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GHD Pty Ltd (April 2016) Wonthaggi North East Growth Area Planning Studies – Contaminated Land Investigation, Prepared for Bass Coast Shire Council (document reference 31/33577/248148)

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1. 248148 Rev 2_Main Report.pdf
2. 248148 Rev 2_Figures.pdf
3. 248148 Rev 2_Appendices A-C.pdf
4. 248148 Rev 2_Appendices D-F.pdf
5. 248148 Rev 2_Appendices G-J.pdf

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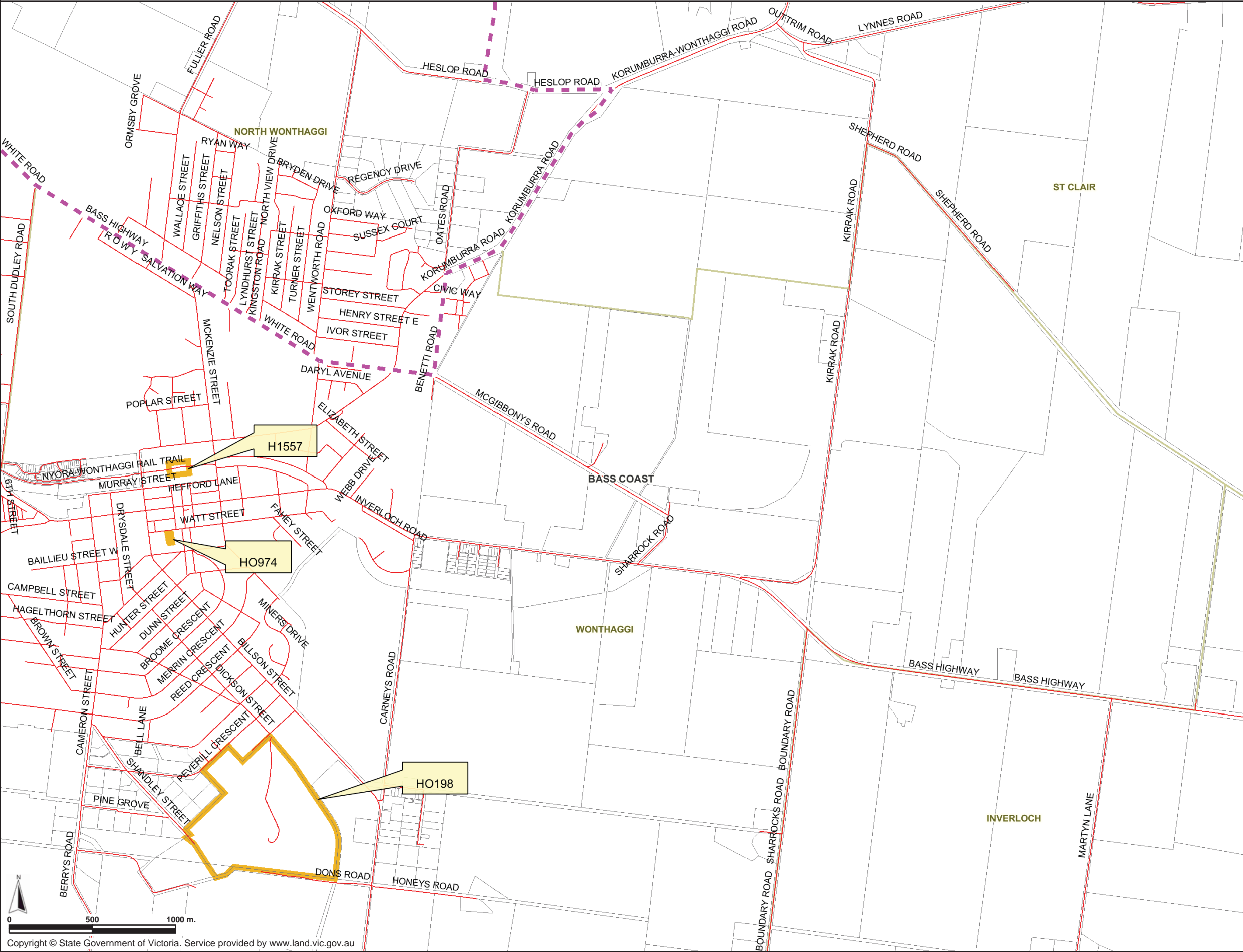
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Appendix G – Heritage Register search



Legend

- WARRNAMBOOL**
- Major Town
 - Major Road, Road
 - Road name
 - Railway, Tramway
 - Property/Parcel, Selected
 - Address, Lot, Crown allotment
 - River, Stream, Coastline
 - Waterbody
 - Locality
 - Locality Name
 - Local Government Area
 - Local Government Name
 - Urban Growth Boundary (UGB)
 - Area outside the UGB
 - Investigation Area
 - Land added to UGB since 2005
 - Boundary of Searched Suburb

ZONES

- AC2 - Activity Centre
- B1Z - Commercial 1
- B2Z - Commercial 1
- B3Z - Commercial 2
- B4Z - Commercial 2
- B5Z - Commercial 1
- C1Z - Commercial 1
- C2Z - Commercial 2
- CA - Commonwealth Land
- CCZ - Capital City
- CDZ - Comprehensive Development
- DZ - Dockland
- ERZ - Environmental Rural
- FZ - Farming
- GRZ - General Residential
- GWAZ - Green Wedge A
- GWZ - Green Wedge
- IN1Z - Industrial 1
- IN2Z - Industrial 2
- IN3Z - Industrial 3
- LDRZ - Low Density Residential
- MUZ - Mixed Use
- NRZ - Neighbourhood Residential
- PCRZ - Public Conservation & Resource
- PDZ - Priority Development
- PFRZ - Public Park & Recreation
- PUZ1 - Public Use - Service & Utility
- PUZ2 - Public Use - Education
- PUZ3 - Public Use - Health Community
- PUZ4 - Public Use - Transport
- PUZ5 - Public Use - Cemetery/Crematorium
- PUZ6 - Public Use - Local Government
- PUZ7 - Public Use - Other Public Use
- PZ - Port
- R1Z - General Residential
- R2Z - General Residential
- R3Z - General Residential
- RAZ - Rural Activity
- RCZ - Rural Conservation
- RD21 - Road - Category 1
- RD22 - Road - Category 2
- RGZ - Residential Growth
- RLZ - Rural Living
- RUZ - Rural
- SUZ - Special Use
- TZ - Township
- UFZ - Urban Floodway
- UGZ - Urban Growth

OVERLAYS

- AEO - Airport Environs
- BMO - Bushfire Management (also WMO)
- CLPD - City Link Project
- DCPD - Development Contributions Plan
- DDO - Design & Development
- DDOPT - Design & Development Part
- DPO - Development Plan
- EAD - Environmental Audit
- EMO - Erosion Management
- ESD - Environmental Significance
- FO - Floodway
- HO - Heritage
- IPD - Incorporated Plan
- LSIO - Land Subject to Inundation
- MAE01 - Melbourne Airport Environs 1
- MAE02 - Melbourne Airport Environs 2
- NCD - Neighbourhood Character
- PO - Parking
- PAD - Public Acquisition
- RO - Restructure
- RCD - Road Closure
- SBD - Special Building
- SLO - Significant Landscape
- SMD - Salinity Management
- SRO - State Resource
- VPO - Vegetation Protection



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Victorian Heritage Database Report

WONTHAGGI STATE COAL MINE (EASTERN PRECINCT)



Location:

STATE COAL MINE ACCESS ROAD WONTHAGGI, BASS COAST SHIRE

Heritage Status / Level of Significance:

Registered

Victorian Heritage Register (VHR) Number: H0198

Listing Authority: VHR

Heritage Overlay Number: HO183**Statement of Significance:**

What is significant?

The Wonthaggi State Coal Mine Eastern Area operated from 1919 to 1947. The Historic Reserve site includes the underground mine areas of the original No.1 bench, with three tunnels and portals, embankment and footings for winding machinery, footings for brace and electricity substation, mullock and slack heaps, railway embankment, and a number of buildings and pieces of machinery brought to the site from other parts of the State Coal Mine.

At the beginning of the twentieth century black coal from New South Wales powered Victoria's railway system, gasworks and manufacturing industries. In 1909 a prolonged strike on the New South Wales coalfields threatened Victoria's economic viability, and the Victorian Government sought to end its dependence by mining its own, poorer-quality coal deposits in South Gippsland at Wonthaggi which at the time was sparsely settled and possessed no transport links with Melbourne. The first shipment of Wonthaggi coal occurred on 25 November 1909 being dispatched by bullock teams to Inverloch and thence by ship to Melbourne. Three months later transportation by rail commenced after the Railways Department constructed a line 27 miles from Nyora in the record time of ten weeks. In 1910 the Government laid out a model township and by 1921 Wonthaggi had a settled population of over 5,000 making it one of the largest towns in Gippsland.

The Wonthaggi State Coal Mine, established in 1909, developed into a huge mining complex which operated until 1968. Within the first year of operation a power station was built to supply electricity to the whole area and installation was under way of the necessary engineering works for mining, ventilation, water drainage, haulage, and coal processing. At a very early stage, the mine also had a brickworks, which operated initially to construct the power station. The mine's peak period of employment was the year 1925-26 when 1,821 men were employed. During its operational life, the Wonthaggi State Coal Mine produced 16.74 million tons, making the field the largest black coal producer in the State's history and the fourth largest in Australia.

At a separate mining area (in the Kirrak Basin) at the east of the township, mining on three separate bench areas occurred from 1919 to 1931, producing over 1.2 million tons. The Eastern Area site was the most southeasterly of the workings of the Kirrak basin and the more productive of the two main areas opened in the Kirrak basin. New infrastructure was required because the area was too far from existing plant. The No.1 bench at 242 metres was reached in 1916 but a down throw fault delayed reaching the No.2 bench at 731 metres. The No.3 bench at 1200 metres was reached in 1919. By 1920 the yield was 350 tons per day. A down cast shaft for ventilation was completed in 1922. Seams in the Nos. 1 and 2 benches were narrow and contained dirt bands, but the No. 3 bench seam was cleaner, 1 metre thick and more productive. Work began in 1924 to take the main heading through another fault to the 4th bench. This heading was used for haulage and the No. 18 shaft (No.18) was started in 1926 was used for ventilation and transport of ponies and men. Coal was first produced from the No.4 bench area in 1930.

How is it significant?

The Wonthaggi State Coal Mine Eastern Area is of historical significance to the State of Victoria

Why is it significant?

