Proposed Queanbeyan Headquarters Administration Building

Preliminary Site Investigation

For Queanbeyan-Palerang Regional Council

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For Queanbeyan-Palerang Regional Council

Prepared By

Mark Terei
Team Leader Environmental

Reviewed By

Debbie Dewar
Contaminated Land Assessment Specialist

Sydney Office
L13, Tower 2, 475 Victoria Avenue, Chatswood
NSW 2067
PO Box 5340, West Chatswood NSW 1515
Australia

Telephone: +61 2 9325 5600

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Contents

Figures:

Tables:

Executive Summary

Purpose and Objectives

Opus International Consultants (Australia) Pty Ltd (Opus) has been engaged by Queanbeyan-Palerang Regional Council (QPRC) to undertake a Preliminary Site Investigation (PSI) of a parcel of land where construction of a new administration building is proposed at Lowe Street, Queanbeyan, NSW. The objectives of the assessment are to provide:

- A preliminary assessment of site contamination and assesses the need for further investigations;
- Improved clarity and certainty for all stakeholders with regard to the risk and location of contaminated and potentially contaminated land subject of the planning proposal;
- Identification of contaminated land will require further work through a Detailed Site Investigation (DSI);
- Preliminary waste classification of site soils to inform likely constraints and costs associated with earthworks.

Site History Review Findings

A desktop site history review was undertaken to identify previous land uses and any potential sources of any contamination. The site history review identified the following potential areas of concern:

- Uncontrolled fill material potentially used for Site levelling, backfill of service trenches and other purposes; and
- Diffuse impacts from operation of a service station and mechanical workshop adjacent to the Site.

Site Sampling and Analysis

Further investigation of potential contamination was undertaken by way of limited soil sampling. Soil sampling was completed by Opus' qualified Geotechnical Engineer between 28 June – 3 July 2017 in conjunction with site geotechnical investigations and ahead of completion of the site history review. The sampling and analysis was intended to be provide a screening measure to support the desktop findings of the PSI.

Site sampling adopted the following strategy:

- Samples were collected from 11 of the 13 boreholes drilled. Opus had not been engaged to undertake a PSI or soil sampling when boreholes BH5 and BH11 were drilled.
- A systematic sampling pattern was adopted to provide broad coverage of the site.
- Soil sampling was generally focussed on the upper 2 m of the site soil profile where contamination was considered most likely ahead of any PSI findings.
- Sampling also focussed on fill material as a potential contaminant source.
- Additional samples were collected where hydrocarbon odours were noted by the geotechnical engineer completing investigations.

Thirteen samples were selected for laboratory analysis to provide broad coverage of the Site and target identified potential areas of concern. All samples were submitted to a NATA certified laboratory and analysed for a broad suite of potential chemicals of concern.

Soil Analysis Results

One sample result (BH4/6.5 m) exceeded the ecological screening level (ESL) for F2 (C_{10} – C_{16}) (diesel range) hydrocarbons concentration. This was the deepest sample collected from site, and therefore closest to the water table at approximately 7.0 m depth. This sample was also noted to have strong hydrocarbon odour as noted on the borehole logs.

All other sample results were within the adopted NEPM commercial/industrial land use assessment criteria for the contaminants analysed in this PSI.

Discussion

The F2 hydrocarbon result (280 mg/kg) is marginally above ecological screening guidelines (170 mg/kg). While local terrestrial and aquatic ecosystems are generally of low value given the urban setting, the main concern is that contamination at this depth has not been adequately assessed and higher concentrations may be present, especially nearer to the adjacent service station site and in groundwater. As part of the limited soil sampling conducted for the PSI, only one sample was collected at this depth. Until the hydrocarbon odour was detected, and while one basement level was previously proposed, testing at such depth was not previously warranted.

Recommendations

Based on the above assessment, it is recommended that a Detailed Site Investigation (DSI) be undertaken comprising additional soil sampling at around 6.5 – 7.0 m depth nearer to the adjacent mechanical workshop and service station properties, and groundwater sampling.

One of the two existing piezometers is likely already well placed for groundwater sampling. Two additional piezometers are likely required to be installed to focus on the area around the service station and workshop. Soil sampling during drilling of these two additional piezometers would suitably satisfy the recommendation for additional soil assessment.

The benefits and reasons for undertaking these additional investigations (a Detailed Site Investigation) are understanding:

- Groundwater quality ahead of proposed dewatering;
- Risk of hydrocarbon vapour intrusion (and potentially corrosion and other impacts) on the proposed building and associated underground services;
- Potential disposal costs of contaminated soil at the deeper depths of proposed excavation; and
- Potential worker health and safety issues during excavation if there are areas of higher hydrocarbon readings.

Conversely, additional data points may reveal a low risk requiring negligible mitigation or management measures.

As the site history review has not identified a likely cause of hydrocarbon contamination stemming from within the site boundaries, entering dialogue with the adjacent service station operator is also recommended. Obtaining their underground tank monitoring records will be relevant, and they may be able to assist with other input to the DSI.

1 Introduction

1.1 Background

Opus International Consultants (Australia) Pty Ltd (Opus) has been engaged by Queanbeyan-Palerang Regional Council (QPRC) to undertake a Preliminary Site Investigation (PSI) of a parcel of land where construction of a new administration building is proposed at Lowe Street, Queanbeyan, NSW. The objectives of the assessment are to provide:

- A preliminary assessment of site contamination and assesses the need for further investigations;
- Improved clarity and certainty for all stakeholders with regard to the risk and location of contaminated and potentially contaminated land subject of the planning proposal;
- Identification of contaminated land will require further work through a Detailed Site Investigation (DSI);
- Preliminary waste classification of site soils to inform likely constraints and costs associated with earthworks.

The investigation includes a desktop review of land use and site history, supplemented by limited soil sampling and analysis.

1.2 Details of Proposed Development

The old Queanbeyan City Council (QCC) administration building located at 257 Crawford Street Queanbeyan is a two-story structure first built in 1973, extended in 1976 and again in 1996. The existing fit out is no longer suitable for use and does not meet current standards and requirements of QPRC.

Council is seeking to reinvigorate the central business district of Queanbeyan through the redevelopment of this precinct. QPRC has an architect to prepare a concept design for the new Queanbeyan Headquarters (QHQ) administration building site. It is envisaged the project will result in a five storey building with two basement car park levels which may extend to the area west of The Q theatre.

Concept plans for the proposed QHQ are provided in Appendix I.

1.3 Legislative Context

1.3.1 Site Contamination

Clause 7(1) of State Environment Planning Policy No 55 – Remediation of Land (SEPP 55) states that:

> *"(1) A consent authority must not consent to the carrying out of any development on land unless:*
>
> *(a) it has considered whether the land is contaminated, and*
>
> *(b) if the land is contaminated, it is satisfied that the land is suitable in its contaminated state (or will be suitable, after remediation) for the purpose for which the development is proposed to be carried out, and*
>
> *(c) if the land requires remediation to be made suitable for the purpose for which the development is proposed to be carried out, it is satisfied that the land will be remediated before the land is used for that purpose.*

(2) Before determining an application for consent to carry out development that would involve a change of use on any of the land specified in subclause (4), the consent authority must consider a report specifying the findings of a preliminary investigation of the land concerned carried out in accordance with the contaminated land planning guidelines.

(3) The applicant for development consent must carry out the investigation required by subclause (2) and must provide a report on it to the consent authority. The consent authority may require the applicant to carry out, and provide a report on, a detailed investigation (as referred to in the contaminated land planning guidelines) if it considers that the findings of the preliminary investigation warrant such an investigation."

This Preliminary Site Investigation has been prepared to address SEPP 55 requirements and in accordance with the following legislation and guidelines:

- *Contaminated Land Management Act 1997;*
- The *National Environment Protection (Assessment of Site Contamination) Measure 1999* (NEPC, 2013),
- *Managing Land Contamination Planning Guidelines* (NSW DUAP and EPA, 1998),
- *Sampling Design Guidelines* (NSW EPA, 1995)*;* and
- *Guidelines for Consultants Reporting on Contaminated Sites* (NSW OEH, 2011).

1.3.2 Waste Classification

To comply with the waste legislation, those who generate waste are responsible for classifying their waste into one of six waste classes defined by clause 49 of Schedule 1 of the *Protection of the Environment Operations Act 1997* (POEO Act). Classifying wastes into groups that pose similar risks to the environment and human health facilitates their management and appropriate disposal. Waste can only be taken to, and accepted at, a waste facility which is lawfully authorised to receive, re-use and/or dispose of that classification or type of waste.

To help waste generators classify the wastes they produce, the NSW Environment Protection Authority (EPA) has developed the *Waste Classification Guidelines Part 1: Classifying waste (2014)*.

The POEO Act also defines virgin excavated natural material (VENM) as a waste that has been pre-classified as general solid waste (non-putrescible).

1.4 Scope of Works

This Preliminary Site Investigation includes:

- A description of site conditions and surrounding environment;
- Site inspection observations;
- Site history review;
- Identification of potential sources of contamination and potential contaminants of concern;
- Limited soil sampling and analysis with reference to the *National Environment Protection (Assessment of Site Contamination) Measure 1999* (NEPC, 2013)*;*
- A preliminary assessment of site contamination risk;
- Conclusions about the suitability of the site for the proposed use and the need for further investigations; and
- Preliminary waste classification of soils associated with proposed site works with reference to *Waste Classification Guidelines Part 1: Classifying waste* (NSW EPA, 2014).

2 Site Details

2.1 Site Identification

The QHQ redevelopment project site is located off Lowe Street in Queanbeyan's central business district. For the purposes of this Preliminary Site Investigation, the study area, or 'Site', consists of four land parcels at 48 and 50 Lowe Street:

- Lot 4 DP 745806;
- Lot 4 DP 251076;
- Lot 5 DP 1179998;
- Lot 1 DP 748338; and
- Local Roads, as shown in Figure 2-1. A site plan is also provided in Appendix II.

Figure 2-1: Study area (shaded) (source: NSW LPI Six Maps).

The Site is located adjacent to an operating service station and former mechanics garage at 46 and 48 Lowe Street, respectively. Other adjoining premises include Queanbeyan Performing Arts Centre, Queanbeyan Bicentennial Hall, Queanbeyan City Library, a dentist, real estate agent and bottle shop premises.

Site location in a local context is shown in Figure 2-2 and relevant site details are summarised in Table 1.

