



Cardinia Shire Council

CSC-PEP- ESA

Pakenham East Precinct

June 2013

Executive summary

Cardinia Shire Council (CSC) engaged GHD Pty Ltd (GHD) in November 2012 to undertake a desktop Phase I Environmental Site Assessment (ESA) (herein referred to as the Study) for part of the Pakenham East Precinct (herein referred to as the Precinct), to support the Precinct Structure Plan for Pakenham East.

Purpose

The purpose of this report was to provide CSC with sufficient information regarding the Precinct to allow a determination of whether an Environmental Audit Overlay (EAO) should be applied to the Precinct, or parts thereof, (in accordance with DSE 2005, *Potentially Contaminated Land*, General Practice Note). As well as provide recommendations on the need for further assessment of land within the Precinct if this is required to progress plans for the Precinct.

Site description

The Precinct is an area of land located in the eastern part of Cardinia Shire Urban Growth Area, approximately 60 km southeast of Melbourne and 20 km east of Narre Warren-Fountain Gate principal activity centre.

The Precinct consists of 52 Properties, or parts thereof, and includes approximately 631 ha of land. The properties are numbered 1- 52 according to the Precinct Structure Plan property numbering system devised by CSC. The Precinct is bounded: to the east by Deep Creek and Ryan Road; to the south by the Princes Freeway (Pakenham Bypass); and, by Mount Ararat Road and Mount Ararat Road North to the East. The northern extent of the Precinct extends into the Properties on either side of Dore Road south of Seymour Road.

The majority of the Precinct is currently zoned as Farming Zone (FZ) with the exception of Properties 16 to 27 along the western border of the Precinct which are currently zoned as Low Density Residential Zone (LDRZ).

Site history information

The results obtained from the site history review indicate that the Precinct and surrounding areas have predominantly been used for agricultural and stock grazing purposes (in particular for grazing cattle) from 1884 to the present day.

The agricultural activities within the Precinct predominantly involved grazing paddocks; however Properties 3, 20, 21, 22, 15 and 43 were identified as potentially housing market gardens during the historical aerial photograph review. Properties 15, 37 and 43 were also identified as potentially containing imported fill material associated with earth works observed in the historical imagery.

Properties 12 and 13 were identified as being in use for gas pipeline infrastructure since 1982 and 1970 respectively. Property 52 has housed an operational rail electrical substation from the early 1950s.

Other potential areas of concern (PAoC) recognised during the aerial review were agricultural and domestic equipment and scrap observed on Properties 4, 6, 32, 33 and 34 and a truck stop on Property 44.

Based on the desk top review 17 properties (1, 3, 4, 6, 12, 13, 15, 20-22, 32-34, 38, 43, 44 and 49) were assigned an initial potential for contamination (PFC) rating of medium and one Property (52) was initially rated as having a High PFC rating.

Site inspection

GHD field personnel conducted general site inspections on 16 and 18 January 2013 to identify possible contaminating activities and to confirm land use identified as potentially contaminating during the site history review.

At the request of CSC, GHD conducted additional walkover inspections of Properties 11, 38 and 44 to access previously inaccessible areas and to evaluate PAoC identified in the general inspections. These additional inspections were completed on 11 April 2013.

DSE 2005 assessment

Based on the site history review and the information obtained from the site inspections, the potential sources of contamination associated with the Properties located within the Precinct are generally consistent with the known historical use for farming and grazing purposes and associated human occupation. Due to the preliminary nature of the Study not all properties were accessed during the inspections, with the majority of Properties assessed through 'fence line' inspections¹.

Potential sources of contamination were identified on 18 Properties (1, 3, 4, 6, 8, 12, 13, 15, 20 - 22, 32 - 34, 38, 43, 44 and 52) and one Property sub-area (14a²), with a further five properties (3, 30 and 40 - 42) which were unable to be accessed and were therefore assigned a conservative Medium PFC rating.

The assessment of potentially contaminated land completed in accordance with DSE 2005, *Potentially Contaminated Land*, General Practice Note, identified the following:

- **High PFC Rating – 3 Properties -12, 13 and 52;**
- **Medium PFC Rating – 20 Properties – 1, 3, 4, 6, 8, 9, 15, 20 - 22, 30, 32 - 34, 38 and 40 - 44) and one Property sub-area (14a); and**
- **Low PFC Rating – 29 Properties – 2, 5, 7, 10, 11, 14, 16 -19, 23-29, 31, 35-37, 39 and 45-51.**

As the Precinct is proposed for predominantly sensitive uses (residential development) these PFC ratings translate directly to the following Assessment Levels (in accordance with the DSE 2005, *Potentially Contaminated Land*, General Practice Note):

- **High PFC Rating = Assessment Level 'A' required;**
- **Medium PFC Rating = Assessment Level 'B' required; and**
- **Low PFC Rating = Assessment Level 'C' required.**

Recommendations

Following the conclusions made in this Study and based on the information collected in the site history and desktop reviews, and the site inspections, GHD recommends that the following additional studies be completed for the Properties within the Precinct, prior to their redevelopment as part of the Pakenham East Precinct:

- **Assessment Level 'A' Properties** - An Environmental Audit Overlay (or equivalent mechanism in the Urban Growth Zone) should be applied to these Properties to ensure

¹ A 'fence line' inspection comprises inspection of the property from publicly accessible areas only (e.g. footpaths, roadways, public land).

² Due to the structure of the Pakenham East Precinct, Phase I ESA, GIS database, Property sub area 14a has been assigned the unique identifier Property ID of 53 which is the next sequential number. This identifier is listed in the database attributes table and property descriptions, however the on the map the property sub-area is labelled "14a".

an environmental audit is carried out at the site prior to redevelopment to sensitive residential or associated land use. The need for an environmental audit may be either confirmed or the PFC rating reduced if a detailed site walkover and/or an intrusive site assessment is conducted;

- **Assessment Level 'B' Properties** – an environmental site assessment (including access to locked structures, intrusive works, soil and groundwater sampling and analysis) should be completed on these Properties, specifically in those areas identified in the Study as containing specific PAoC, to assess if they require the application of an EAO. It is noted that a targeted assessment of these properties including detailed site inspections to access unassessed areas and limited intrusive site assessment to evaluate the identified PAoC could reduce the PFC ratings and consequently the requirement for significant intrusive investigations. The level of investigation required would vary significantly between Properties across the Precinct, depending on their size and identified potential contamination issues. Therefore, it is not possible to make Property specific recommendations in the scope of this Study;
- **Assessment Level 'C' Properties** – no further works are recommended for these Properties, unless evidence of potentially contaminating activities or sources of contamination are identified at a later date. However, the site owner still retains a general duty under Section 12(2)(b) and Section 60(1)(a)(iii) of the Planning and Environment Act 1987; and
- **General Precinct Area**– Sampling of sediments within Deep Creek, and the two unnamed creek/drainage channels running north-south through the central eastern and western parts of the Precinct (running through properties 14, 31, 30, 34 and 41 and 3, 7, 36, 37, 39 and 40, respectively), from sampling locations located up, down and mid gradient of the Precinct to determine if accumulation and/or concentration of potential contaminants associated with the general agricultural use of the area has occurred in these channels.

*This report is subject to, and must be read in conjunction with, the limitations set out in **Section 1.6** and the assumptions and qualifications contained throughout the Report.*

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1. Introduction

Cardinia Shire Council (CSC) engaged GHD Pty Ltd (GHD) in November 2012 to undertake a desktop Phase I Environmental Site Assessment (ESA) (herein referred to as the Study) for part of the Pakenham East Precinct (herein referred to as the Precinct), to support the Precinct Structure Plan for Pakenham East.

The Precinct is an area of land comprising approximately 631 ha (52 Properties) located in the eastern part of Cardinia Shire Urban Growth Area, approximately 60 km southeast of Melbourne and 20 km east of Narre Warren-Fountain Gate principal activity centre. A Site location plan is provided as **Figure 1**.

1.1 Background

The Precinct is part of the new logical inclusions extension to the Urban Growth Boundary announced by the Minister for Planning in June 2012. The Precinct has been identified as a future residential precinct, which is to include a Neighbourhood Activity Centre and associated community facilities.

The Department of Planning and Community Development requires that the Department of Sustainability and Environment (DSE), Ministerial Direction No.1 - Potentially Contaminated Land of the Planning and Environment Act 1987 (Ministerial Direction No.1 1987) is addressed. The requirement is driven by the need to:

“ensure that potentially contaminated land is suitable for a use which is proposed to be allowed under an amendment to a planning scheme, and which could be significantly adversely affected by any contamination” [Planning and Environment Act 1987; Section 12 (2) (a)].

The DSE, *Potentially Contaminated Land - General Practice Note*, 2005 (DSE 2005, *Potentially Contaminated Land*, General Practice Note) requires that:

“planning authorities must satisfy themselves that the environmental conditions of land proposed to be used for a sensitive use (designed as residential, child-care centre, pre-school centre or primary school), agriculture or public open space are, or will be, suitable for that use”.

1.2 Purpose of this report

GHD understands that the purpose for this report, and the accompanying GIS database, was to:

- Provide CSC with sufficient information regarding the Precinct to allow a determination of whether an Environmental Audit Overlay (EAO) should be applied to the Precinct, or parts thereof, (in accordance with DSE 2005, *Potentially Contaminated Land*, General Practice Note); and
- Provide recommendations on the need for further assessment of land within the Precinct if this is required to progress plans for the Precinct.

1.3 Objective

We understand that the main objective is to evaluate the need for further assessment of Properties within the Precinct as part of the development process.

1.4 Scope of work

In order to achieve the objective, GHD developed a scope of works designed to assess historical and present land-uses. The scope of works included:

- Review of current and historical titles for those Properties included either wholly or partially within the Precinct (52 Properties), where available, to establish the ownership and type of land use over time;
- Review of current and historical aerial photography records for the Precinct and surrounds, where available, to assist in establishing the physical patterns of development over time;
- Complete Royal Historical Society of Victoria (RHSV) searches and review details relating to historical use of the Precinct and its surroundings to assist in providing contextual information relating to the history of the Precinct;
- Consultation with relevant agencies as required including:
 - Environment Protection Authority (EPA) for review of records including the 'Priority Sites Registry' and the list of issued 'Certificates and Statements of Environmental Audit';
 - Liaison with CSC, as required, to obtain copies of relevant information relating to current ownership and any other relevant data to the Study.
- Review of published soil, geology and hydrogeology conditions from desktop review, including survey, mapping and other base data as available from relevant authority and agency data sets and maps;
- Compilation of known groundwater borehole locations and use as listed on the Victorian groundwater database;
- Site inspection visits of areas identified as being, or containing areas of, potentially contaminated land (in line with DSE 2005, *Potentially Contaminated Land*, General Practice Note) in the desktop study part of the Study, where possible and/or practicable; and
- Preparation of a report detailing the findings of the Desktop Study and assessing the findings against the criteria within Tables 1 and 2 in the DSE 2005, *Potentially Contaminated Land*, General Practice Note with respect to the need for application of an EAO to all or parts of the Precinct.

The information collected during the desktop review responds to the DSE 2005, *Potentially Contaminated Land*, General Practice Note by enabling GHD to:

- Allocate an initial High, Medium or Low Potential for Contamination (PFC) rating for each Property in relation to land contamination;
- Indicate where key potential areas of concern (PAoC) exist; and
- Indicate where an EAO should be applied and/or where permit requirements specifying site-specific controls/actions should be included in the schedule to the Urban Growth Zone.

The information collected during the desktop assessment has been collated into a GIS database and interactive plan which can be searched Property by Property. The High, Medium or Low PFC rating for each Property is highlighted using an indicative colour scheme and key PAoC are identified.

1.5 Applicable guidelines

The overall methodology of the Study was carried out in general accordance with the following guiding documentation:

- National Environmental Protection Council (NEPC), National Environment Protection (Assessment of Site Contamination) Measure (NEPM), December 1999 (NEPM 1999);

- Australian and New Zealand Environmental and Conservation Council (ANZECC), Guidelines for the Assessment and Management of Contaminated Sites, 1992 (ANZECC 1992);
- Standards Australia, Australian Standard AS4482.1 - Guide to the investigation and sampling of sites with potentially contaminated soil, 2005 (AS4482.1 2005);
- Victorian Environmental Protection Agency (VIC EPA), State Environment Protection Policy – Prevention and Management of Contamination of Land, 2002 (Land SEPP);
- Victorian Environmental Protection Agency (VIC EPA), State Environment Protection Policy - Groundwaters of Victoria, 1997; and
- Victorian Department of Sustainability and Environment (VIC DSE), Potentially Contaminated Land - General Practice Note, 2005 (DSE 2005, *Potentially Contaminated Land*, General Practice Note).

1.6 Limitations

*This report: has been prepared by GHD for Cardinia Shire Council and may only be used and relied on by Cardinia Shire Council for the purpose agreed between GHD and the Cardinia Shire Council as set out in **Section 1.2** of this report.*

GHD otherwise disclaims responsibility to any person other than Cardinia Shire Council arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

*The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report (**Section 1.7** and throughout). GHD disclaims liability arising from any of the assumptions being incorrect.*

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GHD excludes and disclaims all liability for all claims, expenses, losses, damages and costs, including indirect, incidental or consequential loss, legal costs, special or exemplary damages and loss of profits, savings or economic benefit, Cardinia Shire Council may incur as a direct or indirect result of the Pakenham East Precinct, Phase I ESA, GIS database, for any reason being inaccurate, incomplete or incapable of being processed on Cardinia Shire Council's equipment or systems or failing to achieve any particular purpose. To the extent permitted by law, GHD excludes any warranty, condition, undertaking or term, whether express or implied, statutory or otherwise, as to the condition, quality, performance, merchantability or fitness for purpose of the Pakenham East Precinct, Phase I ESA, GIS database.

GHD does not guarantee that the Pakenham East Precinct, Phase I ESA, GIS database is free of computer viruses or other conditions that may damage or interfere with data, hardware or software with which it might be used. Cardinia Shire Council absolves GHD from any

consequence of Cardinia Shire Council's or other person's use of or reliance on, the Pakenham East Precinct, Phase I ESA, GIS database.

1.7 Assumptions

GHD notes that the information provided in this report and in the Pakenham East Precinct, Phase I ESA, GIS database are based on the following assumptions and limitations:

- CSC has informed GHD that they do not have access to and/or are not aware of any previous contamination studies completed on Properties in the Precinct. Therefore no review of previous reports was conducted as part of this Phase I ESA;
- GHD has assumed that all data provided by CSC is accurate and obtained with appropriate licensing including: Current title and proprietor information, DSE, 2012 aerial imagery, spatial data including precinct and property boundaries;
- GHD did not gain access to, but were able to view either all or parts of, the following Properties from publicly accessible areas (roads, paths; etc.) or adjacent property boundaries: 1, 2, 5, 7-13, 15-29, 31, 35-37, 38, 39, 42-43 and 45- 51;
- GHD was not able to gain access to or view any part of the following properties from publicly accessible areas: 3, 30, 40, 41 and 42; and
- The final PFC rating is based on GHD's interpretation and assessment of all of the data reviewed for each Property.

2. Site characterisation

2.1 Site location and description

The Precinct is an area of land located in the Western Part of Cardinia Shire, approximately 60 km southeast of Melbourne and 20 km east of Narre Warren-Fountain Gate principal activity centre. A Site location plan is provided as **Figure 1**.

The Precinct consists of 52 Properties, or parts thereof, and includes approximately 631 ha of land. The properties are numbered 1- 52 according to the Precinct Structure Plan property numbering system devised by CSC. The Precinct is bounded: to the east by Deep Creek and Ryan Road; to the south by the Princes Freeway (Pakenham Bypass); and, by Mount Ararat Road and Mount Ararat Road North to the East. The northern extent of the Precinct extends into the Properties on either side of Dore Road south of Seymour Road. A Site layout plan, showing property numbers is provided as **Figure 2**

The Precinct is currently used for mixed agricultural uses, with predominating grazing paddocks and farm buildings/homesteads and some medium to low density residential Properties.

The Properties located within the Precinct, including the Property number (as supplied by CSC), Property description and the physical addresses are included in **Table 1**. These Property numbers are also shown in **Figure 2**.

Table 1 Properties within in the Precinct

Property Number	Property Description	Address
1	Lot 1 TP709442C	155 Dore Road, Pakenham, VIC 3810
2	Lot 2 LP204796H	365 Seymour Road, Nar Nar Goon, VIC 3812
3	Lot 2 LP093961	325 Seymour Road, Nar Nar Goon, VIC 3812
4	Lot 1 LP55512	Mount Ararat North Road, Nar Nar Goon North, VIC 3812
5	Lot 2 PS436254L	55 Mount Ararat North Road, Nar Nar Goon North, VIC 3812
6	Lot 1 PS436254L	15 Mt Ararat Creek Road, Nar Nar Goon North 3812
7	Lot 3 PS422931W	Dore Road, Pakenham, VIC 3810
8	Lot 1 PS422931W	40 Dore Road, Pakenham, VIC 3810
9	Lot 2 PS422931W	Dore Road, Pakenham, VIC 3810
10	Lot 1 TP516329X	95 Dore Road, Pakenham, VIC 3180
11	Lot 1 PS512523M	45 Dore Road, Pakenham, VIC 3810
12	Lot 1 TP709318D	27 Dore Road, Pakenham, VIC 3810
13	Lot 1 TP424541M	27 Dore Road, Pakenham, VIC 3810
14	Lot 2 PS512523M	55 Dore Road, Pakenham, VIC 3810
15	Lot 2 PS439920H	35 Canty Lane, Pakenham, VIC 3810
16	Lot 1 PS402178R	2 Ryan Road, Pakenham, VIC 3810
17	Lot 1 PS402178R	2 Ryan Road, Pakenham, VIC 3810
18	Lot 1 PS425421F	14 Ryan Road, Pakenham, VIC 3810
19	Lot 2 PS425421F	26 Ryan Road, Pakenham, VIC 3810
20	Lot 3 PS425421F	30 Ryan Road, Pakenham, VIC 3810
21	Lot 4 PS425422D	36 Ryan Road, Pakenham, VIC 3810
22	Lot 5 PS425422D	40 Ryan Road Pakenham, VIC 3810
23	Lot 6 PS425422D	46 Ryan Road, Pakenham, VIC 3810
24	Lot 6 PS425422D	46 Ryan Road, Pakenham, VIC 3810

Property Number	Property Description	Address
25	Lot 7 PS425423B	50 Ryan Road, Pakenham, VIC 3810
26	Lot 8 PS425423B	60 Ryan Road, Pakenham, VIC 3810
27	Lot 9 PS425423B	70 Ryan Road, Pakenham, VIC 3810
28	Reserve 1 PS402188N	Ryan Road, Pakenham, VIC 3810
29	Lot 1 PS439920H	25 Canty Lane, Pakenham, VIC 3810
30	Crown Allotment 23B1 - Parish of Nar-nar-goon	1550 Princes Highway, Nar Nar Goon, VIC 3812
31	Lot 1 TP105798C	1530 Princes Highway, Nar Nar Goon, VIC 3812
32	Lot 1 PS547978V	1550 Princes Highway, Nar Nar Goon, VIC 3812
33	Lot 3 PS308950F	1560 Princes Highway, Nar Nar Goon, VIC 3812
34	Lot 2 PS547978V	1550 Princes Highway, Nar Nar Goon, VIC 3812
35	Lot 1 LP137971	1610 Princes Highway, Nar Nar Goon, VIC 3812
36	Lot 1 LP137971	1610 Princes Highway, Nar Nar Goon, VIC 3812
37	Lot 2 PS425398W	32 Mount Ararat South Road, Nar Nar Goon, VIC 3812
38	Lot 1 PS425398W	32 Mount Ararat South Road, Nar Nar Goon, VIC 3812
39	Lot 1 PS544521L	90 Mount Ararat South Road, Nar Nar Goon, VIC 3812
40	Lot 3 PS607403U	1550 Princes Highway, Nar Nar Goon, VIC 3812
41	Lot 1 PS613913	1550 Princes Highway, Nar Nar Goon, VIC 3812
42	Reserve 1 PS607403U	Ryan Road, Pakenham, VIC 3810
43	Lot 4 PS335913J	10 Canty Lane, Pakenham, VIC 3810
44	Lot 1 LP56549	100 Ryan Road, Pakenham, VIC 3810
45	Lot 3 PS335913J	104 Ryan Road, Pakenham, VIC 3810
46	Lot 1 TP146370M	110 Ryan Road, Pakenham, VIC 3810
47	Lot 1 TP369003W	114 Ryan Road, Pakenham, VIC 3810
48	Lot 1 PS544516D	140 Ryan Road, Pakenham, VIC 3810
49	Lot 1 TP534843F	160 Ryan Road, Pakenham, VIC 3810
50	Lot 1 PS607403U	180 Ryan Road, Pakenham, VIC 3810
51	Lot 3 PS547650H	Ryan Road, Pakenham, VIC 3810
52	Lot 2 PS547650H	Ryan Road, Pakenham, VIC 3810

2.2 Planning zones

The majority of the Precinct is currently zoned as Farming Zone (FZ) with the exception of Properties 16 to 27 along the western border of the Precinct which are currently zoned as Low Density Residential Zone (LDRZ).

The areas to the north, south and east of the Precinct are zoned as Green Wedge (GWZ1). The Princes Highway road reserve, which runs through the centre of the Precinct, is zoned as Road Zone 1 (RDZ1) and the Gippsland Main Line rail corridor to the south of the Precinct is zoned as Public Use – Transport Zone (PUZ4).

Planning zones to the west of the Precinct south of the Princes Highway include Low Density Residential, Public Park and Recreation (PPRZ), Industrial zone 1 (INZ1) and Road - Category 2 (RDZ2).

The strip of land running east of Deep Creek at the northwest corner of the Precinct is zoned as Public Conservation and Resource (PCRZ) and the area immediately west of the Creek is an Urban Food Zone (UFZ). Zones existing beyond these are Residential Zone 1 (R1Z), Business 1

Zone (B1Z), Public Use Zone 1 (PUZ1). **Figure 3** shows the planning zones for the Precinct and Surrounding areas.

2.3 CSC planning schemes

A review of the CSC Planning Scheme overlays indicated that properties to the north of the Princes Highway are subject to an Environmental Significance Overlay, with the exception of Properties 12 and 13.

Properties 16 to 27 are subject to Vegetation Protection Overlay and Design and Development Overlay. A Floodway Overlay has been applied to Properties located adjacent to and downhill from Deep Creek which runs along the western boundary of the Precinct (including Properties 1, 14, 15, 28, 29, 30, 43, 44 and 45). The Land Subject to Inundation Overlay has been applied to areas surrounding unnamed streams and drains including portions of Properties 3, 7, 36, 39, 40 and 43.

The planning scheme overlays that are applicable to the Properties within the Precinct are shown in **Figure 4** and summarised in **Table 2** below. Copies of the applicable planning reports for the Properties within the Precinct are included in **Appendix A**.

Table 2 Planning scheme overlays applicable to the Precinct

Planning Scheme Overlay	Properties Subject to Overlay
Environmental Significance Overlay	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 14
Land Subject to Inundation	3, 7, 6, 30, 36, 39, 40, 43, 45
Floodway	1, 14, 15, 28, 29, 30, 43, 44, 45
Vegetation Protection	16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27
Design and Development Overlay	16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27

2.4 Geology

The Geological Survey of Victoria, 1:25,000 Scale, *Pakenham 7921-1-1 Zone 55 Map Sheet*, 1977 and the Victorian Department of Primary Industries (DPI), GeoVic website indicated that majority of the Precinct is underlain by Quaternary (Pleistocene to Recent) alluvial deposits of gravels, sand and silt. This unit is unconformably underlain by micaceous quartz siltstone, with very minor micaceous quartz sandstone.

The intrusive Late Devonian aged Tynon Granite extends from the north through the centre of the Study area and along the eastern boundary. Younger tholeiitic basalt extrusions (Palaeogene age) exist within the Tynon Granite. Overlying topsoil and grass was evident from satellite imagery. **Table 3** below summarises the Precinct stratigraphy.

Table 3 Precinct stratigraphy

Period	Sub-Period	Formation	Description
Quaternary	Pleistocene-Recent	-	Sedimentary, alluvial-colluvial; gravel, sand and silt
Tertiary	Eocene-oligocene	Older Volcanics	Igneous, extrusive; tholeiitic and minor alkaline basalts
Devonian	Upper	Tynong Granite	Igneous, intrusive; I-type granite.
Silurian	-	-	Sedimentary, massive: micaceous quartz siltstone, very minor micaceous quartz sandstone.

2.5 Hydrology and hydrogeology

Typically, shallow groundwater flow and local drainage patterns follow surface topography, with local drainage patterns and flows from higher elevations towards lower elevations.

The Precinct is located in an area that includes north-south oriented ridges (associated with intrusive granite running north-south through the central northern section of the precinct (incorporating properties 1, 2, 3, 7, 8, 9, 10, 11, 12, 13, 14, 31, 32, 33 and 34 and along the eastern boundary, within properties 4, 37 and 39) as well as high and low lying pastures adjacent to historical and existing watercourses. The surface elevation of these ridges ranges from 70 – 110 mAHD. Lower lying areas to the south and adjacent to watercourses range from 30 to 60 mAHD.

The Precinct contains low lying areas listed as being at risk of flooding by the Cardinia Shire Council Planning Scheme (hence the planning zone overlays relating to inundation listed in **Section 2.3** and presented in **Figure 4**).

The nearest surface water bodies to the Precinct are Deep Creek (located on the western boundary of the Precinct) and two small unnamed water courses running north-south through the central eastern and western parts of the Precinct (running through properties 14, 31, 30, 34 and 41 and 3, 7, 36, 37, 39 and 40, respectively). The presence of these and other nearby surface water courses would suggest that shallow groundwater beneath the Precinct is likely to flow in a south/ south westerly direction, toward Deep Creek and ultimately the Western Port Bay.

There are three (3) registered groundwater bores listed for Properties in the Precinct, these are detailed further in **Section 2.6**.

Based on data obtained from the Department of Sustainability and *Environments Visualising Victoria's Groundwater* map, the depth to groundwater in the Precinct ranges from less than 5.0 m below ground level (mbgl) in areas of lower elevation down to 50 mbgl along the north-south running ridges of Upper Tertiary / Quaternary Basalt. Groundwater bore yield in the area of the Precinct is expected to be < 1 L/second.

The Department of Sustainability and Environment Victorian *Water Resources Map* indicated that the majority of the Precinct (excluding the northernmost parts) is included in the Western Port Basin. The regional aquifer lithology is upper tertiary aged fractured and weathered indurated sediments, metasediments and intrusive (basalt). The Regional groundwater salinity range is listed as between 3000 and 7000 mg/L for the majority of the Precinct, with the parts in the northernmost area of the Precinct listed as being between 1001-3000 mg/L.

The regional salinity range falls within Segments B-C of the Victorian State Environment Protection Policy, *Groundwaters of Victoria*, 1997 (Groundwater SEPP). A conservative approach has been applied to the selection of the relevant Segment given that there has been no intrusive investigation undertaken in the area. The protected beneficial uses for groundwater within Segment B are shown in **Table 4**.

The Victorian EPA may determine that these beneficial uses do not apply to groundwater where:

- there is insufficient yield;
- the background level of a water quality indicator other than TDS precludes a beneficial use;
- the soil characteristics preclude a beneficial use; or
- a groundwater quality restricted use zone has been declared.

Table 4 Protected beneficial uses of groundwater

Beneficial Uses	Segments (mg/L TDS)				
	A1 (0-500)	A2 (501-1000)	B (1001-3500)	C (3501-13,000)	D (>13,000)
Maintenance of ecosystems	✓	✓	✓	✓	✓
Potable water supply					
Desirable	✓				
Acceptable		✓			
Potable mineral water supply	✓	✓	✓		
Agriculture, parks & gardens	✓	✓	✓		
Stock watering	✓	✓	✓	✓	
Industrial water use	✓	✓	✓	✓	✓
Primary contact recreation (e.g. Bathing, swimming)	✓	✓	✓	✓	
Buildings and structures	✓	✓	✓	✓	✓

2.6 State groundwater database

GHD conducted a search of the Victorian Groundwater Database for registered groundwater bores within a 2.0 km radius of the perimeter of the Precinct. The registered groundwater bores are shown in **Figure 5**.

The database search identified the presence of a total of 41 registered bores within a 2 km radius of the Precinct, three (3) of which were located within the Precinct itself.

The bores that were located within the Precinct include:

- 84052 –Property 37 - Installed 1970 and registered for domestic and stock purposes. The database search indicated that this bore is 28.6 m deep. No screen interval, lithology or chemistry data was available for this bore. Bore elevation is listed as 41.0 mAHD;
- 139973 –Property 30 - Installed 1998 and registered for domestic and stock purposes. The database search indicated that this bore is 28.6 m deep and screened across a sandy drift layer from 26.9 - 27.5 mbgl. Static water level in this bore was measured at 4.0 mbgl December 1998. Bore elevation is listed as 34.16 mAHD.
- WRK052086 –Dore Road at the boundary of Properties 8, 9 and 14 - installed in 2009 and registered for observation purposes. The database search indicated this is 15 m deep. No screen interval data was available for this bore. Drillers' logs describe the lithology as brown clay to 10.0 mbgl. Bore elevation is listed as 74.37 mAHD.

The remaining 38 registered bores outside of the Precinct included:

- 11 bores registered for domestic and stock purposes;
- Five (5) bores listed for groundwater investigation purposes;
- Five (5) bores listed for observation;

- Four (4) bores listed for stock purposes;
- Three (3) bores listed for irrigation;
- Two (2) bores listed for domestic/irrigation/dairy and stock purposes;
- One (1) bore listed for domestic purposes; and
- Seven (7) bores listed as purpose '*not known*'.

All of the registered bores within 2 km of the study area were listed as being between 2.4 m and 55.47 m deep. 14 of these bores had the electrical conductivity data listed with TDS ranging from 267 – 4974 mg/L. The bore with the lowest TDS (GMS-4040) was significantly lower than the remaining bores which ranged from 1055 – 4974 mg/L, indicating that groundwater can be typically characterised as Segment B. This is consistent with the groundwater salinity recorded in previous studies in the area (*GHD Report for Cardinia Road Employment Precinct Structure Plan – Phase 1 Desktop Contaminated Land Study*, 2010) which ranged from 3400 – 6400 mg/L. and the The Department of Sustainability and Environment Victorian *Water Resources Map* as discussed in **Section 2.5**.

The varying depths of the bores and the limited drillers log data suggests that groundwater in the PEP area may be present in both shallow (0 – 10 m deep) and deeper (>10 m deep) aquifers, representing shallow groundwater in the near surface drift deposits and deeper groundwater present in the underlying granite, basalt and basaltic clays.

No geological data was available for in the groundwater database for the bores within 2 km of the Precinct. The bore locations and uses are presented in **Figure 5**.

3. Site history

GHD completed a review of historical data for the Properties located within the Precinct including the following:

- Current and historical aerial photographs;
- Current and historical title certificates;
- Royal Historical Society Victoria records;
- Australian Rail Historical Society (Victorian Division)
- Cathodic protection systems register with Energy Safe Victoria;
- Victorian EPA records; and
- Worksafe Victoria dangerous goods licence search.

GHD understands that all of the Properties within the Precinct have historically been used for agricultural and stock grazing purposes, predominantly for grazing cattle.

The following sections outline the results of the review of current and historical data completed by GHD for the Precinct.

