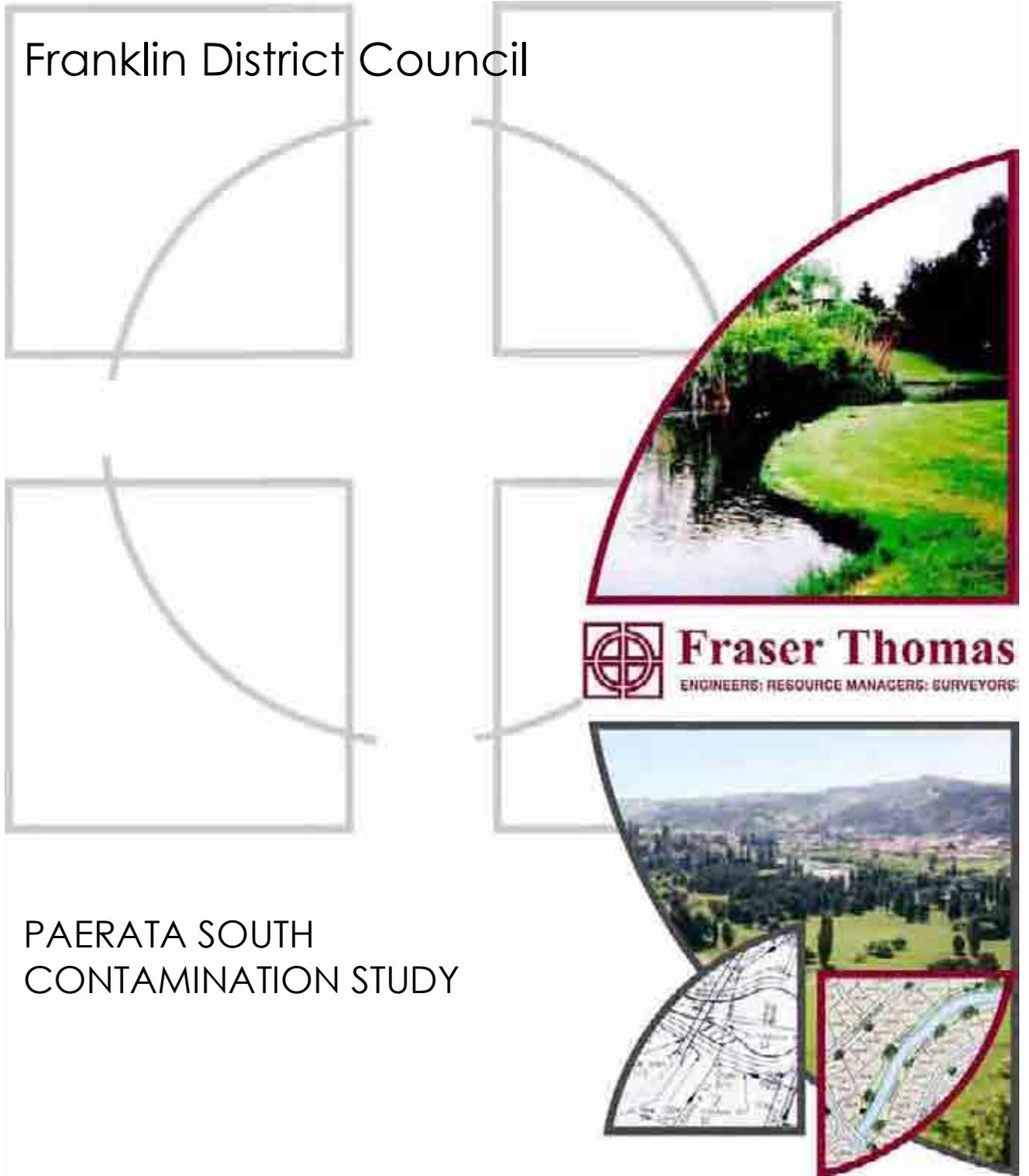


Franklin District Council



PAERATA SOUTH
CONTAMINATION STUDY

PRELIMINARY SITE
INVESTIGATION

Franklin District Council

PAERATA SOUTH CONTAMINATION STUDY

PRELIMINARY SITE INVESTIGATION

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Version No.	1	Name	Ray Hodgland
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Authors	T Bellingham	Date	25 August 2010
Reviewer	Sean Finnigan		

Fraser Thomas Limited

Consulting Engineers, Licensed Surveyors
Planners & Resource Managers
152 Kaimar Road, Papatoetoe, Manukau 2025
PO Box 23 273, Hunters Corner, Manukau 2155
Auckland, New Zealand
Tel: +64 9 278-7078 : Fax: +64 9 278-3697
Email: rhdgland@ftl.co.nz

