Submission No 67

Item F, Tab 1 (2/2)

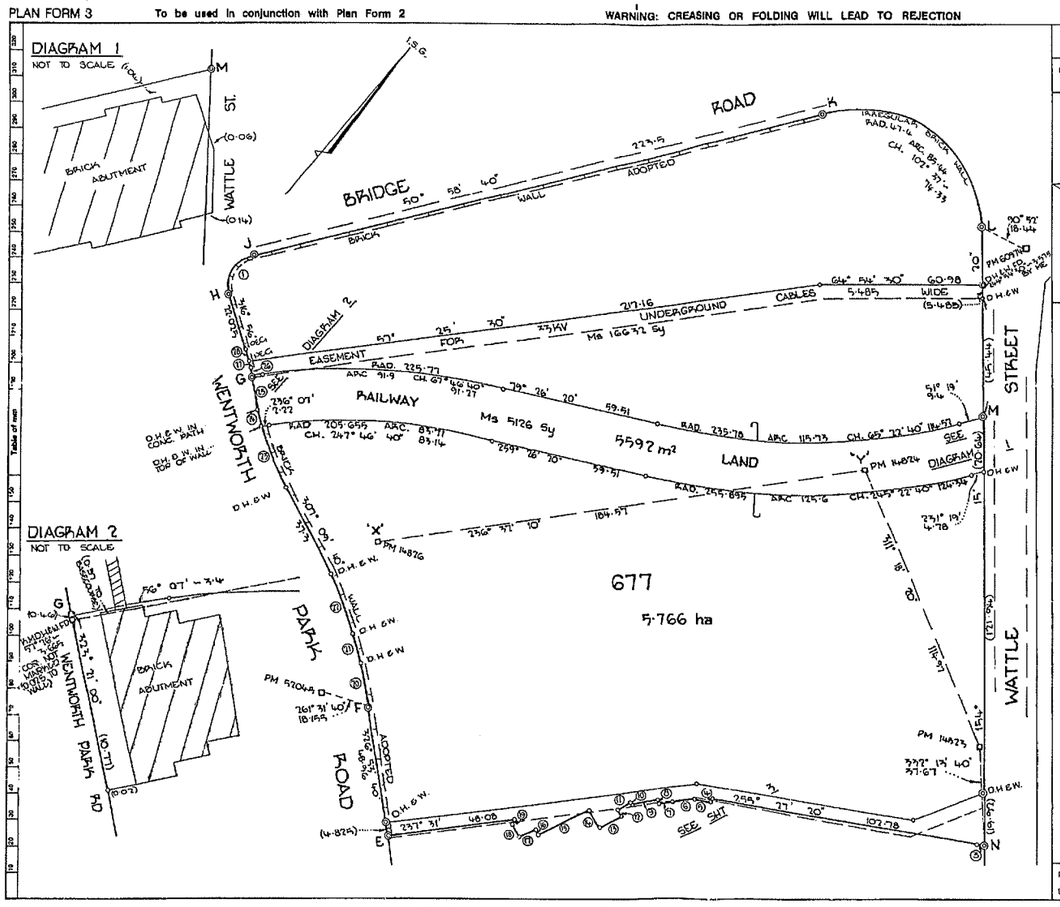
INQUIRY INTO ENROLMENT CAPACITY IN INNER CITY PUBLIC PRIMARY SCHOOLS

Name: NSW Department of Education

Date received: 27 September 2016

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

DIAGRAM 1
NOT TO SCALE



Plan Drawing only to appear in this space

D.P. 729635

Registered. 22.5.1991

This is sheet 2 of my plan in 4 sheets dated 23rd FEBRUARY, 1990.

Surveyor registered under Surveyors Act 1929.

This is sheet of the plan of Sheets covered by my Certificate No. of

Council Clerk

Signatures and seals only.

Reduction Ratio 1:1000
Lengths are in metres

SURVEYOR'S REFERENCE

10 20 30 40 50 60 70 Table of mm 110 120 130 140

This negative is a photograph made as a permanent record of a document in the custody of the Registrar General this day. 23rd May, 1991

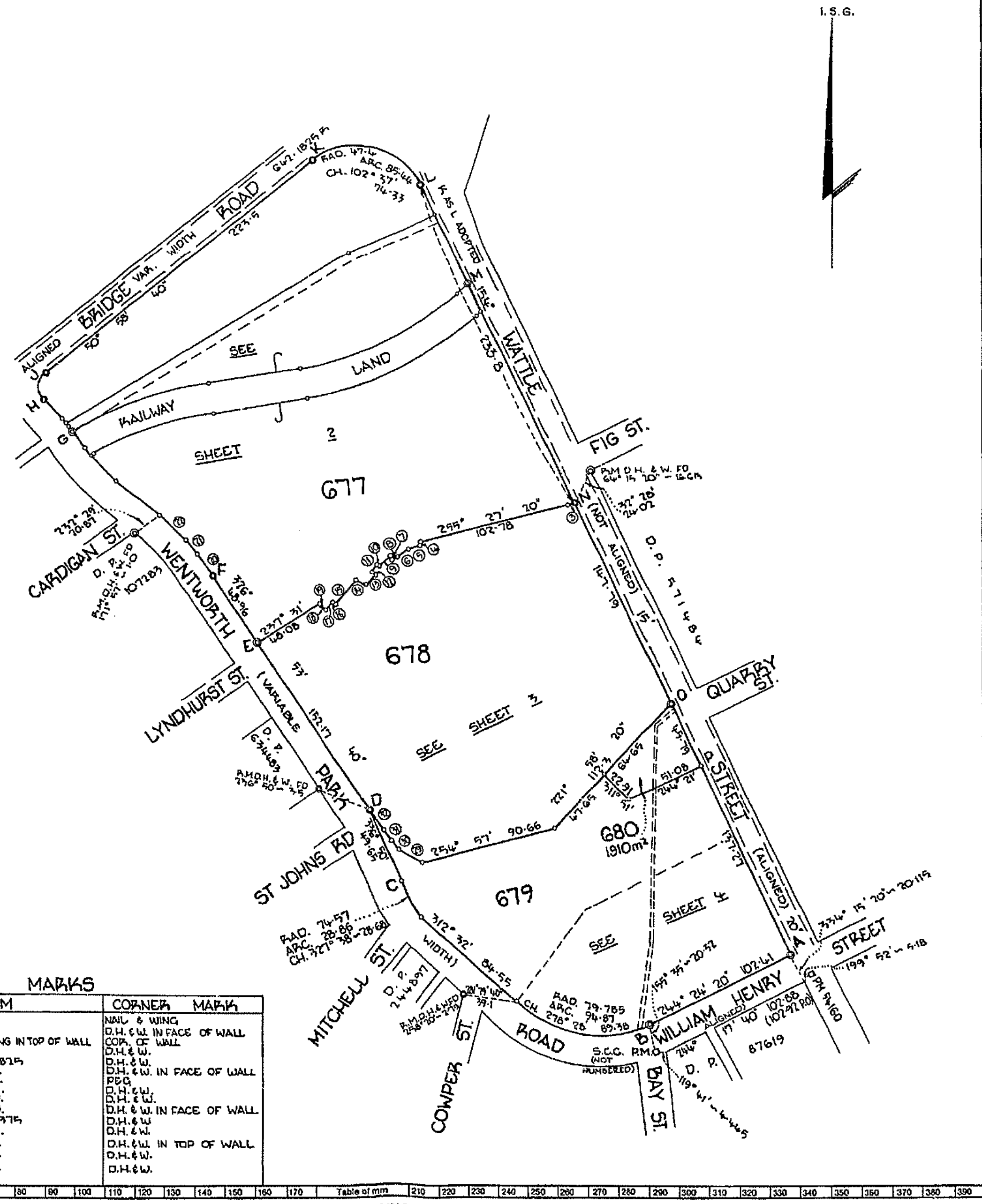
2

PLAN FORM 2

SIGNATURE AND SEALS ONLY.

BOUNDARY LINES

LINE	BEARING	DIST.	RAD.	ARC.
1	3° 57' 20"	17·19	11·75	19·285
2	154° 15' 20"	10·16		
3	244° 06'	2·13		
4	165° 27'	0·94		
5	254° 45'	6·76		
6	238° 08'	9·21		
7	234° 19'	4·4		
8	327° 24'	1·0		
9	237° 24'	10·25		
10	304° 30'	0·29		
11	214° 30'	5·305		
12	124° 30'	0·66		
13	214° 13'	9·6		
14	304° 16'	8·05		
15	214° 16'	21·005		
16	304° 16'	3·45		
17	214° 16'	6·78		
18	317° 41'	5·74		
19	328° 34'	0·61		
20	324° 08'	18·015	186·07	18·025
21	321° 22'	11·29		
22	314° 16'	24·58	99·4	24·645
23	313° 31'	24·49	110·61	24·54
24	321° 36'	6·715	110·61	6·715
25	323° 21'	13·44		
26	323° 21'	2·74		
27	322° 16' 30"	2·3	60·8	2·3
28	319° 05' 30"	4·51	60·8	4·51
29	298° 46'	17·805		
30	323° 10'	7·45		
31	324° 55'	8·005		
32	326° 53' 40"	20·315		



DEFINITION OF RAILWAY LAND BOUNDARY APPROVED BY STATE RAIL AUTHORITY OF NEW SOUTH WALES : 15TH MAY, 1990.

Crown Lands Office Approval

PLAN APPROVED .... 3·4·1991 ....
Authorised Officer
Land District METROPOLITAN
Paper No. MN 85 R 151
Field Book LO 1990-3 MET. pages 1-42

Council Clerk's Certificate

I hereby certify that —

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

**(b) the requirements of section 34B of the † Metropolitan Water, Sewerage and Drainage Act, 1924, as amended, † Hunter District Water, Sewerage, and Drainage Act, 1938, as amended*

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

Subdivision No. ....

Date ....

(Signature) ....
Council Clerk

Council File No. ....