3.1 Historical aerial photographs

Nine (9) sets of historical aerial photographs, dating from 1947 to 2012, were reviewed for the Precinct. The photographs from 1947 to 1991 were obtained from the Department of Sustainability and Environment, Aerial Photography Register, Victorian Records Office. The Most recent imagery (DSE 2012) was supplied to GHD by The Cardinia Shire Council. The georeferenced aerial imagery is presented as layers in the *Pakenham East Precinct, Phase I ESA, GIS database*.

Additional available imagery from Google Earth Pro was also reviewed for periods dating from 2001-2010. A detailed review of historical aerial imagery is provided in **Appendix B** and a summary of the key findings is included in **Section 3.1.1**.

3.1.1 Summary of historical aerial photograph review

The Precinct has remained in use for predominantly agricultural and stock grazing purposes land since the first available aerial imagery from 1947. Medium to high density vegetation existed in patches, particularly south of the Princes Highway and adjacent to Deep Creek in 1947. Electrical transmission towers (pylons) were visible running east-west across the top of the Precinct (through Properties 1, 2, 3, 4 and 14) from 1947 to present.

The imagery for 1956 was limited to the area surrounding the Princes Highway (associated with development of the Princes Highway around this time). However, observations for this area noted the absence of a large dam in the northwest corner of Property 15 previously identified in the 1947 image, this may indicate infilling of the dam and was likely due to restrictions on drawing water from the adjacent Deep Creek. Clearing of vegetation occurred in the eastern parts of the Precinct between 1947 and 1956.

Residential development of the area west of the Precinct and construction of Seymour Road to the north occurred between 1947 and 1971.

Suspected market gardens or greenhouses were visible between 1971 and present day on Properties 3, 20, 21, 22, 15 and 43 as well as in the surrounding areas north and northwest of the Precinct.

An electrical substation associated with the rail line to the south of the study area appeared on Property 52 from sometime between 1947 and 1971 and remains to present day.

Disturbed ground surface or earthworks were observed in the southern part of Property 37 in the 1971 imagery and a large area in the north of Property 43 in 1991. Due to poor the image quality of the 1991 aerials, it is not clear whether the earthworks involved excavations or stockpiling. However, a track and small mounds were visible in the 2001 imagery and larger soil mounds without the track were evident in the area in more recent imagery from 2004 to 2012 and during the site visit.

General scrap materials, car, truck and farming machinery wrecks and building rubble were visible on Properties 4, 6, 32, 33 and 34 from at least 1991 until present. More recent imagery also identified the presence of above ground storage tanks, which are likely silos and water tanks associated with the dairy farming activities on properties 32, 33 and 34.

The properties on the west side of Ryan Road (opposite Properties 16- 28 and 44 - 52), were developed into low density residential blocks between 1991 and 2001. A number of low- medium density residential buildings have been constructed. Property 44 appeared to have been in use as a truck stop from 1991 to present.

The Princes Highway, which runs through the centre of the Precinct, was duplicated between 1979 and 1991.

A gas governor was installed on Properties 12 and 13 at sometime between 1979 and 1991. In 2004 A large linear trench is visible (approximately 10-20 m wide), believed to be associated with a high pressure gas pipeline, extending south from the gas governor on Property 12 through Properties 30 and 31, along the boundary between Properties 30 and 34, and 41 and 43 and then southeast across Property 42 and passing out of the Precinct to the south.

By 2010 low to medium density residential development had extended east from the township of Pakenham to Abrehart Road, approximately 1.5 km west of the Property 14. The Princes Highway Pakenham Bypass had also been constructed between 2004 and 2010, bounding Properties 39, 40, 41, 42, 48, 50, 51, and 52 to the south. Several large sheds/warehouses are present in the surrounding area in the 2010 imagery, including one at an olive grove (Olive Valley) on the east side of Mt Ararat Rad at the eastern boundary of the Precinct.

3.2 Current and historical title information

GHD engaged Feigl and Newell Title Searchers to conduct a search of historical titles for the Properties within the Precinct. The title information was obtained from the Victorian Lands Title Office, Melbourne. A summary of the current and historical title search results is included in **Appendix C** and provided in **Table 5**.

Table 5 Summary of current certificates of title

Property Number	Volume	Folio	Registered Proprietors	Date Acquired
1	8021	62	Steven & Lezley Golding	28/06/2002
2	9697	218	Lloyd Lalor & Yvonne Blackwood	16/03/2006
3	8926	107	Kerry & John Wiadrowski	31/10/1988
4	8354	250	Elizabeth Ruprecht & Walter Duff	13/09/2011
5	10548	34	Samantha Sandbach & Darren Bartley	29/11/2010
6	10548	33	Elizabeth Ruprecht & Walter Duff	11/10/2000
7	10738	152	Robert & Peter Wuchatsch	15/07/2003
8	10738	150	Robert & Peter Wuchatsch	15/07/2003

Property Number	Volume	Folio	Registered Proprietors	Date Acquired
9	10738	151	Robert & Peter Wuchatsch	15/07/2003
10	8239	989	Paul & Penelope Carney	03/10/2000
11	11147	646	Paul & Penelope Carney	15/07/2009
12	9491	111	APA Gasnet Australia (Operations) Pty Ltd	11/09/2008
13	8864	475	APA Gasnet Australia (Operations) Pty Ltd	11/09/2008
14	11147	647	Paul & Penelope Carney	15/07/2009
15	11334	14	Auscare Commercial Pty Ltd	16/02/2012
16/17	10322	149	Colin McKinlay & Julie Patchell	01/03/1999
18	10456	299	Brendan & Jennifer Cornwall	22/10/1999
19	10456	300	Kerrie Wallace	22/04/2009
20	10456	301	Stanko & Kerry Stoiljkovic	23/06/2011
21	10456	302	Karen Lake	13/11/2008
22	10456	303	Paul & Michelle Stevenage	10/09/2003
23/24	10456	304	Robert & Beth Albutt	10/08/1999
25	10456	305	Jodie Evans	30/11/2009
26	10456	306	Amanda & Joseph Adshead	15/03/2011
27	10456	307	Leanne Olsen	24/02/2003
28	10431	106	Cardinia Shire Council	26/02/1999
29	10598	903	Matthew & Judith Weeks	11/10/2012
30	9439	721	John & Timothy Carney	05/07/2006
31	9664	358	Timothy & Kerryn Carney	07/02/1985
32	11261	954	John & Timothy Carney	29/03/2011
33	10090	522	John Carney	16/09/1992
34	11261	955	John & Timothy Carney	29/03/2011
35/36	9452	296	Parklea Pty Ltd	20/08/2004
37	10467	807	Parklea Pty Ltd	20/08/2004
38	10467	806	Neil & Marion Titford	12/07/2000
39	9050	654	Mirko & Heide-Marie Blazevic	08/06/2011
40	11061	708	Timothy Carney	15/06/2009
41	11389	343	John & Timothy Carney	24/11/2012
42	11061	710	Roads Corporation	09/04/2008
43	10200	493	Parklea P/L, Nancye & Glenn Cross & Laurack P/L	25/10/2012
44	8378	896	Hendrika & Johannus Wouters (Transport Operator)	30/12/1976
45	10200	492	Steven & Maria Dunn	16/09/2009
46	9073	656	Neil & Merle Speedie	18/01/1993
47	8199	747	Ian Russell & Cornilia Wilson	08/11/2010
48	11208	870	Robert Roberts (General Manager)	07/05/1980
49	7110	872	Dennis & Rhonda Murphy	29/11/2001
50	11061	706	Pakland P/L	03/06/2008
51	11002	471	Kenzie Park Pty Ltd	27/01/2011
52	11313	415	Victorian Rail Track	06/10/2011

During the review of the historical title information it was noted that the occupation of historical land owners was listed for some Properties. Occupations listed which were considered to be potentially associated with contamination sources are listed in **Table 6**.

Table 6 Historical proprietor occupations of interest

Property number	Volume	Folio	Registered Proprietor / Occupation	Date Acquired	Date Relinquished
1	8021	062	Sylvia & Francis Hall (Auto Electrician)	11/06/1974	08/01/1987
			Muriel & Ronald Norris (Market Gardener)	04/07/1956	20/11/1964
12	9491	111	APA Gasnet Australia/ Gas Transmission Corporation	26/08/1982	Current
13	8864	4785	APA Gasnet Australia/ Victorian Pipelines Commission	16/12/1970	Current
47	8199	474	Wendy & Barry Turner (Industrial Chemist)	07/02/1977	02/05/1989
49	7110	872	Dora & Henry Percy (Steel Worker)	09/02/1961	26/05/1966
52	111313/7482	415/156	Victorian Rail Track / The Victorian Railways Commissioners	23/10/1950	Current

A table summarising the full historical title information collected for the 52 Properties in the Precinct is provided as in **Appendix C**. Copies of all current and historical titles are provided on an accompanying CD due to the volume of information obtained.

3.3 Royal Historical Society Victoria search

GHD requested a search of available information be completed for the Precinct by The Royal Historical Society Victoria (RHSV).

In their response RHSV noted that they hold no specific information pertaining to the Precinct. However, the RHSV did provide the following information on the general Pakenham area.

- Pakenham was first listed in the Sands and McDougall Directories in 1903 as a country town. Most of the residents were listed as engaged in agricultural pursuits, mainly dairy farming and horse breeding;
- By the 1940s the Sands and McDougall directories list Pakenham and Pakenham Upper under separate headings. From the 1950s to 1969 Pakenham is divided into Pakenham, Pakenham East, Pakenham South and Pakenham Upper;
- The Victorian Municipal Directories in 1968 mention Nar Nar Goon as an agricultural district and Pakenham as a prosperous business centre of grazing, dairying, fruit growing, and industrial district. Pakenham was also noted to have a quarry, sawmills, fruit canning and plaster works. The population of Pakenham in 1968 was listed as 2,200 and
- The 1992 Victorian Municipal Directories list Nar Nar Goon as an agricultural district with a vegetable packing factory and a population of 600. Pakenham is noted to have doubled in population by 1992 to 4,500.

A copy of the RHSV letter is provided in **Appendix D**.

3.4 Australian Railway Historical Society search

GHD engaged the Australian Railway Historical Society (ARHS) to conduct a search of their archives for information relating to the Pakenham East Substation which was identified on Property 52 during the historical aerial review.

The ARHS findings indicated that the Gippsland Main Line was electrified in the early 1950s. The metropolitan and Gippsland lines were using a 1500 Volt system, due to the resistance in the overhead wiring systems the transformer and feeder substations had to be located at relatively frequent intervals along the line (the Pakenham East Substation being one of these).

The substations used mercury arc rectifiers in sealed metal containers, to convert the AC feed to 1500 volt DC, which was fed to the overhead wires. These were contained in the brick substation building. The switch yard outside contained the AC transformers and switching mechanism. These were oil damped to protect against arcing and flashovers.

By the 1980s electronic locomotives were approaching the end of their economically viable lives, and were replaced by diesels. With the more recent growth of urban settlement in the South Eastern sector of Melbourne, suburban services have extended to Pakenham and Pakenham East, with plans to establish a major servicing and stabling facility to the south of the tracks, adjacent to the substation. The Pakenham East Substation remains fully operational and is operating at capacity. Whilst it is likely that the development of the stabling sidings will include a new substation, it is unclear if that will replace the existing substation.

It was also noted that the mercury arc rectifiers were in sealed metal units and being modular were removed from the site for maintenance, or in the event of malfunction. The switch gear and the transformers are oil damped and were periodically serviced on site. All Substation buildings are to a standard 1950s design and as was the practice at the time, it is highly likely that there may be fibro cement sheeting used in parts of the building.

A copy of the ARHS report is provided in **Appendix E**.

3.5 Search for cathodic protection systems

Enquiries were made to Energy Safe Victoria, which maintains a database of cathodic protection system installations typically associated with installations of Underground Storage Tanks (USTs).

The search of the database identified that cathodic protection systems have been registered in the area in relation to the major high pressure gas pipeline which extends through the study area. No other cathodic systems were noted.

A copy of the search results is included in **Appendix F**.

3.6 Worksafe Victoria dangerous goods licences search

A request was lodged with Work Safe Victoria to conduct a search of the Victorian Dangerous Goods Database in December 2012. At the time of writing this report GHD had yet to receive a response from Worksafe Victoria.

3.7 EPA Victoria priority sites register search

Priority Sites are sites for which EPA has issued a Clean-up Notice pursuant to section 62A, or a Pollution Abatement Notice pursuant to section 31A or 31B (relevant to land and/or groundwater) of the Environment Protection Act 1970 ('the Act'). Typically these are sites where pollution of land and/or groundwater presents an unacceptable risk to human health or to the environment.

GHD conducted a search of the Register on 8 January 2013. The search identified that none of the Properties within the Precinct, or those within a 2.0 km radius of it, are listed on the Register.

A copy of the relevant extract of the EPA Priority Site Register search is included in **Appendix G**.

3.8 Statements and certificates of environmental audit search

Statements and certificates of environmental audits are issued after a statutory environmental audit has been conducted on Property under Part IXD of the Environmental Protection Act 1970.

GHD conducted a search of the list of Issued Certificates and Statements of Environmental Audit on 08 January 2013. The search identified that none of the Properties within the Precinct, or those adjacent within 2.0 km have been issued with either Certificates or Statements of Environmental Audit.

A copy of the relevant extract of the EPA list of issued Certificates and Statements of Environmental Audits was not available at the time of writing this report due to an error with the Victorian EPA website.

3.9 Previous environmental assessments

At the time of writing this report GHD and CSC were not aware of any previous environmental assessments or reports pertaining to Properties within the Precinct, or those immediately adjacent to it.

3.10 Summary of site history information

The results obtained from the site history review indicate that the Precinct and surrounding areas have predominantly been used for agricultural and stock grazing purposes (in particular for grazing cattle) from 1884 to the present day.

The agricultural activities associated with the Properties located within the Precinct predominantly involved grazing paddocks; however Properties 3, 20, 21, 22, 15 and 43 were identified as potentially housing market gardens during the historical aerial photograph review. Properties 15, 37 and 43 were also identified as potentially containing imported fill material associated with earth works observed in the historical imagery. Other potential areas of concern (PAoC) recognised during the aerial review were agricultural and domestic equipment and scrap observed on Properties 4, 6, 32, 33 and 34 and a truck stop on Property 44.

A large trench associated with the high pressure gas pipeline which runs through the Precinct was noted in the 2004 Google Earth Imagery extending south from the gas governor on Property 12 through Properties 30 and 31, along the boundary between Properties 30 & 34, 41 and 43 and then southeast across Property 42 out of the Precinct. The trench / pipeline is not considered to be significant potential source of contamination as these trenches are typically backfilled with trench sands and gravels.

The results of the historical title search information indicated that the Properties located within the Precinct have generally remained in private ownership with the registered owner's professions most commonly listed as graziers/farmers. Other occupations listed (including auto electrician, industrial chemist and steel worker), however this does not necessarily indicate that these activities took place on the particular title blocks, rather they merely confirm the owners profession.

The registered proprietors of Properties 12 and 13 (location of gas governor) have been the Victorian Pipelines Commission (or Gas and Fuel Corporation) since 1982 and 1970 respectively.

Property 52 (the rail electrical substation site) has been owned by the Victorian Railways Commissioners since 1950, which is consistent with the Australian Rail Historical Society finding

that the Gippsland Main Line was electrified in the early 1950s. The substation remains operational today.

The searches conducted by the RHSV, Energy Safe Victoria, and those conducted by GHD on the Victorian EPA and Work Safe Victoria records identified no activities that GHD would consider to have the potential to be significant contaminating activities.

However, eight Properties (4, 6, 32, 33, 34, 43, 44, 52) located within the Precinct were identified as PAoC having the Potential for Contamination (PFC) to be present due to the current or historical land use. The PFC rating is assessed in relation to various activities generally associated with agricultural and stock grazing land use, including the use and storage of agricultural chemicals, the use and on-site storage of fuels, and the use and storage of farm machinery.

In light of the above information, these eight Properties were targeted as part of the site inspections completed following the site history and desktop review, along with a general inspection of the Precinct. In addition to the eight targeted properties listed above a further nine were assigned an initial Medium PFC rating, based on the findings of the desktop study.

Table 7 summarises the Properties assigned an initial PFC rating of either Medium or High, based on the desk top review.

Table 7 Initial potential for contamination rating

Property No.	Site Activities	Initial PFC Rating
1	Market gardener owned Property from 1956-1964	Medium
3	Part of a market garden and dam visible in the northern section of property in 2001 aerial imagery	Medium
4	Potential market garden visible in 1971 imagery. General scrap and disused farming machinery visible in 2010 imagery	Medium
6	General scrap and disused farming machinery visible near northern boundary in 2010 imagery	Medium
12	Gas governor- potential for asbestos in gaskets & electrical switch boards and general filling	Medium
13	Gas governor- potential for asbestos in gaskets & electrical switch boards and general filling	Medium
15	Large dam filled between 1947 and 1956. Potential market garden visible in 1971 imagery.	Medium
20	Potential greenhouse visible in 1971 imagery	Medium
21	Potential greenhouse visible in 1971 imagery	Medium
22	Potential greenhouse visible in 1971 imagery	Medium
32	General scrap and disused farming machinery visible. potential for asbestos and lead paint associated with building demolition observed in 2001 imagery	Medium

Property No.	Site Activities	Initial PFC Rating
33	General scrap and disused farming machinery visible.	Medium
34	General scrap and disused farming machinery visible. Cattle run,	Medium
38	2010 Imagery shows shed/garage with potential fuel storage	Medium
43	Potential greenhouse visible in 1971 imagery. Earthworks/stockpiles visible in 1991 to present imagery	Medium
44	Truck stop and garages/ sheds visible in 2010 and 2012 imagery	Medium
49	Steel worker owned the property from 1961 - 1966	Medium
52	Rail electrical substation	High

4. Site inspections

GHD field personnel conducted initial general site inspections on 16 and 18 January 2013 to identify possible contaminating activities and to confirm land use identified as potentially contaminating during the site history review.

Additional site inspections were completed at the request of CSC on three Properties (11, 38 and 44) which had been assigned an initial Medium PFC rating following the initial general site inspections. These additional site inspections were completed on 11 April.

It should be noted that due to access and time constraints the inspection of some of the Properties in the Precinct was conducted without the assistance of the Property owners or the current tenants, and as a result only visual inspections from publicly accessible property boundaries and roadways was possible at those Properties. In addition inspections were focussed on the main areas of concern noted for each Property; hence not all areas of those Properties which were accessed were inspected where the PFC rating was considered to be Low (i.e. paddocks).

Site Inspection Photographs are provided in **Appendix H** and in the Pakenham East Precinct, Phase I ESA, GIS database.

4.1 Initial targeted site inspection results

The following sections provide a summary of the findings of a limited number of initial targeted site inspections completed on 16 and 18 January 2013 at a limited number of those Properties identified as containing PAoC in the site history review, where access was available and inspections could be completed during the initial site inspection dates (Properties 4, 6, 32, 33, 34, 43, 44 and 52).

Each PAoC identified on a Property has been assigned a PAoC number as detailed in **Table 8** to **Table 11**

4.1.1 Properties 4 and 6

The inspection of Properties 4 and 6 was conducted on 18 January 2013. The majority of these Properties comprise vacant paddocks. Electrical transmission towers (pylons) run east – west across Property 4. An old homestead is located at the southern boundary of the Property 4 and extends onto the most northern section of Property 6. Numerous sheds and structures are present to the north south and west of the house. The house and sheds were surrounded by disused machinery, trucks, cars and mixed domestic and agricultural waste. The house was in poor condition and not inhabited.

Information provided by the current site occupants/owners indicates that the house was moved to the property at some point between 1930 and 1959. Based on the age of the house and observations made by GHD field staff during the inspection, it is thought possible that building fabrics within the house could include asbestos containing materials (ACM). The current residents also mentioned that the area to the south of the house had been used historically for dairy farming.

The area around the house was in use for scrap and waste storage including; scrap metal, old car bodies, old truck and car tyres, trucks and trailers. Plastic and metallic 44 gallon drums were noted around the Property, some with oil stains. Other items noted in the area were motor oil bottles in sheds and scattered around. A wrecked truck carrying what appeared to be an old rusted UST was also present in the driveway on the north side of the house. Several disused elevated corrugated iron water tanks were also noted adjacent to the house. Domestic and

agricultural waste was strewn across the Property in and around the house and near the ponds on site. A pen with pigs and some grazing cattle were also present.

An oil tank for domestic heating was noted on the west exterior wall of the house. As the house appears to be built up above ground level with a void between the ground surface and the flooring it is not considered likely that underground oil pipes would have been associated with the tank.

The general domestic and agricultural waste and car and truck wrecks were considered to be potential sources of metal and hydrocarbon contamination on Property 4, The presence of pigs, cattle and historical use of the land for dairy farming could also be considered sources for nutrient and pesticides contamination.

The PAoCs identified for Properties 4 and 6 are summarised in **Table 8**.

Table 8 Potential areas of concern - Properties 4 and 6

PAoC	Description	Location	Observations	Potential Contaminants
4.1	General agricultural use of Properties 4 and 6.	Whole Property.	General grazing and agricultural use.	Pesticides, herbicides, fertilisers, hydrocarbons and inorganics (including heavy metals)
4.2	Farmhouse and associated garages.	Property 6: Small tank on west exterior wall of house, cans and drums in various sheds and scattered across the Property	Storage of hydrocarbons and chemicals (motor oil, heating fuel)	Hydrocarbons, solvents, paints, pesticides, herbicides, fertilisers, hydrocarbons and inorganics (including heavy metals).
4.3	Farmhouse and associated garages.	Scattered across Property 4 and northeast corner of property 6	Old cars, trucks, farming machinery	Hydrocarbons (leaks), metals and aesthetic issues.
4.4	ACM	House on Property 6 (northeast corner)	Potential asbestos cement sheeting panels	Asbestos

4.1.2 Properties 32, 33 and 34

Inspections of Properties 32, 33 and 34 were conducted on 16 and 18 January 2013. These Properties are currently tenanted by the Carneys and are in use for dairy farming. The residential, storage and farming compound encompasses parts of each of Properties 32, 33, 34 as described below:

- South-eastern corner of Property 32;
- South-western corner of Property 33; and
- A small area in the central north of Property 34.

These three (3) Properties were assessed as a single large property as they are not discretely bound.

The inspection noted two (2) residential Properties (one (1) on Property 32 and one (1) on Property 33), one (1) large cattle shed and seven (7) storage/workshop sheds. Numerous above ground storage tanks (ASTs) and silos (mostly water, grain and potentially dairy) were noted around the farm including three (3) small fuel ASTs. Two (2) of these approximately 3000 L in volume and were labelled as diesel and unleaded petrol, a third smaller AST (approximately 2000 L) was unlabelled.

Other evidence of chemical/fuel storage at the Property included, the presence of numerous 44 gallon drums (some with grease stains on the drums and ground), oil cans and drums of formalin (formaldehyde used for foot rot in sheep and cattle). One (1) shed on Property 33 was in use as a mechanical workshop. There was no observed sign of underground storage tank breather pipes or vents around the workshop.

General agricultural waste was present across the Properties such as scrap metal, old cars, trailers and farming machinery. Evidence of burning (ash and black burn staining, likely to be related to burning of waste) was noted in and around an old drum on Property 32.

A grass covered soil stockpile approximately 400 m³ in area was noted to the south of the main farming sheds on Property 34, it was unclear what this comprised. Adjacent to the east of the stockpile was a cattle slurry pit. Another smaller stockpile (approximately 10 m³ in area) of soil rubble and rocks was located further south on Property 34. Cattle graze in the low lying paddocks in the south of Property 34

The fuel/chemical storage and vehicle maintenance/engine works are considered potential hydrocarbon contamination sources. The cattle farming activities (cattle/ dairy shed run-off, slurry pit) are a potential source for nutrient and pesticide contamination. General scrap metals, stockpiles and evidence of burning off indicate the potential for metals and hydrocarbons in soils across the area.

The site inspection identified several PAoCs, which are detailed in **Table 9**.

Table 9 Potential areas of concern - Properties 32, 33 and 34

PAoC	Description	Location	Observations	Potential Contaminants
32.1	General agricultural use of Properties, 32, 33 and 34.	Across Properties 32, 33 and 34	General grazing and agricultural use.	Pesticides, herbicides, fertilisers, hydrocarbons and inorganics (including heavy metals)
32.2	Farmhouse and associated garages.	Property 32 and 33	Storage of fuels (in ASTs) and chemicals (formalin, motor oil) in drums and cans.	Hydrocarbons, solvents, paints, pesticides, herbicides, fertilisers, hydrocarbons and inorganics (including heavy metals).
32.3	Farmhouse compound and garages	Property 32 and 33	Old cars, farming machinery and mechanics workshop	Hydrocarbon (leaks) and aesthetic issues.
32.4	Cattle Shed	Southeast of Property 32	Cattle (dairy) shed and yard, with tanks and pumping equipment	Hydrocarbons, pesticides, wash chemicals, microbial and inorganics (ammonia, nitrate, sulphate etc.)

PAoC	Description	Location	Observations	Potential Contaminants
32.5	Burn Pile	Property 32	Burn piles used for burning of domestic rubbish.	PAHs, phenols and heavy metals.
34.1	Cattle slurry pit	Adjacent to soil stockpile in the north of Property 34.	Cow manure kept in pit for use as fertiliser later.	Microbial and inorganics/nutrients (ammonia, nitrate, sulphate, etc.)
34.2	Soil and rubble stockpiles	Property 34	General building waste materials including terracotta tiles, rocks soil, etc.	Inorganics (including heavy metals), hydrocarbons, potential asbestos containing materials.

4.1.3 Property 43

Property 43 was identified during the aerial photography review as having potentially imported fill/earthworks. No access to Property 43 was obtained however the area of concern (northwest corner of Property) was visible from the rear of Property 44. This area contained several grass covered mounds or stockpiles of soil. The remainder of the Property comprised vacant paddocks.

The site inspection identified the PAoC, detailed in **Table 10**.

Table 10 Property 43 potential areas of concern

PAoC	Description	Location	Observations	Potential Contaminants
43.1	Stockpiles	North west section of Property 43	Soil stockpiles unknown origin.	Pesticides, herbicides, fertilisers, hydrocarbons and inorganics (including heavy metals)

4.1.4 Property 44

The initial inspection of Property 44 was conducted by GHD personnel on 16 and 18 January 2013. A typical low density residential Property with a swimming pool exists in the south of Property 44. North of this was a gravel car park area with two (2) sheds and a concrete forecourt area with drains which appeared to be used for washing vehicles. The northern portion of the Property was grass covered and appeared to be a recreation/garden area.

The Property was identified during the desk top study having potentially contaminating land use as aerial photography indicated the site was in use as a truck stop since at least 2001. Anecdotal evidence supplied by the owner of the Property Mr John Wouters indicated that there had been no fuel storage or significant vehicle maintenance activities at the site.

The two (2) sheds were located on either side of the entrance drive and appeared to be in use for storage of general domestic maintenance supplies (lawn mowers, motor oil, and vehicle washing supplies). Some 44 gallon drums and a plastic container of hydraulic fluid was noted on the ground outside a shipping container. Empty 44 gallon drums were also noted behind the shed to the north of the entrance to the Property. No evidence of bulk fuel storage such as underground storage tank (UST) breather pipes or fill points was observed.

As no evidence of fuel storage was identified and chemical storage was limited to small quantities and domestic products Property 44 was not considered to represent a significant risk or source of land or groundwater contamination.

4.1.5 Property 52

Property 52 is currently in use as a railway electrical substation for the Gippsland Main Line. The property consists of a typical brick substation building and small fenced transformer yard. Some small stockpiles of rail ballast were noted to the south of the substation adjacent to the rail corridor. Some general waste/rubbish was present. There was no visual indication of contamination. No oils or greases were observed in the transformer yard.

The PAoC identified during the Site inspection were limited to inferred features of the substation transformer yard and building and are detailed in **Table 11**.

Table 11 Potential areas of concern - Property 52

PAoC	Description	Location	Observations	Potential Contaminants
52.1	Substation Building	Northeast of Property 52	Typical brick substation building of the 1950s era	ACM
52.2	Substation building and transformer yard	Northern section of Property 52	Small transformer yard west of brick building	PCBs and hydrocarbons
52.3	Ballast stockpile	Southeast of Property 52	Rail ballast pile adjacent to rail line and overpass	Metals, phenols, sulphates and hydrocarbons

4.2 Initial general site inspection results

This section identifies PAoCs that were noted during the general inspection of the wider Precinct during the course of the site inspections completed on 16 and 18 January 2013. These observations were made from adjoining Properties and publicly accessible areas.

- **Property 6** – shallow drainage channel running from a dam in the southwest of the Property extending northeast to Property 5 – Area of potential accumulation and/or concentration of pesticides, herbicides, fertilisers, hydrocarbons, solvents and inorganics (including heavy metals) associated with general agricultural activities;
- **Property 8** – Access not obtained and due to local topography it was not possible to this Property from Dore Road. A web based search identified that a refrigeration equipment and supplies business (Southside Refrigeration) is run from this address. As the visual assessment for contamination associated with the land use was not able to be determined, the PFC rating at this Property has been considered medium due to potential industrial activity at the site;
- **Properties 11 and 14** – Visual inspection of properties from Dore Rd, Princes Highway and Deep Creek Road, Properties are agricultural / residential with a farm house located on Property 11. A silo and farm machinery were located on Property 14 during the inspections. A small cattle run/animal pen is located on Property 14 at the northeast boundary of Property 11 representing a potential hot spot for pesticide contamination. Foundations for a house or garage were being constructed at the time of the inspection.
- **Properties 12 and 13** – Gas governor – No access to properties 12 and 13 was obtained as the area was restricted. No obvious signs of contamination were noted from the property boundary however, there is the potential for asbestos containing materials in

gaskets & electrical switch boards (dependant on age), hydrocarbons, Polychlorinated biphenyls and general fill material;

- **Property 38** – Access not obtained, however the visual inspection of the Property from the Princes highway identified a large shed adjacent to house with old cars and service station paraphernalia. Items include vintage bowser and signs. While it is unclear whether these were collector's items or remnants of service station previously operating at the site, the Property required further assessment and is considered to have a Medium PFC rating.
- **Property 47** – Noted to be residential. A large shed and vegetable garden were also observed on the Property. Without access to the shed it is unknown whether any chemicals/fuel is stored on site. As such, the Property is considered to have a Medium PFC rating as it is unclear what activities are conducted in the shed;
- **Properties (not including targeted Properties) 1-3, 5, 7, 9-11, 14, 15, 30, 31, 36, 37, 39-42, 45, 48, 50 and 51** – General agricultural and stock grazing land – While these Properties were not selected for targeted site inspections the PFC associated with general agricultural land, it is noted that potential risks associated with pesticides, herbicides, fertilisers, hydrocarbons and inorganics may exist. However, the land activities observed at the time of the site inspections were considered to have a Low PFC rating.

4.3 Additional property inspections

At the request of CSC, GHD conducted additional inspections of properties, 11, 38 and 44 to gain access previously unassessed areas and to evaluate PAoC identified in the general inspections. The additional inspections were completed on 11 April 2013. The PAoC identified during the additional inspections are detailed below.

4.3.1 Property 11

During the additional site inspection GHD noted that the property appeared to comprise only a residential house and paddock with old farm shed to the rear. The residential property is currently vacant and for lease. The gravel area, the silo (containing cattle feed only) and the cattle run to the north of the house were noted to be on the Property 14 (these had initially been thought to be part of Property 11. The walkover noted the temporary parking of farm machinery (tractor) on the gravelled area adjacent to the silo and localised surface staining (oil).

