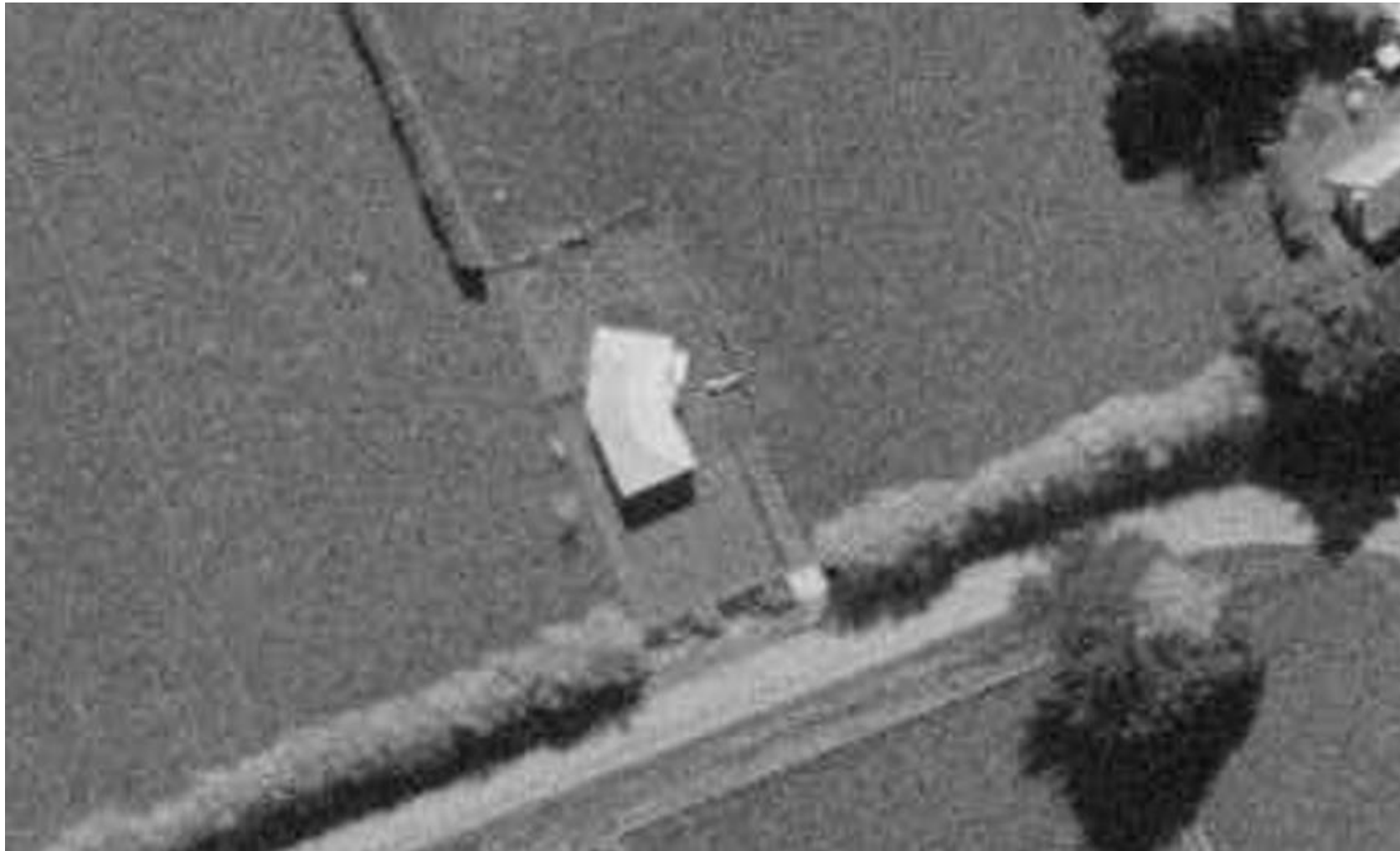


1959 Historical Photograph



Source: Auckland Council GeoMaps

1960 Historical Photograph



Source: NZ Aerial Mapping

1975 Historical Photograph



Source: NZ Aerial Mapping

1981 Historical Photograph



Source: NZ Aerial Mapping

1988 Historical Photograph



Source: NZ Aerial Mapping

2001 Historical Photograph



Source: Auckland Council GeoMaps

2006 Historical Photograph



Source: Auckland Council GeoMaps

2008 Historical Photograph



Source: Auckland Council GeoMaps

2010 Historical Photograph



Source: Auckland Council GeoMaps

2015 Historical Photograph



Source: Auckland Council GeoMaps

2017 Historical Photograph



Source: Auckland Council GeoMaps

PRELIMINARY SITE INVESTIGATION
143 COSGRAVE ROAD
PAPAKURA
AUCKLAND

For the Attention of:

Winton Land Limited

Reference: FES 1804.009 December 2023





Company Information

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Quality Information

Project Name Preliminary Site Investigation

143 Cosgrave Road, Papakura, Auckland

Project Number 1804.009

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Date December 2023

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Authorised

David O'Reilly
Principal Environmental Consultant

Distribution List

Parties	Copies
Winton Land Limited	1
Focus Environmental Services Limited	1



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Executive Summary

This Focus Environmental Services Limited report is produced under a management system certified as complying with ISO 45001:2018 by SGS New Zealand.

Focus Environmental Services Limited was contracted by Winton Land Limited to carry out a Preliminary Site Investigation (PSI) at 143 Cosgrave Road, Papakura, Auckland. The legal description of the site is Lot 1 DP 103787 with an area of 3.04ha.

The Sunfield Urban Development Area (UDA) consists of nineteen properties located across Cosgrave Road, Old Wairoa Road, Hamlin Road and Airfield Road, Papakura, Auckland.

The scope of this report is limited to the property at 143 Cosgrave Road, and should be read in conjunction with the covering letter summarising the findings of the PSIs and DSIs completed for the Sunfield UDA.

This PSI has been prepared in accordance with the requirements of the Contaminated Land Management Guidelines No. 1 and No. 5 (Ministry for the Environment, Revised 2021).

The history of the site was researched by Focus Environmental Services Limited personnel, which involved a review of the available historical aerial photographs of the site.

During the review of the available information, the following potentially contaminating activities or land uses were identified:

- Horticultural Activities;
- Treated timber storage
- Demolition of historic structures potentially containing asbestos; and
- The use and maintenance of lead-based paints.

The information obtained of the site's history was assessed to determine if any potentially hazardous activities listed on the Hazardous Activities and Industries List (HAIL) had occurred on site as a result of past or current land use.

A walkover and site inspection were not possible, as access to the property was not permitted at the time of writing this report. Therefore, the identification of any potential HAIL activities carried out at the site was limited to a desktop assessment. Once access is granted, it is recommended that a site walkover take place to identify any additional potentially contaminating land uses and/or activities that have not been identified in the information made available.

Based on the results of this Preliminary Site Investigation, it is considered that an activity described in the HAIL has been, or is more likely than not to have been, carried out on the site.

Furthermore, as the impact of the HAIL activities identified on the site soils has not been determined, it is recommended that, prior to any earthworks occurring onsite, a detailed site investigation is completed on the property found at 143 Cosgrave Road, Papakura.

The detailed site investigation would confirm if the identified land uses and/or activities have affected the site soils and will confirm the remediation requirements, if any, for the site.

Based on the findings of the preliminary site investigation for the site, it is considered that the regulations of the National Environmental Standard (NES) for Assessing and

Managing Contaminants in Soil to Protect Human Health, and the contaminated land rules as outlined in Chapter E30 of the Auckland Unitary Plan: Operative in Part (AUP: OP), need to be considered and consents under these regulations may be triggered by future development of the site.

The detailed site investigation shall be carried out in general accordance with the Contaminated Land Management Guidelines No. 1 and No. 5 (MfE, Revised 2021).

Following the receipt of the sampling results, a technical report summarising the results of the investigation shall be prepared. The report will be prepared in accordance Contaminated Land Management Guidelines No. 1(MfE, Revised 2021). The report will include:

- Recommendations for any additional investigations if required;
- A statement on whether or not any additional consents are required;
- Recommendations that a Site-Specific Management/Remediation Action Plan is prepared in order to provide controls to mitigate against the potential risks to human health and/or the environment as a result of the effects associated with the site redevelopment works.

All works should be carried out in accordance with the global Site Management Plan titled '*Site Management Plan, Sunfield Urban Development Area*' dated December 2023 and prepared by Focus Environmental Services. If the controls outlined in the Site Management Plan are implemented during the development works, the effects on the environment are likely to be effectively mitigated.

This report is certified by David O'Reilly, Suitability Qualified and Experienced Practitioner (SQEP):



Principal Environmental Consultant
Focus Environmental Services Limited

1.0 Scope

- 1.1 This report has been prepared at the request of Winton Land Limited ("the Client") in terms of the Focus Environmental Services Agreement ("Agreement").
- 1.2 The following report is based on:
 - *Information provided by the Client; and*
 - *A review of historical aerial photographs available for the site.*
- 1.3 We have not independently verified the information provided to us by the Client or its completeness. We do not express an opinion on the accuracy or the reliability of such information.
- 1.4 No warranties are given, intended or implied.
- 1.5 Opinion, inferences, assumptions and interpretations made in this report should not be construed as legal opinion.
- 1.6 Where an assessment is given in this report, the Client must also rely upon their own judgement, knowledge and assessment of the subject of this report before undertaking any action.
- 1.7 This report must not be used in any other context or for any other purpose other than that for which it has been prepared without the prior written consent of Focus Environmental Services.
- 1.8 This report is strictly confidential and intended for the sole use of the Client and shall not be disclosed without the prior written consent of Focus Environmental Services.
- 1.9 This Focus Environmental Services Limited report is produced under a management system certified as complying with ISO 45001: 2018 by SGS New Zealand.

2.0 Site Identification

The property is located at 143 Cosgrave Road, Papakura, Auckland as shown in Figure 1 attached. The legal description of the site is Lot 1 DP 103787 with an area of 3.04ha. The site is located at national grid reference 1773809mE and 5898511mN.

The site is rectangular in shape and is zoned 'Rural – Mixed Rural Zone' under the AUP: OP.

The site location plan is presented as Figure 1.

3.0 Proposed Site Redevelopment Activity

It is proposed that the site will be redeveloped for residential purposes. As part of the redevelopment, the site will undergo subdivision, a change of land use and disturbance of soils.

The illustrative masterplan is attached as Appendix A.

4.0 Site Topography

The property at 143 Cosgrave Road, Papakura has a generally flat landscape.

The site contour plan is presented in Appendix B.

5.0 Geology and Hydrology

Published geological maps¹ indicate the site is typically underlain with Tauranga Group Holocene River Deposits. A description of the underlying geology is presented in Table 1 below.

Table 1: Geology of 143 Cosgrave Road, Papakura.

Key name	OIS1 (Holocene) river deposits
Simple name	Holocene river deposits
Main rock name	Mud
Description	Sand, silt, mud and clay with local gravel and peat beds.
Subsidiary rocks	Sand, silt, clay, peat
Key group	Holocene sediments
Stratigraphic lexicon name	Tauranga Group
Absolute age (min)	0.0 million years
Absolute age (max)	0.014 million years
Rock group	Mudstone
Rock class	Clastic sediment

No groundwater investigation was carried out as part of this investigation.

The nearest surface water bodies are the unnamed, open culvert which flows along Cosgrave Road along the western boundary of the site and an unnamed open stream located approximately 251m to the east of the site.

¹ Geology of the Auckland Area (Institute of Geological & Nuclear Sciences 1:250,000 geological map 3, 2011)

6.0 Regulatory Framework

6.1 The National Environmental Standard

The Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (NES) came into effect on the 1st of January 2012 and supersedes any District Plan rules that related to contaminated land. Any Regional Plan rules relating to contaminated land are still applicable.

In brief, the objective of the NES is to ensure that land affected by contaminants is identified and assessed and, if necessary, remediated or managed to protect human health. The NES only applies to the activities: removing or replacing all, or part of, a fuel storage system; sampling the soil; disturbing the soil; subdividing the land; and changing the land use, and where an activity or industry described in the Hazardous Activities and Industries List (HAIL) is being, has been, or is more likely than not to have been undertaken on the piece of land.

The NES also contains reference to the Soil Contaminant Standards for human health (SCS_(health)), for a variety of land use scenarios along with reference to best practice reporting documents.

The environmental HAIL is attached as Appendix C.

6.2 The National Environmental Standard

The contaminated land rules of the Auckland Unitary Plan: Operative in Part (AUP: OP) have immediate legal effect following its notification. As the AUP: OP was notified on the 15th of November 2016 the contaminated land rules of the AUP: OP must be considered.

In brief, the objective of the AUP: OP is to manage land containing elevated levels of contaminants to protect human health and the environment and to enable the effective use of the land.

The contaminated land rules of the AUP: OP apply when the land contains contaminants above those levels specified in Table E30.6.1.4.1 of Chapter E30 of the AUP: OP.

7.0 Site History

The history of the site was researched by Focus Environmental Services Limited personnel, which involved a review of the available historical aerial photographs of the site.

7.1 Historical Aerial Photographs

Descriptions of the historical aerial photographs for the subject site are presented in Table 2 below. The historical aerial photographs are presented in Appendix D.

Table 2: Historical Photographs: 143 Cosgrave Road, Papakura.

Date	Description
1959 - 1980	The 1959 – 1980 historical photographs show the subject site is part of a larger parcel of land in use for rural purposes. No structures are visible on the subject site throughout this time period. Cosgrave Road is visible bordering the western boundary of the subject site. A racing oval is visible on the property to the west of the subject site. The surrounding properties are in use for rural and rural-residential purposes.
1988	The 1988 historical photograph shows the subject site has been subdivided from the larger parcel of land. The site is now in use for rural – residential purposes. A dwelling has been constructed in the south-western corner of the site. The eastern half of the site appears to be in use for horticultural purposes (likely pip and stone), while the remaining balance of the site appears to be grassed. The horticultural area is bounded by shelter belts on the eastern and western aspects. The northern and southern aspects are unbounded. An area of horticulture can be observed directly to the south of the subject site. The neighbouring properties remain in use for rural and rural – residential purposes.
1996 - 2017	The 1996 – 2017 historical photographs show the subject site remains in use for rural – residential purposes. The 1996 historical photograph shows that a garage has been constructed to the south of the dwelling along with two sheds (HB01 & 1) to the east of the dwelling. The majority of the site boundary is now vegetated with shelter belts. The 2006 historical photograph shows an additional area of horticulture is now present on the site in the central – northern portion. The 2008 historical photograph shows the storage of treated timber directly to the east of HB01. The shelter belt present along the southern boundary has been removed and a further area of horticulture is observed near the western boundary. The 2010 historical photograph shows that the northern shelter belt has also been removed with the majorant of the site now in use for horticultural purposes. The south-western corner has been paved and a shed (2) constructed. The 2017 historical photograph shows the site relatively unchanged with the exception of the removal of HB01. The neighbouring properties remain in use for rural and rural – residential purposes.

Due to the age of the dwelling (pre-1988) located in the south-western portion of the site, it is considered likely that lead-based paints would have been utilised in the external building materials.

In addition, it is considered likely that potentially asbestos containing materials would have been used in the construction of the current site buildings, with the exception of shed (2) (pre-2000).

7.2 Previous Investigations

At the time of writing this report, the results of a geotechnical investigation covering the site was not available. If future geotechnical investigations identify uncertified fills, these shall be investigated as part of any Detailed Site Investigation completed accordingly.

8.0 Site Walkover and Inspection

A walkover and site inspection were not possible at the time of writing the report as access to the property was not permitted. Therefore, the identification of any potential HAIL activities carried out at the site was limited to a desktop assessment. Once access is received, a walkover should take place to identify any additional potentially contaminating land uses and/ or activities that have not been identified as part of the desktop assessment.

The site features able to be identified as part of the desktop assessment are presented as Figure 2.

9.0 Surrounding Environment

The surrounding environment appeared to be predominantly in use for rural and rural-residential purposes. A racing oval is observed to the east of the site. Residential properties were observed further south-west in the wider area.

A large area of excavation works can be observed to the north-west of the subject site, likely to facilitate further residential development.

The surrounding environment is presented as Figure 3.

10.0 Asbestos Management

Due to the age of the dwelling and sheds (HB01 and 1) (pre-1996), external PACM products are likely to be present in the construction materials.

Any removal of asbestos materials from the site will need to be conducted in accordance with the Health and Safety at Work (Asbestos) Regulations (MBIE, 2016) and the Approved Code of Practice for the Management and Removal of Asbestos (WorkSafe New Zealand, 2016) by a licensed asbestos removals specialist under an approved asbestos removal control plan.

It should be noted that ACM, other than that described, may also be present at the site and a thorough inspection should be carried out by a suitably qualified and competent asbestos surveyor prior to any demolition activities at the site.

11.0 Potentially Contaminating Activities or Land Uses

Following a review of the history and the available information relating to the site located at 143 Cosgrave Road, Papakura the potentially contaminating land uses and/or activities identified have been summarised in Table 3 below.

Table 3: Potential Contaminating Activities and/or Land Uses: 143 Cosgrave Road, Papakura.

