REPORT TO

HEALTH INFRASTRUCTURE

ON

PRELIMINARY (STAGE 1) SITE INVESTIGATION

FOR

PROPOSED ALTERATIONS AND ADDITIONS

AT

TEMORA HOSPITAL, 169-189 LOFTUS STREET,
TEMORA, NSW

Date: 8 June 2023
Ref: E35822PRrpt

JKEnvironments
www.jkenvironments.com.au

T: +61 2 9888 5000
JK Environments Pty Ltd
ABN 90 633 911 403

Report prepared by:

Craig Ridley
Associate | Environmental Scientist

Report reviewed by:

B Page

Brendan Page
Principal Associate | Environmental Scientist
CEnvP SC

2022/2023
No. SC40059

For and on behalf of
JKE
PO BOX 976
NORTH RYDE BC NSW 1670

DOCUMENT REVISION RECORD

Report Reference	Report Status	Report Date
E35822PRrpt	Final Report	8 June 2023

This Report (which includes all attachments and annexures) has been prepared by JKE for the Client, and is intended for the use only by that Client.

This Report has been prepared pursuant to a contract between JKE and the Client and is therefore subject to:

a) JKE's proposal in respect of the work covered by the Report;
b) The limitations defined in the client's brief to JKE; and
c) The terms of contract between JKE and the Client, including terms limiting the liability of JKE.

If the Client, or any person, provides a copy of this Report to any third party, such third party must not rely on this Report, except with the express written consent of JKE which, if given, will be deemed to be upon the same terms, conditions, restrictions and limitations as apply by virtue of (a), (b), and (c) above.

Any third party who seeks to rely on this Report without the express written consent of JKE does so entirely at their own risk and to the fullest extent permitted by law, JKE accepts no liability whatsoever, in respect of any loss or damage suffered by any such third party.

Executive Summary

Health Infrastructure ('the client') commissioned JK Environments (JKE) to undertake a Preliminary (Stage 1) Site Investigation (PSI) for the proposed hospital redevelopment at Temora Hospital, 169-189 Loftus Street, Temora, NSW ('the site'). The purpose of the investigation is to make a preliminary assessment of site contamination. The site location is shown on Figure 1 and the investigation was confined to the site boundaries as shown on Figure 2 attached in the appendices.

This report has been prepared to inform the masterplan and design stage of the proposed hospital redevelopment. JKE note that a PSI is the first step in the contaminated land assessment process for planning approval with regards to Chapter 4 of State Environmental Planning Policy (Resilience and Hazards) 2021.

JKE understand that the proposed development is currently in the master planning and early design phase of the project. The proposed development will likely include additions to the existing buildings and/or new buildings constructed on the site. The development may also include refurbishment of the existing buildings. Conceptual drawings were not provided to JKE.

The primary aims of the investigation were to identify any past or present potentially contaminating activities at the site, identify the potential for site contamination, and make a preliminary assessment of the soil conditions. The scope of the investigation included a desktop review of historical information, a site walkover inspection and soil sampling from 12 locations. The site was historically used for residential and agricultural (grazing) purposes until the late 1930s, and has been used for a hospital since.

Potential contamination sources identified at the site and the immediate surrounds included:

- Historic filling activities;
- Historic agricultural activities;
- Use of pesticides;
- Hazardous building materials present within existing and/or former structures;
- On-site generator and associated fuel storage;
- Maintenance workshop; and
- On-site incinerator and hospital activities.

The investigation encountered fill and/or clay soils to depths of approximately, underlain by andesite bedrock. The maximum depth of fill encountered was 1.1m. Groundwater was not encountered during the investigation. The fill typically comprised of silty and/or sandy clay and silty sand, with inclusions of gravel and boulders, volcanic breccia, metal fragments and root fibres. Fibre cement fragments (FCF)/asbestos containing material (ACM) was observed in surficial fill in BH4.

The investigation identified fill soils impacted by asbestos and carcinogenic polycyclic aromatic hydrocarbons (PAHs) at concentrations that were above the adopted site assessment criteria (SAC). Elevated copper concentrations above the SAC were also identified in the majority of the analysed fill, natural soil and rock samples though were considered to be representative of the regional conditions.

Based on the available results, and at the time of reporting, the fill material is assigned the following preliminary classifications:

- Fill in the vicinity of BH4 is assigned a preliminary classification of **General Solid Waste (non-putrescible) containing Special Waste (asbestos)**;
- Fill in other areas tested as part of this investigation and the natural silty clay and sandy silty clay soil is assigned a preliminary classification of **General Solid Waste (non-putrescible)**; and
- The underlying andesite bedrock will likely meet the definition of **Virgin Excavated Natural Material (VENM)** for off-site disposal or re-use purposes. Though the bedrock will likely meet the definition of VENM, an assessment will also be required to confirm the bedrock is suitable from a contamination risk perspective in the context of the proposed re-use due to the elevated copper concentrations.

Based on the findings of the investigation, JKE is of the opinion that the site can be made suitable for the proposed development via remediation. The following is recommended:

- A surface walkover and 'emu-picking' of all visible FCF/ACM from the site surface should be undertaken and an asbestos clearance certificate obtained from a SafeWork NSW licensed asbestos assessor (LAA);
- Interim management of the site is to occur under an asbestos management plan (AMP), until remediation occurs;
- The earthworks and any re-use of material is to adequately consider the presence of copper in the soil in relation to waste classification and potential ecological risks;
- Undertake a detailed (stage 2) site investigation (DSI) to better assess the risks associated with the potential sources of contamination and inform preparation of a remediation action plan (RAP);
- A RAP is to be prepared to address the contamination issues identified at the site; and
- The site is to be managed, remediated and validated in accordance with the RAP and AMP.

In the context of remediation, asbestos-impacted soils and/or PAH-impacted soils may be remediated by:

- Consolidation of impacted soils in a dedicated containment cell, or capped in-situ, and managed long-term in accordance with an Environmental Management Plan (EMP); or
- Excavated and disposed off-site at an appropriately licensed landfill facility.

The remediation approach and validation requirements will need to be outlined in a RAP.

The conclusions and recommendations should be read in conjunction with the limitations presented in the body of this report.

Table of Contents

List of Tables

Attachments

Abbreviations

Asbestos Fines/Fibrous Asbestos	**AF/FA**
Ambient Background Concentrations	**ABC**
Asphaltic Concrete	**AC**
Asbestos Containing Dust	**ACD**
Added Contaminant Limits	**ACL**
Asbestos Containing Material	**ACM**
Area of Environmental Concern	**AEC**
Australian Height Datum	**AHD**
Aboriginal Heritage Information Management System	**AHIMS**
Acid Sulfate Soil	**ASS**
Above-Ground Storage Tank	**AST**
Below Ground Level	**BGL**
Benzo(a)pyrene Toxicity Equivalent Factor	**BaP TEQ**
Bureau of Meteorology	**BOM**
Benzene, Toluene, Ethylbenzene, Xylene	**BTEX**
Before You Dig Australia	**BYDA**
Cation Exchange Capacity	**CEC**
Contaminated Land Management	**CLM**
Carbon Dioxide	**CO_2**
Contaminant(s) of Potential Concern	**CoPC**
Chain of Custody	**COC**
Conceptual Site Model	**CSM**
Contaminant Threshold	**CT**
Development Application	**DA**
Design Guidance Note	**DGN**
Data Quality Indicator	**DQI**
Data Quality Objective	**DQO**
Detailed Site Investigation	**DSI**
Ecological Investigation Level	**EIL**
Ecological Screening Level	**ESL**
Environmental Management Plan	**EMP**
Environment Protection Authority	**EPA**
Environmental Site Assessment	**ESA**
Environmental & Safety Professionals	**ESP**
Fibre Cement Fragment(s)	**FCF**
Hazardous Building Materials	**HAZMAT**
Health Investigation Level	**HILs**
Health Screening Level	**HSL**
International Organisation of Standardisation	**ISO**
JK Environments	**JKE**
JK Geotechnics	**JKG**
Licensed Asbestos Assessor	**LAA**
Lab Control Spike	**LCS**
Local Environment Plan	**LEP**
Map Grid of Australia	**MGA**
National Association of Testing Authorities	**NATA**
National Environmental Protection Measure	**NEPM**
No Set Limit	**NSL**
Organochlorine Pesticides	**OCP**
Organophosphate Pesticides	**OPP**
Polycyclic Aromatic Hydrocarbons	**PAH**
Polychlorinated Biphenyls	**PCBs**
Per-and Polyfluoroalkyl Substances	**PFAS**

Photo-ionisation Detector	**PID**
Protection of the Environment Operations	**POEO**
Practical Quantitation Limit	**PQL**
Preliminary Site Investigation	**PSI**
Quality Assurance	**QA**
Quality Control	**QC**
Remediation Action Plan	**RAP**
Relative Percentage Difference	**RPD**
Site Assessment Criteria	**SAC**
Sampling, Analysis and Quality Plan	**SAQP**
State Environmental Planning Policy	**SEPP**
Synthetic Mineral Fibres	**SMF**
Site Specific Assessment	**SSA**
Source, Pathway, Receptor	**SPR**
Specific Contamination Concentration	**SCC**
Standard Penetration Test	**SPT**
Standing Water Level	**SWL**
Trip Blank	**TB**
Toxicity Characteristic Leaching Procedure	**TCLP**
Total Recoverable Hydrocarbons	**TRH**
Trip Spike	**TS**
Upper Confidence Limit	**UCL**
Unexpected Finds Protocol	**UFP**
Urban Residential and Public Open Space	**URPOS**
Virgin Excavated Natural Material	**VENM**
Volatile Organic Compounds	**VOC**

Units

Kilometres	**km**
Litres	**L**
Metres BGL	**mBGL**
Metres	**m**
Millivolts	**mV**
Millilitres	**ml or mL**
Micrograms per Litre	**µg/L**
Milligrams per Kilogram	**mg/kg**
Milligrams per Litre	**mg/L**
Parts Per Million	**ppm**
Percentage	**%**
Percentage weight for weight	**%w/w**

1 INTRODUCTION

Health Infrastructure ('the client') commissioned JK Environments (JKE) to undertake a Preliminary (Stage 1) Site Investigation (PSI) for the proposed hospital redevelopment at Temora Hospital, 169-189 Loftus Street, Temora, NSW ('the site'). The purpose of the investigation is to make a preliminary assessment of site contamination. The site location is shown on Figure 1 and the investigation was confined to the site boundaries as shown on Figure 2 attached in the appendices.

This report has been prepared to inform the masterplan and design stage of the proposed hospital redevelopment. JKE note that a PSI is the first step in the contaminated land assessment process for planning approval with regards to Chapter 4 of State Environmental Planning Policy (Resilience and Hazards) 2021[1].

A geotechnical investigation and a visual hazardous building materials (HAZMAT) survey were undertaken in conjunction with this PSI by JK Geotechnics (JKG) and JKE respectively. The results of the geotechnical investigation and HAZMAT survey are presented in separate reports (Ref: 35822BFrpt[2] and Ref: E35822HLrpt-HAZ[3]). This report should be read in conjunction with the JKG and JKE HAZMAT reports.

1.1 Proposed Development Details

JKE understand that the proposed development is currently in the master planning and early design phase of the project. The proposed development will likely include additions to the existing buildings and/or new buildings constructed on the site. The development may also include refurbishment of the existing buildings.

Conceptual drawings were not provided to JKE. However, we anticipate that the proposed development will likely be constructed consistent with the existing levels and expect that only minor earthworks (cut/fill) would be required to accommodate the proposed development.

1.2 Aims and Objectives

The primary aims of the investigation were to identify any past or present potentially contaminating activities at the site, identify the potential for site contamination, and make a preliminary assessment of the soil conditions. The objectives were to:

- Provide an appraisal of the past site use(s) based on a review of historical records;
- Assess the current site conditions and use(s) via a site walkover inspection;
- Identify potential contamination sources/areas of environmental concern (AEC) and contaminants of potential concern (CoPC);
- Assess the soil contamination conditions via implementation of a preliminary sampling and analysis program;
- Prepare a conceptual site model (CSM);
- Assess the potential risks posed by contamination to the receptors identified in the CSM (Tier 1 assessment);

---

[1] *State Environmental Planning Policy (Resilience and Hazards) 2021* (NSW) (referred to as SEPP Resilience and Hazards 2021)

[2] JKG (2023). *Report to Health Infrastructure on Geotechnical Investigation for Proposed Alterations and Additions at Temora Hospital, 169-189 Loftus Street, Temora, NSW.* (Ref: 35822YFrpt2) (referred to as JKG report)

[3] JKE, (2023). *Report to Health Infrastructure on Hazardous Building Materials Survey for Proposed Alterations and Additions at Temora Hospital, 169-189 Loftus Street, Temora, NSW.* (Ref: 35822PLrpt-HAZ) (referred to as JKE HAZMAT report)

- Provide a preliminary waste classification for off-site disposal of soil;
- Assess whether the site is suitable or can be made suitable for the proposed development (from a contamination viewpoint);
- Assess whether further intrusive investigation and/or remediation is required; and
- Provide high-level commentary on possible remediation approaches, if required.

1.3 Scope of Work

The investigation was undertaken in accordance with a JKG proposal (Ref: P57854BF) of 9 December 2022 and commissioned by a signed Consultancy Agreement (HI22656). The scope of work included the following:

- Review of site information, including background and site history information from various sources outlined in the report;
- Preparation of a CSM;
- Design and implementation of a sampling, analysis and quality plan (SAQP);
- Interpretation of the analytical results against the adopted Site Assessment Criteria (SAC);
- Data Quality Assessment; and
- Preparation of a report including a Tier 1 risk assessment.

The scope of work was undertaken with reference to the National Environmental Protection (Assessment of Site Contamination) Measure 1999 as amended (2013)[4], other guidelines made under or with regards to the Contaminated Land Management Act (1997)[5], SEPP Resilience and Hazards 2021, Design Guidance Note No. 030 (2021)[6] and Design Guidance Note No. 060 (2020)[7]. A list of reference documents/guidelines is included in the appendices.

---

[4] National Environment Protection Council (NEPC), (2013). *National Environmental Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013).* (referred to as NEPM 2013)

[5] Contaminated Land Management Act 1997 (NSW) (referred to as CLM Act 1997)

[6] Health Infrastructure, (2021). *Design Guidance Note No. 030. Site Investigations: Project Opportunities and Constraints.* (referred to as DGN 030)

[7] Health Infrastructure, (2020). *Design Guidance Note No. 060. Contaminated Land Management Framework*. (referred to as DGN 060)

2 SITE INFORMATION

2.1 Background

2.1.1 Asbestos Analysis & Risk Assessment

An asbestos analysis and risk assessment was undertaken at the site by Robson Environmental in 2018[8]. The purpose of the assessment was to investigate the presence and condition of suspected asbestos containing material (ACM) within the first-floor ceiling space of the nurses' accommodation.

The assessment identified friable asbestos within the hot water pipe lagging, and within surface dust samples collected from the ceiling space. The corrugated roof sheeting and fibre cement fragments (FCF) within the ceiling space were considered to be bonded/non-friable ACM.

Friable asbestos was identified in the pipe lagging and surface dust samples within the ceiling space. Bonded asbestos was identified within the corrugated sheeting roof tiles, an access hatch and fibre cement debris within the ceiling space.

Robson Environmental recommended the removal of all ACM roof sheeting, pipe lagging, FCF and asbestos containing dust (ACD) from within the first-floor ceiling space.

2.1.2 HAZMAT Survey Update

A hazardous materials survey update was undertaken at the site by Environmental & Safety Professionals (ESP) in 2018[9]. The purpose of the assessment was to update the existing HAZMAT register following refurbishments at the site. The scope of work included a visual inspection of ACM, synthetic mineral fibres (SMF), polychlorinated biphenyls (PCBs), lead-based paint, and ozone depleting substances within the buildings. Samples of suspected ACM and lead-based paint were also collected for laboratory analysis.

The report identified the following:

- Bonded/non-friable ACM present in the main hospital building, boiler room, nurses' accommodation, workshop, and plant room;
- There was potential friable asbestos (FA) to be present within old boilers in the hospital, nurses' accommodation or boiler room buildings;
- SMF present in the main hospital building, day centre building, boiler room, and nurses' accommodation;
- Lead-based paint systems and ozone depleting substances in the main hospital building and nurses' home;
- PCB containing materials were not identified. However, a licensed electrician should confirm the whether light fittings installed prior to 1980 contain PCB filled capacitors.

The majority of identified ACM was considered low risk. The following was recommended:

---

[8] Robson Environmental, (2018). *Temora Hospital Nurses Home – Asbestos Analysis and Risk Assessment of 1st floor ceiling space insulation, sheeting and surface dust samples collected on Tuesday 22 May 2018.* (Ref: T-05862)

[9] Environmental & Safety Professionals, (2018). *Report for Murrumbidgee LHD Asset Management. Hazardous Materials Survey Update: Temora Hospital, 169 Temora Young Road Temora NSW.* (Ref: J39256)

- The vinyl floor tiles in the staff dining room required damaged/broken tile edges to be sealed;
- The table tops within the linen store room were required to be removed and/or replaced; and
- The remaining identified ACM was to be managed in accordance with the asbestos management plan (AMP).

2.1.3 Asbestos Site Assessment & Scope of Works for Remediation

An asbestos site assessment was undertaken at the site by Regional EnviroScience in 2019[10]. The scope of works included sampling (using adhesive tape) to assess the potential for migration of asbestos fibres throughout the nurses' accommodation building. Friable asbestos was previously identified within the ceiling cavity, and there was considered to be potential for fibre migration through exposed manholes and access hatches.

The assessment identified asbestos fibres (considered as friable asbestos) in two rooms on the first floor. Regional EnviroScience considered there was potential for further migration of fibres and the entire first floor should be treated as impacted by friable asbestos. The following was recommended:
- Immediately isolate and restrict access to the first floor of the nurses' accommodation. This should be sealed off from the base of the stairs; and
- Remediation must be conducted by a Class A licensed asbestos removalist. All porous furnishing must be disposed of as asbestos waste. Non-porous furniture may be decontaminated and re-used.

2.1.4 Due Diligence Report

A due diligence report was prepared for the site by Northrop Consulting Engineers in 2022[11] to inform the master planning for the hospital redevelopment. The contamination-related information was reviewed and is summarised below.

The due diligence report included a review of the ESP Hazmat Survey update (summarised in Section 2.1.2 of this report), and also referred to an asbestos clearance report undertaken by EnviroScience Solutions in 2020. JKE was not supplied with a copy of the asbestos clearance report for review.

The due diligence report indicated the following materials were removed from the nurses' accommodation building over a period of time:
- Bonded/non-friable ACM corrugated roofing, fibre cement ceiling and wall sheeting from first floor veranda, and fibre cement external sheeting of the ground floor kitchen and storage room;
- Friable asbestos lagged pipes in the ceiling cavity space and from room 10; and
- The vinyl floor tiles from the first-floor landing, however the asbestos containing adhesive layer remained.

The due diligence report did not include information relating to potential soil and/or groundwater contamination.

---

[10] Regional EnviroScience Pty Ltd (2019). *Asbestos Site Assessment and Scope of Works for Remediation*; *Nurses Accommodation, Temora Hospital* (Ref: 22408R01)

[11] Northrop Consulting Engineers, (2022). *Temora Hospital – Site Due Diligence Report* (Ref: SY221522-00-MD01, Revision 2).

2.1.5 Aboriginal Heritage Due Diligence Assessment

An Aboriginal heritage due diligence assessment was undertaken by NGH in 2023[12]. The assessment included a desktop review of the Aboriginal Heritage Information Management System (AHIMS) database and a site walkover inspection.

The desktop review identified 108 Aboriginal sites registered within the local area. However, the nearest was located approximately 1.7km from the site. The site inspection did not identify any Aboriginal sites, objects, places or areas of potential Aboriginal archaeological sensitivity. The site was considered to have been highly disturbed by vegetation clearing, cut/fill operations and the construction of the hospital and associated buildings.

NGH considered it unlikely that Aboriginal heritage objects or areas of archaeological potential were present within the site. NGH recommended the development could proceed with caution.

2.2 Site Identification

Table 2-1: Site Identification

Current Site Owner (Certificate of Title):	Health Administration Corporation
Site Address:	169 – 189 Loftus Street, Temora, NSW
Lot & Deposited Plan:	Lot 2 DP 572392
Current Land Use:	Hospital
Proposed Land Use:	Hospital
Local Government Authority:	Temora Shire Council
Current Zoning:	SP2: Infrastructure
Site Area (m^2) (approx.):	31,770
RL (AHD in m) (approx.):	308-321
Geographical Location (decimal degrees) (approx.):	Latitude: -34.44276 Longitude: 147.5434
Site Location Plan:	Figure 1
Sample Location Plan:	Figure 2

---

[12] NGH Pty Ltd, (2023). *Aboriginal Heritage Due Diligence Assessment; Temora Hospital Redevelopment*. (Ref: 22-610, draft issued 2 February 2023)

2.3 Site Location and Regional Setting

The site is located in a predominantly residential and rural area of Temora and is bound by Loftus Street to the south and Gloucester Street to the west. The site is located approximately 4km to the south-east of Lake Centenary (a man-made lake across Trigalong Creek).

2.4 Topography

The regional topography is characterised by gently undulating terrain. The site is located towards the crest of a gently undulating slope which grades down towards the south-west at approximately 5°. Parts of the site appear to have been levelled to account for the slope and accommodate the existing development.

2.5 Site Inspection

A walkover inspection of the site was undertaken by JKE on 2 May 2023. The inspection was limited to accessible areas of the site and immediate surrounds. An internal inspection of the main hospital and staff accommodation buildings was not undertaken. Selected site photographs obtained during the inspection and throughout the course of the PSI are attached in the appendices.

A summary of the inspection findings is outlined in the following subsections:

2.5.1 Current Site Use and/or Indicators of Former Site Use

At the time of the inspection, the majority of site was utilised as a hospital with associated accommodation and maintenance areas. Former uses could not be discerned.

2.5.2 Buildings, Structures and Roads

The buildings were mostly located within the northern and central portions of the site and appeared to be generally in good condition based on cursory inspections. The main hospital building was a three-storey building of brick and fibre cement construction, with metal roofing and timber and concrete flooring. A single-storey storage building of brick construction with metal roofing and concrete flooring adjoined to the west of the main hospital building.

A single-storey day centre building was located to the north-east of the main hospital building and was of brick construction with metal roofing and concrete flooring. The internal walls were lined with fibre cement.

A single-storey building of brick construction with concrete flooring and metal roofing was located to the north-west of the main hospital building. This building housed the boiler room and infectious waste storage areas. An incinerator was located within the boiler room.

A single-storey maintenance office and workshop building was located to the north of the main hospital building. The maintenance building was of brick construction with concrete flooring, metal roofing, with brick and fibre-cement lined internal walls. A small single-storey plant room of brick construction with a metal roof was located to the east of the main hospital building.

A two-storey building of brick and metal construction with tile roofing was located to the south-east of the main hospital building and was used for staff accommodation. The flooring was of timber construction with fibre cement lining on internal walls. A single-storey shed of fibre cement construction with metal roofing was adjacent to the east of the nurses' accommodation building.

An asphaltic concrete (AC) paved driveway provided vehicular access to the site from Loftus Street in the south-west of the site, and extended to the north-east to and around the main hospital building, connecting with another AC paved driveway providing vehicular egress from the site to Gloucester Street in the north-west of the site. Several on-grade carparks and concrete pathways were observed across the site. The pavement conditions varied from moderate to poor condition based on a cursory inspection, with several cracks and potholes observed. Evidence of repairs to the AC pavements were also noted.

2.5.3 Boundary Conditions, Soil Stability and Erosion

The site was fenced on all boundaries, and was accessible from driveways in the south-west from Loftus Street and the north-west from Gloucester Street. No visible evidence of erosion was observed at the site boundaries or across the site during the course of the PSI.

2.5.4 Presence of Drums/Chemical Storage and Waste

Various chemicals associated with site maintenance were stored on concrete flooring or shelves within the maintenance building. The following chemicals were observed:

- Minor quantities of paints stored in 4-15L containers and pressurised cannisters (for line-marking);
- A 250L flammable liquid storage cabinet containing jerry cans of fuel;
- A 160L toxic substance storage cabinet containing various domestic-grade herbicides stored in 2-5L containers; and
- Minor quantities of sealants, lubricants and grease.

An infectious waste storage area was located within the boiler room building and contained several sharps containers and 240L bins. All waste appeared to be stored in their appropriate containers.

Two gas stores were located across the site, being adjacent to the maintenance building, and adjacent to the main hospital building. The gas stores included oxygen and nitrous oxide cylinders contained within a metal cage. General waste and recycling bins were observed predominantly in the northern portion of the site.

Fire extinguishers were observed in several locations across the site. The fire extinguishers were predominantly carbon dioxide (CO_2) and dry powder type extinguishers. A foam-type fire extinguisher was observed within the maintenance building. The extinguisher was marked as 'Fluorine-free', indicating it did not contain per-and polyfluoroalkyl substances (PFAS) within the foam matrix. During the inspection, no visible evidence of discharge/use of the fire extinguishers was observed.

Based on the above, JKE considered that the use of fuels, oils and lubricants within the maintenance building may represent a potential source of contamination, though it is likely any impacts would be localised.

Due to the relatively small quantities and/or domestic-grade constituents of the remaining identified chemicals/wastes, these were not considered to represent a potential source of contamination that would pose an unacceptable risk.

2.5.5 Evidence of Cut and Fill

Exposed fill soils were observed in the formed garden areas of the site. A steep batter was observed in the south of the site with a large flat area at the base. The provided survey indicated this was a former tennis court.

2.5.6 Visible or Olfactory Indicators of Contamination

Surficial staining of the AC pavement was observed in the northern carpark, adjacent to the maintenance building. The staining was likely associated with localised leaks/spills of fluids from vehicles in this area. JKE note that the staining was minor and was considered unlikely to have impacted the underlying ground to the extent that it would pose an unacceptable risk.

An incinerator was observed within the boiler room located within the north-west of the site.

2.5.7 Drainage and Services

Surface water run-off was expected to generally flow in a south-westerly direction (in sympathy with the local topography) and eventuate in the open concrete drain along the western boundary and/or in off-site stormwater infrastructure along Loftus Street. Infiltration of rainwater would also be expected within the landscaped areas on-site.

Three substations were observed to the west of the boiler room, and a self-contained back-up generator was located adjacent to the west of the main hospital building.

2.5.8 Sensitive Environments

Sensitive environments such as wetlands, ponds, creeks or extensive areas of natural vegetation were not identified on site or in the immediate surrounds.

2.5.9 Landscaped Areas and Visible Signs of Plant Stress

Medium to large trees were observed generally along the site boundaries. Smaller shrubs and trees were located within the courtyard to the north and south of the main hospital building, as well as in other formed garden areas across the site. The on-site vegetation appeared healthy based on a cursory inspection, with no visible evidence of stress or die-back.

2.6 Surrounding Land Use

During the site inspection, JKE observed the following land uses in the immediate surrounds:

- North – low-density residential, the Temora campus of TAFE NSW and residential care facility (Whiddon Group);

- South – Loftus Street with low-density residential beyond;
- East – Utilities infrastructure (transmission tower, substation, pumping station and reservoirs) with vacant agricultural land (possibly grazing) beyond; and
- West – Residential care facility (Whiddon Group) with Gloucester Street beyond.

JKE did not observe any land uses in the immediate surrounds that were identified as potential contamination sources for the site.

2.7 Underground Services

The 'Before You Dig Australia' (BYDA) plans were reviewed for the investigation in order to establish whether any major underground services exist at the site or in the immediate vicinity that could act as a preferential pathway for contamination migration. Major services were not identified that would be expected to act as preferential pathways for contamination migration.

2.8 Local Meteorology

Key meteorological data for the weather station at the Temora Airport available on the Bureau of Meteorology (BOM)[13] website has been reviewed and JKE note the following:

- The highest mean rainfall occurs in November, with a total of 58.4mm;
- The lowest mean rainfall occurs in April, with a total of 31.1mm; and
- In the week leading up to the JKE site inspection, a total of 28mm of rainfall was recorded.

2.9 Section 10.7 Planning Certificate

The section 10.7 (2 and 5) planning certificates were reviewed for the investigation. Copies of the certificates are attached in the appendices. A summary of the relevant information is outlined below:

- The land is not restricted by: contamination; acid sulfate soils (ASS) or salinity;
- The land is not biodiversity certified;
- The land is not located in a conservation area; and
- There are no items of environmental heritage located on the land.

---

[13] http://www.bom.gov.au/climate/averages/tables/cw_073151.shtml

3 GEOLOGY AND HYDROGEOLOGY

3.1 Regional Geology

Regional geological information was reviewed for the investigation. The information was sourced from the Lotsearch report attached in the appendices. The information reviewed indicates that the site is underlain by Temora Volcanics comprising andesite, trachyandesite, latite and basaltic andesite, though may be obscured by quaternary aged alluvial soils. The alluvial soils are likely present on the lower slopes and toe of the hillside and not within the site boundaries.

3.2 Acid Sulfate Soil (ASS) Risk and Planning

The site is not located in an ASS risk area according to the risk maps prepared by the Department of Land and Water Conservation.

3.3 Hydrogeology

Hydrogeological information presented in the Lotsearch report indicated that the regional aquifer on-site and in the areas immediately surrounding the site includes fractured or fissured, extensive aquifers of low to moderate productivity. There was one registered bore within the report buffer of 2,000m. In summary:

- The registered bore was located approximately 330m to the west of the site;
- The registered bore was intended for use for recreational purposes (assumed to be used for irrigation of recreational areas); and
- The drillers log information identified clay soils to a depth of approximately 41mBGL (with a weathered sandstone layer between approximately 30-32mBGL), underlain by siltstone bedrock.

The information reviewed for the PSI indicates that the subsurface conditions at the site are likely to consist of relatively low permeability (residual) soils overlying shallow bedrock. The potential for viable groundwater abstraction and use of groundwater under these conditions is considered to be low. There is a reticulated water supply in the area and consumption of groundwater is not expected to occur. Use of groundwater is not proposed as part of the development as far as we are aware.

Considering the local topography and surrounding land features, JKE anticipate groundwater to flow towards the north-west.

3.4 Receiving Water Bodies

Surface water bodies were not identified in the immediate vicinity of the site. The closest surface water body is an unnamed dam approximately 320m to the north-east from site. This is up-gradient from site and is not considered to be a potential receptor.

The nearest down-gradient surface water body is Trigalong Creek, located approximately 3.8km to the west of the site, which in turn flows into Lake Centenary, approximately 4km to the north-west of the site. Due to the distances from the site, these water bodies are not considered to be potential receptors which could readily be impacted by direct migration of contaminated groundwater.

4 SITE HISTORY INFORMATION

4.1 Review of Historical Aerial Photographs and Historical Maps

Historical aerial photographs were reviewed for the investigation. The information was sourced from the Lotsearch report. JKE has reviewed the photographs and historical maps, and summarised relevant information in the following table:

Table 4-1: Summary of Historical Aerial Photographs and Historical Maps

Year	Details
1945	**On-site:** two inter-connected rectangular buildings (main hospital building) were visible within the north of the site, with a small building/structure adjoining the south-western corner. An 'L'-shaped building was visible to the east of the main hospital building. A small building/shed was visible to the west of the main hospital building, adjacent to the northern site boundary. A large rectangular building (nurses' accommodation) was visible in the south-east of the site. The area between the buildings, and extending to the northern boundary on the north-side of the main buildings, appeared to be paved or cleared, with a driveway extending to the south-western corner of the site. Trees were visible along the driveway and within the north-eastern corner of the site. **Off-site:** The surrounds appeared to be predominantly cleared and used for agricultural (grazing) purposes. A few residential dwellings and associated yards were adjacent to the north-west of the site. The township of Temora (comprised predominantly of low-density residential) was visible to the south-west of the site. A water tower was visible adjacent to the east of the site.
1961	**On-site:** The southern and western portions of the site appeared to be densely vegetated. A rectangular cleared section of land (possible tennis courts) was visible to the south of the nurses' accommodation. **Off-site:** Three large rectangular buildings had been constructed approximately 100m to the north of the site. The surrounds otherwise appeared generally similar to the previous photograph.
1978	**On-site:** The building in the east had been replaced with a small square building (2023 configuration of plant room), and a large rectangular building had been constructed to the north of the main hospital building, adjacent to the northern site boundary (2023 configuration of maintenance building). The small building in the west of the site (adjacent to the northern boundary) had been extended to the east, and a northerly extension had been constructed adjoining the east of the main hospital building. **Off-site:** Several buildings were visible immediately adjacent to the west of the site (Whiddon Temora nursing home). An additional water tower and a house/residence was visible to the east/south-east of the site. A residential subdivision had been constructed to the south of the site, beyond Loftus Street.
1986	**On-site:** An additional rectangular building had been constructed to the north-east of the main hospital building (2023 configuration of day centre). Small additions were visible to the south-western portion of the main hospital building. **Off-site:** The surrounds appeared generally similar to the previous photograph.
1997 2005	The site and surrounds appeared generally similar to the previous photograph. A large 'X'-shaped building was visible by the 1997 photograph, located approximately 150m to the north-east of the site. Several additional houses were visible to the south-east of the site (to the east of the existing subdivision) by the 2005 photograph.

Year	Details
2011	**On-site:** The site appeared relatively similar to the previous photograph. **Off-site:** Several large rectangular buildings were visible approximately 150m to the north of the site. The buildings appear to be consistent with the 2023 configuration of the TAFE NSW Temora campus.
2017 2022	The site and surrounds appeared relatively similar to previous photographs. Construction of a small subdivision (cul-de-sac and residences) approximately 100-150m north-west of the site was visible in these photographs.

4.2 Review of Historical Land Title Records

Historical land title records were reviewed for the investigation. The record search was undertaken by InfoTrack. Copies of the title records are attached in the appendices. The title records indicate the following:

- Prior to the 1930s, the site was owned by individuals. The professions listed including a farmer;
- Between 1930 and 2019, the site was owned by the Temora and District Hospital;
- The site was subdivided in 1974; and
- The site was compulsorily acquired in 2019 by the Health Administration Corporation.

The historical land title records identified the site was likely used for agricultural purposes (likely grazing). Historical agricultural land use could potentially have resulted in contamination.

4.3 Review of Council Records

Council records were sourced under an informal access to information request and were reviewed for the investigation. The council records indicated that a Development Application (DA) was approved in 2012 for the construction of a lift shaft and 1.5m x 2.5m lift car (Ref: 1213/012D).

4.4 SafeWork NSW Records

SafeWork NSW records in relation to the registered storage of dangerous goods were reviewed for the investigation. Copies of relevant documents are attached in the appendices. The search identified licences to store dangerous goods including above ground storage tanks (ASTs) at the site.

A summary of the relevant information is provided in the following table:

Table 4-2: Summary of SafeWork NSW Records

Date	Record Number	License Details
6 November 1992	35/028071	An application to store dangerous goods at the site was lodged. The application related to: • 1x 7,500L liquified petroleum gas (LPG) above-ground tank; and • 1x 2,500L LPG above-ground tank.
27 September 1995	35/028071	A conditional licence was issued for the storage of dangerous goods. The licence was conditional upon receipt of a site sketch within one month of issue.

Date	Record Number	License Details
20 May 1998	35/028071	A renewal application was lodged.

4.5 NSW EPA and Department of Defence Records

A review of the NSW EPA and Department of Defence databases was undertaken for the PSI. Information from the following databases were sourced from the Lotsearch report:

- Records maintained in relation to contaminated land under Section 58 of the CLM Act 1997;
- Records of sites notified in accordance with the Guidelines on the Duty to Report Contamination under Section 60 of the CLM Act 1997 (2015)[14];
- Licensed activities under the Protection of the Environment Operations Act (1997)[15];
- Sites being investigated under the NSW EPA per-and polyfluoroalkyl substances (PFAS) investigation program;
- Sites being investigated by the Department of Defence for PFAS contamination; and
- Sites being managed by the Department of Defence for PFAS contamination.

The search included the site and surrounding areas in the report buffer. A summary of the information is provided below:

Table 4-3: NSW EPA and Department of Defence Records

Records	On-site	Off-site
Records under Section 58 of the CLM Act 1997	None	There was one property listed within the report buffer. This property was a service station location approximately 880m to the west and down-gradient of site. Due to the distance from site and down-gradient location, the property is not considered to represent an off-site source of contamination.
Records under the Duty to Report Contamination under Section 60 of the CLM Act 1997	None	As above.
Licences under the POEO Act 1997	None	Historical licences were identified for several properties within the report buffer for activities including concrete works and the application of herbicides along waterways. However, these activities are considered unlikely to pose a contamination risk to the site or represent an off-site source of contamination.
Records relating to the NSW EPA PFAS Investigation Program	None	None

---

[14] NSW EPA, (2015). *Guidelines on the Duty to Report Contamination under Section 60 of the CLM Act 1997.* (referred to as Duty to Report Contamination)

[15] Protection of the Environment Operations Act 1997 (NSW) (referred to as POEO Act 1997)

Records	On-site	Off-site
Records relating to the Department of Defence PFAS management and investigation programs	None	None

4.6 Historical Business Directory and Additional Lotsearch Information

Historical business records and other relevant information were reviewed for the investigation. The information was sourced from the Lotsearch report and summarised in the following table:

Table 4-4: Historical Business Directory and other Records

Records	On-site	Off-site
Historical dry cleaners, motor garages and service stations	None	There was one service station located approximately 400m to the south-east and cross-gradient of the site. Due to the distance from the site, this property was not considered to represent and off-site source of contamination. The records identified four other motor garage/service stations and two dry cleaner businesses within the report buffer. However, the businesses could only be matched to the road corridors of Loftus Street and Victoria Street. Loftus Street is adjacent to the south of the site, and extends south-west into the town centre, and Victoria Street is located further to the south. Review of the historical aerial photographs indicate the businesses were likely located to the south or west of the site and down/cross-gradient. On this basis, the businesses are considered unlikely to represent an off-site source of contamination.
Other historical businesses that could represent potential sources of contamination	None	The records identified automotive wrecking/scrap metal, panel beating/spray painting, motor trimming and upholstery, and engineering businesses within the report buffer. The businesses were mapped to the road corridor of Loftus Street. Review of the historical aerial photographs indicate the businesses were likely located to the south or west of the site and down/cross-gradient. On this basis, the businesses are considered unlikely to represent an off-site source of contamination.
National waste management site database	None	None
National liquid fuel facilities	None	Five liquid fuel facilities were mapped within the report buffer. These were operational service stations located at

Records	On-site	Off-site
		least 780m from the site. Due to distances from the site, the service stations were not considered to represent a potential source of site contamination.
Mapped heritage items	The site in its entirety is heritage-listed under the Temora Local Environment Plan (LEP) 2010. Any remediation (if required) will be classified as Category 1 remediation and will require development consent.	Various heritage items were mapped in the report buffer. These are not considered to have any relevance in the context of the PSI objectives.
Mapped ecological constraints	None	Various ecological items were mapped in the report buffer. These are not considered to have any relevance in the context of the PSI objectives.
Mapped naturally occurring asbestos	None	None
Mining and exploration titles	There were several historical and current mining and exploration titles recorded for the site. The identified titles related to metallic minerals and mineral sands.	There was one current exploration title and one historical mining/exploration title for properties approximately 500m to the south-east and 960m to the north of the site. The titles related to metallic minerals and diamonds.

4.7 Anecdotal Information

The Aboriginal Heritage Due Diligence Assessment report (refer to Section 2.1.5) identified that the foundation stone of the hospital was unveiled in 1938. The hospital was opened in 1940. An old house was originally sited on the location of the main hospital building and was relocated to the east and renovated for use as the nurse’s quarters.

4.8 Summary of Site History Information

A time line summary of the historical land uses and activities is presented in the following table. The information presented in the table is based on a weight of evidence assessment of the site history documentation and observations made by JKE.

Table 4-5: Summary of Historical Land Uses / Activities

Year(s)	On-site - Potential Land Use / Activities	Off-site - Potential Land Use / Activities
Prior to 1938	Residential and possibly agricultural (grazing).	Residential and agricultural (grazing).
1930 – 1940	Temora Hospital was constructed.	Residential and agricultural (grazing).
1940 - present	Hospital and associated activities.	Residential and agricultural (grazing). 2010s: Vocational education centre (TAFE) was constructed to the north of the site.

4.9 Integrity of Site History Information

The majority of the site history information was obtained from government organisations as outlined in the relevant sections of this report. The veracity of the information from these sources is considered to be relatively high. A certain degree of information loss can be expected given the lack of specific land use details over time. JKE has relied upon the Lotsearch report and have not independently verified any information contained within. However, it is noted that the Lotsearch report is generated based on databases maintained by various government agencies and is expected to be reliable.

5 CONCEPTUAL SITE MODEL

NEPM (2013) defines a CSM as a representation of site related information regarding contamination sources, receptors and exposure pathways between those sources and receptors. The CSM for the site is presented in the following sub-sections and is based on the site information (including the site inspection information) and the review of site history information. Reference should also be made to the figures attached in the appendices.

A review of the CSM in relation to source, pathway and receptor (SPR) linkages has been undertaken as part of the Tier 1 risk assessment process, as outlined in Section 10.

5.1 Potential Contamination Sources/AEC and CoPC

The potential contamination sources/AEC and CoPC are presented in the following table:

Table 5-1: Potential (and/or known) Contamination Sources/AEC and Contaminants of Potential Concern

Source / AEC	**CoPC**
Fill material – The site appears to have been historically filled to achieve the existing levels. The fill may have been imported from various sources and could be contaminated.	Heavy metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc), petroleum hydrocarbons (referred to as total recoverable hydrocarbons – TRHs), benzene, toluene, ethylbenzene and xylene (BTEX), polycyclic aromatic hydrocarbons (PAHs), organochlorine pesticides (OCPs), organophosphate pesticides (OPPs), PCBs and asbestos.
Maintenance Workshop – The site includes a maintenance workshop. It is possible that leaks/spills and/or releases of oils, solvents and fluids (e.g. turpentine/mineral spirits associated with typical painting activities, rather than chlorinated compounds) may have occurred.	Heavy metals, TRHs and PAHs.
On-site Generator – A back-up generator was observed to the west of the main hospital building. The generator appeared to be self-contained. Minor leaks and/or spills of fuel/oils may have occurred during maintenance and/or use.	TRH, BTEX and PAHs.
Historical agricultural use – Prior to 1938, the site was potentially used for agricultural purposes (likely grazing). This could have resulted in contamination across the site via use of machinery, application of pesticides and building/ demolition of various structures. Irrigation pipes made from asbestos cement may also be associated with this AEC.	Heavy metals, TRH, PAHs, OCPs, PCBs and asbestos. JKE note that OCPs only became commercially available in the 1940s. Prior to this time pesticides were predominantly heavy metal compounds.
Use of pesticides – Pesticides may have been used beneath the buildings and/or around the site.	Heavy metals and OCPs.
Hazardous Building Material – Hazardous building materials may be present as a result of former building and demolition activities. These materials have also	Asbestos, lead and PCBs.

Source / AEC	CoPC
been identified by various HAZMAT surveys within the existing buildings/ structures on site.	
On-site incinerator and Hospital Waste – The site has been used as a hospital since at least 1940. An incinerator is located within the boiler room. Waste generated from the incinerator could have been disposed of on-site during the earlier years of operations, although there was no evidence identified by JKE confirming this. Disposal of human waste is unlikely to have occurred at the site.	Heavy metals, PAHs, heavy fraction TRH.

5.2 Mechanism for Contamination, Affected Media, Receptors and Exposure Pathways

The mechanisms for contamination, affected media, receptors and exposure pathways relevant to the potential contamination sources/AEC are outlined in the following CSM table:

Table 5-2: CSM

Potential mechanism for contamination	The potential mechanisms for contamination are most likely to include 'top-down' impacts and spills. There is a potential for sub-surface releases to have occurred if deep fill (or other buried industrial infrastructure) is present, although this is considered to be the least likely mechanism for contamination.
Affected media	Soil has been identified as the potentially affected medium. The potential for groundwater impacts is considered to be relatively low. However, groundwater would need to be considered in the event significant contamination (e.g. high concentrations of mobile/leachable contaminants) was identified in soil.
Receptor identification	Human receptors include site occupants/users (including adults and children) in a healthcare setting, construction workers and intrusive maintenance workers. Off-site human receptors include adjacent land users (in a residential setting) and groundwater users (recreation/irrigation use). Ecological receptors include terrestrial organisms and plants within unpaved areas (including the proposed landscaped areas).
Potential exposure pathways	Potential exposure pathways relevant to the human receptors include ingestion, dermal absorption and inhalation of dust (all contaminants) and vapours (volatile TRH, naphthalene and BTEX), and primary/secondary contact with groundwater used for irrigation. The potential for exposure would typically be associated with the construction and excavation works, on-going and future use of the site, or groundwater use associated with the use of bore water. Potential exposure pathways for ecological receptors include primary/direct contact and ingestion. Exposure during future site use could occur via direct contact with soil in unpaved areas such as gardens, inhalation of airborne asbestos fibres during soil disturbance, or inhalation of vapours within enclosed spaces such as buildings.
Potential exposure mechanisms	The following have been identified as potential exposure mechanisms for site contamination: • Vapour intrusion into the buildings (from soil contamination); • Contact (dermal, ingestion or inhalation) with exposed soils in landscaped areas and/or unpaved areas; and

	• Migration of groundwater off-site into areas where groundwater is being utilised as a resource (i.e. for irrigation).
Presence of preferential pathways for contaminant movement	Major services (i.e. on the BYDA plans) were not identified that would be expected to act as preferential pathways for contamination migration. However, it is noted that localised services are likely to exist that are not shown on those plans and the details of such services must be reviewed/considered in further detail in the event mobile contamination is identified.

6 SAMPLING, ANALYSIS AND QUALITY PLAN

6.1 Data Quality Objectives (DQO)

Data Quality Objectives (DQOs) were developed to define the type and quality of data required to achieve the project objectives outlined in Section 1.2. The DQOs were prepared with reference to the process outlined in Schedule B2 of NEPM (2013). The seven-step DQO approach for this project is outlined in the following sub-sections.

The DQO process is validated in part by the Data Quality Assurance/Quality Control (QA/QC) Evaluation. The Data (QA/QC) Evaluation is summarised in Section 8.1 and the detailed evaluation is provided in the appendices.

6.1.1 Step 1 - State the Problem

The CSM identified potential sources of contamination/AEC at the site that may pose a risk to human health and the environment. Investigation data is required to assess the contamination status of the site, assess the risks posed by the contaminants in the context of the proposed development/intended land use, and assess whether remediation is required.

6.1.2 Step 2 - Identify the Decisions of the Study

The objectives of the investigation are outlined in Section 1.2. The decisions to be made reflect these objectives and are as follows:

- Did the site inspection, or does the historical information identify potential contamination sources/AEC at the site?
- Are any results above the SAC?
- Do potential risks associated with contamination exist, and if so, what are they?
- Is remediation required?
- Is the site characterisation sufficient to provide adequate confidence in the above decisions?
- Is the site suitable for the proposed development, or can the site be made suitable subject to further characterisation and/or remediation?

6.1.3 Step 3 - Identify Information Inputs

The primary information inputs required to address the decisions outlined in Step 2 include the following:

- Site information, including site observations and site history documentation;
- Sampling of soil and FCF (if FCF was visible on the ground surface or in fill);
- Observations of sub-surface variables such as soil type, photo-ionisation detector (PID) concentrations, odours and staining;
- Laboratory analysis of soils and FCF for the CoPC identified in the CSM; and
- Field and laboratory QA/QC data.

6.1.4 Step 4 - Define the Study Boundary

The sampling was confined to the site boundaries as shown in Figure 2 and was limited vertically to a maximum borehole depth of 6mBGL (spatial boundary). The sampling was completed between 2 May 2023 and 5 May 2023 (temporal boundary). The assessment of potential risk to adjacent land users has been made based on data collected within the site boundary.

Sampling was not undertaken within the existing building footprints due to access constraints.

6.1.5 Step 5 - Develop an Analytical Approach (or Decision Rule)

6.1.5.1 Tier 1 Screening Criteria

The laboratory data will be assessed against relevant Tier 1 screening criteria (referred to as SAC), as outlined in Section 7. Exceedances of the SAC do not necessarily indicate a requirement for remediation or a risk to human health and/or the environment. Exceedances are considered in the context of the CSM and valid SPR-linkages.

For this investigation, the individual results have been assessed as either above or below the SAC. Statistical evaluation of the dataset via calculation of mean values and/or 95% upper confidence limit (UCL) values has not been undertaken due to the spatial distribution of the data and the number of samples submitted for analysis.

6.1.5.2 Field and Laboratory QA/QC

Field QA/QC included analysis of inter-laboratory duplicates, intra-laboratory duplicates, trip spike, trip blank and rinsate samples. Further details regarding the sampling and analysis undertaken, and the acceptable limits adopted, is provided in the Data Quality (QA/QC) Evaluation in the appendices.

The suitability of the laboratory data is assessed against the laboratory QA/QC criteria which is outlined in the attached laboratory reports. These criteria were developed and implemented in accordance with the laboratory's National Association of Testing Authorities, Australia (NATA) accreditation and align with the acceptable limits for QA/QC samples as outlined in NEPM (2013) and other relevant guidelines.

In the event that acceptable limits are not met by the laboratory analysis, other lines of evidence are reviewed (e.g. field observations of samples, preservation, handling etc) and, where required, consultation with the laboratory is undertaken in an effort to establish the cause of the non-conformance. Where uncertainty exists, JKE typically adopt the most conservative concentration reported (or in some cases, consider the data from the affected sample as an estimate).

6.1.5.3 Appropriateness of Practical Quantitation Limits (PQLs)

The PQLs of the analytical methods are considered in relation to the SAC to confirm that the PQLs are less than the SAC. In cases where the PQLs are greater than the SAC, a discussion of this is provided.

6.1.6 Step 6 – Specify Limits on Decision Errors

To limit the potential for decision errors, a range of quality assurance processes are adopted. A quantitative assessment of the potential for false positives and false negatives in the analytical results is undertaken with reference to Schedule B(3) of NEPM (2013) using the data quality assurance information collected.

Decision errors can be controlled through the use of hypothesis testing. The test can be used to show either that the baseline condition is false or that there is insufficient evidence to indicate that the baseline condition is false. The null hypothesis is an assumption that is assumed to be true in the absence of contrary evidence. For this investigation, the null hypothesis has been adopted which is that, there is considered to be a complete SPR linkage for the CoPC identified in the CSM unless this linkage can be proven not to (or unlikely to) exist. The null hypothesis has been adopted for this investigation.

Quantitative limits on decision errors were not established as the sample plan was not probabilistic.

Data Quality Indicators (DQI) for field and laboratory QA/QC samples are defined in the QA/QC Data Evaluation in the appendices. An assessment of the DQI's was made in relation to precision, accuracy, representativeness, completeness and comparability.

6.1.7 Step 7 - Optimise the Design for Obtaining Data

The most resource-effective design will be used in an optimum manner to achieve the investigation objectives. Adjustment of the investigation design can occur following consultation or feedback from project stakeholders. For this investigation, the design was optimised via consideration of the various lines of evidence used to select the sample locations, the media being sampled, and also by the way in which the data were collected concurrently with the geotechnical drilling.

The sampling plan and methodology are outlined in the following sub-sections.

6.2 Soil Sampling Plan and Methodology

The soil sampling plan and methodology adopted for this investigation is outlined in the table below:

Table 6-1: Soil Sampling Plan and Methodology

Aspect	Input
Sampling Density	Samples were collected from 12 locations (BH1 to BH8 inclusive and TP13 to TP16 inclusive) as shown on the attached Figure 2. Based on the site area (31,770m^2), this number of locations corresponded to a sampling density of approximately one sample per 2,650m^2. The sampling plan was for a preliminary intrusive investigation and was not designed to meet the minimum sampling density for hotspot identification, as outlined in the NSW EPA Sampling Design Part 1 – Application (2022)[16] contaminated land guidelines, nor the minimum frequency of one sample location per 500m^2 outlined in DGN 030.

---

[16] NSW EPA, (2022). *Sampling design part 1 - application.* (referred to as EPA Sampling Design Guidelines 2022)

Aspect	Input
	The sampling plan was designed in accordance with the project brief outlined in the tender documentation.
Sampling Plan	The sampling locations were placed on a judgemental sampling plan targeting the proposed locations outlined in the tender documentation. JKE consider the locations were broadly positioned for site coverage. The final locations were determined onsite based on access constraints. This sampling plan was considered suitable to make a preliminary assessment of potential risks associated with the non-point source AEC and CoPC identified in the CSM, and assess whether further investigation is warranted.
Set-out and Sampling Equipment	Sampling locations were set out using a tape measure from existing site features. In-situ sampling locations were checked for underground services by an external contractor prior to sampling. Samples were collected using a combination of a drill rig equipped with spiral flight augers (150mm diameter) and an excavator. Soil samples collected from boreholes obtained from a Standard Penetration Test (SPT) split-spoon sampler, and/or directly from the auger. Soil samples collected from test pits were obtained from the test pit walls or directly from the bucket by hand. Where sampling occurred from the bucket, JKE collected samples from the central portion of large soil clods, or from material that was unlikely to have come into contact with the bucket.
Sample Collection and Field QA/QC	Soil samples were obtained between 2 and 5 May 2023 in accordance with our standard field procedures. Soil samples were collected from the fill and natural profiles based on field observations. The sample depths are shown on the logs attached in the appendices. Samples were placed in glass jars with plastic caps and Teflon seals with minimal headspace. Samples for asbestos analysis were placed in zip-lock plastic bags. During sampling, soil at selected depths was split into primary and duplicate samples for field QA/QC analysis. The field splitting procedure included alternately filling the sampling containers to obtain a representative split sample.
Field Screening	A portable PID fitted with a 10.6mV lamp was used to screen the samples for the presence of volatile organic compounds (VOCs). PID screening for VOCs was undertaken on soil samples using the soil sample headspace method. VOC data was obtained from partly filled zip-lock plastic bags following equilibration of the headspace gases. PID calibration records are maintained on file by JKE. The sensitivity of the PID is dependent on the organic compound and varies for different mixtures of hydrocarbons. Some compounds give relatively high readings and some can be undetectable even though present in identical concentrations. The portable PID is best used semi-quantitatively to compare samples contaminated by the same hydrocarbon source. The PID is calibrated before use by measurement of an isobutylene standard gas. All the PID measurements are quoted as parts per million (ppm) isobutylene equivalents.

Aspect	Input
	The field screening for asbestos quantification included the following: • A representative bulk sample was collected from fill at 1m intervals, or from each distinct fill profile. The quantity of material for each sample varied based on whatever return could be achieved using the auger. The bulk sample intervals are shown on the attached borehole and test pit logs; • Each sample was weighed using an electronic scale; • Each bulk sample was passed through a sieve with a 7.1mm aperture to the extent possible and inspected for the presence of fibre cement; • Due to the cohesive nature of some of the soils, some soil samples were placed on a contrasting support (blue tarpaulin) and inspected for the presence of fibre cement. Any soil clumps/nodules were disaggregated; • The condition of fibre cement or any other suspected asbestos materials was noted on the field records; and • If observed, any fragments of fibre cement in the bulk sample were collected, placed in a zip-lock bag and assigned a unique identifier. Calculations for asbestos content were undertaken based on the requirements outlined in Schedule B1 of NEPM (2013), as summarised in Section 7.1. A calibration/check of the accuracy of the scale used for weighing the fibre cement fragments was undertaken using a set of calibration weights. Calibration/check records are maintained on file by JKE. The scale used to weigh the 10L samples was not calibrated, however this is not considered significant as this method of providing a weight for the bulk sample is considered to be considerably more accurate than applying a nominal soil density conversion.
Decontamination and Sample Preservation	Sampling personnel used disposable nitrile gloves during sampling activities. Re-usable sampling equipment was decontaminated using Decon and potable water. Soil samples were preserved by immediate storage in an insulated sample container with ice. On completion of the fieldwork, the samples were stored temporarily in fridges in the JKE warehouse before being delivered in the insulated sample container to a NATA registered laboratory for analysis under standard chain of custody (COC) procedures.

6.3 Analytical Schedule

The soils analysis typically targeted the fill soils and upper natural soils with samples from each location analysed for the CoPC relevant for fill soils. Deeper fill and natural soil samples were selected for heavy metals, BTEX/TRH and PAH, and asbestos in some instances, based on the encountered site conditions and to provide spatial coverage of the site.

JKE note that soil samples were not collected from BH9 to BH12 inclusive. These locations were shallow boreholes drilled by JKG to assess ground conditions for pavement design information. The soil contamination testing was targeted to the surrounds of the existing hospital buildings and areas that may be used for new builds.

6.3.1 Laboratory Analysis

Samples were analysed by an appropriate, NATA Accredited laboratory using the analytical methods detailed in Schedule B(3) of NEPM 2013. Reference should be made to the laboratory reports attached in the appendices for further details.

Table 6-2: Laboratory Details

Samples	Laboratory	Report Reference
All primary samples and field QA/QC samples including (intra-laboratory duplicates, trip blanks, trip spikes and field rinsate samples)	Envirolab Services Pty Ltd NSW, NATA Accreditation Number – 2901 (ISO/IEC 17025 compliance)	322581 & 322581-A
Inter-laboratory duplicates	Envirolab Services Pty Ltd VIC, NATA Accreditation Number – 2901 (ISO/IEC 17025 compliance)	37227 & 37227-A

7 SITE ASSESSMENT CRITERIA (SAC)

The SAC were derived from the NEPM 2013 and other guidelines as discussed in the following sub-sections. The guideline values for individual contaminants are presented in the attached report tables and further explanation of the various criteria adopted is provided in the appendices.

7.1 Soil

Soil data were compared to relevant Tier 1 screening criteria in accordance with NEPM (2013) as outlined below.

7.1.1 Human Health

- Health Investigation Levels (HILs) for a 'residential with accessible soils' exposure scenario (HIL-A). HIL-A were selected as a conservative measure due to the extent of landscaping/unsealed areas and the limited information regarding potential development details;
- Health Screening Levels (HSLs) for a 'low-high density residential' exposure scenario (HSL-A & HSL-B). HSLs were calculated based on conservative assumptions including a 'sand' type and a depth interval of 0m to 1m;
- HSLs for direct contact presented in the CRC Care Technical Report No. 10 – Health screening levels for hydrocarbons in soil and groundwater Part 1: Technical development document (2011)[17]; and
- Asbestos was assessed against the HSL-A criteria in soil and as present or absent in FCF. A summary of the asbestos criteria is provided in the table below:

Table 7-1: Details for Asbestos SAC

Guideline	Applicability
Asbestos in Soil	The HSL-A criteria were adopted for the assessment of asbestos in soil. The SAC adopted for asbestos were derived from the NEPM 2013 and are based on the Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia (2021)[18]. The SAC include the following: • No visible asbestos at the surface/in the top 10cm of soil; • <0.01% w/w bonded asbestos containing material (ACM) in soil; and • <0.001% w/w asbestos fines/fibrous asbestos (AF/FA) in soil. Concentrations for bonded ACM concentrations in soil are based on the following equation which is presented in Schedule B1 of NEPM (2013): $\textbf{\% w/w asbestos in soil} = \frac{\textbf{\% asbestos content x bonded ACM (kg)}}{\text{Soil volume (L) x soil density (kg/L)}}$ However, we are of the opinion that the actual soil volume in a 10L bucket varies considerably due to the presence of voids, particularly when assessing cohesive soils. Therefore, each bucket sample was weighed using electronic scales and the above equation was adjusted as follows (we note that the units have also converted to grams):

---

[17] Cooperative Research Centre for Contamination Assessment and Remediation of the Environment (CRC Care), (2011). Technical Report No. 10 - *Health screening levels for hydrocarbons in soil and groundwater Part 1: Technical development document*

[18] Western Australian (WA) Department of Health (DoH), (2021). *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia*. (referred to as WA DoH 2021)

Guideline	Applicability
	$\% \text{ w/w asbestos in soil} = \frac{\% \text{ asbestos content x bonded ACM (g)}}{\text{Soil weight (g)}}$

7.1.2 Environment (Ecological – terrestrial ecosystems)

- Ecological Investigation Levels (EILs) and Ecological Screening Levels (ESLs) for an 'urban residential and public open space' (URPOS) exposure scenario. These have only been applied to the top 2m of soil as outlined in NEPM (2013). The criterion for benzo(a)pyrene has been increased from the value presented in NEPM (2013) based on the Canadian Soil Quality Guidelines[19];
- ESLs were adopted based on the soil type; and
- EILs for selected metals were calculated based on the most conservative added contaminant limit (ACL) values presented in Schedule B(1) of NEPM (2013) and published ambient background concentration (ABC) values presented in the document titled Trace Element Concentrations in Soils from Rural and Urban Areas of Australia (1995)[20]. This method is considered to be adequate for the Tier 1 screening.

7.1.3 Management Limits for Petroleum Hydrocarbons

Management limits for petroleum hydrocarbons (as presented in Schedule B1 of NEPM 2013) were considered. Management limits were selected on the conservative assumption of 'coarse' type soils.

7.1.4 Waste Classification

Data for the waste classification assessment were assessed in accordance with the Waste Classification Guidelines, Part 1: Classifying Waste (2014)[21] as outlined in the following table:

Table 7-2: Waste Categories

Category	Description
General Solid Waste (non-putrescible)	• If Specific Contaminant Concentration (SCC) ≤ Contaminant Threshold (CT1) then Toxicity Characteristics Leaching Procedure (TCLP) not needed to classify the soil as general solid waste; and • If TCLP ≤ TCLP1 and SCC ≤ SCC1 then treat as general solid waste.
Restricted Solid Waste (non-putrescible)	• If SCC ≤ CT2 then TCLP not needed to classify the soil as restricted solid waste; and • If TCLP ≤ TCLP2 and SCC ≤ SCC2 then treat as restricted solid waste.
Hazardous Waste	• If SCC > CT2 then TCLP not needed to classify the soil as hazardous waste; and • If TCLP > TCLP2 and/or SCC > SCC2 then treat as hazardous waste.
Virgin Excavated Natural Material (VENM)	Natural material (such as clay, gravel, sand, soil or rock fines) that meet the following: • That has been excavated or quarried from areas that are not contaminated with manufactured chemicals, or with process residues, as a result of industrial, commercial mining or agricultural activities;

---

[19] Canadian Council of Ministers of the Environment, (1999). *Canadian soil quality guidelines for the protection of environmental and human health: Benzo(a)Pyrene (1997)* (referred to as the Canadian Soil Quality Guidelines)

[20] Olszowy, H., Torr, P., and Imray, P., (1995), *Trace Element Concentrations in Soils from Rural and Urban Areas of Australia. Contaminated Sites Monograph Series No. 4*. Department of Human Services and Health, Environment Protection Agency, and South Australian Health Commission

[21] NSW EPA, (2014). *Waste Classification Guidelines, Part 1: Classifying Waste.* (referred to as Waste Classification Guidelines 2014)

Category	Description
	• That does not contain sulfidic ores or other waste; and • Includes excavated natural material that meets such criteria for virgin excavated natural material as may be approved from time to time by a notice published in the NSW Government Gazette.

8 RESULTS

8.1 Summary of Data (QA/QC) Evaluation

The data evaluation is presented in the appendices. In summary, JKE is of the opinion that the data are adequately precise, accurate, representative, comparable and complete to serve as a basis for interpretation to achieve the investigation objectives.

8.2 Subsurface Conditions

A summary of the subsurface conditions encountered during the investigation is presented in the following table. Reference should be made to the borehole and test pit logs attached in the appendices for further details.

Table 8-1: Summary of Subsurface Conditions

Profile	Description
Pavement	AC pavement was encountered at the surface in BH7 and BH8 and was approximately 20mm thick.
Fill	Fill was encountered at the surface or beneath the pavement in BH2 to BH4, BH6 to BH8, and TP13 to TP15, and extended to depths of approximately 0.2mBGL to 1.1mBGL. The fill typically comprised of silty and/or sandy clay and silty sand, with inclusions of gravel and boulders, volcanic breccia, metal fragments and root fibres. FCF was observed in fill in BH4. No stained or odorous fill was encountered.
Natural Soil	Residual silty clay and sandy silty clay was encountered at the surface in BH1, BH5, BH9 to BH12 and TP16, and beneath the fill in all other locations with the exception of BH7. BH10, BH12, TP13 and TP15 were terminated in residual soil at depths of approximately 1.05mBGL to 1.5mBGL. No stained or odorous soils were encountered during the investigation.
Bedrock	Weathered andesite bedrock was encountered beneath the fill in BH7 and beneath the residual clays in BH1 to BH6, BH8, BH9, BH11, TP14 and TP16 at depths of approximately 0.5mBGL to 2.1mBGL. The bedrock was typically extremely weathered on first contact.
Groundwater	Groundwater seepage was not encountered in the boreholes during auger drilling or in the test pits during excavation. Some boreholes were advanced into the bedrock using rock coring methods, which introduces potable water into the boreholes. This inhibits meaningful observations of groundwater conditions during core drilling.

8.3 Field Screening

A summary of the field screening results is presented in the following table:

Table 8-2: Summary of Field Screening

Aspect	Details
PID Screening of Soil Samples for VOCs	PID soil sample headspace readings are presented in attached report tables and the COC documents attached in the appendices. The results ranged from 0ppm to 3.8ppm equivalent isobutylene. The results indicated that relatively low concentrations of PID detectable VOCs were detected in the majority of samples.
Bulk Screening for Asbestos	The bulk field screening results are summarised in Table S5 attached in the appendices. The ACM concentration in the sample screened from BH4 (0-0.2m) exceeded the SAC. All other results were below the SAC.

8.4 Soil Laboratory Results

The soil laboratory results were assessed against the SAC presented in Section 7.1. Individual SAC are shown in the report tables attached in the appendices. A summary of the results is presented below:

8.4.1 Human Health and Environmental (Ecological) Assessment

Table 8-3: Summary of Soil Laboratory Results – Human Health and Environmental (Ecological)

Analyte	N	Max. (mg/kg)	N> Human Health SAC	N> Ecological SAC	Comments
Arsenic	30	15	0	0	-
Cadmium	30	<PQL	0	NSL	-
Chromium (total)	30	91	0	0	-
Copper	30	490	0	25	Copper concentrations exceeded the ecological SAC in eight fill soil samples collected from BH2 (0-0.2m), BH3 (0.3-0.5m), BH4 (0-0.1m), BH6 (0-0.1m), BH7 (0.02-0.3m), BH7 (0.02-0.3m) TP13 (0-0.1m), and TP14 (0-0.1m). Copper concentrations exceeded the ecological SAC in 17 natural soil/rock samples collected from BH1 (0.8-1m), BH2 (0.3-0.5m, and 0.8-1m), BH3 (1.3-1.5m), BH4 (0.3-0.5m and 0.8-1m), BH5 (0-0.1m and 0.8-1m), BH6 (0.3-0.5m and 0.8-1m), BH7 (0.3-0.5m), BH8 (0.3-0.5m), TP13 (0.5-0.6), TP14 (0.4-0.5m and 0.9-1m), TP15 (1.3-1.5m) and TP16 (0-0.1 and 0.4-0.5m). The copper concentrations recorded in the majority of the field and laboratory

Analyte	N	Max. (mg/kg)	N> Human Health SAC	N> Ecological SAC	Comments
					duplicate samples also exceeded the ecological SAC.
Lead	30	170	0	0	-
Mercury	30	0.7	0	NSL	-
Nickel	30	18	0	0	-
Zinc	30	140	0	0	-
Total PAHs	30	85	0	NSL	-
Benzo(a)pyrene	30	5.4	NSL	0	-
Carcinogenic PAHs (as BaP TEQ)	30	7.7	3	NSL	Carcinogenic PAH concentrations exceeded the human health SAC in three fill soil samples collected from BH3 (0.3-0.5m), BH8 (0.02-0.2m), and TP15 (0.9-1m).
Naphthalene	30	2	0	NSL	-
DDT+DDE+DDD	14	<PQL	0	NSL	-
DDT	14	<PQL	NSL	0	-
Aldrin and dieldrin	14	<PQL	0	NSL	-
Chlordane	14	<PQL	0	NSL	-
Heptachlor	14	<PQL	0	NSL	-
Chlorpyrifos (OPP)	14	<PQL	0	NSL	-
PCBs	14	<PQL	0	NSL	-
TRH F1	30	<PQL	0	0	-
TRH F2	30	<PQL	0	0	-
TRH F3	30	320	0	0	-
TRH F4	30	230	0	0	-
Benzene	30	<PQL	0	0	-
Toluene	30	<PQL	0	0	-
Ethylbenzene	30	<PQL	0	0	-

Analyte	N	Max. (mg/kg)	N> Human Health SAC	N> Ecological SAC	Comments
Xylenes	30	<PQL	0	0	-
Asbestos (in soil) (%w/w)	14	ACM <0.01 AF/FA <0.001	0	NA	Asbestos was not identified within the 500mL samples submitted for laboratory analysis.
Asbestos in fibre cement	2	Detect	2	NSL	Laboratory analysis confirmed the two FCF collected from BH4 (0-0.2m) during bulk quantification contained asbestos.

Notes:
N: Total number (primary samples)
NSL: No set limit
NL: Not limiting

8.4.2 TRH Management Limits

The laboratory results were assessed against the criteria presented in Section 7.1.3. All TRH results were below the TRH management limits. The results are presented in Table S4 attached in the appendices.

8.4.3 Waste Classification Assessment

The laboratory results were assessed against the criteria presented in Section 7.1.4. The results are presented in the report tables attached in the appendices. A summary of the results is presented in the following table:

Table 8-4: Summary of Soil Laboratory Results Compared to CT and SCC Criteria

Analyte	N	N > CT Criteria	N > SCC Criteria	Comments
Arsenic	30	0	0	-
Cadmium	30	0	0	-
Chromium	30	0	0	-
Copper	30	NSL	NSL	-
Lead	30	1	0	The lead concentrations exceeded the CT1 criterion in the primary fill soil sample collected from TP14 (0-0.1m) and in the field duplicate sample (SDUP3). The maximum lead concentration was 170mg/kg.
Mercury	30	0	0	-
Nickel	30	0	0	-
Zinc	30	NSL	NSL	-

Analyte	N	N > CT Criteria	N > SCC Criteria	Comments
TRH (C_6-C_9)	30	0	0	-
TRH (C_{10}-C_{36})	30	0	0	-
BTEX	30	0	0	-
Total PAHs	30	0	0	-
Benzo(a)pyrene	30	3	0	Benzo(a)pyrene concentrations exceeded the CT2 criterion in two fill soil samples collected from BH3 (0.3-0.5m) and TP15 (0.9-1.0m). A benzo(a)pyrene concentration exceeded the CT1 criterion in one fill soil sample collected from BH8 (0.02-0.2m) The maximum benzo(a)pyrene concentration was 5.4mg/kg.
OCPs & OPPs	14	0	0	-
PCBs	14	0	0	-
Asbestos in soil	14	-	-	Asbestos was not detected in the soil samples analysed.
Asbestos in fibre cement	2	-	-	Asbestos was identified in two FCF collected from BH4 (0-0.2m).

N: Total number (primary samples)

NSL: No set limit

Table 8-5: Summary of Soil Laboratory Results Compared to TCLP Criteria

Analyte	N	N > TCLP Criteria	Comments
Lead	1	0	The primary fill soil sample (and its field duplicate) with lead concentration above the CT1 criterion was analysed for TCLP lead. The TCLP lead results were below the TCLP1 criterion of 5mg/L. The maximum TCLP lead concentration was 0.3mg/L.
Benzo(a)pyrene	3	0	Three fill soil samples with benzo(a)pyrene concentrations above the CT1/CT2 criteria were analysed for TCLP benzo(a)pyrene. All TCLP benzo(a)pyrene results were below the TCLP1 criterion of 0.04mg/L. The maximum TCLP benzo(a)pyrene concentration was 0.0086mg/L.

N: Total number (primary samples)

9 PRELIMINARY WASTE CLASSIFICATION ASSESSMENT

9.1 Preliminary Waste Classification of Fill

Based on the available results, and at the time of reporting, the fill material is assigned the following preliminary classifications:

- Fill in the vicinity of BH4 is assigned a preliminary classification of **General Solid Waste (non-putrescible) containing Special Waste (asbestos)**; and
- Fill in other areas tested as part of this investigation is assigned a preliminary classification of **General Solid Waste (non-putrescible)**.

Further assessment including additional testing is required to confirm the extent of asbestos impacts, the above preliminary classifications and the final waste classification prior to off-site disposal. The anticipated waste quantities should also be confirmed at that time and documented in the report.

9.2 Preliminary Classification of Natural Soil and Bedrock

Based on the available results, and at the time of reporting, the natural silty clay and sandy silty clay soil is assigned a preliminary classification of **General Solid Waste (non-putrescible)** due to the elevated PAH concentrations recorded in several samples. JKE note that low levels of PAHs may be naturally occurring, though there is uncertainty as to the source of the elevated PAH concentrations at each location. It is also acknowledged that some samples were collected from near the interface with overlying fill, and that deeper natural soils may record negligible PAH concentrations.

Based on the available results, and at the time of reporting, JKE is of the opinion that the andesite bedrock within the site will likely meet the definition of **VENM** for off-site disposal or re-use purposes. JKE note that naturally elevated copper concentrations were recorded within the bedrock (up to 470mg/kg) which may pose risk to ecological receptors depending on the proposed re-use scenario. Though the bedrock will likely meet the definition of VENM, an assessment will also be required to confirm the bedrock is suitable from a contamination risk perspective in the context of the proposed re-use.

Further assessment is required to confirm these classifications prior to off-site disposal of the waste. The anticipated waste quantities should also be confirmed at that time and documented in the report.

10 DISCUSSION

10.1 Contamination Sources/AEC and Potential for Site Contamination

Based on the scope of work undertaken for this investigation, JKE identified the following potential contamination sources/AEC:

- Historic filling activities;
- Historic agricultural activities;
- Use of pesticides;
- Hazardous building materials present within existing and/or former structures;
- On-site generator and associated fuel storage;
- Maintenance workshop; and
- On-site incinerator and hospital activities.

Considering the above, and based on a qualitative assessment of various lines of evidence as discussed throughout this report, JKE is of the opinion that there is a potential for site contamination. The preliminary soil data collected for the investigation is discussed further in the following subsection, as part of the Tier 1 risk assessment.

10.2 Tier 1 Risk Assessment and Review of CSM

For a contaminant to represent a risk to a receptor, the following three conditions must be present:

1. Source – The presence of a contaminant;
2. Pathway – A mechanism or action by which a receptor can become exposed to the contaminant; and
3. Receptor – The human or ecological entity which may be adversely impacted following exposure to contamination.

If one of the above components is missing, the potential for adverse risks is relatively low.

JKE note that the SAC selected were based on conservative assumptions to account for the extent of landscaped/unsealed areas and the limited information regarding potential development details. The SAC may be reviewed once further development details are known.

10.2.1 Asbestos

Asbestos, in the form of bonded (non-friable) FCF/ACM, was identified in the surficial (0-200mm) fill soil in BH4 at a concentration above the human health SAC. BH4 was located in the eastern portion of the site, to the north of the nurses' accommodation building, as shown on Figure 4 attached in the appendices. The source of the asbestos was considered to likely be associated with historic demolition and disposal activities and/or impacted fill historically imported to the site.

BH4 was located in an unsealed area within the east of the site. The site is currently occupied and the area in the vicinity of BH4 is readily accessible to site occupants/workers and visitors. As such, the soils in these areas may be disturbed. On this basis, a complete SPR linkage could be realised and the asbestos is considered to pose a potential risk to human health if the soil/asbestos is disturbed. Remediation will be required to address the potential risk. Interim measures should be undertaken to mitigate potential risk to the current site occupants/workers and visitors.

On completion of all boreholes and test pits, a walkover inspection of the surface of all sampling locations and their immediate vicinity was undertaken by JKE. No visible FCF/ACM remained at the surface on the completion of reinstating the test pit and borehole locations.

JKE recommend preparing an Asbestos Management Plan (AMP) to outline the management strategy for addressing the risks posed by the FCF/ACM in soils.

10.2.2 Heavy Metals

Copper was identified in the majority of soil samples and at all sampling locations (BH1 to BH8 inclusive, TP13 to TP16 inclusive), at concentrations above the ecological SAC. The SAC exceedances are shown on Figure 4 attached in the appendices. The concentrations typically increased with depth, with the highest concentrations recorded within the deeper residual silty clay, sandy silty clay and underlying andesite bedrock.

JKE note that the Lotsearch report identified current and historic mining and exploration titles within the vicinity of the site. The mining and exploration titles related to metallic minerals and mineral sands, and specifically identified copper, gold and silver as targeted metallic minerals, indicating that elevated concentrations of copper within the regional area is to be expected.

Considering multiple lines of evidence, JKE is of the opinion that the copper concentrations recorded within the soil and rock samples are representative of regional conditions rather than indicative of potential soil contamination resulting from a site-specific activity. Further, the existing vegetation appeared healthy (based on a cursory inspection) with no obvious indications of stress/die-back. On this basis, JKE is of the opinion it is unlikely for unacceptable, copper-related risk to exist for ecological receptors at the site.

Though the elevated copper concentrations are considered unlikely to pose an unacceptable risk to ecological receptors in the context of the proposed development, consideration should be given during the development planning of any required cut/fill to avoid placement of deeper soils and rock near the surface. Within new landscaping areas, the use of appropriate growing mediums (i.e. approved topsoil) and/or copper-tolerant plantings should be considered. Further advice in this regard should be obtained from the appointed project arborist.

All remaining heavy metal concentrations were below the ecological SAC. All heavy metal concentrations were below the human health SAC.

10.2.3 Hydrocarbons

Carcinogenic PAHs were identified in the shallow fill soils in BH3 and BH8, and within deeper fill soils in TP15, at concentrations above the human health SAC. BH3 and TP15 were located within the central portion of the site, to the north-west of the nurses' accommodation, and BH8 was located within the northern portion of the site, to the south-west of the main hospital building, as shown on Figure 4 attached in the appendices.

The source of the carcinogenic PAHs was considered likely to be associated with impacted fill imported to the site, and to a lesser extent, surficial leaks/spills. The results of leachate analysis indicated low potential for the PAHs to migrate (leach) into the underlying soils and groundwater. On this basis, the impacts were considered to likely be confined to the fill soils.

BH3 and TP15 were located within an unsealed portion of the site, to the west of the main driveway. It is noted that the elevated carcinogenic PAH concentrations in TP15 were recorded at a depth greater than 0.5mBGL, however given the proximity to BH3 which encountered elevated PAH concentrations in shallow fill (at a depth of approximately 0.3mBGL), there is potential for elevated PAH concentrations to be encountered in shallow fill soils. As these areas were unsealed, and elevated carcinogenic PAH concentrations were recorded within shallow fill soils, there is potential for a complete SPR linkage to exist once the soils are disturbed (i.e. excavation, erosion). It is noted that the surficial soil samples collected from BH3 and TP15 recorded low carcinogenic PAH concentrations (below the human health SAC), indicating the elevated carcinogenic PAHs concentrations recorded in the underlying fill do not present an immediate risk to human health, provided they remain undisturbed.

BH8 was located within the main driveway area and was sealed with a thin (20mm thickness) AC pavement. However, the pavement was considered to be in moderate to poor condition with cracked sections and unrepaired potholes. Due to the moderate to poor condition of the AC pavement and the fact that elevated carcinogenic PAH concentrations were recorded in the shallow fill immediately underlying the AC pavement, JKE consider there is potential for a complete SPR linkage to be realised.

Remediation may be required to address the potential risks to human health by carcinogenic PAHs in fill soils. This will need to be further evaluated following the detailed investigation as statistical analysis and/or site-specific risk assessment may establish that remediation is not necessary. The detected concentrations do not pose an unacceptable risk to ecological receptors.

All remaining BTEX/TRH and PAH concentrations were below the human health SAC. All BTEX/TRH and PAH concentrations were below the ecological SAC.

10.2.4 Other CoPC in Soil

All remaining CoPC in soil were below the relevant SAC.

10.3 Decision Statements

The decision statements are addressed below:

> *Did the site inspection, or does the historical information identify potential contamination sources/AEC at the site?*

Yes, as discussed in Section 10.1.

> *Are any results above the SAC?*

Yes, as discussed in Section 8.4.

Do potential risks associated with contamination exist, and if so, what are they?

Yes. The surficial FCF/ACM in the vicinity of BH4 and the carcinogenic PAHs within fill soils in BH3, BH8 and TP15 were assessed to pose a potential risk to human health.

Is remediation required?

Yes. Based on the existing data, remediation is required to address the potential risks to human health posed by asbestos in the form of FCF/ACM. Remediation may also be required in relation to carcinogenic PAHs in fill soils.

Is the site characterisation sufficient to provide adequate confidence in the above decisions?

Further investigation is required to better assess the potential risks posed to human health and ecological receptors, and to inform the preparation of a Remediation Action Plan (RAP).

Is the site suitable for the proposed development, or can the site be made suitable subject to further characterisation and/or remediation?

JKE is of the opinion that the site can be made suitable for the proposed development via remediation. A detailed (stage 2) site investigation (DSI) is required to better assess the risks associated with the potential contamination sources /AEC and the identified CoPC, and to inform the preparation of a RAP.

10.4 Data Gaps

An assessment of data gaps is provided in the following table:

Table 10-1: Data Gap Assessment

Data Gap	Assessment
Groundwater flow direction and contaminant condition not assessed	Based on the site history and the results reported, the potential for groundwater contamination to pose a risk to the receptors is considered to be low. Additional work to address this data gap is not recommended at this stage.
Soil sampling density below minimum guideline density	Sampling was limited to approximately 30% of the minimum sampling density recommended in the EPA Sampling Design Guidelines 2022, and approximately 20% of the minimum sampling density recommended in DGN 030. The investigation identified fill containing demolition waste including FCF/ACM, and elevated concentrations of PAHs. Recommendations for additional soil sampling are included in the report to address this data gap.
Building footprints not assessed.	The nominated sampling locations were positioned outside of the building footprints. The fill and soil conditions beneath the building footprints are currently unknown. JKE note that the proposed development details are unknown and the buildings may be retained. In the event that the existing buildings are not retained, further investigation beneath the building footprints is recommended following demolition. The requirements for

Data Gap	Assessment
	assessing risks in the building footprints must be considered as part of the DSI process.
Asbestos quantification undertaken using boreholes.	Asbestos quantification was undertaken from boreholes (150mm nominal diameter) for some locations. Though acceptable, the WA DoH (2021) guidance recommends the use of test pits where possible. The WA DoH (2021) guidance also recommends that where a site is known to be impacted by asbestos, quantification sampling should be conducted at twice the recommended minimum sampling density. Additional sampling is recommended to quantify the extent of asbestos impacts at the site. Test pits should be used where possible for the additional asbestos quantification sampling.
PAH source within natural soils not confirmed.	Detectable concentrations of PAHs were recorded within several samples collected from the natural silty clay and sandy silty clay soils across the site. The concentrations recorded in the natural soils did not pose an unacceptable risk to receptors, though may compromise classification of the soils as VENM. Low PAH concentrations may be naturally occurring in soils, though may also be attributable to atmospheric/surficial impacts where natural soils are exposed at the surface, and/or from overlying fill where natural soils were sampled near the fill/natural soil interface. Additional investigation is required to assess the lateral and vertical distribution of PAHs within the natural soil. The further investigation is primarily required for waste classification purposes. JKE recommend that the additional investigation is undertaken using push-tube sampling techniques where practicable.

10.5 Potential Remediation & Management Options

Further investigation of the soil contamination conditions is required. The below discussion is based on the available data at the time of reporting. The further investigation(s) will inform the feasibility of the below remediation/management options. Any remediation/management strategy will need to be outlined in a RAP.

Based on the findings of this investigation, the primary concerns identified in relation to soil were the presence of asbestos and elevated concentrations of carcinogenic PAHs within fill soils. The surficial FCF/ACM impacts can by managed in the short term by 'emu-picking', followed by a clearance inspection and certificate by a SafeWork NSW licensed asbestos assessor (LAA), and then suitable site/asbestos management.

In the context of remediation, asbestos-impacted soils and/or PAH-impacted soils may be remediated by:
- Consolidation of impacted soils in a dedicated containment cell, or capped in-situ, and managed long-term in accordance with an Environmental Management Plan (EMP); or
- Excavated and disposed off-site at an appropriately licensed landfill facility.

JKE note that widespread concentrations of copper above the ecological SAC were also identified within the fill and natural soils and bedrock. These exceedances should be considered during proposed earthworks (cut/fill) so that the soils containing elevated concentrations of copper are not placed within landscaped or unpaved areas. Consideration should be given to the importation of validated appropriate growing medium for landscaped areas. The detected concentrations of copper do not pose a risk to human health.

11 CONCLUSIONS AND RECOMMENDATIONS

The investigation included a review of historical information and soil sampling from 12 locations. The site was historically used for residential and agricultural (grazing) purposes until the late 1930s, and has been used for a hospital since.

The investigation encountered fill and/or clay soils to depths of approximately, underlain by andesite bedrock. The maximum depth of fill encountered was 1.1m. Groundwater was not encountered during the investigation. The fill typically comprised of silty and/or sandy clay and silty sand, with inclusions of gravel and boulders, volcanic breccia, metal fragments and root fibres. FCF/ACM was observed in surficial fill in BH4.