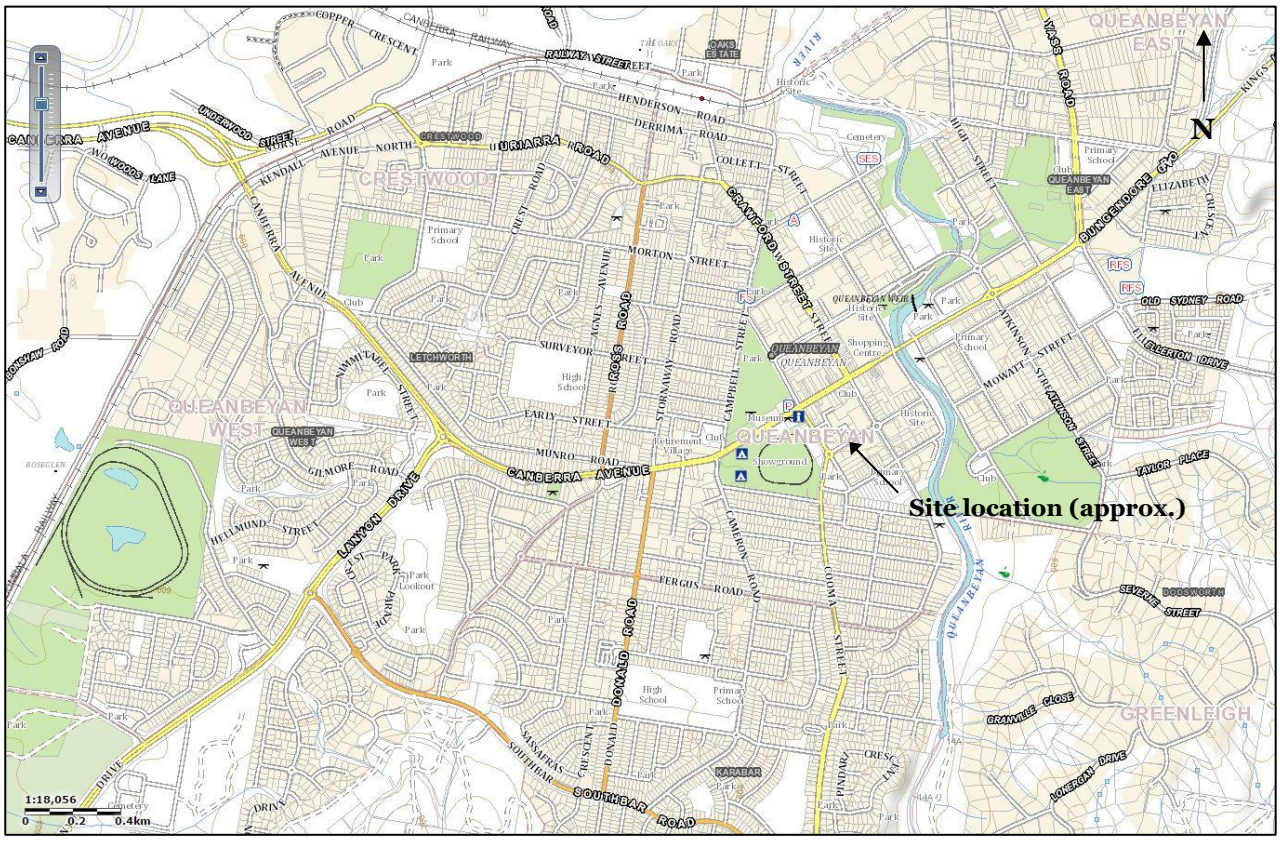
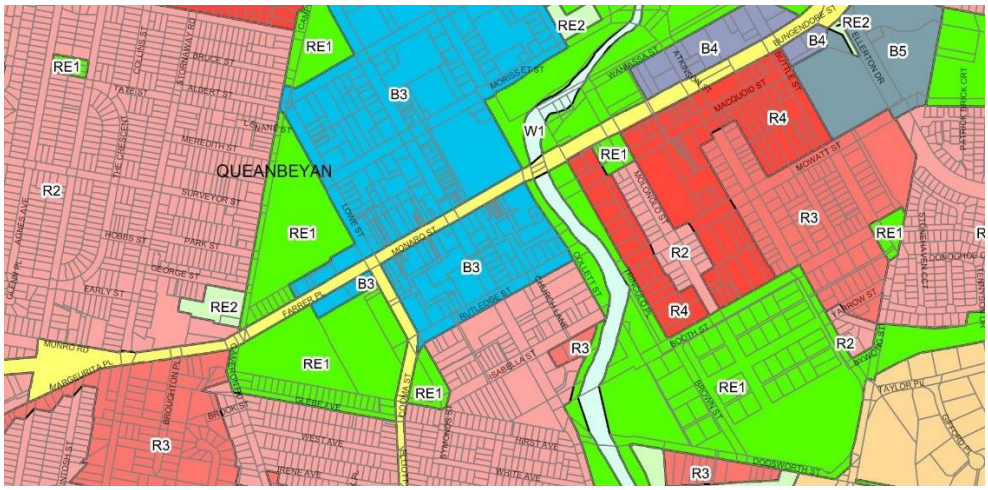


Figure 2-2: Site location in local context (source: NSW LPI Six Maps)

Table 1: Site details

Aspect	Description
Site Owner	• Mr Paul Anthony Job and Mrs Margaret Job (Lot 4 DP 745806) (disused mechanical workshop) • Queanbeyan-Palerang Regional Council (QPRC) (all other lots)
Site Area	Approx. 8,311 m² as shown in Figure 2-1.
Local Government Area	Queanbeyan-Palerang Regional Council

Aspect	Description
Zoning	The subject site and all other properties situated between the boundaries of Lowe Street, Crawford Street, Monaro Street and Rutledge Street are zoned *B2 – Commercial Core* according to *Queanbeyan Local Environmental Plan 2012* (LEP). The stated objectives of B3 Commercial Core are: • To provide a wide range of retail, business, office, entertainment, community and other suitable land uses that serve the needs of the local and wider community. • To encourage appropriate employment opportunities in accessible locations. • To maximise public transport patronage and encourage walking and cycling. • To recognise the Queanbeyan central business district as the main commercial and retail centre of Queanbeyan and to reinforce its commercial and retail primacy in Queanbeyan. • To encourage some high density residential uses in conjunction with retail or employment uses where appropriate. Land zoning across the wider area can be seen in Figure 2-3 below.  **Figure 2-3: Local land zoning (source: Queanbeyan LEP 2012).**
Site Features	The Site is mostly a Council owned and operated asphalt and concrete sealed public car park, and through roads. A disused mechanical workshop is also included within the subject site in the west fronting Lowe Street (Lot 4 DP 745806).
Surrounding Environment	Adjoining premises are a mix of commercial and community services, including: • BP service station • Queanbeyan Performing Arts Centre • Queanbeyan City Council (QCC) administration building • Queanbeyan Bicentennial Hall • Queanbeyan City Library • Senior Citizens Centre • Dentist, real estate agent, hotel and bottle shop, salon and barbers, podiatry, tax agents, takeaway food, cafe and gallery, bank Residential housing adjoins the site in the south-west and north-east.
Existing Land Use	Public car park
Proposed Land Use	Commercial and offices
Topography	The site is situated on the plains approximately 300 m west of Queanbeyan River at approximately 575 m (AHD) elevation. Local grades are very low (<5%).

Aspect	Description
Soils and geology	The Geology of Canberra, Queanbeyan, and Surrounds 1:100,000 map (Sheet 8727, 1st edition, 1992) infers the site is underlain by the middle to late Ordovician bedrock of the Pittman Formation; described as comprising interbedded sandstone, siltstone, shale and minor black shale, chert and impure calcareous sandstone. Site geotechnical investigations completed by Opus concurrently with this PSI encountered variable Quaternary alluvial soil underlain by siltstone and sandstone bedrock at approximately 3 – 12 m, sloping towards the north-east. The geotechnical report (Opus, July 2017[1]) divided alluvium into upper alluvium and lower alluvium: • Upper alluvium: silty clays, silts and some sand layers. The silts and clays are of medium to high plasticity and typically very stiff to hard consistency, with some firm to stiff layers. • Lower alluvium: sandy gravel, cobbles and sand. Typically medium dense, with some loose or dense layers. Fill material overlying natural alluvium includes granular pavement subbase material (gravels) and re-worked natural material. A stormwater pipe (approximately 2.4 m diameter) is orientated east-west through the centre of the site, as shown on the site sampling plan (Appendix II). There some areas adjacent to the stormwater line which has localised deeper fill, although this is expected to be excavated and recompacted natural materials. One exception to this is gravel around the obvert level of the stormwater pipe. Borehole logs are included in Appendix VIII.
Groundwater	A search of the NSW Office of Water Groundwater Bores online mapping shows three existing bores within 600 m of the subject site. They were drilled during 2007 and 2008 and recorded standing water levels of 4 m, 6 m and 12 m depth below ground level (bgl). The intended purpose recorded for all three bores was 'Recreational'. Two groundwater monitoring piezometers were installed as part of the PSI site investigations undertaken between 28 June and 3 July 2017 (see Section 4.3 for further details). The piezometers were dipped to obtain groundwater level 19 July 2017 and standing water level was found to be 6.9 m bgl at BH2 and 7.1 m bgl at BH7.
Flooding	The Site is not within the 100 year Average Recurrence Interval (ARI) +0.5 m flood extent (Queanbeyan LEP 2012)
Acid Sulfate Soils	Not applicable (Queanbeyan LEP 2012). Site elevation is approximately 575 m AHD.
Naturally Occurring Asbestos	Not identified as a constraint (NSW Trade and Investment mapping).

[1] *Geotechnical Investigation Report: New QPRC Administration Building* (Opus International Consultants Pty Ltd (Australia) on behalf of Quenabeyan-Palerang Regional Council, July 2017).

2.2 Site Inspection

A site inspection was completed by Opus' qualified Geotechnical Engineer between 28 June – 3 July 2017, including completion of 13 investigative boreholes, soil sampling and installation of two groundwater monitoring piezometers. The study area was generally observed to be typical of a sealed public car park with site features and adjoining properties as described in Table 1.

The site inspection identified the following potentially contaminating land uses in the west of the site, based on activity type only:

- A disused mechanical workshop at 48 Lowe Street; and a
- Service station at 46 Lowe Street, adjoining the site.

Ground beneath these areas could not be further investigated within the scope of this Preliminary Site Investigation and due to access constraints (private property access to service station and workshop).

No other visible evidence of potential site contamination was observed during the site inspections. However, hydrocarbon odour was noted in three boreholes during drilling undertaken for this PSI and a concurrent geotechnical investigation (Opus, 2017) (BH2, BH4, BH5). Soil sampling is further described in Section 4.3.

3 Site History Review

3.1 Method

A desktop site history review was undertaken to identify previous land uses and any potential sources of contamination. The desktop site history review included collating information from the following sources:

- Review of previous relevant local environmental studies;
- Council Development Application (DA) records;
- Section 149 property certificates;
- Historical aerial photographs;
- Historical land title records; and
- NSW EPA contaminated land records and Environmental Protection Licence register.

The findings of the site history review are outlined below.

3.2 Review of Previous Nearby Studies

QPRC made available two reports prepared in relation to the then proposed and now existing Queanbeyan performing arts centre, which adjoins the current site in the east:

- Geotechnical Investigation report (Rogers & Jefferis Pty Ltd, July 2004); and
- Statement of Environmental Effects (Maunsell Australia Pty Ltd, September 2005).

The geotechnical report noted fill material comprised of gravelly sand clayey sand, sandy clay, sedimentary gravel and trace brick pieces typically to maximum 1.0 m depth below ground level but up to 2.8 m depth at one borehole location, underlain by trench backfill to greater than 4.0 m depth. It was presumed that at this location the borehole was drilled through a backfilled service trench, but the type and alignment was unknown.

The Statement of Environmental Effects noted that:

Comprehensive records detailing the previous land use history of the site are unavailable. However, it has been ascertained from discussions with Council employees a petrol filling station and workshop was located opposite the site in Crawford Street. In addition, the properties fronting Rutledge Street were subdivided into long narrow blocks which may have affected the site with parking stationary motor vehicles and the like.

These previous studies highlight two potential historical contamination risks that may affect the current Site under investigation:

- Uncontrolled fill of unknown origin placed across the Site, especially around service trenches; and

- Diffuse impacts from operation of a service station and mechanical workshop adjacent to the Site.

  It is presumed that the Statement of Environmental Effects was referring to the existing service station and workshop located along Lowe Street, rather than Crawford Street). Any service station or workshop previously located on the east side of Crawford Street is considered unlikely to have impacted the current Site, being at more than 70 m separation.

3.3 Council Development Application (DA) Records

QPRC's online Property Enquiry service was used to search for current and historical DAs associated with the four land parcels encompassing the subject Site. Only one record was available for Lowe Street Carpark (50 Lowe Street) property, being:

- DA 394 – 2005 for: New cultural civic centre (Approved) (Appendix III).

Opus also requested DA records from Queanbeyan-Palerang Regional Council (email, 10/07/2017) in case of any additional records being available offline, however none were available.

3.4 Section 149(2) Planning Certificates

Planning Certificates issued under Section 149 of the *Environmental Planning and Assessment Act 1979* address land contamination as required by Section 59 (2) of the *Contaminated Land Management Act 1997*.