The Wonthaggi State Coal Mine Eastern Area is historically significant as part of the State's most significant black coal mine. The State Coal Mine reflects Victoria's endeavour to become self sufficient in the provision of vital black coal supplies to the State's railways and industry in the early twentieth century. The Eastern area including the underground workings has the potential to educate in relation to this important aspect of Victoria's history.

The Wonthaggi State Coal Mine Eastern Area is significant as a representative example of a black coal mine from the first half of the twentieth century. The underground workings of the Eastern Area Historic Reserve have the potential to educate on important aspects of this industry, including the technology and working conditions of mining coal by hand and the complex organisation of labour required in such a mine.

Heritage Study / Consultant	
Construction Date Range	
Architect / Designer	
Municipality	BASS COAST SHIRE
Other names	
Hermes number	14147
Property number	

This place/object may also be State heritage listed. Check the Victorian Heritage Database. For further details, contact the local Council or go to Planning Schemes Online

Victorian Heritage Database Report

WONTHAGGI STATE COAL MINE CENTRAL PRECINCT

**Location:**

GRAHAM STREET WONTHAGGI, Bass Coast Shire

Heritage Status / Level of Significance:

Registered

Victorian Heritage Register (VHR) Number: H1778**Listing Authority: VHR****Heritage Overlay Number: HO144****Statement of Significance:**

What is Significant?

At the beginning of the twentieth century black coal from New South Wales powered Victoria's railway system, gasworks and manufacturing industries. In 1909 a prolonged strike on the New South Wales coalfields threatened Victoria's economic viability, and the Victorian Government sought to end its dependence by mining its own, poorer-quality coal deposits in South Gippsland at Wonthaggi which at the time was sparsely settled and possessed no transport links with Melbourne. The first shipment of Wonthaggi coal occurred on 25

November 1909 being dispatched by bullock teams to Inverloch and thence by ship to Melbourne. Three months later transportation by rail commenced after the Railways Department constructed a line 27 miles from Nyora in the record time of ten weeks. In 1910 the Government laid out a model township and by 1921 Wonthaggi had a settled population of over 5,000 making it one of the largest towns in Gippsland.

The Wonthaggi State Coal developed into a huge mining complex which operated until 1968. Within the first year of operation a power station was built to supply electricity to the whole area and installation was under way of the necessary engineering works for mining, ventilation, water drainage, haulage, and coal processing. At a very early stage, the mine also had a brickworks, operated initially to construct the power station. The mine's peak period of employment was the year 1925-26 when 1,821 men were employed. During its operational life, the Wonthaggi State Coal Mine produced 16.74 million tons, making the field the largest black coal producer in the State's history and the fourth largest in Australia.

How is it significant?

The Wonthaggi State Coal mine is of historical and scientific importance to the State of Victoria

Why is it significant?

The Wonthaggi State Coal Mine Central Precinct (comprising No.5 Brace, Rescue Station, McBride's tunnel, Power Station and Workshops, and associated archaeological relics) is historically and scientifically significant as an integral part of the State's most significant black coal mine. The Wonthaggi State Coal Mine Central Precinct was the heart of the field: the first place where coal was mined, the first major mining, haulage, processing and servicing centre, and the only site which was continuously operated until the mine's closure in 1968. The three most significant features of the precinct (No. 5 Brace, Rescue Station, and Power Station & Workshops) are not only scientifically important as rare industrial relics, but their size and prominence are tangible evidence of the former scale of the State Coal Mine's operations. The state of deterioration of the place is illustrative of the disintegration of Wonthaggi's central role in Victoria's black coal industry.

The Wonthaggi State Coal Mine Central precinct makes a unique contribution to defining the character of the Wonthaggi State Coal Mine and also has potential to yield significant archaeological evidence of the technological development of coal mining in Victoria.

Heritage Study / Consultant	
Construction Date Range	
Architect / Designer	
Municipality	BASS COAST SHIRE
Other names	
Hermes number	5637
Property number	

This place/object may also be State heritage listed. Check the Victorian Heritage Database. For further details, contact the local Council or go to Planning Schemes Online

Place Details

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State Coal Mine Historic Reserve Area, Graham St, Wonthaggi, VIC, Australia

Photographs



List	Register of the National Estate (Non-statutory archive)
Class	Historic
Legal Status	Registered (28/05/1996)
Place ID	18326
Place File No	2/18/298/0001

Statement of Significance

The mine as a whole has importance for its association with the move of the Victorian State Government into the operation of a mining venture with an associated model town for workers, to give the Victorian Railways independence from New South Wales coal supplies and the later industrial relations issues which occurred at the mine; developments which have had a significant role in the evolution of the State of Victoria and Australian industrial relations (Criterion A.4). The East Area is important in demonstrating a distinctive process of underground mining of narrow seams of coal in faulted ground through sloping adits, a process which is of considerable interest and in danger of being lost. No 18 Area demonstrates part of this process as a ventilation and access shaft some 4km horizontally from the adit entrance, being constructed to allow miners working on piece rates to have quicker access to the coal face (Criterion B.2). The No 5 Brace Area demonstrates the surface operations of screening and loading coal to rail trucks using a gravity feed system with aspects which were developed at this mine, while the surrounding site has evidence of the first mine shafts of the venture, the site of the original tent town and the mine rescue training centre which is of interest for its early occupational health and safety considerations (Criteria B.2, C.2, and F.1). The Power House, although reduced in integrity by the loss of its boilers and steam driven generating plant, is important as a key part of the first electrified coal mine in Australia, as is the underground electrical lighting, signalling, winding, drilling and dewatering equipment in operation at East Area which represents succeeding generations of electrically operated mining equipment which is accessible to the public (Criterion F.1). The No 20 Site with its air shaft ventilation remnants, is highly valued by the Wonthaggi community as a symbolic marker of the loss of life in two underground explosions and the importance of adequate ventilation for underground coal mining (Criterion G.1).

Official Values Not Available

Description

The State Coal Mine Historic Reserve, Wonthaggi, is a selection of nine former black coal mining or ancillary sites from the twenty-two sites which formed the State Coal Mine. Each site illustrates one or more components of black coal mining. When the nine sites are viewed as a whole a total picture of black coal mining becomes evident. Because of the demolition of many buildings and clearing of sites following closure of the State Coal Mine in 1968 the buildings and structures listed are the sole remnants of an immense industrial undertaking. Black coal mines commenced operating in the Gippsland region in the late nineteenth century and by 1900 supplied about one third of the coal needed for Victoria. The State Railways were the largest coal consumer, depending heavily on New South Wales (NSW) supplies. When NSW miners went on strike in 1909 the Victorian Government was forced to import coal and in this emergency situation began operating the State Coal Mine at Wonthaggi. Work commenced rapidly with makeshift equipment and coal was taken by bullock wagon to Inverloch and then by boat to Melbourne before the rail was extended to Wonthaggi. More than 750 miners and construction workers lived in a tent city before the first permanent buildings were constructed in 1910. A model town was built for workers and the mine was developed using the latest technology. It is

believed to have been the first fully electrified coal mine in Australia. The mine operated profitably until the 1920s but the faulted ground and narrow seams of coal at Wonthaggi did not support long term viability. Through a history of fluctuating production enforced in part by the State Rail Management, the people of Wonthaggi were fiercely supportive of each other, especially in crises or times of industrial unrest. Falling production and sustained losses brought about the closure of the mine in 1968. Production during the fifty-nine years was nearly seventeen million tonnes of black coal. The nine sites included in the State Coal Mine Historic Reserve are described below. East Area mine: one of the largest in Wonthaggi, operated from 1919 to 1931. It is now the centre of the Reserve and provides visitors with access to underground workings and an overview of mining life through a reconstructed change room which houses a museum collection. Two original parallel sloping tunnels (adits) have been reopened down to the first coal seam, with fully operational mining equipment including electrically driven drills and cable hauled coal scrapers and skips and a pit pony below ground. Above ground are foundations of buildings and remnants of mining operations and machinery. Nos 9 and 10 Shafts Area is locally known as Orchards and contains building foundations, mine head footings and evidence of the haulage line. Eastern Incline Ventilation Shaft is a small area in which a ventilation shaft serves the incline tunnel between No 18 and the East Area coalfield. Number 18 Shaft is at the far end of the east area tunnels and was sunk to give men and horses quicker access to the coal faces. The shaft also provided additional ventilation to the deeper sections of the mine. Remains of the airlocked entry to the shaft and the ventilator fan room are still visible. The Power House which was built in 1911, supplied electricity to the mines for operation of haulage, winders, coal borers and lighting. Power was also supplied to local houses and shops. The tall brick power house is accompanied by lower corrugated iron maintenance workshops for the mine. Boilers and generating plant have been removed from the Powerhouse but overhead coal bunkers remain from one of the generations of equipment that it housed while operating continuously until 1967. The site is now privately owned and used as a concrete products factory. Buildings are in use but not in particularly good repair and a single storey brick extension has been added to the Power House. Number 5 Brace was the central screening and loading area for the mine and was built with a railway siding in 1910 adjacent to No 5 Shaft. An unstable timber and steel frame of the brace building remains with coal tippers developed at the mine still in place. The original mine shafts (filled with rubbish and discarded coal skips), foundations of railway marshalling yards, engine shed, turn table, weighbridge, saw mill and stores can be identified. A brick rescue training station remains in reasonable condition from the 1920s. Apart from storing ambulances and rescue gear it contained a simulated tunnel which could be filled with smoke for practice with breathing apparatus. Western Area contained tunnels only 800m from the sea, giving wet and uncomfortable working conditions. The major feature of the site was a 2.5km endless haulage that delivered coal to No 5 Brace. The main feature now is a redstone mullock heap resulting from the ignition of waste rock mixed with coal dust. No 20 Area contains the remains of an air shaft with ventilating fans. It was the site of the 1931 and 1937 disasters in which eighteen maintenance workers were killed when methane gas ignited. Kirrak was the last operating mine at Wonthaggi, closing in 1968. It contains the frame of a brace similar to No 5 but less deteriorated, as well as the foundations of a winder house, stables for pit ponies and other buildings.

History Not Available

Condition and Integrity

Condition varies from good in the case of facilities open to the public in East Area, to fair in the Power House, workshop and rescue buildings, to deteriorated and partly demolished in the case of the frames of No 5 Brace and Kirrak Brace, to being only ruins or foundations where buildings have been removed in other areas.