The investigation identified fill soils impacted by asbestos and carcinogenic PAHs at concentrations that were above the adopted SAC. Elevated copper concentrations above the SAC were also identified in the majority of the analysed fill, natural soil and rock samples though were considered to be representative of the regional conditions.

Based on the findings of the investigation, JKE is of the opinion that the site can be made suitable for the proposed development via remediation. The following is recommended:

- A surface walkover and 'emu-picking' of all visible FCF/ACM from the site surface should be undertaken and an asbestos clearance certificate obtained from an LAA;
- Interim management of the site is to occur under an AMP, until remediation occurs;
- The earthworks and any re-use of material is to adequately consider the presence of copper in the soil in relation to waste classification and potential ecological risks, as discussed in Section 10 of this report;
- Undertake a DSI to better assess the risks associated with the AEC/potential sources of contamination and inform preparation of a RAP. The DSI should address the data gaps identified in Section 10.4 of this report. A SAQP should be prepared for the DSI prior to commencement of the investigation;
- A RAP is to be prepared to address the contamination issues identified at the site; and
- The site is to be managed, remediated and validated in accordance with the RAP and AMP.

At this stage, JKE consider there is no requirement to notify the NSW EPA under the NSW EPA Guidelines on the Duty to Report Contamination under Section 60 of the CLM Act 1997 (2015)[22]. The duty to report should be reconsidered following completion of each stage of additional work recommended above.

JKE consider that the report objectives outlined in Section 1.2 have been addressed.

---

[22] NSW EPA, (2015). *Guidelines on the Duty to Report Contamination under Section 60 of the CLM Act 1997* (referred to as Duty to Report Contamination)

12 LIMITATIONS

The report limitations are outlined below:

- JKE accepts no responsibility for any unidentified contamination issues at the site. Any unexpected problems/subsurface features that may be encountered during development works should be inspected by an environmental consultant as soon as possible;
- Previous use of this site may have involved excavation for the foundations of buildings, services, and similar facilities. In addition, unrecorded excavation and burial of material may have occurred on the site. Backfilling of excavations could have been undertaken with potentially contaminated material that may be discovered in discrete, isolated locations across the site during construction work;
- This report has been prepared based on site conditions which existed at the time of the investigation; scope of work and limitation outlined in the JKE proposal; and terms of contract between JKE and the client (as applicable);
- The conclusions presented in this report are based on investigation of conditions at specific locations, chosen to be as representative as possible under the given circumstances, visual observations of the site and immediate surrounds and documents reviewed as described in the report;
- Subsurface soil and rock conditions encountered between investigation locations may be found to be different from those expected. Groundwater conditions may also vary, especially after climatic changes;
- The investigation and preparation of this report have been undertaken in accordance with accepted practice for environmental consultants, with reference to applicable environmental regulatory authority and industry standards, guidelines and the assessment criteria outlined in the report;
- Where information has been provided by third parties, JKE has not undertaken any verification process, except where specifically stated in the report;
- JKE has not undertaken any assessment of off-site areas that may be potential contamination sources or may have been impacted by site contamination, except where specifically stated in the report;
- JKE accept no responsibility for potentially asbestos containing materials that may exist at the site. These materials may be associated with demolition of pre-1990 constructed buildings or fill material at the site;
- JKE have not and will not make any determination regarding finances associated with the site;
- Additional investigation work may be required in the event of changes to the proposed development or land use. JKE should be contacted immediately in such circumstances;
- Material considered to be suitable from a geotechnical point of view may be unsatisfactory from a soil contamination viewpoint, and vice versa; and
- This report has been prepared for the particular project described and no responsibility is accepted for the use of any part of this report in any other context or for any other purpose.

Important Information About This Report

These notes have been prepared by JKE to assist with the assessment and interpretation of this report.

The Report is based on a Unique Set of Project Specific Factors

This report has been prepared in response to specific project requirements as stated in the JKE proposal document which may have been limited by instructions from the client. This report should be reviewed, and if necessary, revised if any of the following occur:

- The proposed land use is altered;
- The defined subject site is increased or sub-divided;
- The proposed development details including size, configuration, location, orientation of the structures or landscaped areas are modified;
- The proposed development levels are altered, eg addition of basement levels; or
- Ownership of the site changes.

JKE will not accept any responsibility whatsoever for situations where one or more of the above factors have changed since completion of the investigation. If the subject site is sold, ownership of the investigation report should be transferred by JKE to the new site owners who will be informed of the conditions and limitations under which the investigation was undertaken. No person should apply an investigation for any purpose other than that originally intended without first conferring with the consultant.

Changes in Subsurface Conditions

Subsurface conditions are influenced by natural geological and hydrogeological process and human activities. Groundwater conditions are likely to vary over time with changes in climatic conditions and human activities within the catchment (e.g. water extraction for irrigation or industrial uses, subsurface waste water disposal, construction related dewatering). Soil and groundwater contaminant concentrations may also vary over time through contaminant migration, natural attenuation of organic contaminants, ongoing contaminating activities and placement or removal of fill material. The conclusions of an investigation report may have been affected by the above factors if a significant period of time has elapsed prior to commencement of the proposed development.

This Report is based on Professional Interpretations of Factual Data

Site investigations identify actual subsurface conditions at the actual sampling locations at the time of the investigation. Data obtained from the sampling and subsequent laboratory analyses, available site history information and published regional information is interpreted by geologists, engineers or environmental scientists and opinions are drawn about the overall subsurface conditions, the nature and extent of contamination, the likely impact on the proposed development and appropriate remediation measures.

Actual conditions may differ from those inferred, because no professional, no matter how qualified, and no subsurface exploration program, no matter how comprehensive, can reveal what is hidden by earth, rock and time. The actual interface between materials may be far more gradual or abrupt than an investigation indicates. Actual conditions in areas not sampled may differ from predictions. Nothing can be done to prevent the unanticipated, but steps can be taken to help minimise the impact. For this reason, site owners should retain the services of their consultants throughout the development stage of the project, to identify variances, conduct additional tests which may be needed, and to recommend solutions to problems encountered on site.

Investigation Limitations

Although information provided by a site investigation can reduce exposure to the risk of the presence of contamination, no environmental site investigation can eliminate the risk. Even a rigorous professional investigation may not detect all contamination on a site. Contaminants may be present in areas that were not surveyed or sampled, or may migrate to areas which showed no signs of contamination when sampled. Contaminant analysis cannot possibly cover every type of contaminant which may occur; only the most likely contaminants are screened.

Misinterpretation of Site Investigations by Design Professionals

Costly problems can occur when other design professionals develop plans based on misinterpretation of an investigation report. To minimise problems associated with misinterpretations, the environmental consultant should be retained to work with appropriate professionals to explain relevant findings and to review the adequacy of plans and specifications relevant to contamination issues.

Logs Should not be Separated from the Investigation Report

Borehole and test pit logs are prepared by environmental scientists, engineers or geologists based upon interpretation of field conditions and laboratory evaluation of field samples. Logs are normally provided in our reports and these should not be re-drawn for inclusion in site remediation or other design drawings, as subtle but significant drafting errors or omissions may occur in the transfer process. Photographic reproduction can eliminate this problem, however contractors can still misinterpret the logs during bid preparation if separated from the text of the investigation. If this occurs, delays, disputes and unanticipated costs may result. In all cases it is necessary to refer to the rest of the report to obtain a proper understanding of the investigation. Please note that logs with the 'Environmental Log' header are not suitable for geotechnical purposes as they have not been peer reviewed by a Senior Geotechnical Engineer.

To reduce the likelihood of borehole and test pit log misinterpretation, the complete investigation should be available to persons or organisations involved in the project, such as contractors, for their use. Denial of such access and disclaiming responsibility for the accuracy of subsurface information does not insulate an owner from the attendant liability. It is critical that the site owner provides all available site information to persons and organisations such as contractors.

Read Responsibility Clauses Closely

Because an environmental site investigation is based extensively on judgement and opinion, it is necessarily less exact than other disciplines. This situation has resulted in wholly unwarranted claims being lodged against consultants. To help prevent this problem, model clauses have been developed for use in written transmittals. These are definitive clauses designed to indicate consultant responsibility. Their use helps all parties involved recognise individual responsibilities and formulate appropriate action. Some of these definitive clauses are likely to appear in the environmental site investigation, and you are encouraged to read them closely. Your consultant will be pleased to give full and frank answers to any questions.

Appendix A: Report Figures

SOURCE: http://www.whereis.com/

AERIAL IMAGE SOURCE: MAPS.AU.NEARMAP.COM

This plan should be read in conjunction with the Environmental report.

Title: **SITE LOCATION PLAN**

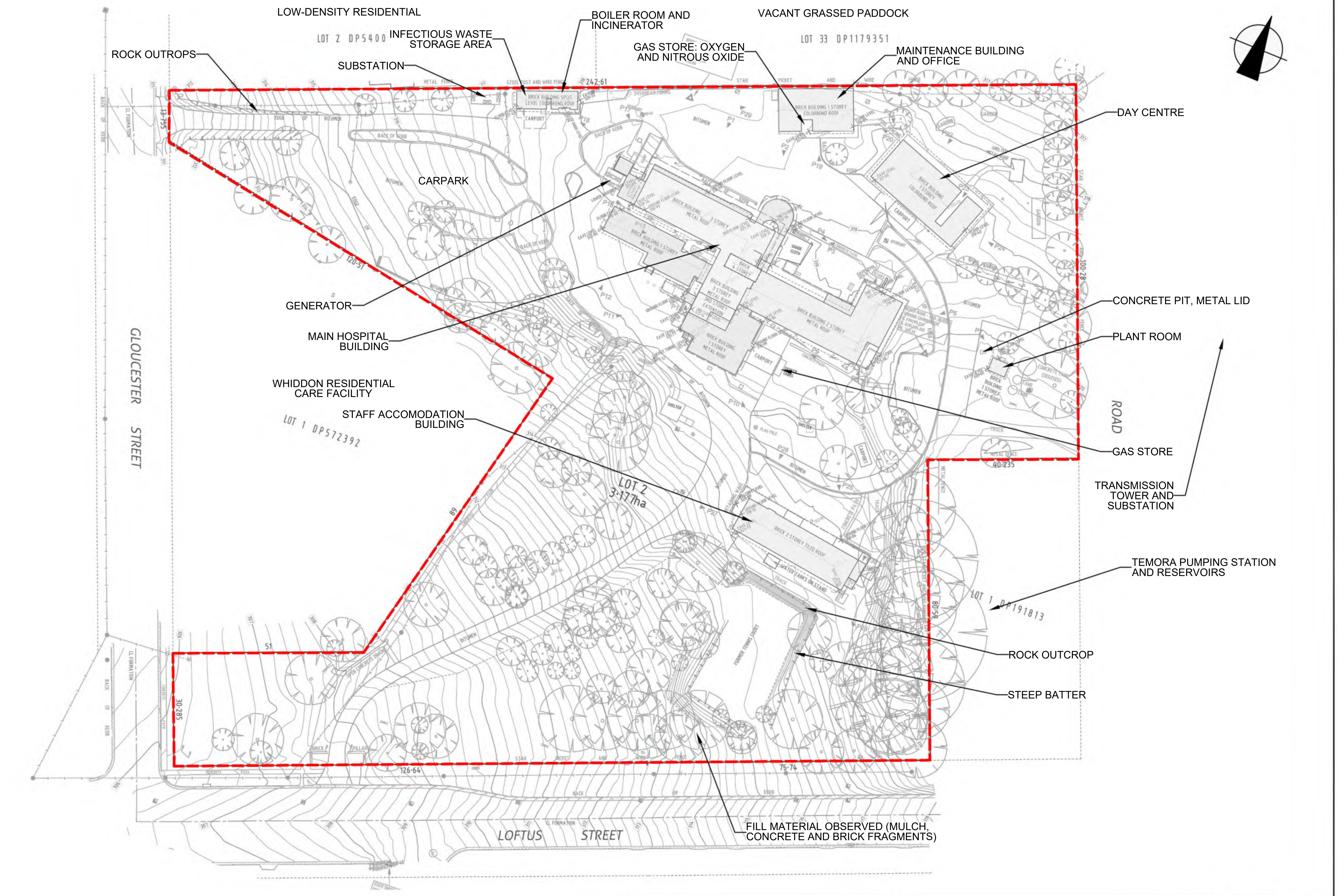
Location: 169-189 LOFTUS STREET, TEMORA, NSW

Project No: E35822PR

Figure No: 1

JKEnvironments

PLOT DATE: 9/05/2023 2:57:21 PM DWG FILE: K:\5C EIS JOBS\35000'S\E35822PR TEMORA\CAD\E35822PR.DWG



PLOT DATE: 8/06/2023 12:18:08 PM DWG FILE: K:\5C EIS JOBS\35000'S\E35822PR TEMORA\CAD\E35822PR.DWG

LEGEND

APPROXIMATE SITE BOUNDARY

0 10 20 30 40 50
SCALE 1:1000 @A3 METRES

This plan should be read in conjunction with the Environmental report.

Title:	**SITE FEATURES PLAN**
Location:	169-189 LOFTUS STREET, TEMORA, NSW
Project No:	E35822PR
Figure No:	2

JKEnvironments

LEGEND

— — —	APPROXIMATE SITE BOUNDARY
● BH(Fill Depth)	BOREHOLE LOCATION, NUMBER AND DEPTH OF FILL (m)
▨ TP(Fill Depth)	TEST PIT LOCATION, NUMBER AND DEPTH OF FILL (m)

0 10 20 30 40 50
SCALE 1:1000 @A3 METRES

This plan should be read in conjunction with the Environmental report.

Title:
SAMPLE LOCATION PLAN

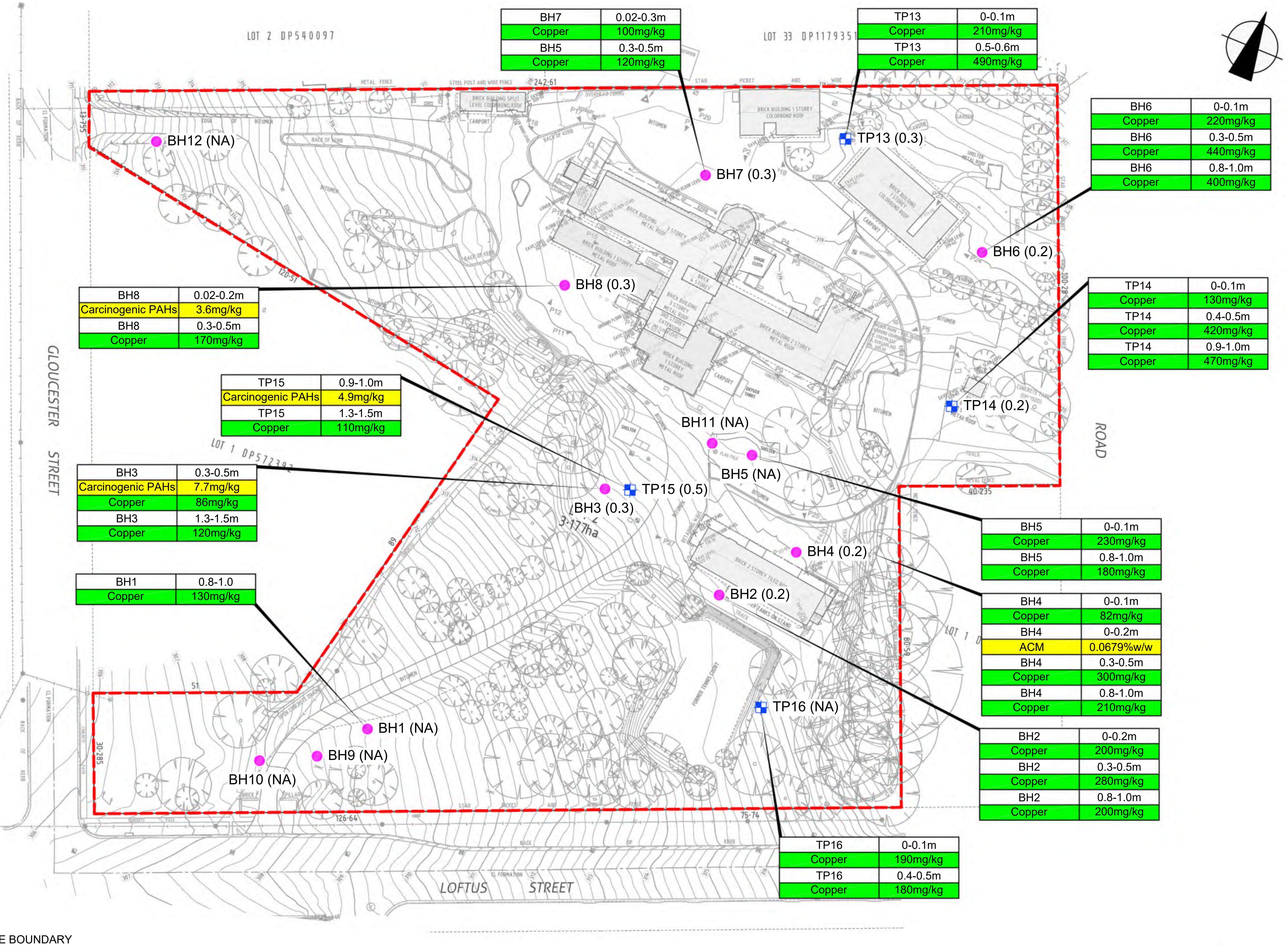
Location: 169-189 LOFTUS STREET, TEMORA, NSW

Project No: E35822PR

Figure No: 3

JKEnvironments

PLOT DATE: 18/05/2023 1:43:06 PM DWG FILE: K:\5C EIS JOBS\35000'S\E35822PR TEMORA\CAD\E35822PR.DWG



BH7	0.02-0.3m
Copper	100mg/kg
BH5	0.3-0.5m
Copper	120mg/kg

TP13	0-0.1m
Copper	210mg/kg
TP13	0.5-0.6m
Copper	490mg/kg

BH6	0-0.1m
Copper	220mg/kg
BH6	0.3-0.5m
Copper	440mg/kg
BH6	0.8-1.0m
Copper	400mg/kg

BH8	0.02-0.2m
Carcinogenic PAHs	3.6mg/kg
BH8	0.3-0.5m
Copper	170mg/kg

TP14	0-0.1m
Copper	130mg/kg
TP14	0.4-0.5m
Copper	420mg/kg
TP14	0.9-1.0m
Copper	470mg/kg

TP15	0.9-1.0m
Carcinogenic PAHs	4.9mg/kg
TP15	1.3-1.5m
Copper	110mg/kg

BH3	0.3-0.5m
Carcinogenic PAHs	7.7mg/kg
Copper	86mg/kg
BH3	1.3-1.5m
Copper	120mg/kg

BH5	0-0.1m
Copper	230mg/kg
BH5	0.8-1.0m
Copper	180mg/kg

BH1	0.8-1.0
Copper	130mg/kg

BH4	0-0.1m
Copper	82mg/kg
BH4	0-0.2m
ACM	0.0679%w/w
BH4	0.3-0.5m
Copper	300mg/kg
BH4	0.8-1.0m
Copper	210mg/kg

BH2	0-0.2m
Copper	200mg/kg
BH2	0.3-0.5m
Copper	280mg/kg
BH2	0.8-1.0m
Copper	200mg/kg

TP16	0-0.1m
Copper	190mg/kg
TP16	0.4-0.5m
Copper	180mg/kg

LEGEND

- - -	APPROXIMATE SITE BOUNDARY
● BH(Fill Depth)	BOREHOLE LOCATION, NUMBER AND DEPTH OF FILL (m)
⊕ BH/MW(Fill Depth)	BOREHOLE AND GROUNDWATER MONITORING WELL LOCATION, NUMBER AND DEPTH OF FILL (m)
SAMPLE ID / DEPTH (metres) CHEMICAL / CONCENTRATION	SOIL/SURFACE SAMPLE EXCEEDANCE
🟨	SOIL/SURFACE CONTAMINATION ABOVE SAC FOR HUMAN HEALTH RISK
🟩	SOIL/SURFACE CONTAMINATION ABOVE SAC FOR ECOLOGICAL RISK

0 10 20 30 40 50
SCALE 1:1000 @A3 METRES

This plan should be read in conjunction with the Environmental report.

Title: **SAC EXCEEDANCE PLAN**

Location: 169-189 LOFTUS STREET, TEMORA, NSW

Project No: E35822PR

Figure No: 4

JKEnvironments

PLOT DATE: 8/06/2023 12:18:21 PM DWG FILE: K:\5C EIS JOBS\35000'S\E35822PR TEMORA\CAD\E35822PR.DWG

Appendix B: Site Information and Site History

Selected Site Photographs

Photograph 1: Main hospital building

Photograph 2: Nurses' accommodation

Photograph 3: Maintenance building and Day centre building

Photograph 4: Plant Room

Photograph 5: Maintenance building

Photograph 6: Fire extinguishers in Maintenance building

Photograph 7: Boilers in Boiler room

Photograph 8: Incinerator in Boiler room

Photograph 9: Generator

Photograph 10: Electrical substation

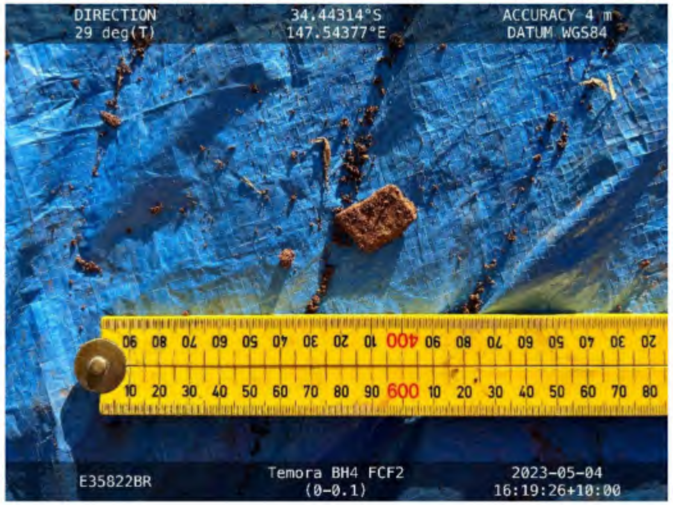
Photograph 11: Exposed fill soils at surface

Photograph 12: Evidence of cut/fill

Photograph 13: TP14 excavation

Photograph 14: TP15 Excavation

Photograph 15: BH4-FCF1



Photograph 16: BH4 – FCF2

Lotsearch Environmental Risk and Planning Report

LOTSEARCH

LOTSEARCH ENVIRO PROFESSIONAL

Date: 28 Mar 2023 15:58:33

Reference: LS041987 EP

Address: Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666

Dataset Listing

Datasets contained within this report, detailing their source and data currency:

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features On-site	No. Features within 100m	No. Features within Buffer
Cadastre Boundaries	NSW Department of Customer Service - Spatial Services	14/02/2023	14/02/2023	Quarterly	-	-	-	-
Topographic Data	NSW Department of Customer Service - Spatial Services	22/08/2022	22/08/2022	Annually	-	-	-	-
List of NSW contaminated sites notified to EPA	Environment Protection Authority	24/03/2023	10/03/2023	Monthly	1000m	0	0	1
Contaminated Land Records of Notice	Environment Protection Authority	27/02/2023	27/02/2023	Monthly	1000m	0	0	1
Former Gasworks	Environment Protection Authority	06/12/2022	14/07/2021	Quarterly	1000m	0	0	0
National Waste Management Facilities Database	Geoscience Australia	26/05/2022	07/03/2017	Annually	1000m	0	0	0
National Liquid Fuel Facilities	Geoscience Australia	23/08/2022	13/07/2012	Annually	1000m	0	0	5
EPA PFAS Investigation Program	Environment Protection Authority	13/02/2023	23/09/2022	Monthly	2000m	0	0	0
Defence PFAS Investigation & Management Program - Investigation Sites	Department of Defence	14/02/2023	14/02/2023	Monthly	2000m	0	0	0
Defence PFAS Investigation & Management Program - Management Sites	Department of Defence	14/02/2023	14/02/2023	Monthly	2000m	0	0	0
Airservices Australia National PFAS Management Program	Airservices Australia	13/02/2023	13/02/2023	Monthly	2000m	0	0	0
Defence 3 Year Regional Contamination Investigation Program	Department of Defence	02/09/2022	02/09/2022	Quarterly	2000m	0	0	0
EPA Other Sites with Contamination Issues	Environment Protection Authority	16/02/2022	13/12/2018	Annually	1000m	0	0	0
Licensed Activities under the POEO Act 1997	Environment Protection Authority	27/02/2023	27/02/2023	Monthly	1000m	0	0	0
Delicensed POEO Activities still regulated by the EPA	Environment Protection Authority	27/02/2023	27/02/2023	Monthly	1000m	0	0	1
Former POEO Licensed Activities now revoked or surrendered	Environment Protection Authority	27/02/2023	27/02/2023	Monthly	1000m	0	0	3
UBD Business Directories (Premise & Intersection Matches)	Hardie Grant			Not required	150m	0	8	8
UBD Business Directories (Road & Area Matches)	Hardie Grant			Not required	150m	-	111	112
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Premise & Intersection Matches)	Hardie Grant			Not required	500m	0	0	1
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Road & Area Matches)	Hardie Grant			Not required	500m	-	4	10
Points of Interest	NSW Department of Customer Service - Spatial Services	19/10/2022	19/10/2022	Quarterly	1000m	1	7	50
Tanks (Areas)	NSW Department of Customer Service - Spatial Services	19/10/2022	19/10/2022	Quarterly	1000m	0	0	0
Tanks (Points)	NSW Department of Customer Service - Spatial Services	19/10/2022	19/10/2022	Quarterly	1000m	0	2	2
Major Easements	NSW Department of Customer Service - Spatial Services	16/02/2023	16/02/2023	Quarterly	1000m	0	0	4
State Forest	Forestry Corporation of NSW	16/08/2022	14/08/2022	Annually	1000m	0	0	0
NSW National Parks and Wildlife Service Reserves	NSW Office of Environment & Heritage	16/02/2023	31/12/2022	Annually	1000m	0	0	0
Hydrogeology Map of Australia	Commonwealth of Australia (Geoscience Australia)	29/08/2022	19/08/2019	As required	1000m	1	1	1
Temporary Water Restriction (Botany Sands Groundwater Source) Order 2018	NSW Department of Planning, Industry and Environment	28/03/2022	23/02/2018	Annually	1000m	0	0	0
National Groundwater Information System (NGIS) Boreholes	Bureau of Meteorology; Water NSW	14/02/2023	14/02/2023	Annually	2000m	0	0	1

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features On-site	No. Features within 100m	No. Features within Buffer
NSW Seamless Geology Single Layer: Rock Units	Department of Regional NSW	17/02/2022	01/05/2021	Annually	1000m	1	2	2
NSW Seamless Geology – Single Layer: Trendlines	Department of Regional NSW	17/02/2022	01/05/2021	Annually	1000m	0	0	0
NSW Seamless Geology – Single Layer: Geological Boundaries and Faults	Department of Regional NSW	17/02/2022	01/05/2021	Annually	1000m	0	0	0
Naturally Occurring Asbestos Potential	NSW Dept. of Industry, Resources & Energy	04/12/2015	24/09/2015	Unknown	1000m	0	0	0
Atlas of Australian Soils	Australian Bureau of Agriculture and Resource Economics and Sciences (ABARES)	19/05/2017	17/02/2011	As required	1000m	1	1	1
Soil Landscapes of Central and Eastern NSW	NSW Department of Planning, Industry and Environment	18/08/2022	27/07/2020	Annually	1000m	2	2	3
Environmental Planning Instrument Acid Sulfate Soils	NSW Department of Planning, Industry and Environment	28/02/2023	02/12/2022	Monthly	500m	0	-	-
Atlas of Australian Acid Sulfate Soils	CSIRO	19/01/2017	21/02/2013	As required	1000m	1	1	1
Dryland Salinity - National Assessment	National Land and Water Resources Audit	18/07/2014	12/05/2013	None planned	1000m	0	0	0
Mining Subsidence Districts	NSW Department of Customer Service - Subsidence Advisory NSW	14/02/2023	14/02/2023	Quarterly	1000m	0	0	0
Current Mining Titles	NSW Department of Industry	13/02/2023	13/02/2023	Monthly	1000m	1	1	2
Mining Title Applications	NSW Department of Industry	13/02/2023	13/02/2023	Monthly	1000m	0	0	0
Historic Mining Titles	NSW Department of Industry	13/02/2023	13/02/2023	Monthly	1000m	9	9	10
Environmental Planning Instrument SEPP State Significant Precincts	NSW Department of Planning, Industry and Environment	15/11/2021	07/12/2018	Monthly	1000m	0	0	0
Environmental Planning Instrument Land Zoning	NSW Department of Planning, Industry and Environment	15/12/2022	02/12/2022	Monthly	1000m	1	4	21
Commonwealth Heritage List	Australian Government Department of the Agriculture, Water and the Environment	03/06/2022	13/04/2022	Annually	1000m	0	0	1
National Heritage List	Australian Government Department of the Agriculture, Water and the Environment	03/06/2022	13/04/2022	Annually	1000m	0	0	0
State Heritage Register - Curtilages	NSW Department of Planning, Industry and Environment	18/10/2022	01/07/2022	Quarterly	1000m	0	0	0
Environmental Planning Instrument Local Heritage	NSW Department of Planning, Industry and Environment	28/02/2023	17/02/2023	Monthly	1000m	1	1	64
Bush Fire Prone Land	NSW Rural Fire Service	27/03/2023	25/10/2022	Weekly	1000m	0	0	0
Ramsar Wetlands of Australia	Australian Government Department of Agriculture, Water and the Environment	28/03/2022	19/03/2020	Annually	1000m	0	0	0
Groundwater Dependent Ecosystems	Bureau of Meteorology	28/10/2022	26/10/2022	Annually	1000m	0	0	0
Inflow Dependent Ecosystems Likelihood	Bureau of Meteorology	28/10/2022	26/10/2022	Annually	1000m	0	0	0
NSW BioNet Species Sightings	NSW Office of Environment & Heritage	28/03/2023	28/03/2023	Weekly	10000m	-	-	-

Site Diagram

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666

Legend

▭ Site Boundary

▭ Internal Parcel Boundaries

Total Area:	31967m^2
Total Perimeter:	973m

Disclaimers:

Measurements are approximate only and may have been simplified or smaller lengths removed for readability.

Parcels that make up a small percentage of the total site area have not been labelled for increased legibility.

Scale:
0 25 50
Meters

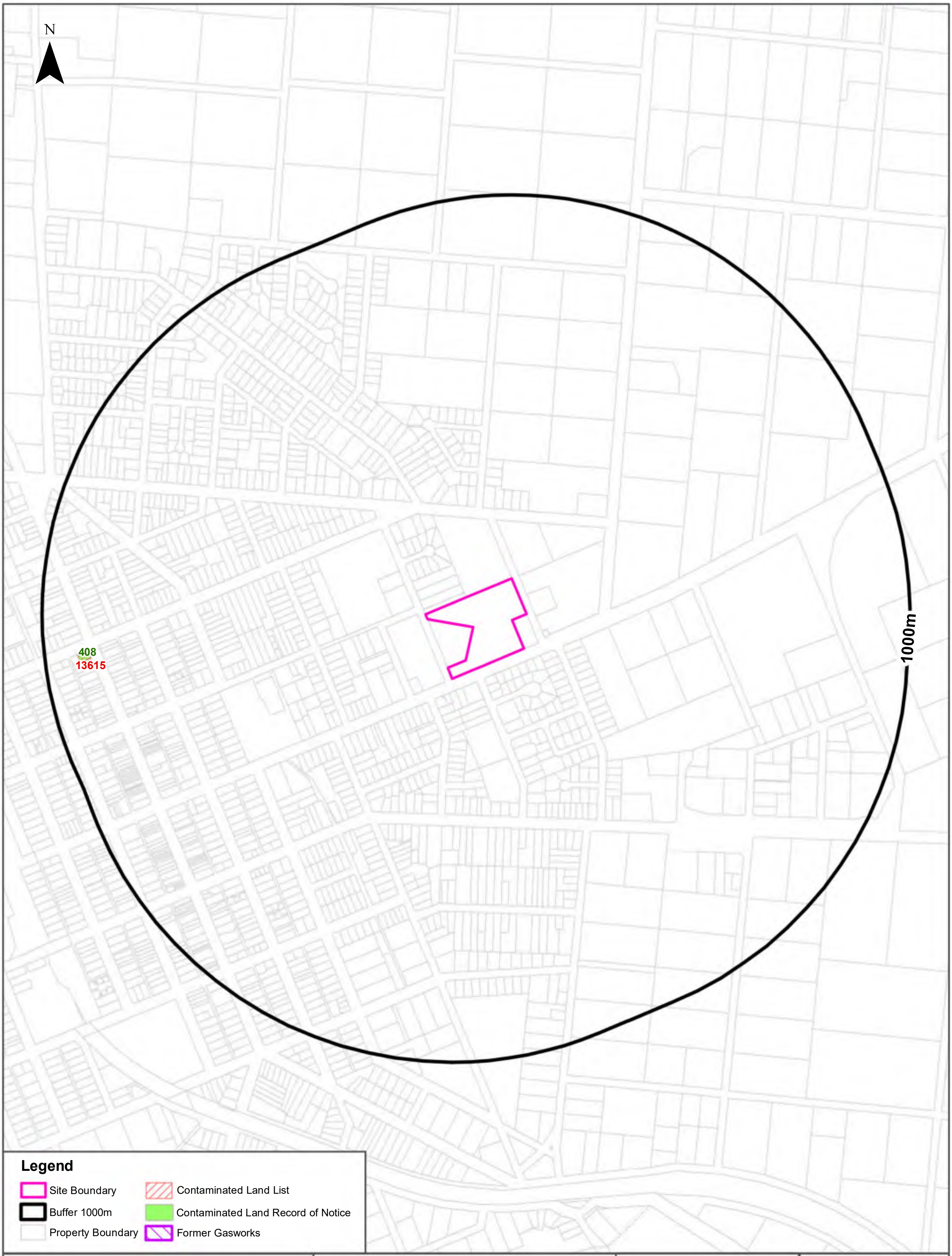
Data Sources: Aerial Imagery:
© NSW Department of Finance, Services & Innovation

Coordinate System:
GDA 1994 MGA Zone 56

Date: 28 March 2023

Contaminated Land

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666



Scale:
0 100 200 400 600
Meters

Data Sources: Property Boundaries & Topographic Data:
© Department Finance, Services & Innovation 2023

Coordinate System:
GDA 1994 MGA Zone 56

Date: 28 March 2023

Contaminated Land

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666

List of NSW contaminated sites notified to EPA

Records from the NSW EPA Contaminated Land list within the dataset buffer:

Map Id	Site	Address	Suburb	Activity	Management Class	Status	Location Confidence	Dist	Direction
13615	Woolworths Caltex Temora	98-100 Hoskins Street	TEMORA	Service Station	Regulation under CLM Act not required	Current EPA List	Premise Match	879m	West

The values within the EPA site management class in the table above, are given more detailed explanations in the table below:

EPA site management class	Explanation
Contamination being managed via the planning process (EP&A Act)	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation. The contamination of this site is managed by the consent authority under the Environmental Planning and Assessment Act 1979 (EP&A Act) planning approval process, with EPA involvement as necessary to ensure significant contamination is adequately addressed. The consent authority is typically a local council or the Department of Planning and Environment.
Contamination currently regulated under CLM Act	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation under the Contaminated Land Management Act 1997 (CLM Act). Management of the contamination is regulated by the EPA under the CLM Act. Regulatory notices are available on the EPA's Contaminated Land Public Record of Notices.
Contamination currently regulated under POEO Act	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation. Management of the contamination is regulated under the Protection of the Environment Operations Act 1997 (POEO Act). The EPA's regulatory actions under the POEO Act are available on the POEO public register.
Contamination formerly regulated under the CLM Act	The EPA has determined that the contamination is no longer significant enough to warrant regulation under the Contaminated Land Management Act 1997 (CLM Act). The contamination was addressed under the CLM Act.
Contamination formerly regulated under the POEO Act	The EPA has determined that the contamination is no longer significant enough to warrant regulation. The contamination was addressed under the Protection of the Environment Operations Act 1997 (POEO Act).
Contamination was addressed via the planning process (EP&A Act)	The EPA has determined that the contamination is no longer significant enough to warrant regulation. The contamination was addressed by the appropriate consent authority via the planning process under the Environmental Planning and Assessment Act 1979 (EP&A Act).
Ongoing maintenance required to manage residual contamination (CLM Act)	The EPA has determined that ongoing maintenance, under the Contaminated Land Management Act 1997 (CLM Act), is required to manage the residual contamination. Regulatory notices under the CLM Act are available on the EPA's Contaminated Land Public Record of Notices.
Regulation being finalised	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation under the Contaminated Land Management Act 1997. A regulatory approach is being finalised.
Regulation under the CLM Act not required	The EPA has completed an assessment of the contamination and decided that regulation under the Contaminated Land Management Act 1997 is not required.
Under assessment	The contamination is being assessed by the EPA to determine whether regulation is required. The EPA may require further information to complete the assessment. For example, the completion of management actions regulated under the planning process or Protection of the Environment Operations Act 1997. Alternatively, the EPA may require information via a notice issued under s77 of the Contaminated Land Management Act 1997 or issue a Preliminary Investigation Order.

NSW EPA Contaminated Land List Data Source: Environment Protection Authority

Contaminated Land

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666

Contaminated Land: Records of Notice

Record of Notices within the dataset buffer:

Map Id	Name	Address	Suburb	Notices	Area No	Location Confidence	Distance	Direction
408	Woolworths Caltex Temora	98-100 Hoskins Street	Temora	2 former	3445	Premise Match	879m	West

Contaminated Land Records of Notice Data Source: Environment Protection Authority

Former Gasworks

Former Gasworks within the dataset buffer:

Map Id	Location	Council	Further Info	Location Confidence	Distance	Direction
N/A	No records in buffer					

Former Gasworks Data Source: Environment Protection Authority

Waste Management & Liquid Fuel Facilities

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666

Legend

- Site Boundary
- Buffer 1000m
- Property Boundary
- National Liquid Fuel Facilities
- Waste Management Facilities

Scale:

Data Sources: Property Boundaries & Topographic Data:
© Department Finance, Services & Innovation 2023

Coordinate System:
GDA 1994 MGA Zone 56

Date: 28 March 2023

Waste Management & Liquid Fuel Facilities

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666

National Waste Management Site Database

Sites on the National Waste Management Site Database within the dataset buffer:

Site Id	Owner	Name	Address	Suburb	Class	Landfill	Reprocess	Transfer	Comments	Loc Conf	Dist	Direction
N/A	No records in buffer											

Waste Management Facilities Data Source: Geoscience Australia

National Liquid Fuel Facilities

National Liquid Fuel Facilties within the dataset buffer:

Map Id	Owner	Name	Address	Suburb	Class	Operational Status	Operator	Revision Date	Loc Conf	Dist	Direction
4498	Caltex	Caltex Temora	111 Hoskins Street	Temora	Petrol Station	Operational		25/07/2011	Premise Match	787m	West
4386	BP	BP Temora	Lot 1 Victoria Street	Temora	Petrol Station	Operational		25/07/2011	Premise Match	812m	South West
3362	BP	Temora Fuel Distributors	9 Ironbark Street	Temora	Fuel Depot	Operational	Temora Fuel Distributors	04/10/2012	Premise Match	849m	South East
4387	BP	Temora Fuel Distributors	9 Ironbark Street	Temora	Petrol Station	Operational		25/07/2011	Premise Match	849m	South East
4499	Caltex	Woolworths Caltex Temora	98 Hoskins Street	Temora	Petrol Station	Operational		25/07/2011	Premise Match	879m	West

National Liquid Fuel Facilities Data Source: Geoscience Australia

PFAS Investigation & Management Programs

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666

EPA PFAS Investigation Program

Sites that are part of the EPA PFAS investigation program, within the dataset buffer:

Map ID	Site	Address	Loc Conf	Dist	Dir
N/A	No records in buffer				

EPA PFAS Investigation Program: Environment Protection Authority

Defence PFAS Investigation Program

Sites being investigated by the Department of Defence for PFAS contamination within the dataset buffer:

Map ID	Base Name	Address	Loc Conf	Dist	Dir
N/A	No records in buffer				

Defence PFAS Investigation Program Data Custodian: Department of Defence, Australian Government

Defence PFAS Management Program

Sites being managed by the Department of Defence for PFAS contamination within the dataset buffer:

Map ID	Base Name	Address	Loc Conf	Dist	Dir
N/A	No records in buffer				

Defence PFAS Management Program Data Custodian: Department of Defence, Australian Government

Airservices Australia National PFAS Management Program

Sites being investigated or managed by Airservices Australia for PFAS contamination within the dataset buffer:

Map ID	Site Name	Impacts	Loc Conf	Dist	Dir
N/A	No records in buffer				

Airservices Australia National PFAS Management Program Data Custodian: Airservices Australia

Defence Sites

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666

Defence 3 Year Regional Contamination Investigation Program

Sites which have been assessed as part of the Defence 3 Year Regional Contamination Investigation Program within the dataset buffer:

Property ID	Base Name	Address	Known Contamination	Loc Conf	Dist	Dir
N/A	No records in buffer					

Defence 3 Year Regional Contamination Investigation Program, Data Custodian: Department of Defence, Australian Government

EPA Other Sites with Contamination Issues

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666

EPA Other Sites with Contamination Issues

This dataset contains other sites identified on the EPA website as having contamination issues. This dataset currently includes:

- James Hardie asbestos manufacturing and waste disposal sites
- Radiological investigation sites in Hunter's Hill
- Pasminco Lead Abatement Strategy Area

Sites within the dataset buffer:

Site Id	Site Name	Site Address	Dataset	Comments	Location Confidence	Distance	Direction
N/A	No records in buffer						

EPA Other Sites with Contamination Issues: Environment Protection Authority

EPA Activities

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666

Licensed Activities under the POEO Act 1997

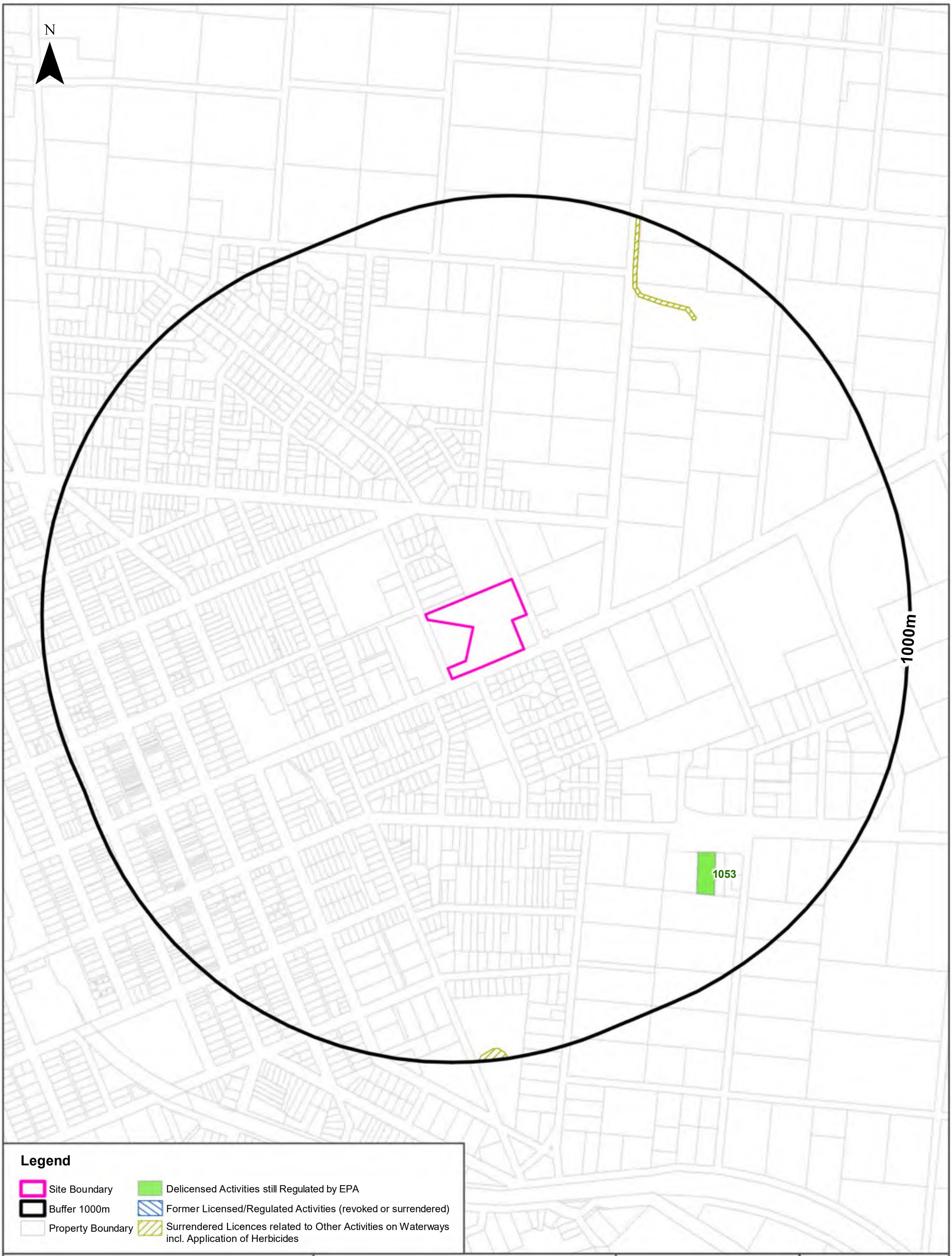
Licensed activities under the Protection of the Environment Operations Act 1997, within the dataset buffer:

EPL	Organisation	Name	Address	Suburb	Activity	Loc Conf	Distance	Direction
N/A	No records in buffer							

POEO Licence Data Source: Environment Protection Authority

Delicensed & Former Licensed EPA Activities

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666



Scale:
0 100 200 400 600
Meters

Property Boundary Data Source:
© Department Finance, Services & Innovation 2023

Coordinate System:
GDA 1994 MGA Zone 56

Date: 28 March 2023

EPA Activities

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666

Delicensed Activities still regulated by the EPA

Delicensed activities still regulated by the EPA, within the dataset buffer:

Licence No	Organisation	Name	Address	Suburb	Activity	Loc Conf	Distance	Direction
1053	HANSON CONSTRUCTION MATERIALS PTY LTD	HANSON CONSTRUCTION MATERIALS PTY LTD	3 INDUSTRIAL AVENUE	TEMORA	Concrete works	Premise Match	697m	South East

Delicensed Activities Data Source: Environment Protection Authority

Former Licensed Activities under the POEO Act 1997, now revoked or surrendered

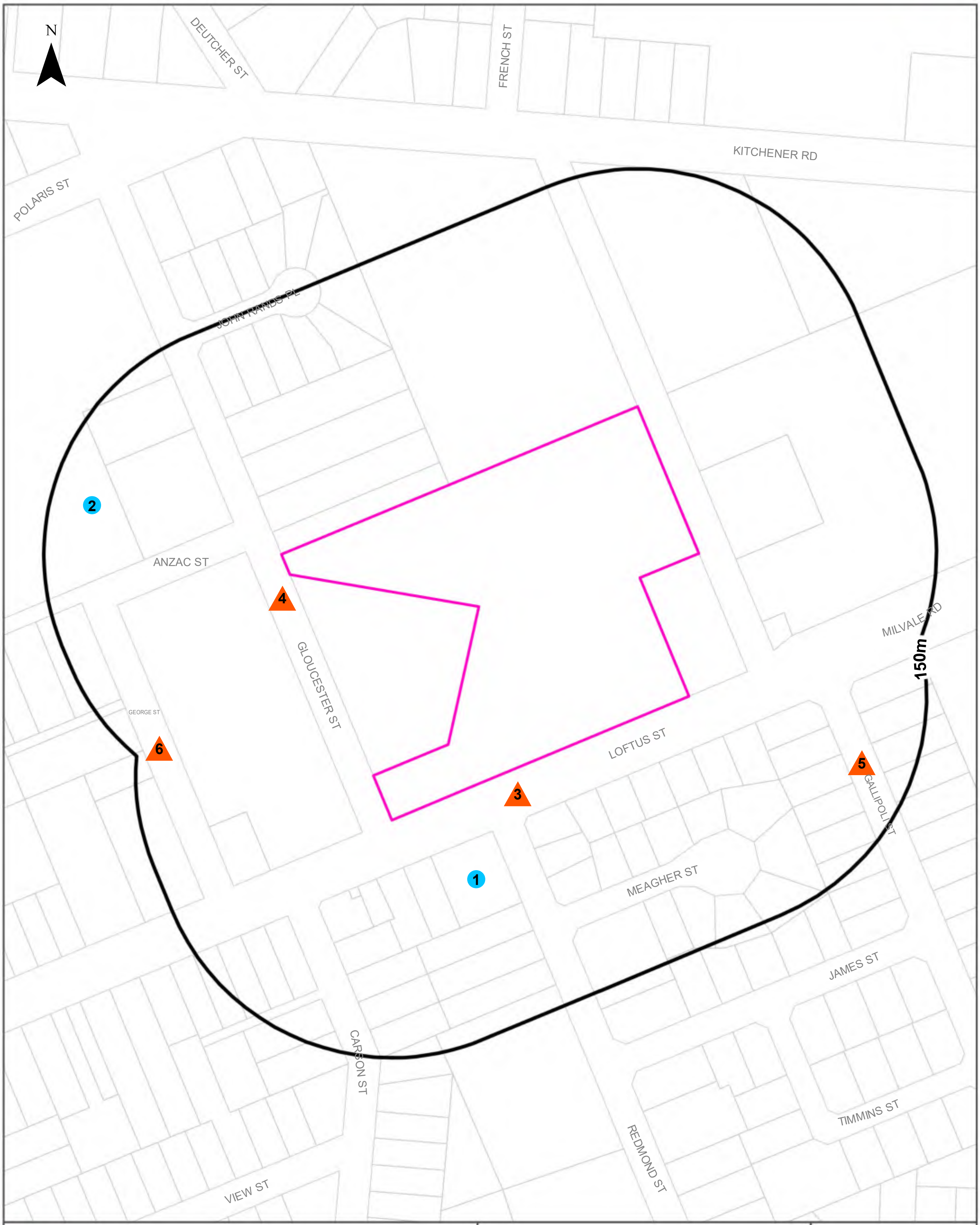
Former Licensed activities under the Protection of the Environment Operations Act 1997, now revoked or surrendered, within the dataset buffer:

Licence No	Organisation	Location	Status	Issued Date	Activity	Loc Conf	Distance	Direction
4653	LUHRMANN ENVIRONMENT MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW	Surrendered	06/09/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	807m	North East
4838	Robert Orchard	Various Waterways throughout New South Wales - SYDNEY NSW 2000	Surrendered	07/09/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	807m	North East
6630	SYDNEY WEED & PEST MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW - PROSPECT, NSW, 2148	Surrendered	09/11/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	807m	North East

Former Licensed Activities Data Source: Environment Protection Authority

Historical Business Directories

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666



Legend

- ▭ Site Boundary
- ▭ Buffer 150m
- ▭ Property Boundary
- ● Business directory records mapped to a specific premise
- 🟩 Business directory records mapped to a road intersection
- ▲ Business directory records mapped to a road corridor
- ▨ Business directory records mapped to a general area

Scale:
0 40 80 120 160
Meters

Coordinate System:
GDA 1994 MGA Zone 56

Date: 28 March 2023

Data Sources: Reproduced with permission of UBD and Hardie Grant Media Pty Ltd DD 01/08/2018
Property Boundaries © NSW Department Finance, Services & Innovation 2023

Historical Business Directories

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666

Business Directory Records 1950-1991 Premise or Road Intersection Matches

Universal Business Directory records from years 1991, 1982, 1970, 1961 & 1950, mapped to a premise or road intersection within the dataset buffer:

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
1	MEDICAL PRACTITIONERS.	Mead M, 172 Loftus St., Temora. 2666	213120	1991	Premise Match	31m	South
	MEDICAL PRACTITIONERS	Mead, M., 172 Loftus St., Temora 2666	162591	1982	Premise Match	31m	South
2	ASSOCIATIONS &/OR SOCIETIES	Temora High School P. & C. Association., Anzac St., Temora 2666	220946	1991	Premise Match	87m	West
	SCHOOLS &/OR COLLEGES - PRIVATE &/OR PUBLIC	Temora High School., Anzac St., Temora. 2666	213271	1991	Premise Match	87m	West
	ASSOCIATIONS, SOCIETIES, CLUBS &/OR SPORTING BODIES	Temora High School P. & C. Association, Anzac St., Temora 2666	162360	1982	Premise Match	87m	West
	SCHOOLS &/OR COLLEGES - PRIVATE &/OR PUBLIC	Temora High School, Anzac St., Temora 2666	162732	1982	Premise Match	87m	West
	SCHOOLS & COLLEGES-PRIVATE & PUBLIC	High School, Anzac St. Temora 2666	588646	1970	Premise Match	87m	West
	ASSOCIATIONS, SOCIETIES, CLUBS & SPORTING BODIES	Temora High School Parents & Citizens Association Anzac St. Temora 2666	588118	1970	Premise Match	87m	West

Reproduced with permission of UBD and Hardie Grant Media Pty Ltd DD 01/08/2018

Business Directory Records 1950-1991
Road or Area Matches

Universal Business Directory records from years 1991, 1982, 1970, 1961 & 1950, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published:

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
3	ASSOCIATIONS &/OR SOCIETIES	Temora Amateur Swimming Club., Loftus St., Temora 2666	220930	1991	Road Match	0m
	ASSOCIATIONS &/OR SOCIETIES	Temora Bowling & Recreation Club., Loftus St., Temora 2666	220932	1991	Road Match	0m
	ASSOCIATIONS &/OR SOCIETIES	Temora Dist Hospital Board., Loftus St., Temora 2666	220938	1991	Road Match	0m
	HOSPITALS &/OR NURSING HOMES.	Temora District Hospital., Loftus St., Temora. 2666	213064	1991	Road Match	0m
	KINDERGARTENS &/OR CHILD MINDING CENTRES.	Temora Pre-School Kindergarten., Loftus St., Temora. 2666	213096	1991	Road Match	0m
	LOCAL BODIES	Temora Shire Council., Loftus St., Temora. 2666	213114	1991	Road Match	0m
	AIR CONDITIONING SALES &/OR SERVICE	Gilchrist's Service Centre, 86 Loftus St., Temora 2666	162305	1982	Road Match	0m
	ELECTRICAL REPAIR SERVICES	Gilchrist's Service Centre, 86 Loftus St., Temora 2666	162475	1982	Road Match	0m
	RADIO &/OR TELEVISION SALES &/OR SERVICE &/OR HIRERS	Gilchrist's Service Centre, 86 Loftus St., Temora 2666	162705	1982	Road Match	0m
	HOTELS - LICENSED	Grand Hotel, Loftus St., Temora 2666	162542	1982	Road Match	0m
	SADDLERS	Hors'n Around Saddlery, 96 Loftus St., Temora 2666	162728	1982	Road Match	0m
	BATHS - SWIMMING	Municipal Swimming Pool. Loftus St., Temora 2666	162394	1982	Road Match	0m
	NATUROPATHS	Naturopath. 94 Loftus St., Temora 2666	162670	1982	Road Match	0m
	ASSOCIATIONS, SOCIETIES, CLUBS &/OR SPORTING BODIES	Temora Amateur Swimming Club, Loftus St., Temora 2666	162346	1982	Road Match	0m
	CRANES - MOBILE & TRAVEL TOWER - PROPRIETORS &/OR HIRERS	Temora Auto Wreckers, 72 Loftus St., Temora 266	162458	1982	Road Match	0m
	MOTOR ACCESSORIES &/OR SPARE PARTS -RETAIL	Temora Auto Wreckers, 72 Loftus St., Temora 266	162618	1982	Road Match	0m
	MOTOR TOWING SERVICES.	Temora Auto Wreckers, 72 Loftus St., Temora 266	162664	1982	Road Match	0m
	MOTOR WRECKERS	Temora Auto Wreckers, 72 Loftus St., Temora 266	162668	1982	Road Match	0m
	SCRAP METAL MERCHANTS	Temora Auto Wreckers, 72 Loftus St., Temora 266	162737	1982	Road Match	0m
	SECONDHAND DEALERS	Temora Auto Wreckers, 72 Loftus St., Temora 266	162741	1982	Road Match	0m
	ASSOCIATIONS, SOCIETIES, CLUBS &/OR SPORTING BODIES	Temora Bowling & Recreation Club. Loftus St., Temora 2666	162348	1982	Road Match	0m
	ASSOCIATIONS, SOCIETIES, CLUBS &/OR SPORTING BODIES	Temora Dist Hospital Board, Loftus St., Temora 2666	162354	1982	Road Match	0m
	HOSPITALS &/OR HEALTH CENTRES	Temora District Hospital, Loftus St., Temora 2666	162541	1982	Road Match	0m
	SCHOOLS - KINDERGARTEN, DAY NURSERY	Temora Pre-School Kindergarten. Loftus St., Temora 2666	162736	1982	Road Match	0m
	ASSOCIATIONS, SOCIETIES, CLUBS &/OR SPORTING BODIES	Women's Friendship Club. Loftus St., Temora 2666	162376	1982	Road Match	0m
	BEAUTY SALONS & LADIES' HAIRDRESSERS	Aromet Salon, 96 Loftus St. Temora 2666	588162	1970	Road Match	0m

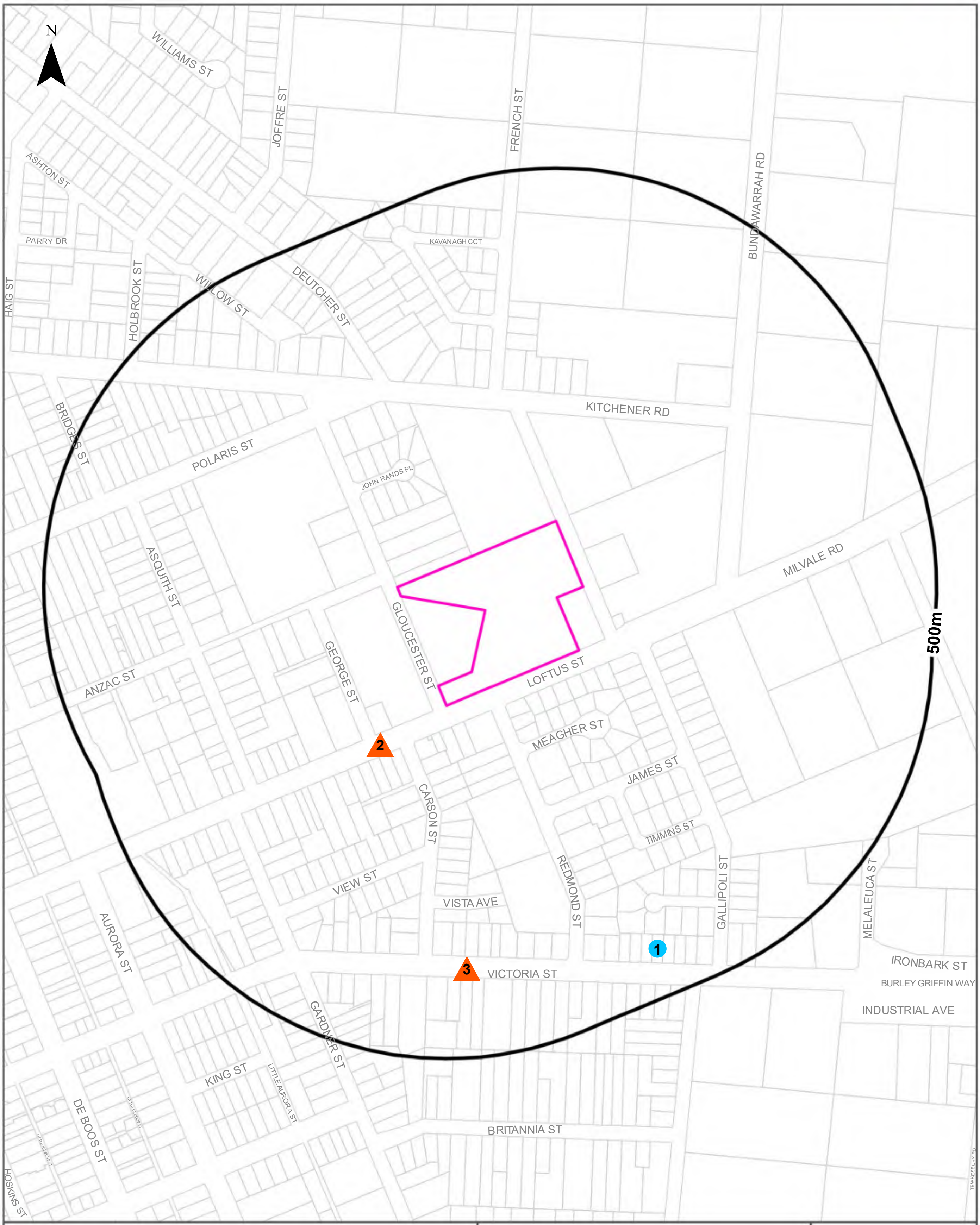
Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
3	AUCTIONEERS-GENERAL	Australian Estates Co. Agencies Pty. Ltd., 94 Loftus St. Temora 2666	588132	1970	Road Match	0m
	INSURANCE AGENTS	Australian Estates Co. Agencies Pty. Ltd., 94 Loftus St. Temora 2666	588380	1970	Road Match	0m
	STATION & FARM SUPPLIES	Australian Estates Co. Agencies Pty. Ltd., 94 Loftus St. Temora 2666	588680	1970	Road Match	0m
	STOCK, STATION & REAL ESTATE AGENTS	Australian Estates Co. Agencies Pty. Ltd., 94 Loftus St. Temora 2666	588699	1970	Road Match	0m
	WOOL BROKERS	Australian Estates Co. Agencies Pty. Ltd., 94 Loftus St. Temora 2666	588787	1970	Road Match	0m
	AUCTIONEERS-GENERAL	Davoren, W. J., 88 Loftus St. Temora 2666	588135	1970	Road Match	0m
	INSURANCE AGENTS	Davoren, W. J., 88 Loftus St. Temora 2666	588385	1970	Road Match	0m
	STOCK, STATION & REAL ESTATE AGENTS	Davoren, W. J., 88 Loftus St. Temora 2666	588702	1970	Road Match	0m
	WOOL, SKIN & HIDE BUYERS	Deep, A. A. & Co., 76 Loftus St. Temora 2666	588793	1970	Road Match	0m
	HOTELS-LICENSED	Grand Hotel, Loftus St. Temora 2666	588371	1970	Road Match	0m
	WOOL, SKIN & HIDE BUYERS	Green, T. W. & Co. Pty. Ltd., 66 Loftus St. Temora 2666	588794	1970	Road Match	0m
	BATHS-SWIMMING	Municipal Swimming Pool, Loftus St. Temora 2666	588157	1970	Road Match	0m
	TAXI &/OR HIRE CAR SERVICES	Taxi Rank, Loftus St. Temora 2666	588716	1970	Road Match	0m
	ASSOCIATIONS, SOCIETIES, CLUBS & SPORTING BODIES	Temora Amateur Swimming Club, Loftus St. Temora 2666	588104	1970	Road Match	0m
	CRANES-MOBILE-PROP. OR HIRERS	Temora Auto Wreckers, 72 Loftus St. Temora 2666	588250	1970	Road Match	0m
	MOTOR ACCESSORIES & SPARE PARTS DEALERS	Temora Auto Wreckers, 72 Loftus St. Temora 2666	588489	1970	Road Match	0m
	MOTOR TOWING SERVICES	Temora Auto Wreckers, 72 Loftus St. Temora 2666	588554	1970	Road Match	0m
	MOTOR WRECKERS	Temora Auto Wreckers, 72 Loftus St. Temora 2666	588558	1970	Road Match	0m
	SECOND-HAND DEALERS	Temora Auto Wreckers, 72 Loftus St. Temora 2666	588657	1970	Road Match	0m
	ASSOCIATIONS, SOCIETIES, CLUBS & SPORTING BODIES	Temora Bowling & Recreation Club, Loftus St. Temora 2666	588105	1970	Road Match	0m
	ASSOCIATIONS, SOCIETIES, CLUBS & SPORTING BODIES	Temora District Hospital Board, Loftus St. Temora 2666	588112	1970	Road Match	0m
	HOSPITALS & HEALTH CENTRES	Temora District Hospital, Loftus St. Temora 2666	588369	1970	Road Match	0m
	LOCAL BODIES	Temora Municipal Council, Loftus St. Temora 2666	588442	1970	Road Match	0m
	BOOT & SHOE REPAIRERS	White, K., 92 Loftus St. Temora 2666	588167	1970	Road Match	0m
	DRY CLEANERS, PRESSERS & DYERS	C.K. Dry Cleaners and Pressers, 92 Loftus St., Temora	225730	1961	Road Match	0m
	ENGINEERS-STRUCTURAL	Cieverdon Bros., 72 Loftus St., Temora	225752	1961	Road Match	0m
	HARDWARE DEALERS & IRONMONGERS	Clevedon's Loftus Street, Temora	225838	1961	Road Match	0m
	AGRICULTURAL MACHINERY DEALERS	Cleverdon Bros., 72 Loftus St., Temora	225556	1961	Road Match	0m
	AGRICULTURAL MACHINERY REPAIRERS	Cleverdon Bros., 72 Loftus St., Temora	225576	1961	Road Match	0m
	ENGINEERS-CONSTRUCTIONAL	Cleverdon Bros., 72 Loftus St., Temora	225744	1961	Road Match	0m
	INSURANCE AGENTS	Cleverdon Bros., 72 Loftus St., Temora	225861	1961	Road Match	0m
	WELDERS-ELECTRIC & OXY	Cleverdon Bros., 72 Loftus St., Temora	226166	1961	Road Match	0m
	AUCTIONEERS-GENERAL	Davoren, W. J., 88 Loftus St., Temora	225606	1961	Road Match	0m
	INSURANCE AGENTS	Davoren, W. J., 88 Loftus St., Temora	225863	1961	Road Match	0m
	STOCK, STATION & REAL ESTATE AGENTS	Davoren, W. J., 88 Loftus St., Temora	226124	1961	Road Match	0m

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
3	WOOL, SKIN & HIDE BUYERS	Deeps, A. A. and Co., Loftus St, Temora	226185	1961	Road Match	0m
	BEAUTY SALONS & LADIES' HAIRDRESSERS	Edwards, G., Loftus St., Temora	225630	1961	Road Match	0m
	HOTELS-LICENSED	Grand Hotel, Loftus St., Temora	225848	1961	Road Match	0m
	WOOL, SKIN & HIDE BUYERS	Green, T. W. Pty. Ltd., 66 Loftus St., Temora	226186	1961	Road Match	0m
	MOTOR TRIMMERS	Rodgers, Jack, Off Loftus St., Temora	226026	1961	Road Match	0m
	UPHOLSTERERS	Rodgers, Jack, Off Loftus St., Temora	226159	1961	Road Match	0m
	LOCAL BODIES	Temora Municipal Council, Loftus St., Temora	225911	1961	Road Match	0m
	HOTELS-LICENSED	Terminus Hotel, Loftus St., Temora	225855	1961	Road Match	0m
	MOTOR WRECKER	Tom Walsh Loftus Street, Temora	226020	1961	Road Match	0m
	MOTOR ACCESSORIES & SPARE PARTS DEALERS	Walsh, T., Loftus St., Temora	225964	1961	Road Match	0m
	MOTOR WRECKERS	Walsh, T., Loftus St., Temora	226028	1961	Road Match	0m
	SECOND-HAND DEALERS	Walsh, T., Loftus St., Temora	226094	1961	Road Match	0m
	BEAUTY SALONS & LADIES HAIRDRESSERS	Allen, Mrs., Loftus St., Temora	165108	1950	Road Match	0m
	DRY CLEANERS, PRESSERS & DYERS	C.K. Dry Cleaners, Loftus St., Temora	165179	1950	Road Match	0m
	WELDERS-ELECTRIC & OXY	Cieverdon and Douglas, Loftus St Temora	165416	1950	Road Match	0m
	MOTOR CAR & TRUCK DEALERS	Cieverdon and Douglas, Loftus St., Temora	165296	1950	Road Match	0m
	MOTOR GARAGES & ENGINEERS	Cieverdon and Douglas, Loftus St., Temora	165309	1950	Road Match	0m
	MOTOR PAINTERS &/OR PANEL BEATERS	Cieverdon and Douglas, Loftus St., Temora	165322	1950	Road Match	0m
	MOTORCYCLE DEALERS & SERVICEMEN	Cieverdon and Douglas, Loftus St., Temora	165304	1950	Road Match	0m
	INSURANCE AGENTS	Cleverdon and Douglas, Loftus St., Temora	165246	1950	Road Match	0m
	MOTOR ACCESSORIES DEALERS	Cleverdon and Douglas, Loftus St., Temora	165292	1950	Road Match	0m
	INSURANCE AGENTS	Davoren, W. J. (Agent, M.L.C.), Loftus St., Temora	165247	1950	Road Match	0m
	REAL ESTATE AGENTS	Davoren, W. J., Loftus St., Temora	165365	1950	Road Match	0m
	STOCK & STATION AGENTS	Davoren, W. J., Loftus St., Temora	165389	1950	Road Match	0m
	AUCTIONEERS-,GENERAL	Davuren, W. J., Loftus St., Temora	165086	1950	Road Match	0m
	SKIN & HIDE MERCHANTS	Deeps, A. A., Loftus St., Temora	165378	1950	Road Match	0m
	WOOL MERCHANTS	Deeps, A. A., Loftus St., Temora	165421	1950	Road Match	0m
	SHEARING CONTRACTORS	Goode, J. J., Loftus St., Temora	165377	1950	Road Match	0m
	HOTELS-LICENSED	Grand Hotel, Loftus St., Temora	165236	1950	Road Match	0m
	SKIN & HIDE MERCHANTS	Green, T. W. Pty. Ltd., Loftus St., Temora	165379	1950	Road Match	0m
	WOOL MERCHANTS	Green, T. W. Pty. Ltd., Loftus St., Temora	165422	1950	Road Match	0m
	MILLINERY-RETAIL	Kelly, Nom Loftus St., Temora	165289	1950	Road Match	0m
	FLORISTS-RETAIL	Kelly, Nora, Loftus St., Temora	165190	1950	Road Match	0m
	CARRIERS & CARTAGE CONTRACTORS	M.W.S. Transport Service, Loftus St., Temora	165143	1950	Road Match	0m
	PRODUCE MERCHANTS-WHOLESALE	M.W.S. Transport Service, Loftus St., Temora	165357	1950	Road Match	0m

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
3	ENGINEERS-GENERAL &/OR MANUFACTURING	Masiin, R. J. Loftus St., Temora	165186	1950	Road Match	0m
	MOTOR CARBURETTOR SPECIALISTS	Maslin, R. G. Loftus St., Temora	165303	1950	Road Match	0m
	DRY CLEANERS, PRESSERS & DYERS	O.K. Dry Cleaners, Loftus St, Temora	165180	1950	Road Match	0m
	AGRICULTURAL MACHINERY DEALERS	Temora Wheatgrowers Union Co-op, Society Ltd., Loftus St., Temora	165081	1950	Road Match	0m
	AUCTIONEERS-,GENERAL	Temora Wheatgrowers Union Co-op. Society Ltd., Loftus St., Temora	165090	1950	Road Match	0m
	REAL ESTATE AGENTS	Temora Wheatgrowers Union Co-op. Society Ltd., Loftus St., Temora	165369	1950	Road Match	0m
	STOCK & STATION AGENTS	Temora Wheatgrowers Union Co-op. Society Ltd., Loftus St., Temora	165393	1950	Road Match	0m
	HOTELS-LICENSED	Terminus Hotel (S. P. Wurth, Propr.), Loftus St., Temora	165241	1950	Road Match	0m
4	ASSOCIATIONS &/OR SOCIETIES	Temora Tech. College Advisory Committee., Gloucester St., Temora 2666	220956	1991	Road Match	0m
	SCHOOLS &/OR COLLEGES - PRIVATE &/OR PUBLIC	Temora Technical College., Gloucester St., Temora. 2666	213273	1991	Road Match	0m
	ASSOCIATIONS, SOCIETIES, CLUBS &/OR SPORTING BODIES	Temora Tech. College Advisory Committee. Gloucester St., Temora 2666	162369	1982	Road Match	0m
	SCHOOLS &/OR COLLEGES - PRIVATE &/OR PUBLIC	Temora Technical College. Gloucester St., Temora 2666	162734	1982	Road Match	0m
	ASSOCIATIONS, SOCIETIES, CLUBS & SPORTING BODIES	Temora Tech. College Advisory Committee, Gloucester St. Temora 2666	588126	1970	Road Match	0m
	SCHOOLS & COLLEGES-TECHNICAL	Temora Technical College, Gloucester St. Temora 2666	588651	1970	Road Match	0m
5	MILK VENDORS	Salzke, C. E. Gallipoli St., Temora	165288	1950	Road Match	84m
6	QUARRY PROPRIETORS	Will Bros., George St., Temora	226083	1961	Road Match	108m

Dry Cleaners, Motor Garages & Service Stations

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666



Legend

🟪 Site Boundary

▭ Buffer 500m

▭ Property Boundary

● Business directory records mapped to a specific premise

🟩 Business directory records mapped to a road intersection

▲ Business directory records mapped to a road corridor

▨ Business directory records mapped to a general area

Scale:

Coordinate System:
GDA 1994 MGA Zone 56

Date: 28 March 2023

Data Sources: Reproduced with permission of UBD and Hardie Grant Media Pty Ltd DD 01/08/2018
Property Boundaries © NSW Department Finance, Services & Innovation 2023

Historical Business Directories

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666

Dry Cleaners, Motor Garages & Service Stations Premise or Road Intersection Matches

Dry Cleaners, Motor Garages & Service Stations from UBD Business Directories, mapped to a premise or road intersection, within the dataset buffer.

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
1	MOTOR SERVICE STATIONS-PETROL, OIL, Etc.	Franke, F. H. & V., 181 Victoria St. Temora 266	588550	1970	Premise Match	411m	South East

Reproduced with permission of UBD and Hardie Grant Media Pty Ltd DD 01/08/2018

Dry Cleaners, Motor Garages & Service Stations Road or Area Matches

Dry Cleaners, Motor Garages & Service Stations from UBD Business Directories, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published.

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
2	DRY CLEANERS, PRESSERS & DYERS	C.K. Dry Cleaners and Pressers, 92 Loftus St., Temora	225730	1961	Road Match	0m
	DRY CLEANERS, PRESSERS & DYERS	C.K. Dry Cleaners, Loftus St., Temora	165179	1950	Road Match	0m
	MOTOR GARAGES & ENGINEERS	Cieverdon and Douglas, Loftus St., Temora	165309	1950	Road Match	0m
	DRY CLEANERS, PRESSERS & DYERS	O.K. Dry Cleaners, Loftus St, Temora	165180	1950	Road Match	0m
3	MOTOR GARAGES & SERVICE STATIONS.	BP Temora Service Station., Victoria St., Temora. 2666	213170	1991	Road Match	354m
	MOTOR GARAGES & SERVICE STATIONS.	BP Temora Service Station., Victoria Street, Temora. 2666	213168	1991	Road Match	354m
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS	Temora Filling Station, Victoria St., Temora 2666	162653	1982	Road Match	354m
	MOTOR SERVICE STATIONS-PETROL, OIL, Etc.	Temora Filling Station, Victoria St. Temora 2666	588551	1970	Road Match	354m
	MOTOR GARAGES & ENGINEERS	Meagher, John & Co. Pty. Ltd. Victoria St., Temora	165306	1950	Road Match	354m
	MOTOR GARAGES & ENGINEERS	Meagher, John and Co. Pty. Ltd., Victoria St., Temora	165314	1950	Road Match	354m

Reproduced with permission of UBD and Hardie Grant Media Pty Ltd DD 01/08/2018

Aerial Imagery 2022

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666

Scale:
0 40 80 120 160
Meters

Data Source Aerial Imagery: © 2023 Google Inc, used with permission. Google and the Google logo are registered trademarks of Google Inc.

Coordinate System:
GDA 1994 MGA Zone 56

Date: 27 March 2023

Aerial Imagery 2017

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666

Legend

▢	Site Boundary
▢	Buffer 150m

Scale: 0 40 80 120 160 Meters	Data Source Aerial Imagery: © 2023 Google Inc, used with permission. Google and the Google logo are registered trademarks of Google Inc.	Coordinate System: GDA 1994 MGA Zone 56	Date: 27 March 2023

Aerial Imagery 2011

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666

Legend

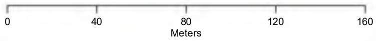
- Site Boundary
- Buffer 150m

Scale: 0 40 80 120 160 Meters	Data Source Aerial Imagery: © 2023 Google Inc, used with permission. Google and the Google logo are registered trademarks of Google Inc.	Coordinate System: GDA 1994 MGA Zone 56	Date: 27 March 2023

Aerial Imagery 2005

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666

Scale:



Data Source Aerial Imagery: © 2023 Google Inc, used with permission. Google and the Google logo are registered trademarks of Google Inc.

Coordinate System:
GDA 1994 MGA Zone 56

Date: 27 March 2023

Aerial Imagery 1997

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666

Legend

🟪 Site Boundary

⬜ Buffer 150m

Scale:

Data Source Aerial Imagery:
© NSW Department of Customer Service

Coordinate System:
GDA 1994 MGA Zone 56

Date: 04 April 2023

Aerial Imagery 1986

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666

Legend

🟪	Site Boundary
⬛	Buffer 150m

Scale:

0 40 80 120 160
Meters

Data Source Aerial Imagery:
© NSW Department of Customer Service

Coordinate System:
GDA 1994 MGA Zone 56

Date: 29 March 2023

Aerial Imagery 1978

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666

Scale:

Data Source Aerial Imagery:
© NSW Department of Customer Service

Coordinate System:
GDA 1994 MGA Zone 56

Date: 29 March 2023

Aerial Imagery 1961

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666

Scale:
0 40 80 120 160
Meters

Data Source Aerial Imagery:
© NSW Department of Customer Service

Coordinate System:
GDA 1994 MGA Zone 56

Date: 29 March 2023

Aerial Imagery 1945

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666

Legend

- Site Boundary
- Buffer 150m

Scale:

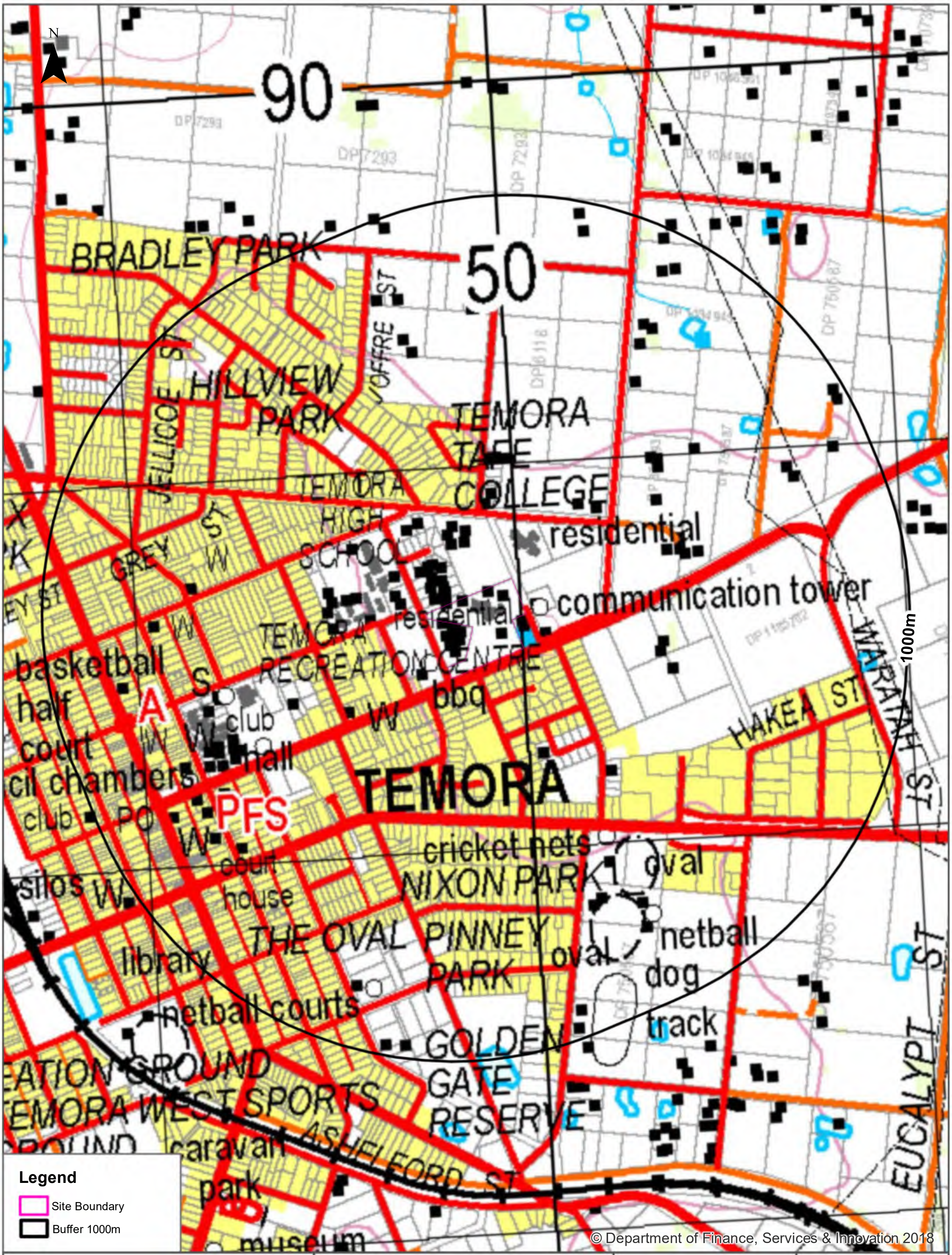
Data Source Aerial Imagery:
© NSW Department of Customer Service

Coordinate System:
GDA 1994 MGA Zone 56

Date: 27 March 2023

Topographic Map 2015

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666



Scale: 0 160 320 480 640 Meters

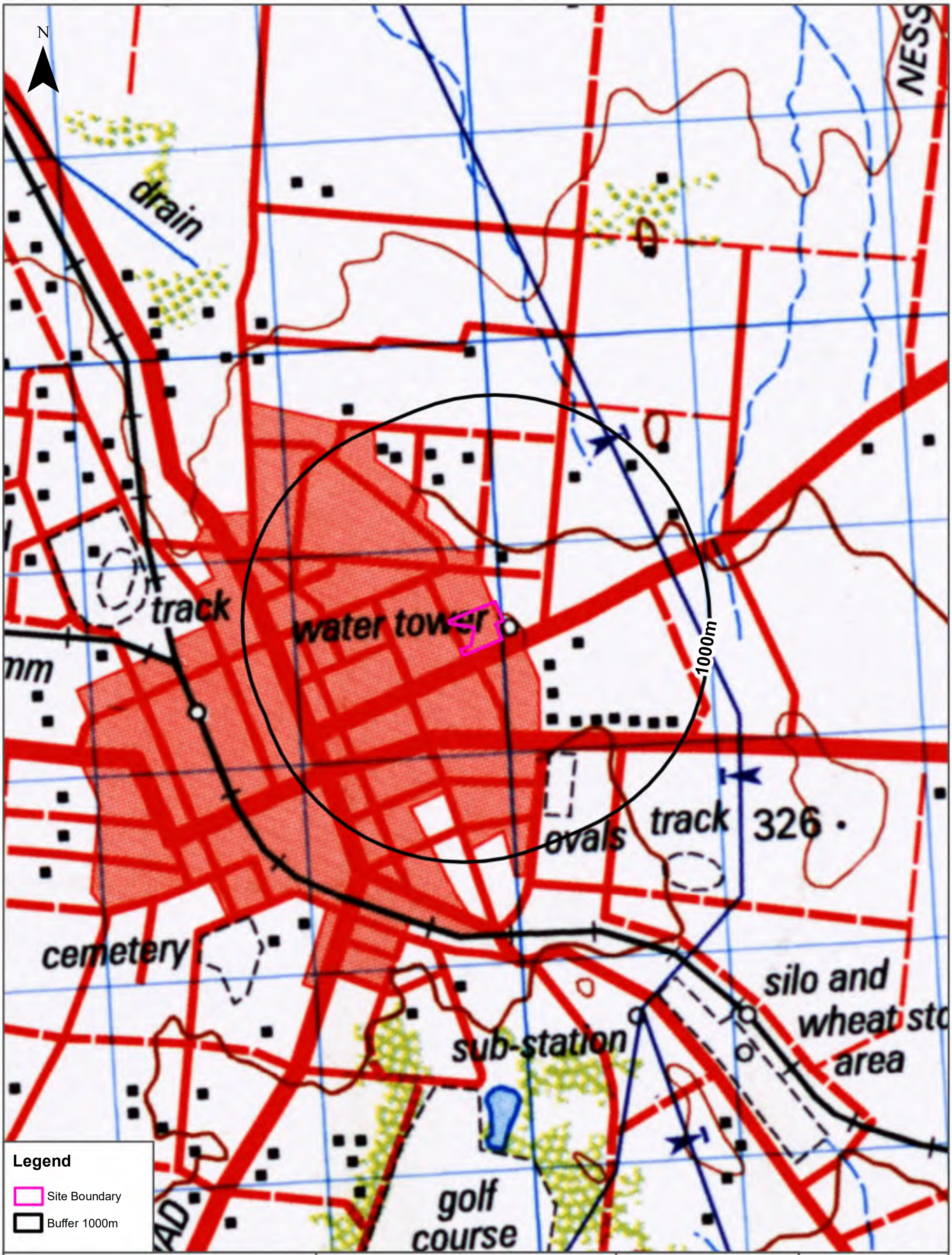
Data Sources: Topographic Map Data
© NSW Land and Property Information

Coordinate System:
GDA 1994 MGA Zone 56

Date: 28 March 2023

Historical Map 2000

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666



Scale:

0 200 400 800 1,200
Metres

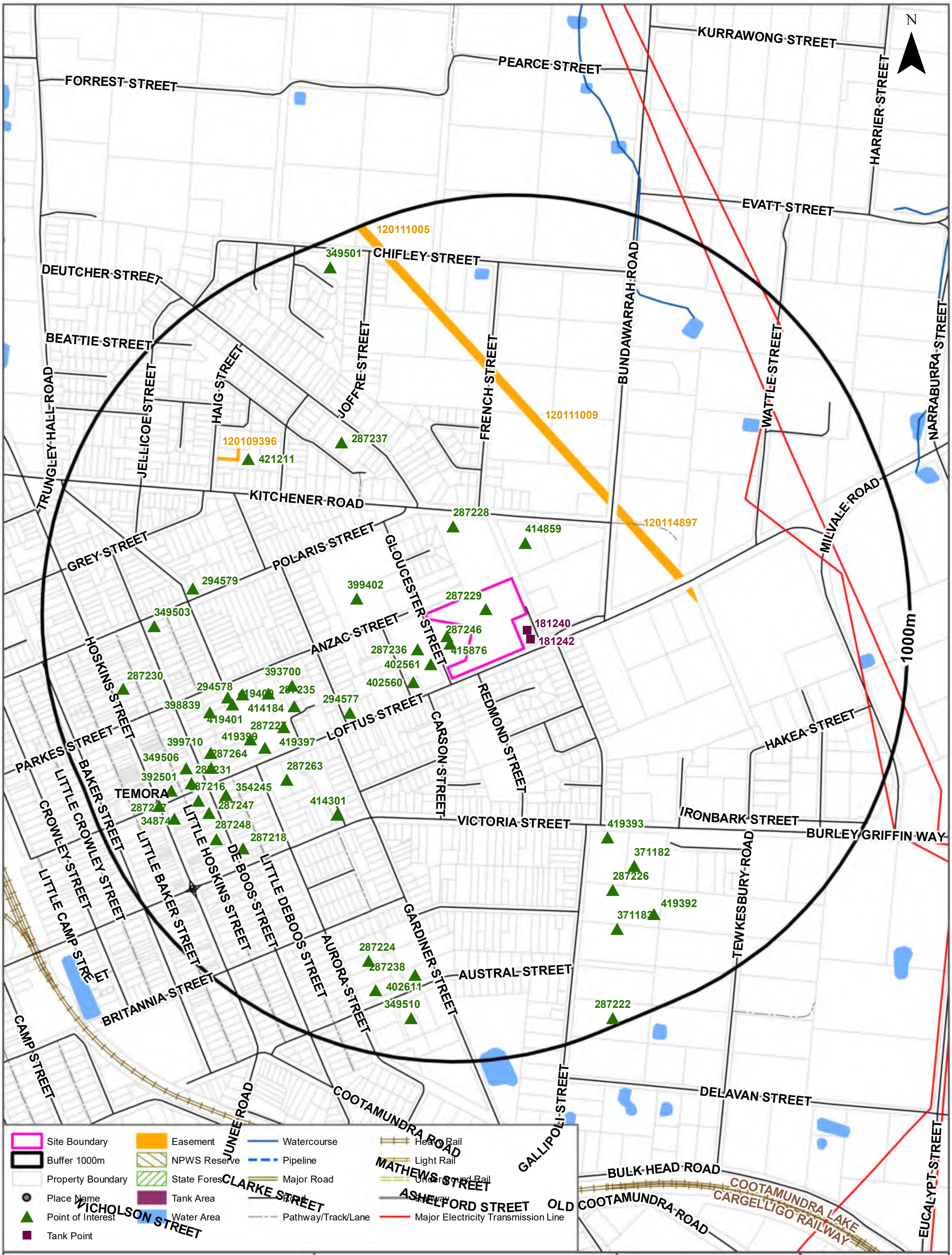
Data Sources: NATMAP 1:100,000
Topographic Maps Geoscience Australia

Coordinate System:
GDA 1994 MGA Zone 56

Date: 27 March 2023

Topographic Features

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666



Scale:

0 100 200 400 600
Meters

Data Sources: Property Boundaries & Topographic Data:
© Department Finance, Services & Innovation 2023

Coordinate System:
GDA 1994 MGA Zone 56

Date: 28 March 2023

Topographic Features

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666

Points of Interest

What Points of Interest exist within the dataset buffer?

