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Report on
Preliminary Site Investigation (Contamination)

Rosalind Park Planning Proposal
Medhurst Road, Menangle NSW

Prepared for
Leda Holdings Pty Ltd

Project 205817.04
August 2022

Douglas Partners
Geotechnics / Environment / Groundwater

## Document History

Document details

| | | | |
|---|---|---|---|
| Project No. | 205817.04 | Document No. | R.001.Rev0 |
| Document title | Report on Preliminary Site Investigation<br>Rosalind Park Planning Proposal | | |
| Site address | Medhurst Road, Menangle NSW | | |
| Report prepared for | Leda Holdings Pty Ltd | | |
| File name | 205817.04.R.001.Rev0 | | |

Document status and review

| Status | Prepared by | Reviewed by | Date issued |
|---|---|---|---|
| Revision 0 | Bradley Harris | Christopher Kline | 17 August 2022 |
| | | | |
| | | | |
| | | | |

Distribution of copies

| Status | Electronic | Paper | Issued to |
|---|---|---|---|
| Revision 0 | 1 | 0 | Leda Holdings Pty Ltd, Nathan Cutler |
| | | | |
| | | | |
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The undersigned, on behalf of Douglas Partners Pty Ltd, confirm that this document and all attached drawings, logs and test results have been checked and reviewed for errors, omissions and inaccuracies.

| | Signature | | Date |
|---|---|---|---|
| Author |  | | 17 August 2021 |
| Reviewer |  | For CCK | 17 August 2021 |

bsi. ISO 9001 Quality Management
FS 604853

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## Executive Summary

Douglas Partners Pty Ltd (DP) has been engaged by Leda Holdings Pty Ltd (Leda) to complete this preliminary site investigation for contamination (PSI) for the proposal at Rosalind Park, Medhurst Road, Menangle NSW (the site).

DP understands that Leda intends to redevelop the site for residential purposes and requires this report to support a planning proposal for rezoning and provide initial information regarding potential contamination constraints at the site.

The objective of the PSI is to identify any past or present potentially contaminating activities and to provide a preliminary assessment of site contamination and to comment on the need for further investigation and/or management.

The following key guidelines were consulted in the preparation of this report:

- NEPC *National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013) [NEPM]* (NEPC, 2013); and
- NSW EPA *Guidelines for Consultants Reporting on Contaminated Land* (NSW EPA, 2020).

A desktop review of site history information has been undertaken to identify potential areas of environmental concern (PAEC) and related Contaminants of Potential Concern (COPC) which may arise from previous and current land uses. The desktop investigation was limited to the following:

- A review of historical aerial photographs;
- NSW EPA data base searches;
- Review of Council/Planning Records; and
- Listing of other potential site contamination issues based on DP's experience with sites of a similar nature and scale.

Site walkovers were completed by DP on 1 July 2021 (DP, 2021), 11 March 2022 (DP,2022) and 17 May 2022 (DP,2022a) to identify additional PAEC.

The PSI identified 79 PAEC at the site. Based on the findings of the PSI (noting the limited scope of works), the site has been divided into two categories from a contamination risk perspective as follows:

- Medium to High risk:
    - Menangle Park Recycling Facility (PAEC 38). As the recycling facility has received recycled waste streams there is the strong possibility that asbestos impacted material has been imported inadvertently; and
    - Rosalind Park Gas Plant (PAEC 41) and gas (PAEC 53/54). DP understands that the RPGP and associated infrastructure is to be remediated by AGL (the asset owner). Leda should confirm that this is the case and should determine to what level it will be remediated and what checks there will be on validation. The suitability of the abandoned gas wells as potential home sites also needs to be confirmed by AGL (ie: how will the wells be plugged and what evidence is there that ongoing gas leakage will not be an issue).

- Low Risk: All other PAEC and the remaining areas of the site. The majority of these PAEC are associated with identified ground disturbance or localised filling. DP note that whilst they are classified as low risk this is not equated to “no risk” as some of these areas will be found to be contaminated during further investigation.

It should be noted that no intrusive testing was completed as part of this PSI. As such there will be further PAEC that could not be identified by the desktop study and visual observations from the site inspection. In addition, a number of the identified PAEC comprised areas of ground disturbance. Where these ground disturbances are confirmed to be areas of filling, the potential for these areas to be impacted with hazardous materials such as asbestos should also be taken into account.

The preparation of a sampling plan and completion of intrusive investigation is required to ascertain which potential areas of environmental concern (PAEC) need to be reclassified as an area of environmental concern (AEC). Once a list of AEC is determined a conceptual site model (CSM) can be developed. Following the development of the CSM, the extent of each AEC and the level of contaminants of concern can be determined through investigation.

Further limited assessment of the non PAEC areas of the site (which were used for agricultural activities) will be required to confirm the inferred low potential for contamination. These low density assessments are often undertaken on a stage by stage basis prior to each development application for subdivision.

Based on the findings of the assessment, potential groundwater contamination is not considered to be significant for the majority of the site, unless soil contamination is found within the AEC or within the background area. If significant soil contamination is identified, then a localised groundwater investigation may be required. A groundwater assessment associated with AEC 38 is likely to be required.

In summary, the level of contamination found on this site is typical of other rural properties in the area, with the exception of the presence of the quarry and gas infrastructure. Notwithstanding the presence of these features, it is expected that the site could be made suitable for the proposed reuse following further investigation and remediation if required.

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## 1. Introduction

Douglas Partners Pty Ltd (DP) has been engaged by Leda Holdings Pty Ltd (Leda) to complete this limited preliminary site investigation for contamination (PSI) for the proposal at Rosalind Park, Medhurst Road, Menangle NSW (the site). The site boundary is shown on Drawing 1, Appendix A.

DP understands that Leda intends to redevelop the site for residential purposes and requires this report to support the planning proposal for rezoning and provide initial information regarding potential contamination constraints at the site.

DP have previously completed three PSI reports for differing areas of the current site boundary (refer Section 4 and Drawing 1, Appendix A). The objective of this report is to review and consolidate the information provided within the previous reports for the current site boundary.

The following key guidelines were consulted in the preparation of this report:

- NEPC *National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013) [NEPM]* (NEPC, 2013); and
- NSW EPA *Guidelines for Consultants Reporting on Contaminated Land* (NSW EPA, 2020).

## 2. Scope of Works

The PSI included completion of the following scope of works:

- A review of previous environmental investigations by DP relevant to the Site;
- Review of local topographic, soil, geological and acid sulfate soils mapping;
- Consolidate and summarise site history revies completed from the previous investigations;
- Consolidate and summarise Potential Areas of Environmental Concern (PAEC) previously identified from the various previous environmental investigations (refer Section 5); and
- Preparation of this PSI report outlining the methodology and results of the investigation, and an assessment of the site's suitability for the proposed development.

## 3. Site Information

| | |
|---|---|
| Site Address | Medhurst Road, Menangle NSW |
| Legal Description | Lot 1 in Deposited Plan 589241<br>Part Lot 35 in Deposited Plan 230946<br>Lot 2 in Deposited Plan 622362<br>Lot 3 in Deposited Plan 622362<br>Lot 1 in Deposited Plan 622362<br>Lot 58 in Deposited Plan 632328 |
| Area | 264 ha |
| Zoning | Zone RU2 Rural Landscape |
| Local Council Area | Campbelltown City Council |
| Current Use | Rural Residential |
| Surrounding Uses | North – Rural agricultural land<br>Northeast - Sydney water canal beyond which is a residential development<br>East – Rural agricultural land<br>South – Rural agricultural land which is the Mount Gilead Residential Release Area<br>West – Highway beyond which is the Menangle Park Residential Release area |

**Figure 1: Site Location**

## 3.1 Site Description

The overall site comprises an irregular shaped area of approximately 264 ha. The site is located on the eastern side of the Hume Highway and is bounded to the north by rural properties and to the south and east by Menangle Creek. Aerial photography shows that the site is traversed by several perennial tributaries of Menangle Creek.

Limited site walkovers completed by DP on 1 July 2021 (DP, 2021), 11 March 2022 (DP,2022) and 17 May 2022 (DP,2022a), and a review of aerial photographs also show that much of the site is grass covered and appears to be used for grazing. Photographs taken during various site inspections are shown in Appendix B. There are areas of shrubs and small trees, particularly on sloping areas and adjacent to major tributaries and Menangle Creek.

The Menangle Park Quarry and Resourse Recovery Facility are located in the central southern part of the site. The Rosalind Park Gas Plant (RPGP) is located adjacent and to the east of the quarry. In addition, two high pressure gas mains, understood to be within the one easement, traverse the central portion of the site from north to south.

Residential dwellings and associated sheds were observed within the northern portion of the site. It should be noted that no interviews with land owners were completed as part of this investigation.

## 4. Previous Investigations

The following DP reports have previously been prepared for separate individual parcels of the Site:

- *Report on Preliminary Site Investigation (Contamination), Proposed Residential Subdivision, Rosalind Park, Medhurst Road, Menangle*, Project 205817.00.R.001.Rev0 dated 29 July 2021 (DP 2021);
- *Report on Preliminary Site Investigation (Contamination), Proposed Residential Subdivision, 111 Menangle Road, Menangle Park*, Project 205817.01.R.001.Rev0 dated 18 March 2022 (DP 2022);
- *Report on Preliminary Site Investigation (Contamination), Proposed Residential Subdivision, 101 Menangle Road, Menangle Park*, Project 205817.02.R.001.Rev0 dated 15 June 2022 (DP 2022a);

The DP (2021), DP (2022) and DP (2022a) were complete for three separate investigation areas, which combined cover all of the current investigation site boundary. The previous investigation boundaries are shown on Figure 2 (below) and Drawing 1, Appendix A.


**Figure 2: Previous Investigations**

The objective of the previous investigations was to identify any past or present potentially contaminating activities and to provide a preliminary assessment of site contamination and to comment on the need for further investigation and/or management. The reports were used for due diligence purposes to inform decisions regarding a proposed residential land use.

The scope of works completed for the above referenced reports included the following:

- Review of local topographic, soil, geological and acid sulfate soils mapping;
- Search of the NSW EPA Land Information records to confirm that there are no statutory notices or licences current on any parts of the site or nearby surrounds under the *Contaminated Land Management Act 1997* and the *Protection of the Environment Operations Act 1997*;
- Search for groundwater bores registered with the NSW Office of Water located on or adjacent to the site;
- A review of previous site ownership records, including land title records (DP,2022 only);
- A search of historical Council and property attributes, records pertaining to previous site use and any information relating to known areas of flood prone land or site contamination;
- Review of aerial photography to identify Potential Areas of Environmental Concern (PAEC);
- Review of available Council Records; and
- Undertaking a limited site visit and walkover to identify additional PAEC;

Based on the results of DP(2019), DP2021, and DP 2022, potential environmental concern (PAEC) were identified within the respective site boundaries, where further environmental investigation for contamination purposes would be required.

The site history information and identified PAEC provided within the above referenced reports will be consolidated and presented within this report.

# 5. Environmental Setting

## 5.1 Topography

The site comprises two north-south oriented ridgelines, separated by an unnamed tributary of Menangle Creek, with a number of easterly and westerly spurs and an east-west oriented ridge line in the northern part of the site which connects the north-south ridges. Much of the site comprises moderate (10 – 18°, grades of 18% - 34%) to steep (18 – 27°, grades of 34% - 50%) slopes with some locally very steep slopes (27 – 45°, grades of 50% - 100%), particularly in the southerly facing slopes lying between approximately RL 106 relative to Australian Height Datum (AHD) to RL 152 in the central third of the site. The ridge above the site rises to approximately RL 172 within the overall site. Gentle slopes (0 – 10°, grades of 0% - 18%) are located on crest of the ridges, the bases of the spurs in the north and west portions of the site and floodplains located adjacent to Menangle Creek in the southern parts of the site.

## 5.2 Soils

Reference to the 1:100 000 Soil Landscapes of Wollongong-Port Hacking Sheet indicates that the site includes four soil landscape groups, namely the Blacktown, Hawkesbury, Luddenham and Theresa Park soil landscapes as well as an area identified as Disturbed Terrain associated with the Menangle Park Quarry. The approximate soil landscape boundaries, as shown on the soil landscape maps, are shown on Figure 3, below.

The four soil landscapes are further described below:

The Blacktown Soil Landscape (mapping unit bt) is characterised by topography of gently undulating rises on Wianamatta Group Shale, with local relief to 30 m and slopes usually less than 5%, typically represented by broad rounded crests and ridges with gently inclined slopes. This is a residual soil landscape, which the mapping indicates comprises multiple soil horizons that range from shallow red-brown podzolic soils comprising mostly clayey soils on crests and upper slopes, to deep brown to yellow clay soils on mid to lower slopes and in areas of poor drainage. These soils are typically of low fertility, are moderately reactive, highly plastic and generally have a low wet strength. Whilst Blacktown soil group is typically associated with Wianamatta shales on this site it is mapped as overlying the Hawkesbury sandstone. This is quite common at the interface zones between the shale and the sandstone.

The Theresa Park Soil Landscape (mapping unit tp) is characterised by *Tertiary and Quaternary floodplain*. The Theresa Park soil landscape group is associated with alluvial soils with localised flooding, seasonal waterlogging, very high soil erosion hazard for concentrated flows.

The Hawkesbury Soil Landscape (mapping unit ha) is characterised by rugged, rolling to very steep hills on Hawkesbury Sandstone, with local relief of 40 m to 200 m and slopes usually greater than 25% and rock outcrops of more than 50%. This is a colluvial soil landscape, which mapping indicates comprises multiple soil horizons, including localised yellow and red podzolic soils associated with shale lenses, siliceous sands and yellow earth along drainage lines, shallow and discontinuous sands associated with rock outcrops and some yellow podzolic soils on the insides of benches and along rock joints and fractures. These soils are typically associated with an extreme soil erosion hazard, mass movement (rock fall) hazard, steep slopes, rock outcrop or shallow, stony, highly permeable soil of low soil fertility.

The Luddenham Soil Landscape (mapping unit lu) is characterised by undulating to rolling low hills on Wianamatta Group shales, often associated with Minchinbury Sandstone with local relief of 50 m to 80 m and slopes 5% to 20%. This is a erosional landscape, which mapping indicates comprises narrow ridges, hillcrests and valleys. These soils are typically associated with high soil erosion hazard, localised impermeable highly plastic subsoil and is moderately reactive.

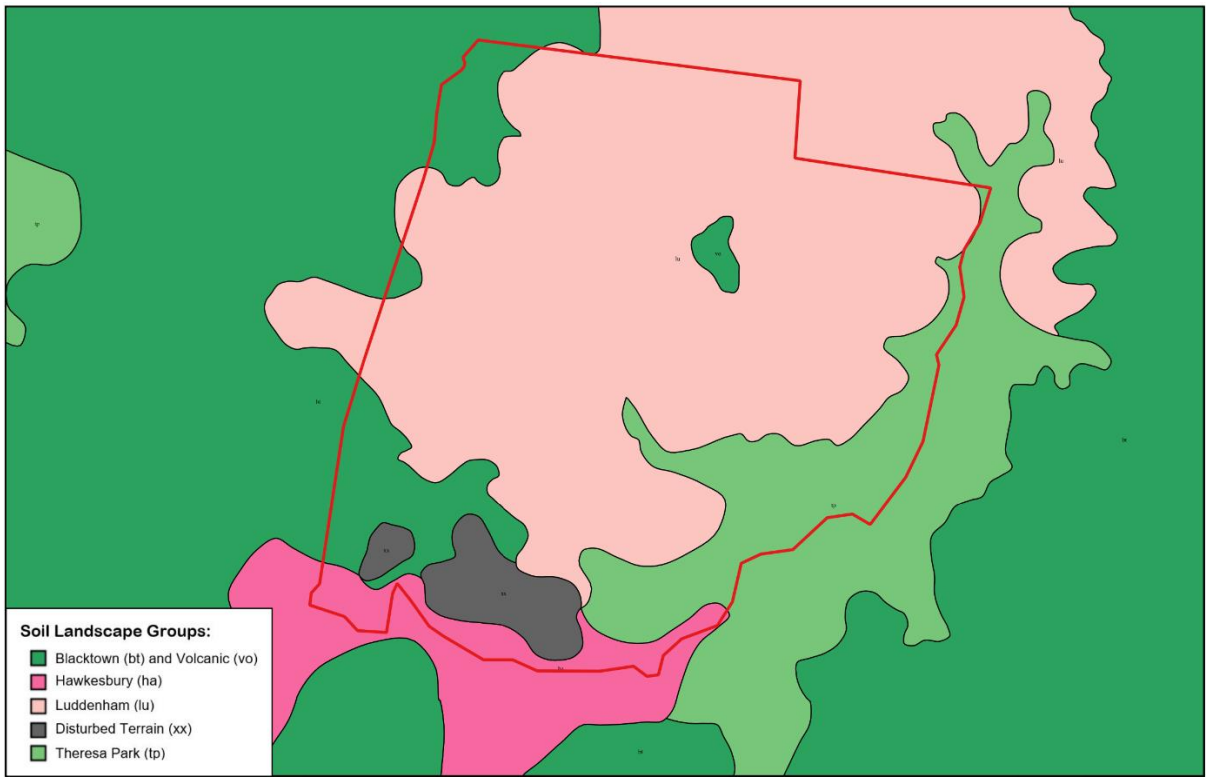



**Figure 3: 1:100 000 Soil Landscapes of Wollongong-Port Hacking Sheet with the current study site boundary.**

## 5.3 Geology

The Wollongong – Port Hacking 1:100 000 Geological Series Sheet indicates that the site is underlain by rocks of the Hawkesbury Sandstone, Mittagong Formation and the Wianamatta Group of Triassic age. The approximate geological landscape boundaries, as shown on the soil landscape maps, are shown on Figure 4, below.

Most of the higher elevations and northern part of the site is underlain by the Bringelly Shale (mapping unit Rwb) which typically comprises thinly bedded shale, siltstone, carbonaceous claystone, fine grained sandstone, laminite and some minor coaly bands. These rocks typically weather to form clays of high plasticity.

The Ashfield Shale (map unit Rwa), which predominantly comprises laminite and claystone, underlies the lower reaches and southern part of the site (refer Figure 4). The boundary between the Bringelly Shale and Ashfield Shale is typically marked by the Minchinbury Sandstone which ranges from approximately 1.5 m to 3.5 m thick.

The Mittagong Formation (map unit Rm) and Hawkesbury Sandstone (map unit Rh) are inferred at shallow depths in the southern part of the site and exposed within the Menangle Park Quarry. The Mittagong Formation is a transitional unit between the Ashfield Shale and Hawkesbury Sandstone Formation and typically comprises interbedded siltstone and fine to medium grained sandstone. The Hawkesbury Sandstone typically comprises medium to coarse grained quartz sandstone.

A diatreme (ie: a vertical pipe or funnel-shaped igneous intrusion) of Jurassic age comprising breccia, basalt and dolerite are mapped (map unit Jv) in the central southern and central part of the site.

McNally[1] describes some general features of the hydrogeology of Western Sydney which are relevant to this site as follows:

- The shale terrain of much of Western Sydney is known for saline groundwater, resulting either from the release of connate salt in shales of marine origin or from the accumulation of windblown sea salt;
- This salt is concentrated by evapo-transpiration and often reaches highest concentrations in the B-horizon of residual soils;
- In areas of urban development, this can lead to damage to building foundations, lower course brickwork, road surfaces and underground services, where these impact on the saline zone or where the salts are mobilised by changing groundwater levels; and
- Seasonal groundwater level changes of 1 m to 2 m can occur in a shallow regolith aquifer or a deeper shale aquifer due to natural influences.

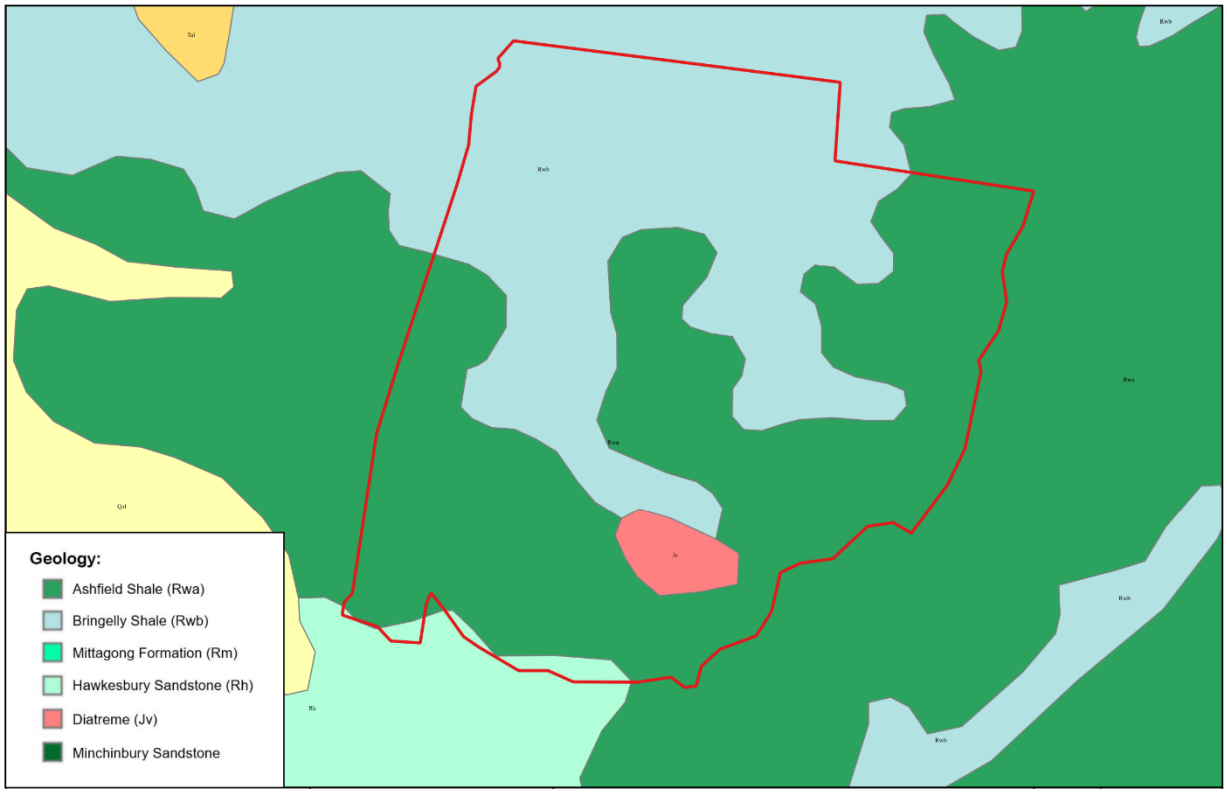



**Figure 4: Wollongong – Port Hacking 1:100 000 Geological Series Sheet with the current study site boundary**

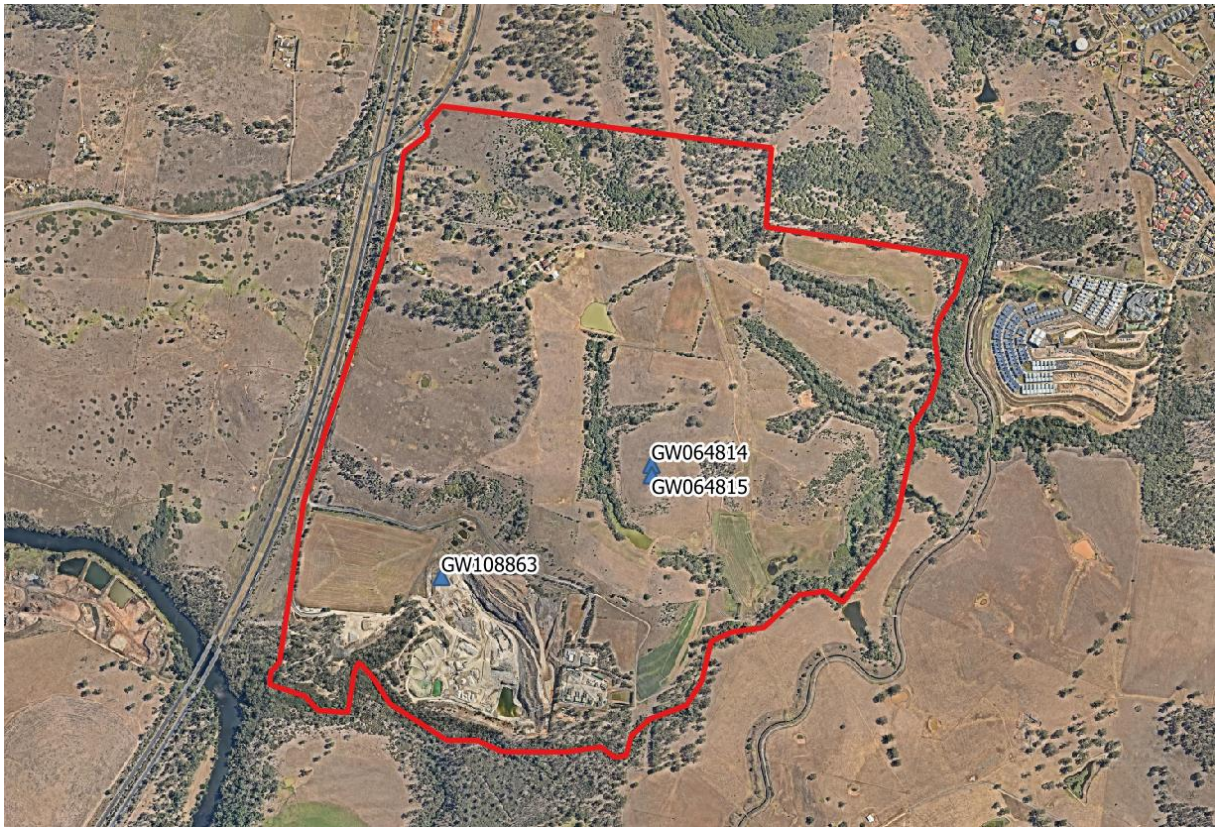
1 McNally, G. 2005. Investigation of urban salinity – case studies from Western Sydney, Urban Salt 2005 Conference Paper, Parramatta.

## 5.4 Surface Water and Groundwater

Based on the regional topography and the inferred flow direction of nearby water courses, the anticipated flow direction of surface water and groundwater beneath the majority of the site is to the south and south-east. For the north and north western portions of the site, the anticipated flow direction of surface water and groundwater beneath these areas is to the north/north west.

Given the local geology (ie: Wianamatta group - Bringelly and Ashfield Shale), the groundwater in the fractured rock aquifer beneath the site is anticipated to be relatively fresh. Accordingly, potential beneficial uses could include irrigation or drinking water.

A groundwater bore search was conducted from information provided by the NSW Department of




Primary Industries Water identified three bores within the site. The locations of the groundwater bores are shown on Figure 5 (below). GW108863 (intended purpose: Industrial), GW064814 (intended purpose: Domestic Stock) and GW064815 (intended purpose: Domestic Stock). Summary information from each bore is provided in Appendix C.