Location

About 450ha, at Wonthaggi, comprising the following eight sites as recommended for inclusion in the State Coal Mine Historic and Cultural Features Reserve, in the Land Conservation Council's Melbourne Area District 2 Review July 1994: F20(a) No 20 Shaft; F20(b) Western Area Workings; F20(c) Nos 9 and 10 Shafts Area (known locally as Orchards); F20(d) No 5 Brace/Central Area; F20(e) East Area; F20(f) Eastern Incline Ventilation Shaft; F20(h) No 18 Shaft; F20(i) Kirrak; and the former Power House which is located wholly within, but not part of (surrounded by) F20(d).

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Place Details

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Wonthaggi State Coal Mine Northern Precinct, Bass Hwy, Wonthaggi, VIC, Australia

Photographs	None
List	Register of the National Estate (Non-statutory archive)
Class	Historic
Legal Status	Registered (28/05/1996)
Place ID	101571
Place File No	2/18/298/0001

Statement of Significance

The Wonthaggi State Coal Mine Northern Precinct is historically significant as the site of the worst accident in the State Coal Mine's history. Particularly when viewed alongside contemporary documents, the mine site commemorates the perils of underground mining at Wonthaggi and makes a unique contribution to defining the character of the Wonthaggi State Coal Mine. The place also has the potential to yield significant archaeological evidence of the technological development of coal mining in Victoria.

This place is entered in the Victorian Heritage Register and the statement above has been provided by Heritage Victoria.

The Australian Heritage Commission recognises the standards of historic assessment of Heritage Victoria and acknowledges that this place has national estate historic values. Enquiries concerning the assessment or conservation of this place should be directed in the first instance to Heritage Victoria.

Commonwealth authorities and bodies should contact the Australian Heritage Commission directly if any Commonwealth action is proposed in relation to this place.

Official Values Not Available

Description

At the beginning of the twentieth century black coal powered the State's railway system. There was also an insatiable demand for black coal from Melbourne's engineering works, agricultural processing plants, gas works, and food and drink factories. The source of this coal was New South Wales. In 1909 a prolonged strike on the New South Wales coalfields threatened Victoria's economic credibility, and the Victorian Government sought to end its dependence by mining its own, poorer-quality coal deposits in East Gippsland (which had been known since 1825). In 1909 drilling operations commenced at Wonthaggi which at the time was sparsely settled and possessing no transport links with Melbourne. The first Government mining shafts were sunk in the Central Area in the same year, the coal raised by small oil engines was dispatched by bullock teams to Inverloch and thence by ship to Melbourne. The Wonthaggi State Coal developed into a huge mining complex which operated until 1968. Working underground at Wonthaggi was very dangerous and there was a high level of mine accidents resulting in men dying in explosions, under roof collapses, or ripped apart after becoming entangled in the rope haulage system. The 1937 shaft explosion at No. 20 shaft was the worst accident in the mine's history with thirteen men dying underground. The No. 20 shaft explosion occurred during a period when the mine was spiralling into decline: to be profitable the mine had to produce 500,000 tons per annum, and it had not been able to produce this amount since 1934. The underground disaster contributed to the mine producing only half the required yield in 1937 and led to the relationship between the Miners Union and management reaching an all time low.

History Not Available

Condition and Integrity Not Available

Location

Bass Highway, 20m south of Hattam Street, and 4km north-north-west of Wonthaggi town centre, comprising the area entered in the Victoria Heritage Register on 18 February 1999 (Number 1777), being:

All the coal mining engineering works including:

Building foundations: No.19 ventilation shaft, winding engine house, 20 shaft and skip haulage, Lamp Room, Boiler, Change Room, Mine Manager's Office, and Smithy, archaeological relics and deposits and surrounding land.

Bibliography Not Available

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Place Details

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Wonthaggi Railway Station, 8-12 Murray St, Wonthaggi, VIC, Australia

Photographs	None
List	Register of the National Estate (Non-statutory archive)
Class	Historic
Legal Status	Indicative Place
Place ID	103546
Place File No	2/18/298/0004

Nominator's Statement of Significance

Wonthaggi Railway Station is historically and architecturally significant to the State of Victoria.

Wonthaggi Railway Station is architecturally significant as a unique and intact example of the 'Gisborne' style of station building. The 'Gisborne' style is described as being typically Edwardian with a distinct Queen Anne character, and was constructed during the years 1909-c.1920. It forms one of the largest groups of standard station buildings spread throughout the rail network.

Wonthaggi Railway Station is historically significant for the role it played in the exploitation of Victoria's coalfields. The railway line was established in 1910 and the permanent location of the line and the station was the basis for the scheme of subdivisions as Wonthaggi began to flourish. Thus the railway line and station are significant for their role in the development of Wonthaggi proper.

Official Values Not Available

Description

Wonthaggi Railway Station was constructed in 1912 by A. Frongernd on the Nyora-Wonthaggi line for the Victorian Railways. The complex comprises a Queen Anne style brick and rough cast, hip-roofed station building, a corrugated iron goods shed, van goods shed and a motor powered crane.

The 'Gisborne' style of station building, that Wonthaggi Railway Station is an example of was a design developed to satisfy the urgent need for improved standards of the existing facilities during the years of 1909 to c.1920.

History Not Available

Condition and Integrity

The railway station has not been in use since 1978.

Location

8-12 Murray St Wonthaggi Vic

Bibliography Not Available


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Appendix H – Site Inspection Photograph Log

H – Study Area Photographs



The photographs provided were taken while conducting a general inspection of the study area. Photos include observations that were noted during the course of the site inspection completed on 8 December 2015.

Table 1 Study Area Photographs

Description	Photograph
<p>1. Property 2 – South western corner, looking north east</p>	

Description	Photograph
<p>2. Property 2 – South western corner, looking east</p>	
<p>3. Property 2 – South eastern corner, looking north</p>	

Description	Photograph
<p>4. Property 2 - Residential building, sheds and cattle yard in south eastern corner, looking north east.</p>	
<p>5. Property 1 - Disturbed soils and dam in north western corner, looking east.</p>	



Description	Photograph
<p>6. Property 1 - Disturbed soils and dam in north western corner, looking south east.</p>	
<p>7. Property 4 - North eastern corner, looking south.</p>	

Description	Photograph
<p>8. Property 4 - North eastern corner, looking west.</p>	
<p>9. Property 6 - North western corner, looking south east.</p>	

Description	Photograph
<p>10. Property 10 - Soil stockpile located in northern portion of site, looking east.</p>	
<p>11. Property 5 - Soil stockpiles and disturbed soils located in eastern portion of site, looking west.</p>	

Description	Photograph
<p>12. Property 4 - Cattle yard located in south eastern portion of site, looking west.</p>	
<p>13. Property 4 - Cattle yard located in south eastern portion of site, looking north west.</p>	

Description	Photograph
<p>14. Property 13 - soil stockpiles and cars located in eastern portion of property, looking south west.</p>	
<p>15. Property 13 - Scrap metal in central portion of property, looking south west.</p>	


Description	Photograph
<p>16. Property 7 - Milking shed and Aboveground Storage Tank located in south western corner of property, looking north west.</p>	
<p>17. Property 7 - Residential building located in south western corner of property, looking north.</p>	


Description	Photograph
<p>18. Property 7 - North eastern corner, looking west.</p>	
<p>19. Property 8 - North western corner, looking east.</p>	

Description	Photograph
<p>20. Property 8 - North western corner, looking south east.</p>	
<p>21. Property 32 - North western corner, looking south east.</p>	


Description	Photograph
<p>22. Property 32 - North western corner, looking south.</p>	
<p>23. Property 32 - South eastern portion, looking south east towards property 34. Stockpiles of fill material, concrete and rubbish were noted on property 34.</p>	



Description	Photograph
<p>24. Property 34 - Stockpiles of fill material, concrete and rubbish and trucks located on eastern half of property, looking east.</p>	
<p>25. Property 36 - Snow pea packing facility and trucks in eastern portion of site, looking east.</p>	


Description	Photograph
<p>26. Property 37 - Eastern boundary, looking west.</p>	
<p>27. Property 39 - Trucks, scrap metal and stockpiles of fill material observed across property, looking east.</p>	

Description	Photograph
<p>28. Property 39 - Trucks, scrap metal and stockpiles of fill material observed across property, looking east.</p>	
<p>29. Property 38, cropping observed in central portion of property, looking north east.</p>	

Description	Photograph
<p>30. Property 38 - Cropping observed in central portion of property, looking east.</p>	
<p>31. Property 41 – Southern portion of Electrical substation, looking north.</p>	

Description	Photograph
<p>32. Property 42 - North west corner looking east.</p>	
<p>33. Property 42 – South west corner looking north east.</p>	

Description	Photograph
<p>34. Property 42 - Southern boundary, looking north west.</p>	
<p>35. Property 42 - Southern boundary, looking north.</p>	



Description	Photograph
<p>36. Property 42 – South east corner, looking north.</p>	
<p>37. Property 44 - Residential building in central portion of site, looking north.</p>	

Description	Photograph
<p>38. Property 47 – North west corner, looking south east.</p>	
<p>39. Property 48 - Southern boundary, looking north.</p>	

Description	Photograph
<p>40. Property 49 - Northern boundary, looking south west.</p>	
<p>41. Property 60 - Car yard, panel beaters and tyre sales, including hydraulic hoist, looking south.</p>	

Description	Photograph
<p>42. Property 60 - Car yard, panel beaters and tyre sales, including hydraulic hoist, looking south.</p>	
<p>43. Property 67 – Scrap metal located in north west portion of property, looking south east.</p>	

Description	Photograph
<p>44. Property 84 - Northern boundary, looking south.</p>	
<p>45. Property 104 - South east corner, looking north.</p>	

Description	Photograph
<p>46. Property 106 – Soil stockpiles located across property, looking south east.</p>	
<p>Property 106 – Soil stockpiles located across property, looking south east.</p>	

Description	Photograph
<p>47. Proposed recreation reserve in southern portion of study area - view of mullock heaps from north-east corner, looking south.</p>	 <p>A photograph showing a large, dark, irregular pile of mullock (excavated material) in the center of a grassy field. In the background, there are trees and a utility pole with power lines. The sky is blue with scattered white clouds. A dirt path or fence line runs along the right side of the mullock heap.</p>
<p>48. Proposed recreation reserve in southern portion of study area - western boundary, looking east.</p>	 <p>A photograph of a wide, flat field covered in tall, dry grass. A wire fence with wooden posts runs across the foreground. In the distance, there are some trees and a clear blue sky with many white, fluffy clouds.</p>