Map Id	Feature Type	Label	Distance	Direction
287229	Integrated Health Service	TEMORA HOSPITAL	0m	On-site
415876	Retirement Village	THE WHIDDON GROUP TEMORA	36m	West
402561	Picnic Area	BBQ	45m	South West
287246	Nursing Home	THE WHIDDON GROUP TEMORA GREENSTONE	50m	South West
287236	Park	GLOUCESTER PARK	83m	West
402560	Child Care Centre	TEMORA PRESCHOOL	98m	South West
414859	Community Home	THE WHIDDON GROUP-TEMORA	100m	North East
287228	TAFE College	TEMORA TAFE COLLEGE	184m	North
399402	High School	TEMORA HIGH SCHOOL	184m	West
294577	Place Of Worship	LUTHERAN CHURCH	281m	South West
393700	Sports Field	BOWLING GREENS	394m	West
414184	Club	TEMORA BOWLING AND REC CLUB	412m	South West
419397	Park	LIONS PARK	455m	South West
287235	Swimming Pool	Swimming Pool	458m	West
414301	Retirement Village	SOUTHERN CROSS VILLAGE TEMORA	466m	South West
287237	Park	HILLVIEW PARK	500m	North West
287263	Sports Field	FATHER HERMAN OVAL	506m	South West
419399	Monument	WAR MEMORIAL	520m	South West
294578	Sports Centre	TEMORA RECREATION CENTRE	521m	West
419393	Sports Court	CRICKET NETS	539m	South East
287227	Park	CALLAGHAN PARK	547m	South West
419401	Park	PLAYGROUND	555m	West
419400	Picnic Area	BBQ	560m	West
294579	Place Of Worship	SEVENTH DAY ADVENTIST CHURCH	611m	West
421211	Retirement Village	DR PARRY MEMORIAL HOMES	615m	North West
398839	Primary School	TEMORA PUBLIC SCHOOL	618m	West
371182	Sports Field	OVAL	636m	South East
399710	Combined Primary-Secondary School	ST ANNES CENTRAL SCHOOL	658m	South West
354245	Community Facility	TEMORA MEMORIAL TOWN HALL	664m	South West
287264	Place Of Worship	CATHOLIC CHURCH	670m	South West
287226	Park	NIXON PARK	671m	South East

Map Id	Feature Type	Label	Distance	Direction
287218	Fire Station	TEMORA FIRE STATION	703m	South West
349503	Place Of Worship	UNITING CHURCH	709m	West
287247	Police Station	TEMORA POLICE STATION	726m	South West
349506	Place Of Worship	ST ANDREWS PRESBYTERIAN CHURCH	731m	South West
287231	Local Government Chambers	TEMORA SHIRE COUNCIL	733m	South West
287216	Place Of Worship	ST PAULS ANGLICAN CHURCH	735m	South West
287248	Court House	TEMORA COURT HOUSE	745m	South West
287224	Sports Field	THE OVAL	768m	South
371183	Sports Field	OVAL	769m	South East
419392	Sports Court	NETBALL	771m	South East
287238	Park	PINNEY PARK	779m	South
392501	Park	PALEFACE PARK	789m	South West
287217	Post Office	TEMORA POST OFFICE	812m	South West
287230	Ambulance Station	TEMORA AMBULANCE STATION	813m	West
348747	Town	TEMORA	834m	South West
402611	Sports Court	NETBALL COURTS	837m	South
349510	Park	GOLDEN GATE RESERVE	892m	South
349501	Park	BRADLEY PARK	931m	North West
287222	Dog Track	TEMORA GREYHOUND TRACK	979m	South

Topographic Data Source: © Land and Property Information (2015)

Topographic Features

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666

Tanks (Areas)

What are the Tank Areas located within the dataset buffer?
Note. The large majority of tank features provided by LPI are derived from aerial imagery & are therefore primarily above ground tanks.

Map Id	Tank Type	Status	Name	Feature Currency	Distance	Direction
N/A	No records in buffer					

Tanks (Points)

What are the Tank Points located within the dataset buffer?
Note. The large majority of tank features provided by LPI are derived from aerial imagery & are therefore primarily above ground tanks.

Map Id	Tank Type	Status	Name	Feature Currency	Distance	Direction
181242	Water	Operational		01/01/2017	24m	East
181240	Water	Operational		01/01/2017	25m	East

Major Easements

What Major Easements exist within the dataset buffer?
Note. Easements provided by LPI are not at the detail of local governments. They are limited to major easements such as Right of Carriageway, Electrical Lines (66kVa etc.), Easement to drain water & Significant subterranean pipelines (gas, water etc.).

Map Id	Easement Class	Easement Type	Easement Width	Distance	Direction
120111009	Primary	Undefined		316m	North
120114897	Primary	Undefined		323m	North East
120109396	Primary	Undefined		631m	North West
120111005	Primary	Undefined		920m	North

Topographic Features

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666

State Forest

What State Forest exist within the dataset buffer?

State Forest Number	State Forest Name	Distance	Direction
N/A	No records in buffer		

State Forest Data Source: © NSW Department of Finance, Services & Innovation (2018)

National Parks and Wildlife Service Reserves

What NPWS Reserves exist within the dataset buffer?

Reserve Number	Reserve Type	Reserve Name	Gazetted Date	Distance	Direction
N/A	No records in buffer				

NPWS Data Source: © NSW Department of Finance, Services & Innovation (2018)

Elevation Contours (m AHD)

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666

Legend

- Elevation Contour (m AHD)
- Site Boundary
- Buffer 1000m
- Property Boundary

Accuracy & Currency: This contour data can be up to 0.4 of the contour interval out in height and must therefore not be used for any design or engineering works, but only as a general guide to topography. Gaps may occur along contour lines due to vertical topography, obscured topography in the source photography such as buildings, dense vegetation or dead ground, or the fact that original buildings have been replaced in the intervening thirty years since the original contour capture.

Scale:

0 100 200 400
Meters

Data Sources: Property Boundaries & Topographic Data:
© Department Finance, Services & Innovation 2023

Coordinate System:
GDA 1994 MGA Zone 56

Date: 28 March 2023

Hydrogeology & Groundwater

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666

Hydrogeology

Description of aquifers within the dataset buffer:

Description	Distance	Direction
Fractured or fissured, extensive aquifers of low to moderate productivity	0m	On-site

Hydrogeology Map of Australia : Commonwealth of Australia (Geoscience Australia)

Temporary Water Restriction (Botany Sands Groundwater Source) Order 2018

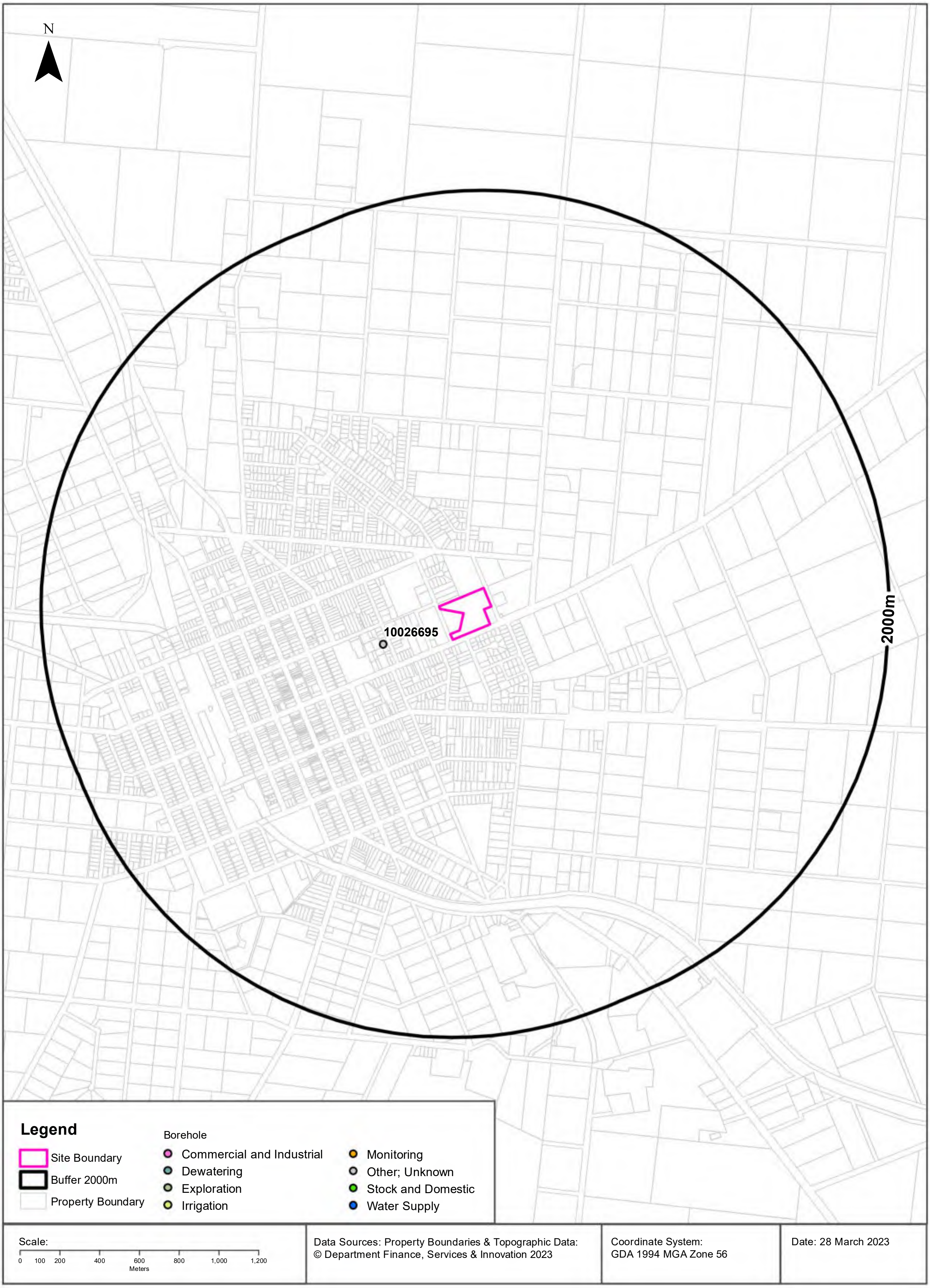
Temporary water restrictions relating to the Botany Sands aquifer within the dataset buffer:

Prohibition Area No.	Prohibition	Distance	Direction
N/A	No records in buffer		

Temporary Water Restriction (Botany Sands Groundwater Source) Order 2018 Data Source : NSW Department of Primary Industries

Groundwater Boreholes

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666



Data Sources: Property Boundaries & Topographic Data:
© Department Finance, Services & Innovation 2023

Coordinate System:
GDA 1994 MGA Zone 56

Date: 28 March 2023

Hydrogeology & Groundwater

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666

Groundwater Boreholes

Boreholes within the dataset buffer:

NGIS Bore ID	NSW Bore ID	Bore Type	Status	Drill Date	Bore Depth (m)	Reference Elevation	Height Datum	Salinity (mg/L)	Yield (L/s)	SWL (mbgl)	Distance	Direction
10026695	GW015089		Unknown	01/02/1957	54.90		AHD				335m	West

Borehole Data Source: Bureau of Meteorology; Water NSW. Creative Commons 3.0 © Commonwealth of Australia http://creativecommons.org/licenses/by/3.0/au/deed.en

Hydrogeology & Groundwater

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666

Driller's Logs

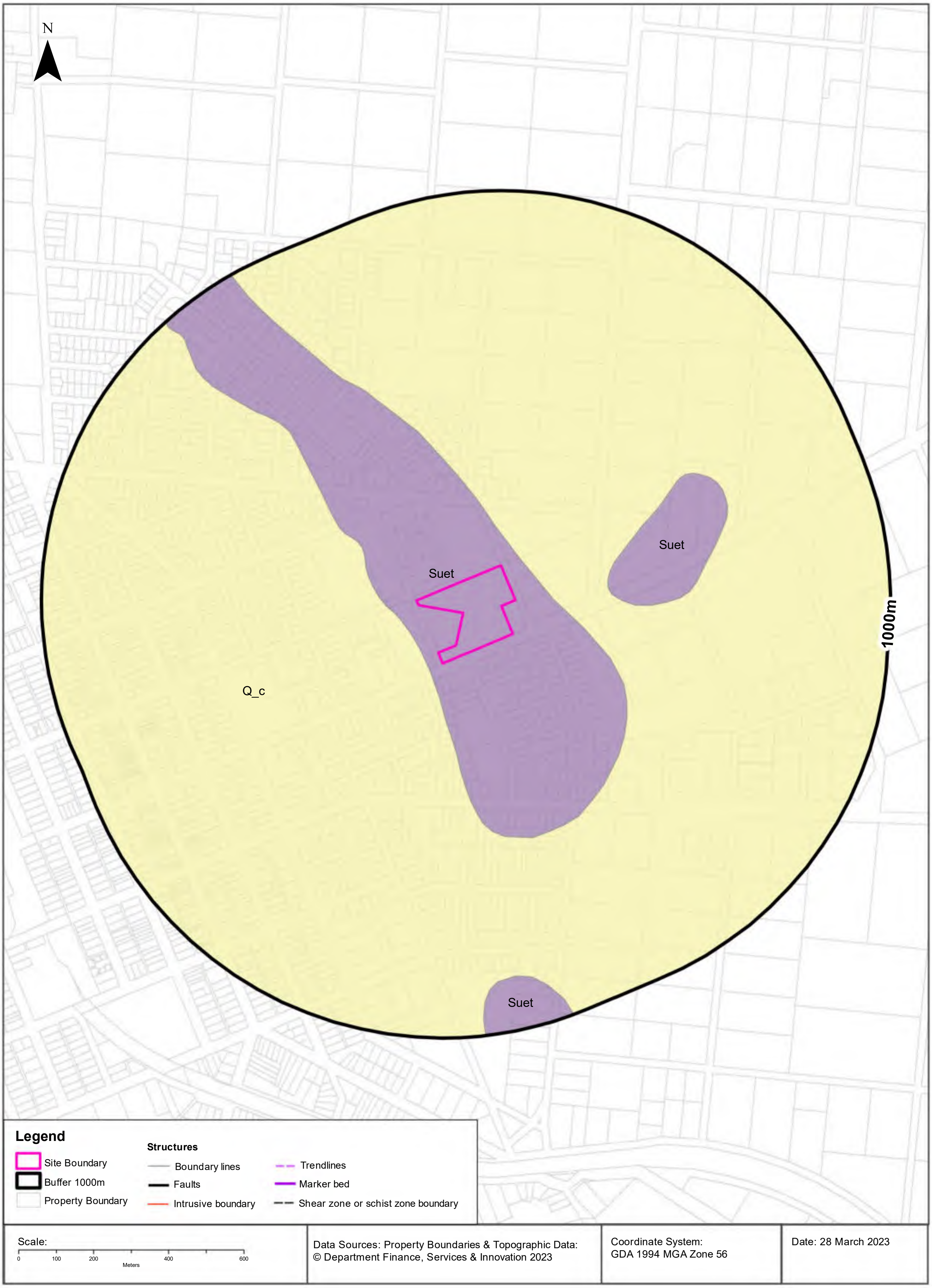
Drill log data relevant to the boreholes within the dataset buffer:

NGIS Bore ID	Drillers Log	Distance	Direction
10026695	0.00m-12.19m Clay Red Sticky 12.19m-15.24m Clay Red 15.24m-22.86m Clay Red Hard 22.86m-29.87m Clay Silty 29.87m-32.00m Sandstone Decomposed 32.00m-37.19m Clay Red Sticky 37.19m-41.15m Clay Yellow 41.15m-46.94m Shale Dark Broken Water Supply 46.94m-51.82m Slate Dark Soft 51.82m-54.86m Slate Yellow Hard Some Sand 51.82m-54.86m Veins	335m	West

Drill Log Data Source: Bureau of Meteorology; Water NSW. Creative Commons 3.0 © Commonwealth of Australia http://creativecommons.org/licenses/by/3.0/au/deed.en

Geology

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666



Data Sources: Property Boundaries & Topographic Data:
© Department Finance, Services & Innovation 2023

Coordinate System:
GDA 1994 MGA Zone 56

Date: 28 March 2023

Geology

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666

Geological Units

What are the Geological Units within the dataset buffer?

Unit Code	Unit Name	Description	Unit Stratigraphy	Age	Dominant Lithology	Distance
Suet	Temora Volcanics	Andesite, trachyandesite, latite, basaltic trachyandesite, basalt, trachybasalt; vesicular amygdaloidal pillow lava with hyaloclastite, breccia and interpillow material; lapilli tuff; volcaniclastic siltstone, sandstone, polymictic pebble conglomerate.	/Ungrouped Eastern Lachlan Silurian units//Temora Volcanics//	Silurian (base) to Silurian (top)	Andesite	0m
Q_c	Colluvium	Poorly sorted, weakly cemented to unconsolidated colluvial lenses of polymictic conglomerate with medium- to very coarse-grained sand matrix; interspersed with unconsolidated clayey and silty red-brown (aeolian) sand layers, modified by pedogenesis.	/Colluvium////	Quaternary (base) to Now (top)	Clastic sediment	39m

Linear Geological Structures

What are the Dyke, Sill, Fracture, Lineament and Vein trendlines within the dataset buffer?

Map ID	Feature Description	Map Sheet Name	Distance
No Features			

What are the Faults, Shear zones or Schist zones, Intrusive boundaries & Marker beds within the dataset buffer?

Map ID	Boundary Type	Description	Map Sheet Name	Distance
No Features				

Geological Data Source: Statewide Seamless Geology v2.1, Department of Regional NSW

Naturally Occurring Asbestos Potential

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666

Naturally Occurring Asbestos Potential

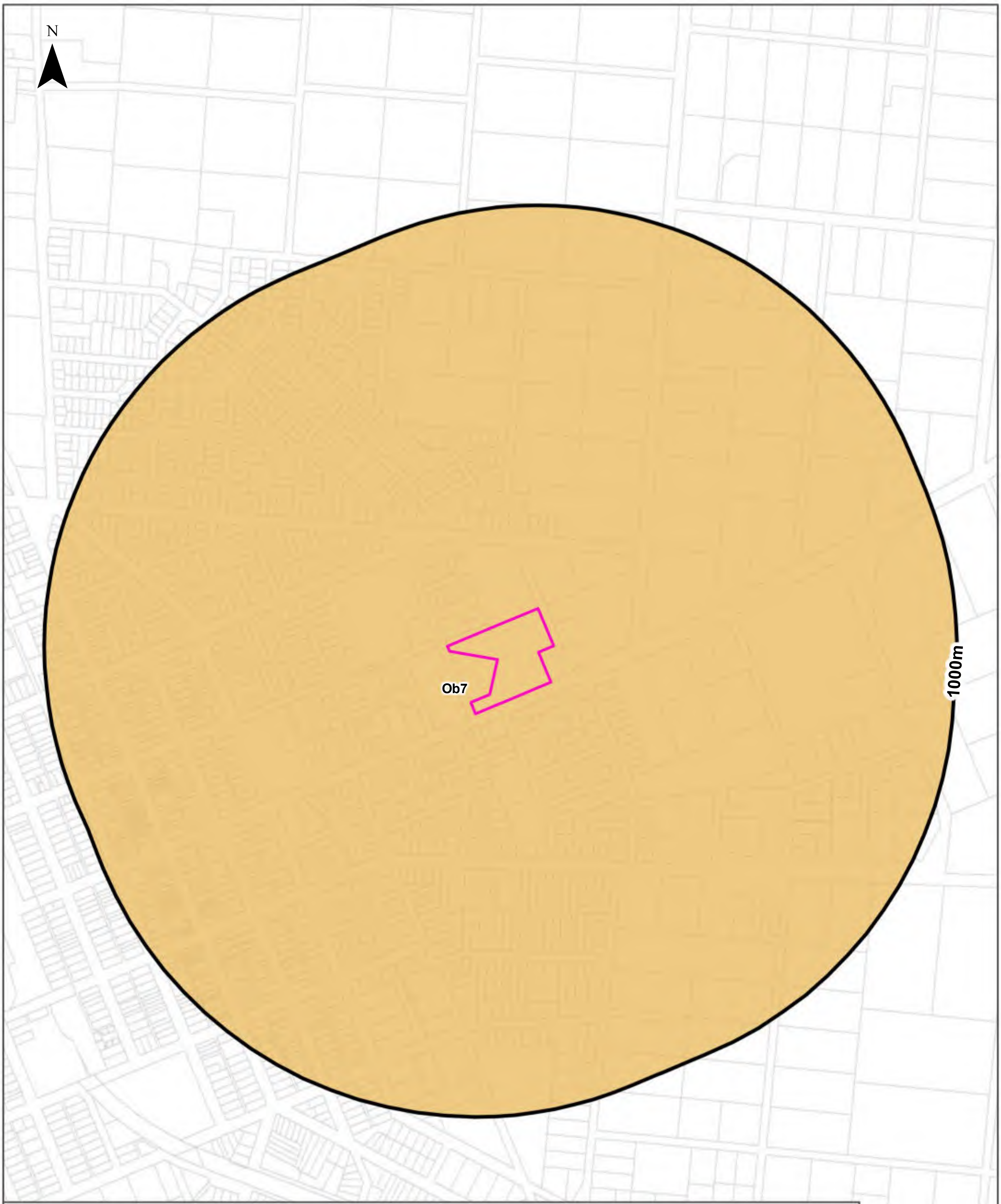
Naturally Occurring Asbestos Potential within the dataset buffer:

Potential	Sym	Strat Name	Group	Formation	Scale	Min Age	Max Age	Rock Type	Dom Lith	Description	Dist	Dir
No records in buffer												

Naturally Occurring Asbestos Potential Data Source: © State of New South Wales through NSW Department of Industry, Resources & Energy

Atlas of Australian Soils

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666



Legend

🟪 Site Boundary
⬛ Buffer 1000m
☐ Property Boundary

Australian Soil Classification Orders

- ■ Anthroposol
- ■ Calcarosol
- ■ Chromosol
- ■ Dermosol
- ■ Ferrosol
- ■ Hydrosol
- ■ Kandosol
- ■ Kurosol
- ■ Organosol
- ■ Podosol
- ■ Rudosol
- ■ Sodosol
- ■ Tenosol
- ■ Vertosol
- ■ Lake
- ☐ No Data

Scale:
0 100 200 400 600
Meters

Data Sources: Property Boundaries & Topographic Data:
© Department Finance, Services & Innovation 2023

Coordinate System:
GDA 1994 MGA Zone 56

Date: 28 March 2023

Soils

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666

Atlas of Australian Soils

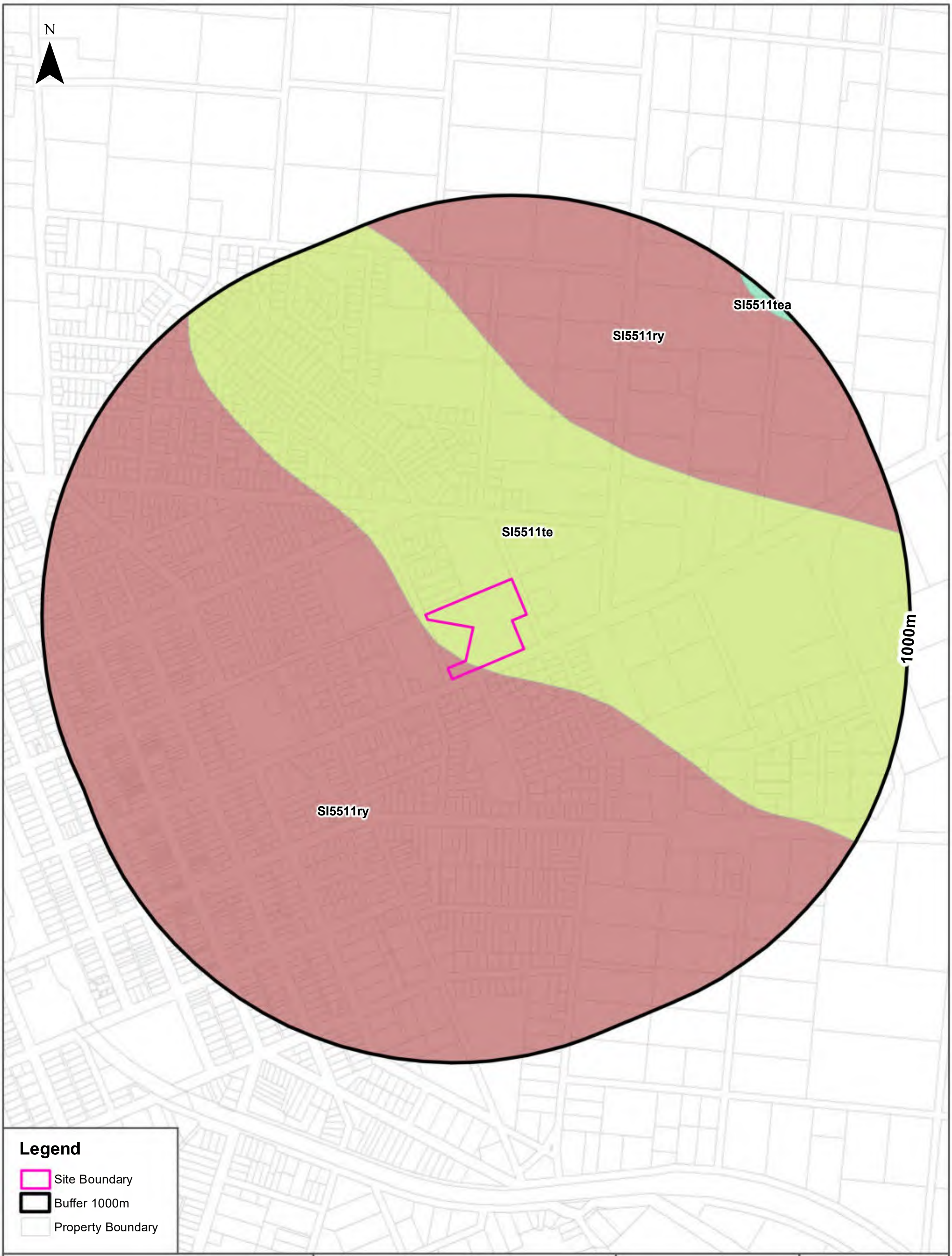
Soil mapping units and Australian Soil Classification orders within the dataset buffer:

Map Unit Code	Soil Order	Map Unit Description	Distance	Direction
Ob7	Chromosol	Gently undulating with long broad slopes and characterized by occasional stone-strewn hilly ridges: chief soils are hard alkaline and neutral red soils (Dr2.23 and Dr2.22) often with a surface scatter of stones and gravel. Associated are some (Dy) and (Gn2.1) soils. Data are limited.	0m	On-site

Atlas of Australian Soils Data Source: CSIRO

Soil Landscapes of Central and Eastern NSW

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666



Legend

- 🟪 Site Boundary
- ⬛ Buffer 1000m
- ☐ Property Boundary

Scale:

Data Sources: Property Boundaries & Topographic Data:
© Department Finance, Services & Innovation 2023

Coordinate System:
GDA 1994 MGA Zone 56

Date: 28 March 2023

Soils

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666

Soil Landscapes of Central and Eastern NSW

Soil Landscapes of Central and Eastern NSW within the dataset buffer:

Soil Code	Name	Distance	Direction
SI5511te	Temora	0m	On-site
SI5511ry	Reynolds	0m	On-site
SI5511tea	Temora variant a	967m	North East

Soil Landscapes of Central and Eastern NSW: NSW Department of Planning, Industry and Environment

Acid Sulfate Soils

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666

Environmental Planning Instrument - Acid Sulfate Soils

What is the on-site Acid Sulfate Soil Plan Class that presents the largest environmental risk?

Soil Class	Description	EPI Name
N/A		

If the on-site Soil Class is 5, what other soil classes exist within 500m?

Soil Class	Description	EPI Name	Distance	Direction
N/A				

Atlas of Australian Acid Sulfate Soils

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666

Legend

Site Boundary
Buffer 1000m
Property Boundary

Probability of occurrence of Acid Sulfate Soils

🟥 A. High (>70%)
🟨 B. Low (6-70%)
🟩 C. Extremely Low (1-5%)
⬜ D. No Chance (0%)
⬜ No Data

Scale:
0 100 200 400 600
Meters

Data Sources: Property Boundaries & Topographic Data:
© Department Finance, Services & Innovation 2023

Coordinate System:
GDA 1994 MGA Zone 56

Date: 28March 2023

Acid Sulfate Soils

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666

Atlas of Australian Acid Sulfate Soils

Atlas of Australian Acid Sulfate Soil categories within the dataset buffer:

Class	Description	Distance	Direction
C	Extremely low probability of occurrence. 1-5% chance of occurrence with occurrences in small localised areas.	0m	On-site

Atlas of Australian Acid Sulfate Soils Data Source: CSIRO

Dryland Salinity

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666

Dryland Salinity - National Assessment

Is there Dryland Salinity - National Assessment data onsite?

No

Is there Dryland Salinity - National Assessment data within the dataset buffer?

No

What Dryland Salinity assessments are given?

Assessment 2000	Assessment 2020	Assessment 2050	Distance	Direction
N/A	N/A	N/A		

Dryland Salinity Data Source : National Land and Water Resources Audit
The Commonwealth and all suppliers of source data used to derive the maps of "Australia, Forecast Areas Containing Land of High Hazard or Risk of Dryland Salinity from 2000 to 2050" do not warrant the accuracy or completeness of information in this product. Any person using or relying upon such information does so on the basis that the Commonwealth and data suppliers shall bear no responsibility or liability whatsoever for any errors, faults, defects or omissions in the information. Any persons using this information do so at their own risk.
In many cases where a high risk is indicated, less than 100% of the area will have a high hazard or risk.

Mining

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666

Mining Subsidence Districts

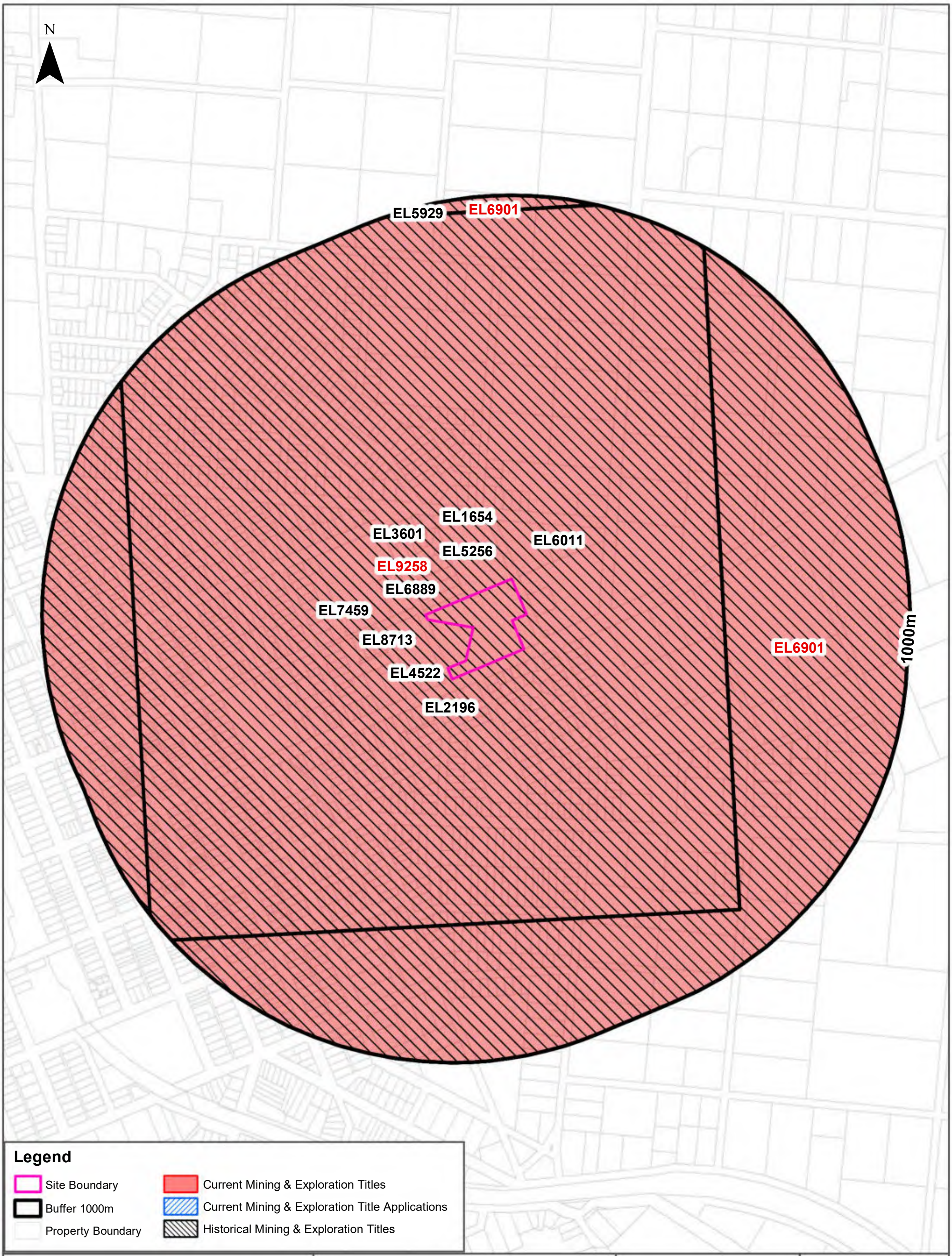
Mining Subsidence Districts within the dataset buffer:

District	Distance	Direction
There are no Mining Subsidence Districts within the report buffer		

Mining Subsidence District Data Source: © Land and Property Information (2016)

Mining & Exploration Titles

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666



Scale: 0 100 200 400 600 Meters	Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2023	Coordinate System: GDA 1994 MGA Zone 56	Date: 28 March 2023

Mining

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666

Current Mining & Exploration Titles

Current Mining & Exploration Titles within the dataset buffer:

Title Ref	Holder	Grant Date	Expiry Date	Last Renewed	Operation	Resource	Minerals	Dist	Dir
EL9258	EX9 PTY LTD	06/08/2021	06/08/2024	20210806	EXPLORING	MINERALS	Group 1, Group 10	0m	On-site
EL6901	CAPE CLEAR (LACHLAN) PTY LTD	08/10/2007	08/10/2023	20210726	EXPLORING	MINERALS	Group 1	514m	South East

Current Mining & Exploration Titles Data Source: © State of New South Wales through NSW Department of Industry

Current Mining & Exploration Title Applications

Current Mining & Exploration Title Applications within the dataset buffer:

Application Ref	Applicant	Application Date	Operation	Resource	Minerals	Dist	Dir
N/A	No records in buffer						

Current Mining & Exploration Title Applications Data Source: © State of New South Wales through NSW Department of Industry

Mining

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666

Historical Mining & Exploration Titles

Historical Mining & Exploration Titles within the dataset buffer:

Title Ref	Holder	Start Date	End Date	Resource	Minerals	Dist	Dir
EL6889	NEW SOUTHERN MINING PTY LTD	20071004	20090630	MINERALS	Au	0m	On-site
EL7459	CENTIUS GOLD LIMITED	20100226	20120226	MINERALS		0m	On-site
EL8713	ABUNDANT METALS PTY LTD	20180305	30000101	MINERALS		0m	On-site
EL4522	CRA EXPLORATION PTY LIMITED	19930617	19950616	MINERALS	Au Cu	0m	On-site
EL5256	GOLD MINES OF AUSTRALIA (NSW) PTY LTD	19970317	19990316	MINERALS	Au Cu	0m	On-site
EL3601	NEWCREST MINING (W.A) LIMITED	19900701	19910101	MINERALS	Au	0m	On-site
EL1654	ZENITH EXPLORATIONS PTY LIMITED	19810601	19820601	MINERALS	Au	0m	On-site
EL2196	PARAGON GOLD PTY LIMITED	19840301	19890301	MINERALS	Au Ag	0m	On-site
EL6011	BIG ISLAND MINING LIMITED	20021022	20070212	MINERALS	Au Cu	0m	On-site
EL5929	TEMPLAR RESOURCES LIMITED	20020402	20060401	MINERALS	Diamond	961m	North

Historical Mining & Exploration Titles Data Source: © State of New South Wales through NSW Department of Industry

State Environmental Planning Policy

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666

State Significant Precincts

What SEPP State Significant Precincts exist within the dataset buffer?

Map Id	Precinct	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
N/A	No records in buffer							

State Environment Planning Policy Data Source: NSW Crown Copyright - Planning & Environment

EPI Planning Zones

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666

Legend

- Site Boundary
- Buffer 1000m
- Property Boundary

Data Sources: Property Boundaries & Topographic Data:
© Department Finance, Services & Innovation 2023
Planning: NSW Crown Copyright - Planning & Environment

Coordinate System:
GDA 1994 MGA Zone 56

Date: 28 March 2023

Environmental Planning Instrument

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666

Land Zoning

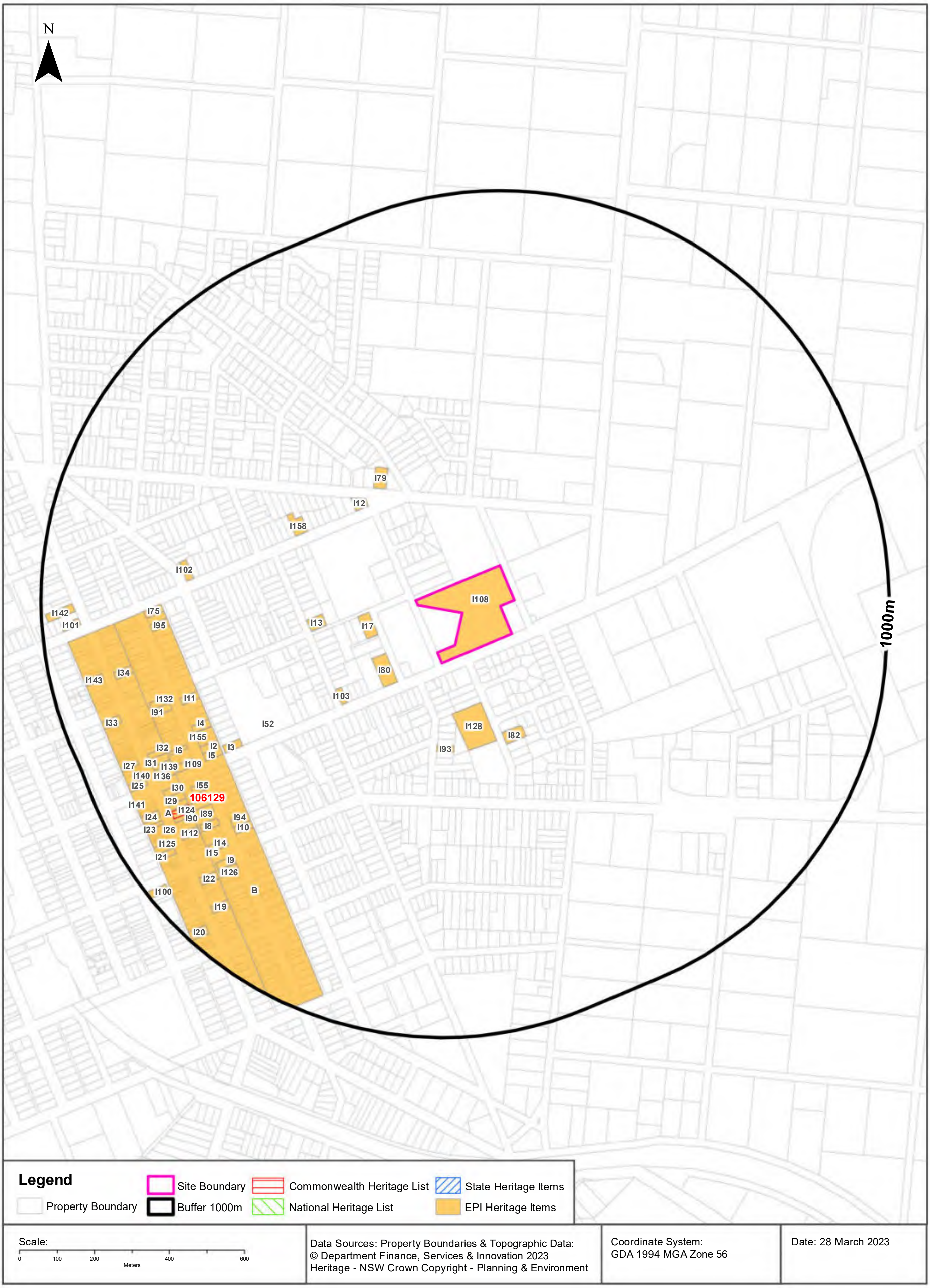
What EPI Land Zones exist within the dataset buffer?

Zone	Description	Purpose	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
SP2	Infrastructure	Hospital	Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	01/12/2021		0m	On-site
R1	General Residential		Temora Local Environmental Plan 2010	22/04/2016	22/04/2016	01/12/2021	Amendment No 2	0m	West
RE1	Public Recreation		Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	01/12/2021		20m	West
SP2	Infrastructure	Seniors Housing	Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	01/12/2021		20m	North East
R5	Large Lot Residential		Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	01/12/2021		215m	North East
IN1	General Industrial		Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	01/12/2021		309m	South East
RE2	Private Recreation		Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	01/12/2021		343m	West
RE1	Public Recreation		Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	01/12/2021		423m	West
RE1	Public Recreation		Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	01/12/2021		426m	North West
RU1	Primary Production		Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	01/12/2021		455m	East
RE1	Public Recreation		Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	01/12/2021		505m	South East
RE1	Public Recreation		Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	01/12/2021		635m	South
RE1	Public Recreation		Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	01/12/2021		659m	South
RE1	Public Recreation		Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	01/12/2021		762m	South West
B2	Local Centre		Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	01/12/2021		762m	South West
RE2	Private Recreation		Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	01/12/2021		803m	South
RE1	Public Recreation		Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	01/12/2021		804m	South
RE1	Public Recreation		Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	01/12/2021		817m	North West
RE1	Public Recreation		Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	01/12/2021		867m	North West
B4	Mixed Use		Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	01/12/2021		938m	West
RE2	Private Recreation		Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	01/12/2021		987m	South West

Environmental Planning Instrument Data Source: NSW Crown Copyright - Planning & Environment

Heritage Items

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666



Data Sources: Property Boundaries & Topographic Data:
© Department Finance, Services & Innovation 2023
Heritage - NSW Crown Copyright - Planning & Environment

Coordinate System:
GDA 1994 MGA Zone 56

Date: 28 March 2023

Heritage

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666

Commonwealth Heritage List

What are the Commonwealth Heritage List Items located within the dataset buffer?

Place Id	Name	Address	Place File No	Class	Status	Register Date	Distance	Direction
106129	Temora Post Office	173 Hoskins St, Temora NSW	1/06/319/0005	Historic	Listed place	08/11/2011	774m	South West

Heritage Data Source: Australian Government Department of the Environment and Energy - Heritage Branch

National Heritage List

What are the National Heritage List Items located within the dataset buffer?
Note. Please click on Place Id to activate a hyperlink to online website.

Place Id	Name	Address	Place File No	Class	Status	Register Date	Distance	Direction
N/A	No records in buffer							

Heritage Data Source: Australian Government Department of the Environment and Energy - Heritage Branch

State Heritage Register - Curtilages

What are the State Heritage Register Items located within the dataset buffer?

Map Id	Name	Address	LGA	Listing Date	Listing No	Plan No	Distance	Direction
N/A	No records in buffer							

Heritage Data Source: NSW Crown Copyright - Office of Environment & Heritage

Environmental Planning Instrument - Heritage

What are the EPI Heritage Items located within the dataset buffer?

Map Id	Name	Classification	Significance	EPI Name	Published Date	Commenced Date	Currency Date	Distance	Direction
I108	Temora & District Hospital	Item - General	Local	Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	21/02/2020	0m	On-site
I17	House (Thurles) - Anzac/George St	Item - General	Local	Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	21/02/2020	128m	West
I80	House - Goode-Loftus St	Item - General	Local	Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	21/02/2020	128m	South West

Map Id	Name	Classification	Significance	EPI Name	Published Date	Commenced Date	Currency Date	Distance	Direction
I128	House Meagher Residence	Item - General	Local	Temora Local Environmental Plan 2010	21/02/2020	21/02/2020	21/02/2020	136m	South
I93	House - Carson St	Item - General	Local	Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	21/02/2020	217m	South
I82	House - Matthews - Redmund St	Item - General	Local	Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	21/02/2020	234m	South
I13	House (Craigendoran) - Asquith St	Item - General	Local	Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	21/02/2020	246m	West
I103	Lutheran Church	Item - General	Local	Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	21/02/2020	273m	South West
I12	House (Booralga) - Polaris St	Item - General	Local	Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	21/02/2020	284m	North West
I79	House - Anderson - Kitchener Rd	Item - General	Local	Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	21/02/2020	306m	North West
I158	Former Methodist Church Manse	Item - General	Local	Temora Local Environmental Plan 2010	21/02/2020	21/02/2020	21/02/2020	343m	North West
I52	Temora War Memorials - Callaghan Park	Item - General	Local	Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	21/02/2020	478m	South West
I3	Catholic Presbytery	Item - General	Local	Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	21/02/2020	575m	South West
I102	7th Day Adventist	Item - General	Local	Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	21/02/2020	596m	West
I155	St Brigid's Convent	Item - General	Local	Temora Local Environmental Plan 2010	21/02/2020	21/02/2020	21/02/2020	631m	South West
I2	Roman Catholic Church	Item - General	Local	Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	21/02/2020	632m	South West
I11	Temora Public School (original building)	Item - General	Local	Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	21/02/2020	632m	West
I5	St. Joseph's Hall	Item - General	Local	Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	21/02/2020	632m	South West
B	Civic Conservation Area	Conservation Area - General	Local	Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	21/02/2020	632m	South West
I4	St. Anne's Original School Building	Item - General	Local	Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	21/02/2020	634m	South West
I94	House (Formerly Surgery - Parry) - DeBoos St	Item - General	Local	Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	21/02/2020	654m	South West
I10	Temora Fire Station	Item - General	Local	Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	21/02/2020	660m	South West
I95	House (Rotunda) - Block - DeBoos St	Item - General	Local	Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	21/02/2020	660m	West
I75	Uniting Church	Item - General	Local	Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	21/02/2020	673m	West
I132	Narraburra Shire Offices - Senior Citizens Centre	Item - General	Local	Temora Local Environmental Plan 2010	21/02/2020	21/02/2020	21/02/2020	712m	West
I91	House (Carlton House) - DeBoos St	Item - General	Local	Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	21/02/2020	712m	West
I109	Temora Council Chambers	Item - General	Local	Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	21/02/2020	712m	South West

Map Id	Name	Classification	Significance	EPI Name	Published Date	Commenced Date	Currency Date	Distance	Direction
I6	St. Andrew's Presbyterian Church & Hall	Item - General	Local	Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	21/02/2020	713m	South West
I55	Anglican Church (Temora)	Item - General	Local	Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	21/02/2020	714m	South West
I90	House (Police Lock Up Keepers) - DeBoos St	Item - General	Local	Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	21/02/2020	718m	South West
I89	House (Police Station) - DeBoos St	Item - General	Local	Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	21/02/2020	721m	South West
I8	Court House (Temora)	Item - General	Local	Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	21/02/2020	728m	South West
I14	House (Mortlake) - Victoria St	Item - General	Local	Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	21/02/2020	743m	South West
I9	Masonic Hall & Temple	Item - General	Local	Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	21/02/2020	759m	South West
I126	House Armagh	Item - General	Local	Temora Local Environmental Plan 2010	21/02/2020	21/02/2020	21/02/2020	766m	South West
I15	House (Terenge) - Victoria St	Item - General	Local	Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	21/02/2020	767m	South West
I139	Commercial Bank of Australia building	Item - General	Local	Temora Local Environmental Plan 2010	21/02/2020	21/02/2020	21/02/2020	769m	South West
A	Central Conservation Area	Conservation Area - General	Local	Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	21/02/2020	769m	South West
I31	Main St Variety (Strand Theatre)	Item - General	Local	Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	21/02/2020	769m	South West
I30	ANZ Bank	Item - General	Local	Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	21/02/2020	769m	South West
I140	Rural Bank building	Item - General	Local	Temora Local Environmental Plan 2010	21/02/2020	21/02/2020	21/02/2020	769m	South West
I32	Sutton's Motors Building	Item - General	Local	Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	21/02/2020	769m	South West
I136	Paleface Park - Queensland Hotel Site	Item - General	Local	Temora Local Environmental Plan 2010	21/02/2020	21/02/2020	21/02/2020	769m	South West
I29	Temora Post Office	Item - General	Local	Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	21/02/2020	770m	South West
I28	Creaghe Lisle (CBC Bank)	Item - General	Local	Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	21/02/2020	772m	South West
I124	Patchwork Inn B & B	Item - General	Local	Temora Local Environmental Plan 2010	21/02/2020	21/02/2020	21/02/2020	774m	South West
I26	Target (Thom's Store)	Item - General	Local	Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	21/02/2020	777m	South West
I34	Temora Ambulance Station	Item - General	Local	Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	21/02/2020	777m	West
I112	Commonwealth Bank	Item - General	Local	Temora Local Environmental Plan 2010	21/02/2020	21/02/2020	21/02/2020	784m	South West
I22	Westminster Hotel	Item - General	Local	Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	21/02/2020	819m	South West
I19	Auswild Complex	Item - General	Local	Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	21/02/2020	850m	South West

Map Id	Name	Classification	Significance	EPI Name	Published Date	Commenced Date	Currency Date	Distance	Direction
I33	Railway Hotel	Item - General	Local	Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	21/02/2020	850m	West
I27	Temora House	Item - General	Local	Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	21/02/2020	850m	South West
I25	Westpac Bank (Temora)	Item - General	Local	Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	21/02/2020	850m	South West
I24	Temora Hotel	Item - General	Local	Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	21/02/2020	853m	South West
I23	Miller & James	Item - General	Local	Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	21/02/2020	856m	South West
I143	Melzer House	Item - General	Local	Temora Local Environmental Plan 2010	21/02/2020	21/02/2020	21/02/2020	858m	West
I125	Royal Hotel	Item - General	Local	Temora Local Environmental Plan 2010	21/02/2020	21/02/2020	21/02/2020	865m	South West
I21	John Meagher Building	Item - General	Local	Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	21/02/2020	869m	South West
I141	Brick Shed	Item - General	Local	Temora Local Environmental Plan 2010	21/02/2020	21/02/2020	21/02/2020	893m	South West
I101	Kingdom Hall	Item - General	Local	Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	21/02/2020	896m	West
I142	McGuirks Tyre Service	Item - General	Local	Temora Local Environmental Plan 2010	21/02/2020	21/02/2020	21/02/2020	908m	West
I20	Shamrock Hotel	Item - General	Local	Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	21/02/2020	940m	South West
I100	Salvation Army	Item - General	Local	Temora Local Environmental Plan 2010	11/06/2010	11/06/2010	21/02/2020	943m	South West

Heritage Data Source: NSW Crown Copyright - Planning & Environment

Natural Hazards

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666

Bush Fire Prone Land

What are the nearest Bush Fire Prone Land Categories that exist within the dataset buffer?

Bush Fire Prone Land Category	Distance	Direction
No records in buffer		

NSW Bush Fire Prone Land - © NSW Rural Fire Service under Creative Commons 4.0 International Licence

Ecological Constraints

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666

Ramsar Wetlands

What Ramsar Wetland areas exist within the dataset buffer?

Map Id	Ramsar Name	Wetland Name	Designation Date	Source	Distance	Direction
N/A	No records in buffer					

Ramsar Wetlands Data Source: © Commonwealth of Australia - Department of Agriculture, Water and the Environment

Ecological Constraints

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666

Groundwater Dependent Ecosystems Atlas

Type	GDE Potential	Geomorphology	Ecosystem Type	Aquifer Geology	Distance	Direction
N/A	No records in buffer					

Groundwater Dependent Ecosystems Atlas Data Source: The Bureau of Meteorology

Ecological Constraints

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666

Inflow Dependent Ecosystems Likelihood

Type	IDE Likelihood	Geomorphology	Ecosystem Type	Aquifer Geology	Distance	Direction
N/A	No records in buffer					

Inflow Dependent Ecosystems Likelihood Data Source: The Bureau of Meteorology

Ecological Constraints

Temora Hospital, 169-189 Loftus Street, Temora, NSW 2666

NSW BioNet Atlas

Species on the NSW BioNet Atlas that have a NSW or federal conservation status, a NSW sensitivity status, or are listed under a migratory species agreement, and are within 10km of the site?

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Aves	Anseranas semipalmata	Magpie Goose	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Artamus cyanopterus cyanopterus	Dusky Woodswallow	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Circus assimilis	Spotted Harrier	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Climacteris picumnus victoriae	Brown Treecreeper (eastern subspecies)	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Daphoenositta chrysoptera	Varied Sittella	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Epthianura albifrons	White-fronted Chat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Gallinago hardwickii	Latham's Snipe	Not Listed	Not Sensitive	Not Listed	ROKAMBA;JAMBA
Animalia	Aves	Hieraaetus morphnoides	Little Eagle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Lathamus discolor	Swift Parrot	Endangered	Not Sensitive	Critically Endangered	
Animalia	Aves	Melanodryas cucullata cucullata	Hooded Robin (south-eastern form)	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Ninox connivens	Barking Owl	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Petroica phoenicea	Flame Robin	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Polytelis swainsonii	Superb Parrot	Vulnerable	Category 3	Vulnerable	
Animalia	Aves	Pomatostomus temporalis temporalis	Grey-crowned Babbler (eastern subspecies)	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Stagonopleura guttata	Diamond Firetail	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Stictonetta naevosa	Freckled Duck	Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Lepidium aschersonii	Spiny Peppercress	Vulnerable	Not Sensitive	Vulnerable	

Data does not include NSW category 1 sensitive species.
NSW BioNet: © State of NSW and Office of Environment and Heritage

Location Confidences

Where Lotsearch has had to georeference features from supplied addresses, a location confidence has been assigned to the data record. This indicates a confidence to the positional accuracy of the feature. Where applicable, a code is given under the field heading “LC” or “LocConf”. These codes lookup to the following location confidences:

LC Code	Location Confidence
Premise Match	Georeferenced to the site location / premise or part of site
Area Match	Georeferenced to an approximate or general area
Road Match	Georeferenced to a road or rail corridor
Road Intersection	Georeferenced to a road intersection
Buffered Point	A point feature buffered to x metres
Adjacent Match	Land adjacent to a georeferenced feature
Network of Features	Georeferenced to a network of features
Suburb Match	Georeferenced to a suburb boundary
As Supplied	Spatial data supplied by provider

USE OF REPORT - APPLICABLE TERMS

The following terms apply to any person (End User) who is given the Report by the person who purchased the Report from Lotsearch Pty Ltd (ABN: 89 600 168 018) (Lotsearch) or who otherwise has access to the Report (Terms). The contract terms that apply between Lotsearch and the purchaser of the Report are specified in the order form pursuant to which the Report was ordered and the terms set out below are of no effect as between Lotsearch and the purchaser of the Report.

1. End User acknowledges and agrees that:
    - (a) the Report is compiled from or using content (**Third Party Content**) which is comprised of:
        - (i) content provided to Lotsearch by third party content suppliers with whom Lotsearch has contractual arrangements or content which is freely available or methodologies licensed to Lotsearch by third parties with whom Lotsearch has contractual arrangements (**Third Party Content Suppliers**); and
        - (ii) content which is derived from content described in paragraph (i);
    - (b) Neither Lotsearch nor Third Party Content Suppliers takes any responsibility for or give any warranty in relation to the accuracy or completeness of any Third Party Content included in the Report including any contaminated land assessment or other assessment included as part of a Report;
    - (c) the Third Party Content Suppliers do not constitute an exhaustive set of all repositories or sources of information available in relation to the property which is the subject of the Report (**Property**) and accordingly neither Lotsearch nor Third Party Content Suppliers gives any warranty in relation to the accuracy or completeness of the Third Party Content incorporated into the report including any contaminated land assessment or other assessment included as part of a Report;
    - (d) Reports are generated at a point in time (as specified by the date/time stamp appearing on the Report) and accordingly the Report is based on the information available at that point in time and Lotsearch is not obliged to undertake any additional reporting to take into consideration any information that may become available between the point in time specified by the date/time stamp and the date on which the Report was provided by Lotsearch to the purchaser of the Report;
    - (e) Reports must be used or reproduced in their entirety and End User must not reproduce or make available to other persons only parts of the Report;
    - (f) Lotsearch has not undertaken any physical inspection of the property;
    - (g) neither Lotsearch nor Third Party Content Suppliers warrants that all land uses or features whether past or current are identified in the Report;
    - (h) the Report does not include any information relating to the actual state or condition of the Property;
    - (i) the Report should not be used or taken to indicate or exclude actual fitness or unfitness of Land or Property for any particular purpose
    - (j) the Report should not be relied upon for determining saleability or value or making any other decisions in relation to the Property and in particular should not be taken to be a rating or assessment of the desirability or market value of the property or its features; and
    - (k) the End User should undertake its own inspections of the Land or Property to satisfy itself that there are no defects or failures
2. The End User may not make the Report or any copies or extracts of the report or any part of it available to any other person. If End User wishes to provide the Report to any other person or make extracts or copies of the Report, it must contact the purchaser of the Report before doing so to ensure the proposed use is consistent with the contract terms between Lotsearch and the purchaser.
3. Neither Lotsearch (nor any of its officers, employees or agents) nor any of its Third Party Content Suppliers will have any liability to End User or any person to whom End User provides the Report and End User must not represent that Lotsearch or any of its Third Party Content Suppliers accepts liability to any such person or make any other representation to any such person on behalf of Lotsearch or any Third Party Content Supplier.
4. The End User hereby to the maximum extent permitted by law:
    - (a) acknowledges that the Lotsearch (nor any of its officers, employees or agents), nor any of its Third Party Content Supplier have any liability to it under or in connection with the

Report or these Terms;

   (b) waives any right it may have to claim against Third Party Content Supplier in connection with the Report, or the negotiation of, entry into, performance of, or termination of these Terms; and
   (c) releases each Third Party Content Supplier from any claim it may have otherwise had in connection with the Report, or the negotiation of, entry into, performance of, or termination of these Terms.

5. The End User acknowledges that any Third Party Supplier shall be entitled to plead the benefits conferred on it under clause 4, despite not being a party to these terms.
6. End User must not remove any copyright notices, trade marks, digital rights management information, other embedded information, disclaimers or limitations from the Report or authorise any person to do so.
7. End User acknowledges and agrees that Lotsearch and Third Party Content Suppliers retain ownership of all copyright, patent, design right (registered or unregistered), trade marks (registered or unregistered), database right or other data right, moral right or know how or any other intellectual property right in any Report or any other item, information or data included in or provided as part of a Report.
8. To the extent permitted by law and subject to paragraph 9, all implied terms, representations and warranties whether statutory or otherwise relating to the subject matter of these Terms other than as expressly set out in these Terms are excluded.
9. Subject to paragraph 6, Lotsearch excludes liability to End User for loss or damage of any kind, however caused, due to Lotsearch's negligence, breach of contract, breach of any law, in equity, under indemnities or otherwise, arising out of all acts, omissions and events whenever occurring.
10. Lotsearch acknowledges that if, under applicable State, Territory or Commonwealth law, End User is a consumer certain rights may be conferred on End User which cannot be excluded, restricted or modified. If so, and if that law applies to Lotsearch, then, Lotsearch's liability is limited to the greater of an amount equal to the cost of resupplying the Report and the maximum extent permitted under applicable laws.
11. Subject to paragraph 9, neither Lotsearch nor the End User is liable to the other for:
    (a) any indirect, incidental, consequential, special or exemplary damages arising out of or in relation to the Report or these Terms; or
    (b) any loss of profit, loss of revenue, loss of interest, loss of data, loss of goodwill or loss of business opportunities, business interruption arising directly or indirectly out of or in relation to the Report or these Terms,

    irrespective of how that liability arises including in contract or tort, liability under indemnity or for any other common law, equitable or statutory cause of action or otherwise.
12. These Terms are subject to New South Wales law.

Land Title Records

ABN: 36 092 724 251
Ph: 02 9099 7400
(Ph: 0412 199 304)

Level 14, 135 King Street, Sydney
Sydney 2000
GPO Box 4103 Sydney NSW 2001
DX 967 Sydney

Report

NSW LRS **Sydney**

Re: - Temora Hospital 169 to 189 Loftus Street, Temora

Description: - Lot 2 D.P. 572392

Date of Acquisition and term held	**Registered Proprietor(s) & Occupations where available**	**Reference to Title at Acquisition and sale**
16.03.1899 (1899 to 1926)	Emily Hamlyn Dibbs (Married Woman)	Volume 913 Folio 23
11.02.1926 (1926 to 1936)	Saville Darcy Morton (Farmer)	Volume 913 Folio 23
24.09.1930 (1930 to 2019)	The Temora and District Hospital	Volume 913 Folio 23 Then Volume 4799 Folio 48 Volume 12452 Folios 7 & 8 Volume 12572 Folio 114 Now 2/572392
13.09.2019 (2019 to Date)	# Health Administration Corporation	2/572392

# Denotes Current Registered Proprietors

Easements and Leases: - NIL

Yours Sincerely
Mark Groll
11 April 2023

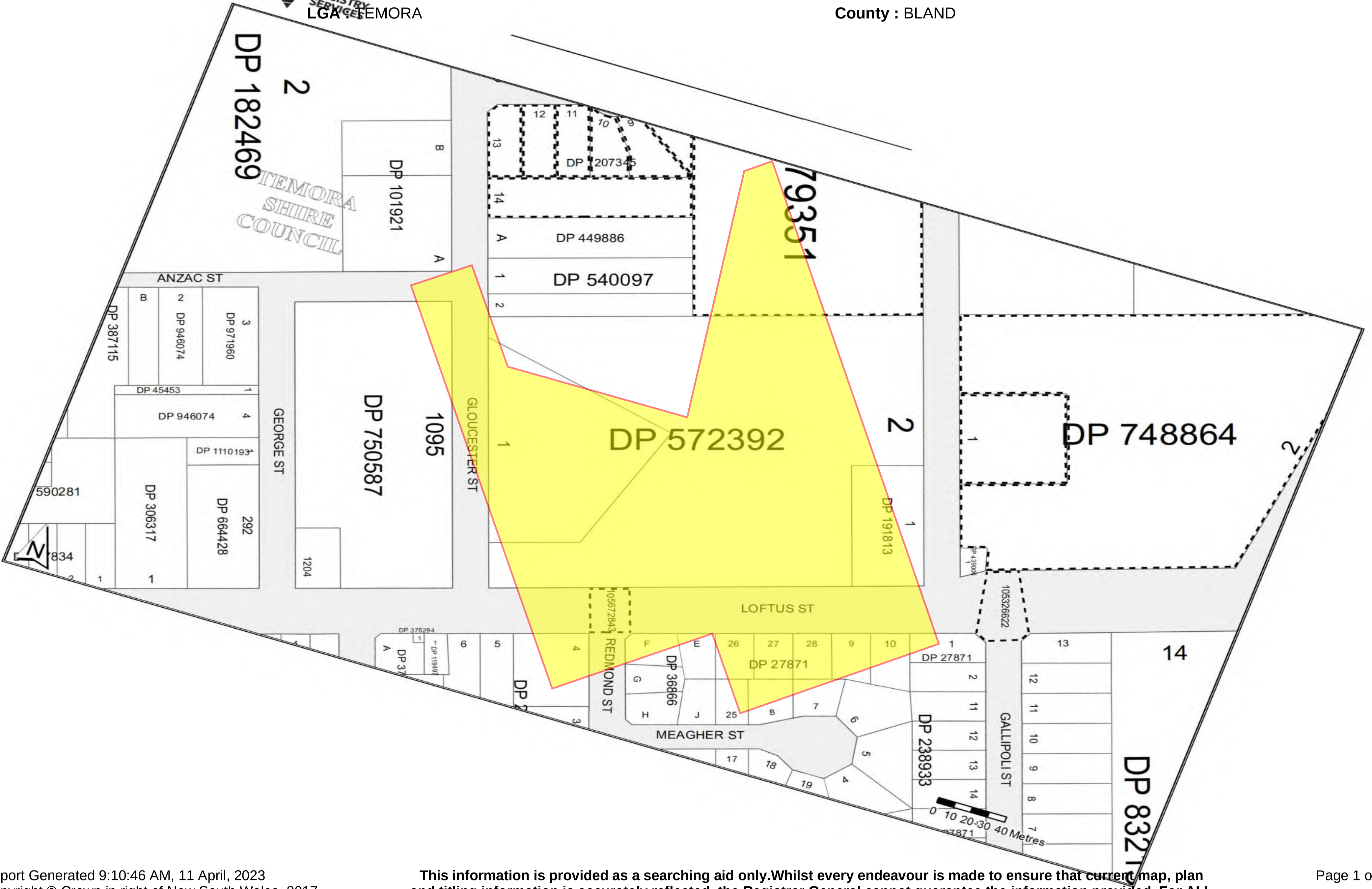
Email: mark.groll@infotrack.com.au

Cadastral Records Enquiry Report : Lot 2 DP 572392

Ref : Temora Hospital

Locality : TEMORA
LGA : TEMORA

Parish : BUNDAWARRAH
County : BLAND



This information is provided as a searching aid only.Whilst every endeavour is made to ensure that current map, plan and titling information is accurately reflected, the Registrar General cannot guarantee the information provided. For ALL ACTIVITY PRIOR TO SEPTEMBER 2002 you must refer to the RGs Charting and Reference Maps

Plan Form 1

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION

*OFFICE USE ONLY C

Council Clerk's Certificate.

I hereby certify that—

(a) the requirements of the Local Government Act, 1919 (other than the requirements for the registration of plans), and

~~(b) the requirements of section 31B of the Metropolitan Water, Sewerage, and Drainage Act, 1924, as amended, †Hunter District Water, Sewerage, and Drainage Act, 1938, as amended,~~*

have been complied with by the applicant in relation to the proposed Subdivision *(insert "new road", "subdivision" or "consolidated lot") set out herein.*

Subdivision No. 467A

Date 26 August 1974

(Signature) .... *Council Clerk.*

**This part of certificate to be deleted where the application is only for a consolidated lot or the opening of a new road or where the land to be subdivided is wholly outside the areas of operations of the Metropolitan Water Sewerage and Drainage Board and the Hunter District Water Board.*
†Delete if inapplicable.

Surveyor's Certificate

I, VINCENT JAMES HUMPHREYS

of COOTAMUNDRA

a surveyor registered under the Surveyors Act, 1929, as amended, hereby certify that the survey represented in this plan & LOT 2 IS COMPILED FROM C.T. VOL 4799 FOL 48 *is accurate and has been made *(1) by me ~~(2) under my immediate supervision~~ in accordance with the Survey Practice Regulations, 1933, and was completed on †* 12-8-1974

Signature Humphreys
Surveyor registered under Surveyors Act, 1929, as amended.
Datum Line of Azimuth. 'A'-'B'
**Strike out either (1) or (2). †Insert date of survey.*

PLAN OF SUBDIVISION OF ~~C.T. VOL 4799 FOL 48~~
LOTS 1 AND 2 D.P. 568979

Mun./Shire City: TEMORA **Locality:** TEMORA

Parish: BUNDAWARRAH **County:** BLAND

Reduction Ratio 1: 2000 **Lengths are in metres.**

D. P. 572392 *

Registered: 1-10-1974

C.A.: Nº 467A OF 26-8-1974

Title System: TORRENS

Purpose: SUBDIVISION

Ref. Map: TEMORA SH2*

Last Plan: D.P. 568979

B 1 A 2 0 0 N

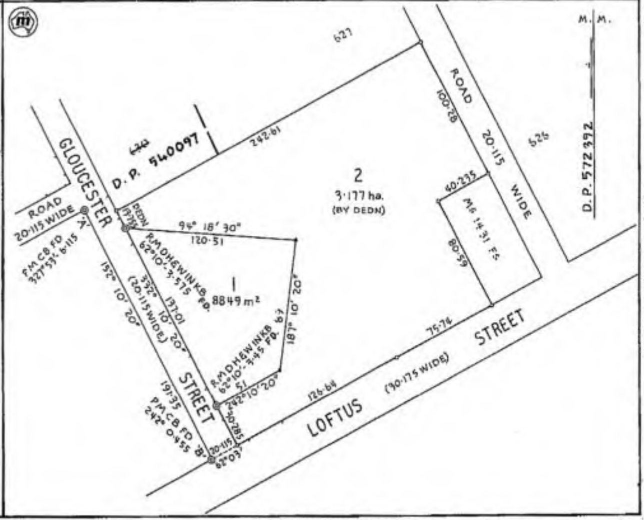
Signatures, seals and statements of intention to dedicate public roads or to create public reserves, drainage reserves, easements or restrictions as to user.

The Common Seal of The Temora District Hospital was hereunto affixed pursuant to a resolution of the Board on 27th August, 1974 and recorded in the Minute Book; at the meeting at which such resolution was passed in the presence of:

THE TEMORA DISTRICT HOSPITAL

D.J. Kay Board Member
L.R. Hood Board Member
Chief Executive Officer

D.P. 572393



D.P. 572393

Plan Drawing only to appear in this space.

0 10 20 30 40 50 60 70 Table of mm 100 110 120 130 140 150 160

SURVEYOR'S REFERENCE: 279/1

M.P.D.

Plan Drawing only to appear in this space.

I, Jack Hayward Watson, Registrar General for New South Wales, certify that this negative is a photograph made as a permanent record of a document in my custody this 2nd day of October, 1974.

JWatson

12452007

NEW SOUTH WALES

[redacted]ICATE OF TITLE

[redacted] PROPERTY ACT, 1900

Vol. 12452 Fol. 7

Crown Grant Vol. 913 Fol.23

Prior Title Vol.4799 Fol.48

Edition issued 31-5-1974.

CANCELLED

(Page 1) Vol. 12452 Fol. 7

I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

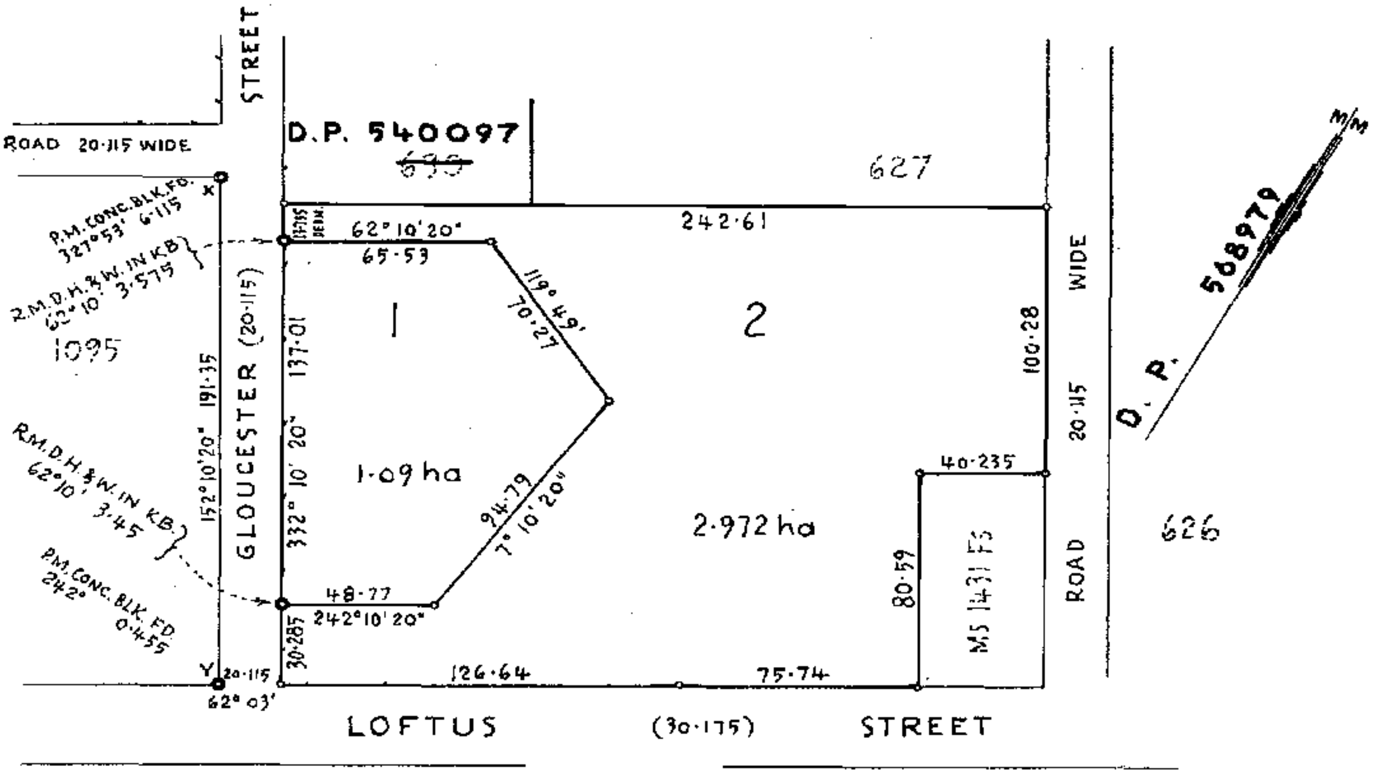
Registrar General.

PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON

WARNING: THIS DOCUMENT MUST NOT BE REMOVED FROM THE LAND TITLES OFFICE.

PLAN SHOWING LOCATION OF LAND

LENGTHS ARE IN METRES



ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 1 in Deposited Plan 568979 at Temora in the Municipality of Temora Parish of Bundawarrah and County of Bland. EXCEPTING THEREOUT the minerals reserved by the Crown Grant.

FIRST SCHEDULE

THE TEMORA AND DISTRICT HOSPITAL.

SECOND SCHEDULE

1. Reservations and conditions, if any, contained in the Crown Grant above referred to.

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED.

Vol. 12452 Fol. 7

DP572392 [illegible]

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT			ENTERED	Signature of Registrar General
	NATURE	NUMBER	DATE		
This deed is cancelled as to the whole New Certificates of Title have issued on 15-10-1974 for lots in Deposited Plan No. 572392 as follows: Lots 1-2 Vol. 12572 Fol. 113-114 respectively. Jowatson REGISTRAR GENERAL					

SECOND SCHEDULE (continued)

INSTRUMENT			PARTICULARS	ENTERED	Signature of Registrar General	CANCELLATION		
NATURE	NUMBER	DATE						

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED

12452008

C[redacted]ICATE OF TITLE

NEW SOUTH WALES

[redacted] PROPERTY ACT, 1900

Vol. 12452 Fol. 8

Crown Grant Vol. 913 Fol.23

Prior Title Vol.4799 Fol.48

Edition issued 31-5-1974.

CANCELLED

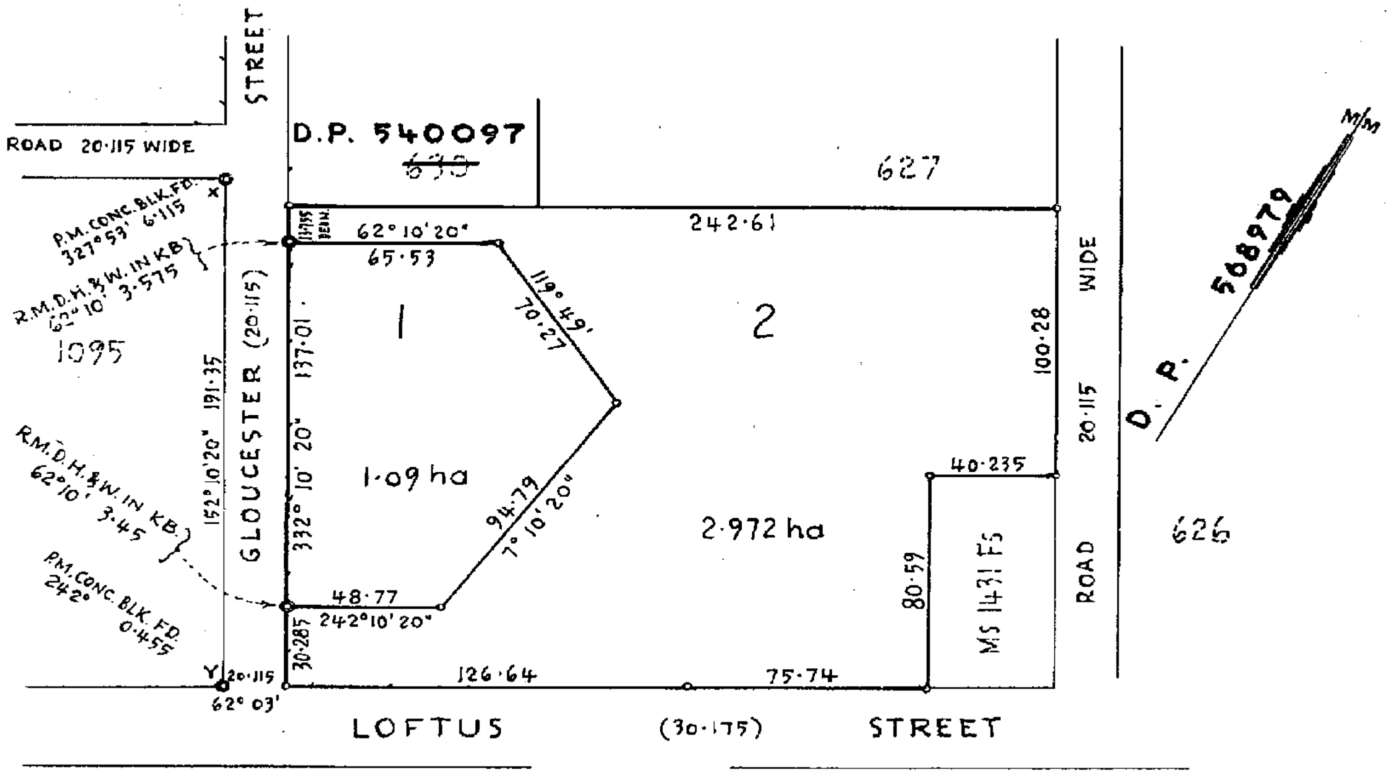
(Page 1) Vol. 12452 Fol. 8

I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

Registrar General.

PLAN SHOWING LOCATION OF LAND

LENGTHS ARE IN METRES



ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 2 in Deposited Plan 568979 at Temora in the Municipality of Temora Parish of Bundawarrah and County of Bland. EXCEPTING THEREOUT the minerals reserved by the Crown Grant.

FIRST SCHEDULE

THE TEMORA AND DISTRICT HOSPITAL.

SECOND SCHEDULE

1. Reservations and conditions, if any, contained in the Crown Grant above referred to.

PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON

WARNING: THIS DOCUMENT MUST NOT BE REMOVED FROM THE LAND TITLES OFFICE.

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED.