Four S149 Planning Certificates were obtained covering the following properties:

- 2 Monaro Street (PT LOT 1 DP 745806, PT LOT 2 DP 745806);
- 46 Lowe Street (LOT 3 DP 745806, PT LOT 1 DP 745806, PT LOT 2 DP 745806);
- 48 Lowe Street (LOT 4 DP 745806);
- Lowe Street Carpark, 50 Lowe Street (LOT 1 DP 748338, LOT 4 DP 251076, LOT 7 DP 251076, LOT 5 DP 1179998);
- 52 Lowe Street (LOT 30 DP 552260); and
- Conference Centre, 253 Crawford Street (LOT 1 DP 1179998).

The advice under Item 7 of all certificates is that:

As at the date of the Certificate this land has not been assessed by Council either by considering its past use or the results from systematic testing. Accordingly, it is not known whether or not consideration of Clause 2.4 – Contaminated Land Management of Queanbeyan Development Control Plan 2012 and the application of provisions under relevant State Legislation is warranted.

Full copies of the certificates are included in Appendix IV.

3.5 Historical Aerial Photographs

A series of historical aerial photographs covering the Site area were obtained from NSW Land and Property Information (LPI) Map Sales service to identify previous land uses where possible. A summary of observations is included in Table 2 and copies of the photographs are included in Appendix V.

The photographs indicate that the service station and garage adjacent to the Site along Lowe Street is likely to have been established by 1985, if not before 1968 or earlier.

The photographs do not identify any other past site activities that represent a significant potential source of direct contamination, or any activities having taken place on adjacent properties that is likely to represent a risk from diffuse contamination or contaminant migration.

Table 2: Summary of observations from historical aerial photographs.

Date	Description
1944	The Site appears to be comprised of elongated residential allotments and their yard areas.
1961	The subject site appears to be used partly as a thoroughfare, and other portions of the site appear to be open space. A building or shed is evident in the north-east of the study area. Immediately adjacent land use is estimated to be similar to current day use, with commercial buildings to the west, residential adjoining the southern Site boundary, and perhaps even the same buildings in the south-west corner of the site along Lowe Street (whether or not these are used as a garage or service station cannot be determined at this time). It appears likely that the opposite property across Lowe Street is used as a church and school grounds, based on comparative building outlines.
1968	Elongated residential lots are evident in the east of the study area, with their yard areas extending onto the study site. As per 1961, land use adjoining the southern site boundary appears residential. Other site and surrounding land use is generally indeterminant from the aerial photo, although the north-western corner appears to be open parking area at this stage.
1976	Site layout and adjoining land use appears similar to current use, with open space predominating (perhaps for car parking or other use). The performing arts centre space is not built upon at his time, however. The Queanbeyan Bicentennial Hall is evident. There are three residential lots apparent across Lot 31 DP 771673 and SP 12593, which are today used for commercial buildings (dentist, real estate, library).
1985	Marked car spaces are seen across the site. Adjoining land uses appear almost identical to that observed today, based on building footprints and roof styles, including the Bicentennial Hall, garage and service station in the west, and office buildings along Monaro Street. A roadway exiting the parking area to Rutledge Street is not evident at this stage, nor is the performing arts centre.
1992	Site and adjoining land use appears very similar to that observed currently, minus the performing arts centre which is used for car parking at this time. Site features shown in the aerial photo are consistent with observations made during site inspection (28 June – 3 July 2017).
2005	Site and adjoining land use appears very similar to that observed currently, minus the performing arts centre which is used for car parking at this time. Site features shown in the aerial photo are consistent with observations made during site inspection (28 June – 3 July 2017).
2014	The aerial photo is consistent with observations made during a site inspection (28 June – 3 July 2017).

3.6 Historical Land Title Search

Thirteen historical land title documents were obtained from a search of NSW Land and Property Information (LPI) records. A summary of the information available is included in Table 3 and copies of the documents are included in Appendix VI.

The land title documents reveal historic land use including residential, garage, Council chambers and fire station. Apart from the garage shown on a 1976 plan, which is considered to represent a low contamination risk, no past site activities that represent a significant potential source of contamination are identified.

Table 3: Historical land title information.

Lot	Prior Titles
Lot 4 DP 745806	CA25000: old deeds system
Lot 4 DP 251076	2344-29 (1913): Plans indicate several buildings situated in the front half of the property (towards Monaro Street). No buildings are shown on adjacent lots. 10220-208 (1966): Plans show a small cottage on the property and drainage (sewer). No buildings are shown on adjacent lots. 13090-115 (1976): Plans show a brick building and surgery fronting Monaro Street, but no buildings at the rear within the study area. A garage building (likely non-commercial based on building footprint) is shown on the east boundary of DP 541273.
Lot 5 DP 1179998	2848-174 (1918): Plans show the lot extending east to Crawford Street and note Council chambers on the adjacent lot to the north and a non-descript building on the adjacent lot south. The subject lot land use is unclear. 5234-106 (1941): Covers the lot immediately west of title 5220-121. Transfer of title document. Land use is unclear. 5220-121 (1941): Transfer of title document. Land use is unclear. 5374-7 (1943): Transfer of title document. Land use is unclear. 6463-127 (1952): As per 6571-67 below. 6571-67 (1952): Documents and plans indicate residential use of the property at the corner of Rutledge Street and Crawford Street. 11996-236 (1972): Plans show substantial subdivision of property at the corner of Crawford Street and Rutledge Street since 1952. A brick cottage and drainage (sewer) are shown on the property fronting Rutledge Street. Otherwise the plans do not indicate local land use. 11996-237 (1972): As per 11996-237 above. 12583-43 (1974): Plans show Queanbeyan Fire Station and a brick cottage on the property fronting Crawford Street. No other relevant features shown. 12583-44 (1974): As per 12583-43 above.
Lot 1 DP 748338	CA43691: old deeds system

3.7 Public Environmental Registers

A range of public environmental registers were searched to identify any contaminated land records relevant to the Site. A summary of the results is included in Table 4 and copies of the completed searches are included in Appendix VII.

The records do not identify any contamination at the Site, or at adjacent properties that is likely to represent a risk from diffuse contamination or contaminant migration.

Table 4: Summary of public environmental register search results.

Register	Register Details	Results
Queanbeyan-Palerang Regional Council contaminated land records	Information about any known local contaminated land.	No information made available following email enquiry to QPRC 20/07/2017.
List of NSW contaminated sites notified to EPA	The sites appearing on this list indicate that the notifiers consider that the sites are contaminated and warrant reporting to EPA. However, the contamination may or may not be significant enough to warrant regulation by the EPA. The EPA needs to review and, if necessary, obtain more information before it can make a determination as to whether the site warrants regulation.	Accessed 25/07/2017. 9 sites listed within the suburb of Queanbeyan; none related to or within proximity to the subject Site.
NSW EPA Contaminated Land Record	The record provides a record of written notices issued by EPA under the *Contaminated Land Management Act 1997*, including preliminary investigation orders.	Accessed 25/07/2017. No records within the Queanbeyan City Council LGA.
NSW EPA POEO Act Public Register	The Register contains information about environment protection licences, licence applications, notices issued under the POEO Act and pollution studies and reduction programs.	Searched 12/07/2017. 42 records listed within the suburb of Queanbeyan; none related to or within proximity to the subject Site.
SafeWork NSW Hazardous Chemicals Notifications	If a site owner or operator stores, handles or processes Schedule 11 hazardous chemicals (dangerous goods) that exceed the quantities specified in the legislation, they must notify SafeWork NSW. SafeWork NSW can search these records to see if there are any hazardous chemicals on a premises (and where on the site they can be found).	A search of the records held by SafeWork NSW has not located any records pertaining to the Site.

Register	Register Details	Results
UPSS monitoring records	Underground Petroleum Storage System (UPSS) operators are required to undertake environmental monitoring as part of their obligations operating under the *Protection of the Environment Operations (Underground Petroleum Storage Systems) Regulation 2014*. Monitoring records for the UPSS at the BP service station site on Lowe Street were requested from NSW EPA (email 11/07/2017).	NSW EPA replied: *the EPA does not have any groundwater monitoring or wetstock reconciliation records for this site. Generally we only have these records for problematic sites in response to a pollution incidents. Council will have to request this information directly from the site or business owner.*

3.8 Anecdotal Information

No site history information additional to that reported in sections above was provided by QPRC.

3.9 Site Characterisation – Potential Sources of Contamination

Based on the site inspection and site history review, potential sources of contamination and associated key indicator chemicals of concern identified within the Site are detailed in Table 5.

The adopted risk level is based on a qualitative combination of likelihood, severity and impact to project (building construction) on ongoing use (commercial and offices).

Additional investigations by way of limited soil sampling (Section 4) targeted these potential sources of contamination.

Table 5: Site Characterisation.

Area of Concern	Potential Sources of Contamination	Key Indicator Chemicals of Concern[1]	Qualitative Risk Level
Site-wide	Uncontrolled fill material of unknown origin potentially used for Site levelling, backfill of service trenches and other purposes.	Heavy metals/metalloids, low or high pH, sodium, hydrocarbons, BTEX, asbestos	Low
	Diffuse impacts from operation of a service station and mechanical workshop adjacent to the Site	Petroleum hydrocarbons, heavy metals (lead), solvents	Low

Notes: [1] From *Managing Land Contamination Planning Guidelines* (NSW DUAP and EPA, 1998). Key indicator chemicals have been summarised and the list is not exhaustive. Asbestos has been excluded from sampling based on site observations (intrusive investigations did not note any signs of asbestos (see Section 2.2)).

4 Site Sampling and Analysis

4.1 Data Quality Objectives

Data quality objectives (DQOs) for the PSI are to provide:

- A risk assessment of potential site contamination to support project environmental approvals; and
- Preliminary waste classification advice to inform construction planning (e.g. soil re-use opportunity).

4.2 Site Sampling Plan

Further investigation of potential contamination was undertaken by way of limited soil sampling. Sampling was undertaken in conjunction with site geotechnical investigations and ahead of completion of the site history review. The sampling and analysis was intended to be provide a screening measure to support the desktop findings of the PSI.

Site sampling adopted the following strategy:

- Samples were collected from 11 of the 13 boreholes drilled. Opus had not been engaged to undertake a PSI or soil sampling when BH5 and BH11 were drilled. Eleven sampling locations is considered reasonable for site screening purposes based on NSW EPA *Sampling Design Guidelines* (1995).
- A systematic sampling pattern was adopted to provide broad coverage of the site.
- Soil sampling was generally focussed on the upper 2 m of the site soil profile where contamination was considered most likely ahead of any PSI findings.
- Sampling also focussed on fill material as a potential contaminant source.
- Additional samples were collected where hydrocarbon odours were noted by the geotechnical engineer completing investigations.

Borehole locations are shown on a Site Plan (Appendix II) and borehole logs are in Appendix VIII.

4.3 Sampling Methods

Soil sampling was completed by Opus' qualified Geotechnical Engineer between 28 June – 3 July 2017.

Boreholes drilling was completed using a 4x4 Hydra-power truck mounted drilling rig, supplied by Nealings Drilling. Soils were drilled using auger or rotary drilling methods as was appropriate for the conditions.

Two of the boreholes (BH2 and BH7) were completed as groundwater monitoring wells, which comprised a combination of slotted and blank PVC casing, with generally 6 m of slotted PVC from the base of the borehole, extended to the surface using blank PVC casing. The annulus between the PVC casing and the well bore was filled with graded sand and bentonite. A steel gatic cover was set in concrete at the surface to protect the groundwater monitoring well installation, set flush with the existing pavement surface.

Equipment was cleaned between each sampling location and samples were collected in laboratory-provided sealed 250 mL glass jars using a small trowel or by hand using disposable nitrile gloves. The samples were stored in a chilled cooler box prior and during transport to the laboratory under standard Opus chain of custody procedures.

The engineering borehole logs are presented in Appendix VIII.

4.4 Sample Selection and Analysis

Thirteen samples were selected for laboratory analysis to provide broad coverage of the Site and target identified potential areas of concern (see Section 4.2).

All samples were submitted to a NATA certified laboratory (*Envirolab*, Sydney) using a Chain of Custody tracking form (Appendix IX) and analysed for a broad suite of potential chemicals of concern based on site inspection observations.

