NSW Land and Housing Corporation

Detailed Site Investigation
Bonnyrigg Stages 12 & 13
Tarlington Parade and Bonnyrigg Avenue, Bonnyrigg

25 March 2022

62436-143977 (Rev A)

JBS&G

www.jbsg.com.au

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Abbreviations

Term	Definition
ACM	Asbestos Containing Material
AECs	Areas of Environmental Concern
AHD	Australian Height Datum
Bgs	Below Ground Surface
BTEX	Benzene, toluene, ethylbenzene and xylenes
COC	Chain of Custody
COPC	Contaminants of Potential Concern
DA	Development Application
DoH	Department of Housing
DP	Deposited Plan
DQIs	Data Quality Indicators
DQOs	Data Quality Objectives
DSI	Detailed Site Investigation
EIL/ESL	Ecological Investigation/Screening Levels
EMP	Environmental Management Plan
EPA	NSW Environment Protection Authority
ESA	Environmental Site Assessment
FA/AF	Fibrous Asbestos/ Asbestos Fines
HIL/HSL	Health Investigation/Screening Levels
JBS&G	JBS&G Australia Pty Ltd
LAHC	Land and Housing Corporation
LOR	Limit of Reporting
LPI	NSW Land and Property Information
NATA	National Association of Testing Authorities
NEPC	National Environment Protection Council
OCPs	Organochlorine pesticide
PAHs	Polycyclic aromatic hydrocarbons
PB	Parsons Brinckerhoff
PFAS	Per- and poly-fluoroalkyl substances
PID	Photo-ionisation Detector
QA/QC	Quality Assurance/Quality Control
RAP	Remedial Action Plan
RPD	Relative Percentage Difference
SEPP	State Environmental Planning Policy
TRH	Total Recoverable Hydrocarbons
UCLs	Upper confidence limits

Executive Summary

JBS&G Australia Pty Ltd (JBS&G) was engaged by NSW Land and Housing Corporation (LAHC, the client) to conduct a Detailed Site Investigation (DSI) across Stages 12 and 13 (the site) of the Bonnyrigg Housing Estate, located at Tarlington Parade and Bonnyrigg Avenue, Bonnyrigg, NSW, as shown on **Figures 1** and **2**.

A number of historical environmental assessments have been conducted across the broader Bonnyrigg Housing Estate encompassing the site, including a Preliminary Environmental Site Assessment (ESA) (JBS 2007[1]) and Precinct Wide Sub-Surface Asbestos Survey (JBS 2008[2]).

The site was historically used for agricultural uses before being developed into residential use including associated open spaces and roadways in the late 1970s to early 1980s. It is understood that the client is working to redevelop Stages 12 & 13 of the Bonnyrigg Housing Estate to revitalise the area into a modern mixed community of private and social housing. In order for the proposed development works to proceed and as a requirement for development application (DA) submission, a contamination assessment is required in accordance with guidelines made or approved by the NSW Environment Protection Authority (EPA) and relevant Australian Standards.

The objectives of this study are to determine if significant surface and subsurface soil contamination is likely to exist on the site that may present a risk to human health and/or environment as a result of previous and current land uses.

Field works were completed by JBS&G on 21 & 28 February and 1 March 2022 and comprised a site inspection and completion of soil sampling from 14 investigation locations within accessible portions of the site. The investigation locations completed are shown on **Figure 4**.

Surfaces across the site varied from bitumen sealed roadways, grassed open space areas and residential yards, gardens beds, igneous gravel pathways, concrete driveways and paths and bare soils.

The soil profile generally comprised of soft, heterogeneous dark brown, mottled silty clay fill/topsoils between depths of 0 to 0.5 m bgs. Inclusions of foreign materials such as bitumen, concrete, brick, plastic debris, wood chips, ash, and aggregate gravels were observed in shallow fill materials across the site. The topsoil was underlain with natural red-grey mottled silty clay.

No staining, odours or asbestos were observed at any location.

Minimal amounts of anthropogenic materials, such as timber, ceramic tiles, and general household rubbish, were observed across the site.

Selected soil samples collected during the investigation were analysed for a range of contaminants of potential concern (COPC) including heavy metals, total recoverable hydrocarbon (TRH), benzene, toluene, ethylbenzene and xylenes (BTEX), polycyclic aromatic hydrocarbons (PAHs), organochlorine pesticides (OCPs) and asbestos. Contaminant concentrations were compared to NEPC (2013) human health and ecological land use suitability adopted for the proposed residential and open space land uses.

Based on the findings of this assessment and subject to the limitations in **Section 12**, the following conclusions are made:

- Minor volumes of fill materials were observed across the site with Inclusions of foreign materials such as bitumen, concrete, brick, plastic debris, wood chips, ash, and aggregate

[1] *Preliminary Environmental Site Assessment Report*, Bonnyrigg Living Communities Project, Bonnyrigg, NSW, Becton Property Group, c/o Aver Pty Ltd, JBS, September 2007 (JBS 2007).

[2] *Bonnyrigg Living Communities Project – Precinct Wide Sub-Surface Asbestos Survey*, Becton Property Group, c/o Aver Pty Ltd, JBS, April 2008 (JBS 2008).

gravels were observed in shallow fill materials across the site. Fill materials were generally observed from the surface to depths of between 0.2 and 0.5 m bgs. The foreign materials will require consideration for aesthetics during future development works.

- Friable asbestos as FA/AF asbestos identified within fill at TP05_0-0.1 exceeded human health criteria and poses a potential human health risk if soil is exposed and fibres become airborne. Additionally, historically ACM was identified at two locations within the site area. Due to the presence of fill with anthropogenic inclusions and the asbestos exceedances there is the potential for asbestos in other locations.
- All other contaminant concentrations of soils samples analysed within investigation locations conducted (heavy metals, TRH, BTEX, PAHs, OCPs) were all below the LOR and/or the adopted site criteria.
- There were no indications of gross or widespread contamination and impact identified at the site. There is the potential for asbestos elsewhere in fill based on identified asbestos impacts and anthropogenic material present within many of the fill samples.
- As such, it is considered the site can be suitable for the intended land uses subject to investigations in areas that were inaccessible and preparation and successful implementation of a remedial action plan (RAP) to manage identified impacts.

Based on the conclusions presented, it is recommended the following actions are undertaken:

- Further investigations works, including confirmation of potential asbestos and aesthetic impacts are required within inaccessible areas and building footprints following demolition of site structures and prior to development-related earthworks and civil works, to confirm the suitability of the site for the intended land uses;
- Preparation of a RAP to address unacceptable impacts where identified; and
- Standard development controls including an Unexpected Finds Protocol to be prepared prior to civil works commencing to address any potential unexpected contamination encountered during future works.
- Given the site may be a workplace for maintenance contractors or future demolition/earthworks contractors and asbestos in soil has been identified, an Asbestos Management Plan (AMP) is recommended to provide appropriate management controls until such time as asbestos risks are removed.

1. Introduction

1.1 Background

JBS&G Australia Pty Ltd (JBS&G) was engaged by NSW Land and Housing Corporation (LAHC, the client) to conduct a Detailed Site Investigation (DSI) across Stages 12 and 13 (the site) of the Bonnyrigg Housing Estate, located at Tarlington Parade and Bonnyrigg Avenue, Bonnyrigg, NSW, as shown on **Figures 1** and **2**.

A number of historical environmental assessments have been conducted across the Bonnyrigg Housing Estate including a Preliminary Environmental Site Assessment (ESA) (JBS 2007[3]) and Precinct Wide Sub-Surface Asbestos Survey (JBS 2008[4]) covering the entire Bonnyrigg Housing Estate including the current site area.

The site was historically used for agricultural purposes before being developed into residential use including associated open spaces and roadways in the late 1970s to early 1980s. It is understood that the client is working to redevelop Stages 12 & 13 of the Bonnyrigg Housing Estate to revitalise the area into a modern mixed community of private and social housing. In order for the proposed development works to proceed and as a requirement for development application (DA) submission, a contamination assessment is required in accordance with guidelines made or approved by the NSW Environment Protection Authority (EPA) and relevant Australian Standards.

1.2 Objectives

The objectives of this study are to determine if significant surface and subsurface soil contamination is likely to exist on the site that may present a risk to human health and/or environment as a result of previous and current land uses.

1.3 Scope of Work

To achieve the objectives of the contamination assessment, the following scope of works were undertaken:

- Review of available information on the site history from aerial photographs and historical titles;
- Search of records of notices by NSW EPA, groundwater boreholes in the area, and review of Fairfield City Council Planning Certificates;
- Inspection of the site to identify apparent or suspected areas of environmental (contamination) concern (AECs);
- Review of published information on the subsurface conditions in the general area;
- Intrusive soil sampling and inspection of subsurface conditions using a backhoe at fourteen locations;
- Analysis of selected soil samples for a range of contaminants of potential concern (COPCs);
- Assessment of environmental data collected, including comparison of field and analytical data against appropriate EPA-made or endorsed investigation / screening levels for the proposed land use(s);
- Implementation of a Quality assurance and control (QA/QC) program appropriate to the investigation; and

[3] *Preliminary Environmental Site Assessment Report*, Bonnyrigg Living Communities Project, Bonnyrigg, NSW, Becton Property Group, c/o Aver Pty Ltd, JBS, September 2007 (JBS 2007).

[4] *Bonnyrigg Living Communities Project – Precinct Wide Sub-Surface Asbestos Survey*, Becton Property Group, c/o Aver Pty Ltd, JBS, April 2008 (JBS 2008).

- Preparation of this Detailed Site Investigation (DSI) report consistent with EPA made or endorsed guidelines and *Remediation of Land* requirements under *State Environmental Planning Policy (Resilience and Hazards) 2021 (Resilience and Hazards SEPP[5])*.

[5] The Resilience and Hazards SEPP commenced on 1 March 2022 at which time *State Environmental Planning Policy 55 – Remediation of Land* was repealed, with SEPP 55 requirements transferred into Chapter 4 of the Resilience and Hazards SEPP.

2. Site Description and Setting

2.1 Site Identification

The Bonnyrigg Housing Estate Project is located approximately 25 km southwest of the Sydney CBD, and 6 km northwest of Liverpool. The Stages 12 and 13 site covers an irregular shaped area of approximately 6.8 ha. The site area was bounded by Bonnyrigg Road to the north, Tarlington Parade to the south, residential and Tarlington Reserve to the southeast and various internal roads followed by Bonnyrigg Plaza along the western boundary (see **Figure 2**).

The site details are summarised in **Table 2.1**.

Table 2.1 Summary Site Details

Lot Numbers	Lot 453 and 454 DP 839627, Lot 13 DP 1143255 and partial Lot 10 DP1143255
Street Address	Bonnyrigg Stage 12-13, Bonnyrigg, NSW.
Site Area	Approximately 6.8 ha
Local Government Authority	Fairfield City Council
Geographic Coordinates (MGA 56)	33.8915 E 150.898 N
Zoning	R1 Residential and RE1 Public Recreation
Current Land-use	Greenspaces and Residential including roadways
Proposed Land-use	Residential with areas of public open space.

2.2 Site Description

The site was inspected by a qualified JBS&G environmental consultant on 21 & 28 February and 1 March 2022. Photographs of the site are provided in **Appendix A**. The site layout, including the boundaries of development Stages 12 to 13, shown on **Figure 2.**

The majority of occupied residential properties were observed from the adjacent roadways.

Stages 12 and 13 were observed to comprise of open spaces, wide streets and approximately 112 residential properties located on Barraclough Way, Priddle Way, Cowdrey Way, Corlette Way, Goodman Way and Derry Way (**Photographs 1 and 2**). The roadways were slab concrete with shallow curved concrete gutters and stormwater drains (**Photograph 3**).

An open space area was located along the eastern side of site, at the northernmost point of Barraclough Way (**Photograph 4**). The area comprised mainly of open grass areas (playing pitches), trees and a surrounding footpath. Some anthropogenic material (e.g., shopping trollies and general waste etc.) was observed on the nearby ground surface (**Photograph 2**).

The residential properties generally comprised of brick/fibro or weatherboard. All properties were single storey residences with concrete driveways and paths, grass lawns, some with gardens and surrounded by timber or corrugated steel fencing (**Photographs 5** to **8**)

No staining, odours or ACM were observed on the accessible ground surface within Stage 12 and 13.

2.3 Surrounding Land Use

Adjacent properties and roads are shown on **Figure 2** and summarised below:

- North – Bonnyrigg Avenue, beyond which is a mixed-use high density residential and commercial property, a mechanics workshop and a Telstra Exchange facility, a 7-Eleven service station on Edensor Rd approximately 150 m north, and asphalt carpark and commercial wedding venue to the northeast;
- East –Tarlington Reserve sporting ovals and low density residential properties;
- South – Tarlington Parade and low density residential properties;

- West – Bonnyrigg Plaza which includes a large shopping centre and carpark, Bonnyrigg Public School and a Caltex Service Station off Bonnyrigg Ave approximately 300m west.

There is potential contamination located at the service stations located north and west of site, however due to the distance from site, there does not appear to be a risk of contamination migration to site. Based on the surrounding land uses identified from a review of aerial imagery, there does not appear to be any significant potential for offsite sources of contamination adjacent to the site.

2.4 Topography

The regional topographic map (NSW LPI) indicates that the site has an elevation of between 37 m Australian Height Datum (AHD) along Derry Way to the north and 47 m AHD at the southwest boundary on Tarlington Parade. The site consists of gently undulating rises and dips with the trend of the site predominantly sloping gently from northeast to east, from a gently northward sloping low ridgeline immediately west of the site.

2.5 Geology and Soils

According to the Penrith 1:100,000 Geological and Soil Series Sheet 9030, the site lies on the Cumberland Lowlands. This consists of low lying, gently undulating plains and low hills underlain by the Bringelly Shale of the Wianamatta Group of Triassic Age, comprising shale, claystones, laminate, sandstones, and rare coal and tuff. The Bringelly Shale weathers at the ground surface to form a silty clay residual soil of medium to high plasticity. On ridge crests and upper valley sides the residual soil averages 1-2m thick, increasing to a layer of 3-4m thick in the lower flanks and valley floors.

The site is located on Blacktown Soil Landscape Group, which include soils derived from the weathering of the underlying shales and sandstones of the Wianamatta Group. Soils typically have low fertility and are often strongly acidic, and the underlying sandstone predominantly provides a dense drainage medium of northward flowing channels.

The above descriptions are consistent with soil profiles observed over the site during the intrusive soil sampling program. Topsoil/fill is generally located in the top 0 - 0.5 metres, underlain by red/brown/grey clays which vary between silty and sandy gravely in composition.

2.6 Hydrology

Two creeks are located within close proximity of the site. Green Valley Creek is situated approximately 1 km to the east of the site and flows in a north-easterly direction. Clear Paddock Creek is located approximately 400 m to the west and northwest of the site and runs in a north-easterly direction. Both creeks join Orphan School Creek approximately 3 km to the northeast of the site, which is part of the Prospect Creek Catchment. Prospect Creek Catchment is a sub-catchment of the Georges River Catchment.

2.7 Hydrogeology

A search for registered groundwater bore information was undertaken on Water NSW[6] website and results are included as **Appendix B**. A total of seven registered bores within a 1.5 km radius of the site boundary, and their relevant information is summarised in **Table 2.2 below**.

The surrounding bores were installed for monitoring purposes. The bores north of site were located on the 7-eleven service station approximately 150 m north of the site.

[6] Water NSW website, https://realtimedata.waternsw.com.au/, accessed 12 March 2021

Table 2.2: Registered Groundwater Bore Search Summary

Bore ID	Use	SWL[1] (m bgs)	Final Drilled Depth (m)	Approximate distance/ direction from site centre	Lithology
GW109724	Monitoring	-	15	0.15 km North	0-0.1m Concrete Slab 0.1-0.2m Fill 0.2-15m Shale
GW109725	Monitoring	-	25	0.16 km North	0-0.1m Concrete Slab 0.1-0.2m Fill 0.2-14m Shale 14-14.1m Clay 14.1-25m Shale
GW109726	Monitoring	-	8	0.17 km North	0-1m Topsoil 1-8m Shale
GW109727	Monitoring	-	16	0.17 km North	0-0.1m Concrete 0.1-1m Fill 1-16m Shale
GW109728	Monitoring	-	9	0.17 km North	0-0.1m Concrete Slab 0.1-1m Fill 1-3m Silty Clay 3-9m Shale
GW115042	Monitoring	1.2	6	0.2 km Southwest	-
GW107912	Bore	-	350	1.5 km northwest	0-132m shale 132- 150m sandstone 150-204m sandstone with shale bands 204- 240m sandstone 240-246 sandstone, shale 246-300 sandstone 300-320 sandstone with shale bands 320-330 shale 330-350 sandstone

1. SWL: Standing water level

Based on local topography and hydrology, shallow perched groundwater at the interface of residual clay soil and shale is expected to flow in a predominantly east to north-easterly direction following topography towards Clean Paddock Creek. It is anticipated that the groundwater will be shallower in the southeast and east of site due to topography and proximity to Green Valley Creek.

Based on the information provided by the Department of Natural Resources and considering the relative elevation of the site, deeper groundwater is expected to be contained within the fractures and bedding planes of the underlying shale and sandstone. The presence of the relatively impermeable sandy clays and shale layers at the site limits the potential for groundwater contamination, ultimately limiting the potential for contamination (if any) at the site to migrate via groundwater.

2.8 Acid Sulfate Soils

As detailed in JBS 2007, an according to the 1:25,000 Acid Sulfate Soil Risk Map for Liverpool (9030S2) provided by the Soil Conservation Service of NSW, 1997, the site exists in an area of no known occurrences of acid sulfate soils, consistent with the site's elevation and geological setting.

2.9 Salinity

According to the Salinity Potential in Western Sydney provided by the Department of Infrastructure, Planning and Natural Resources of NSW, 2002, the site exists in an area of Moderate Salinity Potential. Areas of Moderate Salinity Potential cover all Wianamatta Group Shales (Ashfield or Bringelly). These areas include observed scattered areas of scalding, salt affected buildings and salinity indicator plants having been noted, but no concentrations have been mapped.

High Potential Salinity occurs in areas surrounding lower slopes and streamlines. The western site boundary is located > 1 km from the Bonnyrigg Wetlands and Clear Paddock Creek. The eastern boundary is approximately 400 m from Clear Paddock Creek.

During the detailed site inspection, none of the following signs of urban salinity were observed; salt crystals being present on the soil surface; 'puffiness' of soil when dry, or greasiness on soils when wet; black staining on soils; presence of indicator vegetation species; die back of trees; or staining and marking of house foundations where visible. Minimal bare soil patches were observed across the site, however these were attributed to pedestrian wear and tear and vehicle access factors, not salinity.

3. Summary Site History

3.1 Office of Environment & Heritage Records

A search of the NSW EPA database was undertaken for the site and immediate surrounding properties. EPA records are provided in **Appendix C**. The search was undertaken through the following public registers:

- NSW *Protection of the Environment Operations Act 1997* (POEO Act) public register of licences, applications and notices (maintained under Section 308 of the POEO Act);
    - Based on search of the NSW POEO Act, the site and immediately surrounding did not have any licences, applications or notices on the public register.
- NSW EPA contaminated land public register of record of notices (under Section 58 of the *Contaminated Land Management Act 1997* (CLM Act));
    - No notices have been issued under the CLM Act for the site;
    - Three former notices were issued to Metro (Formerly United & AP SAVER) Service Station, 400 m southeast of site. The first two notices in 2016 related to issue and amendment of a Preliminary Investigation Order (No. 20161002) to investigate potential contamination from Petroleum hydrocarbons (TPH), benzene, toluene, ethylbenzene and xylenes (BTEX), Naphthalene and Lead. The last notice in 2019 (No. 20194434) repealed the investigation order once the investigations were completed. Based on the service station's location relative to the site, it is considered contamination at the service station is unlikely to impact the site.
- NSW contaminated sites notified to the EPA (under Section 60 of the CLM Act); and
    - The site does not appear on the EPA contaminated land register or list of sites notified to EPA.
    - The Metro (Formerly United & AP SAVER) Service Station described above is on the list of NSW contaminated sites notified to the EPA. The list indicates that EPA has determined regulation under CLM Act is not required.
- NSW EPA Government per- and poly-fluoroalkyl substances (PFAS) Investigation Program.
    - The site and surrounding area were not listed on the NSW Government PFAS Investigation program. The closest PFAS Investigation Programs are at the Kemps Creek Rural Fire Service (9km southwest) and the Holsworthy Barracks (10km southeast). Based on the distance, topography, geology and hydrology, these locations are not considered to pose a risk of PFAS migration to the site.

3.2 Australian and NSW Heritage Register

A search of the Australian Heritage did not identify any heritage listed items at the site. The only surrounding heritage item listed was The Homestead, Brown Road, Bonnyrigg Heights located 1 km west of site.

Both Australian Heritage Trust and NSW Heritage information are included in **Appendix D.**

3.3 Section 10.7 Planning Certificate Search

As detailed in JBS 2007, a Section 149 Planning Certificate (now Section 10.7) review was undertaken for a number of representative lots within Stages 12 to 13 during 2007 including the following properties within the current site area:

- Corlette, Cowdrey, Derry and Goodman Way, Bonnyrigg NSW 2177, Lot 454, DP 839627.

An additional selection of Section 10.7 (2) and (5) Planning Certificates were obtained for a lot not covered by the historical report as part of the current study. Planning Certificates were obtained from Fairfield City Council for the following representative properties:

- 56 Tarlington Parade, Bonnyrigg NSW 2177, Lot 453 DP 839627.

Certificates for the above properties, both historical and recent, are provided in **Appendix E**. Based on review of all planning certificates, the following information pertinent to the site is provided below:

- The Land is Zoned as Zone R1 General Residential;
- The land does not include critical habitat;
- The land is not a conservation area;
- No item of environmental heritage (however described) is situated on the land;
- The land is not affected by Section 15 of the *Mine Subsidence Compensation Act 1961* proclaiming land to be a Mine Subsidence District;
- Development on all or part of the land for the purposes of dwelling houses, dual occupancies, multi dwelling housing or residential flat buildings (not including development for the purposes of group homes or seniors housing) is subject to flood related controls;
- The site is not included on the loose-fill asbestos insulation register maintained under the *Home Building Act 1989*; and
- The land is not bushfire prone land.

Under the *Contaminated Land Management Act 1997* and *Contaminated Land Management Amendment Act 2008*, it was reported that the following information is available to Council:

- The land is not significantly contaminated land;
- The land is not subject to a management order;
- The land is not subject to an approved voluntary management proposal;
- The land is not subject to an ongoing maintenance order; and
- The land is not subject of a site audit statement.

3.4 Aerial Photograph Review

A review of the historical aerial photographs provided by the Land and Property Information Centre were reviewed by JBS&G in 2007 during the Preliminary Environmental Site Assessment (JBS 2007). Historical aerial photographs together with more recent aerials from 2010 and 2021 are described below and shown in **Appendix F**.

A summary of the aerial photographs obtained of the site is included below:

1947	In 1947 most of the site comprised of rural land with several cleared paddocks, market gardens and a few building structures in the south of site suggestive of a residence and sheds. There was evidence of a potential structure in the northwest of the property. Bushland can be seen in the northeast and southwest of the site. The site was within a smaller part of a larger area of portioned farmland with roads surrounding its rectangular perimeter. On all sides of the site there was a mixture of rural cleared land, market gardens, bushland and various building structures. Land use surrounding the site appeared rural agricultural land with some residential properties throughout.
1955	The site and surrounding areas in the 1955 aerial photograph are like the previous aerial photograph. However, within the site, differences can be seen where a potential structure is removed from the north-western corner. In the surrounding areas, the land to the east and west of the site has been cleared of more bushland.
1965	The site and surrounding areas in the 1965 aerial photograph appear like the previous aerial photograph with clearing of bushland in the north-east the site. Some relocation of market gardens and or crops has occurred in the centre of the site. In the surrounding areas slight clearing of bushland has occurred with no noticeable new building structures erected other than to the northeast where bushland had previously existed.
1975	The site and surrounding areas have both undergone large scale clearing of market gardens, crops, bushland and building structures.
1983	By 1983, the site has been developed for residential purposes. Many residential houses have been built across the entire site with associated internal roads consistent with current roads i.e., Barraclough Way, Priddle Way, Cowdrey Way, Corlette Way, Goodman Way and Derry Way. The surrounding site areas to the south and east of the site have also been developed for similar residential purposes as well as public open space and playing fields and possibly a school or other community facility to the southeast. It appears the area to the west of the site is yet to be developed, other than the Bonnyrigg Public School has been constructed to the west. To the north is a mix of residential and commercial developments, and the Telstra exchange building.
1991	Beginning of colour archive: The site and surrounding areas to the east and south appear like the previous aerial photograph. A commercial development has been erected immediately west of the site, consistent with the existing Plaza. Minimal residential growth has occurred in surrounding areas. No residential development has occurred on site between previous and current arial photographs. The facility to the southeast has been modified somewhat.
2002	The site and majority of the surrounding areas appear like the previous aerial photograph. Further low-density residential development was observed southeast and southwest of site. Commercial development was seen to the north of site.
2011	The site appears like the previous aerial photograph except that some structure in the central east have been removed, east of the northern end of Barraclough Way. The school or community facility southeast of the site has been replaced by residential development. Concrete paths have been formed in the reserve to the east.
2022	The site and surrounding has seen slight urban development with the introduction of more trees, a carpark adjacent the north-eastern point, and grounds work on the playing fields to the east of the site. The reserve has been extended into the central east of the site, with some trees cleared, east of Barraclough Way.

3.5 Historical Title Review

A review of the historical title documents for a number of properties within the current site area was completed by JBS&G in 2007. The properties included:

- Corlette, Cowdrey, Derry and Goodman Way, Bonnyrigg, NSW 2177, Lot 454 DP 839627.

As detailed in JBS 2007, originally the entire estate was a Grant to Nathaniel George Bull of Liverpool in 1875. Following this, the estate was sub-divided and the smaller, historical lots were owned by a variety of people, but predominantly by farmers, market gardeners, fruit growers, poultry farmers and grocers. This information is consistent with the evidence provided by the aerial photographs. Other owners of land in this area included machinists, carpenters, saddlers, labourers, tailors, mariners, clerks, engravers and boilermakers. In 1973 the Housing Commission of New South Wales held the titles to all the land, and the titles were amalgamated in 1982 to form the current lots.

The majority of Lots in the current Lot configuration encompass several historically smaller Lots within their boundaries, a few encompassing over 10 historical Lots. Between 1880 and 1973 these Lots changed hands through transfers several times each, such that for any present day Lot selected, over 100 title transfers may be documented.

Additional representative historical title documentation was requested for the current investigation site area:

- 56 Tarlington Parade, Bonnyrigg, NSW 2177, Lot 453 DP 839627

Based on review of the historical title records, the site was originally acquired by private proprietors in 1913 and 1922. They were then owned by a variety of people, including widow, farmer, tramway employee, farmer, market gardener, produce merchant, married woman, poultry farmer, traveller and finally the Housing Commission of New South Wales from 1973.

Historical title documentation requested as part of the current investigation are provided in **Appendix G**.

3.6 Integrity Assessment

Based on the range of sources and the general consistency of the historical information, as well as historical aerial photographs, it is considered that the historical assessment has an acceptable level of accuracy with respect to the potentially contaminating activities historically occurring at the site.

4. Previous Investigations

4.1 Preliminary Environmental Site Assessment, Parsons Brinckerhoff, May 2005 (PB 2005a)

In 2005 Parsons Brinckerhoff (PB) produced a Preliminary ESA of the Bonnyrigg Estate (PB 2005a) for the Department of Housing (DoH). This assessment was based on the public and open spaces located across the Bonnyrigg Housing Estate, between Bonnyrigg Avenue and Humphries Road. The investigation area included the current site area however focused on open space parkland areas, none of which are located within the current site area.

The objectives for this assessment were to identify any past or present site activities/practices having the potential to cause contamination; to identify areas of potential contamination and the associated contaminants of concern; to undertake limited sampling and identify additional investigative work requirements.

Eight main parkland/open space areas formed the study area, with a total approximate area of 15ha. Current features of the study areas are identified to include playing fields, trees, footpaths, streetlights, stormwater drains and a disused amenities block.

Historical photographs and land titles records indicate that the sites were used as rural properties from at least the early 1900s. In the late 1970s the DoH redeveloped the rural lands into the present day public housing estate and open spaces. Based upon the review of the site history, the potential contaminants of concern were identified to include heavy metals, organochlorine pesticides (OCPs), total petroleum hydrocarbons (TPH), BTEX compounds (benzene, toluene, ethylbenzene and xylenes), polycyclic aromatic hydrocarbons (PAHs) and asbestos.

PB reported that NSW EPA *Contaminated Sites: Sampling Design Guidelines* (EPA 1995), recommends approximately 150 sampling locations to characterise a site of 15ha in area, however due to the preliminary nature of the investigation, a limited sampling and analysis plan was developed.

The limited sampling and analysis plan was developed as part of an entire Housing Estate geotechnical investigation, encompassing a total of thirty boreholes being drilled, with soil samples being analysed from a total of five boreholes across the entire estate. Of the 30 boreholes, only three encountered evidence of fill. Two boreholes in Bunker Reserve (BH22 and BH23) contained evidence of a fill layer up to 1.1 metres depth, comprising clay with traces of brick, concrete and plastic, and Borehole 3 (BH3) located in Tarlington Reserve contained 0.5m of fill, consisting of clay with wire fragments. These locations are west and northwest of the current site area.

No analysis was conducted on boreholes BH23 and BH3, therefore no conclusions regarding the contamination aspect of this fill material were provided. Analysis was undertaken for Borehole BH22, and although all analytes were below the acceptance criteria, TPH/BTEX concentrations were present.

Several boreholes encountered weathered rock starting at depths ranging from 1.1 to 2.5 metres depth. No free groundwater was encountered during the investigation (up to 2.8 metres below ground surface (m bgs)). No odours or visual staining were observed during the drilling of any of the boreholes. A visual inspection indicated that no fibrous cement pieces (potentially containing asbestos) were noted at the surface of the site.

PB identified no significant potential for contamination resulting from current or past land uses. Only minimal amounts of fill were encountered during the intrusive investigations, and no other signs of contamination were evident. The limited analysis of the soil and fill did not identify any contamination, and PB concluded that there is a low risk of contamination on site.

4.2 Bonnyrigg Living Communities Geotechnical Investigation Report, Parsons Brinckerhoff, May 2005 (PB 2005b),

PB produced a Geotechnical Investigation Report for the Bonnyrigg Estate in 2005 (PB 2005b) for the NSW Department of Housing, in conjunction with the ESA (PB 2005a). This geotechnical investigation also occurred on the public open spaces located between Bonnyrigg Avenue and Humphries Road, none of which specifically fall within the current site areas.

The investigation consisted of boreholes being drilled across the eight open spaces that made up the study area of the assessment. Thirty boreholes were drilled to a maximum depth of 2.8 m bgs. Subsurface strata encountered during the investigation generally comprised medium to high plasticity clay, pale grey, red brown, or orange/yellow brown in colour. Of the 30 boreholes, only three encountered evidence of fill. Two boreholes located in Bunker Reserve contained evidence of a fill layer up to 1.1 metres depth, which comprised clay with traces of brick, concrete and plastic. The third contained evidence of a fill layer half a metre deep, comprising clay and containing fragments of wire. Several boreholes encountered weathered rock starting at depths ranging from 1.1m to 2.5 metres below ground level. As noted, none were in the current site area.

Geotechnical laboratory testing results recorded the natural clays to have a high potential for reactive (shrink/swell) movements from moisture changes, indicating a “Class H” site classification. However, in above-mentioned locations where fill material was encountered, PB considered the site classification to be “Class P” in accordance with AS2870. “Class P” sites include soft soils, such as soft clay or silt or loose sands; collapsing soils; soils subject to erosion; reactive sites subject to abnormal moisture conditions or sites which cannot be classified otherwise.

No free groundwater was encountered during the investigation.

4.3 Preliminary Environmental Site Assessment (JBS 2007)

In 2007 JBS (now JBS&G) completed a Preliminary ESA (JBS 2007). This report covered the entire Bonnyrigg Housing Estate including the current site area.

The objective of the preliminary investigation was to identify potential contamination issues across the Housing Estate and to determine if the area was suitable for the continued residential land use with gardens and accessible soil without further assessment or provide recommendations to enable such conclusions.

The scope of work comprised: a detailed site inspection; a review of all previous investigation reports, aerial photographs, land title information and regulatory notices; a desktop review of the site geology, hydrogeology and acid sulphate soils maps; a desktop salinity information review; a review of available information relating to the historic use of the site, resulting in the identification of areas of environmental concern and associated potential contaminants of concern; and preparation of a Preliminary ESA report, in accordance with relevant regulatory guidelines in place at the time.

At the time the report was prepared (2007), the Housing Estate was utilised as a public housing estate, encompassing 933 residences (833 Social Housing dwellings, 100 privately owned properties) and was home to approximately 3,300 people. The Housing Estate comprised of 81 hectares of open space/recreational parkland areas surrounded by residential housing. The residential structures consisted of attached and freestanding dwellings, constructed of fibrous cement sheeting and brick. The parklands encompassed open spaces, basketball courts, soccer fields, children’s play equipment and thoroughfares.

Historically the Housing Estate encompassed residential and open spaces/recreational parks since the late 1970s, and prior to this, the Estate and surrounding areas were used for rural purposes. Historical evidence suggests the Estate was occupied with market gardens, poultry farmers,

orchards, and low density residential. Several creek beds were formerly located across the area prior to 1980 (completion of the Housing Estate).

It was concluded that the entire Housing Estate encompassed areas of environmental concern, including: areas of indiscriminately dumped material; potential unknown fill material in specific areas (open spaces/ recreational parklands, residential areas, and former creek beds); the recreational use and maintenance of the soccer fields (Bunker and Tarlington Reserves); areas of present residential land use; areas of past rural land use; footprint of former buildings (former residential structures, demolished amenities blocks, etc); and sharing a boundary with an electrical substation and a petrol station.

It was recommended that in order to draw conclusions regarding the suitability of the Housing Estate (including the current Stage 8-11 site area) for the proposed sensitive land uses, further intrusive investigation be conducted, focusing on the areas of environmental concern identified as part of the investigation.

4.4 Precinct Wide Sub-Surface Asbestos Survey (JBS 2008)

In 2008 JBS (now JBS&G) completed a Precinct Wide Sub-Surface Asbestos Survey (JBS 2008). This report covered the entire Bonnyrigg Housing Estate including the current site area.

The objective of the sub-surface asbestos survey was to identify the quantity of materials needing remediation. This was completed through testpits and hand augering to visually assess the presence of asbestos within the fill material at both shallow and deep locations.

Within the relevant area to the current site boundary, thirty-eight sample locations were undertaken with two visually identifying asbestos within the fill as shown on **Figure 3**.

It was recommended an interim Environmental Management Plan (EMP) and a Remedial Action Plan be produced to address identified contamination on site.

5. Conceptual Site Model

5.1 Potential Areas of Environmental Concern

Based on the site history, review of historical reports, together with the detailed site inspection observations, areas, media and contaminants of concern have been identified in **Table 5.1** below.

Table 4.1 Areas of Environmental Concern and associated Contaminants of Potential Concern

Area of Environmental Concern	Contaminants of Potential Concern
Fill material	Heavy metals, TRH, BTEX, PAHs, OCPs and asbestos
Potential fly tipped material and/or fill material.	Heavy metals, TRH, BTEX, PAHs, OCPs and asbestos
Footprints of former and current site structures such as housing and sheds, including former market garden/orchard areas*	Heavy metals, OCPs and asbestos
Former internal access road alignment	Heavy metals, TRH, BTEX, PAHs and asbestos

*Impacts from former structures and rural use, which would largely have been surficial, may have been removed or redistributed when the site was redeveloped from agricultural to residential estate in the late 1970s to early 1980s and in the central east portion of site between 2002 and 2011.

5.2 Potentially Contaminated Media

Potentially contaminated media present at the site include:

- Fill material; and
- Natural soils.

Based on the site history and observations made indicates the potential for fill material around the site is as follows;

- Filling to achieve site levels;
- Around anthropogenic structures such as sheds and houses;
- On or near access roads/paths throughout the site;
- Within former building footprints;
- Fly-tipping within vacant and open space areas, particularly across park/open space areas of the site.

The source of potential fill material is unknown and is therefore considered to be a potentially contaminated medium. In addition to the potential for contamination in fill there is the potential for aesthetic impacts relating to unidentified areas of building rubble, staining or odours.

Given the former rural use of the land, and based on the relatively shallow depth to natural soil below fill where present, COPCs that may be present at the site may have potentially migrated vertically into natural soils. Natural soil material is therefore considered to be a potentially contaminated medium.

As there are no permanent water bodies located at the site, surface water is not considered to be a potentially contaminated media.

Groundwater impact at the site is considered to be unlikely (from **Section 2.7**). considering the presence of the relatively impermeable residual clay soils and shale layers at the site limits the potential for groundwater contamination via infiltration/leaching, ultimately limiting the potential for contamination (if any) at the site to migrate via groundwater.

Vapours are not likely to be impacted given the historical use of the land does not appear to have involved activities involving significant use or storage of fuels/chemicals of a volatile nature.

5.3 Potential for Migration

Contaminants generally migrate from site via a combination of windblown dusts, rainwater infiltration, groundwater migration and surface water runoff. The potential for contaminants to migrate is a combination of:

- The nature of the contaminants (solid/liquid and mobility characteristics);
- The extent of the contaminants (isolated or widespread);
- The location of the contaminants (surface soils or at depth); and
- The site topography, geology, hydrology and hydrogeology.

Due to the isolated nature of the suspected AEC and the inert and or surficial nature of primary COPCs (i.e. asbestos, metals) potential for migration of contaminants is considered low.

There is however some potential for migration of COPCs to occur through windblown migration of ground surface contamination such as fly-tipping and ACM. Given that the majority of the site is grassed or covered by structures and roads however, this is considered to be low.

5.4 Potential Exposure Pathways

Based on the COPC identified in various media as discussed above, the exposure pathways for the site include:

- Potential inhalation of airborne asbestos fibres and/or impacted dust particles; and/or
- Potential dermal contact with and ingestion of impacted soils as present at shallow depths and/or accessible by future excavations.

Inhalation of vapours, dermal contact or ingestion of groundwater are not considered potential exposure pathways based on the above.

5.5 Receptors

Potential receptors of environmental impact within the site which will need to be addressed with respect to the suitability of the site for the proposed use include:

- Current and future site occupants and landowners who may potentially be exposed to COPC through direct contact with impacted soils and/or inhalation of dusts / fibres associated with impacted soils; and/or
- Excavation/ construction/ maintenance workers conducting activities at the site, who may potentially be exposed to COPC through direct contact with impacted soils present within excavations and/ or inhalation of dusts/ fibres associated with impacted soils; and/or
- Existing and/ or future users/ occupants of adjoining residential properties should contamination be identified to be migrating from the current site; and/or
- Ecological receptors include vegetation on the site soils.

6. Sampling and Analysis Plan

6.1 Data Quality Objectives

Data quality objectives (DQOs) were developed for the investigation, as discussed in the following sections.

6.1.1 State the Problem

It is understood that the site has been proposed to be redeveloped into a mixture of land uses including high density residential and open space. To facilitate planning decisions, an environmental investigation was required to assess the site for potential contamination issues and provide recommendations to manage any potential contamination risk during the proposed development.

6.1.2 Identify the Decision

To meet the specific project objectives, the following decisions must be made:

- Are there any unacceptable risks to future onsite receptors?
- Are there any issues relating to background soil concentrations that exceed appropriate site soil criteria?
- Are there any impacts of chemical mixtures?
- Are there any aesthetic issues at the site?
- Is there any evidence of, or potential for, migration of contaminants from the site?
- Is the site suitable or can it be made suitable for the intended land use?
- Is a site management strategy required?

6.1.3 Identify the Inputs to the Decision

Inputs to the decision are:

- Identified areas of concern and contaminants of potential concern at the site;
- Previous site contamination information including physical observations;
- Soil environmental data consisting of assessment for identified COPC in soil;
- Development of appropriate assessment criteria for evaluation of soil impacts;
- Confirmation that data generated by sampling and analysis are of an acceptable quality to allow reliable comparison to assessment criteria as undertaken by assessment of quality assurance / quality control (QA/QC) as per the data quality indicators (DQIs) established in **Section 6.1.6**.

6.1.4 Define the Study Boundaries

The study boundaries are limited to the site boundary as shown in **Figures 1** and **2**.

Due to the project objectives, seasonality will not be assessed as part of this investigation. Data will therefore be representative of the timing and duration of the current investigation.

6.1.5 Develop a Decision Rule

The decision rules adopted to answer the decisions identified in **Section 6.1.2** are summarised in **Table 6.1**.

Table 6.1 Summary of Decision Rules

Decision Required to be made	Decision Rule
1. Are there any unacceptable risks to future onsite receptors?	The additional soil analytical data will be compared against adopted EPA endorsed criteria. Statistical analyses in accordance with relevant guidance documents will be undertaken if appropriate to facilitate the decisions including 95% upper confidence limits (UCLs). Are contaminants present at concentrations exceeding the published guidelines or 95% UCLs? If the criteria stated above are satisfied, the decision is **Yes**. Otherwise, the decision is **No**.
2. Are there any issues relating to background soil concentrations that exceed appropriate site soil criteria?	If COPC concentrations in soils exceeded published background concentrations (NEPC 2013), the answer to the decision is **Yes**. Otherwise the answer to the decision is **No**.
3. Are there any impacts of chemical mixtures?	Were there more than one group of contaminants present which increase the risk of harm? If there is, the answer to the decision is **Yes**. Otherwise, the answer to the decision is **No**.
4. Are there any aesthetic issues at the site?	If there are any unacceptable amounts of building rubble, odours or soil discolouration, the decision is **Yes**. Otherwise, the decision is **No**.
5. Is there any evidence of, or potential for, migration of contaminants from the site?	Consideration will be given to whether there are any elevated contaminant concentrations in soil in proximity to or at site boundaries and where site conditions may lead to the potential to migrate off site. If there is the potential for offsite contaminant migration the decision is **Yes**. Otherwise, the decision is **No**.
6. Is the site suitable or can it be made suitable for the intended land use	If the answer to all of the above decisions is **No**, then the site is suitable for the intended land use. If the answer to any of the above decisions is **Yes**, then a site management strategy may be required to make the site suitable.
7. Is a site management strategy required?	If the answer to decisions 1 to 3 is Y**es**, a site management strategy is required.

Statistical analyses of the data will be undertaken, if required, in accordance with relevant guidance documents. The following statistical criteria shall be adopted:

- The upper 95% confidence limit on the average concentration for each analyte (calculated for samples collected from consistent soil horizons, stratigraphy or material types) must be below the adopted criterion;
- No single analyte concentration shall exceed 250% of the adopted criterion; and
- The standard deviation of the results must be less than 50% of the criterion.