DP572392
8/1/01

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT			ENTERED	Signature of Registrar General
	NATURE	NUMBER	DATE		
This deed is cancelled as to the whole					
New Certificates of Title have issued on 15-10-1974					
for lots in Deposited Plan No. 572392 as follows:-					
Lots 1-2 Vol. 12572 Fol 113-114 respectively.					
REGISTRAR GENERAL					

SECOND SCHEDULE (continued)

INSTRUMENT			PARTICULARS	ENTERED	Signature of Registrar General	CANCELLATION
NATURE	NUMBER	DATE				

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED

12572114

NEW SOUTH WALES

[redacted]FICATE OF TITLE

AL PROPERTY ACT, 1900

(Page 1) Vol. 12572 Fol. 114

Crown Grant Vol. 913 Fol. 23

Prior Titles Vol. 12452 Fols.7 & 8

Vol. 12572 Fol. 114

Edition issued 14-10-1974

I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

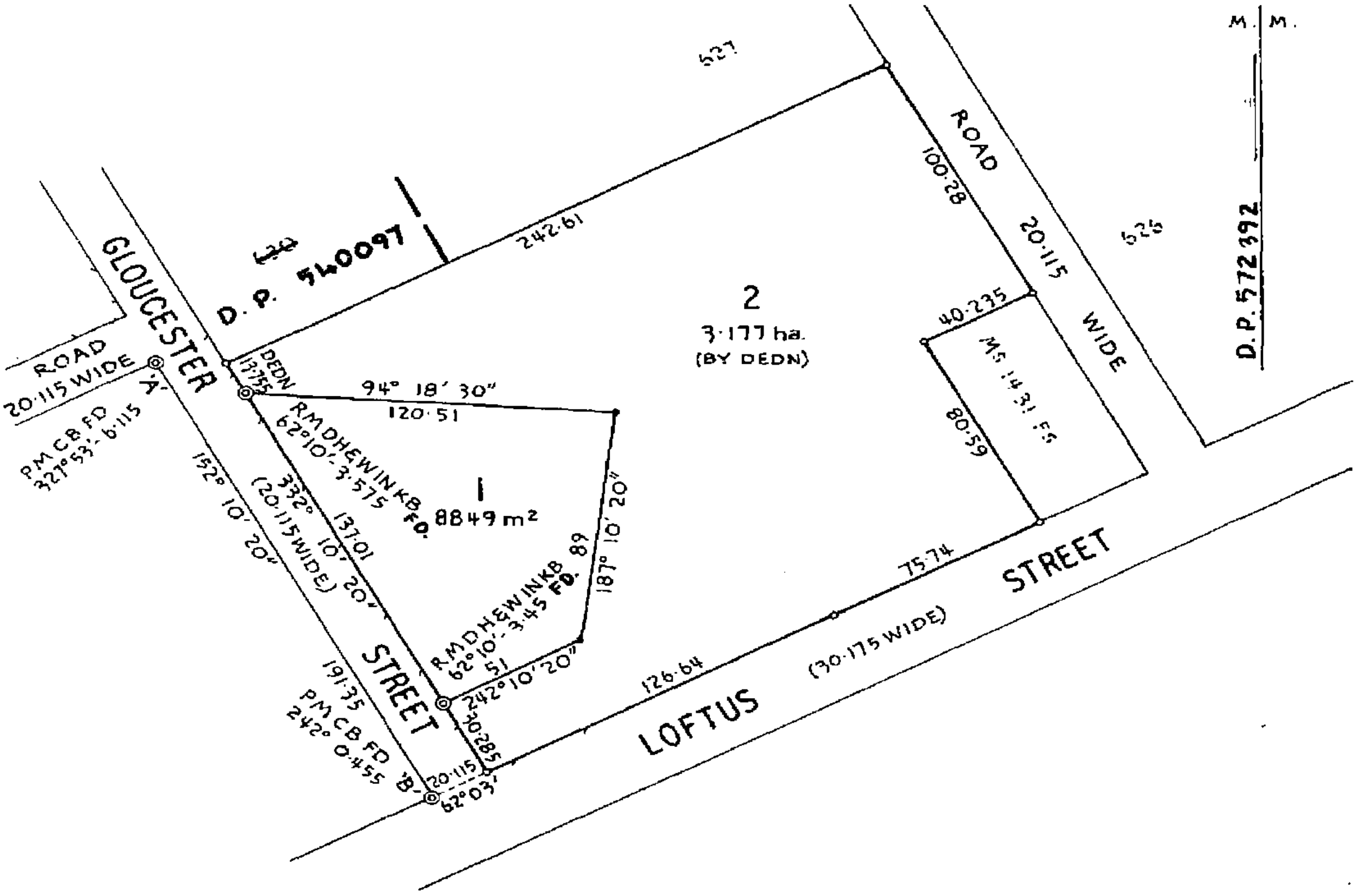
CANCELLED

Registrar General.

SEE AUTO FOLIO

PLAN SHOWING LOCATION OF LAND

LENGTHS ARE IN METRES



S

ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 2 in Deposited Plan 572392 at Temora in the Municipality of Temora, Parish of Bundawarrah and County of Bland. EXCEPTING THEREOUT the minerals reserved by the Crown Grants.

FIRST SCHEDULE

THE TEMORA AND DISTRICT HOSPITAL.

SECOND SCHEDULE

GRM

1. Reservations and conditions, if any, contained in the Crown Grant above referred to.

PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON

WARNING: THIS DOCUMENT MUST NOT BE REMOVED FROM THE LAND TITLES OFFICE.

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED.

Vol. 12572 Fol. 114

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT			ENTERED	Signature of Registrar General
	NATURE	NUMBER	DATE		

CANCELLED

SEE AUTO FOLIO

SECOND SCHEDULE (continued)

INSTRUMENT			PARTICULARS	ENTERED	Signature of Registrar General	CANCELLATION		
NATURE	NUMBER	DATE						

(Page 2 of 2 pages)

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED

Historical Search

```
         NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH
         ----------------------------------------------------------

                                            SEARCH DATE
                                            -----------
                                            11/4/2023 9:09AM

FOLIO: 2/572392
------

       First Title(s): SEE PRIOR TITLE(S)
       Prior Title(s): VOL 12572 FOL 114

Recorded    Number     Type of Instrument              C.T. Issue
--------    ------     ------------------              ----------
28/3/1988              TITLE AUTOMATION PROJECT        LOT RECORDED
                                                       FOLIO NOT CREATED

 8/8/1988              CONVERTED TO COMPUTER FOLIO     FOLIO CREATED
                                                       CT NOT ISSUED

13/9/2019   AP410680   REQUEST
13/9/2019   AP535301   DEPARTMENTAL DEALING            EDITION 1


                  ***  END OF SEARCH   ***
```

```
  Temora Hospital                          PRINTED ON 11/4/2023
```

Form: 11R
Release: 4·3

REQUEST

New South Wales
Real Property Act 1900

AP410680K

PRIVACY NOTE: Section 31B of the Real Property Act 1900 (RP Act) authorises the Registrar General to collect the information required by this form for the establishment and maintenance of the Real Property Act Register. Section 96B RP Act requires that the Register is made available to any person for search upon payment of a fee, if any.

All Statutory Declarations and evidence that are lodged in support of land dealings will be treated as publicly accessible and will be disclosed to persons upon request.

(A) **STAMP DUTY** If applicable. Revenue NSW use only

RELODGED
30 AUG 2019
TIME: 1·05

(B) **TORRENS TITLE** See Annexure X

(C) **REGISTERED DEALING** Number | Torrens Title

(D) **LODGED BY** Document Collection Box 47 V

Name, Address or DX, Telephone, and Customer Account Number if any
LLPN 123012 E
H.M. Allen & Co.
DX 437 Sydney
Ph 9232 3652

Reference: NSW HEALTH MCHD62

CODE R

(E) **APPLICANT** Health Administration Corporation ABN 45 100 538 161

(F) **NATURE OF REQUEST** Issue of Certificates of Title

(G) **TEXT OF REQUEST**

The Health Administration Corporation has acquired the subject land pursuant to the Land Acquisition (Just Terms Compensation) Act 1991 and the Health Administration Act 1982. A copy of the acquisition notice from NSW Government Gazette No. 73 dated 12th July 2019 (n2019-2054) is attached at Annexure "Y". It is requested that the titles for the acquired land be issued in the name of the Health Administration Corporation.

DATE ____________________

(H) I certify that I am an eligible witness and that an authorised officer of the applicant signed this dealing in my presence. [See note* below].

Signature of witness:

Name of witness: Shane Kenyon
Address of witness: 73 Miller Street, North Sydney, NSW

Certified correct for the purposes of the Real Property Act 1900 by the authorised officer named below.

Signature of authorised officer: B. Wil

Authorised officer's name: Bryson Wilson
Authority of officer: Delegate
Signing on behalf of: Health Administration Corporation

(I) *This section is to be completed where a notice of sale is required and the relevant data has been forwarded through eNOS.*

The applicant certifies that the eNOS data relevant to this dealing has been submitted and stored under eNOS ID No. 1866761 Full name: Shane Kenyon Signature:

* *s117 RP Act requires that you must have known the signatory for more than 12 months or have sighted identifying documentation.*

ALL HANDWRITING MUST BE IN BLOCK CAPITALS

φ 2x extra FEES RAISED.

Annexure: X to Request

Parties:
Health Administration Corporation

Text:
(B) TORRENS TITLE
Being

Lot	Section	Plan	Plan No	Vol/Folio	Auto Consol
7	33	DP	257	246/249	
9	Z	DP	3041		
10	Z	DP	3041		
11	Z	DP	3041		
12	Z	DP	3041		
3		DP	41412	11085/230	
218		DP	41481	4590/2	
1		DP	129140	4864/158	being whole Auto Consol 4864-158
1	69	DP	758757	4864/158	
1		DP	129211	4822/173	
2		DP	129211	4216/31	
3		DP	129211	4251/8	
4		DP	129211	4126/140	
5		DP	129211	4242/137	
1		DP	132967	12479/2	being whole Auto Consol 12479-2
2	64	DP	758757	12479/2	
3	64	DP	758757	12479/2	
4	64	DP	758757	12479/2	
5	64	DP	758757	12479/2	
6	64	DP	758757	12479/2	
10		DP	301282		
1		DP	319733		
2		DP	319733		
1		DP	542301	11329/153	
1		DP	556329	11948/13	
1		DP	572392	12572/113	
2		DP	572392	12572/114	
2		DP	604639		
9		DP	667767		
2		DP	748864		
147		DP	756426	8458/70	being whole Auto Consol 8458-70
148		DP	756426	8458/70	
149		DP	756426	8458/70	
150		DP	756426	8458/70	
151		DP	756426	8458/70	
153		DP	756426	1149/228	
154		DP	756426	1153/11	
2	29	DP	758009		
3	29	DP	758009		
10	9	DP	758621		
5	1	DP	758713	14688/209	*
1	64	DP	758757	12479/1	
1	3	DP	759066	4619/18	
10	51	DP	759144	6757/143	
2		DP	815888		
1		DP	818278		
2		DP	818278		
2		DP	1038477		
9132		DP	1041292		
2		DP	1043580		
11		DP	1055714		
1		DP	1070392		
2		DP	1070392		
21		DP	1077622		
1		DP	1144609	4761/216	
2		DP	1167182		
100		DP	1167917		
22		DP	1173233		
16		DP	1180488	5642/28	
18		DP	1184334		
19		DP	1184334		
451		DP	1248604		

* now being title 5/1137023

ANNEXURE "Y"

HEALTH ADMINISTRATION ACT 1982

LAND ACQUISITION (JUST TERMS COMPENSATION) ACT 1991

NOTICE OF ACQUISITION OF LAND BY COMPULSORY PROCESS

FOR THE PURPOSES OF THE *HEALTH ADMINISTRATION ACT 1982*

Pursuant to section 10 of the *Health Administration Act 1982* and section 19(1) of the *Land Acquisition (Just Terms Compensation) Act 1991*, the Health Administration Corporation by its delegate declares, with the approval of the Governor, that the land described in Schedule 1 below is by this notice acquired by compulsory process for the purposes of the *Health Administration Act 1982*.

SIGNED at North Sydney this 4th day of July 2019.

B.Wilson
Manager, Assets
NSW Ministry of Health
a duly authorised delegate of the
Health Administration Corporation

SCHEDULE 1

Land

All those pieces or parcels of land described in Annexure "A" ("the Land") excluding the interests in the Land listed in Schedule 2 ("Excluded Interests").

SCHEDULE 2

Excluded Interests

All other existing interests, easements, leases, unregistered leases, covenants, caveats, rights, charges, restrictions, licences coupled with an interest, native title rights and interests, profits a prendre, mortgages and contracts in, over or in connection with the Land.

Lismore Base Hospital Hunter Street, Lismore 2480	1	DP	350716	THE LISMORE BASE HOSPITAL	1/DP350716
Lismore Base Hospital Hunter Street, Lismore 2480	1	DP	350717	THE LISMORE BASE HOSPITAL	1/DP350717
Lismore Base Hospital Hunter Street, Lismore 2480	3	DP	383870	LISMORE BASE HOSPITAL	3/DP383879
Lismore Base Hospital Hunter Street, Lismore 2480	1	DP	511444	THE LISMORE BASE HOSPITAL	1/DP511444
Lismore Base Hospital Hunter Street, Lismore 2480	21	DP	589890	THE LISMORE BASE HOSPITAL	21/DP589890
Lismore Base Hospital Hunter Street, Lismore 2480	22	DP	589890	NORTHERN NSW LOCAL HEALTH DISTRICT	22/DP589890
Lismore Base Hospital Hunter Street, Lismore 2480	267	DP	755718	NORTHERN NSW LOCAL HEALTH DISTRICT	267/DP755718
Lismore Base Hospital Hunter Street, Lismore 2480	1	DP	820625	NORTH COAST AREA HEALTH SERVICE	1/DP820625
Lismore Base Hospital Hunter Street, Lismore 2480	10	DP	1109862	NORTH COAST AREA HEALTH SERVICE	10/DP1109862
Medical Centre,29 Uralba Street, Lismore 2480	1	DP	120560	THE HEALTH ADMINISTRATION CORPORATION	1/DP120560
Cootamundra Ambulance Station 83 Parker Street Cootamundra 2590	A	DP	349286	NEW SOUTH WALES AMBULANCE TRANSPORT SERVICE BOARD	A/DP349286
Nimbin Community Health Centre,31 Cullen Street, Nimbin 2480	1	DP	1096006	NORTH COAST AREA HEALTH SERVICE	1/DP1096006
Temora District Hospital Kitchener Road, Temora 2666	1	DP	572392	THE TEMORA AND DISTRICT HOSPITAL	1/DP572392
Temora District Hospital Kitchener Road, Temora 2666	2	DP	572392	THE TEMORA AND DISTRICT HOSPITAL	2/DP572392
Temora District Hospital Kitchener Road, Temora 2666	2	DP	748864	THE TEMORA DISTRICT HOSPITAL	2/DP748864
Gundagai District Hospital William, Torr Street, Gundagai 2722	22	DP	1173233	MURRUMBIDGEE LOCAL HEALTH DISTRICT	22/DP1173233
Cootamundra Hospital Mackay Street / Dickson Street, Cootamundra 2590	100	DP	1167917	THE HEALTH ADMINISTRATION CORPORATION	100/DP1167917
Lockhart District Hospital Hebden Street, Lockhart 2656	1	DP	319733	MURRUMBIDGEE LOCAL HEALTH DISTRICT	1/DP319733
Lockhart District Hospital Hebden Street, Lockhart	2	DP	319733	MURRUMBIDGEE LOCAL	2/DP319733

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 2/572392

SEARCH DATE	TIME	EDITION NO	DATE
11/4/2023	9:04 AM	1	13/9/2019

LAND

LOT 2 IN DEPOSITED PLAN 572392
AT TEMORA
LOCAL GOVERNMENT AREA TEMORA
PARISH OF BUNDAWARRAH   COUNTY OF BLAND
TITLE DIAGRAM DP572392

FIRST SCHEDULE

HEALTH ADMINISTRATION CORPORATION (R AP410680)

SECOND SCHEDULE (1 NOTIFICATION)

1 LAND EXCLUDES MINERALS AND IS SUBJECT TO RESERVATIONS AND CONDITIONS IN FAVOUR OF THE CROWN - SEE CROWN GRANT(S)

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

Local Council Records

Health
Murrumbidgee
Local Health District

Annual/Supplementary Fire Safety Statement

Regulator File Reference:

Environmental Planning & Assessment Amendment (Fire Safety & Building Certification) Regulation 2017.
Issued under the Environmental Planning & Assessment Regulation 2000, Part 9, Division 5.

1. Type of statement

☑ an annual fire safety statement | ☐ Supplementary Statement

2. Building the subject of this statement

Flat/Street no.	Street name	
N/A	**Loftus Street**	
Suburb or town	State	Postcode
Temora	**NSW**	**2666**

Description of the building or part of the building — Property# Temora Hospital

Temora Hospital, Nearest cross street- Gloucester. GPS 34°26'34.45"S / 147°32'36.25"E

This statement applies to: ☑ Whole building ☐ Part building......

3. Description of building or part of building the subject of this statement

Stories above ground in the building	Stories below ground in the building
1	0

If statement relates to part of the building, describe that part and its location

n/a

Usage of the building or part subject to this statement

District Hospital / Healthcare BCA Class 9a

4. Name & address of the building owner

Building Owner

NSW Health – Murrumbidgee Local Heath District

Address for all correspondence

Murrumbidgee LHD Asset Management PO Box 159 Wagga Wagga NSW 2650

5. Fire safety measures

List of essential fire safety measures specified in the Fire Safety Schedule for the building

	Date assessed	CFSP*	Minimum standard of performance
Fire Detection & alarm system	March 2020	SH	AS1670 AS1851
System monitoring	March 2020	SH	BCA E 2.2a7
OWS	March 2020	SH	BCA E2.2a AS 1851
Exit & emergency lights	March 2020	SH	AS 2293.2
Fire resistant doors	March 2020	SH	AS1905 AS 1851
Smoke doors	March 2020	SH	BCA C 3.4
Hydrants	March 2020	SH	Ord 70 AS 1851
Fire hose reels	March 2020	SH	Ord 70 AS 1851
Fire Extinguishers & blankets	March 2020	SH	AS 2444 AS 1851
Access for emergency vehicles	March 2020	SH	BCA C 2.4
Operational & warning signs	March 2020	SH	BCA D 2.23
Path of travel	March 2020	SH	Prt 9 div7 c186 epa

6. Details of competent fire safety practitioners (CFSP's)

Each CFSP who endorsed a fire safety measure referred to in Section 5 of this form

Each CFSP who inspected the building in accordance with cl.175(b) of the regulation (shaded row)

Initials	Given name/s	Family name	Phone	email	Signature
SH	**Stephen**	**Halligan**	(02) 59433033	Stephen.halligan@health.nsw.gov.au	
SH	**Stephen**	**Halligan**	(02) 59433033	Stephen.halligan@health.nsw.gov.au	

7. Annual fire safety statement declaration

I, **Stephen Halligan, Asset Management, Fire & Security Advisor**

Being the nominee of the owner *(Murrumbidgee Local Health District)* **for this purpose, certify that:**

(a) each essential fire safety measure listed above has been assessed by a competent fire safety practitioner and was found, when it w assessed, to be capable of performing:

- (i) In the case of an essential fire safety measure applicable by virtue of a fire safety schedule, to a standard not less than that s the schedule; or
- (ii) In the case of an essential fire safety measure applicable otherwise than by virtue of the fire safety schedule to a standard no that to which the measure was originally designed and implemented; and

(b) The building was inspected by a competent fire safety practitioner and was found, when it was inspected, to be a condition that did disclose any grounds for prosecution under EP&AR2000 Division 7; and

(c) the information contained in this statement is true and accurate to the best of my knowledge and belief

Stephen Halligan		16-3-2020

8. Supplementary fire safety statement declaration

Not applicable for Annual fire safety statements

9. Owner's authorisation

NSW Health Murrumbidgee Local Health District has nominated their Fire and Security Advisor, to audit these NSW Health Facilities based upon AS4655-2005 procedures. See the attached letter of appointment being the letter of authority by the NSW Health.

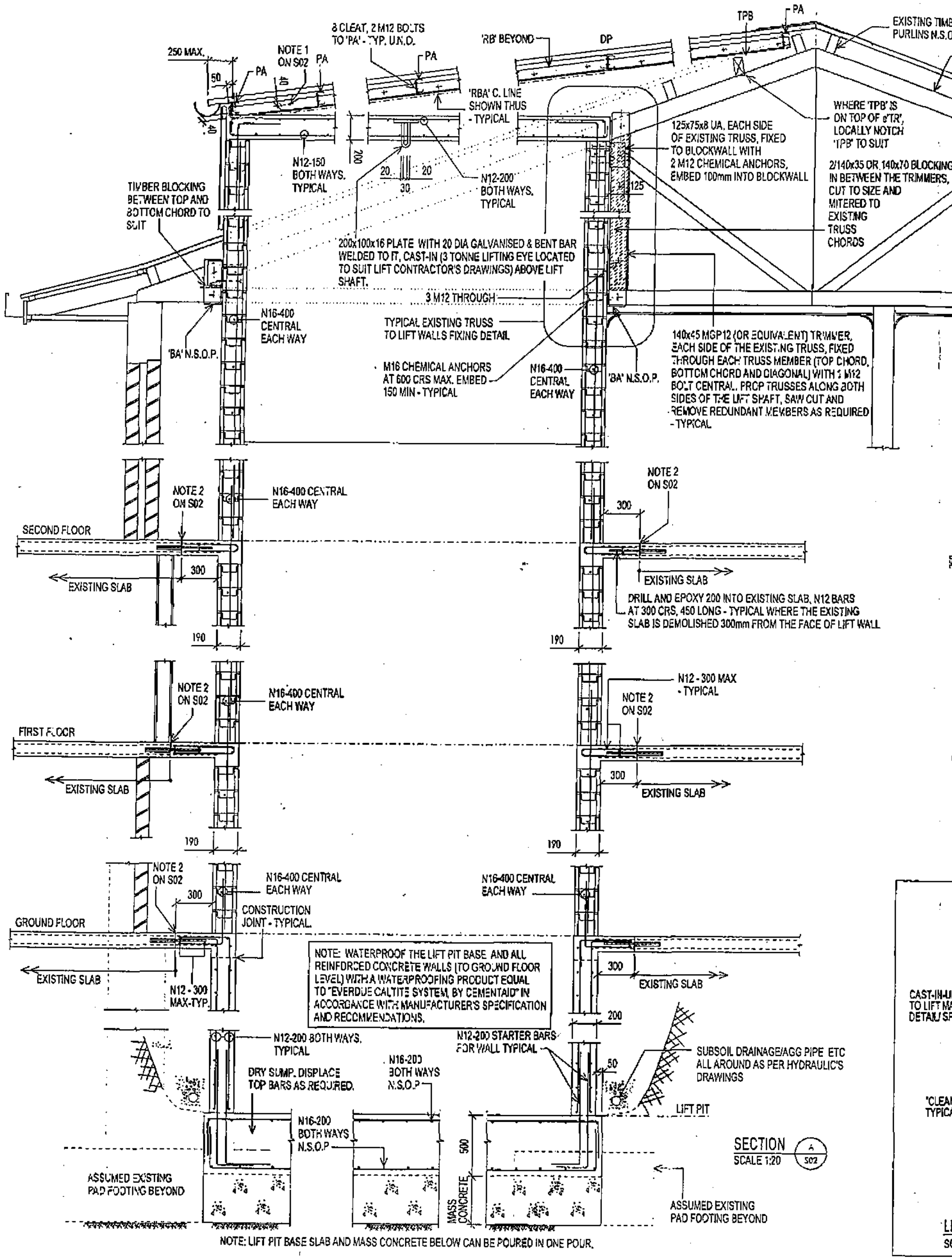
10. Contact details of person issuing this statement

Given name	Family Name	Phone	Cellular	email
Stephen	Halligan	(02) 59433033	0477-388-846	Stephen.halligan@health.nsw.gov.au

11. Fire safety schedule

The Fire Safety measures in Sect.5 reflect the Fire Safety Schedule of record

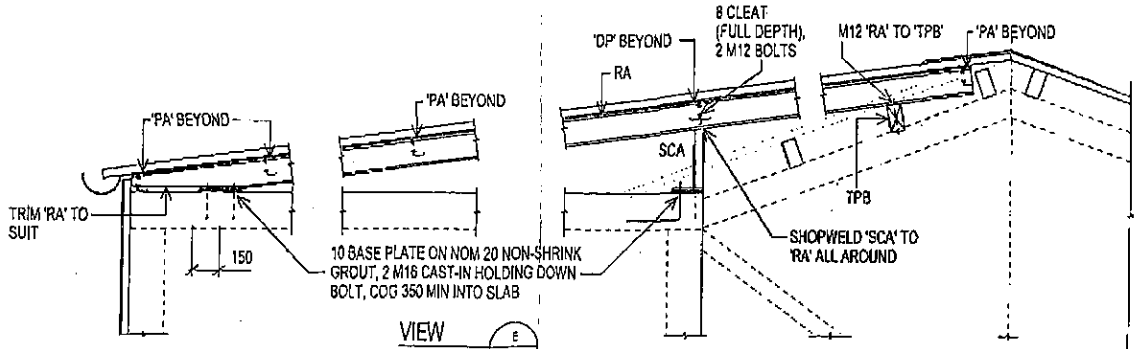
	Fire safety measure	Minimum standard of performance
1	Fire Detection & alarm system	AS1670 AS1851
2	System monitoring	BCA E 2.2a7
3	OWS	BCA E2.2a AS 1851
4	Exit & emergency lights	AS 2293.2
5	Fire resistant doors	AS1905 AS 1851
6	Smoke doors	BCA C 3.4
7	Hydrants	Ord 70 AS 1851
8	Fire hose reels	Ord 70 AS 1851
9	Fire Extinguishers & blankets	AS 2444 AS 1851
10	Access for emergency vehicles	BCA C 2.4
11	Operational & warning signs	BCA D 2.23
12	Path of travel	Prt 9 div7 c186 epa



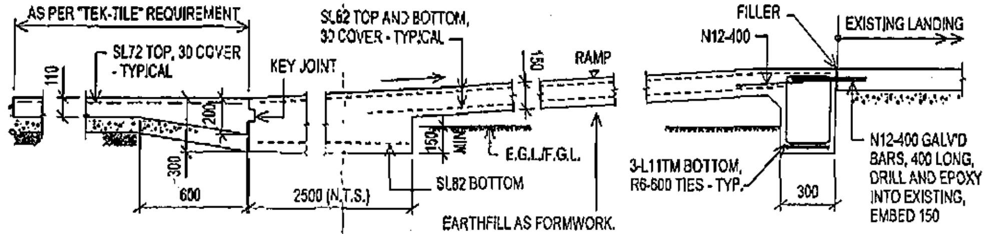
NOTE: WATERPROOF THE LIFT PIT BASE AND ALL REINFORCED CONCRETE WALLS (TO GROUND FLOOR LEVEL) WITH A WATERPROOFING PRODUCT EQUAL TO "EVERDUE CALTITE SYSTEM, BY CEMENTAID" IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATION AND RECOMMENDATIONS.

NOTE: LIFT PIT BASE SLAB AND MASS CONCRETE BELOW CAN BE POURED IN ONE POUR.

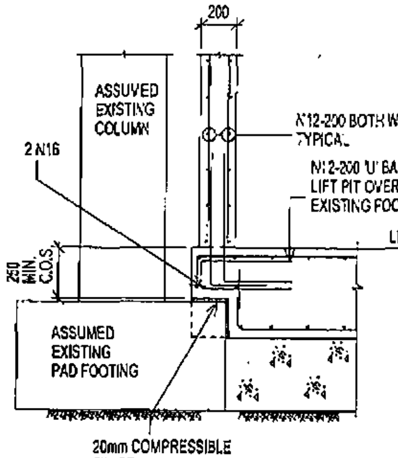
SECTION (A/S02)
SCALE 1:20



VIEW (E/S02)
SCALE 1:20

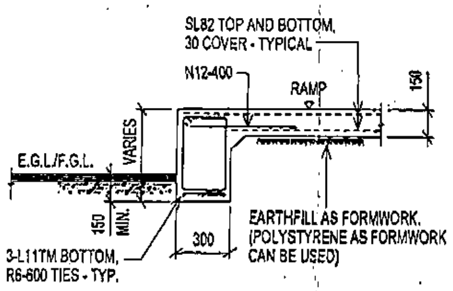


SECTION (C/S02)
SCALE 1:20

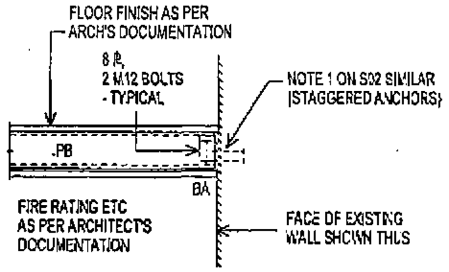


NOTE: SIZE AND DEPTH OF EXISTING PAD FOOTING SHALL BE VERIFIED ON SITE DURING EXCAVATION AND REPORTED TO THE ENGINEER FOR VERIFICATION OF PROPOSED FOOTING PRIOR TO POURING - TYPICAL.

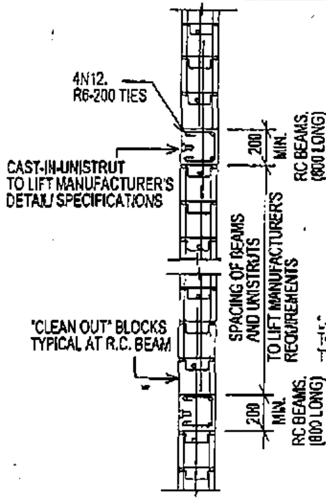
SECTION (B/S02)
SCALE 1:20



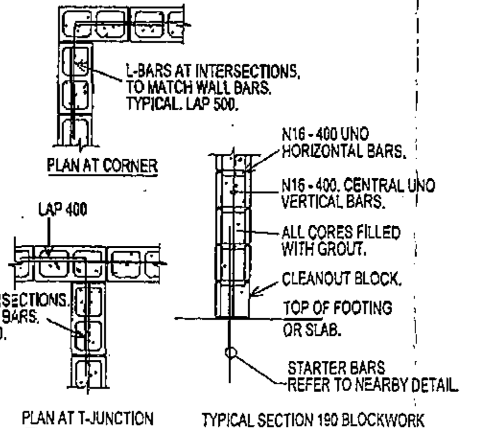
SECTION (D/S02)
SCALE 1:20



SECTION (F/S02)
SCALE 1:20



LIFT INSERTS DETAIL (SECTION)
SCALE 1:20



PLAN AT T-JUNCTION
SCALE 1:20

TYPICAL SECTION 190 BLOCKWORK
SCALE 1:20

TYPICAL REINFORCED BLOCK WALL DETAILS

BLOCK WALL DETAILS-NOTES

REINFORCED CONCRETE BLOCK WALLS SHALL COMPLY WITH THE FOLLOWING:

1. ALL PERPENDS SHALL BE FULLY FILLED WITH MORTAR (1:1:6).
2. PROVIDE TEMPORARY PROPPING TO WALLS WHERE REQUIRED FOR STABILITY DURING CONSTRUCTION.
3. ALL MORTAR DAGS SHALL BE REMOVED BEFORE FILLING CORES WITH GROUT. PROVIDE CLEAN OUT HOLES (OR CLEAN OUT BLOCKS) AT THE BASE OF ALL WALLS AND EACH POUR BREAK.
4. STARTER BARS SHALL BE ACCURATELY POSITIONED BY TEMPLATES OR SIMILAR MEANS.
5. VERTICAL WALLBARS SHALL BE TIED TO STARTER BARS THROUGH INSPECTION OPENINGS AT THE BASE OF THE WALL AND ALSO ACCURATELY FIXED IN POSITION AT THE TOP BY AN APPROPRIATE METHOD.
6. REINFORCEMENT SHALL BE ACCURATELY PLACED AND FIRMLY HELD IN POSITION TO A TOLERANCE OF ± 10 mm
7. FILL ALL CORES WITH GROUT OF f'c 20 MPa AND SLUMP 230, 10 mm MAXIMUM AGGREGATE SIZE.
8. CORE GROUT IS TO BE COMPACTED TO ENSURE COMPLETE FILLING OF ALL CORES.
9. BLOCK CHARACTERISTIC COMPRESSIVE STRENGTH f_{uc} TO BE 15 MPa MINIMUM

A1
USE FIGURED DIMENSIONS IN PREFERENCE TO SCALING
CHECK ALL DIMENSIONS ON SITE
200MM
200MM ON ORIGINAL

STRUCTURAL / CIVIL ENGINEERING
GOVERNMENT ARCHITECT OFFICE

Designed
D. Lofeski
Verified
H. Morb
Detailed
D. Lofeski
Principal Engineer
H. Morb

REVISION		
ISS	DATE	COMMENT
	[illegible]	TENDER ISSUE

STRUCTURAL
GOVERNMENT ARCHITECT'S OFFICE
ELECTRICAL
GOVERNMENT ARCHITECT'S OFFICE
MECHANICAL
GOVERNMENT ARCHITECT'S OFFICE
HYDRAULIC
GOVERNMENT ARCHITECT'S OFFICE
ARCHITECTURAL
GOVERNMENT ARCHITECT'S OFFICE
QUANTITY SURVEYOR
GOVERNMENT ARCHITECT'S OFFICE
PROJECT MANAGEMENT
PROJECT MANAGEMENT GROUP

NSW GOVERNMENT
Public Works
Government Architect's Office
PETER POULET
MICHAEL COUTTS-TROTTER

CONSTRUCT LIFT SHAFT
- TEMORA HOSPITAL

TENDER DOCUMENT
SECTIONS AND DETAIL
- SHEET 1

SCALES
AS SHOWN
PLOT DATE
25/09/2012
CONTRACT NUMBER
1201333/2
SHEET NO
S03

25/09/2012

Kri. D.

Industry

From: "Peter Hughes" <Peter.Hughes@services.nsw.gov.au>
To: <nwblandandsons@bigpond.com>
Sent: Friday, 22 February 2013 9:42 AM
Subject: Temora hospital - Structural changes

Hi Rob

See hereunder principal design engineer concurrence with Xeros Piccolo suggested changes to the design'

Please proceed with the Xeros Piccalo changes

Peter Hughes
Project Manager
NSW Public Works
Riverina Region
M 0407 757 638

>>> Nick Harb 21/02/2013 3:21 >>>
Hi Peter,

Based on the information provided by Xeros Piccolo Consulting Engineers, the following comments are provided:

1. The mass concrete blinding layer underneath the base slab can be deleted.

2. The thickness of the lift base slab can be reduced to a minimum of 350mm thick with local thickening of 150mm under the sump pit.

3. In theory the bond beam as per sketch provided with 4-N12 bars and N12 ties is approved.

4. Fixing/installation of the "UNISTRUT" shall be carried out in accordance with manufacturer's recommendations and details.

Regards

Nick

>>> Peter Hughes 20/02/13 14:54 >>>
Thanks Nick

Contractor had a local structural engineer on site today and he has come up with suggestions that you will find attached for GF and subsequent 1st and 2nd floor connections

We have agreed to move the lift 350mm east this will require now infil floor panel due to the contractor having cut out the floors already

Footing pads have to be cut, this has also been considered by local engineer by casting lift base then temp propping GF until lift walls are cast that will provide adequate support for the pier pads and floor over.

Due to rock in the base of the foundation, the local engineer has deemed that there is adequate bearing on the substrate and therefore suggested that the blinding layer be deleted and the based of the pit slab be reduced to 350mm thick

Also attached on the detail is the proposed casting method of lift inserts using bond beam with legs tied to unistrut sections and connected to horizontal and vertical block wall reinforcement

Can you review and confirm your agreement with the suggested changes or otherwise

Peter Hughes
Project Manager
NSW Public Works
Riverina Region
M 0407 757 638

>>> Nick Harb 20/02/2013 2:34 >>>
Peter,

Expose steel minimum 150mm, drill 150 deep into existing slab and epoxy in N12-300 max.

This should apply only to the ground floor slab. Details for the first and second floor slabs should remain as documented.

Regards

>>> Peter Hughes <PETER.HUGHES@SERVICES.NSW.GOV.AU> 20/02/13 12:05 >>>
Nick
We think we can move lift shaft which will gat away from beam.
Reinforcement for existing slab is only bottom placed, can we drill and chem set reo bars into edge of slab instead of exposing steel in slab
Peter Hughes

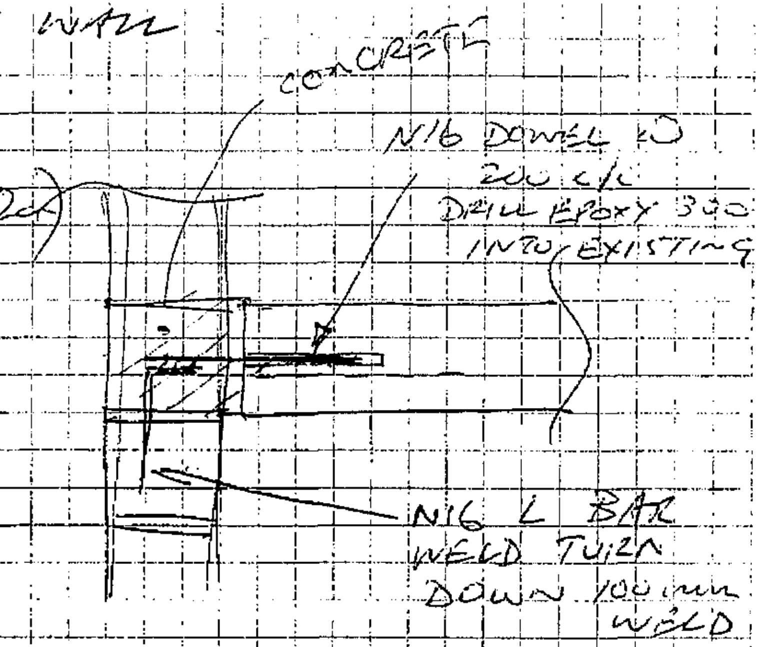
Kris. D

XEROS PICCOLO
CONSULTING ENGINEERS

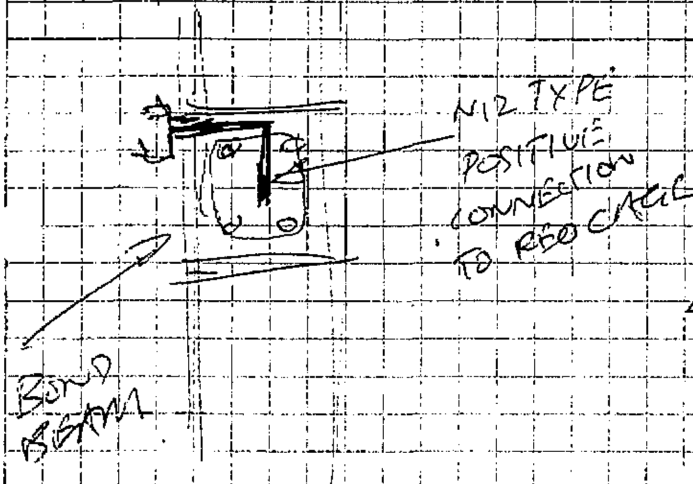
PROJECT: TEMORA HOSPITAL	JOB NO:	DATE: 20 2 13
	DESIGNED BY:	SHEET: 1 OF 1

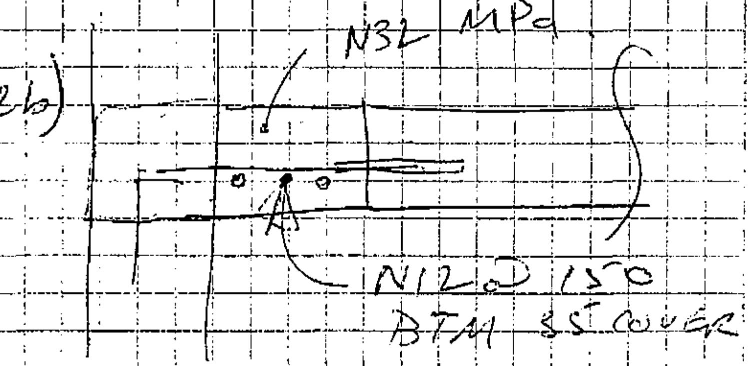
1. BASE SLAB REDUCE TO 250 mm from 500 SAME REO. TO BE FOUNDED ON ROCK OR MASS CONCRETE ON ROCK.

2 SLAB JOIN TO LIFT WALL



3. BOND BEAM
LIFT SUPPORT RAIL





4. POUR BASE SLAB FIRST AND PROP OFF AS REQUIRED

KJD:NMS:D/01/01

NOTICE TO THE APPLICANT OF DETERMINATION OF DEVELOPMENT CONSENT

issued under Section 81 (1)(a) of the *Environmental Planning & Assessment Act, 1979,*

DEVELOPMENT CONSENT No:	1213/012D
Applicant:	PETER HUGHES (TEMORA & DISTRICT HOSPITAL)
Applicant's Address:	PO BOX 2129 WAGGA WAGGA NSW 2650
Land to be Developed:	LOT 2; DP 572392; 19 GLOUCESTER STREET, TEMORA
Proposed Development:	CONSTRUCT LIFT SHAFT AND INSTALL A 1500 X 2500MM LIFT CAR
BCA Building Classification:	9 (a)
DETERMINATION DATE:	**16TH AUGUST, 2012**
Determination:	Consent granted subject to the conditions described below.
Consent to operate from:	17TH AUGUST, 2012
Consent to lapse on:	16TH AUGUST, 2017

Certification

The work referred to in this certificate and completed in accordance with the attached, certified plans, specifications and conditions of approval (identified by the above Development Consent will comply with the requirements of the regulations referred to in Section 81 (1) (a) of the Act.

NOTE: This certification remains valid for the duration of the Development Consent.

Details of Conditions:

Undertake development in accordance with plans, specifications and supporting documentation lodged, except where varied in the below conditions of consent. No departure from the approved plans and specifications shall be made unless the prior approval of Council has been obtained in writing.

All aspects of this development shall comply with the Environmental Planning and Assessment Act 1979 and all relevant Acts and Regulations thereunder, together with all Council planning and development policies. In particular all construction and associated building works shall comply with the Building Code of Australia and any applicable Australian Standards thereunder.

Conditions of Consent:

1 The builder must at all times maintain on the job, a legible copy of the plans and specifications bearing the stamp and building permit of Council.

2 A notice bearing the lot number and the builders name and license number shall be prominently displayed at the front of the land from the time the development application is submitted to Council until the building is complete, or until the occupation certificate is issued.

Building Code of Australia

3 The proposed development has been assessed under the provisions of the Building Code of Australia as:

Class - 9(a)
Rise in Storeys - 3
Type of Construction - B

4 All building work must be carried out in accordance with the provisions of the Building Code of Australia and any applicable Australian Standards.

Construction Certificates

5 The construction work shall be certified under section 109R of the Environmental Planning and Assessment Act.

Long Service Levy

6 For works costing more than $25,000, a Long Service Leave Levy shall be paid. For further information please contact the Long Service Levy Payments Corporation on their helpline 131441 prior to certification of Building Works (Crown).

In order to ensure the structural adequacy of the lift shaft and the existing structures nearby, additional details in regard to the following matters shall be submitted to and approved by the Certifier prior to the issue of a Crown Building works certificate

a. Structural drawings prepared and signed by a suitably qualified engineer certifiying compliance with the relevant clauses of the BCA and Australian Standards.

Access For People With Disabilities

7 The building work and assicated lift installation must be designed and constructed to provide access and facilities for people with a disability in accordance with the Building Code of Australia. The Certifiying Authority must ensure that evidence of compliance with this condition from an appropriately qualified person is provided and that the requirements are referenced in the construction drawings to be certified.

Fire Services/Certification

8 The owner of the building shall certify to Council every year that the essential services installed in the building for the purposes of fire safety have been inspected and at the time of inspection are capable of operating to the required minimum standard.

General

9 All excavation/demolition works involving the removal and disposal of any asbestos must only be undertaken by contractors who hold a current WorkCover Asbestos or "Demolition Licence" and a current WorkCover "Class 2" (Restricted) Asbestos Licence must be carried out in accordance with NOHSC:"Code of Practice for the Safe Removal of Asbestos".

Reasons for Conditions/Refusal

The above conditions have been imposed in the public interest, to reduce any potential environmental impact and to ensure that the proposed development complies with the provisions of the Environmental Planning and Assessment Act, 1979 and the Regulations, any environmental planning instruments applying to the subject land and Council's Codes and Policies.

Right of Review

Under Section 82A of the Environmental Planning and Assessment Act 1979, the applicant has the right to request the Council to review its determinations within 12 months of the consent being granted.

The fee payable to have Council undertake this review is set out in Section 257 of the Environmental Planning and Assessment Act Regulations 2000.

Right of Appeal

Section 97 of the Environmental Planning and Assessment Act confers on the applicant who is not satisfied with the determination of the consent authority a right of appeal to the Land and Environment Court is exercisable within 12 months of receipt of this notice.

Applicant's Responsibilities

Any person who contravenes this notice of determination of the abovementioned application shall be guilty of a breach of the Environmental Planning Assessment Act, 1979, and shall be liable to a monetary penalty and for a restraining order which may be imposed by the Land Environment Court.

SIGNED Signature:	on behalf of the consent authority
Name:	KJ Dunstan **DIRECTOR – Environmental Services** **BPB Accreditation No: 1115**
Date:	20th August, 2012

NSW
GOVERNMENT
Public Works

Temora Hospital
Supply, Installation & Construction of Lift Shaft and Lift Car

Project Brief

May 2012

TEMORA SHIRE COUNCIL
DEVELOPMENT APPLICATION No. 1213/012D
Approved subject to compliance with the E.P. & A.
Act 1979 (as amended), The Temora Shire L.E.P.,
Building Code of Australia (NSW Provisions)
and conditions set by Council

17/8/2012
Date

Director of Health & Building
for and on behalf of Temora Shire Council

1.1 General

Southern Local Health District are planning to construct and install new lift at Temora Hospital Site to replace the existing lift that is now considered beyond their economical life.

The option below will be pursued at the following site: **TEMORA DISTRICT HOSPITAL**

1.2 Scope of works

Ground Floor Level

- Lift to be constructed in alcove area of GF directly under room 228 1st Floor.
- Openings constructed in walls of room 135 to allow access to the internal hallway.

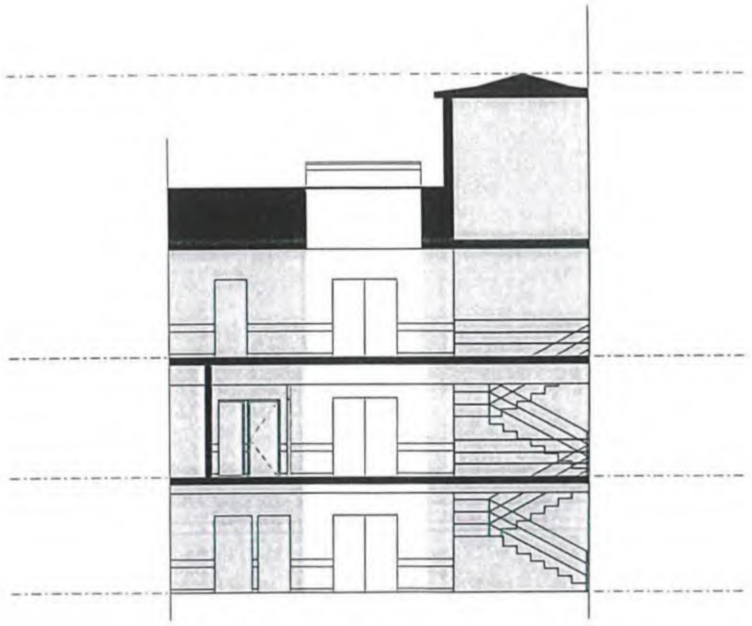
First Floor Level

- Cut and remove concrete floor to allow the construction of lift shaft.
- Fill all openings in external walls and match existing finishes.
- Fill door opening to the ensuite
- Extend opening to allow increased access to hallway.
- Remove and reposition double doors to maintain secure area.
- Remove and replace counter so that office staff are separated from the lift area.
- Install window in the external wall of room 231.
- Install doorway into ensuite room 229. This will allow Room 231 to be returned as a hospital bed from a store room.

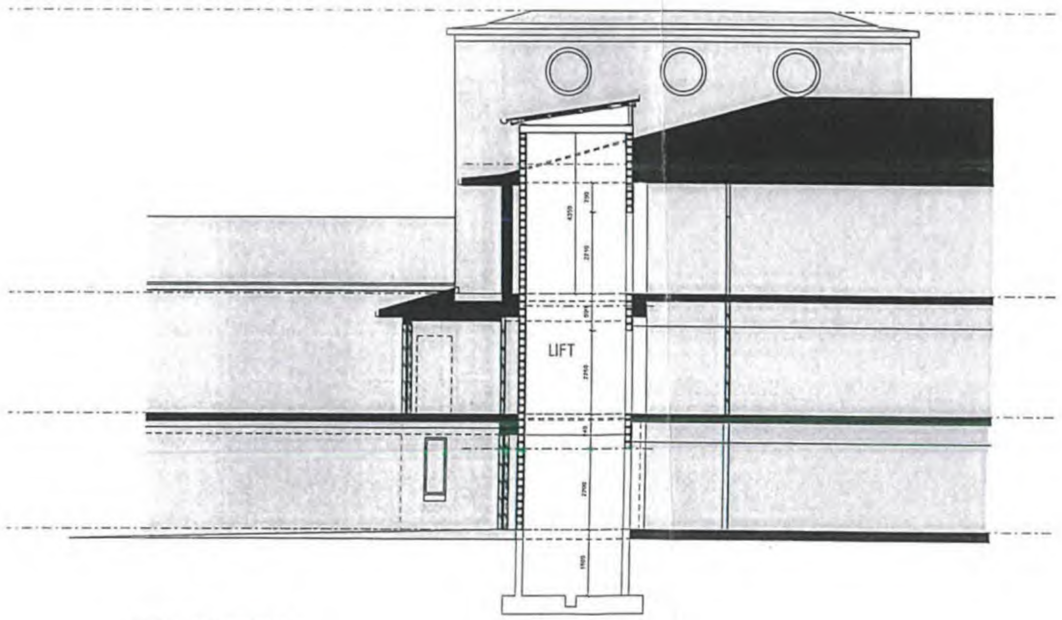
Second Floor

- Install lift shaft to the Second Floor.
- Install an opening for the lift in the external walls of Room 323 and 324.
- Remove internal walls as necessary between Rooms 323 and 324.
- Install new wall to suit lift opening between Room 324 and 323.

Option 1 would deliver access to all three levels of the hospital without losing any beds or services. Construction would be disruptive to the hospital operations (noise, hoardings etc).



1 ELEVATION/ SECTION 1
scale 1:100



2 SECTION 2
scale 1:100

PRELIM
10/07/2012

LEGEND

A/C AIR CONDITIONING
AD AGRICULTURAL DRAIN
AV AUDIO VISUAL RACK
B BOLLARD
BA1,2 BALUSTRADE- TYPE 1, 2
BAR EXISTING BALUSTRADE
BL BLIND
BO BUILDING OVER
BU BUILDING UNDER
CA CENTRELINE
CTX EXISTING ACOUSTIC CEILING TILES
CC CONCRETE COLUMN
CCX EXISTING CONCRETE COLUMN
CFS FIBRE CEMENT CEILING
CFW WATER RESISTANT FIBRE CEMENT CEILING
CH CABLE HOLE
CJ CONTROL JOINT
CMS CONCRETE MOWING STRIP
COMMS COMMUNICATIONS
CON CONCRETE
COS CHECK ON SITE
CPB PLASTERBOARD CEILING
CP CEILING PROJECTOR BRACKET
CPC CEILING PROJECTOR ELECTRICAL PLATE
CPA PERFORATED ALUMINIUM SHEETING
CTA ACOUSTIC CEILING TILES
CU AIR CONDITIONING CONDENSER UNIT
CUS UNDERSIDE OF EXISTING CONCRETE SLAB
DCC CONCRETE DISH DRAIN
DP DOWNPIPE
DWG DRAWING
EDB ELECTRICAL DISTRIBUTION BOARD
EGX EXISTING GROUND LINE
EQ EQUAL
EJ EXPRESSED JOINT IN FC WALL CLADDING
FB BOUNDARY FENCE
FC FIBRE CEMENT
FCB FLUME CUPBOARD
FCL FINISHED U/S OF CEILING LEVEL
FC1,2,3 CARPET TILES COLOURS 1, 2, 3
FCP CARPET
FCX EXISTING CARPET
FFL FINISHED FLOOR LEVEL
FG FIXED GLAZING
FH FIRE HYDRANT
FL FLOOR LEVEL
FMS DOOR MAT
FR1,2,3 RESILIENT FLOOR SHEET TYPES 1,2,3
FR REFRIGERATOR
FS SECURITY FENCE
FRL FIRE RESISTANCE LEVEL
FST STEEL TROWEL CONCRETE
FT1,2 CERAMIC FLOOR TILES TYPES 1, 2
FTA TACTILE INDICATORS
FW FLOOR WASTE
FVX EXISTING VINYL FLOORING
FZ FREEZER
GF GROUND FLOOR
GL GROUND LINE
GRD DROP DOWN GRAB RAIL
GWS GRASS SWALE
HCP HARNESS CONNECTION POINT
HR HANDRAIL
HV HYDRAULIC VENT
INS INSULATION
IWB INTERACTIVE WHITEBOARD
K KERB
KG KERB AND GUTTER
KR MOUNTABLE KERB
LF LIGHT FIXTURE
LMA ADJUSTABLE METAL LOUVRE
LP LANDSCAPE PLANTING
MAR MARMOLEUM
NOM NOMINATED
NTS NOT TO SCALE
PB PLASTERBOARD
PBX EXISTING PLASTERBOARD
PC CONCRETE PAVING BROOM FINISH
PC1 BROOM FINISH CONCRETE PAVING TYPE 1
PCH HEAVY DUTY CONCRETE PAVING
PCX EXISTING CONCRETE PAVING
PFC PARALLEL FLANGE CHANNEL
PGT GRANOLITHIC TOPPING
PM PERFORATED METAL
RAC APEX CAPPING
RBC ROOF BARGE CAPPING
RFA FASCIA ANGLE
RFS ROOF FLASHING
RL REDUCED LEVEL
RMV MECHANICAL VENT
RO ROOF OVER
RRC RIDGE CAPPING
RSM CORRUGATED METAL ROOF SHEETING
RSX EXISTING ROOF SHEETING
RWG RAINWATER GUTTER
RWP RAINWATER DOWNPIPE
RWS RAINWATER SUMP
RWX EXISTING RAINWATER DOWNPIPE
SB STEEL BEAM
SSC 1200 HIGH CIRCULAR STEEL STUB COLUMN
SC CIRCULAR STEEL COLUMN
SF1,2,3 FIBRE CEMENT SHEET SOFFIT COLOUR 1, 2, 3
SFX EXISTING FIBRE CEMENT SHEET SOFFIT
SKA ALUMINIUM SKIRTING
SKC COVED TILE SKIRTING
SMS CORRUGATED METAL SOFFIT
SO STRUCTURE OVER
SS STAINLESS STEEL
SSC SQUARE STEEL COLUMN
SSR STAINLESS STEEL RECEPTACLE
STR STEEL STRUT
SUS SOFFIT UNDERSIDE OF CONCRETE SLAB
SWP STORMWATER PIT
SWX EXISTING STORMWATER PIT
TOS TOP OF SLAB
TOW TOP OF WALL
TV TELEVISION
U/S UNDERSIDE
WBC BRICK WALL CEMENT RENDERED
WBF FACE BRICKWORK
WBS CUT BRICK SOLDIER COURSE
WBT CUT CANT BRICK SOLDIER COURSE
WBX EXISTING FACE BRICK WALL

A1 1 0 10 20 30 40 50 60 70 80 90 100

USE FIGURED DIMENSIONS IN PREFERENCE TO SCALING
CHECK ALL DIMENSIONS ON SITE

200MM

300MM ON ORIGINAL

REVISION		
ISS	DATE	COMMENT

STRUCTURAL GOVERNMENT ARCHITECT'S OFFICE T 9372 8200 F 9372 8399	**ARCHITECTURAL** GOVERNMENT ARCHITECT'S OFFICE T 9372 8411 F 9372 8399
ELECTRICAL GOVERNMENT ARCHITECT'S OFFICE T 9372 8253 F 9372 8133	**LANDSCAPE** GOVERNMENT ARCHITECT'S OFFICE T 9372 8428 F 9372 8444
MECHANICAL GOVERNMENT ARCHITECT'S OFFICE T 9372 8253 F 9372 8133	**QUANTITY SURVEYOR** GOVERNMENT ARCHITECT'S OFFICE T 9372 8311 F 9372 8444
HYDRAULIC GOVERNMENT ARCHITECT'S OFFICE T 9372 8202 F 9372 8133	**PROJECT MANAGEMENT** PROJECT MANAGEMENT GROUP T 9372 8558 F 9372 8566

NSW GOVERNMENT
Public Works
Government Architect's Office
PETER POULET
NSW Government Architect
Nominated Architect ARN 5794
Level 19 McKell Building, 2-24 Rawson Place
Sydney NSW 2000 AUSTRALIA
A division of the Department of Finance & Services
MICHAEL COUTTS-TROTTER
Director General

TEMORA HOSPITAL
- NEW LIFT

ELEVATIONS & SECTIONS

PLAN RM NO		CONTRACT NUMBER
SCALES 1:100 @ A1		SHEET NO DA03
DESIGNED	PLOT DATE 10/07/2012	
DRAFTED	VERIFIED	REVISION

10/07/2012 4:09:33 PM G:\Projects\HEALTH\LEET_TEM_HOSP_LIFT\6_doc\arch\Temora Hospital\DA\TEM_HOSP_LIFT-DA03.PLT

$NODE$

Islesf

TEMORA DISTRICT HOSPITAL - NEW LIFT

CORNER GLOUCESTER AND LOFTUS STREETS, TEMORA

LOCATION

SITE

AERIAL PHOTOGRAPH

DRAWING LIST

ARCHITECTURAL

DA01	COVER SHEET	NTS
DA02	OVERALL SITE PLAN	1:500
DA03	SITE PLAN	1:200
	ADMINISTRATION PLANS	1:100
	NEW ADDITIONS TO EXISTING SHEDS-PLANS	1:100
	ADMINISTRATION ELEVATIONS & SECTIONS	1:100
	NEW ADDITIONS TO EXISTING SHEDS-ELEVATIONS & SECTIONS	1:100

PRELIM
10/07/2012

1 The Government Architect's Office, a division of the Department of Finance & Services (the Department) shall not be liable or responsible for any loss or damage arising out of the conversion of any electronic document, data or program to any other format or medium, or arising out of any modification or changes that occur in the handling or use of the electronic document, data or program.

2 The recipient or user of any electronic document, data or program is solely responsible for ascertaining its accuracy and its suitability for their purposes.

3 The Department uses virus scanning software to prevent file and system virus attacks but gives no warranty. The recipient or user is solely responsible for their own virus protection.

LEGEND

A1

USE FIGURED DIMENSIONS IN PREFERENCE TO SCALING
CHECK ALL DIMENSIONS ON SITE

200MM

300MM ON ORIGINAL

REVISION

ISS DATE COMMENT

STRUCTURAL GOVERNMENT ARCHITECT'S OFFICE T 9372 8200 F 9372 8399	ARCHITECTURAL GOVERNMENT ARCHITECT'S OFFICE T 9372 8411 F 9372 8399
ELECTRICAL GOVERNMENT ARCHITECT'S OFFICE T 9372 8283 F 9372 8133	LANDSCAPE GOVERNMENT ARCHITECT'S OFFICE T 9372 8428 F 9372 8444
MECHANICAL GOVERNMENT ARCHITECT'S OFFICE T 9372 8253 F 9372 8133	QUANTITY SURVEYOR GOVERNMENT ARCHITECT'S OFFICE T 9372 8311 F 9372 8444
HYDRAULIC GOVERNMENT ARCHITECT'S OFFICE T 9372 8202 F 9372 8133	PROJECT MANAGEMENT PROJECT MANAGEMENT GROUP T 9372 8588 F 9372 8566

NSW GOVERNMENT
Public Works
Government Architect's Office
PETER POULET
NSW Government Architect
Nominated Architect ARN 5794
Level 19 McKell Building, 2-24 Rawson Place
Sydney NSW 2000 AUSTRALIA
A division of the Department of Finance & Services
MICHAEL COUTTS-TROTTER
Director General

TEMORA HOSPITAL
- NEW LIFT

COVER SHEET

PLAN RM NO

CONTRACT NUMBER

SCALES
1:100 @ A1

SHEET NO
DA01

DESIGNED

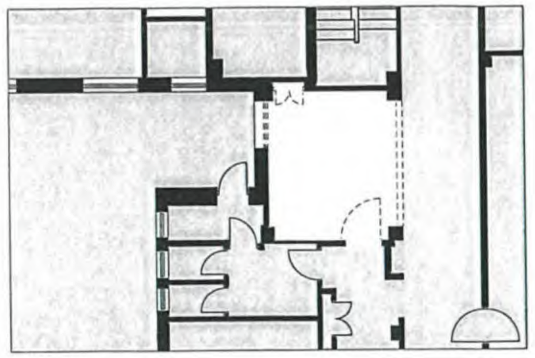
PLOT DATE
10/07/2012

DRAFTED

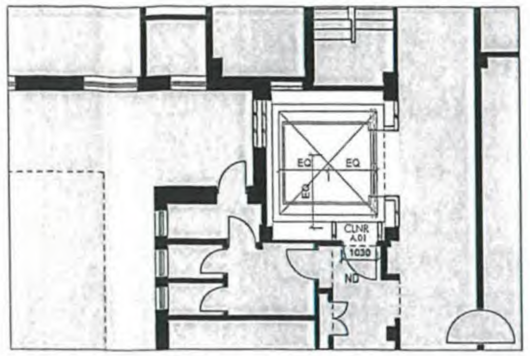
VERIFIED

REVISION

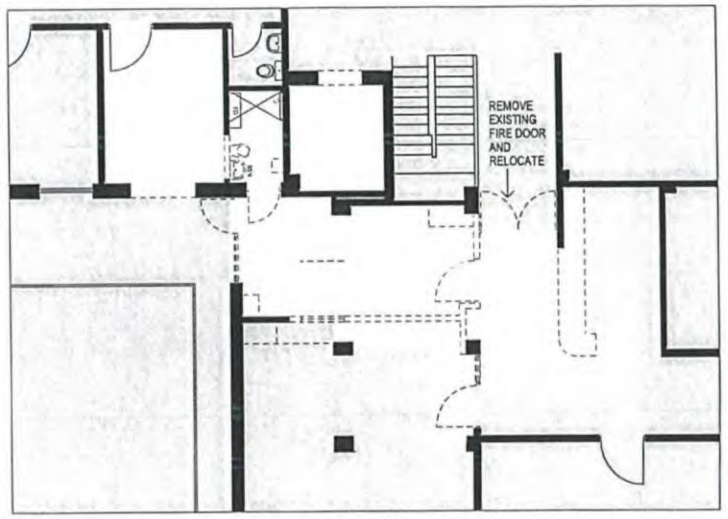
10/07/2012 3:51:19 PM



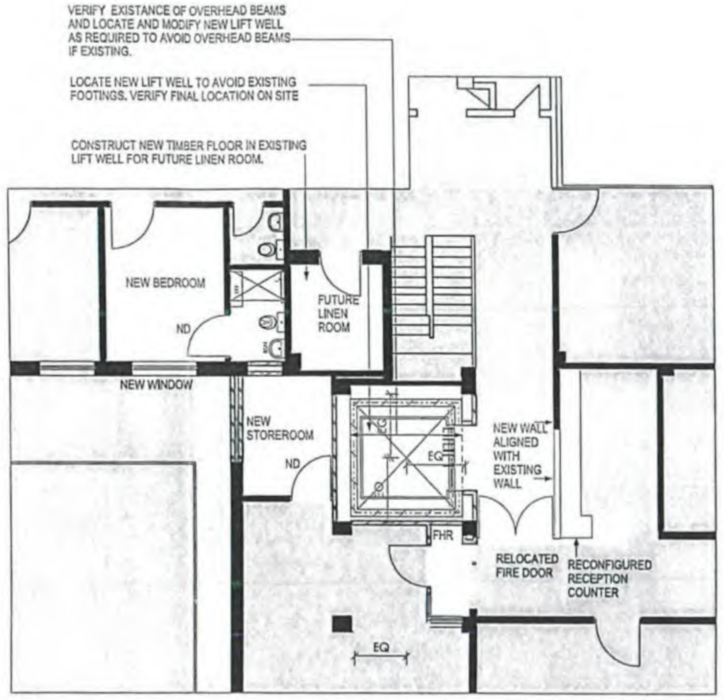
① PART GROUND FLOOR DEMOLITION PLAN



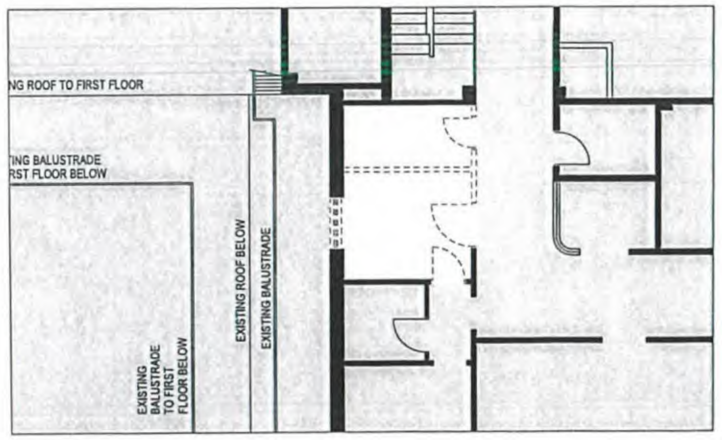
④ PART GROUND FLOOR PLAN



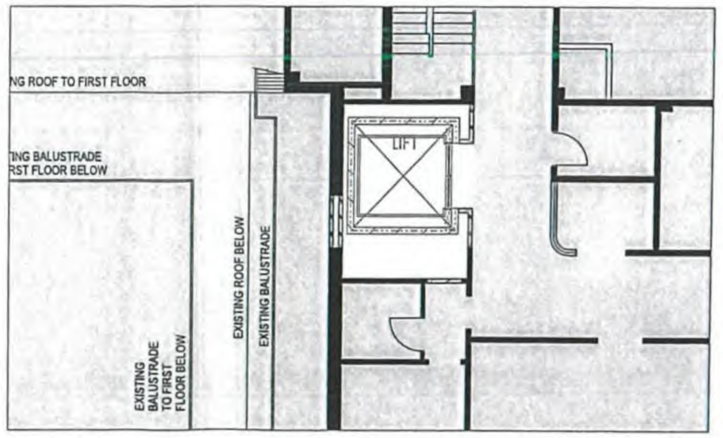
② PART FIRST FLOOR DEMOLITION PLAN



⑤ PART FIRST FLOOR PLAN



③ PART SECOND FLOOR DEMOLITION PLAN



⑥ PART SECOND FLOOR PLAN

LEGEND

▭	BRICKWORK TO MATCH EXISTING
═	STUD WALL UNLESS NOTED OTHERWISE
▬	EXISTING WALLS TO REMAIN
	EXISTING ROOMS NOT PART OF SCOPE OF WORKS
====	EXISTING WALL TO BE DEMOLISHED
	EXISTING DOOR TO BE DEMOLISHED
ND	NEW DOOR
	EXISTING WINDOW TO BE DEMOLISHED
	WINDOW NUMBER ROOM NUMBER
	DOOR NUMBER ROOM NUMBER
	CEILING FINISH FLOOR FINISH
	WALL TYPE INDICATOR
	DETAIL NUMBER DRAWING NUMBER
RL 10.187	REDUCED LEVEL
RL 10.187	EXISTING REDUCED LEVEL

PRELIM
10/07/2012

1 The Government Architect's Office, a division of the Department of Finance & Services (the Department) shall not be liable or responsible for any loss or damage arising out of the conversion of any electronic document, data or program to any other format or medium, or arising out of any modification or changes that occur in the handling or use of the electronic document, data or program.

2 The recipient or user of any electronic document, data or program is solely responsible for ascertaining its accuracy and its suitability for their purposes.

3 The Department uses virus scanning software to prevent file and system virus attacks but gives no warranty. The recipient or user is solely responsible for their own virus protection.

LEGEND

A/C	AIR CONDITIONING
AG	AGRICULTURAL DRAIN
AV	AUDIO VISUAL RACK
B	BOLLARD
BA1,2	BALUSTRADE - TYPE 1, 2
BAA	EXISTING BALUSTRADE
BL	BLIND
BO	BUILDING OVER
BU	BUILDING UNDER
CL	CENTRELINE
CTX	EXISTING ACOUSTIC CEILING TILES
CC	CONCRETE COLUMN
CCX	EXISTING CONCRETE COLUMN
CFL	FIBRE CEMENT CEILING
CFW	WATER RESISTANT FIBRE CEMENT CEILING
CH	CABLE HOLE
CJ	CONTROL JOINT
CMS	CONCRETE MOWING STRIP
COMMS	COMMUNICATIONS
CON	CONCRETE
COS	CHECK ON SITE
CPB	PLASTERBOARD CEILING
CP	CEILING PROJECTOR BRACKET

A1 0 10 20 30 40 50 60 70 80 90 100

USE FIGURED DIMENSIONS IN PREFERENCE TO SCALING
CHECK ALL DIMENSIONS ON SITE

200MM

300MM ON ORIGINAL

REVISION

ISS	DATE	COMMENT

STRUCTURAL GOVERNMENT ARCHITECT'S OFFICE T 9372 8200 F 9372 8300	ARCHITECTURAL GOVERNMENT ARCHITECT'S OFFICE T 9372 8411 F 9372 8399
ELECTRICAL GOVERNMENT ARCHITECT'S OFFICE T 9372 8253 F 9372 8133	LANDSCAPE GOVERNMENT ARCHITECT'S OFFICE T 9372 8426 F 9372 8444
MECHANICAL GOVERNMENT ARCHITECT'S OFFICE T 9372 8253 F 9372 8133	QUANTITY SURVEYOR GOVERNMENT ARCHITECT'S OFFICE T 9372 8311 F 9372 8444
HYDRAULIC GOVERNMENT ARCHITECT'S OFFICE T 9372 8202 F 9372 8133	PROJECT MANAGEMENT PROJECT MANAGEMENT GROUP T 9372 8558 F 9372 8566

NSW GOVERNMENT
Public Works
Government Architect's Office
PETER POULET
NSW Government Architect
Nominated Architect ARN 5764
Level 18 McKell Building 2-24 Rawson Place
Sydney NSW 2000 AUSTRALIA
A division of the Department of Finance & Services
MICHAEL COUTTS-TROTTER
Director General

TEMORA HOSPITAL
- NEW LIFT

DEMOLITION AND
FLOOR PLANS

PLAN RM NO	CONTRACT NUMBER
SCALES 1:100 @ A1	SHEET NO DA02
DESIGNED | PLOT DATE 10/07/2012	
DRAFTED | VERIFIED	REVISION

10/07/2012 3:52:15 PM G:\Projects\HEALTH\LEET_TEM_HOSP_LIFT\5_doc\arch\Temora Hospital\DA\TEM_HOSP_LIFT-DA02.pll

$NODE$

3.0 LIFT SERVICE SCOPE

1 GENERAL

1.1 SCOPE

Supply, install, test and commission MRL (Machine Room Less) passenger lifts with electric traction drive specified in this section and to the relevant provisions of AS 1735 Part 2 (2001) or Part 1, and Part 12 (1999). The installation shall also comply with the Building Code of Australia and the Occupational Health & Safety Regulations 2001.

The MRL lift must have the drive unit installed in the lift well and accessible via a landing lobby only. The controller must be installed adjacent to a landing entrance. No access on the side or rear of the well is available.

All fittings and fixtures to be supplied and installed complete to manufacturer's current printed instructions.

Include all costs to securely store the lift equipment off site and on site prior to installation. Include all transport and moving costs to deliver the equipment to its final installed position.

Contractor to provide temporary security fencing to secure the lift equipment materials and lift installation work site areas.

Contractor to provide all site accommodation, toilet facilities, secure tool storage, crib room etc required by site personnel under this contract.

Contractor to provide weather protection on site to the lift equipment materials and installation work areas for duration of materials on site and installation process.

Contractor to provide temporary protection of finishes to lift car up to time of handover.

Contractor to remove and dispose of all debris, rubbish, packing material, waste etc associated with this contact from the site before handover.

Provide protection to lift well openings to prevent persons from falls into the lift well. Protection to be complete with a door and lock to each level as required by the program. Provide scaffolding in the well for lift installation work. Provide overhead protection for persons working in the lift well.

Provide 4 weeks prior notice to Authorised Person indicating the date of proposed shipment of the lift equipment to the Hospital site. Provide 48 hours prior notice to confirm the delivery-taking place.

1.2 DESIGN AND INSTALLATION CERTIFICATION

Ensure that the design of the proposed equipment has been registered with NSW WorkCover and verified code compliance by a competent person. Provide supporting documents.

Before Practical Completion the contractor shall appoint a competent person to carry out tests on the equipment and safety devices. The Authorised Person may attend the tests. Provide test results and a certificate to confirm that the installation has been tested, complies with the Lift Code and is "safe to operate." Submit a lift registration form with relevant section completed.

Provide a copy of the fire test certificate for the landing doors.

1.3 SHOP DRAWINGS AND WORK PROGRAM

Within four weeks of Letter of Acceptance, supply shop drawings showing the following details:

- Loadings in lift well and pit.
- Car interior finishes;
- Car and landing control panels, indicators and signs.

1.4 INSPECTIONS

NOTICE: Give at least five working days notice so that the Authorised Person may attend the following:

- Safety Tests by the contractor's competent person.
- Supervisory inspection at the end of defect liability period.

Insufficient notice: If the Authorised Person is unable to attend a test due to insufficient notice, the test may be repeated at the Contractor's cost.

1.5 LIFT PERFORMANCE

PRODUCTION ITEMS: Manufactured items of equipment shall be new, of proven design, quiet in operation, in current production, manufactured by approved suppliers and type tests in accordance with AS1735.

> CAPACITY: The drive motor shall be capable of carrying the rated load at the rated speed and at the specified starts per hour without overheating or malfunction.

QUALITY OF RIDE: The quality of ride shall be compatible with the passenger's comfort during acceleration and deceleration. The horizontal and vertical vibration shall be within the specified limits.

LEVELLING: The levelling of car shall be within the specified limit.

NOISE: The car shall be made of solid material construction and free of vibration. Isolation pads shall be provided for lift car platform to eliminate vibration in the car.

1.6 MATERIALS AND WORKMANSHIP

STAINLESS STEEL: Sheet and plate stainless steel 304 to AS1449/303 brushed satin finish.

Lifts installed near coastal region, nominated in tender schedule shall have stainless steel faceplates of Marine grade 316.

FURNITURE STEEL SHEET: TO AS1595. Surface finish: Matt for painting

PAINTING: All metal surfaces other than stainless steel shall have a protective coat of paint or grease. All damage to the prime coat shall be made good. Paint metal surfaces in lift well and pit. The painting shall include guide rail brackets and pit support structure.

LIFT PIT: Do not cut holes for fixing or other purposes in lift pit walls or floor without prior approval.

ELECTRICAL WIRINGS: All wirings must be mechanical protection by cable ducts, rigid PVC conduits or other approved protections. Flexible conduits may be used for final connection to the equipment. Refer to Clause 3.10, AS3000 Wiring Rules.

2 LIFT WELL AND PIT

2.1 WELL PROTECTION AND SCAFFOLDING

Provide protection to the lift well openings to prevent persons from falling into the lift well. Install well protection fencing complete with a door and lock at each level as soon as it is required.

Provide scaffolding for lift installation work and overhead protection for persons working in the lift well.

2.2 GUIDE RAILS

Guide rails shall be T-section or other shapes approved by the statutory authorities. The rail shall have a groove and tongue at each end to permit smooth joint. Sections not specifically designed and manufactured for lift installations are not acceptable.

Provide bond blocks or inserts for guide rail brackets. Use bolts on sections of well which has been constructed without bond blocks or inserts.

2.3 PIT ACCESS AND CLEARANCE

Provide a pit access ladder permanently installed inside the liftwell and complying with Clause 10.4 of AS1732.2 (2001). Movable ladder is not acceptable. Two pit stop switches shall be provided, one near the top and another at the bottom of the pit ladder.

Identify the safe crouching area in the pit and mark in yellow the outline and the words "PERSON CLEARANCE".

A sump is required and will be provided in the pit. Supply a galvanised chequer plate to cover the sump.

Provide an alarm system or other communication means in the pit and at the car top to control the confined space hazard.

3 DRIVE AND CONTROL SYSTEMS

3.1 DRIVE UNIT

DRIVE UNIT: The drive unit shall be located in the lift well. The motor shall be a variable voltage variable frequency drive or other approved drive.

ACCESS FROM LIFT LOBBY ONLY: The drive unit must be installed in the lift well with the access to the unit from the landing lobby only. No access door on the side or rear of the lift well is allowed

3.2 CONTROL SYSTEM

The controller must be installed adjacent to a landing entrance and substantially flush with the lift well. In any case the thickness of the controller must not be greater than 250 mm from the landing door panel.

COLLECTIVE OPERATION For single lift serving two landings Provide floor buttons in the lift car and at each landing. A car or landing call when registered, shall remain registered until answered

DIRECTIONAL COLLECTIVE OPERATION: (For single lift serving more than two landings) Provide a single button at the terminal landings and 'up' and 'down' buttons at intermediate landings to allow registration for the direction of intended travel. The calls are answered by the lift travels in the same direction. A car or landing call shall remain registered until answered.

ELECTROMAGNETIC INTERFERENCE: The controller and other lift equipment shall not cause interference with radio, electronic, computer, medical or the like equipment. If necessary provide filters or interference suppressors.

3.3 LEVELLING

ACCURACY LIMITS: The specified limit is the distance above or below the landing level within which the car is required to stop under any load condition from 0% up to 100% of rated load.

3.4 ASCENDING CAR OVERSPEED PROTECTION

Provide the ascending car over speed protection as required by the Lift Code.

3.5 EXCLUSIVE SERVICE

Provide on the car control panel a key switch to allow the operation of the lift from the car control panel only.

3.6 FIRE SERVICE

Provide the fire service control in the lift car with a recall key switch at the main landing, in accordance with Lift Code AS1735.

3.7 OUT-OF-SERVICE KEY SWITCH

Provide a key switch at the main landing to disable all landing and car calls and put the lift out of service

3.8 LANDING SECURITY CONTROL

In additional to the Out-of-Service key switch, provide a key switch at each landing to permit any landing to be keyed ON or OFF. When the key switch at a landing is keyed OFF the landing button at that floor shall be inoperative. However, car call for that floor shall remain operative.

The key shall be removable in both ON and OFF positions.

The Out of Service key and the landing control key shall have the same key combination.

3.9 TRIP METER

Provide a trip meter on the controller to register the number of motor starts of each lift. The trip meter shall have a minimum of six digits and cannot be reset.

4 ELECTRICAL AND TELEPHONE

4.1 CIRCUIT BREAKERS AND PROTECTION

REQUIREMENT: Provide all circuit breakers required for the operation of the lift system. Connect the sub mains to the lift circuit breaker.

Provide electronic protections for the drive unit, including:

- overload current.
- phase loss.
- phase reversal.
- stalled drive.
- Over-travel timer.

Lift circuit breaker shall be lockable in the OFF position. The locking device shall be installed on the lift switchboard. Portable locks are not acceptable.

RCD: Provide residual current devices for all lighting and power circuits.

4.2 TELEPHONE

Provide a hand-free, self-dialling phone in the lift car. The phone shall be operated by a phone/Alarm button on the car control panel and shall automatically acknowledge the lift number and building location when activated.

The company's remote monitoring system may be provided in lieu of the hand-free self-dialling phone. At the end of operational maintenance period the contractor shall remove the remote monitoring system and replace it with the self-dialling phone detailed above.

APPLICATION: Apply and pay the application fee to the relevant authority for a separate exchange line for each lift. The Authorised Person shall provide the name and address for billing purpose, to be included in the application form. Builder will provide an exchange line to a final distribution frame adjacent to the controller at the lift lobby.

4.3 WIRING DIAGRAMS

One complete set of up-to-date schematic wiring diagrams shall be provided in the control panel. The diagrams shall be new and unmarked at the time of practical completion and shall be sealed in clear plastic sheets.

5 LANDING AND CAR DOORS

5.1 LANDING AND CAR DOORS

The doors shall be horizontal sliding and power operated.

Provide landing door unlocking device on all landing doors.

FIRE TESTING: The landing doors shall have one hour fire rating. Provide a certificate confirming that the doors and frames have been satisfactorily tested to AS 1735 Part 2 and Part 11. Affix a metal tag with the door manufacturer and the rating on each door. Provide the Authorised Person with a copy of the test certificate.

SIGHT GUARDS: Provide sight guards on the leading edges of landing doors to conceal the wiring and clearance space between car and landing doors.

5.2 DOOR PROTECTION UNIT

PASSENGER-PROTECTION DEVICE: Provide an infrared protection unit at the car door entrance. The protection shall be consists of series of beams to detect any motion between 50 mm and 1,600 mm from the sill level. When the beams are interrupted, the unit shall cause the doors to remain in the open position or reverse to the fully open position. The doors shall commence to close after the expiry of the preset period.

DELAY CLOSING: Where the closing of the doors is delayed for longer than a preset period, the doors shall be closed with a kinetic energy not exceeds 3.4 J and an audible alarm sounded in the car. The time for the delay shall be adjustable.

6 CONTROL BUTTONS AND INFORMATION SYSTEM

6.1 FACEPLATES, BOXES AND FIXING

FACEPLATES: Faceplates shall be not less than 2.5 mm thick reinforced where necessary against distortion.

BOXES: House buttons, indicators and key switches in pressed-steel boxes recessed in the car and landing so that the faceplates are flushed with the surfaces. Boxes containing lamps shall form light tight compartments.

FIXING: Raised countersunk crosshead screws finished to match the faceplate. Clip-on type fixings are not acceptable.

ENGRAVING: Floor designations, labels, and sign on the faceplates, buttons shall be machine-engraved and colour filled to standard colours.

REQUIREMENT: Provide the landing and car buttons, indicators and key switches required for lift operation.

6.2 CAR CONTROL PANELS

REQUIREMENT: Provide two control panels, main and secondary control panels. Both panels shall contain the following items:

- floor buttons;
- alarm/phone button;
- door open and door close buttons; and
- telephone operation instruction.

KEY SWITCHES: Provide key switches for the following functions:

- Car light;
- Ventilation fan;
- Fire service; and
- Exclusive Service.

The key switches shall be located on the main control panel. The car light and ventilation fan may be automatically controlled and switched off when the lift is not in use after a certain period. The period shall be adjustable between 0 to 30 minutes.

Provide a load notice with the owner's name, building address, the lift company's emergency phone number and other information required.

CAR INDICATORS

Provide an indicator in the car showing the car position and direction of travel.

6.3 LANDING CONTROL PANELS AND INDICATORS

Provide at each landing, self-illuminating call buttons, key switches, a car position and direction of travel indicator.

6.4 ALARM BELL

REQUIREMENT: Mount a bell above or below the car.

Power source: the bell shall of a diameter of not less than 100 mm and be supplied from the emergency power source.

6.5 EMERGENCY LIGHTING

REQUIREMENT: Provide in each lift a fluorescent lighting fitting capable of operating as an emergency light. The emergency unit shall operate upon failure of the power supply or when car light switch is turned to the test position. The emergency light shall be positioned over the main car control panel. The emergency supply shall have a minimum capacity of four hours continuous operation.

6.6 KEY IDENTIFICATION

Provide two keys for each key combination. To each key attach a metal ring and label engraved the building name, lift number and the purpose of the key.

7 LIFT CAR

7.1 CAR CONSTRUCTION

The car shall be made of steel frame and enclosure with steel or other approved materials. Provide isolation pads for the car platform to minimise vibration in the lift car.

7.2 CAR FINISHES

REQUIREMENT: Materials for car floor, floor coverings, and wall and ceiling linings shall comply with the combustibility characteristics in Clause 23.17.3 of AS1735.2.

GLAZING: When used in lift cars, glazing shall comply with Appendix H of AS1735.2 and the relevant requirements of AS1288 and AS 2208.

If not specified in the Schedule the colours and finishes shall be determined by the Authorised Person.

7.3 CAR EQUIPMENT

POWER OUTLET: Provide a power outlet (GPO) in the lift car. The GPO shall be protected by a residual current device.

Provide a ceiling mounted fan with a minimum flow of 60 litres, approximate 1,000 rpm. The fan shall be controlled by a key switch on the car panel.

8 FACILITIES FOR DISABILITIES

8.1 GENERAL

The design, construction and all equipment and components shall comply with the Lift Code AS1735 Part 12 (1999) Facilities for Persons with Disabilities.

8.2 FACILITIES FOR DISABILITIES

REQUIREMENT: The facilities for disabilities shall include, but not limited to the followings:

- Two car control panels.
- A handrail in car.
- Tactile symbols for all car and landing buttons.
- Design and position of buttons and indicators.
- Visible and audible indication in the car and on the landings.

8.3 INDICATORS IN CAR

In the lift car provide visual and audio indication for the car position and direction of travel. The size of the visual floor designation shall be at least 50 mm high and installed at 1800 mm above the floor.

Audio Indication: For lifts serving up to 3 floors a tone shall sound when the lift passes and arrives at a floor.

For lifts serving more than 3 floors the indication shall be in a form of floor announcement. The sound volume shall be adjustable.

8.4 AUDIBLE CAR BUTTONS

For lift serves more than two landings, the floor buttons in the lift car shall be provided with a short tone and illumination when the button is registered. The tone may be omitted if the operation of the button can be detected by touch.

8.5 INDICATORS AT LANDINGS

Provide visual and audio indication on the car position and direction of travel at all landings. The size of the visual floor designation shall be at least 50 mm high and installed at 1800 mm above the floor.

Audio indication: One tone shall sound to indicate the lift is travelling in the up direction and two tones indicate the lift is travelling in the down direction. The sound volume shall be adjustable.

8.6 HANDRAIL

Provide a handrail on the sidewall adjacent to the side control panel. The handrail shall extend from the front to the back of the lift car.

9 TESTING

9.1 GENERAL

TESTS: Carry out tests to confirm that the installation complies with all the requirements in the Lift Code AS1735 and the lift is safe to operate.

EQUIPMENT: Provide all equipment, tools, test weights and materials necessary for the carrying out of the required tests.

9.2 SAFETY TESTS

ACCEPTANCE TESTS: Test the effectiveness and safe operation of safety devices, including but not limited to the following:

- governor and safety gear;
- machine brake;
- door locks and safety circuits

BRAKE TESTS: Test that the brake can hold the rated load at the rated speed. Further test that the brake can hold the overload conditions at the test speed specified in the Lift Code AS1735.

BALANCE TEST Check the car balancing complies with the Lift Code AS1735.