**Figure 5: Groundwater Bore Search with the current study site boundary**

### 5.5 Acid Sulphate Soils

Reference to the Acid Sulfate Soil (ASS) Risk Map published by the Department of Land and Water Conservation indicates the site is in an area of extremely low probability of acid sulfate soil conditions.

## 6. Site History

A desktop review of site history information was undertaken for the site, as part of DP (2021), DP (2022) and DP (2022a), to identify PAEC and related Contaminants of Potential Concern (COPC) which may arise from previous and current land uses. This section provides a consolidated summary of the review findings as well as results of a current search of available NSW EPA databases.

The desktop investigation was limited to the following:

- A review of historical aerial photographs;
- NSW EPA data base searches;
- Review of Council/Planning Records; and
- Listing of other potential site contamination issues based on DP's experience with sites of a similar nature and scale.

### 6.1 Historical Aerial Photography

Aerial photographs were reviewed to assist in identifying the history of the site and the surrounding area. The following historical aerial photographs were reviewed as part of the previous investigations:

**DP (2021) and DP (2022)** - Images from 1947, 1961, 1970, 1984, 1990 and 2005 were sourced from NSW Land and Property Information. Additionally, images from 2018 and 2021 were sourced from MetroMaps Pty Ltd. All aerial photographs are provided in Drawings 2 to 9 (Appendix A). PAEC identified during the review are shown on the drawings and summarised in Tables 1 and 2, Section 8.

**DP (2022a)** - Images from 1947, 1955, 1963, 1974, 1995 and 2005 were sourced from NSW Land and Property Information. Additionally, an image from 2022 was sourced from MetroMaps Pty Ltd. Extracts of these aerials from DP(2022a) are provided in Appendix F. PAEC identified during the review are shown on the Drawing 11 (Appendix A) and summarised in Table 3, Section 8.

Where a PAEC was observed across multiple aerial photographs, its location is shown on the first aerial from which it was observed.

As some of the boundaries of the identified PAEC were observed to change from one historical aerial photograph to the next, the largest extent of the identified PAEC has been adopted. As such, the extent of the PAEC boundary may extend beyond the observed disturbance shown on the historical aerial being reviewed.

The aerial photography review indicates that the significant changes to the site since 1947 are:

- observed ground disturbances;
- the sandstone quarry;
- construction of dams;
- construction of the RPGP;
- construction of internal access roads/tracks; and
- construction of houses and associated sheds within the northern portion of the site.

The balance of the site has appeared to be vacant and potentially used for agricultural purposes such as cattle grazing.

## 6.2 Search of NSW EPA Public Registers

A current search of the NSW EPA website on 22 July 2022 indicated that:

- The site and adjacent properties have not been listed in the NSW contaminated sites notified to EPA;
- No notices or orders made under the CLM Act have been issued for the site or adjacent properties; and
- Three environmental protection licences (EPL) under Schedule 1 of the POEO Act have been issued for the site. These licences were for:
    - Licence 12003 – Held by AGL Upstream Services Pty Ltd for the RPGP. The licence allows for petroleum exploration, assessment and production;
    - Licence No. 4025 – Held by Cleary Bros (Bombo) Pty Ltd for the Menangle Quarry. The licence allows for land based extraction activities (Licence surrendered in 2006); and
    - Licence 12577 – Held by Hi-Quality Environmental Services Pty Ltd for the Menangle Resource Recovery and Recycling Facility. The licence allows for land based extraction activities and resource recovery (recovery of general solid waste).

The abovementioned licences are provided in Appendix D.

## 6.3 AGL Gas Wells and Rosalind Gas Plant

A search of the AGL website on 22 July 2022 indicated the following with regards to the AGL Wells and RPGP:

- There are 11 gas wells with associated gathering lines located within the site (refer Campbelltown LGA AGL Well Heads and Gas Gathering Lines, Appendix F);
- Some of the gas wells are to be, or have been, plugged and decommissioned;
- Gathering lines run from the gas wells to the RPGP, which is also located within the southern portion of the site (plan in Appendix F);

- The RPGP has several functions, which includes filtration of particles from the gas, the removal of moisture from the gas, metering the gas quality and quantity passing through the plant, injection of odour for leak detection and boost the pressure to allow the gas to enter the gas supply network;
- The RPGP includes a Flare Pond. All water generated from the plant is treated and the clean water is released into the flare pond where it is evaporated or recycled off site and the solid waste is taken off site for disposal; and
- The RPGP has a POEO licence (see Section 5.4) which operations must comply with.

The locations of the AGL Gas Wells within the site boundary are provided on the AGL Gas Operations Drawing Reference No. 3415, in Appendix E.

## 6.4 Council and Planning Records

A property search was completed using the NSW Government ePlanning planning portal on 21 July 2022 which indicated the following:

- The site is zoned RU2 (Rural Landscape) under Campbeltown local environment plan (2015);
- The site is within a bush fire prone area which contains vegetation category 1, vegetation category 3 and vegetation buffer areas;
- The site is not subject to any flood related restrictions; and
- The site is within a mine subsidence district.

During completion of DP (2021), DP (2022) and DP (2022a), DP submitted an informal release applications as per Government Information (Public Access) Act 2009 to Campbelltown City Council for information relating to contaminated land and development applications. At the time of finalising the previous PSI reports, DP had not received any information from Council. However, since completion of the previous reports, correspondence from Council confirmed no previous contamination reports were on file for both the DP (2021) and DP (2022) investigation boundaries.

With regards to DP(2022a), Council confirmed that a number of POEO and EPA applications were on file for the DP(2022a) site, which includes:

- Property Applications: NO/255/2000, Int Lga 93 Sec 124 Ord 10 & 21
- Property Applications: POEO/16/2003, Poeo Act 1997 Sec 91
- Property Applications: POEO/37/2003, Poeo Act 1997 Section 96 N.O.I.
- Property Applications: POEO/22/2003, Prot Of The Env Op Act 1997 Sections 143 & 144
- Property Applications: POEO/23/2003, Prot Of The Env Oper Act 1997 Sections 143 & 144
- Property Applications: EPA/63/2004, Epa Section 121b Order 5 N.O.I
- Property Applications: POEO/2/2004, Poeo Act 1997 Sec 96 N.O.I
- Property Applications: POEO/3/2004, Poeo Act 1997 Sec 96 Infringe Notice Issued 4/3/04
- Property Applications: 2783/2005/N-EPA, EP&A Act 1979 Request entry to Property
- Property Applications: 3005/2005/N-EPA, EP&A Act 1979

- Property Applications: 4201/2005/N-EPA, EP & A Act 1979 Section 121B Order - Cease Use of Premises
- Property Applications: 200/2006/N-POEO, POEO Act 1997
- Property Applications: 205/2006/N-EPA, EP& Act 1979 Request to enter Premises
- Property Applications: 833/2006/N-EPA, EP & A Act 1979 Notice to Enter; and
- Property Applications: 932/2011/N-LGA, repair fence to prevent stock escaping. stock removed. completed. NFA

A review of the above applications was not completed as part of DP(2022a) due to the timing of the search results being received after completion of the DP(2022a) and that Council advised that a formal application for release is required to view the documents. As such it is recommended that the above applications be reviewed as part of the future investigations required to be completed within Lot 1 Deposited Plan 589241 (see Section 9).

### 6.5 Site History Integrity Assessment

The information used to establish the history of the site was sourced from reputable and reliable reference documents, many of which were official records held by Government departments/agencies. The databases maintained by various Government agencies potentially can contain high quality information, but some of these do not contain any data at all.

In particular, aerial photographs provide high quality information that is generally independent of memory or documentation. They are only available at intervals of several years, so some gaps exist in the information from this source. The observed site features are open to different interpretations and can be affected by the time of day and/or year at which they were taken, as well as specific events, such as flooding. Care has been taken to consider different possible interpretations of aerial photographs and to consider them in conjunction with other lines of evidence.

Given that historical aerial photographs identified that most of the site, with the exception of the quarry and gas plant areas, have been used for rural purposes since the 1950's, a title search, SafeWork NSW Dangerous goods search, interviews with owners and Section 10.7 certificate were not considered to be warranted for this PSI. The scope completed is considered appropriate for a preliminary investigation for a rezoning.

## 7. Post DP (2021), DP (2022) and DP (2022a)

Based on the review of recent aerial photographs (refer Drawing 1, Appendix A), the site has remained relatively unchanged since the completion of DP (2021), DP (2022) and DP (2022a).

## 8. Potential for Contamination

In the course of the site history investigations completed as part of DP (2021), DP (2022) and DP(2022a), 79 areas were identified as Potential Areas of Environmental Concern (PAEC) within site.

The locations of the PAEC identified from the 1947, 1961, 1970, 1984, 1990, 2005, 2018 and 2021 aerial photograph review are shown on Drawings 2 to 9, Appendix A, respectively.

Limited site walkovers were completed by DP on 1 July 2021 (DP, 2021), 11 March 2022 (DP,2022) and 17 May 2022 (DP,2022a), to identify additional PAEC which were not identified during the desktop review.

In addition for DP(2022) some PAEC identified from the desktop review were inspected and were considered not to be PAEC. The outcome of the inspections for each of the PAEC (where inspected) is detailed in Table 2 for this area of the site.

For ease of future referencing, the original PAEC No. as referenced within DP(2021. DP(2022) and DP(2022a) are included within Table 1 to 3 along with revised consecutive numbering for future reference. The confirmed PAEC are shown on Drawing 10 and 11, Appendix A.

**Table 1: Summary of Identified Potential Areas of Environmental Concern within DP(2021)**

| Revised PAEC No. | Original PAEC # | Identified from | Brief Description | Potential Environmental Concern | Potential Contaminants of Concern |
|---|---|---|---|---|---|
| **1** | **1** | 1947, 1970 and 2005 AP | Area of unknown ground disturbance and multiple buildings constructed between 1990 and 2005 on southern PAEC boundary. | Impacted surface soil/possible filling.<br>Construction and demolition debris, use of pesticides and lead based paints, and storage of chemicals.<br>Fill may have been imported for the construction of the dam walls. | Metals, BTEX, TRH, PAH, phenols, OCP, OPP and Asb. |
| **2** | **2** | 1947 AP | Area with buildings (residential and associated sheds driveway) constructed prior to 1947. | Impacted surface soil/possible filling – construction and demolition debris, use of pesticides and lead based paints, and storage of chemicals. | Metals, BTEX, TRH, PAH, phenols, OCP, OPP and Asb. |
| **3** | **3** | 1947 AP | Potential ground disturbance (ploughing). | Application of pesticides and herbicides. | Metals, OCP and OPP. |
| **4** | **4** | 1947 AP | Ground disturbance. | Impacted surface soil/possible filling. | Metals, BTEX, TRH, PAH, phenols, OCP, OPP and Asb. |
| **5** | **5** | 1947, 1961, 1984 and 1990 AP | Area of ground disturbance observed in 1947 and 1961 AP adjacent to dam. 1984 AP observed ground disturbance and possible building or storage of materials. | Impacted surface soil/possible filling.<br>Fill may have been imported for the construction of the dam walls | Metals, BTEX, TRH, PAH, phenols, OCP, OPP and Asb. |
| **6** | **6** | 1947 AP | Small area of ground disturbance. | Impacted surface soil/possible filling. | Metals, BTEX, TRH, PAH, phenols, OCP, OPP and Asb. |

| Revised PAEC No. | Original PAEC # | Identified from | Brief Description | Potential Environmental Concern | Potential Contaminants of Concern |
|---|---|---|---|---|---|
| **7** | **7** | 1947, 1970 and 2005 | Area of ground disturbances and dam. | Impacted Surface Soils/Possible Filling.<br>Fill may have been imported for the construction of the dam walls. | Metals, BTEX, TRH, PAH, phenols, OCP, OPP and Asb. |
| **8** | **8** | 1947 AP | Area of ground disturbance | Impacted surface soils/possible filling | Metals, BTEX, TRH, PAH, phenols, OCP, OPP and Asb. |
| **9** | **9** | 1947 and 1961 AP | Area of ground disturbance | Impacted surface soils/possible filling | Metals, BTEX, TRH, PAH, phenols, OCP, OPP and Asb. |
| **10** | **10** | 1947 and 1984 AP | Access track with ground disturbances (eastern portion of PAEC) | Impacted surface soil/possible filling. | Metals, BTEX, TRH, PAH, phenols, OCP, OPP and Asb. |
| **11 to 21** | **11 to 21** | 1947 AP | Areas of ground disturbance. | Impacted surface soils/possible filling | Metals, BTEX, TRH, PAH, phenols, OCP, OPP and Asb. |
| **22** | **22** | 1947, 2005 and 2018 AP | Area of ground disturbance. | Impacted surface soils/possible filling | Metals, BTEX, TRH, PAH, phenols, OCP, OPP and Asb. |
| **23** | **23** | 1961 AP | Area of ground disturbance and dam | Impacted Surface Soils/Possible Filling<br>Fill may have been imported for the construction of the dam walls. | Metals, BTEX, TRH, PAH, phenols, OCP, OPP and Asb. |
| **24** | **24** | 1961 AP | Area of ground disturbance. | Impacted surface soils/possible filling | Metals, BTEX, TRH, PAH, phenols, OCP, OPP and Asb. |

| Revised PAEC No. | Original PAEC # | Identified from | Brief Description | Potential Environmental Concern | Potential Contaminants of Concern |
|---|---|---|---|---|---|
| **25 to 27** | **25 to 27** | 1970 AP | Areas of ground disturbance. | Impacted surface soils/possible filling | Metals, BTEX, TRH, PAH, phenols, OCP, OPP and Asb. |
| **28** | **28** | 1970 AP | Construction of dam | Fill may have been imported for the construction of the dam walls. | Metals, BTEX, TRH, PAH, phenols, OCP, OPP and Asb. |
| **29 and 30** | **29 and 30** | 1970 AP | Two elongated areas of ground disturbances. | Impacted surface soil/possible filling. | Metals, BTEX, TRH, PAH, phenols, OCP, OPP and Asb. |
| **31** | **31** | 1970 AP | Appears to be a dam in 1970 AP which is not present in subsequent aerial photographs. | Fill may have been imported for the construction of the dam walls. Possible filling of dam. | Metals, BTEX, TRH, PAH, phenols, OCP, OPP and Asb. |
| **32** | **32** | 1970 to 2018 AP | Area of ground disturbance, access tracks and stockpiles. | Impacted surface soils/possible filling. | Metals, BTEX, TRH, PAH, phenols, OCP, OPP and Asb. |
| **33** | **33** | 1984 AP | Area of ground disturbance. | Impacted surface soils/possible filling. | Metals, BTEX, TRH, PAH, phenols, OCP, OPP and Asb. |
| **34** | **34** | 1984 AP | Construction of dam. | Fill may have been imported for the construction of the dam walls. | Metals, BTEX, TRH, PAH, phenols, OCP, OPP and Asb. |
| **35** | **35** | 1984 to 2018 AP | Area of ground disturbance. | Impacted surface soils/possible filling. | Metals, BTEX, TRH, PAH, phenols, OCP, OPP and Asb. |

| Revised PAEC No. | Original PAEC # | Identified from | Brief Description | Potential Environmental Concern | Potential Contaminants of Concern |
|---|---|---|---|---|---|
| **36** | **36** | 1984 AP | Construction of dam. | Fill may have been imported for the construction of the dam walls. | Metals, BTEX, TRH, PAH, phenols, OCP, OPP and Asb. |
| **37** | **37** | 1984 AP | Area of ground disturbance. | Impacted surface soils/possible filling. | Metals, BTEX, TRH, PAH, phenols, OCP, OPP and Asb. |
| **38** | **38** | 1984 to 2018 AP and EPL | Mangle Quarry, Resource Recovery and Recycling Facility. Associated stockpiles/ground disturbances/dams. | Review of EPLs for Quarry indicates brick, tile, concrete can be processed within the Quarry.<br>Construction and demolition debris, use of pesticides and lead based paints, from any structures within the quarry (i.e site sheds).<br>Storage of chemicals/fuels for the associated machinery.<br>Fill may have been imported for the construction of the dam walls. | Metals, BTEX, TRH, PAH, phenols, OCP, OPP and Asb. |
| **39** | **39** | 2005 and 2018 AP | Potential ground disturbance (ploughing). | Application of pesticides and herbicides.<br>Potential use of recycled water from the Quarry. | Metals, OCP and OPP. |
| **40** | **40** | 2005 AP and 2018 | Asphalt/roadbase area with gas well. | Impacted surface soils/possible filling | Metals, BTEX, TRH, PAH, phenols, OCP, OPP and Asb. |

| Revised PAEC No. | Original PAEC # | Identified from | Brief Description | Potential Environmental Concern | Potential Contaminants of Concern |
|---|---|---|---|---|---|
| **41** | **41** | 2005 and 2018 AP | Rosalind Gas Plant. | Impacted Surface Soils/Possible Filling.<br>Leaching of contaminants from surface ponds, storage tank and other processes.<br>Storage of chemicals/fuels for the associated machinery. | Metals, BTEX, TRH, PAH, phenols, OCP, OPP, Asb and PFAS. |
| **42** | **42** | 2005 and 2018 AP | Area of ground disturbance. | Impacted surface soils/possible filling. | Metals, BTEX, TRH, PAH, phenols, OCP, OPP and Asb. |
| **43** | **43** | 2005 and 2018 AP | Area of ground disturbance with asphalt and/or roadbase gravels. | Impacted surface soils/possible filling. | Metals, BTEX, TRH, PAH, phenols, OCP, OPP and Asb. |
| **44** | **44** | 2005 and 2018 AP | Area of ground disturbance. | Impacted surface soils/possible filling. | Metals, BTEX, TRH, PAH, phenols, OCP, OPP and Asb. |
| **45** | **45** | 2018 AP | Area of ground disturbance | Impacted surface soils/possible filling. | Metals, BTEX, TRH, PAH, phenols, OCP, OPP and Asb. |
| **46** | **46** | 2018 AP | Area of ground disturbance | Impacted surface soils/possible filling. | Metals, BTEX, TRH, PAH, phenols, OCP, OPP and Asb. |
| **47** | **47** | 2018 AP | Area of ground disturbance | Impacted surface soils/possible filling. | Metals, BTEX, TRH, PAH, phenols, OCP, OPP and Asb. |

| Revised PAEC No. | Original PAEC # | Identified from | Brief Description | Potential Environmental Concern | Potential Contaminants of Concern |
|---|---|---|---|---|---|
| **48** | **48** | 2021 AP | Area of ground disturbance | Impacted surface soils/possible filling. | Metals, BTEX, TRH, PAH, phenols, OCP, OPP and Asb. |
| **49** | **49** | 2021 AP and EPL | Expansion to Mangle Quarry, Resource Recovery and Recycling Facility. Associated stockpiles/ground disturbances. | Review of EPLs for Quarry indicates brick, tile, concrete can be processed within the Quarry.<br>Construction and demolition debris, use of pesticides and lead based paints, from any structures within the quarry (ie: site sheds).<br>Storage of chemicals/fuels for the associated machinery.<br>Fill may have been imported for the construction of the dam walls. | Metals, BTEX, TRH, PAH, phenols, OCP, OPP and Asb. |
| **50*** | **50*** | Typical for land use | Any buried asbestos pipes within the site | Asbestos | Asb. |
| **51*** | **51*** | 2018 AP | All access tracks within the site (not shown on Drawing) | Impacted Surface Soils/Possible Filling | Metals, BTEX, TRH, PAH, phenols, OCP, OPP and Asb. |
| **52*** | **52*** | Typical for land use | All Timber Power Poles (not shown on Drawing). | Leaching of timber treatment chemicals from power poles has potential to impact the adjacent soils. | Metals, BTEX, TRH and PAH. |
| **53** | **53** | Section 6.3 | Gas wells. | Drilling mud storage areas, drilling fluids and imported fill. | Metals, BTEX, TRH, PAH, phenols, OCP, OPP, Asb and PFAS. |

| Revised PAEC No. | Original PAEC # | Identified from | Brief Description | Potential Environmental Concern | Potential Contaminants of Concern |
|---|---|---|---|---|---|
| **54** | **54** | Section 6.3 | Gas well gathering lines | Imported material to backfill excavations | Metals, BTEX, TRH, PAH, phenols, OCP, OPP and Asb. |

***Notes:***

*Metals = arsenic (As), cadmium (Cd), chromium (Cr), copper (Cu), lead (Pb), mercury (Hg), nickel (Ni) and zinc (Zn).*
*TRH = Total recoverable hydrocarbons.*
*BTEX = Benzene, toluene, ethylbenzene and xylenes.*
*PCB = Polychlorinated biphenyls.*
*PAH = Polycyclic aromatic hydrocarbons.*
*OCP = Organochlorine pesticides.*
*OPP = Organophosphorous pesticides.*
*Asb. = Asbestos.*
*PFAS = Per- and poly-fluoroalkyl substances.*
*AP = Aerial Photograph(s).*
* = *AEC locations not shown on Drawings and PAEC applicable for the entire site and not just the property pertaining to DP (2021).*

**Table 2: Summary of Identified Potential Areas of Environmental Concern within DP(2022)**

| Revised PAEC No. | Original PAEC # | Identified from | Brief Description | Site Walkover Observations | Potential Contaminants of Concern |
|---|---|---|---|---|---|
| **55** | 1 | All AP | Dam and an area of ground disturbances surrounding the dam | Fill was observed to be placed down slope of the dam | Heavy metals, TRH, BTEX, OCP, OPP, PCB, PAH and asbestos |
| **56** | 2 | 1947 AP | Area of ground disturbance | Currently grass covered with nothing visible from the surface | Not PAEC |
| **57** | 3 | All AP | Area of ground disturbance | Overlow from central dam. Currently grass covered with nothing visible from the surface | Not PAEC |

| Revised PAEC No. | Original PAEC # | Identified from | Brief Description | Site Walkover Observations | Potential Contaminants of Concern |
|---|---|---|---|---|---|
| **58** | 4 | 1947 AP and 1990 AP | Area of ground disturbance | Ridgeline – eroded ground. No evidence of filling. | Not PAEC |
| **59** | 5 | 1947 AP, 1961 AP, 1970 AP and 1990 AP | Area of ground disturbance | Steep ground running from ridge toward the central dam. Currently grass covered with nothing visible from the surface | Not PAEC |
| **60** | 6 | 1947 AP, 1961 AP, and 1970 AP | Area of ground disturbance. | Currently grass covered with nothing visible from the surface | Heavy metals, TRH, BTEX, OCP, OPP, PCB, PAH and asbestos |
| **61** | 7 | 1990 | Area of ground disturbances. | Ridge Line – Eroded Ground observed | Not PAEC |
| **62** | 8 | 1990 | Area of ground disturbances. | Vigorous grass growth which indicates good water holding potential which may be a result of land instability or filling. Considering the midslope location it is considered unlikely to be fill. | Not PAEC |
| **63** | 9 | 2005 AP | Area of ground disturbance associated with driveway/access track | Currently grass covered with nothing visible from the surface | Heavy metals, TRH, BTEX, OCP, OPP, PCB, PAH and asbestos |
| **64** | 10 | 2005 AP | Fenced off area of the site | Fenced Area of the site | Heavy metals, TRH, BTEX, OCP, OPP, PCB, PAH and asbestos |
| **65** | 11 | 2018 AP | Area of ground disturbance. | Eroded ground above Medhurst Road batter | Not PAEC |

| Revised PAEC No. | Original PAEC # | Identified from | Brief Description | Site Walkover Observations | Potential Contaminants of Concern |
|---|---|---|---|---|---|
| **52** | 12 | Site Walkover | Timber Power Poles were observed running through the centre of the site in a north south direction | A combination of timber and concrete power poles present within the site | Heavy metals, TRH, BTEX, PAH |
| **50** | - | Typical Land use | Any buried asbestos pipes within the site | Asbestos | Asb. |

**Table 3: Summary of Identified Potential Areas of Environmental Concern within DP(2022a)**

| Revised PAEC No. | Original PAEC # | Identified from | Brief Description | Site Walkover Observations | Potential Contaminants of Concern |
|---|---|---|---|---|---|
| **66** | 1 | 1955 aerial photo | Structures | An abandoned house/granny flat containing metal roofing and a wooden frame was observed. At the time of the site walkover, it remained unclear whether the dwelling contained any hazardous building materials such as asbestos sheeting | Metals, PCBs and Asbestos |
| **67** | 2 | 1955 aerial photo | Structure | Area densely vegetated | Metals, PCBs and Asbestos |
| **68** | 3 | 1974 aerial photo | Structure | A corroded metal shed with an unsealed floor was observed in the western portion of the site (MR ]1). Timber and domestic waste, an empty fuel container, and a car battery were observed within this shed | Metals, PCBs and Asbestos |

| Revised PAEC No. | Original PAEC # | Identified from | Brief Description | Site Walkover Observations | Potential Contaminants of Concern |
|---|---|---|---|---|---|
| **69** | 4 | 1974 and 2022 aerial photos | Ground disturbance | Currently grass covered with nothing visible from the surface with the exception of those PAEC located within and discussed below. | Heavy metals, TRH, BTEX, OCP, OPP, PCB, PAH and asbestos |
| **70** | 5 | 1995 aerial photo | Possible cultivated paddock | Currently grass covered with nothing visible from the surface | Heavy metals, OCP, OPP |
| **71** | 6 | 1995 aerial photo | Structure – possible dam pump house | Possible dam pump house | Heavy metals, TRH, BTEX, PAH, Phenols and Asbestos |
| **72** | 7 | Site walkover | Old rubber tyres and wheels, multiple shipping containers and used cars | Old rubber tyres and wheels, alongside multiple shipping containers and used cars were observed | Heavy metals, TRH, BTEX, PAH, and Phenols |
| **73** | 8 | Site walkover | Three oil drums | Three oil drums, one partially corroded, were observed lying sideways with direct ground contact near an abandoned car. The contents of the drums could not be inspected. | Heavy metals, TRH, BTEX, PAH, and Phenols |
| **74** | 9 | Site walkover | Corroded oil drum with petroleum/fuels | A corroded oil drum standing upright was observed in the vicinity of the shipping container, where olfactory detections indicated the presence of petroleum / fuels | Heavy metals, TRH, BTEX, PAH, and Phenols |
| **75** | 10 | Site walkover | Stockpile of domestic refuse | A stockpile of domestic refuse was observed in the western portion of the site | Heavy metals, TRH, BTEX, OCP, OPP, PCB, PAH and asbestos |

| Revised PAEC No. | Original PAEC # | Identified from | Brief Description | Site Walkover Observations | Potential Contaminants of Concern |
|---|---|---|---|---|---|
| **76** | 11 | Site walkover | Timber power poles | Timber power poles were observed with a west to east orientation leading from Medhurst Road to the abandoned house/granny flat.<br><br>Additional, timber power poles and overhead power lines were also observed in the centre of the site, with a north to south orientation. | Heavy metals, TRH, BTEX, and PAH |
| **77** | 12 | Site walkover | Septic tank | The cover of an underground septic tank was visible in the western portion of the site, south of the house/granny flat | Heavy metals, asbestos, faecal coliforms and, e coli |
| **78** | 13 | Site walkover | Dam wall – bricks present in wall | The dam located in the southwestern corner of the site was observed to contain anthropogenic non soil fill material in the form of bricks in the wall | Heavy metals, TRH, BTEX, OCP, OPP, PCB, PAH and asbestos |
| **79** | 14 | Site walkover | Remainder of the dams | The dam wall for the dam located in the southern area of the site, east of the house/granny flat was approximately 10 m in height, and no anthropogenic material or obvious signs of contamination was observed in the surface of the fill.<br><br>No anthropogenic material or obvious signs of contamination were observed in the surface of the walls for two dams located in the centre of the site | Heavy metals, TRH, BTEX, OCP, Nutrients (ammonia, nitrate phosphorus) faecal coliforms and, e coli |

| Revised PAEC No. | Original PAEC # | Identified from | Brief Description | Site Walkover Observations | Potential Contaminants of Concern |
|---|---|---|---|---|---|
| **50** | - | Typical Land use | Any buried asbestos pipes within the site | Asbestos | Asb. |

## 9. Conclusions and Recommendations

Based on the results of DP (2021), DP (2022) DP (2022a) and this investigation 79 PAEC were identified at the site. Based on the findings (noting the limited scope of works), the site has been divided into two categories from a contamination risk perspective as follows:

- Medium to High risk of requiring extensive remediation:
  - Menangle Park Recycling Facility (PAEC 38). As the recycling facility has received recycled waste streams there is the strong possibility that asbestos impacted material has been imported inadvertently; and
  - Rosalind Park Gas Plant (PAEC 41) and gas (PAEC 53/54). DP understands that the RPGP and associated infrastructure is to be remediated by AGL (the asset owner). Leda should confirm that this is the case and should determine to what level it will be remediated and what checks there will be on validation. The suitability of the abandoned gas wells as potential home sites also needs to be confirmed by AGL (i.e: how will the wells be plugged and what evidence is there that ongoing gas leakage will not be an issue).
- Low Risk of requiring extensive remediation: All other PAEC and the remaining areas of the site. The majority of these PAEC are associated with identified ground disturbance or localised filling. DP note that whilst they are classified as low risk this is not equated to “no risk” as some of these areas will be found to be contaminated during further investigation.