Appendix I – Assessment tables



I1– Property Details

Table I1 Properties within in the study area

Property Number	Property Description
1	Lot 1 TP232027 [Fmrly Pt CA 15]
2	Lot 1 PS700899
3	Lot 2 PS302494
4	Lot 2 PS700899
5	Lot 1 PS302494
6	Lot 1 TP862367
7	Lot 1 TP861100 [Formerly Pt CA 33A]
8	CA 33B Parish of Wonthaggi
9	Lot 13 PS323085
10	Lot 12 PS323085
11	Lot 11 PS323085
12	Lot 10 PS323085
13	Lot 9 PS323085
14	Lot 8 PS323085
15	Lot 7 PS323085
16	Lot 14 PS434235
17	Lot 15 PS434235
18	Lot 16 PS434235
19	Lot 17 PS434235
20	Lot 18 PS434235
21	Lot 19 PS434235
22	Lot 2 PS443068
23	Lot 21 PS434235
24	Lot 22 PS434235
25	Lot 23 PS434235
26	Lot 1 PS443068
27	Lot 2 PS313181
28	Lot 3 PS313181
29	Lot 4 PS313181



Property Number	Property Description
30	Lot 5 PS313181
31	Lot 6 PS313181
32	Lot 2 PS648351
33	Lot 1 PS506140
34	Lot 1 LP211687
35	Lot 2 LP211687
36	Lot 1 TP129892 [CA 34G]
37	Lot 1 PS648351
38	Lot 1 LP74840
39	Lot 1 PS531086
40	Lot 2 PS531086
41	Lot 1 TP379102 [Fmrly Pt CA 34F]
42	Lot 1 PS635460
43	Lot 1 PS644463
44	Lot 1 PS525119
45	Lot 1 PS629443
46	Lot 2 PS644463
47	Lot 1 PS628069
48	Lot 2 PS628069
49	Lot 3 PS628069
50	Part Lot 4 PS628069
51	Lot 1 TP100022
52	Lot 2 TP100022
53	Lot 3 TP100022
54	Lot 4 TP100022
55	Lot 5 TP100022
56	LOT 6 LP11690
57	Lot 7 LP11690
58	Lot 8 LP11690
59	PT PC363587
60	CP172891
61	Lot 14 LP11690



Property Number	Property Description
62	Lot 15 LP11690
63	Lot 16 LP11690
64	Lot 17 LP11690
65	Lot 18 LP11690
66	Lot 1 TP949763
67	Lot 26 LP11690
68	Lot 2 TP949763
69	Lot 3 TP949763
70	Lot 4 TP949763
71	Lot 5 TP949763
72	Lot 1 TP102555
73	Lot 1 TP86342 [Fmrly Lot 23 LP11690]
74	Lot 1 TP86302 [Fmrly Lot 22 LP11690]
75	Lot 1 TP87456 [Fmrly Lot 21 LP11690]
76	Lot 1 TP86304 [Fmrly Lot 20 LP11690]
77	Lot 1 TP86311 [Fmrly Lot 19 LP11690]
78	Lot 1 TP102187 [Fmrly Lot 31 LP11690]
79	Lot 1 TP102189 [Fmrly Lot 32 LP11690]
80	Lot 1 TP102556
81	Lot 1 TP102190 [Fmrly Lot 34 LP11690]
82	Lot 1 TP111325 [Fmrly Lot 35 LP11690]
83	Lot 1 TP102188 [Fmrly Lot 36 LP11690]
84	PC367141
85	Lot 1 TP85819
86	Lot 2 TP85819
87	Lot 3 TP85819
88	Lot 42 LP11690
89	Lot 41 LP11690
90	Lot 40 LP11690
91	Lot 39 LP11690
92	Lot 38 LP11690
93	Lot 37 LP11690



Property Number	Property Description
94	Lot 1 TP120994 (fmly Lot 49 LP11690)
95	Lot 1 TP106470 (fmly Lot 50 LP11690)
96	Lot 1 TP108217 (fmly Lot 51 LP11690)
97	Lot 1 TP106471 (fmly Lot 52 LP11690)
98	Lot 1 TP106472 (Fmly Lot 53 LP11690)
99	Lot 1 TP108218 (Fmly Lot 54 LP11690)
100	PC371263
101	Lot 3 TP90427
102	Lot 2 TP90427
103	Lot 1 TP90427
104	Lot 1 TP127267
105	Lot 1 PS500715
106	Lot 2 PS500715
107	Lot 1 TP167690
108	Lot 2 PS428092
109	Lot 1 PS428092
110	CP156261 [Fmrly Pt CA 35A & CA 35C]
111	CA 2004 Parish of Wonthaggi
112	Lot 1 TP7801 [Fmr Rds]
113	CA 1 Sec 75 Parish of Wonthaggi



I2 – Potential Areas of Concern

Table I2 Summary of PAoC observed

Property Number	General Agricultural	Farm house/shed	Infilled dam	Market Gardening - Current / historic	Automotive maintenance	Cattle yard / Animal Pen	Dairy	Earthworks	ASTs / infrastructure	Disturbed Vegetation	General storage/Waste	Fill Material / Stockpiles	Drainage Channel	Chemical / fuel Storage	Car/ Truck / Machinery Scrap	Utility Depot/Electrical terminal	Demolished Building	Industrial Use	Orchards / Crops	Possible abattoir / Butcher
1								✓												
2	✓	✓	✓				✓			✓										
4	✓		✓			✓						✓								
5	✓	✓				✓	✓					✓								
6		✓	✓																✓	
7	✓	✓					✓		✓											
8	✓	✓				✓	✓	✓		✓		✓								
10												✓								
13											✓				✓					
17								✓												
18			✓																	
20		✓																		
26	✓			✓																
34	✓	✓		✓		✓		✓	✓	✓	✓	✓			✓		✓	✓	✓	✓
35	✓																	✓		
36	✓							✓										✓		
38			✓			✓				✓									✓	
39	✓	✓									✓	✓			✓					
41																✓		✓		
42	✓	✓										✓					✓		✓	
46	✓																✓			
47		✓								✓										
48												✓					✓			
49	✓	✓					✓										✓			
51																		✓		
52																		✓		
53																		✓		
54																		✓		
55	✓																	✓		✓



Property Number	General Agricultural	Farm house/shed	Infilled dam	Market Gardening - Current / historic	Automotive maintenance	Cattle yard / Animal Pen	Dairy	Earthworks	ASTs / infrastructure	Disturbed Vegetation	General storage/Waste	Fill Material / Stockpiles	Drainage Channel	Chemical / fuel Storage	Car/ Truck / Machinery Scrap	Utility Depot/Electrical terminal	Demolished Building	Industrial Use	Orchards / Crops	Possible abattoir / Butcher
56	✓				✓												✓	✓		
57																		✓		
58																		✓		
59	✓		✓								✓				✓			✓		
60	✓				✓									✓	✓			✓		
61	✓				✓						✓				✓			✓		
62	✓				✓						✓				✓			✓		
63	✓				✓						✓				✓			✓		
64	✓				✓						✓				✓			✓		
65	✓				✓						✓				✓			✓		
66																		✓		
67	✓				✓													✓		
68																		✓		
69																		✓		
70																		✓		
71																		✓		
72	✓										✓				✓			✓		✓
73	✓										✓				✓			✓		✓
74	✓										✓				✓			✓		✓
75	✓										✓				✓			✓		✓
76	✓										✓				✓			✓		✓
77	✓										✓				✓			✓		✓
78																		✓		
79																		✓		
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84																		✓		
85																		✓		
86																		✓		
87																		✓		



Property Number	General Agricultural	Farm house/shed	Infilled dam	Market Gardening - Current / historic	Automotive maintenance	Cattle yard / Animal Pen	Dairy	Earthworks	ASTs / infrastructure	Disturbed Vegetation	General storage/Waste	Fill Material / Stockpiles	Drainage Channel	Chemical / fuel Storage	Car/ Truck / Machinery Scrap	Utility Depot/Electrical terminal	Demolished Building	Industrial Use	Orchards / Crops	Possible abattoir / Butcher
88																		✓		
89																		✓		
90																		✓		
91																		✓		
92																		✓		
93																		✓		
94																		✓		
95																		✓		
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97																		✓		
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100											✓							✓		
101											✓							✓		
102											✓							✓		
103											✓							✓		
105		✓																		
106	✓							✓			✓	✓								
108		✓						✓												
109			✓							✓										
110			✓																	
111													✓							
112	✓										✓				✓			✓		✓
113	✓					✓		✓		✓		✓								



Property No.	Data Source	Activity Type	Date	Details	Potential Sources of Contamination	Potential Contaminants of Concern	Potential for Contamination Rating
1	Site Inspection	Earth works	2015	Dam and disturbed soils in north west corner of property	Fill	Broad chemical suite including metals, hydrocarbons, organic compounds, phenols, asbestos	Medium
2	Aerial Imagery	Filling	1985	Previous dam infilled between 1970 and 1985	Machinery related contaminants, septic tanks, Fill	Broad chemical suite including metals, hydrocarbons, organic compounds, phenols, asbestos, nutrients	Medium
	Aerial Imagery	Building/Structure	2010	Buildings/Structures - Appears non-residential may be farming or commercial/industrial purposes			
	Titles	Dairy Farming	1933 -1972	Based on proprietor occupation listed on historical titles			
	Titles	Farming	1972-2001	Based on proprietor occupation listed on historical titles			
	Site Inspection	Farmhouse/Shed	2015	Farmstead including sheds and cattle yard at eastern boundary			
	Site Inspection	Disturbed vegetation	2015	Vegetation change in southern portion of property			
3	Aerial Imagery	Vacant	1950-2015	Vacant paddock	-	-	Low
4	Aerial Imagery	Filling	2015	Infilled dam	Machinery related contaminants, septic tanks, fill	Broad chemical suite including metals, hydrocarbons, organic compounds, phenols, asbestos, nutrients	Medium
	Aerial Imagery	Possible structures	1950	No drive way visible - May not be residential - Not present in 1970 image			
	Site Inspection	Agricultural/storage	2015	Buildings (cattle yard), dead trees, fill material and excavations in south west corner of property			
5	Aerial Imagery	Farmhouse/shed	1950	Building/Structure - Does not appear residential	Machinery related contaminants, fill, pesticides	Broad chemical suite including metals, hydrocarbons, organic compounds, phenols, asbestos, pesticides, nutrients	Medium
	Titles	Dairy Farming	1933 -1972	Based on proprietor occupation listed on historical titles			
	Titles	Farming	1972-2001	Based on proprietor occupation listed on historical titles			
	Site Inspection	Agricultural/storage	2015	Cattle yard, stockpile and development of land commenced in north west corner of property			
6	Aerial Imagery	Buildings / Structures	1950	Possible Structure - Not visible from 1970 onwards	Chemical storage, Fill, herbicides, pesticides, fertilisers	Broad chemical suite including metals, hydrocarbons, organic compounds, phenols, asbestos, OCP/OPP, nutrients	Medium
	Aerial Imagery	Filling/ crops	1970	Infilled Dam - Dam present in 1950 appears filled. Area appears to be in use for farming/crops			
	Site Inspection	Farmhouse/Shed	2015	Shed at eastern boundary			
7	Aerial Imagery	Storage	1950	Buildings/Structures - Possibly storage shed	Machinery related contaminants, septic tanks, dairy, chemical storage	Metals, PAH, TPH, pesticides, nutrients, phenols,	Medium
	Titles	Dairy Farming	1974-2015	Based on proprietor occupation listed on historical titles			
	Titles	Farming	1925-1952	Based on proprietor occupation listed on historical titles			
	Site Inspection	Agricultural/storage/dairy/ASTs	2015	Above ground storage tanks, dairy and house in south west corner of property			
8	Aerial Imagery	Earthworks	1950	Earthworks	Machinery related contaminants, septic tanks, dairy, chemical storage, fill, herbicides, pesticides	Broad chemical suite including metals, hydrocarbons, organic compounds, phenols, asbestos, OCP/OPP, nutrients	Medium
	Aerial Imagery	Filling	1970	Former earthworks area - veg cover - Areas now densely vegetated			
	Aerial Imagery	Earthworks	1985	Vegetation cleared - Possible further earthworks			
	Aerial Imagery	Farmhouse/shed	2010				
	Aerial Imagery	Disturbed vegetation	2010	Ground surface discolouration			
	Titles	Dairy Farming	1974-2015	Based on proprietor occupation listed on historical titles			
	Titles	Farming	1941-1952	Based on proprietor occupation listed on historical titles			
	Site Inspection	Filling	2015	Fill material at eastern boundary of property			
	Site Inspection	Agricultural/ storage/ farmhouse	2015	Shed, house and cattle yard at western boundary			
9	Aerial Imagery	Residential	2010	New residential building	-	-	Low
10	Site Inspection	Fill material/stockpiles	2015	Soil stockpile at eastern boundary	Fill	Broad chemical suite including metals, hydrocarbons, organic compounds, phenols, asbestos	Medium
11	Aerial Imagery	Residential	2010	New residential building	-	-	Low
12	Aerial Imagery	Residential	2010	New residential building	-	-	Low
13	Site Inspection	Storage	2015	Cars and scrap in yard at northern boundary. Noted on Google maps to be Bass Coats Recyclers	Machinery related contaminants, fill	Broad chemical suite including metals, hydrocarbons, organic compounds, phenols, asbestos	Medium
14	Aerial Imagery	Residential	2010	New residential building	-	-	Low
15	Aerial Imagery	Residential	2010	New residential building	-	-	Low
16	Aerial Imagery	Residential	2010	New residential building	-	-	Low
17	Aerial Imagery	Earthworks	2010	Appears to be residential/ small industrial construction	fill	Broad chemical suite including metals, hydrocarbons, organic compounds, phenols, asbestos	Medium
18	Aerial Imagery	Residential	2010	Dam to south of house filled in	fill	Broad chemical suite including metals, hydrocarbons, organic compounds, phenols, asbestos	Medium
19	Aerial Imagery	Residential	2010	New residential building	-	-	Low
20	Aerial Imagery	Building/Structure	2010	Possible shed associated with Property 19	chemical storage	Hydrocarbons, other various organic compounds,	Medium
21	Aerial Imagery	Residential	2010	New residential building	-	-	Low
22	Aerial imagery	Building/Structure	2015	Two buildings added between 2010 and 2015	-	-	Low
23	Aerial Imagery	Vacant	1950-2015	Vacant paddock	-	-	Low
24	Aerial Imagery	Residential	2010	New residential building	-	-	Low
25	Aerial Imagery	Residential	2010	New residential building	-	-	Low
26	Aerial Imagery	Market gardening	2010	Poly-tunnels/ greenhouses	Fertilisers, pesticides/herbicides, machinery related contaminants, septic tanks	OCP/OPP, Nutrients, metals, phenols,	Medium
	Titles	Farming	1954-1980	Based on proprietor occupation listed on historical titles		Broad chemical suite including metals, hydrocarbons, phenols.	
27	Aerial Imagery	Residential	2010	New residential building	-	-	Low
28	Aerial Imagery	Residential	2010	New residential building	-	-	Low
29	Aerial Imagery	Residential	1970	Building - Appears residential	-	-	Low
30	Aerial Imagery	Residential	2010	New residential building	-	-	Low
31	Aerial Imagery	Residential	2010	Dense vegetation added around residential building	-	-	Low
32	Aerial Imagery	Vacant	1970	Vacant paddock with dam	-	-	Low
33	Aerial Imagery	Residential	2010	New residential building	-	-	Low

Property No.	Data Source	Activity Type	Date	Details	Potential Sources of Contamination	Potential Contaminants of Concern	Potential for Contamination Rating
34	Historical Titles/ Book Review	orchards	1883 -1920	The book "Pioneers on the Powlett and at Wonthaggi" notes that Llewelyn Davies-Griffiths owned the property from 1883-1920. and that the homestead included a post office and 6 acres of cultivated orchard and gardens. Historical titles review confirms the sale of property 34 to Alexander Thomson (butcher) from Griffiths in 1920. The book also notes that Griffiths' ran an abattoir on Crown Allotment 20 in Kiewa Valley.	Machinery related contaminants, fill material, chemical / fuel storage, process related contaminants, fertilisers, herbicides, pesticides	Broad chemical suite including metals, hydrocarbons, organic compounds, phenols, asbestos, pesticides, nutrients	High
	Book Review	Possible Abattoir	1883 -1920	The book "Pioneers on the Powlett and at Wonthaggi" indicates that an abattoir may have been present on this property			
	Titles	Farming	1974-1980	Based on proprietor occupation listed on historical titles			
	Titles	Dairy farming	1963-1974	Based on proprietor occupation listed on historical titles			
	Titles	Farming	1948-1963	Based on proprietor occupation listed on historical titles			
	Titles	Dairy farming	1921 - 1947	Based on proprietor occupation listed on historical titles			
	Titles	Butcher	1920 - 1921	Based on proprietor occupation listed on historical titles			
	Titles	Farming	1889-1919	Based on proprietor occupation listed on historical titles			
	Aerial Imagery	Building/Structure	1950, 2006 - 2015	Building/structure - Appears non-residential. Possibly commercial/industrial			
	Aerial Imagery	Market garden/greenhouses/plant nursery/stockpiles/building demolition/ animal pen	2006 - 2015	Possible market garden/greenhouses - Not present in 2015 - grass cover only			
	Site Inspection	Storage/fill material/ stockpiles / ASTs	2015	Fill material, rubbish, scrap metals, soil stockpiles, above ground storage tanks and trucks on entire property			
35	Book Review	Possible Abattoir	1883 -1920	The book "Pioneers on the Powlett and at Wonthaggi" indicates that an abattoir may have been present on this property	Machinery related contaminants, chemical / fuel storage, process related contaminants, fill, wash-down areas	Broad chemical suite including metals, hydrocarbons, organic compounds, phenols, asbestos, pesticides, nutrients	High
	Aerial imagery						
		Warehouse /storage	2010	Large warehouse style building added between 1991 and 2010			
36	Book Review	Possible Abattoir	1883 -1920	The book "Pioneers on the Powlett and at Wonthaggi" indicates that an abattoir may have been present on this property	Machinery related contaminants, process related contaminants, fill, pesticides/herbicides	Broad chemical suite including metals, hydrocarbons, organic compounds, phenols, asbestos, pesticides, nutrients	High
	Aerial Imagery	Building Structure	2010	Appears non-residential. Possibly industrial			
	Aerial Imagery	Earth works	1970	Earthwork s to the South of Property 36 (Offsite) appears between 1950 and 1970			
	Site Inspection	Agricultural/commercial	2015	Snow pea packaging facility and trucks in central portion of property			
37	Book Review	Possible Abattoir	1883 -1920	The book "Pioneers on the Powlett and at Wonthaggi" indicates that an abattoir may have been present on this property	Machinery related contaminants, chemical / fuel storage, pesticides/herbicides	Broad chemical suite including metals, hydrocarbons, organic compounds, phenols,	High
	Site Inspection	Storage	2015	Concrete tank at western boundary, likely stock watering			
38	Book Review	Possible Abattoir	1883 -1920	The book "Pioneers on the Powlett and at Wonthaggi" indicates that an abattoir may have been present on this property	Machinery related contaminants, chemical / fuel storage, fill, fertilizers, pesticides/herbicides	Broad chemical suite including metals, hydrocarbons, organic compounds, phenols, asbestos, pesticides, nutrients	High
	Aerial Imagery	Agricultural	1970	Raised structure . Possible water tower or silo. Not present in 1950 imagery. visible in 1970, 1985 and 1991 imagery. Not present in 2010 image			
	Aerial Imagery	Filling	1950	Dam not visible 1970 possible infill			
	Aerial Imagery	Cropping	2010	Crops visible			
	Aerial Imagery	Disturbed vegetation	2010	cleared grass			
	Site Inspection	Agricultural	2015	Cattle yard and cropping in central portion of property			
39	Book Review	Possible Abattoir	1883 -1920	The book "Pioneers on the Powlett and at Wonthaggi" indicates that an abattoir may have been present on this property	Machinery related contaminants, pesticides, septic tanks, fuel/ chemical storage, fill	Broad chemical suite including metals, hydrocarbons, organic compounds, phenols, asbestos, nutrients	High
	Aerial Imagery						
		Agricultural	1950	Possible Farmhouse / sheds			
	Site Inspection	Storage	2015	Residential buildings, scrap material, fill on entire property			
40	Book Review	Possible Abattoir	1883 -1920	The book "Pioneers on the Powlett and at Wonthaggi" indicates that an abattoir may have been present on this property	Machinery related contaminants, chemical / fuel storage, nutrients, pesticides	Broad chemical suite including metals, hydrocarbons, organic compounds, phenols, nutrients	High
	Aerial Imagery	building/structure	1970	Possible building or structure (may be a dam)			
41	Aerial Imagery	Building/structure	1970	Appears non-residential. Possibly industrial	Transformer oils, chemical storage, fill, building materials	Hydrocarbons, PCBs, asbestos, other various organic compounds	High
	Aerial Imagery	Utility Depot	1970	Electrical terminal / substation			
	Site Inspection	Utility Depot	2015	Electrical substation (entire property)			
42	Aerial Imagery	Demolished Building	2015	Demolished residential building. Present in 2010 demolished 2015, building footprint visible in 2015 imagery.	Fill, building materials, fertilisers, pesticides/herbicides, chemicals	Broad chemical suite including metals, hydrocarbons, organic compounds, phenols, asbestos, pesticides, nutrients	Medium
	Aerial Imagery	Demolished Building	2015	Demolished building. Present in 2010 demolished 2015, building footprint visible in 2015 imagery.			
	Site Inspection	Storage/ fill material	2015	Shed and fill material in centre of property			
	Site Inspection	Agricultural	2015	Cropping in south eastern portion of property			
43	Aerial Imagery	Vacant	1950-2015	Vacant paddock	-	-	Low
44	Aerial Imagery	Residential	2010	New residential building	-	-	Low
45	Aerial Imagery	Residential	1950	Building/ Structure - Residential appearance	-	-	Low
46	Aerial Imagery	Demolished building	1970	Small building, residential or shed present 1970, 1985. not present in 1991 imagery.	Machinery related contaminants, process related contaminants, building materials	Broad chemical suite including metals, hydrocarbons, organic compounds, phenols, asbestos	Medium
	Aerial Imagery	Residential	1950	Building - Appears residential, with dam			
	Site Inspection	Storage	2015	Concrete watering tanks scattered across central portion of property			
47	Site Inspection	Disturbed vegetation	2015	Disturbed vegetation at eastern boundary	Fill	Broad chemical suite including metals, hydrocarbons, organic compounds, phenols, asbestos	Medium
	Site Inspection	Storage	2015	Developers shed in north west corner of property			
	Site Inspection	Storage	2015	water tanks in south east corner of property			
48	Aerial Imagery	Demolished buildings	1950-1970	Building present in 1950, not visible in 1970 imagery	Building materials, Fill	Broad chemical suite including metals, hydrocarbons, organic compounds, phenols, asbestos	Medium
	Site Inspection	Storage/ fill material	2015	Fill material in north east corner of property			
49	Aerial Imagery	Building/ Structures	1970	New - Not in 1950 imagery (three buildings in total two adjacent and one approx. 150 m north)	Dairy, septic tank, machinery related contaminants, chemical storage, pesticides, fill	Broad chemical suite including metals, hydrocarbons, organic compounds, phenols, asbestos, OCP/OPP, nutrients	Medium
	Aerial Imagery	Demolished building	1991	Building demolished between 1985 and 1991			
	Site Inspection	Disturbed vegetation	2015	Disturbed vegetation at western boundary			
	Site Inspection	Agricultural/ dairy/ farmhouse	2015	Dairy and house in south east corner of property			
50	Aerial Imagery	Vacant	1950-2015	Vacant paddock	-	-	Low



Property No.	Data Source	Activity Type	Date	Details	Potential Sources of Contamination	Potential Contaminants of Concern	Potential for Contamination Rating
51	Aerial Imagery	Building/structure	2010	Non residential (possible industrial) building erected between 1991 and 2010	Machinery related contaminants, chemical / fuel storage, process related contaminants	Metals, PAH, TPH, various solvents and organic compounds	Medium
	Site Inspection	Off-site - Industrial	2015	Light industrial use off-site to south west of property			
52	Aerial Imagery	Building/structure	2010	Non residential (possible industrial) building erected between 1991 and 2010	Machinery related contaminants, chemical / fuel storage, process related contaminants	Metals, PAH, TPH, various solvents and organic compounds	Medium
	Site Inspection	Off-site - Industrial	2015	Light industrial use off-site to south west of property			
53	Aerial Imagery	Building/structure	2010	Non residential (possible industrial) building erected between 1991 and 2010	Machinery related contaminants, chemical / fuel storage, process related contaminants	Metals, PAH, TPH, various solvents and organic compounds	Medium
	Site Inspection	Off-site - Industrial	2015	Light industrial use off-site to south west of property			
54	Site Inspection	Off-site - Industrial	2015	Light industrial use off-site to south west of property	Machinery related contaminants, chemical / fuel storage, process related contaminants	Metals, PAH, TPH, various solvents and organic compounds	Medium
55	Aerial Imagery	Industrial	1950	Buildings/Structures - Possibly industrial	Machinery related contaminants, chemical / fuel storage, process related contaminants	Metals, PAH, TPH, various solvents and organic compounds, phenols,	Medium
	Titles	Farming	1976-1978	Based on proprietor occupation listed on historical titles			
	Titles	Wholesale butcher	1972-1976	Based on proprietor occupation listed on historical titles			
	Titles	Farming	1962-1972	Based on proprietor occupation listed on historical titles			
	Titles	Farming	1941-1945	Based on proprietor occupation listed on historical titles			
	Site Inspection	Off-site - Industrial	2015	Light industrial use off-site to south west of property			
56	Aerial Imagery	Building/structure	1950	Non -residential buildings/structures - Appears industrial	Machinery related contaminants, chemical / fuel storage, process related contaminants, waste oil storage	Metals, PAH, TPH, various solvents and organic compounds, phenols,	Medium
	Aerial Imagery	Demolished building/structure	2010	Building present from pre-1950 demolished between 1991 and 2010			
	Titles	Freight services	2008-2015	Based on proprietor occupation listed on historical titles			
	Titles	Motor mechanic	1956-1987	Based on proprietor occupation listed on historical titles			
	Titles	farming	1935-unknown	Based on proprietor occupation listed on historical titles			
	Site Inspection	Off-site - Industrial	2015	Light industrial use off-site to south west of property			
57	Aerial Imagery	Industrial	2010	Building present from pre-1950 demolished between 1991 and 2010	Machinery related contaminants, chemical / fuel storage, process related contaminants	Metals, PAH, TPH, various solvents and organic compounds, phenols,	Medium
	Site Inspection	Off-site - Industrial	2015	Light industrial use off-site to south west of property			
58	Site Inspection	Industrial	2015	Light industrial use at south west boundary	Machinery related contaminants, chemical / fuel storage, process related contaminants	Metals, PAH, TPH, various solvents and organic compounds, phenols,	Medium
59	Aerial Imagery	Fill	1985	Dam - Not visible 1950 or 1991 - Possible infill	Fill, machinery related contaminants, chemical / fuel storage, process related contaminants, wash down area,	Broad chemical suite including metals, hydrocarbons, organic compounds, phenols, asbestos.	Medium
	Aerial Imagery	Industrial use	2010-2015	Trucks, waste and industrial style buildings			
	Titles	Freight Services	1994-2015				
	Site Inspection	Industrial	2015	Light industrial use in south of property			
60	Aerial Imagery	Buildings/Structure	1970		Machinery related contaminants, chemical storage, bulk fuel storage process related contaminants, wash down area, triple interceptor traps	Metals, PAH, TPH, various solvents, other various organic compounds, phenols	High
	Titles	Automotive body, paint and interior repair and maintenance	2000-2015	Based on proprietor occupation listed on historical titles			
	Titles	Possible service station/depot (owned by Mobil Oil)	1987	Based on proprietor occupation listed on historical titles			
	Titles	Possible service station/depot (owned by BP Australia)	1976	Based on proprietor occupation listed on historical titles			
	Titles	Wholesale butcher	1972-1976	Based on proprietor occupation listed on historical titles			
	Titles	Farming	1962-1972	Based on proprietor occupation listed on historical titles			
	Aerial Imagery	Industrial use	2010	Trucks, waste and industrial style buildings			
	Site Inspection	Industrial	2015	Light industrial area; mechanical repairs, scrap and wreckers in south of property			
61	Aerial Imagery	Industrial use	2010	Trucks, waste and industrial style buildings	Spray painting, machinery related contaminants, chemical / fuel storage, process related contaminants, wash down area, triple interceptor traps	Metals, PAH, TPH, various solvents, other various organic compounds, phenols.	High
	Titles	Automotive body, paint and interior repair and maintenance	2000-2015	Based on proprietor occupation listed on historical titles			
	Titles	Farming	1976-1978	Based on proprietor occupation listed on historical titles			
	Titles	Wholesale butcher	1972-1976	Based on proprietor occupation listed on historical titles			
	Titles	Farming	1962-1972	Based on proprietor occupation listed on historical titles			
	Titles	Farming	1941-1945	Based on proprietor occupation listed on historical titles			
	Site Inspection	Industrial	2015	Light industrial area; mechanical repairs, scrap and wreckers in south of property			
62	Aerial Imagery	Industrial use	2010	Trucks, waste and industrial style buildings	Spray painting, machinery related contaminants, chemical / fuel storage, process related contaminants, wash down area, triple interceptor traps	Metals, PAH, TPH, various solvents, other various organic compounds, phenols.	High
	Titles	Automotive body, paint and interior repair and maintenance	2000-2015	Based on proprietor occupation listed on historical titles			
	Titles	Farming	1976-1978	Based on proprietor occupation listed on historical titles			
	Titles	Wholesale butcher	1972-1976	Based on proprietor occupation listed on historical titles			
	Titles	Farming	1962-1972	Based on proprietor occupation listed on historical titles			
	Titles	Farming	1941-1945	Based on proprietor occupation listed on historical titles			
	Site Inspection	Industrial	2015	Light industrial area; mechanical repairs, scrap and wreckers in south of property			
63	Aerial Imagery	Industrial use	2010	Trucks, waste and industrial style buildings	Spray painting, machinery related contaminants, chemical / fuel storage, process related contaminants, wash down area, triple interceptor traps	Metals, PAH, TPH, various solvents, other various organic compounds, phenols.	High
	Titles	Automotive body, paint and interior repair and maintenance	2000-2015	Based on proprietor occupation listed on historical titles			
	Titles	Farming	1976-1978	Based on proprietor occupation listed on historical titles			
	Titles	Wholesale butcher	1972-1976	Based on proprietor occupation listed on historical titles			
	Titles	Farming	1962-1972	Based on proprietor occupation listed on historical titles			
	Titles	Farming	1941-1945	Based on proprietor occupation listed on historical titles			
64	Aerial Imagery	Industrial use	2010	Trucks, waste and industrial style buildings	Spray painting, machinery related contaminants, chemical / fuel storage, process related contaminants, wash down area, triple interceptor traps	Metals, PAH, TPH, various solvents, other various organic compounds, phenols,	High
	Titles	Automotive body, paint and interior repair and maintenance	2000-2015	Based on proprietor occupation listed on historical titles			
	Titles	Farming	1976-1978	Based on proprietor occupation listed on historical titles			
	Titles	Wholesale butcher	1972-1976	Based on proprietor occupation listed on historical titles			
	Titles	Farming	1962-1972	Based on proprietor occupation listed on historical titles			
	Titles	Farming	1941-1945	Based on proprietor occupation listed on historical titles			
	Site Inspection	Industrial	2015	Light industrial area; mechanical repairs, scrap and wreckers in south of property			