PROTECTION AND TIMING DEVICES: Test the correct operation settings of protection and timing devices.

CLEARANCES: Check the top and bottoms clearances of the car and counterweight.

INSULATION RESISTANCE OF WIRING AND EQUIPMENT: Carry out tests as required under AS3000.

9.3 LOAD TESTS

REQUIREMENT: Carry out the following load tests:

PROCEDURE: Run the lift continuously for at least 30 minutes at the rated speed, and at full load.

Doors: Car doors and all landing doors shall operate correctly and at the required speed;

STOPPING: Operate the doors to open and close normally at each stop.

MALFUNCTION: Stop the test as soon as a malfunction is detected, rectify it, and restart the test. Do not count "down" time as part of the test period.

9.4 SPEED AND LEVELLING TESTS

REQUIREMENT: Demonstrate that the lift, when run before and after the load tests, meets the following requirements both with rated load and with no load:

Rated Speed: The lift shall achieve the specified rated speed in both directions.

Floor-to-floor: The time taken by the car to travel between landings, measured in either direction from the start of movement to stop, shall be within +/- 5% of the specified time.

Levelling: Levelling at each landing shall be within the limit specified.

Quality of car ride: Starting and stopping of the lift shall be smooth and complies with the specified limit.

9.5 CAR CONTROL SYSTEM TESTS

REQUIREMENT: Demonstrate by a comprehensive series of tests that the car control system complies with the specification. The tests shall include, but nor limited to, testing all car buttons, key switches, alarm, indicators, timing devices

10 MAINTENANCE

10.1 OPERATIONAL MAINTENANCE

OPERATIONAL MAINTENANCE PERIOD: The Operational Maintenance Periods shall be one year.

REQUIREMENT: During the operational maintenance period provide qualified and experienced personnel to perform the maintenance required for safe and reliable operation, including the following:

- Regular maintenance: Make service visits at lest one per month. Service shall be carried out more frequently if necessary.
- Breakdowns: Attend lift breakdowns or unsatisfactory operation at any time of the day or night to restore the lift to proper working order.
- Defects: Make good faults or damage caused by defects in the installation and replace defective part or parts showing signs of wear.
- Lift pit: Clean lift pit and all associated equipment at regular interval. Lift pit shall be clean of debris at a quarterly interval.
- Materials: Supply all materials including parts, lubricants and cleaning materials.
- Cleaning: Leave clean and tidy after each visit the areas and equipment in and on which maintenance work was performed.

RECORD: Provide a record of each visit including the date and time, work carried out, name of the service operator and any relevant information.

10.2 MAINTENANCE MANUAL

REQUIREMENT: At practical completion provide two copies of operation manual which shall include basic lift parameters, drive and controller system, function of each key switches, emergency procedures and other information.

10.3 SAFE TO OPERATE CERTIFICATION

Before the end of the operational maintenance period, carry out a safety inspection to test the safety and protective devices. Rectify any defective parts or components and certify if the lift is safe to operate.

11 LIFT SCHEDULES

11.1 STANDARD PARAMETERS FOR ALL LIFTS

TYPE OF DRIVE:	Variable voltage variable frequency
LOCATION OF DRIVE UNIT:	In lift well (Machine Room Less)
ACCESS TO DRIVE:	From lift entrance only
DUTY:	180 starts/hour
CONTRACT SPEED:	1.0 m/s
CONTRACT LOAD:	2000 kg (26 persons)
WELL SIZE:	Suited to minimum car dimensions
OVERHEAD:	3,800 mm
PIT :	1,750 mm
CLEAR CAR SIZE [MINIMUM]:	1,500mm wide x 2,500mm deep
FLOOR LEVELLING ACCURACY:	+/- 5 mm
RIDE QUALITY (peak to peak):	< 20 milli(g) (0.2 m/s^2) in X, Y & Z
CONTROL:	Directional collective operation
	Single button (for 2 landings)
CONTROL ON CAR PANEL:	Exclusive Service
	Fire Service
	Car light key switch
	Fan key switch
CONTROL AT LANDING:	Fire Service at main landing
	Out of Service at main landing
	Landing security control
DOOR OPERATION	
DOOR TYPE:	2-panel centre-opening power operated
DOOR OPENING:	1300 mm wide x 2,300 mm high
DOOR PROTECT UNIT	Infra-red type

CONTROL PANEL

NO OF CAR CONTROL PANELS:	Two
CAR & LANDING BUTTONS:	Stainless steel vandal resistance type
BUTTON & INDICATOR FACEPLATES:	Stainless steel satin finish

DOORS AND FRAMES FINISHES

LANDING DOOR:	Stainless steel satin finish
LANDING DOOR FRAME:	Stainless steel satin finish
CAR DOOR:	Stainless steel satin finish
SIGHT GUARDS:	Stainless steel satin finish

CAR INTERIORS

FRONT WALL	Stainless steel satin finish
SIDE & REAR WALLS:	Stainless steel Rigidised metal similar to 'Rimex", pattern to be selected
CEILING:	White laminate with fluorescent light
FLOOR:	Vinyl sheet, colour to be selected
SKIRTING:	Stainless steel
HANDRAIL:	Stainless steel on side wall
LIGHTING ON CAR PANELS:	> 200 lux

INDICATIVE FLOOR LEVELS EACH SITE

LEETON HOSPITAL	Ground Floor Level RL 100.00 1st Floor Level RL 103.86 2nd Floor Level RL 107.69
TEMORA HOSPITAL	Ground Floor Level RL 100.00 1st Floor Level RL 103.14 2nd Floor Level RL 106.39

11.2 VARIABLE PARAMETERS [NOT USED]

11.3 OPERATIONAL MAINTENANCE SCHEDULE

OPERATIONAL MAINTENANCE SERVICE: 52 weeks

MINIMUM SERVICE FREQUENCY:	One per month
CALLOUT RESPONSE TIMES:	
- when passenger trapped	within 30 minutes
- Other breakdowns	Two hours

STATEMENT OF ENVIRONMENTAL EFFECTS

TEMORA
DISTRICT HOSPITAL
LIFT REPLACEMENT

JULY 2012

PREPARED FOR MURRUMBIDGEE LOCAL HEALTH DISTRICT

NSW GOVERNMENT
Public Works
Government Architect's Office

TEMORA SHIRE COUNCIL
DEVELOPMENT APPLICATION No. 1213/0120
Approved subject to compliance with the E.P. & A.
Act 1979 (as amended). The Temora Shire L.E.P.,
Building Code of Australia (NSW Provisions)
and conditions set by Council
17/8/2012
Date
Director of Health & Building
[illegible] Temora Shire Council

Forward

This Statement of Environmental Effects (SEE) assesses the potential impacts that may arise from the proposal to undertake provision of a new passenger lift at Temora Hospital. The SEE has been prepared in accordance with the relevant provisions of the Environmental Planning and Assessment Act 1979 and Environmental Planning and Assessment Regulation 2000.

Property Address

TEMORA & DISTRICT HOSPITAL
119 Gloucester Street
TEMORA NSW 2666

Contact Details

Client
Murrumbidgee Local Health District

Project Manager
Project Management (Wagga Office)
NSW Public Works

Peter Hughes
T 02 6938 2877
M 0407 757 638
peter.hughes@services.nsw.gov.au

Project Architect
Government Architect's Office
NSW Public Works

Philip Rose/Robert Isles
T 02 9372 8380
Phil.Rose@services.nsw.gov.au

G:\Projects\HEALTH\LEET_TEM_HOSP_LIFT\4_da\arch\TEMORA SEE\TEMORA Hospital SEE 120625.docx

Table of Contents

REVISION	DATE	DESCRIPTION
Draft	5.07.2012	Draft for review

G:\Projects\HEALTH\LEET_TEM_HOSP_LIFT\4_da\arch\TEMORA SEE\TEMORA Hospital SEE 120625.docx

1. INTRODUCTION

1.1 Background to the Proposal

Temora & District Hospital is a 32 bed Public hospital and offers the following services Accident/emergency, Diabetes, Diversional therapy, Geriatric assessment, Home nursing, Maternity, Medical, Anaesthetics, Occupational therapy, Outpatients, Paediatric, Palliative care, Pathology, Physiotherapy, Podiatry, Radiology and Surgical.

NSW Health is proposing to carry out the provision of a new passenger lift. The existing lift is approaching the end of its service life and may experience mechanical failures. Due to the requirement to maintain operation within the hospital it is not feasible to replace the existing lift.

The Hospital is owned by NSW Health. It is located at the corner of Loftus Street and Gloucester Street, Temora in the Riverina NSW.

The new lift will provide a modern facility that ensures safe and convenient access for NSW Health, its employees, patients and the community.

1.2 Council Area

The local council for the development is Temora Shire Council.

105 Loftus Street
TEMORA 2666
Ph: 02 6980 1100
Fax: 02 6980 1138
Email: temshire@temora.nsw.gov.au

1.3 Proposed Development

The proposed development includes the following components:

- Provision of a new lift over 3 levels constructed within the existing building envelope.

The current operation of the Hospital will be un-changed.

2. LOCATION

2.1 Site Locality

Temora & District Hospital is located within the town centre of Temora, on the corner of Loftus Street and Gloucester Street. The site is defined as Lot 2 DP 572392. The hospital is readily accessible by vehicle and occupies generous, well landscaped grounds.

The site is primarily accessible by a driveway from Gloucester Street as well as secondary entries off surrounding roads. The site is approximately 110m x 242m giving a total site area of approx 2.4 Ha.

Figure 1 Town precinct. Temora Hospital in the centre of the photo.

The main 3 storey hospital building is part of Temora's heritage building stock. It dates from the late 1930s and is an example of art deco architecture. Like all hospitals it has undergone a series of additions over the last 50 years. The site is well established and contains a number of mature trees.

The site is zoned Special Purpose SP2 Infrastructure pursuant to Temora Shire Council Local Environmental Plan 2010. The hospital is not listed in Schedule 5 Environmental Heritage so has no formal heritage classification.

2.2 Existing Facility

The existing hospital comprises a major 2-3 storey brick building with adjacent 1-2 storey buildings providing a range of ancillary services, including staff accommodation and catering, laundry etc. The main facade of the hospital is quite imposing with a strong expression of the "art deco" style of cantilevered balconies and curved plan forms. The main building is in good condition and the main interior spaces are also well maintained and in largely original condition. The grounds are well established and have a strong link to the town centre. It is largely screened from surrounding properties and roads by generous landscaping, including mature trees.

PHOTO: Exterior of Temora Hospital showing vicinity of new lift.

PHOTO: Internal corridor showing location of new lift.

3. PROPOSED DEVELOPMENT

3.1 Objectives of the Proposal

The main objective of the development is to ensure the continuous operation of lift services at the hospital. The existing lift is due for replacement but due to operational requirements it is not feasible to have the lift out of operation for a period of weeks.

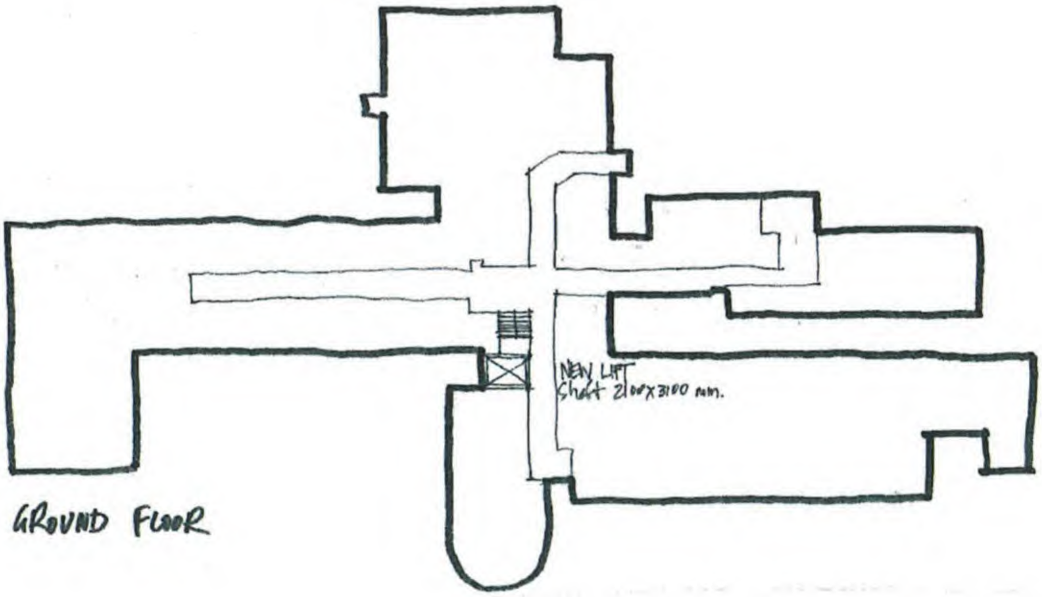
3.2 Options Considered

The primary requirement is to provide a lift in a central location that satisfies the current internal circulation/corridors of the hospital. Clearly the best location is close to the existing lift and stairs. A range of options were explored including new stand-alone lift shaft external to the building in a number of locations. These options would have entailed extensive building work and had a major impact on the appearance of the hospital.

3.3 Preferred Option

The preferred option was sited within the building close to the existing lift shaft and stairwell. This location was central to the existing corridor layout and had no impact on the external appearance of the hospital. In addition it can be constructed with minimal disruption to the day to day operations of the hospital. There is some re-working of a small number of rooms close to the new lift. The lift shaft will extend beyond the existing roof line for approximately 1m but will be very unobtrusive.

Plan of Proposed Development



TEMORA DISTRICT HOSPITAL
Proposed New Lift
Preferred Concept Option 20th April 2012
Government Architects Office Temora.001

4. ENVIRONMENTAL ASSESSMENT

Section 79C (1b) of the Environmental Planning and Assessment Act 1979, as amended, specifies the matters which a consent authority must consider when determining a development application. Comments on these matters are provided as follows.

4.1 Context and Setting

The Hospital occupies its own dedicated site with generous external grounds set well back from the adjoining roads and neighbouring properties. The main building is an imposing 3 storey brick structure built in the late 1930s. The surrounding context is residential.

Activities on the site are hospital activities, including patient transfers, visitors and staff movements, as well as deliveries for catering, maintenance and waste. Generally the activities do not generate high levels of noise and do not involve any industrial processes. Operating times are 24 hours a day, 7 days a week.

4.2 Access and Transport

Vehicular movements to the hospital for staff and visitors will not be affected by the new lift. The roads in the locality have sufficient capacity to accommodate the current volume of traffic and there will be no changes due to the proposed development.

4.3 Utilities

The site is fully serviced by existing utilities including electrical and telecommunication infrastructure. All infrastructure and services required to support the development are available in the existing facility.

4.4 Heritage

Temora Hospital was built in the interwar years and is a good example of Art Deco architecture. The neighbouring towns of Leeton and Griffith contain many fine examples of art deco architecture.

The Hospital is not listed as having local heritage significance. The proposed development has no impact on the primary facades of the main building as it will be constructed within the building envelope. Similarly, the new lift will have minimal impact on the interior spaces of the hospital, especially the existing open stair.

4.5 Other Land Resources

Not Applicable.

4.6 Water

The proposed lift will have no impact on water services.

4.7 Fire Fighting Water

The proposed lift will have no impact on fire fighting services.

4.8 Sewer

The proposed lift will have no impact on sewer. Any existing sewer within the building zone will be re-routed.

4.9 Stormwater

The proposed lift will have no impact on stormwater. The roof of the new lift shaft will drain to the existing roof with no increase in roof area.

4.10 Soils

The lift shaft will be contained within the existing sub-floor.

4.11 Air and Microclimate

There are no adverse impacts from the proposed development. There may be minimal short term impacts during construction but these impacts can be effectively managed.

4.12 Flora and Fauna

There is no vegetation within the construction zone.

4.13 Waste

NSW Health manages solid waste storage and collection facilities on the site, complying with Council waste requirements.

4.14 Energy

Where possible energy-saving devices and fittings will be installed into the proposed development through compliance with Part J of the Building Construction Code (BCC).

4.15 Noise and Vibration

Noise and vibration will be limited to that generated during construction of the works. Noise mitigation will be undertaken during the construction phase.

4.16 Natural Hazards

The site is not subject to flooding. The site is not bushfire prone

4.17 Safety Security and Crime Prevention

Hospital operations are designed to maximize safety and minimize opportunities for criminal behaviour. Security personnel maintain 24 hour oversight of the grounds and interior. After-hours access is by means of controlled entry.

4.18 Social Impact in the Locality

The proposed development is compatible with the land use zoning. It has minimal impact on the local community. Temora Hospital is an important provider of health services to the Leeton community.

4.19 Economic Impact in the Locality

The proposed development will facilitate the delivery of Health services to the community of Temora. The Hospital is an important local employer.

4.20 Cumulative Impacts

The existing Hospital has been operating successfully for many years. It is anticipated the proposed development works will have no impact on the surrounding community and will facilitate the delivery of Health services to the community of Temora.

4.21 The Public Interest

The proposed development is consistent with the public interest.

5. SAFEGUARDS DURING CONSTRUCTION

The following safeguards will be implemented during the construction phase. In addition to Council conditions, Public Works NSW requires a high level of environmental protection through its contract requirements.

Construction Areas and Hours of Construction

- Establishment of a temporary contractor's security compound and gates adjacent the building site.
- Controlled vehicle and workforce access points.
- Construction areas maintained in a clean and tidy state at all times.
- Construction hours would comply with local Council requirements.
- The workforce will use the nearest amenity areas within the contractor's construction compound for rest breaks and temporary "portaloo" toilet facilities on site.

Plant & Equipment

- All internal combustion engines would be maintained and in proper working order to ensure air and noise emissions were minimised.
- No vehicle maintenance would be permitted outside the work area except in emergencies.
- Mufflers would be fitted to all construction plant and equipment to meet EPA air and noise requirements.
- All plant / equipment would be inspected daily to avoid leakage of fuel, oil or hydraulic fluid to the worksite. Machinery found to be leaking would be repaired or replaced.
- All machinery would be secured against vandalism outside working hours.

Traffic Management and Access

- Construction access to the site will be within the Hospital site.
- Where possible truck movements would occur outside peak traffic flow periods.
- Inconvenience to adjacent users and nearby communities would be minimised through best construction and management practices and include the requirement for safe and efficient access for all local vehicles and pedestrians.
- Traffic during construction would be managed in accordance with the requirements of Australian Standard 1742.3 – 1996 *Manual of Uniform Traffic Control Devices Part 3: Traffic Control Devices for Works on Roads.*
- Access will be maintained at all times to private properties and businesses.

Waste Management and Contamination

- Waste management practices for the proposal would follow the resource management hierarchy principles (in priority order, avoidance, reuse, recycle, treatment and disposal) embodied in the *Waste Avoidance and Resource Recovery Act 2001.*
- Appropriate waste management practices will be adopted e.g. no burning or burying of wastes on site.
- All non-recyclable waste would be disposed of at legally operating waste disposal sites.
- No contaminated material would be used in any earthworks.
- Cleaning out of batched concrete mixing plant would not be permitted within the construction area.
- If any contaminated material (e.g. asbestos) were encountered during the carrying out of the works then safe work method statements and appropriate practices would be implemented.

- Any contaminated material would be classified first and then disposed of in accordance with EPA requirements at an EPA licensed waste facility.
- The workforce would use temporary portable toilet facilities on site.
- During construction the building contractor(s) will be required to segregate waste and re-cycle, where possible, for regular removal.
- The waste management plan should refer to ensuring that all waste generated by the project, shall be beneficially reused, recycled or directed to a waste facility lawfully permitted to accept the materials in accordance with the Waste Classification Guidelines (DECC, 2008) and the Protection of the Environment Operations Act 1997.

Erosion and Sediment Control

- Temporary erosion and sedimentation controls would be installed around the site.
- Regular monitoring and maintenance of the sedimentation controls would be implemented to ensure they perform in a fully functioning condition at all times.
- Exposed earthworks would be stabilised as quickly as possible.
- Exposed earthworks areas would be stabilised as quickly as possible.
- Mud deposited on the road network due to truck movements to and from the site would be either prevented or cleaned immediately.

Air Quality

- Best management practices would be implemented for minimising off-site dust impacts from the project.
- Loose materials transported in trucks travelling on public roads would be covered.
- Construction work would be regularly monitored and hand held water sprays would be used to suppress dust as required.
- Tailgates of all vehicles transporting materials on public roads will be securely fixed.

Noise

- Implementation of noise control measures, such as those in Australian Standard 2436-1981 *Guide to Noise Control on Construction, Maintenance and Demolition Sites* will be used to reduce construction noise levels. Reference to this Australian Standard suggests possible remedies such as screening, acoustic enclosures, engine silencing and substitution by alternative processes to reduce noise emission levels from typical construction equipment. In addition to these physical noise controls, the following general noise management measures would be followed:
- The contractor would use the best available techniques not entailing excessive cost to meet construction noise requirements as far as practicable in accordance with the Interim Construction Noise Guideline (DECC, 2009).

Additional Mitigation Measures

Additional mitigation measures to minimise the impact on the environment should include:

- Preparation of a Construction Environmental Management Plan (CEMP) in accordance with the 2004 DIPNR guideline for the Preparation of Environmental Management Plans.
- All materials on-site or being delivered to the site must be contained within the site. The

- Requirements of the Protection of the Environment Operations Act 1997 are to be complied with when placing/stockpiling loose material or when disposing of waste products or during any other activities which have the potential to pollute drains. The CEMP should include management procedures to ensure no pollution event occurs.
- All care and due diligence would be taken to prevent pollutant material entering drain inlets.
- Prior to commencement of construction activities, any services near the proposed building site which may be impacted by the works would be accurately located, which may include contacting 'Dial Before You Dig'.
- Authorities in relation to water utility provider, electricity supply authority, approved telecommunications carrier and gas carrier (as relevant to the site) should be consulted regarding any new connections to service infrastructure
- Construction hold points would be enforced in the following circumstances:
    - Failure to comply with environmental requirements;
    - Failure to secure all relevant approvals, licences and permits prior to commencement of any work relating to that approval, licence or permit;
    - Discovery of suspected or potentially contaminated ground.
- Concrete would be transported from legally operating established batching plants located near the proposal.
- The requirements of all applicable legislation would be met.

Each safeguard previously listed is the responsibility of the contractor and will be verified using a checklist, dated and signed off each workday over the construction period. NSW Department of Finance & Services representatives may periodically audit the contractor's construction environmental management plan to assess compliance.

The contractor's construction environmental management plan would indicate the names, responsibilities and authority of site management personnel who would have primary responsibility for implementing all environmental safeguards, monitoring effectiveness, rectifying environmental deficiencies, controlling further construction activities until deficiencies were rectified and the keeping of environmental records. The construction environmental management plan would include provision for hold points where environmental damage may occur, regular reports and audits on the environmental management of the project, details of non-conformance, verification activities and emergency responses.

6. CONCLUSION

The proposed development will contribute to the amenity and operational effectiveness of the existing Hospital. It has economic and social benefits and will have no environmental impacts in the locality.

The proposed development is consistent with the land use zoning and will contribute to the creation of a modern facility that provides positive workplace and occupational health benefits for NSW Health, its employees and the community.

ATTACHMENTS

01 Development Submission (Plans)

- **DA01 Site Plan**
- **DA02 Building Plan**
- **DA03 Elevations**

STATEMENT OF ENVIRONMENTAL EFFECTS

TEMORA
DISTRICT HOSPITAL
LIFT REPLACEMENT

JULY 2012

PREPARED FOR MURRUMBIDGEE LOCAL HEALTH DISTRICT

NSW GOVERNMENT
Public Works
Government Architect's Office

Forward

This Statement of Environmental Effects (SEE) assesses the potential impacts that may arise from the proposal to undertake provision of a new passenger lift at Temora Hospital. The SEE has been prepared in accordance with the relevant provisions of the Environmental Planning and Assessment Act 1979 and Environmental Planning and Assessment Regulation 2000.

Property Address

TEMORA & DISTRICT HOSPITAL
119 Gloucester Street
TEMORA NSW 2666

Contact Details

Client
Murrumbidgee Local Health District

Project Manager
Project Management (Wagga Office)
NSW Public Works

Peter Hughes
T 02 6938 2877
M 0407 757 638
peter.hughes@services.nsw.gov.au

Project Architect
Government Architect's Office
NSW Public Works

Philip Rose/Robert Isles
T 02 9372 8380
Phil.Rose@services.nsw.gov.au

Table of Contents

REVISION	DATE	DESCRIPTION
Draft	5.07.2012	Draft for review

G:\Projects\HEALTH\LEET_TEM_HOSP_LIFT\4_da\arch\TEMORA SEE\TEMORA Hospital SEE 120625.docx

1. INTRODUCTION

1.1 Background to the Proposal

Temora & District Hospital is a 32 bed Public hospital and offers the following services Accident/emergency, Diabetes, Diversional therapy, Geriatric assessment, Home nursing, Maternity, Medical, Anaesthetics, Occupational therapy, Outpatients, Paediatric, Palliative care, Pathology, Physiotherapy, Podiatry, Radiology and Surgical.

NSW Health is proposing to carry out the provision of a new passenger lift. The existing lift is approaching the end of its service life and may experience mechanical failures. Due to the requirement to maintain operation within the hospital it is not feasible to replace the existing lift.

The Hospital is owned by NSW Health. It is located at the corner of Loftus Street and Gloucester Street, Temora in the Riverina NSW.

The new lift will provide a modern facility that ensures safe and convenient access for NSW Health, its employees, patients and the community.

1.2 Council Area

The local council for the development is Temora Shire Council.

105 Loftus Street
TEMORA 2666
Ph: 02 6980 1100
Fax: 02 6980 1138
Email: temshire@temora.nsw.gov.au

1.3 Proposed Development

The proposed development includes the following components:

- Provision of a new lift over 3 levels constructed within the existing building envelope.

The current operation of the Hospital will be un-changed.

2. LOCATION

2.1 Site Locality

Temora & District Hospital is located within the town centre of Temora, on the corner of Loftus Street and Gloucester Street. The site is defined as Lot 2 DP 572392. The hospital is readily accessible by vehicle and occupies generous, well landscaped grounds.

The site is primarily accessible by a driveway from Gloucester Street as well as secondary entries off surrounding roads. The site is approximately 110m x 242m giving a total site area of approx 2.4 Ha.

Figure 1 Town precinct. Temora Hospital in the centre of the photo.

The main 3 storey hospital building is part of Temora's heritage building stock. It dates from the late 1930s and is an example of art deco architecture. Like all hospitals it has undergone a series of additions over the last 50 years. The site is well established and contains a number of mature trees.

The site is zoned Special Purpose SP2 Infrastructure pursuant to Temora Shire Council Local Environmental Plan 2010. The hospital is not listed in Schedule 5 Environmental Heritage so has no formal heritage classification.

2.2 Existing Facility

The existing hospital comprises a major 2-3 storey brick building with adjacent 1-2 storey buildings providing a range of ancillary services, including staff accommodation and catering, laundry etc. The main facade of the hospital is quite imposing with a strong expression of the "art deco" style of cantilevered balconies and curved plan forms. The main building is in good condition and the main interior spaces are also well maintained and in largely original condition. The grounds are well established and have a strong link to the town centre. It is largely screened from surrounding properties and roads by generous landscaping, including mature trees.

PHOTO: Exterior of Temora Hospital showing vicinity of new lift.

PHOTO: Internal corridor showing location of new lift.

3. PROPOSED DEVELOPMENT

3.1 Objectives of the Proposal

The main objective of the development is to ensure the continuous operation of lift services at the hospital. The existing lift is due for replacement but due to operational requirements it is not feasible to have the lift out of operation for a period of weeks.

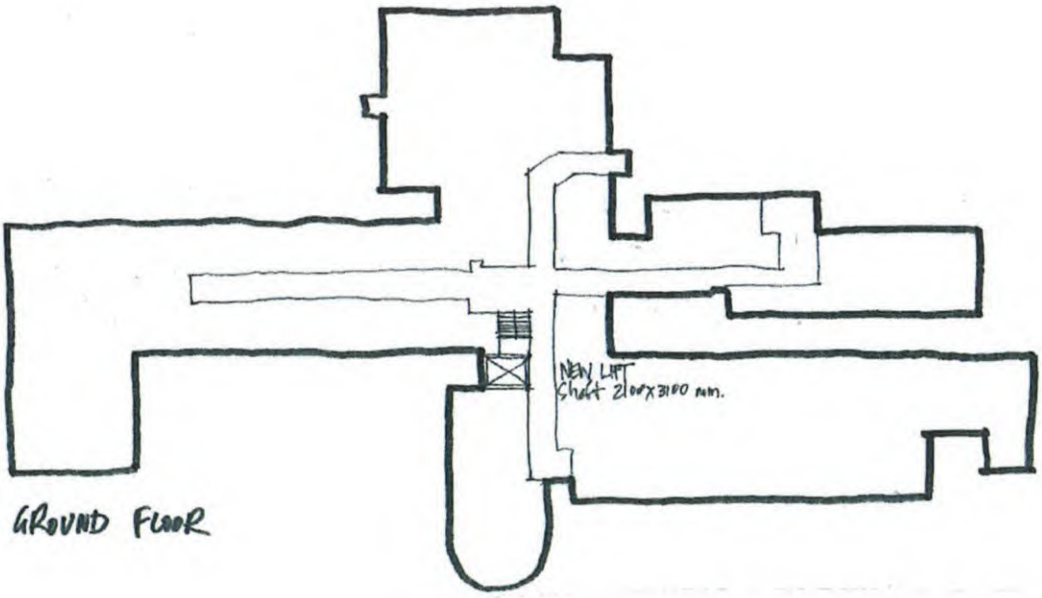
3.2 Options Considered

The primary requirement is to provide a lift in a central location that satisfies the current internal circulation/corridors of the hospital. Clearly the best location is close to the existing lift and stairs. A range of options were explored including new stand-alone lift shaft external to the building in a number of locations. These options would have entailed extensive building work and had a major impact on the appearance of the hospital.

3.3 Preferred Option

The preferred option was sited within the building close to the existing lift shaft and stairwell. This location was central to the existing corridor layout and had no impact on the external appearance of the hospital. In addition it can be constructed with minimal disruption to the day to day operations of the hospital. There is some re-working of a small number of rooms close to the new lift. The lift shaft will extend beyond the existing roof line for approximately 1m but will be very unobtrusive.

Plan of Proposed Development



TEMORA DISTRICT HOSPITAL
Proposed New Lift
Preferred Concept Option — 20th April 2012
Government Architects Office — Temora.001

4. ENVIRONMENTAL ASSESSMENT

Section 79C (1b) of the Environmental Planning and Assessment Act 1979, as amended, specifies the matters which a consent authority must consider when determining a development application. Comments on these matters are provided as follows.

4.1 Context and Setting

The Hospital occupies its own dedicated site with generous external grounds set well back from the adjoining roads and neighbouring properties. The main building is an imposing 3 storey brick structure built in the late 1930s. The surrounding context is residential.

Activities on the site are hospital activities, including patient transfers, visitors and staff movements, as well as deliveries for catering, maintenance and waste. Generally the activities do not generate high levels of noise and do not involve any industrial processes. Operating times are 24 hours a day, 7 days a week.

4.2 Access and Transport

Vehicular movements to the hospital for staff and visitors will not be affected by the new lift. The roads in the locality have sufficient capacity to accommodate the current volume of traffic and there will be no changes due to the proposed development.

4.3 Utilities

The site is fully serviced by existing utilities including electrical and telecommunication infrastructure. All infrastructure and services required to support the development are available in the existing facility.

4.4 Heritage

Temora Hospital was built in the interwar years and is a good example of Art Deco architecture. The neighbouring towns of Leeton and Griffith contain many fine examples of art deco architecture.

The Hospital is not listed as having local heritage significance. The proposed development has no impact on the primary facades of the main building as it will be constructed within the building envelope. Similarly, the new lift will have minimal impact on the interior spaces of the hospital, especially the existing open stair.

4.5 Other Land Resources

Not Applicable.

4.6 Water

The proposed lift will have no impact on water services.

4.7 Fire Fighting Water

The proposed lift will have no impact on fire fighting services.

4.8 Sewer

The proposed lift will have no impact on sewer. Any existing sewer within the building zone will be re-routed.

4.9 Stormwater

The proposed lift will have no impact on stormwater. The roof of the new lift shaft will drain to the existing roof with no increase in roof area.

4.10 Soils

The lift shaft will be contained within the existing sub-floor.

4.11 Air and Microclimate

There are no adverse impacts from the proposed development. There may be minimal short term impacts during construction but these impacts can be effectively managed.

4.12 Flora and Fauna

There is no vegetation within the construction zone.

4.13 Waste

NSW Health manages solid waste storage and collection facilities on the site, complying with Council waste requirements.

4.14 Energy

Where possible energy-saving devices and fittings will be installed into the proposed development through compliance with Part J of the Building Construction Code (BCC).

4.15 Noise and Vibration

Noise and vibration will be limited to that generated during construction of the works. Noise mitigation will be undertaken during the construction phase.

4.16 Natural Hazards

The site is not subject to flooding. The site is not bushfire prone

4.17 Safety Security and Crime Prevention

Hospital operations are designed to maximize safety and minimize opportunities for criminal behaviour. Security personnel maintain 24 hour oversight of the grounds and interior. After-hours access is by means of controlled entry.

4.18 Social Impact in the Locality

The proposed development is compatible with the land use zoning. It has minimal impact on the local community. Temora Hospital is an important provider of health services to the Leeton community.

4.19 Economic Impact in the Locality

The proposed development will facilitate the delivery of Health services to the community of Temora. The Hospital is an important local employer.

4.20 Cumulative Impacts

The existing Hospital has been operating successfully for many years. It is anticipated the proposed development works will have no impact on the surrounding community and will facilitate the delivery of Health services to the community of Temora.

4.21 The Public Interest

The proposed development is consistent with the public interest.

5. SAFEGUARDS DURING CONSTRUCTION

The following safeguards will be implemented during the construction phase. In addition to Council conditions, Public Works NSW requires a high level of environmental protection through its contract requirements.

Construction Areas and Hours of Construction

- Establishment of a temporary contractor's security compound and gates adjacent the building site.
- Controlled vehicle and workforce access points.
- Construction areas maintained in a clean and tidy state at all times.
- Construction hours would comply with local Council requirements.
- The workforce will use the nearest amenity areas within the contractor's construction compound for rest breaks and temporary "portaloo" toilet facilities on site.

Plant & Equipment

- All internal combustion engines would be maintained and in proper working order to ensure air and noise emissions were minimised.
- No vehicle maintenance would be permitted outside the work area except in emergencies.
- Mufflers would be fitted to all construction plant and equipment to meet EPA air and noise requirements.
- All plant / equipment would be inspected daily to avoid leakage of fuel, oil or hydraulic fluid to the worksite. Machinery found to be leaking would be repaired or replaced.
- All machinery would be secured against vandalism outside working hours.

Traffic Management and Access

- Construction access to the site will be within the Hospital site.
- Where possible truck movements would occur outside peak traffic flow periods.
- Inconvenience to adjacent users and nearby communities would be minimised through best construction and management practices and include the requirement for safe and efficient access for all local vehicles and pedestrians.
- Traffic during construction would be managed in accordance with the requirements of Australian Standard 1742.3 – 1996 *Manual of Uniform Traffic Control Devices Part 3: Traffic Control Devices for Works on Roads.*
- Access will be maintained at all times to private properties and businesses.

Waste Management and Contamination

- Waste management practices for the proposal would follow the resource management hierarchy principles (in priority order, avoidance, reuse, recycle, treatment and disposal) embodied in the *Waste Avoidance and Resource Recovery Act 2001*.
- Appropriate waste management practices will be adopted e.g. no burning or burying of wastes on site.
- All non-recyclable waste would be disposed of at legally operating waste disposal sites.
- No contaminated material would be used in any earthworks.
- Cleaning out of batched concrete mixing plant would not be permitted within the construction area.
- If any contaminated material (e.g. asbestos) were encountered during the carrying out of the works then safe work method statements and appropriate practices would be implemented.

- Any contaminated material would be classified first and then disposed of in accordance with EPA requirements at an EPA licensed waste facility.
- The workforce would use temporary portable toilet facilities on site.
- During construction the building contractor(s) will be required to segregate waste and re-cycle, where possible, for regular removal.
- The waste management plan should refer to ensuring that all waste generated by the project, shall be beneficially reused, recycled or directed to a waste facility lawfully permitted to accept the materials in accordance with the Waste Classification Guidelines (DECC, 2008) and the Protection of the Environment Operations Act 1997.

Erosion and Sediment Control

- Temporary erosion and sedimentation controls would be installed around the site.
- Regular monitoring and maintenance of the sedimentation controls would be implemented to ensure they perform in a fully functioning condition at all times.
- Exposed earthworks would be stabilised as quickly as possible.
- Exposed earthworks areas would be stabilised as quickly as possible.
- Mud deposited on the road network due to truck movements to and from the site would be either prevented or cleaned immediately.

Air Quality

- Best management practices would be implemented for minimising off-site dust impacts from the project.
- Loose materials transported in trucks travelling on public roads would be covered.
- Construction work would be regularly monitored and hand held water sprays would be used to suppress dust as required.
- Tailgates of all vehicles transporting materials on public roads will be securely fixed.

Noise

- Implementation of noise control measures, such as those in Australian Standard 2436-1981 *Guide to Noise Control on Construction, Maintenance and Demolition Sites* will be used to reduce construction noise levels. Reference to this Australian Standard suggests possible remedies such as screening, acoustic enclosures, engine silencing and substitution by alternative processes to reduce noise emission levels from typical construction equipment. In addition to these physical noise controls, the following general noise management measures would be followed:
- The contractor would use the best available techniques not entailing excessive cost to meet construction noise requirements as far as practicable in accordance with the Interim Construction Noise Guideline (DECC, 2009).

Additional Mitigation Measures

Additional mitigation measures to minimise the impact on the environment should include:

- Preparation of a Construction Environmental Management Plan (CEMP) in accordance with the 2004 DIPNR guideline for the Preparation of Environmental Management Plans.
- All materials on-site or being delivered to the site must be contained within the site. The

- Requirements of the Protection of the Environment Operations Act 1997 are to be complied with when placing/stockpiling loose material or when disposing of waste products or during any other activities which have the potential to pollute drains. The CEMP should include management procedures to ensure no pollution event occurs.
- All care and due diligence would be taken to prevent pollutant material entering drain inlets.
- Prior to commencement of construction activities, any services near the proposed building site which may be impacted by the works would be accurately located, which may include contacting 'Dial Before You Dig'.
- Authorities in relation to water utility provider, electricity supply authority, approved telecommunications carrier and gas carrier (as relevant to the site) should be consulted regarding any new connections to service infrastructure
- Construction hold points would be enforced in the following circumstances:
  - Failure to comply with environmental requirements;
  - Failure to secure all relevant approvals, licences and permits prior to commencement of any work relating to that approval, licence or permit;
  - Discovery of suspected or potentially contaminated ground.
- Concrete would be transported from legally operating established batching plants located near the proposal.
- The requirements of all applicable legislation would be met.

Each safeguard previously listed is the responsibility of the contractor and will be verified using a checklist, dated and signed off each workday over the construction period. NSW Department of Finance & Services representatives may periodically audit the contractor's construction environmental management plan to assess compliance.

The contractor's construction environmental management plan would indicate the names, responsibilities and authority of site management personnel who would have primary responsibility for implementing all environmental safeguards, monitoring effectiveness, rectifying environmental deficiencies, controlling further construction activities until deficiencies were rectified and the keeping of environmental records. The construction environmental management plan would include provision for hold points where environmental damage may occur, regular reports and audits on the environmental management of the project, details of non-conformance, verification activities and emergency responses.

6. CONCLUSION

The proposed development will contribute to the amenity and operational effectiveness of the existing Hospital. It has economic and social benefits and will have no environmental impacts in the locality.

The proposed development is consistent with the land use zoning and will contribute to the creation of a modern facility that provides positive workplace and occupational health benefits for NSW Health, its employees and the community.

ATTACHMENTS

01 Development Submission (Plans)

- **DA01 Site Plan**
- **DA02 Building Plan**
- **DA03 Elevations**

NSW GOVERNMENT
Public Works
Project Management

Riverina Western Region
2-6 Coleman Street WAGGA WAGGA, NSW 2650
T 02 6938 2880 F 02 6925 2087 TTY 1300 3
ABN 81 913 830 179 www.publicworks.nsw.gov.au

RECEIVED
30 JUL 2012
TEMORA SHIRE COUNCIL

Temora Shire Council,
PO Box 262,
TEMORA
NSW 2666

To Whom It May Concern,

DA: Temora District Hospital: Supply, Installation and construction of lift shaft and lift car

Development Application

Please find enclosed the Development Application for the Temora District Hospital Lift Project.

- Two (2) copies of the following:
    - Development Application Form
    - The Project Brief
    - The location of proposed works in relation to the building,
    - Floor plans of proposed buildings showing layout,
    - Elevations and Sections showing proposed works
    - Specifications that specify the Lift Service Scope.
    - Statement of Environmental Effects

If you require any further information please do not hesitate to contact me.

Yours sincerely,

Peter Hughes
Project Manager

12 July 2012

B/04/03

The Whiddon Group
dignity · integrity · growth

RECEIVED
10 MAY 2012
TEMORA SHIRE COUNCIL

7th May 2012

The General Manager
Temora Shire Council
PO BOX 262
TEMORA NSW 2666

Ref: BCM4597

Dear Sir

Re: Annual Fire Safety Statements
Greenstone Ldg & Narraburra Ldg
The Whiddon Group – Temora

Please find enclosed the following documents:

(a) The Frank Whiddon Masonic Homes of NSW Annual Fire Safety Statements for both buildings duly completed.

(b) National Fire Solutions Pty Ltd – Annual Fire Safety Statements for both buildings dated 2nd May 2012.

(c) As noted on Certificate, copies have been forwarded to NSW Fire Brigade.

Trusting the above meeting with your approval.

Yours faithfully

Phill Brown
Manager Building Services

Enc:

Building Dept. Fax No: 9827.6699

The Frank Whiddon Masonic Homes of New South Wales Registered Office: 81 Belmont Road, Glenfield NSW 2167 ABN 49 082 385 091
Trading as: **The Whiddon Group** Postal Address: Locked Bag 7014 Minto NSW 2566 **T:** +612 9827 6666 **F:** +612 9829 4163

ATTACHMENT C

ANNUAL FIRE SAFETY STATEMENT

Environmental Planning and Assessment Regulation 2000

FACILITY - ***Greenstone Lodge** – Noel Warren Masonic Village - **Temora***

CERTIFICATION

I, Phillip Brown, of The Frank Whiddon Masonic Homes of NSW, being the owner of the building described below, or the agent of the owner certify –

A) That each of the essential fire or other safety measures listed below:

1) has been assessed by a properly qualified person, and

2) was found when it was assessed, to be capable of performing:

(i) in the case of an essential fire safety measure applicable by virtue of a fire safety schedule, to a standard no less than that specified in the schedule, or

(ii) in the case of an essential fire safety measure applicable otherwise than by virtue of a fire safety schedule, to a standard no less than that to which the measure was originally designed and implemented, and

B) That the building has been inspected by a properly qualified person and was found, when it was inspected, to be in a condition that did not disclose any grounds for a prosecution under Division 7.

C) That the information contained in this Certificate is, to the best of my knowledge and belief, true and accurate.

IDENTIFICATION OF BUILDING

House/unit no. or name:	Greenstone Lodge
Street:	Gloucester Street
Suburb:	Temora
Nearest cross street:	Loftus

PARTICULARS OF BUILDING

Whole/part:	Whole
Description of part:	Class 3

DATE OF INSPECTION – 20.01.2012 22.02.2012 19.04.2012

OWNER'S DETAILS

Name:	The Frank Whiddon Masonic Homes of NSW
Address:	81 Belmont Road, GLENFIELD NSW 2167

CURRENT FIRE SAFETY SCHEDULE

The current Fire Safety Schedule for the building is attached to this statement.

ESSENTIAL FIRE SAFETY MEASURES

Measure	Standard of Performance	Date of Assessment
Fire Extinguishers	AS 2444	20.01.2012
Fire Hose Reels	AS 2444	20.01.2012
OWS System	AS 2220.2	19.04.2012
Fire/ Smoke Doors	AS 1905.1	22.02.2012
Emergency Lighting	AS 2293.1	22.02.2012
Fire Detection Systems	AS 1670	19.04.2012
Exit Signs	AS 2293.1	22.02.2012
Fail Safe Devices	1670.1	19.04.2012
Sprinkler System	AS 2188.4	19.04.2012
Electric Pump Sets	AS 2419	19.04.2012

Dated this 7th day of May 2012

Signed.. (Capacity *Agent*)

A copy of this statement has been forwarded to:

✓ Temora Shire Council
✓ NSW Fire Brigades

ATTACHMENT C

ANNUAL FIRE SAFETY STATEMENT

Environmental Planning and Assessment Regulation 2000

FACILITY - ***Narraburra Lodge** – Noel Warren Masonic Village - **Temora***

CERTIFICATION

I, Phillip Brown, of The Frank Whiddon Masonic Homes of NSW, being the owner of the building described below, or the agent of the owner certify –

A) That each of the essential fire or other safety measures listed below:

1) has been assessed by a properly qualified person, and

2) was found when it was assessed, to be capable of performing:

(i) in the case of an essential fire safety measure applicable by virtue of a fire safety schedule, to a standard no less than that specified in the schedule, or

(ii) in the case of an essential fire safety measure applicable otherwise than by virtue of a fire safety schedule, to a standard no less than that to which the measure was originally designed and implemented, and

B) That the building has been inspected by a properly qualified person and was found, when it was inspected, to be in a condition that did not disclose any grounds for a prosecution under Division 7.

C) That the information contained in this Certificate is, to the best of my knowledge and belief, true and accurate.

IDENTIFICATION OF BUILDING

House/unit no. or name:	Narraburra Lodge
Street:	Kitchener Road
Suburb:	Temora
Nearest cross street:	Bundawarrah Road

PARTICULARS OF BUILDING

Whole/part:	Whole
Description of part:	Class 9A

DATE OF INSPECTION – 19.04.2012 15.02.2012 21.02.2012 27.01.2012

OWNER'S DETAILS

Name:	The Frank Whiddon Masonic Homes of NSW
Address:	81 Belmont Road, GLENFIELD NSW 2167

CURRENT FIRE SAFETY SCHEDULE

The current Fire Safety Schedule for the building is attached to this statement.

ESSENTIAL FIRE SAFETY MEASURES

Measure	Standard of Performance	Date of Assessment
Fire Extinguishers	AS 2444	27.01.2012
Fire Hose Reels	AS 2444	27.01.2012
Fire/ Smoke Doors	AS 1905 BCA C3.4	21.02.2012
Emergency Lights	AS 2293.1	21.02.2012
Fire Hydrants	AS 2419.1	15.02.2012
Fire Detection Systems	AS 1670.1	19.04.2012
EWIS/ OWS System	AS 2220.2	19.04.2012
Fail Safe Devices	AS 1670.1	19.04.2012
Exit Lights	AS 2293.1	19.04.2012

Dated this 7th day of May 2012

Signed... (Capacity *Agent*)

A copy of this statement has been forwarded to:

✓ Temora Shire Council
✓ NSW Fire Brigades

Fire Safety Certificate

National Fire Solutions Pty Ltd
ABN: 56 087 239 085
Sydney | Melbourne | Perth | Brisbane | Canberra | Albury | Wagga Wagga | Wollongong www.natfire.com.au

National Fire Solutions Pty Ltd confirm they have conducted the inspection and testing of Fire Protection Equipment or other safety measures at the property noted below

Description of property being certified.

Name of property: Greenstone Lodge Temora
Address of property: 37 Gloucester Street Temora, NSW, 2666
Certificate date range: 02/05/2011 to 02/05/2012

Assessment of safety measures.

The following list of essential services or other safety measures were found to be, at the date of inspection, maintained to the relevant standard and were capable of operating to a standard not less than that to which it was originally designed.

Product Name	Maintenance Standard	Original Design Standard	Date of last service within period
Booster Pump Set - Sprinklers	AS 1851-2005.3	AS2419-1994	19/04/2012
Domestic Fire Sprinkler System	AS 1851-2005.2	AS 2118	19/04/2012
Fire Extinguishers, Hose Reels and Blankets	AS 1851-2005.14,15,16	AS 2444 / AS 2441	20/01/2012
Fire/Smoke Doors	AS 1851-2005.17	AS 1905.1	22/02/2012
Fire/Smoke Doors	AS 1851-2005.17	AS 1905.1	22/02/2012
Inertia - Occupant Warning System	AS 1851-2005.10	AS 2220.2	19/04/2012
Notifier - 2800 Fire Indicator Panel	AS 1851-2005.6	AS 1670.1	19/04/2012
Stand Alone - Emergency & Exit Lighting	AS 2293.2	AS 2293.1	22/02/2012

Equipment status

As at the date of this document, FireTraX has recorded no defects for the equipment listed above.

Certification.

I Robert Ingold of National Fire Solutions Pty Ltd

Being an authorised certifying officer for and on behalf of National Fire Solutions Pty Ltd , being the fire protection maintenance contractor of the building described above, certify that:

☒ Each of the essential fire safety measures listed above:
- has been assessed by a properly qualified person, and
- was found, as at the date of inspection, to be capable of performing to at least the standard listed on this document

☒ The information contained in this statement is true and accurate to the best of my knowledge and belief.

Signature.

Name: Robert Ingold
Position: Regional Manager
Company: National Fire Solutions Pty Ltd

Signature: per Hood.

Fire Safety Certificate

National Fire Solutions Pty Ltd
ABN: 56 087 239 085
Sydney | Melbourne | Perth | Brisbane | Canberra | Albury | Wagga Wagga | Wollongong **www.natfire.com.au**

National Fire Solutions Pty Ltd confirm they have conducted the inspection and testing of Fire Protection Equipment or other safety measures at the property noted below

Description of property being certified.

Name of property:	Narraburra Lodge Temora
Address of property:	Kitchener Road Temora , NSW, 2666
Certificate date range:	**02/05/2011 to 02/05/2012**

Assessment of safety measures.

The following list of essential services or other safety measures were found to be, at the date of inspection, maintained to the relevant standard and were capable of operating to a standard not less than that to which it was originally designed.

Product Name	Maintenance Standard	Original Design Standard	Date of last service within period
EWIS System	AS 1851-2005.9,10	AS 2220.2	19/04/2012
Fire Extinguishers, Hose Reels and Blankets	AS 1851-2005.14,15,16	AS 2444 / AS 2441	27/01/2012
Fire Hydrants	AS 1851-2005.4	AS 2419.1	15/02/2012
Fire/Smoke Doors	AS 1851-2005.17	AS 1905.1	21/02/2012
Firenet - Analogue/AddressableFire Control Panel	AS 1851-2005.6	AS 1670.1	19/04/2012
Stand Alone - Emergency & Exit Lighting	AS 2293.2	AS 2293.1	21/02/2012

Equipment status

As at the date of this document, FireTraX has recorded no defects for the equipment listed above.

Certification.

I Robert Ingold of National Fire Solutions Pty Ltd

Being an authorised certifying officer for and on behalf of National Fire Solutions Pty Ltd , being the fire protection maintenance contractor of the building described above, certify that:

☒ Each of the essential fire safety measures listed above:

- has been assessed by a properly qualified person, and
- was found, as at the date of inspection, to be capable of performing to at least the standard listed on this document

☒ The information contained in this statement is true and accurate to the best of my knowledge and belief.

Signature.

Name: Robert Ingold
Position: Regional Manager
Company: National Fire Solutions Pty Ltd

Signature: per Hood.

B/04/99

The **Whiddon** Group
dignity·integrity·growth

RECEIVED
20 MAY 2010
TEMORA SHIRE COUNCIL

14 May 2010

The General Manager
Temora Shire Council
PO BOX 262
TEMORA NSW 2666

Ref: BCM3798

Dear Sir

Re: Annual Fire Safety Statements
Greenstone Ldg & Narraburra Ldg
The Whiddon Group – Temora

Please find enclosed the following documents:

(a) The Frank Whiddon Masonic Homes of NSW Annual Fire Safety Statements for both buildings duly completed.

(b) Wagga Fire Security – Annual Fire Safety Statements for both buildings dated 11th May 2010.

(c) As noted on Certificate, copies have been forwarded to NSW Fire Brigade.

Trusting the above meeting with your approval.

Yours faithfully

Phill Brown
Manager Building Services

Enc:

Building Dept. Fax No: 9827.6699

ATTACHMENT C

ANNUAL FIRE SAFETY STATEMENT

Environmental Planning and Assessment Regulation 2000

FACILITY - ***Narraburra Lodge** – Noel Warren Masonic Village - **Temora***

CERTIFICATION

I, Phillip Brown, of The Frank Whiddon Masonic Homes of NSW, being the owner of the building described below, or the agent of the owner certify –

A) That each of the essential fire or other safety measures listed below:

1) has been assessed by a properly qualified person, and

2) was found when it was assessed, to be capable of performing:

(i) in the case of an essential fire safety measure applicable by virtue of a fire safety schedule, to a standard no less than that specified in the schedule, or

(ii) in the case of an essential fire safety measure applicable otherwise than by virtue of a fire safety schedule, to a standard no less than that to which the measure was originally designed and implemented, and

B) That the building has been inspected by a properly qualified person and was found, when it was inspected, to be in a condition that did not disclose any grounds for a prosecution under Division 7.

C) That the information contained in this Certificate is, to the best of my knowledge and belief, true and accurate.

IDENTIFICATION OF BUILDING

House/unit no. or name:	Narraburra Lodge
Street:	Kitchener Road
Suburb:	Temora
Nearest cross street:	Bundawarrah Road

PARTICULARS OF BUILDING

Whole/part:	Whole
Description of part:	

DATE OF INSPECTION – 22.04.2010

OWNER'S DETAILS

Name:	The Frank Whiddon Masonic Homes of NSW
Address:	81 Belmont Road, GLENFIELD NSW 2167

CURRENT FIRE SAFETY SCHEDULE

The current Fire Safety Schedule for the building is attached to this statement.

ESSENTIAL FIRE SAFETY MEASURES

Measure	Standard of Performance	Date of Assessment
Fire Extinguishers	AS 2444	22.04.2010
Fire Hose Reels	AS 2441	22.04.2010
Fire/ Smoke Doors	AS 1905 BCA C3.4	22.04.2010
Emergency Lights	AS 2293.1	22.04.2010
Fire Hydrants	AS 2419.1	22.04.2010
Fire Detection Systems	AS 1670	22.04.2010
EWIS/ OWS System	AS 1670.4	22.04.2010
Fail Safe Devices	BCA D2.21	22.04.2010
Exit Lights	AS 2293.1	22.04.2010
Fire Damper	AS 1668.1	26.03.2010

Dated this 14th day of May 2010

Signed.. (Capacity *Agent*)

A copy of this statement has been forwarded to:

√ Temora Shire Council
√ NSW Fire Brigades

Wagga Fire
& Security

COPY

Annual Fire Safety Statement

Under the Environmental Planning and Assessment Regulation 2000
– Division 5, Clauses 175 and 178

Type of Certificate ☑ Annual ☐ Supplementary

I Richard Turner

Of Wagga Fire & Security,
Unit 2/1 Jones St
Wagga Wagga NSW 2650
P: (02) 6921 5554 F: (02) 69213943 E: admin@waggafiresecurity.com.au

Certify:

1) That each essential fire safety measure specified in this statement has been assessed by a properly qualified person and was found, when it was assessed, to be capable of performing:
    i. *In the case of an essential fire safety measure applicable by virtue of a fire safety schedule, to a standard no less than that specified in the schedule, or*
    ii. In the case of an essential fire safety measure applicable otherwise than by virtue of a fire safety schedule, to a standard no less than that to which the measure was originally designed and implemented, and;
2) The building has been inspected by a properly qualified person and was found, that at the date it was inspected, to be in a condition that did not disclose any grounds for a prosecution under Division 7 of the Environmental Planning and Assessment Regulation 2000, and;
3) The information contained in this statement is, to the best of my knowledge and belief, true and accurate.

Identification of Building

Identification: **Narraburra Lodge**
Street: **Kitchener Road**
Nearest Cross Street: **French Street**
Locality / Town: **TEMORA NSW 2666**

Particulars of Building

☑ Whole
☐ Part of Building Description:

Date of Assessment Dated this 22nd day of April 2010

Owners Details

Name(s) The Frank Whiddon Masonic Homes of New South Wales
Address Narraburra Lodge, Kitchener Road
TEMORA State NSW Post Code 2666

Essential Fire Safety Measures

Measure/Item	Standard of Performance	Standard of Maintenance
Fire Extinguishers	AS 2444	AS1851.1
Fire Hose Reels	AS 1221	AS 1851.2
Fire Hydrants	AS 2419.1	AS 1851.4
EWIS / OWS	AS 1670.4	AS 1851.10
Fire / Smoke Doors	AS 1905	AS 1851.7
Exit/Emergency Lighting	AS 2293.1	AS 2293.2
Fire Detection System	AS 1670.1	AS 1851.8
Fail Safe Devices	D2, 21 of BCA	

Declaration *I declare that all the information given is true and correct*

Signature: Date: **11th May 2010.**

A copy of this certificate together with the relevant fire safety schedule must be forwarded to the Council and to the Commissioner of the New South Wales Fire Brigades

A copy of this certificate together with the relevant fire safety schedule must be prominently displayed within the building

MARTIN & WHEELER PTY. LTD
ABN 50 003 531 557
AIR CONDITIONING ENGINEERS
DESIGN & INSTALLATION SERVICE
mandwptyltd@bigpond.com

187 MORGAN STREET
WAGGA WAGGA, NSW. 2650
P.O.Box 4009, ASHMONT
TEL: (02) 6921 6390
FAX: (02) 6931 8332

N.W.BLAND & SONS

26th March 2010

Attn : Rob Bland

CERTIFICATE of COMPLIANCE

This is to certify that the intumescent fire damper installed to the drier exhaust in the Laundry ductwork at Narraburra Lodge – Temora has been installed in accordance with AS1668.1.

Signed:

Bryan Wheeler
(Director)

ATTACHMENT C

ANNUAL FIRE SAFETY STATEMENT

Environmental Planning and Assessment Regulation 2000

FACILITY - *Greenstone Lodge* – *Noel Warren Masonic Village* - *Temora*

CERTIFICATION

I, Phillip Brown, of The Frank Whiddon Masonic Homes of NSW, being the owner of the building described below, or the agent of the owner certify –

A) That each of the essential fire or other safety measures listed below:

1) has been assessed by a *properly qualified person*, and

2) was found when it was assessed, to be capable of performing:

(i) In the case of an essential fire safety measure applicable by virtue of a fire safety schedule, to a standard no less *than that specified* in the schedule, or

(ii) in the case of an essential fire safety measure applicable otherwise than by virtue of a fire safety schedule, to a standard no less than that to which the measure was originally designed and implemented, and

B) That the building has been inspected by a properly qualified person and was found, when it was inspected, to be in a condition that did not disclose any grounds for a prosecution under Division 7.

C) That the information contained in this Certificate is, to the best of my knowledge and belief, true and accurate.

IDENTIFICATION OF BUILDING

House/unit no. or name:	Greenstone Lodge
Street:	Gloucester Street
Suburb:	Temora
Nearest cross street:	Loftus

PARTICULARS OF BUILDING

Whole/part:	Whole
Description of part:	

DATE OF INSPECTION – 22.04.2010

OWNER'S DETAILS

Name:	The Frank Whiddon Masonic Homes of NSW
Address:	81 Belmont Road, GLENFIELD NSW 2167

CURRENT FIRE SAFETY SCHEDULE

The current Fire Safety Schedule for the building is attached to this statement.

ESSENTIAL FIRE SAFETY MEASURES

Measure	Standard of Performance	Date of Assessment
Fire Extinguishers	AS 2444	22.04.2010
Fire Hose Reels	AS 2441	22.04.2010
Fire Hydrants	AS 2419.1	22.04.2010
OWS System	AS 1670.4	22.04.2010
Fire/ Smoke Doors	AS 1905 BCA C3.4	22.04.2010
Emergency Lighting	AS 2293.1	22.04.2010
Fire Detection Systems	AS 1670	22.04.2010
Exit Signs	AS 2293.1	22.04.2010
Fail Safe Devices	BCA D2.21	22.04.2010
Sprinkler System	AS 2188.4	22.04.2010
Electric Pump Sets	AS 2941	22.04.2010

Dated this 14th day of May 2010

Signed.. (Capacity *Agent*)

A copy of this statement has been forwarded to:

√ Temora Shire Council
√ NSW Fire Brigades

COPY

Wagga Fire
& Security

Annual Fire Safety Statement

Under the Environmental Planning and Assessment Regulation 2000
– Division 5, Clauses 175 and 178

Type of Certificate ☑ Annual ☐ Supplementary

I Richard Turner

Of Wagga Fire & Security,
Unit 2/1 Jones St
Wagga Wagga NSW 2650
P: (02) 6921 5554 F: (02) 69213943 E: admin@waggafiresecurity.com.au

Certify:

1) That each essential fire safety measure specified in this statement has been assessed by a properly qualified person and was found, when it was assessed, to be capable of performing:
   i. In the case of an essential fire safety measure applicable by virtue of a fire safety schedule, to a standard no less than that specified in the schedule, or
   ii. In the case of an essential fire safety measure applicable otherwise than by virtue of a fire safety schedule, to a standard no less than that to which the measure was originaly designed and implemented, and;
2) The building has been inspected by a properly qualified person and was found, that at the date it was inspected, to be in a condition that did not disclose any grounds for a prosecution under Division 7 of the Environmental Planning and Assessment Regulation 2000, and;
3) The information contained in this statement is, to the best of my knowledge and belief, true and accurate.

Identification of Building
Identification: Greenstone Lodge
Street: Gloucester Street
Nearest Cross Street: Temora Young Road
Locality / Town: TEMORA NSW 2666

Particulars of Building
☑ Whole
☐ Part of Building Description:

Date of Assessment Dated this 22nd day of April 2010

Owners Details
Name(s) The Frank Whiddon Masonic Homes of New South Wales
Address Greenstone Lodge, Gloucester Street
TEMORA State NSW Post Code 2666

Essential Fire Safety Measures

Measure/Item	Standard of Performance	Standard of Maintenance
Fire Extinguishers	AS 2444	AS1851.1
Fire Hose Reels	AS 1221	AS 1851.2
Fire Hydrants	AS 2419.1	AS 1851.4
OWS	AS 1670.4	AS 1851.10
Fire / Smoke Doors	AS 1905	AS 1851.7
Exit/Emergency Lighting	AS 2293.1	AS 2293.2
Fire Detection System	AS 1670.1	AS 1851.8
Fail Safe Devices	D2, 21 of BCA	
Sprinkler System - Residential	AS 2118.4	AS 1851.3
Electric Pump Sets	AS 2941-	AS1851.14

Declaration I declare that all the information given is true and correct

Signature:

Date: 11th May 2010.

A copy of this certificate together with the relevant fire safety schedule must be forwarded to the Council and to the Commissioner of the New South Wales Fire Brigades

A copy of this certificate together with the relevant fire safety schedule must be prominently displayed within the building

Section 10.7 Certificates

TEMORA SHIRE COUNCIL

ALL COMMUNICATIONS TO:
THE GENERAL MANAGER
PO BOX 262
TEMORA NSW 2666

TEL: 02-6980 1100
FAX: 02-6980 1138
E: temshire@temora.nsw.gov.au

PLANNING CERTIFICATE S10.7 (2)

Environmental Planning and Assessment Act 1979

Applicant:	**JK Environments**	*Applicant Ref:*	
	C/- JK Geotechnics	*Certificate No:*	**60/2023**
	115 Wicks Road	*Fees:*	**$62.00**
	MACQUARIE PARK NSW 2113	*Receipt No:*	**277086**

Description of Land

House No/Name:	**169-189**	Street:	**Loftus**
Locality:	**Temora**	Council's Assessment No:	**2387**
Lot No:	**2**	Section:	
Owner:	**Health Administration Corporation**	DP:	**572392**
Address:	**C/- Murrumbidgee Local Health** **Locked Bag 10** **WAGGA WAGGA NSW 2650**		

1. Names of relevant planning instruments and development control plans:

(a) Name of any Local Environmental Plan (LEP) that applies to the land and the date when that planning instrument took effect:
Temora Local Environmental Plan 2010 – 10th June, 2010 (As amended 9th March, 2022)

(b) Name of any DRAFT Local Environmental Plan (LEP) that applies to the land:
Nil

(c) Name of any Development Control Plan (DCP) that applies to the land:
Temora Shire Development Control Plan 2012

(d) Name of any Development Control Plan (DCP) prepared by the Director-General:
Nil
(e) Name of any State Environmental Planning Policy (SEPP) that applies to the land:

- State Environmental Planning Policy (Biodiversity and Conservation) 2021
- State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004
- State Environmental Planning Policy (Exempt and Complying Development Codes) 2008
- State Environmental Planning Policy (Housing) 2021
- State Environmental Planning Policy (Industry and Employment) 2021
- State Environmental Planning Policy 65 – Design Quality of Residential Flat Development.
- State of Environmental Planning Policy (Planning Systems) 2021
- State of Environmental Planning Policy (Precincts - Regional) 2021
- State Environmental Planning Policy (Primary Production) 2021
- State Environmental Planning Policy (Resilience and Hazards) 2021
- State Environmental Planning Policy (Resources and Energy) 2021
- State Environmental Planning Policy (Transport and Infrastructure) 2021

2. Zoning and Land Use under relevant planning instruments:

(a) The land is within Zone:
Zone SP2 Infrastructure

(b) Objectives of this Zone:

- To provide for infrastructure and related uses.
- To prevent development that is not compatible with or that may detract from the provision of infrastructure.

(c) The types of development that may be carried out in Zone SP2 Infrastructure without development consent:

Roads.

(d) The types of development that may not be carried out in Zone SP2 Infrastructure except with development consent:

The purpose shown on the Land Zoning Map, including any development that is ordinarily incidental or ancillary to development for that purpose.

(e) The types of development that are PROHIBITED in Zone SP2 Infrastructure:

Any developments not specified in item (c) & (d)

(f) Whether the lands' dimensions are such as to permit the erection of a dwelling-house on the land, and if so, the minimum land dimensions so fixed:

Not Permitted

(g) Whether the land includes or comprises critical habitat:

No

(h) Whether the land is in a conservation area:

No

(i) Whether an item of environmental heritage is situated on the land:

No

3. Contribution Plans:

(a) The following contribution plans apply to the land:

Temora Shire Developer Contributions Plan 2020

4. Complying Development:

(a) Whether the land subject of this Certificate, is land on which complying development may be carried out under each of the codes for complying development because of the provisions of clause 1.17A(1)(c)-(e), (2), (3) or (4), 1.18(1) (c3) or 1.19 of the State Environmental Planning Policy (Exempt and Complying Development Codes, 2008)

No – Complying development under the Housing Code, Rural Housing Code, General Development Code, Commercial and Industrial Alterations Code, Commercial and

Industrial (New Buildings and Alterations) Code, Container Recycling Facilities Code, Subdivisions Code, Demolition Code and Fire Safety Code may not be carried out on this land. This land is excluded from the SEPP because it is land that is reserved for a public purpose in an environmental planning instrument and/or land that is bushfire prone and/or a flood control lot and/or is a site of historical significance.

5. Exempt Development:

(a) Whether the land subject of this Certificate, is land on which exempt development may be carried out under the codes for exempt development because of the provisions of clause 1.16(1) (b1)–(d) or 1.16A of the State Environmental Planning Policy (Exempt and Complying Development Codes, 2008)
Yes – Exempt development under the Exempt Development Codes may be carried out on this land.

6. Affected building notices and building product rectification orders:

(a) Whether there is any affected building notice of which the Council is aware in force in respect of the land
Temora Shire Council is not aware of any affected building notice that is in force in respect of the land.

(b) Whether there is any building product rectification order of which the Council is aware in force in respect of the land and has not been fully complied with
Temora Shire Council is not aware of any building rectification order that is in force in respect of the land that has not been fully complied with.

(c) Whether there is any notice of intention to make a building product rectification order of which the council is aware has been given in respect of the land and is outstanding
Temora Shire has not been advised of any intention to make a building product rectification order in respect of the land

7. Land Reserved for Acquisition:

(a) Whether the land is subject to acquisition by a public authority under any planning instrument or draft planning instrument:
The land is NOT affected by any environmental planning instrument or proposed environmental planning instrument referred to Clause 1 that makes provision in relation to the acquisition of the land by a public authority referred to in Section 3.15 of the Act.

8. Road Widening and Road Realignment:

(a) Whether the land is affected by any road widening and road realignment proposals under Division 2 of Part 3 of the *Roads Act 1993*, any Environmental Planning Instrument or any resolution of the Council:
(i) The land is NOT affected by any road widening or realignment under: • Division 2 of Part 3 of the Roads Act, 1993 • Provisions of the Temora Local Environmental Plan, 2010 • Any resolution of Council.

9. Flood related development controls:

(a) Is the land or part of the land within the flood planning area and subject to flood related development controls:
No

(b) Is the land or part of the land is between the flood planning area and the probable maximum flood and subject to floor related development controls:
No

10. Council and other public authority policies on hazard risk restrictions:

(a) Whether any of the land is affected by an adopted policy that restricts the development of the land because of the likelihood of land slip, bush fire, tidal inundation, subsidence, acid sulfate soils, contamination, aircraft noise, salinity, coastal hazards, sea level rise or another risk, other than flooding:
No

11. Bushfire Prone Land:

(a) Is the land identified as Bushfire Prone Land:
The land is NOT bushfire prone land.

12. Loose fill asbestos insulation:

(a) If the land includes any residential premises (within the meaning of Division 1 A of Part 8 of the Home Building Act 1989) that are listed on the register that is required to be maintained under that Division:
Temora Shire Council is not aware of any listing on the register of any residential premises on the land.

13. Mine Subsidence:

(a) Whether the land has been proclaimed to be within a mine subsidence district under Section 15 of the *Mine Subsidence Compensation Act*:
Unknown

14. Paper subdivision information:

(a) The name of any development plan adopted by the relevant authority that applies to the land:
There is no paper subdivision development plan adopted by the relevant authority that applies to the land.

15. Property Vegetation Plans

(a) Whether the land to which the certificate relates has a property vegetation plan approved under Part 4 of the Native Vegetation Act 2003:
Temora Shire Council has not been advised by Local Land Services of the existence of a property vegetation plan relating to this land, by a person or body that approves plans under the Act.

16. Biodiversity Stewardship Sites:

(a) Whether the land to which the certificate relates has a Biodiversity Stewardship site under a biodiversity stewardship agreement under Part 5 of the Biodiversity Conservation Act 2016:
Temora Shire Council has not been advised by the Chief Executive of the Office of Environment and Heritage of the existence of a Biodiversity Stewardship Agreement relating to this land.

17. Biodiversity Certified Land

(a) Whether the land is biodiversity certified under Part 8 of the Biodiversity Conservation Act 2016:
The land is NOT biodiversity certified.

18. Orders under Trees (Disputes Between Neighbours) Act, 2006:

(a) Whether an order has been made under the Trees (Disputes Between Neighbours) Act, 2006 to carry out work in relation to a tree on the land (but only to the extent Council has been notified of the order:
The land is NOT land to which an order under Trees (Disputes Between Neighbours) Act, 2006 applies.

19. Annual charges under Local Government Act 1993 for coastal protection services that relate to existing coastal protection works:

(a) If the *Coastal Management Act 2016* applies to the council
Not applicable

20. State Environmental Planning Policy (Western Sydney Aerotropolis) 2020

(a) Whether under *State Environmental Planning Policy (Precincts—Western Parkland City) 2021*, applies to the council
Not applicable

21. Development consent conditions for seniors housing:

(a) If *State Environmental Planning Policy (Housing) 2021*, Chapter 3, Part 5 applies to the land, any conditions of a development consent granted after 11 October 2007 in relation to the land that are of the kind set out in that Policy, section 88(2):
Not applicable

22. Site compatibility certificates and development consent conditions for Affordable Rental Housing:

(a) Whether there is a valid site compatibility certificate under *State Environmental Planning Policy (Housing) 2021*, of which Council is aware in relation to affordable housing in respect of proposed development on the land:

The land is NOT subject to a valid site compatibility certificate for affordable rental housing.

(b) Whether there are any conditions of a development consent in relation to section 21(1) or 40(1) in that Policy in respect to proposed development on the land:

Not applicable

This certificate provides prescribed and other relevant information affecting how land may be used including certain restrictions on its development. The Certificate contains information Council is aware of through its records and environmental plans, along with data supplied by the State Government. The information is provided in good faith subject to sections 145B and 149(6) of the Environmental Planning and Assessment Act 1979. The above information has been taken from the Council's records but Council cannot accept any responsibility for any omission or inaccuracy.

Date: 28-Mar-23

Shire of Temora
Director of Environmental Services:..
For the General Manager

Any request for further information in connection with the above should be marked for attention of Mr KJ Dunstan, Telephone No: 02 6980 1100

GENERAL NOTE

The *Environmental Planning and Assessment Amendment Act 2018* commenced operation on 1st March, 2018. As a consequence of the Act the information contained in this certificate needs to be read in conjunction with the provisions of the Environmental Planning and Assessment Regulation 2000.

Temora Shire Council

TEMORA
The Friendly Shire

Our reference:

Certificate No: 60/2023

INFORMATION SUPPLIED PURSUANT TO SECTION 10.7(5) OF THE ACT

OWNER RECORDED BY COUNCIL:

HEALTH ADMINISTRATION CORPORATION
C/- MURRUMBIDGEE LOCAL HEALTH DISTRICT
LOCKED BAG 10
WAGGA WAGGA NSW 2650

PROPERTY DESCRIPTION:

Lot 2; DP 572392
169-189 LOFTUS STREET
TEMORA NSW 2666

a.	Has any development consent with respect to the land been granted within the last two (2) years?	No
b.	What is the current approved use of the property?	SP2 Infrastructure
c.	Is the current use of the property in accordance with such approval?	Yes
d.	Is the land affected by any resolution of the Council to seek amendment to any environmental planning instrument or draft environmental planning instrument applying to the land?	No
e.	Is the land subject of this Certificate, land on which complying development can be carried out under the provisions of SEPP Exempt and complying Development Codes 2008?	Yes

- The above information has been taken from the Council's records but council cannot accept responsibility for any ommission or inaccuracy.

$94.00	27/03/2023	KJ Dunstan DIR. ENVIRONMENTAL SERVICES **For the GENERAL MANAGER**
Fees Paid	**Date Paid**	

SafeWork NSW Records

From: Licensing <licensing@safework.nsw.gov.au>
Sent: Thursday, 6 April 2023 6:51 AM
To: Craig Ridley
Subject: SafeWork NSW: 00820831 –Site Search application – Result found [ref:_ 00D281hl6J._500Mn44nxp:ref]

Security Classification: Sensitive Personal
Please do not amend the subject line of this email

Dear Craig,

Re: Site Search for Schedule 11 Hazardous Chemicals on premises Application – Result found.

I refer to your application for a Site Search for Schedule 11 Hazardous Chemicals on premises, received by SafeWork NSW on 28/03/2023 for the following site: 169-198 Loftus Street Temora NSW 2666.

Please find attached copies of the documents that SafeWork NSW holds on record number 35/028071 relating to the storage of Hazardous Chemicals at the above-mentioned premises.

If you have any further information or if you have any questions, please use one of the following options, quoting the SafeWork NSW enquiry reference number: 00820831

- Email: licensing@safework.nsw.gov.au
- Phone: 13 10 50

Kind regards

Mo Lotonuu
SafeWork NSW | Better Regulation Division
Department of Customer Service
p- 13 10 50
e- licensing@safework.nsw.gov.au | www.customerservice.nsw.gov.au
Level 3, 32 Mann Street, Gosford, NSW 2250

We are always looking for ways that we can improve our services. You may be contacted by email in the next few weeks to complete a short survey and provide us with your feedback on what we did well and where we can improve. If you do not wish to participate in our surveys, please email us at: licensingQA@customerservice.nsw.gov.au and we will ensure that you are not contacted.

169-198 Loftus Street Temora NSW 2666 - File 1.pdf

169-198 Loftus Street Temora NSW 2666 - Site Maps.pdf

ref:_00D281hl6J._500Mn44nxp:ref

Form DGI

Check

LICENCE No.
35 028071

Checked

WORKCOVER AUTHORITY

DANGEROUS GOODS ACT, 1975

APPLICATION FOR LICENCE ~~(or AMENDMENT or TRANSFER of LICENCE)~~* FOR THE KEEPING OF DANGEROUS GOODS

SCIENTIFIC SERVICES BRANCH
DANGEROUS GOODS

22 DEC 1992

Plan: 085

(* Delete whichever is not required)

Name of Applicant in full (see Item 1 - Explanatory notes - page 4)	TEMORA + DISTRICT HOSPITAL
Trading name or occupier's name (if any)	
Postal Address	PO BOX 172 TEMORA Postcode 2666
Address of the premises to be licensed. (Including Street No.)	LOFTUS ST TEMORA Postcode 2666
Nature of premises (See Item 2 - Explanatory notes - page 4)	PUBLIC HOSPITAL
Telephone number of applicant	STD Code 069 Number 771066

Particulars of type of depots and maximum quantities of dangerous goods to be kept at any one time.

Depot number	Type of depot (See item 3 - Explanatory notes - page 4)	Storage capacity	Dangerous goods Product being stored	C & C Office use only
1	Above ground	1x 7.5 kL	L.P.G	
2	Tank	1 x 2.75 kL	L.P.G	
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				

[redacted]
4 DEC 1992
WAGGA WAGGA

DATA
5 JAN 1993
ENTERED

SCIENTIFIC SERVICES BRANCH
18 FEB 1994
DANGEROUS GOODS

Has site plan been approved by the Dangerous Goods Branch? Yes ✓ No
If yes, no plans required.
If no please attach site plan, or provide sketch plan overleaf.

Have premises previously been licensed? Yes No
If, yes, state name of previous occupier, and licence No. (if known)

Name of oil company supplying flammable liquid (if applicable).

TEMORA & DISTRICT HOSPITAL

Signature of applicant .... Date 6-11-92

CHIEF EXECUTIVE OFFICER

For external explosives magazine(s), please fill in page 3.

FOR OFFICE USE ONLY

CERTIFICATE OF INSPECTION

I, being an Inspector under the Dangerous Goods Act, 1975, do hereby certify that the premises described above do comply with the requirements of the Dangerous Goods Act, 1975, and the Dangerous Goods Regulation with regard to their situation and construction for the keep[illegible] dangerous goods

PART C

CHEMICAL STORAGE

Complete 1 section per depot

If you have more depots than the space provided, photocopy sufficient sheets first.

Depot number	Type of depot	Class	Licensed maximum storage capacity
1	Above Ground Tank	2.1	7,500 litres

UN number	Shipping name	Class	Pkg. Group	EPG	Product or common name	Typical quantity	Unit eg. L, kg, m³
1075	Propane	2.1			LPGas	6800 ~~7,500~~	litre

Depot number	Type of depot	Class	Licensed maximum storage capacity
2	Above Ground Tank	2.1	

UN number	Shipping name	Class	Pkg. Group	EPG	Product or common name	Typical quantity	Unit eg. L, kg, m³
1075	Propane	2.1			LPGas	2300	lit

Depot number	Type of depot	Class	Licensed maximum storage capacity

UN number	Shipping name	Class	Pkg. Group	EPG	Product or common name	Typical quantity	Unit eg. L, kg, m³

Depot number	Type of depot	Class	Licensed maximum storage capacity

UN number	Shipping name	Class	Pkg. Group	EPG	Product or common name	Typical quantity	Unit eg. L, kg, m³

**** CONDITIONAL LICENCE ****

WorkCover New South Wales, 400 Kent Street, Sydney 2000. Telephone 370 5000 ALL MAIL TO LOCKED BAG 10, CLARENCE STREET SYDNEY 2000

Reference

SCIENTIFIC SERVICES BRANCH
Dangerous Goods Licensing
ph. (02) 370 5187 fax (02) 370 6105

WORKCOVER
NEW SOUTH WALES

Licensee RIVERINA HEALTH SERVICE
TEMORA & DISTRICT HOSPITAL
BOX 172 P O
TEMORA 2666

LICENCE FOR THE KEEPING OF DANGEROUS GOODS

ISSUED UNDER AND SUBJECT TO THE PROVISIONS OF THE DANGEROUS GOODS ACT, 1975 AND REGULATION THEREUNDER

Licence Number 35/028071 **Expiry Date** 22/01/96 **No. of Depots** 2

Licensee Contact J Hingerty Ph. 069 77 1066 Fax. 069 771 545

Premises Licensed to Keep Dangerous Goods
LOFTUS ST & GLOUCESTER ST
TEMORA 2666

Nature of Site HOSPITALS (EXCEPT PSYCHIATRIC HOSPITALS)

Emergency Contact for this Site J Hingerty 069 771 066 24 hrs 7 days

Major Supplier of Dangerous Goods BORAL

DETAILS OF DEPOTS

Depot No.	Depot Type	Goods Stored in Depot	Qty
1	**ABOVEGROUND TANK**	**Class 2.1**	**7500 L**
		UN 1075 PETROLEUM GASES, LIQUE	6800 L
2	**ABOVEGROUND TANK**	**Class 2.1**	**2750 L**
		UN 1075 PETROLEUM GASES, LIQUE	2300 L

***** Licence has been issued on condition that an A4 size site sketch is submitted to WorkCover by 27 October 1995.*****

PLEASE RETAIN AS PROOF OF LICENCE

Issued by Chief Inspector of Dangerous Goods on 27 September 1995

New South Wales Government

TEMORA AND DISTRICT HOSPITAL

Legend

Buildings

1	Main Hospital Building
2	Day Care Centre
3	Engineering and Maintenance
4	Boiler Room
5	Mortuary
6	Nurses Home
7	Water Treatment Plant
8	Carport
9	TENNIS COURT +
10	B.B.Q

Entries

A	Main Entry
B	Ambulance Entry
C	Pathology Entry
D	Service Entry
E	Rear Entry
F	Outpatient Entry
G 1&2	GAS STORAGE
H	INFECTIOUS WASTE
I 1&2	OXYGEN CYLINDERS

8 LAWNS AND GARDENS MAINTAINED BY T. D. H.

H FIRE HYDRANTS.