It should be noted that no intrusive testing was completed as part of this PSI or previously completed PSI’s. As such there may be further PAEC that could not be identified by the desktop study and visual observations from the site inspection. In addition, a number of the identified PAEC comprised areas of ground disturbance. Where these ground disturbances are confirmed to be areas of filling, the potential for these areas to be impacted with hazardous materials such as asbestos should also be taken into account.

The preparation of a sampling plan and completion of initial intrusive investigation is required to ascertain which potential areas of environmental concern (PAEC) need to be reclassified as an area of environmental concern (AEC). Once a list of AEC is determined a conceptual site model (CSM) should be developed. Following the development of the CSM, the extent of each AEC and the level of contaminants of concern should be determined through investigation.

Further limited assessment of the non PAEC areas of the site (which were used for agricultural activities) will be required to confirm the inferred low potential for contamination. These low density assessments are often undertaken on a stage by stage basis at the development application stage.

Based on the findings of the assessment, potential groundwater contamination is not considered to be significant for the majority of the site, unless soil contamination is found within the AEC or within the background area. If significant soil contamination is identified, then a localised groundwater investigation may be required. A groundwater assessment associated with AEC 38 is likely to be required.

In summary, the level of contamination found on this site is typical of other rural properties in the area, with the exception of the presence of the quarry and gas infrastructure. Notwithstanding the presence of these features, it is expected that the site could be made suitable for the proposed residential use following further investigation and remediation if required.

## 10. Limitations

Douglas Partners Pty Ltd (DP) has prepared this report for this project at Rosalind Park, Medhurst Road, Menangle NSW in accordance with DP's proposal P0205817.00 dated 11 June 2021 and acceptance received from Nathan Cutler on behalf of Leda Holdings Pty Ltd dated 15 June 2021. The work was carried out under DP's Conditions of Engagement. This report is provided for the exclusive use of Leda Holdings Pty Ltd for this project only and for the purposes as described in the report. It should not be used by or relied upon for other projects or purposes on the same or other site or by a third party. Any party so relying upon this report beyond its exclusive use and purpose as stated above, and without the express written consent of DP, does so entirely at its own risk and without recourse to DP for any loss or damage. In preparing this report DP has necessarily relied upon information provided by the client and/or their agents.

The results provided in the report are indicative of the subsurface conditions on the site only based on the desktop investigation and a limited site walkover. Subsurface conditions can change abruptly due to variable geological processes and also as a result of human influences. Such changes may occur after DP's field site inspection has been completed.

DP's advice is based upon the conditions encountered during this investigation. The accuracy of the advice provided by DP in this report may be affected by undetected variations in ground conditions across the site between and beyond the sampling and/or testing locations. The advice may also be limited by budget constraints imposed by others or by site accessibility.

The assessment of atypical safety hazards arising from this advice is restricted to the (geotechnical/environmental/groundwater) components set out in this report and based on known project conditions and stated design advice and assumptions. While some recommendations for safe controls may be provided, detailed 'safety in design' assessment is outside the current scope of this report and requires additional project data and assessment.

This report must be read in conjunction with all of the attached and should be kept in its entirety without separation of individual pages or sections. DP cannot be held responsible for interpretations or

conclusions made by others unless they are supported by an expressed statement, interpretation, outcome or conclusion stated in this report.

This report, or sections from this report, should not be used as part of a specification for a project, without review and agreement by DP. This is because this report has been written as advice and opinion rather than instructions for construction.

**Douglas Partners Pty Ltd**

# Appendix A

Drawings

## Legend

- Site Boundary
- DP (2021) Investigation Area
- DP (2022) Investigation Area
- DP (2022a) Investigation Area

0 250 500 750 1000

**Douglas Partners**
Geotechnics | Environment | Groundwater

| | | |
|---|---|---|
| CLIENT: Leda Holdings Pty Ltd | | |
| OFFICE: Macarthur | DRAWN BY: BAH | |
| SCALE: As shown | DATE: 22/07/2022 | |

TITLE: Site Boundary
Proposed Residential Subdivision
Rosalind Park, Medhurst Road, Menangle NSW

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MGA

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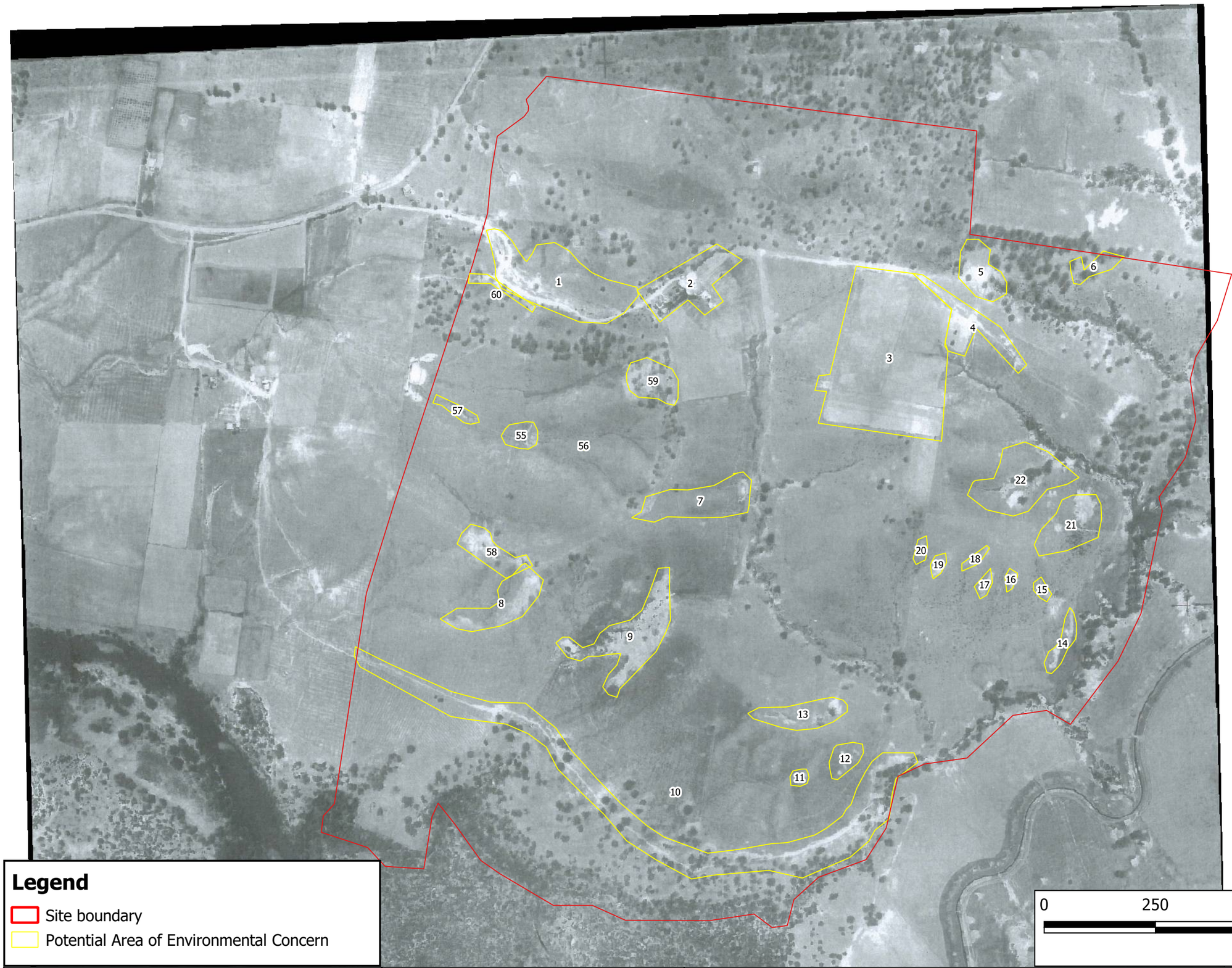


## Legend

- Site boundary
- Potential Area of Environmental Concern

0 250 500 750 1000

Douglas Partners
Geotechnics | Environment | Groundwater

| | | |
|---|---|---|
| CLIENT: Leda Holdings Pty Ltd | | |
| OFFICE: Macarthur | DRAWN BY: BAH | |
| SCALE: As shown | DATE: 22/07/2022 | |

TITLE: Historical Aerial Photograph - 1947
Proposed Residential Subdivision
Rosalind Par, Medhurst Road, Menangle NSW

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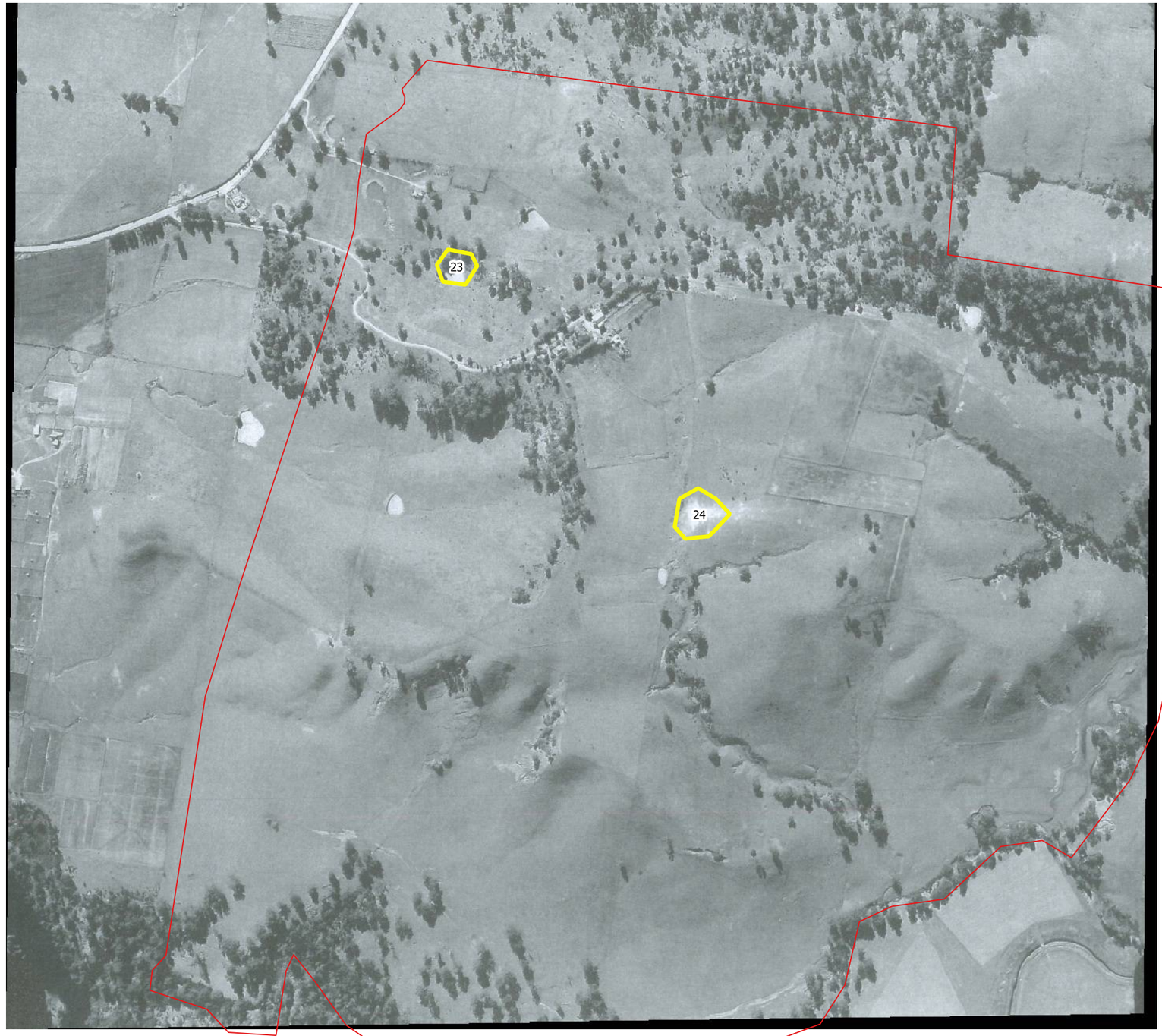


**Legend**

- Site Boundary
- Potential Area of Environmental Co

0 250 500 750 1000

**Douglas Partners**
Geotechnics | Environment | Groundwater

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| CLIENT: Leda Holdings Pty Ltd | | |
| OFFICE: Macarthur | DRAWN BY: BAH | |
| SCALE: As shown | DATE: 22/07/2022 | |

TITLE: Historical Aerial Photograph - 1961
Proposed Residential Subdivision
Rosalind Park, Medhurst Road, Menangle, NSW

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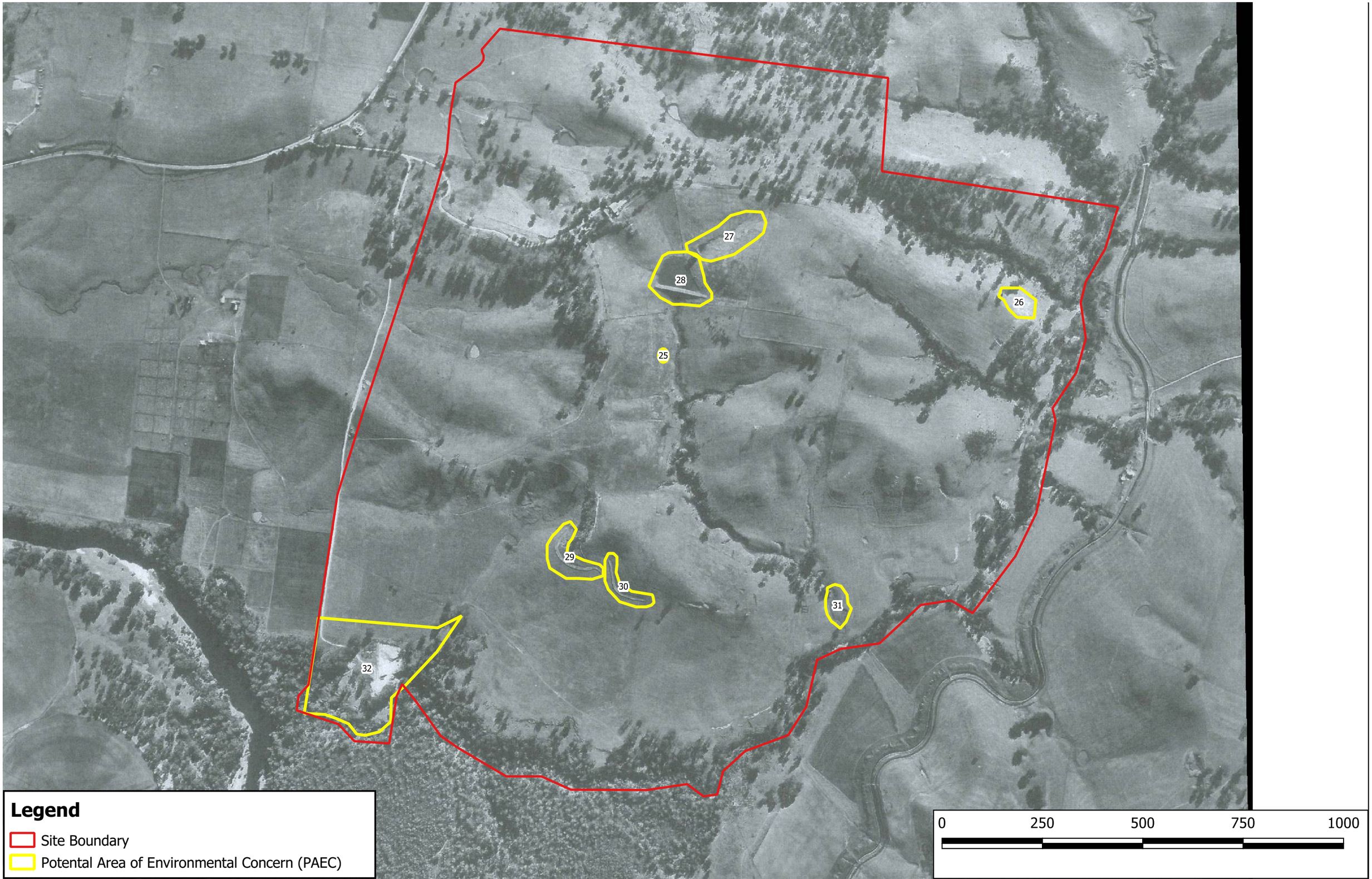


## Legend

- Site Boundary
- Potental Area of Environmental Concern (PAEC)

0 250 500 750 1000

**Douglas Partners**
Geotechnics | Environment | Groundwater

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|---|---|---|
| CLIENT: Leda Holdings Pty Ltd | | |
| OFFICE: Macarthur | DRAWN BY: BAH | |
| SCALE: As shown | DATE: 22/07/2022 | |

TITLE: Historical Aerial Photograph - 1970
Proposed Residential Subdivision
Rosalind Park, Medhurst Road, Menangle

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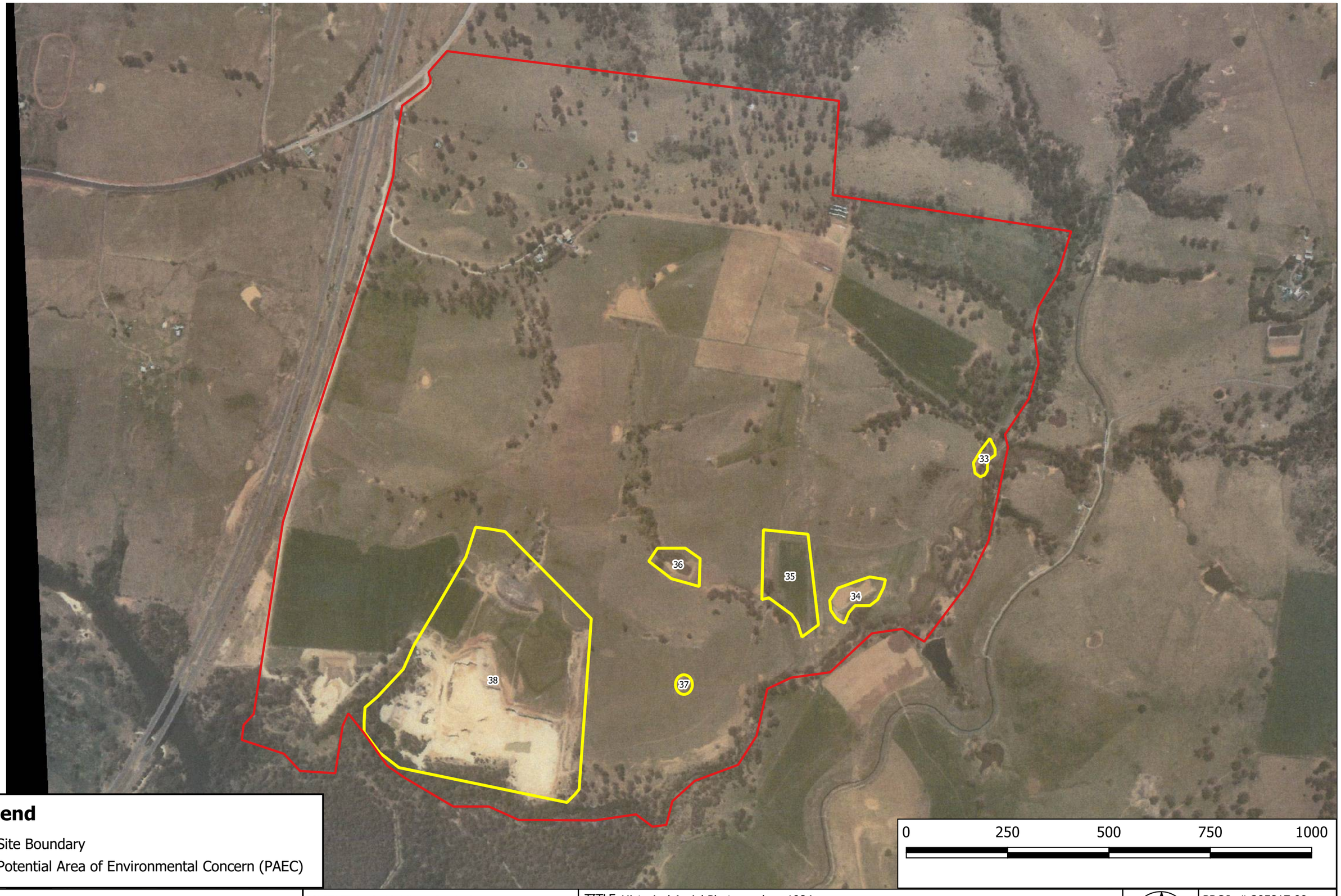


**Legend**

- Site Boundary
- Potential Area of Environmental Concern (PAEC)

Douglas Partners
Geotechnics / Environment / Groundwater

| | | |
|---|---|---|
| CLIENT: Leda Holdings Pty Ltd | | |
| OFFICE: Macarthur | DRAWN BY: BAH | |
| SCALE: As shown | DATE: 22/07/2022 | |

TITLE: Historical Aerial Photographs - 1984
Proposed Residential Subdivision
Rosalind Park, Medhurst Road, Menangle, NSW

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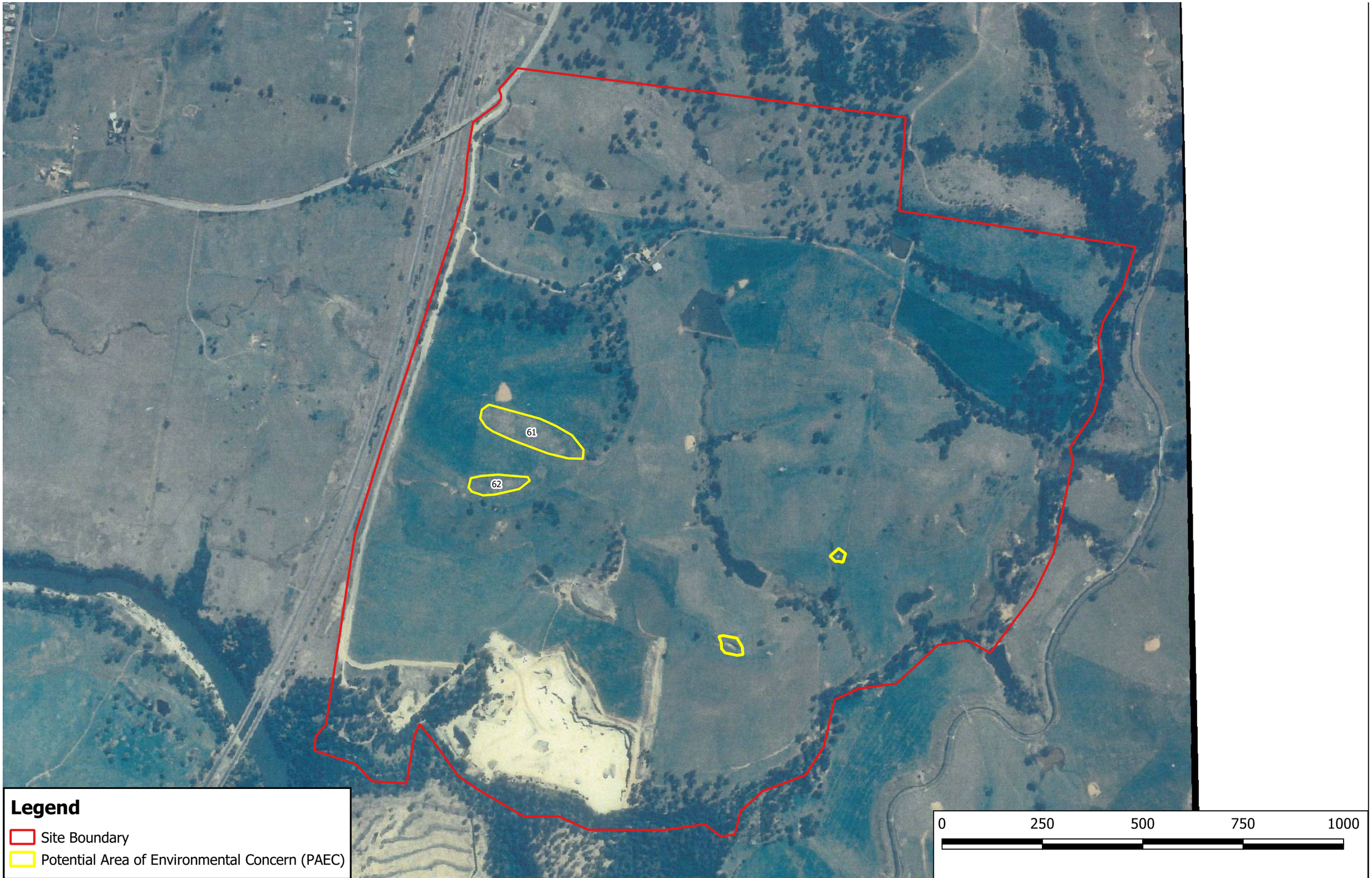