Sheds located to the west of the silo could not be entered during the inspection due to the presence of an electric fence, but from what could be seen they did not appear to represent Potential sources of contamination.

GHD notes that the Property owner was not present during the inspection so no questions could be asked in order to obtain more detailed information.

4.3.2 Property 38

GHD met with the Property owner during the additional site inspection. The owner confirmed verbally that the garage/workshop identified during the general inspection was used historically as a dairy building and that it has no known USTs. The 'fuel pump' originally noted at the front of the property during the general initial site inspections is not, and has never been, in use on the Property, it is just an item of memorabilia. The Property is not, and has never been, a commercial garage.

The owner uses the former dairy as a garage/workshop for the restoration and maintenance of old cars (hobbyist). Inspection in the shed identified significant small scale storage of oils, fuels, solvents, paints etc. The former milking shed is in use as a spray painting area for cars.

The additional site inspection of the Property noted the presence of some 10-15 wrecked and rusting car and truck bodies, within the garage and along the western edge of the property under the trees and around the house.

4.3.3 Property 44

GHD met with the Property owner during the additional site inspection. The owner confirmed verbally that it has been used for around 15-20 years as a truck stop, minor truck maintenance area (tyre changes, wash down, oil top up, etc.) and storage area. The owner advised that its use for this purpose is now almost finished as the trucking business has been sold.

The truck wash down area has integral drainage and a below ground TIT on-site. The large shed in the south of the truck stop area is used for general residential storage (cars, furniture, garden equipment, etc.). The smaller shed to the north was used historically as an office for the truck stop and garage/maintenance building. It is currently used as general residential storage, but there are still some drums of oil, fuel, grease and detergent present from its use as a truck stop garage/maintenance area.

The shipping container was in use for the storage of old truck tyres pending disposal. The owner advised that they were being collected and removed from the Property in April 2013.

A small dam was present in the north eastern corner of the Property which collected surface run-off from the grassed area and may represent an area of contamination accumulation.

The southern part of the Property comprised a residential property with swimming pool to the rear.

4.3.4 Additional notes (Properties 11, 12, 13 and 14)

During the inspection of Property 11 it was noted that the cattle pen and silo originally thought to be located on Property 11 are actually located on Property 14. Consequently, for the purposes of this assessment, the small area of Property 14 located immediately north of Property 11 has been delineated (Property sub-area 14a³) and identified as a PAoC to be assessed in the following sections.

While on Site during the additional inspections, ASTs were observed adjacent to the gas governor on Properties 12 and 13. The ASTs are likely to be associated with fuel supply for backup generators on these Properties

³ Due to the structure of the Pakenham East Precinct, Phase I ESA, GIS database, Property sub area 14a has been assigned the unique identifier Property ID of 53 which is the next sequential number. This identifier is listed in the database attributes table and property descriptions, however the on the map the property sub-area is labelled "14a"

5. Potential for contamination summary

Based on the site history review and the information obtained from the site inspections completed between 16 and 18 January 2013, and the additional site inspections on 11 April 2013, the potential sources of contamination associated with the Properties located within the Precinct are generally consistent with the known historical use for farming and grazing purposes and associated human occupation.

The potential sources of contamination identified on the 18 Properties and one Property sub-area with noted PAoCs in the Precinct, are summarised in **Table 12**.

Table 12 Summary of potential sources of contamination observed

Property Number	General Farm Use	Farm house	Market Garden-Current / historic	Automotive maintenance	Farm Shed	Cattle Run / Animal Pen	Milking Shed	Cattle Slurry Pit	Fuel ASTs / infra-structure	Burn Pile	General Waste	Fill Material / Stockpiles	Farm Dam	Drainage Channel	Chemical Storage	Car/ Truck / Machinery Scrap	Gas governor	Electrical Substation	Industrial Use
Properties																			
1			✓																
3			✓																
4	✓		✓		✓	✓					✓	✓	✓		✓	✓			
6	✓	✓			✓						✓		✓	✓	✓	✓			
8	✓	✓																	✓
12									✓			✓					✓		
13									✓			✓					✓		
15			✓																
20			✓																
21			✓																
22			✓																
32	✓	✓			✓						✓								
33	✓	✓		✓	✓	✓	✓		✓	✓	✓	✓			✓	✓			✓
34	✓							✓	✓		✓	✓	✓		✓	✓			✓
38		✓		✓			✓								✓	✓			
43	✓		✓									✓	✓						
44				✓									✓		✓				
52											✓							✓	
Property Sub-Areas																			
14a	✓			✓		✓													

Based on the potential sources of contamination identified in **Sections 3** and **4** and summarised in **Table 12**, the main potential contaminants of concern within the Precinct included:

- Petroleum Hydrocarbons (TPH) – associated with fuels (diesel, unleaded) and lubricants (oil, grease, etc.) stored and used for farm machinery, cars and trucks;
- Benzene, toluene, ethylbenzene and xylenes (BTEX) – associated with fuel use and storage;
- Polycyclic Aromatic Hydrocarbons (PAH) – associated with burning of waste, farm machinery, fuel storage, fill materials and rail ballast;
- Phenols – associated with the use of pesticides, fuels and lubricants;
- Volatile organic compounds (VOC) – associated with the use of various chemicals, solvents and degreasers and paints/coatings;
- Heavy metals (e.g. lead, mercury, nickel, etc.) – associated with machinery, burn piles, soil and rubble stock piles fill material and agricultural chemicals;
- Inorganics – associated with animal wastes, septic tanks and fertilisers;
- Microbial and nutrient contamination – associated with Cattle/ dairy sheds, slurry pits and septic systems for the treatment of farmhouse waste water;
- Organochlorine and organophosphate pesticides (OC/OP pesticides) – associated with agriculture livestock and market gardens;
- Polychlorinated biphenyls (PCBs) – associated with the rail electrical substation; and
- Potential Asbestos Containing Materials (ACMs) – a complete ACM survey was not completed for the buildings in the Precinct. However, the appearance of some structures and materials observed on some sites, were consistent with typical ACM products. These, structures have been highlighted in this assessment. As many properties with houses were not accessed during the site inspections it is considered that the potential for ACM in the building fabrics exists.

6. Assessment of potentially contaminated land

6.1 Background

The Victorian Government, *Ministerial Direction No.1*, 1987 document outlines the requirement that an environmental audit must be conducted on potentially contaminated land which is designated for a sensitive use to determine the suitability of the Property. The mechanism provided in the Victoria Planning Provisions used to ensure that the requirement for the environmental audit is adhered to prior to the commencement of a sensitive use is the EAO. The application of an EAO enables the assessment and approval of planning scheme amendments whilst ensuring that the requirements of the EAO will be met in the future.

The DSE 2005, *Potentially Contaminated Land*, General Practice Note gives advice on the identification of contaminated land, the appropriate level of assessment of contamination for planning and circumstances where an EAO should be applied.

The PFC rating for Properties within the Precinct was assessed in line with Tables 1 and 2 of DSE 2005, *Potentially Contaminated Land*, General Practice Note to assess the appropriate level of assessment for the Properties located within the Precinct in light of the historical uses. Table 2 from DSE 2005, *Potentially Contaminated Land*, General Practice Note, has been reproduced as **Table 13**.

It is understood that all Properties within the Precinct have the potential to be considered for residential development. As such, for the purposes of this assessment all Properties within the Study are considered to have proposed sensitive land use (residential).

Table 13 DSE 2005 - Table 2 - Assessment matrix

Proposed Land Use	Potential for Contamination		
	High	Medium	Low
Sensitive Uses			
<i>Child care centre, pre-school or primary school</i>	A	B	C
<i>Dwellings, residential buildings, etc.</i>	A	B	C
Other Uses			
<i>Open Space</i>	B	C	C
<i>Agriculture</i>	B	C	C
<i>Retail or office</i>	B	C	C
<i>Industry or warehouse</i>	B	C	C
Notes A: Require an environmental audit as required by Ministerial Direction No. 1 or the Environmental Audit Overlay when a planning scheme amendment or planning permit application would allow a sensitive use to establish on potentially contaminated land. An environmental audit is also strongly recommended by the SEPP where a planning permit application would allow a sensitive use to be established on land with 'high potential' for contamination. B: Require a site assessment from a suitably qualified environmental professional if insufficient information is available to determine if an audit is appropriate. If advised that an audit is not required, default to C. C: General duty under Section 12(2)(b) and Section 60(1) of the Planning and Environment Act 1987.			

6.2 DSE 2005 assessment

This section outlines the results of the assessment of each of the Properties within the Precinct in accordance with Tables 1 and 2 of DSE 2005, *Potentially Contaminated Land*, General Practice Note.

The assessment is summarised in **Table 14** and incorporates the identified potential sources of contamination, the relevant historical or current activities and provides the appropriate assessment level for each Property. Full details of the assessment for all properties are included in **Appendix I**.

The assessment of potentially contaminated land completed in accordance with DSE 2005, *Potentially Contaminated Land*, General Practice Note, identified the following:

- **High PFC Rating – 3 Properties -12, 13 and 52;**
- **Medium PFC Rating – 20 Properties – 1, 3, 4, 6, 8, 9, 15, 20 - 22, 30, 32 - 34, 38 and 40 - 44) and one Property sub-area (14a); and**
- **Low PFC Rating – 29 Properties – 2, 5, 7, 10, 11, 14, 16 -19, 23-29, 31, 35-37, 39 and 45-51.**

As the Precinct is proposed for predominantly sensitive uses (residential development) these PFC ratings translate directly to the following Assessment Levels (in accordance with the DSE 2005, *Potentially Contaminated Land*, General Practice Note):

- **High PFC Rating = Assessment Level 'A' required;**
- **Medium PFC Rating = Assessment Level 'B' required; and**
- **Low PFC Rating = Assessment Level 'C' required.**

The 29 Low PFC / Assessment Level 'C' Properties are not included in **Table 14**. However, a full list of the Assessment Levels assigned to each property is provided in **Appendix I**.

Table 14 DSE 2005 Assessment for properties in the Precinct

Property Number	Site Activities	Table 1 –Potential for Contamination	Table 2 - Assessment Level
Properties			
1	General agricultural use and dam. Market gardener owned Property from 1956-1964	Medium	B
3	General agricultural use and market gardens. No access during Inspection	Medium	B
4	General agricultural use. Agricultural and domestic waste/ machinery scrap, wrecked cars/trucks, chemical storage	Medium	B
6	General agricultural use, farm house, drainage channel. . In northern section only-Agricultural and domestic waste/ machinery scrap, wrecked cars/trucks, chemical storage	Medium	B
8	General agricultural use, farmhouse and farm dam. Potential for industrial activities/chemical storage - Refrigeration equipment and supplies business listed at this address	Medium	B
9	General agricultural use and farm dam- No access – Limited view from Dore Rd	Medium	B
12	Gas governor, ASTs	High	A
13	Gas governor, ASTs	High	A
15	General agricultural use, farm house and dam, farm shed, potential historical market gardens and fill material	Medium	B
20	Greenhouse/market garden	Medium	B
21	Greenhouse/market garden	Medium	B
22	Greenhouse/market garden	Medium	B
30	General agricultural- No Access – viewed from Property 34	Medium	B
32	General agricultural, farm house, farm sheds, fuel storage (ASTs), chemical storage, automotive engine works, cattle sheds (dairy),	Medium	B

Property Number	Site Activities	Table 1 –Potential for Contamination	Table 2 - Assessment Level
	burn pile, general waste		
33	General agricultural, farm house, farm sheds, automotive engine works, chemical storage, general waste	Medium	B
34	General agricultural, farm dam, cattle, run, cattle slurry pit, soil stockpiles, general waste,	Medium	B
38	Residential, Former dairy, Wrecked car/truck bodies, automotive maintenance/spraying	Medium	B
40	General agricultural, drainage channel- No access – Assumed medium	Medium	B
41	General agricultural, drainage channel- No access – Assumed medium	Medium	B
42	General agricultural, drainage channel- No access – Assumed medium	Medium	B
43	General agricultural, farm dam, fill material (soil stockpiles), drainage channels	Medium	B
44	Truck stop, truck wash down area with integral drainage and triple interceptor trap, automotive maintenance, chemical storage (domestic), surface water run-off receiving dam	Medium	B
52	Rail electrical substation building and transformer yard, ballast stockpile	High	A
Property Sub-Area			
14a	General agricultural use, silo, farm machinery animal pen/cattle run (adjacent to Property 11)	Medium	B

Where no access was gained to a Property (or it was not possible to see onto it) and/or the presence of potentially contaminating activities could not be excluded, a Medium PFC rating has been applied as a conservative approach.

GHD notes that a degree of qualitative assessment has been applied to the assessment resulting in some Properties being either demoted or elevated to assessment levels other than those prescribed in the DSE 2005, *Potentially Contaminated Land* General Practice Note.

These adjustments have been made at the discretion of GHD based on the PFC rating from listed sources to be realised. For example, 'automotive engine repairs' is listed as having a High PFC rating in Table 1 of the DSE 2005, *Potentially Contaminated Land*, General Practice Note which would prompt Assessment level 'A' for the proposed sensitive (residential) land use, however, Properties 32 and 33 have been assigned a Medium PFC rating and subsequent Assessment Level of 'B' as the automotive repair activities at these Properties are considered to be for domestic and maintenance purposes and do not necessarily warrant an environmental audit (GHD considers the intent of the DSE 2005, *Potentially Contaminated Land*, General Practice Note in this case to be more focussed on commercial car dealerships and repairers than private individuals and hobbyists).

None of the PFC land uses listed in the High or Medium potential categories in the DSE 2005, *Potentially Contaminated Land* General Practice Note were identified during the completion of the desk study or are known to be, or have been, carried out on the 29 Assessment Level 'C' Properties. However as full site inspections were not carried out on any of those Properties assessed to have a Low PFC rating, therefore the potential for minor storage of household chemicals and automotive maintenance remains on these Properties.

It should be noted that GHD has adopted a conservative approach when classifying the various Properties within the Precinct. This approach applies assessment of a Medium PFC rating to Properties, where access to or visual inspection of the site was not possible. This approach was adopted as all agricultural property structures are considered as potential fuel or minor chemical storage areas unless evidence was obtained to prove otherwise.

7. Summary of results

7.1 DSE 2005 assessment summary and discussion

The assessment of potentially contaminated land completed in accordance with DSE 2005, *Potentially Contaminated Land*, General Practice Note identified the following for Properties within the Precinct:

- **Assessment Level 'A' required – 3 Properties -12, 13 and 52;**
- **Assessment Level 'B' required – 20 Properties – 1, 3, 4, 6, 8, 9, 15, 20 - 22, 30, 32 - 34, 38 and 40 - 44) and one Property sub-area (14a); and**
- **Assessment Level 'C' required – 29 Properties – 2, 5, 7, 10, 11, 14, 16 -19, 23-29, 31, 35-37, 39 and 45-51.**

Figure 6 shows the appropriate DSE 2005, *Potentially Contaminated Land*, General Practice Note Assessment Level for each of the 52 Properties, and the one Property sub-area (14a) within the Precinct.

7.1.1 Assessment Level 'A' - properties with high contamination potential

The DSE 2005, *Potentially Contaminated Land*, General Practice Note, indicates that those Properties assessed as Level 'A' require an environmental audit (or equivalent mechanism in the Urban Growth Zone (UGZ)) as required by Ministerial Direction No. 1 or the Environmental Audit Overlay when a planning scheme amendment or planning permit application would allow a sensitive use to establish on potentially contaminated land. This is the case across the majority of the Precinct, where land zoned for Farming Zone (FZ) use would likely need to be rezoned in the planning scheme to a residential or associated land use.

An environmental audit is also strongly recommended by the SEPP where a planning permit application would allow a sensitive use to be established on land with 'high potential' for contamination.

The three Properties within the Precinct classified as requiring Assessment Level 'A' were:

- Property 12 (gas governor)
- Property 13 (gas governor)
- Property 52 (rail electrical substation)

7.1.2 Assessment Level 'B' -properties with medium contamination potential

The DSE 2005, *Potentially Contaminated Land*, General Practice Note, indicates that those Properties assessed as Level 'B' require a site assessment from a suitably qualified environmental professional, as without further investigation insufficient information is available regarding potential contamination to determine if the application of an EAO is appropriate for the Property.

As with the Assessment Level 'A' Properties, land zoned for Farming Zone (FZ) use would likely need to be rezoned in the planning scheme to a residential or associated land use.

This would trigger the requirement for further site assessment to assess the suitability of the land for the proposed use.

7.1.3 Assessment Level 'C'- properties with low contamination potential

The DSE 2005, *Potentially Contaminated Land*, General Practice Note, indicates that all Properties assessed as Level 'C' Properties do not require the application of an EAO for the Property. However, any proposed development would be subject to the general duty specified under Section 12(2)(b) and Section 60(1)(a)(iii) of the Planning and Environment Act 1987.

The 29 properties classified as assessment Level 'C' are: 2, 5, 7, 10, 11, 14 (not including sub-area 14a), 16-19, 23-29, 31, 35-37, 39, 45-51.

8. Recommendations

Following the conclusions made in this Study and based on the information collected in the site history and desktop reviews, and the site inspections, GHD recommends that the following additional studies be completed for the Properties within the Precinct, prior to their redevelopment as part of the Pakenham East Precinct.

- **Assessment Level 'A' Properties** - An Environmental Audit Overlay (or equivalent mechanism in the Urban Growth Zone) should be applied to these Properties to ensure an environmental audit is carried out at the site prior to redevelopment to sensitive residential or associated land use. The need for an environmental audit may be either confirmed or the PFC rating reduced if a detailed site walkover and/or an intrusive site assessment is conducted;
- **Assessment Level 'B' Properties** – an environmental site assessment (including access to locked structures, intrusive works, soil and groundwater sampling and analysis) should be completed on these Properties, specifically in those areas identified in the Study as containing specific PAoC, to assess if they require the application of an EAO. It is noted that a targeted assessment of these properties including detailed site inspections to access unassessed areas and limited intrusive site assessment to evaluate the identified PAoC could reduce the PFC ratings and consequently the requirement for significant intrusive investigations. The level of investigation required would vary significantly between Properties across the Precinct, depending on their size and identified potential contamination issues. Therefore, it is not possible to make Property specific recommendations in the scope of this Study;
- **Assessment Level 'C' Properties** – no further works are recommended for these Properties, unless evidence of potentially contaminating activities or sources of contamination are identified at a later date. However, the site owner still retains a general duty under Section 12(2)(b) and Section 60(1)(a)(iii) of the Planning and Environment Act 1987; and
- **General Precinct Area**– Sampling of sediments within Deep Creek, and the two unnamed creek/drainage channels running north-south through the central eastern and western parts of the Precinct (running through properties 14, 31, 30, 34 and 41 and 3, 7, 36, 37, 39 and 40, respectively), from sampling locations located up, down and mid gradient of the Precinct to determine if accumulation and/or concentration of potential contaminants associated with the general agricultural use of the area has occurred in these channels.

Figures

Figure 1 Site location plan

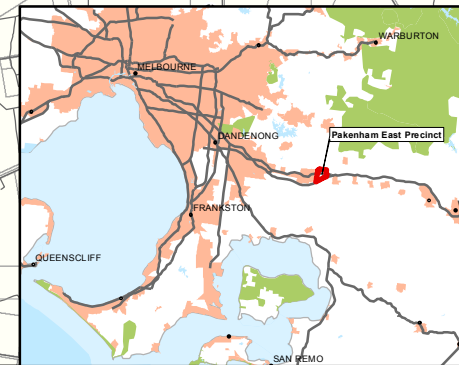
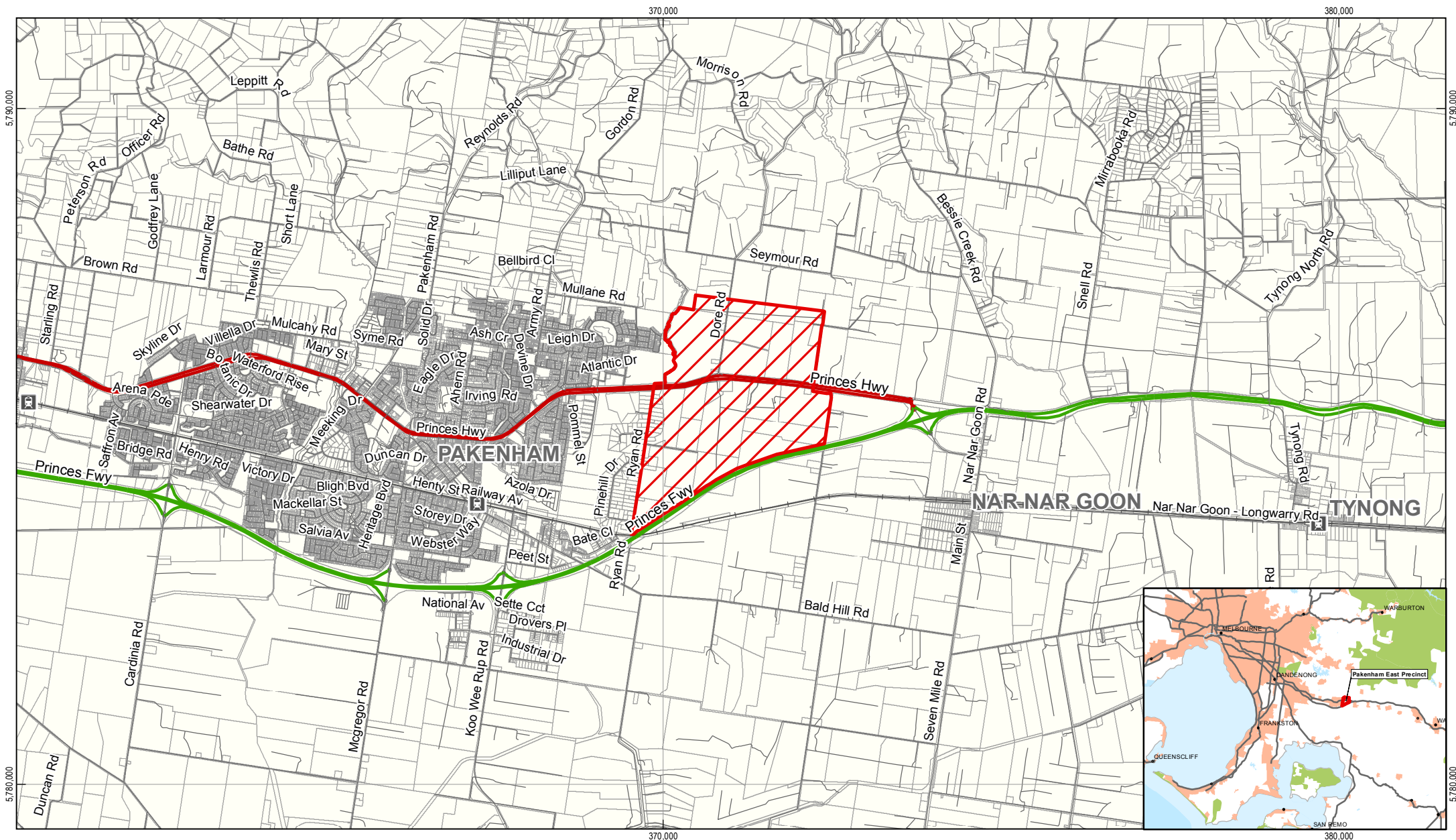
Figure 2 Site layout plan

Figure 3 Planning zones

Figure 4 Planning scheme overlays

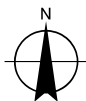
Figure 5 Groundwater database search results

Figure 6 Property assessment level plan



1: 75 000 at A4
0 270 540 1,080 1,620 2,160
Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55



LEGEND

- PEP_Boundary
- Rail
- Sealed Road
- Rail station
- Freeway
- Parcel
- Highway



Cardinia Shire Council
Pakenham East Precinct
Phase 1 ESA

Job Number 31/29738
Revision A
Date 30 Jan 2013

Site Location Plan

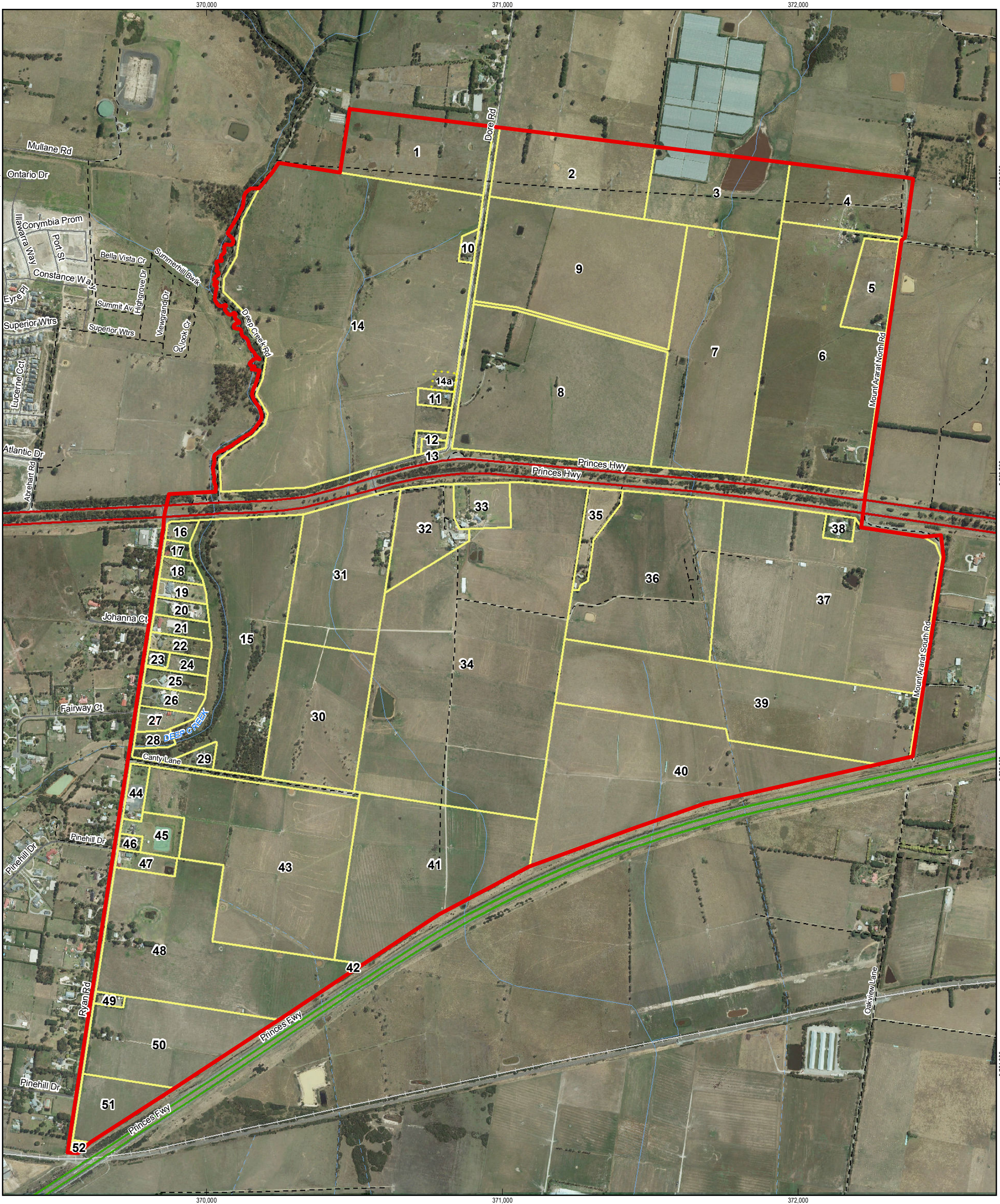
Figure 1

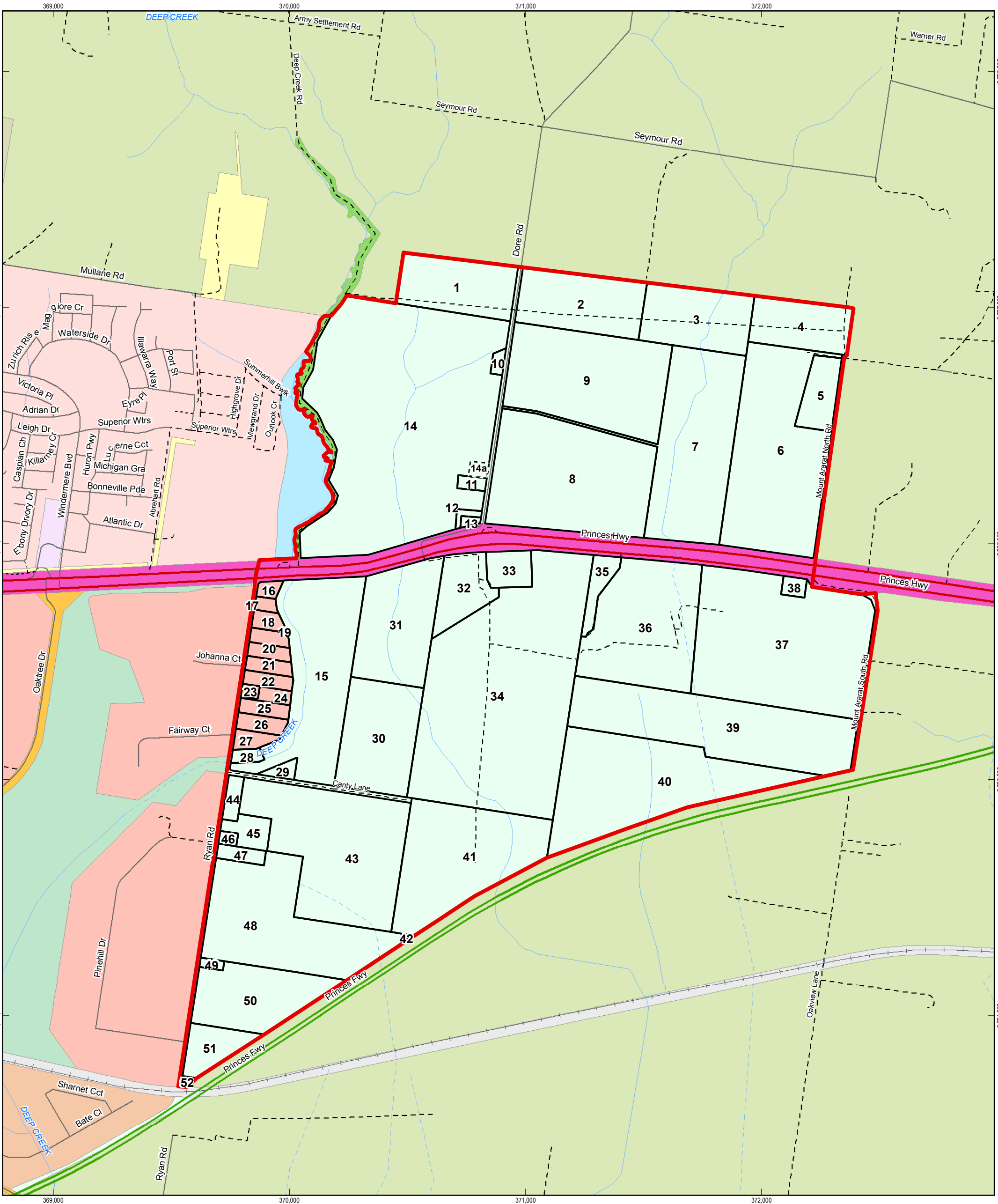
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Data source: Cardinia Shire Council, 2012, DSE: VicMap, 2012, . Created by:ahorvath