ATF

~~L685~~ ~~C75~~ ~~4701~~

WorkCover [illegible]uth Wales, 400 Kent Street, Sydney 2000 , Tel: (02) 9370 5000 ALL MAIL TO LOCKED BAG 10, CLARENCE STREET, SYDNEY 2000

DX 13067, MARKET ST. SYDNEY

WORKCOVER
NEW SOUTH WALES

Reference

APPLICATION FOR RENEWAL
OF LICENCE TO KEEP DANGEROUS GOODS

ISSUED UNDER AND SUBJECT TO THE PROVISIONS OF THE DANGEROUS GOODS ACT, 1975 AND REGULATION THEREUNDER

DECLARATION: *Please renew licence number 35/028071 to 1999. I confirm that all the licence details shown below are correct (amend if necessary).*

Paul Morrow .... Paul Morrow .... 20/5/98 ....
(Signature) *(Please print name)* *(Date signed)*

for: ~~*RIVERINA HEALTH SERVICE*~~
GREATER MURRAY HEALTH SERVICE

*THIS **SIGNED** DECLARATION SHOULD BE **RETURNED** TO:*

WorkCover New South Wales
Dangerous Goods Licensing Section (Level 3)
Locked Bag 10
P O CLARENCE STREET 2000

Enquiries: ph (02) 9370 5187
fax (02) 9370 6105

RECEIVED
22 MAY 1998
SCIENTIFIC SERVICES

Details of licence on 5 December 1997

Licence Number 35/028071 **Expiry Date** 22/01/98

Licensee ~~RIVERINA HEALTH SERVICE~~ GREATER MURRAY HEALTH SERVICE
TEMORA & DISTRICT HOSPITAL

Postal Address BOX 172 P O, TEMORA 2666

Licensee Contact ~~J Hingerty Ph. 069 77 1066 Fax. 069 771 545~~ Temora Hospital Ph 02 69 771066 Fax 02 69 771545 PM

Premises Licensed to Keep Dangerous Goods
LOFTUS ST & GLOUCESTER ST
TEMORA 2666

Nature of Site HOSPITALS (EXCEPT PSYCHIATRIC HOSPITALS) **Major Supplier of Dangerous Goods** BORAL

Emergency Contact for this Site ~~J Hingerty ph. 069 771 066~~ Temora Hospital Ph 02 69 771066 PM

Site staffing 24 hrs 7 days

Details of Depots

Depot No.	Depot Type	Goods Stored in Depot	Qty
1	ABOVE-GROUND TANK	Class 2.1	7500 L
		UN 1075 PETROLEUM GASES, LIQUE	6800 L
2	ABOVE-GROUND TANK	Class 2.1	2750 L
		UN 1075 PETROLEUM GASES, LIQUE	2300 L

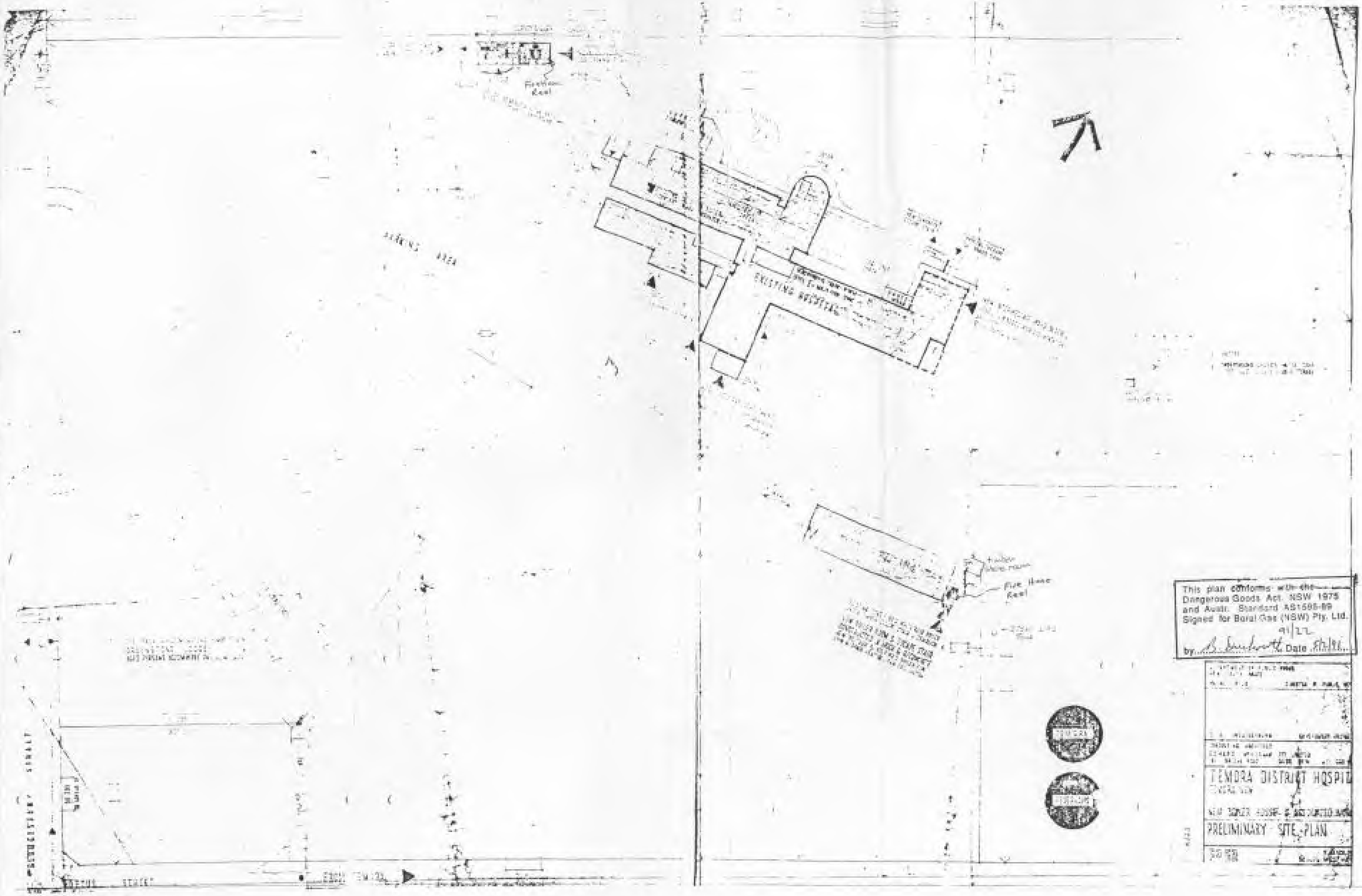
DATA ENTERED
10 AUG 1998
na

RECEIVED
22 MAY 1998

Paul Morrow
Act Network Eng
Ph 02 69 386664

licence renewed on SCID1
JB

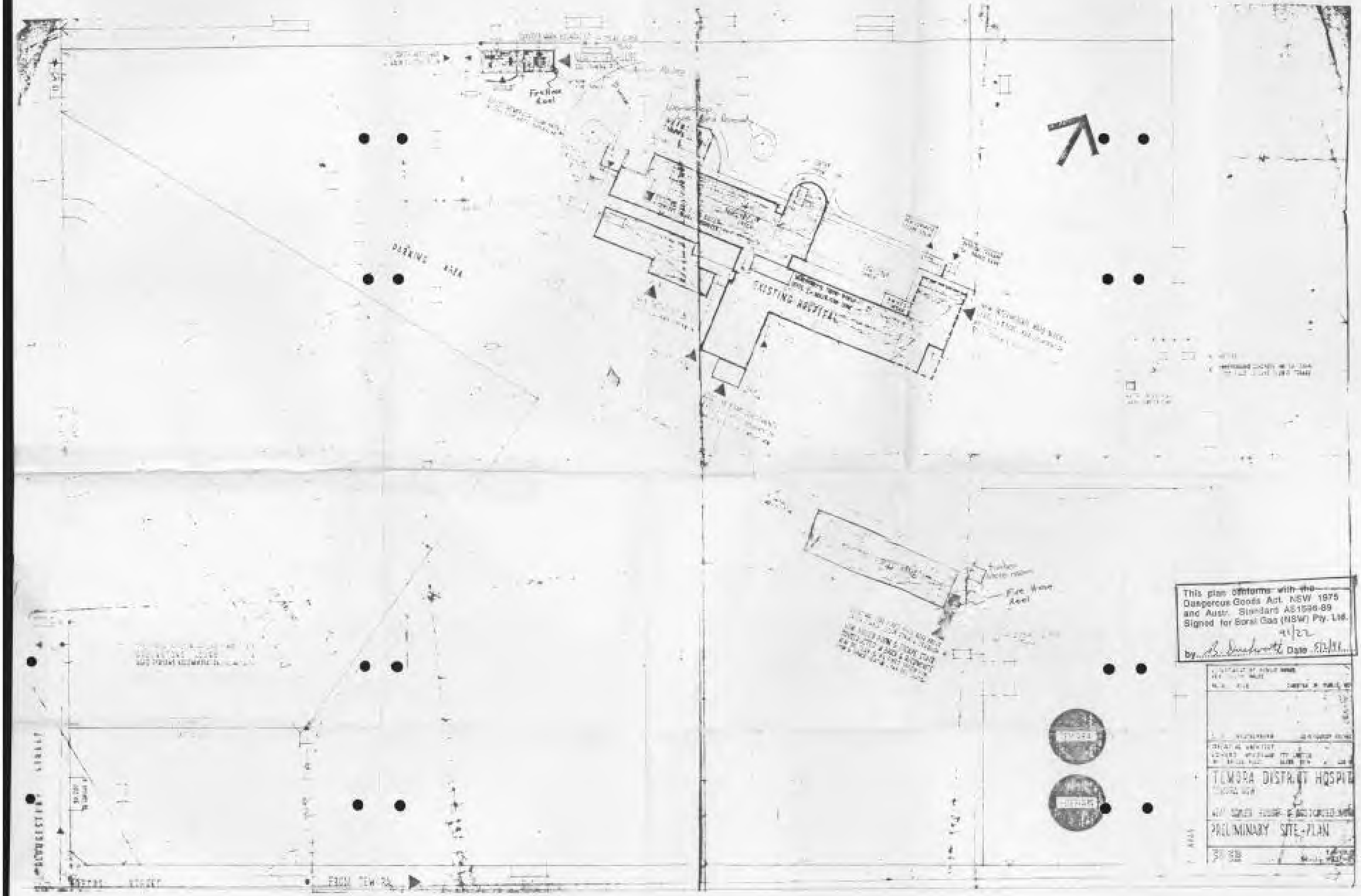
Form DG10



This plan conforms with the Dangerous Goods Act. NSW 1975 and Austr. Standard AS1596-89 Signed for Boral Gas (NSW) Pty. Ltd.

91/22

by B. Smilcott Date 5/3/91



This plan conforms with the
Dangerous Goods Act NSW 1975
and Austr. Standard AS1596-89
Signed for Boral Gas (NSW) Pty. Ltd.
91/22
by A. Duckworth Date 9.12.91

Appendix C: Laboratory Results Summary Tables

ABBREVIATIONS AND EXPLANATIONS

Abbreviations used in the Tables:

ABC:	Ambient Background Concentration	**PCBs:**	Polychlorinated Biphenyls
ACM:	Asbestos Containing Material	**PCE:**	Perchloroethylene (Tetrachloroethylene or Teterachloroethene)
ADWG:	AustralianDrinking Water Guidelines	**pH_{KCL} :**	pH of filtered 1:20, 1M KCL extract, shaken overnight
AF:	Asbestos Fines	**pH_{ox} :**	pH of filtered 1:20 1M KCl after peroxide digestion
ANZG	Australian and New Zealand Guidelines	**PQL:**	Practical Quantitation Limit
B(a)P:	Benzo(a)pyrene	**RS:**	Rinsate Sample
CEC:	Cation Exchange Capacity	**RSL:**	Regional Screening Levels
CRC:	Cooperative Research Centre	**RSW:**	Restricted Solid Waste
CT:	Contaminant Threshold	**SAC:**	Site Assessment Criteria
EILs:	Ecological Investigation Levels	**SCC:**	Specific Contaminant Concentration
ESLs:	Ecological Screening Levels	**S_{Cr}:**	Chromium reducible sulfur
FA:	Fibrous Asbestos	**S_{POS}:**	Peroxide oxidisable Sulfur
GIL:	Groundwater Investigation Levels	**SSA:**	Site Specific Assessment
GSW:	General Solid Waste	**SSHSLs:**	Site Specific Health Screening Levels
HILs:	Health Investigation Levels	**TAA:**	Total Actual Acidity in 1M KCL extract titrated to pH6.5
HSLs:	Health Screening Levels	**TB:**	Trip Blank
HSL-SSA:	Health Screening Level-SiteSpecific Assessment	**TCA:**	1,1,1 Trichloroethane (methyl chloroform)
kg/L	kilograms per litre	**TCE:**	Trichloroethylene (Trichloroethene)
NA:	Not Analysed	**TCLP:**	Toxicity Characteristics Leaching Procedure
NC:	Not Calculated	**TPA:**	Total Potential Acidity, 1M KCL peroxide digest
NEPM:	National Environmental Protection Measure	**TS:**	Trip Spike
NHMRC:	National Health and Medical Research Council	**TRH:**	Total Recoverable Hydrocarbons
NL:	Not Limiting	**TSA:**	Total Sulfide Acidity (TPA-TAA)
NSL:	No Set Limit	**UCL:**	Upper Level Confidence Limit on Mean Valu
OCP:	Organochlorine Pesticides	**USEPA**	United States Environmental Protection Agency
OPP:	Organophosphorus Pesticides	**VOCC:**	Volatile Organic Chlorinated Compounds
PAHs:	Polycyclic Aromatic Hydrocarbons	**WHO:**	World Health Organisation
%w/w:	weight per weight		
ppm:	Parts per million		

Table Specific Explanations:

HIL Tables:

- The chromium results are for Total Chromium which includes Chromium III and VI. For initial screening purposes, we have assumed that the samples contain only Chromium VI unless demonstrated otherwise by additional analysis.
- Carcinogenic PAHs is a toxicity weighted sum of analyte concentrations for a specific list of PAH compounds relative to B(a)P. It is also refered to as the B(a)P Toxic Equivalence Quotient (TEQ).

EIL/ESL Table:

- ABC Values for selected metals have been adopted from the published background concentrations presented in Olszowy et. al., (1995), Trace Element Concentrations in Soils from Rural and Urban New South Wales (the 25th percentile values for old suburbs with low traffic have been quoted).

Waste Classification and TCLP Table:

- Data assessed using the NSW EPA Waste Classification Guidelines, Part 1: Classifying Waste (2014).
- The assessment of Total Moderately Harmful pesticides includes: Dichlorovos, Dimethoate, Fenthion, Fenitrothion, Ethion, Malathion, Methidathion and Parathion Methyl.
- Assessment of Total Scheduled pesticides include: HBC, alpha-BHC, gamma-BHC, beta-BHC, Heptachlor, Aldrin, Heptachlor Epoxide, gamma-Chlordane, alpha-chlordane, pp-DDE, Dieldrin, Endrin, pp-DDD, pp-DDT, Endrin Aldehyde.

QA/QC Table:

- Field blank, Inter and Intra laboratory duplicate results are reported in mg/kg.
- Trip spike results are reported as percentage recovery.
- Field rinsate results are reported in µg/L.

TABLE S1
SOIL LABORATORY RESULTS COMPARED TO NEPM 2013.
HIL-A: 'Residential with garden/accessible soils; children's day care centers; preschools; and primary schools'

All data in mg/kg unless stated otherwise			HEAVY METALS								PAHs		ORGANOCHLORINE PESTICIDES (OCPs)							OP PESTICIDES (OPPs)	TOTAL PCBs	ASBESTOS FIBRES
			Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc	Total PAHs	Carcinogenic PAHs	HCB	Endosulfan	Methoxychlor	Aldrin & Dieldrin	Chlordane	DDT, DDD & DDE	Heptachlor	Chlorpyrifos		
PQL - Envirolab Services			4	0.4	1	1	1	0.1	1	1	-	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	100
Site Assessment Criteria (SAC)			100	20	100	6000	300	40	400	7400	300	3	10	270	300	6	50	240	6	160	1	Detected/Not Detected
Sample Reference	**Sample Depth**	**Sample Description**																				
BH1	0-0.3	Silty Clay	<4	<0.4	**37**	**70**	**7**	<0.1	**10**	**22**	**0.2**	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH1 - [LAB_DUP]	0-0.3	Laboratory Duplicate	<4	<0.4	**38**	**70**	**9**	<0.1	**10**	**25**	**0.55**	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
BH1	0.8-1.0	XW Andersite	<4	<0.4	**62**	**130**	**9**	<0.1	**14**	**31**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH2	0-0.2	F: Gravelly Sandy Clay	**6**	<0.4	**38**	**200**	**8**	<0.1	**11**	**36**	**6.9**	**1**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH2	0.3-0.5	Sandy Silty Clay	**6**	<0.4	**91**	**280**	**5**	<0.1	**18**	**37**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH2	0.8-1.0	Silty Clay	**6**	<0.4	**63**	**200**	**6**	<0.1	**13**	**30**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH3	0-0.1	F: Silty Clay	**7**	<0.4	**23**	**57**	**12**	<0.1	**9**	**24**	**0.64**	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH3	0.3-0.5	F: Sandy Silty Clay	**8**	<0.4	**47**	**86**	**15**	**0.2**	**11**	**33**	**85**	**7.7**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH3	1.3-1.5	Sandy Silty Clay	**4**	<0.4	**72**	**120**	**9**	<0.1	**12**	**22**	**3.3**	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH4	0-0.1	F: Silty Clay	**5**	<0.4	**30**	**82**	**28**	<0.1	**7**	**53**	**0.66**	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH4 - [LAB_DUP]	0-0.1	Laboratory Duplicate	**5**	<0.4	**28**	**80**	**26**	<0.1	**6**	**53**	**0.5**	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
BH4	0.3-0.5	Sandy Silty Clay	**7**	<0.4	**18**	**300**	**3**	<0.1	**11**	**31**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH4	0.8-1.0	XW Andersite	**6**	<0.4	**16**	**210**	**2**	<0.1	**9**	**24**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH5	0-0.1	Silty Clay	**9**	<0.4	**26**	**230**	**13**	<0.1	**9**	**30**	**2.9**	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH5	0.8-1.0	Silty Clay	**4**	<0.4	**52**	**180**	**7**	<0.1	**12**	**20**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH6	0-0.1	F: Silty Clay	<4	<0.4	**22**	**220**	**17**	<0.1	**9**	**54**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH6	0.3-0.5	Sandy Silty Clay	<4	<0.4	**19**	**440**	**3**	<0.1	**10**	**51**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH6	0.8-1.0	XW Andersite	<4	<0.4	**16**	**400**	**1**	<0.1	**9**	**55**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH7	0.02-0.3	F: Gravelly Silty Sand	**7**	<0.4	**36**	**94**	**24**	<0.1	**9**	**36**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH7 - [LAB_DUP]	0.02-0.3	Laboratory Duplicate	**6**	<0.4	**51**	**100**	**20**	<0.1	**11**	**34**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
BH7	0.3-0.5	F: Silty Sand	**7**	<0.4	**66**	**120**	**10**	**0.6**	**13**	**29**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH8	0.02-0.2	F: Silty Sand	<4	<0.4	**13**	**12**	**7**	<0.1	**2**	**7**	**27**	**3.6**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH8	0.3-0.5	Sandy Silty Clay	<4	<0.4	**53**	**170**	**7**	<0.1	**15**	**42**	**3.3**	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TP13	0-0.1	F: Silty Clay	**5**	<0.4	**20**	**210**	**22**	**0.1**	**8**	**59**	**0.2**	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
TP13	0.5-0.6	Silty Clay	**7**	<0.4	**24**	**490**	**4**	<0.1	**11**	**28**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TP14	0-0.1	F: Silty Clay	**15**	<0.4	**31**	**99**	**120**	**0.1**	**3**	**88**	**1.1**	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
TP14	0.4-0.5	Silty Clay	<4	<0.4	**17**	**420**	**6**	<0.1	**10**	**57**	**0.5**	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TP14	0.9-1.0	XW Andersite	<4	<0.4	**10**	**470**	**2**	<0.1	**10**	**47**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TP15	0-0.1	F: Silty Clay	**6**	<0.4	**21**	**34**	**12**	<0.1	**7**	**30**	**0.3**	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
TP15 - [LAB_DUP]	0-0.1	Laboratory Duplicate	**5**	<0.4	**19**	**29**	**12**	<0.1	**7**	**30**	**0.2**	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
TP15	0.9-1.0	F: Sandy Silty Clay	**7**	<0.4	**24**	**32**	**14**	<0.1	**5**	**11**	**43**	**4.9**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
TP15	1.3-1.5	Silty Clay	<4	<0.4	**52**	**110**	**7**	**0.7**	**9**	**18**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TP16	0-0.1	Silty Clay	**10**	<0.4	**56**	**190**	**25**	<0.1	**14**	**61**	**1.4**	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
TP16	0.4-0.5	Silty Clay	**5**	<0.4	**74**	**180**	**4**	<0.1	**15**	**27**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SDUP1	0-0.1	Duplicate of TP16	**10**	<0.4	**55**	**190**	**25**	<0.1	**14**	**66**	**1.7**	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
SDUP2	0-0.1	Duplicate of TP15	**6**	<0.4	**20**	**31**	**12**	<0.1	**7**	**29**	**0.1**	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SDUP3	0-0.1	Duplicate of TP14	**11**	<0.4	**22**	**130**	**170**	<0.1	**6**	**140**	**0.86**	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
SDUP4	0-0.1	Duplicate of TP13	**5**	<0.4	**16**	**160**	**24**	<0.1	**7**	**67**	**0.3**	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SDUP4 - [LAB_DUP]	0-0.1	Laboratory Duplicate	**5**	<0.4	**15**	**170**	**19**	<0.1	**7**	**60**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH4-FCF1	0-0.2	Fragment	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Detected
BH4-FCF2	0-0.2	Fragment	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Detected
Total Number of Samples			39	39	39	39	39	39	39	39	38	38	20	20	20	20	20	20	20	20	20	16
Maximum Value			15	<PQL	91	490	170	0.7	18	140	85	7.7	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	Detected

Concentration above the SAC	**VALUE**
Concentration above the PQL	**Bold**

TABLE S2
SOIL LABORATORY RESULTS COMPARED TO HSLs
All data in mg/kg unless stated otherwise

					C_6-C_{10} (F1)	>C_{10}-C_{16} (F2)	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene	Field PID Measurement
PQL - Envirolab Services					25	50	0.2	0.5	1	1	1	ppm
NEPM 2013 HSL Land Use Category					**HSL-A/B: LOW/HIGH DENSITY RESIDENTIAL**							
Sample Reference	**Sample Depth**	**Sample Description**	**Depth Category**	**Soil Category**								
BH1	0-0.3	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.5
BH1 - [LAB_DUP]	0-0.3	Laboratory Duplicate	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	NA
BH1	0.8-1.0	XW Andersite	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.3
BH2	0-0.2	F: Gravelly Sandy Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	1.3
BH2	0.3-0.5	Sandy Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	1.9
BH2	0.8-1.0	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	1.8
BH3	0-0.1	F: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.6
BH3	0.3-0.5	F: Sandy Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	**2**	0.7
BH3	1.3-1.5	Sandy Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	1.5
BH4	0-0.1	F: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	2.2
BH4 - [LAB_DUP]	0-0.1	Laboratory Duplicate	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	NA
BH4	0.3-0.5	Sandy Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	2
BH4	0.8-1.0	XW Andersite	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	3.8
BH5	0-0.1	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.6
BH5	0.8-1.0	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.6
BH6	0-0.1	F: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.4
BH6	0.3-0.5	Sandy Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.1
BH6	0.8-1.0	XW Andersite	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.1
BH7	0.02-0.3	F: Gravelly Silty Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.8
BH7 - [LAB_DUP]	0.02-0.3	Laboratory Duplicate	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	NA
BH7	0.3-0.5	F: Silty Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	2
BH8	0.02-0.2	F: Silty Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0
BH8	0.3-0.5	Sandy Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.3
TP13	0-0.1	F: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.6
TP13	0.5-0.6	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	1.3
TP14	0-0.1	F: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	1
TP14	0.4-0.5	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.5
TP14	0.9-1.0	XW Andersite	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	1.1
TP15	0-0.1	F: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.3
TP15 - [LAB_DUP]	0-0.1	Laboratory Duplicate	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	NA
TP15	0.9-1.0	F: Sandy Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.4
TP15	1.3-1.5	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.5
TP16	0-0.1	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.2
TP16	0.4-0.5	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	1.2
SDUP1	0-0.1	Duplicate of TP16	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	NA
SDUP2	0-0.1	Duplicate of TP15	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	NA
SDUP3	0-0.1	Duplicate of TP14	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	NA
SDUP4	0-0.1	Duplicate of TP13	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	NA
Total Number of Samples					38	38	38	38	38	38	38	30
Maximum Value					<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	2	3.8

Concentration above the SAC	🟨 **VALUE**
Concentration above the PQL	**Bold**

The guideline corresponding to the concentration above the SAC is highlighted in grey in the Site Assessment Criteria Table below

HSL SOIL ASSESSMENT CRITERIA

Sample Reference	**Sample Depth**	**Sample Description**	**Depth Category**	**Soil Category**	C_6-C_{10} (F1)	>C_{10}-C_{16} (F2)	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene
BH1	0-0.3	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH1 - [LAB_DUP]	0-0.3	Laboratory Duplicate	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH1	0.8-1.0	XW Andersite	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH2	0-0.2	F: Gravelly Sandy Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH2	0.3-0.5	Sandy Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH2	0.8-1.0	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH3	0-0.1	F: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH3	0.3-0.5	F: Sandy Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH3	1.3-1.5	Sandy Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH4	0-0.1	F: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH4 - [LAB_DUP]	0-0.1	Laboratory Duplicate	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH4	0.3-0.5	Sandy Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH4	0.8-1.0	XW Andersite	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH5	0-0.1	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH5	0.8-1.0	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH6	0-0.1	F: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH6	0.3-0.5	Sandy Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH6	0.8-1.0	XW Andersite	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH7	0.02-0.3	F: Gravelly Silty Sand	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH7 - [LAB_DUP]	0.02-0.3	Laboratory Duplicate	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH7	0.3-0.5	F: Silty Sand	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH8	0.02-0.2	F: Silty Sand	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH8	0.3-0.5	Sandy Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP13	0-0.1	F: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP13	0.5-0.6	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP14	0-0.1	F: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP14	0.4-0.5	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP14	0.9-1.0	XW Andersite	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP15	0-0.1	F: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP15 - [LAB_DUP]	0-0.1	Laboratory Duplicate	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP15	0.9-1.0	F: Sandy Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP15	1.3-1.5	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP16	0-0.1	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP16	0.4-0.5	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
SDUP1	0-0.1	Duplicate of TP16	0m to <1m	Sand	45	110	0.5	160	55	40	3
SDUP2	0-0.1	Duplicate of TP15	0m to <1m	Sand	45	110	0.5	160	55	40	3
SDUP3	0-0.1	Duplicate of TP14	0m to <1m	Sand	45	110	0.5	160	55	40	3
SDUP4	0-0.1	Duplicate of TP13	0m to <1m	Sand	45	110	0.5	160	55	40	3

TABLE S3
SOIL LABORATORY RESULTS COMPARED TO MANAGEMENT LIMITS
All data in mg/kg unless stated otherwise

			C_6-C_{10} (F1) plus BTEX	>C_{10}-C_{16} (F2) plus napthalene	>C_{16}-C_{34} (F3)	>C_{34}-C_{40} (F4)
PQL - Envirolab Services			25	50	100	100
NEPM 2013 Land Use Category			**RESIDENTIAL, PARKLAND & PUBLIC OPEN SPACE**			
Sample Reference	**Sample Depth**	**Soil Texture**				
BH1	0-0.3	Coarse	<25	<50	<100	<100
BH1 - [LAB_DUP]	0-0.3	Coarse	<25	<50	<100	<100
BH1	0.8-1.0	Coarse	<25	<50	<100	<100
BH2	0-0.2	Coarse	<25	<50	<100	<100
BH2	0.3-0.5	Coarse	<25	<50	<100	<100
BH2	0.8-1.0	Coarse	<25	<50	<100	<100
BH3	0-0.1	Coarse	<25	<50	**130**	**230**
BH3	0.3-0.5	Coarse	<25	<50	**320**	**120**
BH3	1.3-1.5	Coarse	<25	<50	<100	<100
BH4	0-0.1	Coarse	<25	<50	<100	<100
BH4 - [LAB_DUP]	0-0.1	Coarse	<25	<50	<100	<100
BH4	0.3-0.5	Coarse	<25	<50	<100	<100
BH4	0.8-1.0	Coarse	<25	<50	<100	<100
BH5	0-0.1	Coarse	<25	<50	<100	<100
BH5	0.8-1.0	Coarse	<25	<50	<100	<100
BH6	0-0.1	Coarse	<25	<50	<100	<100
BH6	0.3-0.5	Coarse	<25	<50	<100	<100
BH6	0.8-1.0	Coarse	<25	<50	<100	<100
BH7	0.02-0.3	Coarse	<25	<50	<100	<100
BH7 - [LAB_DUP]	0.02-0.3	Coarse	<25	<50	<100	<100
BH7	0.3-0.5	Coarse	<25	<50	<100	<100
BH8	0.02-0.2	Coarse	<25	<50	<100	<100
BH8	0.3-0.5	Coarse	<25	<50	<100	<100
TP13	0-0.1	Coarse	<25	<50	<100	<100
TP13	0.5-0.6	Coarse	<25	<50	<100	<100
TP14	0-0.1	Coarse	<25	<50	<100	<100
TP14	0.4-0.5	Coarse	<25	<50	<100	<100
TP14	0.9-1.0	Coarse	<25	<50	<100	<100
TP15	0-0.1	Coarse	<25	<50	<100	<100
TP15 - [LAB_DUP]	0-0.1	Coarse	<25	<50	<100	<100
TP15	0.9-1.0	Coarse	<25	<50	<100	<100
TP15	1.3-1.5	Coarse	<25	<50	<100	<100
TP16	0-0.1	Coarse	<25	<50	<100	<100
TP16	0.4-0.5	Coarse	<25	<50	<100	<100
SDUP1	0-0.1	Coarse	<25	<50	<100	<100
SDUP2	0-0.1	Coarse	<25	<50	<100	<100
SDUP3	0-0.1	Coarse	<25	<50	<100	<100
SDUP4	0-0.1	Coarse	<25	<50	<100	<100
Total Number of Samples			38	38	38	38
Maximum Value			<PQL	<PQL	320	230

Concentration above the SAC	**VALUE**
Concentration above the PQL	**Bold**

MANAGEMENT LIMIT ASSESSMENT CRITERIA

Sample Reference	**Sample Depth**	**Soil Texture**	C_6-C_{10} (F1) plus BTEX	>C_{10}-C_{16} (F2) plus napthalene	>C_{16}-C_{34} (F3)	>C_{34}-C_{40} (F4)
BH1	0-0.3	Coarse	700	1000	2500	10000
BH1 - [LAB_DUP]	0-0.3	Coarse	700	1000	2500	10000
BH1	0.8-1.0	Coarse	700	1000	2500	10000
BH2	0-0.2	Coarse	700	1000	2500	10000
BH2	0.3-0.5	Coarse	700	1000	2500	10000
BH2	0.8-1.0	Coarse	700	1000	2500	10000
BH3	0-0.1	Coarse	700	1000	2500	10000
BH3	0.3-0.5	Coarse	700	1000	2500	10000
BH3	1.3-1.5	Coarse	700	1000	2500	10000
BH4	0-0.1	Coarse	700	1000	2500	10000
BH4 - [LAB_DUP]	0-0.1	Coarse	700	1000	2500	10000
BH4	0.3-0.5	Coarse	700	1000	2500	10000
BH4	0.8-1.0	Coarse	700	1000	2500	10000
BH5	0-0.1	Coarse	700	1000	2500	10000
BH5	0.8-1.0	Coarse	700	1000	2500	10000
BH6	0-0.1	Coarse	700	1000	2500	10000
BH6	0.3-0.5	Coarse	700	1000	2500	10000
BH6	0.8-1.0	Coarse	700	1000	2500	10000
BH7	0.02-0.3	Coarse	700	1000	2500	10000
BH7 - [LAB_DUP]	0.02-0.3	Coarse	700	1000	2500	10000
BH7	0.3-0.5	Coarse	700	1000	2500	10000
BH8	0.02-0.2	Coarse	700	1000	2500	10000
BH8	0.3-0.5	Coarse	700	1000	2500	10000
TP13	0-0.1	Coarse	700	1000	2500	10000
TP13	0.5-0.6	Coarse	700	1000	2500	10000
TP14	0-0.1	Coarse	700	1000	2500	10000
TP14	0.4-0.5	Coarse	700	1000	2500	10000
TP14	0.9-1.0	Coarse	700	1000	2500	10000
TP15	0-0.1	Coarse	700	1000	2500	10000
TP15 - [LAB_DUP]	0-0.1	Coarse	700	1000	2500	10000
TP15	0.9-1.0	Coarse	700	1000	2500	10000
TP15	1.3-1.5	Coarse	700	1000	2500	10000
TP16	0-0.1	Coarse	700	1000	2500	10000
TP16	0.4-0.5	Coarse	700	1000	2500	10000
SDUP1	0-0.1	Coarse	700	1000	2500	10000
SDUP2	0-0.1	Coarse	700	1000	2500	10000
SDUP3	0-0.1	Coarse	700	1000	2500	10000
SDUP4	0-0.1	Coarse	700	1000	2500	10000

TABLE S4
SOIL LABORATORY RESULTS COMPARED T0 DIRECT CONTACT CRITERIA
All data in mg/kg unless stated otherwise

Analyte		C_6-C_{10}	>C_{10}-C_{16}	>C_{16}-C_{34}	>C_{34}-C_{40}	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene	PID
PQL - Envirolab Services		25	50	100	100	0.2	0.5	1	1	1	
CRC 2011 -Direct contact Criteria		4,400	3,300	4,500	6,300	100	14,000	4,500	12,000	1,400	
Site Use		RESIDENTIAL WITH ACCESSIBLE SOIL- DIRECT SOIL CONTACT									
Sample Reference	**Sample Depth**										
BH1	0-0.3	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.5**
BH1 - [LAB_DUP]	0-0.3	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NA
BH1	0.8-1.0	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.3**
BH2	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**1.3**
BH2	0.3-0.5	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**1.9**
BH2	0.8-1.0	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**1.8**
BH3	0-0.1	<25	<50	**130**	**230**	<0.2	<0.5	<1	<1	<1	**0.6**
BH3	0.3-0.5	<25	<50	**320**	**120**	<0.2	<0.5	<1	<1	**2**	**0.7**
BH3	1.3-1.5	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**1.5**
BH4	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**2.2**
BH4 - [LAB_DUP]	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NA
BH4	0.3-0.5	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**2**
BH4	0.8-1.0	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**3.8**
BH5	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.6**
BH5	0.8-1.0	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.6**
BH6	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.4**
BH6	0.3-0.5	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.1**
BH6	0.8-1.0	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.1**
BH7	0.02-0.3	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.8**
BH7 - [LAB_DUP]	0.02-0.3	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NA
BH7	0.3-0.5	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**2**
BH8	0.02-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	0
BH8	0.3-0.5	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.3**
TP13	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.6**
TP13	0.5-0.6	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**1.3**
TP14	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**1**
TP14	0.4-0.5	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.5**
TP14	0.9-1.0	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**1.1**
TP15	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.3**
TP15 - [LAB_DUP]	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NA
TP15	0.9-1.0	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.4**
TP15	1.3-1.5	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.5**
TP16	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.2**
TP16	0.4-0.5	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**1.2**
SDUP1	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NA
SDUP2	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NA
SDUP3	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NA
SDUP4	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NA
Total Number of Samples		38	38	38	38	38	38	38	38	38	30
Maximum Value		<PQL	<PQL	320	230	<PQL	<PQL	<PQL	<PQL	2	3.8

Concentration above the SAC	**VALUE**
Concentration above the PQL	**Bold**

TABLE S5
ASBESTOS QUANTIFICATION - FIELD OBSERVATIONS AND LABORATORY RESULTS
HSL-A: Residential with garden/accessible soils; children's day care centers; preschools; and primary schools

FIELD DATA															LABORATORY DATA											
Date Sampled	Sample reference	Sample Depth	Visible ACM in top 100mm	Approx. Volume of Soil (L)	Soil Mass (g)	Mass ACM (g)	Mass Asbestos in ACM (g)	[Asbestos from ACM in soil] (%w/w)	Mass ACM <7mm (g)	Mass Asbestos in ACM <7mm (g)	[Asbestos from ACM <7mm in soil] (%w/w)	Mass FA (g)	Mass Asbestos in FA (g)	[Asbestos from FA in soil] (%w/w)	Lab Report Number	Sample refeference	Sample Depth	Sample Mass (g)	Asbestos ID in soil (AS4964) >0.1g/kg	Trace Analysis	Total Asbestos (g/kg)	Asbestos ID in soil <0.1g/kg	ACM >7mm Estimation (g)	FA and AF Estimation (g)	ACM >7mm Estimation %(w/w)	FA and AF Estimation %(w/w)
SAC			**No**					**0.01**			**0.001**			**0.001**											**0.01**	**0.001**
--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		BH1	0-0.3		No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
3/05/2023	BH2	0-0.2	No	10	12,490	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--		BH2	0-0.2		No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
4/05/2023	BH3	0-0.1	No	10	10,180	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--		BH3	0-0.1		No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
4/05/2023	BH3	0.1-0.3	NA	2	2,240	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4/05/2023	BH3	0.3-1.1	NA	8	8,960	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--		BH3	0.3-0.5		No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
4/05/2023	BH4	0-0.2	Yes	10	10,670	48.3	7.2495	0.0679	No ACM <7mm observed	--	--	No FA observed	--	--		BH4	0-0.1		No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		BH5	0-0.1		No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
2/05/2023	BH6	0-0.2	No	10	10,440	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--		BH6	0-0.1		No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
2/05/2023	BH7	0.02-0.3	NA	1.7	1,880	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--		BH7	0.02-0.3		No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		BH8	0.02-0.2		No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
4/05/2023	TP13	0-0.1	No	10	10,520	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--		TP13	0-0.1		No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
4/05/2023	TP13	0.1-0.3	NA	10	10,220	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4/05/2023	TP14	0-0.2	No	10	12,310	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--		TP14	0-0.1		No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
4/05/2023	TP15	0-0.1	No	10	10,290	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--		TP15	0-0.1		No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
4/05/2023	TP15	0.1-0.5	NA	10	10,340	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4/05/2023	TP15	0.5-1.1	NA	10	12,520	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--		TP15	0.9-1.0		No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		TP16	0-0.1		No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001

Concentration above the SAC	**VALUE**

JKEnvironments

TABLE S6
SOIL LABORATORY RESULTS COMPARED TO NEPM 2013 EILs AND ESLs
All data in mg/kg unless stated otherwise

Land Use Category				**URBAN RESIDENTIAL AND PUBLIC OPEN SPACE**																			
							AGED HEAVY METALS-EILs						EILs		ESLs								
				pH	CEC (cmolc/kg)	Clay Content (% clay)	Arsenic	Chromium	Copper	Lead	Nickel	Zinc	Naphthalene	DDT	C_{6}-C_{10} (F1)	>C_{10}-C_{16} (F2)	>C_{16}-C_{34} (F3)	>C_{34}-C_{40} (F4)	Benzene	Toluene	Ethylbenzene	Total Xylenes	B(a)P
PQL - Envirolab Services				-	1	-	4	1	1	1	1	1	1	0.1	25	50	100	100	0.2	0.5	1	1	0.05
Ambient Background Concentration (ABC)				-	-	-	NSL	8	18	104	5	77	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL
Sample Reference	**Sample Depth**	**Sample Description**	**Soil Texture**																				
BH1	0-0.3	Silty Clay	Fine	NA	NA	NA	<4	**37**	**70**	**7**	**10**	**22**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH1 - [LAB_DUP]	0-0.3	Laboratory Duplicate	Fine	NA	NA	NA	<4	**38**	**70**	**9**	**10**	**25**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	**0.1**
BH1	0.8-1.0	XW Andersite	Fine	NA	NA	NA	<4	**62**	**130**	**9**	**14**	**31**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH2	0-0.2	F: Gravelly Sandy Clay	Fine	NA	NA	NA	**6**	**38**	**200**	**8**	**11**	**36**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	**0.69**
BH2	0.3-0.5	Sandy Silty Clay	Fine	NA	NA	NA	**6**	**91**	**280**	**5**	**18**	**37**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH2	0.8-1.0	Silty Clay	Fine	NA	NA	NA	**6**	**63**	**200**	**6**	**13**	**30**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH3	0-0.1	F: Silty Clay	Fine	NA	NA	NA	**7**	**23**	**57**	**12**	**9**	**24**	<1	<0.1	<25	<50	**130**	**230**	<0.2	<0.5	<1	<1	**0.09**
BH3	0.3-0.5	F: Sandy Silty Clay	Fine	NA	NA	NA	**8**	**47**	**86**	**15**	**11**	**33**	**2**	<0.1	<25	<50	**320**	**120**	<0.2	<0.5	<1	<1	**5.4**
BH3	1.3-1.5	Sandy Silty Clay	Fine	NA	NA	NA	**4**	**72**	**120**	**9**	**12**	**22**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	**0.2**
BH4	0-0.1	F: Silty Clay	Fine	NA	NA	NA	**5**	**30**	**82**	**28**	**7**	**53**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	**0.1**
BH4 - [LAB_DUP]	0-0.1	Laboratory Duplicate	Fine	NA	NA	NA	**5**	**28**	**80**	**26**	**6**	**53**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	**0.09**
BH4	0.3-0.5	Sandy Silty Clay	Fine	NA	NA	NA	**7**	**18**	**300**	**3**	**11**	**31**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH4	0.8-1.0	XW Andersite	Coarse	NA	NA	NA	**6**	**16**	**210**	**2**	**9**	**24**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH5	0-0.1	Silty Clay	Fine	NA	NA	NA	**9**	**26**	**230**	**13**	**9**	**30**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	**0.3**
BH5	0.8-1.0	Silty Clay	Fine	NA	NA	NA	**4**	**52**	**180**	**7**	**12**	**20**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH6	0-0.1	F: Silty Clay	Fine	NA	NA	NA	<4	**22**	**220**	**17**	**9**	**54**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH6	0.3-0.5	Sandy Silty Clay	Fine	NA	NA	NA	<4	**19**	**440**	**3**	**10**	**51**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH6	0.8-1.0	XW Andersite	Fine	NA	NA	NA	<4	**16**	**400**	**1**	**9**	**55**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH7	0.02-0.3	F: Gravelly Silty Sand	Coarse	NA	NA	NA	**7**	**36**	**94**	**24**	**9**	**36**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH7 - [LAB_DUP]	0.02-0.3	Laboratory Duplicate	Coarse	NA	NA	NA	**6**	**51**	**100**	**20**	**11**	**34**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH7	0.3-0.5	F: Silty Sand	Coarse	NA	NA	NA	**7**	**66**	**120**	**10**	**13**	**29**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH8	0.02-0.2	F: Silty Sand	Coarse	NA	NA	NA	<4	**13**	**12**	**7**	**2**	**7**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	**2.6**
BH8	0.3-0.5	Sandy Silty Clay	Fine	NA	NA	NA	<4	**53**	**170**	**7**	**15**	**42**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	**0.3**
TP13	0-0.1	F: Silty Clay	Fine	NA	NA	NA	**5**	**20**	**210**	**22**	**8**	**59**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	**0.05**
TP13	0.5-0.6	Silty Clay	Fine	NA	NA	NA	**7**	**24**	**490**	**4**	**11**	**28**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
TP14	0-0.1	F: Silty Clay	Fine	NA	NA	NA	**15**	**31**	**99**	**120**	**3**	**88**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	**0.1**
TP14	0.4-0.5	Silty Clay	Fine	NA	NA	NA	<4	**17**	**420**	**6**	**10**	**57**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	**0.06**
TP14	0.9-1.0	XW Andersite	Coarse	NA	NA	NA	<4	**10**	**470**	**2**	**10**	**47**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
TP15	0-0.1	F: Silty Clay	Fine	NA	NA	NA	**6**	**21**	**34**	**12**	**7**	**30**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	**0.05**
TP15 - [LAB_DUP]	0-0.1	Laboratory Duplicate	Fine	NA	NA	NA	**5**	**19**	**29**	**12**	**7**	**30**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	**0.05**
TP15	0.9-1.0	F: Sandy Silty Clay	Fine	NA	NA	NA	**7**	**24**	**32**	**14**	**5**	**11**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	**3.4**
TP15	1.3-1.5	Silty Clay	Fine	NA	NA	NA	<4	**52**	**110**	**7**	**9**	**18**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
TP16	0-0.1	Silty Clay	Fine	NA	NA	NA	**10**	**56**	**190**	**25**	**14**	**61**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	**0.1**
TP16	0.4-0.5	Silty Clay	Fine	NA	NA	NA	**5**	**74**	**180**	**4**	**15**	**27**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
SDUP1	0-0.1	Duplicate of TP16	Fine	NA	NA	NA	**10**	**55**	**190**	**25**	**14**	**66**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	**0.2**
SDUP2	0-0.1	Duplicate of TP15	Fine	NA	NA	NA	**6**	**20**	**31**	**12**	**7**	**29**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
SDUP3	0-0.1	Duplicate of TP14	Fine	NA	NA	NA	**11**	**22**	**130**	**170**	**6**	**140**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	**0.08**
SDUP4	0-0.1	Duplicate of TP13	Fine	NA	NA	NA	**5**	**16**	**160**	**24**	**7**	**67**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	**0.05**
SDUP4 - [LAB_DUP]	0-0.1	Laboratory Duplicate	Fine	NA	NA	NA	**5**	**15**	**170**	**19**	**7**	**60**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Number of Samples				0	0	0	39	39	39	39	39	39	38	20	38	38	38	38	38	38	38	38	38
Maximum Value				NA	NA	NA	15	91	490	170	18	140	2	<PQL	<PQL	<PQL	320	230	<PQL	<PQL	<PQL	<PQL	5.4

Concentration above the SAC **VALUE**
Concentration above the PQL **Bold**
The guideline corresponding to the elevated value is highlighted in grey in the EIL and ESL Assessment Criteria Table below

EIL AND ESL ASSESSMENT CRITERIA

Sample Reference	**Sample Depth**	**Sample Description**	**Soil Texture**	pH	CEC (cmolc/kg)	Clay Content (% clay)	Arsenic	Chromium	Copper	Lead	Nickel	Zinc	Naphthalene	DDT	C_{6}-C_{10} (F1)	>C_{10}-C_{16} (F2)	>C_{16}-C_{34} (F3)	>C_{34}-C_{40} (F4)	Benzene	Toluene	Ethylbenzene	Total Xylenes	B(a)P
BH1	0-0.3	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH1 - [LAB_DUP]	0-0.3	Laboratory Duplicate	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH1	0.8-1.0	XW Andersite	Fine	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	1300	5600	65	105	125	45	20
BH2	0-0.2	F: Gravelly Sandy Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH2	0.3-0.5	Sandy Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	1300	5600	65	105	125	45	20
BH2	0.8-1.0	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	1300	5600	65	105	125	45	20
BH3	0-0.1	F: Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH3	0.3-0.5	F: Sandy Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH3	1.3-1.5	Sandy Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	1300	5600	65	105	125	45	20
BH4	0-0.1	F: Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH4 - [LAB_DUP]	0-0.1	Laboratory Duplicate	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH4	0.3-0.5	Sandy Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	1300	5600	65	105	125	45	20
BH4	0.8-1.0	XW Andersite	Coarse	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	300	2800	50	85	70	105	20
BH5	0-0.1	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH5	0.8-1.0	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	1300	5600	65	105	125	45	20
BH6	0-0.1	F: Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH6	0.3-0.5	Sandy Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	1300	5600	65	105	125	45	20
BH6	0.8-1.0	XW Andersite	Fine	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	1300	5600	65	105	125	45	20
BH7	0.02-0.3	F: Gravelly Silty Sand	Coarse	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	300	2800	50	85	70	105	20
BH7 - [LAB_DUP]	0.02-0.3	Laboratory Duplicate	Coarse	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	300	2800	50	85	70	105	20
BH7	0.3-0.5	F: Silty Sand	Coarse	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	300	2800	50	85	70	105	20
BH8	0.02-0.2	F: Silty Sand	Coarse	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	300	2800	50	85	70	105	20
BH8	0.3-0.5	Sandy Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	1300	5600	65	105	125	45	20
TP13	0-0.1	F: Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
TP13	0.5-0.6	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	1300	5600	65	105	125	45	20
TP14	0-0.1	F: Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
TP14	0.4-0.5	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	1300	5600	65	105	125	45	20
TP14	0.9-1.0	XW Andersite	Coarse	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	300	2800	50	85	70	105	20
TP15	0-0.1	F: Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
TP15 - [LAB_DUP]	0-0.1	Laboratory Duplicate	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
TP15	0.9-1.0	F: Sandy Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
TP15	1.3-1.5	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	1300	5600	65	105	125	45	20
TP16	0-0.1	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
TP16	0.4-0.5	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	1300	5600	65	105	125	45	20
SDUP1	0-0.1	Duplicate of TP16	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
SDUP2	0-0.1	Duplicate of TP15	Fine	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	1300	5600	65	105	125	45	20
SDUP3	0-0.1	Duplicate of TP14	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
SDUP4	0-0.1	Duplicate of TP13	Fine	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	1300	5600	65	105	125	45	20
SDUP4 - [LAB_DUP]	0-0.1	Laboratory Duplicate	Fine	NA	NA	NA	100	200	80	1200	35	150	--	--	--	--	--	--	--	--	--	--	--

TABLE S7

SOIL LABORATORY RESULTS COMPARED TO WASTE CLASSIFICATION GUIDELINES

All data in mg/kg unless stated otherwise

			HEAVY METALS								PAHs		OC/OP PESTICIDES				Total PCBs	TRH					BTEX COMPOUNDS				ASBESTOS FIBRES
			Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc	Total PAHs	B(a)P	Total Endosulfans	Chloropyrifos	Total Moderately Harmful	Total Scheduled		C_6-C_9	C_{10}-C_{14}	C_{15}-C_{28}	C_{29}-C_{36}	Total C_{10}-C_{36}	Benzene	Toluene	Ethyl benzene	Total Xylenes	
PQL - Envirolab Services			4	0.4	1	1	1	0.1	1	1	-	0.05	0.1	0.1	0.1	0.1	0.1	25	50	100	100	50	0.2	0.5	1	1	100
General Solid Waste CT1			100	20	100	NSL	100	4	40	NSL	200	0.8	60	4	250	50	50	650	NSL			10,000	10	288	600	1,000	-
General Solid Waste SCC1			500	100	1900	NSL	1500	50	1050	NSL	200	10	108	7.5	250	50	50	650	NSL			10,000	18	518	1,080	1,800	-
Restricted Solid Waste CT2			400	80	400	NSL	400	16	160	NSL	800	3.2	240	16	1000	50	50	2600	NSL			40,000	40	1,152	2,400	4,000	-
Restricted Solid Waste SCC2			2000	400	7600	NSL	6000	200	4200	NSL	800	23	432	30	1000	50	50	2600	NSL			40,000	72	2,073	4,320	7,200	-
Sample Reference	**Sample Depth**	**Sample Description**																									
BH1	0-0.3	Silty Clay	<4	<0.4	**37**	**70**	**7**	<0.1	**10**	**22**	**0.2**	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH1 - [LAB_DUP]	0-0.3	Laboratory Duplicate	<4	<0.4	**38**	**70**	**9**	<0.1	**10**	**25**	**0.55**	**0.1**	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
BH1	0.8-1.0	XW Andersite	<4	<0.4	**62**	**130**	**9**	<0.1	**14**	**31**	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
BH2	0-0.2	F: Gravelly Sandy Clay	**6**	<0.4	**38**	**200**	**8**	<0.1	**11**	**36**	**6.9**	**0.69**	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH2	0.3-0.5	Sandy Silty Clay	**6**	<0.4	**91**	**280**	**5**	<0.1	**18**	**37**	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
BH2	0.8-1.0	Silty Clay	**6**	<0.4	**63**	**200**	**6**	<0.1	**13**	**30**	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
BH3	0-0.1	F: Silty Clay	**7**	<0.4	**23**	**57**	**12**	<0.1	**9**	**24**	**0.64**	**0.09**	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	**180**	**180**	<0.2	<0.5	<1	<1	Not Detected
BH3	0.3-0.5	F: Sandy Silty Clay	**8**	<0.4	**47**	**86**	**15**	**0.2**	**11**	**33**	**85**	**5.4**	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	**170**	**200**	**370**	<0.2	<0.5	<1	<1	Not Detected
BH3	1.3-1.5	Sandy Silty Clay	**4**	<0.4	**72**	**120**	**9**	<0.1	**12**	**22**	**3.3**	**0.2**	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
BH4	0-0.1	F: Silty Clay	**5**	<0.4	**30**	**82**	**28**	<0.1	**7**	**53**	**0.66**	**0.1**	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH4 - [LAB_DUP]	0-0.1	Laboratory Duplicate	**5**	<0.4	**28**	**80**	**26**	<0.1	**6**	**53**	**0.5**	**0.09**	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
BH4	0.3-0.5	Sandy Silty Clay	**7**	<0.4	**18**	**300**	**3**	<0.1	**11**	**31**	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
BH4	0.8-1.0	XW Andersite	**6**	<0.4	**16**	**210**	**2**	<0.1	**9**	**24**	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
BH5	0-0.1	Silty Clay	**9**	<0.4	**26**	**230**	**13**	<0.1	**9**	**30**	**2.9**	**0.3**	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH5	0.8-1.0	Silty Clay	**4**	<0.4	**52**	**180**	**7**	<0.1	**12**	**20**	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
BH6	0-0.1	F: Silty Clay	<4	<0.4	**22**	**220**	**17**	<0.1	**9**	**54**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH6	0.3-0.5	Sandy Silty Clay	<4	<0.4	**19**	**440**	**3**	<0.1	**10**	**51**	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
BH6	0.8-1.0	XW Andersite	<4	<0.4	**16**	**400**	**1**	<0.1	**9**	**55**	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
BH7	0.02-0.3	F: Gravelly Silty Sand	**7**	<0.4	**36**	**94**	**24**	<0.1	**9**	**36**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH7 - [LAB_DUP]	0.02-0.3	Laboratory Duplicate	**6**	<0.4	**51**	**100**	**20**	<0.1	**11**	**34**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
BH7	0.3-0.5	F: Silty Sand	**7**	<0.4	**66**	**120**	**10**	**0.6**	**13**	**29**	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
BH8	0.02-0.2	F: Silty Sand	<4	<0.4	**13**	**12**	**7**	<0.1	**2**	**7**	**27**	**2.6**	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH8	0.3-0.5	Sandy Silty Clay	<4	<0.4	**53**	**170**	**7**	<0.1	**15**	**42**	**3.3**	**0.3**	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
TP13	0-0.1	F: Silty Clay	**5**	<0.4	**20**	**210**	**22**	**0.1**	**8**	**59**	**0.2**	**0.05**	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP13	0.5-0.6	Silty Clay	**7**	<0.4	**24**	**490**	**4**	<0.1	**11**	**28**	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
TP14	0-0.1	F: Silty Clay	**15**	<0.4	**31**	**99**	**120**	**0.1**	**3**	**88**	**1.1**	**0.1**	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP14	0.4-0.5	Silty Clay	<4	<0.4	**17**	**420**	**6**	<0.1	**10**	**57**	**0.5**	**0.06**	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
TP14	0.9-1.0	XW Andersite	<4	<0.4	**10**	**470**	**2**	<0.1	**10**	**47**	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
TP15	0-0.1	F: Silty Clay	**6**	<0.4	**21**	**34**	**12**	<0.1	**7**	**30**	**0.3**	**0.05**	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP15 - [LAB_DUP]	0-0.1	Laboratory Duplicate	**5**	<0.4	**19**	**29**	**12**	<0.1	**7**	**30**	**0.2**	**0.05**	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
TP15	0.9-1.0	F: Sandy Silty Clay	**7**	<0.4	**24**	**32**	**14**	<0.1	**5**	**11**	**43**	**3.4**	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP15	1.3-1.5	Silty Clay	<4	<0.4	**52**	**110**	**7**	**0.7**	**9**	**18**	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
TP16	0-0.1	Silty Clay	**10**	<0.4	**56**	**190**	**25**	<0.1	**14**	**61**	**1.4**	**0.1**	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP16	0.4-0.5	Silty Clay	**5**	<0.4	**74**	**180**	**4**	<0.1	**15**	**27**	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
SDUP1	0-0.1	Duplicate of TP16	**10**	<0.4	**55**	**190**	**25**	<0.1	**14**	**66**	**1.7**	**0.2**	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
SDUP2	0-0.1	Duplicate of TP15	**6**	<0.4	**20**	**31**	**12**	<0.1	**7**	**29**	**0.1**	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
SDUP3	0-0.1	Duplicate of TP14	**11**	<0.4	**22**	**130**	**170**	<0.1	**6**	**140**	**0.86**	**0.08**	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
SDUP4	0-0.1	Duplicate of TP13	**5**	<0.4	**16**	**160**	**24**	<0.1	**7**	**67**	**0.3**	**0.05**	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
SDUP4 - [LAB_DUP]	0-0.1	Laboratory Duplicate	**5**	<0.4	**15**	**170**	**19**	<0.1	**7**	**60**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH4-FCF1	0-0.2	Fragment	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Detected
BH4-FCF2	0-0.2	Fragment	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Detected
Total Number of Samples			39	39	39	39	39	39	39	39	38	38	20	20	20	20	20	38	38	38	38	38	38	38	38	38	16
Maximum Value			15	<PQL	91	490	170	0.7	18	140	85	5.4	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	170	200	370	<PQL	<PQL	<PQL	<PQL	Detected

Concentration above the CT1	VALUE
Concentration above SCC1	VALUE
Concentration above the SCC2	VALUE
Concentration above PQL	**Bold**

TABLE S8
SOIL LABORATORY TCLP RESULTS
All data in mg/L unless stated otherwise

			Lead	B(a)P
PQL - Envirolab Services			0.03	0.001
TCLP1 - General Solid Waste			5	0.04
TCLP2 - Restricted Solid Waste			20	0.16
TCLP3 - Hazardous Waste			>20	>0.16
Sample Reference	**Sample Depth**	**Sample Description**		
BH3	0.3-0.5	F: Sandy Silty Clay	NA	**0.0086**
BH8	0.02-0.2	F: Silty Sand	NA	<0.001
TP14	0-0.1	F: Silty Clay	**0.07**	NA
TP15	0.9-1.0	F: Sandy Silty Clay	NA	<0.001
SDUP3	0-0.1	Duplicate of TP14	**0.3**	NA
Total Number of samples			2	3
Maximum Value			0.30	0.0086

General Solid Waste	**VALUE**
Restricted Solid Waste	**VALUE**
Hazardous Waste	**VALUE**
Concentration above PQL	**Bold**

TABLE Q1
SOIL QA/QC SUMMARY

			TRH C6 - C10	TRH >C10-C16	TRH >C16-C34	TRH >C34-C40	Benzene	Toluene	Ethylbenzene	m+p-xylene	o-Xylene	Naphthalene	Acenaphthylene	Acenaph-thene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo(a)anthracene	Chrysene	Benzo(b,j+k)fluoranthene	Benzo(a)pyrene	Indeno(1,2,3-c,d)pyrene	Dibenzo(a,h)anthra-cene	Benzo(g,h,i)perylene
	PQL Envirolab SYD		*25*	*50*	*100*	*100*	*0.2*	*0.5*	*1*	*2*	*1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.2*	*0.05*	*0.1*	*0.1*	*0.1*
	PQL Envirolab VIC		*25*	*50*	*100*	*100*	*0.2*	*0.5*	*1*	*2*	*1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.2*	*0.05*	*0.1*	*0.1*	*0.1*
Intra laboratory duplicate	TP16	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.3	0.3	<0.1	0.1	0.2	0.1	0.1	<0.1	0.1
	SDUP1	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.4	0.4	0.1	0.1	0.3	0.2	0.1	<0.1	0.2
	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	0.35	0.35	0.075	0.1	0.25	0.15	0.1	nc	0.15
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	29%	29%	67%	0%	40%	67%	0%	nc	67%
Intra laboratory duplicate	TP15	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	0.1	<0.1	<0.1	<0.2	0.05	<0.1	<0.1	<0.1
	SDUP2	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1
	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	0.1	0.075	nc	nc	nc	0.0375	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	0%	67%	nc	nc	nc	67%	nc	nc	nc
Inter laboratory duplicate	TP14	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	0.3	0.3	0.1	0.1	<0.2	0.1	<0.1	<0.1	0.1
	SDUP3	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	0.2	0.2	<0.1	<0.1	<0.2	0.08	0.1	<0.1	0.1
	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	0.1	nc	0.25	0.25	0.075	0.075	nc	0.09	0.075	nc	0.1
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	0%	nc	40%	40%	67%	67%	nc	22%	67%	nc	0%
Inter laboratory duplicate	TP13	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.2	0.05	<0.1	<0.1	<0.1
	SDUP4	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	0.1	<0.1	<0.1	<0.2	0.05	<0.1	<0.1	<0.1
	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	0.075	0.1	nc	nc	nc	0.05	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	67%	0%	nc	nc	nc	0%	nc	nc	nc
Field Blank	TB-S1 2/05/23	-	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1
Field Rinsate	FR-SPT 3/05/23	µg/L[1]	26	<50	<100	<100	<1	<1	<1	<2	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1
Trip Spike	TS-S1 2/05/23		-	-	-	-	97%	97%	97%	97%	98%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

			HCB	alpha- BHC	gamma- BHC	beta- BHC	Heptachlor	delta- BHC	Aldrin	Heptachlor Epoxide	Gamma- Chlordane	alpha- chlordane	Endosulfan I	pp- DDE	Dieldrin	Endrin	pp- DDD	Endosulfan II	pp- DDT	Endrin Aldehyde	Endosulfan Sulphate	Methoxychlor
	PQL Envirolab SYD		*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*
	PQL Envirolab VIC		*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*
Intra laboratory duplicate	TP16	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	SDUP1	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
Intra laboratory duplicate	TP15	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	SDUP2	0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
Inter laboratory duplicate	TP14	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	SDUP3	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
Inter laboratory duplicate	TP13	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	SDUP4	0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
Field Blank	TB-S1 2/05/23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Field Rinsate	FR-SPT 3/05/23	µg/L[1]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trip Spike	TS-S1 2/05/23		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

			Azinphos-methyl (Guthio	Bromophos-ethyl	Chlorpyriphos	Chlorpyriphos-methyl	Diazinon	Dichlorvos	Dimethoate	Ethion	Fenitrothion	Malathion	Parathion	Ronnel	Total PCBS	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc
	PQL Envirolab SYD		*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*4*	*0.4*	*1*	*1*	*1*	*0.1*	*1*	*1*
	PQL Envirolab VIC		*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*4*	*0.4*	*1*	*1*	*1*	*0.1*	*1*	*1*
Intra laboratory duplicate	TP16	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	10	<0.4	56	190	25	<0.1	14	61
	SDUP1	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	10	<0.4	55	190	25	<0.1	14	66
	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	10	nc	55.5	190	25	nc	14	63.5
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	0%	nc	2%	0%	0%	nc	0%	8%
Intra laboratory duplicate	TP15	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	6	<0.4	21	34	12	<0.1	7	30
	SDUP2	0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	6	<0.4	20	31	12	<0.1	7	29
	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	6	nc	20.5	32.5	12	nc	7	29.5
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	0%	nc	5%	9%	0%	nc	0%	3%
Inter laboratory duplicate	TP14	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	15	<0.4	31	99	120	0.1	3	88
	SDUP3	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	11	<0.4	22	130	170	<0.1	6	140
	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	13	nc	26.5	114.5	145	0.075	4.5	114
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	31%	nc	34%	27%	34%	67%	67%	46%
Inter laboratory duplicate	TP13	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	5	<0.4	20	210	22	0.1	8	59
	SDUP4	0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	5	<0.4	16	160	24	<0.1	7	67
	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	5	nc	18	185	23	0.075	7.5	63
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	0%	nc	22%	27%	9%	67%	13%	13%
Field Blank	TB-S1 2/05/23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<4	<0.4	7	1	3	<0.1	5	12
Field Rinsate	FR-SPT 3/05/23	µg/L[1]	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.01	<0.01	0.3	<0.03	<0.0005	<0.02	0.2
Trip Spike	TS-S1 2/05/23		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Result outside of QA/QC acceptance criteria 🟨
1. Heavy metal concentrations reported in mg/L

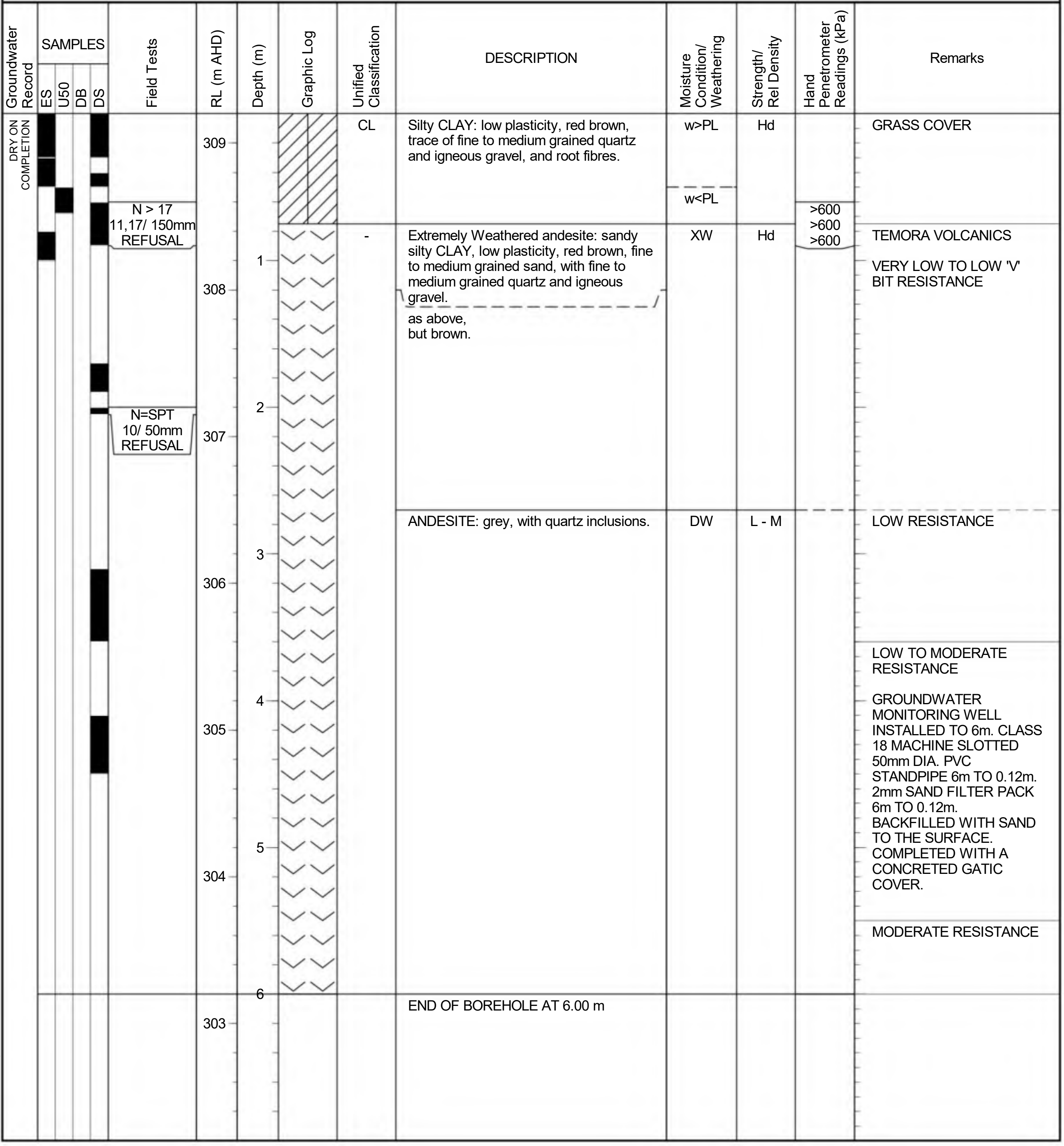
Appendix D: Borehole & Test Pit Logs

BOREHOLE LOG

Borehole No.
1
1 / 1

Client: HEALTH INFRASTRUCTURE
Project: PROPOSED ALTERATIONS AND ADDITIONS
Location: TEMORA HOSPITAL, 169-189 LOFTUS STREET, TEMORA, NSW

Job No.: 35822BF
Method: SPIRAL AUGER
R.L. Surface: ~309.2 m
Date: 4/5/23
Datum: AHD
Plant Type: HANJIN DB8
Logged/Checked By: C.S.Y./O.F.



Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	RL (m AHD)	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel Density	Hand Penetrometer Readings (kPa)	Remarks
DRY ON COMPLETION					N > 17 11,17/ 150mm REFUSAL	309			CL	Silty CLAY: low plasticity, red brown, trace of fine to medium grained quartz and igneous gravel, and root fibres.	w>PL w<PL	Hd	>600 >600 >600	GRASS COVER
					N=SPT 10/ 50mm REFUSAL	308 307	1 2		-	Extremely Weathered andesite: sandy silty CLAY, low plasticity, red brown, fine to medium grained sand, with fine to medium grained quartz and igneous gravel. as above, but brown.	XW	Hd		TEMORA VOLCANICS VERY LOW TO LOW 'V' BIT RESISTANCE
						306 305 304	3 4 5			ANDESITE: grey, with quartz inclusions.	DW	L - M		LOW RESISTANCE LOW TO MODERATE RESISTANCE GROUNDWATER MONITORING WELL INSTALLED TO 6m. CLASS 18 MACHINE SLOTTED 50mm DIA. PVC STANDPIPE 6m TO 0.12m. 2mm SAND FILTER PACK 6m TO 0.12m. BACKFILLED WITH SAND TO THE SURFACE. COMPLETED WITH A CONCRETED GATIC COVER. MODERATE RESISTANCE
						303	6			END OF BOREHOLE AT 6.00 m				

BOREHOLE LOG

Borehole No.
2
1 / 1

Client: HEALTH INFRASTRUCTURE
Project: PROPOSED ALTERATIONS AND ADDITIONS
Location: TEMORA HOSPITAL, 169-189 LOFTUS STREET, TEMORA, NSW

Job No.: 35822BF
Method: SPIRAL AUGER
R.L. Surface: ~317.2 m
Date: 3/5/23
Datum: AHD
Plant Type: HANJIN DB8
Logged/Checked By: C.S.Y./O.F.

RL (m AHD): 317, 316, 315, 314, 313, 312, 311

Depth (m): 1, 2, 3, 4, 5, 6

Groundwater Record	Field Tests	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel Density	Hand Penetrometer Readings (kPa)	Remarks
DRY ON COMPLETION			FILL: Gravelly sandy clay, low plasticity, red brown, fine to coarse grained sand, fine to medium grained igneous gravel.	w<PL			GRAVEL AND GRASS COVER
	N = 3 1,1,2	CL	Sandy Silty CLAY: low plasticity, brown, fine to medium grained sand, trace of fine to medium grained igneous gravel.	w<PL	F - St		SCREEN: 12.49kg 0-0.2m, NO FCF RESIDUAL
		CI	Silty CLAY: medium plasticity, red brown, with fine to medium grained sand, trace of fine grained igneous gravel.		(F - St)		TOO FRIABLE FOR HP TESTING
	N=SPT 12/ 50mm REFUSAL		as above, but brown.		(St - VSt)		
		-	Extremely Weathered andesite: silty clayey SAND, fine to coarse grained, brown, trace of fine grained andesite gravel.	XW	(D)		TEMORA VOLCANICS
			ANDESITE: brown, with quartz inclusions.	DW	EL - VL		VERY LOW 'V' BIT RESISTANCE
			as above, but trace of medium to high strength bands.		VL - L		VERY LOW RESISTANCE
			END OF BOREHOLE AT 5.50 m				

SAMPLES: ES, U50, DB, DS

COPYRIGHT

JKGeotechnics

BOREHOLE LOG

Borehole No.
3
1 / 1

Client: HEALTH INFRASTRUCTURE
Project: PROPOSED ALTERATIONS AND ADDITIONS
Location: TEMORA HOSPITAL, 169-189 LOFTUS STREET, TEMORA, NSW

Job No.: 35822BF
Method: SPIRAL AUGER
R.L. Surface: ~316.3 m
Date: 4/5/23
Datum: AHD
Plant Type: HANJIN DB8
Logged/Checked By: C.S.Y./O.F.

Groundwater Record	Field Tests	RL (m AHD)	Depth (m)	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel Density	Hand Penetrometer Readings (kPa)	Remarks
DRY ON COMPLETION					FILL: Silty clay, medium plasticity, brown and red brown, trace of quartz, igneous and ironstone gravel and root fibres.	w>PL			GRASS COVER APPEARS MODERATELY COMPACTED SCREEN: 10.18kg 0-0.1m, NO FCF
		316			FILL: Sandy silty clay, low to medium plasticity, brown and red brown, fine to coarse grained sand, trace of quartz and igneous gravel and boulders.				SCREEN:2.24kg 0.1-0.3m, NO FCF SCREEN: 8.96kg 0.3-1.1m, NO FCF
	N = 7 2,5,2								
			1	CI	Sandy Silty CLAY: medium plasticity, red brown, fine to coarse grained sand, trace of fine to coarse grained quartz and igneous gravel.	w<PL	VSt - Hd		RESIDUAL
		315						>600 >600 >600	
	N = 31 4,15,16		2	-	Extremely Weathered andesite: sandy silty CLAY, low to medium plasticity, brown, fine to coarse grained sand, with fine grained igneous and quartz gravel.	XW	Hd		TEMORA VOLCANICS VERY LOW 'V' BIT RESISTANCE
		314							
			3						
		313							
			4		Extremely Weathered andesite: silty clayey SAND, fine to coarse grained, brown, low plasticity, trace of fine to medium grained quartz and igneous gravel.				LOW RESISTANCE
		312							
			5						MODERATE RESISTANCE
		311							LOW RESISTANCE
			6		END OF BOREHOLE AT 6.00 m				
		310							

COPYRIGHT

BOREHOLE LOG

Borehole No.
4
1 / 2

Client: HEALTH INFRASTRUCTURE
Project: PROPOSED ALTERATIONS AND ADDITIONS
Location: TEMORA HOSPITAL, 169-189 LOFTUS STREET, TEMORA, NSW

Job No.: 35822BF
Method: SPIRAL AUGER
R.L. Surface: ~318.0 m
Date: 4/5/23 TO 5/5/23
Datum: AHD
Plant Type: HANJIN DB8
Logged/Checked By: C.S.Y./O.F.

Groundwater Record	Field Tests	RL (m AHD)	Depth (m)	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel Density	Hand Penetrometer Readings (kPa)	Remarks
DRY ON COMPLETION OF AUGERING					FILL: Silty clay, low to medium plasticity, brown, trace of fine grained igneous gravel, and root fibres.	w>PL			GRASS COVER
				CL-CI	Sandy Silty CLAY: low to medium plasticity, brown, fine to coarse grained sand, trace of fine grained igneous and andesite gravel.	w<PL			SCREEN: 10.67kg 0-0.2m, FCF1 & FCF2
	N = 21 4,8,13			-	Extremely Weathered andesite: gravelly clayey sand, fine to coarse grained, brown, low plasticity, fine to coarse grained igneous gravel.	XW	D		TEMORA VOLCANICS MODERATE 'V' BIT RESISTANCE
		317	1			DW	L - M		HIGH RESISTANCE
					ANDESITE: grey.				'V' BIT REFUSAL
					REFER TO CORED BOREHOLE LOG				GROUNDWATER MONITORING WELL INSTALLED TO 6m. CLASS 18 MACHINE SLOTTED 50mm DIA. PVC STANDPIPE 6m TO 0.12m. 2mm SAND FILTER PACK 6m TO 0.12m. BACKFILLED WITH SAND TO THE SURFACE. COMPLETED WITH A CONCRETED GATIC COVER.
		316	2						
		315	3						
		314	4						
		313	5						
		312	6						

SAMPLES: ES U50 DB DS

JKGeotechnics

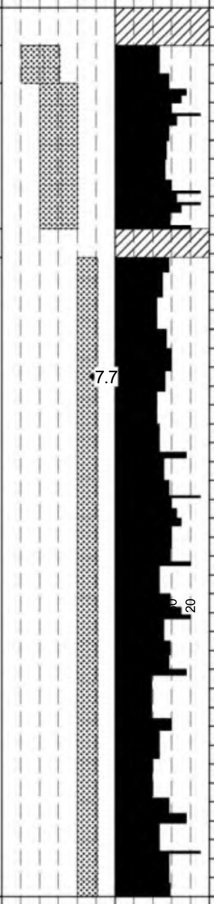
CORED BOREHOLE LOG

Borehole No.
4
2 / 2

Client: HEALTH INFRASTRUCTURE
Project: PROPOSED ALTERATIONS AND ADDITIONS
Location: TEMORA HOSPITAL, 169-189 LOFTUS STREET, TEMORA, NSW

Job No.: 35822BF | **Core Size:** NMLC | **R.L. Surface:** ~318.0 m
Date: 4/5/23 TO 5/5/23 | **Inclination:** VERTICAL | **Datum:** AHD
Plant Type: HANJIN DB8 | **Bearing:** N/A | **Logged/Checked By:** C.S.Y./O.F.

Water Loss\Level	RL (m AHD)	Depth (m)	CORE DESCRIPTION Rock Type, grain characteristics, colour, texture and fabric, features, inclusions and minor components	Weathering	Strength	Formation
			START CORING AT 1.30m			
80% RETURN			Extremely Weathered andesite: gravelly silty CLAY, low to medium plasticity, brown, fine to coarse grained andesite and ironstone gravel.	XW	Hd	Temora Volcanics
				HW	L - M	
	316	2	ANDESITE: grey and brown.	MW	M - H	
50% RETURN			Extremely Weathered andesite: gravelly silty CLAY, low to medium plasticity, brown, fine to coarse grained andesite and ironstone gravel.	XW	Hd	
	315	3	ANDESITE: fine grained, grey, trace of light grey speckles and gas bubbles.	SW	VH	
0% RETURN	314	4				
	313	5				
	312	6	END OF BOREHOLE AT 6.00 m			
	311	7				



DEFECT DETAILS — DESCRIPTION: Type, orientation, defect shape and roughness, defect coatings and seams, openness and thickness

Specific / General

(1.50m) Cr, 0°, 110 mm.t
(1.65m) J, 55°, P, Vr, Fe Sn
(1.65m) Cr, 55°, 70 mm.t
(1.73m) J, 70°, P, Vr, Fe Sn
(1.76m) J, 60°, P, R, Fe Sn
(1.80m) J, 50°, P, Vr, Fe Sn
(1.80m) J x3, P, Vr, Fe Sn
(1.86m) J, 60°, P, R, Fe Sn
(1.87m) J, 80°, P, S, Clay Vn
(1.92m) J, 65°, P, Vr, Fe Sn
(2.00m) J, 50°, P, Vr, Fe Sn
(2.10m) Cr, 50°, 180 mm.t
(2.21m) J, 60°, P, Vr, Fe Sn
(2.27m) J, 60°, P, Vr, Fe Sn
(2.28m) J, 80°, P, Vr, Fe Sn
(2.33m) J, 80°, P, R, Fe Sn
(2.34m) Cr, 80°, 10 mm.t
(2.38m) Cr, 80°, 20 mm.t
(2.45m) Cr, 80°, 90 mm.t
(2.70m) Cr, 20°, 100 mm.t
(2.83m) J, 70°, P, Vr, Fe Sn
(3.00m) J, 50°, P, R, Fe Sn, & Clay, Vn
(3.10m) Be, 5°, Cr, S, Clay FILLED, 2 mm.t
(3.16m) J, 25°, Cr, S, Clay Vn
(3.22m) Be, 5°, Cr, R, Cn
(3.33m) J, 55°, P, R, Fe Sn
(3.50m) J, 55°, P, R, Fe Sn
(3.65m) J, 45°, St, Vr, Fe Sn
(3.68m) J, 10°, Ir, Vr, Fe Sn
(3.80m) Cr, 15°, 100 mm.t, associated with J at 4.38m
(3.88m) J, 70°, P, S, Clay Vn
(3.89m) J, 15°, P, Vr, Cn
(3.95m) J, 10°, P, S, Clay Vn
(4.00m) Ji, 70°, P, Vr, Fe Sn
(4.04m) J, 50°, P, Vr, Fe Sn
(4.10m) Cr, 50°, 100 mm.t
(4.16m) J, 50°, P, R, Fe Sn
(4.23m) Be, 10°, P, S, Clay FILLED, 2 mm.t
(4.25m) J, 60°, P, Vr, Fe Sn
(4.40m) J, 70°, P, S, Clay Vn
(4.47m) Be, 10°, P, S, Clay Vn
(4.51m) J, 85°, P, S, Clay Vn
(4.53m) J, 80°, P, S, Clay Vn
(4.65m) J, 50°, P, Vr, Fe Sn
(4.72m) Be, 85°, P, S, Clay Vn
(4.80m) J, 20°, St, Vr, Fe Sn
(4.83m) J, 80°, P, R, Fe Sn
(5.06m) J, 10°, P, R, Fe Sn
(5.12m) J, 50°, P, R, Fe Sn
(5.27m) J, 30°, St, Vr, Fe Sn
(5.48m) J, 50°, P, R, Clay Vn
(5.56m) Be, 80°, P, S, Clay FILLED, 5 mm.t
(5.61m) J, 60°, P, Vr, Fe Sn
(5.76m) Cr, 50°, 5 mm.t
(5.77m) CS, 50°, 5 mm.t
(5.85m) J, 40°, P, Vr, Fe Sn
(5.93m) J, 20°, P, R, Fe Sn

FRACTURES NOT MARKED ARE CONSIDERED TO BE DRILLING AND HANDLING BREAKS

BOREHOLE LOG

Borehole No.
5
1 / 1

Client: HEALTH INFRASTRUCTURE
Project: PROPOSED ALTERATIONS AND ADDITIONS
Location: TEMORA HOSPITAL, 169-189 LOFTUS STREET, TEMORA, NSW

Job No.: 35822BF
Method: SPIRAL AUGER
R.L. Surface: ~318.2 m
Date: 3/5/23
Datum: AHD
Plant Type: HANJIN DB8
Logged/Checked By: C.S.Y./O.F.

Groundwater Record	Field Tests	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel Density	Hand Penetrometer Readings (kPa)	Remarks
DRY ON COMPLETION		CL-CI	Silty CLAY: low to medium plasticity, brown, trace of fine to medium grained igneous gravel, and root fibres.	w>PL	(St)		GRASS COVER RESIDUAL
	N = 12 3,6,6	CI	Silty CLAY: medium plasticity, red brown, trace of fine to medium grained andesite gravel.	w~PL	Hd		
		-	Extremely Weathered andesite: silty clayey SAND, fine to coarse grained, brown, trace of fine grained igneous gravel.	XW	(D)		TEMORA VOLCANICS
	N=SPT 5/ 0mm REFUSAL		ANDESITE: brown and grey, fine to medium grained, trace of fine to medium grained quartz gravel, trace of high strength bands.	DW	L - M		LOW TO MODERATE 'V' BIT RESISTANCE
			END OF BOREHOLE AT 3.30 m				'V' BIT REFUSAL

COPYRIGHT

JKGeotechnics

BOREHOLE LOG

Borehole No.
6
1 / 1

Client: HEALTH INFRASTRUCTURE
Project: PROPOSED ALTERATIONS AND ADDITIONS
Location: TEMORA HOSPITAL, 169-189 LOFTUS STREET, TEMORA, NSW

Job No.: 35822BF
Method: SPIRAL AUGER
R.L. Surface: ~319.1 m
Date: 2/5/23
Datum: AHD
Plant Type: HANJIN DB8
Logged/Checked By: C.S.Y./O.F.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	RL (m AHD)	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel Density	Hand Penetrometer Readings (kPa)	Remarks
DRY ON COMPLETION						319				FILL: Silty clay, low to medium plasticity, red brown, with fine to coarse grained quartz and igneous gravel, trace of root fibres.	w>PL			GRASS COVER SCREEN: 10.44kg 0-0.2m, NO FCF
					N > 14 11,14/ 100mm REFUSAL				CL-CI	Sandy Silty CLAY: low to medium plasticity, brown, fine to coarse grained sand, trace of fine to medium grained granite gravel.	w<PL	(VSt - Hd)		RESIDUAL
						318	1		-	Extremely Weathered andesite: gravelly sandy SILT, low plasticity, brown and light brown, fine to coarse grained igneous gravel.	XW	(Hd)		TEMORA VOLCANICS
										ANDESITE: grey.	DW	H		HIGH 'V' BIT RESISTANCE 'V' BIT REFUSAL
										END OF BOREHOLE AT 1.30 m				GROUNDWATER MONITORING WELL INSTALLED TO 1.3m. CLASS 18 MACHINE SLOTTED 50mm DIA. PVC STANDPIPE 1.3m TO 0.12m. 2mm SAND FILTER PACK 1.3m TO 0.12m. BACKFILLED WITH SAND TO THE SURFACE. COMPLETED WITH A CONCRETED GATIC COVER.
						317	2							
						316	3							
						315	4							
						314	5							
						313	6							

BOREHOLE LOG

Borehole No.
7
1 / 2

Client: HEALTH INFRASTRUCTURE
Project: PROPOSED ALTERATIONS AND ADDITIONS
Location: TEMORA HOSPITAL, 169-189 LOFTUS STREET, TEMORA, NSW

Job No.: 35822BF
Method: SPIRAL AUGER
R.L. Surface: ~318.8 m
Date: 2/5/23 TO 3/5/23
Datum: AHD
Plant Type: HANJIN DB8
Logged/Checked By: C.S.Y./O.F.

Groundwater Record	SAMPLES				Field Tests	RL (m AHD)	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel Density	Hand Penetrometer Readings (kPa)	Remarks
	ES	U50	DB	DS										
DRY ON COMPLETION OF AUGERING	■							▨	-	ASPHALTIC CONCRETE: 20mm.t	M			SCREEN: 1.88kg 0.02-0.3m, NO FCF
	■			■				▨		FILL: Gravelly silty sand, fine to medium grained, brown, fine to coarse grained quartz and igneous gravel.				POSSIBLY NATURAL
				■	N > 11 13,11/ 80mm REFUSAL	318			-	FILL: Silty sand, fine to coarse grained , red brown, trace of fine grained quartz gravel.	XW	(Hd)		TEMORA VOLCANICS
	■			■ ■			1			Extremely Weathered andesite: gravelly sandy SILT, low plasticity, brown, fine to coarse grained sand, fine grained igneous gravel.				VERY LOW 'V' BIT RESISTANCE
						317	2			REFER TO CORED BOREHOLE LOG				MODERATE TO HIGH RESISTANCE
						316	3							
						315	4							
						314	5							
						313	6							
						312								

JKGeotechnics

CORED BOREHOLE LOG

Borehole No.
7
2 / 2

Client: HEALTH INFRASTRUCTURE
Project: PROPOSED ALTERATIONS AND ADDITIONS
Location: TEMORA HOSPITAL, 169-189 LOFTUS STREET, TEMORA, NSW

Job No.: 35822BF
Core Size: NMLC
R.L. Surface: ~318.8 m
Date: 2/5/23 TO 3/5/23
Inclination: VERTICAL
Datum: AHD
Plant Type: HANJIN DB8
Bearing: N/A
Logged/Checked By: C.S.Y./O.F.