Douglas Partners
Geotechnics | Environment | Groundwater

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|---|---|---|
| CLIENT: Leda Holdings Pty Ltd | | |
| OFFICE: Macarthur | DRAWN BY: BAH | |
| SCALE: As shown | DATE: 22.07.2022 | |

TITLE: Historical Aerial Photographs - 1990
Proposed Residential Subdivision
Rosalind Park, Medhurst Road, Menangle, NSW

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| PROJ. #: | 205817.00 |
| DRAWING No: | 6 |
| REVISION: | 0 |


## Legend

- Site Boundary
- Potential Area of Environmental Concern

Douglas Partners
Geotechnics | Environment | Groundwater

| | | |
|---|---|---|
| CLIENT: Leda Holdings Pty Ltd | | |
| OFFICE: Macarthur | DRAWN BY: BAH | |
| SCALE: As shown | DATE: 25/07/2022 | |

TITLE: Historical Aerial Photograph - 2005
Proposed Residential Subdivision
Rosalind Park, Medhurst Road, Meangle, NSW

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MGA

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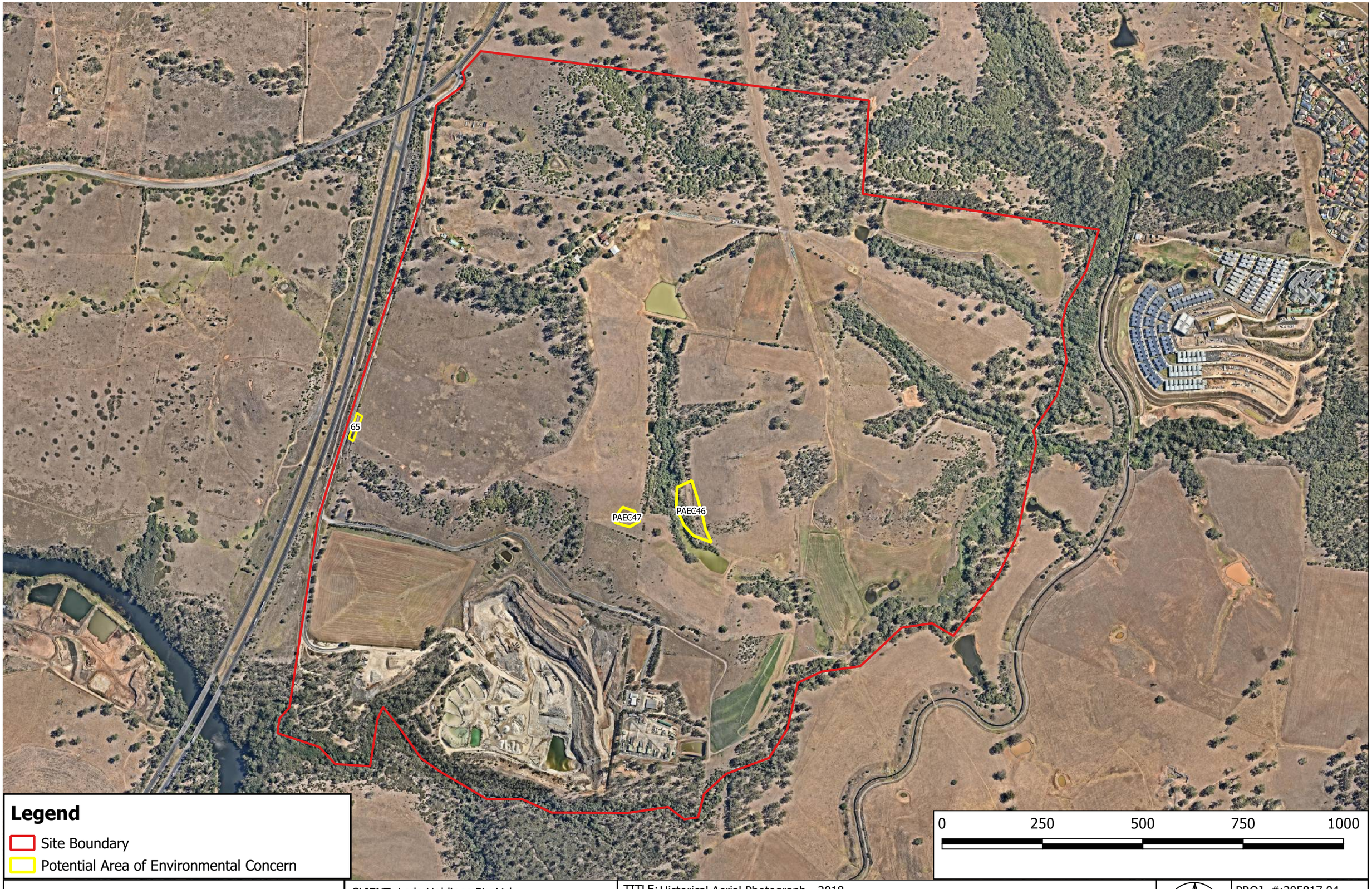
| PROJ. #: | 205817.00 |
| DRAWING No: | 7 |
| REVISION: | 0 |




**Legend**

- Site Boundary
- Potential Area of Environmental Concern

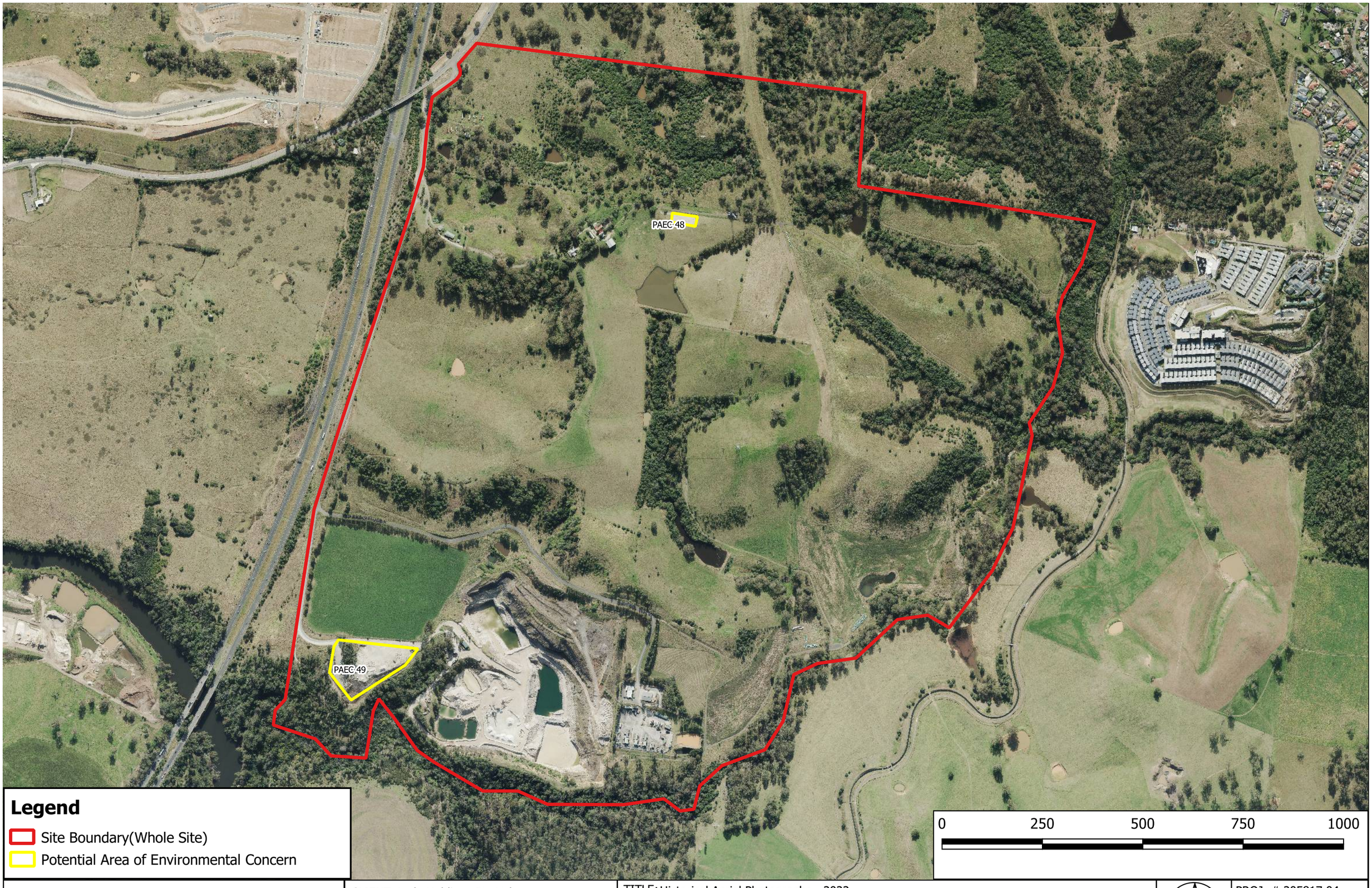
Douglas Partners
Geotechnics | Environment | Groundwater

| | | |
|---|---|---|
| CLIENT: Leda Holdings Pty Ltd | | |
| OFFICE: Macarthur | DRAWN BY: BAH | |
| SCALE: As shown | DATE: 25/07/2022 | |

TITLE: Historical Aerial Photograph - 2018
Proposed Residental Subdvision
Rosalind Park, Medhurst Road, Menangle, NSW

MGA

| | |
|---|---|
| PROJ. #: | 205817.04 |
| DRAWING No: | 8 |
| REVISION: | 0 |




## Legend

- Site Boundary(Whole Site)
- Potential Area of Environmental Concern

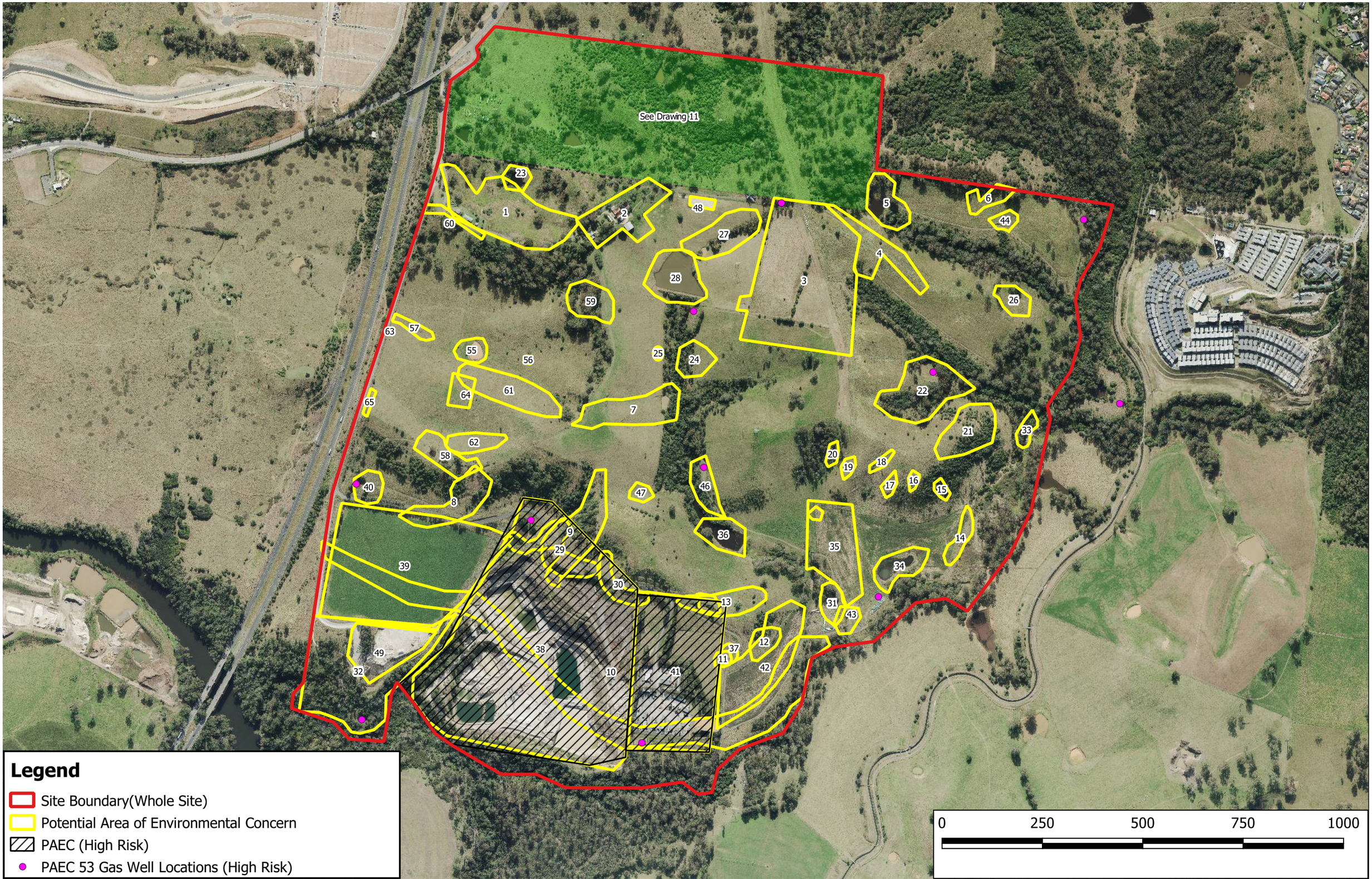
Douglas Partners
Geotechnics / Environment / Groundwater

| | | |
|---|---|---|
| CLIENT: Leda Holdings Pty Ltd | | |
| OFFICE: Macarthur | DRAWN BY: BAH | |
| SCALE: As shown | DATE: 25.07.2022 | |

TITLE: Historical Aerial Photographs - 2022
Proposed Residential Subdivision
Rosalind Park, Medhurst Road, Menangle, NSW

MGA

| | |
|---|---|
| PROJ. #: | 205817.04 |
| DRAWING No: | 9 |
| REVISION: | 0 |




## Legend

- Site Boundary(Whole Site)
- Potential Area of Environmental Concern
- PAEC (High Risk)
- PAEC 53 Gas Well Locations (High Risk)

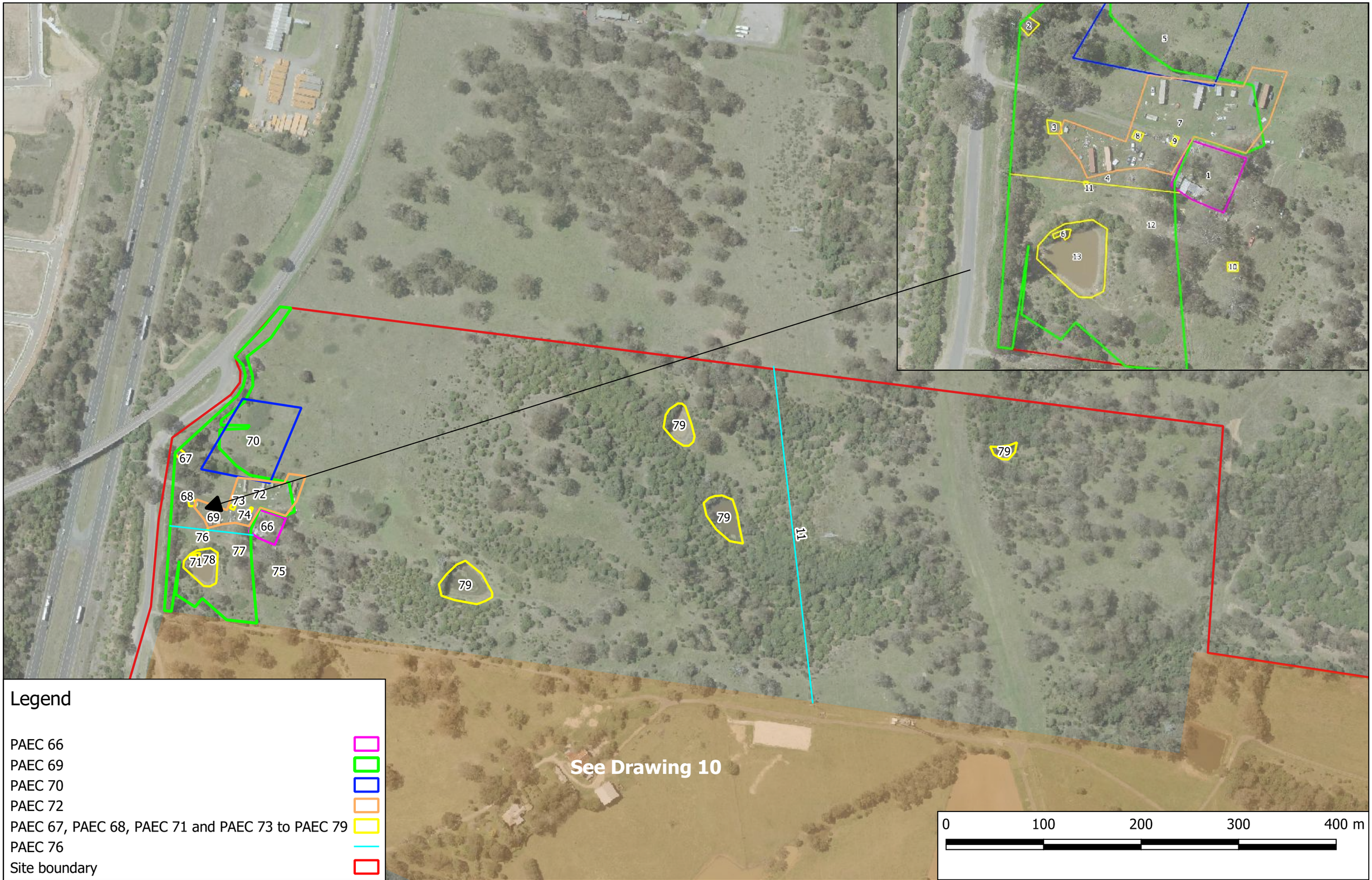
Douglas Partners
Geotechnics | Environment | Groundwater

| | | |
|---|---|---|
| CLIENT: Leda Holdings Pty Ltd | | |
| OFFICE: Macarthur | DRAWN BY: BAH | |
| SCALE: As shown | DATE: 25.07.2022 | |

TITLE: Potential Areas of Environmental Concern
Proposed Residential Subdivision
Rosalind Park, Medhurst Road, Menangle, NSW

MGA

| | |
|---|---|
| PROJ. #: | 205817.04 |
| DRAWING No: | 10 |
| REVISION: | 0 |




## Legend

- PAEC 66
- PAEC 69
- PAEC 70
- PAEC 72
- PAEC 67, PAEC 68, PAEC 71 and PAEC 73 to PAEC 79
- PAEC 76
- Site boundary

Douglas Partners
Geotechnics / Environment / Groundwater

| | | |
|---|---|---|
| CLIENT: Leda Holdings Pty Ltd | | |
| OFFICE: Macarthur | DRAWN BY: BAH | |
| SCALE: As shown | DATE: 25 July 2022 | |

TITLE: Potential Areas of Environmental Concern (South West Corner in Inset)
Proposed Residential Subdivision
Rosalind Park, Medhurst Road, Menangls NSW

N
MGA

| | |
|---|---|
| PROJ. #: | 205817.04 |
| DRAWING No: | 11 |
| REVISION: | 0 |

# Appendix B

Site Photographs

Photo 1 - Central portion of site

Photo 2 - Ground disturbance area in central (due to drilling) Portion of site

| | | |
|---|---|---|
| Douglas Partners Geotechnics / Environment / Groundwater | DP (2021) Site Photographs | PROJECT: 205817.04 |
| | Proposed Residential Subdivision | PLATE No: 1 |
| | Rosalind Park, Medhurst Road, Menangle NSW | REV: 0 |
| | CLIENT: Leda Holdings Pty Ltd | DATE: Jul-21 |

Photo 3 - Southern portion of site with gas plant in background

Photo 4 - Access road in north eastern portion of site

| | | |
|---|---|---|
| Douglas Partners<br>Geotechnics / Environment / Groundwater | DP (2021) Site Photographs | PROJECT: 205817.04 |
| | Proposed Residential Subdivision | PLATE No: 2 |
| | Rosalind Park, Medhurst Road, Menangle NSW | REV: 0 |
| | CLIENT: Leda Holdings Pty Ltd | DATE: Jul-21 |

Photo 5 - South eastern portion of site

Photo 6 - South eastern portion of site

| | | |
|---|---|---|
| Douglas Partners<br>Geotechnics / Environment / Groundwater | DP (2021) Site Photographs | PROJECT: 205817.04 |
| | Proposed Residential Subdivision | PLATE No: 3 |
| | Rosalind Park, Medhurst Road, Menangle NSW | REV: 0 |
| | CLIENT: Leda Holdings Pty Ltd | DATE: Jul-21 |

Photo 7 - South eastern portion of site

Photo 8 - South eastern portion of site

| | | |
|---|---|---|
| Douglas Partners<br>Geotechnics / Environment / Groundwater | DP (2021) Site Photographs | PROJECT: 205817.04 |
| | Proposed Residential Subdivision | PLATE No: 4 |
| | Rosalind Park, Medhurst Road, Menangle NSW | REV: 0 |
| | CLIENT: Leda Holdings Pty Ltd | DATE: Jul-21 |

Photo 9 - Area of stockpiling (PAEC 49) in south western portion of site

Photo 10 - Area of surface soil disturbance (PAEC 48) in northern portion of site

| | | |
|---|---|---|
| Douglas Partners<br>Geotechnics / Environment / Groundwater | DP (2021) Site Photographs | PROJECT: 205817.04 |
| | Proposed Residential Subdivision | PLATE No: 5 |
| | Rosalind Park, Medhurst Road, Menangle NSW | REV: 0 |
| | CLIENT: Leda Holdings Pty Ltd | DATE: Jul-21 |

Photo 11 - Eroded ground above Medhurst Road batter

Photo 12 - Eroded ground on southern ridge line

| | | |
|---|---|---|
| Douglas Partners<br>Geotechnics / Environment / Groundwater | DP (2022) Site Photographs | PROJECT: 205817.04 |
| | Proposed Residential Subdivision | PLATE No: 6 |
| | Rosalind Park, Medhurst Road, Menangle NSW | REV: 0 |
| | CLIENT: Leda Holdings Pty Ltd | DATE: Jul-21 |

Photo 13 - Fill placed downslope of dam wall

Photo 14 - Site vista looking east

| | | |
|---|---|---|
| Douglas Partners<br>Geotechnics / Environment / Groundwater | DP (2022) Site Photographs | PROJECT: 205817.04 |
| | Proposed Residential Subdivision | PLATE No: 7 |
| | Rosalind Park, Medhurst Road, Menangle NSW | REV: 0 |
| | CLIENT: Leda Holdings Pty Ltd | DATE: Jul-21 |

Photo 15 - Site vista looking north west

Photo 16 - Site vista looking west

| | | |
|---|---|---|
| Douglas Partners<br>Geotechnics / Environment / Groundwater | DP (2022) Site Photographs | PROJECT: 205817.04 |
| | Proposed Residential Subdivision | PLATE No: 8 |
| | Rosalind Park, Medhurst Road, Menangle NSW | REV: 0 |
| | CLIENT: Leda Holdings Pty Ltd | DATE: Jul-21 |

Photo 17 - Soak areas in midslope

Photo 18 - Stockpiled fence posts

| | | |
|---|---|---|
| Douglas Partners<br>Geotechnics / Environment / Groundwater | DP (2022) Site Photographs | PROJECT: 205817.04 |
| | Proposed Residential Subdivision | PLATE No: 9 |
| | Rosalind Park, Medhurst Road, Menangle NSW | REV: 0 |
| | CLIENT: Leda Holdings Pty Ltd | DATE: Jul-21 |

Photo 19 - Water pooling midslope

Photo 20 - Inside of metal shed

Photo 21 - Discarded materials

| | | |
|---|---|---|
| Douglas Partners<br>Geotechnics / Environment / Groundwater | DP (2022a) Site Photographs | PROJECT: 205817.04 |
| | Proposed Residential Subdivision | PLATE No: 11 |
| | Rosalind Park, Medhurst Road, Menangle NSW | REV: 0 |
| | CLIENT: Leda Holdings Pty Ltd | DATE: Jul-21 |

Photo 22 - Drums and abandoned car

Photo 23 - Corroded oil drum

| | | |
|---|---|---|
| Douglas Partners<br>Geotechnics / Environment / Groundwater | DP (2022a) Site Photographs | PROJECT: 205817.04 |
| | Proposed Residential Subdivision | PLATE No: 12 |
| | Rosalind Park, Medhurst Road, Menangle NSW | REV: 0 |
| | CLIENT: Leda Holdings Pty Ltd | DATE: Jul-21 |

Photo 24 - Abandoned old house

Photo 25 - Stockpile of domestic refuse

Photo 26 - Timber power pole

Photo 27 - Septic tank cover

Photo 28 - Brick visible in dam wall

Photo 29 - Power lines in eastern part of site

# Appendix C

Groundwater Bores Search

# NSW OFFICE OF WATER
# Work Summary

## GW108863

**Licence :** 10BL601942
**Licence Status** Active

**Work Type :** Excavation
**Work Status :**
**Construct. Method :**
**Owner Type :** Private

| **Authorised Purpose(s)** | **Intended Purpose(s)** |
|---|---|
| INDUSTRIAL | INDUSTRIAL |
| INDUSTRIAL - SAND & GRAVEL | INDUSTRIAL - SAND & GRAVEL |

**Commenced Date :** **Final Depth :** 20.00 m
**Completion Date :** 08-May-2008 **Drilled Depth :**

**Contractor Name :**
**Driller :** 400 UNKNOWN, Unkown
**Assistant Driller's Name :**

**Property :** - HI-QUALITY ENVIRON'TAL SERVICE **Standing Water Level :**
**GWMA :** - **Salinity :**
**GW Zone :** - **Yield :**

## *Site Details*

| **Site Chosen By** | **County** | **Parish** | **Portion/Lot DP** |
|---|---|---|---|
| | **Form A :** CUMBERLAND | MENANGLE | 2//622362 |
| | **Licensed :** CUMBERLAND | MENANGLE | 2 622362 |

**Region :** 10 - SYDNEY SOUTH COAST **CMA Map :**
**River Basin :** **Grid Zone :** **Scale :**
**Area / District :**

**Elevation :** **Northing :** 6222478 **Latitude (S) :** 34° 7' 6"
**Elevation Source :** **Easting :** 293738 **Longitude (E) :** 150° 45' 49"

**GS Map :** **MGA Zone :** 56 **Coordinate Source :**

## *Construction*

Negative depths indicate Above Ground Level;

H-Hole;P-Pipe;OD-Outside Diameter;ID-Inside Diameter;C-Cemented;SL-Slot Length;A-Aperture;GS-Grain Size;Q-Quantity;PL-Placement of Gravel Pack;PC-Pressure Cemented;S-Sump;CE-Centralisers

| H | P | Component Type | From (m) | To (m) | OD (mm) | ID (mm) | Interval | Details |
|---|---|---|---|---|---|---|---|---|

*(No Construction Details Found)*

## *Water Bearing Zones*

| From (m) | To (m) | Thickness (m) | WBZ Type | S.W.L. (m) | D.D.L. (m) | Yield (L/s) | Hole Depth (m) | Duration (hr) | Salinity (mg/L) |
|---|---|---|---|---|---|---|---|---|---|

*(No Water Bearing Zone Details Found)*

## *Drillers Log*

| From (m) | To (m) | Thickness(m) | Drillers Description | Geological Material | Comments |
|---|---|---|---|---|---|

## *Remarks*

***** End of GW108863 *****

# NSW OFFICE OF WATER
# Work Summary

## GW064815

*Converted From HYDSYS*

**Licence :**

**Licence Status**
**Authorised Purpose(s)** | **Intended Purpose(s)**
DOMESTIC
STOCK

**Work Type :** Bore
**Work Status :** (Unknown)
**Construct. Method :** Rotary Air
**Owner Type :** Private

**Commenced Date :** | **Final Depth :** 64.00 m
**Completion Date :** 29-Jan-1985 | **Drilled Depth :** 0.00

**Contractor Name :**
**Driller :** 1587 CARPENTER, Anthony Michael
**Assistant Driller's Name :**

**Property :**
**GWMA :** -
**GW Zone :** -

**Standing Water Level :**
**Salinity :** S.Brackish
**Yield :**

## *Site Details*

**Site Chosen By**

**County** | **Parish** | **Portion/Lot DP**
**Form A :** CUMBERLAND | MENANGLE | 105
**Licensed :**

**Region :** 10 - SYDNEY SOUTH COAST
**River Basin :** 212 - HAWKESBURY RIVER
**Area / District :**

**CMA Map :** 9029-1N CAMPBELLTOWN
**Grid Zone :** 56/1 **Scale :** 1:25,000

**Elevation :** 0.00
**Elevation Source :**

**Northing :** 6222776 **Latitude (S) :** 34° 6' 56"
**Easting :** 294355 **Longitude (E) :** 150° 46' 13"

**GS Map :** 0075D1 **MGA Zone :** 56 **Coordinate Source :**

## *Construction*

Negative depths indicate Above Ground Level;

H-Hole;P-Pipe;OD-Outside Diameter;ID-Inside Diameter;C-Cemented;SL-Slot Length;A-Aperture;GS-Grain Size;Q-Quantity;PL-Placement of Gravel Pack;PC-Pressure Cemented;S-Sump;CE-Centralisers

| H | P | Component | Type | From (m) | To (m) | OD (mm) | ID (mm) | Interval | Details |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | Casing | Steel | -0.50 | 60.00 | 165 | | | Driven into Hole |
| 1 | 1 | Opening | Slots - Vertical | 42.00 | 60.00 | 165 | | 1 | Oxy-Acetylene Slotted; SL: 0mm; A: 2mm |

## *Water Bearing Zones*

| From (m) | To (m) | Thickness (m) | WBZ Type | S.W.L. (m) | D.D.L. (m) | Yield (L/s) | Hole Depth (m) | Duration (hr) | Salinity (mg/L) |
|---|---|---|---|---|---|---|---|---|---|
| 18.00 | 19.00 | 1.00 | Consolidated | 24.00 | | 0.25 | | | S.Brackish |
| 42.00 | 44.00 | 2.00 | Consolidated | 24.00 | | 3.79 | | | S.Brackish |
| 47.00 | 49.00 | 2.00 | Fractured | 24.00 | | 5.06 | | | S.Brackish |
| 56.00 | 58.00 | 2.00 | Consolidated | 24.00 | | 3.79 | | | S.Brackish |

## *Drillers Log*

| From (m) | To (m) | Thickness(m) | Drillers Description | Geological Material | Comments |
|---|---|---|---|---|---|

## *Remarks*

***** End of GW064815 *****

# NSW OFFICE OF WATER
# Work Summary

## GW064814

*Converted From HYDSYS*

**Licence :**

**Licence Status**
**Authorised Purpose(s)** | **Intended Purpose(s)**
DOMESTIC
STOCK

**Work Type :** Bore
**Work Status :** (Unknown)
**Construct. Method :** Rotary Air
**Owner Type :** Private

**Commenced Date :** | **Final Depth :** 48.00 m
**Completion Date :** 01-Jan-1985 | **Drilled Depth :** 0.00

**Contractor Name :**
**Driller :** 1587 CARPENTER, Anthony Michael
**Assistant Driller's Name :**

**Property :**
**GWMA :** -
**GW Zone :** -

**Standing Water Level :**
**Salinity :**
**Yield :**

## *Site Details*

**Site Chosen By**

**County** | **Parish** | **Portion/Lot DP**
**Form A :** CUMBERLAND | MENANGLE | 105
**Licensed :**

**Region :** 10 - SYDNEY SOUTH COAST
**River Basin :** 212 - HAWKESBURY RIVER
**Area / District :**

**CMA Map :** 9029-1N CAMPBELLTOWN
**Grid Zone :** 56/1 **Scale :** 1:25,000

**Elevation :** 0.00
**Elevation Source :**

**Northing :** 6222807 **Latitude (S) :** 34° 6' 55"
**Easting :** 294354 **Longitude (E) :** 150° 46' 13"

**GS Map :** 0075D1 **MGA Zone :** 56 **Coordinate Source :**

## *Construction*

Negative depths indicate Above Ground Level;

H-Hole;P-Pipe;OD-Outside Diameter;ID-Inside Diameter;C-Cemented;SL-Slot Length;A-Aperture;GS-Grain Size;Q-Quantity;PL-Placement of Gravel Pack;PC-Pressure Cemented;S-Sump;CE-Centralisers

| H | P | Component Type | From (m) | To (m) | OD (mm) | ID (mm) | Interval | Details |
|---|---|---|---|---|---|---|---|---|

*(No Construction Details Found)*

## *Water Bearing Zones*

| From (m) | To (m) | Thickness (m) | WBZ Type | S.W.L. (m) | D.D.L. (m) | Yield (L/s) | Hole Depth (m) | Duration (hr) | Salinity (mg/L) |
|---|---|---|---|---|---|---|---|---|---|

*(No Water Bearing Zone Details Found)*

## *Drillers Log*

| From (m) | To (m) | Thickness(m) | Drillers Description | Geological Material | Comments |
|---|---|---|---|---|---|

## *Remarks*

***** End of GW064814 *****

# Appendix D

EPA Searches

Section 55 Protection of the Environment Operations Act 1997

# Environment Protection Licence

Licence - 4025

| Licence Details | |
|---|---|
| Number: | 4025 |
| Anniversary Date: | 16-October |
| Review Due Date: | 09-Dec-2008 |

**Licensee**

CLEARY BROS (BOMBO) PTY LTD
PO BOX 210
PORT KEMBLA NSW 2505

**Licence Type**

Premises

**Premises**

CLEARY BROS (BOMBO) PTY LTD
MEDHURST ROAD
MENANGLE PARK NSW 2563

**Scheduled Activity**

Extractive Industries

| Fee Based Activity | Scale |
|---|---|
| Hard-Rock Gravel Quarrying (36) | > 100000 - 500000 T obtained |

**Region**

Metropolitan
Level 3, NSW Govt Offices, 84 Crown Street
WOLLONGONG NSW 2500
Phone: 02 4224 4100
Fax: 02 4224 4110

PO Box 513 WOLLONGONG EAST
NSW 2520

**Error! No table of contents entries found.**

# Information about this licence

### Dictionary

A definition of terms used in the licence can be found in the dictionary at the end of this licence.

### Responsibilities of licensee

Separate to the requirements of this licence, general obligations of licensees are set out in the Protection of the Environment Operations Act 1997 ("the Act") and the Regulations made under the Act. These include obligations to:

- Ensure persons associated with you comply with this licence, as set out in section 64 of the Act.
- Control the pollution of waters and the pollution of air (see for example sections 120 - 132 of the Act).
- Report incidents causing or threatening material environmental harm to the environment, as set out in Part 5.7 of the Act.

### Variation of licence conditions

The licence holder can apply to vary the conditions of this licence. An application form for this purpose is available from the EPA.

The EPA may also vary the conditions of the licence at any time by written notice without an application being made.

Where a licence has been granted in relation to development which was assessed under the Environmental Planning and Assessment Act 1979 in accordance with the procedures applying to integrated development, the EPA may not impose conditions which are inconsistent with the development consent conditions until the licence is first reviewed under Part 3.6 of the Act.

### Duration of licence

This licence will remain in force until the licence is surrendered by the licence holder or until it is suspended or revoked by the EPA or the Minister. A licence may only be surrendered with the written approval of the EPA.

### Licence review

The Act requires that the EPA review your licence at least every 5 years after the issue of the licence, as set out in Part 3.6 and Schedule 5 of the Act. You will receive advance notice of the licence review.

### Fees and annual return to be sent to the EPA

For each licence fee period you must pay:

- an administrative fee; and
- a load-based fee (if applicable).

The EPA publication "A Guide to Licensing" contains information about how to calculate your licence fees.

The licence requires that an Annual Return, comprising a Statement of Compliance and a summary of any monitoring required by the licence (including the recording of complaints), be submitted to the EPA. The Annual Return must be submitted within 60 days after the end of each reporting period. See condition R1 regarding the Annual Return reporting requirements.

Usually the licence fee period is the same as the reporting period.

### Transfer of licence

The licence holder can apply to transfer the licence to another person. An application form for this purpose is available from the EPA.

### Public register and access to monitoring data

Part 9.5 of the Act requires the EPA to keep a public register of details and decisions of the EPA in relation to, for example:

- licence applications
- licence conditions and variations
- statements of compliance
- load based licensing information
- load reduction agreements

Under s320 of the Act application can be made to the EPA for access to monitoring data which has been submitted to the EPA by licensees.

## This licence is issued to:

| |
|---|
| **CLEARY BROS (BOMBO) PTY LTD** |
| **PO BOX 210** |
| **PORT KEMBLA NSW 2505** |

subject to the conditions which follow:

# 1 Administrative conditions

### A1 What the licence authorises and regulates

A1.1 Not applicable.

A1.2 This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation.

Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.

| **Scheduled Activity** |
| --- |
| Extractive Industries |

| **Fee Based Activity** | **Scale** |
| --- | --- |
| Hard-Rock Gravel Quarrying (36) | > 100000 - 500000 T obtained |

A1.3 Not applicable.

### A2 Premises to which this licence applies

A2.1 The licence applies to the following premises:

| Premises Details |
|---|
| **CLEARY BROS (BOMBO) PTY LTD** |
| **MEDHURST ROAD** |
| **MENANGLE PARK** |
| **NSW** |
| **2563** |
| **PT. LOT 2 DP622362** |
| |
| |
| |

### A3 Other activities

A3.1 This licence applies to all other activities carried on at the premises, including:

| |
|---|
| Crushing, Grinding or Separating Works |

### A4 Information supplied to the EPA

A4.1 Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence.

In this condition the reference to "the licence application" includes a reference to:
(a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and
(b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.

# 2 Discharges to air and water and applications to land

### P1 Location of monitoring/discharge points and areas

P1.1 Not applicable.

P1.2 The following points referred to in the table are identified in this licence for the purposes of the monitoring and/or the setting of limits for discharges of pollutants to water from the point.

P1.3 The following utilisation areas referred to in the table below are identified in this licence for the purposes of the monitoring and/or the setting of limits for any application of solids or liquids to the utilisation area.

*Water and land*

| EPA identification no. | Type of monitoring point | Type of discharge point | Description of location |
|---|---|---|---|
| 1 | Discharge to waters; effluent quality monitoring | Discharge to waters; effluent quality monitoring | Overflow from "Sediment Control Pond" labelled as 'Gabion Basket Spillway RL 75.98' on map titled "Site Safety Control and Water Pollution Control Plan for Menangle Quarry" dated April 1999. |

# 3 Limit conditions

### L1 Pollution of waters

L1.1 Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.

### L2 Load limits

L2.1 Not applicable.

L2.2 Not applicable.

### L3 Concentration limits

L3.1 For each monitoring/discharge point or utilisation area specified in the table\s below (by a point number), the concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentration limits specified for that pollutant in the table.

L3.2 Where a pH quality limit is specified in the table, the specified percentage of samples must be within the specified ranges.

L3.3 To avoid any doubt, this condition does not authorise the pollution of waters by any pollutant other than those specified in the table\s.

*Water and Land*

POINT 1

| Pollutant | Units of Measure | 50 percentile concentration limit | 90 percentile concentration limit | 3DGM concentration limit | 100 percentile Concentration Limit |
|---|---|---|---|---|---|
| pH | pH | | | | 6.5 - 8.5 |
| Total suspended solids | mg/L | | | | 50 |

## L4 Volume and mass limits

L4.1 Not applicable.

## L5 Waste

L5.1 Not applicable.

## L6 Noise Limits

L6.1 The level of continuous noise $L_{Aeq,\ T}$ emanating from the operation of the premises must not exceed the background level $L_{A90,\ T}$ by more than 5dB(A) when measured over a minimum period of 15 minutes at any point within six metres of the nearest affected residence or other noise sensitive areas in the vicinity of the premises, using the "Fast" response on the sound meter.

In the case of any noise which is tonal or impulsive in character, the level of continuous noise $L_{Aeq,T}$ from the premises at any point within six metres of any residence or other noise sensitive area in the vicinity of the premises, is obtained by adding 5dB(A) to the measured level.

## L7 Blasting

L7.1 The airblast overpressure level from blasting operations in or on the premises must not exceed:

(a) 115 dB (Lin Peak) for more than 5% of the total number of blasts during each reporting period; and
(b) 120 dB (Lin Peak) at any time.

At at any residence or noise sensitive location (such as a school or hospital) that is not owned by the licensee or subject of a private agreement between the owner of the residence or noise sensitive location and the licensee as to an alternative overpressure level.

L7.2 Ground vibration peak particle velocity from the blasting operations at the premises must not:

(a) Exceed 5mm/s for more than 5% of the total number of blasts over a period of 12 months; and

(b) Exceed 10mm/s at any time,

when measured at any point within 1 metre of any affected residential boundary or other noise sensitive location such as a school or hospital.

# 4 Operating conditions

### O1 Activities must be carried out in a competent manner

O1.1 Licensed activities must be carried out in a competent manner.

This includes:
(a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and
(b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

### O2 Maintenance of plant and equipment

O2.1 All plant and equipment installed at the premises or used in connection with the licensed activity:
(a) must be maintained in a proper and efficient condition; and
(b) must be operated in a proper and efficient manner.

### O3 Dust

O3.1 The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.

# 5 Monitoring and recording conditions

### M1 Monitoring records

M1.1 The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.

M1.2 All records required to be kept by this licence must be:
(a) in a legible form, or in a form that can readily be reduced to a legible form;
(b) kept for at least 4 years after the monitoring or event to which they relate took place; and
(c) produced in a legible form to any authorised officer of the EPA who asks to see them.

M1.3 The following records must be kept in respect of any samples required to be collected for the

purposes of this licence:

(a) the date(s) on which the sample was taken;
(b) the time(s) at which the sample was collected;
(c) the point at which the sample was taken; and
(d) the name of the person who collected the sample.

## M2 Requirement to monitor concentration of pollutants discharged

M2.1 For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns:

*Water and Land*

POINT 1

| Pollutant | Units of measure | Frequency | Sampling Method |
|---|---|---|---|
| Total suspended solids | mg/L | Daily during any discharge | Grab sample |
| pH | pH | Daily during any discharge | Grab sample |

## M3 Testing methods - concentration limits

M3.1 Not applicable.

M3.2 Subject to any express provision to the contrary in this licence, monitoring for the concentration of a pollutant discharged to waters or applied to a utilisation area must be done in accordance with the Approved Methods Publication unless another method has been approved by the EPA in writing before any tests are conducted.

## M4 Recording of pollution complaints

M4.1 The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.

M4.2 The record must include details of the following:
(a) the date and time of the complaint;
(b) the method by which the complaint was made;
(c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
(d) the nature of the complaint;
(e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and
(f) if no action was taken by the licensee, the reasons why no action was taken.

M4.3 The record of a complaint must be kept for at least 4 years after the complaint was made.

M4.4 The record must be produced to any authorised officer of the EPA who asks to see them.

### M5 Telephone complaints line

M5.1 The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.

M5.2 The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.

M5.3 Conditions M5.1 and M5.2 do not apply until 3 months after:
(a) the date of the issue of this licence or
(b) if this licence is a replacement licence within the meaning of the Protection of the Environment Operations (Savings and Transitional) Regulation 1998, the date on which a copy of the licence was served on the licensee under clause 10 of that regulation.

### M6 Requirement to monitor volume or mass

M6.1 Not applicable.

# 6 Reporting conditions

### R1 Annual return documents

**What documents must an Annual Return contain?**

R1.1 The licensee must complete and supply to the EPA an Annual Return in the approved form comprising:
(a) a Statement of Compliance; and
(b) a Monitoring and Complaints Summary.
A copy of the form in which the Annual Return must be supplied to the EPA accompanies this licence. Before the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.

**Period covered by Annual Return**

R1.2 An Annual Return must be prepared in respect of each reporting period, except as provided below.

Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.

R1.3 Where this licence is transferred from the licensee to a new licensee,

(a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and
(b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.

Note: An application to transfer a licence must be made in the approved form for this purpose.

R1.4 Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on
(a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or
(b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.

**Deadline for Annual Return**

R1.5 The Annual Return for the reporting period must be supplied to the EPA by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').

**Notification where actual load can not be calculated**

R1.6 Not applicable.

**Licensee must retain copy of Annual Return**

R1.7 The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.

**Certifying of Statement of Compliance and Signing of Monitoring and Complaints Summary**

R1.8 Within the Annual Return, the Statement of Compliance must be certified and the Monitoring and Complaints Summary must be signed by:
(a) the licence holder; or
(b) by a person approved in writing by the EPA to sign on behalf of the licence holder.

R1.9 A person who has been given written approval to certify a certificate of compliance under a licence issued under the Pollution Control Act 1970 is taken to be approved for the purpose of this condition until the date of first review of this licence.

## R2 Notification of environmental harm

Note: The licensee or its employees must notify the EPA of incidents causing or threatening material harm to the environment as soon as practicable after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.

R2.1 Notifications must be made by telephoning the EPA's Pollution Line service on 131 555.

R2.2 The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.

### R3 Written report

R3.1 Where an authorised officer of the EPA suspects on reasonable grounds that:
(a) where this licence applies to premises, an event has occurred at the premises; or
(b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence,
and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.

R3.2 The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.

R3.3 The request may require a report which includes any or all of the following information:
(a) the cause, time and duration of the event;
(b) the type, volume and concentration of every pollutant discharged as a result of the event;
(c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event; and
(d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort;
(e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants;
(f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event;
(g) any other relevant matters.

R3.4 The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.

# General conditions

### G1 Copy of licence kept at the premises

G1.1 A copy of this licence must be kept at the premises to which the licence applies.

G1.2 The licence must be produced to any authorised officer of the EPA who asks to see it.

G1.3 The licence must be available for inspection by any employee or agent of the licensee working at the premises.

# Pollution studies and reduction programs

U1.1 Not applicable.

# Special conditions

E1.1 Not applicable.

# Dictionary

### General Dictionary

In this licence, unless the contrary is indicated, the terms below have the following meanings:

| | |
|---|---|
| **3DGM [in relation to a concentration limit]** | Means the three day geometric mean, which is calculated by multiplying the results of the analysis of three samples collected on consecutive days and then taking the cubed root of that amount. Where one or more of the samples is zero or below the detection limit for the analysis, then 1 or the detection limit respectively should be used in place of those samples |
| **Act** | Means the Protection of the Environment Operations Act 1997 |
| **activity** | Means a scheduled or non-scheduled activity within the meaning of the Protection of the Environment Operations Act 1997 |
| **actual load** | Has the same meaning as in the Protection of the Environment Operations (General) Regulation 1998 |
| **AM** | Together with a number, means an ambient air monitoring method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*. |
| **AMG** | Australian Map Grid |
| **anniversary date** | The anniversary date is the anniversary each year of the date of issue of the licence. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act. |
| **annual return** | Is defined in R1.1 |
| **Approved Methods Publication** | Has the same meaning as in the Protection of the Environment Operations (General) Regulation 1998 |
| **assessable pollutants** | Has the same meaning as in the Protection of the Environment Operations (General) Regulation 1998 |
| **BOD** | Means biochemical oxygen demand |
| **CEM** | Together with a number, means a continuous emission monitoring method of that number prescribed by |

| | |
|---|---|
| | the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*. |
| **COD** | Means chemical oxygen demand |
| **composite sample** | Unless otherwise specifically approved in writing by the EPA, a sample consisting of 24 individual samples collected at hourly intervals and each having an equivalent volume. |
| **cond.** | Means conductivity |
| **environment** | Has the same meaning as in the Protection of the Environment Operations Act 1997 |
| **environment protection legislation** | Has the same meaning as in the Protection of the Environment Administration Act 1991 |
| **EPA** | Means Environment Protection Authority of New South Wales. |
| **fee-based activity classification** | Means the numbered short descriptions in Schedule 1 of the Protection of the Environment Operations (General) Regulation 1998. |
| **flow weighted composite sample** | Means a sample whose composites are sized in proportion to the flow at each composites time of collection. |
| **grab sample** | Means a single sample taken at a point at a single time |
| **hazardous waste** | Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997 |
| **industrial waste** | Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997 |
| **inert waste** | Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997 |
| **licensee** | Means the licence holder described at the front of this licence |
| **load calculation protocol** | Has the same meaning as in the Protection of the Environment Operations (General) Regulation 1998 |
| **local authority** | Has the same meaning as in the Protection of the Environment Operations Act 1997 |
| **material harm** | Has the same meaning as in section 147 Protection of the Environment Operations Act 1997 |
| **MBAS** | Means methylene blue active substances |
| **Minister** | Means the Minister administering the Protection of the Environment Operations Act 1997 |
| **mobile plant** | Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997 |
| **motor vehicle** | Has the same meaning as in the Protection of the Environment Operations Act 1997 |
| **O&G** | Means oil and grease |
| **percentile [in relation to a concentration limit of a sample]** | Means that percentage [eg.50%] of the number of samples taken that must meet the concentration limit specified in the licence for that pollutant over a specified period of time. In this licence, the specified period of time is the Reporting Period unless otherwise stated in this licence. |
| **plant** | Includes all plant within the meaning of the Protection of the Environment Operations Act 1997 as well as motor vehicles. |
| **pollution of waters [or water pollution]** | Has the same meaning as in the Protection of the Environment Operations Act 1997 |
| **premises** | Means the premises described in condition A2.1 |

| | |
|---|---|
| **public authority** | Has the same meaning as in the Protection of the Environment Operations Act 1997 |
| **regional office** | Means the relevant EPA office referred to in the Contacting the EPA document accompanying this licence |
| **reporting period** | For the purposes of this licence, the reporting period means the period of 12 months after the issue of the licence, and each subsequent period of 12 months. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act. |
| **reprocessing of waste** | Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997 |
| **scheduled activity** | Means an activity listed in Schedule 1 of the Protection of the Environment Operations Act 1997 |
| **solid waste** | Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997 |
| **TM** | Together with a number, means a test method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*. |
| **treatment of waste** | Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997 |
| **TSP** | Means total suspended particles |
| **TSS** | Means total suspended solids |
| **Type 1 substance** | Means the elements antimony, arsenic, cadmium, lead or mercury or any compound containing one or more of those elements |
| **Type 2 substance** | Means the elements beryllium, chromium, cobalt, manganese, nickel, selenium, tin or vanadium or any compound containing one or more of those elements |
| **utilisation area** | Means any area shown as a utilisation area on a map submitted with the application for this licence |
| **waste** | Has the same meaning as in the Protection of the Environment Operations Act 1997 |
| **waste code** | Means the waste codes listed in Appendix 5 of the EPA document A Guide to Licensing Part B. |
| **waste type** | Means Group A, Group B, Group C, inert, solid, industrial or hazardous waste |

Mr Nigel Sargent

Environment Protection Authority

(By Delegation)

Date of this edition - 09-Oct-2006

## End Notes

| | |
|---|---|
| 1 | Licence varied by notice 1013830, issued on 09-Dec-2003, which came into effect on 03-Jan-2004. |
| 2 | This licence was surrendered by notice 1065915 on 09-Oct-2006. |

# Environment Protection Licence

Licence - 12003

| Licence Details | |
|---|---|
| Number: | 12003 |
| Anniversary Date: | 22-December |

**Licensee**

AGL UPSTREAM INVESTMENTS PTY LIMITED

PO BOX 67

MENANGLE NSW 2568

**Premises**

ROSALIND PARK GAS PLANT

MEDHURST ROAD

GILEAD NSW 2560

**Scheduled Activity**

Petroleum exploration, assessment and production

| Fee Based Activity | Scale |
|---|---|
| Petroleum exploration, assessment and production | > 0.50-6 PJ annual production capacity |

**Region**

Metropolitan - Illawarra

Level 3, NSW Govt Offices, 84 Crown Street
WOLLONGONG NSW 2500

Phone: (02) 4224 4100

Fax: (02) 4224 4110

PO Box 513

WOLLONGONG EAST NSW 2520

# Environment Protection Licence

Licence - 12003

# Environment Protection Licence

Licence - 12003

# Environment Protection Licence

Licence - 12003

## Information about this licence

### Dictionary

A definition of terms used in the licence can be found in the dictionary at the end of this licence.

### Responsibilities of licensee

Separate to the requirements of this licence, general obligations of licensees are set out in the Protection of the Environment Operations Act 1997 ("the Act") and the Regulations made under the Act. These include obligations to:

- ensure persons associated with you comply with this licence, as set out in section 64 of the Act;
- control the pollution of waters and the pollution of air (see for example sections 120 - 132 of the Act);
- report incidents causing or threatening material environmental harm to the environment, as set out in Part 5.7 of the Act.

### Variation of licence conditions

The licence holder can apply to vary the conditions of this licence. An application form for this purpose is available from the EPA.

The EPA may also vary the conditions of the licence at any time by written notice without an application being made.

Where a licence has been granted in relation to development which was assessed under the Environmental Planning and Assessment Act 1979 in accordance with the procedures applying to integrated development, the EPA may not impose conditions which are inconsistent with the development consent conditions until the licence is first reviewed under Part 3.6 of the Act.

### Duration of licence

This licence will remain in force until the licence is surrendered by the licence holder or until it is suspended or revoked by the EPA or the Minister. A licence may only be surrendered with the written approval of the EPA.

### Licence review

The Act requires that the EPA review your licence at least every 5 years after the issue of the licence, as set out in Part 3.6 and Schedule 5 of the Act. You will receive advance notice of the licence review.

### Fees and annual return to be sent to the EPA

For each licence fee period you must pay:

- an administrative fee; and
- a load-based fee (if applicable).