6.1.6 Specify Limits of Decision Error

This step is to establish the decision maker's tolerable limits on decision errors, which are used to establish performance goals for limiting uncertainty in the data. Data generated during this project must be appropriate to allow decisions to be made with confidence.

Specific limits for this project have been adopted in accordance with the appropriate guidance from the NSW EPA, NEPC (2013), appropriate indicators of data quality (DQIs used to assess QA/QC) and standard JBS&G's procedures for field sampling and handling.

To assess the usability of the data prior to making decisions, the data will be assessed against pre-determined Data Quality Indicators (DQIs) for completeness, comparability, representativeness, precision and accuracy. The acceptable limit on decision error is 95% compliance with DQIs.

The pre-determined Data Quality Indicators (DQIs) established for the project are discussed below in relation to precision, accuracy, representativeness, comparability and completeness (PARCCS parameters), and are shown in **Table 6.2**.

- **Precisions** - measures the reproducibility of measurements under a given set of conditions. The precision of the laboratory data and sampling techniques is assessed by calculating the Relative Percent Difference (RPD) of duplicate samples.
- **Accuracy** - measures the bias in a measurement system. The accuracy of the laboratory data that are generated during this study is a measure of the closeness of the analytical results obtained by a method to the 'true' value. Accuracy is assessed by reference to the analytical results of laboratory control samples, laboratory spikes and analyses against reference standards.
- **Representativeness** - expresses the degree which sample data accurately and precisely represent a characteristic of a population or an environmental condition. Representativeness is achieved by collecting samples on a representative basis across the site, and by using an adequate number of sample locations to characterise the site to the required accuracy.
- **Comparability** - expresses the confidence with which one data set can be compared with another. This is achieved through maintaining a level of consistency in techniques used to collect samples; ensuring analysing laboratories use consistent analysis techniques and reporting methods.
- **Completeness** - is defined as the percentage of measurements made which are judged to be valid measurements. The completeness goal is set at there being sufficient valid data generated during the study.
- **Sensitivity** – expresses the appropriateness of the chosen laboratory methods, including the limits of reporting, in producing reliable data in relation to the adopted site assessment criteria.

If any of the DQIs are not met, further assessment will be necessary to determine whether the non-conformance will significantly affect the usefulness of the data. Corrective actions may include requesting further information from samplers and/or analytical laboratories, downgrading of the quality of the data or alternatively, re-collection of the data.

Table 6.2 Summary of Quality Assurance / Quality Control

Data Quality Objective	Frequency	Data Quality Indicator
Precision		
Blind duplicates (intra laboratory)	1 / 20 samples	<50% RPD
Blind duplicates (inter laboratory)	1 / 20 samples	<50% RPD
Accuracy		
Surrogate spikes	All organic samples	70-130%
Laboratory control samples	1 per lab batch	70-130%
Matrix spikes	1 per lab batch	70-130%
Representativeness		
Sampling appropriate for media and analytes		-
Samples extracted and analysed within holding times.	-	organics (14 days), inorganics (6 months)
Trip spike (for volatiles)	1 per sampling event when sampling for volatile or semi-volatile COPC	70-130% recovery
Trip blank	1 per sampling event	<LOR
Rinsate	1 per sampling event where reusable sampling equipment used	<LOR
Comparability		
Standard operating procedures for sample collection & handling	All Samples	All samples
Standard analytical methods used for all analyses	All Samples	All samples
Consistent field conditions, sampling staff and laboratory analysis	All Samples	All samples
Limits of reporting appropriate and consistent	All Samples	All samples
Completeness		
Sample description and COCs completed and appropriate	All Samples	All samples
Appropriate documentation	All Samples	All samples
Satisfactory frequency and result for QC samples	All QA/QC samples	-
Data from critical samples is considered valid	-	Critical samples valid
Sensitivity		
Analytical methods and limits of recovery appropriate for media and adopted site assessment criteria.	All samples	LOR<= site assessment criteria

6.1.7 Optimise the Design for Obtain Data

Various strategies for developing a statistically based sampling plan are identified in EPA (1995), including judgemental, random, systematic and stratified sampling patterns. As the site is mostly comprised of occupied residential areas, sampling was completed to provide coverage in accessible areas in vacant/unoccupied lots, road verges, parkland and walkways.

A combined systematic and judgemental sampling pattern was adopted in accessible areas, with systematic sampling where possible to provide representative site coverage, and targeted sampling focussed towards areas of potential contamination such as fly-tipping or potential fill/mounding and former structures. Sampling targeted shallow surface fill and disturbed topsoils which is where COPC associated with the identified AECs are largely anticipated.

6.2 Soil Sampling Methodology

For soil investigation works, sampling was conducted using a backhoe to excavate testpits. The soil sampling locations conducted are shown on **Figure 4**.

Soil samples were generally collected at the surface (ranging in depths between 0.0 and 0.1 m), and approximate 0.5 m intervals below the surface. Locations were extended to a minimum depth of 0.3 m into natural soils. Generally, locations were excavated to depths ranging between 0.5 m to 0.8 m below ground surface (bgs). During the collection of soil samples, observations regarding the

presence or absence of groundwater seepage, discolouration, staining, odours, visible ACM or other indicators of contamination were noted. Observations made are provided on logs included in **Appendix H**.

The sample jars and 500 mL asbestos bags (as per NEPC 2013 requirements) were transferred to a chilled ice box for sample preservation prior to and during shipment to the testing laboratory. A chain-of-custody form was completed and forwarded with the samples to the testing laboratory. Based upon field observations, samples were analysed in accordance with the laboratory schedule (**Table 6.4**).

Not all samples collected were analysed. All samples will remain at the primary laboratory for a period of two months for possible future analysis (subject to holding times) if required following the receipt of sample results.

6.2.1 Decontamination

Prior to the commencement of sampling activities, any non-disposable sampling equipment (i.e. the hand auger), was cleaned with a water/ detergent spray, rinsed with water and then air dried. The equipment was inspected to ensure that no soil, oil, debris or other contaminants were apparent on the equipment prior to the commencement of works. Sampling equipment was subsequently decontaminated using the above process between each sampling location.

6.3 Visual Inspections (Bonded ACM)

A visual inspection was undertaken across the surface of accessible areas of the site by an appropriate qualified and experienced environmental consultant trained in the identification of asbestos (i.e. competent person). No visible ACM was observed on the surface or within any testpit locations.

6.4 Laboratory Analysis

JBS&G contracted Eurofins | MGT (Eurofins) as the primary laboratory for all the required analyses. The secondary laboratory for these analytes was Envirolab. All laboratories are NATA registered for the required analyses.

In addition, the laboratories will be required to meet JBS&G's internal QA/QC requirements. Laboratory analysis of samples will be conducted as summarised in **Table 6.4**.

Table 6.4 Proposed Sampling and Analytical Program

Medium	No. of Sampling Locations	Analyses (inc. QA/QC)
Soil	14 Locations	Asbestos – 14 samples (500 mL) Heavy Metals – 14 samples OCPs – 14 samples TRH, BTEX, PAH – 14 samples

For QA/QC purposes field duplicates and triplicates were analysed at a rate of 1/20 primary samples. A trip spike and trip blank sample also accompanied the soil samples.

7. Assessment Criteria

7.1 Regulatory Guidelines

The investigation was undertaken with consideration to aspects of the following guidelines, as relevant:

- *National Environment Protection (Assessment of Site Contamination) Measure 1999* as amended 2013, National Environment Protection Council (NEPC 2013);
- *Contaminated Sites: Sampling Design Guidelines*, NSW EPA, 1995 (EPA 1995);
- *Consultants Reporting on Contaminated Land, Contaminated Land Guidelines*, NSW EPA, 2020 (EPA 2020);
- *Contaminated Sites: Guidelines for the NSW Site Auditor Scheme, 3rd Edition*, NSW EPA, 2017 (EPA 2017);
- *Guidelines for the Assessment Remediation and Management of Asbestos-Contaminated Sites in Western Australia, May 2009*. Western Australia Department of Health 2009 (DOH 2009); and
- *Waste Classification Guidelines, NSW EPA*, November 2014 (EPA 2014).

7.2 Soil Criteria

Based on the proposed mixed land use for the site, including high rise residence with gardens and accessible soil, concentrations of contaminants in soil will be compared against published levels presented in **Tables A**, sourced from the following:

- Health based investigation Levels (HILs) for Residential with gardens/accessible soil (HIL-A) – NEPC 2013;
- Health Screening Levels (HSLs) for vapour intrusion, specific levels will vary depending on land use, soil type and depth;
- HSLs for asbestos in soil (NEPC 2013);
- Generic and site derived ecological investigation levels (EILs) based on NEPC 2013; and
- Ecological Screening Levels (ESLs) for TRH fractions, BTEX and benzo(a)pyrene for residential land use (NEPC 2013).

Where there are no NSW EPA endorsed thresholds, the laboratory limit of detection has been adopted as an initial screening value for the purposes of this assessment.

Consideration will also be given to aesthetic aspects, consistent with EPA 2017 and NEPC 2013 guidance.

Site specific ecological investigation levels presented in **Table A** were derived using an average pH of 6.65, a cation exchange capacity (CEC) of 16.75 MEQ/100G, a Total Organic Carbon (TOC) of 1.45 mg/kg and an assumption that any identified impacts would be aged.

8. Quality Assurance / Quality Control

8.1 Soil QA / QC Results

The QA/QC results for soil samples collected at the site are summarised in **Table 8.1** and discussed in **Section 8.2** below. Detailed QA/QC results are included in the laboratory reports in **Appendix I**.

Table 8.1 Data Quality Indicator Assessment

Data Quality Indicator	Results	DQO met?
Precision		
Duplicates (intra laboratory)	0-55% RPD Intra laboratory samples were analysed at a rate of 1 in 14, greater than 1 in 20 samples.	Partial[1]
Triplicates (inter laboratory)	0-82% RPD Inter laboratory samples were analysed at a rate of 1 in 14, greater than 1 in 20 samples.	Partial[1]
Laboratory Duplicates	0-21% RPD	Yes
Accuracy		
Surrogate spikes	60 - 150 % recovery	Partial[1]
Laboratory control samples	70 – 130% recovery	Yes
Matrix spikes	70 – 130% recovery	Yes
Representativeness		
Samples extracted and analysed within holding times.	All primary and duplicate samples were extracted within 14 days of sampling.	Yes
Trip spike	70-130% Recovery	Yes
Trip blank	<LOR	Yes
Rinsate	NA	NR
Standard operating procedures for sample collection & handling	Field scientist used the same standard operating procedures throughout works.	Yes
Comparability		
Standard analytical methods used for all analyses	Standard analytical methods used	Yes
Consistent field conditions, sampling staff and laboratory analysis	Sampling was conducted by the same field scientist. Standard operating procedures were conducted throughout the works. Field conditions remained the same throughout the works. The primary and secondary labs remained consistent throughout the investigation.	Yes
Limits of reporting appropriate and consistent	Soil limits of reporting were consistent and appropriate.	Yes
Completeness		
Soil description and COCs completed and appropriate	All bore logs and COCs were completed appropriately.	Yes
Appropriate documentation	All appropriate field documentation is included in the Appendices.	Yes
Satisfactory frequency and result for QC samples	The QC results are considered adequate for the purposes of the investigation.	Yes
Data from critical samples	Samples were analysed at locations where potential for contamination was observed.	Yes
Sensitivity		
Analytical methods and limits of recovery appropriate for media and adopted site assessment criteria	Analytical methods and limits of recovery were considered appropriate for media and adopted site assessment criteria for all soil analytes.	Yes

1. See discussion of DQI exceedances in **Section 8.2.**

8.2 Soil QA/QC Discussion

8.2.1 Precision

Soil Duplicate (intra-laboratory) and Triplicate (inter-laboratory)

Soil field blind duplicate (intra-laboratory) and triplicate (inter-laboratory) samples were collected at a rate of 1 per 14 primary samples analysed, meeting the 1/20 DQI frequency. Soil field blind duplicate samples (intra-laboratory) sample results were within the range of 0-50% RPD for all samples analysed with the following exceptions:

- Chromium between primary sample TP05_0-0.1 and duplicate sample QC01 with RPD of 55%

Soil field blind triplicate (inter-laboratory) samples results were within the range of 0-50% RPD for all samples analysed with the following exceptions:

- Nickel between primary sample TP05_0-0.1 and triplicate sample QA01 with RPD of 62%; and
- Benzo(a)pyrene TEQ between primary sample TP05_0-0.1 and triplicate sample QA01 with RPD of 82%.

The elevated RPDs are considered to be associated with heterogeneous nature of fill soils encountered at this site. Based on this, and the fact that all results were well below the adopted site criteria, the RPDs above the DQI are not considered to affect the precision of the data set.

Laboratory Duplicates

Laboratory duplicate samples were all below the acceptable limit of 50% RPD.

8.2.2 Accuracy

Soil Surrogate Spikes

Surrogate spikes were used for all required organic analyses. Surrogate spike recoveries were all reported within JBS&G's preferred range of 70-130% with some minor outliers of 60 and 150%. Although outside the JBS&G limits these results still fall within the NATA certified laboratory's acceptable range and therefore are not considered to affect the reliability of the data set.

Soil Laboratory Control Samples

Laboratory control samples analysed reported recoveries within the acceptable range.

Soil Matrix Spikes

Matrix spike samples analysed reported recoveries within the acceptable range.

8.2.3 Representativeness

Sampling appropriate for media and analytes

All soil sampling works completed during the investigation were conducted in accordance with JBS&G standard operating procedures. TP01_0-0.1 asbestos bag sample was collected less than 500 mL as per the sampling procedure outlined in **Section 6.2**, the sample was narrowly underweight and due to all other samples being acceptable this does not appear to impact the validity of sampling. All other soil sampling was conducted as described in **Section 6.2**.

Holding Times

All samples were extracted within the recommended holding times for all analytes.

Rinsate Blank

A rinsate blank was not collected as the samples were sampled from the centre of the excavator bucket and therefore decontamination was not required.

A new pair of disposable nitrile gloves were used for the collection of each sample.

Trip Spike

A trip spike was submitted with the soil samples. All trip spike recoveries were within the acceptable limit of 70-130%, indicating that the adopted assessment sample preservation methods were appropriate to result in a low risk of contaminant concentration loss during transport of the sampling.

Trip Blank

A single storage blank sample was carried out during the soil sampling event and was submitted with the soil samples to the testing laboratory. There were no reported concentrations of BTEX compounds above the laboratory LOR, achieving the nominated DQIs.

Decontamination and Calibration

A backhoe was used for all sampling locations with samples collected from the centre of the excavator bucket. It was ensured that a new pair of disponible nitrile gloves were used for the collection of each sample.

The photo ionisation detector (PID) used had been calibrated and a spot check was completed whilst being used on site.

Field decontamination and calibration records are provided in **Appendix I**.

Comparability

One experienced JBS&G field scientists undertook all sampling in accordance with standard JBS&G sampling methods. Field works and sampling were undertaken by the same JBS&G field scientists throughout the works.

All field documentation was appropriately completed. The nominated laboratories undertook all analysis in accordance with the relevant National Association of Testing Authorities (NATA) accredited methods.

8.2.4 Completeness

Samples were transported under full chain of custody (COC) documentation. The COC documentation was completed correctly and the selected analyses were correctly conducted.

All field documentation was completed appropriately including borehole logs (**Appendix H**).

The frequency of analysis and result for all QC samples were appropriate.

8.2.5 Sensitivity

Laboratory analysis methods for all contaminants in soil adopted during the investigation used limits of reporting significantly less than the site assessment criteria to ensure the contaminant concentrations could be confidently identified as being less than the adopted soil site assessment criteria.

8.3 QA/QC Assessment

The field sampling and handling procedures produced QA/QC results which indicate that the soil data are of an acceptable quality and suitable for use in site characterisation.

The NATA certified laboratory results sheets indicate that the project laboratory was generally achieving levels of performance within its recommended control limits during the period when the samples of this program were analysed.

On the basis of the results of the field and laboratory QA/QC program, the soil data is of an acceptable quality upon which to draw conclusions regarding the environmental condition of the site.

9. Investigation Results

9.1 Soil Field Observations

The lithology encountered at the site during the field works is summarised below. Detailed logs are included in **Appendix H**. A total of 14 soil sampling locations were conducted by JBS&G across the site on 1 March 2022. The samples were undertaken with a backhoe with the sample locations shown on **Figure 4**.

Surfaces across the site varied from bitumen sealed roadways, grassed open space areas and residential yards, gardens beds, igneous gravel pathways, concrete driveways and paths and bare soils.

The soil profile generally comprised of soft, heterogeneous dark brown, mottled silty clay fill/topsoils between depths of 0 to 0.5 m bgs. Inclusions of foreign materials such as bitumen, concrete, brick, plastic debris, wood chips, ash, and aggregate gravels were observed in shallow fill materials across the site. The topsoil was underlain with natural red-grey mottled silty clay.

No staining, odours or asbestos were observed at any sampling location during the current investigation.

Minimal amounts of anthropogenic materials, such as timber, ceramic tiles, and general household rubbish, were observed across the site surface. No ACM was observed on ground surfaces in accessible areas of the site.

9.2 Soil Laboratory Results

Representative samples were collected across the site targeting the areas of environmental concern (AECs) and were analysed for a range of COPCs. The summarised laboratory results are presented in **Table A** and are discussed below. Detailed laboratory reports and chain of custody documentation are provided in **Appendix J.**

9.2.1 Heavy Metals

Heavy metals concentrations, in the samples selected for analysis, were reported below the adopted human health (HIL) and ecological (EIL) criteria.

9.2.2 TRH/BTEX

TRH and BTEX concentrations in all samples selected for analysis were reported below the adopted human health and ecological criteria.

9.2.3 PAH

PAH concentrations in all samples selected for analysis were reported below the LOR and below the adopted human health and ecological criteria.

9.2.4 OCP

All OCP concentrations in the analysed samples were reported below adopted human health and ecological criteria.

9.2.5 Asbestos

Chrysotile and amosite asbestos was detected above the human health criteria in the form of friable asbestos as asbestos fines (AF)/fibrous asbestos (FA) as fibre bundles in surface soil (0-0.1m) at TP05_0-0.1.

Laboratory analysis for all other samples did not report any asbestos as ACM or asbestos fines (AF)/ fibrous asbestos (FA).

10. Site Characterisation

Section 6.1.5 provides decision rules applicable to determine if contamination is present at the site that may be potentially unacceptable for the proposed development from a health and ecological health perspective. Discussion of each of these points is provided in the following sections.

10.1 Are There Any Unacceptable Risks to Future onsite Receptors?

Based on review of laboratory results from the intrusive investigation, most results were either below the LOR, the adopted health-based or ecological site criteria.

Friable asbestos as FA/AF was however identified within surface fill materials at location TP05_0-0.1m at a concentration above the HIL which may present a potential human health risk. Given the presence of fill materials with anthropogenic inclusions possibly relating to historical demolition of former site structures and excess material from building of current structures, there is the potential for further FA/AF to be present at the site. Additionally, historical sampling has identified ACM in fill at two other locations, indicating the potential for asbestos in fill elsewhere.

Further investigation is required to confirm the potential for further asbestos or other contamination at the site.

10.2 Are there any issues relating to the local area background soil concentrations that exceed appropriate Soil Criteria

Soil samples collected from natural soils indicated that the majority of metal concentrations were below the background concentrations within NEPC (2013). On this basis, there are considered to be no outstanding issues in relation to local area background soil conditions that require further consideration.

10.3 Are there any Chemical Mixtures?

There were no potential chemical mixtures identified during the investigation that may increase the risk of harm at the site or require special management.

10.4 Are There any Aesthetic Issues at the Site?

No staining or odours were identified during the assessment.

Anthropogenic materials including timber, ceramic tiles, and general household rubbish was observed on the ground surface at a few locations across the site.

Inclusions of foreign materials such as bitumen, concrete, brick, plastic debris, wood chips, ash, and aggregate gravels were observed in shallow fill materials across the site. ACM was historically reported in fill in two locations, therefore further ACM may also pose an aesthetic issue if exposed.

Based on these findings, aesthetic issues will require consideration during future works.

10.5 Is There Any Evidence of, or Potential for, Migration of Contaminants from the Site?

Given the condition of the surface soils was relatively stable, with vegetative or hardstand cover or buildings over, it is considered that the potential for off-site migration of such contamination is low. It is noted the area where AF/FA was observed in surface fill at TP05 was surfaced with good grass cover, as such there is a low risk of asbestos fibres being released where grass cover is maintained in this area.

10.6 Is the Site Suitable or Can it be Made Suitable for the Intended Landuse?

Based on the results of the investigation and subject to the limitations presented in **Section 12**, it is considered that the site can be made suitable for the intended land use, subject to further investigation and management of asbestos and aesthetic issues identified above, and any potential unexpected finds identified during future works and subject to the additional investigations of inaccessible areas.

10.7 Is a Site Management Strategy Required?

Further works are required, following demolition of site structures and prior to development-related earthworks and civil works, to identify potential impact within areas inaccessible during the current contamination assessment. These shall include intrusive investigations including testpitting to allow for comprehensive inspection for potential asbestos and anthropogenic material in fill and to confirm the suitability of the site or make recommendations to achieve that outcome. On completion of these works, a remedial action plan (RAP) will be required where unacceptable contamination and aesthetic impacts are identified, as well as standard development controls including an Unexpected Finds Protocol to address potential unexpected contamination potentially uncovered during future works. Given the site may be a workplace for maintenance contractors or future demolition/earthworks contractors and asbestos in soil has been identified, an Asbestos Management Plan (AMP) is recommended to provide appropriate management controls until such time as asbestos risks are removed.

11. Conclusions and Recommendations

11.1 Conclusions

Based on the findings of this assessment and subject to the limitations in **Section 12**, the following conclusions are made:

- Minor volumes of fill materials were observed across the site with Inclusions of foreign materials such as bitumen, concrete, brick, plastic debris, wood chips, ash, and aggregate gravels were observed in shallow fill materials across the site. Fill materials were generally observed from the surface to depths of between 0.2 and 0.5 m bgs. The foreign materials will require consideration for aesthetics during future development works.
- Friable asbestos as FA/AF asbestos identified within fill at TP05_0-0.1 exceeded human health criteria and poses a potential human health risk if soil is exposed and fibres become airborne. Additionally, historically ACM was identified at two locations within the site area. Due to the presence of fill with anthropogenic inclusions and the asbestos exceedances there is the potential for asbestos in other locations.
- All other contaminant concentrations of soils samples analysed within investigation locations conducted (heavy metals, TRH, BTEX, PAHs, OCPs) were all below the LOR and/or the adopted site criteria.
- There were no indications of gross or widespread contamination and impact identified at the site. There is the potential for asbestos elsewhere in fill based on identified asbestos impacts and anthropogenic material present within many of the fill samples.
- As such, it is considered the site can be suitable for the intended land uses subject to investigations in areas that were inaccessible and preparation and successful implementation of a remedial action plan (RAP) to manage identified impacts.

11.2 Recommendations

Based on the conclusions presented, it is recommended the following actions are undertaken:

- Further investigations works, including confirmation of potential asbestos and aesthetic impacts are required within inaccessible areas and building footprints following demolition of site structures and prior to development-related earthworks and civil works, to confirm the suitability of the site for the intended land uses;
- Preparation of a RAP to address unacceptable impacts where identified; and
- Standard development controls including an Unexpected Finds Protocol to be prepared prior to civil works commencing to address any potential unexpected contamination encountered during future works.
- Given the site may be a workplace for maintenance contractors or future demolition/earthworks contractors and asbestos in soil has been identified, an Asbestos Management Plan (AMP) is recommended to provide appropriate management controls until such time as asbestos risks are removed.

12. Limitations

This report has been prepared for use by the client who has commissioned the works in accordance with the project brief only, and has been based in part on information obtained from the client and other parties.

The advice herein relates only to this project and all results conclusions and recommendations made should be reviewed by a competent person with experience in environmental investigations, before being used for any other purpose.

JBS&G accepts no liability for use or interpretation by any person or body other than the client who commissioned the works. This report should not be reproduced without prior approval by the client, or amended in any way without prior approval by JBS&G, and should not be relied upon by other parties, who should make their own enquiries.

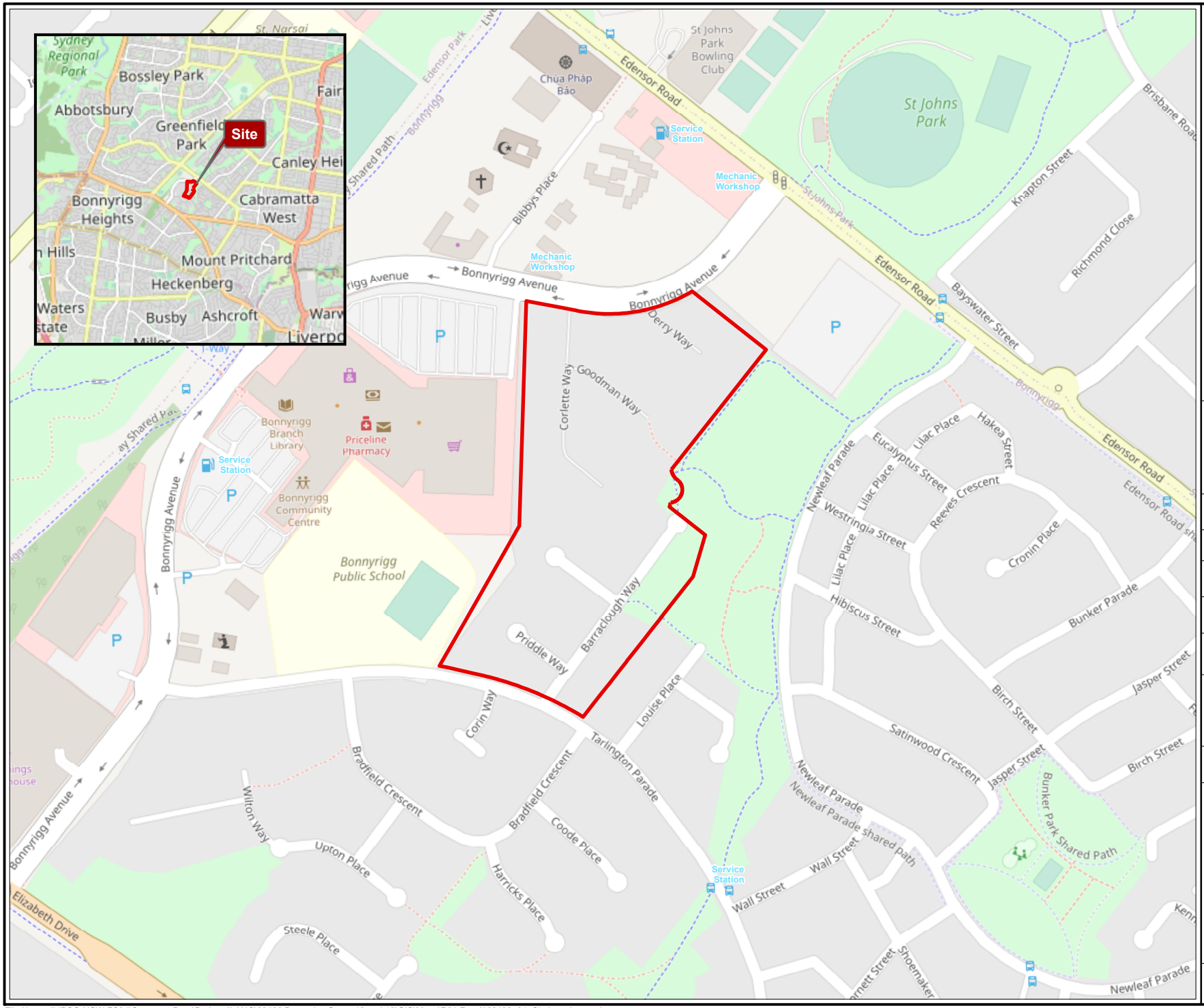
Sampling and chemical analysis of environmental media is based on appropriate guidance documents made and approved by the relevant regulatory authorities. Conclusions arising from the review and assessment of environmental data are based on the sampling and analysis considered appropriate based on the regulatory requirements.

Limited sampling and laboratory analyses were undertaken as part of the investigations undertaken, as described herein. Ground conditions between sampling locations and media may vary, and this should be considered when extrapolating between sampling points. Chemical analytes are based on the information detailed in the site history. Further chemicals or categories of chemicals may exist at the site, which were not identified in the site history and which may not be expected at the site.

Changes to the subsurface conditions may occur subsequent to the investigations described herein, through natural processes or through the intentional or accidental addition of contaminants. The conclusions and recommendations reached in this report are based on the information obtained at the time of the investigations.

This report does not provide a complete assessment of the environmental status of the site, and it is limited to the scope defined herein. Should information become available regarding conditions at the site including previously unknown sources of contamination, JBS&G reserves the right to review the report in the context of the additional information.

Figures



Legend

Approximate Site Boundary

JBS&G

Job No: 62436	
Client: LAHC	
Version: R01 Rev A	Date 25/03/2022
Drawn By: JA/RF	Checked By: AS

Scale 1:5,000

0 75 150

metres

Coord. Sys. GDA 1994 MGA Zone 56

Stages 12 and 13, Tarlington Pde and Bonnyrigg Ave Bonnyrigg, NSW

SITE LOCATION

FIGURE 1

File Name: \\JBSG-NSW-FS01\Company Data\Projects\LAHC\62436 Bonnyrigg Stage 12 and 13\GIS\Maps\R01 Rev A\62436_01_SiteLocation.mxd
Reference: Nearmap - www.nearmap.com.au (Capture Date: 17/10/2021) and © OpenStreetMap (and) contributors, CC-BY-SA

Legend

- Approximate Site Boundary
- NSW Cadastre (DFSI, 2022)
- Site Features

JBS&G

Job No: 62436	
Client: LAHC	
Version: R01 Rev A	Date 25/03/2022
Drawn By: JA/RF	Checked By: AS
Scale 1:2,500	

0 30 60
metres

Coord. Sys. GDA 1994 MGA Zone 56

Stages 12 and 13,
Tarlington Pde and Bonnyrigg Ave
Bonnyrigg, NSW

SITE LAYOUT

FIGURE 2

File Name: \\JBSG-NSW-FS01\Company Data\Projects\LAHC\62436 Bonnyrigg Stage 12 and 13\GIS\Maps\R01 Rev A\62436_02_SiteLayout.mxd
Reference: Nearmap - www.nearmap.com.au (Capture Date: 17/10/2021) and

Legend

- Approximate Site Boundary
- NSW Cadastre (DFSI, 2022)

Sample Location

- Soil, JBS 2008
- ACM Impact

JBS&G

Job No: 62436	
Client: LAHC	
Version: R01 Rev A	Date 25/03/2022
Drawn By: RF	Checked By: AS
Scale 1:2,500	

0 25 50
metres

Coord. Sys. GDA 1994 MGA Zone 56

Stages 12 and 13,
Tarlington Pde and Bonnyrigg Ave
Bonnyrigg, NSW

HISTORICAL SAMPLE LOCATIONS

FIGURE 3

File Name: \\JBSG-NSW-FS01\Company Data\Projects\LAHC\62436 Bonnyrigg Stage 12 and 13\GIS\Maps\R01 Rev A\62436_03_Historical_Sample_Locations.mxd
Reference: Nearmap - www.nearmap.com.au (Capture Date: 17/10/2021) and

Legend

- Approximate Site Boundary
- NSW Cadastre (DFSI, 2022)

Historic Sample Location

- Soil, JBS 2008
- Soil, JBS&G 2022

Sample Location

- Test Pit, JBS&G 2022
- AF/FA Impact
- ACM Impact

JBS&G

Job No: 62436	
Client: LAHC	
Version: R01 Rev A	Date 25/03/2022
Drawn By: RF	Checked By: AS

Scale 1:2,500

0 25 50
metres

Coord. Sys. GDA 1994 MGA Zone 56

Stages 12 and 13,
Tarlington Pde and Bonnyrigg Ave
Bonnyrigg, NSW

SAMPLE LOCATIONS

FIGURE 4

File Name: \\JBSG-NSW-FS01\Company Data\Projects\LAHC\62436 Bonnyrigg Stage 12 and 13\GIS\Maps\R01 Rev A\62436_04_Sample_Locations.mxd
Reference: Nearmap - www.nearmap.com.au (Capture Date: 17/10/2021) and

Tables

Soil Analytical Table
Project Number: 62436
Project Name: Bonnyrigg Stage 12 and 13

			Metals & Metalloids								TPHs (NEPC 1999)					TRHs (NEPC 2013)							BTEXN						PAH							
			Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Sum of Total)	C6-C10	C10-C16	C16-C34	C34-C40	C10-C40 (Sum of total)	F1 (C6-C10 minus BTEX)	F2 (C10-C16 less Naphthalene)	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(a)pyrene TEQ (LOR)	Benzo(a)pyrene TEQ calc (Half)	Benzo(a)pyrene TEQ calc (Zero)	Benzo[b+j]fluoranthene	Benzo[g,h,i]perylene	Benzo(k)fluoranthene
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			2	0.4	5	5	5	0.1	5	5	20	20	50	50	50	20	50	100	100	100	20	50	0.1	0.1	0.1	0.1	0.2	0.3	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
NEPM 2013 Site Specific EIL - Urban Residential and Public Open Space			100		410	220	1100		240	620																													
NEPM 2013 ESLs for Urban Res, Fine Soil																		1300	5600		180	120	65	105	125			45					0.7						
CRC Care 2011 Vapour Intrusion HSL-B Residential (High Density), Clay																50	280						0.7	480	NL			110											
CRC Care 2011 Vapour Intrusion HSL-C Recreational / Open Space, Clay																NL	NL						NL	NL	NL			NL											
CRC Care 2011 Vapour Intrusion Intrusive Maintenance Worker, Clay																NL	NL						350	NL	NL			NL											
NEPM 2013 HILs Res B Soil			500	150	500	30000	1200	120	1200	60000																							4	4	4			
NEPM 2013 Res A/B Soil HSL for Vapour Intrusion, Clay																					50	280	0.7	480	NL			110											
NEPM 2013 Management Limits in Res / Parkland, Fine Soil																800	1000	3500	10000																				
NEPM 2013 Res B Soil HSL for Asbestos in Soil																																							
NSW 2014 General Solid Waste CT1 (No Leaching)			100	20	100		100	4	40		650				10000								10	288	600			1000					0.8						
Sample ID	**Lab Report Number**	**Date**																																					
TP01 0-1	868012	1/03/2022	17	<0.4	36	32	39	<0.1	26	100	<20	<20	<50	62	62	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	<0.5
TP02 0-0.1	868012	1/03/2022	5.9	<0.4	14	13	30	<0.1	7	67	<20	25	51	<50	76	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	<0.5
TP03 0.4-0.5	868012	1/03/2022	21	<0.4	43	21	22	<0.1	14	25	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	<0.5
TP03 0-0.1	868012	1/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP04 0-0.1	868012	1/03/2022	16	<0.4	36	20	18	<0.1	8.9	15	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	<0.5
TP05 0-0.1	868012	1/03/2022	14	<0.4	30	25	26	<0.1	9.5	32	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	<0.5
QA01	290072	1/03/2022	12	<0.4	18	20	32	0.1	5	23	<25	<50	<100	<100	<50	<25	<50	<100	<100	<50	<25	<50	<0.2	<0.5	<1	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.5	<0.5	<0.5	-	<0.1	-
QC01	868012	1/03/2022	11	<0.4	17	17	24	<0.1	7	28	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	<0.5
TP06 0-0.1	868012	1/03/2022	4.8	<0.4	11	14	19	<0.1	<5	49	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	<0.5
TP07 0.2-0.3	868012	1/03/2022	11	<0.4	26	23	18	<0.1	31	76	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	<0.5
TP08 0-0.1	868012	1/03/2022	25	0.4	38	62	70	<0.1	14	84	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	<0.5
TP09 0-0.1	868012	1/03/2022	36	<0.4	59	61	88	<0.1	30	150	<20	<20	<50	51	51	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	<0.5
TP10 0-0.1	868012	1/03/2022	23	<0.4	43	21	31	<0.1	11	49	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	<0.5
TP11 0.4-0.5	868012	1/03/2022	12	<0.4	34	37	32	<0.1	21	88	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	<0.5
TP11 0.6-0.7	868012	1/03/2022	8.7	<0.4	22	29	18	<0.1	8.2	49	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	<0.5
TP11 0-0.1	868012	1/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP12 0-0.1	868012	1/03/2022	2.2	<0.4	9.8	12	26	0.1	6.4	44	<20	31	120	82	233	<20	<50	170	<100	170	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	<0.5
TP13 0-0.1	868012	1/03/2022	8.3	<0.4	22	26	25	<0.1	21	63	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	<0.5
TP14 0-0.1	868012	1/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Soil Analytical Table
Project Number: 62436
Project Name: Bonnyrigg Stage 12 and 13

											Organochlorine Pesticides																						Polychlorinated Biphenyls					
	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	PAHs (Sum of total)	4,4-DDE	a-BHC	b-BHC	d-BHC	g-BHC (Lindane)	Aldrin	Dieldrin	Aldrin + Dieldrin	Chlordane	DDT	DDD	DDT+DDE+DDD	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	Heptachlor	Heptachlor Epoxide	Methoxychlor	Toxaphene	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.5	0.1	0.1	0.1	0.1	0.1	0.1
NEPM 2013 Site Specific EIL - Urban Residential and Public Open Space						170													180																		
NEPM 2013 ESLs for Urban Res, Fine Soil																																					
CRC Care 2011 Vapour Intrusion HSL-B Residential (High Density), Clay						5																															
CRC Care 2011 Vapour Intrusion HSL-C Recreational / Open Space, Clay						NL																															
CRC Care 2011 Vapour Intrusion Intrusive Maintenance Worker, Clay						NL																															
NEPM 2013 HILs Res B Soil									400								10	90			600				20			10		500	30						
NEPM 2013 Res A/B Soil HSL for Vapour Intrusion, Clay						5																															
NEPM 2013 Management Limits in Res / Parkland, Fine Soil																																					
NEPM 2013 Res B Soil HSL for Asbestos in Soil																																					
NSW 2014 General Solid Waste CT1 (No Leaching)																																					

Sample ID	Lab Report Number	Date																																					
TP01 0-1	868012	1/03/2022	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP02 0-0.1	868012	1/03/2022	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP03 0.4-0.5	868012	1/03/2022	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP03 0-0.1	868012	1/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP04 0-0.1	868012	1/03/2022	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP05 0-0.1	868012	1/03/2022	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
QA01	290072	1/03/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<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	<0.1	<0.1	<0.1	<0.1
QC01	868012	1/03/2022	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP06 0-0.1	868012	1/03/2022	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP07 0.2-0.3	868012	1/03/2022	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP08 0-0.1	868012	1/03/2022	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP09 0-0.1	868012	1/03/2022	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.57	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	0.57	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP10 0-0.1	868012	1/03/2022	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP11 0.4-0.5	868012	1/03/2022	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	1.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP11 0.6-0.7	868012	1/03/2022	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP11 0-0.1	868012	1/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP12 0-0.1	868012	1/03/2022	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP13 0-0.1	868012	1/03/2022	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.11	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	0.11	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP14 0-0.1	868012	1/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Soil Analytical Table
Project Number: 62436
Project Name: Bonnyrigg Stage 12 and 13

					Asbestos								
	Arochlor 1260	PCBs (Sum of total)	Hexachlorobenzene	Asbestos from ACM in Soil	Asbestos from FA & AF in Soil	ACM - Comment	FA- Comment	AF - Comment	Organic Fibres - Comment	Respirable Fibres - Comment	Synthetic Fibres - Comment
	mg/kg	mg/kg	mg/kg	% (w/w)	% (w/w)	Comment	Comment	Comment	Comment	Comment	Comment
EQL	0.1	0.1	0.05								
NEPM 2013 Site Specific EIL - Urban Residential and Public Open Space											
NEPM 2013 ESLs for Urban Res, Fine Soil											
CRC Care 2011 Vapour Intrusion HSL-B Residential (High Density), Clay											
CRC Care 2011 Vapour Intrusion HSL-C Recreational / Open Space, Clay											
CRC Care 2011 Vapour Intrusion Intrusive Maintenance Worker, Clay											
NEPM 2013 HILs Res B Soil		1	15								
NEPM 2013 Res A/B Soil HSL for Vapour Intrusion, Clay											
NEPM 2013 Management Limits in Res / Parkland, Fine Soil											
NEPM 2013 Res B Soil HSL for Asbestos in Soil				0.04	0.001						
NSW 2014 General Solid Waste CT1 (No Leaching)		<50									

Sample ID	Lab Report Number	Date										
TP01 0-1	868012	1/03/2022	<0.1	<0.1	<0.05	0	0	Nil	Nil	Nil	Organic fibres detected	No trace asbestos	Nil
TP02 0-0.1	868012	1/03/2022	<0.1	<0.1	<0.05	0	0	Nil	Nil	Nil	Organic fibres detected	No trace asbestos	Nil
TP03 0.4-0.5	868012	1/03/2022	<0.1	<0.1	<0.05	-	-	-	-	-	-	-	-
TP03 0-0.1	868012	1/03/2022	-	-	-	0	0	Nil	Nil	Nil	Organic fibres detected	No trace asbestos	Nil
TP04 0-0.1	868012	1/03/2022	<0.1	<0.1	<0.05	0	0	Nil	Nil	Nil	Organic fibres detected	No trace asbestos	Nil
TP05 0-0.1	868012	1/03/2022	<0.1	<0.1	<0.05	0	0.0014	Nil	**FA: Chrysotile & Amosite Asbestos**	**AF: Chrysotile Asbestos in loose fibre bundles**	Organic fibres detected	No trace asbestos	Nil
QA01	290072	1/03/2022	<0.1	<0.1	<0.1	0	0	-	-	-	-	-	-
QC01	868012	1/03/2022	<0.1	<0.1	<0.05	0	0	Nil	Nil	Nil	Organic fibres detected	No trace asbestos	Nil
TP06 0-0.1	868012	1/03/2022	<0.1	<0.1	<0.05	0	0	Nil	Nil	Nil	Organic fibres detected	No trace asbestos	Nil
TP07 0.2-0.3	868012	1/03/2022	<0.1	<0.1	<0.05	0	0	Nil	Nil	Nil	Organic fibres detected	No trace asbestos	Nil
TP08 0-0.1	868012	1/03/2022	<0.1	<0.1	<0.05	0	0	Nil	Nil	Nil	Organic fibres detected	No trace asbestos	Nil
TP09 0-0.1	868012	1/03/2022	<0.1	<0.1	<0.05	-	-	-	-	-	-	-	-
TP10 0-0.1	868012	1/03/2022	<0.1	<0.1	<0.05	0	0	Nil	Nil	Nil	Organic fibres detected	No trace asbestos	Nil
TP11 0.4-0.5	868012	1/03/2022	<0.1	<0.1	<0.05	0	0	Nil	Nil	Nil	Organic fibres detected	No trace asbestos	Nil
TP11 0.6-0.7	868012	1/03/2022	<0.1	<0.1	<0.05	-	-	-	-	-	-	-	-
TP11 0-0.1	868012	1/03/2022	-	-	-	0	0	Nil	Nil	Nil	Organic fibres detected	No trace asbestos	Nil
TP12 0-0.1	868012	1/03/2022	<0.1	<0.1	<0.05	0	0	Nil	Nil	Nil	Organic fibres detected	No trace asbestos	Nil
TP13 0-0.1	868012	1/03/2022	<0.1	<0.1	<0.05	0	0	Nil	Nil	Nil	Organic fibres detected	No trace asbestos	Nil
TP14 0-0.1	868012	1/03/2022	-	-	-	0	0	Nil	Nil	Nil	Organic fibres detected	No trace asbestos	Nil