A summary of completed site sampling and laboratory analysis is provided in Table 6. Samples that do not indicate analysis were placed on hold at the laboratory.

Table 6: Sample selection and analysis details.

BH	Sample Depth (m BGL)	Analysis	
		Combo 3[1]	Combo 5[2]
BH1	0.1		X
	0.5		X
	1.0		
	1.5		
BH2	0.1		
	0.5		X
	1.0		
	2.0	X	
BH3	0.1		X
	0.5		X
	1.0		
	1.5		
BH4	0.1		
	0.5		
	1.0		
	3.0		
	6.0	X	
	6.5	X	
BH6	0.1		
	0.5		X
	1.0		X
BH7	0.1		
	0.5		X
	1.0		
	1.5		

BH	Sample Depth (m BGL)	Analysis	
		Combo 3[1]	Combo 5[2]
	3.6		X
BH8	0.1		X
	0.5		X
	1.0		
BH9	0.1		
	0.5		X
	1.0		
	1.5		
	3.0	X	
BH11	0.1		
	0.5		X
BH12	0.1		X
	0.5		X
	1.0		
	1.5		
BH13	0.1		X
	0.5		X
	1.0		
	1.5		
QAQC 1 [3]		X	
QAQC 2 [3]		X	
QAQC 3 [3]			
QAQC 4 [3]			
QAQC 5 [3]			

Notes:

[1] Combo 3: heavy metals (As, Cd, Cr, Cu, Pb, Hg, Ni, Zn); Total Petroleum Hydrocarbons (TPH), Polycyclic Aromatic Hydrocarbons (PAH); and BTEX (benzene, toluene, ethylbenzene and xylene).

[2] Combo 5: Combo 3 plus organochlorine pesticides (OCPs) and Polychlorinated Biphenyls (PCBs).

[3] Field duplicate samples collected and analysed for sampling and analysis QA/QC purposes.

4.5 Basis for Assessment Criteria

For the purpose of assessing site contamination, investigation levels from the *National Environment Protection (Assessment of Site Contamination) Measure 1999* (NEPC, 2013) have been selected as per the recommendation of Section 105 of the *NSW Contaminated Land Management Act 1997* (CLM Act) and NSW Office of Environment and Heritage (OEH) approved guidelines. The levels referred to assess protection of human health and ecological impacts via exposure to contaminants to determine if further investigation is needed.

The NEPM includes a range of investigation levels for various land uses. For the purpose of this investigation, the following soil assessment criteria from *Schedule B1 Guideline on the Investigation Levels for Soil and Groundwater* (NEPM, 2013) have been adopted for the proposed commercial and office building development:

- NEPM Health Investigation Levels exposure setting D (HIL D) for Commercial/Industrial land use;
- NEPM Ecological Screening Levels (ESLs) for TPH fractions F1 – F4, BTEX and benzo(a)pyrene in soil for Commercial/Industrial land use (coarse soil type); and
- NEPM Soil Health Screening Levels (HSLs) for vapour intrusion exposure setting D (HIL D) for Commercial/Industrial land use (sandy soil type).

The function of the NEPM HILs is to be an indicator for contamination, and they are not to be used as maximum permissible levels that would preclude the intended land use. The NEPM guidelines recommend further investigation and health risk assessments be undertaken where soil exceeds the HILs.

4.6 Investigation Uncertainty

This Preliminary Site Investigation (PSI) is limited by the following factors:

- The adopted soil sampling plan (Section 4.2) was developed with the aim of providing representative coverage of the site using a systematic sampling pattern. However, subsurface conditions and contamination potential outside of borehole locations is not definitively know and can only be extrapolated;
- Groundwater sampling and/or assessment was not included in the scope of intrusive investigations.
- Opus were not engaged to undertake soil sampling prior to drilling of all boreholes and soil sampling was conducted prior to undertaking the site history review element of the PSI.

5 Soil Analysis Results

5.1 Site Contamination Assessment

Soil sample laboratory analysis results are summarised in Table 7. The full laboratory report is included in Appendix X.

One sample result (BH4/6.5 m) exceeded the ecological screening level (ESL) for F2 hydrocarbons concentration. This was the deepest sample collected from site, and therefore closest to the water table at approximately 7.0 m depth. This sample was also noted to have strong hydrocarbon odour as noted on the borehole logs.

All other sample results were within the adopted NEPM commercial/industrial land use assessment criteria for the contaminants analysed in this PSI.

Soil testing results with reference to waste classification criteria are discussed separately in Section 7.

Table 7: Summary of soil testing results.

Analyte		Guideline Value (mg/kg)[1]	Results (mg/kg)[2]	Sample ID
TRH	F1 (C6 – C10)	215[3] / 260[5]	35	BH4/6.5 m
	F2 (C10 – C16)	170[4]	**280**	BH4/6.5 m
	F3 (C16– C34)	1,700[3]	140	BH8/0.1 m
			130	BH13/0.1 m
	F4 (C34–C40)	3,300[3]	120	BH8/0.1 m
			190	BH13/0.1 m
BTEX	Benzene		<LOR	
	Toluene		<LOR	
	Ethylbenzene		<LOR	
	Total +ve Xylenes		<LOR	
	Naphthalene		<LOR	
PAHs	Benzo(a)pyrene	40	0.1	BH12/0.5 m
	Total +ve PAHs	4,000	0.71	BH12/0.5 m
OCPs			<LOR	
PCBs			<LOR	
Heavy Metals	Arsenic	3,000	6	BH2/0.5 m
	Cadmium	900	<LOR	
	Chromium	3,600	22	BH9/3.0 m
	Copper	240,000	19	BH9/0.5 m
	Lead	1,500	190	BH2/0.5 m
	Mercury	730	0.2	BH2/0.5 m

Analyte		Guideline Value (mg/kg)[1]	Results (mg/kg)[2]	Sample ID
	Nickel	6,000	17	BH2/0.5 m
	Zinc	400,000	210	BH2/0.5 m

Notes:

[1] NEPM *National Environment Protection (Assessment of Site Contamination) Measure 1999 (2013)* Health-based investigation levels for commercial and industrial land use, unless otherwise noted.

[2] Only results above laboratory Limit of reporting (LOR) are listed for the purposes of this summary. For heavy metals, only the highest value for each analyte is listed. The full laboratory report is included in Appendix X.

[3] Conservative Ecological Screening Levels for coarse-grained soils have been used for initial assessment.

[4] NEPM Ecological Screening Levels (ESLs) for TPH fractions F1 – F4, BTEX and benzo(a)pyrene in soil for Commercial/Industrial land use

[5] NEPM Soil Health Screening Levels (HSLs) for vapour intrusion exposure setting D (HIL D) for Commercial/Industrial land use (sandy soil type)

6 Field and Laboratory QA/QC

6.1 QA/QC Methods

Soil sampling was completed by Opus' qualified Geotechnical Engineer between 28 June – 3 July 2017.

Boreholes drilling was completed using a 4x4 Hydra-power truck mounted drilling rig, supplied by Nealings Drilling. Soils were drilled using auger or rotary drilling methods as was appropriate for the conditions.

Two of the boreholes (BH2 and BH7) were completed as groundwater monitoring wells, which comprised a combination of slotted and blank PVC casing, with generally 6 m of slotted PVC from the base of the borehole, extended to the surface using blank PVC casing. The annulus between the PVC casing and the well bore was filled with graded sand and bentonite. A steel gatic cover was set in concrete at the surface to protect the groundwater monitoring well installation, set flush with the existing pavement surface.

Equipment was cleaned between each sampling location and samples were collected in laboratory-provided sealed 250 mL glass jars using a small trowel or by hand using disposable nitril gloves. The samples were stored in a chilled cooler box prior and during transport to the laboratory under standard Opus chain of custody procedures.

Field duplicate samples were collected and analysed at a rate of more than 10% as part of sampling and analysis QA/QC. 5 duplicates (QAQC1 – QAQC5) were collected in addition to 44 samples collected, and 2 duplicates were analysed in addition to 21 samples submitted for analysis. Duplicates were analysed for heavy metals, TPH, PAH and BTEX (Combo 3).

Laboratory duplicates were also analysed for all tests as part of laboratory QA/QC.

6.2 QA/QC Results

Field duplicate soil sample laboratory analysis results are summarised in Table 8. The results show variations in duplicate samples ranging from 0% to 88%. The high variations observed are considered to be the effect of examining differences between very low concentration samples. The field duplicate results indicate acceptable sample collection and analysis methods.

> *The acceptance criterion for quality control samples is an RPD of 30% – 50% of the mean concentration of a particular analyte. This variation can be expected to be higher for low concentrations of analytes* (AS 4482.1—2005).

Laboratory duplicates were also analysed for all tests as part of laboratory QA/QC. Any deficiencies detected in the QA/QC of laboratory methods are noted under the 'Report Comments' section of the laboratory report (Appendix X). In this case, the results meet the laboratory acceptance criteria and indicate reliable laboratory analysis methods.

Table 8: Field duplicate soil sample laboratory analysis results (mg/kg).

BH/Sample Depth	F1 C6 – C10	F2 C10 – C16	F3 C16– C34	F4 C34–C40	B(a)P	Total PAHs	As	Cd	Cr	Cu	Pb	Hg	Ni	Zn
BH12/0.5	0	0	0	0	0.1	0.71	5	<0.4	21	16	89	<0.1	10	53
QAQC 1	0	0	0	0	0.1	0.82	5	<0.4	19	16	96	<0.1	10	60
RPD[1]	**0%**	**0%**	**0%**	**0%**	**0%**	**14%**	**0%**	**0%**	**10%**	**0%**	**8%**	**0%**	**0%**	**12%**
BH9/0.5	0	0	0	0	0	0	4	<0.4	18	19	72	0.1	9	68
QAQC 2	0	0	0	0	0	0	<4	<0.4	16	10	28	<0.1	8	38
RPD[1]	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**12%**	**62%**	**88%**	**0%**	**12%**	**57%**

Notes: [1] RPD: Relative Percent Difference.

7 Preliminary Waste Classification

Soil testing results have been compared with the criteria specified by Table 4 of *The Excavated Natural Material Order 2014* (ENM) (NSW EPA). The requirements in this order apply in relation to receiving or supplying excavated natural material from or to another site for application to land as engineering fill or for use in earthworks.

Site soils (excluding fill) assessed by the PSI met the ENM criteria; however, the completed sampling density is insufficient and the completed soil analysis not comprehensive enough to meet the requirements of the ENM Order (2014). The results provide a preliminary indication, however, that naturally occurring site soils (excluding fill) are potentially suitable to be classified as Virgin excavated natural material (VENM) in accordance with the *Protection of the Environment Operations Act 1997* (POEO Act) and NSW EPA Waste Classification Guidelines.

Further testing in accordance with the recommendations of this PSI and the sampling requirements of the ENM Order would need to be completed to confirm this soil classification.

Fill material sampled and analysed as part of this PSI indicates that fill materials are classified as *General Solid Waste* per NSW EPA Waste Classification Guidelines. Further testing is not required to confirm classification of this fill material, unless any observations are made during excavation contrary to the soil descriptions in this PSI (refer Table 1, and borehole logs in Appendix VIII).

8 Conceptual Site Model

Based on the completed site inspection, site history review, limited soil sampling and analysis, potential receptors of contamination and potential migration pathways are outlined in Table 9.

The conceptual site model shows that the Site may have a higher risk profile than first indicated by the site history review (Table 5) since:

- Soil sampling and analysis indicates hydrocarbon contamination may be present in the groundwater beneath the Site, and construction of the proposed building is likely to require dewatering;
- The proposed development includes excavation to significant depth (~6.5 m bgl) where hydrocarbons were found in soil, and this soil will likely require off-site disposal;
- Hydrocarbon vapour intrusion is a potential risk affecting the proposed development based on proposed excavation depth if higher levels of contamination are present but not identified by the PSI; and
- If higher levels of contamination are present but not identified by the PSI, soils and groundwater may present a risk of damage to sub-grade building materials.

Table 9: Conceptual Site Model.

Site Receptor	Comment	Potential Migration Pathway(s)	Potential Linkages
Construction and maintenance workers attending site in future	Potentially the most relevant receptors. Approximately 6.5 m of excavation is proposed for 2 x basement levels	• Migration of gases or vapours from any volatile contamination sources; • Inhalation – human health impacts from inhalation of dust and vapours from contaminated soil and groundwater; • Ingestion – directly and indirectly via dirty hands etc.; • Dermal contact – causing adverse skin reactions or absorption of contaminants into the body through the skin.	High
The terrestrial ecosystem within the immediate study area – flora, fauna, biota and habitat	Low terrestrial ecosystem value in this urban setting	• Uptake by plants – toxicity to plants and indirect ingestion by humans	Low
Local groundwater resources	Estimated to be at ~7 m depth below ground level (see Table 1).	• Leaching: diffuse contamination from any underground tank leaks could affect groundwater at this level.	Medium
Surface waters and local aquatic ecosystems	The site is situated on the plains approximately 300 m west of Queanbeyan River.	• Migration of contaminated groundwater (laterally or vertically) to surface water ecosystems resulting in pollution of drinking waters, stock water and irrigation water; • Uptake by plants – toxicity to plants and indirect ingestion by humans	Low
Material damage to proposed infrastructure if constructed within contaminated areas	2 x basement levels proposed down to ~6.5 m depth below existing ground level	• Aggressive attack on building material – e.g. acidic conditions affecting concrete or hydrocarbon attack on plastics.	High
Future occupants of the commercial and office building spaces	Potential vapour intrusion if not mitigated	• Migration of gases or vapours from any volatile contamination sources, and build up in enclosed spaces.	Medium

9 Conclusions and Recommendations

Site History Review Findings

A desktop site history review was undertaken to identify previous land uses and any potential sources of any contamination. The site history review identified the following potential areas of concern:

- Uncontrolled fill material of unknown origin potentially used for Site levelling, backfill of service trenches and other purposes; and
- Diffuse impacts from operation of a service station and mechanical workshop adjacent to the Site.

Site Sampling and Analysis

Further investigation of potential contamination was undertaken by way of limited soil sampling. Soil sampling was completed by Opus' qualified Geotechnical Engineer between 28 June – 3 July 2017 in conjunction with site geotechnical investigations and ahead of completion of the site history review. The sampling and analysis was intended to be provide a screening measure to support the desktop findings of the PSI.

Site sampling adopted the following strategy:

- Samples were collected from 11 of the 13 boreholes drilled. Opus had not been engaged to undertake a PSI or soil sampling when boreholes BH5 and BH11 were drilled.
- A systematic sampling pattern was adopted to provide broad coverage of the site.
- Soil sampling was generally focussed on the upper 2 m of the site soil profile where contamination was considered most likely ahead of any PSI findings.
- Sampling also focussed on fill material as a potential contaminant source.
- Additional samples were collected where hydrocarbon odours were noted by the geotechnical engineer completing investigations.

Thirteen samples were selected for laboratory analysis to provide broad coverage of the Site and target identified potential areas of concern. All samples were submitted to a NATA certified laboratory and analysed for a broad suite of potential chemicals of concern.

Soil Analysis Results

One sample result (BH4/6.5 m) exceeded the ecological screening level (ESL) for F2 (C_{10} – C_{16}) (diesel range) hydrocarbons concentration. This was the deepest sample collected from site, and therefore closest to the water table at approximately 7.0 m depth. This sample was also noted to have strong hydrocarbon odour as noted on the borehole logs.

All other sample results were within the adopted NEPM commercial/industrial land use assessment criteria for the contaminants analysed in this PSI.

Discussion

The F2 hydrocarbon result (280 mg/kg) is marginally above ecological screening guidelines (170 mg/kg). While local terrestrial and aquatic ecosystems are generally of low value given the urban setting, the main concern is that contamination at this depth has not been adequately assessed and higher concentrations may be present, especially nearer to the adjacent service station site and in groundwater. As part of the limited soil sampling conducted for the PSI, only one sample was collected at this depth. Until the hydrocarbon odour was detected, and while one basement level was previously proposed, testing at such depth was not previously warranted.

Recommendations

Based on the above assessment, it is recommended that a Detailed Site Investigation (DSI) be undertaken comprising additional soil sampling at around 6.5 – 7.0 m depth nearer to the adjacent mechanical workshop and service station properties, and groundwater sampling.

One of the two existing piezometers is likely already well placed for groundwater sampling. Two additional piezometers are likely required to be installed to focus on the area around the service station and workshop. Soil sampling during drilling of these two additional piezometers would suitably satisfy the recommendation for additional soil assessment.

The benefits and reasons for undertaking these additional investigations (a Detailed Site Investigation) are understanding:

- Groundwater quality ahead of proposed dewatering;
- Risk of hydrocarbon vapour intrusion (and potentially corrosion and other impacts) on the proposed building and associated underground services;
- Potential disposal costs of contaminated soil at the deeper depths of proposed excavation; and
- Potential worker health and safety issues during excavation if there are areas of higher hydrocarbon readings.

Conversely, additional data points may reveal a low risk requiring negligible mitigation or management measures.

As the site history review has not identified a likely cause of hydrocarbon contamination stemming from within the site boundaries, entering dialogue with the adjacent service station operator is also recommended. Obtaining their underground tank monitoring records will be relevant, and they may be able to assist with other input to the DSI.

10 Investigation Limitations and Disclaimer

This report has been prepared by Opus International Consultants (Australia) Pty Ltd (**Opus**) for Queanbeyan-Palerang Regional Council (**Client**) in respect of a Preliminary Site Investigation for a proposed commercial and office building at Queanbeyan, for the purposes agreed between the Client and Opus as specified in the report (**Purpose**). Opus accepts no responsibility for the validity, appropriateness, sufficiency or consequences of the Client using the report for purposes other than for the Purposes and the report is not to be reproduced without Opus' prior written permission.

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This report is subject to the following limitations:

- Opus has provided the report based on the various assumptions contained in this report.
- This report is provided partly based on information received from the Client upon which Opus relies. Opus takes no responsibility for the accuracy of that information.
- A change in circumstances, facts, information after the report has been provided may affect the adequacy or accuracy of the report. Opus is not responsible for the adequacy or accuracy of the report as a result of a change.
- Where we have obtained information from a government register or database, we have assumed that the information is accurate. Where an assumption has been made, we have not made any independent investigations with respect to the matters the subject of that assumption. We are not aware of any reason why any of the assumptions are incorrect.
- No calculations, other than those noted within, have been undertaken in support of the conclusions of this report.
- Opus' professional services are performed using a degree of care and skill normally exercised, under similar circumstances, by reputable consultants practicing in this field at this time.
- Attention is drawn to the fact that, whilst every effort is made to ensure the accuracy of the data and any conclusions derived from it, the possibility exists of variations in ground conditions. No liability can be accepted for such variations.
- No liability can be accepted for any services or other below ground items not positively identified by the investigations described herein.
- Opus shall not be liable for any claims resulting from, arising directly of, indirectly out of, in consequence of, or in any way involving:
    - The existence, handling, removal, processing, distribution, storage or use of asbestos, asbestos products and/or products containing asbestos.
    - Pollution, seepage, or contamination howsoever arising.
- In accepting instructions to carry out site investigations it is assumed that the client has all necessary permissions from existing owners and/or other authorities for such works to proceed, No liability is accepted for any claims arising as a result of anything contrary to this.
- No liability for the services performed for the client is accepted to any parties and the client shall indemnify Opus from any claims arising directly or indirectly from Opus carrying out the Services
- Soil investigations are limited to the borehole locations included in the study. Soil type and contamination conditions outside of these boreholes is unknown and can only be extrapolated at best. No guarantee can be made in regards to site subsurface conditions outside of areas specifically tested and conclusions made about overall site condition are made based on available data from the study herein.

11 References

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12 Appendices

Appendix I – **Proposed Development Concept Plans**

Appendix II – **Site Plan (showing soil sampling locations)**

Appendix III – **Council DA Records**

Appendix IV – **Section 149(2) Planning Certificates**

Appendix V – **Historical Aerial Photographs**

Appendix VI – **Historical Land Title Information**

Appendix VII – **Public Environmental Register Search Results**

Appendix VIII – **Borehole Soil Profile Logs**

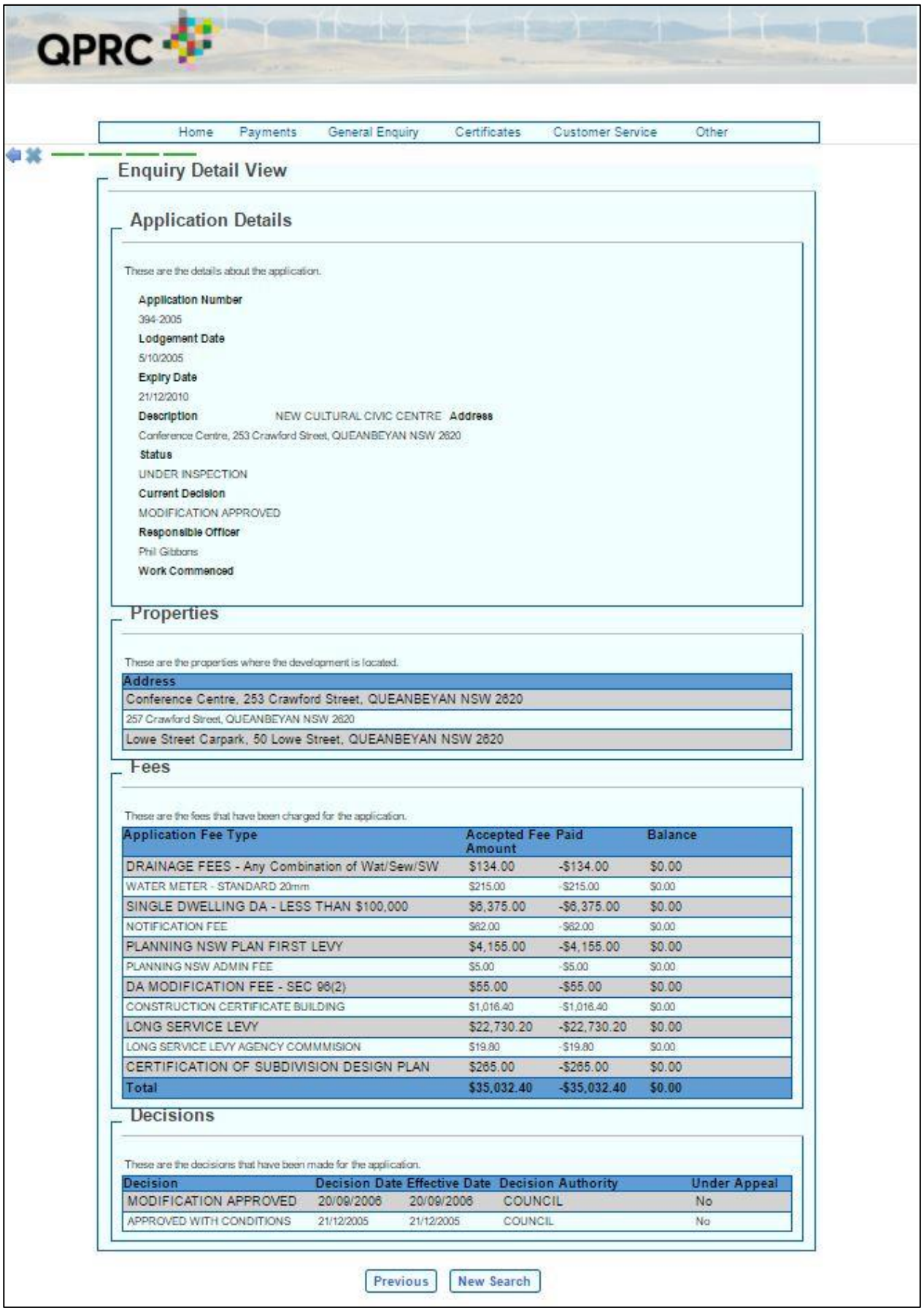
Appendix IX – **Soil Analysis Chain of Custody Form**

Appendix X – **Soil Analysis Laboratory Report (*Envirolab* laboratories)**

Appendix I – Proposed Development Concept Plans

Appendix II – Site Plan (showing soil sampling locations)

Appendix III – Council DA Records



QPRC

Home Payments General Enquiry Certificates Customer Service Other

Enquiry Detail View

Application Details

These are the details about the application.

Application Number
394-2005
Lodgement Date
5/10/2005
Expiry Date
21/12/2010
Description NEW CULTURAL CIVIC CENTRE **Address**
Conference Centre, 253 Crawford Street, QUEANBEYAN NSW 2620
Status
UNDER INSPECTION
Current Decision
MODIFICATION APPROVED
Responsible Officer
Phil Gibbons
Work Commenced

Properties

These are the properties where the development is located.

Address
Conference Centre, 253 Crawford Street, QUEANBEYAN NSW 2620
257 Crawford Street, QUEANBEYAN NSW 2620
Lowe Street Carpark, 50 Lowe Street, QUEANBEYAN NSW 2620

Fees

These are the fees that have been charged for the application.

Application Fee Type	Accepted Fee Amount	Paid	Balance
DRAINAGE FEES - Any Combination of Wat/Sew/SW	$134.00	-$134.00	$0.00
WATER METER - STANDARD 20mm	$215.00	-$215.00	$0.00
SINGLE DWELLING DA - LESS THAN $100,000	$6,375.00	-$6,375.00	$0.00
NOTIFICATION FEE	$62.00	-$62.00	$0.00
PLANNING NSW PLAN FIRST LEVY	$4,155.00	-$4,155.00	$0.00
PLANNING NSW ADMIN FEE	$5.00	-$5.00	$0.00
DA MODIFICATION FEE - SEC 96(2)	$55.00	-$55.00	$0.00
CONSTRUCTION CERTIFICATE BUILDING	$1,016.40	-$1,016.40	$0.00
LONG SERVICE LEVY	$22,730.20	-$22,730.20	$0.00
LONG SERVICE LEVY AGENCY COMMMISION	$19.80	-$19.80	$0.00
CERTIFICATION OF SUBDIVISION DESIGN PLAN	$265.00	-$265.00	$0.00
Total	**$35,032.40**	**-$35,032.40**	**$0.00**

Decisions

These are the decisions that have been made for the application.

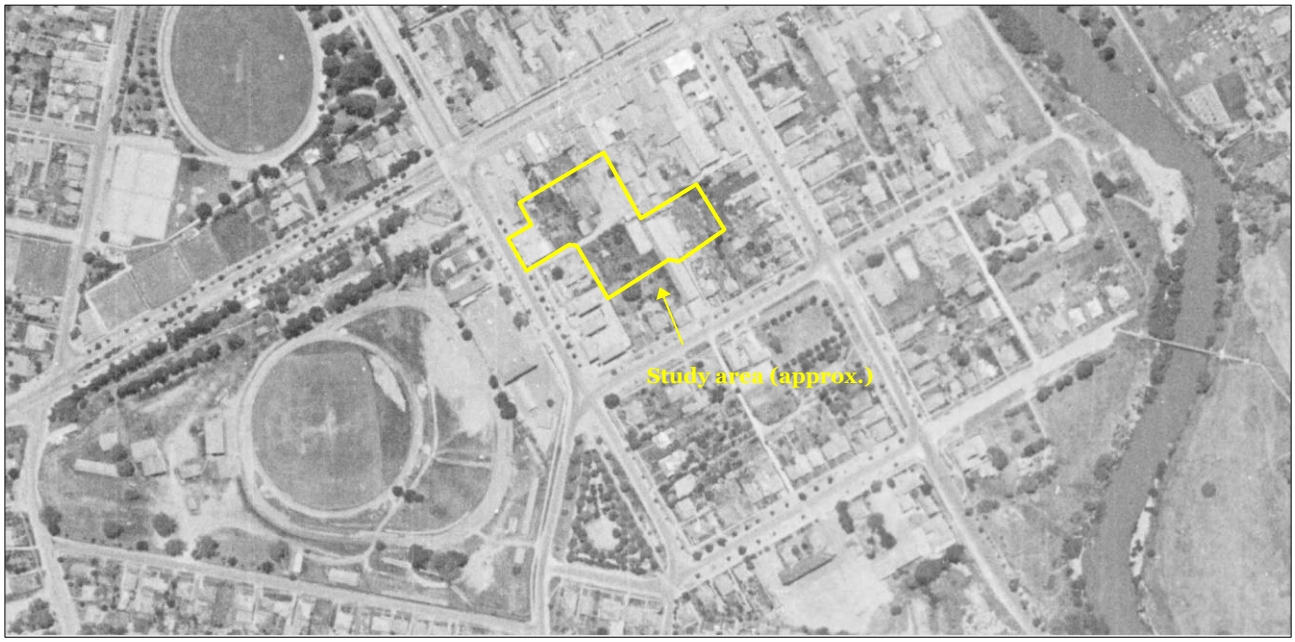
Decision	Decision Date	Effective Date	Decision Authority	Under Appeal
MODIFICATION APPROVED	20/09/2006	20/09/2006	COUNCIL	No
APPROVED WITH CONDITIONS	21/12/2005	21/12/2005	COUNCIL	No

Previous New Search

Appendix IV – Section 149(2) Planning Certificates

Appendix V – Historical Aerial Photographs

1944



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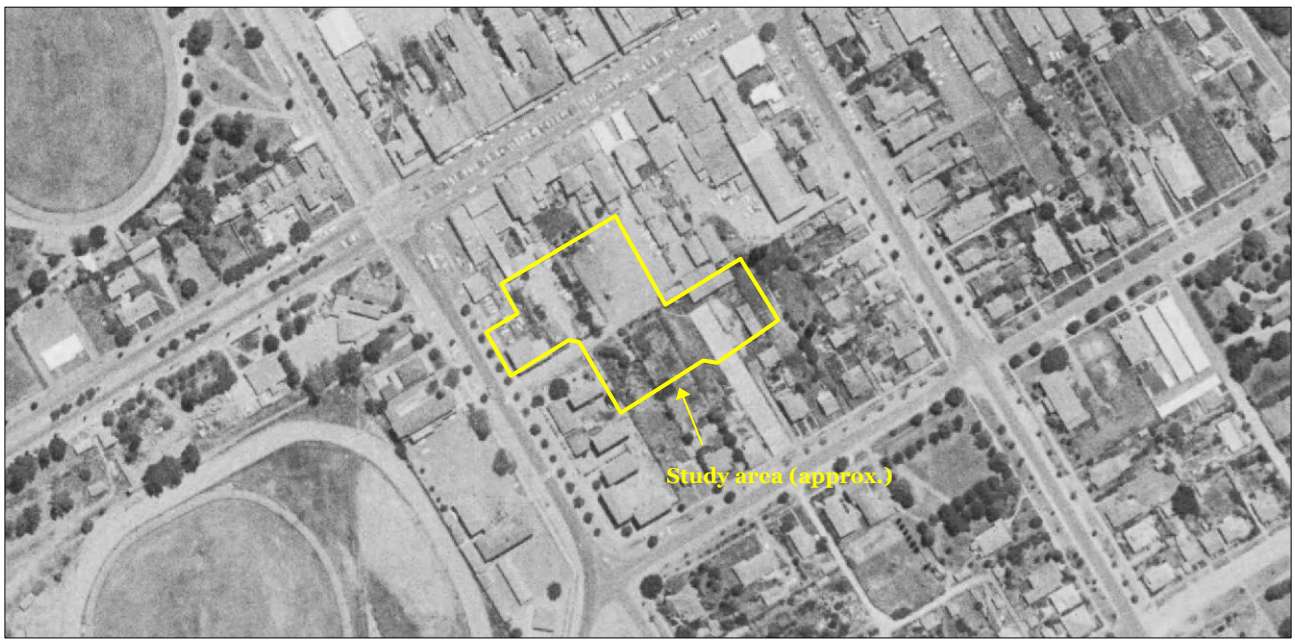

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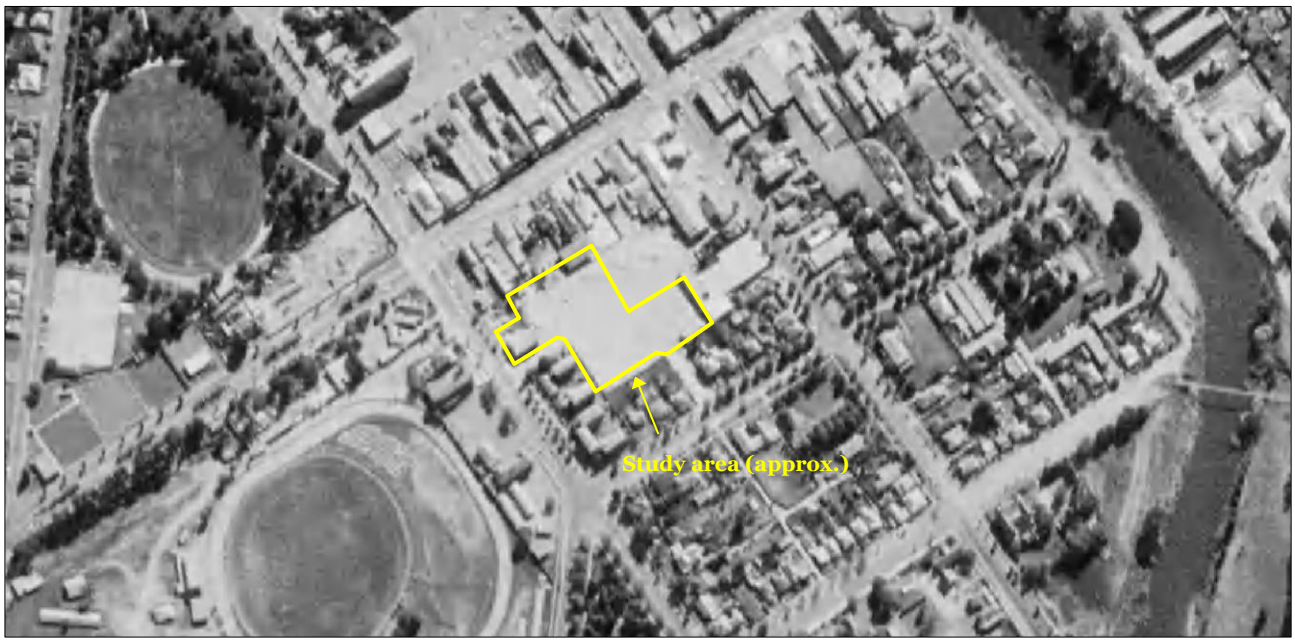


1976

1985

1992


Study area (approx.)