# Environment Protection Licence

Licence - 12003

The EPA publication “A Guide to Licensing” contains information about how to calculate your licence fees. The licence requires that an Annual Return, comprising a Statement of Compliance and a summary of any monitoring required by the licence (including the recording of complaints), be submitted to the EPA. The Annual Return must be submitted within 60 days after the end of each reporting period. See condition R1 regarding the Annual Return reporting requirements.

Usually the licence fee period is the same as the reporting period.

**Transfer of licence**

The licence holder can apply to transfer the licence to another person. An application form for this purpose is available from the EPA.

**Public register and access to monitoring data**

Part 9.5 of the Act requires the EPA to keep a public register of details and decisions of the EPA in relation to, for example:

- licence applications;
- licence conditions and variations;
- statements of compliance;
- load based licensing information; and
- load reduction agreements.

Under s320 of the Act application can be made to the EPA for access to monitoring data which has been submitted to the EPA by licensees.

## This licence is issued to:

| |
|---|
| **AGL UPSTREAM INVESTMENTS PTY LIMITED** |
| **PO BOX 67** |
| **MENANGLE NSW 2568** |

subject to the conditions which follow.

# Environment Protection Licence

Licence - 12003

## 1 Administrative Conditions

### A1 What the licence authorises and regulates

A1.1 This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation.

Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.

| Scheduled Activity | Fee Based Activity | Scale |
|---|---|---|
| Petroleum exploration, assessment and production | Petroleum exploration, assessment and production | > 0.50 - 6 PJ annual production capacity |

A1.2 This licence does not authorise the above scheduled activities where approval for these activities is also required under the *Environmental Planning and Assessment Act* or the *Petroleum (Onshore) Act*, and approval has not been granted.

### A2 Premises or plant to which this licence applies

A2.1 The licence applies to the following premises:

| Premises Details |
|---|
| **ROSALIND PARK GAS PLANT** |
| **MEDHURST ROAD** |
| **GILEAD** |
| **NSW 2560** |
| **PART LOT 35 DP 230946** |

A2.2 The premises also includes the gas gathering reticulation system owned and operated by the licensee that is associated with the gas treatment plant(s) identified in condition A2.1.

A2.3 The gas gathering reticulation system identified in condition A2.2 includes all gas wells, trunk lines, and any associated effluent storages, temporary work areas and infrastructure associated with the gathering systems, gas wells and trunk lines.

A2.4 The licensee must maintain a current register of the gas gathering reticulation system documenting each gas well location, well head configuration and all trunk lines associated with the gas treatment plant identified in condition A2.1.

A2.5 For the purposes of this licence, the premises also includes immediate areas in a 10 metre radius of all infrastructure in connection to the operation of the gas wells. During well establishment, the premises have a nominal area of 100m x 70m and is surrounded by fencing. At various times during well head maintenance, the premises at the gas well head comprises an area of approximate dimensions 50m x

40m.

A2.6 Any maps referred to in this section and included as part of this licence indicate the activity that is authorised by this licence to be undertaken at each well site.

### A3 Information supplied to the EPA

A3.1 Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence.

In this condition the reference to "the licence application" includes a reference to:
a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and
b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.

## 2 Discharges to Air and Water and Applications to Land

### P1 Location of monitoring/discharge points and areas

P1.1 The following points referred to in the table below are identified in this licence for the purposes of monitoring and/or the setting of limits for the emission of pollutants to the air from the point.

***Air***

| EPA identification no. | Type of Monitoring Point | Type of Discharge Point | Location Description |
|---|---|---|---|
| 1 | Discharge to air<br>Air emissions monitoring | Discharge to air<br>Air emissions monitoring | Compressor Engine 1 labelled 'Engine Exhaust Stack 1 on drawing titled 'Camden Gas Project Site Plan Location of Emission Points' drawing number 4229DG06 submitted to the EPA with letter dated 29 October 2004. |
| 2 | Discharge to air<br>Air emissions monitoring | Discharge to air<br>Air emissions monitoring | Compressor Engine 2 labelled "Engine Exhaust Stack 2" on drawing titled 'Camden Gas Project Site Plan Location of Emission Points' drawing number 4229DG06 submitted to the EPA with letter dated 29 October 2004. |
| 3 | Discharge to air<br>Air emissions monitoring | Discharge to air<br>Air emissions monitoring | Compressor Engine 3 marked 'Engine Exhaust Stack 3' on drawing titled 'Camden Gas Project Site Plan Location of Emission Points' drawing number 4229DG06 submitted to the EPA with letter dated 29 October 2004. |

| | | | |
|---|---|---|---|
| 4 | Discharge to air<br>Air emissions monitoring | Discharge to air<br>Air emissions monitoring | TEG Fire Tube marked 'Reboiler Flue 4' on drawing titled 'Camden Gas Project Site Plan Location of Emission Points' drawing number 4229DG06 submitted to the EPA with letter dated 29 October 2004. |
| 5 | Discharge to air<br>Air emissions monitoring | Discharge to air<br>Air emissions monitoring | Reboiler Still Column titled 'Reflux Column Vent 5' on drawing titled 'Camden Gas Project Site Plan Location of Emission Points' drawing number 4229DG06 submitted to the EPA with letter dated 29 October 2004. |
| 6 | Discharge to air<br>Air emissions monitoring | Discharge to air<br>Air emissions monitoring | Carbon scrubber vent discharge stack labelled 'Odouriser Carbon Vent 6' on drawing titled 'Camden Gas Project Site Plan Location of Emission Points' drawing number 4229DG06 submitted to the EPA with letter dated 29 October 2004. |
| 7 | Discharge to air | Discharge to air | Main Flare marked 'Flare Pilot 7' on drawing titled 'Camden Gas Project Site Plan Location of Emission Points' on drawing number 4229DG06 submitted to the EPA with letter dated 29 October 2004. |

P1.2 The following utilisation areas referred to in the table below are identified in this licence for the purposes of the monitoring and/or the setting of limits for any application of solids or liquids to the utilisation area.

P1.3 The following points referred to in the table are identified in this licence for the purposes of the monitoring and/or the setting of limits for discharges of pollutants to water from the point.

***Water and land***

| EPA Identification no. | Type of Monitoring Point | Type of Discharge Point | Location Description |
|---|---|---|---|
| 8 | Groundwater Quality Monitoring Point | | Groundwater monitoring point labelled "SF07" on map entitled "Camden Gas Project Groundwater Monitoring Network" dated 18/06/2012 (DOC16/106041). Prior to February 2016 this was groundwater monitoring point labelled "EM40". |
| 9 | Groundwater Quality Monitoring Point | | Groundwater monitoring point labelled "SF08" as shown on the map entitled "Camden Gas Project Groundwater Monitoring Network" dated 18/06/2012 (Trim DOC16/106041) |

| | | |
|---|---|---|
| 10 | Groundwater Quality Monitoring Point | Groundwater monitoring point labelled "RB10" as shown on the map entitled "Camden Gas Project Groundwater Monitoring Network" dated 18/06/2012 (Trim DOC16/106041). |
| 11 | Groundwater Quality Monitoring Point | Groundwater monitoring point labelled "SL02" on map entitled "Camden Gas Project Groundwater Monitoring Network" dated 18/06/2012 (DOC16/106041). Prior to February 2016 this was groundwater monitoring point labelled "MT05". |
| 12 | Groundwater Quality Monitoring Point | Groundwater monitoring point labelled "MP22" on map entitled "Camden Gas Project Groundwater Monitoring Network" dated 18/06/2012 (DOC16/106041). Prior to February 2016 this was groundwater monitoring point labelled "MP12". |
| 13 | Groundwater Quality Monitoring Point | Groundwater monitoring point labelled "MP07" on map entitled "Camden Gas Project Groundwater Monitoring Network" dated 18/06/2012 (DOC16/106041). Prior to February 2016 this was groundwater monitoring point labelled "MP30". |
| 14 | Groundwater Quality Monitoring Point | Groundwater monitoring point labelled "MP02" on map entitled "Camden Gas Project Groundwater Monitoring Network" dated 18/06/2012 (DOC16/106041). Prior to February 2016 this was groundwater monitoring point labelled "RP12". |
| 15 | Groundwater Quality Monitoring Point | Groundwater monitoring point labelled "MP09" on map entitled "Camden Gas Project Groundwater Monitoring Network" dated 18/06/2012 (DOC16/106041). Prior to February 2016 this was groundwater monitoring point labelled "SL03". |
| 16 | Water Quality Monitoring Point | Rosalind Park Gas Plant Flare Pit. |

Note: **Groundwater Monitoring Program**
Licensed Discharge Points 8, 11, 12, 13, 14, and 15 were commonly dry during the required groundwater monitoring periods. Based on a review of water yield and the geographical spread of production wells across the licensed premises, six (6) of the eight (8) groundwater monitoring locations were changed in February 2016. The licensed discharge point numbers have been retained however the

production well monitoring location has been changed. The description now identifies both the new and old production well monitoring location.

# 3 Limit Conditions

## L1 Pollution of waters

L1.1 Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.

## L2 Load limits

L2.1 The actual load of an assessable pollutant discharged from the premises during the reporting period must not exceed the load limit specified for the assessable pollutant in the table below.

Note: An assessable pollutant is a pollutant which affects the licence fee payable for the licence.

L2.2 The actual load of an assessable pollutant must be calculated in accordance with the relevant load calculation protocol.

| Assessable Pollutant | Load limit (kg) |
|---|---|
| Benzene (Air) | 47.00 |
| Benzo(a)pyrene (equivalent) (Air) | 0.27 |
| BOD (Enclosed Water) | |
| Fine Particulates (Air) | 460.00 |
| Hydrogen Sulfide (Air) | 1.60 |
| Nitrogen Oxides - Summer (Air) | |
| Nitrogen Oxides (Air) | 103000.00 |
| Oil and Grease (Enclosed Water) | |
| Salt (Enclosed Water) | |
| Sulfur Oxides (Air) | 3000.00 |
| Total PAHs (Enclosed Water) | |
| Total Phenolics (Enclosed Water) | |
| Total suspended solids (Enclosed Water) | |
| Volatile organic compounds - Summer (Air) | |
| Volatile organic compounds (Air) | 33000.00 |

Note: There are no discharges to waters for purposes of the Condition L2.2.

# Environment Protection Licence

Licence - 12003

## L3 Concentration limits

L3.1 For each monitoring/discharge point or utilisation area specified in the table\s below (by a point number), the concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentration limits specified for that pollutant in the table.

L3.2 Air Concentration Limits

**POINT 1**

| Pollutant | Units of measure | 100 percentile concentration limit | Reference conditions | Oxygen correction | Averaging period |
|---|---|---|---|---|---|
| Nitrogen Oxides | milligrams per cubic metre | 461 | Dry, 273K, 101.3kPa | 7 percent oxygen | As per test method |
| Sulfuric acid mist and sulfur trioxide (as SO3) | milligrams per cubic metre | 5 | Dry, 273K, 101.3kPa | | As per test method |
| Sulphur dioxide | milligrams per cubic metre | 7 | Dry, 273K, 101.3kPa | | As per test method |

**POINT 2,3**

| Pollutant | Units of measure | 100 percentile concentration limit | Reference conditions | Oxygen correction | Averaging period |
|---|---|---|---|---|---|
| Nitrogen Oxides | milligrams per cubic metre | 220 | Dry, 273K, 101.3kPa | 7 percent oxygen | As per test method |
| Sulfuric acid mist and sulfur trioxide (as SO3) | milligrams per cubic metre | 5 | Dry, 273K, 101.3kPa | | As per test method |
| Sulphur dioxide | milligrams per cubic metre | 7 | Dry, 273K, 101.3 kPa | | As per test method |

**POINT 4**

| Pollutant | Units of measure | 100 percentile concentration limit | Reference conditions | Oxygen correction | Averaging period |
|---|---|---|---|---|---|
| Nitrogen Oxides | milligrams per cubic metre | 110 | Dry, 273K, 101.3kPa | 7 percent oxygen | As per test method |
| Sulfuric acid mist and sulfur trioxide (as SO3) | milligrams per cubic metre | 3.5 | Dry, 273K, 101.3kPa | | As per test method |
| Sulphur dioxide | milligrams per cubic metre | 35 | Dry, 273K, 101.3kPa | | As per test method |

**POINT 5**

| Pollutant | Units of measure | 100 percentile concentration limit | Reference conditions | Oxygen correction | Averaging period |
|---|---|---|---|---|---|
| Sulphur dioxide | milligrams per cubic metre | 1042 | Dry, 273K, 101.3kPa | | As per test method |
| Nitrogen Oxides | milligrams per cubic metre | 13 | Dry, 273K, 101.3kPa | 7 percent oxygen | As per test method |
| Sulfuric acid mist and sulfur trioxide (as SO3) | milligrams per cubic metre | 35 | Dry, 273K, 101.3kPa | | As per test method |

L3.3

Note: Should the licensee seek to revise the concentration limits as specified in Condition L3.1 for nitrogen oxides, the licensee must demonstrate that:
a) The revised emission limit is representative of the proper and efficient maintenance and operation of the equipment;
b) The equipment is designed to minimise emissions as far as is practicable and consistent with best practice considering the type of equipment and application;
c) The revised emission limit is supported by Manufacturers Design Specification; and
d) The revised emission limit does not cause adverse impacts on local air quality. This assessment must be undertaken in accordance with the document: Approved Methods and Guidance for the Modelling and Assessment of Air Pollutants in NSW.

## L4 Waste

L4.1 The licensee must not cause, permit or allow any waste to be received at the premises, except the wastes expressly referred to in the column titled “Waste” and meeting the definition, if any, in the column titled “Description” in the table below.
Any waste received at the premises must only be used for the activities referred to in relation to that waste in the column titled “Activity” in the table below.
Any waste received at the premises is subject to those limits or conditions, if any, referred to in relation to that waste contained in the column titled “Other Limits” in the table below.
This condition does not limit any other conditions in this licence.

| Code | Waste | Description | Activity | Other Limits |
|---|---|---|---|---|
| NA | General or Specific exempted waste | Waste that meets all the conditions of a resource recovery exemption under Clause 51A of the Protection of the Environment Operations (Waste) Regulation 2005 | As specified in each particular resource recovery exemption | NA |
| NA | Waste | Any waste received on | - | NA |

| | |
|---|---|
| | site that is below licensing thresholds in Schedule 1 of the POEO Act, as in force from time to time |

L4.2 **Asbestos**

Note: The licensee must comply with the conditions as specified in this licence or where no specific conditions are outlined in this licence, the licensee must comply with the Protection of the Environment Operations (Waste) Regulation 2005.

## L5 Noise limits

L5.1 Noise from the premises must not exceed the noise limits in the table below:

| Receiver Location | Day | Evening | Night | Flaring (night) |
|---|---|---|---|---|
| | LAeq(15 minute) | LAeq(15 minute) | LAeq(15 minute) | LAeq(15 minute) |
| R1 Medhurst Road, Gilead | 35 | 35 | 35 | 45 |
| R7 Mt. Gilead, Gilead | 37 | 36 | 36 | 45 |

Note: Pressure safety valve (discharge) and pressure safety valve (suction) flaring events are exempted from the limits in condition L5.1.

L5.2 For the purposes of condition L5.1:

a) Day is defined as the period from 7am to 6pm Monday to Saturday and 8am to 6pm Sundays and Public holidays;

b) Evening is defined as the period 6pm to 10pm;

c) Night is defined as the period from 10pm to 7am Monday to Saturday and 10pm to 8am Sundays and Public Holidays; and

d) The receiver locations R1 and R7 are as shown in Figure 5.1 of the Environmental Noise and Vibration Study by Environmental Resources Management Australia Pty Ltd dated June 2003 which accompanied the Environmental Impact Statement for the project.

L5.3 **Incidence of flaring events**

L5.4 Noise for flaring event, must not exceed the noise limits in the table below:

| Receiver Location | Type & Duration of Flare event | Day | Evening | Night |
|---|---|---|---|---|
| | | LAeq(15 minute) | LAeq(15 minute) | LAeq(15 minute) |
| R1 Medhurst Road, Gilead | Spill valve >2.5 hours | 35 | 35 | 35 |
| | Compressor blowdown (ESD) 15-60 minutes | 40 | 40 | 35 |
| | Compressor blowdown (shut down and unload) 6-15 minutes | 42 | 42 | 37 |
| R7 Mt. Gilead, Gilead | Spill valve >2.5 hours | 37 | 36 | 36 |
| | Compressor blowdown (ESD) 15-60 minutes | 42 | 41 | 40[a] |
| | Compressor blowdown (shut down and unload) 6-15 minutes | 44 | 43 | 37 |

Note: 1. For the purposes of the table above, [a] is where ESD (Emergency Shut Down) flare events exceed a frequency of occurrence of 1 per 21 days or a duration higher than 15 minutes per event to a reduced flow rate of less the 0.5 mmscf/d for each event, a lower limit of 36dB(A) LAeq (15 Minutes) applies at night.

Note: 2. For the purposes of the table above, a flare event is defined as the period of time when the gas flow to the flare is greater than the gas flow necessary to maintain the pilot flare.

Note: 3. Pressure safety valve (discharge) and pressure safety valve (suction) flaring events are exempted from the limits in condition L5.4.

L5.5 **Noise measurements**

L5.6 Noise from the premises is to be measured at any point on or within the residential boundary or at any point within 30m of the dwelling (rural situations) where the dwelling is more than 30m from the boundary to determine compliance with the LAeq(15 minute) noise limits in condition L5.1.

Where it can be demonstrated that direct measurement of noise from the premises is impractical, the EPA may accept alternative means of determining compliance. See Chapter 11 of the NSW Industrial Noise Policy January 2000 for general guidance for determining compliance.

The modification factors presented in Section 4 of the NSW Industrial Noise Policy January 2000 shall also be applied to the measured noise levels where applicable.

L5.7 Noise from the premises is to be measured at 1m from the dwelling façade to determine compliance with the LA1 (1 minute) noise level in L5.1.

L5.8 The noise emission limits identified in this licence apply under all meteorological conditions except:

a) during rain and wind speeds (at 10m height) greater than 3m/s; and
b) under "non-significant weather conditions".

Note: Field meteorological indicators for non-significant weather conditions are described in the NSW Industrial Noise Policy, Chapter 5 and Appendix E in relation to wind and temperature inversions.

L5.9 **Well, Gathering System and Trunk Line Maintenance noise management protocol**

L5.10 The licensee must have in place a Well, Gathering System and Trunk Line Maintenance Noise Management Protocol to be used for the premises as defined in Condition A2 of this licence for the duration of the licence. The Protocol must include, but not limited to:

a) noise compliance standards;
b) community consultation;
c) advance notice to affected members of the community for planned well maintenance activities;
d) complaints handling monitoring/system;
e) site contact person to follow up complaints;
f) mitigation measures;
g) the design/orientation of the proposed mitigation methods demonstrating best practice;
h) construction times;
i) contingency measures where noise complaints are received; and
j) monitoring methods and program.

## L6 Hours of operation

L6.1 Planned maintenance activities at any of the wells must only be conducted between:

(a) 7am and 6pm on weekdays; and

(b) 8am and 1pm on Saturdays (excluding Public Holidays).

L6.2 This condition does not apply to the delivery of material outside the hours of operation permitted by condition L6.1, if that delivery is required by police or other authorities for safety reasons; and/or the operation or personnel or equipment are endangered. In such circumstances, prior notification must be provided to the EPA and affected residents as soon as possible or within a reasonable period in the case of emergency.

## L7 Potentially offensive odour

L7.1 No condition of this licence identifies a potentially offensive odour for the purposes of section 129 of the Protection of the Environment Operations Act 1997.

Note: Section 129 of the Protection of the Environment Operations Act 1997, provides that the licensee must not cause or permit the emission of any offensive odour from the premises but provides a defence if the emission is identified in the relevant environment protection licence as a potentially offensive odour and

the odour was emitted in accordance with the conditions of a licence directed at minimising odour.

Note: Should odour emissions become an issue, the EPA will consider requiring investigation and implementation of further odour control measures.

### L8 Other limit conditions

L8.1 **Polychlorinated Biphenyls (PCBs)**

Note: The licensee must comply with the conditions as specified in this licence or where no specific conditions are outlined in this licence, the licensee must comply with the "Chemical Control Order in Relation to Materials and Wastes Containing Polychlorinated Biphenyl, 1997".

L8.2 **Hydraulic Fracturing**

L8.3 The licensee must not use chemicals that contain BTEX compounds (Benzene, Toluene, Ethyl Benzene and Xylene) in the fracturing fluid additives.

## 4 Operating Conditions

### O1 Activities must be carried out in a competent manner

O1.1 Licensed activities must be carried out in a competent manner.
This includes:
a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and
b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

### O2 Maintenance of plant and equipment

O2.1 All plant and equipment installed at the premises or used in connection with the licensed activity:
a) must be maintained in a proper and efficient condition; and
b) must be operated in a proper and efficient manner.

### O3 Dust

O3.1 The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.

### O4 Emergency response

O4.1 The licensee must maintain, and implement as necessary, a current emergency response plan for the premises. The licensee must keep the emergency response plan on the premises at all times. The emergency response plan must document systems and procedures to deal with all types of incidents (e.g. spills, explosions or fire) that may occur at the premises or that may be associated with activities that occur at the premises and which are likely to cause harm to the environment. If a current emergency response plan does not exist at the date on which this condition is attached to the licence, the licensee must develop an emergency response plan within three months of that date.

### O5 Processes and management

O5.1 The licensee must ensure that any liquid and/or non-liquid waste generated and/or stored at the premises is assessed and classified in accordance with the DECC Waste Classification Guidelines as in force from time to time.

O5.2 The licensee must ensure that waste identified for recycling is stored separately from other waste.

## 5 Monitoring and Recording Conditions

### M1 Monitoring records

M1.1 The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.

M1.2 All records required to be kept by this licence must be:
a) in a legible form, or in a form that can readily be reduced to a legible form;
b) kept for at least 4 years after the monitoring or event to which they relate took place; and
c) produced in a legible form to any authorised officer of the EPA who asks to see them.

M1.3 The following records must be kept in respect of any samples required to be collected for the purposes of this licence:
a) the date(s) on which the sample was taken;
b) the time(s) at which the sample was collected;
c) the point at which the sample was taken; and
d) the name of the person who collected the sample.

### M2 Requirement to monitor concentration of pollutants discharged

M2.1 For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns:

M2.2 Air Monitoring Requirements

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**POINT 1,2,3,4,5**

| Pollutant | Units of measure | Frequency | Sampling Method |
|---|---|---|---|
| Carbon dioxide | percent | Quarterly | TM-24 |
| Dry gas density | kilograms per cubic metre | Quarterly | TM-23 |
| Moisture | percent | Quarterly | TM-22 |
| Molecular weight of stack gases | grams per gram mole | Quarterly | TM-23 |
| Nitrogen Oxides | milligrams per cubic metre | Quarterly | TM-11 |
| Oxygen (O2) | percent | Quarterly | TM-25 |
| Sulfuric acid mist and sulfur trioxide (as SO3) | milligrams per cubic metre | Quarterly | TM-3 |
| Sulphur dioxide | milligrams per cubic metre | Quarterly | TM-4 |
| Temperature | degrees Celsius | Quarterly | TM-2 |
| Velocity | metres per second | Quarterly | TM-2 |
| Volumetric flowrate | cubic metres per second | Quarterly | TM-2 |

**POINT 6**

| Pollutant | Units of measure | Frequency | Sampling Method |
|---|---|---|---|
| Carbon dioxide | percent | Quarterly | TM-24 |
| Dry gas density | kilograms per cubic metre | Quarterly | TM-23 |
| Moisture | percent | Quarterly | TM-22 |
| Molecular weight of stack gases | grams per gram mole | Quarterly | TM-23 |
| Odour | odour units | Quarterly | OM-7 |
| Oxygen (O2) | percent | Quarterly | TM-25 |
| Temperature | degrees Celsius | Quarterly | TM-2 |
| Velocity | metres per second | Quarterly | TM-2 |
| Volumetric flowrate | cubic metres per second | Quarterly | TM-2 |

M2.3 **POINT 1**

| Pollutant | Units of Measure | Frequency | Sampling Method |
|---|---|---|---|
| Nitrogen Oxides | milligrams per cubic metre | Continuous | CEM-2 |

| | | | |
|---|---|---|---|
| Temperature | degrees Celsius | Continuous | TM-2 |
| Moisture | percent | Continuous | Method approved by EPA in writing |
| Volumetric flow rate | cubic metres per second | Continuous | CEM-6 |
| Oxygen | percent | Continuous | CEM-3 |

M2.4 Continuous emissions monitoring results for moisture, as required by Condition M2.3, must be calibrated by reference to sampling method TM-22 as specified in EPA Approved Methods for the Sampling and Analysis of Air Pollutants in NSW, as in force from time to time.

Note: The requirement for quarterly monitoring at point 6 may be reviewed based on odour emission performance after 12 months from commissioning of the treatment plant.

M2.5 For the purposes of Condition M2.2, the selection of sampling positions for quarterly monitoring at points 1, 2, 3, 4 and 6 must be carried out in accordance with test method TM-1 as specified in Approved Methods for the Sampling and Analysis of Air Pollutants in NSW, as in force from time to time.

M2.6 For the purposes of Condition M2.2, the selection of sampling positions for quarterly monitoring (excluding velocity) at point 5 must be carried out in accordance with test method TM-1 as specified in Approved Methods for the Sampling and Analysis of Air Pollutants in NSW, as in force from time to time.

M2.7 Water and/ or Land Monitoring Requirements

**POINT 8,9,10,11,12,13,14,15**

| Pollutant | Units of measure | Frequency | Sampling Method |
|---|---|---|---|
| Aluminium | milligrams per litre | Every 6 months | Grab sample |
| Ammonia | milligrams per litre | Yearly | Grab sample |
| Arsenic | milligrams per litre | Every 6 months | Grab sample |
| Barium | milligrams per litre | Every 6 months | Grab sample |
| Benzene | milligrams per litre | Yearly | Grab sample |
| Beryllium | milligrams per litre | Every 6 months | Grab sample |
| Bicarbonate | milligrams per litre | Every 6 months | Grab sample |
| Boron | milligrams per litre | Every 6 months | Grab sample |
| Bromide | milligrams per litre | Every 6 months | Grab sample |
| Cadmium | milligrams per litre | Every 6 months | Grab sample |
| Calcium | milligrams per litre | Every 6 months | Grab sample |
| Carbonate | milligrams per litre | Every 6 months | Grab sample |
| Chloride | milligrams per litre | Every 6 months | Grab sample |
| Chromium | milligrams per litre | Every 6 months | Grab sample |
| Cobalt | milligrams per litre | Every 6 months | Grab sample |
| Copper | milligrams per litre | Every 6 months | Grab sample |
| Electrical conductivity | microsiemens per centimetre | Every 6 months | Grab sample |
| Ethyl benzene | milligrams per litre | Yearly | Grab sample |
| Fluoride | milligrams per litre | Every 6 months | Grab sample |

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| | | | |
|---|---|---|---|
| Iron | milligrams per litre | Every 6 months | Grab sample |
| Lead | milligrams per litre | Every 6 months | Grab sample |
| Magnesium | milligrams per litre | Every 6 months | Grab sample |
| Manganese | milligrams per litre | Every 6 months | Grab sample |
| Mercury | milligrams per litre | Every 6 months | Grab sample |
| Methane | milligrams per litre | Yearly | Grab sample |
| Molybdenum | milligrams per litre | Every 6 months | Grab sample |
| Nickel | milligrams per litre | Every 6 months | Grab sample |
| Nitrate | milligrams per litre | Yearly | Grab sample |
| Nitrite | milligrams per litre | Yearly | Grab sample |
| Phenols | milligrams per litre | Yearly | Grab sample |
| Polycyclic aromatic hydrocarbons | milligrams per litre | Yearly | Grab sample |
| Potassium | milligrams per litre | Every 6 months | Grab sample |
| Reactive Phosphorus | milligrams per litre | Yearly | Grab sample |
| Selenium | milligrams per litre | Every 6 months | Grab sample |
| Silica | milligrams per litre | Every 6 months | Grab sample |
| Sodium | milligrams per litre | Every 6 months | Grab sample |
| Strontium (dissolved) | milligrams per litre | Every 6 months | Grab sample |
| Sulfate | milligrams per litre | Every 6 months | Grab sample |
| Toluene | milligrams per litre | Yearly | Grab sample |
| Total dissolved solids | milligrams per litre | Every 6 months | Grab sample |
| Total petroleum hydrocarbons | milligrams per litre | Yearly | Grab sample |
| Uranium | milligrams per litre | Every 6 months | Grab sample |
| Vanadium | milligrams per litre | Every 6 months | Grab sample |
| Xylene | milligrams per litre | Yearly | Grab sample |
| Zinc | milligrams per litre | Every 6 months | Grab sample |

**POINT 16**

| Pollutant | Units of measure | Frequency | Sampling Method |
|---|---|---|---|
| BOD | milligrams per litre | Monthly | Grab sample |
| Electrical conductivity | microsiemens per centimetre | Monthly | Grab sample |
| Oil and Grease | milligrams per litre | Monthly | Grab sample |
| Phenols | micrograms per litre | Monthly | Grab sample |
| Total organic carbon | milligrams per litre | Monthly | Grab sample |
| Total PAHs | micrograms per litre | Monthly | Grab sample |
| Total petroleum hydrocarbons | micrograms per litre | Monthly | Grab sample |
| Total suspended solids | milligrams per litre | Monthly | Grab sample |

M2.8 For the purposes of the table above for points 8, 9, 10, 11, 12, 13, 14, and 15 the monitoring results are required to be submitted annually as a Groundwater Monitoring Report with the Annual Return.

M2.9 For the purposes of Condition M2.7 EPA has approved the following method of analysis for the following pollutants only:

- Methane - ALS "Static Headspace GC/FID technique"
- Phenols - USEPA method 8270D.
- Polycyclic aromatic hydrocarbons - USEPA method 8270D

All other monitoring must be undertaken in accordance with Conditon M3.2.

## M3 Testing methods - concentration limits

M3.1 Monitoring for the concentration of a pollutant emitted to the air required to be conducted by this licence must be done in accordance with:
a) any methodology which is required by or under the Act to be used for the testing of the concentration of the pollutant; or
b) if no such requirement is imposed by or under the Act, any methodology which a condition of this licence requires to be used for that testing; or
c) if no such requirement is imposed by or under the Act or by a condition of this licence, any methodology approved in writing by the EPA for the purposes of that testing prior to the testing taking place.

Note: The *Protection of the Environment Operations (Clean Air) Regulation 2010* requires testing for certain purposes to be conducted in accordance with test methods contained in the publication "Approved Methods for the Sampling and Analysis of Air Pollutants in NSW".

M3.2 Subject to any express provision to the contrary in this licence, monitoring for the concentration of a water pollutant must be done in accordance with the EPA Approved Methods Publication "*Approved Methods for the Sampling and Analysis of Water Pollutants in New South Wales"* unless another method has been approved by the EPA in writing before any tests are conducted.

M3.3 Subject to any express provision to the contrary in this licence, monitoring for the concentration of a pollutant discharged to waters or applied to a utilisation area must be done in accordance with the Approved Methods Publication unless another method has been approved by the EPA in writing before any tests are conducted.

## M4 Testing methods - load limits

Note: Division 3 of the *Protection of the Environment Operations (General) Regulation 2009* requires that monitoring of actual loads of assessable pollutants listed in L2.2 must be carried out in accordance with the relevant load calculation protocol set out for the fee-based activity classification listed in the Administrative Conditions of this licence.

### M5 Recording of pollution complaints

M5.1 The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.

M5.2 The record must include details of the following:
a) the date and time of the complaint;
b) the method by which the complaint was made;
c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
d) the nature of the complaint;
e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and
f) if no action was taken by the licensee, the reasons why no action was taken.

M5.3 The record of a complaint must be kept for at least 4 years after the complaint was made.

M5.4 The record must be produced to any authorised officer of the EPA who asks to see them.

### M6 Telephone complaints line

M6.1 The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.

M6.2 The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.

M6.3 The preceding two conditions do not apply until 3 months after: the date of the issue of this licence.

### M7 Other monitoring and recording conditions

M7.1 **Leak Detection and Repair Program**

M7.2 The licensee must operate a Leak Detection And Repair Program for all relevant components of plant and equipment.

M7.3 The LDAR Program must, unless otherwise approved by the EPA, monitor for the detection of leaks in accordance with US EPA Method 21- Determination of Volatile Organic Compound Leaks (40 CFR Part 60, Appendix A, Method 21).

## 6 Reporting Conditions

# Environment Protection Licence

Licence - 12003

## R1 Annual return documents

R1.1 The licensee must complete and supply to the EPA an Annual Return in the approved form comprising:

1. a Statement of Compliance,
2. a Monitoring and Complaints Summary,
3. a Statement of Compliance - Licence Conditions,
4. a Statement of Compliance - Load based Fee,
5. a Statement of Compliance - Requirement to Prepare Pollution Incident Response Management Plan,
6. a Statement of Compliance - Requirement to Publish Pollution Monitoring Data; and
7. a Statement of Compliance - Environmental Management Systems and Practices.

At the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.

R1.2 An Annual Return must be prepared in respect of each reporting period, except as provided below.

Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.

R1.3 Where this licence is transferred from the licensee to a new licensee:
a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and
b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.

Note: An application to transfer a licence must be made in the approved form for this purpose.

R1.4 Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on:
a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or
b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.

R1.5 The Annual Return for the reporting period must be supplied to the EPA via eConnect *EPA* or by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').

R1.6 Where the licensee is unable to complete a part of the Annual Return by the due date because the licensee was unable to calculate the actual load of a pollutant due to circumstances beyond the licensee's control, the licensee must notify the EPA in writing as soon as practicable, and in any event not later than the due date. The notification must specify:
a) the assessable pollutants for which the actual load could not be calculated; and
b) the relevant circumstances that were beyond the control of the licensee.

R1.7 The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.

R1.8 Within the Annual Return, the Statements of Compliance must be certified and the Monitoring and Complaints Summary must be signed by:
a) the licence holder; or
b) by a person approved in writing by the EPA to sign on behalf of the licence holder.

R1.9 The licensee must submit a noise compliance monitoring report on 16 April 2004 and on an annual basis with the annual return required in condition R1.1 thereafter, to assess compliance with the noise limits provided in condition L5.1. The noise monitoring must be undertaken in accordance with the NSW Industrial Noise Policy August 2000.

## R2 Notification of environmental harm

R2.1 Notifications must be made by telephoning the Environment Line service on 131 555.

R2.2 The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.

Note: The licensee or its employees must notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.

## R3 Written report

R3.1 Where an authorised officer of the EPA suspects on reasonable grounds that:
a) where this licence applies to premises, an event has occurred at the premises; or
b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence,
and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.

R3.2 The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.

R3.3 The request may require a report which includes any or all of the following information:
a) the cause, time and duration of the event;
b) the type, volume and concentration of every pollutant discharged as a result of the event;
c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event;
d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort;
e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants;
f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and

g) any other relevant matters.

R3.4 The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.

## R4 Other reporting conditions

R4.1 **Leak Detection and Repair Program Summary Report**

R4.2 The licensee must submit a brief summary report on the Leak Detection and Repair (LDAR) program with the annual return. The summary report must include, but may not be limited to:

a. The total number of components inspected, as well as the number and percentage of minor, major and significant leaking components found by component types;
b. The type of components and the scale of the leak for any equipment where leaks are found;
c. The emission level of leaking equipment and emission level of re-check after leak was repaired;
d. The repair responses and times as listed in the table below

**Table: Repair Responses and Times**

| Scale of leak (ppmv) | Initial remedial repair in response | Actual repair time |
|---|---|---|
| 1,000 - < 10,000 (Minor) | | |
| >=10,000 - <50,000 (Major) | | |
| >=50,000 (Significant) | | |

R4.3 Where a leak is identified, AGL should aim to have the component repaired as follows:
• Within a period of 14 days if the concentration of the fugitive VOCs emission is greater than or equal to 1,000 parts per million by volume (ppmv) but not more than 10,000 ppmv (minor leak), as methane, above background
• Within a period of 5 days if the concentration of the fugitive VOCs emission is greater than or equal to 10,000 ppmv but not more than 50,000 ppmv (major leak), as methane, above background
• Within a period of one day if the concentration of the fugitive VOCs emission is greater than or equal to 50,000 ppmv (significant leak > 50,000 ppmv), as methane, above background.

R4.4 **Groundwater Monitoring Report**

R4.5 The licensee must supply with the Annual Return a Groundwater Monitoring Report for points 8, 9, 10, 11, 12, 13, 14, and 15 which provides:
(a) an analysis and interpretation of monitoring results and

(b) actions to correct identified adverse trends.

R4.6 **Spatial Information**

R4.7 The licensee must submit to the EPA updated spatial information with the Annual Return when there have been infrastructure changes to the licence as identified in condition A2.1. The information must be provided in an ESRI goedatabase or shapefile format or any ESRI compatibale dataset in GDA94.

# 7 General Conditions

## G1 Copy of licence kept at the premises or plant

G1.1 A copy of this licence must be kept at the premises to which the licence applies.

G1.2 The licence must be produced to any authorised officer of the EPA who asks to see it.

G1.3 The licence must be available for inspection by any employee or agent of the licensee working at the premises.

## G2 Signage

G2.1 The location of EPA point number(s) 1,2,3,4,5,6 and 7 must be clearly marked by signs that indicate the point identification number used in this licence and be located as close as practical to the point.

## G3 Other general conditions

G3.1 **Completed Programs**

| Program | Description | Completed Date |
|---|---|---|
| PRP 1 - Groundwater Attributes for EPA Groundwater Assessment | Groundwater Asessment. By 30 May 2012 the licensee must submit to the EPA Regional Office a report that details all groundwater assessed data for the premises. | 30-May-2012 |
| PRP 2 - Groundwater Monitoring | Groundwater Monitoring. The licensee must prepare and submit for endorsement to the EPA by the 31 July 2012 a Groundwater Management Plan for the premises and any proposed expansion areas | 31-July-2012 |

# Environment Protection Licence

Licence - 12003

| | | |
|---|---|---|
| PRP 3 - Spatial Database | Spatial Database. The licensee must provide to the EPA by 30 January 2012 a spatial layer that details all of coal seam gas infrastructure and gas and water gathering lines associated with Rosalind Park Gas Plant. | 30-January-2012 |
| PRP 4 - Leak Detection and Repair Program (LDAR) | Leak Detection and Repair Program. 1. The licensee must prepare and submit to the EPA by 27 February 2012 a report detailing the existing LDAR program currently implemented at the premises. 2. The licensee must prepare and submit to the EPA by 30 November 2012 a report investigating best management practices and monitoring techniques for the detection and quantification of VOC emissions from premises. | 30-November-2012 |
| PRP 5 - CSG Drilling, Hydraulic Fracturing, Well Workover and Chemical Addition Report | CSG drilling, hydraulic fracturing, well workover and chemical addition best management practice investigation. By 26 March 2012 AGL Upstream Investments must carry out an investigation and provide a written report to the EPA. | 26-March-2012 |
| PRP 6 - Predictive Emissions Monitoring System | Trial a Predictive Emissions Monitoring System for Compressor Engines 2 and 3 for a six month period. Upon completion of the trial the EPA may approve PEMS as the monitoring system for Compressor Engines 2 and 3 subject to conditions of the (EPL). | 31-August-2014 |
| PRP 7 - Predictive Emissions Monitoring System (Stage 2) | The aim of this Program is for the licensee to refine the Predictive Emissions Monitoring System on Compressor Engines 2 and 3 (LDP 2 and 3) respectively. | 14-April-2016 |
| EIP 8 - Gas Well Instrumentation Improvement Program | Installation of 12 volt air compressor to remove potential methane emissions from instrumentation located at each of the gas wells. | 02-June-2016 |
| EIP 9 - Water Storage Improvement Program | AGL will replace a number of current water storage with purpose built pre-fabricated tanks manufactured to AS1692 (tanks for flammable and combustible liquids) and AS1940 (storage of flammable and combustible liquids). | 31-October-2016 |

# Environment Protection Licence

Licence - 12003

## Dictionary

### General Dictionary

| | |
|---|---|
| **3DGM [in relation to a concentration limit]** | Means the three day geometric mean, which is calculated by multiplying the results of the analysis of three samples collected on consecutive days and then taking the cubed root of that amount. Where one or more of the samples is zero or below the detection limit for the analysis, then 1 or the detection limit respectively should be used in place of those samples |
| **Act** | Means the Protection of the Environment Operations Act 1997 |
| **activity** | Means a scheduled or non-scheduled activity within the meaning of the Protection of the Environment Operations Act 1997 |
| **actual load** | Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009 |
| **AM** | Together with a number, means an ambient air monitoring method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*. |
| **AMG** | Australian Map Grid |
| **anniversary date** | The anniversary date is the anniversary each year of the date of issue of the licence. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act. |
| **annual return** | Is defined in R1.1 |
| **Approved Methods Publication** | Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009 |
| **assessable pollutants** | Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009 |
| **BOD** | Means biochemical oxygen demand |
| **CEM** | Together with a number, means a continuous emission monitoring method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*. |
| **COD** | Means chemical oxygen demand |
| **composite sample** | Unless otherwise specifically approved in writing by the EPA, a sample consisting of 24 individual samples collected at hourly intervals and each having an equivalent volume. |
| **cond.** | Means conductivity |
| **environment** | Has the same meaning as in the Protection of the Environment Operations Act 1997 |
| **environment protection legislation** | Has the same meaning as in the Protection of the Environment Administration Act 1991 |
| **EPA** | Means Environment Protection Authority of New South Wales. |
| **fee-based activity classification** | Means the numbered short descriptions in Schedule 1 of the Protection of the Environment Operations (General) Regulation 2009. |
| **general solid waste (non-putrescible)** | Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997 |

# Environment Protection Licence

Licence - 12003

| | |
|---|---|
| **flow weighted composite sample** | Means a sample whose composites are sized in proportion to the flow at each composites time of collection. |
| **general solid waste (putrescible)** | Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environmen t Operations Act 1997 |
| **grab sample** | Means a single sample taken at a point at a single time |
| **hazardous waste** | Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997 |
| **licensee** | Means the licence holder described at the front of this licence |
| **load calculation protocol** | Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009 |
| **local authority** | Has the same meaning as in the Protection of the Environment Operations Act 1997 |
| **material harm** | Has the same meaning as in section 147 Protection of the Environment Operations Act 1997 |
| **MBAS** | Means methylene blue active substances |
| **Minister** | Means the Minister administering the Protection of the Environment Operations Act 1997 |
| **mobile plant** | Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997 |
| **motor vehicle** | Has the same meaning as in the Protection of the Environment Operations Act 1997 |
| **O&G** | Means oil and grease |
| **percentile [in relation to a concentration limit of a sample]** | Means that percentage [eg.50%] of the number of samples taken that must meet the concentration limit specified in the licence for that pollutant over a specified period of time. In this licence, the specified period of time is the Reporting Period unless otherwise stated in this licence. |
| **plant** | Includes all plant within the meaning of the Protection of the Environment Operations Act 1997 as well as motor vehicles. |
| **pollution of waters [or water pollution]** | Has the same meaning as in the Protection of the Environment Operations Act 1997 |
| **premises** | Means the premises described in condition A2.1 |
| **public authority** | Has the same meaning as in the Protection of the Environment Operations Act 1997 |
| **regional office** | Means the relevant EPA office referred to in the Contacting the EPA document accompanying this licence |
| **reporting period** | For the purposes of this licence, the reporting period means the period of 12 months after the issue of the licence, and each subsequent period of 12 mo nths. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act. |
| **restricted solid waste** | Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997 |
| **scheduled activity** | Means an activity listed in Schedule 1 of the Protection of the Environment Operations Act 1997 |
| **special waste** | Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997 |
| **TM** | Together with a number, means a test method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*. |

# Environment Protection Licence

Licence - 12003

| | |
|---|---|
| **TSP** | Means total suspended particles |
| **TSS** | Means total suspended solids |
| **Type 1 substance** | Means the elements antimony, arsenic, cadmium, lead or mercury or any compound containing one or more of those elements |
| **Type 2 substance** | Means the elements beryllium, chromium, cobalt, manganese, nickel, selenium, tin or vanadium or any compound containing one or more of those elements |
| **utilisation area** | Means any area shown as a utilisation area on a map submitted with the application for this licence |
| **waste** | Has the same meaning as in the Protection of the Environment Operations Act 1997 |
| **waste type** | Means liquid, restricted solid waste, general solid waste (putrescible), general solid waste (non - putrescible), special waste or hazardous waste |

Mr Robert Marr

Environment Protection Authority

(By Delegation)

Date of this edition: 22-December-2004

# Environment Protection Licence

Licence - 12003

## End Notes

| | |
|---|---|
| 1 | Licence transferred through application 144297, approved on 20-Jul-2006, which came into effect on 01-Feb-2006. |
| 2 | Licence varied by notice 1064314, issued on 14-Sep-2006, which came into effect on 14-Sep-2006. |
| 3 | Licence varied by correction to DEC catchment record, issued on 15-May-2007, which came into effect on 15-May-2007. |
| 4 | Licence varied by notice 1073749, issued on 19-Jun-2007, which came into effect on 19-Jun-2007. |
| 5 | Licence varied by change to legislation, issued on 05-Jul-2007, which came into effect on 05-Jul-2007. |
| 6 | Licence varied by notice 1076711, issued on 12-Sep-2007, which came into effect on 12-Sep-2007. |
| 7 | Licence varied by notice 1078337, issued on 22-Oct-2007, which came into effect on 22-Oct-2007. |
| 8 | Condition A1.3 Not applicable varied by notice issued on <issue date> which came into effect on <effective date> |
| 9 | Licence varied by notice 1090214, issued on 18-Nov-2008, which came into effect on 18-Nov-2008. |
| 10 | Licence varied by notice 1096297, issued on 21-Jan-2009, which came into effect on 21-Jan-2009. |
| 11 | Licence varied by notice 1105118, issued on 02-Oct-2009, which came into effect on 02-Oct-2009. |
| 12 | Licence varied by notice 1110279, issued on 27-May-2010, which came into effect on 27-May-2010. |
| 13 | Licence varied by notice 1122545, issued on 15-Dec-2010, which came into effect on 15-Dec-2010. |
| 14 | Licence varied by notice 1501788 issued on 01-Nov-2011 |
| 15 | Licence varied by notice 1503210 issued on 22-Dec-2011 |
| 16 | Licence varied by notice 1504429 issued on 16-Feb-2012 |
| 17 | Licence varied by notice 1507776 issued on 13-May-2013 |
| 18 | Licence varied by notice 1517004 issued on 22-Oct-2013 |
| 19 | Licence varied by notice 1518939 issued on 19-Dec-2013 |
| 20 | Licence varied by notice 1522947 issued on 19-Sep-2014 |

# Environment Protection Licence

Licence - 12003

| | |
|---|---|
| 21 | Licence varied by notice 1526141 issued on 13-Nov-2014 |
| 22 | Licence varied by notice 1527147 issued on 16-Dec-2014 |
| 23 | Licence varied by notice 1529286 issued on 31-Mar-2015 |
| 24 | Licence format updated on 10-Apr-2015 |
| 25 | Licence varied by notice 1534008 issued on 28-Sep-2015 |
| 26 | Licence varied by notice 1538424 issued on 23-Mar-2016 |
| 27 | Licence varied by notice 1540924 issued on 16-Jun-2016 |
| 28 | Licence varied by notice 1547193 issued on 01-Dec-2016 |
| 29 | Licence varied by notice 1558481 issued on 14-Dec-2017 |
| 30 | Licence varied by notice 1560094 issued on 21-Dec-2017 |

# Environment Protection Licence

Licence - 12577

| Licence Details | |
|---|---|
| Number: | 12577 |
| Anniversary Date: | 09-October |

**Licensee**

HI-QUALITY ENVIRONMENTAL SERVICES PTY LTD

PO BOX 42

KEMPS CREEK NSW 2171

**Premises**

ROSALIND PARK QUARRY

MEDHURST ROAD

MENANGLE PARK NSW 2563

**Scheduled Activity**

Extractive activities

Resource recovery

| Fee Based Activity | Scale |
|---|---|
| Land-based extractive activity | > 100000-500000 T annual capacity to extract, process or store |
| Recovery of general waste | Any general waste recovered |

**Region**

Metropolitan - Illawarra

Level 3, NSW Govt Offices, 84 Crown Street

WOLLONGONG NSW 2500

Phone: (02) 4224 4100

Fax: (02) 4224 4110

PO Box 513 WOLLONGONG EAST

NSW 2520

# Environment Protection Licence

Licence - 12577

# Environment Protection Licence

Licence - 12577

# Environment Protection Licence

Licence - 12577

## Information about this licence

### Dictionary

A definition of terms used in the licence can be found in the dictionary at the end of this licence.

### Responsibilities of licensee

Separate to the requirements of this licence, general obligations of licensees are set out in the Protection of the Environment Operations Act 1997 ("the Act") and the Regulations made under the Act. These include obligations to:

- ensure persons associated with you comply with this licence, as set out in section 64 of the Act;
- control the pollution of waters and the pollution of air (see for example sections 120 - 132 of the Act);
- report incidents causing or threatening material environmental harm to the environment, as set out in Part 5.7 of the Act.

### Variation of licence conditions

The licence holder can apply to vary the conditions of this licence. An application form for this purpose is available from the EPA.

The EPA may also vary the conditions of the licence at any time by written notice without an application being made.

Where a licence has been granted in relation to development which was assessed under the Environmental Planning and Assessment Act 1979 in accordance with the procedures applying to integrated development, the EPA may not impose conditions which are inconsistent with the development consent conditions until the licence is first reviewed under Part 3.6 of the Act.

### Duration of licence

This licence will remain in force until the licence is surrendered by the licence holder or until it is suspended or revoked by the EPA or the Minister. A licence may only be surrendered with the written approval of the EPA.

### Licence review

The Act requires that the EPA review your licence at least every 5 years after the issue of the licence, as set out in Part 3.6 and Schedule 5 of the Act. You will receive advance notice of the licence review.

### Fees and annual return to be sent to the EPA

For each licence fee period you must pay:

- an administrative fee; and
- a load-based fee (if applicable).

# Environment Protection Licence

Licence - 12577

The EPA publication “A Guide to Licensing” contains information about how to calculate your licence fees. The licence requires that an Annual Return, comprising a Statement of Compliance and a summary of any monitoring required by the licence (including the recording of complaints), be submitted to the EPA. The Annual Return must be submitted within 60 days after the end of each reporting period. See condition R1 regarding the Annual Return reporting requirements.

Usually the licence fee period is the same as the reporting period.

**Transfer of licence**

The licence holder can apply to transfer the licence to another person. An application form for this purpose is available from the EPA.

**Public register and access to monitoring data**

Part 9.5 of the Act requires the EPA to keep a public register of details and decisions of the EPA in relation to, for example:

- licence applications;
- licence conditions and variations;
- statements of compliance;
- load based licensing information; and
- load reduction agreements.

Under s320 of the Act application can be made to the EPA for access to monitoring data which has been submitted to the EPA by licensees.

## This licence is issued to:

| |
|---|
| **HI-QUALITY ENVIRONMENTAL SERVICES PTY LTD** |
| **PO BOX 42** |
| **KEMPS CREEK NSW 2171** |

subject to the conditions which follow.

# Environment Protection Licence

Licence - 12577

## 1 Administrative Conditions

### A1 What the licence authorises and regulates

A1.1 This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation.

Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.

| Scheduled Activity | Fee Based Activity | Scale |
|---|---|---|
| Extractive activities | Land-based extractive activity | > 100000 - 500000 T annual capacity to extract, process or store |
| Resource recovery | Recovery of general waste | Any general waste recovered |

### A2 Premises or plant to which this licence applies

A2.1 The licence applies to the following premises:

| Premises Details |
|---|
| **ROSALIND PARK QUARRY** |
| **MEDHURST ROAD** |
| **MENANGLE PARK** |
| **NSW 2563** |
| **PART LOT 2 DP 622362** |

### A3 Other activities

A3.1 This licence applies to all other activities carried on at the premises, including:

| Ancillary Activity |
|---|
| Crushing, Grinding or Separating Works |

### A4 Information supplied to the EPA

A4.1 Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence.

In this condition the reference to "the licence application" includes a reference to:
a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998;

and
b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.

# 2 Discharges to Air and Water and Applications to Land

## P1 Location of monitoring/discharge points and areas

P1.1 The following utilisation areas referred to in the table below are identified in this licence for the purposes of the monitoring and/or the setting of limits for any application of solids or liquids to the utilisation area.

P1.2 The following points referred to in the table are identified in this licence for the purposes of the monitoring and/or the setting of limits for discharges of pollutants to water from the point.

***Water and land***

| EPA Identification no. | Type of Monitoring Point | Type of Discharge Point | Location Description |
|---|---|---|---|
| 1 | Discharge to waters; effluent quality monitoring | Discharge to waters; effluent quality monitoring | Overflow from Sediment Control labelled as 'Controlled Outlet Existing Gabion Basket RL=75.98' on map titled "Menangle Quarry Soil and Stormwater Management, Medhurst Road, Menangle" dated 24 05 2015 prepared by siteplus. EPA Trim DOC15/146092-03 |

# 3 Limit Conditions

## L1 Pollution of waters

L1.1 Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.