Appendix A Photographic Log

PHOTO 1: END OF COWDREY WAY FACING EAST, WIDE STREETS AND CONCRETE SLAB ROADS

PHOTO 2: END OF BARRACLOUGH WAY FACING SOUTH, OPEN SPACES AND ANTHROPOGENIC MATERIALS

PHOTO 3: END OF PRIDDLE WAY FACING EAST, SHALLOW GUTTERS

PHOTO 4: OPEN SPACE AT NORTH END OF BARRACLOUGH WAY, PHOTO FACING SOUTHEAST

JBS&G

Job No: 62436	
Client: LAHC	
Version: R01	Date: 03/03/2022
Drawn By: DNO	Checked By: AS
Not to Scale	
Coord. Sys n/a	

Corner of Tarlington Parade and Barraclough Way, Bonnyrigg, 2177, NSW

APPENDIX A

PHOTO 5: PROPERTY LAYOUT AND CONSTRUCTION, BARRACLOUGH WAY, FACING SOUTH

PHOTO 6: RED BRICK STRUCTURE WITH FIBRO EVES

PHOTO 7: RED BRICK AND WEATHERBOARD STRUCTURE

PHOTO 8: RED BRICK STRUCTURE SURROUNDED BY TIMBER FENCING

JBS&G

Job No: 62436

Client: LAHC

Version: R01	Date: 03/03/2022
Drawn By: DNO	Checked By: AS

Not to Scale

Coord. Sys n/a

Corner of Tarlington Parade and Barraclough Way, Bonnyrigg, 2177, NSW

APPENDIX A

PHOTO 9: TP02_0-0.1: FILL LAYER (CLAY)

PHOTO 10: TP02_0.4-0.5: NATURAL LAYER (CLAY)

PHOTO 11: TP03_0-0.1: FILL LAYER (CLAY)

PHOTO 12: TP03_0.4-0.5: NATURAL LAYER (CLAY)

JBS&G

Job No: 62436

Client: LAHC

Version: R01 | Date: 03/03/2022

Drawn By: DNO | Checked By: AS

Not to Scale

Coord. Sys n/a

Corner of Tarlington Parade and Barraclough Way, Bonnyrigg, 2177, NSW

APPENDIX A

Appendix B Groundwater Bore Search

WaterNSW
Work Summary

GW109724

Licence:
Licence Status:
Authorised Purpose(s):
Intended Purpose(s): MONITORING BORE

Work Type: Well
Work Status:
Construct.Method:
Owner Type: Private

Commenced Date:
Completion Date: 14/10/2003
Final Depth: 15.00 m
Drilled Depth: 15.00 m

Contractor Name: IT ENVIRONMENTAL
Driller: Craig Williams
Assistant Driller:

Property:
GWMA:
GW Zone:
Standing Water Level (m):
Salinity Description:
Yield (L/s):

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	CUMBERLAND	ST LUKE	9876//839367
Licensed:			

Region: 10 - Sydney South Coast
River Basin: - Unknown
Area/District:
CMA Map:
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown
Northing: 6248681.000
Easting: 305056.000
Latitude: 33°53'03.2"S
Longitude: 150°53'31.4"E

GS Map: -
MGA Zone: 56
Coordinate Source: Unknown

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	15.00	100			Unknown
1	1	Casing	Pvc Class 18	0.00	5.50	50	49		

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	0.10	0.10	CONCRETE SLAB	Conglomerate	
0.10	0.20	0.10	FILL BROWN,MOIST,LOOSE,NO ODOUR	Fill	
0.20	1.00	0.80	SHALE,SIKLTY CLAY,GREY AND IRONISH RED,FIRM,NO ODOUR	Shale	
1.00	5.00	4.00	SHALE,GREY,SOME SILTY CLAY AND GRAVEL,FIRM TO STIFF	Shale	
5.00	15.00	10.00	SHALE DARK GREY,STIFF,DRY,NO ODOUR.	Shale	

***** End of GW109724 *****

WaterNSW
Work Summary

GW109725

Licence:
Licence Status:
Authorised Purpose(s):
Intended Purpose(s): MONITORING BORE

Work Type: Well
Work Status:
Construct.Method:
Owner Type: Private

Commenced Date:
Completion Date: 14/10/2003
Final Depth: 25.00 m
Drilled Depth: 25.00 m

Contractor Name: IT ENVIRONMENTAL
Driller: Craig Williams
Assistant Driller:

Property:
GWMA:
GW Zone:
Standing Water Level (m):
Salinity Description:
Yield (L/s):

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	CUMBERLAND	ST LUKE	9876//839367
Licensed:			

Region: 10 - Sydney South Coast
River Basin: - Unknown
Area/District:
CMA Map:
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown
Northing: 6248702.000
Easting: 305051.000
Latitude: 33°53'02.5"S
Longitude: 150°53'31.2"E

GS Map: -
MGA Zone: 56
Coordinate Source: Unknown

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	25.00	100			Unknown
1	1	Casing	Pvc Class 18	0.00	3.00	50			

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	0.10	0.10	CONCRETE SLAB	Conglomerate	
0.10	0.20	0.10	FILL,BROWN,LOOSE,MOIST NO ODOUR	Fill	
0.20	0.50	0.30	SHALE,SILTY CLAY,GREY AND IRONISH RED,FIRM,MOIST,NO ODOUR	Shale	
0.50	4.00	3.50	SHALE,GREY AND IRONISH,RED,FIRM,DAM TO DRY,NO ODOUR	Shale	
4.00	14.00	10.00	SHALE,DARK GREY,STIFF,DRY,NO ODOUR	Shale	
14.00	14.10	0.10	CLAY,GREY,FIRM,DAMP,NO ODOUR	Clay	
14.10	25.00	10.90	SHALE,DARK GREY,STIFF,DRY,NO ODOUR.	Shale	

***** End of GW109725 *****

WaterNSW
Work Summary

GW109726

Licence:
Licence Status:
Authorised Purpose(s):
Intended Purpose(s): MONITORING BORE

Work Type: Well
Work Status:
Construct.Method:
Owner Type: Private

Commenced Date:
Completion Date: 14/10/2003
Final Depth: 8.00 m
Drilled Depth: 8.00 m

Contractor Name: IT ENVIRONMENTAL
Driller: Craig Williams
Assistant Driller:

Property:
GWMA:
GW Zone:
Standing Water Level (m):
Salinity Description:
Yield (L/s):

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	CUMBERLAND	ST LUKE	9876//839367
Licensed:			

Region: 10 - Sydney South Coast
River Basin: - Unknown
Area/District:
CMA Map:
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown
Northing: 6248713.000
Easting: 305016.000
Latitude: 33°53'02.1"S
Longitude: 150°53'29.9"E

GS Map: -
MGA Zone: 56
Coordinate Source: Unknown

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	8.00	100			Unknown
1	1	Casing	Pvc Class 18	0.00	1.52	50			

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	1.00	1.00	TOPSOIL,YELLOWISH BROWN,COMPACT,DAMP,NO ODOUR.	Topsoil	
1.00	4.00	3.00	SHALE,LITTLE SILTY CLAY,GREY AND IRONISH RED,FIRM,DAMP,NO ODOUR	Shale	
4.00	6.00	2.00	SHALE,GREY,STIF,DRY, NO ODOUR.	Shale	
6.00	8.00	2.00	SHALE,DARK GREY,STIFF,DRY,NO ODOUR.	Shale	

***** End of GW109726 *****

WaterNSW
Work Summary

GW109727

Licence:
Licence Status:
Authorised Purpose(s):
Intended Purpose(s): MONITORING BORE

Work Type: Well
Work Status:
Construct.Method:
Owner Type: Private

Commenced Date:
Completion Date: 14/10/2003
Final Depth: 16.00 m
Drilled Depth: 16.00 m

Contractor Name: IT ENVIRONMENTAL
Driller: Craig Williams
Assistant Driller:

Property:
GWMA:
GW Zone:
Standing Water Level (m):
Salinity Description:
Yield (L/s):

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	CUMBERLAND	ST LUKE	9876//839367
Licensed:			

Region: 10 - Sydney South Coast
River Basin: - Unknown
Area/District:
CMA Map:
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown
Northing: 6248718.000
Easting: 305031.000
Latitude: 33°53'02.0"S
Longitude: 150°53'30.5"E

GS Map: -
MGA Zone: 56
Coordinate Source: Unknown

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	16.00	100			Unknown
1	1	Casing	Pvc Class 18	0.00	10.50	50			

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	0.10	0.10	CONCRETE SLAB	Conglomerate	
0.10	1.00	0.90	FILL,BROWN,LOOSE,MOIST,NO ODOUR	Fill	
1.00	3.00	2.00	SHALE,SILTY CLAY,GREY AND IRONISH RED,DAMP,NO ODOUR	Shale	
3.00	7.00	4.00	SHALE,GREY,STIFF,DRY,NO ODOUR	Shale	
7.00	16.00	9.00	SHALE,DARK GREY,STIFF,DRY,NO ODOUR.	Shale	

***** End of GW109727 *****

WaterNSW
Work Summary

GW109728

Licence:
Licence Status:
Authorised Purpose(s):
Intended Purpose(s): MONITORING BORE

Work Type: Well
Work Status:
Construct.Method:
Owner Type: Private

Commenced Date:
Completion Date: 16/10/2003
Final Depth: 9.00 m
Drilled Depth: 9.00 m

Contractor Name: IT ENVIRONMENTAL
Driller: Craig Williams
Assistant Driller:

Property:
GWMA:
GW Zone:
Standing Water Level (m):
Salinity Description:
Yield (L/s):

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	CUMBERLAND	ST LUKE	9876//839367
Licensed:			

Region: 10 - Sydney South Coast
River Basin: - Unknown
Area/District:
CMA Map:
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown
Northing: 6248714.000
Easting: 305034.000
Latitude: 33°53'02.1"S
Longitude: 150°53'30.6"E

GS Map: -
MGA Zone: 56
Coordinate Source: Unknown

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	9.00	100			Unknown
1	1	Casing	Pvc Class 18	0.00	2.00	50			

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	0.10	0.10	CONCRETE SLAB	Conglomerate	
0.10	1.00	0.90	FILL, BROWN,MOIST,LOOSE,NO ODOUR,SAND,SILTY CLAY	Fill	
1.00	3.00	2.00	SILTY CLAY,SHALE,GREY AND IRONISH RED, DAMP,FIRM,NO ODOUR	Silty Clay	
3.00	7.00	4.00	SHALE,GREY,STIFF,DRY,NO ODOUR.	Shale	
7.00	9.00	2.00	SHALE,DARK GREY, STIFF,DRY,NO ODOUR.	Shale	

***** End of GW109728 *****

WaterNSW
Work Summary

GW115042

Licence: 10BL605197
Licence Status: ACTIVE

Authorised Purpose(s): MONITORING BORE
Intended Purpose(s): MONITORING BORE

Work Type: Bore
Work Status: Equipped
Construct.Method:
Owner Type: Private

Commenced Date:
Completion Date: 28/08/2015
Final Depth: 6.00 m
Drilled Depth: 6.00 m

Contractor Name: Tightsight Investigations
Driller: Ian David Drever
Assistant Driller:

Property: CALTEX - BONNYRIGG 709
Cabramatta Road West
BONNYRIGG 2177 NSW
GWMA: -
GW Zone: -
Standing Water Level (m): 1.200
Salinity Description:
Yield (L/s):

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	CUMBERLAND	ST LUKE	507//853006
Licensed:	CUMBERLAND	ST LUKE	Whole Lot 507//853006

Region: 10 - Sydney South Coast
River Basin: - Unknown
Area/District:
CMA Map:
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown
Northing: 6247712.000
Easting: 305125.000
Latitude: 33°53'34.7"S
Longitude: 150°53'33.3"E

GS Map: -
MGA Zone: 56
Coordinate Source: Unknown

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	6.00	0			Unknown
1	1	Casing	P.V.C.	0.00	0.00	75			
1	1	Opening	Slots	3.00	6.00			0	PVC

Remarks

28/08/2015: Form A Remarks:
Coordinates provided by LAS.
14/09/2015: Nat Carling, 14-Sept-2015; Added coordinate source & drilled depth, updated drill method.

***** End of GW115042 *****

WaterNSW
Work Summary

GW107912

Licence: 10WA109019
Licence Status: CURRENT

Authorised Purpose(s): DOMESTIC
Intended Purpose(s): DOMESTIC

Work Type: Bore
Work Status: Supply Obtained
Construct.Method: Down Hole Hamm
Owner Type: Private

Commenced Date:
Completion Date: 02/12/2005
Final Depth: 350.00 m
Drilled Depth: 350.00 m

Contractor Name: Ultra Drilling
Driller: Bradley Alan Dodd
Assistant Driller:

Property: LUKE 92-104 Kalang Rd EDENSOR PARK 2176 NSW
GWMA: -
GW Zone: -
Standing Water Level (m):
Salinity Description:
Yield (L/s): 0.840

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	CUMBERLAND	ST LUKE	1 732322
Licensed:	CUMBERLAND	ST LUKE	Whole Lot 3//1228593

Region: 10 - Sydney South Coast
River Basin: - Unknown
Area/District:
CMA Map:
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown
Northing: 6248641.000
Easting: 303445.000
Latitude: 33°53'03.4"S
Longitude: 150°52'28.7"E

GS Map: -
MGA Zone: 56
Coordinate Source: GIS - Geogra

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	132.00	170			Down Hole Hammer
1		Hole	Hole	132.00	350.00	140			Down Hole Hammer

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)
117.00	118.00	1.00	Unknown			0.15		00:05:00	10000.00
144.00	150.00	6.00	Unknown			0.69		01:00:00	6290.00

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	132.00	132.00	shale	Shale	
132.00	150.00	18.00	sandstone	Sandstone	
150.00	204.00	54.00	sandstone, shale bands	Sandstone	
204.00	240.00	36.00	sandstone	Sandstone	
240.00	246.00	6.00	sandstone, shale	Sandstone	

246.00	300.00	54.00	sandstone,	Sandstone	
300.00	320.00	20.00	sandstone, shale bands	Sandstone	
320.00	330.00	10.00	shale	Shale	
330.00	350.00	20.00	sandstone	Sandstone	

Remarks

02/12/2005: Form A Remarks:
back fill with cutting to 132m bendonite seal, then cutting to top of hole
21/04/2010: updated from original form A

***** End of GW107912 *****

Appendix C EPA Searches

Search results

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

Suburb - bonnyrigg

returned 0 result

Search Again

For business and industry

For local government

Contact us

131 555 (tel:131555)

Online (https://yoursay.epa.nsw.gov.au/epa-website-feedback)

info@epa.nsw.gov.au (mailto:info@epa.nsw.gov.au)

EPA Office Locations (https://www.epa.nsw.gov.au/about-us/contact-us/locations)

Find us on

Site and notice details

Your search for: Suburb: BONNYRIGG 3 notices on 1 site were matched.
Return to list of search results Search Again Refine Search

Area No: 3400

The information below was correct at the time the notices were issued.

Site: Metro (Formerly United & AP SAVER) Service Station Bonnyrigg
Address: 709 Cabramatta (W) ROAD, BONNYRIGG
LGA: FAIRFIELD

Occupier: DJS Group Australia Pty Ltd
Owner: Mandaean Pty Ltd

Notices relating to this site (0 current and 3 former)

(Map) where available, maps show the part of the site affected by the notice
*notice matched search criteria

Notice recipient	Notice type & number	Status	Date
Mandaean Pty Ltd	Amendment or Repeal of Order or Notice * 20194434	Former	Issued 24 Sep 2019
Mandaean Pty Ltd	Amendment or Repeal of Order or Notice * 20164419	Former	Issued 05 Jul 2016
Mandaean Pty Ltd	Preliminary Investigation Order * 20161002	Former	Issued 23 Jun 2016

1 March 2022

Background

A strategy to systematically prioritise, assess and respond to notifications under Section 60 of the ***Contaminated Land Management Act 1997*** (CLM Act) has been developed by the EPA. This strategy acknowledges the EPA's obligations to make information available to the public under ***Government Information (Public Access) Act 2009*** .

When a site is notified to the EPA, it may be accompanied by detailed site reports where the owner has been proactive in addressing the contamination and its source. However, often there is minimal information on the nature or extent of the contamination.

After receiving a report, the first step is to confirm that the report does not relate to a pollution incident. The Protection of the Environment Operations Act 1997 (POEO Act) deals with pollution incidents, waste stockpiling or dumping. The EPA also has an incident management process to manage significant incidents (https://www.epa.nsw.gov.au/reporting-and-incidents/incident-management).

In many cases, the information indicates the contamination is securely immobilised within the site, such as under a building or carpark, and is not currently causing any significant risks for the community or environment. Such sites may still need to be cleaned up, but this can be done in conjunction with any subsequent building or redevelopment of the land. These sites do not require intervention under the CLM Act, and are dealt with through the planning and development consent process. In these cases, the EPA informs the local council or other planning authority, so that the information can be recorded and considered at the appropriate time (https://www.epa.nsw.gov.au/your-environment/contaminated-land/managing-contaminated-land/role-of-planning-authorities).

Where indications are that the contamination could cause actual harm to the environment or an unacceptable offsite impact (i.e. the land is 'significantly contaminated'), the EPA would apply the regulatory provisions of the CLM Act to have the responsible polluter and/or landowner investigate and remediate the site. If the reported contamination could present an immediate or long-term threat to human health NSW Health will be consulted. SafeWork NSW and Water NSW can also be consulted if there appear to be occupational health and safety risks or an impact on groundwater quality.

As such, the sites notified to the EPA and presented in the list of contaminated sites notified to the EPA are at various stages of the assessment and remediation process. Understanding the nature of the underlying contamination, its implications and implementing a remediation program where required, can take a considerable period of time. The list provides an indication, in relation to each nominated site, as to the management status of that particular site. Further detailed information may be available from the EPA or the person who notified the site.

The following questions and answers may assist those interested in this issue.

Frequently asked questions

Why does my land appear on the list of notified sites?

Your land may appear on the list because:

• the site owner and/or the polluter has notified the EPA under section 60 of the CLM Act
• the EPA has been notified via other means and is satisfied that the site is or was contaminated.

If a site is on the list, it does not necessarily mean the contamination is significant enough to regulate under the CLM Act.

Does the list contain all contaminated sites in NSW?

No. The list only contains contaminated sites that EPA is aware of. If a site is not on the list, it does not necessarily mean the site is not contaminated.

The EPA relies on responsible parties and the public to notify contaminated sites.

How are notified contaminated sites managed by the EPA?

There are different ways the EPA can manage notified contaminated sites. Options include:

• regulation under the CLM Act, POEO Act, or both
• notifying the relevant planning authority for management under the planning and development process
• managing the site under the Protection of the Environment Operation (Underground Petroleum Storage Systems) Regulation 2014.

There are specific cases where contamination is managed under a tailored program operated by another agency (for example, the Resources & Geoscience's Legacy Mines Program).

What should I do if I am a potential buyer of a site that appears on the list?

You should seek advice from the seller to understand the contamination issue. You may need to seek independent contamination or legal advice.

The information provided in the list is indicative only and a starting point for your own assessment. Land contamination from past site uses is common, mainly in urban environments. If the site is properly remediated or managed, it may not affect the intended future use of the site.

Who can I contact if I need more information about a site?

You can contact the Environment Line at any time by calling 131 555 or by emailing info@environment.nsw.gov.au.

List of NSW Contaminated Sites Notified to the EPA

Disclaimer

The EPA has taken all reasonable care to ensure that the information in the list of contaminated sites notified to the EPA (the list) is complete and correct. The EPA does not, however, warrant or represent that the list is free from errors or omissions or that it is exhaustive.

The EPA may, without notice, change any or all of the information in the list at any time.

You should obtain independent advice before you make any decision based on the information in the list.

The list is made available on the understanding that the EPA, its servants and agents, to the extent permitted by law, accept no responsibility for any damage, cost, loss or expense incurred by you as a result of:

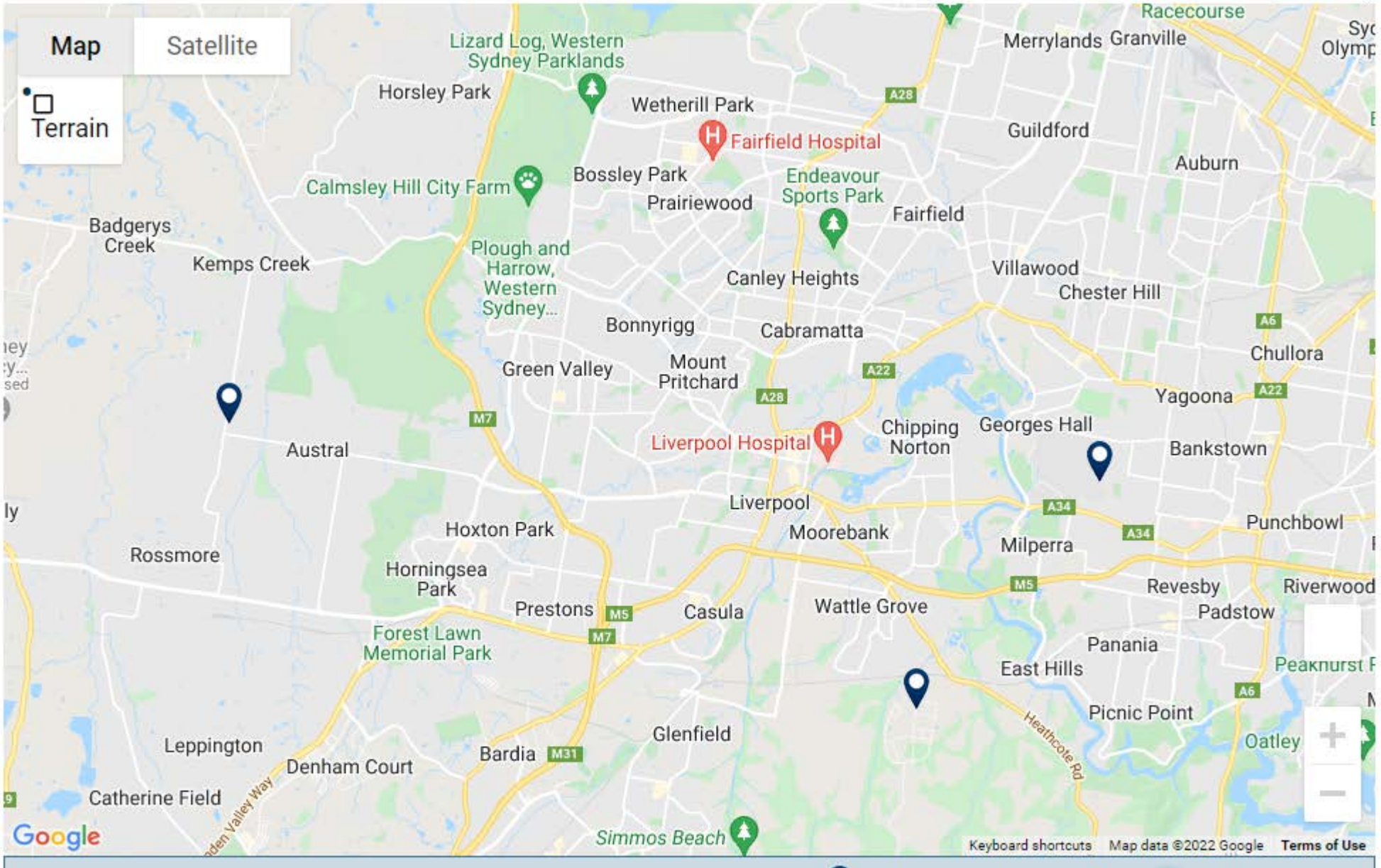
1. any information in the list; or
2. any error, omission or misrepresentation in the list; or
3. any malfunction or failure to function of the list;
4. without limiting (2) or (3) above, any delay, failure or error in recording, displaying or updating information.

Site Status	Explanation
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*.
Under Preliminary Investigation Order	The EPA has issued a Preliminary Investigation Order under s10 of the *Contaminated Land Management Act 1997*, to obtain additional information needed to complete the assessment.
Regulation under 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.

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.
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.
Contamination currently regulated under POEO Act	Contamination is currently regulated under the Protection of the Environment Operations Act 1997 (POEO Act). The EPA as the appropriate regulatory authority reasonably suspects that a pollution incident is occurring/ has occurred and that it requires regulation under the POEO Act. The EPA may use environment protection notices, such as clean up notices, to require clean up action to be taken. Such regulatory notices are available on the POEO public register.
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 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.

Suburb	SiteName	Address	ContaminationActivityType	ManagementClass	Latitude	Longitude
BONNY HILLS	Bonny View Store	923 Ocean DRIVE	Service Station	Regulation under CLM Act not required	-31.59075636	152.8392935
BONNYRIGG	Metro (Formerly United & AP SAVER) Service Station Bonnyrigg	709 Cabramatta (W) ROAD	Service Station	Regulation under CLM Act not required	-33.89297085	150.8925935
BONNYRIGG HEIGHTS	BP-Branded Service Station Bonnyrigg	451 North Liverpool ROAD	Service Station	Regulation under CLM Act not required	-33.89416327	150.8578378
BOOLAROO	Cardiff West Estate - Pasminco Cockle Creek	Adjacent to PCC Smelter at 13A Main ROAD	Metal Industry	Regulation under CLM Act not required	-32.93950137	151.6349183
BOOLAROO	Cockle Creek and Cockle Bay Sediments	Off Creek Reserve ROAD	Metal Industry	Contamination currently regulated under CLM Act	-32.96079541	151.6141327
BOOLAROO	Pasminco Cockle Creek Smelter	Lake ROAD	Metal Industry	Ongoing maintenance required to manage residual contamination (CLM Act)	-32.94434593	151.6307345
BOOLAROO	Incitec Pivot	13 Main STREET	Other Industry	Contamination formerly regulated under the CLM Act	-32.94803538	151.6302187
BOOLAROO	Bunnings Site - Pasminco Cockle Creek	13a Main ROAD	Metal Industry	Contamination formerly regulated under the CLM Act	-32.94364503	151.6252316
BOOLAROO	Part Lot 2 DP1127713 (proposed Lot G) - Pasminco Cockle Creek Smelter site	13a Main ROAD	Metal Industry	Contamination formerly regulated under the CLM Act	-32.94404392	151.6267695
BOOLAROO	Lot 600 DP1228699 (formerly Part Lot 2 DP1127713 & proposed 'Lot D') - Pasminco Cockle Creek Smelter site	Main ROAD	Metal Industry	Contamination formerly regulated under the CLM Act	-32.94440875	151.6264143
BOOROWA	Former Mobil Depot	14-16 Brial STREET	Other Petroleum	Regulation under CLM Act not required	-34.43673234	148.7300821
BOOROWA	Mobil Service Station	63-69 Marsden STREET	Service Station	Contamination formerly regulated under the CLM Act	-34.44157331	148.7162391
BOOROWA	Boorowa Service Station	84 Marsden STREET	Service Station	Under assessment	-34.443029	148.715109
BOTANY	Former Aerosols of Australia	1617 Botany ROAD	Chemical Industry	Regulation under CLM Act not required	-33.9529386	151.2037468
BOTANY	Allnex	49-61 Stephen ROAD	Chemical Industry	Contamination currently regulated under CLM Act	-33.9524442	151.2106446
BOTANY	Former Tannery	2 Daniel STREET	Other Industry	Regulation under CLM Act not required	-33.94126194	151.1991087


Map
Satellite
Terrain
Lizard Log, Western Sydney Parklands
Horsley Park
Wetherill Park
Fairfield Hospital
Calmsley Hill City Farm
Bossley Park
Prairiewood
Endeavour Sports Park
Fairfield
Guildford
Auburn
Merrylands
Granville
Racecourse
Badgerys Creek
Kemps Creek
Plough and Harrow, Western Sydney...
Canley Heights
Villawood
Chester Hill
Bonnyrigg
Cabramatta
Chullora
Green Valley
Mount Pritchard
Yagoona
Austral
Liverpool Hospital
Chipping Norton
Georges Hall
Bankstown
Liverpool
Hoxton Park
Moorebank
Punchbowl
Milperra
Rossmore
Horningsea Park
Revesby
Riverwood
Prestons
Casula
Wattle Grove
Padstow
Forest Lawn Memorial Park
Panania
East Hills
Picnic Point
Heathcote Rd
Leppington
Glenfield
Bardia
Denham Court
Oatley
Catherine Field
Simmos Beach
A28
A6
A22
A34
M7
M5
M31
Google
Keyboard shortcuts
Map data ©2022 Google
Terms of Use
PFAS investigation site
Multiple sites

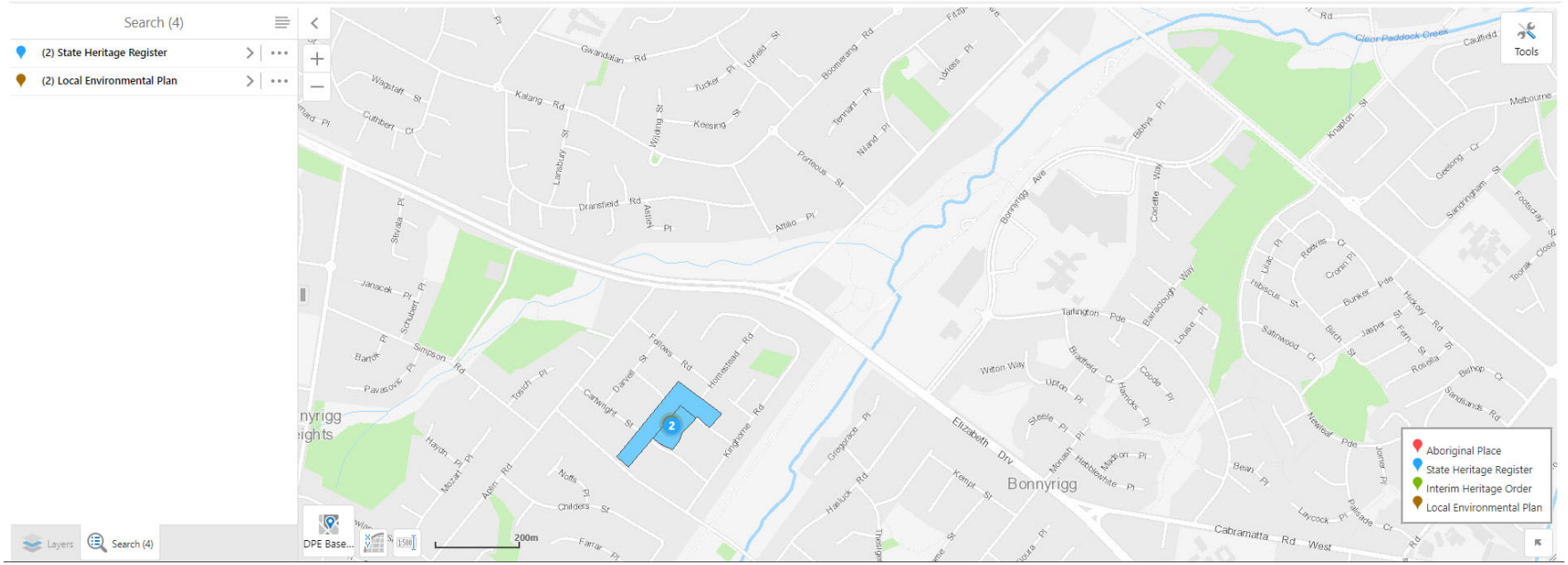
Appendix D Heritage Searches

Search Results

1 result found.

The Homestead Brown Rd	Bonnyrigg Heights, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)

Report Produced: Tue Mar 1 13:43:44 2022


Search (4)
(2) State Heritage Register
(2) Local Environmental Plan
Tools
Aboriginal Place
State Heritage Register
Interim Heritage Order
Local Environmental Plan
Bonnyrigg
Elizabeth Drv
Cabramatta Rd West
Clear Paddock Creek
DPE Base...
200m
Layers
Search (4)

Appendix E Section 10.7 Certificate

24/02/2022

Alison Smith
Level 1, 50 Margaret Street
Sydney
Sydney 2000

Dear Sir/ Madam,

Following is your planning certificate as requested. Should you have any further queries please contact Council on (02) 9725 0821.

PLANNING CERTIFICATE
(under section 10.7 of the Environmental Planning and Assessment Act 1979 as amended)

Applicant:	**Alison Smith**
Certificate No.:	**706/2022**
Applicant's Reference:	**62436**
Issue Date:	**24/02/2022**
Receipt No.:	

PROPERTY ADDRESS:	**56 Tarlington Parade BONNYRIGG NSW 2177**
LEGAL DESCRIPTION:	**Lot: 453 DP: 839627**

Marcus Rowan
MANAGER STRATEGIC LAND USE PLANNING

PLEASE NOTE: This is page 1 of 23. Should this certificate or any subsequent copy not contain this many pages, please confirm with Council prior to acting on the basis of information contained in this certificate under Section 10.7(2) & (5) and inclusive of Flood Information Sheet.

Information provided under
Section 10.7(2) of the Environmental Planning and Assessment Act 1979

Notes:

(1) The following prescribed matters may apply to the land to which this certificate relates.

(2) Where this certificate refers to a specific allotment (or allotments) within a strata plan, the certificate is issued for the whole of the land within the strata plan, not just the specific allotment(s) referred to, and any information contained in the certificate may relate to the whole, or any part, of the strata plan.

(3) The following information is provided pursuant to Section 10.7(2) of the Environmental Planning and Assessment Act 1979 as prescribed by Schedule 4 of the Environmental Planning and Assessment Regulation 2000 and is applicable as at the date of this certificate.

(4) Information provided in this certificate should be interpreted in conjunction with the relevant plans, policies and documents held at Council. In order to obtain copies of these documents you may purchase them by either contacting Council on (02) 9725 0821 or attending Council's Administration Centre at 86 Avoca Road, Wakeley.

1. Names of relevant planning instruments and DCPs

(1) The name of each environmental planning instrument that applies to the carrying out of development on the land.

State Environmental Planning Policies (SEPP)

SEPP (Housing for Seniors or People with a Disability) 2004

SEPP No. 33 - Hazardous and Offensive Development

SEPP (Major Development) 2005

SEPP No. 50 - Canal Estate Development

SEPP No. 55 - Remediation of Land

SEPP No. 64 - Advertising and Signage

SEPP No. 65 - Design Quality of Residential Flat Development

SEPP No. 19 - Bushland in Urban Areas

SEPP (Infrastructure) 2007

SEPP (Exempt and Complying Development Codes) 2008

SEPP (Affordable Rental Housing) 2009

SEPP (State and Regional Development) 2011

SEPP (Primary Production and Rural Development) 2019

SEPP (Mining, Petroleum Production and Extractive Industries) 2007

SEPP (Miscellaneous Consent Provisions) 2007

SEPP No. 21 - Caravan Parks

SEPP (Building Sustainability Index: BASIX) 2004

SEPP (Vegetation in Non-Rural Areas) 2017

SEPP (Educational Establishments and Child Care Facilities) 2017

SEPP (Western Sydney Aerotropolis) 2020

Regional Environmental Plans (Deemed SEPP)

Sydney Regional Environmental Plan No. 9 - Extractive Industry (No 2-1995)
The Greater Metropolitan Regional Environmental Plan No. 2 - Georges River Catchment

Local Environmental Plans (LEP)

Fairfield Local Environmental Plan 2013
Published on NSW Legislation Website: 17/05/2013.
In Force from: 31/05/2013.
As Amended.

(2) The name of each proposed environmental planning instrument that will apply to the carrying out of development on the land and that is or has been the subject of community consultation or on public exhibition under the Act (unless the Director-General has notified the council that the making of the proposed instrument has been deferred indefinitely or has not been approved)

There is no draft SEPP applying to this land.

Fairfield Planning Proposal (LEP Review Stage 2). Public Exhibition period: 02/06/2021 - 30/06/2021. The planning proposal to amend Fairfield Local Environmental Plan 2013 aims to: (1). Rezone certain land and/or amend development standards for certain land in the Fairfield, Cabramatta, Canley Vale and Carramar centres and in adjoining residential areas in Canley Vale and Carramar (if applicable, details are provided in section 2 below); (2). Increase the floor space ratio and height of building under certain circumstances in Zone R3 Medium Density Residential in the eastern part of the City; (3). Amend clause 6.3 Flood Planning and replace clause 6.4 – Floodplain Risk Management with a new standard flood clause 6.4 - Special Flood Considerations; and (4). List four new local heritage items in Schedule 5 Environmental Heritage. Further details on the planning proposal and supporting information can be viewed on the Have My Say, Planning Exhibitions page, by visiting the Fairfield City Council website www.fairfieldcity.nsw.gov.au

(3) The name of each development control plan that applies to the carrying out of development on the land.

The land is subject to adopted Development Control Plans. (See attached schedule).

(4) In this clause, proposed environmental planning instrument includes a planning proposal for a LEP or a draft environmental planning instrument.

2. Zoning and land use under relevant LEP

For each environmental planning instrument or proposed instrument referred to in clause 1 (other than a SEPP or proposed SEPP) that includes the land in any zone (however described):

(a) WHAT IS THE IDENTITY OF THE ZONE?

Zone R1 General Residential

(b) WHAT IS PERMITTED WITHOUT DEVELOPMENT CONSENT?

Environmental protection works; Home-based child care; Home occupations.

(c) WHAT IS PERMITTED ONLY WITH DEVELOPMENT CONSENT?

Attached dwellings; Boarding houses; Centre-based child care facilities; Community facilities; Dwelling houses; Group homes; Hostels; Multi dwelling housing; Neighbourhood shops; Places of public worship; Residential flat buildings; Respite day care centres; Roads; Semi-detached dwellings; Seniors housing; Shop top housing; Any other development not specified in item b or d.

(d) WHAT IS PROHIBITED?

Agriculture; Air transport facilities; Airstrips; Amusement centres; Animal boarding or training establishments; Biosolids treatment facilities; Boat building and repair facilities; Boat launching ramps; Boat sheds; Camping grounds; Car parks; Caravan parks; Cemeteries; Charter and tourism boating facilities; Commercial premises; Correctional centres; Crematoria; Depots; Eco-tourist facilities; Electricity generating works; Entertainment facilities; Environmental facilities; Extractive industries; Farm buildings; Forestry; Freight transport facilities; Function centres; Heavy industrial storage establishments; Helipads; Highway service centres; Home businesses; Home industries; Home occupations (sex services); Industrial retail outlets; Industrial training facilities; Industries; Jetties; Marinas; Mooring pens; Moorings; Mortuaries; Open cut mining; Passenger transport facilities; Recreation facilities (indoor); Recreation facilities (major); Recreation facilities (outdoor); Registered clubs; Research stations; Restricted premises; Rural industries; Rural workers dwellings; Service stations; Sewage treatment plants; Sex services premises; Signage; Storage premises; Tourist and visitor accommodation; Transport depots; Truck depots; Vehicle body repair workshops; Vehicle repair stations; Veterinary hospitals; Warehouse or distribution centres; Waste or resource management facilities; Water recreation structures; Water recycling facilities; Water supply systems; Wharf or boating facilities; Wholesale supplies.

Additional uses that are permitted with development consent.

There are no additional uses permitted with consent.

(e) Whether any development standards applying to the land fix minimum land dimensions for the erection of a dwelling house on the land and, if so, the minimum land dimensions so fixed.

No development standards that fix the minimum land dimensions for the erection of a dwelling house apply to this land. Controls in other policies and plans may apply.

(f) Whether the land includes or comprises critical habitat.

No.

(g) Whether the land is in a conservation area (however described).

No

(h) Whether an item of environmental heritage (however described) is situated on the land.

No.

Attention is drawn however to Clause 5.10(5) of Fairfield Local Environmental Plan 2013:
"The consent authority may, before granting consent to any development:
(a) on land on which a heritage item is located, or
(b) on land that is within a heritage conservation area, or
(c) on land that is within the vicinity of land referred to in paragraph (a) or (b),
require a heritage management document to be prepared to assess the extent to which the carrying out of the proposed development would affect the heritage significance of the heritage item or heritage conservation area concerned."

2A. Zoning and land use under State Environmental Planning Policy (Sydney Region Growth Centres) 2006

Not applicable.

3. Complying development

(1) The extent to which the land is land on which complying development may be carried out under each of the codes for complying development because of the provisions of clauses 1.17A (1) (c) to (e), (2), (3) and (4) 1.18 (1) (c3) and 1.19 of State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.

Housing Code:
Complying development under the Housing Code may be carried out on the land.

Low Rise Housing Diversity Code
Complying development under the Low Rise Medium Density Housing Code may be carried out on the land.

Housing Alterations Code:
Complying development under the Housing Alterations Code may be carried out on the land.

Commercial and Industrial Alterations Code:
Complying development under the Commercial and Industrial Alterations Code may be carried out on the land.

Commercial and Industrial (New Buildings and Additions) Code:
No. The Commercial and Industrial (New Buildings and Additions) Code does not apply to the land.

Subdivision Code:
Complying development under the Subdivision Code may be carried out on the land.

Rural Housing Code:
No. The Rural Housing Code does not apply to this land.

General Development Code:
Complying development under the General Development Code may be carried out on the land.

Demolition Code:
Complying development under the Demolition Code may be carried out on the land.

Fire Safety Code:
Complying development under the Fire Safety Code may be carried out on the land.

Container Recycling Facilities Code:
No. The Container Recycling Facilities Code does not apply to the land.

(2) The extent to which complying development may not be carried out on that land because of the provisions of clauses 1.17A (1) (c) to (e), (2), (3) and (4), 1.18 (1) (c3) and 1.19 of that Policy and the reasons why it may not be carried out under those clauses.

None Relevant.

(3) If the council does not have sufficient information to ascertain the extent to which complying development may or may not be carried out on the land, a statement that a restriction applies to the land, but it may not apply to all of the land, and that council does not have sufficient information to ascertain the extent to which complying development may or may not be carried out on the land.