Study Area Boundary

Property Boundary

Parcel Sub-Area

Freeway

Highway

Sealed road (arterial and local)

Unsealed road

Track and bike path

Rail

River

Stream

Channel / drain

Connector

Planning zone

Business 1

Farming

Green Wedge A

Green Wedge

Industrial 1

Low Density Residential

Public Conservation & Resource

Public Park and Recreation

Public Use

Public use - Transport

Residential 1

Road – Category 1

Road – Category 2

Urban Flood

0

70

140

280

420

560

Metres

Map Projection: Transverse Mercator

Horizontal Datum: GDA 1994

Grid: GDA 1994 MGA Zone 55

N

GHD

Cardinia Shire Council

Pakenham East Precinct

Phase 1 ESA

Job Number

31/29738

Revision

A

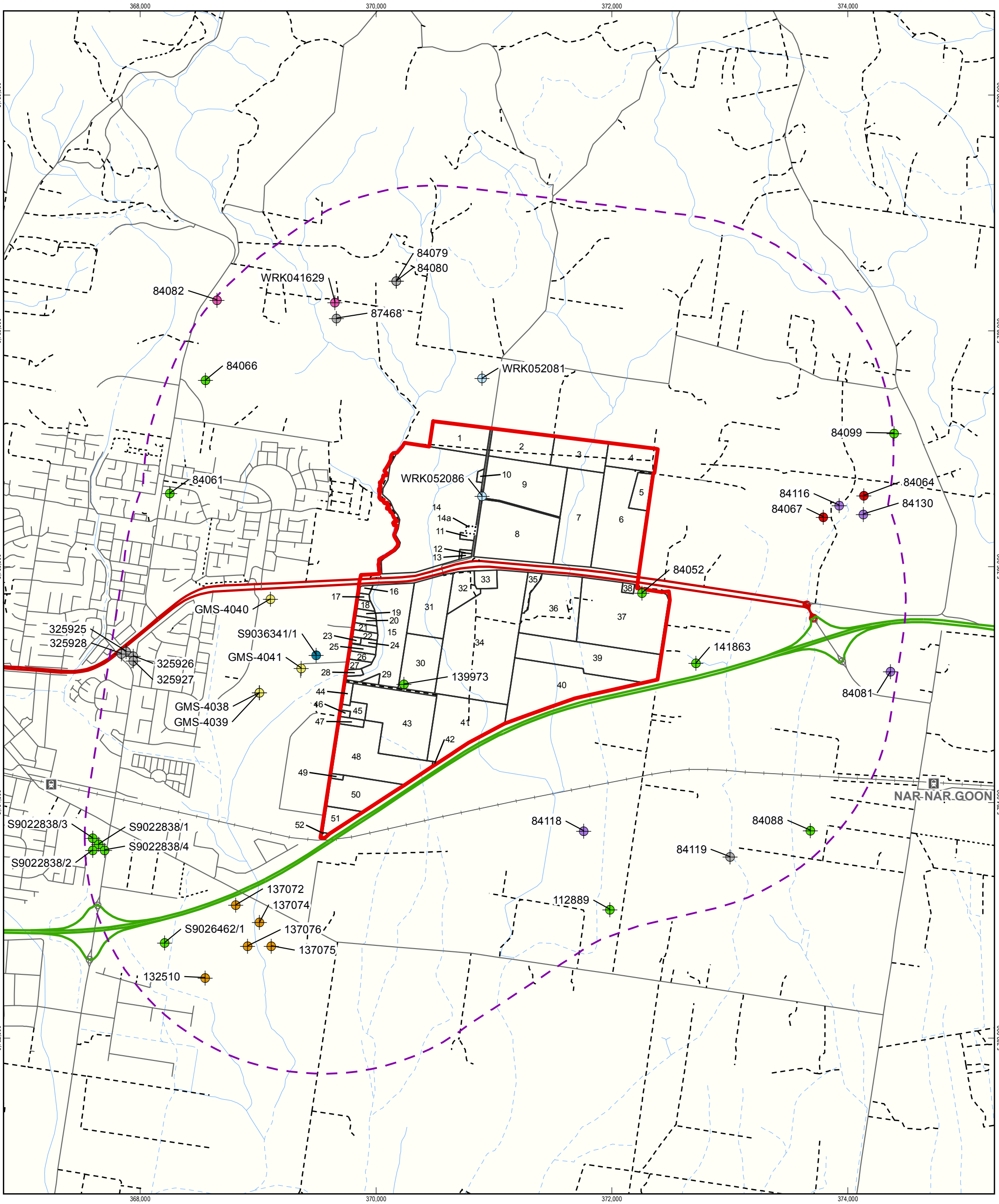
Date

19 Apr 2013

Study Area Planning Zones

Figure 3

G:\3129738\GIS\Maps\Deliverables\3129738_003_Planning_Zones_A3P(B).mxd
Hazelwood Drive (cnr Lignite Court) Morwell VIC 3840 Australia T 61 3 5136 5800 F 61 3 5136 5888 E mw@mail@ghd.com W www.ghd.com
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Data source: Cardinia Shire Council, 2012, DSE: VicMap, 2012. Created by: emelero-blanca



LEGEND

PEP Boundary

2 km Radius

Property Boundary

Parcel Sub-Area

Rail

Freeway

Highway

Sealed road (arterial and local)

Unsealed road

Track and bike path

GROUNDWATER BORE USE

DOMESTIC

DOMESTIC AND STOCK

DOM/IRR/DAIRY/STOCK

GROUNDWATER INVESTIGATION

IRRIGATION

OBSERVATION

OBSERVATION - DRYLAND SALINITY

STOCK

NOT KNOWN

1:30,000 at A3

0 145 290 580 870 1,160

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

N

GHD

Cardinia Shire Council
Pakenham East Precinct
Phase 1 ESA

Victorian Groundwater Database
Search Results - 2 Km Radius

Job Number
Revision
Date

31/29738
A
19 Apr 2013

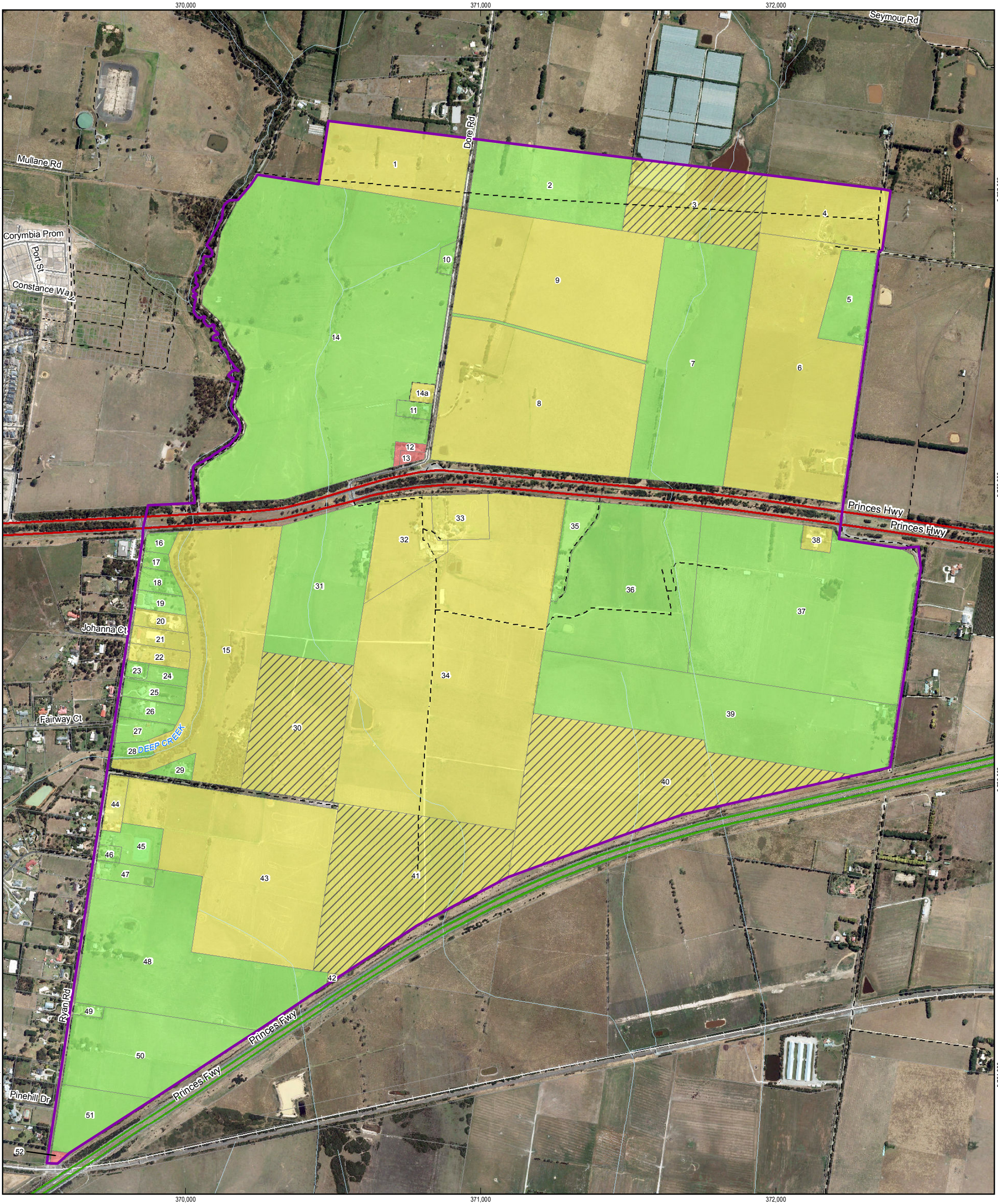
Figure 5

G:\3129738\GIS\Maps\Deliverables\3129738_005_GWDB_A3P.mxd

Hazelwood Drive (cnr Lignite Court) Morwell VIC 3840 Australia T 61 3 5136 5800 F 61 3 5136 5888 E mwlmall@ghd.com W www.ghd.com

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Data source: Cardinia Shire Council, 2012, DSE: VicMap, 2012, Victorian Groundwater Database, 2012. Created by:emilero-bianca



LEGEND

PEP Boundary

Property Boundary

Parcel sub-area

Water course

Freeway

Highway

Sealed road (arterial and local)

Unsealed road

Track and bike path

Property Assessment Level

Assessment Level A

Assessment Level B

Assessment Level B-No access

Assessment Level C

G:\3129738\GIS\Maps\Deliverables\PakenhamEast Precinct_Phase 1 ESA_GISdatabase.mxd
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Data source: Cardinia Shire Council, Base Map Aerial Imagery, 2012, DSE, VicMap, 2012. Created by:emelero-blanca

Appendices

Appendix A - Property planning reports

(Planning property reports are provided on a separate CD)

Appendix B - Historical aerial photography review

(Historical aerial photos are provided on a separate CD in the GIS database)



B1 Historical Aerial Imagery Review

Nine (9) groups of historical aerial photographs dating from 1947 to 2012 were reviewed for the Study Area. The photographs from 1947 to 1991 were obtained from the Department of Sustainability and Environment, Aerial Photography Register, Victorian Records Office. The Most recent imagery (DSE 2012) was supplied to GHD by The Cardinia Shire Council. Additional available imagery from Google Earth Pro was also reviewed for periods dating from 2001-2010 The georeferenced photo sets are presented as layers in the *Pakenham East Precinct, Phase I ESA, GIS database*. The historical aerial photograph review is presented below in Table B1 below

Table B1 Review of Historical Aerial Photographs

Document Identification	Date	Observations
Run: 4 and 5 Film: 766 Photos: 53, 55, 57, 59, 139, 141, 143, 144. Scale: 1:15840 Black & White	18 October 1947	<p>Study Area Observations</p> <p>The study area appears to have been largely vacant grass covered paddocks. Medium to high density vegetation was present in patches, particularly to the south of the Princes Highway which runs east-west through the centre of the Study Area.</p> <p>The Study area is Bound to the west by Deep Creek Road north of the Princes Highway which runs along the west bank of Deep Creek. South of the Princes Highway the Study Area boundary runs along Ryan Road to the Bairnsdale rail line and follows the Princes Freeway (not present at time of imagery) northeast. The eastern extent of the study area is bound by Mount Ararat North Road (South of the Princes Highway) and Mount Ararat Road North (north of the Highway).</p> <p>Dore Road runs north-south through the centre of the northern portion of the Study Area.</p> <p>Buildings or structures were visible on properties 8, 11, 14, 32, 38, 48 and 49. A number of dams were also visible generally in the vicinity of the buildings.</p> <p>Areas of land in properties 39, 34, 40, 41 and 48 appear to be used for farming as linear mow/plough marks are visible. A large area of property 41 also appeared to be in the process of being cleared.</p> <p>Two unnamed water courses were present running north south through the Study Area</p> <p>A number of dirt tracks were visible across the site leading to and from dams and the small water courses. . Electrical transmission towers (pylons) are visible running through properties 1, 2, 3, 4 and 14 in an east-west orientation in the north of the Study Area</p> <p>Surrounding Area Observations</p> <p>The land surrounding the investigation area is predominantly undeveloped, with only a few buildings constructed on lots adjacent to the study area. The majority of the surrounding land was paddocks however some areas, particularly adjacent to Deep Creek, contained medium to high density vegetation. The township of Pakenham is located approximately 2 km to the west of the southwest corner of the study area.</p>



Document Identification	Date	Observations
Run: 12 and 13 Film: 1203 Photos: 77, 78, 79, 91, 92, 93. Scale: 1:3600 Black & White	April 1956	Study Area Observations <p>Due to the limited availability of the 1956 aerial imagery, a large portion of the study area is unable to be reviewed. The imagery available is for the area immediately adjacent to the Princes Highway.</p> <p>An area of dark ground is visible on either side of the eastern unnamed creek in property 36, which is potentially altered ground surface due to inundation by creek overflow.</p> <p>A large dam located in the northwest corner of property 15 (adjacent to property 16 and 17 and Deep Creek) which was present in the 1947 image appears to have been filled. Some paddocks to the east of the former dam have been cleared of the high density ground cover vegetation which was present in the 1947 image.</p> <p>No other changes since the 1947 image were observed.</p> <p>Livestock and at least one dam in the centre of the site adjacent to Dore Road on Property 8. A few buildings can be identified on a number of properties which are likely to be residential.</p> Surrounding Area Observations <p>No imagery was available for the surrounding area.</p>



Document Identification	Date	Observations
Run: 2 Film: 2487 Photos: 8, 10, 12, 14. Scale: 1:35000 Black & White	February 1971	<p>Study Area Observations</p> <p>No significant changes were observed in the northern section of the Study Area (north of the Princes Highway) with the exception of a small pale square section of land west of a homestead located in the northeast of the Study Area (property 4), which may be a greenhouse or cropped area.</p> <p>To the south of the Prince Highway, a driveway is visible extending east from Ryan Road between properties 20 and 21. A side road extends north from this leading up to the area of the former dam which was present in the 1947 image. A potential greenhouse (large pale rectangular area of land) is visible adjacent to the east of north bound track covering sections of Properties 20, 21, 22 and 15.</p> <p>Another side track leads south from the end of the driveway in property 15.</p> <p>The northeast quarter of property 43 appeared to be in use for growing crops with a potential greenhouse (pale square area with diagonal cross) in the southern portion.</p> <p>An area of disturbed ground surface is apparent in the south of property 37 where there was previously high density tree cover.</p> <p>An electrical substation (Pakenham East substation) is present on property 52 in the southwest corner of the Study Area)</p> <p>Surrounding Area Observations</p> <p>Development of low density residential properties west of the study area, along and around Army Road. An area to the north west of the investigation area appears to be undergoing earthworks, the purpose of this is unable to be determined based on review of the aerial imagery. To the south and adjacent to the excavation, five rows of light coloured linear features (trending northeast-southwest) are visible. These may have been soil stockpiles from excavated material adjacent to the area of excavation.</p> <p>Seymore Road has been constructed to the north of the Study Area</p>
Run: 3 Film: 3448 Photos: 73, 75, 126, 128 Scale: 1:25000 Black & White	November 1979	<p>Study Area Observations</p> <p>No significant changes were noted in the remainder of the northern section of the study area with the exception of a cleared rectangular area of land in the southeast of property 6.</p> <p>South of the Princes highway a dirt path or circuit is visible on Property 34, potentially used for pony/ horse or dirt bike riding.</p> <p>The suspected greenhouses visible on property 15 and 43 in the 1971 images are not present in the 1979 imagery.</p> <p>Additional buildings are visible on properties 44, 45, 46 and 47 and a large dam is present to the east of the buildings on property 45 New dams are also visible on properties 36 and 37 in the east of the Study Area.</p> <p>Almost all of the remaining trees located in the southeast of property 37 in the 1971 image had been cleared.</p> <p>Surrounding Area Observations</p> <p>Earth works are visible west of Deep Creek to the northwest of the Study Area where at least 3 large dams can be seen.</p>



Document Identification	Date	Observations
		<p>The earthworks identified in the 1971 image have been extended further east and a large dam added to the north of the excavations.</p> <p>Dams are also visible adjacent to Deep Creek west of property 44. And east of property 50.</p> <p>North of the Study Area, a group of rectangular shaped structures appear for the first time north of Seymour Rd. They are highly reflective features that may have been associated with agricultural activities in the area such as market gardens or greenhouses.</p>
<p>Run: 28, 29 and 30</p> <p>Film: 4410, 4422.</p> <p>Photos: 4410 - (7, 9, 11, 73, 75), 4422 - (28, 30, 32, 34)</p> <p>Scale: 1:15000</p> <p>Colour</p>	<p>July and September 1991</p>	<p>Study Area Observations</p> <p>The Princes Highway that runs through the centre of the site has been duplicated since the 1979 imagery.</p> <p>Additional structures are present in the northeast of property 4. A number of features exist around the residence on Property 4 and the north section of property 6, due to image quality these cannot be made out however review of more recent imagery (2001-2012) identify the presence of farming equipment and car/truck wrecks. These features may have been present earlier however due to markings on the photographs detailed review of this area could not be carried out.</p> <p>A Dark ground surface and a shed or structure are visible on properties 12 and 13 (review of more recent imagery identifies this as a gas governor).</p> <p>South of the Princes Highway, much of the land appears to have been in use for agriculture. Evidence of crop growing (linear mow/plough marks) is visible on properties: 3, 4, 36, 39, 40, 41, 43, and 15 to 29.</p> <p>A cluster of additional buildings are visible north of the track/circuit on properties 32, 33 and 34. A dam is also visible in the southwest of property 34.</p> <p>A large area of earthworks/disturbed earth is visible in the north of Lot 43 (adjacent to Lot 44 eastern boundary). The earthworks extend from a track south of Canty Lane to the Dam located at the rear (east) of property 45. Due to image quality it is not clear whether the earthworks involve excavation or stockpiling.</p> <p>A graded surface is visible on property 44.</p> <p>Surrounding Area Observations</p> <p>The properties on the west side of Ryan Road (opposite Properties 16- 28 and 44 - 52), have been developed into low density residential blocks A number of low- medium density residential buildings have been constructed.. A golf course is visible to the west of these properties which was not present in the 1979 imagery. Further to the west, the township of Pakenham has expanded with more low- medium density residential properties visible..</p> <p>The suspected market gardens / greenhouses noted in the 1979 photographs to the north of Seymour Road are not present in the 1991 imagery.</p> <p>The imagery recovered from 1991 does not include the areas of earthworks to the northwest of the Study Area observed in the 1979 images, therefore no observations regarding the status of that area could be made.</p>



Document Identification	Date	Observations
Google Earth Pro	15 April 2001	<p>Study Area Observations</p> <p>A house has been built on the southeast corner of Property #6. A large area of land extending into Property #3 from the north appears to have been roofed possibly for use of the land as a market garden with a greenhouse or shading. The area within property #3 appears to also be fenced off. A dam has been constructed on the property, and appears to be drawing water from the eastern unnamed creek that runs north-south through properties 3 and 7, and which continue south through properties 36, 37, 39 and 40.</p> <p>The buildings on properties 32 and 33 are in a different orientation to that observed in the 1991 aerial image. Due to image quality it is not possible to discern the features of the properties to any greater detail, however the presence of materials scattered across the area surrounding the sheds/buildings are evident. A cattle slurry pit is also visible on property 34 south of property 33.</p> <p>Properties 17 – 23, 25, and 26 are no longer vacant with buildings, possibly housing observed on these properties. The large graded surface previously observed in the northwest corner of property 43 is no longer present. It has been replaced by a smaller graded road, surrounded by vegetated land.</p> <p>Surrounding Area Observations</p> <p>To the north of property 3, as mentioned earlier, a large market garden has been developed which has been fenced off from its surrounds. A pond has also been constructed to the east of properties 37 and 39. To the southeast of the site, three sheds and a pond adjacent to them have been constructed.</p>
Google Earth Pro	11 April 2004	<p>Study Area Observations</p> <p>A long linear section of disturbed ground surface or trench is visible (approximately 10-20 m wide), extending south from Property 12 (site of a known gas governor) through properties 30 and 31, along the boundary between properties 30 & 34, 41 and 43 and then southeast across property 42 out of the Study Area. No other changes are identified from the previous aerial image</p> <p>Surrounding Area Observations</p> <p>Residential development has continued approximately 1.5 km to the west of property 14, and to the west of properties 44 - 52</p>
Google Earth Pro	14 March 2010	<p>Study Area Observations</p> <p>Gas pipeline trench running south from Property 12 no longer visible.</p> <p>No other significant changes identified since the 2004 imagery.</p> <p>Surrounding Area Observations</p> <p>The Princes Highway Pakenham Bypass appears for the first time, bounding properties 39, 40, 41, 42, 48, 50, 51, and 52. It passes over the Bairnsdale Rail Line to the south and bisects Mount Ararat Road to the east of the site. Large areas of land adjacent to the freeway appear patchy and bare in the road reserve. There appears to be significant urban development to the south west of property 52, north of the Princes Freeway. A number of large warehouses appear to have been constructed in the area, including 2 to the east of the Study Area associated with an olive grove (Olive Valley) and No other significant changes are observed.</p>



Document Identification	Date	Observations
DSE Image – Supplied to GHD by Cardinia Shire Council	2012	<p>Site Observations</p> <p>No Significant changed observed since 2010 imagery</p> <p>Surrounding Area Observations</p> <p>The housing development to the west of Deep Creek is expanding northward with areas of cleared land visible.</p>

B1.1 Historical Aerial Review Summary

The Precinct has remained in use for predominantly agricultural and stock grazing purposes land since the first available aerial imagery from 1947. Medium to high density vegetation existed in patches, particularly south of the Princes Highway and adjacent to Deep Creek in 1947. Electrical transmission towers (pylons) were visible running east–west across the top of the Precinct (through Properties 1, 2, 3, 4 and 14) from 1947 to present.

The imagery for 1956 was limited to the area surrounding the Princes Highway (associated with development of the Princes Highway around this time). However, observations for this area noted the absence of a large dam in the northwest corner of Property 15 previously identified in the 1947 image, this may indicate infilling of the dam and was likely due to restrictions on drawing water from the adjacent Deep Creek. Clearing of vegetation occurred in the eastern parts of the Precinct between 1947 and 1956.

Residential development of the area west of the Precinct and construction of Seymore Road to the north occurred between 1947 and 1971.

Suspected market gardens or greenhouses were visible between 1971 and present day on Properties 3, 20, 21, 22, 15 and 43 as well as in the surrounding areas north and northwest of the Precinct.

An electrical substation associated with the rail line to the south of the study area appeared on Property 52 from sometime between 1947 and 1971 and remains to present day.

Disturbed ground surface or earthworks were observed in the southern part of Property 37 in the 1971 imagery and a large area in the north of Property 43 in 1991. Due to poor the image quality of the 1991 aerials, it is not clear whether the earthworks involved excavations or stockpiling. However, a track and small mounds were visible in the 2001 imagery and larger soil mounds without the track were evident in the area in more recent imagery from 2004 to 2012 and during the site visit.

General scrap materials, car, truck and farming machinery wrecks and building rubble were visible on Properties 4, 6, 32, 33 and 34 from at least 1991 until present. More recent imagery also identified the presence of above ground storage tanks, which are likely silos and water tanks associated with the dairy farming activities on properties 32, 33 and 34.

The properties on the west side of Ryan Road (opposite Properties 16- 28 and 44 - 52), were developed into low density residential blocks between 1991 and 2001. A number of low- medium density residential buildings have been constructed. Property 44 appeared to have been in use as a truck stop from 1991 to present.



The Princes Highway, which runs through the centre of the Precinct, was duplicated between 1979 and 1991.

A gas governor was installed on Properties 12 and 13 at sometime between 1979 and 1991. In 2004 A large linear trench is visible (approximately 10-20 m wide), believed to be associated with a high pressure gas pipeline, extending south from the gas governor on Property 12 through Properties 30 and 31, along the boundary between Properties 30 and 34, and 41 and 43 and then southeast across Property 42 and passing out of the Precinct to the south.

By 2010 low to medium density residential development had extended east from the township of Pakenham to Abrehart Road, approximately 1.5 km west of the Property 14. The Princes Highway Pakenham Bypass had also been constructed between 2004 and 2010, bounding Properties 39, 40, 41, 42, 48, 50, 51, and 52 to the south. Several large sheds/warehouses are present in the surrounding area in the 2010 imagery, including one at an olive grove (Olive Valley) on the east side of Mt Ararat Rad at the eastern boundary of the Precinct.

Appendix C - Current and historical titles

(Current and historical titles are provided on a separate CD)



Pakenham East Precinct - Phase 1 ESA
HISTORICAL TITLE INFORMATION

Cardinia Shire Council,
Pakenham

Actual Property No.	Volume Folio	Registered Proprietors	Date	Status
1	V.8021 F.062	Steven & Lezley Golding	28.06.2002	Current
1		Peter & Judith Wilson	03.02.1988	History
1		Norman & Jean Thompson	08.01.1987	History
1		Sylvia & Francis Hall (Auto Electrician)	11.06.1974	History
1		Muriel Norris (Home Duties)	20.11.1964	History
1		Muriel & Ronald Norris (Market Gardener)	04.07.1956	History
1		Linda & John Perry (Farmer)	01.06.1953	History
1	V.7394 F.749	Gwendolen & Peter Florance (Gentleman)	07.12.1949	History
1	V.1605 F.875	Margaret McMahon	03.11.1949	History
1		William Doherty (Farmer)	30.06.1884	History
2	V.9697 F.218	Lloyd Lalor & Yvonne Blackwood	16.03.2006	Current
2		Kevin Hinrichsen & Bruce Anderson	11.06.1987	History
2		John Viccars & Heather Sneddon	28.08.1986	History
2	V.8630 F.544	John Viccars & Heather Sneddon	13.02.1986	History
2		John Walker	03.09.1985	History
2		June Walker (Home Duties) & John Walker (Retired Gentleman)	14.05.1980	History
2		Janet Macreadie, Annette Dawson & Karen Fankhauser	24.10.1979	History
2		Janet Macreadie	24.10.1979	History
2		Alan Macreadie (Farmer)	14.12.1971	History
2		Ian Paton (Company Director)	23.12.1965	History
2	V.8611 F.327	Joan & Keith Stott (Director)	03.12.1965	History
2	V.8278 F.263	Frank Cutler (Gentleman)	29.08.1960	History
2	V.7638 F.153	Frank Cutler (Farmer)	15.04.1953	History
2		Welton & Frank Cutler (Farmers)	16.10.1951	History
2	V.7422 F.305	Nora Goodbrand	03.10.1949	History
3	V.8926 F.107	Kerry & John Wiadrowski	31.10.1988	Current
3		Marrianne & John Payne (Engineer)	13.08.1980	History
3		Janet Macreadie, Annette Dawson & Karen Fankhauser	24.10.1979	History
3		Janet Macreadie	24.10.1979	History
3		Alan Macreadie (Farmer)	20.01.1972	History
3	V.8683 F.235	William Steele (Farmer)	10.07.1967	History
3	V.8630 F.543	Alan Macreadie (Farmer)	14.12.1971	History
3		Ian Paton (Company Director)	23.12.1965	History
3		refer to history for no. 2		
4	V.8354 F.250	Elizabeth Ruprecht & Walter Duff	13.09.2011	Current
4		Hannah & Walter Duff (Farmer)	05.03.1974	History
4		Joan Norris & Keith Scott (Director)	03.12.1965	History
4		Frank Cutler (Gentleman)	19.06.1962	History
4		refer to history for no. 2		
5	V.10548 F.034	Samantha Sandbach & Darren Bartley	29.11.2010	Current
5		John Leek & Andrea Beveridge	03.05.2007	History
5		Roger Lane	10.05.2001	History
5	V.10036 F.473	Francis & Walter Duff & Elizabeth Ruprecht	20.09.1991	History
5	V.10036 F.472	Elizabeth Ruprecht	10.01.1992	History
5		Francis & Walter Duff & Elizabeth Ruprecht	20.09.1991	History
5	V.8204 F.778	Walter & Francis Duff (Farmers) & Elizabeth Ruprecht	12.04.1984	History
5		Walter Duff (Farmer)	07.03.1958	History
5	V.6849 F.714	Francis Duff (Farmer)	04.05.1945	History
6	V.10548 F.033	Elizabeth Ruprecht & Walter Duff	11.10.2000	Current
6		same as history for no. 5		
7	V.10738 F.152	Robert & Peter Wuchatsch	15.07.2003	Current
7	V.10737 F.444	Robert & Peter Wuchatsch	03.07.2003	History
7	Bk.907 No.269	Robert & Peter Wuchatsch	10.04.1997	History
7	Bk.757 No.204	B.A.C.S.T.P. Investments Pty Ltd	18.07.1975	History
7	Bk.714 No.836	Mary Dore	07.08.1969	History
7	Bk.655 No.711	Richard Savage & Mary Dore	13.11.1959	History
8	V.10738 F.150	Robert & Peter Wuchatsch	15.07.2003	Current
8		same as history for no. 7		
9	V.10738 F.151	Robert & Peter Wuchatsch	15.07.2003	Current
9		Robert & Peter Wuchatsch	15.07.2003	History
9		same as history for no. 7		
10	V.8239 F.989	Paul & Penelope Carney	03.10.2000	Current
10		Michael Carney	18.08.1959	History
10	V.1040 F.895	James & Michael Carney (Farmers)	09.09.1965	History
10		Thomas Carney (Farmer)	08.09.1914	History
10		John Carney (Farmer)	08.09.1914	History
10		Hanora Carney	16.12.1902	History
10		David Connor	04.01.1878	History