## L2 Waste

L2.1 The licensee must not cause, permit or allow any waste to be received at the premises, except the wastes expressly referred to in the column titled “Waste” and meeting the definition, if any, in the column titled “Description” in the table below.
Any waste received at the premises must only be used for the activities referred to in relation to that waste in the column titled “Activity” in the table below.
Any waste received at the premises is subject to those limits or conditions, if any, referred to in relation to that waste contained in the column titled “Other Limits” in the table below.
This condition does not limit any other conditions in this licence.

| Code | Waste | Description | Activity | Other Limits |
|---|---|---|---|---|
| NA | Concrete, bricks and roof tiles | As outlined in Campbelltown City Council development consent DA:1439/2010/DA-U/B granted on 6 June 2016. | Resource recovery | Crushing and screening of up to 29,000 tonnes (per annum) of brick, tile, concrete and soil within existing sandstone quarry. |

L2.2 Notwithstanding any limit specified in the above table, the licensee shall not exceed the authorised amount specified in this licence. Where the authorised amount is less than the total of all wastes listed above, the authorised amount takes precedent.

L2.3 The authorised amount of waste permitted on the premises cannot exceed 15,000 tonnes at any one time.

L2.4 No acid sulphate soil or potential acid sulphate soil is to be received at the premises.

L2.5 Soil received at the premises must not contain Petroleum Hydrocarbons, Polycyclic aromatic hydrocarbons or Polychlorintated biphenyls.

## L3 Noise limits

L3.1 The level of continuous noise LAeq,T emanating from the operation of the premises must not exceed the background level LA90,T by more than 5dB(A) when measured over a minimum period of 15 minutes at any point within six metres of the nearest affected residence or other noise sensitive areas in the vicinity of the premises, using the “Fast” response on the sound meter.
In the case of any noise which is tonal or impulsive in character, the level of continuous noise LAeq,T from the premises at any point within six metres of any residence or other noise sensitive area in the vicinity of the premises, is obtained by adding 5dB(A) to the measured level.

L3.2 The airblast overpressure level from blasting operations in or on the premises must not exceed:
(a) 115 dB (Lin Peak) for more than 5% of the total number of blasts during each reporting period; and
(b) 120 dB (Lin Peak) at any time.

At any residence or noise sensitive location (such as a school or hospital) that is not owned by the licensee or subject of a private agreement between the owner of the residence or noise sensitivie location and the licensee as to an alternative overpressure level.

L3.3 Ground vibration peak particle velocity from the blasting operations at the premises must not:

(a) Exceed 5mm/s for more than 5% of the total number of blasts over a period of 12 months; and
(b) Exceed 10mm/s at any time,

when measured at any point within 1 metre of any affected residential boundary or other noise sensitive

location such as a school or hospital.

# 4 Operating Conditions

## O1 Activities must be carried out in a competent manner

O1.1 Licensed activities must be carried out in a competent manner.
This includes:
a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and
b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

## O2 Maintenance of plant and equipment

O2.1 All plant and equipment installed at the premises or used in connection with the licensed activity:
a) must be maintained in a proper and efficient condition; and
b) must be operated in a proper and efficient manner.

## O3 Dust

O3.1 The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.

# 5 Monitoring and Recording Conditions

## M1 Monitoring records

M1.1 The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.

M1.2 All records required to be kept by this licence must be:
a) in a legible form, or in a form that can readily be reduced to a legible form;
b) kept for at least 4 years after the monitoring or event to which they relate took place; and
c) produced in a legible form to any authorised officer of the EPA who asks to see them.

M1.3 The following records must be kept in respect of any samples required to be collected for the purposes of this licence:
a) the date(s) on which the sample was taken;
b) the time(s) at which the sample was collected;
c) the point at which the sample was taken; and
d) the name of the person who collected the sample.

# Environment Protection Licence

Licence - 12577

## M2 Requirement to monitor concentration of pollutants discharged

M2.1 For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns:

M2.2 Water and/ or Land Monitoring Requirements

**POINT 1**

| Pollutant | Units of measure | Frequency | Sampling Method |
|---|---|---|---|
| pH | pH | Daily during any discharge | Grab sample |
| Total suspended solids | milligrams per litre | Daily during any discharge | Grab sample |

## M3 Testing methods - concentration limits

M3.1 Subject to any express provision to the contrary in this licence, monitoring for the concentration of a pollutant discharged to waters or applied to a utilisation area must be done in accordance with the Approved Methods Publication unless another method has been approved by the EPA in writing before any tests are conducted.

## M4 Recording of pollution complaints

M4.1 The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.

M4.2 The record must include details of the following:
a) the date and time of the complaint;
b) the method by which the complaint was made;
c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
d) the nature of the complaint;
e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and
f) if no action was taken by the licensee, the reasons why no action was taken.

M4.3 The record of a complaint must be kept for at least 4 years after the complaint was made.

M4.4 The record must be produced to any authorised officer of the EPA who asks to see them.

### M5 Telephone complaints line

M5.1 The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.

M5.2 The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.

M5.3 The preceding two conditions do not apply until 3 months after: the date of the issue of this licence.

## 6 Reporting Conditions

### R1 Annual return documents

R1.1 The licensee must complete and supply to the EPA an Annual Return in the approved form comprising:
1. a Statement of Compliance,
2. a Monitoring and Complaints Summary,
3. a Statement of Compliance - Licence Conditions,
4. a Statement of Compliance - Load based Fee,
5. a Statement of Compliance - Requirement to Prepare Pollution Incident Response Management Plan,
6. a Statement of Compliance - Requirement to Publish Pollution Monitoring Data,
7. a Statement of Compliance - Environmental Management Systems and Practices; and
8. a Statement of Compliance - Environmental Improvement Works.

At the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.

R1.2 An Annual Return must be prepared in respect of each reporting period, except as provided below.

Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.

R1.3 Where this licence is transferred from the licensee to a new licensee:
a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and
b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.

Note: An application to transfer a licence must be made in the approved form for this purpose.

R1.4 Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on:
a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or

b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.

R1.5 The Annual Return for the reporting period must be supplied to the EPA by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').

R1.6 The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.

R1.7 Within the Annual Return, the Statements of Compliance must be certified and the Monitoring and Complaints Summary must be signed by:
a) the licence holder; or
b) by a person approved in writing by the EPA to sign on behalf of the licence holder.

## R2 Notification of environmental harm

Note: The licensee or its employees must notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.

R2.1 Notifications must be made by telephoning the Environment Line service on 131 555.

R2.2 The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.

## R3 Written report

R3.1 Where an authorised officer of the EPA suspects on reasonable grounds that:
a) where this licence applies to premises, an event has occurred at the premises; or
b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence,
and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.

R3.2 The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.

R3.3 The request may require a report which includes any or all of the following information:
a) the cause, time and duration of the event;
b) the type, volume and concentration of every pollutant discharged as a result of the event;
c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event;
d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort;
e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants;

f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and
g) any other relevant matters.

R3.4 The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.

# 7 General Conditions

## G1 Copy of licence kept at the premises or plant

G1.1 A copy of this licence must be kept at the premises to which the licence applies.

G1.2 The licence must be produced to any authorised officer of the EPA who asks to see it.

G1.3 The licence must be available for inspection by any employee or agent of the licensee working at the premises.

## G2 Other general conditions

G2.1 **Completed Programs**

| PRP | Description | Completed Date |
|---|---|---|
| PRP1 - Stormwater Control Investigation | To determine compliance against the EPA guideline: Managing Urban Stormwater - Soils and Construction - Volume 2E Mines and Quarries - June 2008. | 29-May-2015 |

# 8 Special Conditions

## E1 Financial Assurance

E1.1 A financial assurance in the form of an unconditional and irrevocable and on demand guarantee from a bank, building society or credit union operating in Australia as 'Authorised Deposit-taking Institutions' under the *Banking Act 1959* of the Commonwealth of Australia and supervised by the Australian Prudential Regulatory Authority (APRA) must be provided to the EPA by 25 December 2015. The financial assurance must be in favour of the EPA in the amount of fifty thousand dollars ($50,000). The financial assurance is required to secure or guarantee funding for works or programs required by or under this licence.

E1.2 The licensee must provide to the EPA, along with the original counterpart guarantee, confirmation in writing that the financial institution providing the guarantee is subject to supervision by the Australian

Prudential Regulatory Authority (APRA).

E1.3 The financial assurance must contain a term that provides that any money claimed can be paid to the EPA or, at the written direction of the EPA, to any other person.

E1.4 The financial assurance must be maintained during the operation of the facility and thereafter until such time as the EPA is satisfied the premises is environmentally secure.

E1.5 The financial assurance must be replenished by the full amount claimed or realised if the EPA has claimed on or realised the financial assurance or any part of it to undertake a work or program required to be carried out by the licence which has not been undertaken by the licence holder.

E1.6 The EPA may require an increase in the amount of the financial assurance at any time as a result of reassessment of the total likely costs and expenses of rehabilitation of the premises.

E1.7 The licensee must provide to the EPA the original counterpart guarantee with five working days of the issue of the financial assurance required by Condition E1.1.

E1.8 The EPA may claim on a financial assurance under s303 of the POEO Act if a licensee fails to carry out any work or program required to comply with the conditions of this licence.

## E2 Environmental Management Obligations

E2.1 While the licensee's premises are being used for the purpose to which the licence relates, the licensee must:
a) Clean up any spill, leak or other discharge of any waste(s) or other material(s) as soon as practicable after it becomes known to the licensee or to one of the licensee's employees or agents.
b) In the event(s) that any liquid and non-liquid waste(s) is unlawfully deposited on the premises, such waste(s) must be removed and lawfully disposed of as soon as practicable or in accordance with any direction given by the EPA.
c) Provide all monitoring data as required by the conditions of this licence or as directed by the EPA.

E2.2 In the event of an earthquake, storm, fire, flood or any other event where it is reasonable to suspect that a pollution incident has occurred, is occurring or is likely to occur, the licensee (whether or not the premises continue to be used for the purposes to which the licence relates) must:
a) make all efforts to contain all firewater on the licensee's premises,
b) make all efforts to control air pollution from the licensee's premises,
c) make all efforts to contain any discharge, spill or run-off from the licensee's premises,
d) make all efforts to prevent flood water entering the licensee's premises,
e) remediate and rehabilitate any exposed areas of soil and/or waste,
f) lawfully dispose of all liquid and solid waste(s) stored on the premises that is not already securely disposed of,
g) at the request of the EPA monitor groundwater beneath the licensee's premises and its potential to migrate from the licensee's premises,
h) at the request of the EPA monitor surface water leaving the licensee's premises; and
i) ensure the licensee's premises is secure.

# Environment Protection Licence



E2.3 After the licensee's premises cease to be used for the purpose to which the licence relates or in the event that the licensee ceases to carry out the activity that is the subject of this licence, that licensee must:
a) remove and lawfully dispose of all liquid and non-liquid waste stored on the licensee's premises; and
b) rehabilitate the site, including conducting an assessment of and if required remediation of any site contamination.

# Environment Protection Licence

Licence - 12577

## Dictionary

### General Dictionary

| | |
|---|---|
| **3DGM [in relation to a concentration limit]** | Means the three day geometric mean, which is calculated by multiplying the results of the analysis of three samples collected on consecutive days and then taking the cubed root of that amount. Where one or more of the samples is zero or below the detection limit for the analysis, then 1 or the detection limit respectively should be used in place of those samples |
| **Act** | Means the Protection of the Environment Operations Act 1997 |
| **activity** | Means a scheduled or non-scheduled activity within the meaning of the Protection of the Environment Operations Act 1997 |
| **actual load** | Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009 |
| **AM** | Together with a number, means an ambient air monitoring method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*. |
| **AMG** | Australian Map Grid |
| **anniversary date** | The anniversary date is the anniversary each year of the date of issue of the licence. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act. |
| **annual return** | Is defined in R1.1 |
| **Approved Methods Publication** | Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009 |
| **assessable pollutants** | Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009 |
| **BOD** | Means biochemical oxygen demand |
| **CEM** | Together with a number, means a continuous emission monitoring method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*. |
| **COD** | Means chemical oxygen demand |
| **composite sample** | Unless otherwise specifically approved in writing by the EPA, a sample consisting of 24 individual samples collected at hourly intervals and each having an equivalent volume. |
| **cond.** | Means conductivity |
| **environment** | Has the same meaning as in the Protection of the Environment Operations Act 1997 |
| **environment protection legislation** | Has the same meaning as in the Protection of the Environment Administration Act 1991 |
| **EPA** | Means Environment Protection Authority of New South Wales. |
| **fee-based activity classification** | Means the numbered short descriptions in Schedule 1 of the Protection of the Environment Operations (General) Regulation 2009. |
| **general solid waste (non-putrescible)** | Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997 |

# Environment Protection Licence

Licence - 12577

| | |
|---|---|
| **flow weighted composite sample** | Means a sample whose composites are sized in proportion to the flow at each composites time of collection. |
| **general solid waste (putrescible)** | Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environmen t Operations Act 1997 |
| **grab sample** | Means a single sample taken at a point at a single time |
| **hazardous waste** | Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997 |
| **licensee** | Means the licence holder describe d at the front of this licence |
| **load calculation protocol** | Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009 |
| **local authority** | Has the same meaning as in the Protection of the Environment Operations Act 1997 |
| **material harm** | Has the same meaning as in section 147 Protection of the Environment Operations Act 1997 |
| **MBAS** | Means methylene blue active substances |
| **Minister** | Means the Minister administering the Protection of the Environment Operations Act 1997 |
| **mobile plant** | Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997 |
| **motor vehicle** | Has the same meaning as in the Protection of the Environment Operations Act 1997 |
| **O&G** | Means oil and grease |
| **percentile [in relation to a concentration limit of a sample]** | Means that percentage [eg.50%] of the number of samples taken that must meet the concentration limit specified in the licence for that pollutant over a specified period of time. In this licence, the specified period of time is the Reporting Period unless otherwise stated in this licence. |
| **plant** | Includes all plant within the meaning of the Protection of the Environment Operations Act 1997 as well as motor vehicles. |
| **pollution of waters [or water pollution]** | Has the same meaning as in the Protection of the Environment Operations Act 1997 |
| **premises** | Means the premises described in condition A2.1 |
| **public authority** | Has the same meaning as in the Protection of the Environment Operations Act 1997 |
| **regional office** | Means the relevant EPA office referred to in the Contacting the EPA document accompanying this licence |
| **reporting period** | For the purposes of this licence, the reporting period means the period of 12 months after the issue of the licence, and each subsequent period of 12 mo nths. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act. |
| **restricted solid waste** | Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997 |
| **scheduled activity** | Means an activity listed in Schedule 1 of the Protection of the Environment Operations Act 1997 |
| **special waste** | Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997 |
| **TM** | Together with a number, means a test method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*. |

# Environment Protection Licence

Licence - 12577

| | |
|---|---|
| **TSP** | Means total suspended particles |
| **TSS** | Means total suspended solids |
| **Type 1 substance** | Means the elements antimony, arsenic, cadmium, lead or mercury or any compound containing one or more of those elements |
| **Type 2 substance** | Means the elements beryllium, chromium, cobalt, manganese, nickel, selenium, tin or vanadium or any compound containing one or more of those elements |
| **utilisation area** | Means any area shown as a utilisation area on a map submitted with the application for this licence |
| **waste** | Has the same meaning as in the Protection of the Environment Operations Act 1997 |
| **waste type** | Means liquid, restricted solid waste, general solid waste (putrescible), general solid waste (non-putrescible), special waste or hazardous waste |

Mr Dennis Pascall

Environment Protection Authority

(By Delegation)

Date of this edition: 06-October-2006

## End Notes

| | |
|---|---|
| 1 | Condition A1.3 Not applicable varied by notice issued on <issue date> which came into effect on <effective date> |
| 2 | Licence varied by notice 1121913, issued on 11-Mar-2011, which came into effect on 11-Mar-2011. |
| 3 | Licence varied by notice 1504310 issued on 06-Mar-2012 |
| 4 | Licence varied by notice 1518373 issued on 29-Jul-2014 |
| 5 | Licence varied by notice 1530393 issued on 05-May-2015 |
| 6 | Licence varied by notice 1532547 issued on 31-Jul-2015 |
| 7 | Licence varied by notice 1532860 issued on 23-Sep-2015 |
| 8 | Licence varied by notice 1541499 issued on 27-Jun-2016 |

# Appendix E

AGL – Gas Operations Drawing:  Camden Gas Project – Campbelltown LGA, Current AGL Well Heads Drawing Reference No. 3415 dated 14/2/2017

# Camden Gas Project – Campbelltown LGA
# Current AGL Well Heads

Author: Gas Operations

Date: 14/02/2017

Ref: 3415



Kilometres
0 0.5 1
Scale 1:20,000 @A3

Geocentric Datum of Australia 1994

Sources: AGL Energy Limited, Omnilink PSMA Data, SKM

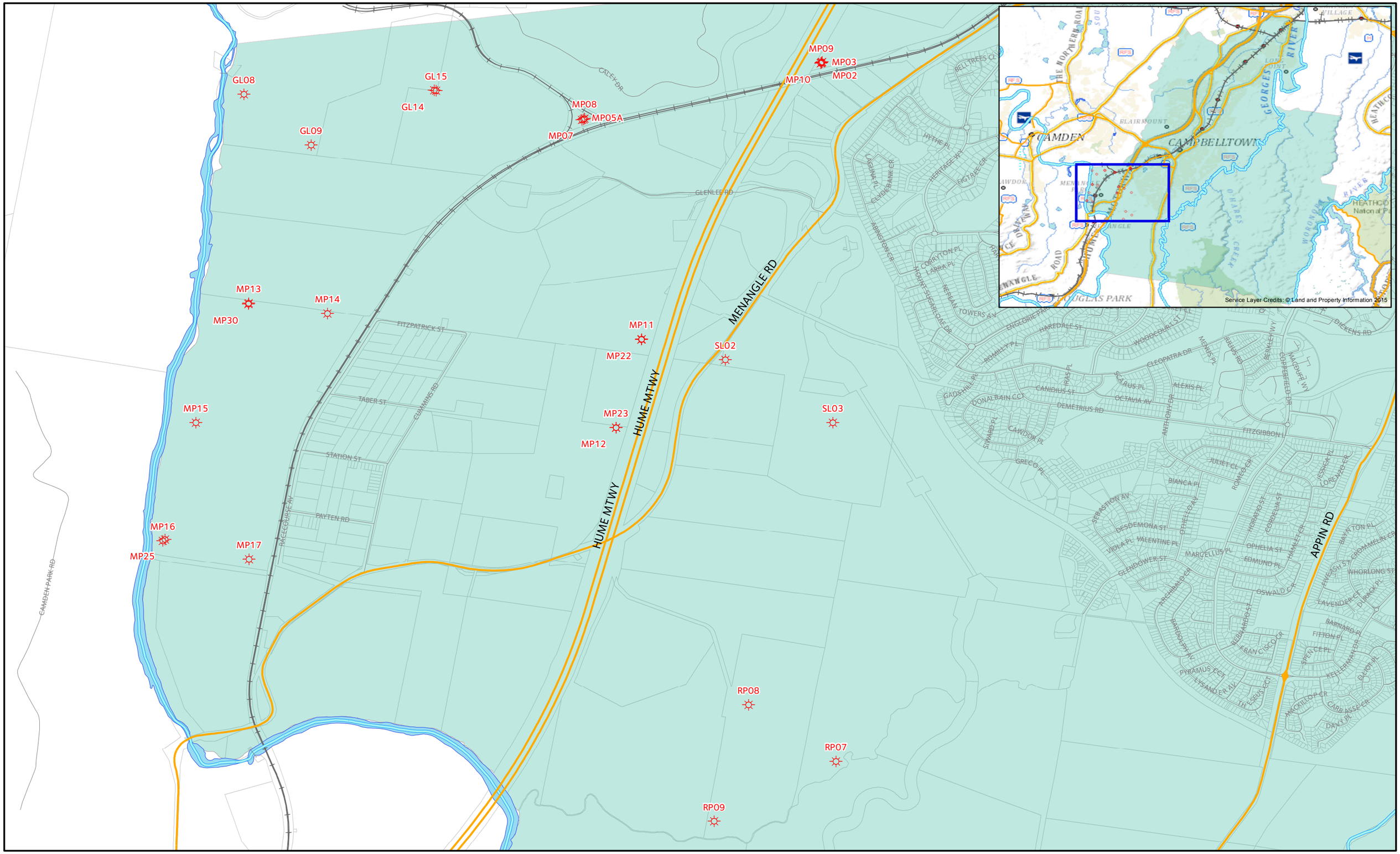
**Legend**

AGL Well Head
- Wells
- Currently being Plug and Abandoned

Roads
Minor Roads
River
Railways

Campbelltown LGA
Cadastre

N




Energy in action.™

AGL

| | |
|---|---|
| Author: | Gas Operations |
| Date: | 14/02/2017 |
| Ref: | 3415 |

# Camden Gas Project – Campbelltown LGA
# AGL Well Heads at completion of Phase 1 Decommissioning Program



Kilometres
0 0.5 1
Scale 1:20,000 @A3

Geocentric Datum of Australia 1994

Sources: AGL Energy Limited, Omnilink PSMA Data, SKM

**Legend**

- AGL Well Heads after Decommissioning
- Wells
- Roads
- Minor Roads
- River
- Railways
- Campbelltown LGA
- Cadastre

N

150°40'0"E 150°42'0"E 150°44'0"E 150°46'0"E

34°4'0"S 34°6'0"S 34°8'0"S

BROWNLOW HILL
GRASMERE
ELDERSLIE
CAMDEN
NARELLAN VALE
BLAIRMOUNT
MOUNT HUNTER
BICKLEY VALE
SPRING FARM
MOUNT ANNAN
CAMPBELLTOWN
CAMDEN SOUTH
CAMDEN PARK
GLEN ALPINE
AMBARVALE
CAWDOR
MENANGLE PARK
ROSEMEADOW
RAZORBACK
MENANGLE
GILEAD

Mount Hunter
Bickley Vale
Cawdor
Camden Park
Menangle Park
Menangle
Razorback
Gilead

Liz Kernohan Drive
Camden Bypass
Springs Road
Burragorang Road
Cawdor Road
Westbrook Road
Elizabeth Macarthur Avenue
Remembrance Driveway
Camden Park Road
South Western Freeway
Menangle Road
Station Street
Moreton Park Road
Woodbridge Road
Finns Road

SF01 SF02 SF03 SF05 SF07 SF08 SF09
GL02 GL04 GL05 GL06 GL07 GL08 GL09 GL11 GL12 GL13 GL14 GL15 GL17
MP01 MP02 MP03 MP05 MP05A MP07 MP08 MP09 MP10 MP11 MP12 MP13 MP14 MP15 MP16 MP17 MP22 MP23 MP25 MP30
SL02 SL03 SL09
EM05 EM06 EM07 EM08 EM09 EM10 EM11 EM12 EM13 EM14 EM15 EM17 EM18 EM19 EM20 EM21 EM22 EM24 EM25 EM27 EM28 EM30 EM31 EM32 EM33 EM34 EM37 EM38 EM39 EM40
MT01 MT02 MT03 MT04 MT06 MT07 MT08
WG01 WG02 WG03 WG04 WG05
RB06 RB07 RB08 RB09 RB10 RB11 RB12
LB06 LB09 LB10 LB11
JD01 JD11
KP01 KP02 KP03 KP05 KP06
RP07 RP08 RP09
RPGP Plant

NEPEAN RIVER
MENANGLE WEIR
WILLIAM HOWE Regional Park
RFS



Author: Gas Operations
Date: 28/11/2018
Ref: 2837R8

# Camden Gas Project
# AGL Well Heads

Kilometres
0 1.25 2.5
Scale 1:40,000 @A3

Geocentric Datum of Australia 1994

Sources: AGL Energy Limited, Omnilink PSMA Data, LPI Imagery



**Legend**

- AGL Well Head
- RPGP
- Towns
- Railway Stations
- Highways
- Roads
- Railways
- Canal
- Waterbody
- Suburb/Locality Boundary

N

# Appendix F

About This Report

# About this Report

Douglas Partners

## Introduction

These notes have been provided to amplify DP's report in regard to classification methods, field procedures and the comments section. Not all are necessarily relevant to all reports.

DP's reports are based on information gained from limited subsurface excavations and sampling, supplemented by knowledge of local geology and experience. For this reason, they must be regarded as interpretive rather than factual documents, limited to some extent by the scope of information on which they rely.

## Copyright



## Borehole and Test Pit Logs

The borehole and test pit logs presented in this report are an engineering and/or geological interpretation of the subsurface conditions, and their reliability will depend to some extent on frequency of sampling and the method of drilling or excavation. Ideally, continuous undisturbed sampling or core drilling will provide the most reliable assessment, but this is not always practicable or possible to justify on economic grounds. In any case the boreholes and test pits represent only a very small sample of the total subsurface profile.

Interpretation of the information and its application to design and construction should therefore take into account the spacing of boreholes or pits, the frequency of sampling, and the possibility of other than 'straight line' variations between the test locations.

## Groundwater

Where groundwater levels are measured in boreholes there are several potential problems, namely:

- In low permeability soils groundwater may enter the hole very slowly or perhaps not at all during the time the hole is left open;
- A localised, perched water table may lead to an erroneous indication of the true water table;
- Water table levels will vary from time to time with seasons or recent weather changes. They may not be the same at the time of construction as are indicated in the report; and
- The use of water or mud as a drilling fluid will mask any groundwater inflow. Water has to be blown out of the hole and drilling mud must first be washed out of the hole if water measurements are to be made.

More reliable measurements can be made by installing standpipes which are read at intervals over several days, or perhaps weeks for low permeability soils. Piezometers, sealed in a particular stratum, may be advisable in low permeability soils or where there may be interference from a perched water table.

## Reports

The report has been prepared by qualified personnel, is based on the information obtained from field and laboratory testing, and has been undertaken to current engineering standards of interpretation and analysis. Where the report has been prepared for a specific design proposal, the information and interpretation may not be relevant if the design proposal is changed. If this happens, DP will be pleased to review the report and the sufficiency of the investigation work.

Every care is taken with the report as it relates to interpretation of subsurface conditions, discussion of geotechnical and environmental aspects, and recommendations or suggestions for design and construction. However, DP cannot always anticipate or assume responsibility for:

- Unexpected variations in ground conditions. The potential for this will depend partly on borehole or pit spacing and sampling frequency;
- Changes in policy or interpretations of policy by statutory authorities; or
- The actions of contractors responding to commercial pressures.

If these occur, DP will be pleased to assist with investigations or advice to resolve the matter.

# *About this Report*

## Site Anomalies

In the event that conditions encountered on site during construction appear to vary from those which were expected from the information contained in the report, DP requests that it be immediately notified. Most problems are much more readily resolved when conditions are exposed rather than at some later stage, well after the event.

## Information for Contractual Purposes

Where information obtained from this report is provided for tendering purposes, it is recommended that all information, including the written report and discussion, be made available. In circumstances where the discussion or comments section is not relevant to the contractual situation, it may be appropriate to prepare a specially edited document. DP would be pleased to assist in this regard and/or to make additional report copies available for contract purposes at a nominal charge.

## Site Inspection

The company will always be pleased to provide engineering inspection services for geotechnical and environmental aspects of work to which this report is related. This could range from a site visit to confirm that conditions exposed are as expected, to full time engineering presence on site.