Council does not have any relevant statement to make in relation to any further restrictions that may apply to complying development being carried

out on the land. All information in relation to the extent that complying development can be carried out on the land is provided under Part 3(1) & (2) of this certificate.

Note: Clause 3 (1) and (2) refers only to land based exclusions as listed in Clauses 1.17A (1) (c) to (e), (2), (3) and (4), 1.18 (1) (c3) and 1.19 of the SEPP (Exempt and Complying Development Codes) 2008. To be complying development, the development must be complying development that meets the standards and other requirements specified for that development as required by the SEPP. Please contact your accredited certifier or Council for further information.

4. Coastal Protection

Whether or not the land is affected by the operation of section 38 or 39 of the *Coastal Protection Act* 1979, but only to the extent that the council has been notified by the Department of Public Works.

No, this land is not affected.

4A Information relating to beaches and coasts

(1) In relation to a coastal council - whether an order has been made under Part 4D of the Coastal Protection Act 1979 in relation to temporary coastal protection works (within the meaning of that Act) on the land (or on public land adjacent to that land), except where the council is satisfied that such an order has been fully complied with.

No order under Part 4D of the *Coastal Protection Act 1979*, has been made.

(2) In relation to a coastal council:

(a) whether the Council has been notified under section 55X of the *Coastal Protection Act 1979* that temporary costal protection works (within the meaning of that Act) have been placed on the land (or on public land adjacent to that land), and

Council has not received any such notification.

(b) if works have been so placed—whether the council is satisfied that the works have been removed and the land restored in accordance with that Act.

Not applicable.

4B Annual charges under *Local Government Act 1993* for coastal protection services that relate to existing coastal protection works.

In relation to a coastal council – whether the owner (or any previous owner) of the land has consented in writing to the land being subject to annual charges under section 946B of the *Local Government Act 1993* for coastal protection services that relate to existing coastal protection works (within the meaning of section 553B of that Act).
Note: "Existing coastal protection works" are works to reduce the impact of coastal hazards on land (such as seawalls, revetments, groynes and beach nourishment) that existed before the commencement of section 553B of the *Local Government Act 1993*.

No annual charges under section 553B of the *Local Government Act 1993*, are applicable to the land.

5. Mine Subsidence

Whether or not the land is proclaimed to be a mine subsidence district within the meaning of section 15 of the *Mine Subsidence Compensation Act* 1961.

No, this land is not affected.

6. Road widening and road realignment

Whether or not the land is affected by any road widening or road realignment under Division 2 or Part 3 of the *Roads Act* 1993, any environmental planning instrument, or any resolution of the council.

The land is not affected by any road widening proposal under Division 2 of Part 3 of the Roads Act or Fairfield Local Environmental Plan 2013.

7. Council and other public authority policies on hazard risk restrictions

Whether or not the land is affected by a policy:
(a) adopted by the Council, or
(b) adopted by any other public authority and notified to the Council for the express purpose of its adoption by that authority being referred to in planning certificates issued by the Council,

that restricts the development of the land because of the likelihood of land slip, bushfire, tidal inundation, subsidence, acid sulfate soils or any other risk, other than flooding.

Council's policies on hazard risk restrictions are as follows:

(i) Landslip

The land is not affected by a policy adopted by Council or adopted by any other public authority and notified to Council (for the express purpose of its adoption by that authority being referred to in Planning Certificates issued by Council) that restricts development on the land because of the likelihood of landslide risk or subsidence.

(ii) Bushfire

Council has been supplied by the NSW Rural Fire Service with a hazard map for the purposes of a bush fire risk management plan applying to land within the Fairfield local government area. Based on that map, it appears the land referred to in this certificate is not bush fire prone as defined in Part 4 of the Environmental Planning and Assessment Act 1979.

(iii) Tidal Inundation

The land is not affected by a policy adopted by Council or adopted by any other public authority and notified to Council (for the express purpose of its adoption by that authority being referred to in Planning Certificates issued by Council) that restricts development on the land because of the likelihood of tidal inundation.

(iv) Subsidence

No, the land is not so affected

(v) Acid Sulfate Soils

The land is not affected by a policy adopted by Council or adopted by any other public authority and notified to Council (for the express purpose of its adoption by that authority being referred to in Planning Certificates issued by Council) that restricts development on the land because of the likelihood of acid sulfate soils.

(vi) Any other risks

No, the land is not so affected

7A. Flood related development controls information

1. If the land or part of the land is within the flood planning area and subject to flood related development controls.

Based on the information currently available to Council, the land is not within the flood planning area. However, this is subject to future flood studies and reviews.

Mainstream Flooding
Based on the information currently available to Council, this land is not affected by mainstream flooding. However, this is subject to future flood studies and reviews.

Overland Flooding
Based on the information currently available to Council, this land is not affected by overland flooding. However, this is subject to future flood studies and reviews.

2. If the land or part of the land is between the flood planning area and the probable maximum flood and subject to flood related development controls.

Based on the information currently available to Council, the land is not between the flood planning area and the probable maximum flood. However, this is subject to future flood studies and reviews.

Note: The flood information is the current information to date. However, Council reviews flood studies on an on-going basis and new information may become available in future. Please contact Council's Catchment Planning Division on 9725 0222 for any updated information.

Note:

3. In this clause –
flood planning area has the same meaning as the Floodplain Development Manual.
Floodplain Development Manual means the *Floodplain Development Manual* (ISBN 0 7347 5476 0) published by the NSW Government in April 2005.
probable maximum flood has the same meaning as in the Floodplain Development Manual.

8. Land reserved for acquisition

Whether or not any environmental planning instrument or proposed environmental planning instrument referred to in clause 1 makes provision in relation to the acquisition of the land by a public authority, as referred to in section 3.15 of the Act.

The land is not reserved for acquisition under Fairfield Local Environmental Plan 2013.

9. Contributions plans

The name of each contributions plan applying to the land.

Fairfield City Council indirect (Section 7.12) Development Contributions Plan 2011 applies to all land within the City of Fairfield.
Fairfield City Council direct (Section 7.11) Development Contributions Plan 2011 applies to this land.

9A. Biodiversity certified land

If the land is biodiversity certified land under Part 8 of the *Biodiversity Conservation Act 2016*, a statement to that effect.

Note: "Biodiversity certified land includes land certified under Part 7AA of the *Threatened Species Conservation Act 1995* that is taken to be certified under Part 8 of the *Biodiversity Conservation Act 2016*.

The land is not biodiversity certified land.

10. Biodiversity stewardship sites

If the land is a biodiversity stewardship site under a biodiversity stewardship agreement under Part 5 of the *Biodiversity Conservation Act 2016*, a statement to that effect (but only if the council has been notified of the existence of the agreement by the Chief Executive of the Office of Environment and Heritage).

Note: "Biodiversity stewardship agreements include biobanking agreements under Part 7A of the *Threatened Species Conservation Act 1995* that are taken to be biodiversity stewardship agreements under Part 5 of the *Biodiversity Conservation Act 2016*.

No such agreement applies to the land.

10A. Native vegetation clearing set asides

If the land contains a set aside area under section 60ZC of the *Local Land Services Act 2013*, a statement to that effect (but only if the council has been notified of the existence of the set aside area by Local Land Services or it is registered in the public register under that section)

Not applicable.

11. Bush fire prone land

If any of the land is bush fire prone land (as defined in Act), a statement that all or, as the case may be, some of the land is bush fire prone land. If none of the land is bush fire prone land, a statement to that effect.

Council has been supplied by the NSW Rural Fire Service with a hazard map for the purposes of a bush fire risk management plan applying to land within the Fairfield local government area. Based on that map, it appears the land referred to in this certificate is not bush fire prone as defined in Part 4 of the Environmental Planning and Assessment Act 1979.

12. Property vegetation plans

If the land to which a property vegetation plan approved under Part 4 of the *Native Vegetation Act 2003* (and that continues in force) applies, a statement to that effect (but on if the council has been notified of the existence of the plan by the person or body that approved the plan under that Act).

No.

13. Orders under Trees (Disputes between Neighbours) Act 2006

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 if the council has been notified of the order).

No

14. Directions under Part 3A

If there is a direction by the Minister in force under section 75P (2) (c1) of the Act that a provision of an environmental planning instrument prohibiting or restricting the carrying out of a project or a stage of a project on the land under Part 4 of the Act does not have effect, a statement to that effect identifying the provision that does not have effect.

No such direction applies to the land.

15. Site compatibility certificates and conditions for seniors housing

If the land is land to which State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004 applies -
(a) a statement of whether there is a current site compatibility certificate (seniors housing), of which the council is aware, in respect of proposed development on the land and, if there is a certificate, the statement is to include -
(i) the period for which the certificate is current, and
(ii) that a copy may be obtained from the head office of the Department, and

No such certificate applies to the land.

(b) a statement setting out any terms of a kind referred to in clause 18(2) of that Policy that have been imposed as a condition of consent to a development application granted after 11 October 2007 in respect of the land.

No such terms apply to the land.

16. Site compatibility certificates for infrastructure, schools or TAFE establishments

A statement of whether there is a valid site compatibility certificate (infrastructure) or site compatibility certificate (schools or TAFE establishments), of which the council is

aware, in respect of proposed development on the land and, if there is a certificate, the statement is to include:
(a) the period for which the certificate is valid, and
(b) that a copy may be obtained from the head office of the Department.

No such certificate applies to the land.

17. Site compatibility certificates and conditions for affordable rental housing

(1) A statement to the whether there is a current site compatibility certificate (affordable rental housing), of which the council is aware, in respect of proposed development on the land and, if there is a certificate, the statement is to include:
(a) the period for which the certificate is current, and
(b) that a copy may be obtained from the head office of the Department.

No such certificate applies to the land.

(2) A statement setting out any terms of a kind referred to in clause 17(1) or 38(1) of *State Environmental Planning Policy (Affordable Rental Housing) 2009* that has been imposed as a condition of consent to a development application in respect of the land.

No such terms apply to the land.

18. Paper subdivision information

(1) The name of any development plan adopted by a relevant authority that applies to the land or that is proposed to be subject to a consent ballot.

(2) The date of any subdivision order that applies to the land.

(3) Words and expressions used in this clause have the same meaning as they have in Part 16C of this Regulation.

No such plan or order applies to the land

19. Site verification certificates

A statement of whether there is a current site verification certificate, of which the council is aware, in respect of the land and, if there is a certificate, the statement is to include:
(a) the matter certified by the certificate, and
Note: A site verification certificate sets out the Director-General's opinion as to whether the land concerned is or is not biophysical strategic agricultural land or critical industry cluster land—see Division 3 of Part 4AA of State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007.
(b) the date on which the certificate ceases to be current (if any), and
(c) that a copy may be obtained from the head office of the Department.

No such certificate applies to the land

20. Loose-fill asbestos insulation

If the land includes any residential premises (within the meaning of Division 1A of Part 8 of the *Home Building Act 1989*) that are listed on the register that is required to be maintained under that Division, a statement to that effect.

Not Applicable.

21. Affected building notices and building product rectification orders

(1) A statement of whether there is any affected building notice of which the council is aware that is in force in respect of the land.

(2) A statement of:

(a) whether there is any building product rectification order of which the council is aware that is in force in respect of the land and has not been fully complied with, and

(b) whether 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.

None Relevant.

22. State Environmental Planning Policy (Western Sydney Aerotropolis) 2020

For land to which *State Environmental Planning Policy (Western Sydney Aerotropolis) 2020* applies, whether the land is –

(a) in an ANEF or ANEC contour of 20 or greater as referred to in clause 19 of that Policy, or

No

(b) shown on the Lighting Intensity and Wind Shear Map under that Policy, or

No

(c) shown on the Obstacle Limitation Surface Map under that Policy, or

No

(d) in the "public safety area" on the Public Safety Area Map under that Policy, or

No

(e) in the "3 kilometre wildlife buffer zone" or the "13 kilometre wildlife buffer zone" on the Wildlife Buffer Zone Map under that Policy.

No

Note: The following matters are prescribed by section 59 (2) of the Contaminated Land Management Act 1997 as additional matters to be specified in a planning certificate:

(a) that the land to which the certificate relates is significantly contaminated land within the meaning of that Act—if the land (or part of the land) is significantly contaminated land at the date when the certificate is issued,

(b) that the land to which the certificate relates is subject to a management order within the meaning of that Act—if it is subject to such an order at the date when the certificate is issued,

(c) that the land to which the certificate relates is the subject of an approved voluntary management proposal within the meaning of that Act—if it is the subject of such an approved proposal at the date when the certificate is issued,

(d) that the land to which the certificate relates is subject to an ongoing maintenance order within the meaning of that Act—if it is subject to such an order at the date when the certificate is issued,

(e) that the land to which the certificate relates is the subject of a site audit statement within the meaning of that Act—if a copy of such a statement has been provided at any time to the local authority issuing the certificate.

Continuously updated information in relation to the above matters can also be found by searching the records of the Environmental Protection Authority (EPA) at the website of the EPA. The search page can be found at: http://www.epa.nsw.gov.au/prclmapp/searchregister.aspx.

The following information is available to Council but may not be current:

Council has adopted by resolution a policy (commencing 1 August 2000), on contaminated land which may restrict the development of land. This policy is implemented when zoning or land use changes are proposed on lands which have previously been used for certain purposes. Consideration of Council's adopted policy and the application of provisions under the State Legislation is warranted.

The land is not within an investigation area or remediation site under Part 3 of the Contaminated Land Management Act 1997.

The land is not subject to an investigation order or a remediation order within the meaning of the Contaminated Land Management Act 1997.

The land is not subject to a voluntary investigation proposal (or voluntary remediation proposal) that is the subject of the Environment Protection Authority's agreement under Section 19 or 26 of the Contaminated Land Management Act 1997.

The land is not subject of a site audit statement within the meaning of the Contaminated Land Management Act 1997.

Note 2: Any advice received by Council pursuant to section 26(2) of the Nation Building and Jobs Plan (State Infrastructure Delivery) Act 2009, is included below.

No such certificate applies to the land.

The following additional information is provided under Section 10.7(5) of the Environmental Planning and Assessment Act 1979

Note:

(1) When information pursuant to section 10.7(5) is requested, the Council is under no obligation to furnish any of the information supplied herein pursuant to that section.
(2) Council draws your attention to section 10.7(6), which states that a Council shall not incur any liability in respect of any advice provided in good faith pursuant to subsection (5).
(3) The absence of any reference to any matter affecting the land shall not imply that the land is not affected by any matter not referred to in this certificate.

The land is subject to the provisions of the SEPP (Vegetation in Non-Rural Areas) 2017 and Fairfield LEP 2013.

Land must not be cleared or filled except with the consent of Council.

The applicant's attention is drawn to the Department of Infrastructure, Planning and Natural Resources map at the 1:100,000 scale 'Salinity Potential in Western Sydney 2002' that indicates there is potential for salinity in the Region. The map can be viewed at Council's Customer Service Centre (86 Avoca Road Wakeley).
Council's policy 'Building in Saline Environments', applies to all areas of Fairfield City and requires use of construction measures and materials in new development to minimise risk of salt damage to buildings from urban salinity.

On 15th April 2014, the Australian Government announced that it intends to proceed with an airport at Badgerys Creek in the Liverpool City Council area. The Western Sydney Airport draft Environmental Impact Statement (EIS) was released for public exhibition on Monday 19 October 2015. You should make your own enquiries with the Commonwealth Government Department responsible via the website http://westernsydneyairport.gov.au/.

Clause 2.7 of Fairfield Local Environmental Plan 2013 requires development consent for the demolition of a building or work.

There is no draft SEPP applying to this land.

FAIRFIELD CITY COUNCIL
DEVELOPMENT CONTROL PLANS

Fairfield Citywide Development Control Plan

Title	Adopted by Council*	Effective Date
Fairfield Citywide Development Control Plan 2013	13 November 2012	31 May 2013
Amendment No.1 change maximum height permissible for detached secondary dwellings, clarify requirements and correct various anomalies, incorporate outdoor dining policy into a number of site specific DCPs (see table below)	11 February 2014	5 March 2014
Amendment No.2 amend chapter 2 to reference Site Specific DCP – Wetherill Park Market Town	20 March 2013	7 March 2014
Amendment No.3 Introduce Chapter 4B - Secondary Dwellings in Rural Area - Horsley Park and Cecil Park	11 December 2013	14 March 2014
Amendment No. 4 amends Chapter 9 Industrial Development Site Specific Controls for 449 Victoria Street and 96 Newton Road, Wetherill Park	24 September 2013	21 March 2014
Amendment No.5 amends Chapters 2 and 10 and Appendix B to ensure provisions within the DCP are in line with the SEPP (Exempt and Complying Development Codes) 2008.	13 May 2014	28 May 2014
Amendment No. 5A amends Chapter 6A – Multi Dwelling Housing – Town house and Villas: Site Specific DCP – 46 & 50 Cobbett Street, Wetherill Park.	12 March 2013	22 August 2014
Amendment No. 6 including increase to building heights for detached granny flats, removal of reference to minimum lot sizes for R1 zoned lands, inclusion of new controls and provisions relating to neighbourhood shops and pad mounted sub stations, clarify requirements and correct a number of anomalies associated with secondary dwellings, dual occupancy, narrow lots and residential flat buildings and other minor inconsequential amendments.	12 August 2014	3 September 2014
Amendment No. 6A amends Chapter 14 Subdivision – Applying to land located on 630 Elizabeth Drive and 9-10 Schubert Place, Bonnyrigg Heights to facilitate a future road link between Stivala Place and Schubert Place.	12 August 2014	3 September 2014
Amendment No.7 proposed amendments include – Additional Controls for Child Care Centres, Boarding Houses and Granny Flats; Revised Heritage Chapter; New provisions relating to CCTV for specific land uses, and; Acoustic measures for development in the Rural Area.	25 November 2014	3 December 2014
Amendment No. 7A amends Chapter 10 Miscellaneous Development - applying to land located on 1 Bartley Street, Cabramatta to facilitate the development of a hotel or motel accommodation at the Cabravale Diggers site.	26 August 2014	16 January 2015
Amendment 8 amends Chapter 9 – Industrial Development. This amendment includes provisions for industrial/employment development proposals in close proximity to residential land. The amended controls cover the following issues: General Design Requirements (including setback considerations, driveways, loading and storage areas, etc); Bulk and scale; Vehicular and Pedestrian Access Privacy; Light Spill; Noise and Vibration; and Landscaping.	10 March 2015	1 April 2015
Amendment 9 includes new provisions relating to various forms of residential development including: Building Appearance, Landscaping, Private Open space, Minimum Lot Width, Car Parking Rates and Notification of S82A Applications.	12 May 2015	27 May 2015
Amendment 10 including amendments to: • the intent of the Development Control Plan and Development Application process – the DA Guide • provisions for rural zone development • residential flat building setbacks • heritage advice • road classifications	14 July 2015	5 August 2015
Amendment No.11 includes site specific development controls (private open space, car parking and dwelling density) for 46-50 Cobbett Street, Wetherill Park included in Chapter 6A Multi Dwelling Housing – Townhouses and Villas.	1 December 2015	16 December 2015
Amendment No. 12 addresses anomalies in the DCP including but not limited to providing clarity on minimum room sizes, updated acoustic proofing measures for new dwellings in rural areas, car parking rates for disabled parking, and provisions for site servicing and loading requirements in neighbourhood shops in residential zones.	10 May 2016	25 May 2016

Amendment No. 13 Clarification to requirements for acoustic measures for development in the rural areas, location of alfresco areas for secondary dwellings, car parking rates for restaurants & amendments to ensure controls for residential flat buildings are consistent with the State Environmental Planning Policy No 65 – Design Quality of Residential Apartment Development & associated Apartment Design Guide.	14 March 2017	5 April 2017
Amendment No. 14 Site specific provisions for 620 Elizabeth Drive, Bonnyrigg Heights.	27 June 2017	15 September 2017
Amendment No. 15 Amendment to Appendix G, and addition of Appendix H to introduce Aboriginal Heritage Management controls for development across Fairfield City	12 September 2017	28 February 2018
Amendment No. 16 Amendments provide clarity relating to alfresco areas and carports provisions for secondary dwellings, lot width provisions for dual occupancy and multi dwelling housing on cul-de-sac heads, setbacks for residential flat buildings on corner sites, removal of Chapter 8B Neighbourhood and Local Centres – Mixed Use (Up to 2 storeys) to ensure consistency with the Apartment Design Guide, inclusion of accessibility requirements, inclusion of Council's Stormwater Management Policy, and guidelines for acknowledging petitions.	27 February 2018	21 March 2018
Amendment No. 18 Amendment to Chapter 10.11 to revise existing site specific DCP in relation to the Cabravale Diggers Club site at 1 Bartley Street, Canley Vale	14 November 2017	28 February 2018
Amendment No. 19 Amendment to introduce site specific development controls for 17-23 Longfield Street, Cabramatta.	11 September 2018	28 February 2019
Amendment No. 20 Amendment No. 20 provides clarity on controls and guidelines within the following chapters: • Chapter 3 – Environmental Management and Constraints; • Chapter 4A – Development in the Rural Zones; • Chapter 5A – Dwelling Houses; • Chapter 5B – Secondary Dwellings; • Chapter 6A – Multi Dwelling Housing; • Chapter 6B – Dual Occupancy; • Chapter 9 – Industrial Development; and • Chapter 14 – Subdivision	12 February 2019	13 March 2019
Amendment No. 22 Amendment No. 22 provides clarity on control and guidelines within the following chapters: • Appendix A – Definitions • Chapter 2 – Development Application Process • Chapter 3 – Environmental Management and Constraints • Chapter 5A – Dwelling Houses • Chapter 5B – Secondary Dwellings • Chapter 5C – Dwelling Houses on Narrow Lots • Chapter 7 – Residential Flat Buildings and Shop Top Housing • Chapter 8 – Neighbourhood and Local Centres Business Use • Chapter 12 – Car Parking, Vehicle and Access Management • Chapter 13 – Child Care Centres • Chapter 14 - Subdivision	9 June 2020	21 September 2020

Place Based and Site Specific Development Control Plans

Title	Adopted by Council*	Effective Date
Bonnyrigg Town Centre DCP 2018	6 August 2019	4 September 2020
Cabramatta Town Centre DCP (5/2000) - Amendment No.1 (Outdoor Dining Controls –5.3.2014) - Amendment No. 2 (New clause regarding Model Submission – 3.09.2014) - Amendment No. 3 (Amended clauses and map regarding Precinct 2- Dutton Lane Car Park)	11 October 2016	10 March 2017
Fairfield City Centre DCP 2013 - Amendment No.1 (Outdoor Dining Controls – 5.3. 2014) - Amendment No. 2 (Remove reference to Public Art Guide and update signage controls reference – 3.09.2014) - Amendment No. 3 (removes reference to the Fairfield Art Strategy as Council has not formally adopted a Public Art Strategy)	10 May 2016	25 May 2016
Canley Corridor DCP No.37 (2013) (Canley Vale and Canley Heights town centres) - Amendment No.1: (Development Controls for Adams Reserve 12.9.2006) - Amendment No.2: (Development Controls for 45-47 Peel St, Canley Heights 9.4.2008) - Amendment No.3: (Awnings controls 3.11.2010) - Amendment No.4: (Development Controls for 190 Canley Vale Rd, Canley Heights 19.4.2011) - Amendment No.5: (References to Fairfield LEP 2013 31.5.2013) - Amendment No.6: (Outdoor Dining Controls –5.3.2014) - Amendment No. 7 (Remove reference to Public Art Guide – 3.09.2014) - Amendment No. 8 (Include 46 Derby Street, Canley Heights into Town Centre Catchment – 01.07.2015) - Amendment No. 9 (removes reference to the Fairfield Art Strategy as Council has not formally adopted a Public Art Strategy)	10 May 2016	25 May 2016
Prairiewood Town Centre – Southern Precinct DCP 2013	13 November 2012	31 May 2013
Site Specific DCP – Wetherill Park Market Town	20 March 2013	7 March 2014
Fairfield Heights Town Centre DCP 2018	06 August 2019	05 June 2020
Villawood Town Centre DCP 2020	28 April 2020	05 June 2020

Master Plans

Title	Adopted by Council*	Effective Date
Prairiewood Masterplan (December 2005)	13 November 2012	31 May 2013
Fairfield Town Centre Masterplans – The Crescent and Barbara Street Precincts (May 2007)		May 2007

Urban Design Studies

Title	Adopted by Council
Fairfield City Centre Key Sites Urban Design Study	27 March 2018
Fairfield Heights Town Centre Urban Design Study	27 March 2018
Villawood Town Centre Urban Design Study	27 March 2018

***** Note: Some *"In Force"* Development Control Plans may be under review, check with Council for date of last amendment.

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Flood Information Sheet

Applicant: **Alison Smith**
Certificate No.: **706/2021**
Applicant's Reference: **62436**
Issue Date: **24/02/2022**
Receipt No.:

PROPERTY ADDRESS: **56 Tarlington Parade BONNYRIGG NSW 2177**
LEGAL DESCRIPTION: **Lot: 453 DP: 839627**

Council has adopted a policy on flooding which may restrict the development of land. The Fairfield City-Wide Development Control Plan 2013 (which includes provisions for flood management) applies to all of the Fairfield Local Government area.

Important Notes:

Not Applicable values indicate that the subject land is not known to be subject to flooding.

Not Available values indicate that Council does not have the required flood information for the subject land.

A Glossary is also attached at the end of this Flood Information Sheet.

MAINSTREAM FLOODING

Description

Based on the information currently available to Council, this land is not affected by mainstream flooding. However, this is subject to future flood studies and reviews.

Mainstream Flood Details

Size of Flood	Flood Level (m AHD)
PMF minimum	**Not Applicable**
PMF maximum	**Not Applicable**
1 in 100 year minimum	**Not Applicable**
1 in 100 year maximum	**Not Applicable**
1 in 20 year minimum	**Not Applicable**
1 in 20 year maximum	**Not Applicable**

LOCAL OVERLAND FLOODING

Description

Based on the information currently available to Council, this land is not affected by overland flooding. However, this is subject to future flood studies and reviews.

Local Overland Flood Details

Size of Flood	Flood Level (m AHD)
PMF minimum	**Not Applicable**
PMF maximum	**Not Applicable**
1 in 100 year minimum	**Not Applicable**
1 in 100 year maximum	**Not Applicable**
1 in 20 year minimum	**Not Applicable**
1 in 20 year maximum	**Not Applicable**

GLOSSARY	
m AHD	metres Australian Height Datum (AHD).
Australian Height Datum (AHD)	A common national plane of level approximately equivalent to the height above sea level. All flood levels, floor levels and ground levels are normally provided in metres AHD.
Average Recurrence Interval (ARI)	The long term average number of years between the occurrence of a flood as big as the selected event. For example, floods with a discharge as great as the 20 year ARI event will occur on average once every 20 years. ARI is another way of expressing the likelihood of occurrence of a flood event.
Flood	A relatively high stream flow that overtops the natural or artificial banks in any part of a stream, river, estuary, lake or dam. It also includes local overland flooding associated with major drainage before entering a watercourse, or coastal inundation resulting from raised sea levels, or waves overtopping the coastline.
Flood risk precinct	An area of land with similar flood risks and where similar development controls may be applied by a Council to manage the flood risk. The flood risk is determined based on the existing development in the precinct or assuming the precinct is developed with normal residential uses. Usually the floodplain is categorised into three flood risk precincts 'low', 'medium' and 'high', although other classifications can sometimes be used. **High Flood Risk:** This has been defined as the area of land below the 100-year flood event that is either subject to a high hydraulic hazard or where there are significant evacuation difficulties. **Medium Flood Risk:** This has been defined as land below the 100-year flood level that is not within a High Flood Risk Precinct. This is land that is not subject to a high hydraulic hazard or where there are no significant evacuation difficulties. **Low Flood Risk:** This has been defined as all land within the floodplain (i.e. within the extent of the probable maximum flood) but not identified within either a High Flood Risk or a Medium Flood Risk Precinct. The Low Flood Risk Precinct is that area above the 100-year flood event.
Local overland flooding	The inundation of normally dry land by local runoff rather than overbank discharge from a stream, river, estuary, lake or dam.
Mainstream flooding	The inundation of normally dry land occurring when water overflows the natural or artificial banks of a stream, river, estuary, lake or dam.
Probable Maximum Flood (PMF)	The largest flood that could conceivably occur at a particular location.
Flood Planning Area	The area of land below the FPL and thus subject to flood related development controls.
Flood Planning Level	Are the combinations of flood levels (derived from significant historical flood events or floods of specific AEPs) and freeboards selected for floodplain risk management purposes, as determined in management studies and incorporated in management plans.
Flood Control Lot	A lot to which flood related development controls apply in respect of development for the purposes of industrial buildings, commercial premises, dwelling houses, dual occupancies, multi dwelling housing or residential flat buildings (other than development for the purposes of group homes or seniors housing)

02/03/2022

Alison Smith
Level 1, 50 Margaret Street
Sydney
Sydney 2000

Dear Sir/ Madam,

Following is your planning certificate as requested. Should you have any further queries please contact Council on (02) 9725 0821.

PLANNING CERTIFICATE
(under section 10.7 of the Environmental Planning and Assessment Act 1979 as amended)

Applicant:	**Alison Smith**
Certificate No.:	**707/2022**
Applicant's Reference:	**62436**
Issue Date:	**02/03/2022**
Receipt No.:	**3995089**

PROPERTY ADDRESS:	**42 Tarlington Parade BONNYRIGG NSW 2177**
LEGAL DESCRIPTION:	**Lot: 454 DP: 839627**

Marcus Rowan
MANAGER STRATEGIC LAND USE PLANNING

PLEASE NOTE: This is page 1 of 24. Should this certificate or any subsequent copy not contain this many pages, please confirm with Council prior to acting on the basis of information contained in this certificate under Section 10.7(2) & (5) and inclusive of Flood Information Sheet.

Information provided under
Section 10.7(2) of the Environmental Planning and Assessment Act 1979

Notes:

(1) The following prescribed matters may apply to the land to which this certificate relates.

(2) Where this certificate refers to a specific allotment (or allotments) within a strata plan, the certificate is issued for the whole of the land within the strata plan, not just the specific allotment(s) referred to, and any information contained in the certificate may relate to the whole, or any part, of the strata plan.

(3) The following information is provided pursuant to Section 10.7(2) of the Environmental Planning and Assessment Act 1979 as prescribed by Schedule 4 of the Environmental Planning and Assessment Regulation 2000 and is applicable as at the date of this certificate.

(4) Information provided in this certificate should be interpreted in conjunction with the relevant plans, policies and documents held at Council. In order to obtain copies of these documents you may purchase them by either contacting Council on (02) 9725 0821 or attending Council's Administration Centre at 86 Avoca Road, Wakeley.

1. Names of relevant planning instruments and DCPs

(1) The name of each environmental planning instrument that applies to the carrying out of development on the land.

State Environmental Planning Policies (SEPP)

SEPP (Primary Production and Rural Development) 2019

SEPP (Mining, Petroleum Production and Extractive Industries) 2007

SEPP (Miscellaneous Consent Provisions) 2007

SEPP (Infrastructure) 2007

SEPP (Exempt and Complying Development Codes) 2008

SEPP (Affordable Rental Housing) 2009

SEPP (Housing for Seniors or People with a Disability) 2004

SEPP No. 33 - Hazardous and Offensive Development

SEPP (Major Development) 2005

SEPP No. 50 - Canal Estate Development

SEPP No. 55 - Remediation of Land

SEPP No. 64 - Advertising and Signage

SEPP No. 65 - Design Quality of Residential Flat Development

SEPP No. 19 - Bushland in Urban Areas

SEPP (State and Regional Development) 2011

SEPP No. 21 - Caravan Parks

SEPP (Building Sustainability Index: BASIX) 2004

SEPP (Vegetation in Non-Rural Areas) 2017

SEPP (Educational Establishments and Child Care Facilities) 2017

SEPP (Western Sydney Aerotropolis) 2020

Regional Environmental Plans (Deemed SEPP)

Sydney Regional Environmental Plan No. 9 - Extractive Industry (No 2-1995)
The Greater Metropolitan Regional Environmental Plan No. 2 - Georges River Catchment

Local Environmental Plans (LEP)

Fairfield Local Environmental Plan 2013
Published on NSW Legislation Website: 17/05/2013.
In Force from: 31/05/2013.
As Amended.

(2) The name of each proposed environmental planning instrument that will apply to the carrying out of development on the land and that is or has been the subject of community consultation or on public exhibition under the Act (unless the Director-General has notified the council that the making of the proposed instrument has been deferred indefinitely or has not been approved)

There is no draft SEPP applying to this land.

Fairfield Planning Proposal (LEP Review Stage 2). Public Exhibition period: 02/06/2021 - 30/06/2021. The planning proposal to amend Fairfield Local Environmental Plan 2013 aims to: (1). Rezone certain land and/or amend development standards for certain land in the Fairfield, Cabramatta, Canley Vale and Carramar centres and in adjoining residential areas in Canley Vale and Carramar (if applicable, details are provided in section 2 below); (2). Increase the floor space ratio and height of building under certain circumstances in Zone R3 Medium Density Residential in the eastern part of the City; (3). Amend clause 6.3 Flood Planning and replace clause 6.4 – Floodplain Risk Management with a new standard flood clause 6.4 - Special Flood Considerations; and (4). List four new local heritage items in Schedule 5 Environmental Heritage. Further details on the planning proposal and supporting information can be viewed on the Have My Say, Planning Exhibitions page, by visiting the Fairfield City Council website www.fairfieldcity.nsw.gov.au

(3) The name of each development control plan that applies to the carrying out of development on the land.

The land is subject to adopted Development Control Plans. (See attached schedule).

(4) In this clause, proposed environmental planning instrument includes a planning proposal for a LEP or a draft environmental planning instrument.

2. Zoning and land use under relevant LEP

For each environmental planning instrument or proposed instrument referred to in clause 1 (other than a SEPP or proposed SEPP) that includes the land in any zone (however described):

Note: The subject land is affected by more than one zone under Fairfield LEP 2013. Details of each zone applying to the land are as described below;

(a) WHAT IS THE IDENTITY OF THE ZONE?

Zone R1 General Residential

(b) WHAT IS PERMITTED WITHOUT DEVELOPMENT CONSENT?

Environmental protection works; Home-based child care; Home occupations.

(c) WHAT IS PERMITTED ONLY WITH DEVELOPMENT CONSENT?

Attached dwellings; Boarding houses; Centre-based child care facilities; Community facilities; Dwelling houses; Group homes; Hostels; Multi dwelling housing; Neighbourhood shops; Places of public worship; Residential flat buildings; Respite day care centres; Roads; Semi-detached dwellings; Seniors housing; Shop top housing; Any other development not specified in item b or d.

(d) WHAT IS PROHIBITED?

Agriculture; Air transport facilities; Airstrips; Amusement centres; Animal boarding or training establishments; Biosolids treatment facilities; Boat building and repair facilities; Boat launching ramps; Boat sheds; Camping grounds; Car parks; Caravan parks; Cemeteries; Charter and tourism boating facilities; Commercial premises; Correctional centres; Crematoria; Depots; Eco-tourist facilities; Electricity generating works; Entertainment facilities; Environmental facilities; Extractive industries; Farm buildings; Forestry; Freight transport facilities; Function centres; Heavy industrial storage establishments; Helipads; Highway service centres; Home businesses; Home industries; Home occupations (sex services); Industrial retail outlets; Industrial training facilities; Industries; Jetties; Marinas; Mooring pens; Moorings; Mortuaries; Open cut mining; Passenger transport facilities; Recreation facilities (indoor); Recreation facilities (major); Recreation facilities (outdoor); Registered clubs; Research stations; Restricted premises; Rural industries; Rural workers dwellings; Service stations; Sewage treatment plants; Sex services premises; Signage; Storage premises; Tourist and visitor accommodation; Transport depots; Truck depots; Vehicle body repair

workshops; Vehicle repair stations; Veterinary hospitals; Warehouse or distribution centres; Waste or resource management facilities; Water recreation structures; Water recycling facilities; Water supply systems; Wharf or boating facilities; Wholesale supplies.

(a)WHAT IS THE IDENTITY OF THE ZONE?

Zone RE1 Public Recreation

(b)WHAT IS PERMITTED WITHOUT DEVELOPMENT CONSENT?
Environmental protection works; Markets.

(c)WHAT IS PERMITTED ONLY WITH DEVELOPMENT CONSENT?
Boat building and repair facilities; Boat launching ramps; Boat sheds; Building identification signs; Business identification signs; Camping grounds; Caravan parks; Charter and tourism boating facilities; Community facilities; Environmental facilities; Flood mitigation works; Function centres; Heliports; Information and education facilities; Jetties; Kiosks; Marinas; Mooring pens; Moorings; Recreation areas; Recreation facilities (indoor); Recreation facilities (major); Recreation facilities (outdoor); Restaurants or cafes; Roads; Water recreation structures; Water recycling facilities; Water supply systems; Wharf or boating facilities.

(a) WHAT IS PROHIBITED?

Any other development not specified in item b or c.

Additional uses that are permitted with development consent.

There are no additional uses permitted with consent.

(e) Whether any development standards applying to the land fix minimum land dimensions for the erection of a dwelling house on the land and, if so, the minimum land dimensions so fixed.

No development standards that fix the minimum land dimensions for the erection of a dwelling house apply to this land. Controls in other policies and plans may apply.

(f) Whether the land includes or comprises critical habitat.

No.

(g) Whether the land is in a conservation area (however described).

No

(h) Whether an item of environmental heritage (however described) is situated on the land.

No.

Attention is drawn however to Clause 5.10(5) of Fairfield Local Environmental Plan 2013:
"The consent authority may, before granting consent to any development:
(a) on land on which a heritage item is located, or
(b) on land that is within a heritage conservation area, or
(c) on land that is within the vicinity of land referred to in paragraph (a) or (b),
require a heritage management document to be prepared to assess the extent to which the carrying out of the proposed development would affect the heritage significance of the heritage item or heritage conservation area concerned."

2A. Zoning and land use under State Environmental Planning Policy (Sydney Region Growth Centres) 2006

Not applicable.

3. Complying development

(1) The extent to which the land is land on which complying development may be carried out under each of the codes for complying development because of the provisions of clauses 1.17A (1) (c) to (e), (2), (3) and (4) 1.18 (1) (c3) and 1.19 of State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.

Housing Code:
Complying development under the Housing Code may be carried out on that part of the land that is not zoned RE1 public recreation as shown on the map associated with the Fairfield LEP 2013 - Land Zoning Map.

Low Rise Housing Diversity Code
Complying development under the Low Rise Housing Diversoty Code may be carried out on that part of the land that is not zoned RE1 public recreation as shown on the map associated with the Fairfield LEP 2013 - Land Zoning Map.

Housing Alterations Code:
Complying development under the Housing Alterations Code may be carried out on that part of the land that is not zoned RE1 public recreation as shown on the map associated with the Fairfield LEP 2013 - Land Zoning Map.

Industrial and Business Alterations Code:
Complying development under the Industrial and Business Alteration Code may be carried out on that part of the land that is not zoned RE1 public recreation as shown on the map associated with the Fairfield LEP 2013 - Land Zoning Map.

Industrial and Business Buildings Code:
No. The Industrial and Business Buildings Code does not apply to the land.

Subdivision Code:

Complying development under the Subdivision Code may be carried out on that part of the land that is not zoned RE1 public recreation as shown on the map associated with the Fairfield LEP 2013 - Land Zoning Map.

Rural Housing Code:
No. The Rural Housing Code does not apply to this land.

General Development Code:
Complying development under the General Development Code may be carried out on that part of the land that is not zoned RE1 public recreation as shown on the map associated with the Fairfield LEP 2013 - Land Zoning Map.

Demolition Code:
Complying development under the Demolition Code may be carried out on that part of the land that is not zoned RE1 public recreation as shown on the map associated with the Fairfield LEP 2013 - Land Zoning Map.

Fire Safety Code:
Complying development under the Fire Safety Code may be carried out on that part of the land that is not zoned RE1 public recreation as shown on the map associated with the Fairfield LEP 2013 - Land Zoning Map.

Container Recycling Facilities Code:
No. The Container Recycling Facilities Code does not apply to the land.

(2) The extent to which complying development may not be carried out on that land because of the provisions of clauses 1.17A (1) (c) to (e), (2), (3) and (4), 1.18 (1) (c3) and 1.19 of that Policy and the reasons why it may not be carried out under those clauses.

Complying development can not be carried out on that part of the land that is zoned RE1 public recreation as shown on the map associated with the Fairfield LEP 2013 - Land Zoning Map.

(3) If the council does not have sufficient information to ascertain the extent to which complying development may or may not be carried out on the land, a statement that a restriction applies to the land, but it may not apply to all of the land, and that council does not have sufficient information to ascertain the extent to which complying development may or may not be carried out on the land.

Council does not have any relevant statement to make in relation to any further restrictions that may apply to complying development being carried out on the land. All information in relation to the extent that complying development can be carried out on the land is provided under Part 3(1) & (2) of this certificate.

Note: Clause 3 (1) and (2) refers only to land based exclusions as listed in Clauses 1.17A (1) (c) to (e), (2), (3) and (4), 1.18 (1) (c3) and 1.19 of the SEPP (Exempt and Complying Development Codes) 2008. To be complying development, the development must be complying development that meets the standards and other requirements specified for that development as required by the SEPP. Please contact your accredited certifier or Council for further information.

4. Coastal Protection

Whether or not the land is affected by the operation of section 38 or 39 of the *Coastal Protection Act* 1979, but only to the extent that the council has been notified by the Department of Public Works.

No, this land is not affected.

4A Information relating to beaches and coasts

(1) In relation to a coastal council - whether an order has been made under Part 4D of the Coastal Protection Act 1979 in relation to temporary coastal protection works (within the meaning of that Act) on the land (or on public land adjacent to that land), except where the council is satisfied that such an order has been fully complied with.

No order under Part 4D of the *Coastal Protection Act 1979*, has been made.

(2) In relation to a coastal council:

(a) whether the Council has been notified under section 55X of the *Coastal Protection Act 1979* that temporary costal protection works (within the meaning of that Act) have been placed on the land (or on public land adjacent to that land), and

Council has not received any such notification.

(b) if works have been so placed—whether the council is satisfied that the works have been removed and the land restored in accordance with that Act.

Not applicable.

4B Annual charges under *Local Government Act 1993* for coastal protection services that relate to existing coastal protection works*.*

In relation to a coastal council – whether the owner (or any previous owner) of the land has consented in writing to the land being subject to annual charges under section 946B of the *Local Government Act 1993* for coastal protection services that relate to existing coastal protection works (within the meaning of section 553B of that Act).
Note: "Existing coastal protection works" are works to reduce the impact of coastal hazards on land (such as seawalls, revetments, groynes and beach nourishment) that existed before the commencement of section 553B of the *Local Government Act 1993*.

