

**REPORT PREPARED FOR:
ABIB (OAMARU) LIMITED**

**PRELIMINARY SITE INVESTIGATION
2127 KAIPARA COAST HIGHWAY
KAKANUI**

**Prepared by:
Groundwater and Environmental Services
PO Box 190
Cambridge
30 May 2022**

EXECUTIVE SUMMARY

This PSI has been undertaken to determine the potential for contamination across and beneath the ground at 2127 Kaipara Coast Highway due to past or present activities on the property or on surrounding land.

Auckland Council's site contamination enquiry response noted the potential for spray race operations in a former sheep yard along with the presence of a transformer and above ground fuel storage tank. There was no recorded evidence of actual contamination at the site. No contamination related consents or pollution incidents were recorded for the property and there were no identified items in the surrounding area that would be likely to have resulted in contamination of the subject property.

The council property file included building consents and plans for dwelling and other farm buildings on the site from 1969 onwards. The presence of a farm dairy effluent pond to the north-east of the milking shed was noted. Recorded activities included sheep, goat and cattle grazing, dairy farming and the land application of dairy effluent to pasture. The presence of a disused former quarry on the property was also noted. The property file did not contain any records of existing contamination on the property. The presence of likely asbestos-containing materials in the dwelling was however noted in building specifications. No other potentially hazardous materials were noted.

The aerial photographs largely confirmed the available site history obtained from other sources that indicated that the property had historically been in pasture and used for stock grazing and dairy farming. The aerial photographs did not provide any visible indications of actual or potential contamination at the property. There were no activities identified on surrounding properties that were likely to be causing contamination of the subject property.

A walkover inspection was carried out on 9 May 2022. The features of potential environmental concern identified during the walkover included:

- The stock loading ramp, race and yards in the north of the property where stock spraying could potentially have taken place and resulted in contamination of the ground;
- The former sheep yard area where stock spraying could potentially have taken place and resulted in contamination of the ground; and
- Two disused above ground fuel tanks where historic fuel leaks could have resulted in contamination of the underlying ground.

The identified features are in areas that are to remain part of the working farm and, as such, will not be subject to a change in land use or redevelopment earthworks.

There were no activities observed on neighbouring properties that were likely to have resulted in contamination of the subject property.

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Identified HAIL activities included the potential for livestock spray operations (two locations), disused above ground fuel storage tanks (one location) and an electrical transformer. The locations of the potential HAIL activities were in areas that are to remain part of the working farm.

The preliminary conceptual site model identified the potential for contamination within limited areas of the site with confirmed or possible HAIL activities (all within parts of the site that are not undergoing a change in land use). Intrusive investigation of potential contamination would be required for these areas if they were to undergo a future change of land use or any earthworks associated with the proposed redevelopment.

Outside of locations areas of identified HAIL activities, the property is modelled as having incomplete source, pathway and receptor linkages and no intrusive investigation of potential contamination is required for the proposed redevelopment areas.

The information gathered for this PSI indicates that further investigations are unlikely to be required prior to the currently proposed redevelopment of the site and that no consents for site redevelopment are likely to be required under the NES or the contaminated land provisions of the Auckland Unitary Plan.

As with any assessment of this nature, there is always the possibility that additional items not visible during the investigation may be revealed during more detailed subsequent investigations or during redevelopment work at the site. Any such items should be evaluated by a suitably qualified environmental consultant in accordance with the requirements of Auckland Council.

TABLE OF CONTENTS

1	Introduction	1
1.1	Scope.....	1
1.2	Site Identification.....	1
1.3	Nature of Proposed Redevelopment.....	2
1.4	Reason for Investigation	2
1.5	Background	2
1.6	Geology	3
1.7	Surface Water & Groundwater Information.....	3
1.8	Previous Investigations	3
2	Site History.....	4
2.1	Review of Auckland Council Environmental databases.....	4
2.2	Review of Auckland Council Property File	5
2.3	Dangerous Goods Licences	6
2.4	Review of Aerial Photographs.....	6
2.5	Information from Property Owner	7
3	Walkover Site Inspection	8
4	Potential HAIL Activities.....	10
5	Preliminary Conceptual Site Model	11
6	Summary & Conclusions	13
7	PSI Certifying Statement	15

LIST OF FIGURES

Figure 1:	Site Location & Layout
Figure 2:	Goodland Coastal Farm Plan
Figure 3:	Aerial Photograph Features
Figure 4:	Site Inspection Features

LIST OF TABLES

Table 1	Potential HAIL Activities	10
Table 2	Preliminary Conceptual Site Model	11

LIST OF APPENDICES

Appendix A	Site Contamination Enquiry Response
Appendix B	Property File Figures
Appendix C	Historic Aerial Photographs
Appendix D	Site Photographs
Appendix E	Statement of Qualification

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LIMITATIONS

No liability is assumed for misrepresentation of data or for items not visible, accessible or present at the time of the site investigations conducted by Groundwater and Environmental Services that may affect the validity and/or accuracy of the interpretation of environmental data.

Interpretations and conclusions presented herein are based on data presented in this report, information from others and experience on similar projects. The available data does not preclude the presence of materials at other locations at the site, which presently or in the future may be considered hazardous. Services in respect of this investigation have been performed in accordance with professional standards for investigations of contamination assessment. No guarantees are either expressed or implied.

This document and the information contained herein have been prepared for the use of ABIB (Oamaru) Limited in relation to the redevelopment of the subject site and should not be used or relied upon by any other person or entity for any other project, with the exception that the relevant territorial authority can rely on it for the purpose of processing those consent applications for which this report has been prepared. Any reliance on this report by any other parties shall be at such party's sole risk.

This document has been prepared by a suitably qualified and experienced practitioner as required by the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (2011).

Report prepared: 30 May 2022

Report prepared by:



Andrew MacDonald, MSc(Hons), Principal

1 Introduction

Groundwater and Environmental Services (GES) was engaged to carry out a preliminary site investigation (PSI) for the property at 2127 Kaipara Coast Highway, Kakanui. This work has been undertaken on behalf of ABIB (Oamaru) Limited to support future lifestyle residential redevelopment of parts of the property. Earthworks are likely to be carried out in specific areas of the property as part of the planned redevelopment.

The investigation has been undertaken in accordance with the requirements of the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 and the relevant Ministry for the Environment site investigation¹ and reporting guidelines². It also addresses the requirements of the Auckland Unitary Plan in relation to potentially contaminated sites.

This report provides information on historic or present potentially contaminating activities at the site.

1.1 Scope

This report details the results of a background investigation and walkover inspection carried out to determine the likelihood of there being contamination on and beneath the ground at 2127 Kaipara Coast Highway due to current or past activities.

Significant activities undertaken as part of this investigation included:

- Collection and review of background information about the property including the Auckland Council property file and site contamination database information
- Collection and review of historic aerial photographs covering the property from 1941 onwards;
- A walkover inspection of the property to check for indications of potential contamination; and
- Reporting the investigation results and providing recommendations.

1.2 Site Identification

2127 Kaipara Coast Highway is a large farm property on the west side of Kaipara Coast Highway, approximately 0.5 km north of Makarau Road.

The property is predominantly in pasture and has a north-northeast to south-southwest trending ridge in its eastern half. The ground slopes down to the west, north and east from the ridge.

The property is bounded by Makarau River to the east and a tributary of Makarau River to the west. Kaipara Harbour is located approximately 1 km west of the western property boundary.

¹ Ministry for the Environment (June 2021). Contaminated Land Management Guidelines No. 5: Site Investigation and Analysis of Soils.

² Ministry for the Environment (June 2021). Contaminated Land Management Guidelines No. 1: Reporting on Contaminated Sites in New Zealand.

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The location and layout of property are shown on Figure 1.

The property details are given below:

Address: 2127 Kaipara Coast Highway
Legal Description: Pt Sec 50 Blk II Kaipara Survey District SO 51097, Sec 1 SO 328127, Pt Makarau Blk 4A SO 28095, Pt Makarau Blk 4B SO 28095
Title Number: 165841
Area: 133.9078 Hectares

1.3 Nature of Proposed Redevelopment

The current redevelopment proposal for 2127 Kaipara Coast Highway involves the conversion of parts of the property for lifestyle residential use, with the creation of residential lots, roads and associated amenities. The balance of the property will continue to be used for farming purposes. A plan showing the proposed layout of the site is attached as Figure 2.

Activities to be carried out as part of the future subdivision and redevelopment include:

- Stripping and stockpiling of site topsoil at building platform sites;
- Cut and fill earthworks to provide appropriate levels for building platforms;
- Earthworks for construction of roads and access driveways;
- Earthworks for the installation of underground services and wastewater systems; and
- Minor earthworks for landscaping and planned planting.

At this stage, it is unlikely that the above activities would require removal of soil for off-site disposal.

1.4 Reason for Investigation

The current investigation was carried out to determine the nature and extent of historic land uses and any resulting potential for contamination across and beneath the site that could potentially pose a risk to human health or the environment during redevelopment earthworks and during future lifestyle residential land use of parts of the property.

1.5 Background

2127 Kaipara Coast Highway is a rural grazing property that has historically been used for dry stock (sheep, goats and bulls) and dairy farming. The bulk of the property is in pasture although there is a significant area of bush in the south-east. Other areas of bush are present near the eastern property boundary and along a drainage gullies. Several small man-made ponds are located on the property.

A dwelling and a shearing shed located in the north of the property, close to the entry from Kaipara Coast Highway. The other main farm buildings are located in the north-east of the property around the milk tanker loop track. Structures in this area include a disused milking shed and yard, a large calf rearing shed, a portacom office building and a shipping container. There are no farm buildings located elsewhere on the property. A dairy effluent pond is located to the north-east of the calf rearing shed.

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There is no available evidence to suggest that the property had previously been used for commercial horticulture.

There do not appear to be any significant potentially contaminating activities currently being carried out at the property.

1.6 Geology

The Auckland geological map³ indicates that the geology of the bulk of the site is likely to consist of Helensville Conglomerate which is described as boulder-, cobble-, and pebble size clasts of andesite, microdiorite, spilitic basalt, limestone and chert. The eastern margin of the property may consist of Cornwallis Formation thick-bedded, graded, volcanoclastic sandstone and thin-bedded fine-grained sandstone and siltstone (volcanogenic flysch). The Helensville Conglomerate and Cornwallis Formation belong to the Warkworth Subgroup of the Waitemata Group rocks.

Holocene to recent alluvial/colluvial deposits are likely to be present along the western margin of the property.

1.7 Surface Water & Groundwater Information

The most significant potentially sensitive receiving environments for any contamination at the property would be surface water and underlying groundwater.

Surface water across the property drains to Makarau River which discharges to Kaipara Harbour.

Groundwater in the area of the property is also expected to flow locally towards Makarau River.

1.8 Previous Investigations

No previous environmental investigations are known to have been carried out for 2127 Kaipara Coast Highway.

³ Edbrooke, SW (2001). Geology of the Auckland Area. Institute of Geological and Nuclear Sciences 1:250,000 Geological Map 3.

2 Site History

The available site history has been gathered from a number of sources and is set out in the following sections.

2.1 Review of Auckland Council Environmental databases

A request for available site contamination information relating to the subject property was made to Auckland Council in May 2022 and a response was received on 11 May 2022. The response was based on information available to the Contamination, Air and Noise Team in the Resource Consent Department. A copy of the Auckland Council response to the site contamination enquiry is attached to this report as Appendix A.

The Ministry for the Environment's Hazardous Activities and Industries List (HAIL) consists of activities and industries that are considered likely to cause land contamination as a result of hazardous substance use, storage, and/or disposal.

Council's records suggested that the site may have been subject to the following HAIL activities:

- HAIL Item (A.8)– Livestock dip or spray race operations
- HAIL Item (A.17)– Storage tanks or drums for fuel, chemicals or liquid waste
- HAIL Item (B.2)– Electrical transformers including the manufacturing, repairing or disposing of electrical transformers or other heavy electrical equipment

Council records indicated the potential for spray race operations and the presence of a transformer on site. The records were based on a site sketch plan submitted with an application for a new barn. The sketch included an area labelled "Sheep Yards" and a nearby transformer. A copy of the sketch is attached to this report in Appendix B.

The response also noted the presence of an above ground fuel storage tank on site in 2010. Follow up information obtained from council confirmed that the tank observed during a site visit by a council officer and that it was located beside the tanker loop. No visible hydrocarbon staining was observed on the ground beneath the tank at the time of the 2010 site visit. A copy of the council officer's photograph of the tank is reproduced below.

The Auckland Council database was searched for pollution incidents, bores, contaminated site and air discharges and industrial trade process consents, closed landfills and air-quality permitted activities within approximately a 200 m radius of the site.

Consent 13578 authorised the construction of a bore in the north of the property for the extraction of groundwater for stock and domestic supply. The consent was issued to Makarua River Partnership in 1995. Bore consents were also noted for neighbouring properties to the north and north-east.

Consent 11404 authorised the discharge of dairy wastewater onto land between one October and 30 June. The consent was issued to NW Beaver in 1994 and expired in 2003. The consent included provision for a storage/settling pond (25 m x 25 m x 4.5 m).

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No other consents or pollution incidents were recorded for the property and there are no identified items in the surrounding area that would be likely to have resulted in contamination of the subject property.



Fuel Storage Tank – 2010

2.2 Review of Auckland Council Property File

An electronic copy of the Auckland Council property file for the subject property was obtained from Auckland Council for this investigation. The following items were identified in the property file:

- Building Permit No 22581 issued to Bowater & Co Ltd in 1969 for construction of a new dwelling. The specifications note the use of asbestos-containing fibrolite for the soffits.
- Building Permit No 19290 issued to JFC Platts in 1983 for a potbelly fireplace installation and an existing dwelling. The specifications note potential use of asbestos-containing materials in the sidewall and corner behind the fireplace.
- Building Permit No 1107501 issued to CenterPoint Community Growth Trust in 1987 for a 138 m² farm building (kidding barn) extension to the existing wool shed to house more sheep for shearing. Council noted the presence of a metaled track leading to a disused quarry on the site that “hadn’t been used for years”. A plan attached to the consent application (see Appendix B) showed the presence of a house, implement shed, sheep yards and a transformer in addition to the location of the proposed farm building.
- Building Permit No 1911 issued to CenterPoint Community Growth Trust (Bells Hill Goat and Sheep Farm) in 1988 for a 96 m² extension to the existing wool shed to house more sheep for shearing (plan attached in Appendix B). A council report on the application did not identify any potential contamination issues at the property.
- Subdivision Consent Application prepared by Bolam & Associates Ltd in 1991 for NW & SB Beaver. The application noted that the property was predominantly in pasture with some areas of bush and was used as a grazing unit for raising calves and bulls. The

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presence of the existing house in the north of the property was noted. A plan showing the proposed subdivision is attached in Appendix B. A report by the Council's development engineer did not identify any existing hazards on the site.

- Building Consent No 93/1092 issued to NW & SB Beaver in 1993 for construction of a new 200 m² herringbone cowshed. Final code compliance was issued in September 1994. A plan showing the shed location is attached in Appendix B. A council report on the application did not identify any potential contamination issues at the property.
- Resource Consent G3/1092 issued to NW & SB Beaver in 1993 for dairy shed discharge to land over most of the property. Noted the presence of an oxidation pond designed to store up to 3 months effluent and the use of the tanker to spread effluent over pasture.

The property file includes building consent for the dwelling and farm buildings on the site from 1969 onwards and notes the presence of a farm dairy effluent pond. Uses of the property include sheep, goat and cattle grazing as well as dairy farming. The land application of dairy effluent to pasture was noted. The presence of a disused former quarry on the property was also noted. The property file did not contain any records of existing contamination on the property. The presence of likely asbestos-containing materials in the dwelling was noted in building specifications. No other potentially hazardous materials were noted.

2.3 Dangerous Goods Licences

No known dangerous goods licences were known to have been held for the property under investigation.

2.4 Review of Aerial Photographs

A review of aerial photographs of the property and surrounding area was undertaken in order to determine past land use practices. Available photographs covered the period from 1941 onwards. No earlier photographs were available at the time of the review. Observations from the aerial photographs are discussed below and the locations of features of interest are shown on Figure 3. Copies of historic aerial photographs are attached to this report in Appendix C.

In the 1941 photograph, the property is mainly in pasture with some areas of bush. A track extends southward along the ridgeline in the east of the property into a cleared area within the bush in the south (location 1). A further from the track extends towards the west (location 2). There are no buildings or other structures on or immediately around the property. There are no visible indications of potentially contaminating activities on the subject site or on surrounding properties.

In the 1966 photographs, the property remains mainly in pasture. A small circular feature that appeared likely to be a small pond was noted in the north of the property (location 3). A second feature that was likely to be a small pond was also noted to the east of the main north-south ridgeline (location 4). A third likely pond feature was located in the north of the property (location 5). An area of disturbed ground was noted at the end of a well formed track into the property (location 6) - this coincides with the known location of the old quarry on the property. There are no buildings or other structures on or immediately around the property. There were no indications of potentially contaminating activities on the property or in the surrounding area.

The property and surrounding area were essentially unchanged in the 1968 photograph.

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In the 1974 photographs, there appears to be a small shed located in the south of the property besides the track along the ridgeline (location 7). A second likely shed (location 8) is located east of the track that leads to the quarry which is still visible. A dwelling (location 9) has been constructed in the north of the property, close to the road. A small shed (location 10) was visible in the west of the property. There are some structures adjacent to the road and immediately east of the track entry to the property (location 11) - these could be stockyards. The property also appears unchanged in the 1973 photograph and remains in pasture. There appears to have been a dwelling constructed on the neighbouring property to the south. There were no indications of potentially contaminating activities on the property or surrounding area.

No significant changes to the property were visible on the 1975 or 1976 photographs.

In the 1979 photographs, a farm building (the shearing shed – Location 12) was visible to the north-east of the dwelling. An area of disturbed ground was also visible between location 8 from the 1968 photograph and the adjacent farm track. The layout of the balance of the property was largely unchanged.

In the 1981 photograph, a feature was visible in the south of the property that appeared likely to be a pond (location 13). The bulk of the property remained in pasture.

In the 1988 photographs, the milking shed is visible in the north-east of the property (location 14). No other significant changes could be noted at the scale of the photographs.

In the 2010 photographs, the layout of the property is similar to the present day. The large herringbone shed (location 15) is visible on the north-east side of the tanker track, north of the milking shed. There is an area of disturbed ground around location 8 - this was shown as a sheep yard in the property file information. Farm tracks are visible across the property. The bulk of the property remains in pasture, with a significant area of bush in the south-east and isolated patches of bush elsewhere (mostly along drainage gullies).

The aerial photographs largely confirmed the available site history obtained from other sources that indicated that the property had historically been in pasture and used for stock grazing and dairy farming. The aerial photographs did not provide any visible indications of actual or potential contamination at the property. There were no activities identified on surrounding properties that were likely to be causing contamination of the subject property.

2.5 Information from Property Owner

The current property owner (ABIB (Oamaru)) is not aware of any actual contamination, potential contamination incidents or other outstanding environmental issues at the property or in the surrounding area.

The current farm manager was also not aware of any environmental issues at the property.

No previous owners of the property were available to be interviewed as part of this investigation.

3 Walkover Site Inspection

A walkover inspection of the property was carried out by GES on 9 May 2022. Relevant observations from the walkover inspection are summarised below and photographs from the inspection are included in Appendix D to this report. The inspection locations are shown on Figure 4.

1. A stock loading ramp, yards and race were located immediately east of the entry to the property from Kaipara Coast Highway.
2. Timber was stacked in a small paddock below the race. There were no indications of any potentially contaminating materials in this area.
3. A small plywood shed with an earth floor and block base was located east of the driveway/track and adjacent to a drainage gully. There was a pipe outlet from the shed however the shed was empty.
4. A shearing shed was located west of the driveway/track. The shed had painted corrugated iron cladding. The floor inside the shed had a mixture of concrete and wood areas.
5. A groundwater borehole with a submersible pump was located on the south side of the shearing shed.
6. A weatherboard dwelling with a block base is located west of the shearing shed and north of the main farm track.
7. Dry pond with an earth bund (aerial photograph location 5).
8. An 8 m x 4.5 m concrete pad was located in the former sheep yard area east of the farm track (location 8 from the aerial photograph review). A power pole and transformer were located north-east of location 8.
9. The calf rearing shed located on the north-east side of the tanker track had stockyards on its north-west and south-east sides. Small quantities of farm chemicals were stored inside the shed however there are no indications of spills to ground of hazardous materials.
10. Two small above ground disused fuel storage tanks were located immediately east of the tanker track. There were no visible or odour indications of hydrocarbon discharges to ground in the vicinity of the tanks.
11. The milking shed and rotary yard were located on the south-east side of the tanker track along with two above ground concrete water tanks. Pumping equipment was located on a concrete slab between the water tanks and the shed.
12. A grain silo was located to the south-west of the milking shed.
13. A portable building, lean to and shipping container were located to the north-west of the milking shed.
14. The dairy pond was located to the north-east of the milking shed around location 3 from the aerial photograph review.
15. Trig station located beside farm track.
16. Concrete aboveground water tank located on the south-east side of farm track.
17. Dry pond with earth bunds located to the east of the farm track and main ridge.
18. Dry pond with earth bunds located east of the farm track and main ridge.
19. Raised area of ground with no structure visible at location 7 from the aerial photograph review. Disused hay baler in the paddock in this area.
20. Location 1 from the aerial photograph review. Area is in pasture with some bush and no indications of potentially contaminating past activity.

Groundwater and Environmental Services

21. Pond with earth bund (location 12 from aerial photograph review). Pond discharges to the west.
22. Dry pond. Pond discharges to the west.
23. Pond with earth bund west of area of bush. Pond discharges to the north-west.
24. Pond with earth bund in gully west of area of bush. Pond discharges to the south-west.
25. Large concrete trough (location two on aerial photograph review).
26. Pond at location of former quarry (aerial photograph location 6). Pond discharges to west.
27. Remnants of small corrugated iron shed to west of track (aerial photograph location 10).
28. Pond with earth bund. Pond discharges to the west.
29. Small area of surface farm rubbish located west of track to former quarry. Rubbish includes fencing wire, posts, Highgate, corrugated iron, feed bags and a tank. No hazardous Materials observed.

The property was largely as pictured in the recent aerial photographs. The bulk of the property was in pasture with some stands of bush, that largest being in the southeast corner.

There were no signs of potential ground contamination, such as plant distress, observed across the property.

The areas of potential environmental concern identified during the walkover included:

- The stock loading ramp, race and yards in the north of the property (location 1). This is an area where stock spraying could potentially have taken place and resulted in contamination of the ground;
- The former sheep yard area (location 8). This is also an area where stock spraying could potentially have taken place and resulted in contamination of the ground; and
- The location of the two above ground fuel tanks (location 10) where fuel leaks could have resulted in contamination of the underlying ground.

There were no activities observed on neighbouring properties that were likely to have resulted in contamination of the subject property.

4 Potential HAIL Activities

The Ministry for the Environment’s Hazardous Activities and Industries List (HAIL) specifies activities/industries that have the potential to result in contamination. Where current or former HAIL activities are identified on a property, intrusive investigation is generally required prior to a change in land use or redevelopment of those areas. Potential HAIL activities for pastoral grazing or dairying properties similar to the subject property are evaluated in Table 1 below using the information gathered for this investigation.

Table 1 Potential HAIL Activities

HAIL ID	Description	Assessment
A.8	Livestock dip or spray race operations	Possible Possibility of livestock spray operations at inspection locations 1 (stock loading ramp, race and yard) and 8 (former sheep yard) No evidence for the presence of livestock dip or spray race structures elsewhere on the property
A.10	Persistent pesticide bulk storage or use	Highly unlikely No commercial horticulture activity identified
A.17	Storage tanks or drums for fuel, chemicals or liquid-based	Confirmed Aboveground farm fuel storage tanks were observed on site in 2010 and during the inspection in 2022 (location 10 on Figure 4)
B.2	Electrical transformers	Confirmed Power pole mounted electrical transformer identified on site in the north-east of inspection location 8
G.3	Landfill sites	Highly unlikely No indications for the presence of potentially hazardous fill or buried rubbish on the property
G.5	Waste disposal to land (excluding where biosolids have been used as soil conditioners)	Highly unlikely No indications for any waste disposal to land at the property other than spreading of treated dairy shed effluent
H	Any land that has been subject to the migration of hazardous substances from adjacent land in sufficient quantity that it could be a risk to human health or the environment	Highly unlikely No potentially hazardous substances that would be likely to affect the subject property are likely to be present on adjacent land.
I	Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	Highly unlikely No evidence to suggest that there would have been any releases of hazardous substances to land at the subject property

5 Preliminary Conceptual Site Model

The information gathered for this PSI has been used to prepare a preliminary conceptual site model (CSM) to aid in determining whether intrusive investigation was likely to be required. The CSM provided in Table 2 evaluates contaminant source, pathway and receptor linkages for potential items of concern at the property during redevelopment or under future lifestyle residential land use.

Table 2 Preliminary Conceptual Site Model

Potential Source	Potential Pathways	Potential Receptors	Assessment
Contaminated Soil due to HAIL Activities	Dermal contact with contaminated soils	Human Health - residential and outdoor worker	Potentially complete: Hail Activities Identified at specific locations
	Ingestion of contaminated soils	Human Health - residential and outdoor worker	Potentially complete: Hail Activities Identified at specific locations
	Inhalation of vapours	Human Health - residential and outdoor worker	Potentially complete: Hail Activities Identified at specific locations
	Surface water run-off	Ecological receptors – Makarau River	Potentially complete: Hail Activities Identified at specific locations
	Migration of groundwater	Ecological receptors – Makarau River	Potentially complete: Hail Activities Identified at specific locations

The preliminary conceptual site model identifies the potential for contamination within limited areas of the site where the PSI has identified likely HAIL activities. The areas of concern are restricted to:

- Possible livestock spray areas at inspection locations 1 and 8; and
- Above ground fuel storage at inspection location 10.

The presence of contamination on-site due to the power pole mounted electrical transformer in the north-east of location 8 it is considered highly unlikely.

On this basis, the site is modelled as having potentially complete source, pathway and receptor linkages in the areas identified above. Intrusive investigation of potential contamination would be required for these areas if they were to undergo a change of land use or any earthworks associated with the proposed redevelopment.

The identified areas of potential contamination (locations 1, 8 and 10) are outside the areas of proposed land use change or earthworks. These areas remain as part of a working farm under the current redevelopment proposal.