Pakenham East Precinct - Phase 1 ESA
HISTORICAL TITLE INFORMATION

Cardinia Shire Council,
Pakenham

Actual Property No.	Volume Folio	Registered Proprietors	Date	Status
11	V.11147 F.646	Paul & Penelope Carney	15.07.2009	Current
11		same as history for no. 14		
12	V.9491 F.111	APA Gasnet Australia (Operations) Pty Ltd	11.09.2008	Current
12		GPU Gasnet Pty Ltd	19.07.1999	History
12		Transmission Pipelines Australia (Assets) Pty Ltd	03.02.1998	History
12		Gas Transmission Corporation	28.01.1997	History
12		Gas And Fuel Corporation Of Victoria	26.08.1982	History
12		same as history for no. 14		
13	V.8864 F.475	APA Gasnet Australia (Operations) Pty Ltd	11.09.2008	Current
13		GPU Gasnet Pty Ltd	19.07.1999	History
13		Transmission Pipelines Australia (Assets) Pty Ltd	03.02.1998	History
13		Gas Transmission Corporation	28.01.1997	History
13		Gas And Fuel Corporation Of Victoria	22.03.1984	History
13		Victorian Pipelines Commission	16.12.1970	History
13		same as history for no. 14		
14	V.11147 F.647	Paul & Penelope Carney	15.07.2009	Current
14	V.8955 F.654	Paul & Penelope Carney	03.10.2000	History
14		Michael Carney (Farmer)	20.11.1972	History
14	V.8758 F.250	James & Michael Carney (Farmers)	22.07.1968	History
14		same as history for no. 10		
15	V.11334 F.014	Auscare Commercial Pty Ltd	16.02.2012	Current
15	V.10598 F.904	Patrick Canty	15.08.2001	History
15	V.10431 F.104	Patrick Canty	30.03.2000	History
15	V.9521 F.991	Patrick Canty (Purchasing Manager)	13.07.1983	History
15	V.8876 F.637	Patricia & James Canty (Farmer)	16.05.1962	History
15		Crown Land		
16 & 17	V.10322 F.149	Colin McKinlay & Julie Patchell	01.03.1999	Current
16 & 17		Mary & Patrick Canty & Donald Duffy	20.03.1997	History
16 & 17	V.10160 F.321	Mary & Patrick Canty & Donald Duffy	17.03.1994	History
16 & 17	V.10160 F.320	Mary & Patrick Canty & Donald Duffy	17.03.1994	History
16 & 17	V.7297 F.299	Mary & Patrick Canty & Donald Duffy	25.03.1991	History
16 & 17		Patricia Canty	19.11.1984	History
16 & 17		James Canty (Farmer)	05.01.1955	History
16 & 17		Irean & Angus Johnson (Farmer)	24.04.1951	History
16 & 17		Maude Ashton	22.03.1950	History
16 & 17		Philip & Richard Fogarty	27.07.1943	History
18	V.10456 F.299	Brendan & Jennifer Cornwall	22.10.1999	Current
18	V.10431 F.103	Mannaburra Investments Pty Ltd	31.03.1999	History
18	V.10322 F.150	Mary & Patrick Canty & Donald Duffy	20.03.1997	History
18		same as history for no. 16&17		
19	V.10456 F.300	Kerrie Wallace	22.04.2009	Current
19		Stephen & Kerrie Wallace	21.10.1999	History
19		same as history for no. 18		
20	V.10456 F.301	Stanko & Kerry Stojiljkovic	23.06.2011	Current
20		Ronald & Lynette Smith	20.08.1999	History
20		same as history for no. 18		
21	V.10456 F.302	Karen Lake	13.11.2008	Current
21		Gayle Doring	19.08.1999	History
21		same as history for no. 18		
22	V.10456 F.303	Paul & Michelle Stevenage	10.09.2003	Current
22		Gordon & Lorraine Edwards	29.07.1999	History
22		same as history for no. 18		
23 & 24	V.10456 F.304	Robert & Beth Albutt	10.08.1999	Current
23 & 24		same as history for no. 18		
25	V.10456 F.305	Jodie Evans	30.11.2009	Current
25		Mark & Jodie Evans	02.09.1999	History
25		same as history for no. 18		
26	V.10456 F.306	Amanda & Joseph Adshead	15.03.2011	Current
26		Steven & Melissa Athans	05.10.1999	History
26		same as history for no. 18		
27	V.10456 F.307	Leanne Olsen	24.02.2003	Current
27		Shane & Elizabeth Ricardo	18.11.1999	History
27		same as history for no. 18		
28	V.10431 F.106	Cardinia Shire Council	26.02.1999	Current
28		same as history for no. 18		
29	V.10598 F.903	Matthew & Judith Weeks	11.10.2012	Current
29		Barry & Karen Fankhauser	28.02.2002	History
29		Patrick Canty (Purchasing Manager)	15.08.2001	History
29		same as history for no. 15		
30	V.9439 F.721	John & Timothy Carney	05.07.2006	Current
30		same as history for no. 31		



Pakenham East Precinct - Phase 1 ESA
HISTORICAL TITLE INFORMATION

Cardinia Shire Council,
Pakenham

Actual Property No.	Volume Folio	Registered Proprietors	Date	Status
32	V.11261 F.954	John & Timothy Carney	29.03.2011	Current
32	V.10090 F.523	James Carney (Farmer)	02.11.1992	History
32	V.9464 F.014	James Carney (Farmer)	06.05.1982	History
32	V.9464 F.013	John Carney (Salesman)	29.10.1982	History
32		James Carney (Farmer)	06.05.1982	History
32	V.9439 F.723	James Carney (Farmer)	13.05.1981	History
32	V.9439 F.722	James Carney (Farmer)	13.05.1981	History
32	V.7967 F.037	James Carney (Farmer)	20.11.1972	History
32		Michael & James Carney (Farmers)	07.11.1952	History
31	V.9664 F.358	Timothy & Kerry Carney	07.02.1985	History
31	V.9439 F.721	John & Timothy Carney	11.10.2004	History
31		James Carney (Farmer)	13.05.1981	History
31	V.6177 F.399	James Carney (Farmer)	20.11.1972	History
31		Michael & James Carney (Farmers)	13.10.1966	History
31		Honora & Mary Carney (Spinsters)	18.02.1938	History
33	V.10090 F.522	John Carney	16.09.1992	Current
33		John & James Carney	02.11.1992	History
33		same as history for no. 32		
34	V.11261 F.955	John & Timothy Carney	29.03.2011	Current
34		same as history for no. 32		
35 & 36	V.9452 F.296	Parklea Pty Ltd	20.08.2004	Current
35 & 36		Bruce & Gwynneth Henderson	04.07.1986	History
35 & 36		Graeme Henderson (Journalist)	27.01.1982	History
35 & 36		Gwynneth & Bruce Henderson (Farmer) & Graeme Henderson (Journalist)	10.02.1982	History
35 & 36	V.9421 F.328	Gwynneth & Bruce Henderson (Farmer) & Graeme Henderson (Journalist)	10.03.1981	History
35 & 36	V.957 F.328	Gwynneth & Bruce Henderson (Farmer) & Graeme Henderson (Journalist)	04.08.1976	History
35 & 36		Mary Cochrane	07.12.1971	History
35 & 36		Francis Dore (Farmer)	28.09.1911	History
35 & 36		Edward Dore (Farmer)	22.04.1893	History
35 & 36		John Dore (Farmer)	12.06.1877	History
37	V.10467 F.807	Parklea Pty Ltd	20.08.2004	Current
37		Bruce & Gwynneth Henderson	15.09.1999	History
37	V.9452 F.297	Gwynneth & Bruce Henderson (Farmer) & Graeme Henderson (Journalist)	10.02.1982	History
37		same as history for no. 35 & 36		
38	V.10467 F.806	Neil & Marion Titford	12.07.2000	Current
38		same as history for no. 37		
39	V.9050 F.654	Mirko & Heide-Marie Blazevec	08.06.2011	Current
39		Mirko Blazevec	05.04.2004	History
39		Charles & Lorna Rundell	14.05.1992	History
39		Valda Shield	18.08.1980	History
39		William Maughan (Farmer)	05.02.1974	History
39		Shirley Harrop	25.11.1971	History
39	V.8535 F.947	Shirley Harrop	13.01.1964	History
39	V.6529 F.621	see no. 50		
40	V.11061 F.708	Timothy Carney	15.06.2009	Current
40		Roads Corporation	09.04.2008	History
40		same as history for no. 50		
41	V.11389 F.343	John & Timothy Carney	24.11.2012	Current
41	V.7967 F.038	James Carney (Farmer)	20.11.1972	History
41		Michael & James Carney (Farmers)		
42	V.11061 F.710	Roads Corporation	09.04.2008	Current
42		same as history for no. 50		
43	V.10200 F.493	Parklea P/L, Nancye & Glenn Cross & Laurack P/L	25.10.2012	Current
43		Laurack P/L, Parklea P/L, Bross P/L & Nancye & Glenn Cross	27.07.2012	History
43		Laurack P/L, Parklea P/L, Bross P/L & Nancye Cross	27.07.2012	History
43		Bross P/L, Laurack P/L & Parklea P/L	02.04.2009	History
43		S & N Castello Nominees P/L & Bross P/L	12.10.2004	History
43		Kaethe Meiss	11.09.2000	History
43	V.10028 F.538	Josef Meiss (Salesman)	24.07.1991	History
43	V.10028 F.537	Josef Meiss (Salesman)	24.07.1991	History
43	V.9065 F.028	Josef Meiss (Salesman)	31.01.1980	History
43		Sandra & Frederick Mundy (Builder)	15.02.1977	History
43		Thomas Yates (Farmer)	19.08.1974	History
43	V.8378 F.897	Thomas Yates (Farmer)	19.08.1974	History
43		Violet Yates	31.10.1962	History
43		same as history for no. 44		



Pakenham East Precinct - Phase 1 ESA
HISTORICAL TITLE INFORMATION

Cardinia Shire Council,
Pakenham

Actual Property No.	Volume Folio	Registered Proprietors	Date	Status
44	V.8378 F.896	Hendrika & Johannus Wouters (Transport Operator)	30.12.1976	History
44		Valerie Davis & Thomas Yates (Storeman)	05.03.1963	History
44		Violet Yates	31.10.1962	History
44	V.2889 F.746	Violet Yates	07.11.1960	History
44		Thomas Yates (Labourer)	18.12.1912	History
44		The Trustees Executive Agency	18.12.1912	History
44		Jane Fortune	10.03.1902	History
45	V.10200 F.492	Steven & Maria Dunn	16.09.2009	Current
45		Hendrika & Johannus Wouters (Transport Operator)	29.04.2006	History
45		Ken & Lucie Pau	01.05.1996	History
45		same as history for no.43		
46	V.9073 F.656	Neil & Merle Speedie	18.01.1993	Current
46		Robin & Gail Jones	09.03.1984	History
46		Margaret & Graham Millier (School Teacher)	02.05.1975	History
46		Thomas Yates (Farmer)	03.12.1974	History
46		Leonard Yates (Truck Driver)	03.12.1974	History
46		same as history fo no. 43		
47	V.8199 F.747	Ian Russell & Cornilia Wilson	08.11.2010	Current
47		Valerie Biondo	12.04.1999	History
47		David & Janeen Lawrence	30.10.1995	History
47		Rolf & Margaret Meiss	28.09.1992	History
47		Josef & Kaethe Meiss	02.05.1989	History
47		Wendy & Barry Turner (Industrial Chemist)	07.02.1977	History
47		Ann Ramsdale	27.08.1958	History
47	V.7910 F.070	Henry Skeates (Farmer)	04.02.1953	History
47	V.7480 F.116	Alan & Harriett Wood (Farmers)	16.11.1950	History
48	V.11208 F.870	Robert Roberts (General Manager)	07.05.1980	Current
48	V.8264 F.377	Robert Roberts (General Manager)	07.05.1980	History
48		Lena & Robert Roberts (General Manager)	22.01.1975	History
48		Lena & David Roberts (Gentleman)	06.07.1960	History
49	V.7110 F.872	Dennis & Rhonda Murphy	29.11.2001	Current
49		Barry & Marjorie Couch	18.11.1985	History
49		Patrick McHugh	27.09.1985	History
49		Keith Woods (Loader/Driver)	05.12.1980	History
49		Lily Bradley	21.08.1979	History
49		Lily & William Bradley (Driver)	26.05.1966	History
49		Dora & Henry Percy (Steel Worker)	09.02.1961	History
49		Ada Turner	08.07.1948	History
49		Matthew Ruston (Farmer)	04.05.1948	History
50	V.11061 F.706	Pakland P/L	03.06.2008	Current
50	V.11002 F.472	Roads Corporation	18.08.2006	History
50	V.8838 F.352	Frank Bourke (Storeman)	07.11.1969	History
50	V.1207 F.279	The Trustees Executive Agency & Frank Bourke (Storeman)	28.05.1968	History
50		Milo Bourke (Grazier)	07.08.1912	History
50		Ann Ritchie (Spinster)	14.10.1880	History
50	V.10966 F.624	Roads Corporation	30.08.2006	History
50	V.8264 F.377	see no. 48		
50	V.7910 F.070	see no. 47		
50	V.10959 F.170	Martin Grogan	29.06.2006	History
50	V.10155 F.392	Donald & Joan Grogan	10.02.1994	History
50	V.9050 F.655	Donald & Joan Grogan	05.07.1985	History
50		Alan & Ian Chatfield (Farmers)	09.05.1974	History
50	V.8535 F.946	William Harrop (Farmer)	13.01.1964	History
50	V.6529 F.621	Violet & Douglas Hilder (Grazier)	25.02.1947	History
50		George Mortimer (Farmer)	18.12.1941	History
50	V.9474 F.981	Country Roads Board	25.05.1982	History
50		Shirley Harrop	13.01.1964	History
50	V.10947 F.618	Roads Corporation	06.06.2006	History
50		Martin Grogan	28.10.2002	History
50		Donald & Joan Grogan	23.02.1995	History
50	V.7781 F.181	Roads Corporation	22.04.1986	History
50		Janice & Keith Morris (Farmer) & Dianne & Lindsay Morris (Farmer)	04.12.1981	History
50		Nellie Somerville	02.04.1970	History
50		Nellie & Richard Somerville (Farmer)	08.04.1960	History
50		Frank Langsford (Tailor)	28.07.1952	History
51	V.11002 F.471	Kenzie Park Pty Ltd	27.01.2011	Current
51	V.8838 F.352	Frank Bourke (Storeman)	07.11.1969	History
51		see history for no. 50		
52	V.11313 F.415	Victorian Rail Track	06.10.2011	Current
52	V.7482 F.156	Victorian Rail Track	20.05.2011	History
52		The Victorian Railways Commissioners	23.10.1950	History

Appendix D - Royal Historical Society of Victoria search results



ROYAL HISTORICAL SOCIETY OF VICTORIA INC.

239 A'Beckett Street, Melbourne 3000

Date: 4 February 2013

Attention: Annie Horvath

Company: GHD

From: Gerardine Horgan (Administrative Officer)

SITE SEARCH: The site is Pakenham east and Nar Nar Goon west , encompassing Dore, Ryan, Seymour, Mt. Ararat South Roads and Princes Highway.

We have no specific information on this site. The Sands and McDougall Directories listed Pakenham as a country town and named residents in alphabetical order only. Most residents are listed as engaged in agricultural pursuits, mainly dairy farming, sheep farming and horse breeding.

The Sands and McDougall directories first list Country towns – Trade or Commercial in 1900. The listings continue up to and finish at 1969 and the wording trade/commercial is later dropped. They are in alphabetical order of surname only with occupation, but NO addresses. Pakenham is first listed in 1903 with half a column of names. By 1903s and 1940s Pakenham takes up half a page with Pakenham and Pakenham Upper under separate headings. From the 1950s to 1969 Pakenham is divided into Pakenham, Pakenham East, Pakenham South and Pakenham Upper and takes up two and a half pages.

The Victorian Municipal Directories in 1968 mention that Nar Nar Goon is an agricultural and dairying district, and Pakenham is “a prosperous business centre of grazing, dairying, fruit growing and industrial district. There is a quarry, sawmills, fruit canning and plaster works. Population 2,200.”

In 1992 Nar Nar Goon is an agricultural district, with a vegetable packing factory, population 600. Pakenham has grown considerably, with the population double of that in 1968, in 1992 - 4,500 population.



ROYAL HISTORICAL SOCIETY OF VICTORIA INC.

239 A'Beckett Street, Melbourne 3000

Research by Margaret Fleming

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Appendix E - Australian Rail Historical Society search results



AUSTRALIAN RAILWAY HISTORICAL SOCIETY

VICTORIAN DIVISION INC. A0033223H
ABN 65 533 143 834

P.O. Box 748
Williamstown,
Vic., 3016

15 January 2013

Ms. Annie Horvath
Environmental Scientist
Contamination Assessment & Remediation
GHD
180 Lonsdale St
Melbourne
Victoria 3000
Tel: 03 8687 8886
Mob: 0432 613 101
Email: annie.horvath@ghd.com
Re the Pakenham East, Metro Substation Site

Dear Annie,

Thank you for Consulting ARHS Vic Div Archives. Please find attached our report.

Background

Electrification of the Gippsland main line, saw its origins in Operation Phoenix in the early 1950s.

The original plan was to electrify the main lines to Geelong, Ballarat, Bendigo, and Traralgon, but the high cost coupled with the success of the new diesel locomotive fleet, saw the plan dropped for all of the lines, with the exception of the Gippsland Line.

Electrification of the Gippsland Line was continued, due to the development of the Latrobe Valley Brown Coal fields and the establishment of area as the main electricity generation area for the State. Also at the time, brown coal briquettes were seen as a primary source of fuel for both industry and domestic heating in the State and the State Electricity

Commission of Victoria established an extensive network of briquette distribution points through out the State. This was seen as a necessity as the few Black Coal deposits in Victoria were of poor quality; and the reserves at the State Coal Mine at Wonthaggi were largely worked out. Making the State, and the Victorian Railways in particular dependant on coal imported from New South Wales. Not only was this expensive but major industrial issues in the late 1940s saw the VR reduced to using wood as a locomotive fuel in 1949.

Much of the technology was based on German practice, and indeed, several senior VR officers had to be inducted into the Occupying Forces to visit Germany in the late 1940s to gather information on the use of pulverized brown coal as locomotive fuel. In the event, the decision to dieselize and the logistics of refuelling locomotives (Pulverized Brown Coal was highly volatile) saw the project dropped.

At the time however, State Politicians saw the Latrobe Valley becoming the "Ruhr of Victoria".

So the line to Traralgon was electrified, along with significant regrading works and track duplication for much of the route. A fleet of 2400hp English Electric locomotives were purchased to operate both passenger and freight trains over the line, in 1952.

As the metropolitan system was already electrified using a 1500V DC system, and this was still seen as acceptable technology, the same system was used for the Gippsland line. One

disadvantage of this system being that the resistance in the overhead wiring meant that transformer, feeder substations had to be located at relatively frequent intervals along the line. The site in question being one of these.

The substations used, the state of the art technology, with mercury arc rectifiers in sealed metal containers, to convert the AC feed to 1500 volt DC, which was fed to the overhead wires. These were contained in the brick substation building, The switch yard outside contained the AC transformers and switching mechanism. These were oil damped to protect against arcing and flashovers.

As the service envisaged involved a relatively low density of long heavy briquette trains, interspersed between a relatively frequency of country passenger trains, the output of the individual substations was relatively low.

Electrification to Warragul was in July 1954 and to Traralgon in March 1956.

The discover of oil and gas reserves Bass Strait, largely saw an end to the great plans for Briquettes becoming a major industrial fuel die away. Briquettes did not have a high calorific value and required modification to most industrial furnaces. In domestic applications the bagged briquettes were heavy, they were dirty to handle and in both cases produced relatively large volumes of ash. So with advances in gas and electric heaters, the domestic market died by the end of the 1970s, and never really became established in the industrial sphere.

By the 1980s, the Electric Locomotives were approaching the end of their economic lives. As, at the time, the cost of diesel fuel was lower than the cost of electricity and the cost of refurbishment or replacement was too expensive, the locomotives were withdrawn and replaced by diesels. In fact diesel locomotives had shared services for some time prior to this as it removed the need to change locomotives on trains continuing beyond Melbourne, and also removed the need to maintain a pool of drivers certified to operate electric locomotives. For a brief period, Suburban train services were extended to Warragul, but even running express, Caulfield, Dandenong, Warragul, was found to be too long for suburban trains without toilet facilities; and many passengers were greatly relieved on arrival.

With the significant growth of urban settlement in the South Eastern sector of Melbourne, suburban services have extended to Pakenham and Pakenham East, with plans to establish a major servicing and stabling facility to the south of the tracks, but adjacent to the Substation in question.

As noted above the substations provided in the 1950s were not intended to provide the power output required to support a regular suburban commuter service and the substations are operating at capacity, so much so that the Pakenham East substation is fully operational. This latter information is based on current advice from senior METRO engineers and senior consultants to the Public Transport industry. Whilst it is likely that the stabling sidings will include a new substation, it is unclear if that will replace the existing substation.

Environmental Hazards

We are advised by senior metro engineers, that the mercury arc rectifiers were in sealed metal units and being modular were removed from the site for maintenance, or in the event of malfunction. So there is little risk of mercury contamination of the site.

The switch gear and the transformers are oil damped and were periodically serviced on site, so it is suggested that the area is checked for ant hydrocarbon contamination of the site.

All Substation buildings are to a standard 1950s design and as was the practice at the time, it is highly likely that there may be fibro cement sheeting used in parts of the building. It would be worth checking with METRO, if such sheeting has been removed and appropriate measures taken if the building is to be demolished or renovated.

Final Note

Whilst we fully understand that the site is in a rapidly growing urban area, we are a little puzzled that your client is seeking an assessment of the site, at this point of time.

The extension of METRO services to Pakenham East is likely to see the continued need for the substation.

Whilst its stabling sidings are part of the Greater Melbourne Urban Transport Plan, this is subject to Federal funding, which is yet to be approved; and may be subject to State and Federal agreement related to priorities and conditions placed on the funding.

Images



Main 22,000V Ac
Feeds are intact.

Main
Transformers
appear to be wired
in.

This image was
taken mid January
The vegetation
would indicate the
site may be
relatively damp.



Power switch cabinet to the track signalling.

Note CCTV Camera monitoring the transformer yard



Standard 1950s brick Substation Building

The access road would indicate that the site is visited relatively frequently



Apart from the Graffiti the building appears secure, as do the ducting and earth return feeds

Gates to switch yard are locked



We are not able to give any advice as to the remains of this concrete. Structure; but it appears to have been in this state for some time.
Suggest you check with Metro as to its previous use

Note that the feed posts are relatively new concrete. And the metal strapping of the CCTV Camera and the feed cable are also new.

All of the above annotations tend to confirm the advice we have received from Metro officers and other railway Officials.

Based on our standard rates, as a Fee category, our charge for this work is

Consultation Fee: \$20.00

hours research and copying: \$100.00 + 1x\$50

Total \$ 170.00 Ex GST

You will be separately invoiced for this amount by our accountants

Ian Jenkin.

ARHS Archives Officer

Appendix F - Cathodic protection search results

17 January, 2013

TO: Annie Horvath
GHD Pty Ltd

Fax: 8687 8111
Ph: 8687 8886

SEARCH FOR CATHODIC PROTECTION SYSTEMS

With reference to your email of 17/12/2012 a search of the CP database has identified cathodic protection systems registered in the vicinity of the following locations:

- 155 Dore Road, Pakenham 3810 - Lot 1 TP709442C
- 365 Seymour Road, Nar Nar Goon 3812 - Lot 2 LP204796H
- 325 Seymour Road, Nar Nar Goon 3812 - Lot 2 LP093961
- Mount Ararat North Road, Nar Nar Goon North 3812 - Lot 1 LP55512
- 55 Mount Ararat North Road, Nar Nar Goon North 3812 - Lot 2 PS436254L
- 15 Mt Ararat Creek Road, Nar Nar Goon North 3812 - Lot 1 PS436254L
- Dore Road, Pakenham 3810 - Lot 3 PS422931W
- 40 Dore Road, Pakenham 3810 - Lot 1 PS422931W
- Dore Road, Pakenham 3810 - Lot 2 PS422931W
- 95 Dore Road, Pakenham 3180 - Lot 1 TP516329X
- 45 Dore Road, Pakenham 3810 - Lot 1 PS512523M
- 27 Dore Road, Pakenham 3810 - Lot 1 TP709318D
- 27 Dore Road, Pakenham 3810 - Lot 1 TP424541M
- 55 Dore Road, Pakenham 3810 - Lot 2 PS512523M
- 35 Cauty Lane, Pakenham 3810 - Lot 2 PS439920H
- 2 Ryan Road, Pakenham 3810 - Lot 1 PS402178R
- 2 Ryan Road, Pakenham 3810 - Lot 1 PS402178R
- 14 Ryan Road, Pakenham 3810 - Lot 1 PS425421F
- 26 Ryan Road, Pakenham 3810 - Lot 2 PS425421F
- 30 Ryan Road, Pakenham 3810 - Lot 3 PS425421F
- 36 Ryan Road, Pakenham 3810 - Lot 4 PS425422D
- 40 Ryan Road, Pakenham 3810 - Lot 5 PS425422D
- 46 Ryan Road, Pakenham 3810 - Lot 6 PS425422D
- 46 Ryan Road, Pakenham 3810 - Lot 6 PS425422D
- 50 Ryan Road, Pakenham 3810 - Lot 7 PS425423B
- 60 Ryan Road, Pakenham 3810 - Lot 8 PS425423B
- 70 Ryan Road, Pakenham 3810 - Lot 9 PS425423B

- Ryan Road, Pakenham 3810 - Reserve 1 PS402188N
- 25 Canty Lane, Pakenham 3810 - Lot 1 PS439920H
- 1550 Princes Highway, Nar Nar Goon 3812 - Crown Allotment 23B1
- 1530 Princes Highway, Nar Nar Goon 3812 - Lot 1 TP105798C
- 1550 Princes Highway, Nar Nar Goon 3812 - Lot 1 PS547978V
- 1560 Princes Highway, Nar Nar Goon 3812 - Lot 3 PS308950F
- 1550 Princes Highway, Nar Nar Goon 3812 - Lot 2 PS547978V
- 1610 Princes Highway, Nar Nar Goon 3812 - Lot 1 LP137971
- 1610 Princes Highway, Nar Nar Goon 3812 - Lot 1 LP137971
- 32 Mount Ararat South Road, Nar Nar Goon 3812 - Lot 2 PS425398W
- 32 Mount Ararat South Road, Nar Nar Goon 3812 - Lot 1 PS425398W
- 90 Mount Ararat South Road, Nar Nar Goon 3812 - Lot 1 PS544521L
- 1550 Princes Highway, Nar Nar Goon 3812 - Lot 3 PS607403U
- 1550 Princes Highway, Nar Nar Goon 3812
- Ryan Road, Pakenham 3810 - Reserve 1 PS607403U
- 10 Canty Lane, Pakenham 3810 - Lot 4 PS335913J
- 100 Ryan Road, Pakenham 3810 - Lot 1 LP56549
- 104 Ryan Road, Pakenham 3810 - Lot 3 PS335913J
- 110 Ryan Road, Pakenham 3810 - Lot 1 TP146370M
- 114 Ryan Road, Pakenham 3810 - Lot 1 TP369003W
- 140 Ryan Road, Pakenham 3810 - Lot 1 PS544516D
- 160 Ryan Road, Pakenham 3810 - Lot 1 TP534843F
- 180 Ryan Road, Pakenham 3810 - Lot 1 PS607403U
- Ryan Road, Pakenham 3810 - Lot 3 PS547650H
- Ryan Road, Pakenham 3810 - Lot 2 PS547650H

The attached drawings indicate the location of the systems (Permit No.'s 1950 & 12563) near the corner of Dore Road and the Princes Highway.