Property No.	Data Source	Activity Type	Date	Details	Potential Sources of Contamination	Potential Contaminants of Concern	Potential for Contamination Rating
65	Aerial Imagery	Industrial use	2010	Trucks, waste and industrial style buildings	Spray painting, machinery related contaminants, chemical / fuel storage, process related contaminants, wash down area, triple interceptor traps	Metals, PAH, TPH, various solvents, other various organic compounds, phenols.	High
	Titles	Automotive body, paint and interior repair and maintenance	2000-2015	Based on proprietor occupation listed on historical titles			
	Titles	Farming	1976-1978	Based on proprietor occupation listed on historical titles			
	Titles	Wholesale butcher	1972-1976	Based on proprietor occupation listed on historical titles			
	Titles	Farming	1962-1972	Based on proprietor occupation listed on historical titles			
	Titles	Farming	1941-1945	Based on proprietor occupation listed on historical titles			
	Site Inspection	Industrial	2015	Light industrial area; mechanical repairs, scrap and wreckers in south of property			
66	Aerial Imagery	Buildings/Structure	1970		Machinery related contaminants, chemical / fuel storage, process related contaminants	Metals, PAH, TPH, various solvents, other various organic compounds, phenols.	Medium
	Site Inspection	Industrial	2015	Light industrial area			
67	Historical Titles	Automotive Repair / Engine works	1979-2004	Property owned by Florence & William Archibald (motor mechanic) from 1979-1994 and then Florence Archibald from 1994-2005	Machinery related contaminants, chemical / fuel storage, process related contaminants, waste oil storage	Metals, PAH, TPH, various solvents, other various organic compounds, phenols.	High
	Aerial Imagery	Buildings/Structure	1970				
	Titles	Motor mechanic	1945-1979	Based on proprietor occupation listed on historical titles			
	Titles	Farming	1932-1945	Based on proprietor occupation listed on historical titles			
	Site Inspection	Industrial	2015	Light industrial area			
68	Aerial Imagery	Buildings/Structure	1970		Machinery related contaminants, chemical / fuel storage, process related contaminants	Metals, PAH, TPH, various solvents, other various organic compounds, phenols.	Medium
	Site Inspection	Industrial	2015	Light industrial area			
69	Aerial Imagery	Buildings/Structure	1970		Machinery related contaminants, chemical / fuel storage, process related contaminants	Metals, PAH, TPH, various solvents, other various organic compounds, phenols.	Medium
	Site Inspection	Industrial	2015	Light industrial area			
70	Aerial Imagery	Buildings/Structure	1970		Machinery related contaminants, chemical / fuel storage, process related contaminants	Metals, PAH, TPH, various solvents, other various organic compounds, phenols.	Medium
	Site Inspection	Industrial	2015	Light industrial area			
71	Aerial Imagery	Buildings/Structure	1970		Machinery related contaminants, chemical / fuel storage, process related contaminants	Metals, PAH, TPH, various solvents, other various organic compounds, phenols.	Medium
	Site Inspection	Industrial	2015	Light industrial area			
72	Aerial Imagery	Industrial use	2010	Trucks, waste and industrial style buildings	Machinery related contaminants, chemical / fuel storage, process related contaminants, wash down area, triple interceptor traps	Metals, PAH, TPH, various solvents, other various organic compounds, phenols.	Medium
	Aerial Imagery	Buildings/Structure	1970				
	Titles	Farming	1976-1978	Based on proprietor occupation listed on historical titles			
	Titles	Wholesale butcher	1972-1976	Based on proprietor occupation listed on historical titles			
	Titles	Farming	1962-1972	Based on proprietor occupation listed on historical titles			
	Titles	Farming	1941-1945	Based on proprietor occupation listed on historical titles			
	Site Inspection	Industrial	2015	Light industrial area			
73	Aerial Imagery	Industrial use	2010	Trucks, waste and industrial style buildings	Machinery related contaminants, chemical / fuel storage, process related contaminants, wash down area, triple interceptor traps	Metals, PAH, TPH, various solvents, other various organic compound, phenols.	Medium
	Aerial Imagery	Buildings/Structure	1970				
	Titles	Farming	1976-1978	Based on proprietor occupation listed on historical titles			
	Titles	Wholesale butcher	1972-1976	Based on proprietor occupation listed on historical titles			
	Titles	Farming	1962-1972	Based on proprietor occupation listed on historical titles			
	Titles	Farming	1941-1945	Based on proprietor occupation listed on historical titles			
	Site Inspection	Industrial	2015	Light industrial area			
74	Aerial Imagery	Industrial use	2010	Trucks, waste and industrial style buildings	Machinery related contaminants, chemical / fuel storage, process related contaminants, wash down area, triple interceptor traps	Metals, PAH, TPH, various solvents, other various organic compounds, phenols.	Medium
	Titles	Farming	1976-1978	Based on proprietor occupation listed on historical titles			
	Titles	Wholesale butcher	1972-1976	Based on proprietor occupation listed on historical titles			
	Titles	Farming	1962-1972	Based on proprietor occupation listed on historical titles			
	Titles	Farming	1941-1945	Based on proprietor occupation listed on historical titles			
	Site Inspection	Industrial	2015	Light industrial area			
75	Aerial Imagery	Industrial use	2010	Trucks, waste and industrial style buildings	Machinery related contaminants, chemical / fuel storage, process related contaminants, wash down area, triple interceptor traps	Metals, PAH, TPH, various solvents, other various organic compounds, phenols.	Medium
	Titles	Farming	1976-1978	Based on proprietor occupation listed on historical titles			
	Titles	Wholesale butcher	1972-1976	Based on proprietor occupation listed on historical titles			
	Titles	Farming	1962-1972	Based on proprietor occupation listed on historical titles			
	Titles	Farming	1941-1945	Based on proprietor occupation listed on historical titles			
	Site Inspection	Industrial	2015	Light industrial area			
76	Aerial Imagery	Industrial use	2010	Trucks, waste and industrial style buildings	Machinery related contaminants, chemical / fuel storage, process related contaminants, wash down area, triple interceptor traps	Metals, PAH, TPH, various solvents, other various organic compounds, phenols	Medium
	Titles	Farming	1976-1978	Based on proprietor occupation listed on historical titles			
	Titles	Wholesale butcher	1972-1976	Based on proprietor occupation listed on historical titles			
	Titles	Farming	1962-1972	Based on proprietor occupation listed on historical titles			
	Titles	Farming	1941-1945	Based on proprietor occupation listed on historical titles			
	Site Inspection	Industrial	2015	Light industrial area			
77	Aerial Imagery	Industrial use	2010	Trucks, waste and industrial style buildings	Machinery related contaminants, chemical / fuel storage, process related contaminants, wash down area, triple interceptor traps	Metals, PAH, TPH, various solvents, other various organic compounds, phenols	Medium
	Titles	Farming	1976-1978	Based on proprietor occupation listed on historical titles			
	Titles	Wholesale butcher	1972-1976	Based on proprietor occupation listed on historical titles			
	Titles	Farming	1962-1972	Based on proprietor occupation listed on historical titles			
	Titles	Farming	1941-1945	Based on proprietor occupation listed on historical titles			
	Site Inspection	Industrial	2015	Light industrial area			
78	Site Inspection	Industrial	2015	Light industrial area	Machinery related contaminants, chemical / fuel storage, process related contaminants	Metals, PAH, TPH, various solvents, other various organic compounds	Medium
79	Site Inspection	Industrial	2015	Light industrial area	Machinery related contaminants, chemical / fuel storage, process related contaminants	Metals, PAH, TPH, various solvents, other various organic compounds	Medium
80	Site Inspection	Industrial	2015	Light industrial area	Machinery related contaminants, chemical / fuel storage, process related contaminants	Metals, PAH, TPH, various solvents, other various organic compounds	Medium
81	Site Inspection	Industrial	2015	Light industrial area	Machinery related contaminants, chemical / fuel storage, process related contaminants	Metals, PAH, TPH, various solvents, other various organic compounds	Medium
82	Site Inspection	Industrial	2015	Light industrial area	Machinery related contaminants, chemical / fuel storage, process related contaminants	Metals, PAH, TPH, various solvents, other various organic compounds	Medium
83	Site Inspection	Industrial	2015	Light industrial area	Machinery related contaminants, chemical / fuel storage, process related contaminants	Metals, PAH, TPH, various solvents, other various organic compounds	Medium
84	Aerial Imagery	Industrial	2010	Building/Structure - Possible industrial	Machinery related contaminants, chemical / fuel storage, process related contaminants	Metals, PAH, TPH, various solvents, other various organic compounds	Medium
	Site Inspection	Industrial	2015	Light industrial area			
85	Site Inspection	Industrial	2015	Light industrial area	Machinery related contaminants, chemical / fuel storage, process related contaminants	Metals, PAH, TPH, various solvents, other various organic compounds	Medium