Groundwater and Environmental Services

Outside of locations 1, 8 and 10, the property is modelled as having incomplete source, pathway and receptor linkages and no intrusive investigation of potential contamination is required for the proposed redevelopment areas.

6 Summary & Conclusions

This PSI has been undertaken to determine the potential for contamination across and beneath the ground at 2127 Kaipara Coast Highway due to past or present activities on the property or on surrounding land. This investigation involved a review of background information (including Auckland Council site contamination information, property file data and historic aerial photographs) and a walkover inspection of the property.

The Auckland Council site contamination enquiry response noted the potential for spray race operations in a former sheep yard and the presence of a transformer on site. The response also noted the presence of an above ground fuel storage tank on site in 2010. There was no recorded evidence of actual contamination at the site. No contamination related consents or pollution incidents were recorded for the property and there were no identified items in the surrounding area that would be likely to have resulted in contamination of the subject property.

The council property file includes building consents and plans for dwelling and other farm buildings on the site from 1969 onwards. The presence of a farm dairy effluent pond to the north-east of the milking shed was noted. Recorded activities included sheep, goat and cattle grazing as well as dairy farming along with the land application of dairy effluent to pasture. The presence of a disused former quarry on the property was also noted. The property file did not contain any records of existing contamination on the property. The presence of likely asbestos-containing materials in the dwelling was however noted in building specifications. No other potentially hazardous materials were noted.

The aerial photographs largely confirmed the available site history obtained from other sources that indicated that the property had historically been in pasture and used for stock grazing and dairy farming. The aerial photographs did not provide any visible indications of actual or potential contamination at the property. There were no activities identified on surrounding properties that were likely to be causing contamination of the subject property.

The walkover inspection of the property was carried out on 9 May 2022. The areas of potential environmental concern identified during the walkover included:

- The stock loading ramp, race and yards in the north of the property (location 1) where stock spraying could potentially have taken place and resulted in contamination of the ground;
- The former sheep yard area (location 8) where stock spraying could potentially have taken place and resulted in contamination of the ground; and
- The above ground fuel tanks (location 10) where fuel leaks could have resulted in contamination of the underlying ground.

The identified features are in areas that are to remain part of the working farm and, as such, will not be subject to a change in land use or redevelopment earthworks.

There were no activities observed on neighbouring properties that were likely to have resulted in contamination of the subject property.

Groundwater and Environmental Services

HAIL activities identified at the property included the potential for livestock spray operations to have been carried out at two locations in the northern part of the property, outside of proposed redevelopment areas. The presence of disused above ground fuel storage tanks near to the milking shed was confirmed. Although an electrical transformer was identified on site, the pole mounted transformer is unlikely to have resulted in any significant contamination of the ground beneath it.

The preliminary conceptual site model identified the potential for contamination within limited areas of the site with confirmed or possible HAIL activities. The possible livestock spray areas (locations 1 and 8) and the above ground fuel storage area (location 10) are within the part of the site that is to remain a working farm. Intrusive investigation of potential contamination would be required for these areas if they were to undergo a future change of land use or any earthworks associated with the proposed redevelopment.

Outside of locations 1, 8 and 10, the property is modelled as having incomplete source, pathway and receptor linkages and no intrusive investigation of potential contamination is required for the proposed redevelopment areas.

The information gathered for this PSI indicates that further investigations are unlikely to be required prior to the currently proposed redevelopment of the site and that no consents for site redevelopment are likely to be required under the NES or the contaminated land provisions of the Auckland Unitary Plan.

As with any assessment of this nature, there is always the possibility that additional items not visible during the investigation may be revealed during more detailed subsequent investigations or during redevelopment work at the site. Any such items should be evaluated by a suitably qualified environmental consultant in accordance with the requirements of Auckland Council.

7 PSI Certifying Statement

I **Andrew James MacDonald** of Groundwater and Environmental Services certify that:

This preliminary site investigation report meets the requirements of the Resource Management (National Environmental Standard for assessing and managing contaminants in soil to protect human health) Regulations 2011 because it has been:

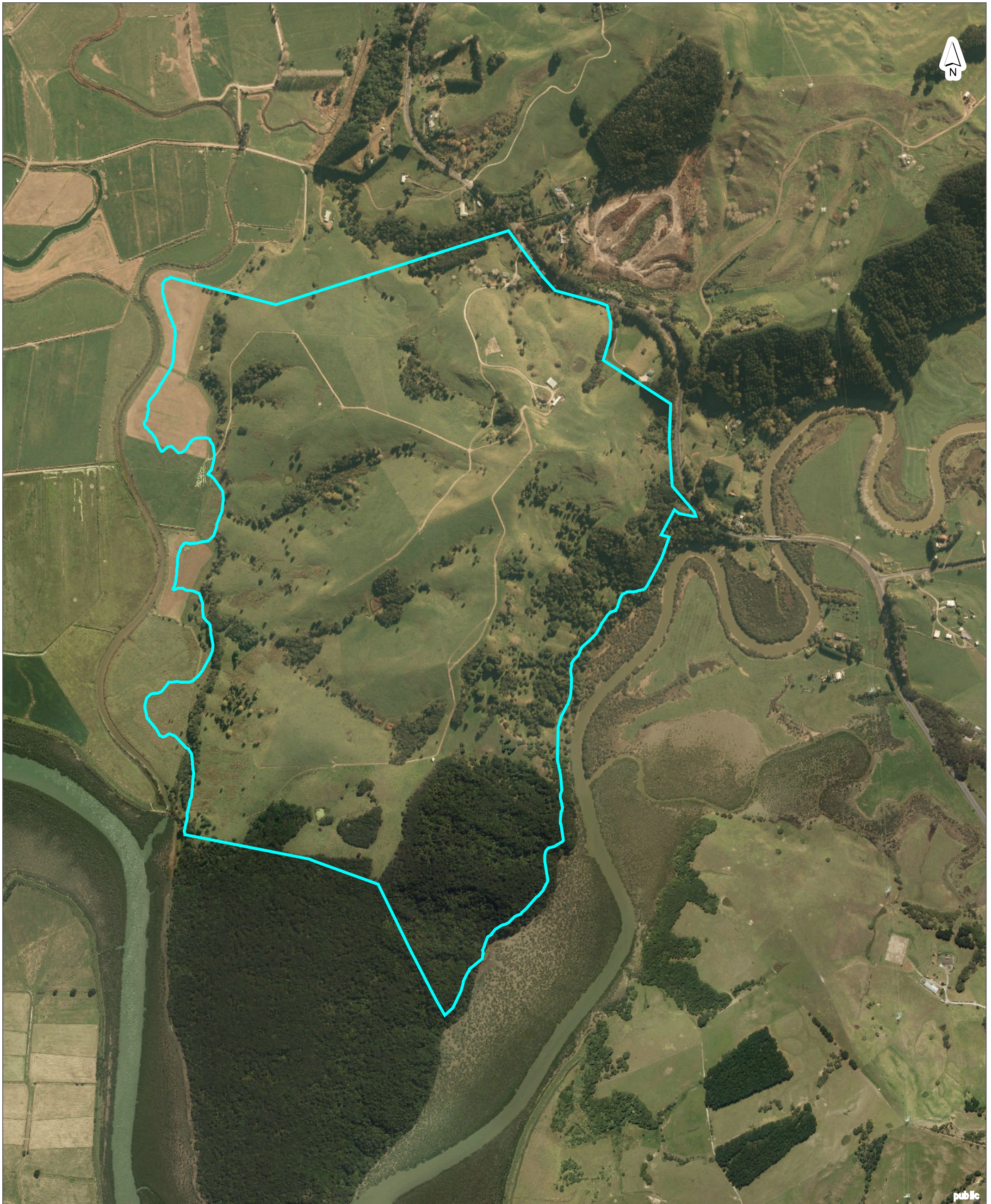
- Carried out by a suitably qualified and experienced practitioner;
- Reported on in accordance with the current edition of Contaminant Land Management Guidelines No 1 – Reporting on Contaminated Sites in New Zealand (June 2021); and
- Certified by a suitably qualified and experienced practitioner.

Evidence of the qualifications and experience of the suitably qualified and experienced practitioner who has carried out this investigation and has certified this report is appended to this plan in Appendix E.

Signed and dated:

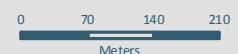


30 May 2022



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Figure 1: Site Location and Layout
2127 Kaipara Coast Highway



Scale @ A3
= 1:8,000

Date Printed:
10/05/2022



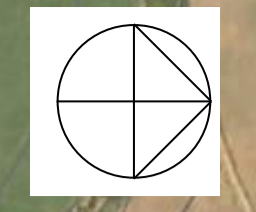
Auckland Council
Te Kaurihera o Tāmaki Makaurau

Planting area	Area in hectares
A	32.02ha
B	1.89
C	1.25
D	4.9
E	3.25
F	1.3
G	2.25
H	0.47
I	0.59
J	0.33
K	3.0
L	0.61
M	1.94
N	1.72
O	4.11
P	0.88
Q	0.16
R	0.38
S	1.28
T	0.39
U	0.17
V	1.83
W	0.64
X	0.42
Total	65ha

Paddocks & Yards	Area in hectares
Total	52.6ha

Lot number	Area in hectares
1	0.4224
2	0.4150
3	0.4095
4	0.3738
5	0.3879
6	0.3616
7	0.3320
8	0.4000
9	0.3354
10	0.3677
11	0.3177
12	0.2981
13	0.3416
14	0.4006
15	0.3169
16	0.3244
17	0.3476
18	0.4170
19	0.4098
20	0.3462
21	0.4081
22	0.3380
23	0.3402
24	0.3274
25	0.3500
Total	9.09ha

Orchard number	Area in hectares
1	.6155ha
2	.1945
3	.1297
4	.0980
5	.3367
Total	1.3744ha



Legend

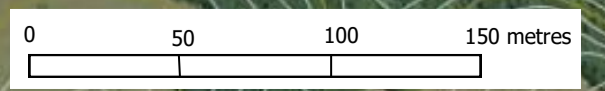
- Vegetation regeneration/ revegetation/infill areas
- Permanent stream
- Intermittent stream
- Wetland/Riparian Areas
- Wi grassland
- Septic Irrigation Fields to be planted
- Area in which wastewater fields may be located (for Lots 9 to 12)
- Pedestrian / Cycle Trail
- Roading network
- Fencing
- Road Crossings
- Gate
- Orchard
- Paddock number
- Lot number
- Building platform
- Archaeological Site

GOODLAND COASTAL FARM PLAN

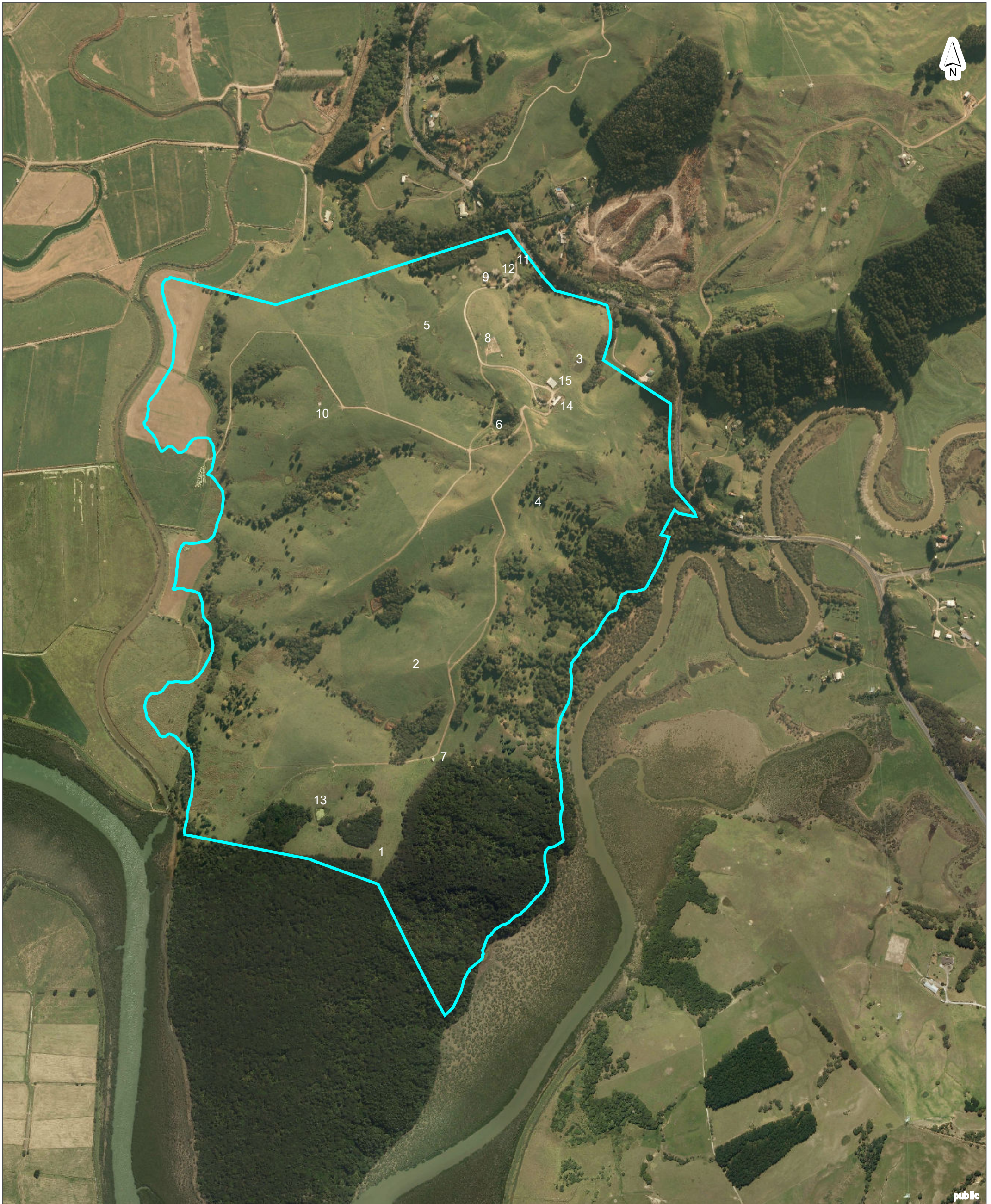
2127 KAIPARA COAST HIGHWAY, KAKANUI
 scale: 1:2500 @ A1; 1:5000 @ A3 date: 21 March 2022
 Job no: 21016



Geraldine Bayly p 09 420 3434 m 021 475 222
 e geraldine@kaiparacoast.co.nz
 PO Box 63 Kaukapakapa Auckland 0843



Base Plan produced by Crang Civil Consulting Engineers



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Figure 3: Aerial Photograph Features

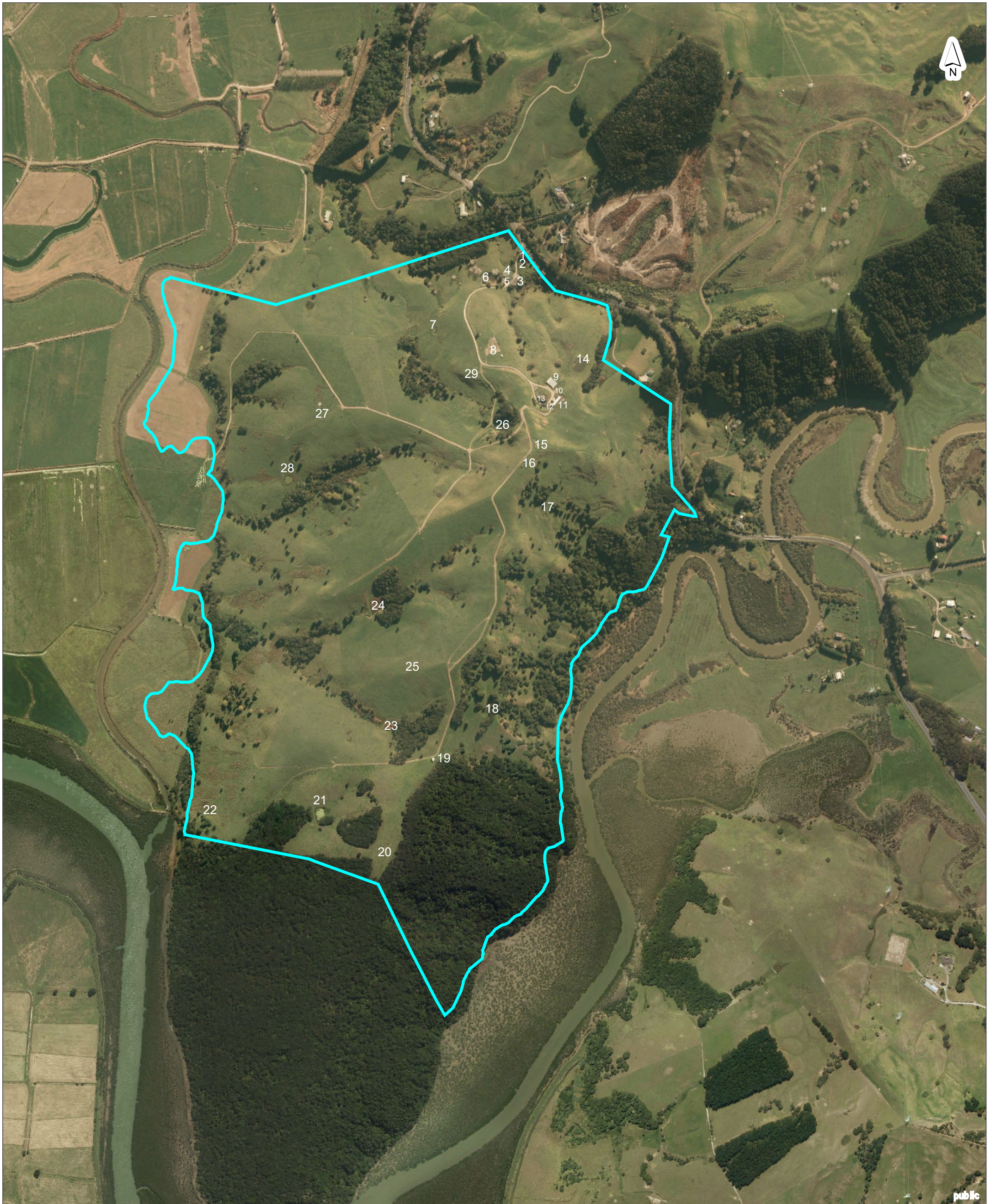


Scale @ A3
= 1:8,000

Date Printed:
10/05/2022



Auckland Council
Te Kaurihera o Tāmaki Makaurau



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Figure 4: Site Inspection Features

0 70 140 210
Meters

Scale @ A3
= 1:8,000

Date Printed:
10/05/2022



Appendix A
Site Contamination Enquiry Response

11 May 2022

Groundwater and Environmental Services
70 Hooker Road
HAMILTON 3283

Attention: Andrew MacDonald

Dear Andrew

Site Contamination Enquiry at 2127 Kaipara Coast Highway, Kakanui

This letter is in response to your enquiry requesting available site contamination information within Auckland Council records for the above site. Please note this report does not constitute a site investigation report; such reports are required to be prepared by a (third-party) Suitably Qualified and Experienced Practitioner.

The following details are based on information available to the Contamination, Air & Noise Team in the Resource Consent Department. The details provided may be from former regional council information, as well as property information held by the former district/city councils. For completeness the relevant property file should also be requested to obtain all historical records and reports via 09 3010101 or online at:

<https://www.aucklandcouncil.govt.nz/buying-property/order-property-report/Pages/order-property-file.aspx>.

1. Hazardous Activities and Industries List (HAIL) Information

This list published by the Ministry for the Environment (MfE) comprises activities and industries that are considered likely to cause land contamination as a result of hazardous substance use, storage, and/or disposal.

Council's records indicate this site has possibly been subject to the following activity that falls within the HAIL:

- HAIL Item (A.8)– Livestock dip or spray race operations
- HAIL Item (A.17)– Storage tanks or drums for fuel, chemicals or liquid waste
- HAIL Item (B.2)– Electrical transformers including the manufacturing, repairing or disposing of electrical transformers or other heavy electrical equipment

Council records indicate the potential for spray race operations on site. Additionally records indicate the presence of a transformer on site. Further records indicate an above ground storage tank was present on site in 2010.

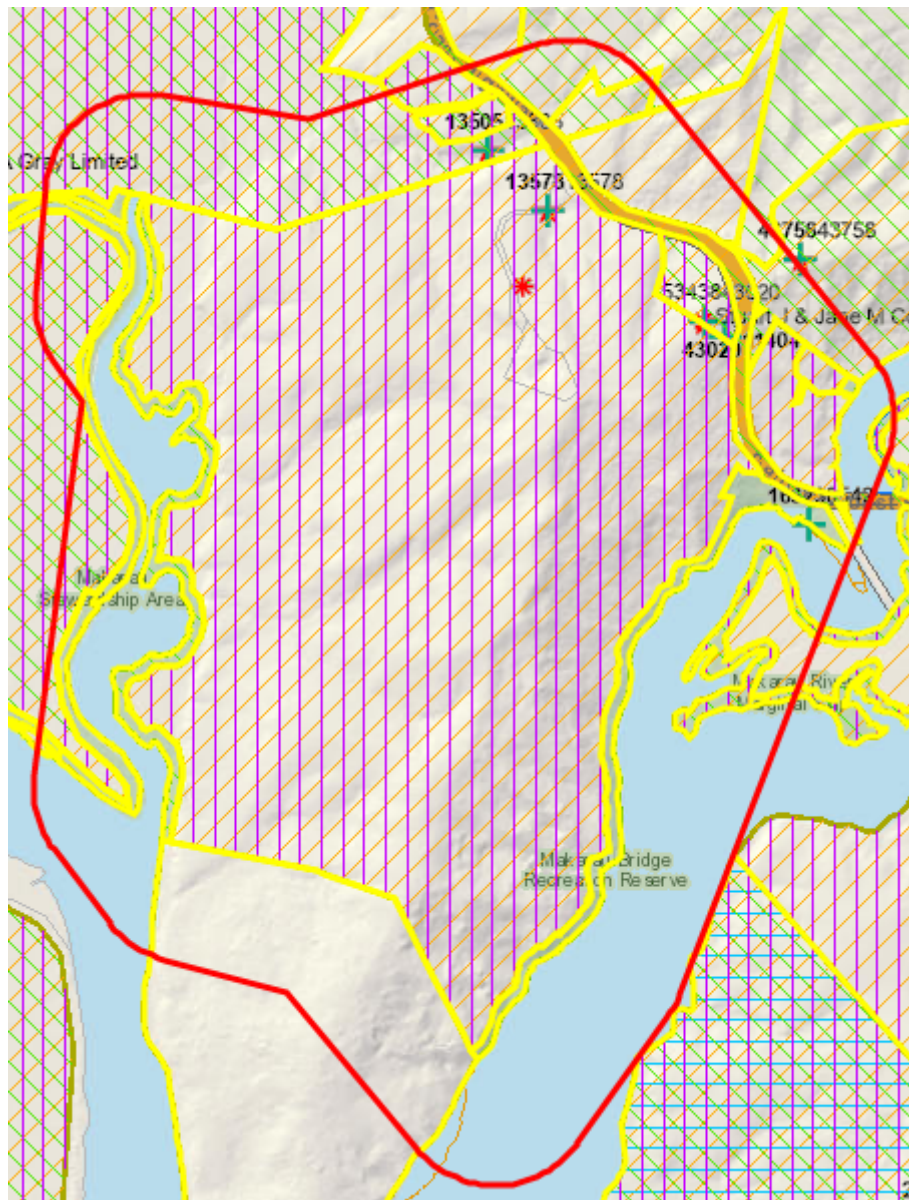
Please note:

- *If you are demolishing any building that may have asbestos containing materials (ACM) in it, you have obligations under the Health and Safety at Work (Asbestos) Regulations 2016 for the management and removal of asbestos, including the need to engage a Competent Asbestos Surveyor to confirm the presence or absence of any ACM.*
- *Paints used on external parts of properties up until the mid-1970's routinely contained lead, a poison and a persistent environmental pollutant. You are advised to ensure that soils affected by old, peeling or flaking paint are assessed in relation to the proposed use of the property, including high risk use by young children.*

2. Consents and Incidents Information (200m radius of the selected site)

The Council database was searched for records of the following activities within approximately 200 metres of the site:

- Pollution Incidents (including air discharges, oil or diesel spills)
- Bores
- Contaminated site and air discharges, and industrial trade process consents
- Closed Landfills
- Air quality permitted activities



Legend:

All Consents +	Closed Landfill (Auckland Council owned) □
All Applications ■	Closed Landfill (Privately owned) ■
All Permitted Activities *	
All Bores ★	

Relevant details of any pollution incidents and consents are appended to this letter (Attachment A). Please refer to the column titled 'Property Address' on the spreadsheet to aid in identifying corresponding data on the map.

While the Auckland Council has carried out the above search using its best practical endeavours, it does not warrant its completeness or accuracy and disclaims any responsibility or liability in respect of the information. If you or any other person wishes to act or to rely on this information, or make any

financial commitment based upon it, it is recommended that you seek appropriate technical and/or professional advice.

If you wish to clarify anything in this letter that relates to this site, please contact contaminatedsites@aucklandcouncil.govt.nz. Any follow up requests for information on other sites must go through the online order process.

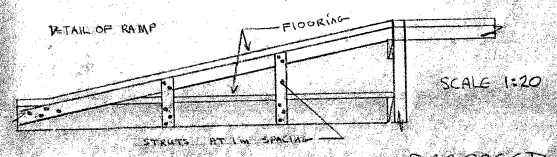
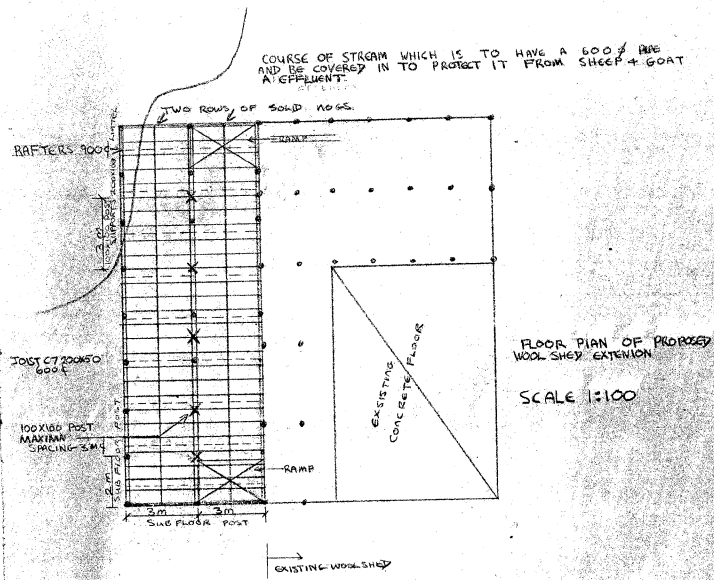
Should you wish to request any of the files referenced above and/or listed in the attached spreadsheet for viewing, please contact the Auckland Council Call Centre on 301 0101 and note you are requesting former Auckland Regional Council records (the records department requires three working days' notice to ensure the files will be available).

Please note Auckland Council cost recovers officer's time for all site enquiries. As such an invoice for \$228 for the time involved in this enquiry will follow shortly.

Yours Sincerely,

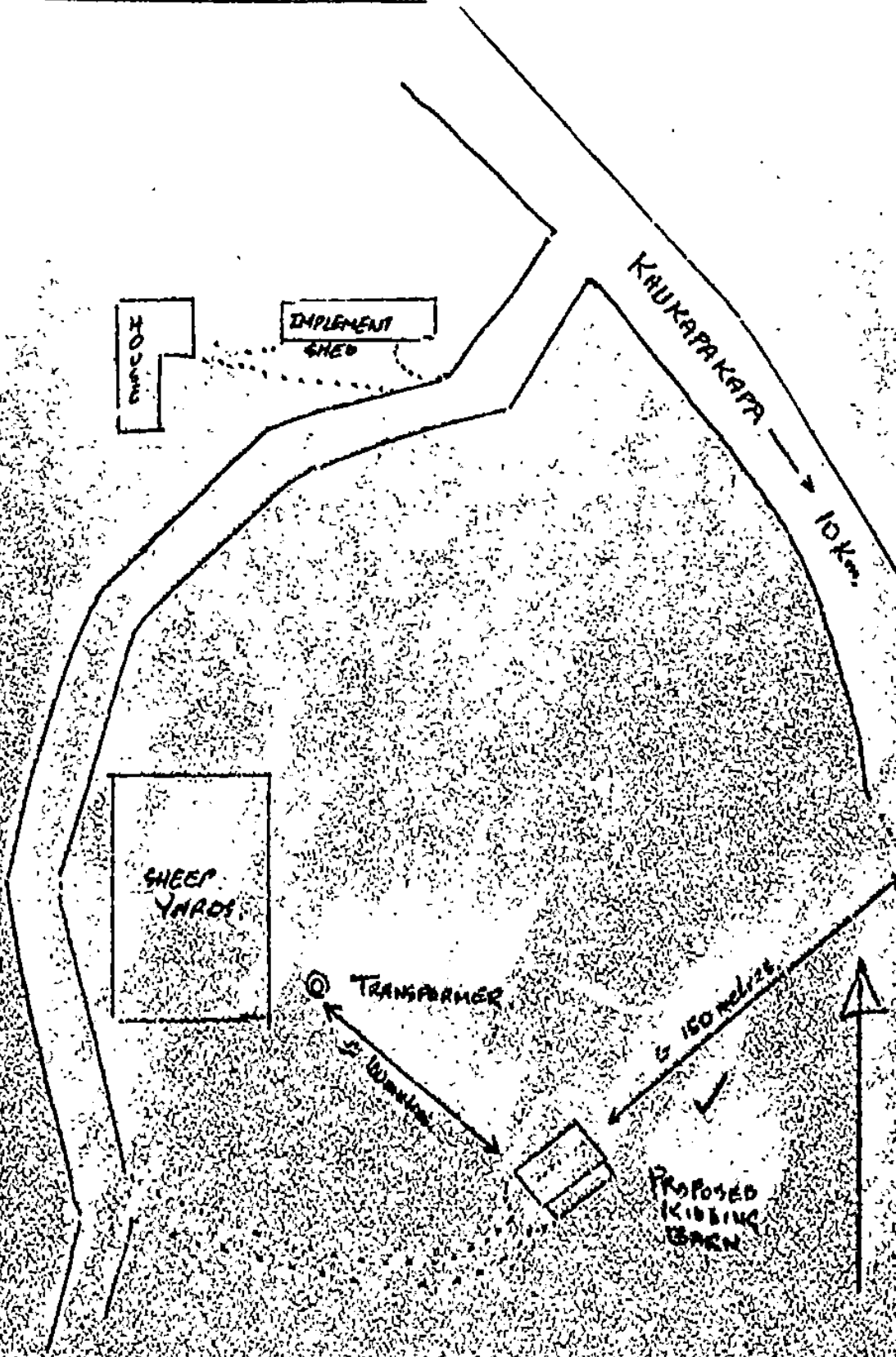
**Contamination, Air and Noise Team
Specialist Unit | Resource Consents
Auckland Council**

**Appendix B
Property File Figures**

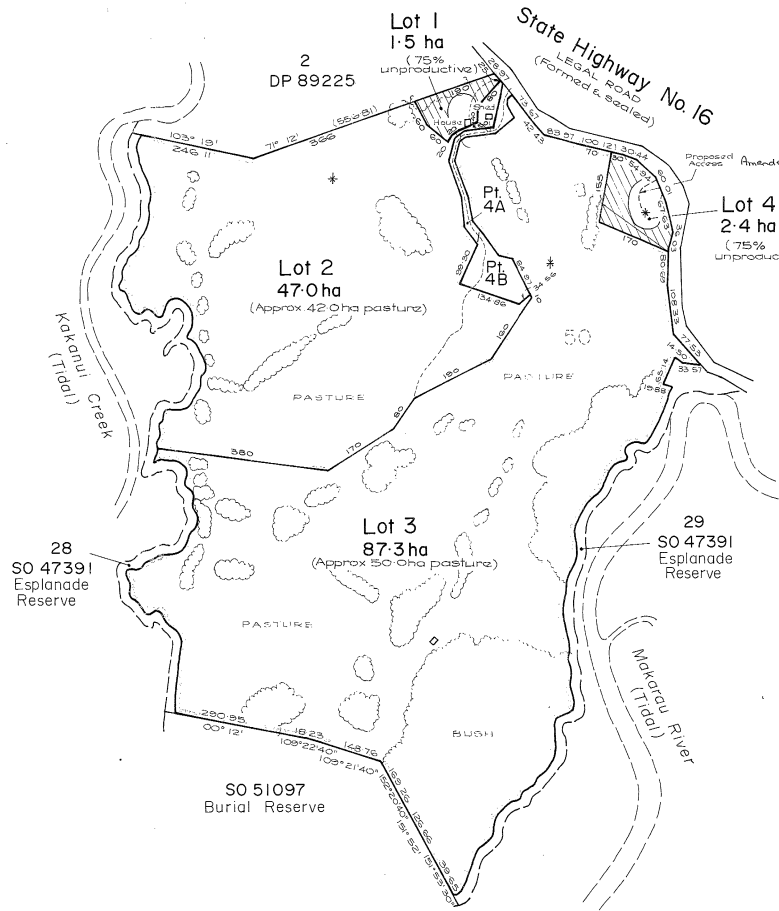


DRAWING NO 2 OR 3 OF PROPOSED EXTENSION TO WOOL SHED FOR BELLS HILL GOAT AND SHEEP FARM

LOCATION MAP



Amended Plan received
17/2/94



**LOTS 1 to 4 BEING A
PROPOSED SUBDIVISION
OF SECTION 50
BLOCK II KAIPARA S.D.
Blk. II KAIPARA S.D.
NORTH AUCKLAND L.D.
COMPRISED IN C.T. 42/938
RODNEY DISTRICT COUNCIL
TOTAL AREA 138.2000 ha**

Approved by the Rodney District Council under Section 105 of the Resource Management Act 1991 at a meeting held on the 24 day of April, 1992 subject to the conditions contained in resolution no.

[Signature]
General Manager

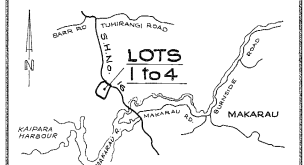
I, John Russell Bolam, Registered Surveyor hereby certify that this schematic plan has been prepared by me in accordance with the provisions of the Code of Subdivision of the Rodney District Council.

[Signature]

AREAS AND MEASUREMENTS SUBJECT TO SURVEY

WARD: Helensville
ZONING: Rural One
BASIS OF APPLICATION:
Lots 1 & 4 ~ Rural Residential
Lots 2 & 3 ~ Pastoral

NOTES:
 Unproductive steep land within rural residential lot
 Possible building sites



LOCALITY PLAN
R.D.C. Map ~ N12

BOLAM & ASSOCIATES LTD

Registered Land and Engineering Surveyors
Land Development and Town Planning Consultants

**N.W. & S.B. BEAVER
MAKARAU**

R15773

SCALE 1:6000	DATE NOV. 1991	DRAWING No. 2508-2
-----------------	-------------------	-----------------------

Appendix C
Historic Aerial Photographs



F 14
New Zealand
C. H. R. S. 17-1-41



[77327]

No 250
1986
209.76



1886 M/12



No 250
1886
209.76



1886 M/13



Ag 76
0491
11441

N 37 / 3B

5041 / 13

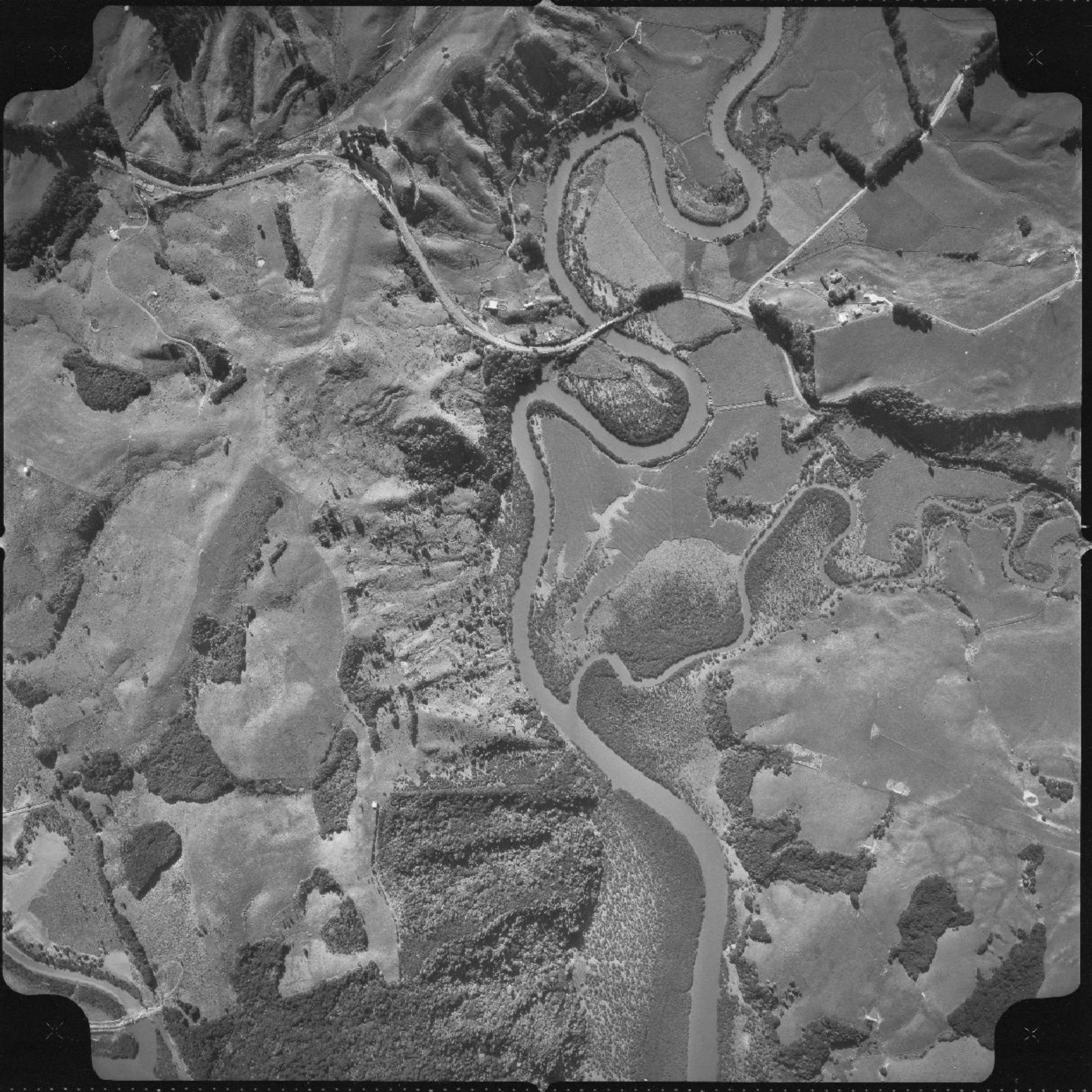
1875

HANICARLE
25000
28-9-68

Ag 76
95.7
114.41



SN 3737 B/2



Ag 76
114.41



SN 3737 A/2



SN 5070 L/II

157



SN 5783 E/II

248



SN 8772 B/7

990

**Appendix D
Site Photographs**

Groundwater and Environmental Services



Stockyard – location 1



Plywood shed– location 3



Loading ramp – location 1



Shearing shed– location 4



Stock race– location 1



Groundwater bore– location 5



Timber stockpile– location 2



Interior of shearing shed– location 4

Groundwater and Environmental Services



Interior of shearing shed– location 4



Track to milking shed



Dwelling – location 6



Calf rearing shed – location 9



Concrete pad – location 8



Calf rearing shed – location 9



Pad & transformer – location 8



Calf rearing shed – location 9

Groundwater and Environmental Services



Calf rearing shed – location 9



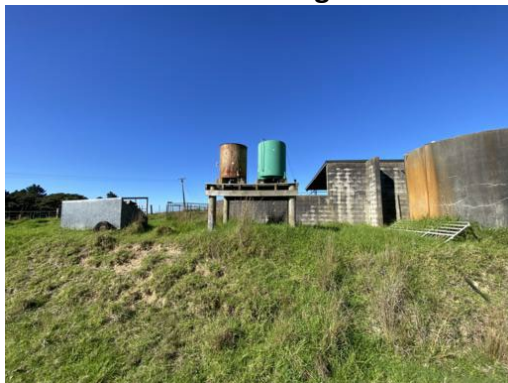
Milking shed pumps – location 11



Water tanks and milking shed



Milking shed - location 11



Above ground fuel tanks – location 10



Silo - location 12



Milking shed yard – location 11



Portacom & container - location 13

Groundwater and Environmental Services



Dairy effluent pond – location 14



Disused hay baler – location 19



Trig Station – location 15



Raised ground area – location 19



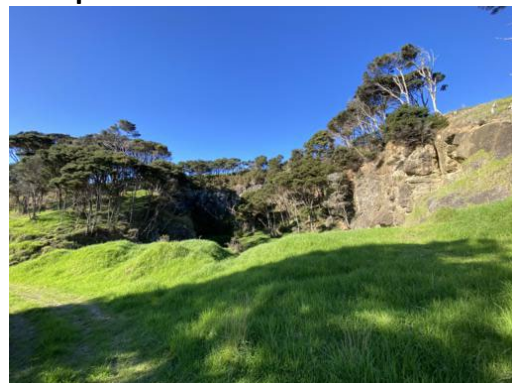
View to south west from location 15



Collapsed shed – location 27



View to south from location 15



Former quarry – location 26

Groundwater and Environmental Services



Former quarry – location 26



Surface farm rubbish – location 29



Surface farm rubbish – location 29

Appendix E
Statement of Qualification

Groundwater and Environmental Services

My full name is **Andrew James MacDonald**. I am an environmental consultant trading as **Groundwater and Environmental Services (GES)**.

I certify that I meet the requirements to operate as a suitably qualified and experienced practitioner (SQEP) under the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (NES) in contaminated land and groundwater assessment, management and remediation.

I hold Bachelor of Science and Master of Science Honours degrees from Auckland University.

I have worked as a consultant in the field of contaminated land and groundwater assessment, management and remediation since 1991. In that time, I have dealt with contamination issues at numerous industrial, commercial, horticultural, rural and residential sites throughout New Zealand on behalf of commercial, local government and central government clients.

CAPABILITIES

Environmental Site Investigation
Remediation of Contaminated Land
Environmental Effects Assessment
Contaminated Site Consents
Groundwater Investigation
Contaminant Transport Modelling
Groundwater Contamination Remediation

EDUCATION

Bachelor of Science (Geology)	University of Auckland, 1989
Master of Science, Hons (Geology)	University of Auckland, 1991
Environmental Law (COP)	University of Auckland, 1993
Resource Management (Planning) Law (COP)	University of Auckland, 1993

PROFESSIONAL HISTORY

1995 - Groundwater and Environmental Services, Principal
1991 - 1995 Woodward-Clyde (NZ) Ltd, Environmental Scientist

REPRESENTATIVE EXPERIENCE

- Preliminary and detailed environmental site investigations of a wide range of potentially contaminated sites.
- Remedial action/site management plans for contaminated sites.
- Organisation and supervision of remediation at contaminated sites.
- Validation of remediation at contaminated sites.
- Long term contaminated site monitoring and management plans.
- Resource consents for site remediation and ongoing discharges of contaminants to ground at contaminated sites.
- Provision of expert evidence related to contamination issues.

Groundwater and Environmental Services

- Peer review of contaminated site investigations.
- Drilling supervision, soil sampling and groundwater monitoring well installation at a range of sites for investigations of contaminated ground and groundwater.
- Computer modelling of groundwater contaminant transport and associated environmental effects.