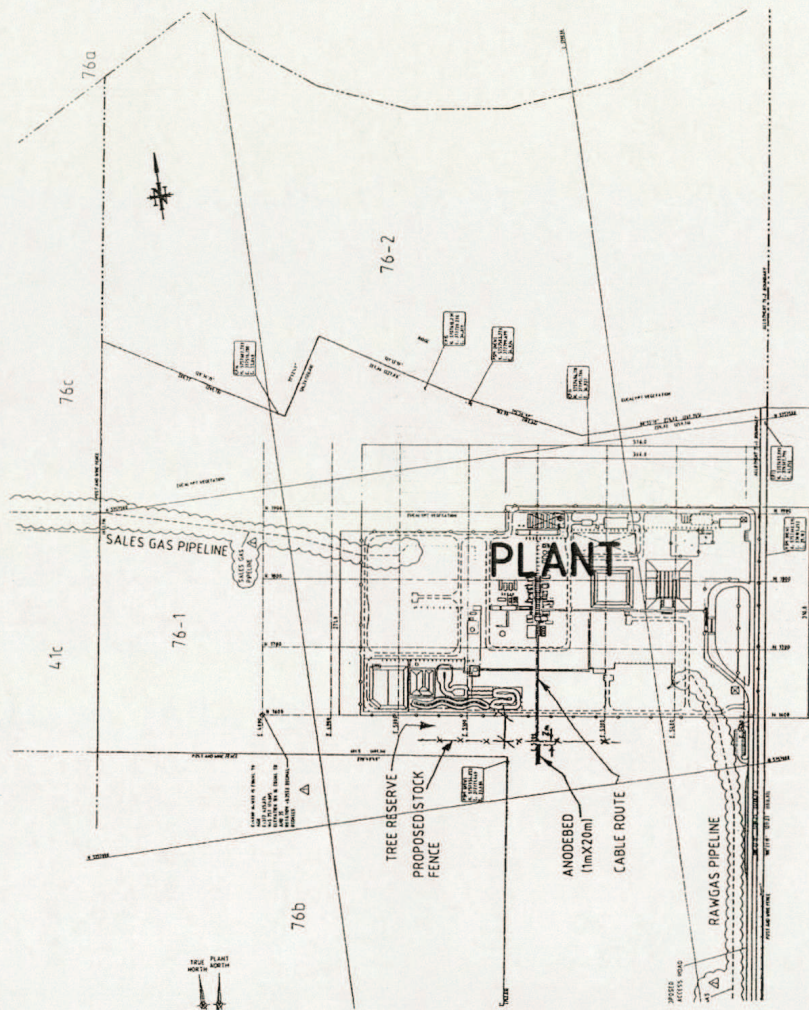
Yours sincerely



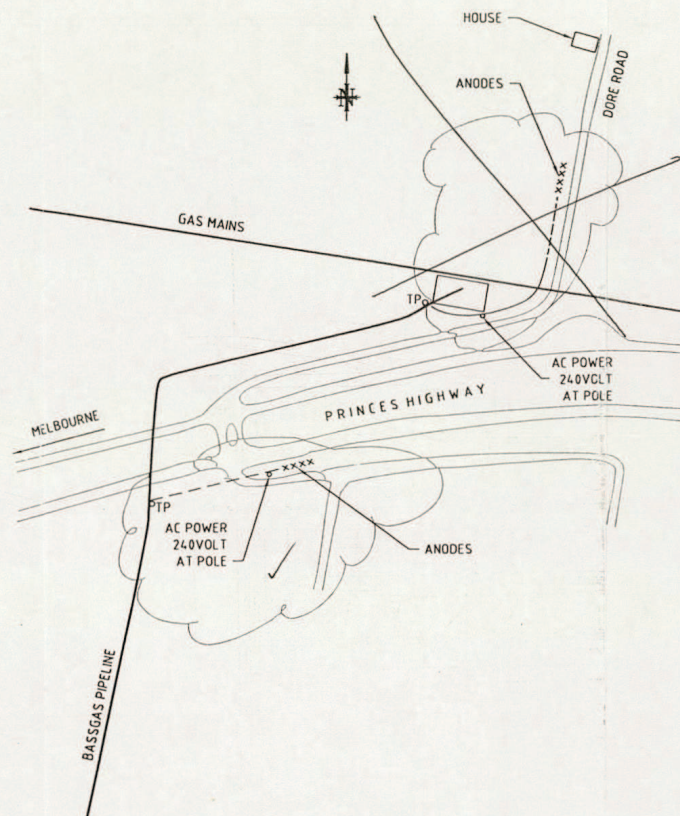
Glenn Carrig
MANAGER ELECTROLYSIS MITIGATION

EASEMENT NUMBER		T61-7-12										T61-7-11		T61-7-10		T61-7-9		T61-7-8		T61-7-7		T61-7-6		T61-7-5		T61-7-4		T61-7-3		T61-7-2		T61-7-1	
PROPERTY OWNER OCCUPIER		E.C. BAWDEN										CROWN LAND		E.W. BAWDEN		A.J.M. & C. PHILLIPS		J.D. & M.L. HAYES		A.N. & M.R. PARTON		PENALUNA NOMINEES PTY LTD		J.F. & E.E. STACKER		RONDAGAR PTY LTD		W.G. & M.J. WALLACE		F.P. & S.A. HALL		M.J. CARNEY	
CROWN ALLOTMENT NO.		LOT 2 PS 95903										LOT 1 PS 126644		LOT 1 PS 133707		LOT 2		LOT 2 PS 130879		LOT 3 PS 130879		LOT 3 PS 89898		LOT 4		PI 18B		PI 20					
PARISH COUNTY		NAR NAR GOON MORNINGTON										NAR NAR GOON MORNINGTON										NAR NAR GOON MORNINGTON											
MUNICIPALITY		SHIRE OF PAKENHAM										SHIRE OF PAKENHAM										SHIRE OF PAKENHAM											
REFERENCE DRAWINGS		DRG. NO.										DRG. NO.										DRG. NO.											
SPECIAL INSTALLATIONS																																	
PROGRESSIVE HORIZONTAL DISTANCE																																	
HORIZONTAL BENDS																																	
PIPE CENTRELINE NO.(PEG)																																	
LONGITUDINAL SECTION SHEET																																	
PIPE O.D. & W.T.																																	
DATE PIPELINE LAID																																	
SPECIAL INSTALLATIONS																																	
PROGRESSIVE HORIZONTAL DISTANCE																																	
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LONGITUDINAL SECTION SHEET		REFER DRG T61-14-1										T61-13-2										T61-13-1											
PIPE O.D. & W.T.		762 mm O.D.										12-7										10-6 mm W.T.											
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SCALE OF METRES																																	
LEGEND																																	
ROUTE PLAN																																	
750 N.B. TRANSMISSION PIPELINE																																	
PAKENHAM - WOLLERT																																	
DRAWN		D. Dugan										P. Thomas										J. Gellman											
CHECKED		7-5-1982										P. Thomas										J. Gellman											
DISTRICT PLAN NUMBER																																	
SCALE		As Shown																															
FIELD BOOK		398																															
DRAWN		P. 1-43																															
LEVEL DATUM		AHD																															
CHECKED		S. Soder																															
DATE		8/83																															
CONTRACTOR		Watsons Pty Ltd																															
SHEET		1																															
TOTAL SHEETS		1																															
PROJECT		750 N.B. TRANSMISSION PIPELINE																															
DRAWN BY		D. Dugan																															
CHECKED BY		P. Thomas																															
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DRAWN BY		D. Dugan																															
CHECKED BY		P. Thomas																															
DATE		7-5-1982																															
SCALE		As Shown																															

#12563



LANG LANG PLANT ANODE GROUND BED



PAKENHAM ANODE GROUND BED

				DRAWN: GM	CLIENT:
				ENGINEER: GM	OMV AUSTRALIA
0	FIRST ISSUE		PC	APPROVED: PC	TRANSFIELD CONSTRUCTIONS
REV	DESCRIPTION	DATE	APPROVED	DATE 08-05-2003	

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TITLE BASSGAS PROJECT CATHODIC PROTECTION ANODE BED LOCATIONS			
SIZE A3	DWG No. SCCS-3105-A3/22	REV 0	
SCALE NTS	SHEET 1 OF 1		

Appendix G - Victorian EPA priority sites register (extract)

Priority Sites Register

Date Generated 09/11/2012

BACKGROUND

EPA has a key responsibility in protecting beneficial uses of land. Many of these uses are regulated or controlled through a range of measures to prevent contamination of land and groundwater. Land contaminated by former waste disposal, industrial and similar activities is frequently discovered during changes to land use - for example, from industrial to residential use. In most cases these can be managed at the time that the change of land use occurs. Some sites however, present a potential risk to human health or to the environment and must be dealt with as a priority. Such sites are typically subject to clean-up and/or management under EPA directions.

WHAT ARE PRIORITY SITES?

Priority Sites are sites for which EPA has issued a Clean-up Notice pursuant to section 62A, or a Pollution Abatement Notice pursuant to section 31A or 31B (relevant to land and/or groundwater) of the Environment Protection Act 1970. Typically these are sites where pollution of land and/or groundwater presents a potential risk to human health or to the environment. The condition of these sites is not compatible with the current or approved use of the site without active management to reduce the risk to human health and the environment. Such management can include clean-up, monitoring and/or institutional controls.

The Priority Sites Register does not list sites managed by voluntary agreements or sites subject to management by planning controls (eg. sites managed in accordance with a section 173 agreement under the Planning and Environment Act 1987). Land purchasers should be aware of these limitations and make their own enquiries. A site is listed on the Priority Sites Register when EPA issues a Clean-up Notice or a Pollution Abatement Notice (relevant to land and/or groundwater). A notice is a means by which EPA formalises requirements to manage pollution. Sites are removed from the Priority Sites Register once all conditions of a Notice have been complied with. This is formalised through a Notice of Revocation pursuant to section 60B of the Act.

FURTHER INFORMATION

Additional information is available from:
EPA Information Centre
200 Victoria Street
Carlton VIC 3053
Tel: 03 9695 2722 Fax: 03 9695 2610
Media Enquiries: 03 9695 2704
EPA internet site: www.epa.vic.gov.au

NOTICE ID	MUNICIPALITY	LOCALITY	ADDRESS	ISSUE
0090001739	Ararat Rural City Council	ARARAT	26 GRANO ST	Former Industrial Site. Requires assessment and/or clean up.
0090001744	Ararat Rural City Council	ARARAT	MCLELLAN ST	Railway yard. Requires assessment and/or clean up.
0090001857	Ballarat City Council	BALLARAT	1003 HUMFFRAY ST	Former Industrial Site. Requires assessment and/or clean up.



NOTICE ID	MUNICIPALITY	LOCALITY	ADDRESS	ISSUE
0090000494	Ballarat City Council	BALLARAT	CANADIAN GULLY RESERVE GEELONG RD	Historical deposit of mine tailings. Requires assessment and/or clean up.
0090001913	Ballarat City Council	BALLARAT	VOLUME 6747 FOLIO 250	Current Industrial Site. Requires assessment and/or clean up.
0090001795	Ballarat City Council	DELACOMBE	1201-1209 LATROBE ST 4 HEINZ RD	Current Industrial Site. Requires assessment and/or clean up.
NO1960	Ballarat City Council	MOUNT CLEAR	WHITEHORSE RD	
0090002097	Ballarat City Council	SANDHILL LAKE	C/A 14 SECTION A - PARISH OF BAELE BAELE	Industrial waste has been dumped at the site. Requires assessment and/or clean up.
0090002430	Ballarat City Council	WARRENHEIP	BALLARAT- BURRUMBEET RD	Accidental spill/leak (non-industrial site). Requires ongoing management.
0090002096	Ballarat City Council	WENDOUREE	40 GREGORY ST	Former Industrial Site. Requires assessment and/or clean up.
0090000661	Banyule City Council	GREENSBOROUGH	131 GRIMSHAW ST	Current Service Station. Requires assessment and/or clean up.
0090002585	Banyule City Council	GREENSBOROUGH	131 GRIMSHAW ST	Current Service Station. Requires assessment and/or clean up.
0090000239	Bass Coast Shire Council	GRANTVILLE	1685 BASS HWY	Current landfill. Requires ongoing management.
NO7820	Bass Coast Shire Council	WONTHAGGI	C/A 15 SECTION 58 CAMERON ST	
0090001698	Bayside City Council	BRIGHTON	316 NEW ST	Former Service Station. Requires assessment and/or clean up.
0090000642	Bayside City Council	BRIGHTON	601 HAMPTON ST	Current Service Station. Requires ongoing management.
0090001671	Bayside City Council	CHELTENHAM	18 HAMLET ST	Current Industrial Site. Requires ongoing management.
NO5532	Brimbank City Council	BROOKLYN	40-60 MCDONALD RD	
0090002538	Brimbank City Council	BROOKLYN	459 SOMERVILLE RD	Industrial waste has been dumped at the site. Requires assessment and/or clean up.
NO3111	Brimbank City Council	BROOKLYN	594 GEELONG RD (CORNER MCDONALD RD)	
0090003178	Brimbank City Council	BROOKLYN	69 BUNTING RD	Former Landfill. Requires assessment and/or clean up.
0090002743	Brimbank City Council	BROOKLYN	BUNTING RD	Former Landfill. Requires ongoing management.
0090001886	Brimbank City Council	DEER PARK	765 BALLARAT RD	Current Industrial Site. Requires assessment and/or clean up.
NO3409	Brimbank City Council	KEILOR DOWNS	GREEN GULLY RD	
0090001549	Brimbank City Council	SUNSHINE	47 MCINTYRE RD	Former Industrial Site. Requires ongoing management.
0090000284	Brimbank City Council	SUNSHINE	49 MCINTYRE RD	Current Industrial Site. Requires assessment and/or clean up.
0090000665	Brimbank City Council	SUNSHINE	49 MCINTYRE RD	Current Industrial Site. Requires assessment and/or clean up.
0090002476	Brimbank City Council	SUNSHINE	HULETT ST	Former Landfill. Requires assessment and/or clean up.

NOTICE ID	MUNICIPALITY	LOCALITY	ADDRESS	ISSUE
0090002468	Brimbank City Council	SUNSHINE NORTH	51 MCINTYRE RD	Current Industrial Site. Requires assessment and/or clean up.
0090002269	Brimbank City Council	SUNSHINE NORTH	56 SPALDING AV	Current Industrial Site. Requires assessment and/or clean up.
0090002270	Brimbank City Council	SUNSHINE NORTH	56 SPALDING AV	Current Industrial Site. Requires assessment and/or clean up.
0090000921	Brimbank City Council	SYDENHAM	SYDENHAM RD	Former Landfill. Requires assessment and/or clean up.
0090001745	Campaspe Shire Council	BAMAWM	LOT 2 PLAN OF SUBDIVISION 544316M PARISH OF TORRUMBURRY	Industrial waste has been dumped at the site. Requires assessment and/or clean up.
NO7511	Campaspe Shire Council	ECHUCA	ECHUCA LANDFILL ECHUCA-KYABRAM RD	
NO7383	Campaspe Shire Council	KYABRAM	GRAHAM RD	
NO2296	Cardinia Shire Council	NAR NAR GOON	FIVE MILE RD	
0090002085	Casey City Council	CRANBOURNE	LOT 7, 9, 10, 11 & 12 STEVENSONS RD	Former Landfill. Requires ongoing management.
NO798	Casey City Council	NARRE WARREN NOR	QUARRY RD	
NO7433	Central Goldfields Shire Council	CARISBROOK	POTTS LA	
0090003138	Central Goldfields Shire Council	DUNOLLY	43 RAILWAY RD	Industrial waste has been dumped at the site. Requires assessment and/or clean up.
0090000192	Colac-Otway Shire Council	BARONGAROOK WEST	10 HOVEYS RD	Current Industrial Site. Requires assessment and/or clean up.
0090001464	Colac-Otway Shire Council	COLAC	BRUCE ST	Former Landfill. Requires ongoing management.
0090002082	Colac-Otway Shire Council	COROROOKE	FACTORY RD	Current Industrial Site. Requires assessment and/or clean up.
0090000229	Colac-Otway Shire Council	ELLIMINYT	214 POUND RD	Current Industrial Site. Requires assessment and/or clean up.
NO6868	Colac-Otway Shire Council	MARENGO	ROBERTS RD	
0090000292	Corangamite Shire Council	COBRICO	COUNTY BOUNDARY RD	Current landfill. Requires ongoing management.
NO1343	Corangamite Shire Council	GLENORMISTON	TERANG-MORTLAKE RD	
0090000240	Corangamite Shire Council	TERANG	379 AYRESFORD RD	Current Industrial Site. Requires assessment and/or clean up.
0090002323	Darebin City Council	NORTHCOTE	24 LEINSTER GR	Current Industrial Site. Requires assessment and/or clean up.
NO3743	Darebin City Council	NORTHCOTE	CNR CLIFTON ST & WALES ST	
0090000660	Darebin City Council	PRESTON	140 HIGH ST	Former Industrial Site. Requires assessment and/or clean up.
0090002948	Darebin City Council	PRESTON	140 HIGH ST	Former Industrial Site. Requires assessment and/or clean up.
0090002088	Darebin City Council	PRESTON	194 BELL ST	Former Industrial Site. Requires assessment and/or clean up.

NOTICE ID	MUNICIPALITY	LOCALITY	ADDRESS	ISSUE
0090003150	Darebin City Council	PRESTON	3 & 7 NEWMAN ST	Former Industrial Site. Requires assessment and/or clean up.
0090000535	Darebin City Council	PRESTON	62 ALBERT ST	Current Industrial Site. Requires ongoing management.
0090001449	Darebin City Council	PRESTON	67 HIGH ST	Former Service Station. Requires assessment and/or clean up.
NO1357	Darebin City Council	RESERVOIR	LOT 87 NEWLANDS RD	
0090001552	East Gippsland Shire Council	BAIRNSDALE	201 MAIN ST	Former Service Station. Requires assessment and/or clean up.
0090001562	East Gippsland Shire Council	BAIRNSDALE	201 MAIN ST	Former Service Station. Requires assessment and/or clean up.
0090001553	East Gippsland Shire Council	BAIRNSDALE	205 MAIN ST	Former Service Station. Requires assessment and/or clean up.
0090001588	East Gippsland Shire Council	ORBOST	44 SALSIBURY ST	Former Service Station. Requires assessment and/or clean up.
0090000114	East Gippsland Shire Council	SWIFTS CREEK	349 SWIFTS CREEK EAST RD	Industrial waste has been dumped at the site. Requires assessment and/or clean up.
0090001708	Frankston City Council	FRANKSTON	3 ROSELLA ST	Former Industrial Site. Requires assessment and/or clean up.
0090001740	Frankston City Council	FRANKSTON	3 ROSELLA ST	Former Industrial Site. Requires assessment and/or clean up.
0090001741	Frankston City Council	FRANKSTON	3 ROSELLA ST	Former Industrial Site. Requires assessment and/or clean up.
NO2089	Frankston City Council	FRANKSTON NORTH	PARISH OF FRANKSTON C/A 33C	
0090001532	Glen Eira City Council	CAULFIELD SOUTH	371 HAWTHORN RD	Former Service Station. Requires assessment and/or clean up.
0090001761	Glen Eira City Council	CAULFIELD SOUTH	818 GLEN HUNTLY RD	Former Service Station. Requires assessment and/or clean up.
0090001966	Glenelg Shire Council	PORTLAND	210 CAPE NELSON RD	Current landfill. Requires ongoing management.
0090000137	Glenelg Shire Council	PORTLAND	LIQUID PITCH TERMINAL MADEIRA PACKET RD	Current Industrial Site. Requires assessment and/or clean up.
0090000035	Golden Plains Shire Council	SMYTHESDALE	1380 GLENELG HWY	Current landfill. Requires ongoing management.
0090000195	Greater Bendigo City Council	BENDIGO	49 SANDHURST RD	Former petroleum storage site. Requires assessment and/or clean up.
0090000021	Greater Bendigo City Council	CALIFORNIA GULLY	45 SANDHURST RD	Current Service Station. Requires assessment and/or clean up.
0090000061	Greater Bendigo City Council	LOCKWOOD	74 HAZELDENES RD	Land and/or groundwater impacted by intensive animal industry. Requires assessment and/or clean up.
0090000194	Greater Bendigo City Council	LONG GULLY	MAIDEN GULLY RD	Industrial waste has been dumped at the site. Requires assessment and/or clean up.
0090002451	Greater Bendigo City Council	MAIDEN GULLY	195 MARONG RD	Historical deposit of mine tailings. Requires ongoing management.

NOTICE ID	MUNICIPALITY	LOCALITY	ADDRESS	ISSUE
0090002475	Greater Bendigo City Council	NEWBRIDGE	3256 BRIDGEWATER - MALDON RD	Current petroleum storage site. Requires assessment and/or clean up.
0090002377	Greater Dandenong City Council	BANGHOLME	790 FRANKSTON DENDENONG RD	Solid inert waste has been dumped at the site. Requires assessment and/or clean up.
0090000108	Greater Dandenong City Council	DANDENONG	2 HAZEL AV	Current Industrial Site. Requires assessment and/or clean up.
0090002792	Greater Dandenong City Council	DANDENONG	230 FRANKSTON-DANDENONG RD	Current Service Station. Requires assessment and/or clean up.
0090002115	Greater Dandenong City Council	DANDENONG SOUTH	20 CAHILL ST	Former Industrial Site. Requires assessment and/or clean up.
0090001592	Greater Dandenong City Council	LYNDHURST	125 COLEMANS RD	Former Landfill. Requires assessment and/or clean up.
0090001607	Greater Dandenong City Council	SPRINGVALE	310 SPRINGVALE RD	Former Service Station. Requires ongoing management.
0090001557	Greater Dandenong City Council	SPRINGVALE	917 PRINCES HWY	Former Industrial Site. Requires assessment and/or clean up.
NO8706	Greater Dandenong City Council	SPRINGVALE SOUTH	CLARKE RD	
0090000608	Greater Dandenong City Council	SPRINGVALE SOUTH	EASTERN SIDE OF CLARKE RD	Former Landfill. Requires ongoing management.
0090002139	Greater Geelong City Council	BALLAN	1 6511 WESTERN FWY	Former Service Station. Requires assessment and/or clean up.
0090002289	Greater Geelong City Council	BELMONT	180 BARWON HEADS RD	Former Service Station. Requires assessment and/or clean up.
0090002361	Greater Geelong City Council	CORIO	1500 BIDDLECOMBE AV	Current landfill. Requires assessment and/or clean up.
0090000150	Greater Geelong City Council	CORIO	246 PRINCES HWY	Current Service Station. Requires assessment and/or clean up.
0090002217	Greater Geelong City Council	CORIO	391 PRINCES HWY	Former Service Station. Requires assessment and/or clean up.
0090002343	Greater Geelong City Council	CORIO	83 PURNELL RD	Current Service Station. Requires ongoing management.
0090000782	Greater Geelong City Council	CORIO	OF HARPUR RD	Former Service Station. Requires assessment and/or clean up.
0090000024	Greater Geelong City Council	CORIO	REFINERY RD	Current petroleum storage site. Requires ongoing management.
0090001808	Greater Geelong City Council	DRYSDALE	97 HIGH ST	Current Service Station. Requires ongoing management.
0090000498	Greater Geelong City Council	GEELONG EAST		Gun, pistol or rifle range. Requires assessment and/or clean up.
0090001664	Greater Geelong City Council	GEELONG NORTH	1 ROSENEATH ST	Former chemical storage facility. Requires assessment and/or clean up.
0090000091	Greater Geelong City Council	GEELONG NORTH	343 MELBOURNE RD	Former Industrial Site. Requires assessment and/or clean up.
0090000058	Greater Geelong City Council	GEELONG SOUTH	1 BARWON TCE	Former Industrial Site. Requires assessment and/or clean up.
0090002218	Greater Geelong City Council	GEELONG WEST	151 CHURCH ST	Former Service Station. Requires assessment and/or clean up.

NOTICE ID	MUNICIPALITY	LOCALITY	ADDRESS	ISSUE
0090000156	Greater Geelong City Council	LARA	210 OLD MELBOURNE RD	Current Industrial Site. Requires assessment and/or clean up.
0090001012	Greater Geelong City Council	LARA	PRINCES HWY	Accidental spill/leak (non-industrial site). Requires assessment and/or clean up.
0090001688	Greater Geelong City Council	MANIFOLD HEIGHTS	35 SHANNON AV	Current Service Station. Requires assessment and/or clean up.
0090001832	Greater Geelong City Council	MOOLAP	132 POINT HENRY RD	Current Industrial Site. Requires assessment and/or clean up.
0090001833	Greater Geelong City Council	MOOLAP	132 POINT HENRY RD	Current Industrial Site. Requires assessment and/or clean up.
0090000011	Greater Geelong City Council	NORLANE	5 PRINCES HWY	Former Industrial Site. Requires assessment and/or clean up.
0090002362	Greater Geelong City Council	NORLANE	60 NORTH SHORE RD	Current Industrial Site. Requires assessment and/or clean up.
0090000226	Greater Geelong City Council	NORTH GEELONG	FORESHORE AREA AT END OF CROWLE ST	Industrial waste has been dumped at the site. Requires assessment and/or clean up.
0090002499	Greater Geelong City Council	PORTARLINGTON	46 FENWICK ST	Current petroleum storage site. Requires assessment and/or clean up.
0090000113	Greater Geelong City Council	WAURN PONDS	5 KATELYN CT	Industrial waste has been dumped at the site. Requires assessment and/or clean up.
NO2755	Greater Shepparton City Council	COSGROVE	LOT 1 PLAN OF SUBDIVISION 404181S	
0090000083	Greater Shepparton City Council	KIALLA WEST	7358 GOULBURN VALLEY HWY	Industrial waste has been dumped at the site. Requires assessment and/or clean up.
0090000289	Greater Shepparton City Council	SHEPPARTON	60 OLD DOOKIE RD	Industrial waste has been dumped at the site. Requires assessment and/or clean up.
0090001776	Greater Shepparton City Council	SHEPPARTON NORTH	280 DALDY RD	Former Industrial Site. Requires assessment and/or clean up.
0090000263	Hepburn Shire Council	CRESWICK	18 CLUNES RD	Former Service Station. Requires assessment and/or clean up.
NO2532	Hepburn Shire Council	CRESWICK	OFF LUTTET ST CRESWICK C/A 45A PARISH OF CRESWICK COUNTY OF TALBOT	
0090000125	Hepburn Shire Council	MOUNT BECKWORTH	1670 OLD BALLART RD	Industrial waste has been dumped at the site. Requires assessment and/or clean up.
0090000009	Hobsons Bay City Council	ALTONA	401 KOROROIT CREEK RD	Current Industrial Site. Requires assessment and/or clean up.
0090000425	Hobsons Bay City Council	ALTONA	541 KOROROIT CREEK RD	Current chemical storage facility. Requires assessment and/or clean up.
0090002400	Hobsons Bay City Council	ALTONA	611 KOROROIT CREEK RD	Current Industrial Site. Requires assessment and/or clean up.

NOTICE ID	MUNICIPALITY	LOCALITY	ADDRESS	ISSUE
0090002765	Hobsons Bay City Council	ALTONA	ELFIELD MEADOWS ESTATE DEFINED BY VOLUME 10426	Waste Acid Sulfate Soils. Requires ongoing management.
NO1247	Hobsons Bay City Council	ALTONA	FORMER ALTONA LANDFILL, QUEEN ST	
0090000597	Hobsons Bay City Council	ALTONA	MILLERS RD	Current Industrial Site. Requires assessment and/or clean up.
0090002186	Hobsons Bay City Council	ALTONA MEADOWS	306 QUEEN ST	Current Service Station. Requires assessment and/or clean up.
0090001747	Hobsons Bay City Council	ALTONA NORTH	55 MCARTHURS RD	Former Landfill. Requires ongoing management.
NO7534	Hobsons Bay City Council	ALTONA NORTH	KYLE RD	
0090002086	Hobsons Bay City Council	NEWPORT	411 DOUGLAS PDE	Current Industrial Site. Requires assessment and/or clean up.
0090001325	Hobsons Bay City Council	NEWPORT	BURLEIGH ST	Current petroleum storage site. Requires assessment and/or clean up.
0090001459	Hobsons Bay City Council	NEWPORT	UNDERGROUND SECTION OF PETROLEUM PIPELINES THAT RUN UNDER CHAMPION RD	Current Industrial Site. Requires assessment and/or clean up.
0090001727	Hobsons Bay City Council	SOUTH KINGSVILLE	22 NEW ST	Former Landfill. Requires assessment and/or clean up.
0090002381	Hobsons Bay City Council	SOUTH KINGSVILLE	38 BLACKSHAW RD	Former Industrial Site. Requires ongoing management.
0090001709	Hobsons Bay City Council	SPOTSWOOD	18 DRAKE ST	Current petroleum storage site. Requires assessment and/or clean up.
0090002179	Hobsons Bay City Council	SPOTSWOOD	42 SIMCOCK AV	Former Industrial Site. Requires assessment and/or clean up.
0090000799	Hobsons Bay City Council	SPOTSWOOD	512 MELBOURNE RD	Railway yard. Requires assessment and/or clean up.
0090002444	Hobsons Bay City Council	WILLIAMSTOWN	12 SEAVIEW PDE	Current Industrial Site. Requires ongoing management.
0090000177	Hume City Council	BULLA	315 LOEMANS RD	Industrial waste has been dumped at the site. Requires assessment and/or clean up.
0090001572	Hume City Council	CAMPBELLFIELD	1735 SYDNEY RD	Current Industrial Site. Requires assessment and/or clean up.
0090002373	Hume City Council	CAMPBELLFIELD	1735 SYDNEY RD	Current Industrial Site. Requires assessment and/or clean up.
NO413	Hume City Council	CAMPBELLFIELD	MAHONEY RD	
0090003107	Hume City Council	CRAIGIEBURN	CRAIGIEBURN RD	Former Landfill. Requires ongoing management.
0090000070	Hume City Council	DIGGERS REST	50 EDWARDS RD	Illegal dumping. Requires assessment and/or clean up.
0090001856	Hume City Council	GREENVALE		Illegal dumping. Requires ongoing management.

NOTICE ID	MUNICIPALITY	LOCALITY	ADDRESS	ISSUE
0090002446	Hume City Council	SOMERTON	CLIFFORDS RD	Former Industrial Site. Requires assessment and/or clean up.
NO8168	Hume City Council	TULLAMARINE	WESTERN AV	
0090001389	Kingston City Council	CHELSEA	476 NEPEAN HWY	Former Service Station. Requires assessment and/or clean up.
0090000311	Kingston City Council	CHELSEA	FORMER CHELSEA LANDFILL MULKARRA DR	Former Landfill. Requires ongoing management.
NO2855	Kingston City Council	CHELSEA	SCOTCH PDE	
NO2706	Kingston City Council	CLAYTON SOUTH	CNR CLAYTON RD & RYANS RD	
0090002350	Kingston City Council	CLAYTON SOUTH	FRASER RD	Current landfill. Requires ongoing management.
NO3679	Kingston City Council	CLAYTON SOUTH	LOT 8 ELDER ST	
NO3391	Kingston City Council	CLAYTON SOUTH	RYANS RD	
0090000093	Kingston City Council	DINGLEY VILLAGE	370 OLD DANDENONG RD	Current landfill. Requires ongoing management.
0090001391	Kingston City Council	DINGLEY VILLAGE	WATERWAY EAST OF BOUNDARY ROAD	Former Industrial Site. Requires assessment and/or clean up.
0090002273	Kingston City Council	MOORABBIN	1 10 EBDEN ST	Former Industrial Site. Requires ongoing management.
0090001994	Kingston City Council	MOORABBIN	105 COCHRANES RD	Current Industrial Site. Requires assessment and/or clean up.
0090002256	Kingston City Council	MORDIALLOC	78 WHITE ST	Former Industrial Site. Requires assessment and/or clean up.
0090001836	Knox City Council	BAYSWATER	836 MOUNTAIN HWY	Current Industrial Site. Requires assessment and/or clean up.
0090000018	Knox City Council	ROWVILLE	82 BERGINS RD	Industrial waste has been dumped at the site. Requires assessment and/or clean up.
0090000181	Knox City Council	WANTIRNA	706 BORONIA RD	Illegal dumping. Requires assessment and/or clean up.
0090002537	Knox City Council	WANTIRNA SOUTH	14 COPPELIA STREET RD	Former Landfill. Requires ongoing management.
0090000475	Knox City Council	WANTIRNA SOUTH	CATHIES LANE	Former Landfill. Requires ongoing management.
0090002894	Latrobe City Council	TRARALGON	3 4 BENCH BARTONS LANE	Ash pond with a Groundwater Attenuation Zone. Requires ongoing management.
0090000224	Macedon Ranges Shire Council	BAYNTON	508 MISSION HILL RD	Illegal dumping. Requires assessment and/or clean up.
0090003228	Macedon Ranges Shire Council	BAYNTON	508 MISSION HILL RD	Illegal dumping. Requires assessment and/or clean up.
NO3399	Macedon Ranges Shire Council	BULLENGAROOK	HOBBS RD	
NO2227	Macedon Ranges Shire Council	KYNETON	REDESDALE RD	
0090000241	Macedon Ranges Shire Council	LANCEFIELD	BAYNTON RD	Former Landfill. Requires assessment and/or clean up.
0090000218	Macedon Ranges Shire Council	MACEDON	48 MIDDLE GULLY RD	Industrial waste has been dumped at the site. Requires assessment and/or clean up.

NOTICE ID	MUNICIPALITY	LOCALITY	ADDRESS	ISSUE
0090000138	Macedon Ranges Shire Council	WOODEND	130 HIGH ST	Current Service Station. Requires assessment and/or clean up.
0090002546	Maribyrnong City Council	BRAYBROOK	30 SOUTH RD	Former Industrial Site. Requires assessment and/or clean up.
0090002056	Maribyrnong City Council	BROOKLYN	550 GEELONG RD	Former Industrial Site. Requires assessment and/or clean up.
NO2181	Maribyrnong City Council	BROOKLYN	FORMER JAMES HARDIE LANDFILL, HARDIE RD	
NO6121	Maribyrnong City Council	FOOTSCRAY	FARNSWORTH AV	
0090001771	Maribyrnong City Council	MAIDSTONE	9 WILLIAMSON RD	Former Industrial Site. Requires assessment and/or clean up.
0090000266	Maribyrnong City Council	WEST FOOTSCRAY	1 GRAINGERS RD	Current chemical storage facility. Requires assessment and/or clean up.
0090002163	Maribyrnong City Council	WEST FOOTSCRAY	SOMERVILLE RD	Former Industrial Site. Requires assessment and/or clean up.
0090000134	Maribyrnong City Council	YARRAVILLE	1 HIGH ST	Former Industrial Site. Requires ongoing management.
0090001122	Maribyrnong City Council	YARRAVILLE	2 FRANCIS ST	Current Industrial Site. Requires assessment and/or clean up.
0090001932	Maribyrnong City Council	YARRAVILLE	221 WHITEHALL ST	Former Industrial Site. Requires ongoing management.
0090001942	Maribyrnong City Council	YARRAVILLE	281 WHITEHALL ST	Former Industrial Site. Requires assessment and/or clean up.
0090001941	Maribyrnong City Council	YARRAVILLE	281 WHITEHALL ST	Former Industrial Site. Requires ongoing management.
0090000989	Maribyrnong City Council	YARRAVILLE	YARRAVILLE TERMINAL FRANCIS ST	Current petroleum storage site. Requires assessment and/or clean up.
0090002862	Maroondah City Council	CROYDON	MT DANDENONG RD	Former Service Station. Requires ongoing management.
0090002884	Maroondah City Council	RINGWOOD	385 CANTERBURY RD	Current Service Station. Requires ongoing management.
0090001804	Maroondah City Council	RINGWOOD EAST	18 MOUNT DANDENONG RD	Current Service Station. Requires assessment and/or clean up.
NO2982	Melton Shire Council	MELTON	FORMER MELTON SHIRE LANDFILL, FERRIS RD	
0090000259	Melton Shire Council	MOUNT COTTRELL	180 FAULKNERS RD	Former Landfill. Requires assessment and/or clean up.
0090000259	Melton Shire Council	MOUNT COTTRELL	180 FAULKNERS RD	Industrial waste has been dumped at the site. Requires assessment and/or clean up.
0090000416	Melton Shire Council	MOUNT COTTRELL	180 FAULKNERS RD	Solid inert waste has been dumped at the site. Requires assessment and/or clean up.
0090000159	Melton Shire Council	PLUMPTON	1 HOLDEN RD	Solid inert waste has been dumped at the site. Requires assessment and/or clean up.