2005


Study area (approx.)
Map Layers
Lot Labels
Survey Marks
Dynamic Labels
Lot Boundaries
Flood Imagery
Flood Imagery CIR
Area Tool
Area: 8311 m²
Perimeter: 474 m
CRAMFORD STREET
DP 852035

2014

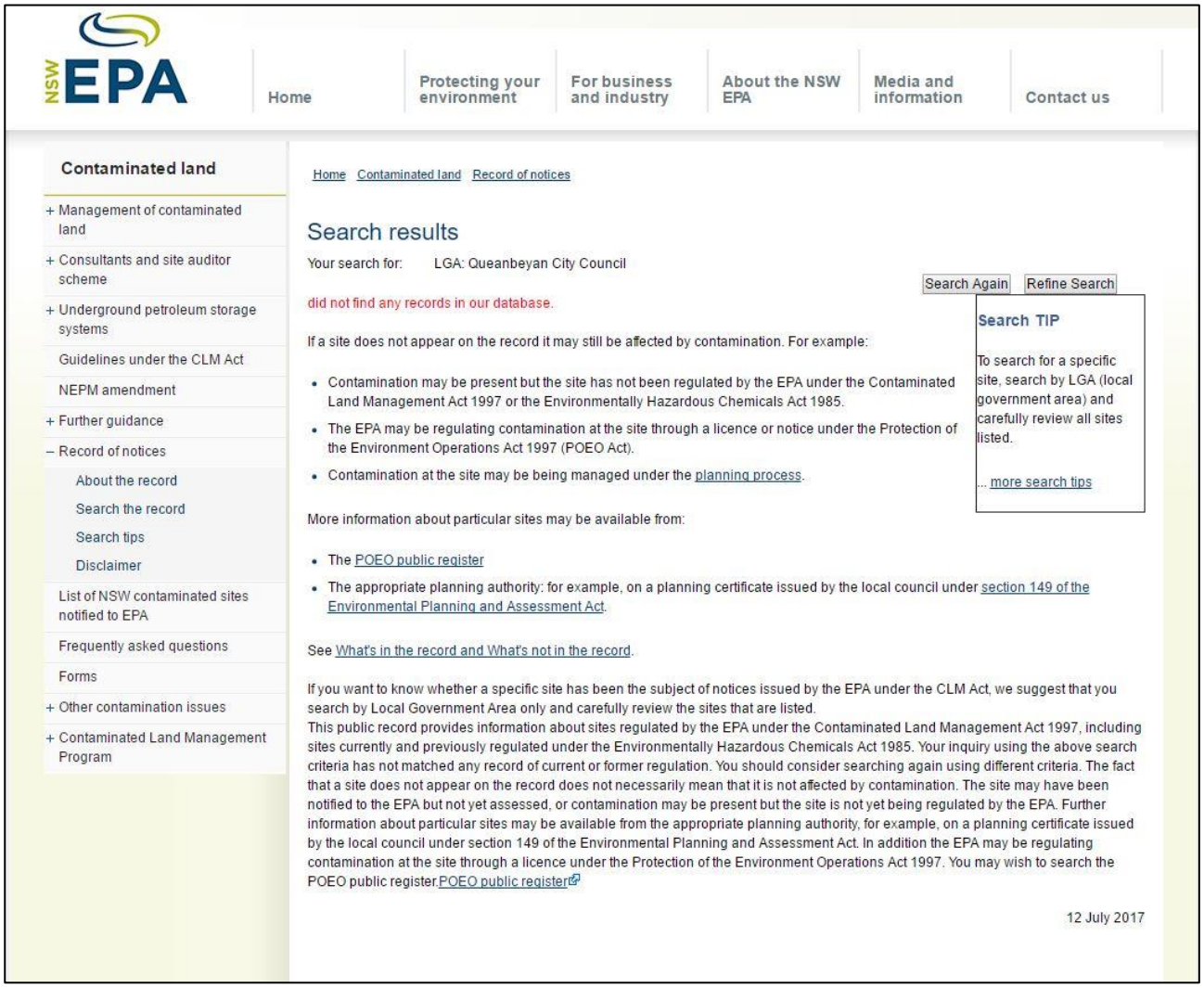
Appendix VI – Historical Land Title Information

Appendix VII – Public Environmental Register Search Results

List of NSW contaminated sites notified to EPA:

QUEANBEYAN	Bill Lilley Automotive 169 Crawford STREET	Service Station	Regulation under CLM Act not required
QUEANBEYAN	Woolworths Queanbeyan Service Station 196 Crawford (Cnr Morisset St) STREET	Service Station	Regulation under CLM Act not required
QUEANBEYAN	Former Mobil Emoleum Depot 109-111 High STREET	Other Petroleum	Regulation under CLM Act not required
QUEANBEYAN	Former Caltex Depot 20-30 Railway STREET	Other Petroleum	Regulation under CLM Act not required
QUEANBEYAN	Former Mobil Service Station 151-153 Uriarra STREET	Service Station	Under assessment
QUEANBEYAN	Caltex Depot 5 Stephens ROAD	Service Station	Under assessment
QUEANBEYAN	BP Queanbeyan 50 Yass ROAD	Service Station	Under assessment
QUEANBEYAN	Former BP Queanbeyan 64 Uriarra ROAD	Service Station	Under assessment
QUEANBEYAN	Caltex Service Station Bungendore ROAD	Service Station	Under assessment
QUEANBEYAN WEST	Caltex Service Station Lanyon Dr Cnr Mccrae St (1 Suraci Place) STREET	Service Station	Regulation under CLM Act not required

NSW EPA Contaminated Land Record:



NSW EPA

Home | Protecting your environment | For business and industry | About the NSW EPA | Media and information | Contact us

Contaminated land

+ Management of contaminated land
+ Consultants and site auditor scheme
+ Underground petroleum storage systems
Guidelines under the CLM Act
NEPM amendment
+ Further guidance
– Record of notices
About the record
Search the record
Search tips
Disclaimer
List of NSW contaminated sites notified to EPA
Frequently asked questions
Forms
+ Other contamination issues
+ Contaminated Land Management Program

Home Contaminated land Record of notices

Search results

Your search for: LGA: Queanbeyan City Council

Search Again Refine Search

did not find any records in our database.

Search TIP

To search for a specific site, search by LGA (local government area) and carefully review all sites listed.

... more search tips

If a site does not appear on the record it may still be affected by contamination. For example:

- Contamination may be present but the site has not been regulated by the EPA under the Contaminated Land Management Act 1997 or the Environmentally Hazardous Chemicals Act 1985.
- The EPA may be regulating contamination at the site through a licence or notice under the Protection of the Environment Operations Act 1997 (POEO Act).
- Contamination at the site may be being managed under the planning process.

More information about particular sites may be available from:

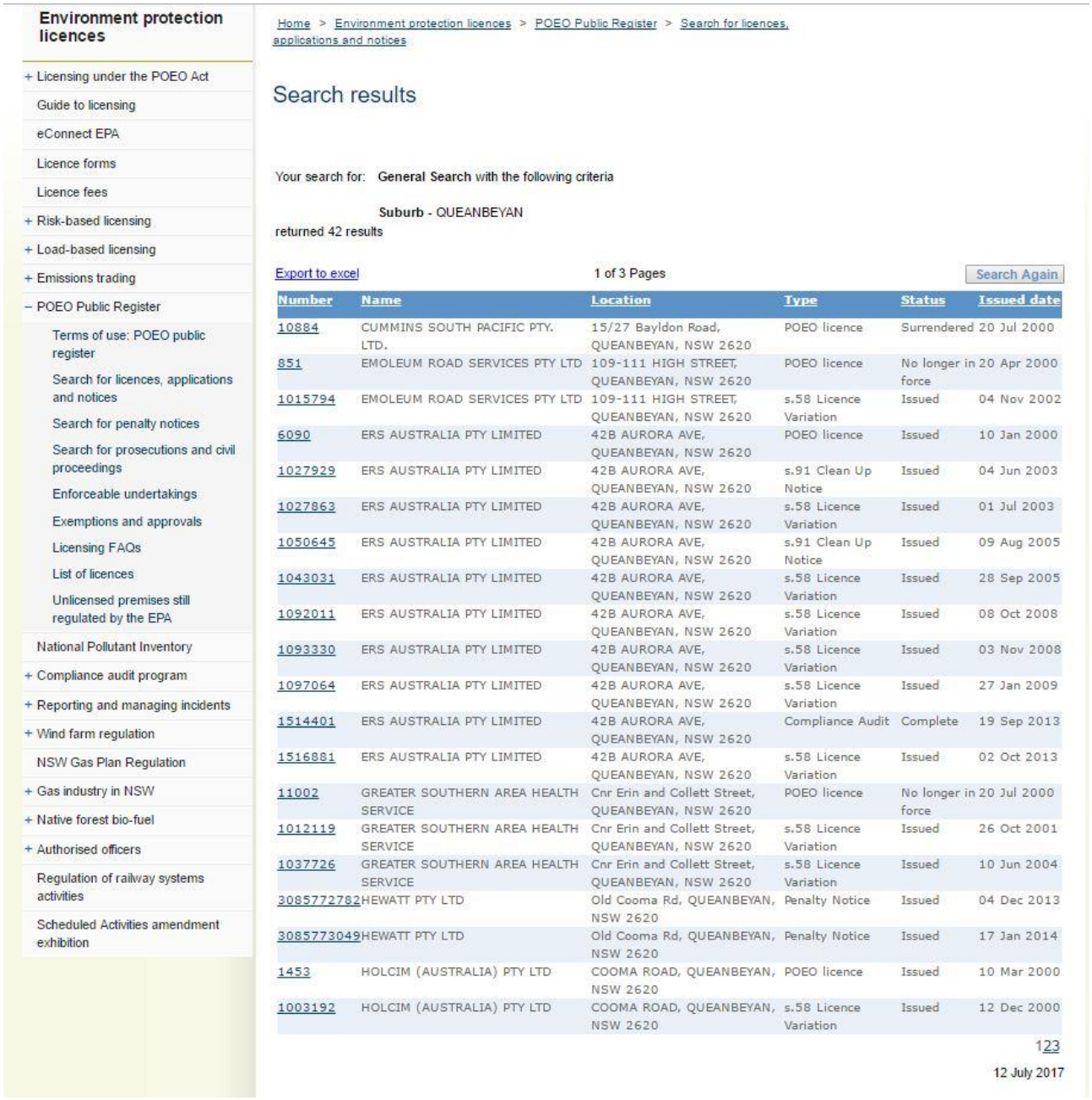
- The POEO public register
- The appropriate planning authority: for example, on a planning certificate issued by the local council under section 149 of the Environmental Planning and Assessment Act.

See What's in the record and What's not in the record.

If you want to know whether a specific site has been the subject of notices issued by the EPA under the CLM Act, we suggest that you search by Local Government Area only and carefully review the sites that are listed.
This public record provides information about sites regulated by the EPA under the Contaminated Land Management Act 1997, including sites currently and previously regulated under the Environmentally Hazardous Chemicals Act 1985. Your inquiry using the above search criteria has not matched any record of current or former regulation. You should consider searching again using different criteria. The fact that a site does not appear on the record does not necessarily mean that it is not affected by contamination. The site may have been notified to the EPA but not yet assessed, or contamination may be present but the site is not yet being regulated by the EPA. Further information about particular sites may be available from the appropriate planning authority, for example, on a planning certificate issued by the local council under section 149 of the Environmental Planning and Assessment Act. In addition the EPA may be regulating contamination at the site through a licence under the Protection of the Environment Operations Act 1997. You may wish to search the POEO public register.POEO public register

12 July 2017

NSW EPA POEO Act Public Register:



Environment protection licences

- + Licensing under the POEO Act
- Guide to licensing
- eConnect EPA
- Licence forms
- Licence fees
- + Risk-based licensing
- + Load-based licensing
- + Emissions trading
- − POEO Public Register
  - Terms of use: POEO public register
  - Search for licences, applications and notices
  - Search for penalty notices
  - Search for prosecutions and civil proceedings
  - Enforceable undertakings
  - Exemptions and approvals
  - Licensing FAQs
  - List of licences
  - Unlicensed premises still regulated by the EPA
- National Pollutant Inventory
- + Compliance audit program
- + Reporting and managing incidents
- + Wind farm regulation
- NSW Gas Plan Regulation
- + Gas industry in NSW
- + Native forest bio-fuel
- + Authorised officers
- Regulation of railway systems activities
- Scheduled Activities amendment exhibition

Home > Environment protection licences > POEO Public Register > Search for licences, applications and notices

Search results

Your search for: **General Search** with the following criteria

Suburb - QUEANBEYAN

returned 42 results

Export to excel 1 of 3 Pages Search Again

Number	Name	Location	Type	Status	Issued date
10884	CUMMINS SOUTH PACIFIC PTY. LTD.	15/27 Bayldon Road, QUEANBEYAN, NSW 2620	POEO licence	Surrendered	20 Jul 2000
851	EMOLEUM ROAD SERVICES PTY LTD	109-111 HIGH STREET, QUEANBEYAN, NSW 2620	POEO licence	No longer in force	20 Apr 2000
1015794	EMOLEUM ROAD SERVICES PTY LTD	109-111 HIGH STREET, QUEANBEYAN, NSW 2620	s.58 Licence Variation	Issued	04 Nov 2002
6090	ERS AUSTRALIA PTY LIMITED	42B AURORA AVE, QUEANBEYAN, NSW 2620	POEO licence	Issued	10 Jan 2000
1027929	ERS AUSTRALIA PTY LIMITED	42B AURORA AVE, QUEANBEYAN, NSW 2620	s.91 Clean Up Notice	Issued	04 Jun 2003
1027863	ERS AUSTRALIA PTY LIMITED	42B AURORA AVE, QUEANBEYAN, NSW 2620	s.58 Licence Variation	Issued	01 Jul 2003
1050645	ERS AUSTRALIA PTY LIMITED	42B AURORA AVE, QUEANBEYAN, NSW 2620	s.91 Clean Up Notice	Issued	09 Aug 2005
1043031	ERS AUSTRALIA PTY LIMITED	42B AURORA AVE, QUEANBEYAN, NSW 2620	s.58 Licence Variation	Issued	28 Sep 2005
1092011	ERS AUSTRALIA PTY LIMITED	42B AURORA AVE, QUEANBEYAN, NSW 2620	s.58 Licence Variation	Issued	08 Oct 2008
1093330	ERS AUSTRALIA PTY LIMITED	42B AURORA AVE, QUEANBEYAN, NSW 2620	s.58 Licence Variation	Issued	03 Nov 2008
1097064	ERS AUSTRALIA PTY LIMITED	42B AURORA AVE, QUEANBEYAN, NSW 2620	s.58 Licence Variation	Issued	27 Jan 2009
1514401	ERS AUSTRALIA PTY LIMITED	42B AURORA AVE, QUEANBEYAN, NSW 2620	Compliance Audit	Complete	19 Sep 2013
1516881	ERS AUSTRALIA PTY LIMITED	42B AURORA AVE, QUEANBEYAN, NSW 2620	s.58 Licence Variation	Issued	02 Oct 2013
11002	GREATER SOUTHERN AREA HEALTH SERVICE	Cnr Erin and Collett Street, QUEANBEYAN, NSW 2620	POEO licence	No longer in force	20 Jul 2000
1012119	GREATER SOUTHERN AREA HEALTH SERVICE	Cnr Erin and Collett Street, QUEANBEYAN, NSW 2620	s.58 Licence Variation	Issued	26 Oct 2001
1037726	GREATER SOUTHERN AREA HEALTH SERVICE	Cnr Erin and Collett Street, QUEANBEYAN, NSW 2620	s.58 Licence Variation	Issued	10 Jun 2004
3085772782	HEWATT PTY LTD	Old Cooma Rd, QUEANBEYAN, NSW 2620	Penalty Notice	Issued	04 Dec 2013
3085773049	HEWATT PTY LTD	Old Cooma Rd, QUEANBEYAN, NSW 2620	Penalty Notice	Issued	17 Jan 2014
1453	HOLCIM (AUSTRALIA) PTY LTD	COOMA ROAD, QUEANBEYAN, NSW 2620	POEO licence	Issued	10 Mar 2000
1003192	HOLCIM (AUSTRALIA) PTY LTD	COOMA ROAD, QUEANBEYAN, NSW 2620	s.58 Licence Variation	Issued	12 Dec 2000

1 2 3

12 July 2017

Search results

Your search for: **General Search** with the following criteria

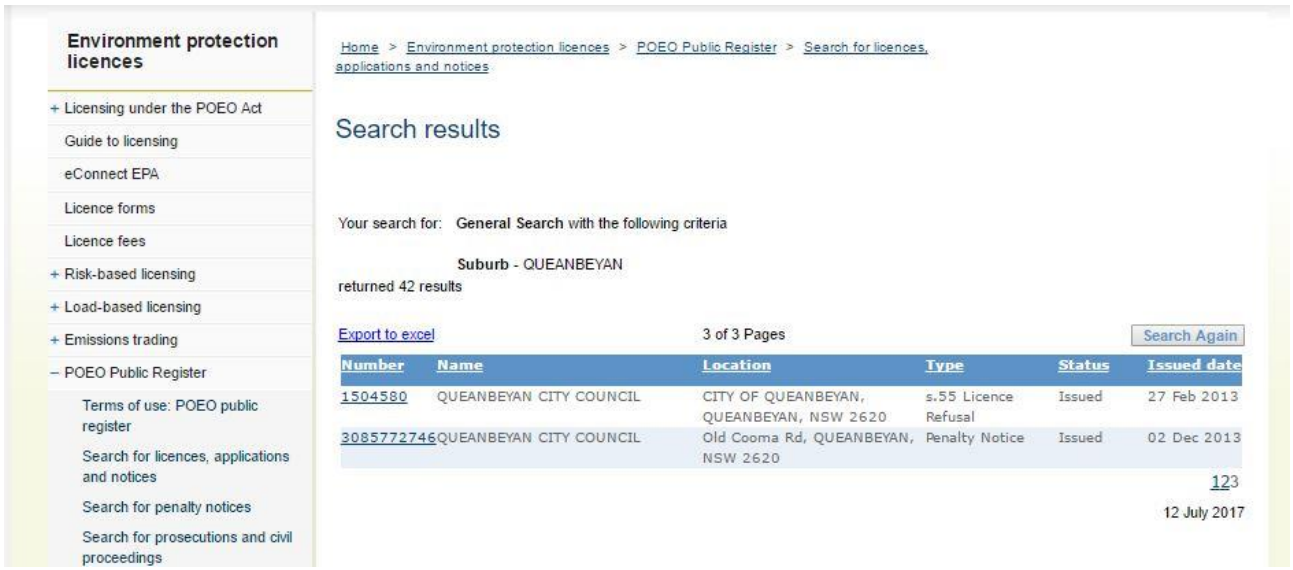
Suburb - QUEANBEYAN
returned 42 results

Export to excel

2 of 3 Pages

Search Again

Number	Name	Location	Type	Status	Issued date
1004548	HOLCIM (AUSTRALIA) PTY LTD	COOMA ROAD, QUEANBEYAN, NSW 2620	s.58 Licence Variation	Issued	20 Feb 2002
1043991	HOLCIM (AUSTRALIA) PTY LTD	COOMA ROAD, QUEANBEYAN, NSW 2620	s.58 Licence Variation	Issued	27 Jan 2005
1115596	HOLCIM (AUSTRALIA) PTY LTD	COOMA ROAD, QUEANBEYAN, NSW 2620	s.58 Licence Variation	Issued	06 Aug 2010
1125151	HOLCIM (AUSTRALIA) PTY LTD	COOMA ROAD, QUEANBEYAN, NSW 2620	s.58 Licence Variation	Issued	23 Feb 2011
1516545	HOLCIM (AUSTRALIA) PTY LTD	COOMA ROAD, QUEANBEYAN, NSW 2620	s.58 Licence Variation	Issued	23 Aug 2013
1513915	HOLCIM (AUSTRALIA) PTY LTD	COOMA ROAD, QUEANBEYAN, NSW 2620	Compliance Audit	Complete	25 Jul 2014
5427	ICON WATER LIMITED	VIA OLD COOMA ROAD, QUEANBEYAN, NSW 2620	POEO licence	Issued	03 Nov 1999
1007139	ICON WATER LIMITED	VIA OLD COOMA ROAD, QUEANBEYAN, NSW 2620	s.58 Licence Variation	Issued	20 Sep 2001
1012564	ICON WATER LIMITED	VIA OLD COOMA ROAD, QUEANBEYAN, NSW 2620	s.58 Licence Variation	Issued	25 Jan 2002
1026547	ICON WATER LIMITED	VIA OLD COOMA ROAD, QUEANBEYAN, NSW 2620	s.58 Licence Variation	Issued	17 Apr 2003
1030338	ICON WATER LIMITED	VIA OLD COOMA ROAD, QUEANBEYAN, NSW 2620	s.58 Licence Variation	Issued	26 Aug 2003
1040564	ICON WATER LIMITED	VIA OLD COOMA ROAD, QUEANBEYAN, NSW 2620	s.58 Licence Variation	Issued	07 Oct 2004
1516470	ICON WATER LIMITED	VIA OLD COOMA ROAD, QUEANBEYAN, NSW 2620	s.58 Licence Variation	Issued	22 Aug 2013
1514395	ICON WATER LIMITED	VIA OLD COOMA ROAD, QUEANBEYAN, NSW 2620	Compliance Audit	Complete	30 Sep 2013
1541927	ICON WATER LIMITED	VIA OLD COOMA ROAD, QUEANBEYAN, NSW 2620	s.58 Licence Variation	Issued	18 Aug 2016
13030	JOHN HOLLAND PTY LTD	Googong Road, QUEANBEYAN, NSW 2620	POEO licence	Surrendered	28 Jan 2009
40	MONARO MIX SPECIFIED CONCRETE PTY. LIMITED	9 BOWEN PLACE, QUEANBEYAN, NSW 2620	POEO licence	No longer in force	08 Dec 1999
1030514	MONARO MIX SPECIFIED CONCRETE PTY. LIMITED	9 BOWEN PLACE, QUEANBEYAN, NSW 2620	s.58 Licence Variation	Issued	04 Sep 2003
1035852	MONARO MIX SPECIFIED CONCRETE PTY. LIMITED	9 BOWEN PLACE, QUEANBEYAN, NSW 2620	s.58 Licence Variation	Issued	02 Apr 2004
1544332	MONARO MIX SPECIFIED CONCRETE PTY. LIMITED	9 BOWEN PLACE, QUEANBEYAN, NSW 2620	s.91 Clean Up Notice	Issued	05 Sep 2016



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- – POEO Public Register
  - Terms of use: POEO public register
  - Search for licences, applications and notices
  - Search for penalty notices
  - Search for prosecutions and civil proceedings

Home > Environment protection licences > POEO Public Register > Search for licences, applications and notices

Search results

Your search for: **General Search** with the following criteria

Suburb - QUEANBEYAN

returned 42 results

Export to excel 3 of 3 Pages Search Again

Number	Name	Location	Type	Status	Issued date
1504580	QUEANBEYAN CITY COUNCIL	CITY OF QUEANBEYAN, QUEANBEYAN, NSW 2620	s.55 Licence Refusal	Issued	27 Feb 2013
3085772746	QUEANBEYAN CITY COUNCIL	Old Cooma Rd, QUEANBEYAN, NSW 2620	Penalty Notice	Issued	02 Dec 2013

1 2 3

12 July 2017

Environment protection licences

- + Licensing under the POEO Act
- Guide to licensing
- eConnect EPA
- Licence forms
- Licence fees
- + Risk-based licensing
- + Load-based licensing
- + Emissions trading
- – POEO Public Register
  - Terms of use: POEO public register
  - Search for licences, applications and notices
  - Search for penalty notices
  - Search for prosecutions and civil proceedings
  - Enforceable undertakings

Home > Environment protection licences > POEO Public Register > Search for licences, applications and notices

Notice summary

Search Again Return to Previous Page

Summary of Notice No: 1504580

View report (PDF document 86 kb)

Organisation: QUEANBEYAN CITY COUNCIL
Location: QUEANBEYAN SEWERAGE RETICULATION SYSTEM CITY OF QUEANBEYAN, QUEANBEYAN, NSW, 2620
LGA: QUEANBEYAN
Catchment: Murrumbidgee
Issue date: 27 Feb 2013
Notice type: s.55 Licence Refusal

Licence

Number	Name	Licence status
13318	QUEANBEYAN CITY COUNCIL	Refused

SafeWork NSW Hazardous Chemicals Notifications:

UPSS Monitoring Records Enquiry:

Appendix VIII – Borehole Soil Profile Logs

Appendix IX – Soil Analysis Chain of Custody Form

Appendix X – Soil Analysis Laboratory Report (*Envirolab* laboratories)

L13, Tower 2, 475 Victoria Avenue,
Chatswood NSW 2067
PO Box 5340, West Chatswood NSW 1515
Australia

t: +61 2 9325 5600
f: +61 2 9904 6777
w: www.opus.com.au