No annual charges under section 553B of the *Local Government Act 1993*, are applicable to the land.

5. Mine Subsidence

Whether or not the land is proclaimed to be a mine subsidence district within the meaning of section 15 of the *Mine Subsidence Compensation Act* 1961.

No, this land is not affected.

6. Road widening and road realignment

Whether or not the land is affected by any road widening or road realignment under Division 2 or Part 3 of the *Roads Act* 1993, any environmental planning instrument, or any resolution of the council.

The land is not affected by any road widening proposal under Division 2 of Part 3 of the Roads Act or Fairfield Local Environmental Plan 2013.

7. Council and other public authority policies on hazard risk restrictions

Whether or not the land is affected by a policy:
(a) adopted by the Council, or
(b) adopted by any other public authority and notified to the Council for the express purpose of its adoption by that authority being referred to in planning certificates issued by the Council,

that restricts the development of the land because of the likelihood of land slip, bushfire, tidal inundation, subsidence, acid sulfate soils or any other risk, other than flooding.

Council's policies on hazard risk restrictions are as follows:

(i) Landslip

The land is not affected by a policy adopted by Council or adopted by any other public authority and notified to Council (for the express purpose of its adoption by that authority being referred to in Planning Certificates issued by Council) that restricts development on the land because of the likelihood of landslide risk or subsidence.

(ii) Bushfire

Council has been supplied by the NSW Rural Fire Service with a hazard map for the purposes of a bush fire risk management plan applying to land within the Fairfield local government area. Based on that map, it appears the land referred to in this certificate is not bush fire prone as defined in Part 4 of the Environmental Planning and Assessment Act 1979.

(iii) Tidal Inundation

The land is not affected by a policy adopted by Council or adopted by any other public authority and notified to Council (for the express purpose of its adoption by that authority being referred to in Planning Certificates issued by Council) that restricts development on the land because of the likelihood of tidal inundation.

(iv) Subsidence

No, the land is not so affected

(v) Acid Sulfate Soils

The land is not affected by a policy adopted by Council or adopted by any other public authority and notified to Council (for the express purpose of its adoption by that authority being referred to in Planning Certificates issued by Council) that restricts development on the land because of the likelihood of acid sulfate soils.

(vi) Any other risks

No, the land is not so affected

7A. Flood related development controls information

1. If the land or part of the land is within the flood planning area and subject to flood related development controls.

Based on the information currently available to Council, the land is not within the flood planning area. However, this is subject to future flood studies and reviews.

Mainstream Flooding
Based on the information currently available to Council, this land is not affected by mainstream flooding. However, this is subject to future flood studies and reviews.

Overland Flooding
Part or all of this land is within the floodplain and may be affected by local overland flooding. This parcel is not in an area in which Council's current program of overland flood risk mapping has been completed. The term local overland flooding means inundation by local runoff rather than overbank discharge from a stream, river, estuary, lake or dam. If you are planning a development proposal, you may be required to undertake an Overland Flood Study prepared by a suitably qualified civil engineer experienced in flood analysis to identify the overland flood levels and velocities for the site.

2. If the land or part of the land is between the flood planning area and the probable maximum flood and subject to flood related development controls.

Based on the information currently available to Council, the land is not between the flood planning area and the probable maximum flood. However, this is subject to future flood studies and reviews.

Note: The flood information is the current information to date. However, Council reviews flood studies on an on-going basis and new information may become available in future. Please contact Council's Catchment Planning Division on 9725 0222 for any updated information.

Note:

3. In this clause –
flood planning area has the same meaning as the Floodplain Development Manual.
Floodplain Development Manual means the *Floodplain Development Manual* (ISBN 0 7347 5476 0) published by the NSW Government in April 2005.
probable maximum flood has the same meaning as in the Floodplain Development Manual.

8. Land reserved for acquisition

Whether or not any environmental planning instrument or proposed environmental planning instrument referred to in clause 1 makes provision in relation to the acquisition of the land by a public authority, as referred to in section 3.15 of the Act.

The land is not reserved for acquisition under Fairfield Local Environmental Plan 2013.

9. Contributions plans

The name of each contributions plan applying to the land.

Fairfield City Council indirect (Section 7.12) Development Contributions Plan 2011 applies to all land within the City of Fairfield.
Fairfield City Council direct (Section 7.11) Development Contributions Plan 2011 applies to this land.

9A. Biodiversity certified land

If the land is biodiversity certified land under Part 8 of the *Biodiversity Conservation Act 2016*, a statement to that effect.

Note: "Biodiversity certified land includes land certified under Part 7AA of the *Threatened Species Conservation Act 1995* that is taken to be certified under Part 8 of the *Biodiversity Conservation Act 2016*.

The land is not biodiversity certified land.

10. Biodiversity stewardship sites

If the land is a biodiversity stewardship site under a biodiversity stewardship agreement under Part 5 of the *Biodiversity Conservation Act 2016*, a statement to that effect (but only if the council has been notified of the existence of the agreement by the Chief Executive of the Office of Environment and Heritage).

Note: "Biodiversity stewardship agreements include biobanking agreements under Part 7A of the *Threatened Species Conservation Act 1995* that are taken to be biodiversity stewardship agreements under Part 5 of the *Biodiversity Conservation Act 2016*.

No such agreement applies to the land.

10A. Native vegetation clearing set asides

If the land contains a set aside area under section 60ZC of the *Local Land Services Act 2013*, a statement to that effect (but only if the council has been notified of the existence of the set aside area by Local Land Services or it is registered in the public register under that section)

Not applicable.

11. Bush fire prone land

If any of the land is bush fire prone land (as defined in Act), a statement that all or, as the case may be, some of the land is bush fire prone land. If none of the land is bush fire prone land, a statement to that effect.

Council has been supplied by the NSW Rural Fire Service with a hazard map for the purposes of a bush fire risk management plan applying to land within the Fairfield local government area. Based on that map, it appears the land referred to in this certificate is not bush fire prone as defined in Part 4 of the Environmental Planning and Assessment Act 1979.

12. Property vegetation plans

If the land to which a property vegetation plan approved under Part 4 of the *Native Vegetation Act 2003* (and that continues in force) applies, a statement to that effect (but on if the council has been notified of the existence of the plan by the person or body that approved the plan under that Act).

No.

13. Orders under Trees (Disputes between Neighbours) Act 2006

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 if the council has been notified of the order).

No

14. Directions under Part 3A

If there is a direction by the Minister in force under section 75P (2) (c1) of the Act that a provision of an environmental planning instrument prohibiting or restricting the carrying out of a project or a stage of a project on the land under Part 4 of the Act does not have effect, a statement to that effect identifying the provision that does not have effect.

No such direction applies to the land.

15. Site compatibility certificates and conditions for seniors housing

If the land is land to which State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004 applies -
(a) a statement of whether there is a current site compatibility certificate (seniors housing), of which the council is aware, in respect of proposed development on the land and, if there is a certificate, the statement is to include -
(i) the period for which the certificate is current, and
(ii) that a copy may be obtained from the head office of the Department, and

No such certificate applies to the land.

(b) a statement setting out any terms of a kind referred to in clause 18(2) of that Policy that have been imposed as a condition of consent to a development application granted after 11 October 2007 in respect of the land.

No such terms apply to the land.

16. Site compatibility certificates for infrastructure, schools or TAFE establishments

A statement of whether there is a valid site compatibility certificate (infrastructure) or site compatibility certificate (schools or TAFE establishments), of which the council is aware, in respect of proposed development on the land and, if there is a certificate, the statement is to include:
(a) the period for which the certificate is valid, and
(b) that a copy may be obtained from the head office of the Department.

No such certificate applies to the land.

17. Site compatibility certificates and conditions for affordable rental housing

(1) A statement to the whether there is a current site compatibility certificate (affordable rental housing), of which the council is aware, in respect of proposed development on the land and, if there is a certificate, the statement is to include:
(a) the period for which the certificate is current, and
(b) that a copy may be obtained from the head office of the Department.

No such certificate applies to the land.

(2) A statement setting out any terms of a kind referred to in clause 17(1) or 38(1) of *State Environmental Planning Policy (Affordable Rental Housing) 2009* that has been imposed as a condition of consent to a development application in respect of the land.

No such terms apply to the land.

18. Paper subdivision information

(1) The name of any development plan adopted by a relevant authority that applies to the land or that is proposed to be subject to a consent ballot.

(2) The date of any subdivision order that applies to the land.

(3) Words and expressions used in this clause have the same meaning as they have in Part 16C of this Regulation.

No such plan or order applies to the land

19. Site verification certificates

A statement of whether there is a current site verification certificate, of which the council is aware, in respect of the land and, if there is a certificate, the statement is to include:

(a) the matter certified by the certificate, and
Note: A site verification certificate sets out the Director-General's opinion as to whether the land concerned is or is not biophysical strategic agricultural land or critical industry cluster land—see Division 3 of Part 4AA of State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007.
(b) the date on which the certificate ceases to be current (if any), and
(c) that a copy may be obtained from the head office of the Department.

No such certificate applies to the land

20. Loose-fill asbestos insulation

If the land includes any residential premises (within the meaning of Division 1A of Part 8 of the *Home Building Act 1989*) that are listed on the register that is required to be maintained under that Division, a statement to that effect.

Not Applicable.

21. Affected building notices and building product rectification orders

(1) A statement of whether there is any affected building notice of which the council is aware that is in force in respect of the land.
(2) A statement of:

(a) whether there is any building product rectification order of which the council is aware that is in force in respect of the land and has not been fully complied with, and
(b) whether 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.

None Relevant.

22. State Environmental Planning Policy (Western Sydney Aerotropolis) 2020

For land to which *State Environmental Planning Policy (Western Sydney Aerotropolis) 2020* applies, whether the land is –

(a) in an ANEF or ANEC contour of 20 or greater as referred to in clause 19 of that Policy, or

No

(b) shown on the Lighting Intensity and Wind Shear Map under that Policy, or

No

(c) shown on the Obstacle Limitation Surface Map under that Policy, or

No

(d) in the "public safety area" on the Public Safety Area Map under that Policy, or

No

(e) in the "3 kilometre wildlife buffer zone" or the "13 kilometre wildlife buffer zone" on the Wildlife Buffer Zone Map under that Policy.

No

Note: The following matters are prescribed by section 59 (2) of the Contaminated Land Management Act 1997 as additional matters to be specified in a planning certificate:

(a) that the land to which the certificate relates is significantly contaminated land within the meaning of that Act—if the land (or part of the land) is significantly contaminated land at the date when the certificate is issued,
(b) that the land to which the certificate relates is subject to a management order within the meaning of that Act—if it is subject to such an order at the date when the certificate is issued,
(c) that the land to which the certificate relates is the subject of an approved voluntary management proposal within the meaning of that Act—if it is the subject of such an approved proposal at the date when the certificate is issued,
(d) that the land to which the certificate relates is subject to an ongoing maintenance order within the meaning of that Act—if it is subject to such an order at the date when the certificate is issued,
(e) that the land to which the certificate relates is the subject of a site audit statement within the meaning of that Act—if a copy of such a statement has been provided at any time to the local authority issuing the certificate.

Continuously updated information in relation to the above matters can also be found by searching the records of the Environmental Protection Authority (EPA) at the website of the EPA. The search page can be found at: http://www.epa.nsw.gov.au/prclmapp/searchregister.aspx.

The following information is available to Council but may not be current:

Council has adopted by resolution a policy (commencing 1 August 2000), on contaminated land which may restrict the development of land. This policy is implemented when zoning or land use changes are proposed on lands which have previously been used for certain purposes. Consideration of Council's adopted policy and the application of provisions under the State Legislation is warranted.

The land is not within an investigation area or remediation site under Part 3 of the Contaminated Land Management Act 1997.

The land is not subject to an investigation order or a remediation order within the meaning of the Contaminated Land Management Act 1997.

The land is not subject to a voluntary investigation proposal (or voluntary remediation proposal) that is the subject of the Environment Protection Authority's agreement under Section 19 or 26 of the Contaminated Land Management Act 1997.

The land is not subject of a site audit statement within the meaning of the Contaminated Land Management Act 1997.

Note 2: Any advice received by Council pursuant to section 26(2) of the Nation Building and Jobs Plan (State Infrastructure Delivery) Act 2009, is included below.

No such certificate applies to the land.

The following additional information is provided under Section 10.7(5) of the Environmental Planning and Assessment Act 1979

Note:

(1) When information pursuant to section 10.7(5) is requested, the Council is under no obligation to furnish any of the information supplied herein pursuant to that section.
(2) Council draws your attention to section 10.7(6), which states that a Council shall not incur any liability in respect of any advice provided in good faith pursuant to subsection (5).
(3) The absence of any reference to any matter affecting the land shall not imply that the land is not affected by any matter not referred to in this certificate.

The land is subject to the provisions of the SEPP (Vegetation in Non-Rural Areas) 2017 and Fairfield LEP 2013.

Land must not be cleared or filled except with the consent of Council.

The applicant's attention is drawn to the Department of Infrastructure, Planning and Natural Resources map at the 1:100,000 scale 'Salinity Potential in Western Sydney 2002' that indicates there is potential for salinity in the Region. The map can be viewed at Council's Customer Service Centre (86 Avoca Road Wakeley).
Council's policy 'Building in Saline Environments', applies to all areas of Fairfield City and requires use of construction measures and materials in new development to minimise risk of salt damage to buildings from urban salinity.

On 15th April 2014, the Australian Government announced that it intends to proceed with an airport at Badgerys Creek in the Liverpool City Council area. The Western Sydney Airport draft Environmental Impact Statement (EIS) was released for public exhibition on Monday 19 October 2015. You should make your own enquiries with the Commonwealth Government Department responsible via the website http://westernsydneyairport.gov.au/.

Clause 2.7 of Fairfield Local Environmental Plan 2013 requires development consent for the demolition of a building or work.

There is no draft SEPP applying to this land.

FAIRFIELD CITY COUNCIL
DEVELOPMENT CONTROL PLANS

Fairfield Citywide Development Control Plan

Title	Adopted by Council*	Effective Date
Fairfield Citywide Development Control Plan 2013	13 November 2012	31 May 2013
Amendment No.1 change maximum height permissible for detached secondary dwellings, clarify requirements and correct various anomalies, incorporate outdoor dining policy into a number of site specific DCPs (see table below)	11 February 2014	5 March 2014
Amendment No.2 amend chapter 2 to reference Site Specific DCP – Wetherill Park Market Town	20 March 2013	7 March 2014
Amendment No.3 Introduce Chapter 4B - Secondary Dwellings in Rural Area - Horsley Park and Cecil Park	11 December 2013	14 March 2014
Amendment No. 4 amends Chapter 9 Industrial Development Site Specific Controls for 449 Victoria Street and 96 Newton Road, Wetherill Park	24 September 2013	21 March 2014
Amendment No.5 amends Chapters 2 and 10 and Appendix B to ensure provisions within the DCP are in line with the SEPP (Exempt and Complying Development Codes) 2008.	13 May 2014	28 May 2014
Amendment No. 5A amends Chapter 6A – Multi Dwelling Housing – Town house and Villas: Site Specific DCP – 46 & 50 Cobbett Street, Wetherill Park.	12 March 2013	22 August 2014
Amendment No. 6 including increase to building heights for detached granny flats, removal of reference to minimum lot sizes for R1 zoned lands, inclusion of new controls and provisions relating to neighbourhood shops and pad mounted sub stations, clarify requirements and correct a number of anomalies associated with secondary dwellings, dual occupancy, narrow lots and residential flat buildings and other minor inconsequential amendments.	12 August 2014	3 September 2014
Amendment No. 6A amends Chapter 14 Subdivision – Applying to land located on 630 Elizabeth Drive and 9-10 Schubert Place, Bonnyrigg Heights to facilitate a future road link between Stivala Place and Schubert Place.	12 August 2014	3 September 2014
Amendment No.7 proposed amendments include – Additional Controls for Child Care Centres, Boarding Houses and Granny Flats; Revised Heritage Chapter; New provisions relating to CCTV for specific land uses, and; Acoustic measures for development in the Rural Area.	25 November 2014	3 December 2014
Amendment No. 7A amends Chapter 10 Miscellaneous Development - applying to land located on 1 Bartley Street, Cabramatta to facilitate the development of a hotel or motel accommodation at the Cabravale Diggers site.	26 August 2014	16 January 2015
Amendment 8 amends Chapter 9 – Industrial Development. This amendment includes provisions for industrial/employment development proposals in close proximity to residential land. The amended controls cover the following issues: General Design Requirements (including setback considerations, driveways, loading and storage areas, etc); Bulk and scale; Vehicular and Pedestrian Access Privacy; Light Spill; Noise and Vibration; and Landscaping.	10 March 2015	1 April 2015
Amendment 9 includes new provisions relating to various forms of residential development including: Building Appearance, Landscaping, Private Open space, Minimum Lot Width, Car Parking Rates and Notification of S82A Applications.	12 May 2015	27 May 2015
Amendment 10 including amendments to: • the intent of the Development Control Plan and Development Application process – the DA Guide • provisions for rural zone development • residential flat building setbacks • heritage advice • road classifications	14 July 2015	5 August 2015
Amendment No.11 includes site specific development controls (private open space, car parking and dwelling density) for 46-50 Cobbett Street, Wetherill Park included in Chapter 6A Multi Dwelling Housing – Townhouses and Villas.	1 December 2015	16 December 2015
Amendment No. 12 addresses anomalies in the DCP including but not limited to providing clarity on minimum room sizes, updated acoustic proofing measures for new dwellings in rural areas, car parking rates for disabled parking, and provisions for site servicing and loading requirements in neighbourhood shops in residential zones.	10 May 2016	25 May 2016

Amendment No. 13 Clarification to requirements for acoustic measures for development in the rural areas, location of alfresco areas for secondary dwellings, car parking rates for restaurants & amendments to ensure controls for residential flat buildings are consistent with the State Environmental Planning Policy No 65 – Design Quality of Residential Apartment Development & associated Apartment Design Guide.	14 March 2017	5 April 2017
Amendment No. 14 Site specific provisions for 620 Elizabeth Drive, Bonnyrigg Heights.	27 June 2017	15 September 2017
Amendment No. 15 Amendment to Appendix G, and addition of Appendix H to introduce Aboriginal Heritage Management controls for development across Fairfield City	12 September 2017	28 February 2018
Amendment No. 16 Amendments provide clarity relating to alfresco areas and carports provisions for secondary dwellings, lot width provisions for dual occupancy and multi dwelling housing on cul-de-sac heads, setbacks for residential flat buildings on corner sites, removal of Chapter 8B Neighbourhood and Local Centres – Mixed Use (Up to 2 storeys) to ensure consistency with the Apartment Design Guide, inclusion of accessibility requirements, inclusion of Council's Stormwater Management Policy, and guidelines for acknowledging petitions.	27 February 2018	21 March 2018
Amendment No. 18 Amendment to Chapter 10.11 to revise existing site specific DCP in relation to the Cabravale Diggers Club site at 1 Bartley Street, Canley Vale	14 November 2017	28 February 2018
Amendment No. 19 Amendment to introduce site specific development controls for 17-23 Longfield Street, Cabramatta.	11 September 2018	28 February 2019
Amendment No. 20 Amendment No. 20 provides clarity on controls and guidelines within the following chapters: • Chapter 3 – Environmental Management and Constraints; • Chapter 4A – Development in the Rural Zones; • Chapter 5A – Dwelling Houses; • Chapter 5B – Secondary Dwellings; • Chapter 6A – Multi Dwelling Housing; • Chapter 6B – Dual Occupancy; • Chapter 9 – Industrial Development; and • Chapter 14 – Subdivision	12 February 2019	13 March 2019
Amendment No. 22 Amendment No. 22 provides clarity on control and guidelines within the following chapters: • Appendix A – Definitions • Chapter 2 – Development Application Process • Chapter 3 – Environmental Management and Constraints • Chapter 5A – Dwelling Houses • Chapter 5B – Secondary Dwellings • Chapter 5C – Dwelling Houses on Narrow Lots • Chapter 7 – Residential Flat Buildings and Shop Top Housing • Chapter 8 – Neighbourhood and Local Centres Business Use • Chapter 12 – Car Parking, Vehicle and Access Management • Chapter 13 – Child Care Centres • Chapter 14 - Subdivision	9 June 2020	21 September 2020

Place Based and Site Specific Development Control Plans

Title	Adopted by Council*	Effective Date
Bonnyrigg Town Centre DCP 2018	6 August 2019	4 September 2020
Cabramatta Town Centre DCP (5/2000) - Amendment No.1 (Outdoor Dining Controls –5.3.2014) - Amendment No. 2 (New clause regarding Model Submission – 3.09.2014) - Amendment No. 3 (Amended clauses and map regarding Precinct 2- Dutton Lane Car Park)	11 October 2016	10 March 2017
Fairfield City Centre DCP 2013 - Amendment No.1 (Outdoor Dining Controls – 5.3. 2014) - Amendment No. 2 (Remove reference to Public Art Guide and update signage controls reference – 3.09.2014) - Amendment No. 3 (removes reference to the Fairfield Art Strategy as Council has not formally adopted a Public Art Strategy)	10 May 2016	25 May 2016
Canley Corridor DCP No.37 (2013) (Canley Vale and Canley Heights town centres) - Amendment No.1: (Development Controls for Adams Reserve 12.9.2006) - Amendment No.2: (Development Controls for 45-47 Peel St, Canley Heights 9.4.2008) - Amendment No.3: (Awnings controls 3.11.2010) - Amendment No.4: (Development Controls for 190 Canley Vale Rd, Canley Heights 19.4.2011) - Amendment No.5: (References to Fairfield LEP 2013 31.5.2013) - Amendment No.6: (Outdoor Dining Controls –5.3.2014) - Amendment No. 7 (Remove reference to Public Art Guide – 3.09.2014) - Amendment No. 8 (Include 46 Derby Street, Canley Heights into Town Centre Catchment – 01.07.2015) - Amendment No. 9 (removes reference to the Fairfield Art Strategy as Council has not formally adopted a Public Art Strategy)	10 May 2016	25 May 2016
Prairiewood Town Centre – Southern Precinct DCP 2013	13 November 2012	31 May 2013
Site Specific DCP – Wetherill Park Market Town	20 March 2013	7 March 2014
Fairfield Heights Town Centre DCP 2018	06 August 2019	05 June 2020
Villawood Town Centre DCP 2020	28 April 2020	05 June 2020

Master Plans

Title	Adopted by Council*	Effective Date
Prairiewood Masterplan (December 2005)	13 November 2012	31 May 2013
Fairfield Town Centre Masterplans – The Crescent and Barbara Street Precincts (May 2007)		May 2007

Urban Design Studies

Title	Adopted by Council
Fairfield City Centre Key Sites Urban Design Study	27 March 2018
Fairfield Heights Town Centre Urban Design Study	27 March 2018
Villawood Town Centre Urban Design Study	27 March 2018

***** Note: Some *"In Force"* Development Control Plans may be under review, check with Council for date of last amendment.

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Flood Information Sheet

Applicant:	**Alison Smith**
Certificate No.:	**707/2021**
Applicant's Reference:	**62436**
Issue Date:	**02/03/2022**
Receipt No.:	**3995089**

PROPERTY ADDRESS:	**42 Tarlington Parade BONNYRIGG NSW 2177**
LEGAL DESCRIPTION:	**Lot: 454 DP: 839627**

Council has adopted a policy on flooding which may restrict the development of land. The Fairfield City-Wide Development Control Plan 2013 (which includes provisions for flood management) applies to all of the Fairfield Local Government area.

Important Notes:

Not Applicable values indicate that the subject land is not known to be subject to flooding.

Not Available values indicate that Council does not have the required flood information for the subject land.

A Glossary is also attached at the end of this Flood Information Sheet.

MAINSTREAM FLOODING

Description

Based on the information currently available to Council, this land is not affected by mainstream flooding. However, this is subject to future flood studies and reviews.

Mainstream Flood Details

Size of Flood	Flood Level (m AHD)
PMF minimum	**Not Applicable**
PMF maximum	**Not Applicable**
1 in 100 year minimum	**Not Applicable**
1 in 100 year maximum	**Not Applicable**
1 in 20 year minimum	**Not Applicable**
1 in 20 year maximum	**Not Applicable**

LOCAL OVERLAND FLOODING

Description

Part or all of this land is within the floodplain and may be affected by local overland flooding. This parcel is not in an area in which Council's current program of overland flood risk mapping has been completed. The term local overland flooding means inundation by local runoff rather than overbank discharge from a stream, river, estuary, lake or dam. If you are planning a development proposal, you may be required to undertake an Overland Flood Study prepared by a suitably qualified civil engineer experienced in flood analysis to identify the overland flood levels and velocities for the site.

Local Overland Flood Details

Size of Flood	Flood Level (m AHD)
PMF minimum	**Not Applicable**
PMF maximum	**Not Applicable**
1 in 100 year minimum	**Not Applicable**
1 in 100 year maximum	**Not Applicable**
1 in 20 year minimum	**Not Applicable**
1 in 20 year maximum	**Not Applicable**

Advisory Note:
A preliminary analysis of this catchment to quantify the amount of stormwater in the vicinity of this property has not been carried out.

If you are planning a development proposal, you will be required to undertake an Overland Flood Study as the flood level for this site is not known. The study shall be prepared by a suitably qualified civil engineer experienced in flood analysis and in accordance with Council's Flood Risk Management Policy in Chapter 11 of the Fairfield City Wide DCP 2013 and Council's Stormwater Drainage Policy.

Please contact Council's Development Engineers in 9725 0222 for further information on this process.

GLOSSARY	
m AHD	metres Australian Height Datum (AHD).
Australian Height Datum (AHD)	A common national plane of level approximately equivalent to the height above sea level. All flood levels, floor levels and ground levels are normally provided in metres AHD.
Average Recurrence Interval (ARI)	The long term average number of years between the occurrence of a flood as big as the selected event. For example, floods with a discharge as great as the 20 year ARI event will occur on average once every 20 years. ARI is another way of expressing the likelihood of occurrence of a flood event.
Flood	A relatively high stream flow that overtops the natural or artificial banks in any part of a stream, river, estuary, lake or dam. It also includes local overland flooding associated with major drainage before entering a watercourse, or coastal inundation resulting from raised sea levels, or waves overtopping the coastline.
Flood risk precinct	An area of land with similar flood risks and where similar development controls may be applied by a Council to manage the flood risk. The flood risk is determined based on the existing development in the precinct or assuming the precinct is developed with normal residential uses. Usually the floodplain is categorised into three flood risk precincts 'low', 'medium' and 'high', although other classifications can sometimes be used. **High Flood Risk:** This has been defined as the area of land below the 100-year flood event that is either subject to a high hydraulic hazard or where there are significant evacuation difficulties. **Medium Flood Risk:** This has been defined as land below the 100-year flood level that is not within a High Flood Risk Precinct. This is land that is not subject to a high hydraulic hazard or where there are no significant evacuation difficulties. **Low Flood Risk:** This has been defined as all land within the floodplain (i.e. within the extent of the probable maximum flood) but not identified within either a High Flood Risk or a Medium Flood Risk Precinct. The Low Flood Risk Precinct is that area above the 100-year flood event.
Local overland flooding	The inundation of normally dry land by local runoff rather than overbank discharge from a stream, river, estuary, lake or dam.
Mainstream flooding	The inundation of normally dry land occurring when water overflows the natural or artificial banks of a stream, river, estuary, lake or dam.
Probable Maximum Flood (PMF)	The largest flood that could conceivably occur at a particular location.
Flood Planning Area	The area of land below the FPL and thus subject to flood related development controls.
Flood Planning Level	Are the combinations of flood levels (derived from significant historical flood events or floods of specific AEPs) and freeboards selected for floodplain risk management purposes, as determined in management studies and incorporated in management plans.
Flood Control Lot	A lot to which flood related development controls apply in respect of development for the purposes of industrial buildings, commercial premises, dwelling houses, dual occupancies, multi dwelling housing or residential flat buildings (other than development for the purposes of group homes or seniors housing)

Appendix F Historical Aerial Photographs

Legend

Approximate Site Boundary

JBS&G

Job No: 62436	
Client: LAHC	
Version: Aerials	Date 1/03/2022
Drawn By: JA	Checked By: AS
Scale 1:3,000	

0 50 100

metres

Coord. Sys. GDA 1994 MGA Zone 56

Stage 12 and 13,
Bonnyrigg, NSW

HISTORICAL AERIAL PHOTOGRAPH - 1947

AERIAL 1947

File Name: N:\Projects\LAHC\62436 Bonnyrigg Stage 12 and 13\GIS\Maps\Aerials\62436_1947_Aerial.mxd
Reference: NSW DFSI

Legend

Approximate Site Boundary

JBS&G

Job No: 62436	
Client: LAHC	
Version: Aerials	Date 1/03/2022
Drawn By: JA	Checked By: AS
Scale 1:3,000	

0 50 100

metres

Coord. Sys. GDA 1994 MGA Zone 56

Stage 12 and 13,
Bonnyrigg, NSW

HISTORICAL AERIAL PHOTOGRAPH - 1955

AERIAL 1955

File Name: N:\Projects\LAHC\62436 Bonnyrigg Stage 12 and 13\GIS\Maps\Aerials\62436_1955_Aerial.mxd
Reference: NSW DFSI

Legend

Approximate Site Boundary

JBS&G

Job No: 62436	
Client: LAHC	
Version: Aerials	Date 1/03/2022
Drawn By: JA	Checked By: AS
Scale 1:3,000	

0 50 100

metres

Coord. Sys. GDA 1994 MGA Zone 56

Stage 12 and 13,
Bonnyrigg, NSW

HISTORICAL AERIAL PHOTOGRAPH - 1965

AERIAL 1965

File Name: N:\Projects\LAHC\62436 Bonnyrigg Stage 12 and 13\GIS\Maps\Aerials\62436_1965_Aerial.mxd
Reference: NSW DFSI

Legend

Approximate Site Boundary

JBS&G

Job No: 62436	
Client: LAHC	
Version: Aerials	Date 1/03/2022
Drawn By: JA	Checked By: AS
Scale 1:3,000	

0 50 100

metres

Coord. Sys. GDA 1994 MGA Zone 56

Stage 12 and 13,
Bonnyrigg, NSW

HISTORICAL AERIAL PHOTOGRAPH - 1975

AERIAL 1975

File Name: N:\Projects\LAHC\62436 Bonnyrigg Stage 12 and 13\GIS\Maps\Aerials\62436_1975_Aerial.mxd
Reference: NSW DFSI

Legend

Approximate Site Boundary

JBS&G

Job No: 62436	
Client: LAHC	
Version: Aerials	Date 1/03/2022
Drawn By: JA	Checked By: AS
Scale 1:3,000	

0 50 100

metres

Coord. Sys. GDA 1994 MGA Zone 56

Stage 12 and 13,
Bonnyrigg, NSW

HISTORICAL AERIAL PHOTOGRAPH - 1983

AERIAL 1983

File Name: N:\Projects\LAHC\62436 Bonnyrigg Stage 12 and 13\GIS\Maps\Aerials\62436_1983_Aerial.mxd
Reference: NSW DFSI

Legend

Approximate Site Boundary

JBS&G

Job No: 62436	
Client: LAHC	
Version: Aerials	Date 1/03/2022
Drawn By: JA	Checked By: AS
Scale 1:3,000	

0 50 100

metres

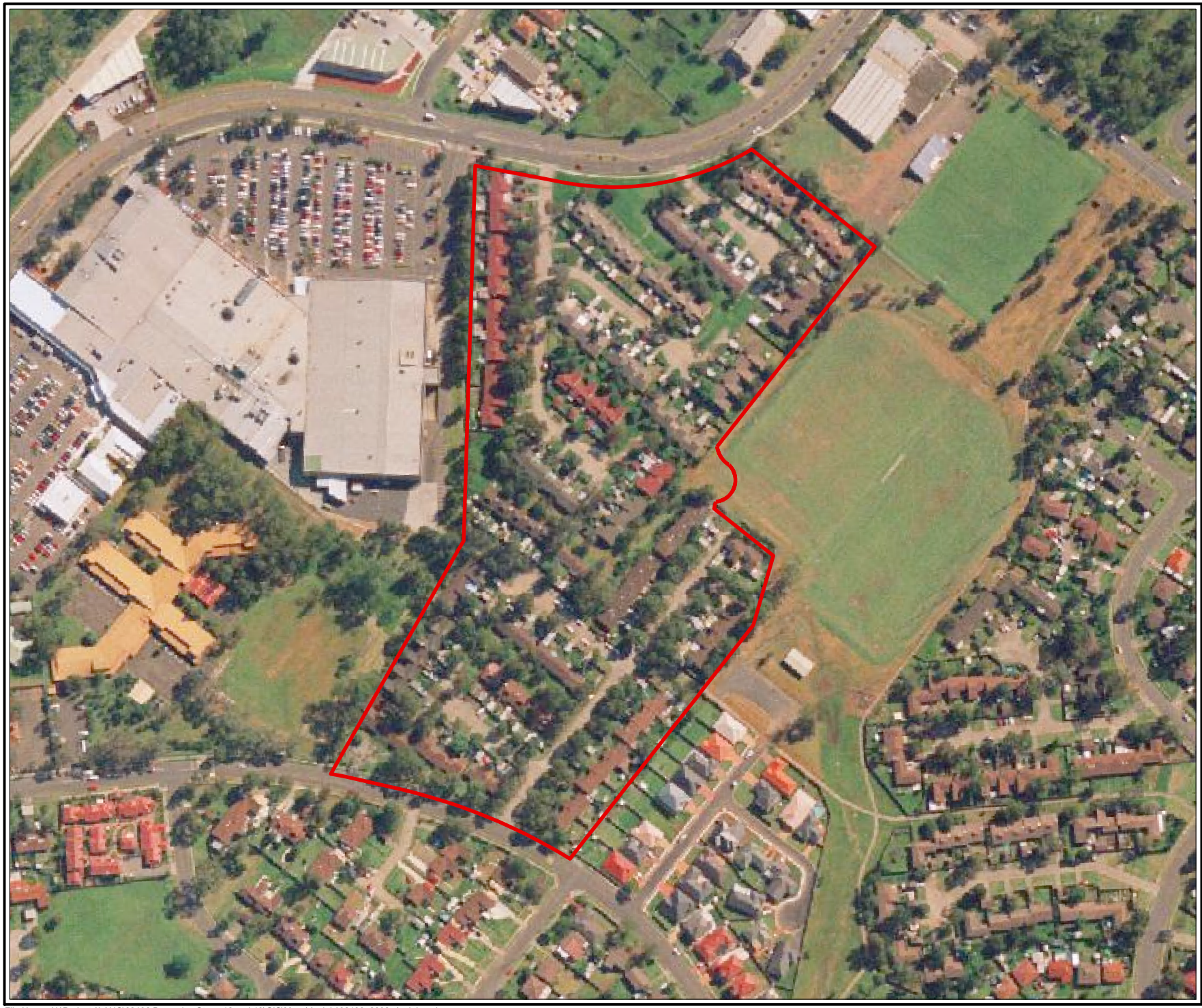
Coord. Sys. GDA 1994 MGA Zone 56

Stage 12 and 13,
Bonnyrigg, NSW

HISTORICAL AERIAL PHOTOGRAPH - 1991

AERIAL 1991

File Name: N:\Projects\LAHC\62436 Bonnyrigg Stage 12 and 13\GIS\Maps\Aerials\62436_1991_Aerial.mxd
Reference: NSW DFSI



Legend

Approximate Site Boundary

JBS&G

Job No: 62436	
Client: LAHC	
Version: Aerials	Date 25/03/2022
Drawn By: JA	Checked By: AS
Scale 1:3,000	

0 50 100

metres

Coord. Sys. GDA 1994 MGA Zone 56

Stage 12 and 13,
Bonnyrigg, NSW

HISTORICAL AERIAL PHOTOGRAPH - 2002

AERIAL 2002

File Name: N:\Projects\LAHC\62436 Bonnyrigg Stage 12 and 13\GIS\Maps\Aerials\62436_2002_Aerial.mxd
Reference: NSW DFSI

Legend

Approximate Site Boundary

JBS&G

Job No: 62436	
Client: LAHC	
Version: Aerials	Date 1/03/2022
Drawn By: JA	Checked By: AS
Scale 1:3,000	

0 50 100

metres

Coord. Sys. GDA 1994 MGA Zone 56

Stage 12 and 13,
Bonnyrigg, NSW

HISTORICAL AERIAL PHOTOGRAPH - 2011

AERIAL 2011

File Name: N:\Projects\LAHC\62436 Bonnyrigg Stage 12 and 13\GIS\Maps\Aerials\62436_2011_Aerial.mxd
Reference: Nearmap - www.nearmap.com.au (Capture Date: 16/05/2011)

Legend

Approximate Site Boundary

JBS&G

Job No: 62436	
Client: LAHC	
Version: Aerials	Date 1/03/2022
Drawn By: JA	Checked By: AS
Scale 1:3,000	

0 50 100

metres

Coord. Sys. GDA 1994 MGA Zone 56

Stage 12 and 13,
Bonnyrigg, NSW

HISTORICAL AERIAL PHOTOGRAPH - 2022

AERIAL 2022

File Name: N:\Projects\LAHC\62436 Bonnyrigg Stage 12 and 13\GIS\Maps\Aerials\62436_2021_Aerial.mxd
Reference: Nearmap - www.nearmap.com.au (Capture Date: 17/02/2022)

Appendix G Land Titles Records

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 454/839627

SEARCH DATE	TIME	EDITION NO	DATE
6/8/2007	11:41 AM	1	26/5/1994

LAND

LOT 454 IN DEPOSITED PLAN 839627
AT BONNYRIGG
LOCAL GOVERNMENT AREA FAIRFIELD
PARISH OF ST LUKE COUNTY OF CUMBERLAND
TITLE DIAGRAM DP839627

FIRST SCHEDULE

NEW SOUTH WALES LAND AND HOUSING CORPORATION

SECOND SCHEDULE (3 NOTIFICATIONS)

1 Z560464 EASEMENT FOR ELECTRICITY PURPOSES 1 & 2.75 WIDE AFFECTING THE PART OF THE LAND ABOVE DESCRIBED SHOWN SO BURDENED IN THE TITLE DIAGRAM
2 DP839627 EASEMENT TO DRAIN WATER 2 WIDE AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM
3 DP839627 EASEMENT TO DRAIN WATER 2 WIDE AND VARIABLE AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM

NOTATIONS

NOTE: THE CERTIFICATE OF TITLE FOR THIS FOLIO OF THE REGISTER DOES NOT INCLUDE SECURITY FEATURES INCLUDED ON COMPUTERISED CERTIFICATES OF TITLE ISSUED FROM 4TH JANUARY, 2004. IT IS RECOMMENDED THAT STRINGENT PROCESSES ARE ADOPTED IN VERIFYING THE IDENTITY OF THE PERSON(S) CLAIMING A RIGHT TO DEAL WITH THE LAND COMPRISED IN THIS FOLIO.
UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

PLAN FORM 2

Plan Drawing only to appear in this space

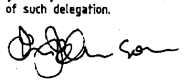
*OFFICE USE ONLY

DP 839627

Y 0 1 2 A 1 2 A

SIGNATURES, SEALS AND STATEMENTS of intention to dedicate public roads or to create reserves, drainage reserves, easements, restrictions on the use of land or positive covenants.

SIGNED by me IAN WARWICK JOHNSON as delegate of the New South Wales Land and Housing Corporation and I hereby certify that I have no notice of the revocation of such delegation.



⊕ EASEMENT TO DRAIN WATER 2 WIDE

EASEMENT FOR ELECTRICITY PURPOSES 2.75 WIDE (D.P. 262455)

SEE SHEET 2

454

453
1455 m²

420

D. P. 262454

PRIDDLE WAY (VARIABLE WIDTH) (11 WIDE)

BARRACLOUGH WAY (13 WIDE)

412

SSM 75097

EASEMENT FOR ELECTRICITY PURPOSES 20.115 WIDE (D.P. 635851)

EASEMENT FOR WATERMAIN 5 WIDE

SEE DIAGRAM

CLOUT IN TOP OF FENCE CAPPING

GUNALINE SE FACE OF FENCE POST

DH & WS IN CONC.

PM DH & WINGS

PM CONC. BLK. FD (DP 245617)

NAIL IN CONC.

PM DH & WING FD (DP 262455)

SSM 39416 FD

SSM 39417 FD

SSM 39413 FD

PM DH & WING FD (DP 262452)

PM DH & WING FD (DP 262455)

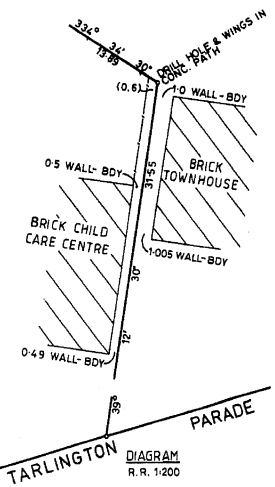
PM DH & WINGS FD (DP 262452)

TARLINGTON

PARADE

(18 WIDE)

SURVEY PRACTICE REGULATION 1990 CLAUSE 32 (2)				
	ISG CO-ORDINATES			
MARK	EASTING	NORTHING	ZONE	ACC
SSM 39413	289957.734	1248486.842	561	2
SSM 39416	289814.217	1248664.156	561	2
SSM 39417	289588.938	1248722.341	561	2
SOURCE: ISG CO-ORDINATES ADOPTED FROM NSW LANDS DEPARTMENT AT 26TH SEPTEMBER 1991				



Registered: 26.5.1994 WGI

C.A: NO 6733 OF 26·10·1992

Title System: TORRENS

Purpose: SUBDIVISION

Ref. Map: U8245-62#

Last Plan: DP 262455

PLAN OF SUBDIVISION OF LOT 410 IN D.P. 262455.

Lengths are in metres. Reduction Ratio 1: 500

~~Mun./Shire~~ City: FAIRFIELD

Locality: BONNYRIGG

Parish: ST LUKE

County: CUMBERLAND

This is sheet 1 of my plan in 2 sheets. (Delete if inapplicable).

I, MICHAEL JOHN MORGAN of RYAN FIRTH & CO, 70 MOORE AVENUE, WEST LINDFIELD

a surveyor registered under the Surveyors Act, 1929, as amended, hereby certify that the survey represented in this plan is accurate and has been made in accordance with the Survey Practice Regulations, 1933 and any special requirements of the Department of Lands, and was completed on

10 JANUARY 1992

Signature M.J.Morgan

Surveyor registered under Surveyors Act, 1929, as amended.
Datum Line of Azimuth. 'X'-'Y'
#Insert date of survey.

Plans used in preparation of survey/compilation.

DP 253269 DP 262452
DP 262454 DP 262455
DP 624912 DP 635851

PANEL FOR USE ONLY for statements of intention to dedicate public roads or to create public reserves, drainage reserves, easements or restrictions as to user.