NOTICE ID	MUNICIPALITY	LOCALITY	ADDRESS	ISSUE
0090001470	Melton Shire Council	RAVENHALL	53 REBECCA DR	Industrial waste has been dumped at the site. Requires assessment and/or clean up.
0090001469	Melton Shire Council	RAVENHALL	53 REBECCA DR	Industrial waste has been dumped at the site. Requires ongoing management.
0090000123	Mildura Rural City Council	COLIGNAN	1074 BOONONAR RD	Current Industrial Site. Requires assessment and/or clean up.
0090000123	Mildura Rural City Council	COLIGNAN	LOT 1 PLAN SUB DIVISION 303176 VOLUME 0002 FOLIO 234	Current Industrial Site. Requires assessment and/or clean up.
0090000230	Mildura Rural City Council	MILDURA	14A ETIWANDA AV	Industrial waste has been dumped at the site. Requires assessment and/or clean up.
0090001869	Mildura Rural City Council	MILDURA	42 NINTH ST	Current Service Station. Requires assessment and/or clean up.
0090002356	Mildura Rural City Council	MILDURA	ETIWANDA AV	Former Landfill. Requires ongoing management.
NO5562	Mildura Rural City Council	MILDURA	KOORLONG RD	
NO4426	Mitchell Shire Council	BROADFORD	HIGH ST	
0090001730	Mitchell Shire Council	NORTHWOOD	1630 NORTHWOOD RD	Solid inert waste has been dumped at the site. Requires assessment and/or clean up.
0090001731	Mitchell Shire Council	NORTHWOOD	1630 NORTHWOOD RD	Solid inert waste has been dumped at the site. Requires assessment and/or clean up.
0090001737	Mitchell Shire Council	SEYMOUR	117 WIMBLE ST	Current Industrial Site. Requires assessment and/or clean up.
NO3159	Moir Shire Council	NUMURKAH	PARISH OF KATUNGA C/ A 14 SECT D NARING RD	
NO5206	Moir Shire Council	YARRAWONGA	81 CHANNEL RD	
0090002242	Monash City Council	CLAYTON	1555 CENTRE RD	Current Industrial Site. Requires assessment and/or clean up.
0090002027	Monash City Council	GLEN WAVERLEY	310 SPRINGVALE RD	Current Industrial Site. Requires assessment and/or clean up.
0090002132	Monash City Council	OAKLEIGH	1386 DANDENONG RD	Current Service Station. Requires assessment and/or clean up.
0090002031	Moonee Valley City Council	ASCOT VALE	421 MT ALEXANDER RD	Former Service Station. Requires assessment and/or clean up.
0090002299	Moonee Valley City Council	ASCOT VALE	MT ALEXANDER RD	Current Service Station. Requires assessment and/or clean up.
0090000664	Moonee Valley City Council	MOONEE PONDS	783 MT ALEXANDER RD	Current Service Station. Requires assessment and/or clean up.
0090001880	Moorabool Shire Council	BACCHUS MARSH		Industrial waste has been dumped at the site. Requires assessment and/or clean up.
NO3332	Moorabool Shire Council	MADDINGLEY	NORTH SIDE OF KERRS RD	

NOTICE ID	MUNICIPALITY	LOCALITY	ADDRESS	ISSUE
0090001283	Moorabool Shire Council	MOUNT EGERTON	CNR YENDON-EGERTON RD & BALLAN-EGERTON RD	Former Landfill. Requires ongoing management.
0090002652	Moorabool Shire Council	ROWSLEY	C/A 5E SECTION 13 PARISH OF GORROCKBURKGAP COUNTY OF GRANT	Gun, pistol or rifle range. Requires ongoing management.
0090000747	Moreland City Council	BRUNSWICK	225 BARKLY ST	Former Industrial Site. Requires assessment and/or clean up.
0090001206	Moreland City Council	BRUNSWICK	225 BARKLY ST	Former Industrial Site. Requires assessment and/or clean up.
0090000624	Moreland City Council	BRUNSWICK	227 BARKLY ST	Former Industrial Site. Requires assessment and/or clean up.
0090001205	Moreland City Council	BRUNSWICK	227 BARKLY ST	Former Industrial Site. Requires assessment and/or clean up.
0090000000	Moreland City Council	COBURG NORTH	46 NEWLANDS RD	Current Service Station. Requires assessment and/or clean up.
0090001860	Moreland City Council	COBURG NORTH	737 SYDNEY RD	Former Service Station. Requires assessment and/or clean up.
0090002542	Moreland City Council	PASCOE VALE	512 PASCOE VALE RD	Current Service Station. Requires assessment and/or clean up.
NO3403	Mornington Peninsula Shire Council	CRIB POINT	2 LENS ST	
0090002897	Mornington Peninsula Shire Council	CRIB POINT	THE ESP	Former Industrial Site. Requires ongoing management.
0090000855	Mornington Peninsula Shire Council	MORNINGTON	25 MAYNE AV	Former Landfill. Requires assessment and/or clean up.
0090000477	Mornington Peninsula Shire Council	MOUNT ELIZA	250 MOOROODUC HWY	Former Landfill. Requires ongoing management.
0090002114	Mornington Peninsula Shire Council	RED HILL	87 ARTHURS SEAT RD	Current Service Station. Requires assessment and/or clean up.
NO3402	Mornington Peninsula Shire Council	ROSEBUD WEST	119 TRUEMANS RD	
0090000658	Mornington Peninsula Shire Council	RYE	POINT NEPEAN RD	Current Service Station. Requires ongoing management.
0090000097	Mornington Peninsula Shire Council	SOMERVILLE	182 ERAMOSIA RD	Illegal dumping. Requires assessment and/or clean up.
0090002388	Mornington Peninsula Shire Council	SOMERVILLE	182 ERAMOSIA RD	Industrial waste has been dumped at the site. Requires assessment and/or clean up.
0090000189	Mount Alexander Shire Council	CASTLEMAINE	74 TOMKIES LANE	Contaminated soil is retained and managed onsite. Requires ongoing management.
0090002367	Moyne Shire Council	ALLANSFORD	5331 GREAT OCEAN RD	Current Industrial Site. Requires ongoing management.
0090002126	Moyne Shire Council	MAILORS FLAT	LOT 2 PLAN OF SUBDIVISION 128242 PRIMMERS RD (VOLUME 05782 FOLIO 356)	Industrial waste has been dumped at the site. Requires assessment and/or clean up.

NOTICE ID	MUNICIPALITY	LOCALITY	ADDRESS	ISSUE
0090000161	Moyne Shire Council	PORT FAIRY	ALLOTMENT 36A (PT) PARISH OF KOROIT TOWNSHIP OF PORT FAIRY -	Former Landfill. Requires assessment and/or clean up.
NO1650	Moyne Shire Council	PORT FAIRY	BADHAMS LA	
0090000160	Moyne Shire Council	PORT FAIRY	PORTION 10(P.T) PARISH OF KOROIT PROPERTY NUMBER 506450	Former Landfill. Requires assessment and/or clean up.
0090003147	Moyne Shire Council	WOOLSTHORPE	101 MANIFOLD ST	Current Industrial Site. Requires assessment and/or clean up.
0090001636	Murrindindi Shire Council	GHIN GHIN	67 HOMEWOOD-GHIN GHIN RD (CROWN ALLOTMENT 167B PARISH OF YEA) &	Industrial waste has been dumped at the site. Requires assessment and/or clean up.
0090001680	Murrindindi Shire Council	GHIN GHIN	67 HOMEWOOD-GHIN GHIN RD (CROWN ALLOTMENT 167B PARISH OF YEA) &	Industrial waste has been dumped at the site. Requires assessment and/or clean up.
0090000149	Murrindindi Shire Council	THORNTON	969 GOULBURN VALLEY HWY	Industrial waste has been dumped at the site. Requires assessment and/or clean up.
0090002671	Nillumbik Shire Council	DIAMOND CREEK	50 FRASER ST	Historical deposit of mine tailings. Requires assessment and/or clean up.
0090000158	Nillumbik Shire Council	ELTHAM	197 SHERBOURNE RD	Former Industrial Site. Requires assessment and/or clean up.
NO1752	Nillumbik Shire Council	KANGAROO GROUND	GRAHAM RD	
0090002787	Nillumbik Shire Council	PANTON HILL	165 MOTSCHALLS RD	Current Industrial Site. Requires ongoing management.
0090002083	Nillumbik Shire Council	PANTON HILL	165 MOTSCHALLS RD	Industrial waste has been dumped at the site. Requires assessment and/or clean up.
0090002140	Northern Grampians Shire Council	STAWELL	25 HORSHAM RD	Former Industrial Site. Requires ongoing management.
0090002142	Northern Grampians Shire Council	STAWELL	25 HORSHAM RD	Former Industrial Site. Requires ongoing management.
0090000663	Port Phillip City Council	ELWOOD	54A MARINE PDE	Current Service Station. Requires assessment and/or clean up.
NO3723	South Gippsland Shire Council	FOSTER	SOUTH GIPPSLAND HWY	
0090002058	Southern Grampians Shire Council	HAMILTON	358 GLENELG HWY	Industrial waste has been dumped at the site. Requires assessment and/or clean up.
0090000274	Surf Coast Shire Council	MOUNT MORIAC	450 HENDY MAIN RD	Former Industrial Site. Requires assessment and/or clean up.
0090001935	Surf Coast Shire Council	WINCHELSEA	114 TREBECK CT	Illegal dumping. Requires assessment and/or clean up.
0090002438	Swan Hill Rural City Council	3459	HAPPY VALLEY TRACK TRK	Illegal dumping. Requires assessment and/or clean up.

NOTICE ID	MUNICIPALITY	LOCALITY	ADDRESS	ISSUE
0090003151	Swan Hill Rural City Council	SWAN HILL	3 HASTINGS ST	Current petroleum storage site. Requires assessment and/or clean up.
0090002953	Swan Hill Rural City Council	SWAN HILL	5 HASTINGS ST	Current petroleum storage site. Requires ongoing management.
0090000256	Swan Hill Rural City Council	TOL TOL	3216 MURRAY VALLEY HWY	Industrial waste has been dumped at the site. Requires assessment and/or clean up.
NO1396	Towong Shire Council	BETHANGA	MARTINS RD	
0090002536	Wangaratta Rural City Council	NORTH WANGARATTA	150 STAMPS LANE	Industrial waste has been dumped at the site. Requires assessment and/or clean up.
0090002555	Wangaratta Rural City Council	NORTH WANGARATTA	150 STAMPS LANE	Industrial waste has been dumped at the site. Requires assessment and/or clean up.
0090003137	Wangaratta Rural City Council	WANGARATTA	22 NEWMAN ST	Accidental spill/leak (non-industrial site). Requires assessment and/or clean up.
0090000492	Warrnambool City Council	ALLANSFORD	137 ZIEGLER PDE	Contaminated soil is retained and managed onsite. Requires assessment and/or clean up.
NO1466	Warrnambool City Council	WARRNAMBOOL	BRAITHWAITE ST	
0090000036	Wellington Shire Council	COWWARR	PART C/A 41 PARISH OF TOONGABBIE NTH CERT OF TITLE VOL 8713 FOLIO 830	Former Landfill. Requires assessment and/or clean up.
0090000204	Wellington Shire Council	FULHAM	SALE-HEYFIELD RD	Illegal dumping. Requires assessment and/or clean up.
0090001587	Wellington Shire Council	MAFFRA	57 JOHNSON ST	Current Industrial Site. Requires assessment and/or clean up.
0090002127	Wellington Shire Council	PORT ALBERT	OLD PORT RD	Current Industrial Site. Requires ongoing management.
0090001928	Wellington Shire Council	SALE	35 MCGHEE ST	Former Industrial Site. Requires assessment and/or clean up.
0090002893	Wellington Shire Council	TRARALGON	LOY YANG SWITCHYARD BARTONS LANE	Ash pond with a Groundwater Attenuation Zone. Requires ongoing management.
0090003055	Wellington Shire Council	YARRAM	OFF YARRAM-TRARALGON RD	Former Landfill. Requires ongoing management.
0090002076	Whitehorse City Council	BLACKBURN	2 CENTRAL RD	Former Service Station. Requires assessment and/or clean up.
0090002839	Whitehorse City Council	BLACKBURN	21 BLACKBURN RD	Current Service Station. Requires ongoing management.
0090003034	Whitehorse City Council	BLACKBURN	21 BLACKBURN RD	Current Service Station. Requires ongoing management.
0090003153	Whitehorse City Council	BLACKBURN	24 BLACKBURN RD	#. #.
NO3999	Whitehorse City Council	BOX HILL	14 FEDERATION ST	
0090002452	Whitehorse City Council	BOX HILL	14 FEDERATION ST	Former Landfill. Requires ongoing management.

NOTICE ID	MUNICIPALITY	LOCALITY	ADDRESS	ISSUE
NO6736	Whittlesea City Council	EPPING	500 COOPER ST	
NO414	Whittlesea City Council	EPPING	500 COOPER ST	
0090000016	Whittlesea City Council	KEON PARK	6 DUNSTANS CT	Former Industrial Site. Requires assessment and/or clean up.
0090001959	Whittlesea City Council	THOMASTOWN	342 SETTLEMENT RD	Former Service Station. Requires assessment and/or clean up.
0090000059	Whittlesea City Council	THOMASTOWN	51 HIGH ST	Current Industrial Site. Requires assessment and/or clean up.
0090000167	Whittlesea City Council	THOMASTOWN	97 TRAWALLA AV	Current Industrial Site. Requires assessment and/or clean up.
0090002587	Wodonga Rural City Council	BARANDUDA	219 & PART OF 221 WHYTES RD	Current Industrial Site. Requires ongoing management.
0090002586	Wodonga Rural City Council	BARANDUDA	219 WHYTES RD	Current Industrial Site. Requires ongoing management.
0090002471	Wodonga Rural City Council	WODONGA	CARROLLS LA (LOT 5 PS345280)	Illegal dumping. Requires assessment and/or clean up.
0090002504	Wyndham City Council	LAVERTON NORTH	105 DOHERTYS RD	Current Industrial Site. Requires assessment and/or clean up.
0090002506	Wyndham City Council	LAVERTON NORTH	105 DOHERTYS RD	Current Industrial Site. Requires assessment and/or clean up.
0090002503	Wyndham City Council	LAVERTON NORTH	105 DOHERTYS RD	Current Industrial Site. Requires assessment and/or clean up.
0090002258	Wyndham City Council	LAVERTON NORTH	170 FITZGERALD RD	Current Industrial Site. Requires ongoing management.
0090000003	Wyndham City Council	LAVERTON NORTH	19 LITTLE BOUNDARY RD	Current Industrial Site. Requires assessment and/or clean up.
0090002450	Wyndham City Council	LAVERTON NORTH	87 PIPE RD	Current Industrial Site. Requires assessment and/or clean up.
0090000864	Wyndham City Council	LAVERTON NORTH	LEAKES RD	Former Industrial Site. Requires assessment and/or clean up.
0090000121	Wyndham City Council	LITTLE RIVER	LOT 1 EDGARS RD (1 PS544576)	Solid inert waste has been dumped at the site. Requires assessment and/or clean up.
0090000073	Wyndham City Council	QUANDONG	1225 BALLAN RD	Illegal dumping. Requires assessment and/or clean up.
0090002914	Wyndham City Council	TRUGANINA	99 PALMERS RD	Solid inert waste has been dumped at the site. Requires ongoing management.
0090000815	Yarra City Council	RICHMOND	1-21 KENT ST & 10-24 BUCKINGHAM ST	Former Industrial Site. Requires ongoing management.
0090001392	Yarra City Council	RICHMOND	1-21 KENT ST & 10-24 BUCKINGHAM ST	Former Industrial Site. Requires ongoing management.
0090001920	Yarra City Council	RICHMOND	3-21A KENT ST 1/4-14/4 LITTLE BUCKINGHAM ST	Former Industrial Site. Requires ongoing management.
0090002405	Yarra Ranges Shire Council	BELGRAVE	2 MONBULK RD	Current petroleum storage site. Requires assessment and/or clean up.
0090001184	Yarra Ranges Shire Council	GRUYERE	108 KILLARA RD	Industrial waste has been dumped at the site. Requires assessment and/or clean up.

NOTICE ID	MUNICIPALITY	LOCALITY	ADDRESS	ISSUE
0090000006	Yarra Ranges Shire Council	KILSYTH	1 76 FUSSELL RD	#. #.
0090000004	Yarra Ranges Shire Council	KILSYTH	1 76 FUSSELL RD	Former Industrial Site. Requires assessment and/or clean up.
0090000005	Yarra Ranges Shire Council	KILSYTH	2 76 FUSSELL RD	Former Industrial Site. Requires assessment and/or clean up.
0090000007	Yarra Ranges Shire Council	KILSYTH	2 76 FUSSELL RD	Former Industrial Site. Requires assessment and/or clean up.
0090000020	Yarriambiack Shire Council	WARRACKNABEAL	13 SCHULTZS RD	Industrial waste has been dumped at the site. Requires assessment and/or clean up.



Appendix H - Site inspection photographs

Appendix H – Precinct Photographs

The photographs provided were taken while conducting a general inspection of the Precinct. Photos include observations that were noted during the course of the site inspections completed on 16 and 18 January 2013. These observations include items outlined in the targeted property inspections (Section 4.1 the report document 217932) as well as general observations of the wider Study Area made from adjoining properties and roadways.

Table 1 Precinct Photographs

Description	Photograph
<p>1. Property 1: Looking west from Dore Rd</p>	

Description	Photograph
<p>2. Property 1:</p> <p>Looking north-west from Dore Rd. Electrical transmission towers (pylons) running across paddocks.</p>	
<p>3. Property 1:</p> <p>Looking east from Deep Creek Rd with electrical transmission towers (Pylons) running overhead through property.</p>	

Description	Photograph
<p>4. Property 2:</p> <p>Looking east from Dore Road. Electrical transmission towers (pylons) running across paddocks.</p>	
<p>5. Property 4:</p> <p>Front yard. Wrecked trucks, building rubble, general scrap and waste e.g. metal, car and truck tyres, plastic and metal drums.</p>	

Description	Photograph
<p>6. Property 4:</p> <p>Side of house. Building rubble, general scrap and waste.</p>	
<p>7. Property 4:</p> <p>Back yard. Wrecked truck carrying storage tank (old UST), general scrap and waste e.g. metal, car and truck tyres, metal drums.</p>	

Description	Photograph
<p>8. Property 4:</p> <p>Old domestic heating oil tank on west exterior wall of house.</p>	
<p>9. Property 4:</p> <p>Wrecked truck and plastic and metal drums.</p>	



Description	Photograph
<p>10. Property 4:</p> <p>Back yard. Building rubble, general scrap and waste e.g. metal, car and truck tyres, old furniture.</p>	
<p>11. Property 4:</p> <p>Back yard. Pig pens, old metal drums and scrap metal.</p>	

Description	Photograph
<p>12. Property 4:</p> <p>Looking north to study area boundary. Wrecked cars and trucks, building rubble, general scrap and waste e.g. metal, car and truck tyres, plastic and metal drums.</p>	
<p>13. Property 4:</p> <p>View of front yard containing scrap metal.</p>	

Description	Photograph
<p>14. Property 4:</p> <p>View of house, with plastic drums.</p>	
<p>15. Property 4:</p> <p>View of side of house, containing old tyres and scrap metal.</p>	

Description	Photograph
<p>16. Property 4:</p> <p>View of side of house containing building rubble, plastic and metal drums and old furnace.</p>	
<p>17. Property 4:</p> <p>Old car and car tyres at rear of house.</p>	

Description	Photograph
<p>18. Property 4:</p> <p>Scrap metal and old tyres at rear of house.</p>	
<p>19. Property 4:</p> <p>Scrap metal, general rubbish and old furniture in back yard of house.</p>	

Description	Photograph
<p>20. Property 4:</p> <p>Old cars, trucks and tyres at rear of house near dam.</p>	 <p>A photograph showing a rural landscape with a dam in the foreground. In the middle ground, there is a collection of old vehicles and tires. A green truck is prominent on the left, and a white truck is on the right. Several tires are scattered around them. The background shows a line of trees and hills under a cloudy sky.</p>
<p>21. Property 4:</p> <p>Scrap metal and general rubbish in back yard of house.</p>	 <p>A photograph showing a large pile of scrap metal and general rubbish in a grassy field. The pile includes various metal sheets, pipes, and other debris. In the background, there is a line of trees and hills under a cloudy sky.</p>

Description	Photograph
<p>22. Property 4:</p> <p>Old truck at back yard of house.</p>	
<p>23. Property 4:</p> <p>Old car and truck, and metal drum in back yard of house.</p>	

Description	Photograph
<p>24. Property 4:</p> <p>Old caravan and scrap metal in back yard of house.</p>	
<p>25. Property 5:</p> <p>Looking west from Mount Ararat North Road at stockpiled material.</p>	

Description	Photograph
<p>26. Property 5:</p> <p>Looking west from Mount Ararat North Road at dam.</p>	
<p>27. Property 5:</p> <p>Looking west from Mount Ararat North Road at dam with close up of shed construction..</p>	

Description	Photograph
<p>28. Property 6:</p> <p>Looking west from Mount Ararat North Road. High pressure gas pipeline.</p>	
<p>29. Property 6:</p> <p>Looking west from Mount Ararat North Road.</p>	

Description	Photograph
<p>30. Property 6:</p> <p>Modern house with some chemical bottles at front.</p>	
<p>31. Property 6:</p> <p>Waste pile in front yard.</p>	



Description	Photograph
<p>32. Property 6:</p> <p>Looking west from Mount Ararat North Road into yard containing water tank.</p>	
<p>33. Property 7:</p> <p>Looking north from Princes Highway.</p>	



Description	Photograph
<p>34. Property 8:</p> <p>Looking north from Princes Highway. High pressure gas pipeline.</p>	 <p>The photograph shows a rural landscape with a yellow fence post in the foreground. A warning sign on a yellow post reads: "WARNING", "VIA 3. TRANSMISSION CORPORATION", "HIGH PRESSURE", "GAS PIPELINE". The background features rolling hills and a cloudy sky.</p>
<p>35. Property 8:</p> <p>Looking north from Princes Highway.</p>	 <p>The photograph shows a rural landscape with rolling hills and a cloudy sky. The foreground is covered in dry grass, and there are some trees and structures in the distance.</p>

Description	Photograph
<p>36. Property 8</p> <p>Looking east from Dore Rd.</p>	
<p>37. Property 10:</p> <p>Looking west from Dore Rd.</p>	

Description	Photograph
<p>38. Property 10:</p> <p>Looking west from Dore Rd. Shed used for storage of furniture, a dirt bike and some oils, etc.</p>	
<p>39. Property 11:</p> <p>Front and rear of residential property on Property 11.</p>	

Description	Photograph
	
<p>40. Property 11: Water at rear of house</p>	

Description	Photograph
<p>41. Property 11:</p> <p>Shed at western boundary- no access due to electric fence</p>	
<p>42. Properties 12 and 13:</p> <p>Looking north from Princes Hwy. Gravel driveway to high pressure gas governor. Restricted zone. White AST visible .</p>	



Description	Photograph
<p>43. Properties 12 and 13:</p> <p>Looking north from Princes Hwy. Gravel driveway to high pressure gas governor. Restricted zone.</p>	
<p>44. Properties 12 and 13:</p> <p>Looking west from Dore Rd. Gravel driveway to high pressure gas governor. Restricted zone.</p>	

Description	Photograph
<p>45. Property 14a:</p> <p>Rear of Property 11.- Looking north/north-west</p>	
<p>46. Property 14a:</p> <p>Collapsed shed.</p>	

Description	Photograph
<p>47. Property 14a:</p> <p>Looking east. Silo tractor and oil stains on gravel.</p>	
<p>48. Property 14a:</p> <p>Cattle pen. Looking north</p>	

Description	Photograph
<p>49. Property 14:</p> <p>Looking east from Deep Creek Rd to vacant paddocks.</p>	
<p>50. Property 14:</p> <p>Looking east from Deep Creek Rd to vacant paddocks. High pressure gas line on perimeter of property. House in background is on Property 14. Driveway to the house is from Dore Rd.</p>	



Description	Photograph
<p>51. Property 14:</p> <p>Looking north west from Dore Rd to house.</p>	
<p>52. Property 14:</p> <p>Looking east from Deep Creek Rd to vacant paddocks. House visible in background</p>	

Description	Photograph
<p>53. Property 14:</p> <p>Looking east from Deep Creek Rd to vacant paddocks.</p>	
<p>54. Property 14:</p> <p>Looking south east from Deep Creek Rd with electrical transmission towers (Pylons) running overhead through property.</p>	

Description	Photograph
<p>55. Property 15:</p> <p>Looking north from Canty Lane.</p>	
<p>56. Property 15:</p> <p>Looking south from Princes Hwy at vacant paddocks.</p>	

Description	Photograph
<p>57. Property 16:</p> <p>Looking east from Ryan Rd at horse trailer, old shed, and small fenced off paddock area potentially used for horses.</p>	
<p>58. Property 16:</p> <p>Looking east from Ryan Rd at small fenced off paddock area potentially used for horses.</p>	

Description	Photograph
<p>59. Property 18:</p> <p>Looking east from Ryan Rd at modern, well maintained house with lots of trees.</p>	
<p>60. Property 19:</p> <p>Looking east from Ryan Rd at modern house with gravel driveway.</p>	



Description	Photograph
<p>61. Property 19:</p> <p>Looking east from Ryan Rd at modern house, gravel driveway, with garage/sheds visible in the southern portion of the property.</p>	
<p>62. Property 20:</p> <p>Looking east from Ryan Rd at modern house, with grassed front yard and some patchy non-grassed areas with gravel driveway.</p>	



Description	Photograph
<p>63. Property 21:</p> <p>Looking east from Ryan Rd at gravel driveway with large waste bin/skip and large garage/shed.</p>	
<p>64. Property 24:</p> <p>Looking east from Ryan Rd at gravel driveway leading to a trailer containing unidentified bags, and a shed with large tyres leaning on the outer wall.</p>	


Description	Photograph
<p>65. Property 25:</p> <p>Looking from Ryan Rd at new-looking house, with large open grassy front yard</p>	
<p>66. Property 27:</p> <p>Looking east from Ryan Rd at large new house.</p>	

Description	Photograph
<p>67. Property 27:</p> <p>Looking east from Ryan Rd at large new house, with a large garage/shed on the north side of the home.</p>	
<p>68. Property 28:</p> <p>Looking east from Ryan Rd at reserve adjacent Deep Creek.</p>	


Description	Photograph
<p>69. Property 29:</p> <p>Looking north from Canty Lane. Property contains piled up tree branches, and a large area of mounded soil (0.5 m high) in the southern portion.</p>	
<p>70. Property 31:</p> <p>Looking south from Princes Hwy at vacant paddocks.</p>	



Description	Photograph
<p>71. Property 31:</p> <p>Looking south from Princes Hwy at vacant paddocks.</p>	
<p>72. Property 32:</p> <p>Cattle farm: Sheds, 44 gallon drums, formalin drums, oil cans, scrap metals, old cars and trailers.</p>	

Description	Photograph
<p>73. Property 32:</p> <p>Cattle farm: Burn pile, scrap metals, large silos and tanks (likely water).</p>	
<p>74. Property 32:</p> <p>Cattle farm: Sheds and workshops, scrap metals, soil piles.</p>	

Description	Photograph
<p>75. Property 32:</p> <p>Cattle farm: 44 gallon drums, oil and chemical, cans, tanks.</p>	
<p>76. Property 32:</p> <p>Cattle farm: formalin drums.</p>	



Description	Photograph
<p>77. Property 32:</p> <p>Cattle farm: Large silos and tanks (likely dairy).</p>	
<p>78. Property 32:</p> <p>Cattle farm: Sheds and workshops, 44 gallon drums, oil cans, scrap metals.</p>	



Description	Photograph
<p>79. Property 32:</p> <p>Shed with tyre and scrap storage</p>	
<p>80. Property 32:</p> <p>Cattle Run (across boundary of property 32 and 34)</p>	

Description	Photograph
<p>81. Property 32:</p> <p>(Across boundary of Properties 32 and 33). Facing east, scrap materials including old cars, tyres, car parts.</p>	
<p>82. Property 32:</p> <p>Storage container, concrete mixer and general scrap material.</p>	

Description	Photograph
<p>83. Property 32:</p> <p>2 approx. 3000L ASTs (1 diesel, 1 ULP). Located on northeast of driveway.</p>	
<p>84. Property 32:</p> <p>1 approx. 2000L AST - contents unknown - labelled as flammable liquid. Located on northeast of driveway.</p>	


Description	Photograph
<p>85. Property 32:</p> <p>Scrap metal in front yard and empty storage tank.</p>	
<p>86. Property 32:</p> <p>Scrap metal in front yard, storage tank and possible silo.</p>	



Description	Photograph
<p>87. Property 33:</p> <p>Mechanics workshop setup.</p>	
<p>88. Property 33:</p> <p>Facing north outside workshop used for repairing cars. Oil staining observed on concrete outside shed. Old shipping container is stored on the northern side of the shed.</p>	

Description	Photograph
<p>89. Property 34:</p> <p>Soil stockpile approx. 400 m³ adjacent to boundary of property 32. Cattle slurry pit adjacent to east (left of picture).</p>	
<p>90. Property 34:</p> <p>Soil and rubble stockpile amongst hay bales to west of driveway in north of property 34- Looking west.</p>	

Description	Photograph
<p>91. Property 34:</p> <p>View west of surroundings from hill on property 34.</p>	
<p>92. Property 34:</p> <p>View south of surroundings from hill on property 34.</p>	

Description	Photograph
<p>93. Property 34:</p> <p>View south east of surroundings from hill on property 34.</p>	
<p>94. Property 36:</p> <p>(Boundary of properties 36 and 35). View south from Princes Hwy at vacant paddocks.</p>	

Description	Photograph
<p>95. Property 37:</p> <p>View south from Princes Hwy at vacant paddock and large sheds. Sheds are in the centre of the property near a small pond.</p>	
<p>96. Property 37:</p> <p>View south west from Mount Ararat Rd at vacant paddock.</p>	



Description	Photograph
<p>97. Property 37:</p> <p>View south from Princes Hwy at vacant paddock and hay bales.</p>	
<p>98. Property 37:</p> <p>Brick structure filled with tyres-located east of Property 38.</p>	