FRANKLIN DISTRICT COUNCIL
PAERATA SOUTH CONTAMINATION STUDY
PRELIMINARY SITE INVESTIGATION

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FRANKLIN DISTRICT COUNCIL

PAERATA SOUTH CONTAMINATION STUDY PRELIMINARY SITE INVESTIGATION

SUMMARY CONTAMINATED SITES REPORT CHECKLIST

Report sections and information to be presented	PSI	SIR	RAP	SVR	MMP	Notes
Executive summary	R <input checked="" type="checkbox"/>	R <input type="checkbox"/>	R <input type="checkbox"/>	R <input type="checkbox"/>	R <input type="checkbox"/>	
Scope of work	R <input checked="" type="checkbox"/>	R <input type="checkbox"/>	R <input type="checkbox"/>	R <input type="checkbox"/>	R <input type="checkbox"/>	
Site identification	R <input checked="" type="checkbox"/>	R <input type="checkbox"/>	R <input type="checkbox"/>	R <input type="checkbox"/>	R <input type="checkbox"/>	
Site history	R <input checked="" type="checkbox"/>	S <input type="checkbox"/>	S <input type="checkbox"/>	S <input type="checkbox"/>	S <input type="checkbox"/>	
Site condition and surrounding environment	R <input checked="" type="checkbox"/>	S <input type="checkbox"/>	S <input type="checkbox"/>	S <input type="checkbox"/>	S <input type="checkbox"/>	
Geology and hydrology	A <input checked="" type="checkbox"/>	R <input type="checkbox"/>	S <input type="checkbox"/>	S <input type="checkbox"/>	S <input type="checkbox"/>	
Sampling and analysis plan and sampling methodology	A <input type="checkbox"/>	R <input type="checkbox"/>	X	R <input type="checkbox"/>	R <input type="checkbox"/>	3
Field quality assurance and quality control (QA/QC)	N <input type="checkbox"/>	R <input type="checkbox"/>	X	R <input type="checkbox"/>	S <input type="checkbox"/>	
Laboratory QA/QC	N <input type="checkbox"/>	R <input type="checkbox"/>	X	R <input type="checkbox"/>	X	
QA/QC data evaluation	N <input type="checkbox"/>	R <input type="checkbox"/>	X	R <input type="checkbox"/>	X	
Basis for guideline values	R <input type="checkbox"/>	R <input type="checkbox"/>	R <input type="checkbox"/>	R <input type="checkbox"/>	R <input type="checkbox"/>	3
Results	A <input type="checkbox"/>	R <input type="checkbox"/>	R <input type="checkbox"/>	R <input type="checkbox"/>	S <input type="checkbox"/>	3
Site Characterisation	R <input checked="" type="checkbox"/>	R <input type="checkbox"/>	R <input type="checkbox"/>	R <input type="checkbox"/>	R <input type="checkbox"/>	
Remedial actions	X	X	R <input type="checkbox"/>	S <input type="checkbox"/>	S <input type="checkbox"/>	
Validation	X	X	X	R <input type="checkbox"/>	S <input type="checkbox"/>	
Site management plan	X	X	R <input type="checkbox"/>	S <input type="checkbox"/>	S <input type="checkbox"/>	
Ongoing monitoring	X	X	X	N <input type="checkbox"/>	R <input type="checkbox"/>	
Conclusions and recommendations	R <input checked="" type="checkbox"/>	R <input type="checkbox"/>	R <input type="checkbox"/>	R <input type="checkbox"/>	R <input type="checkbox"/>	

KEY:

1. PSI = preliminary site inspection report
SIR = detailed site investigation report
RAP = site remedial action plan
SVR = site validation report
MMP = ongoing monitoring and management plan
2. R = corresponding details required
A = readily available information should be included;
S = summary of this section's details is adequate if detailed information has been included in an available referenced report;
N = include only if no further site investigation is to be undertaken;
X = not applicable and may be omitted.
3. No intrusive investigation (soil sampling) was undertaken for this PSI investigation

FRANKLIN DISTRICT COUNCIL

PAERATA SOUTH CONTAMINATION STUDY PRELIMINARY SITE INVESTIGATION

EXECUTIVE SUMMARY

In response to instructions from Cathy Kenkel of Franklin District Council (FDC), Fraser Thomas Limited (FTL) undertook a preliminary site investigation (PSI) for the Paerata South area that is proposed for development under the Franklin District Growth Strategy (DGS). This investigation involved a desktop study and reporting associated with potential land contamination issues.

The Paerata South area is bounded by Paerata Rd to the west and Cape Hill Rd to the east. The southern boundary is generally at the northern edge of the Pukekohe residential zone. The Paerata South area extends north to Tuhimata Rd. The total area covers approximately 143ha divided into approximately 40 main lots.

The main rationale and objectives for this investigation were:

- To identify the main actual or potential contamination issues due to ongoing and historic use of land within the study area.
- To recommend to Council areas where further investigation should be conducted based on preliminary information in this report.

The scope of the environmental site assessment was limited to addressing the above issues.

This preliminary site investigation for the Paerata South area has highlighted several potential contamination issues due to present and historic land use within the area. In rural areas the main issues relate to possible sheep dip locations, farm dumps, storage of agrichemicals and storage of fuels, although no specific issues of this nature have been identified. Agricultural activities identified include dairy, sheep, beef, poultry and pig farming. There are also at least three sites where horticultural activities have taken place and where contaminants may have accumulated. Several sites contain clusters of farm buildings which may indicate the location of potentially contaminated areas due to activities such as fuel and agrichemical storage and use.

There is at least one site, The Tractor Centre, which previously contained an underground storage tank (UST) but this has reportedly been removed. Several sites have been or continue to be used as contractor depots, most of which have had some fill imported on site in addition to the storage of various equipment and supplies. Fill at so called Adams Drive landfill, on the corner of Paerata Road and Adams Drive, reportedly includes asbestos. More detail on the historic county council landfill sites is necessary to determine whether they impact on the Study area.

Specific areas requiring a more detailed site investigation report (SIR) include, but are not limited to, the following:

- Lot 1 DP73273 – Former meat works, former UST, outdoor storage of tractors, parts and equipment.
- Lot 2 DP109824 – Former horticultural activity, outdoor storage of tractors, parts and equipment.
- Lot 1 DP109824 – Former horticultural activity.
- Pt Lot 30 DP10637 – Farm buildings, ACM stabilised areas, poultry sheds.
- Pt Lot 3 DP65101 – Farm buildings, ACM stabilised areas, gas pipeline infrastructure.
- Lot 1 DP65101 – Import of fill.
- Lot 2 DP41628 – Former contractor depot, import of fill, storage of equipment and supplies, horticultural activities.
- Lot 1 DP108496 – Contractor depot, Adams Drive Landfill, burial of demolition waste including ACM, storage of equipment and supplies.
- Lot 7 DP119441 – Contractor depot, import of fill, storage of equipment and supplies.
- Lots 1-6 DP167987 and Lots 7-13 DP167988 – Farm buildings, ACM stabilised areas, piggery, horticultural activities (plastic house).
- Pt Lot 1 and Lots 2-4 DP12304, Pt Lot 7 DP1553 and Lot 1 DP26018 – Farm buildings, ACM stabilised areas, effluent ponds.

Further investigation on a site by site basis is recommended prior to development of individual sites within the Study area. In some instances, such as those above, this may require a detailed site investigation report (SIR) although the majority of sites should only need a preliminary site investigation (PSI). All investigations should include a more detailed site walkover and interviews with current and historic owners, and others with general knowledge of the area.

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FRANKLIN DISTRICT COUNCIL

PAERATA SOUTH CONTAMINATION STUDY PRELIMINARY SITE INVESTIGATION

1.0 INTRODUCTION

In response to instructions from Cathy Kenkel of Franklin District Council (FDC), Fraser Thomas Limited (FTL) undertook a preliminary environmental site investigation of the Paerata South area. This investigation involved a desktop study and reporting associated with potential land contamination issues.

The Paerata South area is bounded by Paerata Rd to the west and Cape Hill Rd to the east. The southern boundary is generally at the northern edge of the Pukekohe residential zone. The Paerata South area extends north to Tuhimata Rd. The total area covers approximately 143ha divided into 40 main lots.

This report was prepared for submission to FDC as part of the Franklin District Growth Strategy (DGS) to identify potential land contamination issues within the Paerata South area.

The scope of the assessment and investigation was limited to a preliminary site investigation (PSI) related to any actual or potential site contamination issues as a result of ongoing and previous uses of the land within the study area.

The format of this report is as follows:

- Rationale, objectives and scope of work.
- Study area details.
- Investigation methodology.
- Desktop study and site walkover results.
- Discussion, conclusions and recommendations.
- Site plans, drawings, certificates of title, representative photographs and other relevant information in appendix form.

2.0 RATIONALE, OBJECTIVES AND SCOPE OF WORK

The main rationale and objectives for this investigation were:

- To identify the main actual or potential contamination issues due to ongoing and historic use of land within the study area.
- To recommend to Council areas where further investigation should be conducted based on preliminary information in this report.

The scope of the preliminary site investigation was limited to addressing the above issues.

The Hazardous Activities and Industries List (HAIL) from Ministry for the Environment (MfE) has been used to highlight potential contamination issues.

Potential HAIL items for the Study area include sheep dips and footrot troughs, agricultural chemical use, storage and mixing, intensive horticultural activities (cropping and orchards), filling of gullies, farm dumps, contractor depots, use of asbestos containing material (ACM) for stabilisation of roads and cattle races, mechanical and engineering workshops and garages, service stations with underground storage tanks (USTs) and other commercial properties included in the HAIL.

3.0 INVESTIGATION METHODOLOGY

The methodology used for this site assessment is summarised below:

1. Desktop study involving review of existing historical information for the study area focussing on available historical information and aerial photographs, certificates of title, review of FDC and Auckland Regional Council (ARC) files (contaminated land information). As instructed by FDC, interviews with previous and current land owners and long term residents of the area were not conducted. The current and historical certificates of title are included in Appendix A and a summary of the certificates of title information is included in Appendix C.
2. Selected preliminary site walkover investigations of potentially contaminated areas and locations, with visual appraisal to identify any disturbed and potentially contaminated areas. Relevant photographs are set out in Appendix B.
3. Preparation of a PSI report, including the results of the desktop study, selected site walkover survey, and conclusions and recommendations.
4. Provision of site plans, drawings, certificates of title, relevant documentation and representative photographs as appendices to this report.

Fraser Thomas Limited Health and Safety Management Plan procedures were followed throughout the duration of the investigation.

4.0 SITE DETAILS

4.1 LOCATION AND ZONING

The general and specific location of the Paerata South area is shown in drawing 31948/1. The Paerata South area is bounded by Paerata Rd to the west and Cape Hill Rd to the east. The southern boundary is generally at the northern edge of the Pukekohe residential zone. The Paerata South area extends north to Tuhimata Rd. The total area covers approximately 143ha divided into approximately 40 main lots.

In the 'Franklin District Council Operative District Plan 2000' the study area includes the following land use zones (District Plan Maps, Operative 2003).

- Rural zone
 - The majority of the study area falls under this zone.
- Recreation Zone
 - Small area in the middle of the study area.
- Proposed Esplanade Reserve
 - Through the middle of the study area along the stream.

The DGS proposes changing the majority of the study area to business zone, with residential areas proposed north and south of the business zone. Stormwater reserves will also be created next to the stream through the middle of the study area. These areas are shown in the Paerata Structure Plan Area map included in Appendix E.

4.2 TOPOGRAPHY, GEOLOGY AND SOILS

The study area is, in general, located around the Whangapouri Creek and the main trunk railway line, which extends through the study area from the northern to southern site boundaries. The Whangapouri Creek is generally 2-4m wide with steep to vertical banks. The main trunk railway generally comprises north and south bound lines, on a raised embankment.

The northern, southern and eastern margins of the study area have moderately steep topography and there is a flat, low lying flood plain in the central part of the study area. Most of the study area is in pasture.

The Geological Map of New Zealand (Provisional Map Compilation), scale 1:50,000, Pukekohe, Sheet R12, indicates that the study area is underlain by a combination of basalt lava and lithic tuff of the South Auckland Volcanic Field of Pliocene to Pleistocene age, with no alluvium.

The New Zealand Land Resource Inventory Map, Worksheet N47 & PT N46, Scale 1:63,360, 2nd Edition, Pukekohe, indicates that ash with undifferentiated flood plain alluvium is present in the western part of the study area; ash older than Taupo Pumice is present around the northern, eastern and southern margins of the study area and alluvium, with peat, is present within the floor of the basin, in the central, low lying part of the study area.

Further information on the geology of the study area can be found in the Fraser Thomas Ltd Geotechnical Investigation Report (No. 61416).

5.0 DESKTOP STUDY AND WALKOVER SURVEY RESULTS

The results of the desktop study and the limited site walkover survey are summarised in this section and illustrated in drawings 31948/1, 2 and 3. Associated site walkover photos are presented in Appendix B of this report. Throughout the site walkover survey, a visual assessment was used to classify any foreign materials as particular contaminants, without any formal identification. Hence, reference to a specific contaminant in the survey results should essentially be read as “suspected contaminant”, unless otherwise stated.

5.1 SITE IDENTIFICATION AND OWNERSHIP

The Study area covers approximately 143ha divided into approximately 40 lots of various sizes. Current certificates of title are included in Appendix A. A summary of ownership details for these lots is given in Appendix C.

Appellation and certificate of title details are shown on drawings 31948/1-3. There are two main landowners within the study area at present. The entire southeast area (~48ha) is owned by Daniel G. Brownlee Ltd and the northeast part of the site (~52ha) is owned by the McCall family. Other significant landowners include Tuakau Trustee Ltd, TTC Properties, Hongbo Wang, Henry Heng Chiang, Kirk, Flowerday and FDC. Historic certificates of title indicate that the area has mainly been used for agriculture, with farmers being the main landowners in the past.