PURSUANT TO SECTION 88B OF THE CONVEYANCING ACT, 1919 IT IS INTENDED TO CREATE:

1. EASEMENT TO DRAIN WATER 2 WIDE
2. EASEMENT TO DRAIN WATER 2 WIDE AND VARIABLE

PURSUANT TO SECTION 81 OF THE PUBLIC WORKS ACT, 1912, AND SECTION 15(3) OF THE HOUSING ACT, 1976 IT IS INTENDED TO DEDICATE BARRACLOUGH WAY, PRIDDLE WAY, COWDREY WAY, CORLETTE WAY, GOODMAN WAY, DERRY WAY AND THE PATHWAYS AS PUBLIC HIGHWAY

Crown Lands Office Approval

PLAN APPROVED .....
Authorised Officer

Land District .....

Paper No. .....

Field Book ..... pages .....

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 Part 3 Division 2 of the ~~Water Board Act 1987 and the Water Supply Authorities Act 1987~~

*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. 6733

Dated 26-10-92

(Signature) Council Clerk

Council File No. SUB 2303

*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 REFERENCE: H1116 S7550 INSTRUCTION 22643 REF 7550/18

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION

BP4

PLAN FORM 3 | To be used in conjunction with Plan Form 2 | WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION | *OFFICE USE ONLY

DP 839627

Registered: 26.5.1994 WGI

This is sheet 2 of my plan in 2 sheets dated 10 JANUARY 1992

M.J.Morgan.

Surveyor registered under Surveyors Act 1929

This is sheet 2 of the plan of 2 sheets covered by my Certificate No. 6733 of 26-10-92

Council Clerk

For use where space is insufficient in any panel on Plan Form 2.

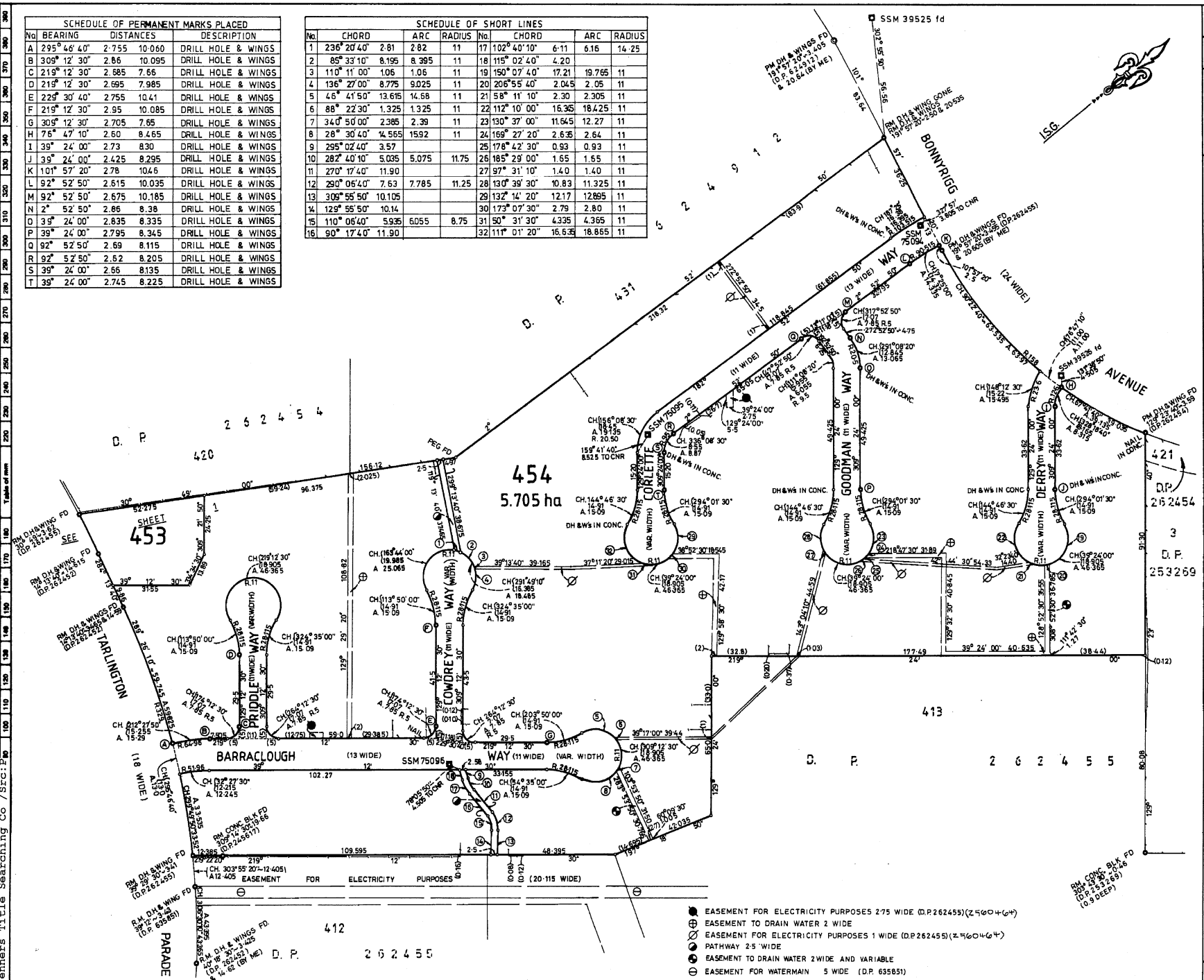
Reduction Ratio 1:1000

SCHEDULE OF PERMANENT MARKS PLACED

No.	BEARING	DISTANCES		DESCRIPTION
A	295° 46' 40"	2·755	10·060	DRILL HOLE & WINGS
B	309° 12' 30"	2.86	10.095	DRILL HOLE & WINGS
C	219° 12' 30"	2.685	7.66	DRILL HOLE & WINGS
D	219° 12' 30"	2.695	7.985	DRILL HOLE & WINGS
E	229° 30' 40"	2.755	10.41	DRILL HOLE & WINGS
F	219° 12' 30"	2.95	10.085	DRILL HOLE & WINGS
G	309° 12' 30"	2.705	7.65	DRILL HOLE & WINGS
H	76° 47' 10"	2.60	8.465	DRILL HOLE & WINGS
I	39° 24' 00"	2.73	8.30	DRILL HOLE & WINGS
J	39° 24' 00"	2.425	8.295	DRILL HOLE & WINGS
K	101° 57' 20"	2.78	10.46	DRILL HOLE & WINGS
L	92° 52' 50"	2.615	10.035	DRILL HOLE & WINGS
M	92° 52' 50"	2.675	10.185	DRILL HOLE & WINGS
N	2° 52' 50"	2.86	8.38	DRILL HOLE & WINGS
O	39° 24' 00"	2.835	8.335	DRILL HOLE & WINGS
P	39° 24' 00"	2.795	8.345	DRILL HOLE & WINGS
Q	92° 52' 50"	2.69	8.115	DRILL HOLE & WINGS
R	92° 52' 50"	2.62	8.205	DRILL HOLE & WINGS
S	39° 24' 00"	2.66	8.135	DRILL HOLE & WINGS
T	39° 24' 00"	2.745	8.225	DRILL HOLE & WINGS

SCHEDULE OF SHORT LINES

No.	CHORD		ARC	RADIUS	No.	CHORD		ARC	RADIUS
1	236° 20' 40"	2·81	2·82	11	17	102° 40' 10"	6·11	6.16	14·25
2	85° 33' 10"	8.195	8.395	11	18	115° 02' 40"	4.20		
3	110° 11' 00"	1.06	1.06	11	19	150° 07' 40"	17.21	19.765	11
4	136° 27' 00"	8.775	9.025	11	20	206° 55' 40"	2.045	2.05	11
5	46° 41' 50"	13.615	14.68	11	21	58° 11' 10"	2.30	2.305	11
6	88° 22' 30"	1.325	1.325	11	22	112° 10' 00"	16.365	18.425	11
7	340° 50' 00"	2.385	2.39	11	23	130° 37' 00"	11.645	12.27	11
8	28° 30' 40"	14.565	15.92	11	24	169° 27' 20"	2.635	2.64	11
9	295° 02' 40"	3.57			25	178° 42' 30"	0.93	0.93	11
10	282° 40' 10"	5.035	5.075	11.75	26	185° 29' 00"	1.65	1.65	11
11	270° 17' 40"	11.90			27	97° 31' 10"	1.40	1.40	11
12	290° 06' 40"	7.63	7.785	11.25	28	130° 39' 30"	10.83	11.325	11
13	309° 55' 50"	10.105			29	132° 14' 20"	12.17	12.895	11
14	129° 55' 50"	10.14			30	173° 07' 30"	2.79	2.80	11
15	110° 06' 40"	5.935	6.055	8.75	31	50° 31' 30"	4.335	4.365	11
16	90° 17' 40"	11.90			32	111° 01' 20"	16.635	18.865	11



S 7550 I 22643 REF. 7550/18

Plan Drawing only to appear in this space

SURVEYOR'S REFERENCE: H 1116

JENNERS TITLE SEARCHING CO.

Level 6 229 Macquarie Street Sydney NSW 2000 Phone:02 9233 7077 Fax:02 9233 8330 http://www.jajenner.com.au

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE
6/8/2007 11:42AM

FOLIO: 454/839627

First Title(s): VOL 242 FOL 3 VOL 217 FOL 122
Prior Title(s): 410/262455

Recorded	Number	Type of Instrument	C.T. Issue
26/5/1994	DP839627	DEPOSITED PLAN	FOLIO CREATED EDITION 1

*** END OF SEARCH ***

Jenners Title Searching Co PRINTED ON 6/8/2007

ABN: 36 092 724 251
Ph: 02 9099 7400
(Ph: 0413 400 020)

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

Summary of Owners Report

Address: - 56 Tarlington Parade, Bonnyrigg NSW

Description: - Lot 453 in D.P. 839627

As regards the small sliver of land numbered (1) on the attached Cadastral Records Enquiry Report

Date of Acquisition and term held	Registered Proprietor(s) & Occupations where available	Reference to Title at Acquisition and sale
14.03.1922 (1922 to 1922)	Elsie Marian de Laplato (Widow)	Volume 1974 Folio 86
24.05.1922 (1922 to 1939)	George Shepherdson (Farmer)	Volume 1974 Folio 86
22.05.1939 (1939 to 1942)	Richard Whittaker (Tramway Employee)	Volume 1974 Folio 86
10.01.1942 (1942 to 1946)	Roko Cor (Farmer)	Volume 1974 Folio 86
15.04.1946 (1946 to)	John Klimko (Market Gardener)	Volume 1974 Folio 86

As regards the part numbered (2) on the attached Cadastral Records Enquiry Report

Date of Acquisition and term held	Registered Proprietor(s) & Occupations where available	Reference to Title at Acquisition and sale
12.02.1913 (1913 to)	Rees Jones (Produce Merchant)	Volume 2340 Folio 187
03.09.1930 (1930 to)	Deborah Jones (Married Woman) (Transmission Application, not investigated)	Volume 2340 Folio 187
01.11.1944 (1944 to)	Morgan Jones (Poultry Farmer) (Transmission Application, not investigated)	Volume 2340 Folio 187
04.02.1950 (1950 to)	John Jones (Traveller)	Volume 2340 Folio 187 Now Volume 6269 Folio 171
29.06.1951 (1951 to)	Agostin Erzetic (Market Gardener)	Volume 6269 Folio 171

ABN: 36 092 724 251
Ph: 02 9099 7400
(Ph: 0413 400 020)

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

Continued as regards the whole subject land

Date of Acquisition and term held	**Registered Proprietor(s) & Occupations where available**	**Reference to Title at Acquisition and sale**
14.11.1973 (1973 to)	# The Housing Commission of New South Wales Now # New South Wales Land and Housing Corporation	Volume 1974 Folio 86 & Volume 6269 Folio 171 Then Intervening Titles Volume 14894 Folio 178 410/262455 Now 453/839627

# Denotes current registered proprietor

Leases:

- Lease was found from 15th January 2008 that has since expired or has been surrendered - not investigated.

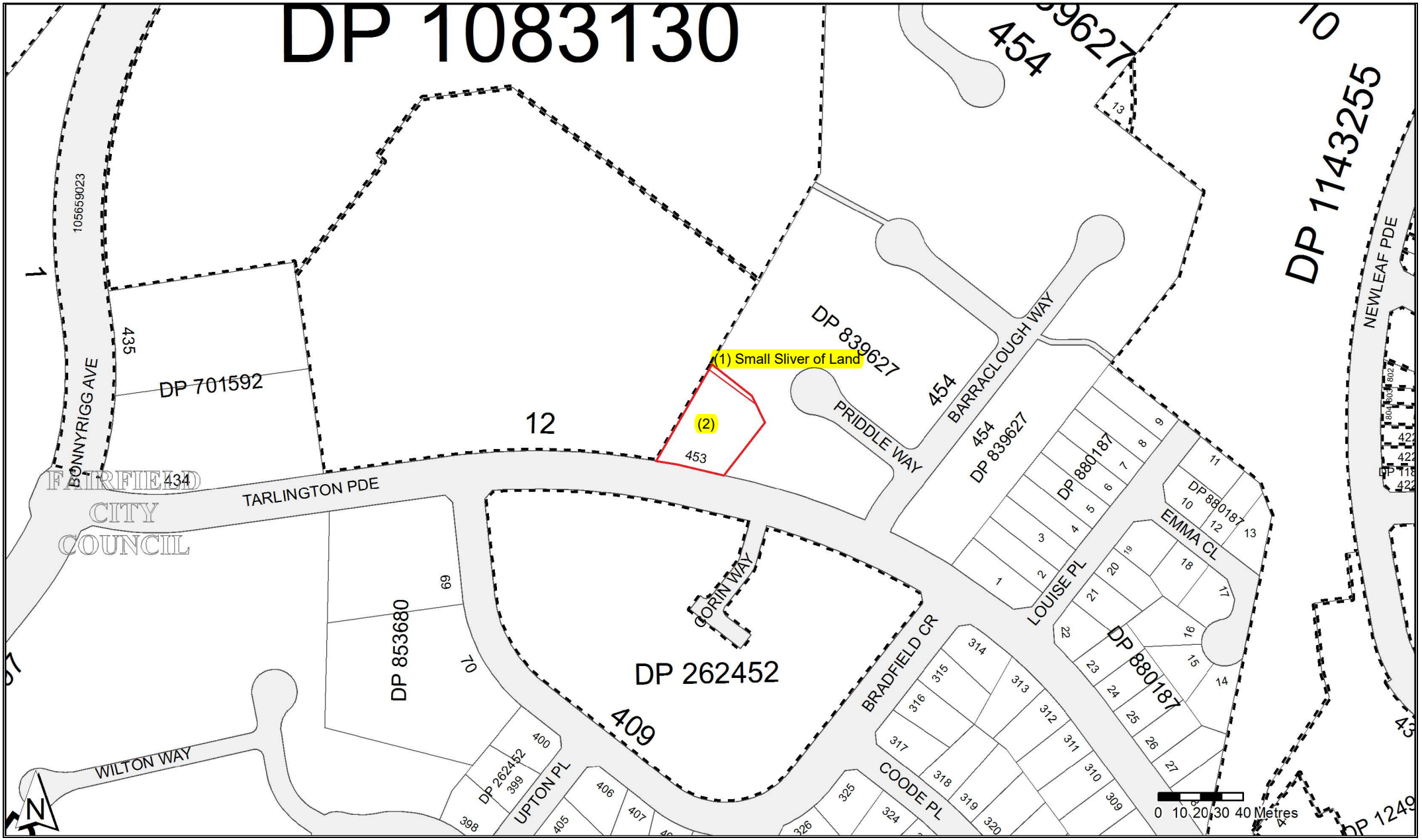
Easements: - NIL

Yours Sincerely
Harrison Byrne
18th March 2022

Cadastral Records Enquiry Report : Lot 453 DP 839627

Ref : 56 Tarlington Parade, Bonnyrigg

Locality : BONNYRIGG
Parish : ST LUKE
LGA : FAIRFIELD
County : CUMBERLAND



Report Generated 2:50:36 PM, 18 March, 2022

PLAN FORM 2

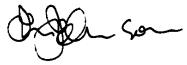
Plan Drawing only to appear in this space

*OFFICE USE ONLY

DP 839627

SIGNATURES, SEALS AND STATEMENTS of intention to dedicate public roads or to create reserves, drainage reserves, easements, restrictions on the use of land or positive covenants.

SIGNED by me IAN WARWICK JOHNSON as delegate of the New South Wales Land and Housing Corporation and I hereby certify that I have no notice of the revocation of such delegation.



Registered: 26.5.1994 WGI

C.A: NO 6733 OF 26·10·1992

Title System: TORRENS

Purpose: SUBDIVISION

Ref. Map: U8245-62*

Last Plan: DP 262455

PLAN OF SUBDIVISION OF LOT 410 IN D.P 262455.

Lengths are in metres. Reduction Ratio 1: 500

~~Mun./Shire~~ City: FAIRFIELD

Locality: BONNYRIGG

Parish: ST LUKE

County: CUMBERLAND

This is sheet 1 of my plan in 2 sheets. (Delete if inapplicable).

I, MICHAEL JOHN MORGAN of RYAN FIRTH & CO, 10 MOORE AVENUE, WEST LINDFIELD

a surveyor registered under the Surveyors Act, 1929, as amended, hereby certify that the survey represented in this plan is accurate and has been made in accordance with the Survey Practice Regulations, 1933 and any special requirements of the Department of Lands, and was completed on

the 10 JANUARY 1992

Signature M.J Morgan

Surveyor registered under Surveyors Act, 1929, as amended.

Datum Line of Azimuth. 'X'-'Y'

#insert date of survey.

Plans used in preparation of survey/compilation.

DP 253269	DP 262452
DP 262454	DP 262455
DP 624912	DP 635851

PANEL FOR USE ONLY for statements of intention to dedicate public roads or to create public reserves, drainage reserves, easements or restrictions as to user.

PURSUANT TO SECTION 88B OF THE CONVEYANCING ACT, 1919 IT IS INTENDED TO CREATE:

1. EASEMENT TO DRAIN WATER 2 WIDE
2. EASEMENT TO DRAIN WATER 2 WIDE AND VARIABLE

PURSUANT TO SECTION 81 OF THE PUBLIC WORKS ACT, 1912, AND SECTION 15(3) OF THE HOUSING ACT, 1976 IT IS INTENDED TO DEDICATE BARRACLOUGH WAY, PRIDDLE WAY, COWDREY WAY, CORLETTE WAY, GOODMAN WAY, DERRY WAY AND THE PATHWAYS AS PUBLIC HIGHWAY

EASEMENT TO DRAIN WATER 2 WIDE

EASEMENT FOR ELECTRICITY PURPOSES 2.75 WIDE (D.P 262455)

SEE SHEET 2

454

D.P. 262454

420

453

1455 m²

SEE DIAGRAM

PRIDDLE WAY (VARIABLE WIDTH) (11 WIDE)

BARRACLOUGH WAY (13 WIDE)

412

EASEMENT FOR ELECTRICITY PURPOSES 20.115 WIDE (D.P. 635851)

EASEMENT FOR WATERMAIN 5 WIDE

SSM 75097

TARLINGTON

PARADE

(18 WIDE)

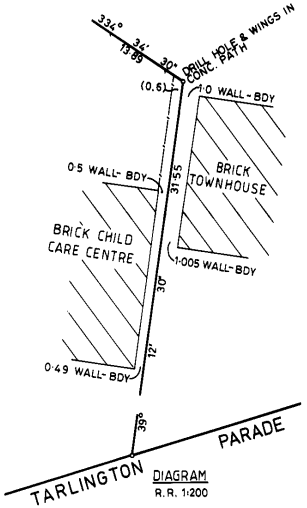
SSM 39417 FD

SSM 39416 FD 'X'

SSM 39413 FD 'Y'

SURVEY PRACTICE REGULATION 1990 CLAUSE 32 (2)				
	ISG CO-ORDINATES			
MARK	EASTING	NORTHING	ZONE	ACC
SSM 39413	289957.734	1248486.842	561	2
SSM 39416	289814.217	1248664.156	561	2
SSM 39417	289588.938	1248722.341	561	2

SOURCE: ISG CO-ORDINATES ADOPTED FROM NSW LANDS DEPARTMENT AT 26TH SEPTEMBER 1991



Crown Lands Office Approval

APPROVED ..... Authorised Officer

Land District .....

Paper No. .....

Field Book ..... pages .....

Council Clerk's Certificate

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

*(b) the requirements of Part 3 Division 2 of the † Water Board Act 1987 ~~and † Water Supply Authorities Act 1987~~

have been complied with by the applicant in relation to the proposed SUBDIVISION

set "new road", "subdivision" or "consolidated lot") set out herein

Subdivision No. 6733

Date 26·10·92

(Signature) ..... Council Clerk

Council File No. SUB 2303

*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.

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SURVEYOR'S REFERENCE: H1116 S7550 INSTRUCTION 22643 REF 7550/18

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BP4

PLAN FORM 3 | To be used in conjunction with Plan Form 2 | WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION | *OFFICE USE ONLY

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No.	BEARING	DISTANCES		DESCRIPTION
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SCHEDULE OF SHORT LINES									
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3	110° 11' 00"	1.06	1.06	11	19	150° 07' 40"	17.21	19.765	11
4	136° 27' 00"	8.775	9.025	11	20	206° 55' 40"	2.045	2.05	11
5	46° 41' 50"	13.615	14.68	11	21	58° 11' 10"	2.30	2.305	11
6	88° 22' 30"	1.325	1.325	11	22	112° 10' 00"	16.345	18.425	11
7	340° 50' 00"	2.385	2.39	11	23	130° 37' 00"	11.645	12.27	11
8	28° 30' 40"	14.565	15.92	11	24	169° 27' 20"	2.635	2.64	11
9	295° 02' 40"	3.57			25	178° 42' 30"	0.93	0.93	11
10	282° 40' 10"	5.035	5.075	11.75	26	185° 29' 00"	1.65	1.65	11
11	270° 17' 40"	11.90			27	97° 31' 10"	1.40	1.40	11
12	290° 05' 40"	7.63	7.785	11.25	28	130° 39' 30"	10.83	11.325	11
13	309° 55' 50"	10.105			29	132° 14' 20"	12.17	12.895	11
14	129° 55' 50"	10.14			30	173° 07' 30"	2.79	2.80	11
15	110° 05' 40"	5.935	6.055	8.75	31	50° 31' 30"	4.335	4.365	11
16	90° 17' 40"	11.90			32	111° 01' 20"	16.635	18.865	11

DP 839627

Registered: 26.5.1994 WGI

This is sheet 2 of my plan in 2 sheets dated 10 JANUARY 1992

M.J. Morgan.

Surveyor registered under Surveyors Act 1929

This is sheet 2 of the plan of 2 sheets covered by my Certificate No. 6733 of 26-10-92

Council Clerk

For use where space is insufficient in any panel on Plan Form 2.

Reduction Ratio 1:1000

S 7550 I 22643 REF. 7550/18 — Plan Drawing only to appear in this space — SURVEYOR'S REFERENCE: H 1116

W.S.= 10-10-84

STANDARD PREPARED

Lodged by M. Bibby 31/3/[illegible]

DP1327

"A"

PLAN

of Portions 50, 51, 53 to 57, 103 to 106 and 114 to 117

PARISH OF ST LUKE

County of Cumberland

ST JOHN'S PARK

SCALE 6 CHAINS TO 1 INCH

COPY MADE AHB. 21.6.49

EXAMINED R.A.P. 24.7.90

41·0·24	Portion	50	Grant to	Nathaniel George Bull	1st November 1875	Vol: 242	fol: 2
43·3·0	"	51	"	"	1st " 1875	" 242	" 3
41·0·10	"	53	"	Harriett Bull	25th March 1875	" 217	" 122
42·2·0	"	54	"	Nathaniel George Bull	1st November 1875	" 242	" 4
35·2·32	"	55	"	"	1st " 1875	" 242	" 5
33·2·2	"	56	"	"	25th March 1875	" 233	" 121
35·2·25	"	57	"	"	1st November 1875	" 242	" 6
48·1·4	"	103	"	"	1st June 1878	" 360	" 183
20·3·8	"	104	"	"	1st " 1878	" 360	" 184
40·0·0	"	105	"	"	1st " 1878	" 360	" 185
42·1·30	"	106	"	"	1st " 1878	" 360	" 186
40·0·0	"	114	"	"	1st " 1878	" 360	" 187
45·0·6	"	115	"	"	1st " 1878	" 360	" 188
47·0·38	"	116	"	"	1st " 1878	" 360	" 189
39·3·35	"	117	"	"	1st " 1878	" 360	" 190

For subdivision see Dep.g Plan 1390

107 36·2·35 — 108 40·0·0 — 113 43·0·32 — 112 41·1·4 — 119 40a·0r·17p

118 40a·0r·28p

ROAD

Thomas Street

635 ac:

PARKES

SMITHFIELD ROAD

MULGOA ROAD

TO CABRAMATTA

TO LIVERPOOL

Louis A Curtis L.S.
29th May 1884

1327

Dep.t Plan 1419

18/10/84
Cancs &c &c
WBP

D.P. 1327

LTO Charting Map Extract

14894178

NEW SOUTH WALES

[redacted]IFICATE OF TITLE

[redacted] REAL PROPERTY ACT, 1900

Vol. 14894 Fol. 178

EDITION ISSUED

30 9 1982

Crown Grants Vol. 217 Fol.122
Vol. 242 Fol.3
Prior Titles Vol.1088 Fol.153
Vol.1421 Fol.4
Vol.1974 Fol.86
Vol.4935 Fol.70
Vol.5337 Fol.193
Vol.5629 Fol.51
Vol.6269 Fol.171

14894 178 Vol. ..... Fol. .....
(Page 1) Vol. ..... Fol. .....

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

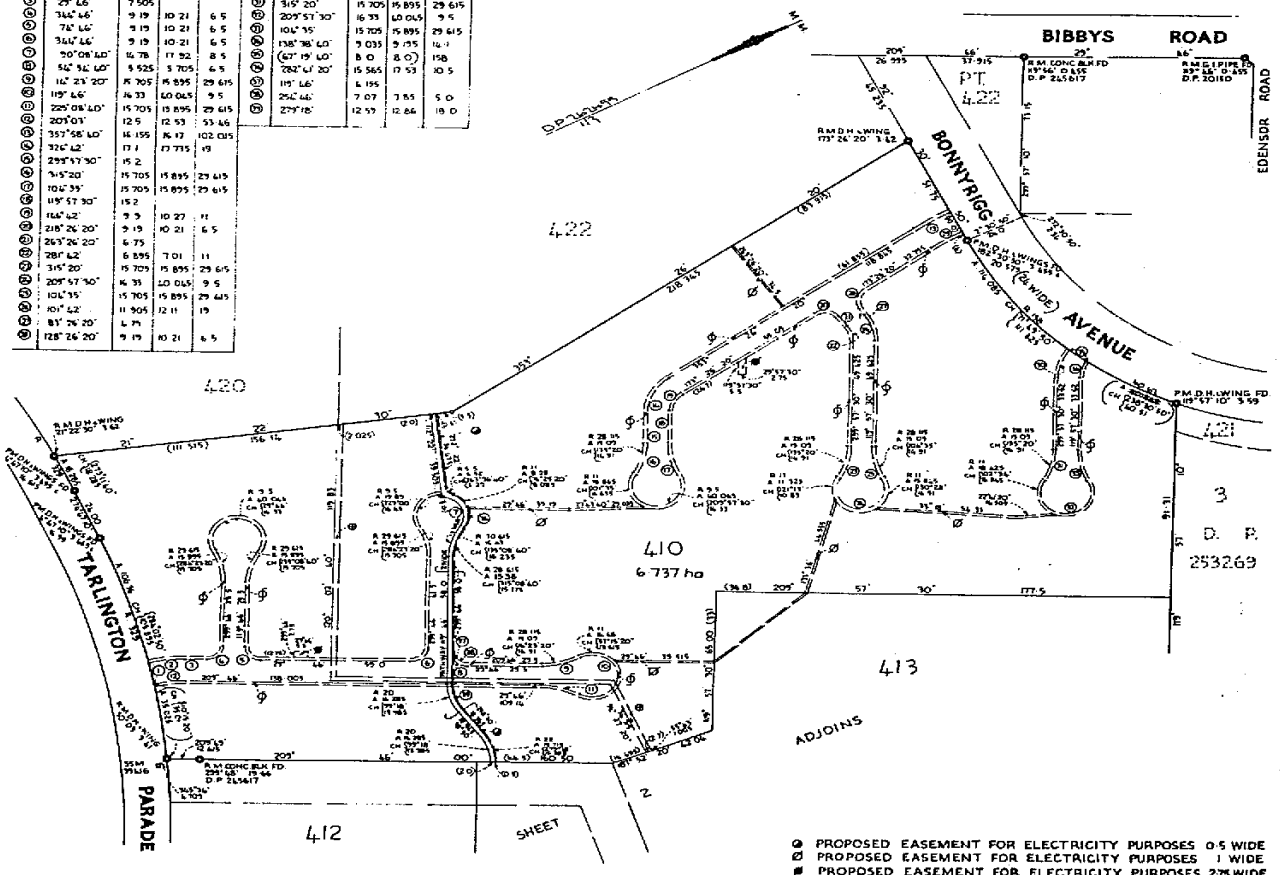
Registrar General.

PLAN SHOWING LOCATION OF LAND

SEE AUTO FOLIO

LENGTHS ARE IN METRES

NO	BEARING	DIST	ARC	RADIUS	NO	BEARING	DIST	ARC	RADIUS
1	284° 20' 20"	10 0	10 03	329	19	177° 58' 40"	14 97	14 585	92 075
2	29° 01'	14 84	14 879	63 66	20	318° 38' 40"	14 76	14 615	22 1
3	29° 46'	7 505			21	315° 20'	15 705	15 895	29 615
4	344° 46'	9 19	10 21	6 5	22	209° 57' 30"	16 33	20 065	9 5
5	74° 46'	9 19	10 21	6 5	23	104° 35'	15 705	15 895	29 615
6	344° 46'	9 19	10 21	6 5	24	138° 38' 40"	9 035	9 155	14 1
7	20° 08' 40"	14 78	17 92	8 5	25	67° 15' 40"	8 0	8 03	158
8	54° 56' 40"	5 525	5 705	6 5	26	282° 41' 20"	15 565	17 53	10 5
9	112° 23' 20"	15 705	15 895	29 615	27	115° 46'	6 195		
10	119° 46'	16 33	20 065	9 5	28	254° 46'	7 07	7 85	5 0
11	209° 08' 40"	15 705	15 895	29 615	29	279° 18'	12 57	12 86	18 0
12	209° 03'	12 5	12 53	55 46					
13	351° 58' 40"	16 155	16 17	102 035					
14	326° 42'	17 1	17 775	19					
15	299° 17' 30"	15 2							
16	345° 20'	15 705	15 895	29 615					
17	104° 35'	15 705	15 895	29 615					
18	119° 57' 30"	15 2							
19	166° 42'	9 5	10 27	11					
20	218° 26' 20"	9 19	10 21	6 5					
21	263° 26' 20"	6 75							
22	281° 42'	6 895	7 01	11					
23	315° 20'	15 705	15 895	29 615					
24	209° 57' 30"	16 33	20 065	9 5					
25	104° 35'	15 705	15 895	29 615					
26	101° 42'	11 905	12 11	19					
27	83° 26' 20"	6 75							
28	128° 26' 20"	9 19	10 21	6 5					



S

ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 410 in Deposited Plan 262455 at Bonnyrigg in the City of Fairfield Parish of St. Luke and County of Cumberland.

FIRST SCHEDULE

THE HOUSING COMMISSION OF NEW SOUTH WALES.

SECOND SCHEDULE

NIL.

GRN

RG 2/64

Vol 14894 Fol 178

99346D 8.81 D. West. Government Printer

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	Registrar General

SECOND SCHEDULE (continued)

PARTICULARS	Registrar General	CANCELLATION

NOTATIONS AND UNREGISTERED DEALINGS

NOTE: ENTRIES RULED THRO[illegible] AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
18/3/2022 2:24PM

FOLIO: 410/262455

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 14894 FOL 178

Recorded	Number	Type of Instrument	C.T. Issue
5/6/1987		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
6/10/1987		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
9/4/1991	Z560464	TRANSFER GRANTING EASEMENT	EDITION 1
26/5/1994	DP839627	DEPOSITED PLAN	FOLIO CANCELLED RESIDUE REMAINS
1/11/2020	AQ514583	DEPARTMENTAL DEALING	

*** END OF SEARCH ***

LAND REGISTRY SERVICES Historical Search

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
18/3/2022 2:24PM

FOLIO: 453/839627

First Title(s): VOL 242 FOL 3 VOL 217 FOL 122
Prior Title(s): 410/262455

Recorded	Number	Type of Instrument	C.T. Issue
26/5/1994	DP839627	DEPOSITED PLAN	FOLIO CREATED EDITION 1
15/1/2008	AD701276	LEASE	
15/1/2008	AD701277	MORTGAGE OF LEASE	EDITION 2
12/5/2015	AJ473952	SURRENDER OF LEASE	EDITION 3

*** END OF SEARCH ***

56 Tarlington Parade, Bonnyrigg PRINTED ON 18/3/2022

LAND REGISTRY SERVICES

Title Search

InfoTrack

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 453/839627

SEARCH DATE	TIME	EDITION NO	DATE
18/3/2022	2:24 PM	3	12/5/2015

LAND

LOT 453 IN DEPOSITED PLAN 839627
AT BONNYRIGG
LOCAL GOVERNMENT AREA FAIRFIELD
PARISH OF ST LUKE COUNTY OF CUMBERLAND
TITLE DIAGRAM DP839627

FIRST SCHEDULE

NEW SOUTH WALES LAND AND HOUSING CORPORATION

SECOND SCHEDULE (0 NOTIFICATIONS)

NIL

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

Appendix H Borelogs

TEST PIT TP01

PROJECT NUMBER 62436	**DRILLING COMPANY** Ken Cole Excavations	**EASTING** N/A
PROJECT NAME Bonnyrigg Stage 12 and 13	**DRILLING DATE** 01-Mar-22	**NORTHING** N/A
CLIENT LAHC	**DRILL RIG** Excavator	**COORD SYS** GDA94_MGA_zone_56
ADDRESS Tarlington Parade & Barraclough Way, Bonnyrigg, NSW	**DRILLING METHOD** Bucket Excavation	**COORD SOURCE**
	DIMENSIONS 1 x 1 m	**LOGGED BY** DNO

COMMENTS

Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
BE		0.05 0.1 0.15 0.2 0.25 0.3		Fill	Fill - silty CLAY, dark brown, heterogeneous, wet, medium plasticity, soft, traces (0-10%) of bitumen	W	TP01_0.00-0.10	1.2	No odours, staining or asbestos.
		0.35 0.4 0.45 0.5 0.55 0.6 0.65 0.7		CL	Natural - clay CLAY, light brown, homogenous, damp, high plasticity, firm	DP	TP01_0.40-0.50	0.2	No odours, staining or asbestos.
		0.75 0.8 0.85 0.9 0.95			Termination Depth at: 0.70 m.				

TEST PIT TP02

PROJECT NUMBER 62436	**DRILLING COMPANY** Ken Cole Excavations	**EASTING** N/A
PROJECT NAME Bonnyrigg Stage 12 and 13	**DRILLING DATE** 01-Mar-22	**NORTHING** N/A
CLIENT LAHC	**DRILL RIG** Excavator	**COORD SYS** GDA94_MGA_zone_56
ADDRESS Tarlington Parade & Barraclough Way, Bonnyrigg, NSW	**DRILLING METHOD** Bucket Excavation	**COORD SOURCE**
	DIMENSIONS 1 x 1 m	**LOGGED BY** DNO

COMMENTS

Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
BE		0.05 0.1 0.15 0.2		Fill	Fill - silty CLAY, dark brown, heterogeneous, wet, medium plasticity, soft, traces (0-10%) of concrete and brick cobbles	W	TP02_0.00-0.10	1.8	No odours, staining or asbestos.
		0.25 0.3 0.35 0.4 0.45 0.5		CL	Natural - silty CLAY, red orange brown, homogenous, damp, high plasticity, firm	W	TP02_0.40-0.50	0.4	No odours, staining or asbestos.
		0.55 0.6 0.65 0.7							
		0.75 0.8 0.85 0.9 0.95			Termination Depth at: 0.70 m.				

TEST PIT TP03

PROJECT NUMBER 62436	**DRILLING COMPANY** Ken Cole Excavations	**EASTING** N/A
PROJECT NAME Bonnyrigg Stage 12 and 13	**DRILLING DATE** 01-Mar-22	**NORTHING** N/A
CLIENT LAHC	**DRILL RIG** Excavator	**COORD SYS** GDA94_MGA_zone_56
ADDRESS Tarlington Parade & Barraclough Way, Bonnyrigg, NSW	**DRILLING METHOD** Bucket Excavation	**COORD SOURCE**
	DIMENSIONS 1 x 1 m	**LOGGED BY** DNO

COMMENTS

Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
BE		0.05 0.1 0.15 0.2		Fill	Fill - silty CLAY, dark brown, heterogeneous, wet, medium plasticity, soft, traces (0-10%) rootlets and roots	W	TP03_0.00-0.10	1	No odours, staining or asbestos.
		0.25 0.3 0.35 0.4 0.45		CH	Natural - silty CLAY, red orange brown, homogenous, damp, high plasticity, firm	DP	TP03_0.40-0.50	0.1	No odours, staining or asbestos.
		0.5 0.55 0.6 0.65 0.7 0.75 0.8 0.85 0.9 0.95			Termination Depth at: 0.50 m.				

TEST PIT TP04

PROJECT NUMBER 62436	**DRILLING COMPANY** Ken Cole Excavations	**EASTING** N/A
PROJECT NAME Bonnyrigg Stage 12 and 13	**DRILLING DATE** 01-Mar-22	**NORTHING** N/A
CLIENT LAHC	**DRILL RIG** Excavator	**COORD SYS** GDA94_MGA_zone_56
ADDRESS Tarlington Parade & Barraclough Way, Bonnyrigg, NSW	**DRILLING METHOD** Bucket Excavation	**COORD SOURCE**
	DIMENSIONS 1 x 1 m	**LOGGED BY** DNO

COMMENTS

Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
BE		0.05 0.1 0.15 0.2 0.25		Fill	Fill - silty CLAY, dark brown, heterogeneous, wet, medium plasticity, soft, traces (0-10%) of plastic debris, rootlets, brick and concrete gravels and wood chips	W	TP04_0.00-0.10	1.2	No odours, staining or asbestos.
		0.3 0.35 0.4 0.45 0.5 0.55 0.6		CL	Natural - silty CLAY, orange red brown, homogenous, wet, high plasticity, firm	W	TP04_0.40-0.50	0.5	No odours, staining or asbestos.
		0.65 0.7 0.75 0.8 0.85 0.9 0.95			Termination Depth at: 0.60 m.				

TEST PIT TP05

PROJECT NUMBER 62436	**DRILLING COMPANY** Ken Cole Excavations	**EASTING** N/A
PROJECT NAME Bonnyrigg Stage 12 and 13	**DRILLING DATE** 01-Mar-22	**NORTHING** N/A
CLIENT LAHC	**DRILL RIG** Excavator	**COORD SYS** GDA94_MGA_zone_56
ADDRESS Tarlington Parade & Barraclough Way, Bonnyrigg, NSW	**DRILLING METHOD** Bucket Excavation	**COORD SOURCE**
	DIMENSIONS 1 x 1 m	**LOGGED BY** DNO

COMMENTS

Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
BE		0.05 0.1 0.15 0.2 0.25 0.3		Fill	Fill - silty CLAY, dark brown, heterogeneous, wet, medium plasticity, soft, traces (0-10%) of bricks, concrete and brick gravels, plastic debris	W	TP05_0.00-0.10	2	No odours, staining or asbestos. QA/QC01 @ 0-0.1 m.
		0.35 0.4 0.45 0.5 0.55 0.6		CL	Natural - silty CLAY, red brown, homogenous, wet, high plasticity, firm	W	TP05_0.40-0.50	0.3	No odours, staining or asbestos.
		0.65 0.7 0.75 0.8 0.85 0.9 0.95			Termination Depth at: 0.60 m.				

TEST PIT TP06

PROJECT NUMBER 62436	**DRILLING COMPANY** Ken Cole Excavations	**EASTING** N/A
PROJECT NAME Bonnyrigg Stage 12 and 13	**DRILLING DATE** 01-Mar-22	**NORTHING** N/A
CLIENT LAHC	**DRILL RIG** Excavator	**COORD SYS** GDA94_MGA_zone_56
ADDRESS Tarlington Parade & Barraclough Way, Bonnyrigg, NSW	**DRILLING METHOD** Bucket Excavation	**COORD SOURCE**
	DIMENSIONS 1 x 1 m	**LOGGED BY** DNO

COMMENTS

Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
BE		0.05 0.1 0.15 0.2		Fill	Fill - sandy gravelly CLAY, brown grey, heterogeneous, wet, medium plasticity, soft, traces (0-10%) of brick and concrete gravels, plastics and ash	W	TP06_0.00-0.10	2.1	No odours, staining or asbestos.
		0.25 0.3 0.35 0.4 0.45 0.5		CL	Natural - sandy gravelly CLAY, brown grey, heterogeneous, wet, medium plasticity, firm	W	TP06_0.40-0.50	0.7	No odours, staining or asbestos.
		0.55 0.6 0.65 0.7 0.75 0.8 0.85 0.9 0.95			Termination Depth at: 0.50 m.				