Description	Photograph
<p>99. Property 38:</p> <p>View south from Princes Hwy. Large shed adjacent to house with old cars and service station paraphernalia. Items include vintage bowser and old signs. May be historic service station.</p>	
<p>100. Property 38:</p> <p>View south from Princes Hwy.</p>	

Description	Photograph
<p>101. Property 38:</p> <p>Contents of shed at rear of garage.</p>	
<p>102. Property 38:</p> <p>West of property looking north.</p>	

Description	Photograph
<p>103. Property 38:</p> <p>Wrecked vehicles.</p>	
<p>104. Property 69:</p> <p>Contents of garage (former dairy) used for spraying cars</p>	

Description	Photograph
<p>105. Property 39:</p> <p>View west from Mount Ararat South Rd. House with shed containing scrap metals.</p>	
<p>106. Property 39:</p> <p>View west from Mount Ararat South Rd. Small soil stockpile located at front of property.</p>	

Description	Photograph
<p>107. Property 39:</p> <p>View west from Mount Ararat South Rd. Old wooden shed on north east corner of a largely vacant property.</p>	
<p>108. Property 39:</p> <p>View west from Mount Ararat South Rd.</p>	

Description	Photograph
<p>109. Property 39:</p> <p>View west from Mount Ararat South Rd. Two shipping containers used as bill boards (viewed from Pakenham Bypass) are present in the southern portion of the property.</p>	
<p>110. Property 43:</p> <p>View south from Canty Lane of grass covered stockpiles.</p>	



Description	Photograph
<p>111. Property 44:</p> <p>View west from gravel car park of several old metal 44 gallon drums.</p>	
<p>112. Property 44:</p> <p>View west from gravel car park containing empty drums, a shipping container, hydraulic fluid containers, and water drums. Resident advised no current or historical fuel storage.</p>	



Description	Photograph
<p>113. Property 44:</p> <p>View behind shed at entrance of old metal 44 gallon drums. Looking south .</p>	
<p>114. Property 44:</p> <p>Contents of large shed</p>	



Description	Photograph
<p>115. Property 44:</p> <p>Contents of large shed.</p>	
<p>116. Property 44:</p> <p>Triple interceptor trap in truck wash down area.</p>	


Description	Photograph
<p>117. Property 44:</p> <p>Contents of smaller shed/former maintenance area.</p>	
<p>118. Property 44:</p> <p>Contents of shipping container.</p>	



Description	Photograph
<p>119. Property 44: Dam in north of property.</p>	
<p>120. Property 45: View east from Ryan Rd.</p>	



Description	Photograph
<p>121. Property 45:</p> <p>View east from Ryan Rd. Pond/dam at rear of property.</p>	
<p>122. Property 47:</p> <p>View east from Ryan Rd of modern house.</p>	



Description	Photograph
<p>123. Property 47:</p> <p>View east from Ryan Rd of modern house. With large shed and vegetable garden.</p>	
<p>124. Property 47:</p> <p>View east from Ryan Rd of large shed with cars, tools and oils.</p>	



Description	Photograph
<p>125. Property 48:</p> <p>View east from Ryan Rd of old sheds with corrugated iron.</p>	
<p>126. Property 48:</p> <p>View east from Ryan Rd of old sheds with corrugated iron.</p>	

Description	Photograph
<p>127. Property 48:</p> <p>View east from Ryan Rd of vacant paddock.</p>	
<p>128. Property 50:</p> <p>View east from Ryan Rd of building rubble at front of property. House appears abandoned.</p>	

Description	Photograph
<p>129. Property 50:</p> <p>View east from Ryan Rd of building rubble at front of property. House appears abandoned.</p>	
<p>130. Property 51:</p> <p>View east from Ryan Rd of vacant paddock.</p>	

Description	Photograph
<p>131. Property 51:</p> <p>View east from Ryan Rd of vacant paddock.</p>	
<p>132. Property 52:</p> <p>View east from Ryan Rd. Rail electrical substation transformer switch yard.</p>	

Description	Photograph
<p>133. Property 52:</p> <p>View east from Ryan Rd. Rail electrical substation.</p>	
<p>134. Property 52:</p> <p>View east from Ryan Rd. Concrete block and switch yard</p>	

Description	Photograph
<p>135. Property 52:</p> <p>View east from Ryan Rd of ballast stockpile southeast corner of property.</p>	
<p>136. Property 52:</p> <p>View east from Ryan Rd of rail corridor and overpass.</p>	

Appendix I - Assessment tables

Appendix I – Property Assessment Level

Table I1 Property Assessment Level- Based on Table 1 and 2, DSE 2005

Property Number	Site Activities	Table 1 Potential for Contamination	Table 2 Assessment Level
1	General agricultural use and dam. Market gardener owned Property from 1956-1964	Medium	B
2	General agricultural use and dam.	Low	C
3	General agricultural use, and market gardens	Medium	B
4	General agricultural use. Agricultural and domestic waste/ machinery scrap, wrecked cars/trucks, chemical storage	Medium	B
5	General agricultural use and farm house	Low	C
6	General agricultural use, farm house, drainage channel. In northern section only-Agricultural and domestic waste/ machinery scrap, wrecked cars/trucks, chemical storage	Medium	B
7	General agricultural use, drainage channels and farm dam.	Low	C
8	General agricultural use, farmhouse and farm dam. Potential for industrial activities/chemical storage - Refrigeration equipment and supplies business listed at this address	Medium	B
9	General agricultural use and farm dam- No access – Limited view from Dore Rd	Medium	B
10	General agricultural use and farm house	Low	C
11	Residential property with farm sheds and grazing to rear	Low	C
12	Gas governor, AST	High	A
13	Gas governor, AST	High	A
14	General agricultural use, farm dam, drainage channel/old creek	Low	C
14a	Residential property with animal pen/cattle run (adjacent to Property 11), feed silo and farm machinery	Medium	B
15	General agricultural use, farm house and dam, farm shed, potential historical market gardens and fill material	Medium	B
16	Residential	Low	C



Property Number	Site Activities	Table 1 Potential for Contamination	Table 2 Assessment Level
17	Residential	Low	C
18	Residential	Low	C
19	Residential	Low	C
20	Greenhouse/market garden	Medium	B
21	Greenhouse/market garden	Medium	B
22	Greenhouse/market garden	Medium	B
23	Residential	Low	C
24	Residential, domestic garage	Low	C
25	Residential	Low	C
26	Residential	Low	C
27	Residential	Low	C
28	Reserve	Low	C
29	Residential, stockpiled soils	Low	C
30	General agricultural- No Access – viewed from Property 34	Medium	B
31	General agricultural, farm house, farm shed,	Low	C
32	General agricultural, farm house, farm sheds, fuel storage (ASTs), chemical storage, automotive engine works, cattle sheds (dairy), burn pile, general waste	Medium	B
33	General agricultural, farm house, farm sheds, automotive engine works, chemical storage, general waste	Medium	B
34	General agricultural, farm dam, cattle, run, cattle slurry pit, soil stockpiles, general waste,	Medium	B
35	Residential	Low	C
36	General agricultural, farm dam, drainage channel	Low	C
37	General agricultural, farm shed, farm dam, potential receiver of surface water run-off from olive grove to east	Low	C
38	Residential, Former dairy, Wrecked car/truck bodies, automotive maintenance/spraying	Medium	B
39	General agricultural, farm house, farm shed, drainage channel, potential surface water run-off receiver from olive grove to east.	Low	C



Property Number	Site Activities	Table 1 Potential for Contamination	Table 2 Assessment Level
40	General agricultural, drainage channel- No access – Assumed medium	Medium	B
41	General agricultural, drainage channel- No access – Assumed medium	Medium	B
42	General agricultural – No access – Assumed medium	Medium	B
43	General agricultural, farm dam, fill material (soil stockpiles), drainage channels	Medium	B
44	Truck stop, truck wash down area with integral drainage and triple interceptor trap, automotive maintenance, chemical storage (domestic), surface water run-off receiving dam	Medium	B
45	Residential, farm shed, farm dam	Low	C
46	Residential	Low	C
47	Domestic chemical storage, potential automotive maintenance,	Low	C
48	General agricultural, farm sheds, farm dam,	Low	C
49	Residential	Low	C
50	General agricultural, farm sheds	Low	C
51	General agricultural	Low	C
52	Rail electrical substation building and transformer yard, ballast stockpile	High	A

Property No.	Data Source	Activity Type	Date	Details	Potential Sources of Contamination	Potential Contaminants of Concern	Potential for Contamination Rating
1	Titles	Auto Electrician	1974-1987	Sylvia & Francis Hall (Auto Electrician)		Hydrocarbons, PAH	MEDIUM
	Titles	Market Gardener	1956-1964	Muriel & Ronald Norris (Market Gardener)	Potential for pesticides/herbicides - Based on owner occupation only	OCPs/OPPs	
	Aerials	Power lines	1947-Present	Power lines running across property			
	Incidental observation	Agricultural	16-18 January 2013	Vacant paddock with electrical transmission towers (Pylons) running overhead through property.	Viewed from Deep Creek Rd		
2	Aerials	Power lines	1947-Present	Power lines running across property			LOW
	Incidental observation	Agricultural	16-18 January 2013	Vacant paddocks with electrical transmission towers (pylons) running across in an east west orientation.	Viewed property 2 and 3 from Dore Rd.		
3	Titles	Engineer	1980 - 1988	Marrianne & John Payne (Engineer)			MEDIUM
	Aerials	Power lines	1947-Present	Power lines running across property			
	Aerials	Market garden	2001	Part of a market garden and dam visible in the northern section			
	Incidental observation	Agricultural	16-18 January 2013	Vacant paddocks with electrical transmission towers (pylons) running across in an east west orientation.	Viewed from Dore Road		
4	Aerials	Power lines	1947-Present	Power lines running across property			MEDIUM
	Aerials	Market garden	1971	Potential crops/greenhouse	Potential for pesticides/herbicides	OCPs/OPPs	
	Aerials	Farm Machinery	2010	General scrap and disused farming equipment scattered around buildings	Machinery related contaminants	Metals, hydrocarbons, PAH	
	Contamination source	Automotive repair/engine works, chemical storage,	16-18 January 2013	Wrecked cars and trucks, building rubble, general scrap and waste eg metal, car and truck tyres, plastic and metal drums, motor oil bottles. Truck carrying a storage tank (old UST). Old domestic heating oil tank on west exterior wall of house.		Hydrocarbons	
	Incidental observation	Residential	16-18 January 2013	House not inhabited, in poor condition. ACM unlikely due to age of property. Scattered waste material in front yard eg metal, wood, buildings rubble.			
5	Incidental observation	Agricultural	16-18 January 2013	Vacant paddocks			LOW
	Incidental observation	Agricultural/ Residential	16-18 January 2013	Dam in southeast. Old shed/barn frame in south of property with wooden pallets and stockpiled material	Viewed from Mt Ararat North Rd		
6	Aerials	Farm Machinery	2010	General scrap and disused farming equipment scattered around house at northern boundary and on adjoining property (Property 4)		Metals hydrocarbons, PAH	MEDIUM
	Aerials	Cleared land	1979	Cleared land			
	Aerials	Highway duplication	1991	Potentially impacted during Princes Highway duplication			
	Incidental observation	Shed	16-18 January 2013				
	Incidental observation	Agricultural	16-18 January 2013	Grazing cattle			
	Incidental observation	Agricultural	16-18 January 2013	Vacant paddocks. Drainage channel runs fro property 5 southwest to dam at western boundary of the property			
	Incidental observation	Agricultural	16-18 January 2013	Paddock with truck and cattle			
	Contamination source	Chemical storage	16-18 January 2013	Potential chemical storage in sheds and house located in north of property.			
7	Aerials	Highway duplication	1991	Potentially impacted during Princes Highway duplication			LOW
	Incidental observation	Agricultural	16-18 January 2013	Vacant paddock with dam and old creek/drainage channel	Property not accessed. Viewed from Princes Hwy and property 6		
8	Aerials	Highway duplication	1991	Potentially impacted during Princes Highway duplication			MEDIUM
	Incidental observation	Agricultural	16-18 January 2013	Vacant paddocks , Property also 8 contains a high pressure gas pipeline along southern boundary.	Property access not gained- no answer from resident on day of inspection		
	Contamination source	Residential/Industrial	16-18 January 2013	Vacant paddock between road and house on this property. Buildings are on a hill - cannot view from street. No Access. Dam located in south west of property.	Web search suggested potential industrial land use (Southside Refrigeration- equipment and supplies)	CFC, VOC, Metals, Hydrocarbons	
9	Incidental observation	Agricultural	16-18 January 2013	Paddocks with dam in northwest	No access Viewed from Dore Rd (poor view)		MEDIUM
10	Incidental observation	Residential	16-18 January 2013	With domestic shed used for storage of furniture, a dirt bike and some oils, etc. - Potential for domestic automotive maintenance	Viewed from Dore Rd		LOW
11	Incidental observation	Residential/agricultural	16-18 January 2013	Residential property with farm sheds and grazing to rear.			LOW
12	Aerials	Highway duplication	1991	Potentially impacted during Princes Highway duplication			HIGH
	Aerials	Gas governor	1991	Appears to be a pump station I 2012 imagery (Google maps) pump station	Gas governor- potential for asbestos in gaskets & electrical switch boards (dependant on age) and general filling	PAHs, hydrocarbons, PCBs, asbestos	
	Titles	Gas governor	2008 - Present	APA Gasnet Australia (Operations) Pty Ltd			
	Titles	Gas governor	1999 - 2008	GPU Gasnet Pty Ltd			
	Titles	Gas governor	1998 - 1999	Transmission Pipelines Australia (Assets) Pty Ltd			
	Titles	Gas governor	1997 -1998	Gas Transmission Corporation			
	Titles	Gas governor	1982 - 1997	Gas And Fuel Corporation Of Victoria			
	Incidental observation	Gas governor	16-16-18 January 2013	High pressure gas governor. Gravel driveway leads to restricted area.	Restricted area- Viewed from fence lines		
13	Contamination source	AST	11 April 2013	AST present on site associated with gas governor equipment	AST	PAH and/or hydrocarbons	HIGH
	Aerials	Highway duplication	1991	Potentially impacted during Princes Highway duplication			
	Aerials	Gas governor	1991	Industrial site - Appears to be a pump station In 2012 imagery (Google maps) pump station	Gas governor- potential for asbestos in gaskets & electrical switch boards (dependant on age) and general filling	PAHs, hydrocarbons, PCBs, asbestos	
	Titles	Gas governor	2008 - Present	APA Gasnet Australia (Operations) Pty Ltd			
	Titles	Gas governor	1999 - 2008	GPU Gasnet Pty Ltd			
	Titles	Gas governor	1998 - 1999	Transmission Pipelines Australia (Assets) Pty Ltd			
	Titles	Gas governor	1997 - 1998	Gas Transmission Corporation			
	Titles	Gas governor	1984 - 1997	Gas And Fuel Corporation Of Victoria			
	Titles	Gas governor	1970-1984	Victorian Pipelines Commission			
	Incidental observation	Gas governor	16-18 January 2013	Gravel driveway to high pressure gas governor. Restricted zone.	Restricted area- Viewed from fence lines		
	Incidental observation	AST	11 April 2013	AST present on site associated with gas governor equipment	AST	PAH and/or hydrocarbons	

Property No.	Data Source	Activity Type	Date	Details	Potential Sources of Contamination	Potential Contaminants of Concern	Potential for Contamination Rating
14	Aerials	Highway duplication	1991	Potentially impacted during Princes Highway duplication			LOW
	Incidental observation	Agricultural	16-18 January 2013	Vacant paddocks viewed from Deep Creek Rd and Dore Rd			
	Incidental observation	Agricultural	16-18 January 2013	Vacant paddocks with high pressure gas line on perimeter of property. Viewed from Deep Creek Rd			
	Incidental observation	Residential	16-18 January 2013	Vacant paddock. House visible from Deep Creek Rd (in background) and Dore Rd. Dam in centre of property.	Viewed from Dore Rd and Deep Creek Rd		
14a	Contamination source	Animal Pen/ Cattle run	16-18 January 2013	Small cattle run/ pen in east boundary adjacent to north side of Property 11	Animal pesticide/fungicide treatments	OCPs/OPPs	MEDIUM
	Incidental observation	Building construction	16-18 January 2013	Construction of building (foundations)			
	Incidental observation	Residential	11 April 2013	Completed residential building			
	Incidental observation	Feed silo	11 April 2013	Animal feed silo (pellets)			
	Contamination source	Farm machinery	11 April 2013	Oil staining (localised) on gravel surface and storage of farm equipment	Fuel/oils	PAH and/or hydrocarbons	
15	Aerials	Filling	1956	Large dam filled between 1947 and 1956 - vegetation cleared	Potential for imported fill	Broad screen	MEDIUM
	Aerials	market gardens	1971	Potential crops/greenhouse		OCPs/OPPs	
	Aerials	Highway duplication	1991	Potentially impacted during Princes Highway duplication			
	Aerials	Water tanks	2012	At least 2 ASTs - likely rain water tanks			
	Incidental observation	Agricultural	16-18 January 2013	Grazing cattle Dam in southwest adjacent Deep Creek			
	Incidental observation	Agricultural	16-18 January 2013	Vacant paddocks viewed From Princes Hwy	Viewed from Princes Hwy and Canty Lane		
16	Incidental observation	Residential	16-18 January 2013	Low density residential	Viewed from Ryan Rd		LOW
17	Aerials	Residential	2001	Developed to low density residential			LOW
18	Incidental observation	Residential	16-18 January 2013	Low density residential	Viewed from Ryan Rd		LOW
	Aerials	Residential	2001	Developed to low density residential			LOW
19	Incidental observation	Residential	16-18 January 2013	Low density residential	Viewed from Ryan Rd		LOW
	Aerials	Residential	2001	Property developed to low density residential			LOW
20	Incidental observation	Residential	16-18 January 2013	Low density residential	Viewed from Ryan Rd		MEDIUM
	Aerials	Greenhouse	1971	Potential crops/greenhouse	potential for pesticides/herbicides	OCPs/OPPs	
	Aerials	Residential	2001	Developed to low density residential			
21	Incidental observation	Residential	16-18 January 2013	Low density residential	Viewed from Ryan Rd		MEDIUM
	Aerials	Greenhouse	1971	Potential crops/greenhouse	potential for pesticides/herbicides	OCPs/OPPs	
	Aerials	Residential	2001	Developed to low density residential			
	Aerials	Animal Pen	2010	Large grey rectangle visible- possible horse training pen			
22	Incidental observation	Residential	16-18 January 2013	Low density residential	Viewed from Ryan Rd		MEDIUM
	Aerials	Greenhouse	1971	Potential crops/greenhouse	potential for pesticides/herbicides	OCPs/OPPs	
	Aerials	Residential	2001	Developed to low density residential			
23	Incidental observation	Residential	16-18 January 2013	Low density residential	Viewed from Ryan Rd		LOW
24	Incidental observation	Residential	16-18 January 2013	Developed to low density residential			LOW
	Incidental observation	Residential	16-18 January 2013	Low density residential			
	Incidental observation	Garage/shed (domestic)	16-18 January 2013	Gravel driveway from Ryan's Road leading to a trailer containing unidentified bags, and a shed with large tyres leaning on the outer wall.	Viewed from Ryan Rd		
25	Incidental observation	Residential	16-18 January 2013	Developed to low density residential	Viewed from Ryan Rd		LOW
	Aerials	Residential	2001	Developed to low density residential			
26	Incidental observation	Residential	16-18 January 2013	Low density residential	Viewed from Ryan Rd		LOW
27	Incidental observation	Residential	16-18 January 2013	low density- Old trailer and tractor visible at end of driveway	Viewed from Ryan Rd		LOW
28	Incidental observation	Reserve	16-18 January 2013	Reserve adjacent Creek.	Viewed from Ryan Rd		LOW
29	Incidental observation	Residential	16-18 January 2013	Low density residential			LOW
30	Incidental observation	Stockpiled soils	16-18 January 2013		Viewed from Canty Lane		MEDIUM
	Aerials	Gas Pipe Trench	2004	A linear section of disturbed ground (possible track or trench approx 15-20m wide) is visible running south through the property- leading from property 12 (gas governor)			
31	Incidental observation	Agricultural	16-18 January 2013	No Access. No contamination indicators from distant view (top of hill Property 34) and aerials	Not Accessed - Assumed medium		LOW
	Aerials	Highway duplication	1991	Potentially impacted during Princes Highway duplication			
	Aerials	Gas Pipe Trench	2004	A linear section of disturbed ground (possible track or trench approx 15-20m wide) is visible running south through the property- leading from property 12 (gas governor)			
32	Incidental observation	Agricultural/Residential	16-18 January 2013	Vacant paddocks viewed from Deep Creek Rd	Viewed from Princes Hwy and access driveway to Property 32		MEDIUM
	Aerials	Highway duplication	1991	Potentially impacted during Princes Highway duplication			
	Aerials	ASTs and farm machinery	2012	At least 11 ASTs visible- appear to be cattle feed silos, and rain water tanks. Scattered disused farming equipment. Cattle visible in Google Maps image	Machinery related contaminants	Metals, hydrocarbons, PAH	
	Aerials	Potential building demolition	2001	Altered building layout - additions and possibly demolition	Potential asbestos/ lead paint associated with building demolition	Metals, asbestos	
33	Incidental observation	Farmhouse compound and garages	16-18 January 2013	Dam located at south west boundary			MEDIUM
	Contamination source	Chemical/ fuel Storage, dairy farming, engine works	16-18 January 2013	Properties 32 and 33: Cattle farm: Sheds and workshops, 44 gallon drums, formalin drums, oil cans, scrap metals, old cars and trailers, evidence of burning (in drums). One shed contains mechanics workshop setup. Large silos and tanks (likely water and dairy) also present.			
	Aerials	Highway duplication	1991	Potentially impacted during Princes Highway duplication			
	Aerials	ASTs and farm machinery	2012	5 rounded structures- may be ASTs (likely rain tanks) ground surface generally disturbed and scattered disused farming equipment	Machinery related contaminants	Metals, hydrocarbons, PAH	
	Aerials	Potential building demolition	2001	Altered building layout - additions and possibly demolition		ACM, lead, metals	
33	Contamination source	ASTs- fuel storage	16-18 January 2013	2 x ~3000L ASTs (1 labelled diesel, 1 labelled ULP) 1x ~2000L AST - labelled as flammable liquid	ASTs	PAH and/or hydrocarbons	MEDIUM
	Contamination source	Chemical/ fuel Storage, dairy farming, engine works	16-18 January 2013	Properties 32 and 33: Cattle farm: Sheds and workshops, 44 gallon drums, formalin drums, oil cans, scrap metals, old cars and trailers, evidence of burning (in drums). One shed contains mechanics workshop setup. Large silos and tanks (likely water and dairy) also present.		Hydrocarbons, metals, PAH, nutrients,	

Property No.	Data Source	Activity Type	Date	Details	Potential Sources of Contamination	Potential Contaminants of Concern	Potential for Contamination Rating
34	Aerials	Track/circuit	1979	Track or circuit			MEDIUM
	Aerials	Gas Pipe Trench	2004	A linear section of disturbed ground (possible track or trench approx 15-20m wide) is visible running south through the property- leading from property 12 (gas governor)			
	Aerials	Machinery/ Stockpiles/ cattle run	2012	Car wrecks and soil stockpiles near boundary of property 322012- Car wrecks and soil stockpiles near boundary of property 32. cattle run and slurry pit visible			
	Contamination source	Imported fill/ stockpile and slurry pit	16-18 January 2013	Soil stockpile ~400 m3 adjacent to boundary of property 32. Cattle slurry pit adjacent.	Potenntial microbial, nutiruents		
	Incidental observation	Agricultural	16-18 January 2013	Soil and rubble stockpile amongst hay bales		Broad screen	
35	Incidental observation	Agricultural	16-18 January 2013	Viewed vacant paddocks to south west - south west from top of hill. Large dam in southwest			LOW
	Aerials	Highway duplication	1991	Potentially impacted during Princes Highway duplication			
36	Incidental observation	Residential	16-18 January 2013	Low density residential	Viewed fro Princes Hwy		LOW
	Aerials	Highway duplication	1991	Potentially impacted during Princes Highway duplication	Viewed from Princes Hwy		
37	Incidental Observation	Agricultural	16-18 January 2013	Paddocks with dam in southwest			LOW
	Aerials	Disturbed ground	1971	Disturbed ground surface and tree clearing			
	Aerials	Tree clearing	1979	Further tree clearing			
	Aerials	Highway duplication	1991	Potentially impacted during Princes Highway duplication			
	Incidental observation	Agricultural	16-18 January 2013	Vacant paddocks with large sheds and dam in central portion of the property and hay bales.	Viewed from Princes Hwy		
38	Incidental observation	Residential/ Garage	16-18 January 2013	House with shed containing scrap metals. Small soil stockpile located at front of property.			MEDIUM
	Aerials	Highway duplication	1991	Potentially impacted during Princes Highway duplication			
	Aerials	Garage	2010	Street view on Google Maps shows shed/garage with a 44 gallon drum	Potential fuel storage / spills	Hydrocarbons, PAH	
	Incidental observation	Potential fuel storage/ engine works	16-18 January 2013	Large shed adjacent to house with old cars and service station paraphernalia. Items include vintage bowser and old signs.	Viewed from Princes Hwy. Potential fuel storage / spills	Hydrocarbons, PAH	
	Incidental observation	Former dairy buildings	11 April 2013	Site owner confirmed the shed on-site was a former dairy building and milking shed	Dairy products, chemicals/solvents	OCP/OPP, nutrients and biological	
39	Incidental observation	Car repair and maintenance	11 April 2013	Former dairy building used for the maintenance and repair of several old trucks and cars. Several wrecked cars and trucks present across the property, left to rust and degrade in the open.	Paints, solvents, fuels, oil and car and truck wrecks	Metals, hydrocarbons, PAH	LOW
	Incidental observation	Agricultural	16-18 January 2013	Old wooden shed on north east corner of a largely vacant property. Sheep graze in the paddock.			
	Incidental observation	Storage containers	16-18 January 2013	Two shipping containers used as bill boards (viewed from Pakenham Bypass) are present in the southern portion of the property.	Viewed from Mt Ararat Rd and Princes Fwy (Pakenham Bypass)		
40	Incidental observation	Agricultural	16-18 January 2013	No Access.	No Access- Assumed medium as only viewed from Princes Fwy		MEDIUM
41	Aerials	Agricultural	1947	Cleared in sections and potential crop or mowing lines			MEDIUM
	Aerials	Gas Pipe Trench	2004	A linear section of disturbed ground (possible track or trench approx 15-20m wide) is visible running south through the property- leading from property 12 (gas governor)			
	Incidental observation	Agricultural	16-18 January 2013	No Access. Assumed low based on distant view and aerials	No Access- Assumed medium as only viewed from Princes Fwy		
42	Aerials	Gas Pipe Trench	2004	A linear section of disturbed ground (possible track or trench approx 15-20m wide) is visible running south through the property- leading from property 12 (gas governor)			MEDIUM
	Incidental observation	Agricultural	16-18 January 2013	No Access.	No Access- Assumed medium as only viewed from Princes Fwy		
43	Aerials	Greenhouse	1971	Potential crops/greenhouse		OCPs/OPPs	MEDIUM
	Aerials	Disturbed earth/Filling	1991	Disturbed ground surface visible in NW corner	Potential imported soil	Broad screen	
	Aerials	Track	2001	Track in place where disturbed surface was observed in 1991 image.			
	Aerials	Gas Pipe Trench	2004	A linear section of disturbed ground (possible track or trench approx 15-20m wide) is visible running south through the property- leading from property 12 (gas governor)			
	Incidental Observation	Agricultural	16-18 January 2013	Dam adjacent Cauty Lane in North			
	Contamination source	Potential filling/stockpiling	16-18 January 2013	Grass covered stockpiles viewed from rear of property 44.	Northwest area (stockpiles) viewed from rear of Property 44	Broad screen	
44	Aerials	Truck stop	2010	In use as truck stop- No visual evidence of fuel storage or engine works being carried out - however two buildings on site.		Metals, hydrocarbons, PAH	MEDIUM
	Contamination source	Garage (domestic)	16-18 January 2013	Residential low density to south. Centre of property is gravel car park. Contents include, empty drums, a shipping container, hydraulic fluid containers, and water drums. Resident advised no current or historical fuel storage. Empty 44 gallons drums observed at entrance.		Metals, hydrocarbons, PAH	
	Incidental observation	Truck Stop	11 April 2013	Property owner confirmed verbally that property has been used as a truck stop for 15-20 years. Minor maintenance included tyre changes, wash down, oil top up etc.		Metals, hydrocarbons, PAH	
	Contamination source	Wash down area	11 April 2013	The truck wash down area in the centre of the property has integral drainage and a triple interceptor trap.		Metals, solvents, hydrocarbons, PAH	
	Incidental observation	Dam	11 April 2013	A small dam located in the eastern corner of the property collects surface water run-off.	May represent a point of contamination accumulation	Metals, hydrocarbons, PAH	
	Incidental observation	Sheds	11 April 2013	A large shed used for general residential storage is located in the south of the property. A smaller shed to north was used historically as an office for the truck stop business and a garage/maintenance building. It is currently in use as domestic storage but some drums of oil, fuel, grease and detergent remain.		Metals, hydrocarbons, PAH	
45	Aerials	Agricultural	2010	Large dam with bright green water (algae) visible			LOW
	Incidental observation	Residential	16-18 January 2013	Dam/pond at rear of property with small shed likely pump shed) at west edge	Viewed from Ryan Rd and over fence from Property 44		
46	Incidental observation	Residential	16-18 January 2013	Low density residential	Viewed from Ryan Rd		LOW
47	Titles	Industrial chemist	1977 - 1989	Wendy & Barry Turner (Industrial Chemist) -			LOW
	Contamination source	Potential engine works, chemical/fuel storage (domestic)	16-18 January 2013	Modern House, with vegetable garden, large shed with cars, tools, oils,	Viewed from Ryan Rd		
48	Incidental observation	Sheds	16-18 January 2013	Old Sheds, corrugated iron. Dam in northwest.	Viewed from Ryan Rd		LOW
49	Titles	Steel worker	1961 - 1966	Dora & Henry Percy (Steel Worker) -			LOW
	Incidental observation	Residential	16-18 January 2013	Low density residential	Viewed from Ryan Rd		
50	Incidental observation	Residential	16-18 January 2013	House with vacant paddocks. Building rubble at front of property. House appears abandoned	Potential for ACM in house. Age of house unknown. Viewed from Ryan Rd		LOW
51	Incidental observation	Agricultural	16-18 January 2013	Vacant paddocks	Viewed from Ryan Rd		LOW
52	Titles	Rail Electrical Substation	2011 - Present	Victorian Rail Track - 2011 - current		PCBs, asbestos, hydrocarbons, metals	HIGH
	Titles	Rail Electrical Substation	2011 - 2011	Victorian Rail Track - 2011 - 2011		PCBs, asbestos, hydrocarbons, metals	
	Titles	Rail Electrical Substation	1950 - 2011	The Victorian Railways Commissioners -(VicTrack)		PCBs, asbestos, hydrocarbons, metals	
	Aerials	Rail Electrical Substation	1950 - 2012	Rail electrical substation		PCBs, asbestos, hydrocarbons, metals	
	Contamination source	Rail Electrical Substation	16-18 January 2013	Rail electrical substation, Currently in use- Some ballast piles and waste present	Viewed from Ryan Rd	PCBs, asbestos, hydrocarbons, metals	

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