Property No.	Data Source	Activity Type	Date	Details	Potential Sources of Contamination	Potential Contaminants of Concern	Potential for Contamination Rating
86	Site Inspection	Industrial	2015	Light industrial area	Machinery related contaminants, chemical / fuel storage, process related contaminants	Metals, PAH, TPH, various solvents, other various organic compounds	Medium
87	Site Inspection	Industrial	2015	Light industrial area	Machinery related contaminants, chemical / fuel storage, process related contaminants	Metals, PAH, TPH, various solvents, other various organic compounds	Medium
88	Site Inspection	Industrial	2015	Light industrial area	Machinery related contaminants, chemical / fuel storage, process related contaminants	Metals, PAH, TPH, various solvents, other various organic compounds	Medium
89	Site Inspection	Industrial	2015	Light industrial area	Machinery related contaminants, chemical / fuel storage, process related contaminants	Metals, PAH, TPH, various solvents, other various organic compounds	Medium
90	Site Inspection	Industrial	2015	Light industrial area	Machinery related contaminants, chemical / fuel storage, process related contaminants	Metals, PAH, TPH, various solvents, other various organic compounds	Medium
91	Site Inspection	Industrial	2015	Light industrial area	Machinery related contaminants, chemical / fuel storage, process related contaminants	Metals, PAH, TPH, various solvents, other various organic compounds	Medium
92	Site Inspection	Industrial	2015	Light industrial area	Machinery related contaminants, chemical / fuel storage, process related contaminants	Metals, PAH, TPH, various solvents, other various organic compounds	Medium
93	Site Inspection	Industrial	2015	Light industrial area	Machinery related contaminants, chemical / fuel storage, process related contaminants	Metals, PAH, TPH, various solvents, other various organic compounds	Medium
94	Site Inspection	Industrial	2015	Light industrial area	Machinery related contaminants, chemical / fuel storage, process related contaminants	Metals, PAH, TPH, various solvents, other various organic compounds	Medium
95	Site Inspection	Industrial	2015	Light industrial area	Machinery related contaminants, chemical / fuel storage, process related contaminants	Metals, PAH, TPH, various solvents, other various organic compounds	Medium
96	Site Inspection	Industrial	2015	Light industrial area	Machinery related contaminants, chemical / fuel storage, process related contaminants	Metals, PAH, TPH, various solvents, other various organic compounds	Medium
97	Site Inspection	Industrial	2015	Light industrial area	Machinery related contaminants, chemical / fuel storage, process related contaminants	Metals, PAH, TPH, various solvents, other various organic compounds	Medium
98	Site Inspection	Industrial	2015	Light industrial area	Machinery related contaminants, chemical / fuel storage, process related contaminants	Metals, PAH, TPH, various solvents, other various organic compounds	Medium
99	Site Inspection	Industrial	2015	Light industrial area	Machinery related contaminants, chemical / fuel storage, process related contaminants	Metals, PAH, TPH, various solvents, other various organic compounds	Medium
100	Site Inspection	Industrial	2015	Light industrial area, building storage yard in south of property	Machinery related contaminants, chemical / fuel storage, process related contaminants	Metals, PAH, TPH, various solvents, other various organic compounds	Medium
101	Site Inspection	Industrial	2015	Light industrial area, building storage yard in south of property	Machinery related contaminants, chemical / fuel storage, process related contaminants	Metals, PAH, TPH, various solvents, other various organic compounds	Medium
102	Site Inspection	Industrial	2015	Light industrial area, building storage yard in south of property	Machinery related contaminants, chemical / fuel storage, process related contaminants	Metals, PAH, TPH, various solvents, other various organic compounds	Medium
103	Site Inspection	Industrial	2015	Light industrial area, building storage yard in south of property	Machinery related contaminants, chemical / fuel storage, process related contaminants	Metals, PAH, TPH, various solvents, other various organic compounds	Medium
104	Aerial Imagery	Residential	1970		-	-	Low
105	Aerial Imagery	Residential	1950	Farmhouse and shed pre-1950	-	-	Low
106	Aerial Imagery	Disturbed earth/ stockpiles	2010	Possible hay storage	Fill	Broad chemical suite including metals, hydrocarbons, organic compounds, phenols, asbestos	Medium
	Aerial Imagery	Earthworks/Filling	2015	Large area in eastern half of Property 106 approximately 190 m x 200. confirmed in site inspection to be soil stockpiles			
	Site Inspection	Soil stockpiles	2015	Stockpiled soil			
107	Aerial Imagery	Buildings/Structure	1970	Likely residential	-	-	Low
108	Aerial Imagery	Earthworks	1950	Linear region adjacent to northern boundary of lot approximately 30 m x 320 m. Area visible in all imagery and is tree lined without any buildings or structures in recent imagery.	Fill	Broad chemical suite including metals, hydrocarbons, organic compounds, phenols, asbestos	Medium
	Aerial Imagery	Buildings structures	1991	Possibly present in previous photographs (poor image quality)			
	Aerial Imagery	Building/Structure	2010				
109	Aerial Imagery	Disturbed Vegetation	1985	Dense vegetation removed	Fill	Broad chemical suite including metals, hydrocarbons, organic compounds, phenols, asbestos	Medium
	Aerial Imagery	Filling	2010	Possible infilled dam			
110	Aerial Imagery	Filling	2010	Possible infilled dam present in 1991	Fill	Broad chemical suite including metals, hydrocarbons, organic compounds, phenols, asbestos	Medium
111	Aerial Imagery	dam /drainage	1950	Dam present in imagery from 1950, located at end of possible drainage channel leading south from Inverloch Rd.	Fill/ accumulation of contaminants	Broad chemical suite including metals, hydrocarbons, organic compounds, phenols, asbestos, pesticides/ herbicides	Medium
112	Aerial Imagery	Industrial use	2010	Trucks, waste and industrial style buildings	Machinery related contaminants, chemical / fuel storage, process related contaminants, wash down area, triple interceptor traps	Broad chemical suite including metals, hydrocarbons, organic compounds, phenols, asbestos,.	Medium
	Titles	Farming	1976-1978	Based on proprietor occupation listed on historical titles			
	Titles	Wholesale butcher	1972-1976	Based on proprietor occupation listed on historical titles			
	Titles	Farming	1962-1972	Based on proprietor occupation listed on historical titles			
	Titles	Farming	1941-1945	Based on proprietor occupation listed on historical titles			
113	Aerial Imagery	earthworks	1950	Earth works visible off-site adjacent to southwest boundary from 1950- 1991.	Mine waste, fill	Broad chemical suite including metals, hydrocarbons, organic compounds, asbestos, acids, carbon, creosote, lignins and styrene	High
	Aerial Imagery	Earthworks	1970	cleared vegetation, several dams, mounds and tracks now present through vegetated area			
	Aerial Imagery	Earthworks	1985	Further removal of vegetation/earthworks			
	Aerial Imagery	Earthworks	1991	Offsite earthworks expanded and tracks visible leading from earthworks to Property 113 suggesting possible depositing of fill.			
	Site Inspection	Industrial	2015	Possible mullock heaps and treed area, cattle yard at west boundary			

Appendix J – Environmental Audit Overview

Environmental Audits Overview

For s53X audits only

Environmental audits¹ are a statutory tool used to protect the community and to confirm that potentially contaminated land is suitable for its intended use.

While each site and the associated audit is unique, the overall process is standardised with well documented regulations and guidance.

The diagram outlines the five steps of an audit. The process can take time and expense to finalise.

Audits can only be completed by an Environmental Auditor appointed by Environment Protection Authority (EPA) Victoria under the *Environment Protection Act 1970*. Usually an independent environmental consultant, engaged by the proponent², conducts an assessment and cleanup. A list of appointed auditors can be found at www.epa.vic.gov.au.

EPA recognises the contributions made by ALGA (Australasian Land & Groundwater Association), ACLCA (Australian Contaminated Land Consultants Association) and UDIA (Urban Development Institute of Australia) in the preparation of this flyer.

¹This information relates to environmental audits for potentially contaminated land, conducted under s53X of the *Environment Protection Act 1970*. It is important to confirm that this is the environmental audit type required at your site - a different environmental audit (s53V) may be required, for example, at an industrial site or a site near to a current or former landfill.

² The proponent is the person or organisation whose activity is being audited or the occupier(s) of the segment of the environment that is being audited.

For further information about the environmental audit system, visit www.epa.vic.gov.au/enviroaudit contact EPA Victoria on 1300 372 842.

1 AUDIT TRIGGERS

Environmental audits require an assessment of a site's environmental conditions. Triggers include:

- a planning need (eg. permit condition, Environmental Audit Overlay, Ministerial Direction No.1)
- due diligence (eg. buying/selling a property)
- when previous use may have introduced contamination.

2 COMMERCIAL ASPECTS

An audit's cost and timeframe is an essential part of any commercial project plan.

Costs:

- generally start at \$30,000 and increase with a site's complexity but do not usually include cleanup and site management costs, they may be substantially higher
- can be reduced and delays minimised by engaging an auditor and consultant at the start of a project to help identify potential issues early
- should include contingencies to deal with unforeseen issues.

Note that a financier may want certainty that auditor requirements have been met prior to lending.

Timeframe:

An audit on a simple site takes about 3 months with complex sites often taking more than a year.

3 ASSESSMENT PHASE

The data collection phase is probably the most critical stage. This stage:

- includes assessment works completed in accordance with the relevant Australian standards
- establishes the presence and degree of any contamination and whether further work is needed to make a site safe for its intended use.

Since the auditor relies on this information, they should be actively consulted.

The preliminary site investigation examines the potential for contamination and reviews past use:

- if contamination is suspected, a detailed site investigation of soil and groundwater is done. This may take several stages to fully assess the presence and levels of contamination.
- acceptable levels of contamination may vary depending on the proposed use and the development layout.

On simple sites, this step may prove that the site is either suitable as is, or requires only minor works to make it suitable for its intended use. If the investigation identifies complex contamination issues, additional steps are required to complete the audit.

4 COMPLEX SITES

Sites with more complex contamination issues may require wider stakeholder consultation, more time consuming assessment and extensive cleanup. This includes:

- specific human health or ecological risk assessment
- soil and/or groundwater cleanup (remediation)
- stakeholder consultation
- approval that sufficient cleanup of groundwater has occurred (CUTEP - Cleanup to the Extent Practicable).

Where contamination remains beneath or extends beyond the site, ongoing management may be needed, such as:

- monitoring (soil, gas or groundwater)
- control of site use
- restriction on groundwater extraction via the declaration of a GORUZ (Groundwater Quality Restricted Use Zone).

Consultation must occur with affected parties about offsite contamination and cleanup.

Early consultation will minimise delays in the approval process.

5 AUDIT OUTCOMES

The audit is finalised when the auditor is satisfied that site risks have been remediated, or suitably managed.

For sites where no adverse contamination remains, the auditor issues a *Certificate of Environmental Audit* and *Audit Report* certifying the site is suitable for any use with no conditions. If residual contamination requires management, the auditor issues a *Statement of Environmental Audit and Audit Report*. This may include:

- restrictions and conditions that must be met for the site to be suitable for its intended use
- conditions on parties to implement ongoing actions.

Consultation with relevant stakeholders helps develop conditions that are practicable.

The audit report is submitted to council and EPA and is then accessible on the EPA website as a public document.

The proponent must provide a copy of the statement to future site occupiers.

At any stage, the proponent may terminate the audit, which will result in the auditor notifying EPA.

1 AUDIT TRIGGERS



Planning permit
and/or rezoning



Due
diligence

2 COMMERCIAL ASPECTS



Project finance
Assessment costs
Auditor costs



Engagement



3 ASSESSMENT PHASE

Preliminary site investigation
Detailed site investigation
On-site cleanup



4 COMPLEX SITES



Off-site delineation
Health risk assessment
Further cleanup



Stakeholder
consultation



Cleanup and manage
residual contamination

5 AUDIT OUTCOMES

Audit completion results in:

- Certificate of Environmental Audit or
- Statement of Environmental Audit
(including possible ongoing management conditions)



Council



Proponent



Auditor



Consultant



Environment
Protection
Authority



Community