5.2 INTERVIEWS

In response to instruction from FDC, the scope of this PSI did not include interviews with current or previous land owners or long term residents. Nona Morris, a local historian, was contacted but declined to be interviewed. Dan Madsen and David Lawrie of Madsen Lawrie Consultants Ltd, land development practitioners based in Pukekohe since 1957, would have considerable knowledge of the history of the area. No interviews have been conducted with them however. Madsen Lawrie Consultants Ltd also have a collection of maps and survey plans for the area dating back to the 1860s according to the Heritage Assessment referenced below.

5.3 PAERATA HISTORIC HERITAGE ASSESSMENT

The heritage assessment report details a timeline of settlement and development for the Paerata area, and evolution of the local community. From the first land parcels becoming available to private owners in the mid to late 1800s to the important introduction of the railway and industry such as the dairy factory the report shows that Paerata is a township proud to be separate from the larger Pukekohe to the south for over 125 years.

The first settlers arrived in the Paerata area prior to 1861 and established farms, one of which was 600 acres owned by James Burtt. Even in the 1920s Paerata remained a dispersed farming community with 15 of 23 householders involved in farming. This changed dramatically within the next decade, due in part to the completion of the Waiuku branch railway line connecting the main trunk line to Waiuku at what became Paerata Junction. Other factors in the growth of Paerata were the establishment of Wesley College in 1923 (used as a military camp during World War II) and the construction of the dairy factory, opened in 1924. The dairy factory expanded in the 1950s with milk powder and casein plants added. The factory ceased production in 1998 and is presently used by Fonterra as a storage depot, with parts of the site leased to other businesses.

The importance of the Paerata Junction railway station also decreased over time with improvements in road transport. The Waiuku branch line closed in 1968 but was rebuilt to service the Glenbrook Steel Mill the same year. Stockyards at Paerata Station were removed in 1972 along with the goods shed. A new junction came into use in

1982 to improve the rail connection between Glenbrook and the main trunk line to the south. Modernisation of the signalling meant that Paerata Station was closed in 1977 with the remaining yard tracks being removed. The Heritage Assessment includes a plan of the Paerata Junction which is located to the north of the study area.

The Heritage Assessment also includes a timeline of important dates (Appendix 1) and some details on early land ownership in the late 1800s (Appendix 3).

5.4 PAERATA SCHOOL JUBILEE BOOKS (1921-1971 & 1996)

The Jubilee books give a general overview of the history of the Paerata area. The information most relevant to this investigation relates to the industrial activities in and around Paerata. These include a large ostrich farm (1902-1916), the dairy factory, including milk processing, milk powder and casein production (1924-1998), a piggery (1961-1966) and the original 240ha Burt farm which included sheep and beef farming. The book also contains a list of early landowners compiled by N Morris. Reference is made to other books by N Morris titled '*Early Days in Franklin*' and '*Franklin Remembers, the War Years 1939-1945*'. The land for the Paerata School was previously part of the Schlaepfer farm.

5.5 FRANKLIN DISTRICT COUNCIL RECORDS

FDC property files for the study area were searched for information relating to land contamination issues. A summary of relevant notes from the property file search are included in Appendix D. Overall there was relatively little information of interest with respect to land contamination, and the area appears to have been used for agricultural purposes since the early 1900s to the present. Several potential contamination issues are however highlighted below.

The Tractor Centre on the corner of Heights and Paerata Roads (Lot 1 DP73273) was formerly a meat processing and packing facility and included a large factory building. An FDC resource consent for the demolition of the main factory building was issued in 2001. Since such buildings often contained asbestos in roofing, cladding and pipe lagging material, demolition records should be checked for appropriate disposal of such material. Note that from the aerial photographs it is unclear whether demolition actually occurred.

The redevelopment of the site into The Tractor Centre involved the removal of a UST. FDC records indicate that the surrounding ground was not heavily contaminated but it is unclear whether any formal tank removal report or investigation was done, as is required under MfE guidelines*.

The site adjacent to The Tractor Centre at 33 Heights Road contained a 4ha orchard named Kotuku Gardens according to FDC records. The planning consent mentioned kiwifruit, tangelos, avocados and tamarillos, and a building consent for a packing shed was issued in 1978. Another building consent, issued in 1990, for the conversion of a

* *Guidelines for Assessing and Managing Petroleum Hydrocarbon Contaminated Sites in New Zealand*, Ministry for the Environment, 1999.

shed to a residential dwelling suggests that horticultural activities had ceased by this time. The adjacent site to the west (Lot 1 DP109824) may have also been part of the orchard based on the 1984 aerial photo (refer section 5.7 below).

Records for 1199 Paerata Road (Pt Lot 30 DP10637) contain a permit for the erection of poultry sheds although it is not clear from the property file whether this occurred. Aerial photographs from 2002 and 2007/8 do not show any long narrow buildings typically used in large scale poultry operations.

The property at 1213 Paerata Road (Pt Lot 3 DP65101) was reportedly used for horticulture based on FDC records and an ARC water bore permit. This site also contains a cluster of farm buildings. Lot 1 DP104758, also at 1213 Paerata Road, is owned by Vector Gas Ltd and the main gas line to the steel mill runs through this property.

Approximately 20-30 truckloads of soil (400-500m³) are reported to have been brought to 1235 Paerata Road (Lot 1 DP65101) according to FDC records. The owner was advised to obtain a cleanfill consent or remove the fill immediately due to issues around filling of the flood plain. There are also concerns regarding the source of the fill and possible contamination.

Records for 1237 Paerata Road (Lot 2 DP41628) indicate that the site has been used as a contractor depot since the 1950s until recently. Records indicate that stockpiling of soil, concrete, tarseal, vegetation and firewood occurred, in addition to storage of machinery and burning of rubbish. There was also reportedly short term use of the front paddock for growing crops. All these activities have potential for land contamination.

The site at 1251 Paerata Road, on the corner of Adams Drive, is reportedly also known as the Adams Drive landfill. The site was formerly owned by a demolition contractor and records indicate that demolition material, including asbestos, is buried at this site. Filling may have occurred over a 15 year period. Burning of demolition waste also occurred. There is also a letter on file from FDC advising that sawmilling is not a permitted use of the site. Milling of treated timber is a concern due to disposal and leaching of contaminants (copper, chromium, arsenic and pentachlorophenol) from sawdust and other waste material.