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TEST PIT TP07

PROJECT NUMBER 62436	**DRILLING COMPANY** Ken Cole Excavations	**EASTING** N/A
PROJECT NAME Bonnyrigg Stage 12 and 13	**DRILLING DATE** 01-Mar-22	**NORTHING** N/A
CLIENT LAHC	**DRILL RIG** Excavator	**COORD SYS** GDA94_MGA_zone_56
ADDRESS Tarlington Parade & Barraclough Way, Bonnyrigg, NSW	**DRILLING METHOD** Bucket Excavation	**COORD SOURCE**
	DIMENSIONS 1 x 1 m	**LOGGED BY** DNO

COMMENTS

Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
BE		0.05		Fill	Fill - silty CLAY, dark brown, heterogeneous, moist, medium plasticity, soft, traces (0-10%) of rootlets	M	TP07_0.00-0.10	2.8	No odours, staining or asbestos.
		0.1		Fill	Fill - silty CLAY, red brown, heterogeneous, wet, high plasticity, firm, traces (0-10%) of bitumen	W			
		0.15							
		0.2					TP07_0.20-0.30	2.1	No odours, staining or asbestos.
		0.25							
		0.3							
		0.35							
		0.4		CL	Natural - silty CLAY, red grey, homogenous, moist, high plasticity, firm	M			
		0.45							
		0.5					TP07_0.50-0.60	0.3	No odours, staining or asbestos.
		0.55							
		0.6							
		0.65							
		0.7							
		0.75			Termination Depth at: 0.70 m.				
		0.8							
		0.85							
		0.9							
		0.95							

TEST PIT TP08

PROJECT NUMBER 62436	**DRILLING COMPANY** Ken Cole Excavations	**EASTING** N/A
PROJECT NAME Bonnyrigg Stage 12 and 13	**DRILLING DATE** 01-Mar-22	**NORTHING** N/A
CLIENT LAHC	**DRILL RIG** Excavator	**COORD SYS** GDA94_MGA_zone_56
ADDRESS Tarlington Parade & Barraclough Way, Bonnyrigg, NSW	**DRILLING METHOD** Bucket Excavation	**COORD SOURCE**
	DIMENSIONS 1 x 1 m	**LOGGED BY** DNO

COMMENTS

Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
BE		0.05 0.1 0.15 0.2		Fill	Fill - silty CLAY, dark brown, heterogeneous, moist, medium plasticity, soft, traces (0-10%) of rootlets	M	TP08_0.00-0.10	1.6	No odours, staining or asbestos.
		0.25 0.3 0.35 0.4 0.45 0.5		CL	Natural - silty CLAY, red grey, homogenous, dry, high plasticity, firm	DR	TP08_0.40-0.50	0.1	No odours, staining or asbestos.
		0.55 0.6 0.65 0.7 0.75 0.8 0.85 0.9 0.95			Termination Depth at: 0.50 m.				

TEST PIT TP09

PROJECT NUMBER 62436	**DRILLING COMPANY** Ken Cole Excavations	**EASTING** N/A
PROJECT NAME Bonnyrigg Stage 12 and 13	**DRILLING DATE** 01-Mar-22	**NORTHING** N/A
CLIENT LAHC	**DRILL RIG** Excavator	**COORD SYS** GDA94_MGA_zone_56
ADDRESS Tarlington Parade & Barraclough Way, Bonnyrigg, NSW	**DRILLING METHOD** Bucket Excavation	**COORD SOURCE**
	DIMENSIONS 1 x 1 m	**LOGGED BY** DNO

COMMENTS

Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
BE		0.05 0.1 0.15 0.2		Fill	Fill - silty CLAY, dark brown, heterogeneous, wet, medium plasticity, soft, traces (0-10%) of brick and concrete gravels, rootlets and tree roots	W	TP09_0.00-0.10	2.8	No odours, staining or asbestos.
		0.25 0.3 0.35 0.4 0.45 0.5		CL	Natural - silty CLAY, red grey, homogenous, moist, high plasticity, firm	M	TP09_0.40-0.50	0.9	No odours, staining or asbestos.
		0.55 0.6 0.65 0.7 0.75 0.8 0.85 0.9 0.95			Termination Depth at: 0.50 m.				

TEST PIT TP10

PROJECT NUMBER 62436	**DRILLING COMPANY** Ken Cole Excavations	**EASTING** N/A
PROJECT NAME Bonnyrigg Stage 12 and 13	**DRILLING DATE** 01-Mar-22	**NORTHING** N/A
CLIENT LAHC	**DRILL RIG** Excavator	**COORD SYS** GDA94_MGA_zone_56
ADDRESS Tarlington Parade & Barraclough Way, Bonnyrigg, NSW	**DRILLING METHOD** Bucket Excavation	**COORD SOURCE**
	DIMENSIONS 1 x 1 m	**LOGGED BY** DNO

COMMENTS

Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
BE		0.05 0.1 0.15 0.2		Fill	Fill - silty CLAY, dark brown, heterogeneous, wet, medium plasticity, soft, traces (0-10%) of brick gravels and rootlets	W	TP10_0.00-0.10	1.9	No odours, staining or asbestos.
		0.2 0.25 0.3 0.35 0.4 0.45 0.5		CL	Natural - silty CLAY, red grey, homogenous, moist, high plasticity, firm	M	TP10_0.40-0.50	0.3	No odours, staining or asbestos.
		0.5 0.55 0.6 0.65 0.7 0.75 0.8 0.85 0.9 0.95			Termination Depth at: 0.50 m.				

TEST PIT TP11

PROJECT NUMBER 62436	**DRILLING COMPANY** Ken Cole Excavations	**EASTING** N/A
PROJECT NAME Bonnyrigg Stage 12 and 13	**DRILLING DATE** 01-Mar-22	**NORTHING** N/A
CLIENT LAHC	**DRILL RIG** Excavator	**COORD SYS** GDA94_MGA_zone_56
ADDRESS Tarlington Parade & Barraclough Way, Bonnyrigg, NSW	**DRILLING METHOD** Bucket Excavation	**COORD SOURCE**
	DIMENSIONS 1 x 1 m	**LOGGED BY** DNO

COMMENTS

Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
BE		0.05 0.1 0.15 0.2 0.25 0.3 0.35 0.4 0.45 0.5		Fill	Fill - silty CLAY, dark brown, heterogeneous, wet, medium plasticity, soft, traces (0-10%) of brick and concrete gravels, sandstone, plastics and rootlets	W	TP11_0.00-0.10	2.2	No odours, staining or asbestos.
							TP11_0.40-0.50	2	No odours, staining or asbestos.
		0.55 0.6 0.65 0.7 0.75 0.8		CL	Natural - silty CLAY, red brown, homogenous, wet, high plasticity, firm	W			
							TP11_0.60-0.70	0.4	No odours, staining or asbestos.
		0.85 0.9 0.95			Termination Depth at: 0.80 m.				

TEST PIT TP12

PROJECT NUMBER 62436	**DRILLING COMPANY** Ken Cole Excavations	**EASTING** N/A
PROJECT NAME Bonnyrigg Stage 12 and 13	**DRILLING DATE** 01-Mar-22	**NORTHING** N/A
CLIENT LAHC	**DRILL RIG** Excavator	**COORD SYS** GDA94_MGA_zone_56
ADDRESS Tarlington Parade & Barraclough Way, Bonnyrigg, NSW	**DRILLING METHOD** Bucket Excavation	**COORD SOURCE**
	DIMENSIONS 1 x 1 m	**LOGGED BY** DNO

COMMENTS

Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
BE		0.05 0.1 0.15 0.2		Fill	Fill - sandy silty CLAY, dark brown, heterogeneous, moist, medium plasticity, soft, traces (0-10%) of rootlets and sandstone gravels	M	TP12_0.00-0.10	1.2	No odours, staining or asbestos.
		0.2 0.25 0.3 0.35 0.4 0.45 0.5		CL	Natural - silty CLAY, red grey, homogenous, dry, high plasticity, firm	M	TP12_0.40-0.50	0.1	No odours, staining or asbestos.
		0.55 0.6 0.65 0.7 0.75 0.8 0.85 0.9 0.95			Termination Depth at: 0.50 m.				

TEST PIT TP13

PROJECT NUMBER 62436	**DRILLING COMPANY** Ken Cole Excavations	**EASTING** N/A
PROJECT NAME Bonnyrigg Stage 12 and 13	**DRILLING DATE** 01-Mar-22	**NORTHING** N/A
CLIENT LAHC	**DRILL RIG** Excavator	**COORD SYS** GDA94_MGA_zone_56
ADDRESS Tarlington Parade & Barraclough Way, Bonnyrigg, NSW	**DRILLING METHOD** Bucket Excavation	**COORD SOURCE**
	DIMENSIONS 1 x 1 m	**LOGGED BY** DNO

COMMENTS

Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
BE		0.05 0.1 0.15 0.2		Fill	Fill - silty CLAY, dark brown, heterogeneous, moist, medium plasticity, soft, traces (0-10%) of rootlets and aggregate gravels	M	TP13_0.00-0.10	1.6	No odours, staining or asbestos.
		0.2 0.25 0.3 0.35 0.4 0.45		CL	Natural - silty CLAY, red brown, homogenous, damp, high plasticity, firm	DP	TP13_0.40-0.50	0.3	No odours, staining or asbestos.
		0.5 0.55 0.6 0.65 0.7 0.75 0.8 0.85 0.9 0.95			Termination Depth at: 0.50 m.				

TEST PIT TP14

PROJECT NUMBER 62436	**DRILLING COMPANY** Ken Cole Excavations	**EASTING** N/A
PROJECT NAME Bonnyrigg Stage 12 and 13	**DRILLING DATE** 01-Mar-22	**NORTHING** N/A
CLIENT LAHC	**DRILL RIG** Excavator	**COORD SYS** GDA94_MGA_zone_56
ADDRESS Tarlington Parade & Barraclough Way, Bonnyrigg, NSW	**DRILLING METHOD** Bucket Excavation	**COORD SOURCE**
	DIMENSIONS 1 x 1 m	**LOGGED BY** DNO

COMMENTS

Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
BE		0.05 0.1 0.15 0.2		Fill	Fill - silty CLAY, dark brown, heterogeneous, moist, medium plasticity, soft, traces (0-10%) of rootlets and aggregate gravels	M	TP14_0.00-0.10	2.7	No odours, staining or asbestos.
		0.25 0.3 0.35 0.4 0.45 0.5		CL	Natural - silty CLAY, red grey, homogenous, damp, high plasticity, firm	DP	TP14_0.40-0.50	0.3	No odours, staining or asbestos.
		0.55 0.6 0.65 0.7 0.75 0.8 0.85 0.9 0.95			Termination Depth at: 0.50 m.				

Appendix I QA/QC

Bonnyrigg Stages 12 and 13 QAQC
Project Number: 62436
Project Name: Bonnyrigg Stage 12 and 13

Contents

Count of Samples

Matrix Type	soil	water
First Sample Date	1/03/2022	1/03/2022
Last Sample Date	1/03/2022	1/03/2022
Sampling Period (days)	1	1
Number of Samples Submitted	49	1
Number of Non QA Samples Submitted	47	0
Number of Field Blanks	0	0
Number of Trip Blanks	0	1
Number of Rinsates	0	0
Number of Field Duplicates	1	0
Number of Trip Spikes	0	1
Number of Lab Duplicates	5	0
Number of LCSs	6	0
Number of CRMs	0	0
Number of Method Blanks	4	0
Number of Storage Blanks	0	0
Number of Matrix Spikes	9	0
Number of Matrix Spike Dupes	0	0

Bonnyrigg Stages 12 and 13 QAQC
Project Number: 62436
Project Name: Bonnyrigg Stage 12 and 13

soil — Field Duplicates (soil)
Filter: ALL

SDG	868012	868012		868012	ENVIROLAB 2022-03-02T00:00:00				
Field ID	TP05 0-0.1	QC01	**RPD**	TP05 0-0.1	QA01	**RPD**			
Sampled Date/Time	1/03/2022	1/03/2022		1/03/2022	1/03/2022				

Filter	Chem_Grou	ChemName	Units	EQL						
Metals & M	Metals & M	Arsenic	mg/kg	2 : 4 (Interlab)	14	11	24	14	12	15
Metals & M		Cadmium	mg/kg	0.4	<0.4	<0.4	0	<0.4	<0.4	0
Metals & M		Chromium (	mg/kg	5 : 1 (Interlab)	**30**	**17**	**55**	**30**	**18**	**50**
Metals & M		Copper	mg/kg	5 : 1 (Interlab)	**25**	**17**	**38**	25	20	22
Metals & M		Lead	mg/kg	5 : 1 (Interlab)	26	24	8	26	32	21
Metals & M		Mercury	mg/kg	0.1	<0.1	<0.1	0	<0.1	0.1	0
Metals & M		Nickel	mg/kg	5 : 1 (Interlab)	**9.5**	**7**	**30**	**9.5**	**5**	**62**
Metals & M		Zinc	mg/kg	5 : 1 (Interlab)	32	28	13	**32**	**23**	**33**
Metals & Metalloids										
TPHs (NEPC	TPHs (NEPC	C6-C9 Fracti	mg/kg	20 : 25 (Interlab)	<20	<20	0	<20	<25	0
TPHs (NEPC		C10-C14 Fra	mg/kg	20 : 50 (Interlab)	<20	<20	0	<20	<50	0
TPHs (NEPC		C15-C28 Fra	mg/kg	50 : 100 (Interlab)	<50	<50	0	<50	<100	0
TPHs (NEPC		C29-C36 Fra	mg/kg	50 : 100 (Interlab)	<50	<50	0	<50	<100	0
TPHs (NEPC		C10-C36 Fra	mg/kg	50	<50	<50	0	<50	<50	0
TPHs (NEPC 1999)										
TRHs (NEPC	TRHs (NEPC	C6-C10	mg/kg	20 : 25 (Interlab)	<20	<20	0	<20	<25	0
TRHs (NEPC		C10-C16	mg/kg	50	<50	<50	0	<50	<50	0
TRHs (NEPC		C16-C34	mg/kg	100	<100	<100	0	<100	<100	0
TRHs (NEPC		C34-C40	mg/kg	100	<100	<100	0	<100	<100	0
TRHs (NEPC		C10-C40 (Su	mg/kg	100 : 50 (Interlab)	<100	<100	0	<100	<50	0
TRHs (NEPC		F1 (C6-C10 r	mg/kg	20 : 25 (Interlab)	<20	<20	0	<20	<25	0
TRHs (NEPC		F2 (C10-C16	mg/kg	50	<50	<50	0	<50	<50	0
TRHs (NEPC 2013)										
BTEXN	BTEXN	Benzene	mg/kg	0.1 : 0.2 (Interlab)	<0.1	<0.1	0	<0.1	<0.2	0
BTEXN		Toluene	mg/kg	0.1 : 0.5 (Interlab)	<0.1	<0.1	0	<0.1	<0.5	0
BTEXN		Ethylbenzer	mg/kg	0.1 : 1 (Interlab)	<0.1	<0.1	0	<0.1	<1	0
BTEXN		Xylene (o)	mg/kg	0.1 : 1 (Interlab)	<0.1	<0.1	0	<0.1	<1	0
BTEXN		Xylene (m &	mg/kg	0.2 : 2 (Interlab)	<0.2	<0.2	0	<0.2	<2	0
BTEXN		Xylene Tota	mg/kg	0.3 : 1 (Interlab)	<0.3	<0.3	0	<0.3	<1	0
BTEXN										
PAH	PAH	Acenaphthe	mg/kg	0.5 : 0.1 (Interlab)	<0.5	<0.5	0	<0.5	<0.1	0
PAH		Acenaphthy	mg/kg	0.5 : 0.1 (Interlab)	<0.5	<0.5	0	<0.5	<0.1	0
PAH		Anthracene	mg/kg	0.5 : 0.1 (Interlab)	<0.5	<0.5	0	<0.5	<0.1	0
PAH		Benz(a)anth	mg/kg	0.5 : 0.1 (Interlab)	<0.5	<0.5	0	<0.5	<0.1	0
PAH		Benzo(a)pyr	mg/kg	0.5 : 0.05 (Interlab)	<0.5	<0.5	0	<0.5	<0.05	0
PAH		Benzo(a)pyr	mg/kg	0.5	1.2	1.2	0	**1.2**	**<0.5**	**82**
PAH		Benzo(a)pyr	mg/kg	0.5	0.6	0.6	0	0.6	<0.5	18
PAH		Benzo(a)pyr	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
PAH		Benzo(b+j)fl	mg/kg	0.5	<0.5	<0.5	0	<0.5		
PAH		Benzo(g,h,i)	mg/kg	0.5 : 0.1 (Interlab)	<0.5	<0.5	0	<0.5	<0.1	0
PAH		Benzo(k)fluo	mg/kg	0.5	<0.5	<0.5	0	<0.5		
PAH		Chrysene	mg/kg	0.5 : 0.1 (Interlab)	<0.5	<0.5	0	<0.5	<0.1	0
PAH		Dibenz(a,h)a	mg/kg	0.5 : 0.1 (Interlab)	<0.5	<0.5	0	<0.5	<0.1	0
PAH		Fluoranther	mg/kg	0.5 : 0.1 (Interlab)	<0.5	<0.5	0	<0.5	<0.1	0
PAH		Fluorene	mg/kg	0.5 : 0.1 (Interlab)	<0.5	<0.5	0	<0.5	<0.1	0
PAH		Indeno(1,2,3	mg/kg	0.5 : 0.1 (Interlab)	<0.5	<0.5	0	<0.5	<0.1	0
PAH		Naphthalen	mg/kg	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<0.1	0
PAH		Naphthalen	mg/kg	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<0.1	0
PAH		Phenanthre	mg/kg	0.5 : 0.1 (Interlab)	<0.5	<0.5	0	<0.5	<0.1	0
PAH		Pyrene	mg/kg	0.5 : 0.1 (Interlab)	<0.5	<0.5	0	<0.5	<0.1	0
PAH		PAHs (Sum c	mg/kg	0.5 : 0.05 (Interlab)	<0.5	<0.5	0	<0.5	<0.05	0
PAH										
Organochlo	Organochlo	4,4-DDE	mg/kg	0.05 : 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.1	0
Organochlo		a-BHC	mg/kg	0.05 : 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.1	0
Organochlo		b-BHC	mg/kg	0.05 : 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.1	0
Organochlo		d-BHC	mg/kg	0.05 : 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.1	0
Organochlo		g-BHC (Lind	mg/kg	0.05 : 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.1	0
Organochlo		Aldrin	mg/kg	0.05 : 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.1	0
Organochlo		Dieldrin	mg/kg	0.05 : 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.1	0
Organochlo		Aldrin + Die	mg/kg	0.05	<0.05	<0.05	0	<0.05		
Organochlo		Chlordane	mg/kg	0.1	<0.1	<0.1	0	<0.1		
Organochlo		DDT	mg/kg	0.05 : 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.1	0
Organochlo		DDD	mg/kg	0.05 : 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.1	0
Organochlo		DDT+DDE+D	mg/kg	0.05 : 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.1	0
Organochlo		Endosulfan	mg/kg	0.05 : 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.1	0
Organochlo		Endosulfan	mg/kg	0.05 : 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.1	0
Organochlo		Endosulfan	mg/kg	0.05 : 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.1	0
Organochlo		Endrin	mg/kg	0.05 : 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.1	0
Organochlo		Endrin aldel	mg/kg	0.05 : 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.1	0
Organochlo		Endrin keto	mg/kg	0.05	<0.05	<0.05	0	<0.05		
Organochlo		Heptachlor	mg/kg	0.05 : 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.1	0
Organochlo		Heptachlor	mg/kg	0.05 : 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.1	0
Organochlo		Methoxychl	mg/kg	0.05 : 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.1	0
Organochlo		Toxaphene	mg/kg	0.5	<0.5	<0.5	0	<0.5		
Organochlorine Pesticides										
Polychlorina	Polychlorina	Arochlor 10	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0
Polychlorina		Arochlor 12	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0
Polychlorina		Arochlor 12	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0
Polychlorina		Arochlor 12	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0
Polychlorina		Arochlor 12	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0
Polychlorina		Arochlor 12	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0
Polychlorina		Arochlor 12	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0
Polychlorina		PCBs (Sum c	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0
Polychlorinated Biphenyls										
Chlorinated	Chlorinated	Hexachlorob	mg/kg	0.05 : 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.1	0
Chlorinated Benzenes										
EPA VIC - IW	EPA VIC - IW	Organochlo	mg/kg	0.1	<0.1	<0.1	0	<0.1		
EPA VIC - IW		Other Organ	mg/kg	0.1	<0.1	<0.1	0	<0.1		
EPA VIC - IWRG621										
Asbestos - E	Asbestos - E	Approximat	g		625	627	0	625		
Asbestos - E		Mass ACM	g		0.0E0	0.0E0	0	0.0E0		
Asbestos - E		Mass Asbest	g		0.0E0	0.0E0	0	0.0E0		
Asbestos - E		Asbestos fro	% (w/w)		0.0E0	0.0E0	0	0.0E0		
Asbestos - E		Mass FA	g		0.0826	0.0E0	200	0.0826		
Asbestos - E		Mass Asbest	g		0.0083	0.0E0	200	0.0083		
Asbestos - E		Mass AF	g		0.0008	0.0E0	200	0.0008		
Asbestos - E		Mass asbest	g		0.0008	0.0E0	200	0.0008		
Asbestos - E		Asbestos fro	% (w/w)		0.0014	0.0E0	200	0.0014		
Asbestos - E		Mass Asbest	g		0.0091	0.0E0	200	0.0091		
Asbestos - E		ACM - Comr	Comment		1	1	0	1		
Asbestos - E		FA- Comme	Comment		1	1	0	1		
Asbestos - E		AF - Comme	Comment		1	1	0	1		
Asbestos - E		Organic Fibr	Comment		1	1	0	1		
Asbestos - E		Respirable F	Comment		1	1	0	1		
Asbestos - E		Synthetic Fi	Comment		1	1	0	1		
Asbestos - E		Asbestos Re	Comment		1	1	0	1		
Asbestos - Eurofins										
Other	Other	Moisture Co	%	1	**20**	**14**	**35**	20		

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 30 (1-10 x EQL); 30 (10-30 x EQL); 30 (> 30 x EQL))
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in th

Appendix J Laboratory Reports and Chain of Custody

Chain of Custody

JBS&G

PROJECT NO.: 62436
PROJECT NAME: Bonnyrigg
DATE NEEDED BY: standard turn

LABORATORY BATCH NO.:
SAMPLERS: MS / DNO
QC LEVEL: NEPM (2013)

PHONE: Sydney 02 8245 0300 | Perth 08 9488 0100 | Brisbane 07 3112 2688 | Melbourne 03 9642 0599 | Adelaide 08 8431 7113

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) .....mstacey.....@jbsg.com.au; (3) .....a.okeeffe.....@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	JB2a	BTEX	JB2	Asbestos 500mL	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
TP01 0-0.1	SOIL	1/3/22		B+J + ice		X					X	
0.4-0.5				J								
TP02 0-0.1	S			B+J		X					X	
0.4-0.5				J								
TP03 0-0.1				B+J					X		X	
0.4-0.5				J				X				
TP04 0-0.1				B+J		X					X	
0.4-0.5				J								
TP05 0-0.1				B+J		X					X	
0.4-0.5				J								
TP06 0-0.1				B+J		X					X	
0.4-0.5				J								
TP07 0-0.1				B+J								
TP07 0.2-0.3				B+J		X						
0.5-0.6				J								
TP08 0-0.1				B+J		X					X	
0.4-0.5				J								
TP09 0-0.1				B+J				X			X	
0.4-0.5				J								

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: M.Stacey DATE: 1/3/22	CONSIGNMENT NOTE NO.	NAME: DATE: 4:32 PM	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF: JBS&G	TRANSPORT CO.	OF: 1/3/22	COOLER TEMP ..... deg C
NAME: DATE:	CONSIGNMENT NOTE NO.	NAME: DATE:	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF:	TRANSPORT CO	OF:	COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

868012

2 of 2

Chain of Custody

JBS&G

PROJECT NO.: 62436
PROJECT NAME: Bonny Cigg
DATE NEEDED BY: standard

LABORATORY BATCH NO.:
SAMPLERS: Mackenzie Dominic Noonan-O'Keeffe
QC LEVEL: NEPM (2013)

PHONE: Sydney 02 8245 0300 | Perth 08 9488 0100 | Brisbane 07 3112 2688 | Melbourne 03 9642 0599 | Adelaide 08 8431 7113

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) .....mstacey.....@jbsg.com.au; (3) .....dokeeffe.....@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	JB24d	BTEX	JB2	Asbestos 500	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
TP10 0-0.1	Soil	1/3/22		B+J +ice		X					X	
0.4-0.5				J					X			
TP11 0-0.1				B+J								
0.4-0.5				B+J		X					X	
0.6-0.7				J				X				
TP12 0-0.1				B+J		X					X	
0.4-0.5				J								
TP13 0-0.1				B+J		X					X	
0.4-0.5				J								
TP14 0-0.1				B+J					X			
0.4-0.5				J								
QC01				Jar + bag (2 vials)		X					X	
TS/TB							X					

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: M.Stacey DATE: 1/3/22	CONSIGNMENT NOTE NO.	NAME: Alis DATE: 1.3.22 4:32 PM	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF: JBS&G	TRANSPORT CO.	OF:	COOLER TEMP ..... deg C
NAME: DATE:	CONSIGNMENT NOTE NO.	NAME: DATE:	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF:	TRANSPORT CO	OF:	COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

#868012

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www.eurofins.com.au EnviroSales@eurofins.com

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Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Sample Receipt Advice

Company name:	JBS & G Australia (NSW) P/L
Contact name:	Mackenzie Stacey
Project name:	BONNYRIGG
Project ID:	62436
Turnaround time:	5 Day
Date/Time received	Mar 1, 2022 4:32 PM
Eurofins reference	868012

Sample Information

✓	A detailed list of analytes logged into our LIMS, is included in the attached summary table.
✓	Sample Temperature of chilled sample on the batch as recorded by Eurofins Sample Receipt : 14.2 degrees Celsius.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
X	Split sample sent to requested external lab.
X	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Ursula Long on phone : or by email: UrsulaLong@eurofins.com

Results will be delivered electronically via email to Mackenzie Stacey - mstacey@jbsg.com.au.

Global Leader - Results you can trust

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web: www.eurofins.com.au
email: EnviroSales@eurofins.com

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IANZ # 1290

Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: BONNYRIGG
Project ID: 62436

Order No.:
Report #: 868012
Phone: 02 8245 0300
Fax:

Received: Mar 1, 2022 4:32 PM
Due: Mar 8, 2022
Priority: 5 Day
Contact Name: Mackenzie Stacey

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - WA guidelines	HOLD	BTEX	Moisture Set	JBS&G Suite 2	BTEX
Melbourne Laboratory - NATA # 1261 Site # 1254											
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794											
Mayfield Laboratory - NATA # 1261 Site # 25079											
Perth Laboratory - NATA # 2377 Site # 2370											
External Laboratory											
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**						
1	TP01 0-1	Mar 01, 2022		Soil	S22-Ma05278	X			X	X	
2	TP02 0-0.1	Mar 01, 2022		Soil	S22-Ma05279	X			X	X	
3	TP03 0-0.1	Mar 01, 2022		Soil	S22-Ma05280	X					
4	TP03 0.4-0.5	Mar 01, 2022		Soil	S22-Ma05281				X	X	
5	TP04 0-0.1	Mar 01, 2022		Soil	S22-Ma05282	X			X	X	
6	TP05 0-0.1	Mar 01, 2022		Soil	S22-Ma05283	X			X	X	
7	TP06 0-0.1	Mar 01, 2022		Soil	S22-Ma05284	X			X	X	
8	TP07 0.2-0.3	Mar 01, 2022		Soil	S22-Ma05285	X			X	X	
9	TP08 0-0.1	Mar 01, 2022		Soil	S22-Ma05286	X			X	X	

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Rolleston, Christchurch 7675
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IANZ # 1290

Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: BONNYRIGG
Project ID: 62436

Order No.:
Report #: 868012
Phone: 02 8245 0300
Fax:

Received: Mar 1, 2022 4:32 PM
Due: Mar 8, 2022
Priority: 5 Day
Contact Name: Mackenzie Stacey

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - WA guidelines	HOLD	BTEX	Moisture Set	JBS&G Suite 2	BTEX
Melbourne Laboratory - NATA # 1261 Site # 1254											
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794											
Mayfield Laboratory - NATA # 1261 Site # 25079											
Perth Laboratory - NATA # 2377 Site # 2370											
External Laboratory											
10	TP09 0-0.1	Mar 01, 2022		Soil	S22-Ma05287				X	X	
11	TP10 0-0.1	Mar 01, 2022		Soil	S22-Ma05288	X			X	X	
12	TP11 0-0.1	Mar 01, 2022		Soil	S22-Ma05289	X					
13	TP11 0.4-0.5	Mar 01, 2022		Soil	S22-Ma05290	X			X	X	
14	TP11 0.6-0.7	Mar 01, 2022		Soil	S22-Ma05291				X	X	
15	TP12 0-0.1	Mar 01, 2022		Soil	S22-Ma05292	X			X	X	
16	TP13 0-0.1	Mar 01, 2022		Soil	S22-Ma05293	X			X	X	
17	TP14 0-0.1	Mar 01, 2022		Soil	S22-Ma05294	X					
18	QC01	Mar 01, 2022		Soil	S22-Ma05295	X			X	X	
19	TS	Mar 01, 2022		Water	S22-Ma05296						X
20	TB	Mar 01, 2022		Water	S22-Ma05297			X			

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IANZ # 1290

Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
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NSW 2000

Project Name: BONNYRIGG
Project ID: 62436

Order No.:
Report #: 868012
Phone: 02 8245 0300
Fax:

Received: Mar 1, 2022 4:32 PM
Due: Mar 8, 2022
Priority: 5 Day
Contact Name: Mackenzie Stacey

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - WA guidelines	HOLD	BTEX	Moisture Set	JBS&G Suite 2	BTEX
Melbourne Laboratory - NATA # 1261 Site # 1254											
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794											
Mayfield Laboratory - NATA # 1261 Site # 25079											
Perth Laboratory - NATA # 2377 Site # 2370											
External Laboratory											
21	TP01 .4-.5	Mar 01, 2022		Soil	S22-Ma05298		X				
22	TP02 0.4-0.5	Mar 01, 2022		Soil	S22-Ma05299		X				
23	TP04 0.4-0.5	Mar 01, 2022		Soil	S22-Ma05300		X				
24	TP05 0.4-0.5	Mar 01, 2022		Soil	S22-Ma05301		X				
25	TP06 0.4-0.5	Mar 01, 2022		Soil	S22-Ma05302		X				
26	TP07 0-0.1	Mar 01, 2022		Soil	S22-Ma05303		X				
27	TP07 0.5-0.6	Mar 01, 2022		Soil	S22-Ma05304		X				
28	TP08 0.4-0.5	Mar 01, 2022		Soil	S22-Ma05305		X				
29	TP09 0.4-0.5	Mar 01, 2022		Soil	S22-Ma05306		X				
30	TP10 0.4-0.5	Mar 01, 2022		Soil	S22-Ma05307		X				
31	TP12 0.4-0.5	Mar 01, 2022		Soil	S22-Ma05308		X				

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Perth Laboratory - NATA # 2377 Site # 2370											
External Laboratory											
32	TP13 0.4-0.5	Mar 01, 2022		Soil	S22-Ma05309		X				
33	TP14 0.4-0.5	Mar 01, 2022		Soil	S22-Ma05310		X				
Test Counts						15	13	1	15	15	1

Certificate of Analysis

Environment Testing

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025–Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

JBS & G Australia (NSW) P/L
Level 1, 50 Margaret St
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NSW 2000

Attention:	Mackenzie Stacey
Report	868012-AID
Project Name	BONNYRIGG
Project ID	62436
Received Date	Mar 01, 2022
Date Reported	Mar 10, 2022

Methodology:

Asbestos Fibre Identification	Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques. *NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.*
Unknown Mineral Fibres	Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity. *NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.*
Subsampling Soil Samples	The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) is employed. *NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis, in accordance with AS 4964-2004.*
Bonded asbestos-containing material (ACM)	The material is first examined and any fibres isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination.The resultant material is then further examined in accordance with AS 4964 - 2004. *NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.*
Limit of Reporting	The performance limitation of the AS 4964 (2004) method for non-homogeneous samples is around 0.1 g/kg (equivalent to 0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis, this is considered to be at the nominal reporting limit of 0.01% (w/w). The NEPM screening level of 0.001% (w/w) is intended as an on-site determination, not a laboratory Limit of Reporting (LOR), per se. Examination of a large sample size (e.g. 500 mL) may improve the likelihood of detecting asbestos, particularly AF, to aid assessment against the NEPM criteria. Gravimetric determinations to this level of accuracy are outside of AS 4964 and hence NATA Accreditation does not cover the performance of this service (non-NATA results shown with an asterisk). *NOTE: NATA News March 2014, p.7, states in relation to AS 4964: "This is a qualitative method with a nominal reporting limit of 0.01 % " and that currently in Australia "there is no validated method available for the quantification of asbestos".This report is consistent with the analytical procedures and reporting recommendations in the NEPM and the WA DoH.*

Project Name BONNYRIGG
Project ID 62436
Date Sampled Mar 01, 2022
Report 868012-AID

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
TP01 0-1	22-Ma05278	Mar 01, 2022	Approximate Sample 378g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP02 0-0.1	22-Ma05279	Mar 01, 2022	Approximate Sample 663g Sample consisted of: Brown coarse-grained sandy soil, glass and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP03 0-0.1	22-Ma05280	Mar 01, 2022	Approximate Sample 582g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP04 0-0.1	22-Ma05282	Mar 01, 2022	Approximate Sample 515g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
TP05 0-0.1	22-Ma05283	Mar 01, 2022	Approximate Sample 625g Sample consisted of: Brown fine-grained clayey soil, glass, cement and rocks	FA: Chrysotile and amosite asbestos detected in weathered fibre cement fragments. Approximate raw weight of FA = 0.083g Estimated asbestos content in FA = 0.0083g* AF: Chrysotile asbestos detected in the form of loose fibre bundles. Approximate raw weight of AF = 0.00080g* Estimated asbestos content in AF = 0.00080g* Total estimated asbestos content in FA and AF = 0.0091g* Total estimated asbestos concentration in FA and AF = 0.0014% w/w* Organic fibre detected. No trace asbestos detected.
TP06 0-0.1	22-Ma05284	Mar 01, 2022	Approximate Sample 548g Sample consisted of: Brown fine-grained clayey soil, cement and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP07 0.2-0.3	22-Ma05285	Mar 01, 2022	Approximate Sample 597g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP08 0-0.1	22-Ma05286	Mar 01, 2022	Approximate Sample 638g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP10 0-0.1	22-Ma05288	Mar 01, 2022	Approximate Sample 533g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP11 0-0.1	22-Ma05289	Mar 01, 2022	Approximate Sample 687g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP11 0.4-0.5	22-Ma05290	Mar 01, 2022	Approximate Sample 671g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP12 0-0.1	22-Ma05292	Mar 01, 2022	Approximate Sample 609g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP13 0-0.1	22-Ma05293	Mar 01, 2022	Approximate Sample 642g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
TP14 0-0.1	22-Ma05294	Mar 01, 2022	Approximate Sample 554g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
QC01	22-Ma05295	Mar 01, 2022	Approximate Sample 627g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Asbestos - LTM-ASB-8020	Sydney	Mar 02, 2022	Indefinite

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Perth Laboratory - NATA # 2377 Site # 2370											
External Laboratory											
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**						
1	TP01 0-1	Mar 01, 2022		Soil	S22-Ma05278	X			X	X	
2	TP02 0-0.1	Mar 01, 2022		Soil	S22-Ma05279	X			X	X	
3	TP03 0-0.1	Mar 01, 2022		Soil	S22-Ma05280	X					
4	TP03 0.4-0.5	Mar 01, 2022		Soil	S22-Ma05281				X	X	
5	TP04 0-0.1	Mar 01, 2022		Soil	S22-Ma05282	X			X	X	
6	TP05 0-0.1	Mar 01, 2022		Soil	S22-Ma05283	X			X	X	
7	TP06 0-0.1	Mar 01, 2022		Soil	S22-Ma05284	X			X	X	
8	TP07 0.2-0.3	Mar 01, 2022		Soil	S22-Ma05285	X			X	X	
9	TP08 0-0.1	Mar 01, 2022		Soil	S22-Ma05286	X			X	X	

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External Laboratory											
10	TP09 0-0.1	Mar 01, 2022		Soil	S22-Ma05287				X	X	
11	TP10 0-0.1	Mar 01, 2022		Soil	S22-Ma05288	X			X	X	
12	TP11 0-0.1	Mar 01, 2022		Soil	S22-Ma05289	X					
13	TP11 0.4-0.5	Mar 01, 2022		Soil	S22-Ma05290	X			X	X	
14	TP11 0.6-0.7	Mar 01, 2022		Soil	S22-Ma05291				X	X	
15	TP12 0-0.1	Mar 01, 2022		Soil	S22-Ma05292	X			X	X	
16	TP13 0-0.1	Mar 01, 2022		Soil	S22-Ma05293	X			X	X	
17	TP14 0-0.1	Mar 01, 2022		Soil	S22-Ma05294	X					
18	QC01	Mar 01, 2022		Soil	S22-Ma05295	X			X	X	
19	TS	Mar 01, 2022		Water	S22-Ma05296						X
20	TB	Mar 01, 2022		Water	S22-Ma05297			X			

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25	TP06 0.4-0.5	Mar 01, 2022		Soil	S22-Ma05302		X				
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27	TP07 0.5-0.6	Mar 01, 2022		Soil	S22-Ma05304		X				
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29	TP09 0.4-0.5	Mar 01, 2022		Soil	S22-Ma05306		X				
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31	TP12 0.4-0.5	Mar 01, 2022		Soil	S22-Ma05308		X				

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33	TP14 0.4-0.5	Mar 01, 2022		Soil	S22-Ma05310		X				
Test Counts						15	13	1	15	15	1

Internal Quality Control Review and Glossary General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. Information identified on this report with the colour **blue** indicates data provided by customer that may have an impact on the results.
5. Information identified on this report with the colour **orange** indicates sections of the report not covered by the laboratory's scope of NATA accreditation.
6. This report replaces any interim results previously issued.

Holding Times

Please refer to the most recent version of the 'Sample Preservation and Container Guide' for holding times (QS3001).
If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported. Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

Units

% w/w:	Percentage weight-for-weight basis, e.g. of asbestos in asbestos-containing finds in soil samples (**% w/w**)
F/fld	Airborne fibre filter loading as Fibres (**N**) per Fields counted (**n**)
F/mL	Airborne fibre reported concentration as Fibres per millilitre of air drawn over the sampler membrane (**C**)
g, kg	Mass, e.g. of whole sample (**M**) or asbestos-containing find within the sample (**m**)
g/kg	Concentration in grams per kilogram
L, mL	Volume, e.g. of air as measured in AFM (**V** = **r** x **t**)
L/min	Airborne fibre sampling Flowrate as litres per minute of air drawn over the sampler membrane (**r**)
min	Time (**t**), e.g. of air sample collection period

Calculations

Airborne Fibre Concentration: $C = \left(\frac{A}{a}\right) \times \left(\frac{N}{n}\right) \times \left(\frac{1}{r}\right) \times \left(\frac{1}{t}\right) = K \times \left(\frac{N}{n}\right) \times \left(\frac{1}{V}\right)$

Asbestos Content (as asbestos): $\%\, w/w = \frac{(m \times P_A)}{M}$

Weighted Average (of asbestos): $\%_{WA} = \sum \frac{(m \times P_A)_x}{x}$

Terms

%asbestos	Estimated percentage of asbestos in a given matrix. May be derived from knowledge or experience of the material, informed by HSG264 *Appendix 2*, else assumed to be 15% in accordance with WA DOH *Appendix 2* (**P_A**).
ACM	Asbestos Containing Materials. Asbestos contained within a non-asbestos matrix, typically presented in bonded (non-friable) condition. For the purposes of the NEPM and WA DOH, ACM corresponds to material larger than 7 mm x 7 mm.
AF	Asbestos Fines. Asbestos contamination within a soil sample, as defined by WA DOH. Includes loose fibre bundles and small pieces of friable and non-friable material such as asbestos cement fragments mixed with soil. Considered under the NEPM as equivalent to "non-bonded / friable".
AFM	Airborne Fibre Monitoring, e.g. by the MFM.
Amosite	Amosite Asbestos Detected. Amosite may also refer to Fibrous Grunerite or Brown Asbestos. Identified in accordance with AS 4964-2004.
AS	Australian Standard.
Asbestos Content (as asbestos)	Total % w/w asbestos content in asbestos-containing finds in a soil sample (**% w/w**).
Chrysotile	Chrysotile Asbestos Detected. Chrysotile may also refer to Fibrous Serpentine or White Asbestos. Identified in accordance with AS 4964-2004.
COC	Chain of Custody.
Crocidolite	Crocidolite Asbestos Detected. Crocidolite may also refer to Fibrous Riebeckite or Blue Asbestos. Identified in accordance with AS 4964-2004.
Dry	Sample is dried by heating prior to analysis.
DS	Dispersion Staining. Technique required for Unequivocal Identification of asbestos fibres by PLM.
FA	Fibrous Asbestos. Asbestos containing material that is wholly or in part friable, including materials with higher asbestos content with a propensity to become friable with handling, and any material that was previously non-friable and in a severely degraded condition. For the purposes of the NEPM and WA DOH, FA generally corresponds to material larger than 7 mm x 7 mm, although FA may be more difficult to visibly distinguish and may be assessed as AF.
Fibre Count	Total of all fibres (whether asbestos or not) meeting the counting criteria set out in the NOHSC:3003
Fibre ID	Fibre Identification. Unequivocal identification of asbestos fibres according to AS 4964-2004. Includes Chrysotile, Amosite (Grunerite) or Crocidolite asbestos.
Friable	Asbestos-containing materials of any size that may be broken or crumbled by hand pressure. For the purposes of the NEPM, this includes both AF and FA. It is outside of the laboratory's remit to assess degree of friability.
HSG248	UK HSE HSG248, *Asbestos: The Analysts Guide*, 2nd Edition (2021).
HSG264	UK HSE HSG264, *Asbestos: The Survey Guide* (2012).
ISO (also ISO/IEC)	International Organization for Standardization / International Electrotechnical Commission.
K Factor	Microscope constant (**K**) as derived from the effective filter area of the given AFM membrane used for collecting the sample (**A**) and the projected eyepiece graticule area of the specific microscope used for the analysis (**a**).
LOR	Limit of Reporting.
MFM (also NOHSC:3003)	Membrane Filter Method. As described by the Australian Government National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres*, 2nd Edition [NOHSC:3003(2005)].
NEPM (also ASC NEPM)	National Environment Protection (Assessment of Site Contamination) Measure, (2013, as amended).
Organic	Organic Fibres Detected. Organic may refer to Natural or Man-Made Polymeric Fibres. Identified in accordance with AS 4964-2004.
PCM	Phase Contrast Microscopy. As used for Fibre Counting according to the MFM.
PLM	Polarised Light Microscopy. As used for Fibre Identification and Trace Analysis according to AS 4964-2004.
SMF	Synthetic Mineral Fibre Detected. SMF may also refer to Man Made Vitreous Fibres. Identified in accordance with AS 4964-2004.
SRA	Sample Receipt Advice.
Trace Analysis	Analytical procedure used to detect the presence of respirable fibres (particularly asbestos) in a given sample matrix.
UK HSE HSG	United Kingdom, Health and Safety Executive, Health and Safety Guidance, publication.
UMF	Unidentified Mineral Fibre Detected. Fibrous minerals that are detected but have not been unequivocally identified by PLM with DS according the AS 4964-2004. May include (but not limited to) Actinolite, Anthophyllite or Tremolite asbestos.
WA DOH	Reference document for the NEPM. Government of Western Australia, *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia* (updated 2021), including Appendix Four: *Laboratory analysis*
Weighted Average	Combined average % w/w asbestos content of all asbestos-containing finds in the given aliquot or total soil sample (**$\%_{WA}$**).

Comments

22-Ma05278: Sample received was less than the nominal 500mL as recommended in Section 4.10 of the NEPM Schedule B1 - Guideline on Investigation Levels for Soil and Groundwater.

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Asbestos Counter/Identifier:

Laxman Dias	Senior Analyst-Asbestos (NSW)

Authorised by:

Sayeed Abu	Senior Analyst-Asbestos (NSW)

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

JBS & G Australia (NSW) P/L
Level 1, 50 Margaret St
Sydney
NSW 2000

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **Mackenzie Stacey**

Report **868012-S**
Project name BONNYRIGG
Project ID 62436
Received Date Mar 01, 2022

Client Sample ID			**TP01 0-1**	**TP02 0-0.1**	**TP03 0.4-0.5**	**TP04 0-0.1**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**S22-Ma05278**	**S22-Ma05279**	**S22-Ma05281**	**S22-Ma05282**
Date Sampled			**Mar 01, 2022**	**Mar 01, 2022**	**Mar 01, 2022**	**Mar 01, 2022**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	25	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	51	< 50	< 50
TRH C29-C36	50	mg/kg	62	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	62	76	< 50	< 50
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	77	78	80	72
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			TP01 0-1	TP02 0-0.1	TP03 0.4-0.5	TP04 0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ma05278	S22-Ma05279	S22-Ma05281	S22-Ma05282
Date Sampled			Mar 01, 2022	Mar 01, 2022	Mar 01, 2022	Mar 01, 2022
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	100	117	102	100
p-Terphenyl-d14 (surr.)	1	%	91	109	99	87
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	124	150	127	114
Tetrachloro-m-xylene (surr.)	1	%	116	128	114	111
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	124	150	127	114
Tetrachloro-m-xylene (surr.)	1	%	116	128	114	111

Client Sample ID			TP01 0-1	TP02 0-0.1	TP03 0.4-0.5	TP04 0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ma05278	S22-Ma05279	S22-Ma05281	S22-Ma05282
Date Sampled			Mar 01, 2022	Mar 01, 2022	Mar 01, 2022	Mar 01, 2022
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	17	5.9	21	16
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	36	14	43	36
Copper	5	mg/kg	32	13	21	20
Lead	5	mg/kg	39	30	22	18
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	26	7.0	14	8.9
Zinc	5	mg/kg	100	67	25	15
% Moisture	1	%	32	21	20	24

Client Sample ID			TP05 0-0.1	TP06 0-0.1	TP07 0.2-0.3	TP08 0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ma05283	S22-Ma05284	S22-Ma05285	S22-Ma05286
Date Sampled			Mar 01, 2022	Mar 01, 2022	Mar 01, 2022	Mar 01, 2022
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	71	77	70	89
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			TP05 0-0.1	TP06 0-0.1	TP07 0.2-0.3	TP08 0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ma05283	S22-Ma05284	S22-Ma05285	S22-Ma05286
Date Sampled			Mar 01, 2022	Mar 01, 2022	Mar 01, 2022	Mar 01, 2022
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	100	113	101	83
p-Terphenyl-d14 (surr.)	1	%	95	108	94	79
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	1.0
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	1
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	123	148	121	82
Tetrachloro-m-xylene (surr.)	1	%	111	124	116	87
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1

Client Sample ID			TP05 0-0.1	TP06 0-0.1	TP07 0.2-0.3	TP08 0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ma05283	S22-Ma05284	S22-Ma05285	S22-Ma05286
Date Sampled			Mar 01, 2022	Mar 01, 2022	Mar 01, 2022	Mar 01, 2022
Test/Reference	LOR	Unit				
Polychlorinated Biphenyls						
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	123	148	121	82
Tetrachloro-m-xylene (surr.)	1	%	111	124	116	87
Heavy Metals						
Arsenic	2	mg/kg	14	4.8	11	25
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	0.4
Chromium	5	mg/kg	30	11	26	38
Copper	5	mg/kg	25	14	23	62
Lead	5	mg/kg	26	19	18	70
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	9.5	< 5	31	14
Zinc	5	mg/kg	32	49	76	84
% Moisture	1	%	20	19	22	16

Client Sample ID			TP09 0-0.1	TP10 0-0.1	TP11 0.4-0.5	TP11 0.6-0.7
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ma05287	S22-Ma05288	S22-Ma05290	S22-Ma05291
Date Sampled			Mar 01, 2022	Mar 01, 2022	Mar 01, 2022	Mar 01, 2022
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	51	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	51	< 50	< 50	< 50
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	86	86	71	104
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			TP09 0-0.1	TP10 0-0.1	TP11 0.4-0.5	TP11 0.6-0.7
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ma05287	S22-Ma05288	S22-Ma05290	S22-Ma05291
Date Sampled			Mar 01, 2022	Mar 01, 2022	Mar 01, 2022	Mar 01, 2022
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	105	110	98	112
p-Terphenyl-d14 (surr.)	1	%	106	111	95	111
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	0.57	< 0.05	1.1	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	0.57	< 0.05	1.1	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	0.57	< 0.1	1.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	120	128	111	126
Tetrachloro-m-xylene (surr.)	1	%	111	118	102	120

Client Sample ID			TP09 0-0.1	TP10 0-0.1	TP11 0.4-0.5	TP11 0.6-0.7
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ma05287	S22-Ma05288	S22-Ma05290	S22-Ma05291
Date Sampled			Mar 01, 2022	Mar 01, 2022	Mar 01, 2022	Mar 01, 2022
Test/Reference	LOR	Unit				
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	120	128	111	126
Tetrachloro-m-xylene (surr.)	1	%	111	118	102	120
Heavy Metals						
Arsenic	2	mg/kg	36	23	12	8.7
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	59	43	34	22
Copper	5	mg/kg	61	21	37	29
Lead	5	mg/kg	88	31	32	18
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	30	11	21	8.2
Zinc	5	mg/kg	150	49	88	49
% Moisture	1	%	33	23	19	18

Client Sample ID			TP12 0-0.1	TP13 0-0.1	QC01
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			S22-Ma05292	S22-Ma05293	S22-Ma05295
Date Sampled			Mar 01, 2022	Mar 01, 2022	Mar 01, 2022
Test/Reference	LOR	Unit			
Total Recoverable Hydrocarbons					
TRH C6-C9	20	mg/kg	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	31	< 20	< 20
TRH C15-C28	50	mg/kg	120	< 50	< 50
TRH C29-C36	50	mg/kg	82	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	233	< 50	< 50
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	170	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	170	< 100	< 100
BTEX					
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	72	60	70

Client Sample ID			TP12 0-0.1	TP13 0-0.1	QC01
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			S22-Ma05292	S22-Ma05293	S22-Ma05295
Date Sampled			Mar 01, 2022	Mar 01, 2022	Mar 01, 2022
Test/Reference	LOR	Unit			
Polycyclic Aromatic Hydrocarbons					
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	104	112	99
p-Terphenyl-d14 (surr.)	1	%	111	114	103
Organochlorine Pesticides					
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	0.10	0.11	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05
a-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05
b-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05
d-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	0.1	0.11	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	0.1	0.11	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	125	137	122
Tetrachloro-m-xylene (surr.)	1	%	111	120	108

Client Sample ID			TP12 0-0.1	TP13 0-0.1	QC01
Sample Matrix			**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**S22-Ma05292**	**S22-Ma05293**	**S22-Ma05295**
Date Sampled			**Mar 01, 2022**	**Mar 01, 2022**	**Mar 01, 2022**
Test/Reference	LOR	Unit			
Polychlorinated Biphenyls					
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	125	137	122
Tetrachloro-m-xylene (surr.)	1	%	111	120	108
Heavy Metals					
Arsenic	2	mg/kg	2.2	8.3	11
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	9.8	22	17
Copper	5	mg/kg	12	26	17
Lead	5	mg/kg	26	25	24
Mercury	0.1	mg/kg	0.1	< 0.1	< 0.1
Nickel	5	mg/kg	6.4	21	7.0
Zinc	5	mg/kg	44	63	28
% Moisture	1	%	21	21	14

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
JBS&G Suite 2			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Mar 04, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Mar 04, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Mar 04, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Mar 04, 2022	14 Days
- Method: LTM-ORG-2010 BTEX and Volatile TRH			
Polycyclic Aromatic Hydrocarbons	Sydney	Mar 04, 2022	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Organochlorine Pesticides	Sydney	Mar 04, 2022	14 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Polychlorinated Biphenyls	Sydney	Mar 04, 2022	28 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Metals M8	Sydney	Mar 04, 2022	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Sydney	Mar 02, 2022	14 Days
- Method: LTM-GEN-7080 Moisture			

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Project Name: BONNYRIGG
Project ID: 62436

Order No.:
Report #: 868012
Phone: 02 8245 0300
Fax:

Received: Mar 1, 2022 4:32 PM
Due: Mar 8, 2022
Priority: 5 Day
Contact Name: Mackenzie Stacey

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - WA guidelines	HOLD	BTEX	Moisture Set	JBS&G Suite 2	BTEX
Melbourne Laboratory - NATA # 1261 Site # 1254											
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794											
Mayfield Laboratory - NATA # 1261 Site # 25079											
Perth Laboratory - NATA # 2377 Site # 2370											
External Laboratory											
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**						
1	TP01 0-1	Mar 01, 2022		Soil	S22-Ma05278	X			X	X	
2	TP02 0-0.1	Mar 01, 2022		Soil	S22-Ma05279	X			X	X	
3	TP03 0-0.1	Mar 01, 2022		Soil	S22-Ma05280	X					
4	TP03 0.4-0.5	Mar 01, 2022		Soil	S22-Ma05281				X	X	
5	TP04 0-0.1	Mar 01, 2022		Soil	S22-Ma05282	X			X	X	
6	TP05 0-0.1	Mar 01, 2022		Soil	S22-Ma05283	X			X	X	
7	TP06 0-0.1	Mar 01, 2022		Soil	S22-Ma05284	X			X	X	
8	TP07 0.2-0.3	Mar 01, 2022		Soil	S22-Ma05285	X			X	X	
9	TP08 0-0.1	Mar 01, 2022		Soil	S22-Ma05286	X			X	X	

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Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
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NSW 2000

Project Name: BONNYRIGG
Project ID: 62436

Order No.:
Report #: 868012
Phone: 02 8245 0300
Fax:

Received: Mar 1, 2022 4:32 PM
Due: Mar 8, 2022
Priority: 5 Day
Contact Name: Mackenzie Stacey

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - WA guidelines	HOLD	BTEX	Moisture Set	JBS&G Suite 2	BTEX
Melbourne Laboratory - NATA # 1261 Site # 1254											
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794											
Mayfield Laboratory - NATA # 1261 Site # 25079											
Perth Laboratory - NATA # 2377 Site # 2370											
External Laboratory											
10	TP09 0-0.1	Mar 01, 2022		Soil	S22-Ma05287				X	X	
11	TP10 0-0.1	Mar 01, 2022		Soil	S22-Ma05288	X			X	X	
12	TP11 0-0.1	Mar 01, 2022		Soil	S22-Ma05289	X					
13	TP11 0.4-0.5	Mar 01, 2022		Soil	S22-Ma05290	X			X	X	
14	TP11 0.6-0.7	Mar 01, 2022		Soil	S22-Ma05291				X	X	
15	TP12 0-0.1	Mar 01, 2022		Soil	S22-Ma05292	X			X	X	
16	TP13 0-0.1	Mar 01, 2022		Soil	S22-Ma05293	X			X	X	
17	TP14 0-0.1	Mar 01, 2022		Soil	S22-Ma05294	X					
18	QC01	Mar 01, 2022		Soil	S22-Ma05295	X			X	X	
19	TS	Mar 01, 2022		Water	S22-Ma05296						X
20	TB	Mar 01, 2022		Water	S22-Ma05297			X			

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Melbourne Laboratory - NATA # 1261 Site # 1254											
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794											
Mayfield Laboratory - NATA # 1261 Site # 25079											
Perth Laboratory - NATA # 2377 Site # 2370											
External Laboratory											
21	TP01 .4-.5	Mar 01, 2022		Soil	S22-Ma05298		X				
22	TP02 0.4-0.5	Mar 01, 2022		Soil	S22-Ma05299		X				
23	TP04 0.4-0.5	Mar 01, 2022		Soil	S22-Ma05300		X				
24	TP05 0.4-0.5	Mar 01, 2022		Soil	S22-Ma05301		X				
25	TP06 0.4-0.5	Mar 01, 2022		Soil	S22-Ma05302		X				
26	TP07 0-0.1	Mar 01, 2022		Soil	S22-Ma05303		X				
27	TP07 0.5-0.6	Mar 01, 2022		Soil	S22-Ma05304		X				
28	TP08 0.4-0.5	Mar 01, 2022		Soil	S22-Ma05305		X				
29	TP09 0.4-0.5	Mar 01, 2022		Soil	S22-Ma05306		X				
30	TP10 0.4-0.5	Mar 01, 2022		Soil	S22-Ma05307		X				
31	TP12 0.4-0.5	Mar 01, 2022		Soil	S22-Ma05308		X				

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Melbourne Laboratory - NATA # 1261 Site # 1254											
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794											
Mayfield Laboratory - NATA # 1261 Site # 25079											
Perth Laboratory - NATA # 2377 Site # 2370											
External Laboratory											
32	TP13 0.4-0.5	Mar 01, 2022		Soil	S22-Ma05309		X				
33	TP14 0.4-0.5	Mar 01, 2022		Soil	S22-Ma05310		X				
Test Counts						15	13	1	15	15	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

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QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons							
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-HCH	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-HCH	mg/kg	< 0.05			0.05	Pass	
d-HCH	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-HCH (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.1			0.1	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.1			0.1	Pass	
Aroclor-1242	mg/kg	< 0.1			0.1	Pass	
Aroclor-1248	mg/kg	< 0.1			0.1	Pass	
Aroclor-1254	mg/kg	< 0.1			0.1	Pass	
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C10-C14	%	117			70-130	Pass	
TRH >C10-C16	%	111			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	115			70-130	Pass	
Acenaphthylene	%	109			70-130	Pass	
Anthracene	%	103			70-130	Pass	
Benz(a)anthracene	%	72			70-130	Pass	
Benzo(a)pyrene	%	97			70-130	Pass	
Benzo(b&j)fluoranthene	%	103			70-130	Pass	
Benzo(g.h.i)perylene	%	109			70-130	Pass	
Benzo(k)fluoranthene	%	92			70-130	Pass	
Chrysene	%	91			70-130	Pass	
Dibenz(a.h)anthracene	%	103			70-130	Pass	
Fluoranthene	%	97			70-130	Pass	
Fluorene	%	104			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	99			70-130	Pass	
Naphthalene	%	115			70-130	Pass	
Phenanthrene	%	104			70-130	Pass	
Pyrene	%	97			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	83			70-130	Pass	
4.4'-DDD	%	96			70-130	Pass	
4.4'-DDE	%	95			70-130	Pass	
4.4'-DDT	%	93			70-130	Pass	
a-HCH	%	87			70-130	Pass	
Aldrin	%	98			70-130	Pass	
b-HCH	%	96			70-130	Pass	
d-HCH	%	88			70-130	Pass	
Dieldrin	%	95			70-130	Pass	
Endosulfan I	%	96			70-130	Pass	
Endosulfan II	%	88			70-130	Pass	
Endosulfan sulphate	%	91			70-130	Pass	
Endrin	%	104			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin aldehyde	%	89			70-130	Pass	
Endrin ketone	%	97			70-130	Pass	
g-HCH (Lindane)	%	91			70-130	Pass	
Heptachlor	%	100			70-130	Pass	
Heptachlor epoxide	%	101			70-130	Pass	
Hexachlorobenzene	%	91			70-130	Pass	
Methoxychlor	%	85			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1016	%	76			70-130	Pass	
Aroclor-1221	%	90			70-130	Pass	
Aroclor-1254	%	109			70-130	Pass	
Aroclor-1260	%	100			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	118			80-120	Pass	
Cadmium	%	114			80-120	Pass	
Chromium	%	108			80-120	Pass	
Copper	%	106			80-120	Pass	
Lead	%	110			80-120	Pass	
Mercury	%	106			80-120	Pass	
Nickel	%	107			80-120	Pass	
Zinc	%	100			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S22-Ma10030	NCP	%	100			70-130	Pass	
4.4'-DDD	S22-Ma13780	NCP	%	110			70-130	Pass	
4.4'-DDE	S22-Ma13780	NCP	%	118			70-130	Pass	
4.4'-DDT	S22-Ma10030	NCP	%	88			70-130	Pass	
a-HCH	S22-Ma13780	NCP	%	107			70-130	Pass	
b-HCH	S22-Ma13780	NCP	%	102			70-130	Pass	
d-HCH	S22-Ma13780	NCP	%	107			70-130	Pass	
Dieldrin	S22-Ma13780	NCP	%	119			70-130	Pass	
Endosulfan II	S22-Ma13780	NCP	%	103			70-130	Pass	
Endosulfan sulphate	S22-Ma13780	NCP	%	109			70-130	Pass	
Endrin aldehyde	S22-Ma13780	NCP	%	76			70-130	Pass	
Heptachlor	S22-Ma10030	NCP	%	117			70-130	Pass	
Heptachlor epoxide	S22-Ma13780	NCP	%	130			70-130	Pass	
Methoxychlor	S22-Ma10030	NCP	%	121			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls				Result 1					
Aroclor-1221	S22-Ma13780	NCP	%	96			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Lead	W22-Fe53467	NCP	%	118			75-125	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C10-C14	S22-Ma05279	CP	%	103			70-130	Pass	
Naphthalene	S22-Ma05279	CP	%	92			70-130	Pass	
TRH >C10-C16	S22-Ma05279	CP	%	98			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S22-Ma05279	CP	%	76			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Toluene	S22-Ma05279	CP	%	73			70-130	Pass	
Ethylbenzene	S22-Ma05279	CP	%	79			70-130	Pass	
m&p-Xylenes	S22-Ma05279	CP	%	81			70-130	Pass	
o-Xylene	S22-Ma05279	CP	%	88			70-130	Pass	
Xylenes - Total*	S22-Ma05279	CP	%	83			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S22-Ma05281	CP	%	124			75-125	Pass	
Cadmium	S22-Ma05281	CP	%	119			75-125	Pass	
Chromium	S22-Ma05281	CP	%	118			75-125	Pass	
Copper	S22-Ma05281	CP	%	116			75-125	Pass	
Mercury	S22-Ma05281	CP	%	114			75-125	Pass	
Nickel	S22-Ma05281	CP	%	113			75-125	Pass	
Zinc	S22-Ma05281	CP	%	121			75-125	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Endrin	S22-Ma03589	NCP	%	98			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls				Result 1					
Aroclor-1016	W22-Fe53461	NCP	%	80			70-130	Pass	
Aroclor-1260	W22-Fe53461	NCP	%	90			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S22-Ma05291	CP	%	103			70-130	Pass	
Acenaphthylene	S22-Ma05291	CP	%	104			70-130	Pass	
Anthracene	S22-Ma05291	CP	%	106			70-130	Pass	
Benz(a)anthracene	S22-Ma05291	CP	%	95			70-130	Pass	
Benzo(a)pyrene	S22-Ma05291	CP	%	103			70-130	Pass	
Benzo(b&j)fluoranthene	S22-Ma05291	CP	%	108			70-130	Pass	
Benzo(g.h.i)perylene	S22-Ma05291	CP	%	112			70-130	Pass	
Benzo(k)fluoranthene	S22-Ma05291	CP	%	102			70-130	Pass	
Chrysene	S22-Ma05291	CP	%	102			70-130	Pass	
Dibenz(a.h)anthracene	S22-Ma05291	CP	%	115			70-130	Pass	
Fluoranthene	S22-Ma05291	CP	%	99			70-130	Pass	
Fluorene	S22-Ma05291	CP	%	109			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S22-Ma05291	CP	%	113			70-130	Pass	
Naphthalene	S22-Ma05291	CP	%	102			70-130	Pass	
Phenanthrene	S22-Ma05291	CP	%	101			70-130	Pass	
Pyrene	S22-Ma05291	CP	%	99			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Aldrin	S22-Ma05291	CP	%	70			70-130	Pass	
Endosulfan I	S22-Ma05291	CP	%	71			70-130	Pass	
Endrin ketone	S22-Ma05291	CP	%	73			70-130	Pass	
g-HCH (Lindane)	S22-Ma05291	CP	%	70			70-130	Pass	
Hexachlorobenzene	S22-Ma05291	CP	%	70			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls				Result 1					
Aroclor-1254	S22-Ma05291	CP	%	71			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	S22-Ma05278	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S22-Ma05278	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S22-Ma05278	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S22-Ma05278	CP	mg/kg	62	< 50	57	30%	Fail	Q15
Naphthalene	S22-Ma05278	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S22-Ma05278	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S22-Ma05278	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S22-Ma05278	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S22-Ma05278	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S22-Ma05278	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S22-Ma05278	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S22-Ma05278	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S22-Ma05278	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S22-Ma05278	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	S22-Ma05278	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Toxaphene	S22-Ma13219	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S22-Ma05279	CP	mg/kg	5.9	5.8	2.0	30%	Pass	
Cadmium	S22-Ma05279	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S22-Ma05279	CP	mg/kg	14	14	3.0	30%	Pass	
Copper	S22-Ma05279	CP	mg/kg	13	12	7.0	30%	Pass	
Lead	S22-Ma05279	CP	mg/kg	30	32	6.0	30%	Pass	
Mercury	S22-Ma05279	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S22-Ma05279	CP	mg/kg	7.0	7.1	1.0	30%	Pass	
Zinc	S22-Ma05279	CP	mg/kg	67	81	18	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	S22-Ma05285	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Naphthalene	S22-Ma05285	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S22-Ma05285	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S22-Ma05285	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S22-Ma05285	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S22-Ma05285	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S22-Ma05285	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S22-Ma05285	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	S22-Ma05285	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S22-Ma05286	CP	%	16	15	4.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C10-C14	S22-Ma05290	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S22-Ma05290	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S22-Ma05290	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C10-C16	S22-Ma05290	CP	mg/kg	< 50	< 50	<1	30%	Pass	

Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH >C16-C34	S22-Ma05290	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S22-Ma05290	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S22-Ma05290	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S22-Ma05290	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S22-Ma05290	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S22-Ma05290	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S22-Ma05290	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S22-Ma05290	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S22-Ma05290	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S22-Ma05290	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S22-Ma05290	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S22-Ma05290	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S22-Ma05290	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S22-Ma05290	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S22-Ma05290	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S22-Ma05290	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S22-Ma05290	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S22-Ma05290	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S22-Ma05290	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S22-Ma05290	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S22-Ma05290	CP	mg/kg	1.1	0.90	21	30%	Pass	
4.4'-DDT	S22-Ma05290	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-HCH	S22-Ma05290	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S22-Ma05290	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-HCH	S22-Ma05290	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-HCH	S22-Ma05290	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S22-Ma05290	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S22-Ma05290	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S22-Ma05290	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S22-Ma05290	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S22-Ma05290	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S22-Ma05290	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S22-Ma05290	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-HCH (Lindane)	S22-Ma05290	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S22-Ma05290	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S22-Ma05290	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S22-Ma05290	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S22-Ma05290	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls				Result 1	Result 2	RPD			
Aroclor-1016	S22-Ma05290	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1221	S22-Ma05290	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1232	S22-Ma05290	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1242	S22-Ma05290	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1248	S22-Ma05290	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1254	S22-Ma05290	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1260	S22-Ma05290	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Total PCB*	S22-Ma05290	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S22-Ma05291	CP	mg/kg	8.7	7.5	15	30%	Pass	
Cadmium	S22-Ma05291	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S22-Ma05291	CP	mg/kg	22	20	9.0	30%	Pass	
Copper	S22-Ma05291	CP	mg/kg	29	27	6.0	30%	Pass	
Lead	S22-Ma05291	CP	mg/kg	18	15	14	30%	Pass	
Mercury	S22-Ma05291	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S22-Ma05291	CP	mg/kg	8.2	8.3	2.0	30%	Pass	
Zinc	S22-Ma05291	CP	mg/kg	49	47	5.0	30%	Pass	

Comments

Eurofins | Environment Testing accreditation number 1261, site 18217 is currently in progress of a controlled transition to a new custom built location at 179 Magowar Road, Girraween, NSW 2145. All results on this report denoted as being performed by Eurofins | Environment Testing Unit F3, Building F, 16 Mars road, Lane Cove West, NSW 2066, corporate site 18217, will have been performed on either Lane Cove or new Girraween site

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Andrew Black	Analytical Services Manager
Gabriele Cordero	Senior Analyst-Metal (NSW)
Andrew Sullivan	Senior Analyst-Organic (NSW)
Roopesh Rangarajan	Senior Analyst-Volatile (NSW)

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

JBS & G Australia (NSW) P/L
Level 1, 50 Margaret St
Sydney
NSW 2000

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **Mackenzie Stacey**

Report **868012-W**
Project name BONNYRIGG
Project ID 62436
Received Date Mar 01, 2022

Client Sample ID			**TS**	**TB**
Sample Matrix			**Water**	**Water**
Eurofins Sample No.			**S22-Ma05296**	**S22-Ma05297**
Date Sampled			**Mar 01, 2022**	**Mar 01, 2022**
Test/Reference	LOR	Unit		
BTEX				
Benzene	1	%	99	-
Ethylbenzene	1	%	100	-
m&p-Xylenes	1	%	120	-
o-Xylene	1	%	100	-
Toluene	1	%	95	-
Xylenes - Total	1	%	110	-
4-Bromofluorobenzene (surr.)	1	%	120	-
BTEX				
Benzene	0.001	mg/L	-	< 0.001
Toluene	0.001	mg/L	-	< 0.001
Ethylbenzene	0.001	mg/L	-	< 0.001
m&p-Xylenes	0.002	mg/L	-	< 0.002
o-Xylene	0.001	mg/L	-	< 0.001
Xylenes - Total*	0.003	mg/L	-	< 0.003
4-Bromofluorobenzene (surr.)	1	%	-	109

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
JBS&G Suite 2			
BTEX	Sydney	Mar 02, 2022	14 Days
- Method: LTM-ORG-2010 BTEX and Volatile TRH			

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NATA # 1261 Site # 18217

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NATA # 1261 Site # 20794

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IANZ # 1290

Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: BONNYRIGG
Project ID: 62436

Order No.:
Report #: 868012
Phone: 02 8245 0300
Fax:

Received: Mar 1, 2022 4:32 PM
Due: Mar 8, 2022
Priority: 5 Day
Contact Name: Mackenzie Stacey

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - WA guidelines	HOLD	BTEX	Moisture Set	JBS&G Suite 2	BTEX
Melbourne Laboratory - NATA # 1261 Site # 1254											
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794											
Mayfield Laboratory - NATA # 1261 Site # 25079											
Perth Laboratory - NATA # 2377 Site # 2370											
External Laboratory											
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**						
1	TP01 0-1	Mar 01, 2022		Soil	S22-Ma05278	X			X	X	
2	TP02 0-0.1	Mar 01, 2022		Soil	S22-Ma05279	X			X	X	
3	TP03 0-0.1	Mar 01, 2022		Soil	S22-Ma05280	X					
4	TP03 0.4-0.5	Mar 01, 2022		Soil	S22-Ma05281				X	X	
5	TP04 0-0.1	Mar 01, 2022		Soil	S22-Ma05282	X			X	X	
6	TP05 0-0.1	Mar 01, 2022		Soil	S22-Ma05283	X			X	X	
7	TP06 0-0.1	Mar 01, 2022		Soil	S22-Ma05284	X			X	X	
8	TP07 0.2-0.3	Mar 01, 2022		Soil	S22-Ma05285	X			X	X	
9	TP08 0-0.1	Mar 01, 2022		Soil	S22-Ma05286	X			X	X	

eurofins | Environment Testing

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Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: BONNYRIGG
Project ID: 62436

Order No.:
Report #: 868012
Phone: 02 8245 0300
Fax:

Received: Mar 1, 2022 4:32 PM
Due: Mar 8, 2022
Priority: 5 Day
Contact Name: Mackenzie Stacey

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - WA guidelines	HOLD	BTEX	Moisture Set	JBS&G Suite 2	BTEX
Melbourne Laboratory - NATA # 1261 Site # 1254											
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794											
Mayfield Laboratory - NATA # 1261 Site # 25079											
Perth Laboratory - NATA # 2377 Site # 2370											
External Laboratory											
10	TP09 0-0.1	Mar 01, 2022		Soil	S22-Ma05287				X	X	
11	TP10 0-0.1	Mar 01, 2022		Soil	S22-Ma05288	X			X	X	
12	TP11 0-0.1	Mar 01, 2022		Soil	S22-Ma05289	X					
13	TP11 0.4-0.5	Mar 01, 2022		Soil	S22-Ma05290	X			X	X	
14	TP11 0.6-0.7	Mar 01, 2022		Soil	S22-Ma05291				X	X	
15	TP12 0-0.1	Mar 01, 2022		Soil	S22-Ma05292	X			X	X	
16	TP13 0-0.1	Mar 01, 2022		Soil	S22-Ma05293	X			X	X	
17	TP14 0-0.1	Mar 01, 2022		Soil	S22-Ma05294	X					
18	QC01	Mar 01, 2022		Soil	S22-Ma05295	X			X	X	
19	TS	Mar 01, 2022		Water	S22-Ma05296						X
20	TB	Mar 01, 2022		Water	S22-Ma05297			X			

eurofins | Environment Testing

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Eurofins Environment Testing Australia Pty Ltd
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6 Monterey Road
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Phone : +61 3 8564 5000
NATA # 1261 Site # 1254

Sydney
Unit F3, Building F
16 Mars Road
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Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

Eurofins ARL Pty Ltd
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Perth
46-48 Banksia Road
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NATA # 2377 Site # 2370

Eurofins Environment Testing NZ Limited
NZBN: 9429046024954

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Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: BONNYRIGG
Project ID: 62436

Order No.:
Report #: 868012
Phone: 02 8245 0300
Fax:

Received: Mar 1, 2022 4:32 PM
Due: Mar 8, 2022
Priority: 5 Day
Contact Name: Mackenzie Stacey

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - WA guidelines	HOLD	BTEX	Moisture Set	JBS&G Suite 2	BTEX
Melbourne Laboratory - NATA # 1261 Site # 1254											
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794											
Mayfield Laboratory - NATA # 1261 Site # 25079											
Perth Laboratory - NATA # 2377 Site # 2370											
External Laboratory											
21	TP01 .4-.5	Mar 01, 2022		Soil	S22-Ma05298		X				
22	TP02 0.4-0.5	Mar 01, 2022		Soil	S22-Ma05299		X				
23	TP04 0.4-0.5	Mar 01, 2022		Soil	S22-Ma05300		X				
24	TP05 0.4-0.5	Mar 01, 2022		Soil	S22-Ma05301		X				
25	TP06 0.4-0.5	Mar 01, 2022		Soil	S22-Ma05302		X				
26	TP07 0-0.1	Mar 01, 2022		Soil	S22-Ma05303		X				
27	TP07 0.5-0.6	Mar 01, 2022		Soil	S22-Ma05304		X				
28	TP08 0.4-0.5	Mar 01, 2022		Soil	S22-Ma05305		X				
29	TP09 0.4-0.5	Mar 01, 2022		Soil	S22-Ma05306		X				
30	TP10 0.4-0.5	Mar 01, 2022		Soil	S22-Ma05307		X				
31	TP12 0.4-0.5	Mar 01, 2022		Soil	S22-Ma05308		X				

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Melbourne Laboratory - NATA # 1261 Site # 1254											
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794											
Mayfield Laboratory - NATA # 1261 Site # 25079											
Perth Laboratory - NATA # 2377 Site # 2370											
External Laboratory											
32	TP13 0.4-0.5	Mar 01, 2022		Soil	S22-Ma05309		X				
33	TP14 0.4-0.5	Mar 01, 2022		Soil	S22-Ma05310		X				
Test Counts						15	13	1	15	15	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

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QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Comments

Eurofins | Environment Testing accreditation number 1261, site 18217 is currently in progress of a controlled transition to a new custom built location at 179 Magowar Road, Girraween, NSW 2145. All results on this report denoted as being performed by Eurofins | Environment Testing Unit F3, Building F, 16 Mars road, Lane Cove West, NSW 2066, corporate site 18217, will have been performed on either Lane Cove or new Girraween site

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised by:

Andrew Black	Analytical Services Manager
Roopesh Rangarajan	Senior Analyst-Volatile (NSW)

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

Chain of Custody

JBS&G

PROJECT NO.: 62436	LABORATORY BATCH NO.:
PROJECT NAME: Bannyrigg	SAMPLERS: M.Stacey
DATE NEEDED BY: Standard	QC LEVEL: NEPM (2013)

PHONE: Sydney 02 8245 0300 | Perth 08 9488 0100 | Brisbane 07 3112 2688 | Melbourne 03 9642 0599 | Adelaide 08 8431 7113

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) ...mstacey.....@jbsg.com.au; (3) ....clakeeffe....@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	5a	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
(1) QA01	Soil	1/3/22		Soil jar + bag tie		X		X	

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

ENVIROLAB
Job No: 300072
Date Received: 1/3/22
Time Received: 1700
Received By: UN
Temp: Cool/Ambient
Cooling: Icepack
Security: Intact/Broken/None

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: M.Stacey DATE: 1/3/22	CONSIGNMENT NOTE NO.	NAME: CHRISTOPHER DATE: 1/3/22 1700	COOLER SEAL – Yes ..... No ..... Intact ..... Broken .....
OF: JBS&G	TRANSPORT CO.	OF: ENSUL	COOLER TEMP ..... deg C
NAME: DATE:	CONSIGNMENT NOTE NO.	NAME: DATE:	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF:	TRANSPORT CO	OF:	COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

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	JBS & G (NSW & WA) Pty Ltd
Attention	M Stacey

Sample Login Details

Your reference	62436, Bonnyrigg
Envirolab Reference	290072
Date Sample Received	01/03/2022
Date Instructions Received	01/03/2022
Date Results Expected to be Reported	08/03/2022

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	1 soil
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	8
Cooling Method	Ice Pack
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:

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	PCBsin Soil	Acid Extractable metalsin soil	Asbestos ID - soils NEPM - ASB-001
QA01	✓	✓	✓	✓	✓	✓	✓

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.

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customerservice@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 290072

Client Details

Client	JBS & G (NSW & WA) Pty Ltd
Attention	M Stacey
Address	Level 1, 50 Margaret St, Sydney, NSW, 2000

Sample Details

Your Reference	**62436, Bonnyrigg**
Number of Samples	1 soil
Date samples received	01/03/2022
Date completed instructions received	01/03/2022

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	08/03/2022
Date of Issue	07/03/2022

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
Authorised by Asbestos Approved Signatory: Lucy Zhu

Results Approved By
Dragana Tomas, Senior Chemist
Giovanni Agosti, Group Technical Manager
Lucy Zhu, Asbestos Supervisor
Thomas Beenie, Lab Technician

Authorised By

Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil		
Our Reference		290072-1
Your Reference	UNITS	QA01
Date Sampled		01/03/2022
Type of sample		soil
Date extracted	-	03/03/2022
Date analysed	-	03/03/2022
TRH C_6 - C_9	mg/kg	<25
TRH C_6 - C_{10}	mg/kg	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25
Benzene	mg/kg	<0.2
Toluene	mg/kg	<0.5
Ethylbenzene	mg/kg	<1
m+p-xylene	mg/kg	<2
o-Xylene	mg/kg	<1
Naphthalene	mg/kg	<1
Total +ve Xylenes	mg/kg	<1
Surrogate aaa-Trifluorotoluene	%	100

svTRH (C10-C40) in Soil		
Our Reference		290072-1
Your Reference	UNITS	QA01
Date Sampled		01/03/2022
Type of sample		soil
Date extracted	-	03/03/2022
Date analysed	-	03/03/2022
TRH C_{10} - C_{14}	mg/kg	<50
TRH C_{15} - C_{28}	mg/kg	<100
TRH C_{29} - C_{36}	mg/kg	<100
Total +ve TRH (C10-C36)	mg/kg	<50
TRH >C_{10} -C_{16}	mg/kg	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50
TRH >C_{16} -C_{34}	mg/kg	<100
TRH >C_{34} -C_{40}	mg/kg	<100
Total +ve TRH (>C10-C40)	mg/kg	<50
Surrogate o-Terphenyl	%	78

PAHs in Soil		
Our Reference		290072-1
Your Reference	UNITS	QA01
Date Sampled		01/03/2022
Type of sample		soil
Date extracted	-	03/03/2022
Date analysed	-	04/03/2022
Naphthalene	mg/kg	<0.1
Acenaphthylene	mg/kg	<0.1
Acenaphthene	mg/kg	<0.1
Fluorene	mg/kg	<0.1
Phenanthrene	mg/kg	<0.1
Anthracene	mg/kg	<0.1
Fluoranthene	mg/kg	<0.1
Pyrene	mg/kg	<0.1
Benzo(a)anthracene	mg/kg	<0.1
Chrysene	mg/kg	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2
Benzo(a)pyrene	mg/kg	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1
Total +ve PAH's	mg/kg	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5
Surrogate p-Terphenyl-d14	%	83

Organochlorine Pesticides in soil		
Our Reference		290072-1
Your Reference	UNITS	QA01
Date Sampled		01/03/2022
Type of sample		soil
Date extracted	-	03/03/2022
Date analysed	-	04/03/2022
alpha-BHC	mg/kg	<0.1
HCB	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 DDT+DDD+DDE	mg/kg	<0.1
Surrogate TCMX	%	81

PCBs in Soil		
Our Reference		290072-1
Your Reference	UNITS	QA01
Date Sampled		01/03/2022
Type of sample		soil
Date extracted	-	03/03/2022
Date analysed	-	04/03/2022
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 TCMX	%	81

Acid Extractable metals in soil		
Our Reference		290072-1
Your Reference	UNITS	QA01
Date Sampled		01/03/2022
Type of sample		soil
Date prepared	-	03/03/2022
Date analysed	-	03/03/2022
Arsenic	mg/kg	12
Cadmium	mg/kg	<0.4
Chromium	mg/kg	18
Copper	mg/kg	20
Lead	mg/kg	32
Mercury	mg/kg	0.1
Nickel	mg/kg	5
Zinc	mg/kg	23

Moisture		
Our Reference		290072-1
Your Reference	UNITS	QA01
Date Sampled		01/03/2022
Type of sample		soil
Date prepared	-	03/03/2022
Date analysed	-	04/03/2022
Moisture	%	17

Asbestos ID - soils NEPM - ASB-001		
Our Reference		290072-1
Your Reference	UNITS	QA01
Date Sampled		01/03/2022
Type of sample		soil
Date analysed	-	07/03/2022
Sample mass tested	g	684.85
Sample Description	-	Brown clayey soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected
Total Asbestos[#1]	g/kg	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected
ACM >7mm Estimation*	g	–
FA and AF Estimation*	g	–
ACM >7mm Estimation*	%(w/w)	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001

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-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 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	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-3	290072-1
Date extracted	-			03/03/2022	[NT]	[NT]	[NT]	[NT]	03/03/2022	03/03/2022
Date analysed	-			03/03/2022	[NT]	[NT]	[NT]	[NT]	03/03/2022	03/03/2022
TRH C_6 - C_9	mg/kg	25	Org-023	<25	[NT]	[NT]	[NT]	[NT]	89	88
TRH C_6 - C_{10}	mg/kg	25	Org-023	<25	[NT]	[NT]	[NT]	[NT]	89	88
Benzene	mg/kg	0.2	Org-023	<0.2	[NT]	[NT]	[NT]	[NT]	82	82
Toluene	mg/kg	0.5	Org-023	<0.5	[NT]	[NT]	[NT]	[NT]	95	94
Ethylbenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	83	84
m+p-xylene	mg/kg	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	92	91
o-Xylene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	87	87
Naphthalene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	99	[NT]	[NT]	[NT]	[NT]	96	100

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-3	290072-1
Date extracted	-			03/03/2022	[NT]	[NT]	[NT]	[NT]	03/03/2022	03/03/2022
Date analysed	-			03/03/2022	[NT]	[NT]	[NT]	[NT]	03/03/2022	03/03/2022
TRH C_{10} - C_{14}	mg/kg	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	84	93
TRH C_{15} - C_{28}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	96	110
TRH C_{29} - C_{36}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	103	120
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	84	93
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	96	110
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	103	120
Surrogate o-Terphenyl	%		Org-020	75	[NT]	[NT]	[NT]	[NT]	73	78

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-3	290072-1
Date extracted	-			03/03/2022	[NT]	[NT]	[NT]	[NT]	03/03/2022	03/03/2022
Date analysed	-			04/03/2022	[NT]	[NT]	[NT]	[NT]	04/03/2022	04/03/2022
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	86	93
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]	83	91
Fluorene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	90	97
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	92	100
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]	92	99
Pyrene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	99	105
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]	77	85
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]	90	100
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-d14	%		Org-022/025	90	[NT]	[NT]	[NT]	[NT]	92	102

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-3	290072-1
Date extracted	-			03/03/2022	[NT]	[NT]	[NT]	[NT]	03/03/2022	03/03/2022
Date analysed	-			04/03/2022	[NT]	[NT]	[NT]	[NT]	04/03/2022	04/03/2022
alpha-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	80	92
HCB	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]	85	103
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]	83	91
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]	75	83
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	90	94
gamma-Chlordane	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[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]	90	101
Dieldrin	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	94	95
Endrin	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	90	96
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]	82	88
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]	90	98
Methoxychlor	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	84	[NT]	[NT]	[NT]	[NT]	86	99

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-3	290072-1
Date extracted	-			03/03/2022	[NT]	[NT]	[NT]	[NT]	03/03/2022	03/03/2022
Date analysed	-			04/03/2022	[NT]	[NT]	[NT]	[NT]	04/03/2022	04/03/2022
Aroclor 1016	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	89	80
Aroclor 1260	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCMX	%		Org-021	84	[NT]	[NT]	[NT]	[NT]	86	99

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-3	290072-1
Date prepared	-			03/03/2022	[NT]	[NT]	[NT]	[NT]	03/03/2022	03/03/2022
Date analysed	-			03/03/2022	[NT]	[NT]	[NT]	[NT]	03/03/2022	03/03/2022
Arsenic	mg/kg	4	Metals-020	<4	[NT]	[NT]	[NT]	[NT]	92	79
Cadmium	mg/kg	0.4	Metals-020	<0.4	[NT]	[NT]	[NT]	[NT]	92	77
Chromium	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	100	82
Copper	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	97	92
Lead	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	97	72
Mercury	mg/kg	0.1	Metals-021	<0.1	[NT]	[NT]	[NT]	[NT]	90	91
Nickel	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	94	74
Zinc	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	95	76

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.

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

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.

Document Distribution

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