Water Loss\Level	Barrel Lift	RL (m AHD)	Depth (m)	Graphic Log	CORE DESCRIPTION Rock Type, grain characteristics, colour, texture and fabric, features, inclusions and minor components	Weathering	Strength	POINT LOAD STRENGTH INDEX $I_s(50)$ VL -0.1 L -0.3 M -1 H -3 VH -10 EH	DEFECT DETAILS SPACING (mm) 600 200 60 20	DEFECT DETAILS DESCRIPTION Type, orientation, defect shape and roughness, defect coatings and seams, openness and thickness Specific General	Formation
					START CORING AT 1.40m						
90% RETURN		317 316	2 3		NO CORE 1.82m						
					ANDESITE: fine to coarse grained, grey, with quartz inclusions.	SW	VH	4.1		(3.22m) Cr, 10°, 30 mm.t (3.33m) J, 40°, P, R, Fe Sn (3.39m) J, 35°, P, Vr, Cn (3.43m) Jh, 45°, P, S, Cn (3.48m) Be, 15°, P, Vr, Cn (3.50m) J, 60°, P, R, Cn (3.55m) Be, 10°, Cr, Vr, Cn (3.60m) Be, 20°, Cr, Vr, Fe Sn (3.70m) J, 70°, P, Vr, Fe Sn, & Gravel FILLED	Temora Volcanics
		315 314 313 312 311	4 5 6 7		END OF BOREHOLE AT 3.80 m				600 200 60 20 600 200 60 20		

JK 9.02.4 LIB.GLB Log JK CORED BOREHOLE - MASTER 35822BF TEMORA.GPJ <<DrawingFile>> 25/05/2023 13:19 10.01.00.01 Datgel Lab and In Situ Tool - DGD | Lib: JK 9.02.4 2019-05-31 Prj: JK 9.01.0 2018-03-20

FRACTURES NOT MARKED ARE CONSIDERED TO BE DRILLING AND HANDLING BREAKS

BOREHOLE LOG

Borehole No.
8
1 / 1

Client: HEALTH INFRASTRUCTURE
Project: PROPOSED ALTERATIONS AND ADDITIONS
Location: TEMORA HOSPITAL, 169-189 LOFTUS STREET, TEMORA, NSW

Job No.: 35822BF **Method:** SPIRAL AUGER **R.L. Surface:** ~318.3 m
Date: 5/5/23 **Datum:** AHD
Plant Type: HANJIN DB8 **Logged/Checked By:** C.S.Y./O.F.

Groundwater Record	Field Tests	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel Density	Hand Penetrometer Readings (kPa)	Remarks
DRY ON COMPLETION		-	ASPHALTIC CONCRETE: 20mm.t	M			
			FILL: Silty sand, fine to medium grained, red brown, with fine to coarse grained igneous gravel.				APPEARS POORLY COMPACTED
	N = 3 1,1,2	CL	Sandy Silty CLAY: low plasticity, red brown, fine to coarse grained sand, trace of fine grained igneous and quartz gravel.	w<PL	(Hd)	>600 >600 >600	INSUFFICIENT RETURN FOR BULK SCREEN SAMPLE RESIDUAL
	N = 25 5,11,14 N > 11 2,11/ 150mm REFUSAL	-	Extremely Weathered andesite: sandy silty CLAY or silty clayey SAND, low plasticity, brown, fine to coarse grained sand, trace of fine grained quartz gravel.	XW	Hd		TEMORA VOLCANICS NO SPT RECOVERY FROM AUGER
			Extremely Weathered andesite: gravelly silty SAND, fine to coarse grained, brown, fine to medium grained igneous gravel.		VD		
			ANDESITE: grey, trace of high strength bands.	DW	L		VERY LOW TO LOW 'V' BIT RESISTANCE
			END OF BOREHOLE AT 6.00 m				

SAMPLES: ES, U50, DB, DS

RL (m AHD): 318, 317, 316, 315, 314, 313, 312

Depth (m): 1, 2, 3, 4, 5, 6

JKGeotechnics

BOREHOLE LOG

Borehole No.
9
1 / 1

Client: HEALTH INFRASTRUCTURE
Project: PROPOSED ALTERATIONS AND ADDITIONS
Location: TEMORA HOSPITAL, 169-189 LOFTUS STREET, TEMORA, NSW

Job No.: 35822BF **Method:** SPIRAL AUGER **R.L. Surface:** ~308.5 m
Date: 3/5/23 **Datum:** AHD
Plant Type: HANJIN DB8 **Logged/Checked By:** C.S.Y./O.F.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	RL (m AHD)	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel Density	Hand Penetrometer Readings (kPa)	Remarks
DRY ON COMPLETION			■			308	1	▨	CL-CI	Silty CLAY: low to medium plasticity, red brown, trace of quartz gravel and root fibres.	w<PL	(St - VSt)		GRASS COVER RESIDUAL TOO FRIABLE FOR HP TESTING
									-	ANDESITE: brown.	DW	H		TEMORA VOLCANICS MODERATE TO HIGH 'V' BIT RESISTANCE
						307				END OF BOREHOLE AT 1.20 m				'V' BIT REFUSAL
							2							
						306								
							3							
						305								
							4							
						304								
							5							
						303								
							6							
						302								

JKGeotechnics

BOREHOLE LOG

Borehole No.
10
1 / 1

Client: HEALTH INFRASTRUCTURE
Project: PROPOSED ALTERATIONS AND ADDITIONS
Location: TEMORA HOSPITAL, 169-189 LOFTUS STREET, TEMORA, NSW

Job No.: 35822BF
Method: SPIRAL AUGER
R.L. Surface: ~307.8 m
Date: 3/5/23
Datum: AHD
Plant Type: HANJIN DB8
Logged/Checked By: C.S.Y./O.F.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	RL (m AHD)	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel Density	Hand Penetrometer Readings (kPa)	Remarks
DRY ON COMPLETION			■					▨	CL-CI	Silty CLAY: low to medium plasticity, red brown, trace of fine to medium grained quartz gravel and fine to coarse grained andesite gravel.	w>PL	(St - VSt)		GRASS COVER RESIDUAL TOO FRIABLE FOR HP TESTING
			■			307		▨			w<PL			
			■				1	▨						
			■					▨		as above, but brown.				
										END OF BOREHOLE AT 1.50 m				
						306								
							2							
						305								
							3							
						304								
							4							
						303								
							5							
						302								
							6							
						301								

JKGeotechnics

BOREHOLE LOG

Borehole No.
11
1 / 1

Client: HEALTH INFRASTRUCTURE
Project: PROPOSED ALTERATIONS AND ADDITIONS
Location: TEMORA HOSPITAL, 169-189 LOFTUS STREET, TEMORA, NSW

Job No.: 35822BF
Method: SPIRAL AUGER
R.L. Surface: ~318.1 m
Date: 3/5/23
Datum: AHD
Plant Type: HANJIN DB8
Logged/Checked By: C.S.Y./O.F.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	RL (m AHD)	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel Density	Hand Penetrometer Readings (kPa)	Remarks
DRY ON COMPLETION			■			318			CL-CI	Silty CLAY: low to medium plasticity, red brown, trace of fine to medium grained igneous gravel, and root fibres.	w~PL			GRASS COVER RESIDUAL TOO FRIABLE FOR HP TESTING
			■			317	1		-	Extremely Weathered andesite: sandy silty CLAY, low to medium plasticity, red brown, trace of fine to coarse grained igneous gravel.	XW	(Hd)		TEMORA VOLCANICS
						316 315 314 313 312	2 3 4 5 6			END OF BOREHOLE AT 1.50 m				

BOREHOLE LOG

Borehole No.
12
1 / 1

Client: HEALTH INFRASTRUCTURE
Project: PROPOSED ALTERATIONS AND ADDITIONS
Location: TEMORA HOSPITAL, 169-189 LOFTUS STREET, TEMORA, NSW

Job No.: 35822BF
Method: SPIRAL AUGER
R.L. Surface: ~312.6 m
Date: 3/5/23
Datum: AHD
Plant Type: HANJIN DB8
Logged/Checked By: C.S.Y./O.F.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	RL (m AHD)	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel Density	Hand Penetrometer Readings (kPa)	Remarks
DRY ON COMPLETION			■			312		▨	CL-CI	Silty CLAY: low to medium plasticity, red brown, with fine to coarse grained quartz gravel, trace of quartz boulder, fine grained igneous gravel, and root fibres.	w~PL			GRASS COVER RESIDUAL
			■				1	▨		Sandy Silty CLAY: low to medium plasticity, brown, fine to medium grained sand, trace of fine grained igneous and ironstone gravel.	w<PL			
						311 310 309 308 307 306	2 3 4 5 6			END OF BOREHOLE AT 1.50 m				

COPYRIGHT

JKEnvironments

ENVIRONMENTAL LOG

Log No. **TP13** **1/1**

SDUP4: 0-0.1m

Environmental logs are not to be used for geotechnical purposes

Client: HEALTH INFRASTRUCTURE
Project: PROPOSED ALTERATIONS AND ADDITIONS
Location: TEMORA HOSPITAL, 169-189 LOFTUS STREET, TEMORA, NSW

Job No.: E35822PR
Method: STRIP TRENCH
R.L. Surface: ≈ 319.3m
Date: 4/5/23
Datum: AHD
Plant Type: 3T EXCAVATOR
Logged/Checked by: A.D./T.H.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLETION	■		■		■ ■		0	▨		FILL:Silty clay, low to medium plasticity, brown, trace of quartz gravel and root fibres.	w≈PL			GRASS COVER SCREEN: 10.52kg 0-0.1m, NO FCF SCREEN: 10.22kg 0.1-0.3m, NO FCF
	■ ■		■ ■				0.5 1	▨	CI-CH	Silty CLAY: medium to high plasticity, red brown, trace of volcanic breccia.	w≈PL			RESIDUAL
							1.5 2 2.5 3 3.5			END OF BOREHOLE AT 1.05m				

ENVIRONMENTAL LOG

Log No.
TP14
1/1

Environmental logs are not to be used for geotechnical purposes

SDUP3: 0-0.1m

Client: HEALTH INFRASTRUCTURE
Project: PROPOSED ALTERATIONS AND ADDITIONS
Location: TEMORA HOSPITAL, 169-189 LOFTUS STREET, TEMORA, NSW

Job No.: E35822PR
Method: STRIP TRENCH
R.L. Surface: ≈ 320.5m
Date: 4/5/23
Datum: AHD
Plant Type: 3T EXCAVATOR
Logged/Checked by: A.D./T.H.

Groundwater Record	SAMPLES ES	ASS	ASB	SAL	DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLETION	■		■		■		0			FILL: Silty clay, low to medium plasticity, brown, trace of igneous and quartz gravel, volcanic breccia, metal fragments and root fibres.	w≈PL			GRASS COVER SCREEN: 12.31kg 0-0.2m, NO FCF
	■		■						CI-CH	Silty CLAY: medium to high plasticity, red brown, trace of quartz and volcanic breccia.	w≈PL			RESIDUAL
	■		■				0.5		-	Extremely Weathered andesite: silty SAND, fine to coarse grained, brown.	XW			TEMORA VOLCANICS
							1			END OF BOREHOLE AT 1.0m				
							1.5							
							2							
							2.5							
							3							
							3.5							

JKEnvironments

ENVIRONMENTAL LOG

Log No.
TP15
1/1

Environmental logs are not to be used for geotechnical purposes

SDUP2: 0-0.1m

Client: HEALTH INFRASTRUCTURE

Project: PROPOSED ALTERATIONS AND ADDITIONS

Location: TEMORA HOSPITAL, 169-189 LOFTUS STREET, TEMORA, NSW

Job No.: E35822PR **Method:** STRIP TRENCH **R.L. Surface:** ≈ 316.7m

Date: 4/5/23 **Datum:** AHD

Plant Type: 3T EXCAVATOR **Logged/Checked by:** A.D./T.H.

Groundwater Record	SAMPLES ES	ASS	ASB	SAL	DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLETION							0			FILL: Silty clay, low to medium plasticity, brown, trace of quartz gravel, and root fibres.	w≈PL			GRASS COVER SCREEN: 10.29kg 0-0.1m, NO FCF SCREEN: 10.34kg 0.1-0.5m, NO FCF
							0.5			FILL: Sandy silty clay, low to medium plasticity, red brown, trace of volcanic breccia.	w≈PL			SCREEN: 12.52kg 0.5-1.1m, NO FCF
							1		CL-CI	Silty CLAY: low to medium plasticity, red brown, trace of quartz gravel.	w≈PL			RESIDUAL
							1.5			END OF BOREHOLE AT 1.5m				
							2							
							2.5							
							3							
							3.5							

JKEnvironments

ENVIRONMENTAL LOG

Environmental logs are not to be used for geotechnical purposes

Log No.
TP16
1/1

SDUP1: 0-0.1m

Client: HEALTH INFRASTRUCTURE
Project: PROPOSED ALTERATIONS AND ADDITIONS
Location: TEMORA HOSPITAL, 169-189 LOFTUS STREET, TEMORA, NSW

Job No.: E35822PR **Method:** STRIP TRENCH **R.L. Surface:** ≈ 316.6m
Date: 4/5/23 **Datum:** AHD
Plant Type: 3T EXCAVATOR **Logged/Checked by:** A.D./T.H.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLETION	■		■				0		CL-CI	Silty CLAY: low to medium plasticity, brown, trace of quartz gravel, and root fibres.	w≈PL			GRASS COVER RESIDUAL
	■		■				0.5		CI-CH	Silty CLAY: medium to high plasticity, red brown, trace of volcanic breccia.	w≈PL			
	■		■						-	Extremely Weathered andesite: silty SAND, fine to coarse grained, brown.	XW			TEMORA VOLCANICS
							1			END OF BOREHOLE AT 1.0m				
							1.5							
							2							
							2.5							
							3							
							3.5							

ENVIRONMENTAL LOGS EXPLANATION NOTES

INTRODUCTION

These notes have been provided to amplify the environmental report in regard to classification methods, field procedures and certain matters relating to the logging of soil and rock. Not all notes are necessarily relevant to all reports.

Where geotechnical borehole logs are utilised for environmental purpose, reference should also be made to the explanatory notes included in the geotechnical report. Environmental logs are not suitable for geotechnical purposes.

The ground is a product of continuing natural and man-made processes and therefore exhibits a variety of characteristics and properties which vary from place to place and can change with time. Environmental studies include gathering and assimilating limited facts about these characteristics and properties in order to understand or predict the behaviour of the ground on a particular site under certain conditions. This report may contain such facts obtained by inspection, excavation, probing, sampling, testing or other means of investigation. If so, they are directly relevant only to the ground at the place where and time when the investigation was carried out.

DESCRIPTION AND CLASSIFICATION METHODS

The methods of description and classification of soils and rocks used in this report are based on Australian Standard 1726:2017 *'Geotechnical Site Investigations'*. In general, descriptions cover the following properties – soil or rock type, colour, structure, strength or density, and inclusions. Identification and classification of soil and rock involves judgement and the Company infers accuracy only to the extent that is common in current geoenvironmental practice.

Soil types are described according to the predominating particle size and behaviour as set out in the attached soil classification table qualified by the grading of other particles present (eg. sandy clay) as set out below:

Soil Classification	Particle Size
Clay	< 0.002mm
Silt	0.002 to 0.075mm
Sand	0.075 to 2.36mm
Gravel	2.36 to 63mm
Cobbles	63 to 200mm
Boulders	> 200mm

Non-cohesive soils are classified on the basis of relative density, generally from the results of Standard Penetration Test (SPT) as below:

Relative Density	SPT 'N' Value (blows/300mm)
Very loose (VL)	< 4
Loose (L)	4 to 10
Medium dense (MD)	10 to 30
Dense (D)	30 to 50
Very Dense (VD)	> 50

Cohesive soils are classified on the basis of strength (consistency) either by use of a hand penetrometer, vane shear, laboratory testing and/or tactile engineering examination. The strength terms are defined as follows.

Classification	Unconfined Compressive Strength (kPa)	Indicative Undrained Shear Strength (kPa)
Very Soft (VS)	≤ 25	≤ 12
Soft (S)	> 25 and ≤ 50	> 12 and ≤ 25
Firm (F)	> 50 and ≤ 100	> 25 and ≤ 50
Stiff (St)	> 100 and ≤ 200	> 50 and ≤ 100
Very Stiff (VSt)	> 200 and ≤ 400	> 100 and ≤ 200
Hard (Hd)	> 400	> 200
Friable (Fr)	Strength not attainable – soil crumbles	

Rock types are classified by their geological names, together with descriptive terms regarding weathering, strength, defects, etc. Where relevant, further information regarding rock classification is given in the text of the report. In the Sydney Basin, 'shale' is used to describe fissile mudstone, with a weakness parallel to bedding. Rocks with alternating inter-laminations of different grain size (eg. siltstone/claystone and siltstone/fine grained sandstone) are referred to as 'laminite'.

INVESTIGATION METHODS

The following is a brief summary of investigation methods currently adopted by the Company and some comments on their use and application. All methods except test pits, hand auger drilling and portable Dynamic Cone Penetrometers require the use of a mechanical rig which is commonly mounted on a truck chassis or track base.

Test Pits: These are normally excavated with a backhoe or a tracked excavator, allowing close examination of the insitu soils and 'weaker' bedrock if it is safe to descend into the pit. The depth of penetration is limited to about 3m for a backhoe and up to 6m for a large excavator. Limitations of test pits are the problems associated with disturbance and difficulty of reinstatement and the consequent effects on close-by structures. Care must be taken if construction is to be carried out near test pit locations to either properly recompact the backfill during construction or to design and construct the structure so as not to be adversely affected by poorly compacted backfill at the test pit location.

Hand Auger Drilling: A borehole of 50mm to 100mm diameter is advanced by manually operated equipment. Refusal of the hand auger can occur on a variety of materials such as obstructions within any fill, tree roots, hard clay, gravel or ironstone, cobbles and boulders, and does not necessarily indicate rock level.

Continuous Spiral Flight Augers: The borehole is advanced using 75mm to 115mm diameter continuous spiral flight augers, which are withdrawn at intervals to allow sampling and insitu testing. This is a relatively economical means of drilling in clays and in sands above the water table. Samples are returned to the surface by the flights or may be collected after withdrawal of the auger flights, but they can be very disturbed and layers may become mixed. Information from the auger sampling (as distinct from specific sampling by SPTs or undisturbed samples) is of limited reliability due to mixing or softening of samples by groundwater, or uncertainties as to the original depth of the samples. Augering below the groundwater table is of even lesser reliability than augering above the water table.

Rock Augering: Use can be made of a Tungsten Carbide (TC) bit for auger drilling into rock to indicate rock quality and continuity by variation in drilling resistance and from examination of recovered rock cuttings. This method of investigation is quick and relatively inexpensive but provides only an indication of the likely rock strength and predicted values may be in error by a strength order. Where rock strengths may have a significant impact on construction feasibility or costs, then further investigation by means of cored boreholes may be warranted.

Wash Boring: The borehole is usually advanced by a rotary bit, with water being pumped down the drill rods and returned up the annulus, carrying the drill cuttings. Only major changes in stratification can be assessed from the cuttings, together with some information from "feel" and rate of penetration.

Mud Stabilised Drilling: Either Wash Boring or Continuous Core Drilling can use drilling mud as a circulating fluid to stabilise the borehole. The term 'mud' encompasses a range of products ranging from bentonite to polymers. The mud tends to mask the cuttings and reliable identification is only possible from intermittent intact sampling (eg. from SPT and U50 samples) or from rock coring, etc.

Continuous Core Drilling: A continuous core sample is obtained using a diamond tipped core barrel. Provided full core recovery is achieved (which is not always possible in very low strength rocks and granular soils), this technique provides a very reliable (but relatively expensive) method of investigation. In rocks, NMLC or HQ triple tube core barrels, which give a core of about 50mm and 61mm diameter, respectively, is usually used with water flush. The length of core recovered is compared to the length drilled and any length not recovered is shown as NO CORE. The location of NO CORE recovery is determined on site by the supervising engineer; where the location is uncertain, the loss is placed at the bottom of the drill run.

Standard Penetration Tests: Standard Penetration Tests (SPT) are used mainly in non-cohesive soils, but can also be used in cohesive soils, as a means of indicating density or strength and also of obtaining a relatively undisturbed sample. The test procedure is described in Australian Standard 1289.6.3.1–2004 (R2016) *'Methods of Testing Soils for Engineering Purposes, Soil Strength and Consolidation Tests – Determination of the Penetration Resistance of a Soil – Standard Penetration Test (SPT)'*.

The test is carried out in a borehole by driving a 50mm diameter split sample tube with a tapered shoe, under the impact of a 63.5kg hammer with a free fall of 760mm. It is normal for the tube to be driven in three successive 150mm increments and the 'N' value is taken as the number of blows for the last 300mm. In dense sands, very hard clays or weak rock, the full 450mm penetration may not be practicable and the test is discontinued.

The test results are reported in the following form:

- In the case where full penetration is obtained with successive blow counts for each 150mm of, say, 4, 6 and 7 blows, as

  N = 13
  4, 6, 7

- In a case where the test is discontinued short of full penetration, say after 15 blows for the first 150mm and 30 blows for the next 40mm, as

  N > 30
  15, 30/40mm

The results of the test can be related empirically to the engineering properties of the soil.

A modification to the SPT is where the same driving system is used with a solid 60° tipped steel cone of the same diameter as the SPT hollow sampler. The solid cone can be continuously driven for some distance in soft clays or loose sands, or may be used where damage would otherwise occur to the SPT. The results of this Solid Cone Penetration Test (SCPT) are shown as 'N_c' on the borehole logs, together with the number of blows per 150mm penetration.

LOGS

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

The terms and symbols used in preparation of the logs are defined in the following pages.

Interpretation of the information shown on the logs, and its application to design and construction, should therefore take into account the spacing of boreholes or test pits, the method of drilling or excavation, the frequency of sampling and testing and the possibility of other than 'straight line' variations between the boreholes or test pits. Subsurface conditions between boreholes or test pits may vary significantly from conditions encountered at the borehole or test pit locations.

GROUNDWATER

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

- Although groundwater may be present, in low permeability soils it may enter the hole slowly or perhaps not at all during the time it 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 and may not be the same at the time of construction.
- 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 be washed out of the hole or 'reverted' chemically if reliable water observations are to be made.

More reliable measurements can be made by installing standpipes which are read after the groundwater level has stabilised at intervals ranging from several days to 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 perched water tables or surface water.

FILL

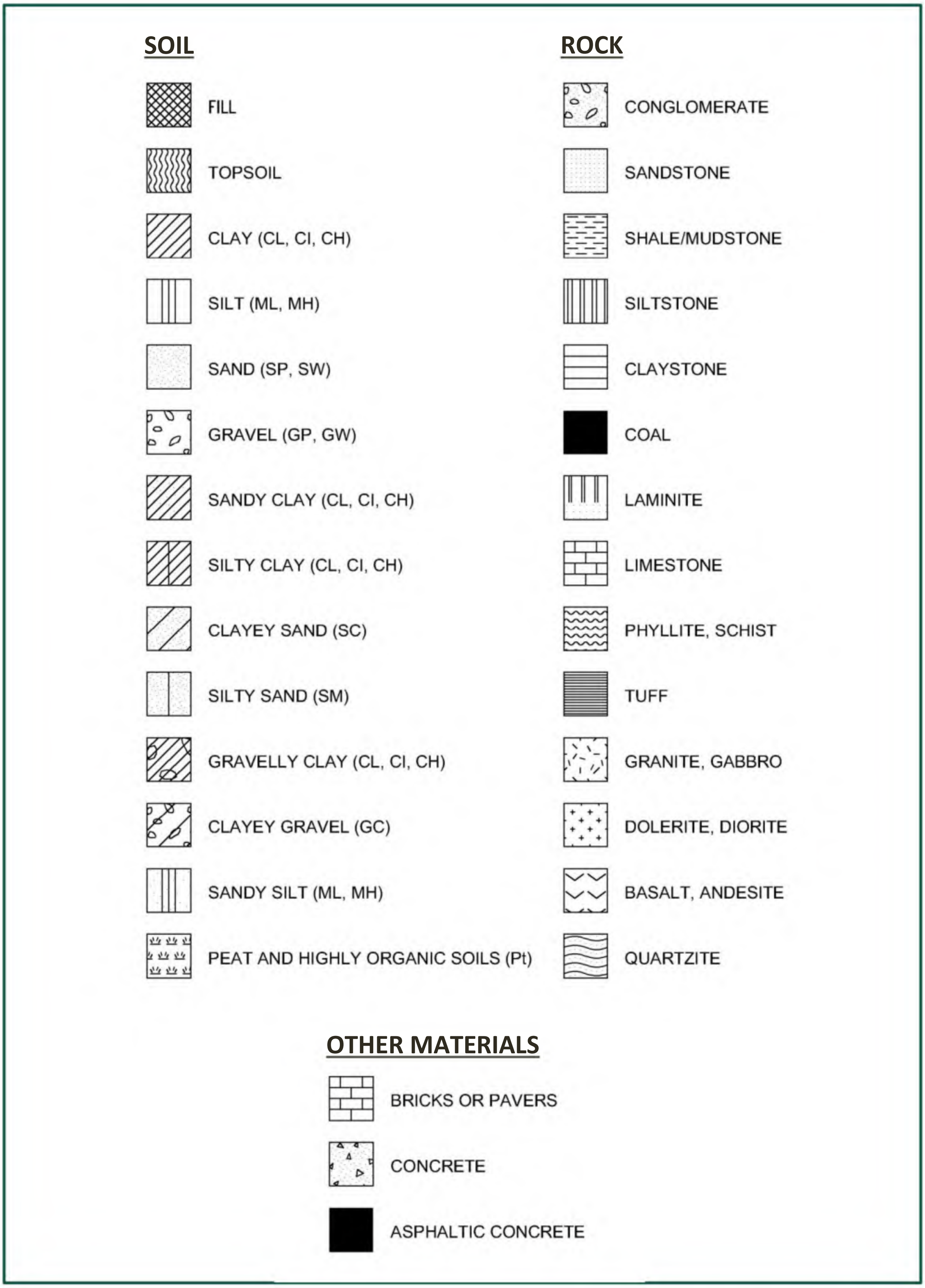
The presence of fill materials can often be determined only by the inclusion of foreign objects (eg. bricks, steel, etc) or by distinctly unusual colour, texture or fabric. Identification of the extent of fill materials will also depend on investigation methods and frequency. Where natural soils similar to those at the site are used for fill, it may be difficult with limited testing and sampling to reliably assess the extent of the fill.

The presence of fill materials is usually regarded with caution as the possible variation in density and material type is much greater than with natural soil deposits. Consequently, there is an increased risk of adverse environmental characteristics or behaviour. If the volume and nature of fill is of importance to a project, then frequent test pit excavations are preferable to boreholes.

LABORATORY TESTING

Laboratory testing has not been undertaken to confirm the soil classification and rock strengths indicated on the environmental logs unless noted in the report.

SYMBOL LEGENDS



SOIL

- FILL
- TOPSOIL
- CLAY (CL, CI, CH)
- SILT (ML, MH)
- SAND (SP, SW)
- GRAVEL (GP, GW)
- SANDY CLAY (CL, CI, CH)
- SILTY CLAY (CL, CI, CH)
- CLAYEY SAND (SC)
- SILTY SAND (SM)
- GRAVELLY CLAY (CL, CI, CH)
- CLAYEY GRAVEL (GC)
- SANDY SILT (ML, MH)
- PEAT AND HIGHLY ORGANIC SOILS (Pt)

ROCK

- CONGLOMERATE
- SANDSTONE
- SHALE/MUDSTONE
- SILTSTONE
- CLAYSTONE
- COAL
- LAMINITE
- LIMESTONE
- PHYLLITE, SCHIST
- TUFF
- GRANITE, GABBRO
- DOLERITE, DIORITE
- BASALT, ANDESITE
- QUARTZITE

OTHER MATERIALS

- BRICKS OR PAVERS
- CONCRETE
- ASPHALTIC CONCRETE

CLASSIFICATION OF COARSE AND FINE GRAINED SOILS

Major Divisions		Group Symbol	Typical Names	Field Classification of Sand and Gravel	Laboratory Classification	
Coarse grained soil (more than 65% of soil excluding oversize fraction is greater than 0.075mm)	GRAVEL (more than half of coarse fraction is larger than 2.36mm	GW	Gravel and gravel-sand mixtures, little or no fines	Wide range in grain size and substantial amounts of all intermediate sizes, not enough fines to bind coarse grains, no dry strength	≤ 5% fines	$C_u > 4$ $1 < C_c < 3$
		GP	Gravel and gravel-sand mixtures, little or no fines, uniform gravels	Predominantly one size or range of sizes with some intermediate sizes missing, not enough fines to bind coarse grains, no dry strength	≤ 5% fines	Fails to comply with above
		GM	Gravel-silt mixtures and gravel-sand-silt mixtures	'Dirty' materials with excess of non-plastic fines, zero to medium dry strength	≥ 12% fines, fines are silty	Fines behave as silt
		GC	Gravel-clay mixtures and gravel-sand-clay mixtures	'Dirty' materials with excess of plastic fines, medium to high dry strength	≥ 12% fines, fines are clayey	Fines behave as clay
	SAND (more than half of coarse fraction is smaller than 2.36mm)	SW	Sand and gravel-sand mixtures, little or no fines	Wide range in grain size and substantial amounts of all intermediate sizes, not enough fines to bind coarse grains, no dry strength	≤ 5% fines	$C_u > 6$ $1 < C_c < 3$
		SP	Sand and gravel-sand mixtures, little or no fines	Predominantly one size or range of sizes with some intermediate sizes missing, not enough fines to bind coarse grains, no dry strength	≤ 5% fines	Fails to comply with above
		SM	Sand-silt mixtures	'Dirty' materials with excess of non-plastic fines, zero to medium dry strength	≥ 12% fines, fines are silty	N/A
		SC	Sand-clay mixtures	'Dirty' materials with excess of plastic fines, medium to high dry strength	≥ 12% fines, fines are clayey	

Major Divisions		Group Symbol	Typical Names	Field Classification of Silt and Clay			Laboratory Classification
				Dry Strength	Dilatancy	Toughness	% < 0.075mm
ine grained soils (more than 35% of soil excluding oversize fraction is less than 0.075mm)	SILT and CLAY (low to medium plasticity)	ML	Inorganic silt and very fine sand, rock flour, silty or clayey fine sand or silt with low plasticity	None to low	Slow to rapid	Low	Below A line
		CL, CI	Inorganic clay of low to medium plasticity, gravelly clay, sandy clay	Medium to high	None to slow	Medium	Above A line
		OL	Organic silt	Low to medium	Slow	Low	Below A line
	SILT and CLAY (high plasticity)	MH	Inorganic silt	Low to medium	None to slow	Low to medium	Below A line
		CH	Inorganic clay of high plasticity	High to very high	None	High	Above A line
		OH	Organic clay of medium to high plasticity, organic silt	Medium to high	None to very slow	Low to medium	Below A line
	Highly organic soil	Pt	Peat, highly organic soil	–	–	–	–

Laboratory Classification Criteria

A well graded coarse grained soil is one for which the coefficient of uniformity $Cu > 4$ and the coefficient of curvature $1 < C_c < 3$. Otherwise, the soil is poorly graded. These coefficients are given by:

$$C_U = \frac{D_{60}}{D_{10}} \quad and \quad C_C = \frac{(D_{30})^2}{D_{10}\,D_{60}}$$

Where D_{10}, D_{30} and D_{60} are those grain sizes for which 10%, 30% and 60% of the soil grains, respectively, are smaller.

NOTES:

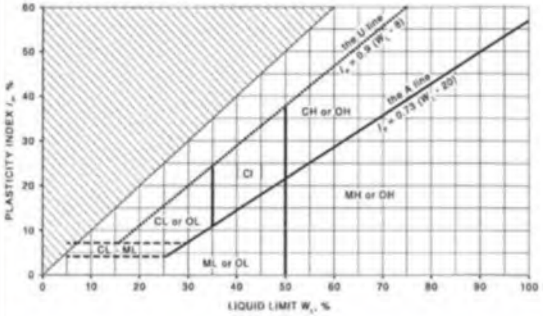
1 For a coarse grained soil with a fines content between 5% and 12%, the soil is given a dual classification comprising the two group symbols separated by a dash; for example, for a poorly graded gravel with between 5% and 12% silt fines, the classification is GP-GM.

2 Where the grading is determined from laboratory tests, it is defined by coefficients of curvature (C_c) and uniformity (C_u) derived from the particle size distribution curve.

3 Clay soils with liquid limits > 35% and ≤ 50% may be classified as being of medium plasticity.

4 The U line on the Modified Casagrande Chart is an approximate upper bound for most natural soils.

Modified Casagrande Chart for Classifying Silts and Clays according to their Behaviour



LOG SYMBOLS

Log Column	Symbol	Definition
Groundwater Record	▼	Standing water level. Time delay following completion of drilling/excavation may be shown.
	—C—	Extent of borehole/test pit collapse shortly after drilling/excavation.
	▶—	Groundwater seepage into borehole or test pit noted during drilling or excavation.
Samples	ES	Sample taken over depth indicated, for environmental analysis.
	U50	Undisturbed 50mm diameter tube sample taken over depth indicated.
	DB	Bulk disturbed sample taken over depth indicated.
	DS	Small disturbed bag sample taken over depth indicated.
	ASB	Soil sample taken over depth indicated, for asbestos analysis.
	ASS	Soil sample taken over depth indicated, for acid sulfate soil analysis.
	SAL	Soil sample taken over depth indicated, for salinity analysis.
	PFAS	Soil sample taken over depth indicated, for analysis of Per- and Polyfluoroalkyl Substances.
Field Tests	N = 17 4, 7, 10	Standard Penetration Test (SPT) performed between depths indicated by lines. Individual figures show blows per 150mm penetration. 'Refusal' refers to apparent hammer refusal within the corresponding 150mm depth increment.
	N_c = 5 7 3R	Solid Cone Penetration Test (SCPT) performed between depths indicated by lines. Individual figures show blows per 150mm penetration for 60° solid cone driven by SPT hammer. 'R' refers to apparent hammer refusal within the corresponding 150mm depth increment.
	VNS = 25	Vane shear reading in kPa of undrained shear strength.
	PID = 100	Photoionisation detector reading in ppm (soil sample headspace test).
Moisture Condition (Fine Grained Soils)	$w > PL$	Moisture content estimated to be greater than plastic limit.
	$w \approx PL$	Moisture content estimated to be approximately equal to plastic limit.
	$w < PL$	Moisture content estimated to be less than plastic limit.
	$w \approx LL$	Moisture content estimated to be near liquid limit.
	$w > LL$	Moisture content estimated to be wet of liquid limit.
(Coarse Grained Soils)	D	DRY – runs freely through fingers.
	M	MOIST – does not run freely but no free water visible on soil surface.
	W	WET – free water visible on soil surface.
Strength (Consistency) Cohesive Soils	VS	VERY SOFT – unconfined compressive strength ≤ 25kPa.
	S	SOFT – unconfined compressive strength > 25kPa and ≤ 50kPa.
	F	FIRM – unconfined compressive strength > 50kPa and ≤ 100kPa.
	St	STIFF – unconfined compressive strength > 100kPa and ≤ 200kPa.
	VSt	VERY STIFF – unconfined compressive strength > 200kPa and ≤ 400kPa.
	Hd	HARD – unconfined compressive strength > 400kPa.
	Fr	FRIABLE – strength not attainable, soil crumbles.
	( )	Bracketed symbol indicates estimated consistency based on tactile examination or other assessment.

Log Column	Symbol	Definition	**Density Index (I_D) Range (%)**	**SPT 'N' Value Range (Blows/300mm)**
Density Index/ Relative Density (Cohesionless Soils)	VL	VERY LOOSE	≤ 15	0 – 4
	L	LOOSE	> 15 and ≤ 35	4 – 10
	MD	MEDIUM DENSE	> 35 and ≤ 65	10 – 30
	D	DENSE	> 65 and ≤ 85	30 – 50
	VD	VERY DENSE	> 85	> 50
	( )	Bracketed symbol indicates estimated density based on ease of drilling or other assessment.		

Log Column	Symbol	Definition
Hand Penetrometer Readings	300 250	Measures reading in kPa of unconfined compressive strength. Numbers indicate individual test results on representative undisturbed material unless noted otherwise.
Remarks	'V' bit	Hardened steel 'V' shaped bit.
	'TC' bit	Twin pronged tungsten carbide bit.
	T_{60}	Penetration of auger string in mm under static load of rig applied by drill head hydraulics without rotation of augers.
	Soil Origin	The geological origin of the soil can generally be described as: RESIDUAL – soil formed directly from insitu weathering of the underlying rock. No visible structure or fabric of the parent rock. EXTREMELY WEATHERED – soil formed directly from insitu weathering of the underlying rock. Material is of soil strength but retains the structure and/or fabric of the parent rock. ALLUVIAL – soil deposited by creeks and rivers. ESTUARINE – soil deposited in coastal estuaries, including sediments caused by inflowing creeks and rivers, and tidal currents. MARINE – soil deposited in a marine environment. AEOLIAN – soil carried and deposited by wind. COLLUVIAL – soil and rock debris transported downslope by gravity, with or without the assistance of flowing water. Colluvium is usually a thick deposit formed from a landslide. The description 'slopewash' is used for thinner surficial deposits. LITTORAL – beach deposited soil.

Classification of Material Weathering

Term		Abbreviation		Definition
Residual Soil		RS		Material is weathered to such an extent that it has soil properties. Mass structure and material texture and fabric of original rock are no longer visible, but the soil has not been significantly transported.
Extremely Weathered		XW		Material is weathered to such an extent that it has soil properties. Mass structure and material texture and fabric of original rock are still visible.
Highly Weathered	Distinctly Weathered (Note 1)	HW	DW	The whole of the rock material is discoloured, usually by iron staining or bleaching to the extent that the colour of the original rock is not recognisable. Rock strength is significantly changed by weathering. Some primary minerals have weathered to clay minerals. Porosity may be increased by leaching, or may be decreased due to deposition of weathering products in pores.
Moderately Weathered		MW		The whole of the rock material is discoloured, usually by iron staining or bleaching to the extent that the colour of the original rock is not recognisable, but shows little or no change of strength from fresh rock.
Slightly Weathered		SW		Rock is partially discoloured with staining or bleaching along joints but shows little or no change of strength from fresh rock.
Fresh		FR		Rock shows no sign of decomposition of individual minerals or colour changes.

NOTE 1: The term 'Distinctly Weathered' is used where it is not practicable to distinguish between 'Highly Weathered' and 'Moderately Weathered' rock. 'Distinctly Weathered' is defined as follows: *'Rock strength usually changed by weathering. The rock may be highly discoloured, usually by iron staining. Porosity may be increased by leaching, or may be decreased due to deposition of weathering products in pores'*. There is some change in rock strength.

Rock Material Strength Classification

			Guide to Strength	
Term	Abbreviation	Uniaxial Compressive Strength (MPa)	Point Load Strength Index $Is_{(50)}$ (MPa)	Field Assessment
Very Low Strength	VL	0.6 to 2	0.03 to 0.1	Material crumbles under firm blows with sharp end of pick; can be peeled with knife; too hard to cut a triaxial sample by hand. Pieces up to 30mm thick can be broken by finger pressure.
Low Strength	L	2 to 6	0.1 to 0.3	Easily scored with a knife; indentations 1mm to 3mm show in the specimen with firm blows of the pick point; has dull sound under hammer. A piece of core 150mm long by 50mm diameter may be broken by hand. Sharp edges of core may be friable and break during handling.
Medium Strength	M	6 to 20	0.3 to 1	Scored with a knife; a piece of core 150mm long by 50mm diameter can be broken by hand with difficulty.
High Strength	H	20 to 60	1 to 3	A piece of core 150mm long by 50mm diameter cannot be broken by hand but can be broken by a pick with a single firm blow; rock rings under hammer.
Very High Strength	VH	60 to 200	3 to 10	Hand specimen breaks with pick after more than one blow; rock rings under hammer.
Extremely High Strength	EH	> 200	> 10	Specimen requires many blows with geological pick to break through intact material; rock rings under hammer.

Appendix E: Laboratory Reports & COC Documents

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 322581

Client Details

Client	JK Environments
Attention	C Ridley
Address	PO Box 976, North Ryde BC, NSW, 1670

Sample Details

Your Reference	**E35822PR, Temora**
Number of Samples	44 Soil, 1 Water, 2 Material
Date samples received	08/05/2023
Date completed instructions received	08/05/2023

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	15/05/2023
Date of Issue	15/05/2023

NATA Accreditation Number 2901. This document shall not be reproduced except in full.

Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Asbestos Approved By

Analysed by Asbestos Approved Analyst: Nyovan Moonean, Anthony Clark
Authorised by Asbestos Approved Signatory: Lucy Zhu

Results Approved By

Dragana Tomas, Senior Chemist
Greta Petzold, Operation Manager
Hannah Nguyen, Metals Supervisor
Kyle Gavrily, Senior Chemist
Liam Timmins, Organics Supervisor
Loren Bardwell, Development Chemist
Lucy Zhu, Asbestos Supervisor

Authorised By

Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		322581-1	322581-3	322581-4	322581-5	322581-6
Your Reference	UNITS	BH1	BH1	BH2	BH2	BH2
Depth		0-0.3	0.8-1.0	0-0.2	0.3-0.5	0.8-1.0
Date Sampled		4/05/2023	4/05/2023	3/05/2023	3/05/2023	3/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/05/2023	10/05/2023	10/05/2023	10/05/2023	10/05/2023
Date analysed	-	11/05/2023	11/05/2023	11/05/2023	11/05/2023	11/05/2023
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	111	108	109	105	107

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		322581-7	322581-8	322581-10	322581-11	322581-12
Your Reference	UNITS	BH3	BH3	BH3	BH4	BH4
Depth		0-0.1	0.3-0.5	1.3-1.5	0-0.1	0.3-0.5
Date Sampled		4/05/2023	4/05/2023	4/05/2023	4/05/2023	4/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/05/2023	10/05/2023	10/05/2023	10/05/2023	10/05/2023
Date analysed	-	11/05/2023	11/05/2023	11/05/2023	11/05/2023	11/05/2023
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	2	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	110	113	107	107	110

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		322581-13	322581-14	322581-16	322581-17	322581-18
Your Reference	UNITS	BH4	BH5	BH5	BH6	BH6
Depth		0.8-1.0	0-0.1	0.8-1.0	0.02-0.3	0.3-0.5
Date Sampled		4/05/2023	3/05/2023	3/05/2023	02/05/2023	02/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/05/2023	10/05/2023	10/05/2023	10/05/2023	10/05/2023
Date analysed	-	11/05/2023	11/05/2023	11/05/2023	11/05/2023	11/05/2023
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	112	105	109	108	114

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		322581-19	322581-20	322581-21	322581-23	322581-24
Your Reference	UNITS	BH6	BH7	BH7	BH8	BH8
Depth		0.8-1.0	0-0.1	0.3-0.5	0.02-0.2	0.3-0.5
Date Sampled		02/05/2023	02/05/2023	02/05/2023	05/05/2023	05/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/05/2023	10/05/2023	10/05/2023	10/05/2023	10/05/2023
Date analysed	-	11/05/2023	11/05/2023	11/05/2023	11/05/2023	11/05/2023
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	114	115	116	115	115

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		322581-27	322581-28	322581-30	322581-31	322581-32
Your Reference	UNITS	TP13	TP13	TP14	TP14	TP14
Depth		0-0.1	0.5-0.6	0-0.1	0.4-0.5	0.9-1.0
Date Sampled		4/05/2023	4/05/2023	4/05/2023	4/05/2023	4/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/05/2023	10/05/2023	10/05/2023	10/05/2023	10/05/2023
Date analysed	-	11/05/2023	11/05/2023	11/05/2023	11/05/2023	11/05/2023
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	106	114	117	113	112

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		322581-33	322581-35	322581-36	322581-37	322581-38
Your Reference	UNITS	TP15	TP15	TP15	TP16	TP16
Depth		0-0.1	0.9-1.0	1.3-1.5	0-0.1	0.4-0.5
Date Sampled		4/05/2023	4/05/2023	4/05/2023	4/05/2023	4/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/05/2023	10/05/2023	10/05/2023	10/05/2023	10/05/2023
Date analysed	-	11/05/2023	11/05/2023	11/05/2023	11/05/2023	11/05/2023
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	105	112	101	109	112

vTRH(C6-C10)/BTEXN in Soil					
Our Reference		322581-40	322581-41	322581-42	322581-43
Your Reference	UNITS	SDUP1	SDUP2	TB-S1	TS-S1
Depth		-	-	-	-
Date Sampled		4/05/2023	4/05/2023	02/05/2023	02/05/2023
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	10/05/2023	10/05/2023	10/05/2023	10/05/2023
Date analysed	-	11/05/2023	11/05/2023	11/05/2023	11/05/2023
TRH C_6 - C_9	mg/kg	<25	<25	<25	[NA]
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	[NA]
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	[NA]
Benzene	mg/kg	<0.2	<0.2	<0.2	97%
Toluene	mg/kg	<0.5	<0.5	<0.5	97%
Ethylbenzene	mg/kg	<1	<1	<1	97%
m+p-xylene	mg/kg	<2	<2	<2	97%
o-Xylene	mg/kg	<1	<1	<1	98%
Naphthalene	mg/kg	<1	<1	<1	[NA]
Total +ve Xylenes	mg/kg	<1	<1	<1	[NA]
Surrogate aaa-Trifluorotoluene	%	113	105	118	95

svTRH (C10-C40) in Soil						
Our Reference		322581-1	322581-3	322581-4	322581-5	322581-6
Your Reference	UNITS	BH1	BH1	BH2	BH2	BH2
Depth		0-0.3	0.8-1.0	0-0.2	0.3-0.5	0.8-1.0
Date Sampled		4/05/2023	4/05/2023	3/05/2023	3/05/2023	3/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/05/2023	10/05/2023	10/05/2023	10/05/2023	10/05/2023
Date analysed	-	12/05/2023	15/05/2023	12/05/2023	12/05/2023	12/05/2023
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	84	76	85	84	83

svTRH (C10-C40) in Soil						
Our Reference		322581-7	322581-8	322581-10	322581-11	322581-12
Your Reference	UNITS	BH3	BH3	BH3	BH4	BH4
Depth		0-0.1	0.3-0.5	1.3-1.5	0-0.1	0.3-0.5
Date Sampled		4/05/2023	4/05/2023	4/05/2023	4/05/2023	4/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/05/2023	10/05/2023	10/05/2023	10/05/2023	10/05/2023
Date analysed	-	13/05/2023	13/05/2023	12/05/2023	12/05/2023	12/05/2023
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	170	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	180	200	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	180	370	<50	<50	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	130	320	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	230	120	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	360	440	<50	<50	<50
Surrogate o-Terphenyl	%	78	104	84	85	89

svTRH (C10-C40) in Soil						
Our Reference		322581-13	322581-14	322581-16	322581-17	322581-18
Your Reference	UNITS	BH4	BH5	BH5	BH6	BH6
Depth		0.8-1.0	0-0.1	0.8-1.0	0.02-0.3	0.3-0.5
Date Sampled		4/05/2023	3/05/2023	3/05/2023	02/05/2023	02/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/05/2023	10/05/2023	10/05/2023	10/05/2023	10/05/2023
Date analysed	-	12/05/2023	12/05/2023	12/05/2023	12/05/2023	12/05/2023
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	85	84	83	85	83

svTRH (C10-C40) in Soil						
Our Reference		322581-19	322581-20	322581-21	322581-23	322581-24
Your Reference	UNITS	BH6	BH7	BH7	BH8	BH8
Depth		0.8-1.0	0-0.1	0.3-0.5	0.02-0.2	0.3-0.5
Date Sampled		02/05/2023	02/05/2023	02/05/2023	05/05/2023	05/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/05/2023	10/05/2023	10/05/2023	10/05/2023	10/05/2023
Date analysed	-	12/05/2023	12/05/2023	12/05/2023	12/05/2023	12/05/2023
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	84	87	85	87	77

svTRH (C10-C40) in Soil						
Our Reference		322581-27	322581-28	322581-30	322581-31	322581-32
Your Reference	UNITS	TP13	TP13	TP14	TP14	TP14
Depth		0-0.1	0.5-0.6	0-0.1	0.4-0.5	0.9-1.0
Date Sampled		4/05/2023	4/05/2023	4/05/2023	4/05/2023	4/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/05/2023	10/05/2023	10/05/2023	10/05/2023	10/05/2023
Date analysed	-	12/05/2023	12/05/2023	12/05/2023	12/05/2023	12/05/2023
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	76	78	78	78	70

svTRH (C10-C40) in Soil						
Our Reference		322581-33	322581-35	322581-36	322581-37	322581-38
Your Reference	UNITS	TP15	TP15	TP15	TP16	TP16
Depth		0-0.1	0.9-1.0	1.3-1.5	0-0.1	0.4-0.5
Date Sampled		4/05/2023	4/05/2023	4/05/2023	4/05/2023	4/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/05/2023	10/05/2023	10/05/2023	10/05/2023	10/05/2023
Date analysed	-	12/05/2023	12/05/2023	12/05/2023	12/05/2023	12/05/2023
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	82	87	83	77	77

svTRH (C10-C40) in Soil				
Our Reference		322581-40	322581-41	322581-42
Your Reference	UNITS	SDUP1	SDUP2	TB-S1
Depth		-	-	-
Date Sampled		4/05/2023	4/05/2023	02/05/2023
Type of sample		Soil	Soil	Soil
Date extracted	-	10/05/2023	10/05/2023	12/05/2023
Date analysed	-	13/05/2023	13/05/2023	13/05/2023
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50
Surrogate o-Terphenyl	%	79	82	81

PAHs in Soil						
Our Reference		322581-1	322581-3	322581-4	322581-5	322581-6
Your Reference	UNITS	BH1	BH1	BH2	BH2	BH2
Depth		0-0.3	0.8-1.0	0-0.2	0.3-0.5	0.8-1.0
Date Sampled		4/05/2023	4/05/2023	3/05/2023	3/05/2023	3/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/05/2023	10/05/2023	10/05/2023	10/05/2023	10/05/2023
Date analysed	-	11/05/2023	11/05/2023	11/05/2023	11/05/2023	11/05/2023
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	0.3	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	1.3	<0.1	<0.1
Pyrene	mg/kg	0.1	<0.1	1.4	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	0.4	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	0.5	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	1	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	0.69	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	0.5	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	0.8	<0.1	<0.1
Total +ve PAH's	mg/kg	0.2	<0.05	6.9	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	0.9	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	1	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	1.0	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	87	101	91	99	89

PAHs in Soil						
Our Reference		322581-7	322581-8	322581-10	322581-11	322581-12
Your Reference	UNITS	BH3	BH3	BH3	BH4	BH4
Depth		0-0.1	0.3-0.5	1.3-1.5	0-0.1	0.3-0.5
Date Sampled		4/05/2023	4/05/2023	4/05/2023	4/05/2023	4/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/05/2023	10/05/2023	10/05/2023	10/05/2023	10/05/2023
Date analysed	-	11/05/2023	11/05/2023	11/05/2023	11/05/2023	11/05/2023
Naphthalene	mg/kg	<0.1	1.9	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	0.2	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	1.5	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	1.9	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	14	0.6	<0.1	<0.1
Anthracene	mg/kg	<0.1	3.6	0.2	<0.1	<0.1
Fluoranthene	mg/kg	0.1	16	0.7	0.2	<0.1
Pyrene	mg/kg	0.3	15	0.6	0.2	<0.1
Benzo(a)anthracene	mg/kg	<0.1	5.4	0.2	<0.1	<0.1
Chrysene	mg/kg	0.1	5.2	0.2	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	7.8	0.3	<0.2	<0.2
Benzo(a)pyrene	mg/kg	0.09	5.4	0.2	0.1	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	2.7	0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	0.6	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	3.7	0.2	0.1	<0.1
Total +ve PAH's	mg/kg	0.64	85	3.3	0.66	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	7.7	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	7.7	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	7.7	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	98	92	98	100	100

PAHs in Soil						
Our Reference		322581-13	322581-14	322581-16	322581-17	322581-18
Your Reference	UNITS	BH4	BH5	BH5	BH6	BH6
Depth		0.8-1.0	0-0.1	0.8-1.0	0.02-0.3	0.3-0.5
Date Sampled		4/05/2023	3/05/2023	3/05/2023	02/05/2023	02/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/05/2023	10/05/2023	10/05/2023	10/05/2023	10/05/2023
Date analysed	-	11/05/2023	11/05/2023	11/05/2023	11/05/2023	11/05/2023
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	0.2	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	0.6	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	0.6	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	0.2	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	0.2	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	0.4	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	0.3	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	0.2	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	0.3	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	2.9	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	83	90	96	96	79

PAHs in Soil						
Our Reference		322581-19	322581-20	322581-21	322581-23	322581-24
Your Reference	UNITS	BH6	BH7	BH7	BH8	BH8
Depth		0.8-1.0	0-0.1	0.3-0.5	0.02-0.2	0.3-0.5
Date Sampled		02/05/2023	02/05/2023	02/05/2023	05/05/2023	05/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/05/2023	10/05/2023	10/05/2023	10/05/2023	10/05/2023
Date analysed	-	11/05/2023	11/05/2023	11/05/2023	11/05/2023	11/05/2023
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	0.2	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	1.1	0.3
Anthracene	mg/kg	<0.1	<0.1	<0.1	0.3	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	4.6	0.8
Pyrene	mg/kg	<0.1	<0.1	<0.1	5.4	0.7
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	2.2	0.2
Chrysene	mg/kg	<0.1	<0.1	<0.1	2.0	0.3
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	3.9	0.4
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	2.6	0.3
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	1.7	0.2
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	0.3	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	2.5	0.3
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	27	3.3
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	3.6	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	3.6	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	3.6	<0.5
Surrogate p-Terphenyl-d14	%	92	86	100	93	98

PAHs in Soil						
Our Reference		322581-27	322581-28	322581-30	322581-31	322581-32
Your Reference	UNITS	TP13	TP13	TP14	TP14	TP14
Depth		0-0.1	0.5-0.6	0-0.1	0.4-0.5	0.9-1.0
Date Sampled		4/05/2023	4/05/2023	4/05/2023	4/05/2023	4/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/05/2023	10/05/2023	10/05/2023	10/05/2023	10/05/2023
Date analysed	-	11/05/2023	11/05/2023	11/05/2023	11/05/2023	11/05/2023
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	0.1	0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	0.3	0.2	<0.1
Pyrene	mg/kg	0.1	<0.1	0.3	0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	0.05	<0.05	0.1	0.06	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	0.2	<0.05	1.1	0.5	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	96	94	99	93	88

PAHs in Soil						
Our Reference		322581-33	322581-35	322581-36	322581-37	322581-38
Your Reference	UNITS	TP15	TP15	TP15	TP16	TP16
Depth		0-0.1	0.9-1.0	1.3-1.5	0-0.1	0.4-0.5
Date Sampled		4/05/2023	4/05/2023	4/05/2023	4/05/2023	4/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/05/2023	10/05/2023	10/05/2023	10/05/2023	10/05/2023
Date analysed	-	11/05/2023	11/05/2023	11/05/2023	11/05/2023	11/05/2023
Naphthalene	mg/kg	<0.1	0.2	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	0.3	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	0.2	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	4.9	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	1.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	8.7	<0.1	0.3	<0.1
Pyrene	mg/kg	0.1	7.2	<0.1	0.3	<0.1
Benzo(a)anthracene	mg/kg	<0.1	3.7	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	3.0	<0.1	0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	5.3	<0.2	0.2	<0.2
Benzo(a)pyrene	mg/kg	0.05	3.4	<0.05	0.1	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	1.8	<0.1	0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	0.4	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	2.4	<0.1	0.1	<0.1
Total +ve PAH's	mg/kg	0.3	43	<0.05	1.4	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	4.9	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	4.9	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	4.9	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	102	92	98	96	97

PAHs in Soil				
Our Reference		322581-40	322581-41	322581-42
Your Reference	UNITS	SDUP1	SDUP2	TB-S1
Depth		-	-	-
Date Sampled		4/05/2023	4/05/2023	02/05/2023
Type of sample		Soil	Soil	Soil
Date extracted	-	10/05/2023	10/05/2023	10/05/2023
Date analysed	-	11/05/2023	11/05/2023	12/05/2023
Naphthalene	mg/kg	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.4	0.1	<0.1
Pyrene	mg/kg	0.4	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	0.3	<0.2	<0.2
Benzo(a)pyrene	mg/kg	0.2	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	0.2	<0.1	<0.1
Total +ve PAH's	mg/kg	1.7	0.1	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	90	107	102

Organochlorine Pesticides in soil						
Our Reference		322581-1	322581-4	322581-7	322581-8	322581-11
Your Reference	UNITS	BH1	BH2	BH3	BH3	BH4
Depth		0-0.3	0-0.2	0-0.1	0.3-0.5	0-0.1
Date Sampled		4/05/2023	3/05/2023	4/05/2023	4/05/2023	4/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/05/2023	10/05/2023	10/05/2023	10/05/2023	10/05/2023
Date analysed	-	11/05/2023	11/05/2023	11/05/2023	11/05/2023	11/05/2023
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	100	112	101	100	104

Organochlorine Pesticides in soil						
Our Reference		322581-14	322581-17	322581-20	322581-23	322581-27
Your Reference	UNITS	BH5	BH6	BH7	BH8	TP13
Depth		0-0.1	0.02-0.3	0-0.1	0.02-0.2	0-0.1
Date Sampled		3/05/2023	02/05/2023	02/05/2023	05/05/2023	4/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/05/2023	10/05/2023	10/05/2023	10/05/2023	10/05/2023
Date analysed	-	11/05/2023	11/05/2023	11/05/2023	11/05/2023	11/05/2023
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	109	103	101	103	104

Organochlorine Pesticides in soil						
Our Reference		322581-30	322581-33	322581-35	322581-37	322581-40
Your Reference	UNITS	TP14	TP15	TP15	TP16	SDUP1
Depth		0-0.1	0-0.1	0.9-1.0	0-0.1	-
Date Sampled		4/05/2023	4/05/2023	4/05/2023	4/05/2023	4/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/05/2023	10/05/2023	10/05/2023	10/05/2023	10/05/2023
Date analysed	-	11/05/2023	11/05/2023	11/05/2023	11/05/2023	11/05/2023
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	101	103	101	97	104

Organophosphorus Pesticides						
Our Reference		322581-1	322581-4	322581-7	322581-8	322581-11
Your Reference	UNITS	BH1	BH2	BH3	BH3	BH4
Depth		0-0.3	0-0.2	0-0.1	0.3-0.5	0-0.1
Date Sampled		4/05/2023	3/05/2023	4/05/2023	4/05/2023	4/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/05/2023	10/05/2023	10/05/2023	10/05/2023	10/05/2023
Date analysed	-	11/05/2023	11/05/2023	11/05/2023	11/05/2023	11/05/2023
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Coumaphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Disulfoton	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenamiphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenthion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methidathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mevinphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion (Methyl)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phorate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phosalone	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	100	112	101	100	104

Organophosphorus Pesticides						
Our Reference		322581-14	322581-17	322581-20	322581-23	322581-27
Your Reference	UNITS	BH5	BH6	BH7	BH8	TP13
Depth		0-0.1	0.02-0.3	0-0.1	0.02-0.2	0-0.1
Date Sampled		3/05/2023	02/05/2023	02/05/2023	05/05/2023	4/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/05/2023	10/05/2023	10/05/2023	10/05/2023	10/05/2023
Date analysed	-	11/05/2023	11/05/2023	11/05/2023	11/05/2023	11/05/2023
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Coumaphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Disulfoton	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenamiphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenthion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methidathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mevinphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion (Methyl)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phorate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phosalone	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	109	103	101	103	104

Organophosphorus Pesticides						
Our Reference		322581-30	322581-33	322581-35	322581-37	322581-40
Your Reference	UNITS	TP14	TP15	TP15	TP16	SDUP1
Depth		0-0.1	0-0.1	0.9-1.0	0-0.1	-
Date Sampled		4/05/2023	4/05/2023	4/05/2023	4/05/2023	4/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/05/2023	10/05/2023	10/05/2023	10/05/2023	10/05/2023
Date analysed	-	11/05/2023	11/05/2023	11/05/2023	11/05/2023	11/05/2023
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Coumaphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Disulfoton	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenamiphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenthion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methidathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mevinphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion (Methyl)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phorate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phosalone	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	101	103	101	97	104

PCBs in Soil						
Our Reference		322581-1	322581-4	322581-7	322581-8	322581-11
Your Reference	UNITS	BH1	BH2	BH3	BH3	BH4
Depth		0-0.3	0-0.2	0-0.1	0.3-0.5	0-0.1
Date Sampled		4/05/2023	3/05/2023	4/05/2023	4/05/2023	4/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/05/2023	10/05/2023	10/05/2023	10/05/2023	10/05/2023
Date analysed	-	11/05/2023	11/05/2023	11/05/2023	11/05/2023	11/05/2023
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	100	112	101	100	104

PCBs in Soil						
Our Reference		322581-14	322581-17	322581-20	322581-23	322581-27
Your Reference	UNITS	BH5	BH6	BH7	BH8	TP13
Depth		0-0.1	0.02-0.3	0-0.1	0.02-0.2	0-0.1
Date Sampled		3/05/2023	02/05/2023	02/05/2023	05/05/2023	4/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/05/2023	10/05/2023	10/05/2023	10/05/2023	10/05/2023
Date analysed	-	11/05/2023	11/05/2023	11/05/2023	11/05/2023	11/05/2023
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	109	103	101	103	104

PCBs in Soil						
Our Reference	UNITS	322581-30	322581-33	322581-35	322581-37	322581-40
Your Reference		TP14	TP15	TP15	TP16	SDUP1
Depth		0-0.1	0-0.1	0.9-1.0	0-0.1	-
Date Sampled		4/05/2023	4/05/2023	4/05/2023	4/05/2023	4/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/05/2023	10/05/2023	10/05/2023	10/05/2023	10/05/2023
Date analysed	-	11/05/2023	11/05/2023	11/05/2023	11/05/2023	11/05/2023
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	101	103	101	97	104

Acid Extractable metals in soil						
Our Reference		322581-1	322581-3	322581-4	322581-5	322581-6
Your Reference	UNITS	BH1	BH1	BH2	BH2	BH2
Depth		0-0.3	0.8-1.0	0-0.2	0.3-0.5	0.8-1.0
Date Sampled		4/05/2023	4/05/2023	3/05/2023	3/05/2023	3/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	11/05/2023	11/05/2023	11/05/2023	11/05/2023	11/05/2023
Date analysed	-	12/05/2023	12/05/2023	12/05/2023	12/05/2023	12/05/2023
Arsenic	mg/kg	<4	<4	6	6	6
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	37	62	38	91	63
Copper	mg/kg	70	130	200	280	200
Lead	mg/kg	7	9	8	5	6
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	10	14	11	18	13
Zinc	mg/kg	22	31	36	37	30

Acid Extractable metals in soil						
Our Reference		322581-7	322581-8	322581-10	322581-11	322581-12
Your Reference	UNITS	BH3	BH3	BH3	BH4	BH4
Depth		0-0.1	0.3-0.5	1.3-1.5	0-0.1	0.3-0.5
Date Sampled		4/05/2023	4/05/2023	4/05/2023	4/05/2023	4/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	11/05/2023	11/05/2023	11/05/2023	11/05/2023	11/05/2023
Date analysed	-	12/05/2023	12/05/2023	12/05/2023	12/05/2023	12/05/2023
Arsenic	mg/kg	7	8	4	5	7
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	23	47	72	30	18
Copper	mg/kg	57	86	120	82	300
Lead	mg/kg	12	15	9	28	3
Mercury	mg/kg	<0.1	0.2	<0.1	<0.1	<0.1
Nickel	mg/kg	9	11	12	7	11
Zinc	mg/kg	24	33	22	53	31

Acid Extractable metals in soil						
Our Reference		322581-13	322581-14	322581-16	322581-17	322581-18
Your Reference	UNITS	BH4	BH5	BH5	BH6	BH6
Depth		0.8-1.0	0-0.1	0.8-1.0	0.02-0.3	0.3-0.5
Date Sampled		4/05/2023	3/05/2023	3/05/2023	02/05/2023	02/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	11/05/2023	11/05/2023	11/05/2023	11/05/2023	11/05/2023
Date analysed	-	12/05/2023	12/05/2023	12/05/2023	12/05/2023	12/05/2023
Arsenic	mg/kg	6	9	4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	16	26	52	22	19
Copper	mg/kg	210	230	180	220	440
Lead	mg/kg	2	13	7	17	3
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	9	9	12	9	10
Zinc	mg/kg	24	30	20	54	51

Acid Extractable metals in soil						
Our Reference		322581-19	322581-20	322581-21	322581-23	322581-24
Your Reference	UNITS	BH6	BH7	BH7	BH8	BH8
Depth		0.8-1.0	0-0.1	0.3-0.5	0.02-0.2	0.3-0.5
Date Sampled		02/05/2023	02/05/2023	02/05/2023	05/05/2023	05/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	11/05/2023	11/05/2023	11/05/2023	11/05/2023	11/05/2023
Date analysed	-	12/05/2023	12/05/2023	12/05/2023	12/05/2023	12/05/2023
Arsenic	mg/kg	<4	7	7	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	16	36	66	13	53
Copper	mg/kg	400	94	120	12	170
Lead	mg/kg	1	24	10	7	7
Mercury	mg/kg	<0.1	<0.1	0.6	<0.1	<0.1
Nickel	mg/kg	9	9	13	2	15
Zinc	mg/kg	55	36	29	7	42

Acid Extractable metals in soil						
Our Reference		322581-27	322581-28	322581-30	322581-31	322581-32
Your Reference	UNITS	TP13	TP13	TP14	TP14	TP14
Depth		0-0.1	0.5-0.6	0-0.1	0.4-0.5	0.9-1.0
Date Sampled		4/05/2023	4/05/2023	4/05/2023	4/05/2023	4/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	11/05/2023	11/05/2023	11/05/2023	11/05/2023	11/05/2023
Date analysed	-	12/05/2023	12/05/2023	12/05/2023	12/05/2023	12/05/2023
Arsenic	mg/kg	5	7	15	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	20	24	31	17	10
Copper	mg/kg	210	490	99	420	470
Lead	mg/kg	22	4	120	6	2
Mercury	mg/kg	0.1	<0.1	0.1	<0.1	<0.1
Nickel	mg/kg	8	11	3	10	10
Zinc	mg/kg	59	28	88	57	47

Acid Extractable metals in soil						
Our Reference		322581-33	322581-35	322581-36	322581-37	322581-38
Your Reference	UNITS	TP15	TP15	TP15	TP16	TP16
Depth		0-0.1	0.9-1.0	1.3-1.5	0-0.1	0.4-0.5
Date Sampled		4/05/2023	4/05/2023	4/05/2023	4/05/2023	4/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	11/05/2023	11/05/2023	11/05/2023	11/05/2023	11/05/2023
Date analysed	-	12/05/2023	12/05/2023	12/05/2023	12/05/2023	12/05/2023
Arsenic	mg/kg	6	7	<4	10	5
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	21	24	52	56	74
Copper	mg/kg	34	32	110	190	180
Lead	mg/kg	12	14	7	25	4
Mercury	mg/kg	<0.1	<0.1	0.7	<0.1	<0.1
Nickel	mg/kg	7	5	9	14	15
Zinc	mg/kg	30	11	18	61	27

Acid Extractable metals in soil				
Our Reference		322581-40	322581-41	322581-42
Your Reference	UNITS	SDUP1	SDUP2	TB-S1
Depth		-	-	-
Date Sampled		4/05/2023	4/05/2023	02/05/2023
Type of sample		Soil	Soil	Soil
Date prepared	-	11/05/2023	11/05/2023	11/05/2023
Date analysed	-	12/05/2023	12/05/2023	12/05/2023
Arsenic	mg/kg	10	6	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4
Chromium	mg/kg	55	20	7
Copper	mg/kg	190	31	1
Lead	mg/kg	25	12	3
Mercury	mg/kg	<0.1	<0.1	<0.1
Nickel	mg/kg	14	7	5
Zinc	mg/kg	66	29	12

Moisture						
Our Reference		322581-1	322581-3	322581-4	322581-5	322581-6
Your Reference	UNITS	BH1	BH1	BH2	BH2	BH2
Depth		0-0.3	0.8-1.0	0-0.2	0.3-0.5	0.8-1.0
Date Sampled		4/05/2023	4/05/2023	3/05/2023	3/05/2023	3/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	10/05/2023	10/05/2023	10/05/2023	10/05/2023	10/05/2023
Date analysed	-	11/05/2023	11/05/2023	11/05/2023	11/05/2023	11/05/2023
Moisture	%	13	11	9.8	15	12

Moisture						
Our Reference		322581-7	322581-8	322581-10	322581-11	322581-12
Your Reference	UNITS	BH3	BH3	BH3	BH4	BH4
Depth		0-0.1	0.3-0.5	1.3-1.5	0-0.1	0.3-0.5
Date Sampled		4/05/2023	4/05/2023	4/05/2023	4/05/2023	4/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	10/05/2023	10/05/2023	10/05/2023	10/05/2023	10/05/2023
Date analysed	-	11/05/2023	11/05/2023	11/05/2023	11/05/2023	11/05/2023
Moisture	%	15	12	13	16	13

Moisture						
Our Reference		322581-13	322581-14	322581-16	322581-17	322581-18
Your Reference	UNITS	BH4	BH5	BH5	BH6	BH6
Depth		0.8-1.0	0-0.1	0.8-1.0	0.02-0.3	0.3-0.5
Date Sampled		4/05/2023	3/05/2023	3/05/2023	02/05/2023	02/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	10/05/2023	10/05/2023	10/05/2023	10/05/2023	10/05/2023
Date analysed	-	11/05/2023	11/05/2023	11/05/2023	11/05/2023	11/05/2023
Moisture	%	6.6	16	17	18	14

Moisture						
Our Reference		322581-19	322581-20	322581-21	322581-23	322581-24
Your Reference	UNITS	BH6	BH7	BH7	BH8	BH8
Depth		0.8-1.0	0-0.1	0.3-0.5	0.02-0.2	0.3-0.5
Date Sampled		02/05/2023	02/05/2023	02/05/2023	05/05/2023	05/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	10/05/2023	10/05/2023	10/05/2023	10/05/2023	10/05/2023
Date analysed	-	11/05/2023	11/05/2023	11/05/2023	11/05/2023	11/05/2023
Moisture	%	5.6	3.5	5.9	2.5	5.5

Moisture						
Our Reference		322581-27	322581-28	322581-30	322581-31	322581-32
Your Reference	UNITS	TP13	TP13	TP14	TP14	TP14
Depth		0-0.1	0.5-0.6	0-0.1	0.4-0.5	0.9-1.0
Date Sampled		4/05/2023	4/05/2023	4/05/2023	4/05/2023	4/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	10/05/2023	10/05/2023	10/05/2023	10/05/2023	10/05/2023
Date analysed	-	11/05/2023	11/05/2023	11/05/2023	11/05/2023	11/05/2023
Moisture	%	26	19	11	12	8.3

Moisture						
Our Reference		322581-33	322581-35	322581-36	322581-37	322581-38
Your Reference	UNITS	TP15	TP15	TP15	TP16	TP16
Depth		0-0.1	0.9-1.0	1.3-1.5	0-0.1	0.4-0.5
Date Sampled		4/05/2023	4/05/2023	4/05/2023	4/05/2023	4/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	10/05/2023	10/05/2023	10/05/2023	10/05/2023	10/05/2023
Date analysed	-	11/05/2023	11/05/2023	11/05/2023	11/05/2023	11/05/2023
Moisture	%	29	9.6	2.5	18	14

Moisture				
Our Reference		322581-40	322581-41	322581-42
Your Reference	UNITS	SDUP1	SDUP2	TB-S1
Depth		-	-	-
Date Sampled		4/05/2023	4/05/2023	02/05/2023
Type of sample		Soil	Soil	Soil
Date prepared	-	10/05/2023	10/05/2023	10/05/2023
Date analysed	-	11/05/2023	11/05/2023	11/05/2023
Moisture	%	19	29	0.1

Asbestos ID - soils NEPM - ASB-001						
Our Reference		322581-1	322581-4	322581-7	322581-8	322581-11
Your Reference	UNITS	BH1	BH2	BH3	BH3	BH4
Depth		0-0.3	0-0.2	0-0.1	0.3-0.5	0-0.1
Date Sampled		4/05/2023	3/05/2023	4/05/2023	4/05/2023	4/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	15/05/2023	15/05/2023	15/05/2023	15/05/2023	15/05/2023
Sample mass tested	g	577.15	862.12	754.89	390.48	574.85
Sample Description	-	Brown fine-grained soil & rocks	Brown coarse-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos$^{\#1}$	g/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–	–	–	–
FA and AF Estimation*	g	–	–	–	–	–
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01	<0.01	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001

Asbestos ID - soils NEPM - ASB-001						
Our Reference		322581-14	322581-17	322581-20	322581-23	322581-27
Your Reference	UNITS	BH5	BH6	BH7	BH8	TP13
Depth		0-0.1	0.02-0.3	0-0.1	0.02-0.2	0-0.1
Date Sampled		3/05/2023	02/05/2023	02/05/2023	05/05/2023	4/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	15/05/2023	15/05/2023	15/05/2023	15/05/2023	15/05/2023
Sample mass tested	g	667.13	599.31	1,198.85	891.69	558.56
Sample Description	-	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Beige coarse-grained soil & rocks	Brown fine-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos$^{\#1}$	g/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–	–	–	–
FA and AF Estimation*	g	–	–	–	–	–
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01	<0.01	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001

Asbestos ID - soils NEPM - ASB-001					
Our Reference		322581-30	322581-33	322581-35	322581-37
Your Reference	UNITS	TP14	TP15	TP15	TP16
Depth		0-0.1	0-0.1	0.9-1.0	0-0.1
Date Sampled		4/05/2023	4/05/2023	4/05/2023	4/05/2023
Type of sample		Soil	Soil	Soil	Soil
Date analysed	-	15/05/2023	15/05/2023	15/05/2023	15/05/2023
Sample mass tested	g	820.02	482.11	920.77	601.76
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos#1	g/kg	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–	–	–
FA and AF Estimation*	g	–	–	–	–
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001

Asbestos ID - materials			
Our Reference		322581-45	322581-46
Your Reference	UNITS	BH4-FCF1	BH4-FCF2
Depth		-	-
Date Sampled		4/05/2023	4/05/2023
Type of sample		Material	Material
Date analysed	-	11/05/2023	11/05/2023
Mass / Dimension of Sample	-	110x82x5mm	30x20x5mm
Sample Description	-	Grey fibre cement material	Grey fibre cement material
Asbestos ID in materials	-	Chrysotile asbestos detected Amosite asbestos detected Crocidolite asbestos detected	Chrysotile asbestos detected
Trace Analysis	-	[NT]	[NT]

vTRH(C6-C10)/BTEXN in Water		
Our Reference		322581-44
Your Reference	UNITS	FR-SPT
Depth		-
Date Sampled		03/05/2023
Type of sample		Water
Date extracted	-	09/05/2023
Date analysed	-	10/05/2023
TRH C_6 - C_9	μg/L	23
TRH C_6 - C_{10}	μg/L	26
TRH C_6 - C_{10} less BTEX (F1)	μg/L	26
Benzene	μg/L	<1
Toluene	μg/L	<1
Ethylbenzene	μg/L	<1
m+p-xylene	μg/L	<2
o-xylene	μg/L	<1
Naphthalene	μg/L	<1
Surrogate Dibromofluoromethane	%	99
Surrogate toluene-d8	%	99
Surrogate 4-BFB	%	107

svTRH (C10-C40) in Water		
Our Reference		322581-44
Your Reference	UNITS	FR-SPT
Depth		-
Date Sampled		03/05/2023
Type of sample		Water
Date extracted	-	12/05/2023
Date analysed	-	12/05/2023
TRH C_{10} - C_{14}	µg/L	<50
TRH C_{15} - C_{28}	µg/L	<100
TRH C_{29} - C_{36}	µg/L	<100
Total +ve TRH (C10-C36)	µg/L	<50
TRH >C_{10} - C_{16}	µg/L	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	µg/L	<50
TRH >C_{16} - C_{34}	µg/L	<100
TRH >C_{34} - C_{40}	µg/L	<100
Total +ve TRH (>C10-C40)	µg/L	<50
Surrogate o-Terphenyl	%	95

PAHs in Water		
Our Reference		322581-44
Your Reference	UNITS	FR-SPT
Depth		-
Date Sampled		03/05/2023
Type of sample		Water
Date extracted	-	12/05/2023
Date analysed	-	12/05/2023
Naphthalene	µg/L	<2
Acenaphthylene	µg/L	<1
Acenaphthene	µg/L	<1
Fluorene	µg/L	<1
Phenanthrene	µg/L	<1
Anthracene	µg/L	<1
Fluoranthene	µg/L	<1
Pyrene	µg/L	<1
Benzo(a)anthracene	µg/L	<1
Chrysene	µg/L	<1
Benzo(b,j+k)fluoranthene	µg/L	<2
Benzo(a)pyrene	µg/L	<1
Indeno(1,2,3-c,d)pyrene	µg/L	<1
Dibenzo(a,h)anthracene	µg/L	<1
Benzo(g,h,i)perylene	µg/L	<1
Benzo(a)pyrene TEQ	µg/L	<5
Total +ve PAH's	µg/L	NIL (+)VE
Surrogate p-Terphenyl-d14	%	82

Metals in Waters - Acid extractable		
Our Reference		322581-44
Your Reference	UNITS	FR-SPT
Depth		-
Date Sampled		03/05/2023
Type of sample		Water
Date prepared	-	11/05/2023
Date analysed	-	12/05/2023
Arsenic - Total	mg/L	<0.05
Cadmium - Total	mg/L	<0.01
Chromium - Total	mg/L	<0.01
Copper - Total	mg/L	0.3
Lead - Total	mg/L	<0.03
Mercury - Total	mg/L	<0.0005
Nickel - Total	mg/L	<0.02
Zinc - Total	mg/L	0.2

Method ID	Methodology Summary
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
ASB-001	Asbestos ID - Identification of asbestos in soil samples using Polarised Light Microscopy and Dispersion Staining Techniques. Minimum 500mL soil sample was analysed as recommended by "National Environment Protection (Assessment of site contamination) Measure, Schedule B1 and "The Guidelines from the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia - May 2009" with a reporting limit of 0.1g/kg (0.01% w/w) as per Australian Standard AS4964-2004. Results reported denoted with * are outside our scope of NATA accreditation. **NOTE** #1 Total Asbestos g/kg was analysed and reported as per Australian Standard AS4964 (This is the sum of ACM >7mm, <7mm and FA/AF) **NOTE** #2 The screening level of 0.001% w/w asbestos in soil for FA and AF only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres. Estimation = Estimated asbestos weight Results reported with "--" is equivalent to no visible asbestos identified using Polarised Light microscopy and Dispersion Staining Techniques.
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-021	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.