Records for 105A Crown Road (Lot 7 DP11944) indicate that importing of clay, soil and concrete fill has occurred and other material has also been dumped at this contractor depot. The site has been highlighted by FDC as being potentially contaminated due to the filling activity.

Along Cape Hill Road, at 219-301 (Lots 1-6 DP167987 and Lots 7-13 DP167988), there are building permits for a variety of farm buildings. There is also a resource consent for a plastic house (horticultural activity) and planning permission for a piggery. Complaints have been received regarding odour from whey.

At 157-165 Cape Hill Road (Pt Lot 1 and Lots 2-3 DP12304, and Lots 1 and 3 DP26018) there are records relating to erection of a cow shed.

5.6 AUCKLAND REGIONAL COUNCIL RECORDS

A site contamination enquiry by ARC for the study area and 200m beyond the boundaries of this area returned various records (9) with additional file information. These can be roughly grouped into three areas of interest: Pollution incidents, Drilling and water bore permits, and contamination reports related to historical landfills. Bore permits (3) relate to drilling and use of bore water. All are now expired and there are no current water take permits within the study area.

Pollution incidents listed (6) are minor and one-off events. Only two of the sites with pollution incidents are within the study area, although a further two are just outside the boundary. Both incidents within the study area relate to discharges to waterways, the most recent of which was at the large dairy farm at 301 Cape Hill Road (Lots 1-6, DP167987) in 2009.

There are two sites listed by ARC where previous contamination investigations have been undertaken and no evidence of soil contamination found. These sites are located on Isabella Drive and Grace James Road, approximately 100-300m south of the study area.

ARC records also indicate that three landfills are present in the area. Of most relevance is the Adams Drive landfill (file ref: M096-39-1439). This is reportedly located at the corner of Adams Drive and Paerata Road (Lot 1 DP108496) where demolition material, including ACM, was buried by a previous land owner. The ARC file should be reviewed as part of a detailed site investigation report (SIR). FDC indicate that an SIR is to be completed and made available in early August 2010.

ARC records also reference the burial of domestic waste at Wesley College (file ref: M096-39-0489) and the Paerata landfill (closed – file ref: M096-39-0913). The Wesley College landfill is presumably within the school property and hence outside the Study area. The Paerata landfill is understood to be referring to the private dairy factory landfill on Paerata Road, opposite the dairy factory. ARC records indicate that this landfill was established in 1974 by the dairy factory for its own use. Prior to this waste from the factory was reportedly disposed of to a county council operated waste metal dump approximately 300m south of Anchor Road. There are unconfirmed reports of another county site close to the Whangapouri Stream[†]. The existence and location of these sites is yet to be established and it is unclear whether they are located within the Study area. Indeed, long serving (40 years) Franklin District Council staff did not recall the previous existence of either of these sites.

5.7 AERIAL PHOTOGRAPHS

Seven historical aerial photographs from 1942, 1961, 1968, 1981, 1984, 2002 and 2007/2008 were reviewed as part of the desktop study and are included in drawings 31948/4-10. Historical aerial photographs of the study area have been sourced from FDC and date from 1942 to 2008. The Auckland Regional Council ALGGi map portal has also been utilised for more recent records.

[†] Tonkin & Taylor letter dated 4 December 1996 to Anchor Products Ltd held on ARC file (ref: M096-39-0913)

Overall, the collection of available aerial data shows that the predominant usage of the land area that is generally bordered by Paerata, Anchor, Tuhimata and Cape Hill Roads has been for agriculture for at least the last 70 years. Small areas such as adjacent to the dairy factory and around the intersection of Heights Road and the railway corridor have become the most developed over this time. In addition, there are several individual farm properties of interest located on Cape Hill Road that appear to have been developed more intensively, possibly with larger scale farming activities. Areas outside of the study area, but immediately to the south have recently been subdivided and/or developed with industrial and residential uses.

1942 Aerial (Drawing 31948/4)

This aerial photograph shows the entire study area to be in agricultural use. There are farmhouses sprinkled along each of the main roads, and a small cluster of buildings visible at the dairy factory site to the north. The stream through the study area can clearly be seen, and the entire area between the railway line south to Pukekohe and Cape Hill Road comprises farm paddocks. Neither Butcher Road (off Paerata Road), nor the Adams Drive area to the south, exist at this time.

1961 Aerial (Drawing 31948/5)

There are three separate aerials of the area available from 1961, detailing only the section of Paerata Road south of the railway junction and a southern length of Cape Hill Road. Each photograph shows various farm houses to be present, and the main use of land being typically rural. Several small stream crossings appear to be visible over the stream where it crosses Lot 1 DP65101, Pt Lot 30 DP10637 and Allotment 307 Parish of Pukekohe. Some recent earthworks can be seen in the area near Heights Road, and where the railway lines branch. Butcher Road has not yet been formed.

1968 Aerial (Drawing 31948/6)

The aerial photograph available from this year shows northern Pukekohe and the southern portion of the study area only. Similar features are visible as those seen on earlier photography. The majority of the study area remains in farm paddocks, with the exception of several residential/farm dwellings along Paerata and Cape Hill Roads. The main areas of development are seen on Lot 13 DP167988, Pt Lot 1 DP12304 and Lot 2 DP12304, all of which have multiple farm buildings. The other site at Lot 5 DP167987 is outside of the photo.

1981 Aerial (Drawing 31948/7)

This aerial shows the northern half of the study area and up along Paerata Road to the north. Significant developments to the railway junction area and over the dairy factory site at Anchor Road can be clearly seen during this time. Changes on some of the farm properties along Cape Hill Road are noticeable, especially those on Lot 5 DP167987, Lot 13 DP167988, and Pt Lot 1 DP12304, which appear to be larger scale endeavours than those on the surrounding sites. Butcher Road to the west of Paerata Road is now visible. As the southern part of the study area is not shown on this aerial, it is not clear if developments at Adams Drive exist yet. The aerial photo also indicates that Lots 1 and 2 DP109824 were used for horticultural activities based on the grid planting pattern.

1984 Aerial (Drawing 31948/8)

The aerial information available from this year shows the southern half of the study area only, specifically Paerata Road south from the railway and a southern length along Cape Hill Road. Similar features to those seen on earlier photography are evident. Large areas of earthworks can be seen to the south of the study area on what are now Adams Drive, Reynolds Road and Isabella Drive. Features on many rural properties within the study area have been expanded, noticeably at Pt Lot 1 DP12304, Lot 2 DP12304, Lot 1 DP108496, Lot 1 DP43801, Lot 2 DP41628, Lots 2-5 DP110719, Lot 2 DP325523, and Lot 1 DP36796 inclusive.

2002 Aerial (Drawing 31948/9)

The aerials for this year are relatively similar to the situation seen in the 1980s, with only minor changes to the density of development along the southern area of Paerata Road and near the railway junction. Aerials obtained of the area for this year do not show the southern part of the study area.

2007/2008 Aerial (Drawing 31948/10)

The several aerials available for these years show that development on the main roads around the perimeter of the study area has slowly continued. More developments have occurred outside of but immediately to the south of the study area, likely due to different land zonings. Sites previously mentioned on Cape Hill Road appear to be affecting neighbouring sites. For example, the collection of farm buildings at Lot 5 DP167987 now also seem to be over Lots 4 and 6 DP167987.

2008 Aerial (ALGGi website)

Very recent aerial data sourced from the ARC web based mapping has been referred to in order to check details of earlier features seen on the older less high quality aerials obtained. The following are noted:

- Lots 4 and 5 DP167987 at 301 Cape Hill Road has multiple farm buildings, including barns (dairy shed) and stormwater and effluent treatment ponds not clearly visible on earlier photos from 2002.
- Pt Lot 1 DP12304 at 185 Cape Hill Road has farm buildings, including a barn, milking shed and two effluent treatment ponds also not clearly visible on 2002 and earlier photographs.
- Lot 2 DP12304 and Lot 1 DP26018 at 157 Cape Hill Road comprises farm dwellings x 2, and old shed buildings only. Farm roads connecting this site with Pt Lot 1 DP12304 to the north are still clearly evident.
- Lot 13 DP167988 at 219 and 235 Cape Hill Road outside of aerial from 2002, but 2007/2008 aerial (ex ALGGI) shows site is now much less developed than in 1968 and 1981, with previous buildings now removed. A farm road can be seen to connect multiple lots from Lot 5 DP167987 on Cape Hill Road.
- There appears to be a small orchard holding at 62 Tuhimata Rd, just outside the Study area.
- Lot 7 DP119441 at 105A Crown Road appear to contain stockpiles of material, possibly scrap metal.

- Lot 1 DP73273 and Lot 2 DP109824 at 9 and 33 Heights Road respectively contain a large storage / materials yard of some sort. Development occurred mainly between 2002 and 2008.
- Lot 2 DP41628 and Lot 1 DP108496 at 1237 and 1251 Paerata Road are possibly contractor yards with areas of exposed soils, multiple sheds, machinery and equipment present. ARC refers to an incident at this 1237 Paerata Road in 2006 involving the spill of fuel to stream.
- Pt Lot 3 DP65101 at 1213 Paerata Road also has a cluster of farm or contractor shed type buildings and a separate driveway.

5.8 SITE WALKOVER RESULTS

The site walkover consisted of a brief visit or drive-by, focussing on sites highlighted by the desktop investigation as having past or present land uses with potential to cause land contamination, as instructed by FDC.

The Tractor Centre at the corner of Heights and Paerata Roads is located mainly on Lot 1 DP72373. In addition to the main building, there are numerous smaller buildings and containers around the site used for offices and storage. Large areas of the subject site and the neighbouring Lot 2 DP109824 are paved or metalled and used for the storage of tractor related parts and equipment. Photos 1-4 in Appendix B show various parts of the site.

Pt Lot 3 DP65101 at 1213 Paerata Road contains a cluster of farm buildings, a stock loading yard and a fenced gas pipeline infrastructure area. Refer to photo 5.

Several contractor depot type properties are located at 1237-1251 Paerata Road. These properties contain fill stockpiles, comprising various types of material. Various construction and land development equipment and supplies are stockpiled on these sites. Refer to photos 6-9. Another contractor depot type property is located at 105A Crown Rd (Photo 10).

The remaining sites of interest were rural sites along Cape Hill Road containing clusters of farm buildings (Nos. 185 and 301A/B). Buildings and activities appeared to be typical of dairy farms. Photos 11-14 give an illustration of the main site features. Photos 15 and 16 give an overview of the largely pastoral land use within the Study area.

6.0 DISCUSSION

This preliminary investigation has highlighted several potential contamination issues within the Study area as summarised below. Refer to drawings 31948/1-3 for further information.

In general, the Study area has been predominantly used for farming although there is limited information as to what type. The presence of the dairy factory on the northern side of Paerata outside of the Study area, and the generally rolling topography of the area, suggests that dairy farming may have been the main use over the years. Site features such as effluent ponds on the two main rural properties are additional evidence. There is at least one reference to sheep and beef farming on the original Burt farm though and there were stockyards at Paerata Junction (north of the Study area) in the past. Hence the possible presence of historic sheep dips within the Study area cannot be discounted. FDC records also include references to a piggery (Lots 1-6 DP167987 and Lots 7-13 DP167988) and to poultry sheds (Pt Lot 30 DP10637). Indeed, the potential contamination from the storage and use of other agricultural chemicals and fuels is also an issue that requires further investigation. This type of activity is likely to be centred around the clusters of farm buildings visible in the aerial photos. Another issue of relevance to rural properties is the possible stabilisation of farm tracks, gateways and drinking troughs with ACM. A detailed site walkover was outside the scope of this investigation and hence the presence or absence of ACM from these areas could not be confirmed. Historic aerial photos from when the use of ACM for stabilisation occurred (1960s to 1980s) should be referenced to identify areas requiring further investigation.

There does not appear to have been any significant horticultural activity within the Study area despite the prevalence of this activity within Franklin as a whole. The site at 33 Heights Road (Lot 2 DP109824, 4ha) does appear to have been used as an orchard (kiwifruit, tangelo, avocado, tamarillo) between 1978 and 1990 according to FDC records. The neighbouring site to the west (Lot 1 DP109824) may have also been used as an orchard. This is generally after the use of organochlorine pesticides such as DDT but other pesticides, particularly copper-based formulations, may have been used. A consent for a plastic house was granted to McCall Family Trust (Lots 1-6 DP167987 and Lots 7-13 DP167988) in 1993 and crops were reportedly grown at 1237 Paerata Road (Lot 2 DP41628) for a short period.

There do not appear to have been any service stations, motor garages or bus/truck depots within the Study area. Some of the aerial photographs suggest that some sites may have been used as contractor depots. Hence there may be residual contamination issues associated with this land use from the storage of fuel, supplies and machinery. Of particular concern are references to the import of fill to several sites as there is often little information regarding the source of the fill material. Soil sampling to confirm the status of the imported fill will be required to confirm whether any contamination issues exist on the impacted sites.

The so called Adams Drive landfill, on the corner of Paerata Road and Adams Drive (Lot1 DP108496) contains ACM and is the subject of a detailed environmental investigation, the results of which are due out in early August 2010 according to FDC. Fill was also noted at 1235 and 1237 Paerata Road (Lot 1 DP65101 and Lot 2

DP41628) and 105A Crown Rd (Lot 7 DP119441). Further investigation is recommended to ascertain whether any contamination risk is present.

Indeed, use of farm gullies for small scale land filling by farmers has been common practice over the years, and one would expect similar activities to have occurred within the Study area. Further information is needed on the location, size and years of operation of closed landfill sites in and around the Study area, such as Paerata Landfill, located opposite the dairy factory, and the county council run waste metal dump south of Anchor Road. The possible existence of another county site near Whangapouri Creek should also be investigated. FDC and ARC records may contain this information.

There is little industry within the study area boundary with the dairy factory located just beyond the northern boundary. Hence the potential for land contamination as a result of industrial activities is limited. There is however The Tractor Centre site located on the corner of Heights and Paerata Roads. This site, previously a meat processing and packing facility, contained a UST but FDC files indicate that contamination issues associated with this were not significant and that the UST was removed during redevelopment of the site in 2002. This development may have involved the demolition of all or part of the old factory. Building and demolition records should be investigated to ascertain where any ACM may have been disposed of.

Stockyards were located at Paerata Junction railway station to the north and outside of the Study area. Historically, sheep dips were often located at stockyards and while there is no evidence that this was the case here further investigation around Paerata Station is recommended. Railway yards were also located at Paerata Junction and hence potential contamination associated with this land use is also outside the study area.

Drawings 31948/1-3 give appellation details for locating the main sites of concern referenced above. The drawings also contain a table summarising the activities with potential to cause land contamination.

7.0 CONCLUSIONS AND RECOMMENDATIONS

This preliminary site investigation for the Paerata South area has highlighted several potential contamination issues due to present and historic land use within the area. In rural areas the main issues relate to possible sheep dip locations, farm dumps, ACM stabilised areas, storage of agrichemicals and storage of fuels, although no specific issues of this nature have been identified. Agricultural activities identified include dairy, sheep, beef, poultry and pig farming. There are also at least three sites where horticultural activities have taken place and where contaminants may have accumulated. Several sites contain clusters of farm buildings which may indicate the location of potentially contaminated areas due to activities such as fuel and agrichemical storage and use.

There is at least one site, The Tractor Centre, which previously contained an underground storage tank (UST) but this has reportedly been removed. Several sites

have been or continue to be used as contractor depots, most of which have had some fill imported on site in addition to the storage of various equipment and supplies. Fill at so called Adams Drive landfill, on the corner of Paerata Road and Adams Drive, reportedly includes asbestos. More detail on the historic county council metal waste and landfill sites is necessary to determine whether they impact on the Study area.

Specific areas requiring a more detailed site investigation report (SIR) include, but are not limited to, the following:

- Lot 1 DP73273 – Former meat works, former UST, outdoor storage of tractors, parts and equipment.
- Lot 2 DP109824 – Former horticultural activity, outdoor storage of tractors, parts and equipment.
- Lot 1 DP109824 – Former horticultural activity.
- Pt Lot 30 DP10637 – Farm buildings, ACM stabilised areas, poultry sheds.
- Pt Lot 3 DP65101 – Farm buildings, ACM stabilised areas, gas pipeline infrastructure.
- Lot 1 DP65101 – Import of fill.
- Lot 2 DP41628 – Former contractor depot, import of fill, storage of equipment and supplies, horticultural activities.
- Lot 1 DP108496 – Contractor depot, Adams Drive Landfill, burial of demolition waste including ACM, storage of equipment and supplies.
- Lot 7 DP119441 – Contractor depot, import of fill, storage of equipment and supplies.
- Lots 1-6 DP167987 and Lots 7-13 DP167988 – Farm buildings, ACM stabilised areas, piggery, horticultural activities (plastic house).
- Pt Lot 1 and Lots 2-4 DP12304, Pt Lot 7 DP1553 and Lot 1 DP26018 – Farm buildings, ACM stabilised areas, effluent ponds.

Further investigation on a site by site basis is recommended prior to development of individual sites within the Study area. In some instances, such as those above, this may require a detailed site investigation report (SIR) although the majority of sites should only need a preliminary site investigation (PSI). All investigations should include a more detailed site walkover and interviews with current and historic owners, and others with general knowledge of the area.

8.0 LIMITATIONS

We have performed our services for this project in accordance with current professional standards for an assessment of the nature and extent of any soil contamination on-site, based upon preliminary site assessment investigations and current regulatory standards for site contamination. The scope of the site assessment activities was limited to those outlined in the PARP:ALW and generally in accordance with the Ministry for Environment Contaminated Land Management Guideline's (Parts 1, 2 and 5). Conclusions on actual or potential contamination cannot be applied to areas outside of the site investigation.

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Figures and Drawings

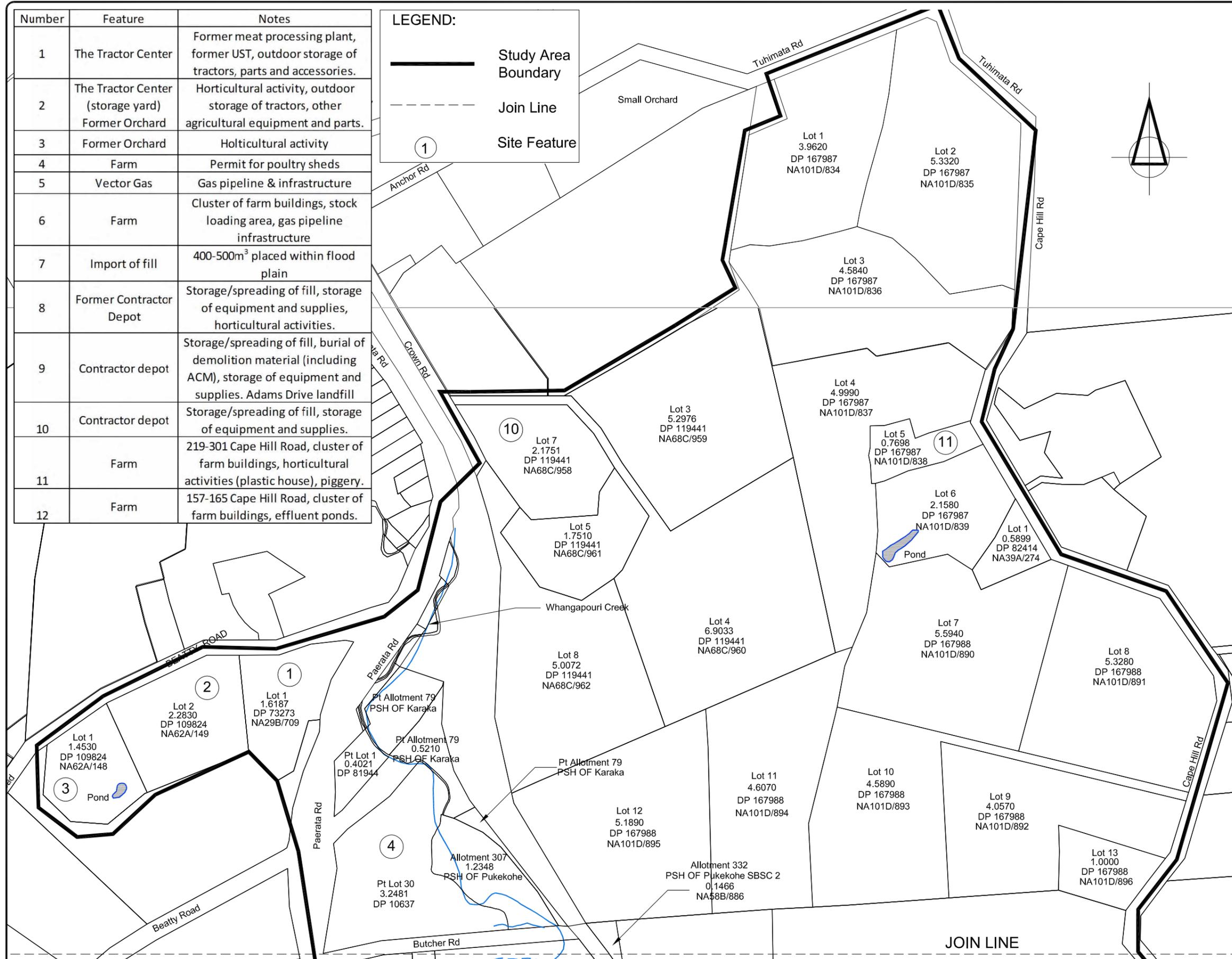
Number	Feature	Notes
1	The Tractor Center	Former meat processing plant, former UST, outdoor storage of tractors, parts and accessories.
2	The Tractor Center (storage yard) Former Orchard	Horticultural activity, outdoor storage of tractors, other agricultural equipment and parts.
3	Former Orchard	Horticultural activity
4	Farm	Permit for poultry sheds
5	Vector Gas	Gas pipeline & infrastructure
6	Farm	Cluster of farm buildings, stock loading area, gas pipeline infrastructure
7	Import of fill	400-500m ³ placed within flood plain
8	Former Contractor Depot	Storage/spreading of fill, storage of equipment and supplies, horticultural activities.
9	Contractor depot	Storage/spreading of fill, burial of demolition material (including ACM), storage of equipment and supplies. Adams Drive landfill
10	Contractor depot	Storage/spreading of fill, storage of equipment and supplies.
11	Farm	219-301 Cape Hill Road, cluster of farm buildings, horticultural activities (plastic house), piggery.
12	Farm	157-165 Cape Hill Road, cluster of farm buildings, effluent ponds.

LEGEND:

 Study Area Boundary

 Join Line

 Site Feature



SURVEYED	DESIGNED	DRAWN	CAD	CHECKED	REVISION	CHANGES	CHECKED	DATE
			RC	07/10				
			TB	07/10				

NOTES

1. Area, lot, survey and title number as shown are based on QuickMap.

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FRANKLIN DISTRICT COUNCIL

PROJECT

PAERATA SOUTH AREA PRELIMINARY SITE INVESTIGATION

TITLE

STUDY AREA DETAILED PLAN NORTH



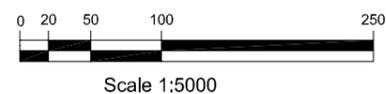
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152 KOLMAR ROAD, PAPAETOE
PO BOX 23-273
TEL+64-9-278 7078

WILLIAMS ROAD, PAIHIA
PO BOX 154
TEL+64-9-402-7838

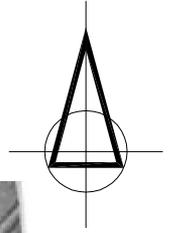
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Study Area Boundary



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Fraser Thomas
162 RD, MAR BROAD, PARAKETEKE
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 TEL: 09 276 7078
 WILLIAMS ROAD, PAKIA
 PO BOX 154
 TEL: 09 462 7138

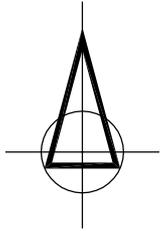
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TITLE
AERIAL PHOTOGRAPH 1942

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 PO BOX 24273
 WILLIAMS ROAD, PAKIA
 PO BOX 242
 TEL: 09-483-7338

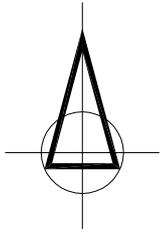
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TITLE
AERIAL PHOTOGRAPH 1961

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Fraser Thomas
162 RD, MAR ROAD, PARAKETE
 PO BOX 24278
 TEL: 09 276 7078
 WILLIAMS ROAD, PAKIA
 PO BOX 244
 TEL: 09 482 7288
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TITLE
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