Activity Description	HAIL Category
Horticultural Activities	A10
Treated Timber Storage	A18
Demolition of Historic Structures Potentially Containing Asbestos	E1
Maintenance and Use of Lead-based Paint	I

12.0 Conceptual Model of Exposure Pathways

The assessment provided in Table 4 below expands on the potential sources of contamination identified within the site and was based on the potential effects of the subdivision, change of land use and soil disturbance activities on human health and the environment associated with future residential development.

Table 4: Conceptual Site Model: 143 Cosgrave Road, Papakura.

Potential Source	Potential Pathways	Potential Receptors	Assessment
Contaminated Soil	Dermal Contact with Contaminated Soils	Human Health – Residential Land Use	Potentially Complete: Sampling and analysis are recommended to confirm the concentrations of contaminants in soil.
		Human Health – Commercial/Industrial Outdoor Worker	Potentially Complete: Sampling and analysis are recommended to confirm the concentrations of contaminants in soil.
	Ingestion of Contaminated Soils	Human Health – Residential Land Use	Potentially Complete: Sampling and analysis are recommended to confirm the concentrations of contaminants in soil.
		Human Health – Commercial/Industrial Outdoor Worker	Potentially Complete: Sampling and analysis are recommended to confirm the concentrations of contaminants in soil.
	Inhalation of Vapours/Fibres	Human Health – Residential Land Use	Potentially Complete: Sampling and analysis are recommended to confirm the concentrations of contaminants in soil.
		Human Health – Commercial/Industrial Outdoor Worker	Potentially Complete: Sampling and analysis are recommended to confirm the concentrations of contaminants in soil.
	Surface Water Run-off	Ecological Receptors - Unnamed Culvert	Potentially Complete: Sampling and analysis are recommended to confirm the concentrations of contaminants in soil.

	Migration of Groundwater	Ecological Receptors - Unnamed Culvert	Potentially Complete: Sampling and analysis are recommended to confirm the concentrations of contaminants in soil.
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13.0 Regulatory Requirements

13.1 The National Environmental Standard

Potentially contaminating activities and/or land uses were identified across the site, and in the area of proposed development, therefore it is considered that consent under the regulations of the NES may be triggered by future development of the site.

Prior to the development of the site where potentially contaminating land uses and/or activities have taken place, a detailed site investigation (DSI) is recommended. The DSI would confirm if the identified land uses and/or activities have affected the site soils and will confirm the consenting requirements for these areas of the site. The DSI shall be prepared in general accordance with the requirements of the Contaminated Land Management Guidelines No. 1 and No. 5 (MfE, Revised 2021).

13.2 Auckland Unitary Plan (Operative in Part)

The contaminated land rules of the Auckland Unitary Plan - Operative in Part (AUP OP) have immediate legal effect following its notification. As the AUP OP was notified on the 15th of November 2016 the contaminated land rules must be considered.

As potentially contaminating activities and/or land uses were identified across the site, the contaminated land rules of the AUP: OP may be triggered by future development of the site.

14.0 Conclusions and Recommendations

This PSI has been prepared in accordance with the requirements of the Contaminated Land Management Guidelines No. 1 and No. 5 (Ministry for the Environment, Revised 2021).

The history of the site was researched by Focus Environmental Services Limited personnel, which involved a review of the available historical aerial photographs of the site.

During the review of the available information, the following potentially contaminating activities or land uses were identified:

- Horticultural Activities;
- Treated timber storage
- Demolition of historic structures potentially containing asbestos; and
- The use and maintenance of lead-based paints.

The information obtained of the site's history was assessed to determine if any potentially hazardous activities listed on the Hazardous Activities and Industries List (HAIL) had occurred on site as a result of past or current land use.

A walkover and site inspection were not possible, as access to the property was not permitted at the time of writing this report. Therefore, the identification of any potential HAIL activities carried out at the site was limited to a desktop assessment. Once access is granted, it is recommended that a site walkover take place to identify any additional potentially contaminating land uses and/or activities that have not been identified in the information made available.

Based on the results of this Preliminary Site Investigation, it is considered that an activity described in the HAIL has been, or is more likely than not to have been, carried out on the site.

Furthermore, as the impact of the HAIL activities identified on the site soils has not been determined, it is recommended that, prior to any earthworks occurring onsite, a detailed site investigation is completed on the property found at 143 Cosgrave Road, Papakura.

The detailed site investigation would confirm if the identified land uses and/or activities have affected the site soils and will confirm the remediation requirements, if any, for the site.

Based on the findings of the preliminary site investigation for the site, it is considered that the regulations of the National Environmental Standard (NES) for Assessing and Managing Contaminants in Soil to Protect Human Health, and the contaminated land rules as outlined in Chapter E30 of the Auckland Unitary Plan: Operative in Part (AUP: OP), need to be considered and consents under these regulations may be triggered by future development of the site.

The detailed site investigation shall be carried out in general accordance with the Contaminated Land Management Guidelines No. 1 and No. 5 (MfE, Revised 2021).

Following the receipt of the sampling results, a technical report summarising the results of the investigation shall be prepared. The report will be prepared in accordance Contaminated Land Management Guidelines No. 1(MfE, Revised 2021). The report will include:

- Recommendations for any additional investigations if required;
- A statement on whether or not any additional consents are required;

- Recommendations that a Site-Specific Management/Remediation Action Plan is prepared in order to provide controls to mitigate against the potential risks to human health and/or the environment as a result of the effects associated with the site redevelopment works.

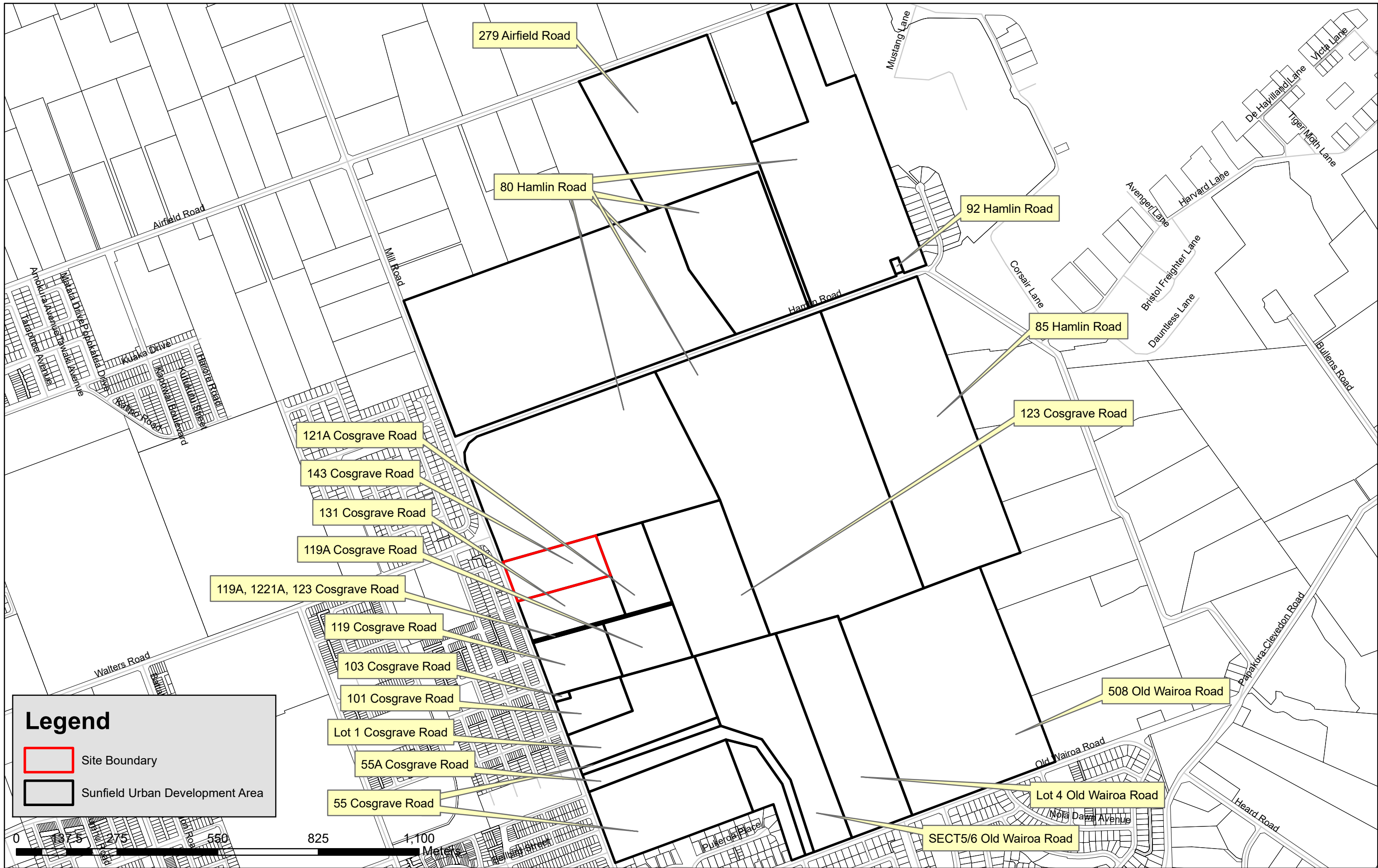
All works should be carried out in accordance with the global Site Management Plan titled '*Site Management Plan, Sunfield Urban Development Area*' dated December 2023 and prepared by Focus Environmental Services. If the controls outlined in the Site Management Plan are implemented during the development works, the effects on the environment are likely to be effectively mitigated.

Figures

Figure 1 – Site Location Plan

Figure 2 – Site Features Plan

Figure 3 – Surrounding Environment



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143 Cosgrave Road
Sunfield Urban Development Area
Papakura
Auckland

Figure 1: Site Location Plan
Preliminary Site Investigation



1804.009

Drawing Number: 1804.009.01

Drawn By: MT

Checked By: DO'R

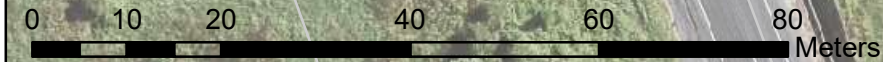
Date: 04/12/2023



Legend

Site Boundary

Site Features	Description
1	Site Entrance
2	Dwelling
3	Garage
4	Shed (1)
5	Shed (2)
6	Area of Horticulture







Legend

Site Boundary

Sunfield Urban Development Area



 <p>Focus Environmental Services Limited PO Box 11455 Ellerslie Auckland 1542</p> <p>Ph: +64 9 579 4155 www.focusenvironmental.co.nz</p>	<p>Winton Land Limited</p> <p>143 Cosgrave Road Sunfield Urban Development Area Papakura Auckland</p>	<p>Figure 3: Surrounding Environment</p> <p>Preliminary Site Investigation</p>		Drawing Number: 1804.009.03
				Drawn By: MT
				Checked By: DO'R
				Date: 04/12/2023

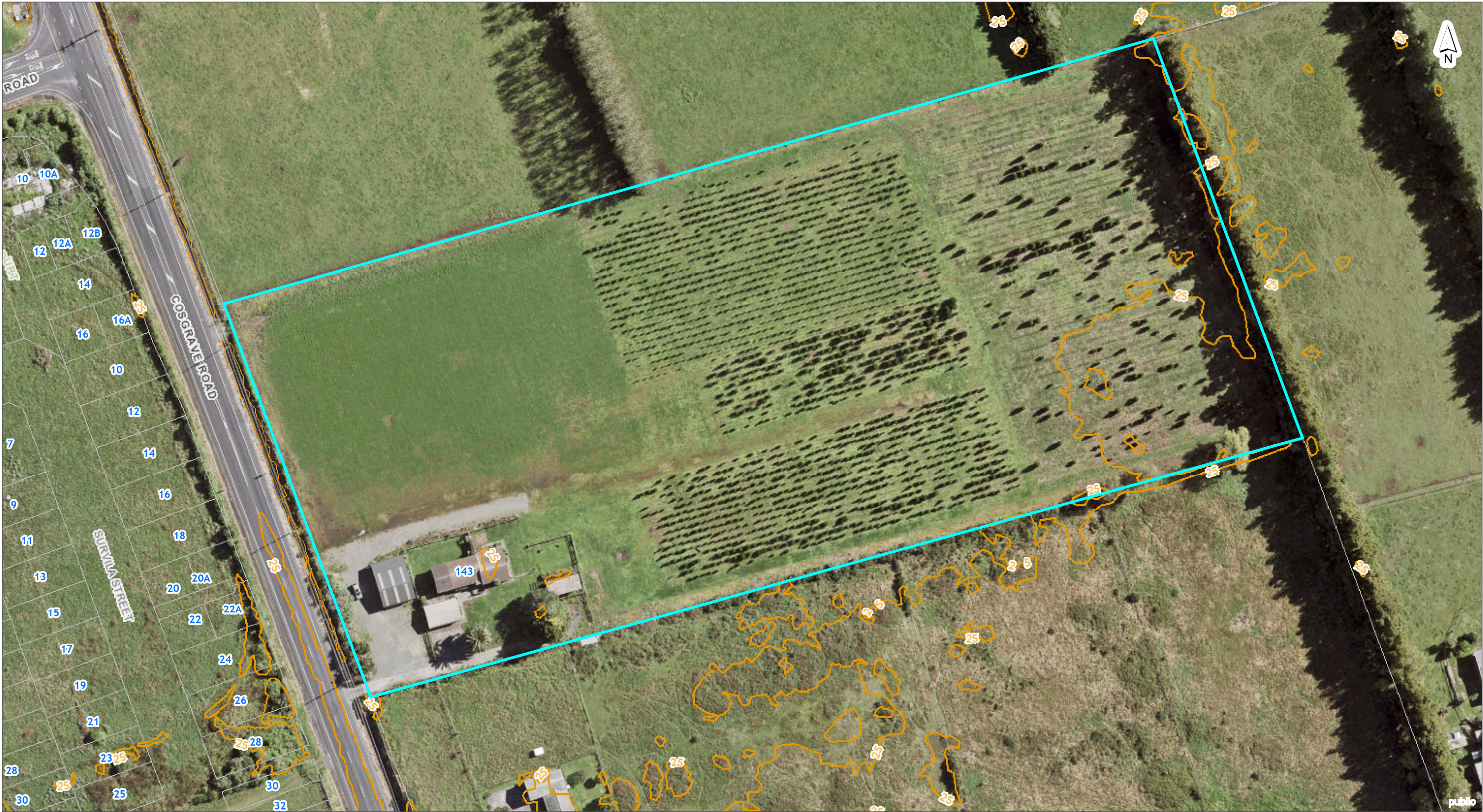
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Appendices

Appendix A – Illustrative Masterplan

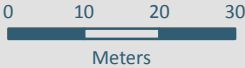


Appendix B – Site Contour Plan



DISCLAIMER:
This map/plan is illustrative only and all information should be independently verified on site before taking any action. Copyright Auckland Council. Land Parcel Boundary information from LINZ (Crown Copyright Reserved). Whilst due care has been taken, Auckland Council gives no warranty as to the accuracy and plan completeness of any information on this map/plan and accepts no liability for any error, omission or use of the information.
Height datum: Auckland 1946.

Site Contour Plan



Scale @ A3
= 1:1,000

Date Printed:
4/12/2023



Appendix C – Environmental HAIL



Hazardous Activities and Industries List (HAIL)

October 2011

A Chemical manufacture, application and bulk storage

1. Agrichemicals including commercial premises used by spray contractors for filling, storing or washing out tanks for agrichemical application
2. Chemical manufacture, formulation or bulk storage
3. Commercial analytical laboratory sites
4. Corrosives including formulation or bulk storage
5. Dry-cleaning plants including dry-cleaning premises or the bulk storage of dry-cleaning solvents
6. Fertiliser manufacture or bulk storage
7. Gasworks including the manufacture of gas from coal or oil feedstocks
8. Livestock dip or spray race operations
9. Paint manufacture or formulation (excluding retail paint stores)
10. Persistent pesticide bulk storage or use including sport turfs, market gardens, orchards, glass houses or spray sheds
11. Pest control including the premises of commercial pest control operators or any authorities that carry out pest control where bulk storage or preparation of pesticide occurs, including preparation of poisoned baits or filling or washing of tanks for pesticide application
12. Pesticide manufacture (including animal poisons, insecticides, fungicides or herbicides) including the commercial manufacturing, blending, mixing or formulating of pesticides
13. Petroleum or petrochemical industries including a petroleum depot, terminal, blending plant or refinery, or facilities for recovery, reprocessing or recycling petroleum-based materials, or bulk storage of petroleum or petrochemicals above or below ground
14. Pharmaceutical manufacture including the commercial manufacture, blending, mixing or formulation of pharmaceuticals, including animal remedies or the manufacturing of illicit drugs with the potential for environmental discharges
15. Printing including commercial printing using metal type, inks, dyes, or solvents (excluding photocopy shops)
16. Skin or wool processing including a tannery or fellmongery, or any other commercial facility for hide curing, drying, scouring or finishing or storing wool or leather products
17. Storage tanks or drums for fuel, chemicals or liquid waste
18. Wood treatment or preservation including the commercial use of anti-sapstain chemicals during milling, or bulk storage of treated timber outside

B Electrical and electronic works, power generation and transmission

1. Batteries including the commercial assembling, disassembling, manufacturing or recycling of batteries (but excluding retail battery stores)

2. Electrical transformers including the manufacturing, repairing or disposing of electrical transformers or other heavy electrical equipment
3. Electronics including the commercial manufacturing, reconditioning or recycling of computers, televisions and other electronic devices
4. Power stations, substations or switchyards

C Explosives and ordinances production, storage and use

1. Explosive or ordinance production, maintenance, dismantling, disposal, bulk storage or re-packaging
2. Gun clubs or rifle ranges, including clay targets clubs that use lead munitions outdoors
3. Training areas set aside exclusively or primarily for the detonation of explosive ammunition

D Metal extraction, refining and reprocessing, storage and use

1. Abrasive blasting including abrasive blast cleaning (excluding cleaning carried out in fully enclosed booths) or the disposal of abrasive blasting material
2. Foundry operations including the commercial production of metal products by injecting or pouring molten metal into moulds
3. Metal treatment or coating including polishing, anodising, galvanising, pickling, electroplating, or heat treatment or finishing using cyanide compounds
4. Metalliferous ore processing including the chemical or physical extraction of metals, including smelting, refining, fusing or refining metals
5. Engineering workshops with metal fabrication

E Mineral extraction, refining and reprocessing, storage and use

1. Asbestos products manufacture or disposal including sites with buildings containing asbestos products known to be in a deteriorated condition
2. Asphalt or bitumen manufacture or bulk storage (excluding single-use sites used by a mobile asphalt plant)
3. Cement or lime manufacture using a kiln including the storage of wastes from the manufacturing process
4. Commercial concrete manufacture or commercial cement storage
5. Coal or coke yards
6. Hydrocarbon exploration or production including well sites or flare pits
7. Mining industries (excluding gravel extraction) including exposure of faces or release of groundwater containing hazardous contaminants, or the storage of hazardous wastes including waste dumps or dam tailings

F Vehicle refuelling, service and repair

1. Airports including fuel storage, workshops, washdown areas, or fire practice areas
2. Brake lining manufacturers, repairers or recyclers
3. Engine reconditioning workshops
4. Motor vehicle workshops
5. Port activities including dry docks or marine vessel maintenance facilities

6. Railway yards including goods-handling yards, workshops, refuelling facilities or maintenance areas
7. Service stations including retail or commercial refuelling facilities
8. Transport depots or yards including areas used for refuelling or the bulk storage of hazardous substances

G Cemeteries and waste recycling, treatment and disposal

1. Cemeteries
2. Drum or tank reconditioning or recycling
3. Landfill sites
4. Scrap yards including automotive dismantling, wrecking or scrap metal yards
5. Waste disposal to land (excluding where biosolids have been used as soil conditioners)
6. Waste recycling or waste or wastewater treatment

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

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

Appendix D – Historical Aerial Photographs

Historical Aerial Photographs

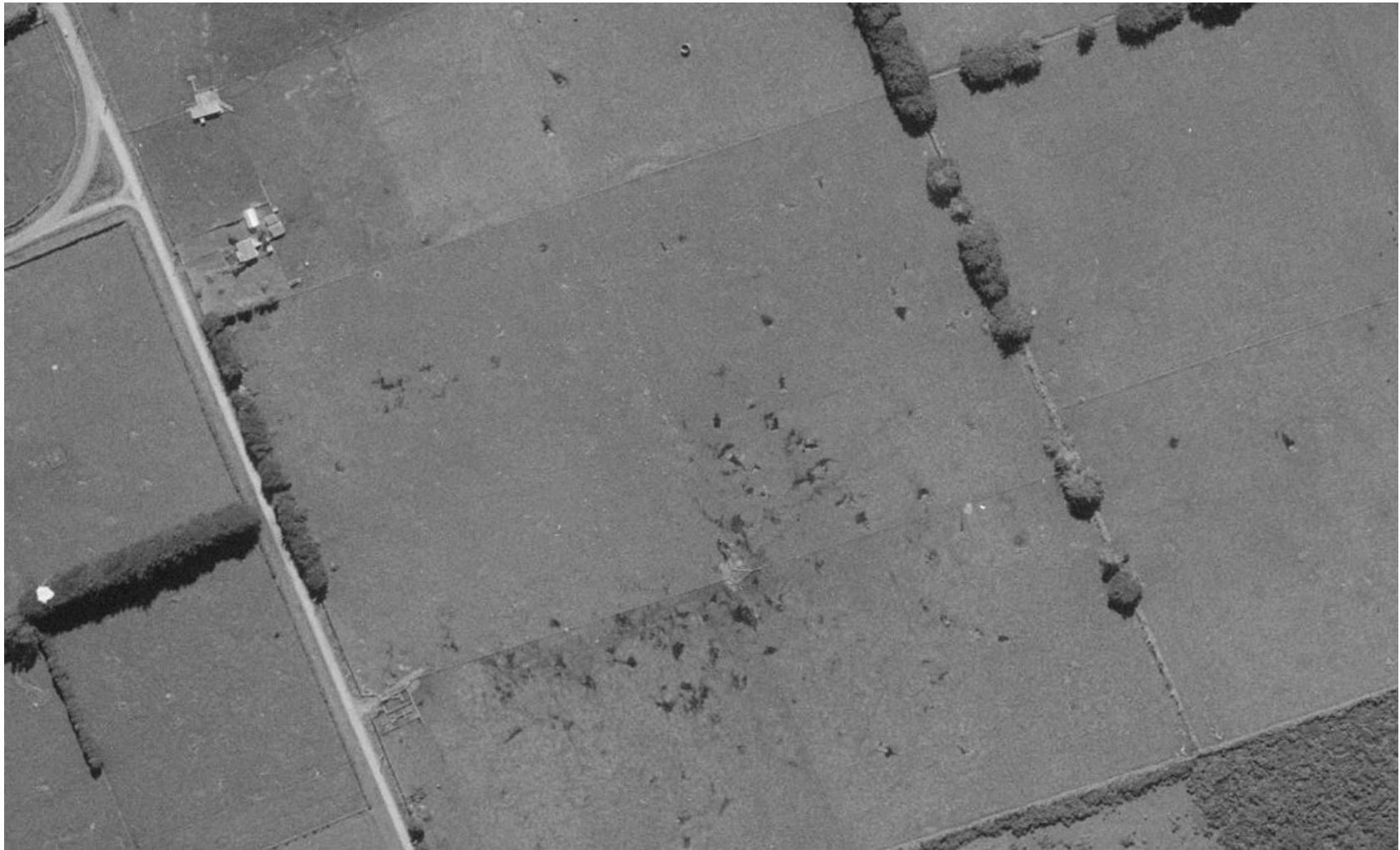
143 Cosgrave Road
Papakura
Auckland

by Focus Environmental Services Limited

1959 Historical Photograph



1960 Historical Photograph



Source: NZ Aerial Mapping

1975 Historical Photograph



Source: NZ Aerial Mapping

1980 Historical Photograph



Source: NZ Aerial Mapping

1988 Historical Photograph



Source: NZ Aerial Mapping

1996 Historical Photograph



Source: Auckland Council GeoMaps

2001 Historical Photograph



2006 Historical Photograph



Source: Auckland Council GeoMaps

2008 Historical Photograph



Source: Auckland Council GeoMaps

2010 Historical Photograph



Source: Auckland Council GeoMaps

2017 Historical Photograph



Source: Auckland Council GeoMaps

PRELIMINARY SITE INVESTIGATION
131 COSGRAVE ROAD
PAPAKURA
AUCKLAND

For the Attention of:

Winton Land Limited

Reference: FES 1804.008 December 2023





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Quality Information

Project Name Preliminary Site Investigation
131 Cosgrave Road, Papakura, Auckland
Project Number 1804.008
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Date December 2023

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Executive Summary

This Focus Environmental Services Limited report is produced under a management system certified as complying with ISO 45001:2018 by SGS New Zealand.

Focus Environmental Services Limited was contracted by Winton Land Limited to carry out a Preliminary Site Investigation (PSI) at 131 Cosgrave Road, Papakura, Auckland. The legal description of the site is Lot 2 DP 103787 with an area of 3.04ha.

The Sunfield Urban Development Area (UDA) consists of nineteen properties located across Cosgrave Road, Old Wairoa Road, Hamlin Road and Airfield Road, Papakura, Auckland.

The scope of this report is limited to the property at 131 Cosgrave Road, and should be read in conjunction with the covering letter summarising the findings of the PSIs and DSIs completed for the Sunfield UDA.

This PSI has been prepared in accordance with the requirements of the Contaminated Land Management Guidelines No. 1 and No. 5 (Ministry for the Environment, Revised 2021).

The history of the site was researched by Focus Environmental Services Limited personnel, which involved a review of the available historical aerial photographs of the site.

During the review of the available information, the following potentially contaminating activities or land uses were identified:

- Spray Drift from Neighbouring Horticultural Activities;
- Demolition of historic structures potentially containing asbestos; and
- The use and maintenance of lead-based paints.

The information obtained of the site's history was assessed to determine if any potentially hazardous activities listed on the Hazardous Activities and Industries List (HAIL) had occurred on site as a result of past or current land use.

A walkover and site inspection were not possible, as access to the property was not permitted at the time of writing this report. Therefore, the identification of any potential HAIL activities carried out at the site was limited to a desktop assessment. Once access is granted, it is recommended that a site walkover take place to identify any additional potentially contaminating land uses and/or activities that have not been identified in the information made available.

Based on the results of this Preliminary Site Investigation, it is considered that an activity described in the HAIL has been, or is more likely than not to have been, carried out on the site.

Furthermore, as the impact of the HAIL activities identified on the site soils has not been determined, it is recommended that, prior to any earthworks occurring onsite, a detailed site investigation is completed on the property found at 131 Cosgrave Road, Papakura.

The detailed site investigation would confirm if the identified land uses and/or activities have affected the site soils and will confirm the remediation requirements, if any, for the site.

Based on the findings of the preliminary site investigation for the site, it is considered that the regulations of the National Environmental Standard (NES) for Assessing and Managing Contaminants in Soil to Protect Human Health, and the contaminated land

rules as outlined in Chapter E30 of the Auckland Unitary Plan: Operative in Part (AUP: OP), need to be considered and consents under these regulations may be triggered by future development of the site.


The detailed site investigation shall be carried out in general accordance with the Contaminated Land Management Guidelines No. 1 and No. 5 (MfE, Revised 2021).

Following the receipt of the sampling results, a technical report summarising the results of the investigation shall be prepared. The report will be prepared in accordance Contaminated Land Management Guidelines No. 1(MfE, Revised 2021). The report will include:

- Recommendations for any additional investigations if required;
- A statement on whether or not any additional consents are required;
- Recommendations that a Site-Specific Management/Remediation Action Plan is prepared in order to provide controls to mitigate against the potential risks to human health and/or the environment as a result of the effects associated with the site redevelopment works.

All works should be carried out in accordance with the global Site Management Plan titled '*Site Management Plan, Sunfield Urban Development Area*' dated December 2023 and prepared by Focus Environmental Services. If the controls outlined in the Site Management Plan are implemented during the development works, the effects on the environment are likely to be effectively mitigated.

This report is certified by David O'Reilly, Suitability Qualified and Experienced Practitioner (SQEP):



Principal Environmental Consultant
Focus Environmental Services Limited

1.0 Scope

- 1.1 This report has been prepared at the request of Winton Land Limited ("the Client") in terms of the Focus Environmental Services Agreement ("Agreement").
- 1.2 The following report is based on:
 - *Information provided by the Client; and*
 - *A review of historical aerial photographs available for the site.*
- 1.3 We have not independently verified the information provided to us by the Client or its completeness. We do not express an opinion on the accuracy or the reliability of such information.
- 1.4 No warranties are given, intended or implied.
- 1.5 Opinion, inferences, assumptions and interpretations made in this report should not be construed as legal opinion.
- 1.6 Where an assessment is given in this report, the Client must also rely upon their own judgement, knowledge and assessment of the subject of this report before undertaking any action.
- 1.7 This report must not be used in any other context or for any other purpose other than that for which it has been prepared without the prior written consent of Focus Environmental Services.
- 1.8 This report is strictly confidential and intended for the sole use of the Client and shall not be disclosed without the prior written consent of Focus Environmental Services.
- 1.9 This Focus Environmental Services Limited report is produced under a management system certified as complying with ISO 45001:2018 by SGS New Zealand.

2.0 Site Identification

The property is located at 131 Cosgrave Road, Papakura, Auckland as shown in Figure 1 attached. The legal description of the site is Lot 2 DP 103787 with an area of 3.04ha. The site is located at national grid reference 1773856mE and 5898404mN.

The site is rectangular in shape and is zoned 'Rural – Mixed Rural Zone' under the AUP: OP.

The site location plan is presented as Figure 1.

3.0 Proposed Site Redevelopment Activity

It is proposed that the site will be redeveloped for residential purposes. As part of the redevelopment, the site will undergo subdivision, a change of land use and disturbance of soils.

The illustrative masterplan is attached as Appendix A.

4.0 Site Topography

The property at 131 Cosgrave Road, Papakura has a generally flat landscape.

The site contour plan is presented in Appendix B.

5.0 Geology and Hydrology

Published geological maps¹ indicate the site is typically underlain with Tauranga Group Holocene River Deposits. A description of the underlying geology is presented in Table 1 below.

Table 1: Geology of 131 Cosgrave Road, Papakura.

Key name	OIS1 (Holocene) river deposits
Simple name	Holocene river deposits
Main rock name	Mud
Description	Sand, silt, mud and clay with local gravel and peat beds.
Subsidiary rocks	Sand, silt, clay, peat
Key group	Holocene sediments
Stratigraphic lexicon name	Tauranga Group
Absolute age (min)	0.0 million years
Absolute age (max)	0.014 million years
Rock group	Mudstone
Rock class	Clastic sediment

No groundwater investigation was carried out as part of this investigation.

The nearest surface water bodies are the unnamed, open culvert which flows along Cosgrave Road along the western boundary of the site and an unnamed open stream located approximately 286m to the north-east of the site.

¹ Geology of the Auckland Area (Institute of Geological & Nuclear Sciences 1:250,000 geological map 3, 2011)

6.0 Regulatory Framework

6.1 The National Environmental Standard

The Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (NES) came into effect on the 1st of January 2012 and supersedes any District Plan rules that related to contaminated land. Any Regional Plan rules relating to contaminated land are still applicable.

In brief, the objective of the NES is to ensure that land affected by contaminants is identified and assessed and, if necessary, remediated or managed to protect human health. The NES only applies to the activities: removing or replacing all, or part of, a fuel storage system; sampling the soil; disturbing the soil; subdividing the land; and changing the land use, and where an activity or industry described in the Hazardous Activities and Industries List (HAIL) is being, has been, or is more likely than not to have been undertaken on the piece of land.

The NES also contains reference to the Soil Contaminant Standards for human health (SCS_(health)), for a variety of land use scenarios along with reference to best practice reporting documents.

The environmental HAIL is attached as Appendix C.

6.2 The National Environmental Standard

The contaminated land rules of the Auckland Unitary Plan: Operative in Part (AUP: OP) have immediate legal effect following its notification. As the AUP: OP was notified on the 15th of November 2016 the contaminated land rules of the AUP: OP must be considered.

In brief, the objective of the AUP: OP is to manage land containing elevated levels of contaminants to protect human health and the environment and to enable the effective use of the land.

The contaminated land rules of the AUP: OP apply when the land contains contaminants above those levels specified in Table E30.6.1.4.1 of Chapter E30 of the AUP: OP.

7.0 Site History

The history of the site was researched by Focus Environmental Services Limited personnel, which involved a review of the available historical aerial photographs of the site.

7.1 Historical Aerial Photographs

Descriptions of the historical aerial photographs for the subject site are presented in Table 2 below. The historical aerial photographs are presented in Appendix D.

Table 2: Historical Photographs: 131 Cosgrave Road, Papakura.

Date	Description
1939 - 1980	The 1939 - 1980 historical photographs show the subject site is part of a larger parcel of land in use for rural purposes. No structures are visible on the subject site throughout this time period. Cosgrave Road is visible bordering the western boundary of the subject site. The surrounding properties are in use for rural and rural-residential purposes.
1988	The 1988 historical photograph shows the subject site has been subdivided from the larger parcel of land. The site is now in use for rural - residential purposes. A dwelling and a garage have been constructed in the south-western corner of the site, accessed by a driveway. The western half of the site appears to be in use for horticultural purposes (likely pip and stone), while the remaining balance of the site appears to be grassed. A racing oval is visible to the north-west of the subject site. An area of horticulture can be observed directly to the north of the subject site. The neighbouring properties remain in use for rural and rural - residential purposes.
1996 - 2017	The 1996 - 2017 historical photographs show the subject site remains in use for rural - residential purposes. The 1996 historical photograph shows that an extension to the dwelling has been constructed on the northerly aspect and the driveway extended to service the additional buildings. A secondary dwelling has been constructed to the north of the original dwelling. A racing oval has been constructed to the east of the subject site. The 2001 historical photograph shows another extension has been made to the dwelling on the southerly aspect. Three small sheds (1 - 3) have been constructed surrounding the area of the dwellings. The 2017 historical photograph shows a shed (4) has been constructed to the north of the secondary dwelling and another shed (5) constructed along the northern boundary of the subject site. A shelter belt is present along the northern boundary of the site throughout this time period. Two large greenhouses can be observed on the neighbouring property to the south of the subject site throughout the time period. A shelter belt separates the properties from 2015 onwards. The neighbouring properties remain in use for rural and rural - residential purposes.

Due to the age of the dwelling and garage (pre-1988) located in the south-western portion of the site, it is considered likely that lead-based paints would have been utilised in the external building materials.

In addition, it is considered likely that potentially asbestos containing materials would have been used in the construction of the current site buildings, with the exception of sheds (4 & 5), which were built pre-2000.

7.2 Previous Investigations

At the time of writing this report, the results of a geotechnical investigation covering the site was not available. If future geotechnical investigations identify uncertified fills, these shall be investigated as part of any Detailed Site Investigation completed accordingly.

8.0 Site Walkover and Inspection

A walkover and site inspection were not possible at the time of writing the report as access to the property was not permitted. Therefore, the identification of any potential HAIL activities carried out at the site was limited to a desktop assessment. Once access is received, a walkover should take place to identify any additional potentially contaminating land uses and/ or activities that have not been identified as part of the desktop assessment.

The site features able to be identified as part of the desktop assessment are presented as Figure 2.

9.0 Surrounding Environment

The surrounding environment appeared to be predominantly in use for rural and rural-residential purposes. A racing oval is observed to the east of the site. Residential properties were observed further south-west in the wider area.

An area of horticulture is observed on the northerly neighbouring property and is only partially bounded by a shelter belt. Furthermore, two large greenhouses are present to the south of the subject site, with a shelter belt only present between the properties since 2015. Given this, it is considered that potential contamination associated with the horticultural activities may have possibly migrated to the subject site.

The surrounding environment is presented as Figure 3.

10.0 Asbestos Management

Due to the age of the dwelling and sheds (1 and 2) (pre-1996), external PACM products are likely to be present in the construction materials.

Any removal of asbestos materials from the site will need to be conducted in accordance with the Health and Safety at Work (Asbestos) Regulations (MBIE, 2016) and the Approved Code of Practice for the Management and Removal of Asbestos (WorkSafe New Zealand, 2016) by a licensed asbestos removals specialist under an approved asbestos removal control plan.

It should be noted that ACM, other than that described, may also be present at the site and a thorough inspection should be carried out by a suitably qualified and competent asbestos surveyor prior to any demolition activities at the site.

11.0 Potentially Contaminating Activities or Land Uses

Following a review of the history and the available information relating to the site located at 131 Cosgrave Road, Papakura the potentially contaminating land uses and/or activities identified have been summarised in Table 3 below.

Table 3: Potential Contaminating Activities and/or Land Uses: 131 Cosgrave Road, Papakura.

Activity Description	HAIL Category
Spray Drift from Neighbouring Horticultural Activities	A10
Demolition of Historic Structures Potentially Containing Asbestos	E1
Maintenance and Use of Lead-based Paint	I

12.0 Conceptual Model of Exposure Pathways

The assessment provided in Table 4 below expands on the potential sources of contamination identified within the site and was based on the potential effects of the subdivision, change of land use and soil disturbance activities on human health and the environment associated with future residential development.

Table 4: Conceptual Site Model: 131 Cosgrave Road, Papakura.

Potential Source	Potential Pathways	Potential Receptors	Assessment
Contaminated Soil	Dermal Contact with Contaminated Soils	Human Health – Residential Land Use	Potentially Complete: Sampling and analysis are recommended to confirm the concentrations of contaminants in soil.
		Human Health – Commercial/Industrial Outdoor Worker	Potentially Complete: Sampling and analysis are recommended to confirm the concentrations of contaminants in soil.
	Ingestion of Contaminated Soils	Human Health – Residential Land Use	Potentially Complete: Sampling and analysis are recommended to confirm the concentrations of contaminants in soil.
		Human Health – Commercial/Industrial Outdoor Worker	Potentially Complete: Sampling and analysis are recommended to confirm the concentrations of contaminants in soil.
	Inhalation of Vapours/Fibres	Human Health – Residential Land Use	Potentially Complete: Sampling and analysis are recommended to confirm the concentrations of contaminants in soil.
		Human Health – Commercial/Industrial Outdoor Worker	Potentially Complete: Sampling and analysis are recommended to confirm the concentrations of contaminants in soil.
	Surface Water Run-off	Ecological Receptors - Unnamed Culvert	Potentially Complete: Sampling and analysis are recommended to confirm the concentrations of contaminants in soil.

	Migration of Groundwater	Ecological Receptors - Unnamed Culvert	Potentially Complete: Sampling and analysis are recommended to confirm the concentrations of contaminants in soil.
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13.0 Regulatory Requirements

13.1 The National Environmental Standard

Potentially contaminating activities and/or land uses were identified across the site, and in the area of proposed development, therefore it is considered that consent under the regulations of the NES may be triggered by future development of the site.

Prior to the development of the site where potentially contaminating land uses and/or activities have taken place, a detailed site investigation (DSI) is recommended. The DSI would confirm if the identified land uses and/or activities have affected the site soils and will confirm the consenting requirements for these areas of the site. The DSI shall be prepared in general accordance with the requirements of the Contaminated Land Management Guidelines No. 1 and No. 5 (MfE, Revised 2021).

13.2 Auckland Unitary Plan (Operative in Part)

The contaminated land rules of the Auckland Unitary Plan - Operative in Part (AUP OP) have immediate legal effect following its notification. As the AUP OP was notified on the 15th of November 2016 the contaminated land rules must be considered.

As potentially contaminating activities and/or land uses were identified across the site, the contaminated land rules of the AUP: OP may be triggered by future development of the site.

14.0 Conclusions and Recommendations

This PSI has been prepared in accordance with the requirements of the Contaminated Land Management Guidelines No. 1 and No. 5 (Ministry for the Environment, Revised 2021).

The history of the site was researched by Focus Environmental Services Limited personnel, which involved a review of the available historical aerial photographs of the site.

During the review of the available information, the following potentially contaminating activities or land uses were identified:

- Spray Drift from Neighbouring Horticultural Activities;
- Demolition of historic structures potentially containing asbestos; and
- The use and maintenance of lead-based paints.

The information obtained of the site's history was assessed to determine if any potentially hazardous activities listed on the Hazardous Activities and Industries List (HAIL) had occurred on site as a result of past or current land use.

A walkover and site inspection were not possible, as access to the property was not permitted at the time of writing this report. Therefore, the identification of any potential HAIL activities carried out at the site was limited to a desktop assessment. Once access is granted, it is recommended that a site walkover take place to identify any additional potentially contaminating land uses and/or activities that have not been identified in the information made available.

Based on the results of this Preliminary Site Investigation, it is considered that an activity described in the HAIL has been, or is more likely than not to have been, carried out on the site.

Furthermore, as the impact of the HAIL activities identified on the site soils has not been determined, it is recommended that, prior to any earthworks occurring onsite, a detailed site investigation is completed on the property found at 131 Cosgrave Road, Papakura.

The detailed site investigation would confirm if the identified land uses and/or activities have affected the site soils and will confirm the remediation requirements, if any, for the site.

Based on the findings of the preliminary site investigation for the site, it is considered that the regulations of the National Environmental Standard (NES) for Assessing and Managing Contaminants in Soil to Protect Human Health, and the contaminated land rules as outlined in Chapter E30 of the Auckland Unitary Plan: Operative in Part (AUP: OP), need to be considered and consents under these regulations may be triggered by future development of the site.

The detailed site investigation shall be carried out in general accordance with the Contaminated Land Management Guidelines No. 1 and No. 5 (MfE, Revised 2021).

Following the receipt of the sampling results, a technical report summarising the results of the investigation shall be prepared. The report will be prepared in accordance Contaminated Land Management Guidelines No. 1(MfE, Revised 2021). The report will include:

- Recommendations for any additional investigations if required;
- A statement on whether or not any additional consents are required;

- Recommendations that a Site-Specific Management/Remediation Action Plan is prepared in order to provide controls to mitigate against the potential risks to human health and/or the environment as a result of the effects associated with the site redevelopment works.

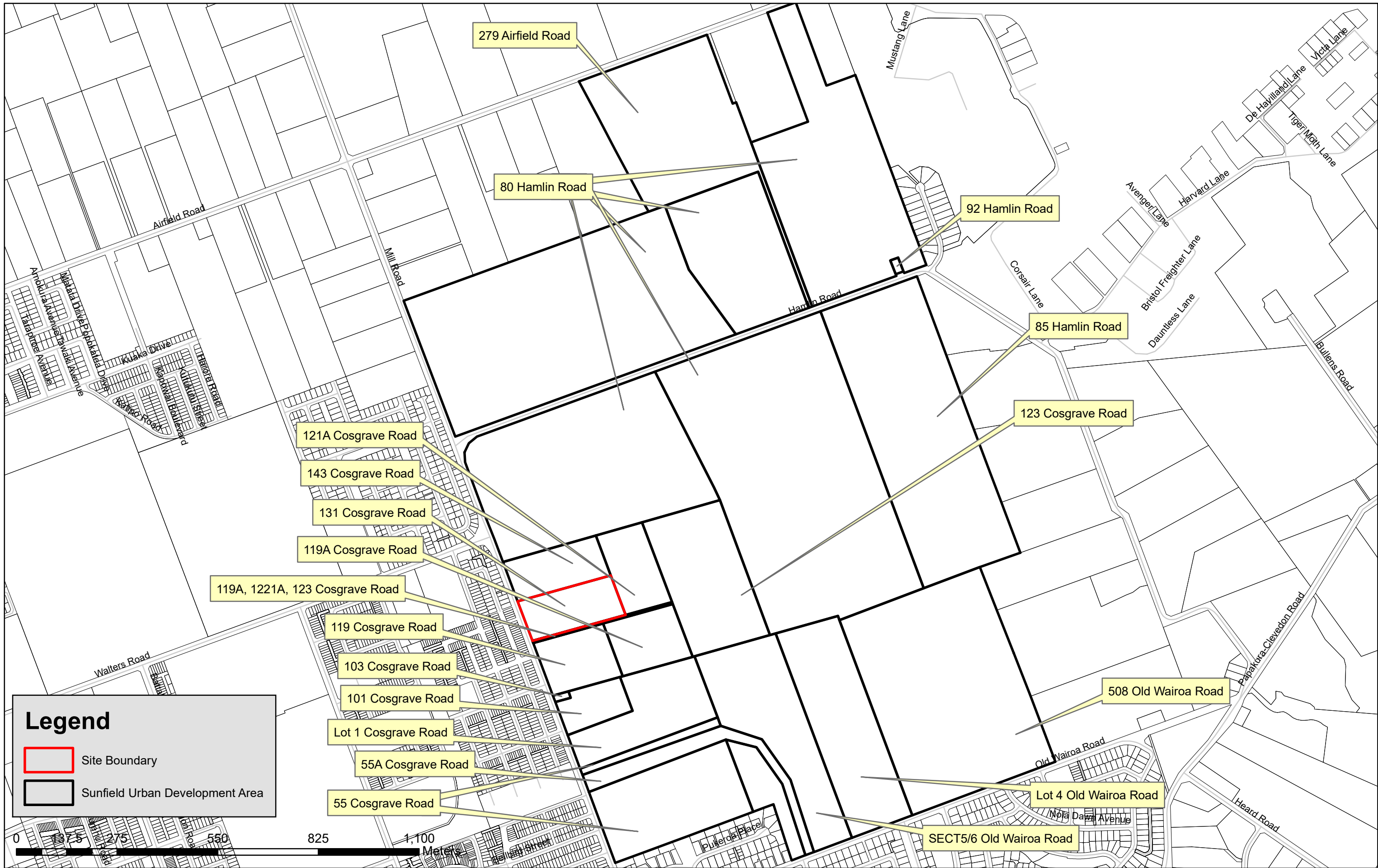
All works should be carried out in accordance with the global Site Management Plan titled '*Site Management Plan, Sunfield Urban Development Area*' dated December 2023 and prepared by Focus Environmental Services. If the controls outlined in the Site Management Plan are implemented during the development works, the effects on the environment are likely to be effectively mitigated.

Figures

Figure 1 – Site Location Plan

Figure 2 – Site Features Plan

Figure 3 – Surrounding Environment



Legend

- Site Boundary
- Sunfield Urban Development Area

0 250 500 750 1,000 1,100 Meters



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Winton Land Limited

131 Cosgrave Road
Sunfield Urban Development Area
Papakura
Auckland

Figure 1: Site Location Plan

Preliminary Site Investigation



1804.008

Drawing Number: 1804.008.01

Drawn By: MT

Checked By: DO'R

Date: 29/11/2023

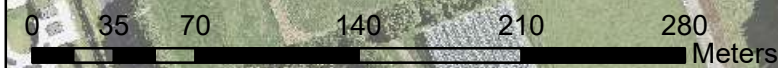






Legend

Site Boundary

Sunfield Urban Development Area



 <p>Focus Environmental Services Limited PO Box 11455 Ellerslie Auckland 1542</p> <p>Ph: +64 9 579 4155 www.focusenvironmental.co.nz</p>	<p>Winton Land Limited</p> <p>131 Cosgrave Road Sunfield Urban Development Area Papakura Auckland</p>	<p>Figure 3: Surrounding Environment</p> <p>Preliminary Site Investigation</p>		<p>Drawing Number: 1804.008.03</p>
				<p>Drawn By: MT</p>
				<p>Checked By: DO'R</p>
				<p>Date: 29/11/2023</p>

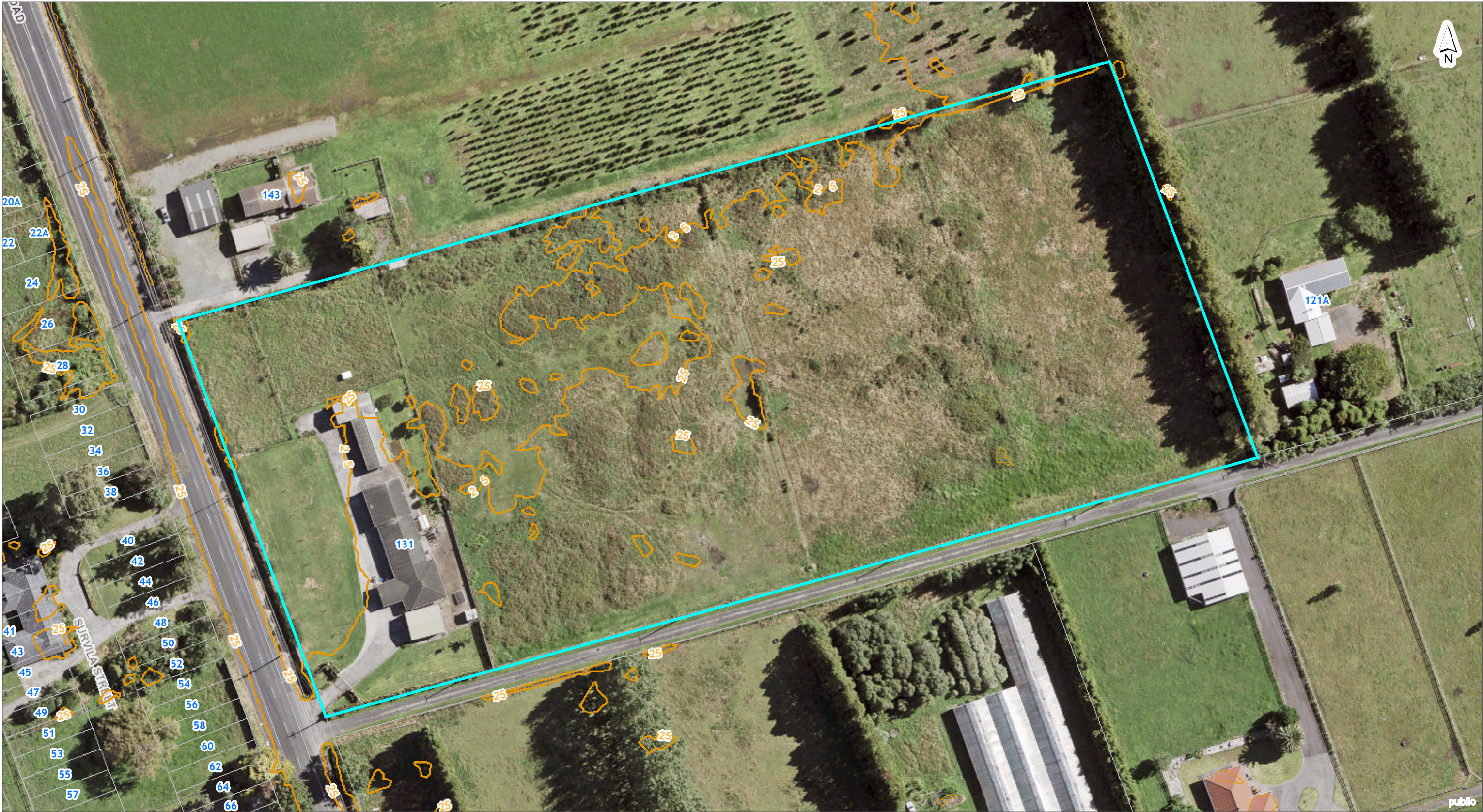
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Appendices

Appendix A – Illustrative Masterplan



Appendix B – Site Contour Plan



DISCLAIMER:
This map/plan is illustrative only and all information should be independently verified on site before taking any action. Copyright Auckland Council. Land Parcel Boundary information from LINZ (Crown Copyright Reserved). Whilst due care has been taken, Auckland Council gives no warranty as to the accuracy and plan completeness of any information on this map/plan and accepts no liability for any error, omission or use of the information.
Height datum: Auckland 1946.

Site Contour Plan

0 10 20 30
Meters
Scale @ A3
= 1:1,000
Date Printed:
29/11/2023



Appendix C – Environmental HAIL



Hazardous Activities and Industries List (HAIL)

October 2011

A Chemical manufacture, application and bulk storage

1. Agrichemicals including commercial premises used by spray contractors for filling, storing or washing out tanks for agrichemical application
2. Chemical manufacture, formulation or bulk storage
3. Commercial analytical laboratory sites
4. Corrosives including formulation or bulk storage
5. Dry-cleaning plants including dry-cleaning premises or the bulk storage of dry-cleaning solvents
6. Fertiliser manufacture or bulk storage
7. Gasworks including the manufacture of gas from coal or oil feedstocks
8. Livestock dip or spray race operations
9. Paint manufacture or formulation (excluding retail paint stores)
10. Persistent pesticide bulk storage or use including sport turfs, market gardens, orchards, glass houses or spray sheds
11. Pest control including the premises of commercial pest control operators or any authorities that carry out pest control where bulk storage or preparation of pesticide occurs, including preparation of poisoned baits or filling or washing of tanks for pesticide application
12. Pesticide manufacture (including animal poisons, insecticides, fungicides or herbicides) including the commercial manufacturing, blending, mixing or formulating of pesticides
13. Petroleum or petrochemical industries including a petroleum depot, terminal, blending plant or refinery, or facilities for recovery, reprocessing or recycling petroleum-based materials, or bulk storage of petroleum or petrochemicals above or below ground
14. Pharmaceutical manufacture including the commercial manufacture, blending, mixing or formulation of pharmaceuticals, including animal remedies or the manufacturing of illicit drugs with the potential for environmental discharges
15. Printing including commercial printing using metal type, inks, dyes, or solvents (excluding photocopy shops)
16. Skin or wool processing including a tannery or fellmongery, or any other commercial facility for hide curing, drying, scouring or finishing or storing wool or leather products
17. Storage tanks or drums for fuel, chemicals or liquid waste
18. Wood treatment or preservation including the commercial use of anti-sapstain chemicals during milling, or bulk storage of treated timber outside

B Electrical and electronic works, power generation and transmission

1. Batteries including the commercial assembling, disassembling, manufacturing or recycling of batteries (but excluding retail battery stores)

2. Electrical transformers including the manufacturing, repairing or disposing of electrical transformers or other heavy electrical equipment
3. Electronics including the commercial manufacturing, reconditioning or recycling of computers, televisions and other electronic devices
4. Power stations, substations or switchyards

C Explosives and ordinances production, storage and use

1. Explosive or ordinance production, maintenance, dismantling, disposal, bulk storage or re-packaging
2. Gun clubs or rifle ranges, including clay targets clubs that use lead munitions outdoors
3. Training areas set aside exclusively or primarily for the detonation of explosive ammunition

D Metal extraction, refining and reprocessing, storage and use

1. Abrasive blasting including abrasive blast cleaning (excluding cleaning carried out in fully enclosed booths) or the disposal of abrasive blasting material
2. Foundry operations including the commercial production of metal products by injecting or pouring molten metal into moulds
3. Metal treatment or coating including polishing, anodising, galvanising, pickling, electroplating, or heat treatment or finishing using cyanide compounds
4. Metalliferous ore processing including the chemical or physical extraction of metals, including smelting, refining, fusing or refining metals
5. Engineering workshops with metal fabrication

E Mineral extraction, refining and reprocessing, storage and use

1. Asbestos products manufacture or disposal including sites with buildings containing asbestos products known to be in a deteriorated condition
2. Asphalt or bitumen manufacture or bulk storage (excluding single-use sites used by a mobile asphalt plant)
3. Cement or lime manufacture using a kiln including the storage of wastes from the manufacturing process
4. Commercial concrete manufacture or commercial cement storage
5. Coal or coke yards
6. Hydrocarbon exploration or production including well sites or flare pits
7. Mining industries (excluding gravel extraction) including exposure of faces or release of groundwater containing hazardous contaminants, or the storage of hazardous wastes including waste dumps or dam tailings

F Vehicle refuelling, service and repair

1. Airports including fuel storage, workshops, washdown areas, or fire practice areas
2. Brake lining manufacturers, repairers or recyclers
3. Engine reconditioning workshops
4. Motor vehicle workshops
5. Port activities including dry docks or marine vessel maintenance facilities

6. Railway yards including goods-handling yards, workshops, refuelling facilities or maintenance areas
7. Service stations including retail or commercial refuelling facilities
8. Transport depots or yards including areas used for refuelling or the bulk storage of hazardous substances

G Cemeteries and waste recycling, treatment and disposal

1. Cemeteries
2. Drum or tank reconditioning or recycling
3. Landfill sites
4. Scrap yards including automotive dismantling, wrecking or scrap metal yards
5. Waste disposal to land (excluding where biosolids have been used as soil conditioners)
6. Waste recycling or waste or wastewater treatment

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

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

Appendix D – Historical Aerial Photographs

Historical Aerial Photographs

131 Cosgrave Road
Papakura
Auckland

by Focus Environmental Services Limited

1939 Historical Photograph



Source: NZ Aerial Mapping

1959 Historical Photograph



Source: Auckland Council GeoMaps

1974 Historical Photograph



Source: NZ Aerial Mapping

1980 Historical Photograph



Source: NZ Aerial Mapping

1988 Historical Photograph



Source: NZ Aerial Mapping

1996 Historical Photograph



Source: Auckland Council GeoMaps

2001 Historical Photograph



Source: Auckland Council GeoMaps

2006 Historical Photograph



Source: Auckland Council GeoMaps

2008 Historical Photograph



2010 Historical Photograph



2015 Historical Photograph



Source: Auckland Council GeoMaps

2017 Historical Photograph



Source: Auckland Council GeoMaps

PRELIMINARY SITE INVESTIGATION
121A COSGRAVE ROAD
PAPAKURA
AUCKLAND

For the Attention of:

Winton Land Limited

Reference: FES 1804.006 December 2023





Company Information

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Quality Information

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121A Cosgrave Road, Papakura, Auckland
Project Number 1804.006
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Road\1804.006_PSI_MT.docx
Date December 2023

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Reviewed

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Authorised

David O'Reilly
Principal Environmental Consultant

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- Appendix D – Historical Aerial Photographs

Executive Summary

This Focus Environmental Services Limited report is produced under a management system certified as complying with ISO 45001:2018 by SGS New Zealand.

Focus Environmental Services Limited was contracted by Winton Land Limited to carry out a Preliminary Site Investigation (PSI) at 121A Cosgrave Road, Papakura, Auckland. The legal description of the site is Lot 3 DP 103787 – 1/3 SH in Lot 7 DP 103787 with an area of 3.04ha.

The Sunfield Urban Development Area (UDA) consists of nineteen properties located across Cosgrave Road, Old Wairoa Road, Hamlin Road and Airfield Road, Papakura, Auckland.

The scope of this report is limited to the property at 121A Cosgrave Road, and should be read in conjunction with the covering letter summarising the findings of the PSIs and DSIs completed for the Sunfield UDA.

This PSI has been prepared in accordance with the requirements of the Contaminated Land Management Guidelines No. 1 and No. 5 (Ministry for the Environment, Revised 2021).

The history of the site was researched by Focus Environmental Services Limited personnel, which involved a review of the available historical aerial photographs of the site.

During the review of the available information, the following potentially contaminating activities or land uses were identified:

- Spray Drift from Neighbouring Horticultural Activities;
- Demolition of historic structures potentially containing asbestos; and
- The use and maintenance of lead-based paints.

The information obtained of the site's history was assessed to determine if any potentially hazardous activities listed on the Hazardous Activities and Industries List (HAIL) had occurred on site as a result of past or current land use.

A walkover and site inspection were not possible, as access to the property was not permitted at the time of writing this report. Therefore, the identification of any potential HAIL activities carried out at the site was limited to a desktop assessment. Once access is granted, it is recommended that a site walkover take place to identify any additional potentially contaminating land uses and/or activities that have not been identified in the information made available.

Based on the results of this Preliminary Site Investigation, it is considered that an activity described in the HAIL has been, or is more likely than not to have been, carried out on the site.

Furthermore, as the impact of the HAIL activities identified on the site soils has not been determined, it is recommended that, prior to any earthworks occurring onsite, a detailed site investigation is completed on the property found at 121A Cosgrave Road, Papakura.

The detailed site investigation would confirm if the identified land uses and/or activities have affected the site soils and will confirm the remediation requirements, if any, for the site.

Based on the findings of the preliminary site investigation for the site, it is considered that the regulations of the National Environmental Standard (NES) for Assessing and

Managing Contaminants in Soil to Protect Human Health, and the contaminated land rules as outlined in Chapter E30 of the Auckland Unitary Plan: Operative in Part (AUP: OP), need to be considered and consents under these regulations may be triggered by future development of the site.

The detailed site investigation shall be carried out in general accordance with the Contaminated Land Management Guidelines No. 1 and No. 5 (MfE, Revised 2021).

Following the receipt of the sampling results a technical report summarising the results of the investigation shall be prepared. The report will be prepared in accordance Contaminated Land Management Guidelines No. 1(MfE, Revised 2021). The report will include:

- Recommendations for any additional investigations if required;
- A statement on whether or not any additional consents are required;
- Recommendations that a Site-Specific Management/Remediation Action Plan is prepared in order to provide controls to mitigate against the potential risks to human health and/or the environment as a result of the effects associated with the site redevelopment works.

All works should be carried out in accordance with the global Site Management Plan titled '*Site Management Plan, Sunfield Urban Development Area*' dated December 2023 and prepared by Focus Environmental Services. If the controls outlined in the Site Management Plan are implemented during the development works, the effects on the environment are likely to be effectively mitigated.

This report is certified by David O'Reilly, Suitability Qualified and Experienced Practitioner (SQEP):



Principal Environmental Consultant
Focus Environmental Services Limited

1.0 Scope

- 1.1 This report has been prepared at the request of Winton Land Limited ("the Client") in terms of the Focus Environmental Services Agreement ("Agreement").
- 1.2 The following report is based on:
 - *Information provided by the Client; and*
 - *A review of historical aerial photographs available for the site.*
- 1.3 We have not independently verified the information provided to us by the Client or its completeness. We do not express an opinion on the accuracy or the reliability of such information.
- 1.4 No warranties are given, intended or implied.
- 1.5 Opinion, inferences, assumptions and interpretations made in this report should not be construed as legal opinion.
- 1.6 Where an assessment is given in this report, the Client must also rely upon their own judgement, knowledge and assessment of the subject of this report before undertaking any action.
- 1.7 This report must not be used in any other context or for any other purpose other than that for which it has been prepared without the prior written consent of Focus Environmental Services.
- 1.8 This report is strictly confidential and intended for the sole use of the Client and shall not be disclosed without the prior written consent of Focus Environmental Services.
- 1.9 This Focus Environmental Services Limited report is produced under a management system certified as complying with ISO 45001:2081 by SGS New Zealand.

2.0 Site Identification

The property is located at 121A Cosgrave Road, Papakura, Auckland as shown in Figure 1 attached. The legal description of the site is Lot 3 DP 103787 – 1/3 SH in Lot 7 DP 103787 with an area of 3.04ha. The site is located at national grid reference 1774021mE and 5898505mN.

The site is rectangular in shape and is zoned 'Rural – Mixed Rural Zone' under the AUP: OP.

The site location plan is presented as Figure 1.

3.0 Proposed Site Redevelopment Activity

It is proposed that the site will be redeveloped for residential purposes. As part of the redevelopment, the site will undergo subdivision, a change of land use and disturbance of soils.

The illustrative masterplan is attached as Appendix A.

4.0 Site Topography

The property at 121A Cosgrave Road, Papakura has a generally flat landscape.

The site contour plan is presented in Appendix B.

5.0 Geology and Hydrology

Published geological maps¹ indicate the site is typically underlain with Tauranga Group Holocene River Deposits. A description of the underlying geology is presented in Table 1 below.

Table 1: Geology of 121A Cosgrave Road, Papakura.

Key name	OIS1 (Holocene) river deposits
Simple name	Holocene river deposits
Main rock name	Mud
Description	Sand, silt, mud and clay with local gravel and peat beds.
Subsidiary rocks	Sand, silt, clay, peat
Key group	Holocene sediments
Stratigraphic lexicon name	Tauranga Group
Absolute age (min)	0.0 million years
Absolute age (max)	0.014 million years
Rock group	Mudstone
Rock class	Clastic sediment

No groundwater investigation was carried out as part of this investigation.

The nearest surface water bodies are the unnamed, open culvert which flows along Cosgrave Road approximately 263m from the western boundary of the site and an unnamed open stream located approximately 122m from the eastern boundary of the site.

¹ Geology of the Auckland Area (Institute of Geological & Nuclear Sciences 1:250,000 geological map 3, 2011)

6.0 Regulatory Framework

6.1 The National Environmental Standard

The Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (NES) came into effect on the 1st of January 2012 and supersedes any District Plan rules that related to contaminated land. Any Regional Plan rules relating to contaminated land are still applicable.

In brief, the objective of the NES is to ensure that land affected by contaminants is identified and assessed and, if necessary, remediated or managed to protect human health. The NES only applies to the activities: removing or replacing all, or part of, a fuel storage system; sampling the soil; disturbing the soil; subdividing the land; and changing the land use, and where an activity or industry described in the Hazardous Activities and Industries List (HAIL) is being, has been, or is more likely than not to have been undertaken on the piece of land.

The NES also contains reference to the Soil Contaminant Standards for human health (SCS_(health)), for a variety of land use scenarios along with reference to best practice reporting documents.

The environmental HAIL is attached as Appendix C.

6.2 The National Environmental Standard

The contaminated land rules of the Auckland Unitary Plan: Operative in Part (AUP: OP) have immediate legal effect following its notification. As the AUP: OP was notified on the 15th of November 2016 the contaminated land rules of the AUP: OP must be considered.

In brief, the objective of the AUP: OP is to manage land containing elevated levels of contaminants to protect human health and the environment and to enable the effective use of the land.

The contaminated land rules of the AUP: OP apply when the land contains contaminants above those levels specified in Table E30.6.1.4.1 of Chapter E30 of the AUP: OP.

7.0 Site History

The history of the site was researched by Focus Environmental Services Limited personnel, which involved a review of the available historical aerial photographs of the site.

7.1 Historical Aerial Photographs

Descriptions of the historical aerial photographs for the subject site are presented in Table 2 below. The historical aerial photographs are presented in Appendix D.

Table 2: Historical Photographs: 121A Cosgrave Road, Papakura.

Date	Description
1959 - 1980	The 1959 - 1980 historical photographs show the subject site is part of a larger parcel of land in use for rural purposes. No structures are visible on the subject site throughout this time period. The surrounding properties are in use for rural and rural-residential purposes.
1988	The 1988 historical photograph shows the subject site has been subdivided from the larger parcel of land. The site is now in use for rural - residential purposes. A dwelling has been constructed in the south-western corner of the site and a shared driveway is now visible along the southern boundary. An area of horticulture is present adjacent to the western boundary of the site; however, a shelter belt does run along the length of this boundary. A racing oval is visible directly to the east of the subject site. The neighbouring properties remain in use for rural and rural - residential purposes.
1996 - 2017	The 1996 - 2017 historical photographs show the subject site remains in use for rural - residential purposes. The 1996 historical photograph shows that a shed (1) has been constructed near the dwelling in the south-western corner of the site. The 2001 historical photograph shows another shed (2) has been constructed in the same area. In addition, an extension has been added to the southern-most aspect of the dwelling. The remaining balance of the site remains largely unchanged throughout the time period. However, an extension of the horticultural area on the westerly neighbouring site is observed throughout the time period. The neighbouring properties remain in use for rural and rural - residential purposes.

Due to the age of the dwelling (pre-1988) located in the south-western portion of the site, it is considered likely that lead-based paints would have been utilised in the external building materials.

In addition, it is considered likely that potentially asbestos containing materials would have been used in the construction of the current site buildings (pre-2000).

7.2 Previous Investigations

At the time of writing this report, the results of a geotechnical investigation covering the site was not available. If future geotechnical investigations identify uncertified fills, these shall be investigated as part of any Detailed Site Investigation completed accordingly.

8.0 Site Walkover and Inspection

A walkover and site inspection were not possible at the time of writing the report as access to the property was not permitted. Therefore, the identification of any potential HAIL activities carried out at the site was limited to a desktop assessment. Once access is received, a walkover should take place to identify any additional potentially contaminating land uses and/ or activities that have not been identified as part of the desktop assessment.

The site features able to be identified as part of the desktop assessment are presented as Figure 2.

9.0 Surrounding Environment

The surrounding environment appeared to be predominantly in use for rural and rural-residential purposes. A racing oval is observed to the east of the site. Residential properties were observed further south-west in the wider area.

An area of horticulture is observed on the westerly neighbouring property. However, a shelter belt is present along the boundary between the properties. Given this, it is considered that potential contamination associated with the horticultural activities is reduced regarding its impact to the subject site.

The surrounding environment is presented as Figure 3.

10.0 Asbestos Management

Due to the age of the current site buildings (pre-1996), external PACM products are likely to be present in the construction materials.

Any removal of asbestos materials from the site will need to be conducted in accordance with the Health and Safety at Work (Asbestos) Regulations (MBIE, 2016) and the Approved Code of Practice for the Management and Removal of Asbestos (WorkSafe New Zealand, 2016) by a licensed asbestos removals specialist under an approved asbestos removal control plan.

It should be noted that ACM, other than that described, may also be present at the site and a thorough inspection should be carried out by a suitably qualified and competent asbestos surveyor prior to any demolition activities at the site.

11.0 Potentially Contaminating Activities or Land Uses

Following a review of the history and the available information relating to the site located at 119A Cosgrave Road, Papakura the potentially contaminating land uses and/or activities identified have been summarised in Table 3 below.

Table 3: Potential Contaminating Activities and/or Land Uses: 121A Cosgrave Road, Papakura.

Activity Description	HAIL Category
Spray Drift from Neighbouring Horticultural Activities	A10
Demolition of Historic Structures Potentially Containing Asbestos	E1
Maintenance and Use of Lead-based Paint	I

It should be noted that the HAIL item A.10 – Spray Drift from Neighbouring Horticultural Activities is unlikely to present as a risk of contamination to the subject site due to the location of such activities within greenhouses and the presence of the shelter belt along the western boundary of the property.

12.0 Conceptual Model of Exposure Pathways

The assessment provided in Table 4 below expands on the potential sources of contamination identified within the site and was based on the potential effects of the subdivision, change of land use and soil disturbance activities on human health and the environment associated with future residential development.

Table 4: Conceptual Site Model: 121A Cosgrave Road, Papakura.

Potential Source	Potential Pathways	Potential Receptors	Assessment
Contaminated Soil	Dermal Contact with Contaminated Soils	Human Health – Residential Land Use	Potentially Complete: Sampling and analysis are recommended to confirm the concentrations of contaminants in soil.
		Human Health – Commercial/Industrial Outdoor Worker	Potentially Complete: Sampling and analysis are recommended to confirm the concentrations of contaminants in soil.
	Ingestion of Contaminated Soils	Human Health – Residential Land Use	Potentially Complete: Sampling and analysis are recommended to confirm the concentrations of contaminants in soil.
		Human Health – Commercial/Industrial Outdoor Worker	Potentially Complete: Sampling and analysis are recommended to confirm the concentrations of contaminants in soil.
	Inhalation of Vapours/Fibres	Human Health – Residential Land Use	Potentially Complete: Sampling and analysis are recommended to confirm the concentrations of contaminants in soil.
		Human Health – Commercial/Industrial Outdoor Worker	Potentially Complete: Sampling and analysis are recommended to confirm the concentrations of contaminants in soil.
	Surface Water Run-off	Ecological Receptors - Unnamed Culvert	Potentially Complete: Sampling and analysis are recommended to confirm the concentrations of contaminants in soil.

	Migration of Groundwater	Ecological Receptors - Unnamed Culvert	Potentially Complete: Sampling and analysis are recommended to confirm the concentrations of contaminants in soil.
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13.0 Regulatory Requirements

13.1 The National Environmental Standard

Potentially contaminating activities and/or land uses were identified across the site, and in the area of proposed development, therefore it is considered that consent under the regulations of the NES may be triggered by future development of the site.

Prior to the development of the site where potentially contaminating land uses and/or activities have taken place, a detailed site investigation (DSI) is recommended. The DSI would confirm if the identified land uses and/or activities have affected the site soils and will confirm the consenting requirements for these areas of the site. The DSI shall be prepared in general accordance with the requirements of the Contaminated Land Management Guidelines No. 1 and No. 5 (MfE, Revised 2021).

13.2 Auckland Unitary Plan (Operative in Part)

The contaminated land rules of the Auckland Unitary Plan - Operative in Part (AUP OP) have immediate legal effect following its notification. As the AUP OP was notified on the 15th of November 2016 the contaminated land rules must be considered.

As potentially contaminating activities and/or land uses were identified across the site, the contaminated land rules of the AUP: OP may be triggered by future development of the site.

14.0 Conclusions and Recommendations

This PSI has been prepared in accordance with the requirements of the Contaminated Land Management Guidelines No. 1 and No. 5 (Ministry for the Environment, Revised 2021).

The history of the site was researched by Focus Environmental Services Limited personnel, which involved a review of the available historical aerial photographs of the site.

During the review of the available information, the following potentially contaminating activities or land uses were identified:

- Spray Drift from Neighbouring Horticultural Activities;
- Demolition of historic structures potentially containing asbestos; and
- The use and maintenance of lead-based paints.

The information obtained of the site's history was assessed to determine if any potentially hazardous activities listed on the Hazardous Activities and Industries List (HAIL) had occurred on site as a result of past or current land use.

A walkover and site inspection were not possible, as access to the property was not permitted at the time of writing this report. Therefore, the identification of any potential HAIL activities carried out at the site was limited to a desktop assessment. Once access is granted, it is recommended that a site walkover take place to identify any additional potentially contaminating land uses and/or activities that have not been identified in the information made available.

Based on the results of this Preliminary Site Investigation, it is considered that an activity described in the HAIL has been, or is more likely than not to have been, carried out on the site.

Furthermore, as the impact of the HAIL activities identified on the site soils has not been determined, it is recommended that, prior to any earthworks occurring onsite, a detailed site investigation is completed on the property found at 121A Cosgrave Road, Papakura.

The detailed site investigation would confirm if the identified land uses and/or activities have affected the site soils and will confirm the remediation requirements, if any, for the site.

Based on the findings of the preliminary site investigation for the site, it is considered that the regulations of the National Environmental Standard (NES) for Assessing and Managing Contaminants in Soil to Protect Human Health, and the contaminated land rules as outlined in Chapter E30 of the Auckland Unitary Plan: Operative in Part (AUP: OP), need to be considered and consents under these regulations may be triggered by future development of the site.

The detailed site investigation shall be carried out in general accordance with the Contaminated Land Management Guidelines No. 1 and No. 5 (MfE, Revised 2021).

Following the receipt of the sampling results a technical report summarising the results of the investigation shall be prepared. The report will be prepared in accordance Contaminated Land Management Guidelines No. 1(MfE, Revised 2021). The report will include:

- Recommendations for any additional investigations if required;
- A statement on whether or not any additional consents are required;

- Recommendations that a Site-Specific Management/Remediation Action Plan is prepared in order to provide controls to mitigate against the potential risks to human health and/or the environment as a result of the effects associated with the site redevelopment works.

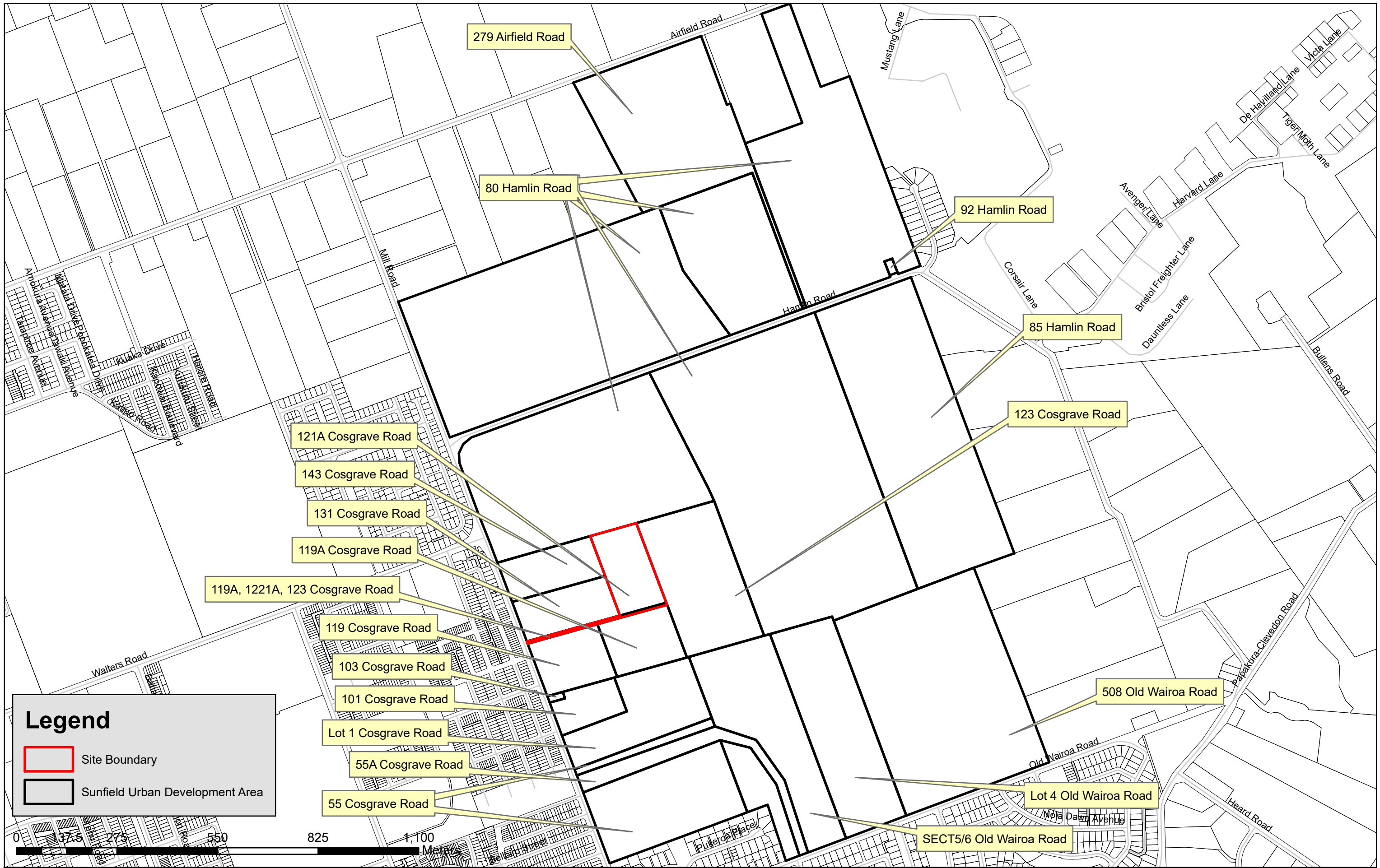
All works should be carried out in accordance with the global Site Management Plan titled '*Site Management Plan, Sunfield Urban Development Area*' dated December 2023 and prepared by Focus Environmental Services. If the controls outlined in the Site Management Plan are implemented during the development works, the effects on the environment are likely to be effectively mitigated.

Figures



Figure 1 – Site Location Plan

Figure 2 – Site Features Plan

Figure 3 – Surrounding Environment



Legend

-  Site Boundary
-  Sunfield Urban Development Area

0 375 275 550 825 1,100 Meters



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Winton Land Limited
121A Cosgrave Road
Sunfield Urban Development Area
Papakura
Auckland

Figure 1: Site Location Plan
Preliminary Site Investigation



1804.006

Drawing Number: 1804.006.01
Drawn By: MT
Checked By: DO'R
Date: 28/11/2023



Legend

● Site Features

□ Site Boundary

Site Features	Description
1	Site Entrance
2	Shed (1)
3	Shed (2)
4	Shed (3)
5	Shed (4)
6	Garage
7	Dwelling
8	Building Material Pile





Legend

Site Boundary

0 45 90 180 270 360 Meters



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Winton Land Limited
121A Cosgrave Road
Sunfield Urban Development Area
Papakura
Auckland

Figure 3: Surrounding Environment
Preliminary Site Investigation



1804.006

Drawing Number: 1804.006.03

Drawn By: MT

Checked By: DO'R

Date: 28/11/2023

Appendices

Appendix A – Illustrative Masterplan



Appendix B – Site Contour Plan



DISCLAIMER:
This map/plan is illustrative only and all information should be independently verified on site before taking any action.
Copyright Auckland Council. Land Parcel Boundary information from LINZ (Crown Copyright Reserved). Whilst due care has been taken, Auckland Council gives no warranty as to the accuracy and plan completeness of any information on this map/plan and accepts no liability for any error, omission or use of the information. Height datum: Auckland 1946.

Site Contour Plan

0 8.5 17 25.5
Meters

Scale @ A3
= 1:1,000

Date Printed:
8/11/2023





Hazardous Activities and Industries List (HAIL)

October 2011

A Chemical manufacture, application and bulk storage

1. Agrichemicals including commercial premises used by spray contractors for filling, storing or washing out tanks for agrichemical application
2. Chemical manufacture, formulation or bulk storage
3. Commercial analytical laboratory sites
4. Corrosives including formulation or bulk storage
5. Dry-cleaning plants including dry-cleaning premises or the bulk storage of dry-cleaning solvents
6. Fertiliser manufacture or bulk storage
7. Gasworks including the manufacture of gas from coal or oil feedstocks
8. Livestock dip or spray race operations
9. Paint manufacture or formulation (excluding retail paint stores)
10. Persistent pesticide bulk storage or use including sport turfs, market gardens, orchards, glass houses or spray sheds
11. Pest control including the premises of commercial pest control operators or any authorities that carry out pest control where bulk storage or preparation of pesticide occurs, including preparation of poisoned baits or filling or washing of tanks for pesticide application
12. Pesticide manufacture (including animal poisons, insecticides, fungicides or herbicides) including the commercial manufacturing, blending, mixing or formulating of pesticides
13. Petroleum or petrochemical industries including a petroleum depot, terminal, blending plant or refinery, or facilities for recovery, reprocessing or recycling petroleum-based materials, or bulk storage of petroleum or petrochemicals above or below ground
14. Pharmaceutical manufacture including the commercial manufacture, blending, mixing or formulation of pharmaceuticals, including animal remedies or the manufacturing of illicit drugs with the potential for environmental discharges
15. Printing including commercial printing using metal type, inks, dyes, or solvents (excluding photocopy shops)
16. Skin or wool processing including a tannery or fellmongery, or any other commercial facility for hide curing, drying, scouring or finishing or storing wool or leather products
17. Storage tanks or drums for fuel, chemicals or liquid waste
18. Wood treatment or preservation including the commercial use of anti-sapstain chemicals during milling, or bulk storage of treated timber outside

B Electrical and electronic works, power generation and transmission

1. Batteries including the commercial assembling, disassembling, manufacturing or recycling of batteries (but excluding retail battery stores)

2. Electrical transformers including the manufacturing, repairing or disposing of electrical transformers or other heavy electrical equipment
3. Electronics including the commercial manufacturing, reconditioning or recycling of computers, televisions and other electronic devices
4. Power stations, substations or switchyards

C Explosives and ordinances production, storage and use

1. Explosive or ordinance production, maintenance, dismantling, disposal, bulk storage or re-packaging
2. Gun clubs or rifle ranges, including clay targets clubs that use lead munitions outdoors
3. Training areas set aside exclusively or primarily for the detonation of explosive ammunition

D Metal extraction, refining and reprocessing, storage and use

1. Abrasive blasting including abrasive blast cleaning (excluding cleaning carried out in fully enclosed booths) or the disposal of abrasive blasting material
2. Foundry operations including the commercial production of metal products by injecting or pouring molten metal into moulds
3. Metal treatment or coating including polishing, anodising, galvanising, pickling, electroplating, or heat treatment or finishing using cyanide compounds
4. Metalliferous ore processing including the chemical or physical extraction of metals, including smelting, refining, fusing or refining metals
5. Engineering workshops with metal fabrication

E Mineral extraction, refining and reprocessing, storage and use

1. Asbestos products manufacture or disposal including sites with buildings containing asbestos products known to be in a deteriorated condition
2. Asphalt or bitumen manufacture or bulk storage (excluding single-use sites used by a mobile asphalt plant)
3. Cement or lime manufacture using a kiln including the storage of wastes from the manufacturing process
4. Commercial concrete manufacture or commercial cement storage
5. Coal or coke yards
6. Hydrocarbon exploration or production including well sites or flare pits
7. Mining industries (excluding gravel extraction) including exposure of faces or release of groundwater containing hazardous contaminants, or the storage of hazardous wastes including waste dumps or dam tailings

F Vehicle refuelling, service and repair

1. Airports including fuel storage, workshops, washdown areas, or fire practice areas
2. Brake lining manufacturers, repairers or recyclers
3. Engine reconditioning workshops
4. Motor vehicle workshops
5. Port activities including dry docks or marine vessel maintenance facilities

6. Railway yards including goods-handling yards, workshops, refuelling facilities or maintenance areas
7. Service stations including retail or commercial refuelling facilities
8. Transport depots or yards including areas used for refuelling or the bulk storage of hazardous substances

G Cemeteries and waste recycling, treatment and disposal

1. Cemeteries
2. Drum or tank reconditioning or recycling
3. Landfill sites
4. Scrap yards including automotive dismantling, wrecking or scrap metal yards
5. Waste disposal to land (excluding where biosolids have been used as soil conditioners)
6. Waste recycling or waste or wastewater treatment

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

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

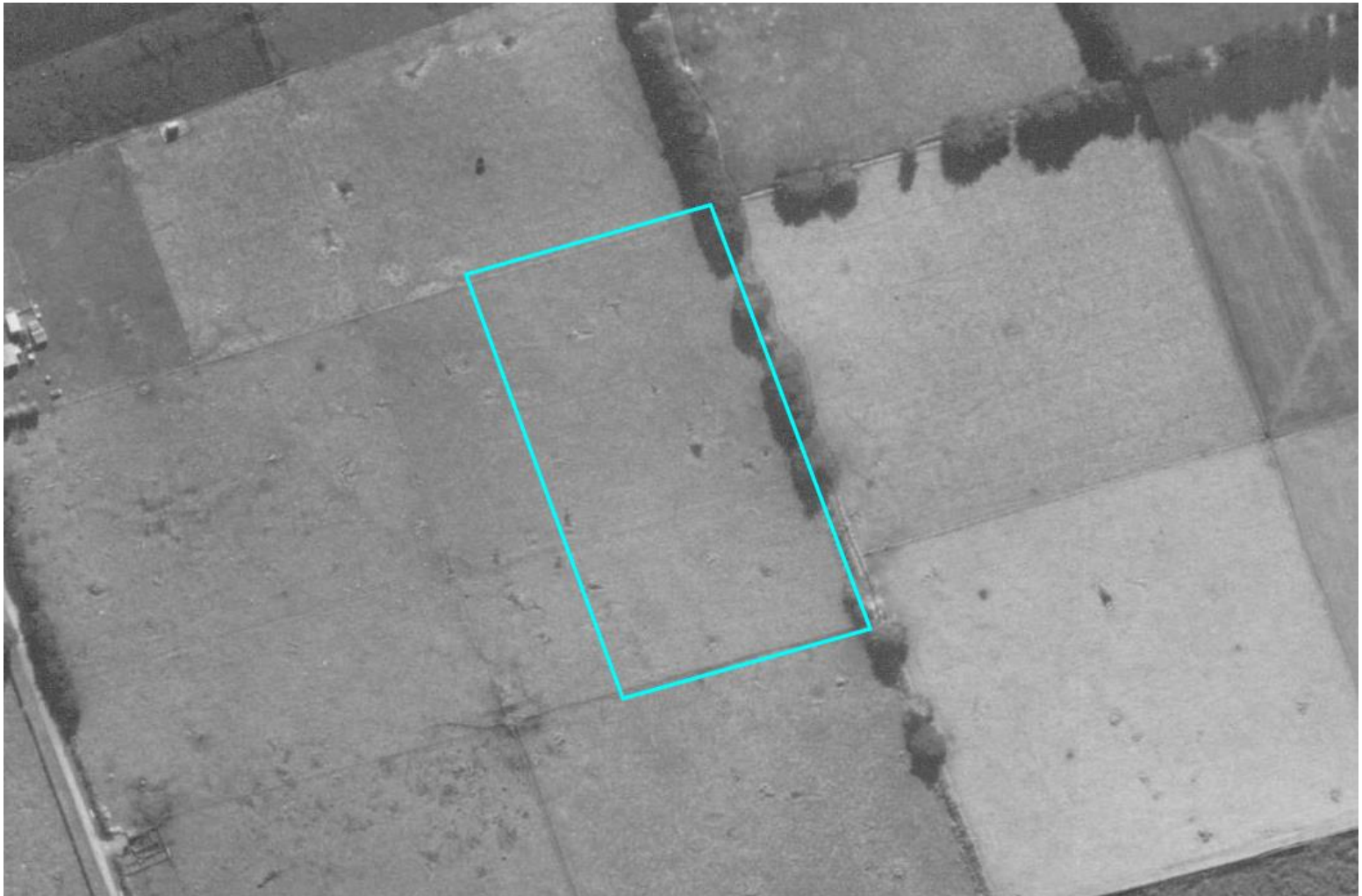
Appendix D – Historical Aerial Photographs

Historical Aerial Photographs

121A Cosgrave Road
Papakura
Auckland

by Focus Environmental Services Limited

1959 Historical Photograph



1975 Historical Photograph



Source: NZ Aerial Mapping

1980 Historical Photograph



Source: NZ Aerial Mapping

1988 Historical Photograph



Source: NZ Aerial Mapping

1996 Historical Photograph



2001 Historical Photograph



2006 Historical Photograph

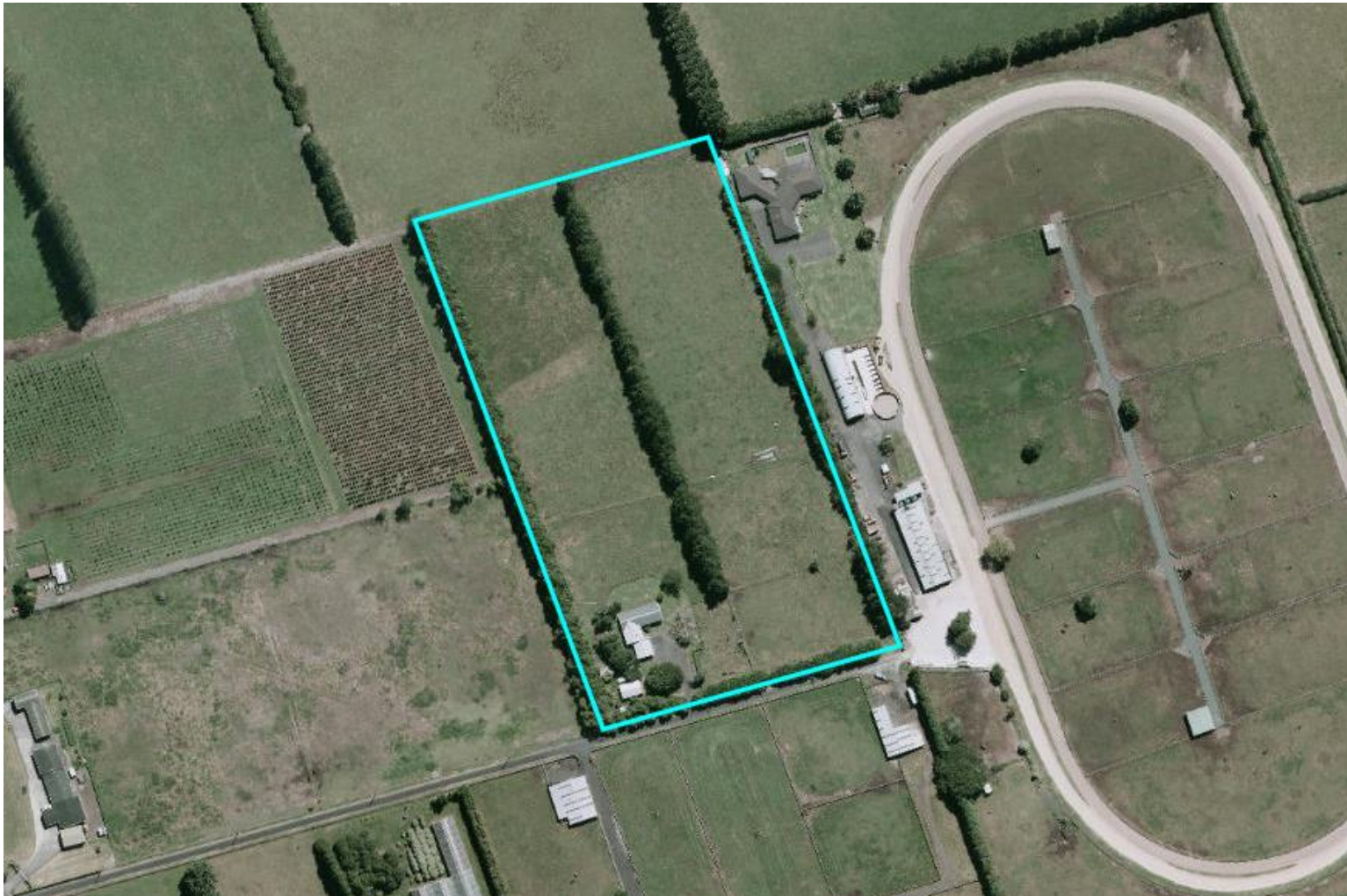


Source: Auckland Council GeoMaps

2008 Historical Photograph



2010 Historical Photograph



Source: Auckland Council GeoMaps

2015 Historical Photograph



Source: Auckland Council GeoMaps

2017 Historical Photograph



Source: Auckland Council GeoMaps

PRELIMINARY SITE INVESTIGATION
123 COSGRAVE ROAD
ARDMORE
AUCKLAND

For the Attention of:

Winton Land Limited

Reference: FES 1804.007 December 2023





Company Information

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Date December 2023

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Authorised

David O'Reilly
Principal Environmental Consultant

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Appendices

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- Appendix B – Site Contour Plan
- Appendix C – Environmental HAIL
- Appendix D – Historical Aerial Photographs

Executive Summary

This Focus Environmental Services Limited report is produced under a management system certified as complying with ISO 45001:2018 by SGS New Zealand.

Focus Environmental Services Limited was contracted by Winton Land Limited to carry out a Preliminary Site Investigation (PSI) at 123 Cosgrave Road, Ardmore, Auckland. The legal description of the site is Lot 4 DP 103787 – 1/3 SH IN Lot 7 DP 103787 with an area of 8.63ha.

The Sunfield Urban Development Area (UDA) consists of nineteen properties located across Cosgrave Road, Old Wairoa Road, Hamlin Road and Airfield Road, Papakura, Auckland.

The scope of this report is limited to the property at 123 Cosgrave Road, and should be read in conjunction with the covering letter summarising the findings of the PSIs and DSIs completed for the Sunfield UDA.

This PSI has been prepared in accordance with the requirements of the Contaminated Land Management Guidelines No. 1 and No. 5 (Ministry for the Environment, Revised 2021).

The history of the site was researched by Focus Environmental Services Limited personnel, which involved a review of the available historical aerial photographs of the site, a review of the previous environmental investigations conducted for the site, a review of the Auckland Council property file and a review of the Historical Certificate of Title.

During the review of the available information, the following potentially contaminating activities or land uses were identified:

- Demolition of historic structures potentially containing asbestos; and
- The use and maintenance of lead-based paints.

The information obtained of the site's history was assessed to determine if any potentially hazardous activities listed on the Hazardous Activities and Industries List (HAIL) had occurred on site as a result of past or current land use.

A walkover and site inspection were not possible, as access to the property was not permitted at the time of writing this report. Therefore, the identification of any potential HAIL activities carried out at the site was limited to a desktop assessment. Once access is granted, it is recommended that a site walkover take place to identify any additional potentially contaminating land uses and/or activities that have not been identified in the information made available.

Based on the results of this Preliminary Site Investigation, it is considered that an activity described in the HAIL has been, or is more likely than not to have been, carried out on the site.

Furthermore, as the impact of the HAIL activities identified on the site soils has not been determined, it is recommended that, prior to any earthworks occurring onsite, a detailed site investigation is completed on the property found at 123 Cosgrave Road.

The detailed site investigation would confirm if the identified land uses and/or activities have affected the site soils and will confirm the remediation requirements, if any, for the site.

Based on the findings of the preliminary site investigation for the site, it is considered that the regulations of the National Environmental Standard (NES) for Assessing and Managing Contaminants in Soil to Protect Human Health, and the contaminated land rules as outlined in Chapter E30 of the Auckland Unitary Plan: Operative in Part (AUP: OP), need to be considered and consents under these regulations may be triggered by future development of the site.

The detailed site investigation shall be carried out in general accordance with the Contaminated Land Management Guidelines No. 1 and No. 5 (MfE, Revised 2021).

Following the receipt of the sampling results, a technical report summarising the results of the investigation shall be prepared. The report will be prepared in accordance Contaminated Land Management Guidelines No. 1(MfE, Revised 2021). The report will include:

- Recommendations for any additional investigations if required;
- A statement on whether or not any additional consents are required;
- Recommendations that a Site-Specific Management/Remediation Action Plan is prepared in order to provide controls to mitigate against the potential risks to human health and/or the environment as a result of the effects associated with the site redevelopment works.

All works should be carried out in accordance with the global Site Management Plan titled '*Site Management Plan, Sunfield Urban Development Area*' dated December 2023 and prepared by Focus Environmental Services. If the controls outlined in the Site Management Plan are implemented during the development works, the effects on the environment are likely to be effectively mitigated.

This report is certified by David O'Reilly, Suitability Qualified and Experienced Practitioner (SQEP):



Principal Environmental Consultant
Focus Environmental Services Limited

1.0 Scope

- 1.1 This report has been prepared at the request of Winton Land Limited ("the Client") in terms of the Focus Environmental Services Agreement ("Agreement").
- 1.2 The following report is based on:
 - *Information provided by the Client;*
 - *A review of historical aerial photographs available for the site;*
 - *A geotechnical report titled 'Geotechnical Investigation Report for 123 Cosgrave Road, Papakura dated 15th June 2011 and prepared by Coffey Geotechnics (NZ) Limited;*
 - *A search of the Auckland Council Property File; and*
 - *A review of the Historical Certificate of Title.*
- 1.3 We have not independently verified the information provided to us by the Client or its completeness. We do not express an opinion on the accuracy or the reliability of such information.
- 1.4 No warranties are given, intended or implied.
- 1.5 Opinion, inferences, assumptions and interpretations made in this report should not be construed as legal opinion.
- 1.6 Where an assessment is given in this report, the Client must also rely upon their own judgement, knowledge and assessment of the subject of this report before undertaking any action.
- 1.7 This report must not be used in any other context or for any other purpose other than that for which it has been prepared without the prior written consent of Focus Environmental Services.
- 1.8 This report is strictly confidential and intended for the sole use of the Client and shall not be disclosed without the prior written consent of Focus Environmental Services.
- 1.9 This Focus Environmental Services Limited report is produced under a management system certified as complying with ISO 45001:2018 by SGS New Zealand.

2.0 Site Identification

The property is located at 123 Cosgrave Road, Ardmore, Auckland as shown in Figure 1 attached. The legal description of the site is Lot 4 DP 103787 – 1/3 SH IN Lot 7 DP 103787 with an area of 8.63ha. The site is located at national grid reference 1774217mE and 5898464mN.

The site is rectangular in shape and is zoned 'Rural – Mixed Rural Zone' under the AUP: OP.

The site location plan is presented as Figure 1.

3.0 Proposed Site Redevelopment Activity

It is proposed that the site will be redeveloped for residential purposes. As part of the redevelopment, the site will undergo subdivision, a change of land use and disturbance of soils.

The illustrative masterplan is attached as Appendix A.

4.0 Site Topography

The property at 123 Cosgrave Road, Ardmore has a generally flat landscape.

The site contour plan is presented in Appendix B.

5.0 Geology and Hydrology

Published geological maps¹ indicate the site is typically underlain with Tauranga Group Holocene River Deposits. A description of the underlying geology is presented in Table 1 below.

Table 1: Geology of 123 Cosgrave Road, Ardmore.

Key name	OIS1 (Holocene) river deposits
Simple name	Holocene river deposits
Main rock name	Mud
Description	Sand, silt, mud and clay with local gravel and peat beds.
Subsidiary rocks	Sand, silt, clay, peat
Key group	Holocene sediments
Stratigraphic lexicon name	Tauranga Group
Absolute age (min)	0.0 million years
Absolute age (max)	0.014 million years
Rock group	Mudstone
Rock class	Clastic sediment

No groundwater investigation was carried out as part of this investigation.

The nearest surface water body is the unnamed, open stream which flows along the northern boundary of the site.

¹ Geology of the Auckland Area (Institute of Geological & Nuclear Sciences 1:250,000 geological map 3, 2011)

6.0 Regulatory Framework

6.1 The National Environmental Standard

The Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (NES) came into effect on the 1st of January 2012 and supersedes any District Plan rules that related to contaminated land. Any Regional Plan rules relating to contaminated land are still applicable.

In brief, the objective of the NES is to ensure that land affected by contaminants is identified and assessed and, if necessary, remediated or managed to protect human health. The NES only applies to the activities: removing or replacing all, or part of, a fuel storage system; sampling the soil; disturbing the soil; subdividing the land; and changing the land use, and where an activity or industry described in the Hazardous Activities and Industries List (HAIL) is being, has been, or is more likely than not to have been undertaken on the piece of land.

The NES also contains reference to the Soil Contaminant Standards for human health (SCS_(health)), for a variety of land use scenarios along with reference to best practice reporting documents.

The environmental HAIL is attached as Appendix C.

6.2 The National Environmental Standard

The contaminated land rules of the Auckland Unitary Plan: Operative in Part (AUP: OP) have immediate legal effect following its notification. As the AUP: OP was notified on the 15th of November 2016 the contaminated land rules of the AUP: OP must be considered.

In brief, the objective of the AUP: OP is to manage land containing elevated levels of contaminants to protect human health and the environment and to enable the effective use of the land.

The contaminated land rules of the AUP: OP apply when the land contains contaminants above those levels specified in Table E30.6.1.4.1 of Chapter E30 of the AUP: OP.

7.0 Site History

The history of the site was researched by Focus Environmental Services Limited personnel, which involved a review of the available historical aerial photographs of the site, a review of the previous environmental investigations conducted for the site, a review of the Auckland Council property file and a review of the historical certificate of title.

7.1 Historical Aerial Photographs

Descriptions of the historical aerial photographs for the subject site are presented in Table 2 below. The historical aerial photographs are presented in Appendix D.

Table 2: Historical Photographs: 123 Cosgrave Road, Ardmore.

Date	Description
1959 - 1975	The 1959 - 1975 historical photographs show that the subject site is part of a larger parcel of land in use for rural purposes. No structures are visible on the subject site. The surrounding properties are in use for rural and rural - residential purposes with increasing residential development throughout the time period.
1981	The 1981 historical photograph shows the subject site has been subdivided from the larger parcel of land. A horse racing oval has been constructed across the majority of the site. A small shed (1) has been constructed near the western boundary. A shared driveway is visible leading to the central western area of the site. The surrounding properties remain in use for rural and rural - residential purposes.
1988 - 1996	The 1988 - 1996 historical photographs show the subject site relatively unchanged from the previous time period. The 1988 historical photograph shows a large shed (2) has been constructed in the central western portion of the site. The 1996 historical photograph shows that another shed (3) has been constructed to the north of shed (2) and small shed (4) has been constructed adjacent the northern boundary of shed (2). The area to the south of shed (2) appears to be covered with gravel or hardstand. A dwelling has been constructed in the north-western corner of the site, and as such the site is now in use for rural - residential purposes. The surrounding properties remain in use for rural and rural - residential purposes.
2001 - 2017	The 2001 - 2017 historical photographs show the subject site remains in use for rural - residential purposes with much of the site balance occupied by a horse racing oval. The 2001 historical photograph shows two small sheds (5 & 6) have been constructed in the centre of the oval. A further two sheds (7 & 8) are observed along the northern boundary, along which a shelter belt has been planted. An inground tank is visible adjacent to shed (3). An extension to the dwelling has been constructed from the north-western aspect of the building. The 2006 historical photograph shows an inground pool has been constructed adjacent to the northern aspect of the dwelling. The 2015 historical photograph shows the construction of a small glasshouse in the north-western corner of the site. The remaining balance of the site is grassed.

Due to the age of the dwelling and sheds (1 - 4) (pre-1988) located at the site, it is considered likely that lead-based paints would have been utilised in the external building materials.

In addition, it is considered likely that potentially asbestos containing materials would have been used in the construction of the dwelling and sheds (1 - 6) (pre-2000).

7.2 Previous Investigations

One previous environmental investigation report completed was made available at the time of writing this report.

A geotechnical report titled '*Geotechnical Investigation Report for 123 Cosgrave Road, Papakura*' dated 15th June 2011 and prepared by Coffey Geotechnics (NZ) Limited summarises the findings of a geotechnical investigation carried out for the property at 123 Cosgrave Road.

Fieldwork was conducted at the site on the 9th June 2011.

In summary, two 50mm diameter hand auger boreholes to depths of up to 2.0 and 3.0m (HA01 & HA02) were drilled across the site. A falling-head percolation test was carried out in HA01 to ascertain the site soakage rates for onsite stormwater disposal design.

Following the testing it was concluded that:

- Topsoil depths were difficult to ascertain due to the organic nature of the underlying soils but may be assumed to be ~10mm;
- Organic silts were encountered up to 0.4m below ground level (bgl) below which were soft organic clays with decaying organic inclusions.

7.3 Auckland Council Property File Search

The results of the council search showed multiple consents relating to the site at 123 Cosgrave Road, Ardmore. The relevant details of the Property File search are presented in Table 3 below.

Table 3: Relevant Property File Information: 123 Cosgrave Road, Ardmore

Proposed Activity	Applicant	Reference	Date
Application for Connection to District Water Supply	Abernethy Contractors Ltd	36703/520/4	1/11/1991
Building Permit - Erect 1/2 Round Building Shed	K.L. Abernethy	5390	6/12/1991
Building Permit - Relocate a Porta-Com	Abernethy Contractors Ltd	5651	2/06/1992
Building Permit - Erect a New Dwelling	Abernethy Contractors Ltd	5703	6/07/1992
Application for Subdivision Resource Consent	Mr W Abernethy	-	24/01/1996
Building Consent - Add a Garage to Existing Dwelling	Abernethy Contractors Ltd	012122	7/03/1996
Building Consent - Fireplace	Abernethy Wayne Stephen	012629	18/07/1996
Building Consent - Inground Swimming Pool	Wayne Abernethy	19222	4/11/2002

7.4 Historical Certificate of Title Review

The historical certificate of title review was completed for the property at 515 Remuera Road, Remuera.

Following the review of the historical certificate of title it was concluded that no registered owners were listed that would suggest the presence of any HAIL activities occurring on the site.

However, it should be noted that the Oaonui – Auckland high pressure gas transmission pipeline runs in the vicinity of the subject site.

The historical certificate of title is presented in full as Appendix E.

8.0 Site Walkover and Inspection

A walkover and site inspection were not possible at the time of writing the report as access to the property was not permitted. Therefore, the identification of any potential HAIL activities carried out at the site was limited to a desktop assessment. Once access is granted, a walkover should take place to identify any additional potentially contaminating land uses and/ or activities that have not been identified as part of the desktop assessment.

The site features able to be identified as part of the desktop assessment are presented as Figure 2.

9.0 Surrounding Environment

The surrounding environment appeared to be predominantly in use for rural and rural-residential purposes. Ardmore Aerodrome is observed to the north-east of the site. Residential properties were observed further south-west in the wider area.

No significant horticultural land use can be observed on the properties neighbouring the subject site.

The surrounding environment is presented as Figure 3.

10.0 Asbestos Management

Due to the age of the dwelling and sheds (1-4) (pre-1996), external PACM products are likely to be present in the construction materials.

Any removal of asbestos materials from the site will need to be conducted in accordance with the Health and Safety at Work (Asbestos) Regulations (MBIE, 2016) and the Approved Code of Practice for the Management and Removal of Asbestos (WorkSafe New Zealand, 2016) by a licensed asbestos removals specialist under an approved asbestos removal control plan.

It should be noted that ACM, other than that described, may also be present at the site and a thorough inspection should be carried out by a suitably qualified and competent asbestos surveyor prior to any demolition activities at the site.

11.0 Potentially Contaminating Activities or Land Uses

Following a review of the history and the available information relating to the site located at 123 Cosgrave Road, Ardmore the potentially contaminating land uses and/or activities identified have been summarised in Table 3 below.

Table 3: Potential Contaminating Activities and/or Land Uses: 123 Cosgrave Road, Ardmore.

Activity Description	HAIL Category
Demolition of Historic Structures Potentially Containing Asbestos	E1
Maintenance and Use of Lead-based Paint	I

12.0 Conceptual Model of Exposure Pathways

The assessment provided in Table 4 below expands on the potential sources of contamination identified within the site and was based on the potential effects of the subdivision, change of land use and soil disturbance activities on human health and the environment associated with future residential development.

Table 4: Conceptual Site Model: 123 Cosgrave Road, Ardmore.

Potential Source	Potential Pathways	Potential Receptors	Assessment
Contaminated Soil	Dermal Contact with Contaminated Soils	Human Health – Residential Land Use	Potentially Complete: Sampling and analysis are recommended to confirm the concentrations of contaminants in soil.
		Human Health – Commercial/Industrial Outdoor Worker	Potentially Complete: Sampling and analysis are recommended to confirm the concentrations of contaminants in soil.
	Ingestion of Contaminated Soils	Human Health – Residential Land Use	Potentially Complete: Sampling and analysis are recommended to confirm the concentrations of contaminants in soil.
		Human Health – Commercial/Industrial Outdoor Worker	Potentially Complete: Sampling and analysis are recommended to confirm the concentrations of contaminants in soil.
	Inhalation of Vapours/Fibres	Human Health – Residential Land Use	Potentially Complete: Sampling and analysis are recommended to confirm the concentrations of contaminants in soil.
		Human Health – Commercial/Industrial Outdoor Worker	Potentially Complete: Sampling and analysis are recommended to confirm the concentrations of contaminants in soil.
	Surface Water Run-off	Ecological Receptors - Unnamed Open Stream	Potentially Complete: Sampling and analysis are recommended to confirm the concentrations of contaminants in soil.
	Migration of Groundwater	Ecological Receptors - Unnamed Open Stream	Potentially Complete: Sampling and analysis are recommended to confirm the concentrations of contaminants in soil.

13.0 Regulatory Requirements

13.1 The National Environmental Standard

Potentially contaminating activities and/or land uses were identified across the site, and in the area of proposed development, therefore it is considered that consent under the regulations of the NES may be triggered by future development of the site.

Prior to the development of the site where potentially contaminating land uses and/or activities have taken place, a detailed site investigation (DSI) is recommended. The DSI would confirm if the identified land uses and/or activities have affected the site soils and will confirm the consenting requirements for these areas of the site. The DSI shall be prepared in general accordance with the requirements of the Contaminated Land Management Guidelines No. 1 and No. 5 (MfE, Revised 2021).

13.2 Auckland Unitary Plan (Operative in Part)

The contaminated land rules of the Auckland Unitary Plan - Operative in Part (AUP OP) have immediate legal effect following its notification. As the AUP OP was notified on the 15th of November 2016 the contaminated land rules must be considered.

As potentially contaminating activities and/or land uses were identified across the site, the contaminated land rules of the AUP: OP may be triggered by future development of the site.

14.0 Conclusions and Recommendations

This PSI has been prepared in accordance with the requirements of the Contaminated Land Management Guidelines No. 1 and No. 5 (Ministry for the Environment, Revised 2021).

The history of the site was researched by Focus Environmental Services Limited personnel, which involved a review of the available historical aerial photographs of the site, a review of the previous environmental investigations conducted for the site, a review of the Auckland Council property file and a review of the Historical Certificate of Title.

During the review of the available information, the following potentially contaminating activities or land uses were identified:

- Demolition of historic structures potentially containing asbestos; and
- The use and maintenance of lead-based paints.

The information obtained of the site's history was assessed to determine if any potentially hazardous activities listed on the Hazardous Activities and Industries List (HAIL) had occurred on site as a result of past or current land use.

A walkover and site inspection were not possible, as access to the property was not permitted at the time of writing this report. Therefore, the identification of any potential HAIL activities carried out at the site was limited to a desktop assessment. Once access is granted, it is recommended that a site walkover take place to identify any additional potentially contaminating land uses and/or activities that have not been identified in the information made available.

Based on the results of this Preliminary Site Investigation, it is considered that an activity described in the HAIL has been, or is more likely than not to have been, carried out on the site.

Furthermore, as the impact of the HAIL activities identified on the site soils has not been determined, it is recommended that, prior to any earthworks occurring onsite, a detailed site investigation is completed on the property found at 123 Cosgrave Road.

The detailed site investigation would confirm if the identified land uses and/or activities have affected the site soils and will confirm the remediation requirements, if any, for the site.

Based on the findings of the preliminary site investigation for the site, it is considered that the regulations of the National Environmental Standard (NES) for Assessing and Managing Contaminants in Soil to Protect Human Health, and the contaminated land rules as outlined in Chapter E30 of the Auckland Unitary Plan: Operative in Part (AUP: OP), need to be considered and consents under these regulations may be triggered by future development of the site.

The detailed site investigation shall be carried out in general accordance with the Contaminated Land Management Guidelines No. 1 and No. 5 (MfE, Revised 2021).

Following the receipt of the sampling results, a technical report summarising the results of the investigation shall be prepared. The report will be prepared in accordance Contaminated Land Management Guidelines No. 1(MfE, Revised 2021). The report will include:

- Recommendations for any additional investigations if required;
- A statement on whether or not any additional consents are required;

- Recommendations that a Site-Specific Management/Remediation Action Plan is prepared in order to provide controls to mitigate against the potential risks to human health and/or the environment as a result of the effects associated with the site redevelopment works.

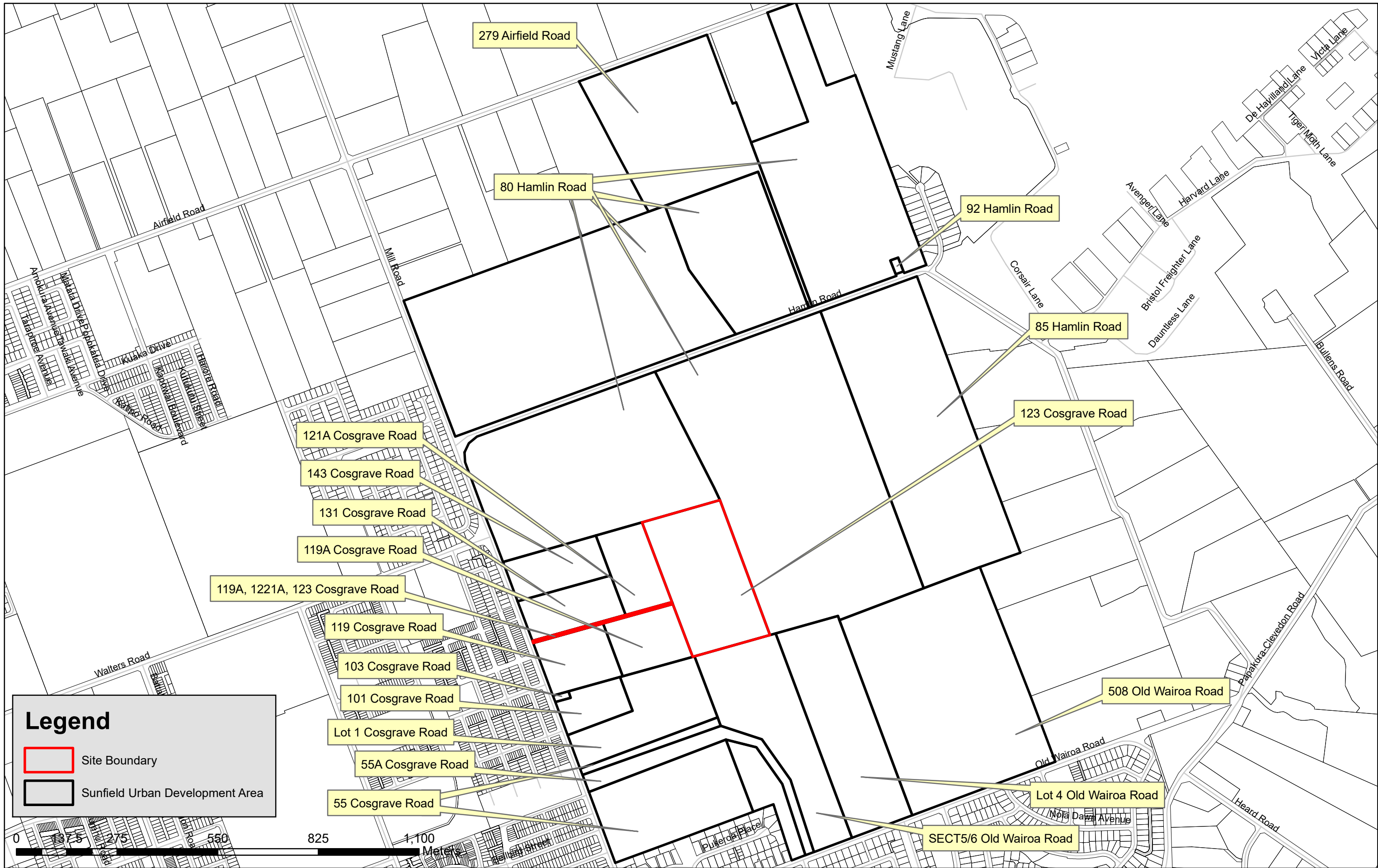
All works should be carried out in accordance with the global Site Management Plan titled '*Site Management Plan, Sunfield Urban Development Area*' dated December 2023 and prepared by Focus Environmental Services. If the controls outlined in the Site Management Plan are implemented during the development works, the effects on the environment are likely to be effectively mitigated.

Figures

Figure 1 – Site Location Plan

Figure 2 – Site Features Plan

Figure 3 – Surrounding Environment



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Figure 1: Site Location Plan
Preliminary Site Investigation



1804.007

Drawing Number: 1804.007.01

Drawn By: MT

Checked By: DO'R

Date: 11/12/2023



Legend

-  Site Features
-  Site Boundary

Site Features	Description
1	Site Entrance
2	Horse Racing Oval
3	Shed (1)
4	Shed (2)
5	Shed (3)
6	Shed (4)
7	Dwelling
8	Shed (5)
9	Shed (6)
10	Shed (7)
11	Shed (8)
12	Inground Tank
13	Inground Pool
14	Glasshouse



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Figure 3: Surrounding Environment
 Preliminary Site Investigation



1804.007

Drawing Number: 1804.007.03
 Drawn By: MT
 Checked By: DO'R
 Date: 12/12/2023

Appendices

Appendix A – Illustrative Masterplan