Method ID	Methodology Summary
Org-021	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-021	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS.
Org-022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-MS/GC-MSMS. Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS and/or GC-MS/MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'EQ PQL'values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero'values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL'values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-023	Water samples are analysed directly by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	322581-4
Date extracted	-			10/05/2023	1	10/05/2023	10/05/2023		10/05/2023	10/05/2023
Date analysed	-			11/05/2023	1	11/05/2023	11/05/2023		11/05/2023	11/05/2023
TRH C_6 - C_9	mg/kg	25	Org-023	<25	1	<25	<25	0	125	126
TRH C_6 - C_{10}	mg/kg	25	Org-023	<25	1	<25	<25	0	125	126
Benzene	mg/kg	0.2	Org-023	<0.2	1	<0.2	<0.2	0	114	114
Toluene	mg/kg	0.5	Org-023	<0.5	1	<0.5	<0.5	0	125	126
Ethylbenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	123	123
m+p-xylene	mg/kg	2	Org-023	<2	1	<2	<2	0	132	133
o-Xylene	mg/kg	1	Org-023	<1	1	<1	<1	0	135	137
Naphthalene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	117	1	111	111	0	114	107

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	322581-23
Date extracted	-			[NT]	11	10/05/2023	10/05/2023		10/05/2023	10/05/2023
Date analysed	-			[NT]	11	11/05/2023	11/05/2023		11/05/2023	11/05/2023
TRH C_6 - C_9	mg/kg	25	Org-023	[NT]	11	<25	<25	0	123	124
TRH C_6 - C_{10}	mg/kg	25	Org-023	[NT]	11	<25	<25	0	123	124
Benzene	mg/kg	0.2	Org-023	[NT]	11	<0.2	<0.2	0	109	115
Toluene	mg/kg	0.5	Org-023	[NT]	11	<0.5	<0.5	0	128	127
Ethylbenzene	mg/kg	1	Org-023	[NT]	11	<1	<1	0	118	119
m+p-xylene	mg/kg	2	Org-023	[NT]	11	<2	<2	0	129	130
o-Xylene	mg/kg	1	Org-023	[NT]	11	<1	<1	0	129	130
Naphthalene	mg/kg	1	Org-023	[NT]	11	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	[NT]	11	107	106	1	114	112

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	20	10/05/2023	10/05/2023		[NT]	[NT]
Date analysed	-			[NT]	20	11/05/2023	11/05/2023		[NT]	[NT]
TRH C_6 - C_9	mg/kg	25	Org-023	[NT]	20	<25	<25	0	[NT]	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-023	[NT]	20	<25	<25	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-023	[NT]	20	<0.2	<0.2	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-023	[NT]	20	<0.5	<0.5	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-023	[NT]	20	<1	<1	0	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-023	[NT]	20	<2	<2	0	[NT]	[NT]
o-Xylene	mg/kg	1	Org-023	[NT]	20	<1	<1	0	[NT]	[NT]
Naphthalene	mg/kg	1	Org-023	[NT]	20	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	[NT]	20	115	115	0	[NT]	[NT]

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	33	10/05/2023	10/05/2023		[NT]	[NT]
Date analysed	-			[NT]	33	11/05/2023	11/05/2023		[NT]	[NT]
TRH C_6 - C_9	mg/kg	25	Org-023	[NT]	33	<25	<25	0	[NT]	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-023	[NT]	33	<25	<25	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-023	[NT]	33	<0.2	<0.2	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-023	[NT]	33	<0.5	<0.5	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-023	[NT]	33	<1	<1	0	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-023	[NT]	33	<2	<2	0	[NT]	[NT]
o-Xylene	mg/kg	1	Org-023	[NT]	33	<1	<1	0	[NT]	[NT]
Naphthalene	mg/kg	1	Org-023	[NT]	33	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	[NT]	33	105	104	1	[NT]	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	322581-4
Date extracted	-			10/05/2023	1	10/05/2023	10/05/2023		10/05/2023	10/05/2023
Date analysed	-			12/05/2023	1	12/05/2023	12/05/2023		12/05/2023	12/05/2023
TRH C_{10} - C_{14}	mg/kg	50	Org-020	<50	1	<50	<50	0	103	107
TRH C_{15} - C_{28}	mg/kg	100	Org-020	<100	1	<100	<100	0	87	87
TRH C_{29} - C_{36}	mg/kg	100	Org-020	<100	1	<100	<100	0	100	118
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	<50	1	<50	<50	0	103	107
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	<100	1	<100	<100	0	87	87
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	<100	1	<100	<100	0	100	118
Surrogate o-Terphenyl	%		Org-020	83	1	84	85	1	93	85

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	322581-23
Date extracted	-			[NT]	11	10/05/2023	10/05/2023		10/05/2023	10/05/2023
Date analysed	-			[NT]	11	12/05/2023	12/05/2023		12/05/2023	12/05/2023
TRH C_{10} - C_{14}	mg/kg	50	Org-020	[NT]	11	<50	<50	0	130	121
TRH C_{15} - C_{28}	mg/kg	100	Org-020	[NT]	11	<100	<100	0	101	114
TRH C_{29} - C_{36}	mg/kg	100	Org-020	[NT]	11	<100	<100	0	100	126
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	[NT]	11	<50	<50	0	130	121
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	[NT]	11	<100	<100	0	101	114
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	[NT]	11	<100	<100	0	100	126
Surrogate o-Terphenyl	%		Org-020	[NT]	11	85	90	6	94	87

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	20	10/05/2023	10/05/2023		[NT]	[NT]
Date analysed	-			[NT]	20	12/05/2023	12/05/2023		[NT]	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	[NT]	20	<50	<50	0	[NT]	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	[NT]	20	<100	<100	0	[NT]	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	[NT]	20	<100	<100	0	[NT]	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	[NT]	20	<50	<50	0	[NT]	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	[NT]	20	<100	<100	0	[NT]	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	[NT]	20	<100	<100	0	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-020	[NT]	20	87	87	0	[NT]	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	33	10/05/2023	10/05/2023		[NT]	[NT]
Date analysed	-			[NT]	33	12/05/2023	12/05/2023		[NT]	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	[NT]	33	<50	<50	0	[NT]	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	[NT]	33	<100	<100	0	[NT]	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	[NT]	33	<100	<100	0	[NT]	[NT]
TRH $>C_{10}$ -C_{16}	mg/kg	50	Org-020	[NT]	33	<50	<50	0	[NT]	[NT]
TRH $>C_{16}$ -C_{34}	mg/kg	100	Org-020	[NT]	33	<100	<100	0	[NT]	[NT]
TRH $>C_{34}$ -C_{40}	mg/kg	100	Org-020	[NT]	33	<100	<100	0	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-020	[NT]	33	82	83	1	[NT]	[NT]

QUALITY CONTROL: PAHs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	322581-4
Date extracted	-			10/05/2023	1	10/05/2023	10/05/2023		10/05/2023	10/05/2023
Date analysed	-			11/05/2023	1	11/05/2023	11/05/2023		11/05/2023	11/05/2023
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	93	93
Acenaphthylene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	101	97
Fluorene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	101	101
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	100	83
Anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	<0.1	1	0.1	0.2	67	102	#
Pyrene	mg/kg	0.1	Org-022/025	<0.1	1	0.1	0.2	67	105	#
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	93	67
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	<0.05	1	<0.05	0.1	67	102	69
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	115	1	87	90	3	101	88

QUALITY CONTROL: PAHs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	322581-23
Date extracted	-			[NT]	11	10/05/2023	10/05/2023		10/05/2023	10/05/2023
Date analysed	-			[NT]	11	11/05/2023	11/05/2023		12/05/2023	11/05/2023
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	93	96
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	93	95
Fluorene	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	92	92
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	98	64
Anthracene	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	11	0.2	0.2	0	114	#
Pyrene	mg/kg	0.1	Org-022/025	[NT]	11	0.2	0.2	0	117	#
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	101	#
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	11	0.1	0.09	11	114	#
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	11	0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	11	100	95	5	96	99

Client Reference: E35822PR, Temora

QUALITY CONTROL: PAHs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	20	10/05/2023	10/05/2023		[NT]	[NT]
Date analysed	-			[NT]	20	11/05/2023	11/05/2023		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	20	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	20	<0.05	<0.05	0	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	20	86	97	12	[NT]	[NT]

QUALITY CONTROL: PAHs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	33	10/05/2023	10/05/2023		[NT]	[NT]
Date analysed	-			[NT]	33	11/05/2023	11/05/2023		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	33	0.1	0.1	0	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-022/025	[NT]	33	0.1	<0.1	0	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	33	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	33	0.05	0.05	0	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	33	102	94	8	[NT]	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	322581-4
Date extracted	-			10/05/2023	1	10/05/2023	10/05/2023		10/05/2023	10/05/2023
Date analysed	-			11/05/2023	1	11/05/2023	11/05/2023		11/05/2023	11/05/2023
alpha-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	82	82
HCB	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	108	102
gamma-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	107	103
delta-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	103	97
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	98	92
gamma-Chlordane	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	115	107
Dieldrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	112	110
Endrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	103	98
Endosulfan II	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	102	100
Endrin Aldehyde	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	95	95
Methoxychlor	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	105	1	100	100	0	110	103

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	322581-23
Date extracted	-			[NT]	11	10/05/2023	10/05/2023		10/05/2023	10/05/2023
Date analysed	-			[NT]	11	11/05/2023	11/05/2023		11/05/2023	11/05/2023
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	80	98
HCB	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	106	98
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	103	105
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	101	101
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	94	92
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	107	111
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	112	114
Endrin	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	100	103
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	98	102
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	85	89
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	11	104	115	10	105	102

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	20	10/05/2023	10/05/2023		[NT]	[NT]
Date analysed	-			[NT]	20	11/05/2023	11/05/2023		[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
HCB	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	20	101	101	0	[NT]	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	33	10/05/2023	10/05/2023		[NT]	[NT]
Date analysed	-			[NT]	33	11/05/2023	11/05/2023		[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
HCB	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	33	103	115	11	[NT]	[NT]

QUALITY CONTROL: Organophosphorus Pesticides					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	322581-4
Date extracted	-			10/05/2023	1	10/05/2023	10/05/2023		10/05/2023	10/05/2023
Date analysed	-			11/05/2023	1	11/05/2023	11/05/2023		11/05/2023	11/05/2023
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	108	104
Chlorpyriphos-methyl	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	99	113
Dimethoate	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	96	104
Fenitrothion	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	115	113
Malathion	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	108	103
Parathion	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	111	111
Ronnel	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	104	95
Coumaphos	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Disulfoton	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Fenamiphos	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Fenthion	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Methidathion	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Mevinphos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Parathion (Methyl)	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Phorate	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Phosalone	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	105	1	100	100	0	110	103

QUALITY CONTROL: Organophosphorus Pesticides					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	322581-23
Date extracted	-			[NT]	11	10/05/2023	10/05/2023		10/05/2023	10/05/2023
Date analysed	-			[NT]	11	11/05/2023	11/05/2023		11/05/2023	11/05/2023
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-021	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-021	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-021	[NT]	11	<0.1	<0.1	0	108	106
Chlorpyriphos-methyl	mg/kg	0.1	Org-021	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-021	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-021	[NT]	11	<0.1	<0.1	0	107	113
Dimethoate	mg/kg	0.1	Org-021	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-021	[NT]	11	<0.1	<0.1	0	106	113
Fenitrothion	mg/kg	0.1	Org-021	[NT]	11	<0.1	<0.1	0	111	119
Malathion	mg/kg	0.1	Org-021	[NT]	11	<0.1	<0.1	0	105	108
Parathion	mg/kg	0.1	Org-021	[NT]	11	<0.1	<0.1	0	113	121
Ronnel	mg/kg	0.1	Org-021	[NT]	11	<0.1	<0.1	0	97	101
Coumaphos	mg/kg	0.1	Org-021	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Disulfoton	mg/kg	0.1	Org-021	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Fenamiphos	mg/kg	0.1	Org-021	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Fenthion	mg/kg	0.1	Org-021	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Methidathion	mg/kg	0.1	Org-021	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Mevinphos	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Parathion (Methyl)	mg/kg	0.1	Org-021	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Phorate	mg/kg	0.1	Org-021	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Phosalone	mg/kg	0.1	Org-021	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	[NT]	11	104	115	10	105	102

QUALITY CONTROL: Organophosphorus Pesticides					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	20	10/05/2023	10/05/2023		[NT]	[NT]
Date analysed	-			[NT]	20	11/05/2023	11/05/2023		[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Fenitrothion	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Malathion	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Coumaphos	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Disulfoton	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Fenamiphos	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Fenthion	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Methidathion	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Mevinphos	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Parathion (Methyl)	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Phorate	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Phosalone	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	[NT]	20	101	101	0	[NT]	[NT]

QUALITY CONTROL: Organophosphorus Pesticides					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	33	10/05/2023	10/05/2023		[NT]	[NT]
Date analysed	-			[NT]	33	11/05/2023	11/05/2023		[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-021	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-021	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-021	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-021	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-021	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-021	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-021	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-021	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Fenitrothion	mg/kg	0.1	Org-021	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Malathion	mg/kg	0.1	Org-021	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-021	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-021	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Coumaphos	mg/kg	0.1	Org-021	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Disulfoton	mg/kg	0.1	Org-021	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Fenamiphos	mg/kg	0.1	Org-021	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Fenthion	mg/kg	0.1	Org-021	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Methidathion	mg/kg	0.1	Org-021	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Mevinphos	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Parathion (Methyl)	mg/kg	0.1	Org-021	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Phorate	mg/kg	0.1	Org-021	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Phosalone	mg/kg	0.1	Org-021	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	[NT]	33	103	115	11	[NT]	[NT]

QUALITY CONTROL: PCBs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	322581-4
Date extracted	-			10/05/2023	1	10/05/2023	10/05/2023		10/05/2023	10/05/2023
Date analysed	-			11/05/2023	1	11/05/2023	11/05/2023		11/05/2023	11/05/2023
Aroclor 1016	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	122	100
Aroclor 1260	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	105	1	100	100	0	110	103

QUALITY CONTROL: PCBs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	322581-23
Date extracted	-			[NT]	11	10/05/2023	10/05/2023		10/05/2023	10/05/2023
Date analysed	-			[NT]	11	11/05/2023	11/05/2023		11/05/2023	11/05/2023
Aroclor 1016	mg/kg	0.1	Org-021	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	[NT]	11	<0.1	<0.1	0	116	120
Aroclor 1260	mg/kg	0.1	Org-021	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	[NT]	11	104	115	10	105	102

QUALITY CONTROL: PCBs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	20	10/05/2023	10/05/2023		[NT]	[NT]
Date analysed	-			[NT]	20	11/05/2023	11/05/2023		[NT]	[NT]
Aroclor 1016	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1260	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	[NT]	20	101	101	0	[NT]	[NT]

QUALITY CONTROL: PCBs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	33	10/05/2023	10/05/2023		[NT]	[NT]
Date analysed	-			[NT]	33	11/05/2023	11/05/2023		[NT]	[NT]
Aroclor 1016	mg/kg	0.1	Org-021	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1260	mg/kg	0.1	Org-021	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	[NT]	33	103	115	11	[NT]	[NT]

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	322581-4
Date prepared	-			11/05/2023	1	11/05/2023	11/05/2023		11/05/2023	11/05/2023
Date analysed	-			12/05/2023	1	12/05/2023	12/05/2023		12/05/2023	12/05/2023
Arsenic	mg/kg	4	Metals-020	<4	1	<4	<4	0	106	82
Cadmium	mg/kg	0.4	Metals-020	<0.4	1	<0.4	<0.4	0	101	75
Chromium	mg/kg	1	Metals-020	<1	1	37	38	3	105	92
Copper	mg/kg	1	Metals-020	<1	1	70	70	0	107	##
Lead	mg/kg	1	Metals-020	<1	1	7	9	25	104	82
Mercury	mg/kg	0.1	Metals-021	<0.1	1	<0.1	<0.1	0	113	113
Nickel	mg/kg	1	Metals-020	<1	1	10	10	0	104	81
Zinc	mg/kg	1	Metals-020	<1	1	22	25	13	98	#

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	322581-23
Date prepared	-			[NT]	11	11/05/2023	11/05/2023		11/05/2023	11/05/2023
Date analysed	-			[NT]	11	12/05/2023	12/05/2023		12/05/2023	12/05/2023
Arsenic	mg/kg	4	Metals-020	[NT]	11	5	5	0	101	105
Cadmium	mg/kg	0.4	Metals-020	[NT]	11	<0.4	<0.4	0	97	95
Chromium	mg/kg	1	Metals-020	[NT]	11	30	28	7	99	99
Copper	mg/kg	1	Metals-020	[NT]	11	82	80	2	100	100
Lead	mg/kg	1	Metals-020	[NT]	11	28	26	7	99	97
Mercury	mg/kg	0.1	Metals-021	[NT]	11	<0.1	<0.1	0	113	129
Nickel	mg/kg	1	Metals-020	[NT]	11	7	6	15	100	99
Zinc	mg/kg	1	Metals-020	[NT]	11	53	53	0	94	86

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	20	11/05/2023	11/05/2023		[NT]	[NT]
Date analysed	-			[NT]	20	12/05/2023	12/05/2023		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	20	7	6	15	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	20	<0.4	<0.4	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	20	36	51	34	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	20	94	100	6	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	20	24	20	18	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	20	9	11	20	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	20	36	34	6	[NT]	[NT]

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	33	11/05/2023	11/05/2023		[NT]	[NT]
Date analysed	-			[NT]	33	12/05/2023	12/05/2023		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	33	6	5	18	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	33	<0.4	<0.4	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	33	21	19	10	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	33	34	29	16	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	33	12	12	0	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	33	7	7	0	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	33	30	30	0	[NT]	[NT]

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W3	[NT]
Date extracted	-			09/05/2023	[NT]	[NT]	[NT]	[NT]	09/05/2023	[NT]
Date analysed	-			10/05/2023	[NT]	[NT]	[NT]	[NT]	10/05/2023	[NT]
TRH C_6 - C_9	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	114	[NT]
TRH C_6 - C_{10}	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	114	[NT]
Benzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	119	[NT]
Toluene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	111	[NT]
Ethylbenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	114	[NT]
m+p-xylene	µg/L	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	118	[NT]
o-xylene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	116	[NT]
Naphthalene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	99	[NT]	[NT]	[NT]	[NT]	100	[NT]
Surrogate toluene-d8	%		Org-023	98	[NT]	[NT]	[NT]	[NT]	100	[NT]
Surrogate 4-BFB	%		Org-023	106	[NT]	[NT]	[NT]	[NT]	104	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			12/05/2023	[NT]	[NT]	[NT]	[NT]	12/05/2023	[NT]
Date analysed	-			12/05/2023	[NT]	[NT]	[NT]	[NT]	12/05/2023	[NT]
TRH C_{10} - C_{14}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	95	[NT]
TRH C_{15} - C_{28}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	100	[NT]
TRH C_{29} - C_{36}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	114	[NT]
TRH >C_{10} - C_{16}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	95	[NT]
TRH >C_{16} - C_{34}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	100	[NT]
TRH >C_{34} - C_{40}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	114	[NT]
Surrogate o-Terphenyl	%		Org-020	73	[NT]	[NT]	[NT]	[NT]	90	[NT]

QUALITY CONTROL: PAHs in Water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W3	[NT]
Date extracted	-			12/05/2023	[NT]	[NT]	[NT]	[NT]	12/05/2023	[NT]
Date analysed	-			12/05/2023	[NT]	[NT]	[NT]	[NT]	12/05/2023	[NT]
Naphthalene	µg/L	2	Org-022/025	<2	[NT]	[NT]	[NT]	[NT]	117	[NT]
Acenaphthylene	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	113	[NT]
Fluorene	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	123	[NT]
Phenanthrene	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	103	[NT]
Anthracene	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	108	[NT]
Pyrene	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	115	[NT]
Benzo(a)anthracene	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	84	[NT]
Benzo(b,j+k)fluoranthene	µg/L	2	Org-022/025	<2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	106	[NT]
Indeno(1,2,3-c,d)pyrene	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	75	[NT]	[NT]	[NT]	[NT]	121	[NT]

QUALITY CONTROL: Metals in Waters - Acid extractable					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			11/05/2023	[NT]	[NT]	[NT]	[NT]	11/05/2023	[NT]
Date analysed	-			12/05/2023	[NT]	[NT]	[NT]	[NT]	12/05/2023	[NT]
Arsenic - Total	mg/L	0.05	Metals-020	<0.05	[NT]	[NT]	[NT]	[NT]	118	[NT]
Cadmium - Total	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	[NT]	[NT]	108	[NT]
Chromium - Total	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	[NT]	[NT]	113	[NT]
Copper - Total	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	[NT]	[NT]	118	[NT]
Lead - Total	mg/L	0.03	Metals-020	<0.03	[NT]	[NT]	[NT]	[NT]	110	[NT]
Mercury - Total	mg/L	0.0005	Metals-021	<0.0005	[NT]	[NT]	[NT]	[NT]	108	[NT]
Nickel - Total	mg/L	0.02	Metals-020	<0.02	[NT]	[NT]	[NT]	[NT]	112	[NT]
Zinc - Total	mg/L	0.02	Metals-020	<0.02	[NT]	[NT]	[NT]	[NT]	104	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Where matrix spike recoveries fall below the lower limit of the acceptance criteria (e.g. for non-labile or standard Organics <60%), positive result(s) in the parent sample will subsequently have a higher than typical estimated uncertainty (MU estimates supplied on request) and in these circumstances the sample result is likely biased significantly low.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

Report Comments

PAH_S:
Percent recovery for the matrix spike is not possible to report as the high concentration of analytes in samples 322581-4ms, 23ms have caused interference.

Asbestos-ID in soil: NEPM
This report is consistent with the reporting recommendations in the National Environment Protection (Assessment of Site Contamination) Measure, Schedule B1, May 2013. This is reported outside our scope of NATA accreditation.

Note: All samples analysed as received. However, sample 322581-8 is below the minimum recommended 500mL sample volume as per National Environment Protection (Assessment of Site Contamination) Measure, Schedule B1, May 2013.

8 metals in soil :
- # Percent recovery is not possible to report due to the inhomogeneous nature of the element/s in the sample/s. However an acceptable recovery was obtained for the LCS.
-## Percent recovery is not applicable due to the high concentration of the element/s in the sample/s. However an acceptable recovery was obtained for the LCS.

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

SAMPLE RECEIPT ADVICE

Client Details

Client	JK Environments
Attention	C Ridley

Sample Login Details

Your reference	E35822PR, Temora
Envirolab Reference	322581
Date Sample Received	08/05/2023
Date Instructions Received	08/05/2023
Date Results Expected to be Reported	15/05/2023

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	44 Soil, 1 Water, 2 Material
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	8
Cooling Method	Ice
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	**Phone: 02 9910 6200**
Fax: 02 9910 6201	**Fax: 02 9910 6201**
Email: ahie@envirolab.com.au	**Email: jhurst@envirolab.com.au**

Analysis Underway, details on the following page:

Sample ID	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticides in soil	Organophosphorus Pesticides	PCBs in Soil	Acid Extractable metalsin soil	Asbestos ID - soils NEPM - ASB-001	Asbestos ID - materials	vTRH(C6-C10)/BTEXN in Water	svTRH (C10-C40) in Water	PAHsin Water	Metals in Waters -Acid extractable	On Hold
BH1-0-0.3	✓	✓	✓	✓	✓	✓	✓	✓						
BH1-0.3-0.5														✓
BH1-0.8-1.0	✓	✓	✓				✓							
BH2-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓						
BH2-0.3-0.5	✓	✓	✓				✓							
BH2-0.8-1.0	✓	✓	✓				✓							
BH3-0-0.1	✓	✓	✓	✓	✓	✓	✓	✓						
BH3-0.3-0.5	✓	✓	✓	✓	✓	✓	✓	✓						
BH3-0.8-1.0														✓
BH3-1.3-1.5	✓	✓	✓				✓							
BH4-0-0.1	✓	✓	✓	✓	✓	✓	✓	✓						
BH4-0.3-0.5	✓	✓	✓				✓							
BH4-0.8-1.0	✓	✓	✓				✓							
BH5-0-0.1	✓	✓	✓	✓	✓	✓	✓	✓						
BH5-0.3-0.5														✓
BH5-0.8-1.0	✓	✓	✓				✓							
BH6-0.02-0.3	✓	✓	✓	✓	✓	✓	✓	✓						
BH6-0.3-0.5	✓	✓	✓				✓							
BH6-0.8-1.0	✓	✓	✓				✓							
BH7-0-0.1	✓	✓	✓	✓	✓	✓	✓	✓						
BH7-0.3-0.5	✓	✓	✓				✓							
BH7-0.8-1.0														✓
BH8-0.02-0.2	✓	✓	✓	✓	✓	✓	✓	✓						
BH8-0.3-0.5	✓	✓	✓				✓							
BH8-0.8-1.0														✓
BH8-1.3-1.5														✓
TP13-0-0.1	✓	✓	✓	✓	✓	✓	✓	✓						
TP13-0.5-0.6	✓	✓	✓				✓							
TP13-0.9-1.0														✓
TP14-0-0.1	✓	✓	✓	✓	✓	✓	✓	✓						
TP14-0.4-0.5	✓	✓	✓				✓							
TP14-0.9-1.0	✓	✓	✓				✓							

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200   fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

Sample ID	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticides in soil	Organophosphorus Pesticides	PCBs in Soil	Acid Extractable metalsin soil	Asbestos ID - soils NEPM - ASB-001	Asbestos ID - materials	vTRH(C6-C10)/BTEXN in Water	svTRH (C10-C40) in Water	PAHsin Water	Metals in Waters -Acid extractable	On Hold
TP15-0-0.1	✓	✓	✓	✓	✓	✓	✓	✓						
TP15-0.4-0.5														✓
TP15-0.9-1.0	✓	✓	✓	✓	✓	✓	✓	✓						
TP15-1.3-1.5	✓	✓	✓				✓							
TP16-0-0.1	✓	✓	✓	✓	✓	✓	✓	✓						
TP16-0.4-0.5	✓	✓	✓				✓							
TP16-0.9-1.0														✓
SDUP1	✓	✓	✓	✓	✓	✓	✓							
SDUP2	✓	✓	✓				✓							
TB-S1	✓	✓	✓				✓							
TS-S1	✓													
FR-SPT										✓	✓	✓	✓	
BH4-FCF1									✓					
BH4-FCF2									✓					
TP3-0.4-0.5														✓

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.

Requests for longer term sample storage must be received in writing.

Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.

TAT for Micro is dependent on incubation. This varies from 3 to 6 days.

SAMPLE AND CHAIN OF CUSTODY FORM

TO:
ENVIROLAB SERVICES PTY LTD
12 ASHLEY STREET
CHATSWOOD NSW 2067
P: (02) 99106200
F: (02) 99106201

Attention: Aileen

JKE Job Number: E35822PR

Date Results Required: STANDARD

Page: 1 of 2

FROM:
JKEnvironments
REAR OF 115 WICKS ROAD
MACQUARIE PARK, NSW 2113
P: 02-9888 5000 **F: 02-9888 5001**
Attention: **Craig Ridley**
cridley@jkenvironments.com.au

Location: Temora
Sampler: AD

Sample Preserved in Esky on Ice

Tests Required

Date Sampled	Lab Ref:	Sample Number	Depth (m)	Sample Container	PID	Sample Description	Combo 6an	Combo 3an	Combo 6	Combo 3	Asbestos [NEPM]	Asbestos ID	TRH/BTEX	BTEX				
4/05/2023	1	BH1	0-0.3	G, A	0.5	Silty Clay	X											
4/05/2023	2	BH1	0.3-0.5	G, A	0.4	Silty Clay												
4/05/2023	3	BH1	0.8-1.0	G, A	0.3	XW Andesite				X								
3/05/2023	4	BH1	0-0.2	G, A	1.3	F: Gravelly Sandy Clay	X											
3/05/2023	5	BH2	0.3-0.5	G, A	1.9	Sandy Silty Clay				X								
3/05/2023	6	BH2	0.8-1.0	G, A	1.8	Silty Clay				X								
4/05/2023	7	BH3	0-0.1	G, A	0.6	F: Silty Clay	X											
4/05/2023	8	BH3	0.3-0.5	G, A	0.7	F: Sandy Silty Clay	X											
4/05/2023	9	BH3	0.8-1.0	G, A	0.6	F: Sandy Silty Clay												
4/05/2023	10	BH3	1.3-1.5	G, A	1.5	Sandy Silty Clay				X								
4/05/2023	11	BH4	0-0.1	G, A	2.2	F: Silty Clay	X											
4/05/2023	12	BH4	0.3-0.5	G, A	2	Sandy Silty Clay				X								
4/05/2023	13	BH4	0.8-1.0	G, A	3.8	XW Andesite				X								
3/05/2023	14	BH5	0-0.1	G, A	0.6	Silty Clay	X											
3/05/2023	15	BH5	0.3-0.5	G, A	0.5	Silty Clay												
3/05/2023	16	BH5	0.8-1.0	G, A	0.6	Silty Clay				X								
2/05/2023	17	BH6	0-0.1 0.02-0.3	G, A	0.4	F: Silty Clay	X											
2/05/2023	18	BH6	0.3-0.5	G	0.1	Sandy Silty Clay				X								
2/05/2023	19	BH4	0.8-1.0	G	0.1	XW Andesite				X								
2/05/2023	20	BH7	0-0.3	G, A	0.8	F: Gravelly Silty Sand	X											
2/05/2023	21	BH6	0.3-0.5	G, A	2	Sandy Silt				X								
2/05/2023	22	BH7	0.8-1.0	G	0	XW Andesite												
5/05/2023	23	BH8	0.02-0.2	G, A	0	F: Silty Sand	X											
5/05/2023	24	BH8	0.3-0.5	G, A	0.3	Sandy Silty Clay				X								
5/05/2023	25	BH8	0.8-1.0	G, A	0.4	Sandy Silty Clay												
5/05/2023	26	BH8	1.3-1.5	G, A	0.4	Sandy Silty Clay												

ENVIROLAB
Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200
Job No: 322581
Date Received: 08/05/23
Time Received: 1130
Received By: SP
Temp: [✓ Cool]/Ambient
Cooling: Ice/[✓ Icepack]
Security: Intact/Broken/[✓ None]

Remarks (comments/detection limits required):

Sample Containers:
G - 250mg Glass Jar
A - Ziplock Asbestos Bag
P - Plastic Bag

Relinquished By:	**Date:**	**Time:**	**Received By:**	**Date:**
AD	08/05/23	10:30am	ELS SYD Sarah P	08/05/23

updated

SAMPLE AND CHAIN OF CUSTODY FORM

TO:
ENVIROLAB SERVICES PTY LTD
12 ASHLEY STREET
CHATSWOOD NSW 2067
P: (02) 99106200
F: (02) 99106201

Attention: Aileen

JKE Job Number: E35822PR

Date Results Required: STANDARD

Page: 2 of 2

FROM:
JKEnvironments
REAR OF 115 WICKS ROAD
MACQUARIE PARK, NSW 2113
P: 02-9888 5000 F: 02-9888 5001
Attention: Craig Ridley
cridley@jkenvironments.com.au

Location: Temora

Sampler: AD

Sample Preserved in Esky on Ice

Tests Required

Date Sampled	Lab Ref:	Sample Number	Depth (m)	Sample Container	PID	Sample Description	Combo 6an	Combo 3an	Combo 6	Combo 3	Asbestos (NEPM)	Asbestos ID	TRH/BTEX	BTEX				
4/05/2023		TP13	0-0.1	G, A	0.6	F: Silty Clay	X											
4/05/2023		TP13	0.5-0.6	G, A	1.3	Silty Clay				X								
4/05/2023		TP13	0.9-1.0	G, A	2.4	Silty Clay												
4/05/2023		TP13	0-0.1	G, A	1	F: Silty Clay	X											
4/05/2023		TP14	0.4-0.5	G, A	0.5	Silty Clay				X								
4/05/2023		TP14	0.9-1.0	G, A	1.1	XW Andesite				X								
4/05/2023		TP13	0-0.1	G, A	0.3	F: Silty Clay	X											
4/05/2023		TP15	0.4-0.5	G, A	0.2	F: Silty Clay												
4/05/2023		TP15	0.9-1.0	G, A	0.4	F: Sandy Silty Clay	X											
4/05/2023		TP14	1.3-1.5	G, A	0.6	Silty Clay				X								
4/05/2023		TP16	0-0.1	G, A	0.2	Silty Clay	X											
4/05/2023		TP15	0.4-0.5	G, A	1.2	Silty Clay				X								
4/05/2023		TP16	0.9-1.0	G, A	0.3	XW Andesite												
4/05/2023		SDUP1	-	G	-	Soil Duplicate			X									
4/05/2023		SDUP1	-	G	-	Soil Duplicate				X								
4/05/2023		SDUP3	-	G	-	Soil Duplicate			X									
4/05/2023		SDUP4	-	G	-	Soil Duplicate				X								
2/05/2023		TB-S1	-	V	-	Trip Blank				X								
2/05/2023		TS-S1	-	V	-	Trip Spike								X				
2/05/2023		FR-SPT	-	#	-	Field Rinsate				X								
4/05/2023		BH4-FCF1	0-0.1	A	-	Fragment						X						
4/05/2023		BH4-FCF2	0-0.1	A	-	Fragment						X						
		-	-															
** PLEASE SEND SDUP3 AND SDUP4 FOR INTER-LAB ANALYSIS																		
		-	-		-													

Remarks (comments/detection limits required):

Sample Containers:
G - 250mg Glass Jar A - Ziplock Asbestos Bag V-Vial
2x BTEX, 1x HNO3, 1x amber glass

Relinquished By: AD
Date: 08/05/23
Time: 10:30am
Received By:
Date:

SAMPLE AND CHAIN OF CUSTODY FORM

TO:
ENVIROLAB SERVICES PTY LTD
12 ASHLEY STREET
CHATSWOOD NSW 2067
P: (02) 99106200
F: (02) 99106201

Attention: Aileen

JKE Job Number: E35822PR

Date Results Required: STANDARD

Page: 2 of 2

FROM:
JKEnvironments
REAR OF 115 WICKS ROAD
MACQUARIE PARK, NSW 2113
P: 02-9888 5000 **F: 02-9888 5001**
Attention: Craig Ridley
cridley@jkenvironments.com.au

Location: Temora

Sampler: AD

Sample Preserved in Esky on Ice

Tests Required

Date Sampled	Lab Ref:	Sample Number	Depth (m)	Sample Container	PID	Sample Description	Combo 6an	Combo 3an	Combo 6	Combo 6	Asbestos (NEPM)	Asbestos ID	TRH/BTEX	BTEX				
4/05/2023	27	TP9	0-0.1	G, A	0.6	F: Silty Clay	X											
4/05/2023	28	TP9	0.5-0.6	G, A	1.3	Silty Clay				X								
4/05/2023	29	TP9	0.9-1.0	G, A	2.4	Silty Clay												
4/05/2023	30	TP10	0-0.1	G, A	1	F: Silty Clay	X											
4/05/2023	31	TP10	0.4-0.5	G, A	0.5	Silty Clay				X								
4/05/2023	32	TP10	0.9-1.0	G, A	1.1	XW Andesite				X								
4/05/2023	33	TP11	0-0.1	G, A	0.3	F: Silty Clay	X											
4/05/2023	34	TP11	0.4-0.5	G, A	0.2	F: Silty Clay												
4/05/2023	35	TP11	0.9-1.0	G, A	0.4	F: Sandy Silty Clay	X											
4/05/2023	36	TP11	1.3-1.5	G, A	0.5	Silty Clay				X								
4/05/2023	37	TP12	0-0.1	G, A	0.2	Silty Clay	X											
4/05/2023	38	TP12	0.4-0.5	G, A	1.2	Silty Clay				X								
4/05/2023	39	TP12	0.9-1.0	G, A	0.5	XW Andesite												
4/05/2023	40	SDUP1	-	G	-	Soil Duplicate			X									
4/05/2023	41	SDUP2	-	G	-	Soil Duplicate				X								
4/05/2023 SO	~~42~~ SP	SDUP3	-	G	-	Soil Duplicate			X									
4/05/2023 SO	~~43~~ SP	SDUP4	-	G	-	Soil Duplicate				X								
1 2/05/2023	~~44~~ 42 SP	TB-S1	42	V	-	Trip Blank				X								
1 2/05/2023	~~45~~ 43 SP	TS-S1	43	V	-	Trip Spike								X				
4 3/05/2023	~~46~~ 44 SP	FR-SPT	44	#	-	Field Rinsate				X								
1 4/05/2023	~~47~~ 45 SP	BH4-FCF1	0-0.1 45	A	-	Fragment						X						
1 4/05/2023	~~48~~ 46 SP	BH4-FCF2	0-0.1 46	A	-	Fragment						X						
Extra² sample ←	47	TP3	0.4-0.5		-													

**** PLEASE SEND SDUP3 AND SDUP4 FOR INTER-LAB ANALYSIS**

Remarks (comments/detection limits required):

Sample Containers:
G - 250mg Glass Jar A - Ziplock Asbestos Bag V - Vial
 # 2x BTEX, 1x HNO3, 1x amber glass

Relinquished By:	Date:	Time:	Received By:	Date:
AD	08/05/23	10:30am	ELS SYD Sarah P	08/05/23

ENVIROLAB
Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200
Job No: 322581
Date Received: 08/05/23
Time Received: 1130
Received By: SP
Temp: [✓ Cool]/Ambient
Cooling: Ice/[✓ Icepack]
Security: Intact/Broken/[✓ None]

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200   fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 322581-A

Client Details

Client	JK Environments
Attention	C Ridley
Address	PO Box 976, North Ryde BC, NSW, 1670

Sample Details

Your Reference	**E35822PR, Temora**
Number of Samples	additional analysis
Date samples received	08/05/2023
Date completed instructions received	17/05/2023

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by	24/05/2023
Date of Issue	24/05/2023

NATA Accreditation Number 2901. This document shall not be reproduced except in full.

Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Results Approved By
Kyle Gavrily, Senior Chemist
Loren Bardwell, Development Chemist

Authorised By
Nancy Zhang, Laboratory Manager

TCLP Preparation - Acid					
Our Reference		322581-A-8	322581-A-23	322581-A-30	322581-A-35
Your Reference	UNITS	BH3	BH8	TP14	TP15
Depth		0.3-0.5	0.02-0.2	0-0.1	0.9-1.0
Date Sampled		4/05/2023	05/05/2023	4/05/2023	4/05/2023
Type of sample		Soil	Soil	Soil	Soil
pH of soil for fluid# determ.	pH units	8.3	8.3	8.2	8.2
pH of soil TCLP (after HCl)	pH units	1.8	1.8	1.8	1.8
Extraction fluid used		1	1	1	1
pH of final Leachate	pH units	5.0	5.0	5.0	5.0

PAHs in TCLP (USEPA 1311)				
Our Reference		322581-A-8	322581-A-23	322581-A-35
Your Reference	UNITS	BH3	BH8	TP15
Depth		0.3-0.5	0.02-0.2	0.9-1.0
Date Sampled		4/05/2023	05/05/2023	4/05/2023
Type of sample		Soil	Soil	Soil
Date extracted	-	24/05/2023	24/05/2023	24/05/2023
Date analysed	-	24/05/2023	24/05/2023	24/05/2023
Naphthalene in TCLP	mg/L	0.005	<0.001	<0.001
Acenaphthylene in TCLP	mg/L	<0.001	<0.001	<0.001
Acenaphthene in TCLP	mg/L	0.001	<0.001	<0.001
Fluorene in TCLP	mg/L	<0.001	<0.001	<0.001
Phenanthrene in TCLP	mg/L	0.002	<0.001	<0.001
Anthracene in TCLP	mg/L	<0.001	<0.001	<0.001
Fluoranthene in TCLP	mg/L	<0.001	<0.001	<0.001
Pyrene in TCLP	mg/L	<0.001	<0.001	<0.001
Benzo(a)anthracene in TCLP	mg/L	<0.001	<0.001	<0.001
Chrysene in TCLP	mg/L	<0.001	<0.001	<0.001
Benzo(bjk)fluoranthene in TCLP	mg/L	<0.002	<0.002	<0.002
Benzo(a)pyrene in TCLP	mg/L	<0.001	<0.001	<0.001
Indeno(1,2,3-c,d)pyrene - TCLP	mg/L	<0.001	<0.001	<0.001
Dibenzo(a,h)anthracene in TCLP	mg/L	<0.001	<0.001	<0.001
Benzo(g,h,i)perylene in TCLP	mg/L	<0.001	<0.001	<0.001
Total +ve PAH's	mg/L	0.0086	NIL (+)VE	NIL (+)VE
Surrogate p-Terphenyl-d14	%	84	79	80

Metals from Leaching Fluid pH 2.9 or 5		
Our Reference		322581-A-30
Your Reference	UNITS	TP14
Depth		0-0.1
Date Sampled		4/05/2023
Type of sample		Soil
Date extracted	-	24/05/2023
Date analysed	-	24/05/2023
Lead	mg/L	0.07

Method ID	Methodology Summary
Inorg-004	Toxicity Characteristic Leaching Procedure (TCLP) using AS 4439 and USEPA 1311. Please note that the mass used may be scaled down from default based on sample mass available. Samples are stored at 2-6oC before and after leachate preparation.
Metals-020	Determination of various metals by ICP-AES following buffer determination as per USEPA 1311 and hence AS 4439.3. Extraction Fluid 1 refers to the pH 5.0 buffer and Extraction Fluid 2 is the pH 2.9 buffer.
Org-022/025	Leachates are extracted with Dichloromethane and analysed by GC-MS/GC-MSMS.

QUALITY CONTROL: PAHs in TCLP (USEPA 1311)					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			24/05/2023	[NT]	[NT]	[NT]	[NT]	24/05/2023	[NT]
Date analysed	-			24/05/2023	[NT]	[NT]	[NT]	[NT]	24/05/2023	[NT]
Naphthalene in TCLP	mg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	75	[NT]
Acenaphthylene in TCLP	mg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene in TCLP	mg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	80	[NT]
Fluorene in TCLP	mg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	84	[NT]
Phenanthrene in TCLP	mg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	88	[NT]
Anthracene in TCLP	mg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene in TCLP	mg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	81	[NT]
Pyrene in TCLP	mg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	86	[NT]
Benzo(a)anthracene in TCLP	mg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene in TCLP	mg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	66	[NT]
Benzo(bjk)fluoranthene in TCLP	mg/L	0.002	Org-022/025	<0.002	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene in TCLP	mg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	104	[NT]
Indeno(1,2,3-c,d)pyrene - TCLP	mg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene in TCLP	mg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene in TCLP	mg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	77	[NT]	[NT]	[NT]	[NT]	97	[NT]

QUALITY CONTROL: Metals from Leaching Fluid pH 2.9 or 5					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			24/05/2023	[NT]	[NT]	[NT]	[NT]	24/05/2023	[NT]
Date analysed	-			24/05/2023	[NT]	[NT]	[NT]	[NT]	24/05/2023	[NT]
Lead	mg/L	0.03	Metals-020	<0.03	[NT]	[NT]	[NT]	[NT]	96	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Where matrix spike recoveries fall below the lower limit of the acceptance criteria (e.g. for non-labile or standard Organics <60%), positive result(s) in the parent sample will subsequently have a higher than typical estimated uncertainty (MU estimates supplied on request) and in these circumstances the sample result is likely biased significantly low.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200   fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

SAMPLE RECEIPT ADVICE

Client Details

Client	JK Environments
Attention	C Ridley

Sample Login Details

Your reference	E35822PR, Temora
Envirolab Reference	322581-A
Date Sample Received	08/05/2023
Date Instructions Received	17/05/2023
Date Results Expected to be Reported	24/05/2023

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	additional analysis
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	8
Cooling Method	Ice
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	**Phone: 02 9910 6200**
Fax: 02 9910 6201	**Fax: 02 9910 6201**
Email: ahie@envirolab.com.au	**Email: jhurst@envirolab.com.au**

Analysis Underway, details on the following page:

Sample ID	TCLP Preparation - Acid	Naphthalene in TCLP	Acenaphthylene in TCLP	Acenaphthene in TCLP	Fluorene in TCLP	Phenanthrene in TCLP	Anthracene in TCLP	Fluoranthene in TCLP	Pyrene in TCLP	Benzo(a)anthracene in TCLP	Chrysene in TCLP	Benzo(bjk)fluoranthene in TCLP	Benzo(a)pyrene in TCLP	Indeno(1,2,3-c,d)pyrene - TCLP	Dibenzo(a,h)anthracene in TCLP	Benzo(g,h,i)perylene in TCLP	Total +vePAH's	Surrogate p-Terphenyl-d14	Lead	On Hold
BH1-0-0.3																				✓
BH1-0.3-0.5																				✓
BH1-0.8-1.0																				✓
BH2-0-0.2																				✓
BH2-0.3-0.5																				✓
BH2-0.8-1.0																				✓
BH3-0-0.1																				✓
BH3-0.3-0.5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
BH3-0.8-1.0																				✓
BH3-1.3-1.5																				✓
BH4-0-0.1																				✓
BH4-0.3-0.5																				✓
BH4-0.8-1.0																				✓
BH5-0-0.1																				✓
BH5-0.3-0.5																				✓
BH5-0.8-1.0																				✓
BH6-0.02-0.3																				✓
BH6-0.3-0.5																				✓
BH6-0.8-1.0																				✓
BH7-0-0.1																				✓

Sample ID	TCLP Preparation - Acid	Naphthalene in TCLP	Acenaphthylene in TCLP	Acenaphthene in TCLP	Fluorene in TCLP	Phenanthrene in TCLP	Anthracene in TCLP	Fluoranthene in TCLP	Pyrene in TCLP	Benzo(a)anthracene in TCLP	Chrysene in TCLP	Benzo(bjk)fluoranthene in TCLP	Benzo(a)pyrene in TCLP	Indeno(1,2,3-c,d)pyrene - TCLP	Dibenzo(a,h)anthracene in TCLP	Benzo(g,h,i)perylene in TCLP	Total +vePAH's	Surrogate p-Terphenyl-d14	Lead	On Hold
BH7-0.3-0.5																				✓
BH7-0.8-1.0																				✓
BH8-0.02-0.2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
BH8-0.3-0.5																				✓
BH8-0.8-1.0																				✓
BH8-1.3-1.5																				✓
TP13-0-0.1																				✓
TP13-0.5-0.6																				✓
TP13-0.9-1.0																				✓
TP14-0-0.1	✓																		✓	
TP14-0.4-0.5																				✓
TP14-0.9-1.0																				✓
TP15-0-0.1																				✓
TP15-0.4-0.5																				✓
TP15-0.9-1.0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
TP15-1.3-1.5																				✓
TP16-0-0.1																				✓
TP16-0.4-0.5																				✓
TP16-0.9-1.0																				✓
SDUP1																				✓

Sample ID	TCLP Preparation - Acid	Naphthalene in TCLP	Acenaphthylene in TCLP	Acenaphthene in TCLP	Fluorene in TCLP	Phenanthrene in TCLP	Anthracene in TCLP	Fluoranthene in TCLP	Pyrene in TCLP	Benzo(a)anthracene in TCLP	Chrysene in TCLP	Benzo(bjk)fluoranthene in TCLP	Benzo(a)pyrene in TCLP	Indeno(1,2,3-c,d)pyrene - TCLP	Dibenzo(a,h)anthracene in TCLP	Benzo(g,h,i)perylene in TCLP	Total +vePAH's	Surrogate p-Terphenyl-d14	Lead	On Hold
SDUP2																				✓
TB-S1																				✓
TS-S1																				✓
FR-SPT																				✓
BH4-FCF1																				✓
BH4-FCF2																				✓
TP3-0.4-0.5																				✓

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.

Requests for longer term sample storage must be received in writing.

Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.

TAT for Micro is dependent on incubation. This varies from 3 to 6 days.

Ming To

From: Craig Ridley <CRidley@jkenvironments.com.au>
Sent: Wednesday, 17 May 2023 10:57 AM
To: Nancy Zhang
Cc: Samplereceipt
Subject: RE: Results for Registration 322581 E35822PR, Temora

Categories: Additional

Ref: 322581-A
TAT: Standard
Due: 24/05/2023
MT

CAUTION: This email originated from outside of the organisation. Do not act on instructions, click links or open attachments unless you recognise the sender and know the content is authentic and safe.

Hi Nancy, can we please arrange the following additional tests on standard turnaround:

Sample Number and Depth	Lab Reference	Test Required
BH3 (0.3-0.5) 8	322581-8	TCLP PAH
BH8 (0.02-0.3) 23	322581-23	TCLP PAH
TP14 (0-0.1) 30	322581-30	TCLP Lead
TP15 (0.9-1.0) 35	322581-35	TCLP PAH

Any issues, please call

Regards
Craig Ridley
Associate | Environmental Scientist

T: +612 9888 5000
D: 0421 856 992
E: CRidley@jkenvironments.com.au
www.jkenvironments.com.au

PO Box 976
NORTH RYDE BC NSW 1670
115 Wicks Road
MACQUARIE PARK NSW 2113

JKEnvironments

From: Nancy Zhang <NZhang@envirolab.com.au>
Sent: Monday, 15 May 2023 7:21 PM
To: Craig Ridley <CRidley@jkenvironments.com.au>
Subject: Results for Registration 322581 E35822PR, Temora

This message originated outside the JKG network. If this looks to be from a staff member, it is likely to be malicious (spam/phish attack). Do not click links of open attachments unless you recognise the sender and know the content is safe.

Please refer to attached for:
a copy of the Certificate of Analysis
a copy of the COC/paperwork received from you
an Excel or .csv file containing the results

Please note that a hard copy will not be posted.

Enquiries should be made directly to:
customerservice@envirolab.com.au

Envirolab Services Pty Ltd
ABN 37 112 535 645 - 002
25 Research Drive Croydon South VIC 3136
ph 03 9763 2500 fax 03 9763 2633
melbourne@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 37227

Client Details

Client	JK Environments
Attention	Craig Ridley
Address	PO Box 976, North Ryde BC, NSW, 1670

Sample Details

Your Reference	**E35822PR**
Number of Samples	2 Soil
Date samples received	10/05/2023
Date completed instructions received	10/05/2023

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by	16/05/2023
Date of Issue	15/05/2023

NATA Accreditation Number 2901. This document shall not be reproduced except in full.

Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Results Approved By
Chris De Luca, Assistant Lab Manager
Suk Lee, Organic Supervisor
Tianna Milburn, Chemist (FAS)

Authorised By

P.Adams.

Pamela Adams, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil			
Our Reference		37227-1	37227-2
Your Reference	UNITS	SDUP3	SDUP4
Date Sampled		04/05/2023	04/05/2023
Type of sample		Soil	Soil
Date extracted	-	12/05/2023	12/05/2023
Date analysed	-	13/05/2023	13/05/2023
vTRH C_6 - C_9	mg/kg	<25	<25
vTRH C_6 - C_{10}	mg/kg	<25	<25
TRH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25
Benzene	mg/kg	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1
m+p-xylene	mg/kg	<2	<2
o-Xylene	mg/kg	<1	<1
Naphthalene	mg/kg	<1	<1
Total BTEX	mg/kg	<1	<1
Total +ve Xylenes	mg/kg	<1	<1
Surrogate aaa-Trifluorotoluene	%	82	74

TRH Soil C10-C40 NEPM			
Our Reference		37227-1	37227-2
Your Reference	UNITS	SDUP3	SDUP4
Date Sampled		04/05/2023	04/05/2023
Type of sample		Soil	Soil
Date extracted	-	10/05/2023	10/05/2023
Date analysed	-	12/05/2023	12/05/2023
TRH C_{10} - C_{14}	mg/kg	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50
Surrogate o-Terphenyl	%	82	82

PAHs in Soil			
Our Reference		37227-1	37227-2
Your Reference	UNITS	SDUP3	SDUP4
Date Sampled		04/05/2023	04/05/2023
Type of sample		Soil	Soil
Date extracted	-	10/05/2023	10/05/2023
Date analysed	-	12/05/2023	12/05/2023
Naphthalene	mg/kg	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1
Fluoranthene	mg/kg	0.2	0.1
Pyrene	mg/kg	0.2	0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1
Benzo(b,j&k)fluoranthene	mg/kg	<0.2	<0.2
Benzo(a)pyrene	mg/kg	0.08	0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	0.1	<0.1
Total +ve PAH's	mg/kg	0.86	0.3
Benzo(a)pyrene TEQ calc (Zero)	mg/kg	<0.5	<0.5
Benzo(a)pyrene TEQ calc (Half)	mg/kg	<0.5	<0.5
Benzo(a)pyrene TEQ calc (PQL)	mg/kg	<0.5	<0.5
Surrogate p-Terphenyl-d_{14}	%	76	84

OCP in Soil		
Our Reference		37227-1
Your Reference	UNITS	SDUP3
Date Sampled		04/05/2023
Type of sample		Soil
Date extracted	-	10/05/2023
Date analysed	-	12/05/2023
alpha-BHC	mg/kg	<0.1
Hexachlorobenzene	mg/kg	<0.1
beta-BHC	mg/kg	<0.1
gamma-BHC	mg/kg	<0.1
Heptachlor	mg/kg	<0.1
delta-BHC	mg/kg	<0.1
Aldrin	mg/kg	<0.1
Heptachlor Epoxide	mg/kg	<0.1
gamma-Chlordane	mg/kg	<0.1
alpha-chlordane	mg/kg	<0.1
Endosulfan I	mg/kg	<0.1
pp-DDE	mg/kg	<0.1
Dieldrin	mg/kg	<0.1
Endrin	mg/kg	<0.1
Endosulfan II	mg/kg	<0.1
pp-DDD	mg/kg	<0.1
Endrin Aldehyde	mg/kg	<0.1
pp-DDT	mg/kg	<0.1
Endosulfan Sulphate	mg/kg	<0.1
Methoxychlor	mg/kg	<0.1
Total +ve reported Aldrin + Dieldrin	mg/kg	<0.1
Total +ve reported DDT+DDD+DDE	mg/kg	<0.1
Surrogate 2-chlorophenol-d4	%	80

OP in Soil		
Our Reference		37227-1
Your Reference	UNITS	SDUP3
Date Sampled		04/05/2023
Type of sample		Soil
Date extracted	-	10/05/2023
Date analysed	-	12/05/2023
Azinphos-methyl	mg/kg	<0.1
Bromophos-ethyl	mg/kg	<0.1
Chlorpyrifos	mg/kg	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1
Diazinon	mg/kg	<0.1
Dichlorovos	mg/kg	<0.1
Dimethoate	mg/kg	<0.1
Ethion	mg/kg	<0.1
Fenitrothion	mg/kg	<0.1
Malathion	mg/kg	<0.1
Parathion	mg/kg	<0.1
Ronnel	mg/kg	<0.1
Surrogate 2-chlorophenol-d4	%	80

PCBs in Soil		
Our Reference		37227-1
Your Reference	UNITS	SDUP3
Date Sampled		04/05/2023
Type of sample		Soil
Date extracted	-	10/05/2023
Date analysed	-	12/05/2023
Aroclor 1016	mg/kg	<0.1
Aroclor 1221	mg/kg	<0.1
Aroclor 1232	mg/kg	<0.1
Aroclor 1242	mg/kg	<0.1
Aroclor 1248	mg/kg	<0.1
Aroclor 1254	mg/kg	<0.1
Aroclor 1260	mg/kg	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1
Surrogate 2-fluorobiphenyl	%	82

Acid Extractable metals in soil			
Our Reference		37227-1	37227-2
Your Reference	UNITS	SDUP3	SDUP4
Date Sampled		04/05/2023	04/05/2023
Type of sample		Soil	Soil
Date digested	-	11/05/2023	11/05/2023
Date analysed	-	12/05/2023	12/05/2023
Arsenic	mg/kg	11	5
Cadmium	mg/kg	<0.4	<0.4
Chromium	mg/kg	22	16
Copper	mg/kg	130	160
Lead	mg/kg	170	24
Mercury	mg/kg	<0.1	<0.1
Nickel	mg/kg	6	7
Zinc	mg/kg	140	67

Moisture			
Our Reference		37227-1	37227-2
Your Reference	UNITS	SDUP3	SDUP4
Date Sampled		04/05/2023	04/05/2023
Type of sample		Soil	Soil
Date prepared	-	10/05/2023	10/05/2023
Date analysed	-	11/05/2023	11/05/2023
Moisture	%	9.1	24

Method ID	Methodology Summary
Inorg-008	Moisture content determined by heating at 105°C for a minimum of 12 hours.
Metals-020 ICP-AES	Determination of various metals by ICP-AES.
Metals-021 CV-AAS	Determination of Mercury by Cold Vapour AAS.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-021/022	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD or GC-MS. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-022	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS. Note, For OCs the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.

Method ID	Methodology Summary
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'EQ PQL'values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero'values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL'values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			12/05/2023	[NT]	[NT]	[NT]	[NT]	12/05/2023	[NT]
Date analysed	-			13/05/2023	[NT]	[NT]	[NT]	[NT]	13/05/2023	[NT]
vTRH C_6 - C_9	mg/kg	25	Org-023	<25	[NT]	[NT]	[NT]	[NT]	98	[NT]
vTRH C_6 - C_{10}	mg/kg	25	Org-023	<25	[NT]	[NT]	[NT]	[NT]	98	[NT]
Benzene	mg/kg	0.2	Org-023	<0.2	[NT]	[NT]	[NT]	[NT]	93	[NT]
Toluene	mg/kg	0.5	Org-023	<0.5	[NT]	[NT]	[NT]	[NT]	96	[NT]
Ethylbenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	97	[NT]
m+p-xylene	mg/kg	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	101	[NT]
o-Xylene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	95	[NT]
Naphthalene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	90	[NT]	[NT]	[NT]	[NT]	87	[NT]

QUALITY CONTROL: TRH Soil C10-C40 NEPM					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			10/05/2023	[NT]	[NT]	[NT]	[NT]	10/05/2023	[NT]
Date analysed	-			11/05/2023	[NT]	[NT]	[NT]	[NT]	11/05/2023	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	88	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	95	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	107	[NT]
TRH $>C_{10}$ -C_{16}	mg/kg	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	88	[NT]
TRH $>C_{16}$ -C_{34}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	95	[NT]
TRH $>C_{34}$ -C_{40}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	107	[NT]
Surrogate o-Terphenyl	%		Org-020	78	[NT]	[NT]	[NT]	[NT]	74	[NT]

QUALITY CONTROL: PAHs in Soil					Duplicate					Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			10/05/2023	[NT]	[NT]	[NT]	[NT]	10/05/2023	[NT]
Date analysed	-			12/05/2023	[NT]	[NT]	[NT]	[NT]	12/05/2023	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	110	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	112	[NT]
Fluorene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	110	[NT]
Anthracene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	122	[NT]
Pyrene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	124	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	108	[NT]
Benzo(b,j&k)fluoranthene	mg/kg	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	100	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d_{14}	%		Org-022/025	88	[NT]	[NT]	[NT]	[NT]	94	[NT]

QUALITY CONTROL: OCP in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			10/05/2023	[NT]	[NT]	[NT]	[NT]	10/05/2023	[NT]
Date analysed	-			12/05/2023	[NT]	[NT]	[NT]	[NT]	12/05/2023	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	90	[NT]
Hexachlorobenzene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	84	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	104	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	140	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	98	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	96	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	110	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Endrin	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	138	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	84	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate 2-chlorophenol-d4	%		Org-022/025	84	[NT]	[NT]	[NT]	[NT]	88	[NT]

QUALITY CONTROL: OP in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			10/05/2023	[NT]	[NT]	[NT]	[NT]	10/05/2023	[NT]
Date analysed	-			12/05/2023	[NT]	[NT]	[NT]	[NT]	12/05/2023	[NT]
Azinphos-methyl	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chlorpyrifos	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	96	[NT]
Chlorpyrifos-methyl	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	92	[NT]
Diazinon	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	94	[NT]
Dichlorovos	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	102	[NT]
Fenitrothion	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	92	[NT]
Malathion	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Parathion	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate 2-chlorophenol-d4	%		Org-022/025	84	[NT]	[NT]	[NT]	[NT]	88	[NT]

QUALITY CONTROL: PCBs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			10/05/2023	[NT]	[NT]	[NT]	[NT]	10/05/2023	[NT]
Date analysed	-			12/05/2023	[NT]	[NT]	[NT]	[NT]	12/05/2023	[NT]
Aroclor 1016	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	116	[NT]
Aroclor 1260	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate 2-fluorobiphenyl	%		Org-022/025	88	[NT]	[NT]	[NT]	[NT]	94	[NT]

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date digested	-			11/05/2023	2	11/05/2023	11/05/2023		11/05/2023	[NT]
Date analysed	-			12/05/2023	2	12/05/2023	12/05/2023		12/05/2023	[NT]
Arsenic	mg/kg	4	Metals-020 ICP-AES	<4	2	5	5	0	103	[NT]
Cadmium	mg/kg	0.4	Metals-020 ICP-AES	<0.4	2	<0.4	<0.4	0	100	[NT]
Chromium	mg/kg	1	Metals-020 ICP-AES	<1	2	16	15	6	99	[NT]
Copper	mg/kg	1	Metals-020 ICP-AES	<1	2	160	170	6	99	[NT]
Lead	mg/kg	1	Metals-020 ICP-AES	<1	2	24	19	23	100	[NT]
Mercury	mg/kg	0.1	Metals-021 CV-AAS	<0.1	2	<0.1	<0.1	0	86	[NT]
Nickel	mg/kg	1	Metals-020 ICP-AES	<1	2	7	7	0	99	[NT]
Zinc	mg/kg	1	Metals-020 ICP-AES	<1	2	67	60	11	100	[NT]

Result Definitions	
NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Where matrix spike recoveries fall below the lower limit of the acceptance criteria (e.g. for non-labile or standard Organics <60%), positive result(s) in the parent sample will subsequently have a higher than typical estimated uncertainty (MU estimates supplied on request) and in these circumstances the sample result is likely biased significantly low.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

Envirolab Services Pty Ltd
ABN 37 112 535 645 - 002
25 Research Drive Croydon South VIC 3136
ph 03 9763 2500   fax 03 9763 2633
melbourne@envirolab.com.au
www.envirolab.com.au

SAMPLE RECEIPT ADVICE

Client Details	
Client	JK Environments
Attention	Craig Ridley

Sample Login Details	
Your reference	E35822PR
Envirolab Reference	37227
Date Sample Received	10/05/2023
Date Instructions Received	10/05/2023
Date Results Expected to be Reported	16/05/2023

Sample Condition	
Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	2 Soil
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	11.1
Cooling Method	Ice Pack
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Pamela Adams	Chris De Luca
Phone: 03 9763 2500	**Phone: 03 9763 2500**
Fax: 03 9763 2633	**Fax: 03 9763 2633**
Email: padams@envirolab.com.au	**Email: cdeluca@envirolab.com.au**

Analysis Underway, details on the following page:

Envirolab Services Pty Ltd
ABN 37 112 535 645 - 002
25 Research Drive Croydon South VIC 3136
ph 03 9763 2500 fax 03 9763 2633
melbourne@envirolab.com.au
www.envirolab.com.au

Sample ID	vTRH(C6-C10)/BTEXN in Soil	TRH Soil C10-C40 NEPM	PAHs in Soil	OCP in Soil	OP in Soil	PCBsin Soil	Acid Extractable metalsin soil
SDUP3	✓	✓	✓	✓	✓	✓	✓
SDUP4	✓	✓	✓				✓

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.

Requests for longer term sample storage must be received in writing.

Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.

SAMPLE AND CHAIN OF CUSTODY FORM

TO:
ENVIROLAB SERVICES PTY LTD
12 ASHLEY STREET
CHATSWOOD NSW 2067
P: (02) 99106200
F: (02) 99106201

Attention: Aileen

JKE Job Number: E35822PR

Date Results Required: STANDARD

Page: 2 of 2

FROM:
JKEnvironments
REAR OF 115 WICKS ROAD
MACQUARIE PARK, NSW 2113
P: 02-9888 5000 **F: 02-9888 5001**
Attention: Craig Ridley
cridley@jkenvironments.com.au

Location: Temora
Sampler: AD

Sample Preserved in Esky on Ice

Tests Required

	Date Sampled	Lab Ref:	Sample Number	Depth (m)	Sample Container	PID	Sample Description	Combo 6an	Combo 3an	Combo 6	Combo 3	Asbestos (NEPM)	Asbestos ID	TRH/BTEX	BTEX				
	4/05/2023	27	TP9	0-0.1	G, A	0.6	F: Silty Clay	X											
	4/05/2023	28	TP9	0.5-0.6	G, A	1.3	Silty Clay				X								
	4/05/2023	29	TP9	0.9-1.0	G, A	2.4	Silty Clay												
	4/05/2023	30	TP10	0-0.1	G, A	1	F: Silty Clay	X											
	4/05/2023	31	TP10	0.4-0.5	G, A	0.5	Silty Clay				X								
	4/05/2023	32	TP10	0.9-1.0	G, A	1.1	XW Andesite				X								
	4/05/2023	33	TP11	0-0.1	G, A	0.5	F: Silty Clay	X											
	4/05/2023	34	TP11	0.4-0.5	G, A	0.2	F: Silty Clay												
	4/05/2023	35	TP11	0.9-1.0	G, A	0.4	F: Sandy Silty Clay	X											
	4/05/2023	36	TP11	1.3-1.5	G, A	0.5	Silty Clay				X								
	4/05/2023	37	TP12	0-0.1	G, A	0.2	Silty Clay	X											
	4/05/2023	38	TP12	0.4-0.5	G, A	1.2	Silty Clay				X								
	4/05/2023	39	TP12	0.9-1.0	G, A	0.5	XW Andesite												
	4/05/2023	40	SDUP1	-	G	-	Soil Duplicate			X									
	4/05/2023	41	SDUP2	-	G	-	Soil Duplicate				X								
1	4/05/2023 SO	~~42~~ SP	SDUP3	-	G	-	Soil Duplicate			X									
2	4/05/2023 SO	~~43~~ SP	SDUP4	-	G	-	Soil Duplicate				X								
1	2/05/2023	42 ~~44~~ SP	TB-S1	42	V	-	Trip Blank				X								
1	2/05/2023	43 ~~45~~ SP	TS-S1	43	V	-	Trip Spike								X				
4	3/05/2023	44 ~~46~~ GP	FR-SPT	44	#	-	Field Rinsate				X								
1	4/05/2023	45 ~~47~~ SP	BH4-FCF1	0-0.1 45	A	-	Fragment						X						
1	4/05/2023	46 ~~48~~ SP	BH4-FCF2	0-0.1 46	A	-	Fragment						X						
Extra 2 sample		47	TP3	0.4-0.5															

**** PLEASE SEND SDUP3 AND SDUP4 FOR INTER-LAB ANALYSIS**

Remarks (comments/detection limits required):

Sample Containers:
G - 250mg Glass Jar A - Ziplock Asbestos Bag V - Vial
 # 2x BTEX, 1x HNO3, 1x amber glass

Relinquished By:	Date:	Time:	Received By:	Date:
AD Sherry SO	08/05/23 9/5/23	10:30am	ELS SYD Sarah P	08/05/23

ENVIROLAB
Envirolab Services
25 Research Drive
Croydon South VIC 3136
Ph: (03) 9763 2500
Job No: 37227
Date Received: 10/5/23
Time Received: 12:20
Received By: GS
Temp: [✓ Cool]/Ambient 11.1
Cooling: Ice/[✓ Icepack]
Security: [✓ Intact]/Broken/None

ENVIROLAB
Envirolab Servic
12 Ashley
Chatswood NSW 20
Ph: (02) 9910 62
Job No: 32258
Date Received: 08/05/23
Time Received: 1430
Received By: SP
Temp: [✓ Cool]/Ambient
Cooling: Ice/[✓ Icepack]
Security: Intact/Broken/[✓ None]

SAMPLE AND CHAIN OF CUSTODY FORM

TO:
ENVIROLAB SERVICES PTY LTD
12 ASHLEY STREET
CHATSWOOD NSW 2067
P: (02) 99106200
F: (02) 99106201

Attention: Aileen

JKE Job Number: E35822PR

Date Results Required: STANDARD

Page: 1 of 2

FROM:
JKEnvironments
REAR OF 115 WICKS ROAD
MACQUARIE PARK, NSW 2113
P: 02-9888 5000 F: 02-9888 5001
Attention: Craig Ridley
cridley@jkenvironments.com.au

Location: Temora

Sampler: AD

Sample Preserved in Esky on Ice

Tests Required

	Date Sampled	Lab Ref:	Sample Number	Depth (m)	Sample Container	PID	Sample Description	Combo 6an	Combo 6an	Combo 6	Combo 3	Asbestos (NEPM)	Asbestos ID	TRH/BTEX	BTEX				
4	4/05/2023	1	BH1	0-0.3	G, A	0.5	Silty Clay	X											
3	4/05/2023	2	BH1	0.3-0.5	G, A	0.4	Silty Clay												
	4/05/2023	3	BH1	0.8-1.0	G, A	0.5	XW Andesite				X								
	3/05/2023	4	BH2	0-0.2	G, A	1.3	F: Gravelly Sandy Clay	X											
	3/05/2023	5	BH2	0.3-0.5	G, A	1.3	Sandy Silty Clay				X								
	3/05/2023	6	BH2	0.8-1.0	G, A	1.8	Silty Clay				X								
	4/05/2023	7	BH3	0-0.2	G, A	0.6	F: Silty Clay	X											
	4/05/2023	8	BH3	0.3-0.5	G, A	0.7	F: Sandy Silty Clay	X											
	4/05/2023	9	BH3	0.8-1.0	G, A	0.6	F: Sandy Silty Clay												
	4/05/2023	10	BH3	1.3-1.5	G, A	1.5	Sandy Silty Clay				X								
	4/05/2023	11	BH4	0-0.1	G, A	2.2	F: Silty Clay	X											
	4/05/2023	12	BH4	0.3-0.5	G, A	2	Sandy Silty Clay				X								
	4/05/2023	13	BH4	0.8-1.0	G, A	3.8	XW Andesite				X								
	3/05/2023	14	BH5	0-0.1	G, A	0.6	Silty Clay	X											
	3/05/2023	15	BH3	0.3-0.5	G, A	0.5	Silty Clay												
	3/05/2023	16	BH5	0.8-1.0	G, A	0.6	Silty Clay				X								
	2/05/2023	17	BH6	0-0.1 0.02-0.3	G, A	0.4	F: Silty Clay	X											
	2/05/2023	18	BH6	0.3-0.5	G	0.1	Sandy Silty Clay				X								
	2/05/2023	19	BH6	0.8-1.0	G	0.1	XW Andesite				X								
	2/05/2023	20	BH7	0-0.1	G, A	0.8	F: Gravelly Silty Sand	X											
	2/05/2023	21	BH7	0.3-0.5	G, A	2	Sandy Silt				X								
	2/05/2023	22	BH7	0.8-1.0	G	0	XW Andesite												
	5/05/2023	23	BH8	0.02-0.2	G, A	0	F: Silty Sand	X											
	5/05/2023	24	BH8	0.3-0.5	G, A	0.3	Sandy Silty Clay				X								
	5/05/2023	25	BH6	0.8-1.0	G, A	0.4	Sandy Silty Clay												
	5/05/2023	26	BH8	1.3-1.5	G, A	0.3	Sandy Silty Clay												

ENVIROLAB
Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200
Job No: 322581
Date Received: 08/05/23
Time Received: 1130
Received By: SP
Temp: [✓ Cool]/Ambient
Cooling: Ice/[✓ Icepack]
Security: Intact/Broken/[✓ None]

Remarks (comments/detection limits required):

Sample Containers:
G - 250mg Glass Jar
A - Ziplock Asbestos Bag
P - Plastic Bag

Relinquished By:	Date:	Time:	Received By:	Date:
AD Sherry SO	08/05/23 9/5/23	10:30am	ELS SYD Sarah P	08/05/23

Envirolab Services Pty Ltd
ABN 37 112 535 645 - 002
25 Research Drive Croydon South VIC 3136
ph 03 9763 2500   fax 03 9763 2633
melbourne@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 37227-A

Client Details

Client	JK Environments
Attention	Craig Ridley
Address	PO Box 976, North Ryde BC, NSW, 1670

Sample Details

Your Reference	**E35822PR**
Number of Samples	2 Soil
Date samples received	10/05/2023
Date completed instructions received	17/05/2023

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by	24/05/2023
Date of Issue	18/05/2023

NATA Accreditation Number 2901. This document shall not be reproduced except in full.

Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Results Approved By
Tara White, Metals Team Leader

Authorised By
Pamela Adams, Laboratory Manager

Metals from Leachate determ. pH 2.9 or 5		
Our Reference		37227-A-1
Your Reference	UNITS	SDUP3
Date Sampled		04/05/2023
Type of sample		Soil
Date extracted	-	17/05/2023
Date analysed	-	18/05/2023
pH of soil for ASLP	pH units	6.8
pH of soil ASLP (after HCl)	pH units	2.1
Extraction fluid used	-	1
pH of final Leachate	pH units	5.1
Lead	mg/L	0.3

Method ID	Methodology Summary
EXTRACT.7	Toxicity Characteristic Leaching Procedure (TCLP).
Inorg-001	pH - Measured using pH meter and electrode in accordance with APHA latest edition, 4500-H+. Please note that the results for water analyses are indicative only as analysis outside of the APHA storage times.
Inorg-004	Toxicity Characteristic Leaching Procedure (TCLP) using AS 4439 and USEPA 1311. Please note that the sample mass used may be scaled down from the default based on the sample mass available. Samples are stored at 2-6°C before and after leachate preparation.
Metals-020	Determination of various metals by ICP-OES in accordance with USEPA 1311 and hence AS 4439.3. Buffer fluid determination performed only if required, otherwise leaching fluid selection should relate to the relevant landfill category from Table 3 of AS 4439.3 following information from the client. Extraction Fluid 1 refers to pH 5.0 Buffer, while Extraction Fluid 2 is the pH 2.9 Buffer.

Client Reference: E35822PR

QUALITY CONTROL: Metals from Leachate determ. pH 2.9 or 5					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			17/05/2023	[NT]	[NT]	[NT]	[NT]	17/05/2023	[NT]
Date analysed	-			18/05/2023	[NT]	[NT]	[NT]	[NT]	18/05/2023	[NT]
Lead	mg/L	0.03	Metals-020	<0.03	[NT]	[NT]	[NT]	[NT]	104	[NT]

Result Definitions	
NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Where matrix spike recoveries fall below the lower limit of the acceptance criteria (e.g. for non-labile or standard Organics <60%), positive result(s) in the parent sample will subsequently have a higher than typical estimated uncertainty (MU estimates supplied on request) and in these circumstances the sample result is likely biased significantly low.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

Envirolab Services Pty Ltd
ABN 37 112 535 645 - 002
25 Research Drive Croydon South VIC 3136
ph 03 9763 2500   fax 03 9763 2633
melbourne@envirolab.com.au
www.envirolab.com.au

SAMPLE RECEIPT ADVICE

Client Details

Client	JK Environments
Attention	Craig Ridley

Sample Login Details

Your reference	E35822PR
Envirolab Reference	37227-A
Date Sample Received	10/05/2023
Date Instructions Received	17/05/2023
Date Results Expected to be Reported	24/05/2023

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	2 Soil
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	11.1
Cooling Method	Ice Pack
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Pamela Adams	Chris De Luca
Phone: 03 9763 2500	**Phone: 03 9763 2500**
Fax: 03 9763 2633	**Fax: 03 9763 2633**
Email: padams@envirolab.com.au	**Email: cdeluca@envirolab.com.au**

Analysis Underway, details on the following page:

Sample ID	Metals from Leachate determ. pH 2.9 or 5	On Hold
SDUP3	✓	
SDUP4		✓

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.

Requests for longer term sample storage must be received in writing.

Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.

Chris De Luca

From: Craig Ridley <CRidley@jkenvironments.com.au>
Sent: Wednesday, 17 May 2023 11:00 AM
To: Chris De Luca
Subject: RE: Results for Registration 37227 E35822PR

Hi Chris, can we please arrange for the following additional analysis on standard turnaround:

- SDUP3 (37227-1) for TCLP Lead. – 1

Can you please use the acidic buffer solution to meet NSW EPA waste classification requirements.
Any issues, please call.

37227 – 4
Due 24/5/23
Std TAT

Regards
Craig Ridley
Associate | Environmental Scientist

T: +612 9888 5000
D: 0421 856 992
E: CRidley@jkenvironments.com.au
www.jkenvironments.com.au

PO Box 976
NORTH RYDE BC NSW 1670
115 Wicks Road
MACQUARIE PARK NSW 2113

JKEnvironments

From: Chris De Luca <CDeLuca@envirolab.com.au>
Sent: Monday, 15 May 2023 5:44 PM
To: Craig Ridley <CRidley@jkenvironments.com.au>
Subject: Results for Registration 37227 E35822PR

Please refer to attached for:
a copy of the Certificate of Analysis
a copy of the COC/paperwork received from you
ESDAT Extracts
an Excel or .csv file containing the results

Please note that a hard copy will not be posted.

Enquiries should be made directly to:
melbourne@envirolab.com.au

How did we do? Send Feedback

Appendix F: Report Explanatory Notes

QA/QC Definitions

The QA/QC terms used in this report are defined below. The definitions are in accordance with US EPA publication SW-846, entitled *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods* (1994)[23] methods and those described in *Environmental Sampling and Analysis, A Practical Guide,* (1991)[24]. The NEPM (2013) is consistent with these documents.

A. Practical Quantitation Limit (PQL), Limit of Reporting (LOR) & Estimated Quantitation Limit (EQL)

These terms all refer to the concentration above which results can be expressed with a minimum 95% confidence level. The laboratory reporting limits are generally set at ten times the standard deviation for the Method Detection Limit for each specific analyte. For the purposes of this report the LOR, PQL, and EQL are considered to be equivalent.

When assessing laboratory data it should be borne in mind that values at or near the PQL have two important limitations: *"The uncertainty of the measurement value can approach, and even equal, the reported value. Secondly, confirmation of the analytes reported is virtually impossible unless identification uses highly selective methods. These issues diminish when reliably measurable amounts of analytes are present. Accordingly, legal and regulatory actions should be limited to data at or above the reliable detection limit*" (Keith, 1991).

B. Precision

The degree to which data generated from repeated measurements differ from one another due to random errors. Precision is measured using the standard deviation or Relative Percent Difference (RPD).

C. Accuracy

Accuracy is a measure of the agreement between an experimental result and the true value of the parameter being measured (i.e. the proximity of an averaged result to the true value, where all random errors have been statistically removed). The assessment of accuracy for an analysis can be achieved through the analysis of known reference materials or assessed by the analysis of surrogates, field blanks, trip spikes and matrix spikes. Accuracy is typically reported as percent recovery.

D. Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents a characteristic of a population, parameter variations at a sampling point, or an environmental condition. Representativeness is primarily dependent upon the design and implementation of the sampling program. Representativeness of the data is partially ensured by the avoidance of contamination, adherence to sample handing and analysis protocols and use of proper chain-of-custody and documentation procedures.

E. Completeness

Completeness is a measure of the number of valid measurements in a data set compared to the total number of measurements made and overall performance against DQIs. The following information is assessed for completeness:

- Chain-of-custody forms;
- Sample receipt form;
- All sample results reported;
- All blank data reported;

---

[23] US EPA, (1994). *SW-846: Test Methods for Evaluating Solid Waste, Physical/Chemical Methods.* (US EPA SW-846)

[24] Keith., H, (1991). *Environmental Sampling and Analysis, A Practical Guide*

- All laboratory duplicate and RPDs calculated;
- All surrogate spike data reported;
- All matrix spike and lab control spike (LCS) data reported and RPDs calculated;
- Spike recovery acceptable limits reported; and
- NATA stamp on reports.

F. Comparability

Comparability is the evaluation of the similarity of conditions (e.g. sample depth, sample homogeneity) under which separate sets of data are produced. Data comparability checks include a bias assessment that may arise from the following sources:

- Collection and analysis of samples by different personnel; Use of different techniques;
- Collection and analysis by the same personnel using the same methods but at different times; and
- Spatial and temporal changes (due to environmental dynamics).

G. Blanks

The purpose of laboratory and field blanks is to check for artefacts and interferences that may arise during sampling, transport and analysis.

H. Matrix Spikes

Samples are spiked with laboratory grade standards to detect interactive effects between the sample matrix and the analytes being measured. Matrix Spikes are reported as a percent recovery and are prepared for 1 in every 20 samples. Sample batches that contain less than 20 samples may be reported with a Matrix Spike from another batch. The percent recovery is calculated using the formula below. Acceptable recovery limits are 70% to 130%.

$$\frac{(\text{Spike Sample Result} - \text{Sample Result}) \ \text{x} \ 100}{\text{Concentration of Spike Added}}$$

I. Surrogate Spikes

Samples are spiked with a known concentration of compounds that are chemically related to the analyte being investigated but unlikely to be detected in the environment. The purpose of the Surrogate Spikes is to check the accuracy of the analytical technique. Surrogate Spikes are reported as percent recovery.

J. Duplicates

Laboratory duplicates measure precision, expressed as Relative Percent Difference. Duplicates are prepared from a single field sample and analysed as two separate extraction procedures in the laboratory. The RPD is calculated using the formula where D1 is the sample concentration and D2 is the duplicate sample concentration:

$$\frac{(D1 - D2) \ \text{x} \ 100}{\{(D1 + D2)/2\}}$$

Appendix G: Data (QA/QC) Evaluation

Data (QA/QC) Evaluation

A. INTRODUCTION

This Data (QA/QC) Evaluation forms part of the validation process for the DQOs documented in Section 6.1 of this report. Checks were made to assess the data in terms of precision, accuracy, representativeness, comparability and completeness. These 'PARCC' parameters are referred to collectively as DQIs and are defined in the Report Explanatory Notes attached in the report appendices.

1. Field and Laboratory Considerations

The quality of the analytical data produced for this project has been considered in relation to the following:

- Sample collection, storage, transport and analysis;
- Laboratory PQLs;
- Field QA/QC results; and
- Laboratory QA/QC results.

2. Field QA/QC Samples and Analysis

A summary of the field QA/QC samples collected and analysed for this investigation is provided in the following table:

Sample Type	Sample Identification	Frequency (of Sample Type)	Analysis Performed
Intra-laboratory duplicate (soil)	SDUP1 (primary sample TP16 0-0.1m)	Approximately 7% of primary samples	Heavy metals, TRH/BTEX, PAHs, OCPs, OPPs and PCBs
Intra-laboratory duplicate (soil)	SDUP2 (primary sample TP15 0-0.1m)	As above	Heavy metals, TRH/BTEX, PAHs
Inter-laboratory duplicate (soil)	SDUP3 (primary sample TP14 0-0.1m)	Approximately 7% of primary samples	Heavy metals, TRH/BTEX, PAHs, OCPs, OPPs and PCBs
Inter-laboratory duplicate (soil)	SDUP4 (primary sample TP13 0-0.1m)	As above	Heavy metals, TRH/BTEX, PAHs
Trip spike (soil)	TS-S1 (02/05/2023)	One for the investigation to demonstrate adequacy of preservation, storage and transport methods	BTEX
Trip blank (soil)	TB-S1 (02/05/2023)	One for the investigation to demonstrate adequacy of storage and transport methods	Heavy metals, TRH/BTEX, PAHs
Rinsate (soil SPT)	FR-SPT (03/05/2023)	One for the investigation to demonstrate adequacy of decontamination methods	Heavy metals, TRH/BTEX, PAHs

The results for the field QA/QC samples are detailed in Table Q1 attached to the investigation report and are discussed in the subsequent sections of this Data (QA/QC) Evaluation report.

3. Data Assessment Criteria

JKE adopted the following criteria for assessing the field and laboratory QA/QC analytical results:

Field Duplicates

Acceptable targets for precision of field duplicates in this report will be 30% or less, consistent with NEPM (2013). RPD failures will be considered qualitatively on a case-by-case basis taking into account factors such as the concentrations used to calculate the RPD (i.e. RPD exceedance where concentrations are close to the PQL are typically not as significant as those where concentrations are reported at least five or 10 times the PQL), sample type, collection methods and the specific analyte where the RPD exceedance was reported.

Trip Blanks and Rinsates

Acceptable targets for trip blank and rinsate samples in this report will be less than the PQL for organic analytes. Metals will be considered on a case-by-case basis with regards to typical background concentrations in soils and published drinking water guidelines for waters.

Trip Spikes

Acceptable targets for trip spike samples in this report will be 70% to 130%.

Laboratory QA/QC

The suitability of the laboratory data is assessed against the laboratory QA/QC criteria which is outlined in the laboratory reports. These criteria were developed and implemented in accordance with the laboratory's NATA accreditation and align with the acceptable limits for QA/QC samples as outlined in NEPM (2013) and other relevant guidelines.

A summary of the acceptable limits adopted by the primary laboratory (Envirolab) is provided below:

RPDs

- Results that are <5 times the PQL, any RPD is acceptable; and
- Results >5 times the PQL, RPDs between 0-50% are acceptable.

Laboratory Control Samples (LCS) and Matrix Spikes

- 70-130% recovery acceptable for metals and inorganics;
- 60-140% recovery acceptable for organics; and
- 10-140% recovery acceptable for VOCs.

Surrogate Spikes

- 60-140% recovery acceptable for general organics; and
- 10-140% recovery acceptable for VOCs.

Method Blanks

- All results less than PQL.

B. DATA EVALUATION

1. Sample Collection, Storage, Transport and Analysis

Samples were collected by trained field staff in accordance in accordance with our standard field sampling procedures, which were designed to be consistent with relevant guidelines, including NEPM (2013) and other guidelines made under the CLM Act 1997.

Appropriate sample preservation, handling and storage procedures were adopted. Laboratory analysis was undertaken within specified holding times generally in accordance with Schedule B(3) of NEPM (2013) and the laboratory NATA accredited methodologies. Envirolab noted that the asbestos results were reported to be consistent with the recommendations in NEPM (2013), however this level of reporting is outside the scope of their NATA accreditation. In the absence of other available analytical methods for asbestos, this was found to be acceptable for the purpose of this investigation.

JKE note that minor transcription errors occurred in the field in relation to sampling depth intervals of the following samples:

- The soil sample collected from BH6 (0-0.1m) was identified on the COC as BH6 (0.02-0.3m); and
- The soil sample collected from BH7 (0.02-0.3m) was identified on the COC as BH7 (0-0.1m).

Throughout this report, on the respective borehole logs and within the summary tables attached in the appendices, the samples are referred to their corrected identifications (BH6 0-0.1m and BH7 0.02-0.3m respectively). JKE consider these minor transcription errors do not adversely impact on the representativeness and completeness of the data collected for this investigation.

Review of the project data also indicated that:

- COC documentation was adequately maintained;
- Sample receipt advice documentation was provided for all sample batches;
- All analytical results were reported; and
- Consistent units were used to report the analysis results.

2. Laboratory PQLs

Appropriate PQLs were adopted for the analysis and all PQLs were below the SAC.

3. Field QA/QC Sample Results

Field Duplicates

The results indicated that field precision was acceptable. RPD non-conformances were reported for some analytes as discussed below:

- Elevated RPDs were reported for several PAH compounds in SDUP1/TP16 (0-0.1m);
- Elevated RPDs were reported for two PAH compounds in SDUP2/TP15 (0-0.1m);
- Elevated RPDs were reported for several PAH compounds and several heavy metals in SDUP3/TP14 (0-0.1m); and
- Elevated RPDs were reported for fluoranthene (a PAH compound) and mercury in SDUP4/TP13 (0-0.1m).

The RPD values outside the acceptable limits for PAH compounds have been attributed to low analyte concentration (less than 5x the PQL), which exacerbate the RPD values. The RPD exceedances for various heavy metals have been attributed to sample heterogeneity and the difficulties associated with obtaining homogenous duplicate samples of heterogeneous matrices. As both the primary and duplicate sample results were compared to the SAC, the exceedances are not considered to have had an adverse impact on the data set as a whole.

Trip Blank

During the investigation, one soil trip blank was placed in the esky during sampling and transported back to the laboratory. The soil trip blank analysis results were all less than the PQLs with the exception of various heavy metals (chromium, copper, lead, nickel and zinc) with reported concentrations ranging from 1mg/kg to 7mg/kg. Low level metals concentrations are typical in washed sand which is utilised as blank material. In JKE's experience, the concentrations reported were consistent with background concentrations in a sand matrix and were not indicative of cross-contamination. On this basis, cross contamination between samples that may have significance for data validity did not occur.

Rinsates

All results were below the PQL with the exception of TRH F1 (26µg/L), copper (0.3mg/L) and zinc (0.2mg/L). The detectable concentration of light fraction TRH is most likely attributed to trihalomethanes. These compounds are breakdown products from the chlorination process and are common in potable water at the concentration reported (the Australian drinking water guideline for total trihalomethanes is 250µg/L).

Low level metals concentrations are typical in potable water which is utilised for rinsing and the collection of rinsate samples. In JKE's experience, the concentrations reported were consistent with expected concentrations in potable water (the Australian drinking water guidelines for copper is 2mg/L whilst the aesthetic consideration for zinc is 3mg/L). On this basis, cross contamination between samples that may have significance for data validity did not occur.

Trip Spikes

The results ranged from 97% to 98% and indicated that field preservation methods were appropriate.

4. Laboratory QA/QC

The analytical methods implemented by the laboratory were performed in accordance with their NATA accreditation and were consistent with Schedule B(3) of NEPM (2013). The frequency of data reported for the laboratory QA/QC (i.e. duplicates, spikes, blanks, LCS) was considered to be acceptable for the purpose of this investigation. A review of the laboratory QA/QC data identified the following minor non-conformances:

- Report 322581 – matrix spike recovery was not possible for zinc in one sample due to the inhomogeneous nature of the sample. However, the laboratory noted an acceptable recovery was obtained for the LCS;
- Report 322581 – Matrix spike recovery was not possible for copper in one sample due to the high concentration in the sample. An acceptable recovery was obtained for the LCS; and

- Report 322581 – Matrix spike recoveries were not possible for several PAHs in two samples due to interference from the high analyte concentrations within the samples. Acceptable recoveries were obtained for the LCS.

C. DATA QUALITY SUMMARY

JKE is of the opinion that the data are adequately precise, accurate, representative, comparable and complete to serve as a basis for interpretation to achieve the investigation objectives.

Non-conformances were reported for some field QA/QC samples and laboratory QA/QC analysis. These non-conformances were considered to be sporadic and minor, and were not considered to be indicative of systematic sampling or analytical errors. On this basis, these non-conformances are not considered to materially impact the report findings.

Appendix H: Guidelines and Reference Documents

Acid Sulfate Soils Management Advisory Committee (ASSMAC), (1998). Acid Sulfate Soils Manual

Canadian Council of Ministers of the Environment, (1999). Canadian soil quality guidelines for the protection of environmental and human health: Benzo(a)Pyrene (1997)

CRC Care, (2011). Technical Report No. 10 – Health screening levels for hydrocarbons in soil and groundwater Part 1: Technical development document

Contaminated Land Management Act 1997 (NSW)

Department of Land and Water Conservation, (1997). 1:25,000 Acid Sulfate Soil Risk Map Series

Managing Land Contamination, Planning Guidelines SEPP55 – Remediation of Land (1998)

National Health and Medical Research Council (NHMRC), (2021). National Water Quality Management Strategy, Australian Drinking Water Guidelines 2011

NSW Department of Environment and Conservation, (2007). Guidelines for the Assessment and Management of Groundwater Contamination

NSW EPA, (2014). Waste Classification Guidelines - Part 1: Classifying Waste

NSW EPA, (2015). Guidelines on the Duty to Report Contamination under Section 60 of the CLM Act 1997

NSW EPA, (2017). Guidelines for the NSW Site Auditor Scheme, 3rd Edition

NSW EPA, (2020). Consultants Reporting on Contaminated Land, Contaminated Land Guidelines

NSW EPA, (2022). Sampling Design Part 1 – Application

National Environment Protection Council (NEPC), (2013). National Environmental Protection (Assessment of Site Contamination) Measure 1999 as amended (2013)

Olszowy, H., Torr, P., and Imray, P., (1995). Trace Element Concentrations in Soils from Rural and Urban Areas of Australia. Contaminated Sites Monograph Series No. 4. Department of Human Services and Health, Environment Protection Agency, and South Australian Health Commission

Protection of the Environment Operations Act 1997 (NSW)

State Environmental Planning Policy (Resilience and Hazards) 2021 (NSW)

Western Australia Department of Health, (2021). Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia