr (removes 3-5% more water than air dry) , gravimetry. US EPA 3550. (Free water removed before analysis).	0.10 g/100g as rcvd	1-3, 13
Total Recoverable digestion	Nitric / hydrochloric acid digestion. US EPA 200.2.	-	1-3, 13, 20-24
Composite Environmental Solid Samples*	Individual sample fractions mixed together to form a composite fraction.	-	4-12, 14-19
Total Recoverable Arsenic	Dried sample, sieved as specified (if required). Nitric/Hydrochloric acid digestion, ICP-MS, screen level. US EPA 200.2.	2 mg/kg dry wt	1-3, 13, 20-24
Total Recoverable Cadmium	Dried sample, sieved as specified (if required). Nitric/Hydrochloric acid digestion, ICP-MS, screen level. US EPA 200.2.	0.10 mg/kg dry wt	1-3, 13, 20-24
Total Recoverable Lead	Dried sample, sieved as specified (if required). Nitric/Hydrochloric acid digestion, ICP-MS, screen level. US EPA 200.2.	0.4 mg/kg dry wt	1-3, 13, 20-24
Total Recoverable Mercury	Dried sample, sieved as specified (if required). Nitric/Hydrochloric acid digestion, ICP-MS, screen level. US EPA 200.2.	0.10 mg/kg dry wt	1-3, 13, 20-24

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Samples are held at the laboratory after reporting for a length of time depending on the preservation used and the stability of the analytes being tested. Once the storage period is completed the samples are discarded unless otherwise advised by the client.

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Martin Cowell - BSc
Client Services Manager - Environmental Division



**COMPUTER FREEHOLD REGISTER
UNDER LAND TRANSFER ACT 1952**

Limited as to Parcels

Search Copy



R. W. Muir
Registrar-General
of Land

Identifier **OT264/53**
Land Registration District **Otago**
Date Issued 20 January 1934

Prior References
DI W644

Estate	Fee Simple
Area	3.6422 hectares more or less
Legal Description	Part Section 1 Block V West Taieri Survey District

Proprietors
Lynda May Lin Choie and Nie Sun Wan

Interests

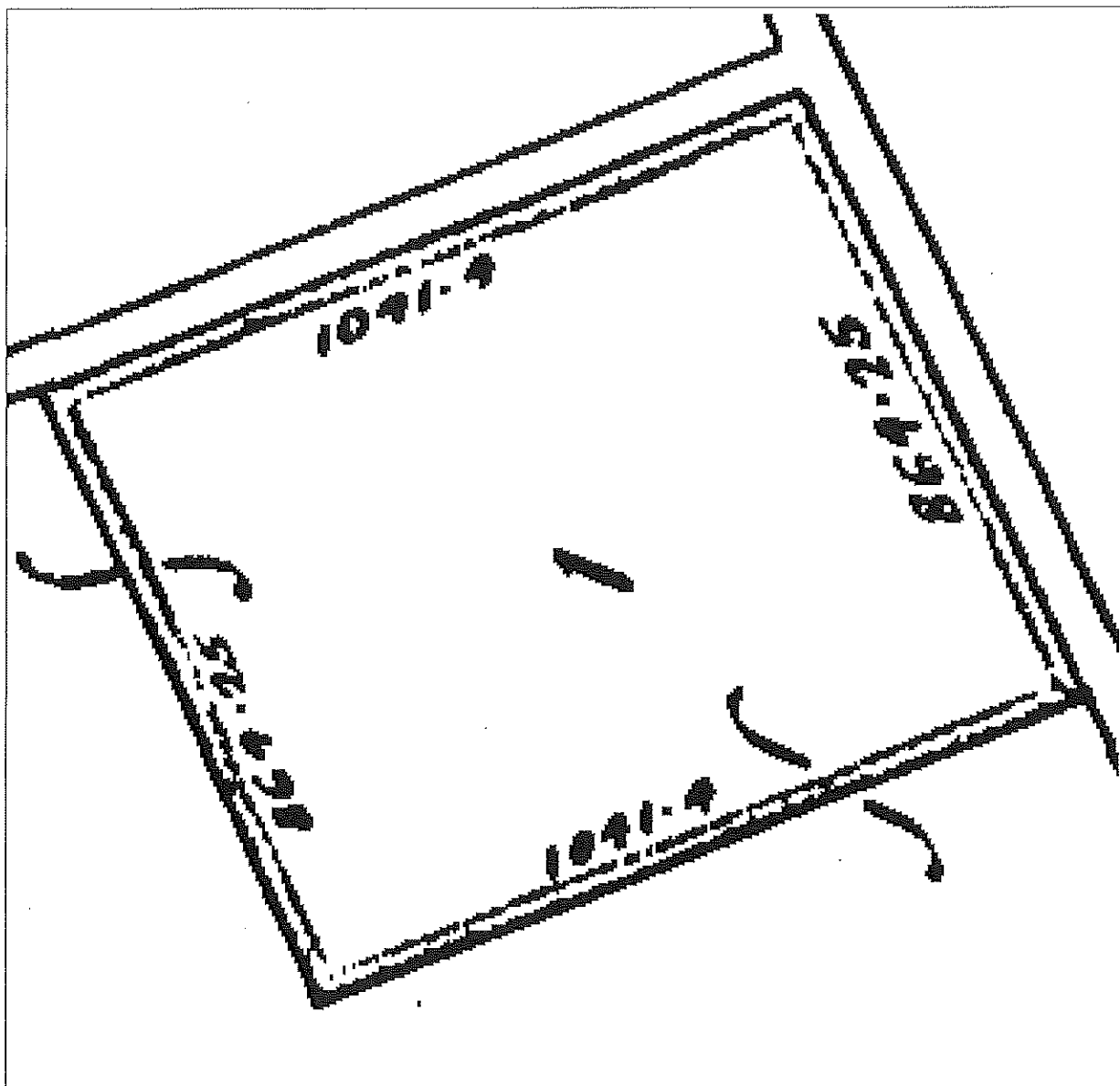
2782 Order in Council exempting the roads fronting the above described land from the provisions of Section 117 of The Public Works Act 1908 - 4.5.1915 at 10.00 am

2781 Order in Council exempting the roads fronting the above described land from the provisions of Section 117 of The Public Works Act 1908 - 4.5.1915 at 10.00 am

978418.4 Mortgage to The National Bank of New Zealand Limited - 16.11.1999 at 3.20 pm

Identifier

OT264/53





**COMPUTER FREEHOLD REGISTER
UNDER LAND TRANSFER ACT 1952**

Search Copy



R. W. Muir
Registrar-General
of Land

Identifier OT370/243
Land Registration District Otago
Date Issued 30 March 1954

Prior References
OT264/54

Estate	Fee Simple
Area	1.6389 hectares more or less
Legal Description	Lot 2 Deposited Plan 7816

Proprietors
Lynda May Lin Choie and Nie Sun Wan

Interests

2781 Order in Council exempt Formby Street frontage from the provisions of Section 128 Public Works Act 1928 - 4.5.1915 at 10.00 am
2782 Order in Council exempt Formby Street frontage from the provisions of Section 128 Public Works Act 1928 - 4.5.1915 at 10.00 am
978418.4 Mortgage to The National Bank of New Zealand Limited - 16.11.1999 at 3.20 pm