**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.

REFERENCE MARKS

COR.	BEARING	DIST.	FROM	CORNER MARK
A	51° 09'	4·07	D.H.& W.	NAIL & WING
B	330° 04'	3·58	D.H.& W.	D.H.& W. IN FACE OF WALL
C	246° 18'	4·56	NAIL & WING IN TOP OF WALL	COR. OF WALL
D	175° 42'	10·25	D.H.& W.	D.H.& W.
E	180° 29'	1·135	P.M. 14825	D.H.& W.
F	60° 00'	0·958	D.H.& W.	D.H.& W. IN FACE OF WALL
G	110° 42'	6·85	D.H.& W.	PEG
H	46° 48'	3·66	D.H.& W.	D.H.& W.
J	140° 59'	1·0	D.H.& W.	D.H.& W.
K	140° 59'	1·0	D.H.& W.	D.H.& W. IN FACE OF WALL
L	245° 57'	15·65	P.M. 60975	D.H.& W.
M	231° 19'	1·0	D.H.& W.	D.H.& W.
N	170° 49' 20"	13·2	D.H.& W.	D.H.& W. IN TOP OF WALL
O	299° 38'	2·44	D.H.& W.	D.H.& W.
P	313° 46'	5·88	D.H.& W.	D.H.& W.

SURVEYOR'S REFERENCE:

*OFFICE USE ONLY

D.P. 729635

C4N4OON

Registered 22.5.1991

C.A: ——

Title System: CROWN LAND

Purpose: CROWN FOLIO ISSUE

Ref. Map: PARISH

Last Plan: 2280.3000
7914.3000

PLAN OF WENTWORTH PARK CREATING LOTS 677 - 680.

Lengths are in metres. Reduction Ratio 1:2000

Mun./Shire City: LEICHHARDT

Locality: GLEBE

Parish: PETERSHAM (4)

County: CUMBERLAND

This is sheet 1 of my plan in 4 sheets. (Delete if inapplicable).

I, BASIL PATRICK Mc CANN
of M.L.O. BLACKTOWN
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
23RD FEBRUARY, 1990.
Signature ....
Surveyor registered under Surveyors Act, 1929, as amended.
Datum Line of Azimuth. 'X-Y' SHT 2
Insert date of survey.

Plans used in preparation of survey/compilation.

D.P. 84507 D.P. 634027
D.P. 87619 D.P. 634483
D.P. 107263 D.P. 787132
D.P. 243618
D.P. 244827
D.P. 260807
D.P. 571484
D.P. 600783
CONT'D BELOW

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.

Plans used in preparation of survey.

25 - 1875	P.M. 14023
42 - 1875	P.M. 14024
1611 - 2030	P.M. 14026
2280 - 3000	P.M. 42341
5126 - 3000	P.M. 52045
7914 - 3000	P.M. 54160
16632 - 3000	P.M. 60974

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION

Section 149 Certificates

City of Sydney
Town Hall House
456 Kent Street
Sydney NSW 2000
Telephone +61 2 9265 9333
Fax +61 2 9265 9222
council@cityofsydney.nsw.gov.au
GPO Box 1591 Sydney NSW 2001
cityofsydney.nsw.gov.au

JEFFERY & KATAUSKAS EIS
PO BOX 976
NORTH RYDE BC NSW 1670

PLANNING CERTIFICATE

Under Section 149 of the Environmental Planning and Assessment Act, 1979

Applicant:	JEFFERY & KATAUSKAS EIS
Applicant's reference:	E29319K GLEBE (GF)
Address of property:	1 Wentworth Park Road , GLEBE NSW 2037
Owner:	THE STATE of NEW SOUTH WALES
Description of land:	Part Lot 679 DP 729635, Lot 680 DP 729635
Certificate No.:	2016301988
Certificate Date:	11/04/16
Receipt No:	47382
Fee:	$80.00
Paid:	8/04/16

Title information, description, dimensions and area of land are provided from data supplied by the Valuer General and shown where available.

Issuing Officer
per **Monica Barone**
Chief Executive Officer

CERTIFICATE ENQUIRIES:
Ph: 9265 9333
Fax: 9265 9415

PLANNING CERTIFICATE UNDER SECTION 149 (2) OF THE ENVIRONMENTAL PLANNING AND ASSESSMENT ACT, 1979

MATTERS AFFECTING THE LAND AS PRESCRIBED BY SCHEDULE 4 - ENVIRONMENTAL PLANNING & ASSESSMENT REGULATION, 2000, CLAUSES (1) - (2).

DEVELOPMENT CONTROLS

The following information must be read in conjunction with and subject to all other provisions of the environmental planning instruments specified in this certificate.

ZONING

Zoned Public Recreation – Sydney Regional Environmental Plan No 26
Only uses which the consent authority is satisfied are generally consistent with the zone objectives are permissible in this zone. However the consent authority may consent to other uses being carried beneath land used as a public recreation area.

The Objectives of this zone are:

- to establish public recreation areas which serve the needs of residents and workers within the City West and the adjoining suburbs; and
- to provide public access to all parts of the public domain, especially waterfront areas and escarpments; and
- to provide a variety of public areas and recreational opportunities; and
- to provide for facilities which accommodate or are ancillary to recreation opportunities relating to the use of the public domain, and
- in the Bays Precinct, in additional to the other objectives of this zone, to allow for the continued operation and development of Wentworth Park as a major public open space and recreational facility.

Uses permissible in the zone adjoining the public recreation zone are also permissible in the public recreation zone for a distance of 10 metres from the zone boundary if, in the opinion of the consent authority, it would allow a better relationship between the use of the land as a public recreation area and use of adjoining land would not decrease the total amount of land that will be available for use as a public recreation area.

Development for the purpose of roads, rail and light rail transport undertakings and facilities, fire stations and other emergency services, and public utility undertakings are permissible in any zone.

PROPOSED ZONING

This property is not affected by a draft zone.

LOCAL PLANNING CONTROLS

Sydney Development Control Plan 2012 (as amended) - (commenced 14.12.2012)

Leichhardt Local Environmental Plan 2000 (Gazetted 22.12.2000, as amended)

Leichhardt Development Control Plan 2000 (Adopted 18.04.2000, and in force 22.12.2000) –

Development Control Plan No. 35 – Exempt and Complying Development (Adopted 24.08.1999, as amended)

Development Control Plan No. 38 – Waste – Avoid, Reuse and Recycle (Adopted 26.10.1999, and in force 15.12.1999)

Development Control Plan No. 48 – Managing Activities on Footpaths and Street Verges (Adopted 23.07.2002, and in force 07.08.2002)

City of Sydney Contaminated Land Development Control Plan 2004 (in force on 28.06.2004)

City of Sydney Access Development Control Plan 2004 (in force on 28.06.2004)

City of Sydney Convenience Store Development Control Plan 2004 (date of commencement – 24.09.2004)

City of Sydney Boarding Houses Development Control Plan 2004 (date of commencement – 12.01.2005)

City of Sydney Notification of Planning and Development Applications Development Control Plan 2005 (commenced 18.05.2005)

City of Sydney Child Care Centres Development Control Plan 2005 (commenced 10.10.2005)

City of Sydney Adult Entertainment and Sex Industry Premises Development Control Plan 2006 (commenced 18.04.06)

City of Sydney Heritage Development Control Plan 2006 (commenced 02.01.07)

HERITAGE

State Heritage Register (Amendment To Heritage Act, 1977 Gazetted 2/4/99)
This property may be identified as being of state heritage significance, and entered on the State Heritage Register.

To confirm whether the site is listed under the Heritage Act 1977 a Section 167 Certificate should be obtained from the NSW Heritage Office by contacting the NSW Heritage office on (02) 9873 8500 for an application from or by downloading the application form from www.heritage.nsw.gov.au

STATE PLANNING INSTRUMENTS

Full copies of State Environmental Planning Policies are available online at www.planning.nsw.gov.au.

State Environmental Planning Policy No. 1 – Development Standards
This policy makes development standards more flexible. It allows Council to approve a development proposal that does not comply with a set standard where this can be shown to be unreasonable or unnecessary.

State Environmental Planning Policy No. 19 – Bushland in Urban Areas
This is a policy to protect and preserve bushland within certain urban areas, as part of the natural heritage or for recreational, educational and scientific purposes. This policy is designed to protect bushland in public open space zones and reservations, and to ensure that bush preservation is given a high priority when local environmental plans for urban development are prepared.

State Environmental Planning Policy No. 32 – Urban Consolidation
This policy implements the principles of urban consolidation, including the orderly, economic use and development of land. The policy enables urban land which is no longer required for the purpose for which it is currently zoned or used to be redeveloped for multi-unit housing and related development.

State Environmental Planning Policy No. 33 – Hazardous and Offensive Development
This policy aims to amend the definitions of hazardous and offensive industries; to render ineffective any environmental planning instruments not defining hazardous or offensive as per this policy; to control development of hazardous and offensive industries.

State Environmental Planning Policy No. 55 – Remediation of Land
This policy provides planning controls for the remediation of contaminated land. The policy states that land must not be developed if it is unsuitable for a proposed use because it is contaminated. If the land is unsuitable, remediation must take place before the land is developed. The policy makes remediation permissible across the State, defines when consent is required, requires all remediation to comply with standards, ensures land is investigated if contamination is suspected, and requires councils to be notified of all remediation proposals. To assist councils and developers, the Department, in conjunction with the Environment Protection Authority, has prepared Managing Land Contamination: Planning Guidelines.

State Environmental Planning Policy No. 64 – Advertising and Signage
This policy aims to ensure that signage (including advertising):
Is compatible with the desired amenity and visual character of an area, and
- Provides effective communications in suitable locations, and
- Is of a high quality design and finish.

To this end the policy regulates signage (but not content) under Part 4 of the Act and provides limited time consents for the display of certain advertisements. The policy does not apply to signage that is exempt development under an environmental planning instrument. It does apply to all signage that can be displayed with or without consent and is visible from any public place or reserve, except as provided by the policy.

This policy should be read in conjunction with the Sydney Local Environmental Plan 2005, the City of Sydney Signage and Advertising Structures Development Control Plan 2005 and State Environmental Planning Policy No. 60 where these apply.

State Environmental Planning Policy No. 65 – Design Quality of Residential Flat Buildings
This policy aims to improve the design quality of flats of three or more storeys with four or more self contained dwellings. The policy sets out a series of design principles for local councils to consider when assessing development proposals for residential flat development.

The policy also creates a role for an independent design review panel and requires the involvement of a qualified designer in the design and approval process.

State Environmental Planning Policy No.70 – Affordable Housing (Revised Schemes) (Gazetted 31.05.02)
The policy identifies that there is a need for affordable housing in the City of Sydney, describes the kinds of households for which affordable housing may be provided and makes a requirement with respect to the imposition of conditions relating to the provision of affordable housing (provided other requirements under the Act are met).

State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004
This Policy does not apply to land described in Schedule 1 (Environmentally sensitive land), or land that is zoned for industrial purposes, or land to which an interim heritage order made under the *Heritage Act 1997* by the Minister administering that Act applies, or land to which a listing on the State Heritage Register kept under the *Heritage Act 1997* applies.

The Policy aims to encourage the provision of housing (including residential care facilities) that will increase the supply and diversity of residences that meet the needs of seniors or people with a disability, and make efficient use of existing infrastructure and services, and be of good design.

State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004
Aims to ensure consistency in the implementation of the BASIX scheme throughout the State. This Policy achieves its aim by overriding provisions of other environmental planning instruments and development control plans that would otherwise add to, subtract from or modify any obligations arising under the BASIX scheme.

State Environmental Planning Policy (Major Development) 2005
This Policy aims to identify development of economic, social or environmental significance to the State or regions of the State so as to provide a consistent and comprehensive assessment and decision making process for that development.
NB: This SEPP also contains exempt & complying provisions

State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007
This Policy aims to provide for the proper management and development of mineral, petroleum and extractive material resources for the social and economic welfare of the State.

State Environmental Planning Policy (Temporary Structures and Places of Public Entertainment) 2007
This Policy aims to ensure that suitable provision is made for ensuring the safety of persons using temporary structures or places of public entertainment.

State Environmental Planning Policy (Infrastructure) 2007
This Policy aims to facilitate the effective delivery of infrastructure across the state.
NB: This SEPP also contains exempt & complying provisions

State Environmental Planning Policy (Repeal of Concurrence and Referral Provisions) 2008
This Policy is an 'amending instrument' that removes or modifies referral and concurrence clauses within local environmental plans (LEPs), regional environmental plans (REPs) and State environmental planning policies (SEPPs).

State Environmental Planning Policy (Exempt and Complying Development Codes) 2008
This Policy Streamlines assessment processes for development that complies with specified development standards. The policy provides exempt and complying development codes that have State-wide application, identifying, in the General Exempt Development Code, types of development that are of minimal environmental impact that may be carried out without the

need for development consent; and, in the General Housing Code, types of complying development that may be carried out in accordance with a complying development certificate as defined in the Environmental Planning and Assessment Act 1979.

State Environmental Planning Policy (Affordable Rental Housing) 2009
Establishes a consistent planning regime for the provision of affordable rental housing. The policy provides incentives for new affordable rental housing, facilitates the retention of existing affordable rentals, and expands the role of not-for-profit providers. It also aims to support local centres by providing housing for workers close to places of work, and facilitate development of housing for the homeless and other disadvantaged people. NOTE: Does not apply to land at Green Square or at Ultimo Pyrmont, or on southern employment land.

State Environmental Planning Policy (Urban Renewal) 2010
The aims of this Policy are as follows:
(a) to establish the process for assessing and identifying sites as urban renewal precincts,
(b) to facilitate the orderly and economic development and redevelopment of sites in and around urban renewal precincts,
(c) to facilitate delivery of the objectives of any applicable government State, regional or metropolitan strategies connected with the renewal of urban areas that are accessible by public transport.

State Environmental Planning Policy (State and Regional Development) 2011
The aims of this Policy are as follows:
(a) to identify development that is State significant development,
(b) to identify development that is State significant infrastructure and critical State significant infrastructure,
(c) to confer functions on joint regional planning panels to determine development applications.

Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005
This plan applies to land within the Sydney Harbour Catchment, as shown edged heavy black on the Sydney Harbour Catchment Map, being part of the Sydney Region declared by order published in Gazette No 38 of 7 April 1989 at page 1841.

This plan has the following aims with respect to the Sydney Harbour Catchment:
to ensure that the catchment, foreshores, waterways and islands of Sydney Harbour are recognised, protected and maintained: as outstanding natural asset, and as a public asset of national and heritage significance, for existing and future generations; to ensure a healthy, sustainable environment on land and water; to achieve a high quality urban environment; to ensure a prosperous working waterfront and an effective transport corridor, to encourage a culturally rich and vibrant place for people; to ensure accessibility to and along Sydney Harbour and its foreshores; to ensure the protection, maintenance and rehabilitation of watercourses, wetlands, riparian lands, remnant vegetation and ecological connectivity, to provide a consolidated, simplified and updated legislative framework for future planning.

OTHER MATTERS AFFECTING THE LAND AS PRESCRIBED BY SCHEDULE 4 - E. P. & A. REGULATION, 2000. CLAUSES (3) - (10)

(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*.

(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.

(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.

Note: All Exempt and Complying Development Codes: Council does not have sufficient information to ascertain the extent of a land based exclusion on a property. Despite any statement preventing the carrying out of complying development in the Codes listed below, complying development may still be carried out providing the development is not on the land affected by the exclusion and meets the requirements and standards of *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008*.

General Housing Code & Commercial and Industrial (New Buildings and Additions) Code

Complying development **may not** be carried out on the land under the General Housing Code & the Commercial and Industrial (New Buildings and Additions) Code if because of the provisions of clause 1.17A,1.18(1)(c3) & 1.19 (Land-based requirements for exempt and complying development) any of the following statements are **YES**

▪ Clause 1.19(5)d. Land that is significantly contaminated land within the meaning of the Contaminated Land Management Act 1997. (Applies only to the Commercial and Industrial (New Buildings and Additions) Code.	NO
▪ Clause 1.17A(d). Has been identified as a property that comprises, or on which there is, an item that is listed on the State Heritage Register under the *Heritage Act 1977* or that is subject to an interim heritage order under the *Heritage Act 1977*.	NO
▪ Clause 1.17A(d) & 1.18(1)(c3). Has been identified as a property that comprises, or on which there is, a heritage item or draft heritage item.	**NO**
▪ Clause 1.17A(c). Has been identified as being within a wilderness area (identified under the *Wilderness Act 1987*.	**NO**
▪ Clause 1.17A(e) & 1.19(1)e or 1.19(5)f. Has been identified as land that is within an environmentally sensitive area or by an environmental planning instrument as being within a buffer area, a river front area, an ecologically sensitive area, environmentally sensitive land or a protected area	**NO**
▪ Clause 1.19(1)a.or 1.19(5)a Has been identified as being within a heritage conservation area or a draft heritage conservation area.	**NO**
▪ Clause 1.19(1)b or 1.19(5)b. Has been identified as being land that is reserved for a public purpose in an environmental planning instrument.	**NO**
▪ Clause 1.19(1)c or 1.19(5)c. Has been identified as being on an Acid Sulfate Soils Map as being Class 1 or Class 2.	**YES**
▪ Clause 1.19(1)d or 1.19(5)e. Has been identified as land that is subject to a biobanking agreement under part 7A of the threatened Species Conservation Act 1995 or a property vegetation plan under the Native Vegetation Act 2003.	**NO**
▪ Clause 1.19(1)f or 1.19(5)g. Has been identified by an environmental planning instrument, a development control plan or a policy adopted by the Council as being or affected by a coastline hazard, a coastal hazard or a coastal erosion hazard.	**NO**
▪ Clause 1.19(1)g or 1.19(5)h. Has been identified as being land in a foreshore area.	**NO**
▪ Clause 1.19(1)h. Has been identified as land that is in the 25 ANEF contour or a higher ANEF contour. (Applies only to the General Housing Code)	**NO**
▪ Clause 1.19(1)j or 1.19(5)i. Has been identified as unsewered land within a drinking water catchment.	**NO**
▪ Clause 1.19(1)i. Has been identified as land that is declared to be a special area under the Sydney Water Catchment Management Act 1998.	**NO**

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.

Subdivisions Code

Complying development under the Subdivisions Code **may** be carried out on the land.

Rural Housing Code
The Rural Housing Code does not apply to this Local Government Area.

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.

(4) Coastal Protection Act, 1979

The council has not been notified by the department of public works that the land is affected by the operation of section 38 or 39 of the coastal protection act, 1979.

(4A) Certain information relating to beaches and coasts

(1) In relation to a coastal council an order has **not** 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).

(2) In relation to a coastal council : Council has **not** been notified under section 55X of the Coastal Protection Act 1979 that temporary coastal protection works (within the meaning of that Act) have been placed on the land (or on public land adjacent to that land)

(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 : The owner (or any previous owner) of the land has not consented in writing to the land being subject to annual charges under section 496B 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.

(5) Mine Subsidence District

This land has not been proclaimed to be a mine subsidence district within the meaning of section 15 of the mine subsidence compensation act, 1961.

(6) Road Widening and/or Road Realignment affected by (a) Division 2 of Part 3 of the Roads act 1993 or (c) any resolution of council or other authority.

This land **is not** affected by road widening and/or road realignment under section 25 of the Roads Act, 1993 and/or resolution of Council or any other authority.

(6) Road Widening and/or Road Realignment Affected by (b) any environmental planning instrument.

This land **is not** affected by any road widening or road realignment under any planning instrument.

(7) Council and other public authorities policies on hazard risk restrictions:

(a) The land **is** affected by the **City of Sydney Contaminated Land Development Control Plan 2004** adopted by the Council which may restrict the land if the potential for the risk of land contamination exists; and

(b) The land **is not** affected by a policy adopted by any other public authority and notified to the council for the express purpose of its adoption by that authority being referred to on planning certificate issued by Council, that restricts the development of the land because of the likelihood of land slip, bushfire, flooding, tidal inundation, subsidence, acid sulphate soils or any other risk.

(7A) Flood related development controls information.

The development on this land or part of this land is not subject to flood related development controls.

(8) Land reserved for acquisition

No environmental planning instrument, or proposed environmental planning instrument applying to the land, provides for the acquisition of the land by a public authority, as referred to in section 27 of the Act.

(9) Contribution plans

The following Contributions Plans apply to properties within the City of Sydney local government area. Contributions plans marked **YES** may apply to this property:

▪ Central Sydney Development Contributions Plan 2013 – in operation 9th July 2013	**NO**
▪ Ultimo Pyrmont Section 94 Contributions Plan (approved C.S.P.C 15th December 1994 and Council 19th December 1994)	**NO**
▪ City of Sydney Development Contributions Plan 2006 – in operation 7th April 2007	**YES**
▪ Redfern Waterloo Authority Contributions Plan 2006 – in operation 16th May 2007 ▪ Redfern Waterloo Authority Affordable Housing Contributions Plan – in operation 16th May 2007	**NO**

(9A) Biodiversity certified land

The land has not been certified as biodiversity certified land.

(10) Biobanking Agreement

Council has not been notified of a biobanking agreement under Part 7A of the Threatened Species Conservation Act 1995.

(11) Bush fire prone land

The land has not been identified as Bush fire prone land.

(12) Property vegetation plans

Not Applicable.

(13) Orders under Trees (Disputes Between Neighbours) Act 2006

Council has not been notified of an order which as been made under the *Trees (Disputes Between Neighbours) Act 2006* to carry out work in relation to a tree on the land.

(14) Directions under Part 3A

Not Applicable.

(15) Site compatibility certificates and conditions for seniors housing

(a)The land to which the certificate relates is not subject to a current site compatibility certificate (seniors housing), of which Council is aware, in respect of proposed development on the land.

(b) The land to which the certificate relates is not subject to any condition of consent to a development application granted after 11 October 2007 required by State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004.

(16) Site compatibility certificates for infrastructure

The land to which the certificate relates is not subject to a valid site compatibility certificate (infrastructure), of which Council is aware, in respect of proposed development on the land.

(17) Site compatibility certificates and conditions for affordable rental housing

(a)The land to which the certificate relates is not subject to a current site compatibility certificate (affordable rental housing), of which Council is aware, in respect of proposed development on the land.

(b) The land to which the certificate relates is not subject to any terms of a kind referred to in clause 17(1) or 37(1) of State Environmental Planning Policy (Affordable Rental Housing) 2009 that have been imposed as a condition of consent to a development application in respect of the land.

(18) Paper subdivision information

Not Applicable.

(19) Site verification certificates

The land to which the certificate relates is not subject to a valid site verification certificate of which Council is aware.

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) The land to which the certificate relates **is not** declared to be **significantly contaminated land** within the meaning of that act as at the date when the certificate is issued.

(b) The land to which the certificate relates **is not** subject to a **management order** within the meaning of that act as at the date when the certificate is issued.

(c) The land to which the certificate relates **is not** the subject of an **approved voluntary management proposal** within the meaning of that act at the date the certificate is issued.

(d) The land to which the certificate relates **is not** the subject of an **ongoing maintenance order** within the meaning of that act as at the date when the certificate is issued.

(e) As at the date when the certificate is issued, Council **has not** identified that a **site audit statement** within the meaning of that act has been received in respect of the land the subject of the certificate.

PLANNING CERTIFICATE SECTION 149(2) INFORMATION:
Information provided in accordance with planning certificate section 149 (2) has been taken from council's records and advice from other authorities but council disclaims all liability for any omission or inaccuracy in the information. Specific inquiry should be made where doubt exists.

PLANNING CERTIFICATE UNDER SECTION 149 (5) OF THE ENVIRONMENTAL PLANNING AND ASSESSMENT ACT, 1979

PLANNING CERTIFICATE SECTION 149 (5) ADVICE is current as at 12:00 noon two working days prior to the date of issue of this certificate. The following matters have been considered & details provided where information exists: easements in favour of council; parking permit scheme; heritage floor space restrictions; low-rental residential building; foreshore building line; tree preservation order.

Contaminated Land Potential:
Council records do not have sufficient information about the uses (including previous uses) of the land which is the subject of this section 149 certificate to confirm that the land has not been used for a purpose which would be likely to have contaminated the land. Parties should make their own enquiries as to whether the land may be contaminated.

Hazard Risk Restriction:
The City of Sydney Local Environmental Plan 2012 incorporates Acid Sulfate soil maps. Development on the land identified in those maps should have regard to Division 4 clause 7.16 of the LEP.

Construction Noise and View Loss Advice:
Intending purchasers are advised that the subject property may be affected by construction noise and loss or diminution of views as a result of surrounding development.

City of Sydney Tree Preservation Order 2004 (TPO)
This order applies to all land where South Sydney Local Environmental Plan 1998 applies and the City of Sydney Council or the Central Sydney Planning Committee is the relevant consent authority under the *Environmental Planning & Assessment* Act 1979. Contact Council's Contract and Asset Management section for more information.

Outstanding Notice & Order information
In relation to this property, there **is not** an outstanding Order or Notice of Intention to issue an Order relating to Fire Safety (being an Order or Notice of Intention to issue an Order of type 6, 10, 11 under Section 121B of the Environmental Planning and Assessment Act, 1979). Further information about the Order or Notice of Intention to issue an Order may be obtained by applying for a certificate under Section 121ZP of the Environmental Planning and Assessment Act and Section 735A of the Local Government Act.

In relation to this property, there **is not** an outstanding Order or Notice of Intention to issue an Order (being an Order or Notice of Intention to issue an Order of a type other than relating to fire safety). Further information about the Order or Notice of Intention to issue an Order may be obtained by applying for a certificate under Section 121ZP of the Environmental Planning and Assessment Act and Section 735A of the Local Government Act.

Residential & Visitor Parking Permit Schemes
The City of Sydney co-ordinates a Resident Permit Parking Scheme and a Visitor Permit Parking scheme. This property may be restricted from participating in either scheme. Eligibility may change after the date of this certificate, as parking supply and other traffic demands change. For more information contact Council's call centre on 9265 9333.

ADVICE FROM OTHER BODIES

Sydney Ports Corporation Advice
Some land in the City of Sydney located in the vicinity of the White Bay, Glebe Island and Darling Harbour ports may be affected by noise from port operations.

Advice provided in accordance with planning certificate section 149 (5) is supplied in good faith. Council accepts no liability for the validity of the advice given. (see section 149 (6) of the Environmental Planning and Assessment Act, 1979).

For information regarding outstanding notices and orders a CERTIFICATE FOR OUTSTANDING NOTICES OF INTENTION AND/OR AN ORDER UNDER SECTION 735A OF THE LOCAL GOVERNMENT ACT, 1993 AND SECTION 121ZP OF THE ENVIRONMENTAL PLANNING AND ASSESSMENT ACT, 1979 may be applied for at Sydney City Council.

Planning certificate section 149 (2), local planning controls are available for inspection at the following locations:

General Enquiries :
Telephone: 02 9265 9333
Facsimile: 02 9265 9415

Town Hall House
Level 2,
Town Hall House,
456 Kent Street,
Sydney.
8am – 6pm, Monday - Friday

Glebe Customer Service Centre
Glebe Library,
186 Glebe Point Road,
Glebe
9am – 5pm, Monday – Friday

Neighbourhood Service Centre Kings Cross
50 Darlinghurst Road,
Potts Point
9am – 5pm, Monday – Friday
9am – 12pm, Saturday

Neighbourhood Service Centre Redfern
158 Redfern Street
Redfern
9am-5pm Monday – Friday
9am – 12 Noon Saturday

Green Square Customer Service Centre
The Tote,
100 Joynton Avenue,
Zetland
10am-6pm Monday – Friday

State planning controls are available for inspection at the following locations:

Sydney Harbour Foreshore Authority (former Sydney Cove Authority and Darling Harbour Authority),
Level 6,
66 Harrington Street,
The Rocks.

Department of Planning & Infrastructure Information Centre
23-33 Bridge Street,
Sydney NSW 2000

Where planning certificate section 149 (5) matters are supplied, complete details are available by writing to:
Chief Executive Officer,
City of Sydney,
G.P.O. Box 1591,
Sydney, NSW 2000

End of Document

NSW WorkCover Records

11 MAY 2016

NSW GOVERNMENT | SafeWork NSW

SafeWork NSW
92-100 Donnison Street, Gosford, NSW, 2250
Locked Bag 2906, Lisarow, NSW, 2252 |
Customer Service Centre **13 10 50**
licensing@safework.nsw.gov.au | www.safework.nsw.gov.au

Our Ref: D16/5738390
Your Ref:

5 May 2016

Attention:
Environmental Investigation Services
PO Box 976
NORTH RYDE BC NSW 1670

Dear

RE SITE: 1-5 Wentworth Park Road, Glebe NSW 2037

I refer to your site search request received by SafeWork NSW on 28 April 2016 requesting information on Storage of Hazardous Chemicals for the above site.

Enclosed are copies of the documents that SafeWork NSW holds on record number 35/007125 relating to the storage of Hazardous Chemicals at the above-mentioned premises.

For further information or if you have any questions, please call our Customer Service Centre on 13 10 50 or email licensing@safework.nsw.gov.au

Yours sincerely,

Customer Service Officer
Customer Service Centre - Operations
SafeWork NSW

WorkCover New South Wales, 400 Kent Street, Sydney 2000 . Tel: (02) 9370 5000 ALL MAIL TO LOCKED BAG 10, CLARENCE STREET, SYDNEY 2000

DX 13067, MARKET ST. SYDNEY

SCIENTIFIC SERVICES BRANCH
Dangerous Goods Licensing
ph. (02) 9370 5187 fax (02) 9370 6105

WORKCOVER
NEW SOUTH WALES

Reference 35/007125

PUBLIC WORKS DEPT
BOX 107 P O
GLEBE 2037

30 December 1996

Dear Licensee

RE: NON RENEWAL OF LICENCE FOR THE KEEPING OF DANGEROUS GOODS

Our records indicate you previously held licence number 35/007125 for storage of dangerous goods at WENTWORTH ST & COWPER ST , GLEBE 2037. This licence has expired.

If dangerous goods are still being kept at this site the licence will need to be renewed. **To renew the licence** to 1997, please fully complete and return the enclosed application form. If extra depots need to be added to your licence, please include a plan stamped by an accredited consultant for these depots.

If the licence is not to be renewed, please provide the Chief Inspector of Dangerous Goods, WorkCover New South Wales with a signed statement giving the reason why the licence is no longer required *eg site sold, lease ended or storage removed*.

- Where the site has been sold or the lease ended, please inform the WorkCover New South Wales, of the date you sold/vacated the premises and whether you removed the dangerous goods before leaving. Where possible, please supply the new owner's name and address.

- If the depot has been removed from the site or is no longer used for storing dangerous goods, please advise the date the goods/depots were removed and by whom *see specific information overleaf for underground tanks*.

If you have any further queries, please contact your local WorkCover office or dangerous goods licensing staff pl . Thank you for your assistance.

Yours faithfully/

for Senior Licensing Clerk, Dangerous Goods
encs

WorkCover New South Wales

Details of Licence for Keeping

Dangerous Goods on 30 December 1996

Licence Number 35/007125 **Expiry Date** 15/08/90

Licensee Details

Licensee PUBLIC WORKS DEPT

Trading name

Postal Address BOX 107 P O, GLEBE 2037

Licensee Contact

Site Details

Premises Licensed to Keep Dangerous Goods
WENTWORTH ST & COWPER ST
GLEBE 2037

Nature of Site PRIVATE DWELLING **Supplier**

Emergency Contact ph.

Site staffing

Details of Depots

Depot No.	Depot Type	Goods Stored in Depot	Qty
1	ROOFED STORE	Class 3	1000 L

ME 37
FORM B
Page 1

Register No. 7125.

INFLAMMABLE LIQUID ACT, 1915 (AS AMENDED)

Applicat[illegible] Registration of Premises or Store Licence under Division A or for the transfer alterat[illegible]endment of any such Registration or Licence, for the keeping of Inflammable Liquid and/or Dangerous Goods, in accorda[illegible] with the provisions of the Inflammable Liquid Act, 1915 (as amended), for the ensu ng year.

SEE PAGE 4 FOR DETAILS OF FEES PAYABLE AND DISTANCES FROM PROTECTED WORKS

DIRECTIONS

1. Applications must be forwarded to the Chief Inspector of Inflammable Liquid, Explosives Department, Box R216, Royal Exchange Sydney, N.S.W. 2000 and must be accompanied by the prescribed fee. No Fee
Registration of Premises — For quantities not exceeding 300 gallons of mineral oil and 100 gallons of mineral spirit, if kept together; or 800 gallons of mineral oil and 100 gallons of mineral spirit, if kept in separate depots; or 500 gallons of mineral spirit, if kept in an underground tank depot; or 800 gallons of mineral oil and 500 gallons of mineral spirit, if mineral spirit is kept in an underground tank depot.
In addition to, or in lieu of the above, similar quantities of Dangerous Goods of Classes 1 and 2 may be kept under the like conditions; reading Dangerous Goods of Class 1 for the words Mineral Spirit and Dangerous Goods of Class 2 for the words Mineral Oil.
Store Licence, Div. A — For quantities in excess of those stated above, but not exceeding 4,000 gallons mineral oil and/or mineral spirit, and/or Dangerous Goods of Classes 1, 2 and 9.
Store Licence, Div. B (Fee See Regulation 7) — For quantities exceeding 4,000 gallons of mineral spirit, and/or Dangerous Goods of Classes 1 and 2, and/or Dangerous Goods of Class 3.
For the keeping of Dangerous Goods of Classes 3 and/or 4.

1. Name of occupier including full christian names.	Public Works Dept N.S.W Govt. Electrical Workshops
2. ~~Trading Name (if any)~~	
3. Locality of the premises in which the depot or depots are situated	No. or Name Street Cnr Wentworth & Cowper Sts Town Glebe
4. Postal address	Box 107 Glebe Postcode 2037
5. Occupation	Govt. Authority
6. Nature of premises (dwelling, garage etc.)	Maintenance Workshop

New Licence 8

7. Particulars of construction of depots and maximum quantities of inflammable liquid and/or Dangerous Goods to be kept at any one time.

PLEASE ATTACH PLAN OF PREMISES

Depot No.	Construction of depots*			Inflammable liquid		Dangerous goods						
	Walls	Roof	Floor	Mineral spirit ~~gallons~~ Litres	Mineral oil ~~gallons~~	Class 1 ~~gallons~~	Class 2 ~~gallons~~	Class 3 lb	Class 4 cu ft	Class 5A water gal	Class 5B water ~~gal~~ gallons	Class 9
1	Concrete	Concrete	Concrete	1500	1500							
2												
3												
4												
5												
6												
7												
8												
9												
10												

PUBLIC REVENUE A/c.
No Fee.
(Date) 15. 2. 75.
Receipt No. 1035

*If product is kept in tanks describe depots as underground or aboveground tanks.

Signature of applicant [signature]
W. E. LEWIS
MANAGER
ELECTRICAL SERVICES WORKSHOP,
DEPARTMENT OF PUBLIC WORKS.

Date of application _____ 19____

CERTIFICATE OF INSPECTION

I, George Edward Woods being an Inspector under the Inflammable Liquid Act, 1915 (as amended), do hereby certify that the premises or store herein referred to and described is suitable with regard to its situation and construction for the safe keeping of inflammable liquid and/or dangerous goods in quantity and nature specified.

Place Sydney
Date 9-4-75

Signature of Inspector [signature]

PLEASE TURN OVER

ME 35

INSPECTION RECORD

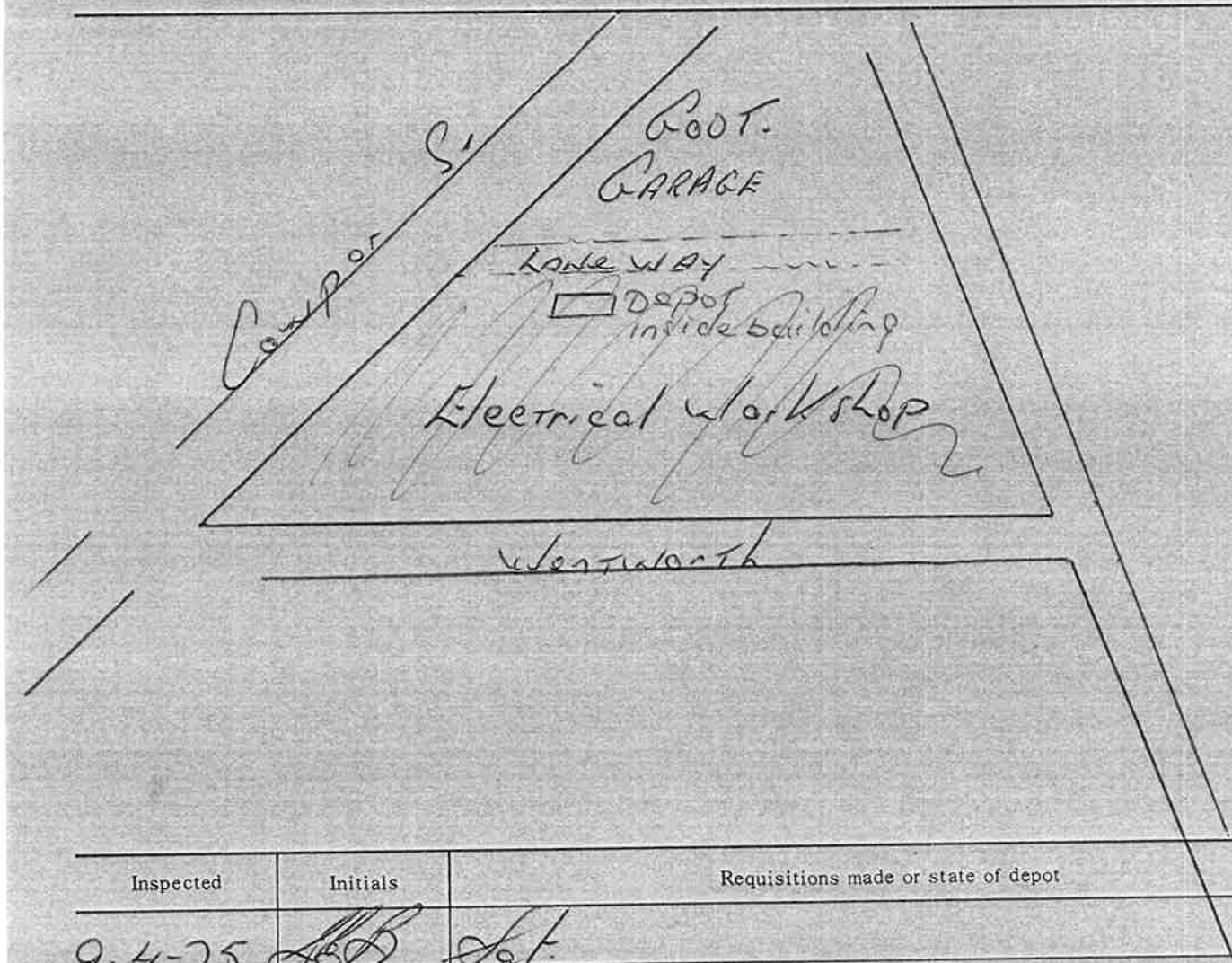
Licence No. 7

Licensee: Public Works Dept
N.S.W. Govt. Workshops (Electrical)

Address: Cnr Cowper & Wentworth Sts Glebe

Storage licensed: 3000 Litres M.S.N.O.

Sketch of Premises (Dimensions of depot and distance of same from adjoining "protected works" to be shown).



Inspected	Initials	Requisitions made or state of depot
9.4.75	[illegible]	Nil

M 5388 V. C. N. Blight, Government Printer

Appendix B: Borehole Logs

JK Geotechnics
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERS

BOREHOLE LOG

Borehole No. 1 1/2

Client: TKD ARCHITECTS

Project: PROPOSED WENTWORTH PARK POP-UP SCHOOL

Location: WENTWORTH PARK, WENTWORTH PARK ROAD, ULTIMO, NSW

Job No. 29319ZH **Method:** SPIRAL AUGER JK308 **R.L. Surface:** ≈ 3.1m

Date: 20-4-16 **Datum:** AHD

Logged/Checked by: N.C./A.J.H.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
						0			FILL: Silty clay, low to medium plasticity, brown, with roots and root f bres.	MC<PL			APPEARS MODERATELY COMPACTED
					N = 10 7,6,4	1			FILL: Silty sandy clay, low to medium plasticity, brown and dark brown, fine to medium grained sand, with fine to coarse grained sandstone gravel, and roots.				
ON COMPLET-ION ▼									FILL: Silty sand, fine to coarse grained, light brown and brown, with clay fines, fine to coarse grained sandstone gravel, timber fragments and ash.	M			APPEARS POORLY COMPACTED
▶					N = 2 1,1,1	2							
									FILL: Silty sand, fine to medium grained, with clay fines and clay nodules, trace of fine to medium grained ironstone gravel.	W			
					N = 0 0,0,0	3		CL	SANDY CLAY: medium plasticity, light grey and grey, trace of root f bres.	MC>PL	VS	10 10 20	ORGANIC ODOUR ESTUARINE
					N = 0 0,0,0	4						10 10 10 10 20	
					N = 2 1,1,1	5							
						6		CL-CH	SILTY CLAY: medium to high plasticity, dark grey, trace of root f bres.		S-F	10 10 20	
									SILTY SANDY CLAY: medium to high plasticity, orange brown and brown, trace of fine to medium grained gravel.			30 20 30 40	
									SANDY CLAY: medium to high plasticity, light grey.			70 60 70	HP TESTING ON REMOULDED AUGER SAMPLE
						7							

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GEOTECHNICAL AND ENVIRONMENTAL ENGINEERS

BOREHOLE LOG

Borehole No. 1 2/2

Client: TKD ARCHITECTS

Project: PROPOSED WENTWORTH PARK POP-UP SCHOOL

Location: WENTWORTH PARK, WENTWORTH PARK ROAD, ULTIMO, NSW

Job No. 29319ZH **Method:** SPIRAL AUGER JK308 **R.L. Surface:** ≈ 3.1m

Date: 20-4-16 **Datum:** AHD

Logged/Checked by: N.C./A.J.H.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
					N = 10 4,6,4			CL-CH	SILTY CLAY: medium to high plasticity, red brown, brown and orange brown.	MC>PL	F	50	
								CH			VSt	100	
												80	
									SILTY CLAY: high plasticity, light grey, trace of sand.			60	
												80	
									END OF BOREHOLE AT 7.65m			240	
												240	
												260	
						8							
						9							
						10							
						11							
						12							
						13							
						14							

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GEOTECHNICAL AND ENVIRONMENTAL ENGINEERS

BOREHOLE LOG

Borehole No. 2
1/2

Client: TKD ARCHITECTS
Project: PROPOSED WENTWORTH PARK POP-UP SCHOOL
Location: WENTWORTH PARK, WENTWORTH PARK ROAD, ULTIMO, NSW

Job No. 29319ZH
Date: 20-4-16
Method: SPIRAL AUGER JK308
Logged/Checked by: N.C./A.J.H.
R.L. Surface: ≈ 3.6m
Datum: AHD

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
						0			FILL: Silty clay, low to medium plasticity, brown, with roots and root f bres.	MC<PL / M			APPEARS POORLY COMPACTED
					N = 12 3,5,7				FILL: Sand, fine to medium grained, light brown and brown, trace of ash, with clay fines.	MC>PL		100 50 80	
						1			FILL: Silty clay, medium to high plasticity, brown, red brown and dark brown, with fine to coarse grained sandstone gravel, fine grained sand, ash and roots.				
					N = 3 1,2,1				FILL: Silty sand, fine to coarse grained, brown and grey, with clay bands and sandstone gravel bands, trace of ash and timber fragments.	M			
ON COMPLETION ▼					N = 10 2,3,7	2							
						3							APPEARS MODERATELY COMPACTED
▶								SM	SILTY SAND: fine to medium grained, dark grey and grey, with clay fines, trace of timber and shell fragments and organic silty clay bands.	M / W	VL		ESTUARINE
					N = 0 0,0,0	4							
								CL-CH	SILTY CLAY: medium to high plasticity, grey, with sand, trace of timber and shell fragments.	MC>PL	VS-S		
					N = 0 0,0,0	5						40 30 20 20	
						6							
						7							

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BOREHOLE LOG

Borehole No. 2 2/2

Client: TKD ARCHITECTS

Project: PROPOSED WENTWORTH PARK POP-UP SCHOOL

Location: WENTWORTH PARK, WENTWORTH PARK ROAD, ULTIMO, NSW

Job No. 29319ZH
Date: 20-4-16

Method: SPIRAL AUGER
JK308

Logged/Checked by: N.C./A.J.H.

R.L. Surface: ≈ 3.6m
Datum: AHD

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
								CH	SILTY CLAY: high plasticity, red brown, light grey and orange brown.	MC>PL	F		
					N = 13 1,3,10				SILTY CLAY: high plasticity, light grey, trace of sand.			60 70 100	
								SP	SAND: fine to coarse grained, light grey, with silt fines.	W	MD	60 60	
									END OF BORHOLE AT 7.65m				
						8							
						9							
						10							
						11							
						12							
						13							
						14							

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BOREHOLE LOG

Borehole No. 3
1/2

Client: TKD ARCHITECTS
Project: PROPOSED WENTWORTH PARK POP-UP SCHOOL
Location: WENTWORTH PARK, WENTWORTH PARK ROAD, ULTIMO, NSW

Job No. 29319ZH
Date: 20-4-16
Method: SPIRAL AUGER JK308
Logged/Checked by: N.C./A.J.H.
R.L. Surface: ≈ 4.7m
Datum: AHD

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
	■					0			FILL: Silty clay, low to medium plasticity, brown, with roots and root f bres.	M			GRASS COVER
				■	N = 6 5,4,2				FILL: Sand, fine to medium grained, grey, with fine to coarse grained igneous gravel.	MC>PL		240 150 120	APPEARS POORLY TO MODERATELY COMPACTED
	■					1			FILL: Silty sandy clay, medium to high plasticity, red brown, orange brown, brown and dark grey, with fine to coarse grained sandstone gravel, ash, brick and glass fragments and fine to medium grained ironstone gravel.				
				■	N = 5 12,2,3				as above, but with sandstone gravel bands.			100 100 80 150	
ON COMPLET-ION ▼						2							
				■	N = 6 3,3,3	3							
▶						4							
				■	N = 3 2,1,2				FILL: Sandy clay, low to medium plasticity, light brown and light grey, fine to coarse grained sand, with fine to coarse grained sandstone and ironstone gravel.				APPEARS POORLY COMPACTED
						5		CL-CH	SILTY SANDY CLAY: medium to high plasticity, light grey.	MC>PL	(S)		ESTUARINE
								SP	SAND: fine to medium grained, dark grey, with silt fines, trace of root fibres, shells and fine to medium grained quartz gravel.	W	VL		
				■	N = 1 0,0,1	6							
						7		SM	SILTY SAND: as below				

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BOREHOLE LOG

Borehole No. 3 2/2

Client: TKD ARCHITECTS

Project: PROPOSED WENTWORTH PARK POP-UP SCHOOL

Location: WENTWORTH PARK, WENTWORTH PARK ROAD, ULTIMO, NSW

Job No. 29319ZH
Date: 20-4-16
Method: SPIRAL AUGER JK308
Logged/Checked by: N.C./A.J.H.
R.L. Surface: ≈ 4.7m
Datum: AHD

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
								SM	SILTY SAND: fine to medium grained, grey, trace of shells and root fibres.	W	VL		
				■	N = 14 0,7,7				SILTY SAND: fine to coarse grained, light grey, trace of clay fines.		MD		
									END OF BORHOLE AT 7.65m				
						8							
						9							
						10							
						11							
						12							
						13							
						14							

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GEOTECHNICAL AND ENVIRONMENTAL ENGINEERS

BOREHOLE LOG

Borehole No. 4 1/2

Client: TKD ARCHITECTS
Project: PROPOSED WENTWORTH PARK POP-UP SCHOOL
Location: WENTWORTH PARK, WENTWORTH PARK ROAD, ULTIMO, NSW

Job No. 29319ZH **Method:** SPIRAL AUGER JK308 **R.L. Surface:** ≈ 4.5m
Date: 20-4-16 **Datum:** AHD
Logged/Checked by: N.C./A.J.H.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
						0		-	ASPHALTIC CONCRETE: 50mm.t	M			
									FILL: Gravelly sand, fine to medium grained, grey, fine to coarse grained igneous gravel.	MC>PL			APPEARS POORLY COMPACTED
					N = 5 2,2,3	1			FILL: Silty clay, medium to high plasticity, red brown, light brown and brown, with fine to coarse grained ironstone and sandstone gravel, trace of ash and plastic, glass and timber fragments.			280 120 120 180	
									FILL: Gravelly sand, fine to coarse grained, light brown, brown and grey, fine to coarse grained sandstone, ironstone and igneous gravel, with clay nodules, trace of ash, plastic and brick fragments.	M			
					N = 18 2,6,12	2							APPEARS WELL COMPACTED
ON COMPLET-ION ▼					N = 15 7,7,8	3							
▶										W			
						4		SM	SILTY SAND: fine to coarse grained, grey and light brown, trace of root f bres and fine grained ironstone gravel.	W	(VL)		ESTUARINE
					N = 2 3,2,0			CH	SILTY CLAY: high plasticity, dark grey, trace of root fibres.	MC>PL	VS-S	30 20 10 10	
						5							
					N = 0 0,0,0	6			as above, but with occasional bands of fine to coarse grained sand (up to ≈50mm.t).			20 20 30	
						7							

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GEOTECHNICAL AND ENVIRONMENTAL ENGINEERS

BOREHOLE LOG

Borehole No. 4 2/2

Client: TKD ARCHITECTS

Project: PROPOSED WENTWORTH PARK POP-UP SCHOOL

Location: WENTWORTH PARK, WENTWORTH PARK ROAD, ULTIMO, NSW

Job No. 29319ZH
Date: 20-4-16
Method: SPIRAL AUGER JK308
Logged/Checked by: N.C./A.J.H.
R.L. Surface: ≈ 4.5m
Datum: AHD

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
								CH	SILTY CLAY: high plasticity, dark grey.	MC>PL	VS		
				■	N = 0 0,0,0			SM	SILTY SAND: fine to medium grained, grey, with shell fragments and fine grained gravel.	W	VL		
								CH	SILTY CLAY: high plasticity, dark grey, trace of root fibres and shells.	MC>PL	VS	20 10 10	
						8			END OF BOREHOLE AT 7.65m				
						9							
						10							
						11							
						12							
						13							
						14							

ENVIRONMENTAL INVESTIGATION SERVICES

CONSULTING ENVIRONMENTAL ENGINEERS

EIS

ENVIRONMENTAL LOG

Borehole No. **5** 1/1

Environmental logs are not to be used for geotechnical purposes

Client: TKD ARCHITECTS

Project: PROPOSED TEMPORARY SCHOOL

Location: WENTWORTH PARK SOUTH, OFF WENTWORTH PARK ROAD, ULTIMO, NSW

Job No. E29319K **Method:** EZIPROBE **R.L. Surface:** N/A

Date: 20/4/16 **Datum:**

Logged/Checked by: G.F./A.K.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLETION	■		■			0			FILL: Sandy silty clay, low plasticity, brown, trace of root fibres and fine to medium grained igneous gravel.	MC<PL			GRASS COVER
	■		■			0.5			FILL: Silty sandy clay, low to medium plasticity, light brown, brown and grey, with fine to coarse grained sandstone, ironstone and igneous gravel, trace of root fibres, ash and slag.				
	■		■			1							
	■		■			1.5			END OF BOREHOLE AT 1.50m				WATERLOO MEMBRANE SAMPLER INSTALLED TO APPROXIMATELY 1.0m BELOW GROUND LEVEL (21/4/16)
						2							
						2.5							
						3							
						3.5							

ENVIRONMENTAL INVESTIGATION SERVICES

CONSULTING ENVIRONMENTAL ENGINEERS

EIS

ENVIRONMENTAL LOG

Borehole No. **6** **1/1**

Environmental logs are not to be used for geotechnical purposes

Client: TKD ARCHITECTS

Project: PROPOSED TEMPORARY SCHOOL

Location: WENTWORTH PARK SOUTH, OFF WENTWORTH PARK ROAD, ULTIMO, NSW

Job No. E29319K **Method:** EZIPROBE **R.L. Surface:** N/A

Date: 20/4/16 **Datum:**

Logged/Checked by: G.F./A.K.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLETION	■		■			0			FILL: Sandy silty clay, low plasticity, brown, trace of root fibres and fine to medium grained igneous gravel.	MC<PL			GRASS COVER
	■		■			0.5			FILL: Silty sandy clay, low to medium plasticity, light brown, brown and grey, with fine to coarse grained sandstone, ironstone and igneous gravel, trace of root fibres, ash, slag and glass.				
	■		■			1							
	■		■			1.5			END OF BOREHOLE AT 1.50m				GAS MONITORING WELL INSTALLED TO A DEPTH OF APPROXIMATELY 1.1m. CLASS 18, 50mm DIAMETER MACHINE SLOTTED PVC FROM 1.1m TO 0.4m, CASING FROM 0.4m TO 0.1m, 2mm FILTER SAND PACK FROM 1.1m TO 0.4m. BENTONITE SEAL FROM 0.4m T0 0.1m, BACKFILLED WITH CUTTINGS TO SURFACE, COMPLETED WITH STEEL GATIC COVER
						2							
						2.5							
						3							
						3.5							

ENVIRONMENTAL INVESTIGATION SERVICES

CONSULTING ENVIRONMENTAL ENGINEERS

EIS

ENVIRONMENTAL LOG

Borehole No. 7

1/1

Environmental logs are not to be used for geotechnical purposes

Client: TKD ARCHITECTS

Project: PROPOSED TEMPORARY SCHOOL

Location: WENTWORTH PARK SOUTH, OFF WENTWORTH PARK ROAD, ULTIMO, NSW

Job No. E29319K **Method:** EZIPROBE **R.L. Surface:** N/A

Date: 20/4/16 **Datum:**

Logged/Checked by: G.F./A.K.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLETION	■		■			0			FILL: Sandy clay, low plasticity, brown, trace of ash, slag, root fibres and fine to medium grained sandstone, ironstone and igneous gravel.	MC<PL			GRASS COVER
	■		■			0.5			FILL: Gravelly sandy clay, low to medium plasticity, brown, grey and light brown, with fine to medium grained sandstone, ironstone and igneous gravel, trace of ash, slag and silty clay nodules.				
	■		■			1							
						1.5			END OF BOREHOLE AT 1.50m				WATERLOO MEMBRANE SAMPLER INSTALLED TO APPROXIMATELY 1.0m BELOW GROUND LEVEL (21/4/16)
						2							
						2.5							
						3							
						3.5							

ENVIRONMENTAL INVESTIGATION SERVICES

CONSULTING ENVIRONMENTAL ENGINEERS

EIS

ENVIRONMENTAL LOG

Borehole No. 8

1/1

Environmental logs are not to be used for geotechnical purposes

Client: TKD ARCHITECTS

Project: PROPOSED TEMPORARY SCHOOL

Location: WENTWORTH PARK SOUTH, OFF WENTWORTH PARK ROAD, ULTIMO, NSW

Job No. E29319K **Method:** EZIPROBE **R.L. Surface:** N/A

Date: 20/4/16 **Datum:**

Logged/Checked by: G.F./A.K.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLETION	■		■			0			FILL: Sandy clay, low plasticity, brown, trace of root fibres, ash, and fine to medium grained igneous gravel.	MC<PL			GRASS COVER
	■		■			0.5			FILL: Gravelly sandy clay, low plasticity, brown, light brown and grey, with fine to coarse grained sandstone, ironstone and igneous gravel, trace of ash and slag.				
	■		■			1							
	■		■			1.5			END OF BOREHOLE AT 1.50m				GAS MONITORING WELL INSTALLED TO A DEPTH OF APPROXIMATELY 1.1m. CLASS 18, 50mm DIAMETER MACHINE SLOTTED PVC FROM 1.1m TO 0. 4m, CASING FROM 0.4m TO 0. 1m, 2mm FILTER SAND PACK FROM 1.1m TO 0.4m. BENTONITE SEAL FROM 0.4m T0 0. 1m, BACKFILLED WITH CUTTINGS TO SURFACE, COMPLETED WITH STEEL GATIC COVER
						2							
						2.5							
						3							
						3.5							

ENVIRONMENTAL INVESTIGATION SERVICES

CONSULTING ENVIRONMENTAL ENGINEERS

EIS

ENVIRONMENTAL LOG

Borehole No. **9** 1/1

Environmental logs are not to be used for geotechnical purposes

Client: TKD ARCHITECTS

Project: PROPOSED TEMPORARY SCHOOL

Location: WENTWORTH PARK SOUTH, OFF WENTWORTH PARK ROAD, ULTIMO, NSW

Job No. E29319K **Method:** EZIPROBE **R.L. Surface:** N/A

Date: 20/4/16 **Datum:**

Logged/Checked by: G.F./A.K.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLETION	■		■			0			FILL: Sandy clay, low plasticity, brown, trace of root fibres, ash and fine to medium grained igneous gravel.	MC<PL			GRASS COVER
	■		■			0.5			FILL: Gravelly sandy clay, low plasticity, brown, light brown and grey, with fine to coarse grained sandstone and ironstone gravel, trace of ash and slag.				
	■		■			1			as above, but trace of shell fragments.				
	■		■			1.5			END OF BOREHOLE AT 1.50m				
						2							
						2.5							
						3							
						3.5							

ENVIRONMENTAL INVESTIGATION SERVICES

CONSULTING ENVIRONMENTAL ENGINEERS

EIS

ENVIRONMENTAL LOG

Borehole No. **10** 1/1

Environmental logs are not to be used for geotechnical purposes

Client: TKD ARCHITECTS

Project: PROPOSED TEMPORARY SCHOOL

Location: WENTWORTH PARK SOUTH, OFF WENTWORTH PARK ROAD, ULTIMO, NSW

Job No. E29319K **Method:** EZIPROBE **R.L. Surface:** N/A

Date: 20/4/16 **Datum:**

Logged/Checked by: G.F./A.K.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLET-ION						0			ASPHALTIC CONCRETE: 50mm.t				
								-	FILL: Silty gravel, fine to medium grained igneous gravel, brown grey/	D			ROADBASE
						0.5			FILL: Sandy clay, low plasticity, brown, trace of ash and slag, fine to coarse grained sandstone and ironstone gravel.	MC<PL			
						1			FILL: Silty clay, medium plasticity, brown, grey and light brown, trace of ash and slag, fine to coarse grained ironstone, sandstone and igneous gravel.				
						1.5			END OF BOREHOLE AT 1.50m				WATERLOO MEMBRANE SAMPLER INSTALLED TO APPROXIMATELY 1.0m BELOW GROUND LEVEL (21/4/16)
						2							
						2.5							
						3							
						3.5							

ENVIRONMENTAL INVESTIGATION SERVICES

CONSULTING ENVIRONMENTAL ENGINEERS

EIS

ENVIRONMENTAL LOG

Borehole No. 11 1/1

Environmental logs are not to be used for geotechnical purposes

Client: TKD ARCHITECTS

Project: PROPOSED TEMPORARY SCHOOL

Location: WENTWORTH PARK SOUTH, OFF WENTWORTH PARK ROAD, ULTIMO, NSW

Job No. E29319K **Method:** EZIPROBE **R.L. Surface:** N/A

Date: 20/4/16 **Datum:**

Logged/Checked by: G.F./A.K.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLETION						0			ASPHALTIC CONCRETE: 50mm.t				
								-	FILL: Sandy gravel, fine to medium grained, grey and dark grey, ash and slag.	M			
						0.5			FILL: Gravelly sandy clay, low plasticity, brown, dark grey and light brown, fine to coarse grained sandstone, ironstone and igneous gravel, trace of ash and slag.	MC<PL			
						1							
						1.5			END OF BOREHOLE AT 1.50m				GAS MONITORING WELL INSTALLED TO A DEPTH OF APPROXIMATELY 1.1m. CLASS 18, 50mm DIAMETER MACHINE SLOTTED PVC FROM 1.1m TO 0. 4m, CASING FROM 0.4m TO 0. 1m, 2mm FILTER SAND PACK FROM 1.1m TO 0.4m. BENTONITE SEAL FROM 0.4m T0 0. 1m, BACKFILLED WITH CUTTINGS TO SURFACE, COMPLETED WITH STEEL GATIC COVER
						2							
						2.5							
						3							
						3.5							

ENVIRONMENTAL INVESTIGATION SERVICES

CONSULTING ENVIRONMENTAL ENGINEERS

EIS

ENVIRONMENTAL LOG

Borehole No. **12** 1/1

Environmental logs are not to be used for geotechnical purposes

Client: TKD ARCHITECTS

Project: PROPOSED TEMPORARY SCHOOL

Location: WENTWORTH PARK SOUTH, OFF WENTWORTH PARK ROAD, ULTIMO, NSW

Job No. E29319K **Method:** EZIPROBE **R.L. Surface:** N/A

Date: 20/4/16 **Datum:**

Logged/Checked by: G.F./A.K.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLET-ION						0			ASPHALTIC CONCRETE: 80mm.t				
								-	FILL: Silty gravel, fine to medium grained, igneous, grey and brown.	D			ROADBASE
						0.5			FILL: Silty clay, medium plasticity, brown, trace of ash and slag, fine to medium grained ironstone and sandstone gravel, and fine to medium grained sand.	MC=PL			
						1			FILL: Gravelly sandy clay, low plasticity, light brown, grey and dark grey, fine to medium grained sandstone and ironstone gravel, trace of ash and slag.	MC<PL			
						1.5			END OF BOREHOLE AT 1.50m				
						2							
						2.5							
						3							
						3.5							

ENVIRONMENTAL INVESTIGATION SERVICES

CONSULTING ENVIRONMENTAL ENGINEERS

EIS

ENVIRONMENTAL LOG

Borehole No. 13 1/1

Environmental logs are not to be used for geotechnical purposes

Client: TKD ARCHITECTS

Project: PROPOSED TEMPORARY SCHOOL

Location: WENTWORTH PARK SOUTH, OFF WENTWORTH PARK ROAD, ULTIMO, NSW

Job No. E29319K **Method:** EZIPROBE **R.L. Surface:** N/A

Date: 20/4/16 **Datum:**

Logged/Checked by: G.F./A.K.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLETION	■		■			0			FILL: Gravelly sandy clay, low plasticity, brown, concrete gravel, trace root fibres.	MC<PL			GRASS COVER
									FILL: Gravelly sandy clay, low plasticity, orange brown and light grey, fine to coarse grained sandstone.				CRUSHED SANDSTONE
	■		■			0.5							
						1							
						1.5			END OF BOREHOLE AT 1.50m				WATERLOO MEMBRANE SAMPLER INSTALLED TO APPROXIMATELY 1.0m BELOW GROUND LEVEL (21/4/16)
						2							
						2.5							
						3							
						3.5							

ENVIRONMENTAL INVESTIGATION SERVICES

CONSULTING ENVIRONMENTAL ENGINEERS

EIS

ENVIRONMENTAL LOG

Borehole No. 14

1/1

Environmental logs are not to be used for geotechnical purposes

Client: TKD ARCHITECTS

Project: PROPOSED TEMPORARY SCHOOL

Location: WENTWORTH PARK SOUTH, OFF WENTWORTH PARK ROAD, ULTIMO, NSW

Job No. E29319K **Method:** EZIPROBE **R.L. Surface:** N/A

Date: 20/4/16 **Datum:**

Logged/Checked by: G.F./A.K.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLETION	■		■			0			FILL: Clayey silty sand, fine to medium grained, brown, trace of ash, slag, metal, fine to medium grained igneous, sandstone and ironstone gravel, brick and concrete fragments.	M			GRASS COVER
	■		■			0.5							
						1							
						1.5			END OF BOREHOLE AT 1.50m				
						2							
						2.5							
						3							
						3.5							

ENVIRONMENTAL INVESTIGATION SERVICES

CONSULTING ENVIRONMENTAL ENGINEERS

EIS

ENVIRONMENTAL LOG

Borehole No. 15 1/1

Environmental logs are not to be used for geotechnical purposes

Client: TKD ARCHITECTS

Project: PROPOSED TEMPORARY SCHOOL

Location: WENTWORTH PARK SOUTH, OFF WENTWORTH PARK ROAD, ULTIMO, NSW

Job No. E29319K **Method:** EZIPROBE **R.L. Surface:** N/A

Date: 20/4/16 **Datum:**

Logged/Checked by: G.F./A.K.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLETION	■		■			0			FILL: Gravelly silty sand, fine to coarse grained, igneous, brown, trace of slag, metal fragments and clay fines.	M			GRASS COVER
										MC<PL			
	■		■			0.5			FILL: Sandy clay, low plasticity, brown, dark grey and grey, with ash and slag gravel, trace of fine to coarse grained sandstone, ironstone and igneous gravel.				
	■		■			1							
	■		■			1.5			END OF BOREHOLE AT 1.50m				GAS MONITORING WELL INSTALLED TO A DEPTH OF APPROXIMATELY 1.1m. CLASS 18, 50mm DIAMETER MACHINE SLOTTED PVC FROM 1.1m TO 0. 4m, CASING FROM 0.4m TO 0. 1m, 2mm FILTER SAND PACK FROM 1.1m TO 0.4m. BENTONITE SEAL FROM 0.4m T0 0. 1m, BACKFILLED WITH CUTTINGS TO SURFACE, COMPLETED WITH STEEL GATIC COVER
						2							
						2.5							
						3							
						3.5							

EXPLANATORY NOTES – ENVIRONMENTAL LOGS

INTRODUCTION

These notes have been provided to supplement the environmental report with regards to drilling and field logging. Not all notes are necessarily relevant to all reports. Where geotechnical borehole logs are utilised for environmental purpose, reference should also be made to the explanatory notes included in the geotechnical report. Environmental logs are not suitable for geotechnical purposes.

The ground is a product of continuing natural and manmade processes and therefore exhibits a variety of characteristics and properties which vary from place to place and can change with time. Environmental studies involve gathering and assimilating limited facts about these characteristics and properties in order to understand the ground on a particular site under certain conditions. These conditions are directly relevant only to the ground at the place where, and time when, the investigation was carried out.

DESCRIPTION AND CLASSIFICATION METHODS

The methods of description and classification of soils and rocks used in this report are based on Australian Standard 1726, the SAA Site Investigation Code. In general, descriptions cover the following properties – soil or rock type, colour, structure, strength or density, and inclusions. Identification and classification of soil and rock involves judgement and the Company infers accuracy only to the extent that is common in current geotechnical practice.

Soil types are described according to the predominating particle size and behaviour as set out in the attached Unified Soil Classification Table qualified by the grading of other particles present (e.g. sandy clay) as set out below (note that unless stated in the report, the soil classification is based on a qualitative field assessment, not laboratory testing):

Soil Classification	Particle Size
Clay	less than 0.002mm
Silt	0.002 to 0.075mm
Sand	0.075 to 2mm
Gravel	2 to 60mm

Non-cohesive soils are classified on the basis of relative density, generally from the results of Standard Penetration Test (SPT) as below:

Relative Density	SPT 'N' Value (blows/300mm)
Very loose	less than 4
Loose	4 – 10
Medium dense	10 – 30
Dense	30 – 50
Very Dense	greater than 50

Cohesive soils are classified on the basis of strength (consistency) either by use of hand penetrometer, laboratory testing or engineering examination. The strength terms are defined as shown in the following table:

Classification	Unconfined Compressive Strength kPa
Very Soft	less than 25
Soft	25 – 50
Firm	50 – 100
Stiff	100 – 200
Very Stiff	200 – 400
Hard	Greater than 400
Friable	Strength not attainable – soil crumbles

Rock types are classified by their geological names, together with descriptive terms regarding weathering, strength, defects, etc. Where relevant, further information regarding rock classification is given in the text of the report. In the Sydney Basin, 'Shale' is used to describe thinly bedded to laminated siltstone.

DRILLING OR EXCAVATION METHODS

The following is a brief summary of drilling and excavation methods currently adopted by the Company, and some comments on their use and application. All except test pits and hand auger drilling require the use of a mechanical drilling rig.

Test Pits: These are normally excavated with a backhoe or a tracked excavator, allowing close examination of the in-situ soils if it is safe to descend into the pit. The depth of penetration is limited to approximately 3m for a backhoe and up to 6m for an excavator. Limitations of test pits include problems associated with disturbance and difficulty of reinstatement; and the consequent effects on nearby structures. Care must be taken if construction is to be carried out near test pit locations to either properly re-compact the backfill during construction, or to design and construct the structure so as not to be adversely affected by poorly compacted backfill at the test pit location.

Hand Auger Drilling: A borehole of 50mm to 100mm diameter is advanced by manually operated equipment. Premature refusal of the hand augers can occur on a variety of materials such as fill, hard clay, gravel or ironstone, and does not necessarily indicate rock level.

Continuous Spiral Flight Augers: The borehole is advanced using 75mm to 115mm diameter continuous spiral flight augers, which are withdrawn at intervals to allow sampling and in-situ testing. This is a relatively economical means of drilling in clays and in sands above the water table. Samples are returned to the surface by the flights or may be collected after withdrawal of the auger flights, but they can be very disturbed and layers may become mixed. Information from the auger sampling (as distinct from specific sampling by SPTs or undisturbed samples) is of relatively lower reliability due to mixing or softening of samples by groundwater, or uncertainties as to the original depth of the samples. Augering below the groundwater table is of even lesser reliability than augering above the water table.

Rock Augering: Use can be made of a Tungsten Carbide (TC) bit for auger drilling into rock to indicate rock quality and continuity by variation in drilling resistance and from examination of recovered rock fragments. This method of investigation is quick and relatively inexpensive but provides only an indication of the likely rock strength and predicted values may be in error by a strength order. Where rock strengths may have a significant impact on construction feasibility or costs, then further investigation by means of cored boreholes may be warranted.

Wash Boring: The borehole is usually advanced by a rotary bit, with water being pumped down the drill rods and returned up the annulus, carrying the drill cuttings. Only major changes in stratification can be determined from the cuttings, together with some information from "feel" and rate of penetration.

Mud Stabilised Drilling: Either Wash Boring or Continuous Core Drilling can use drilling mud as a circulating fluid to stabilise the borehole. The term 'mud' encompasses a range of products ranging from bentonite to polymers such as Revert or Biogel. The mud tends to mask the cuttings and reliable identification is only possible from intermittent intact sampling (e.g. from SPT and U50 samples) or from rock coring, etc.

Continuous Core Drilling: A continuous core sample is obtained using a diamond tipped core barrel. Provided full core recovery is achieved (which is not always possible in very low strength rocks and granular soils), this technique provides a very reliable (but relatively expensive) method of investigation. In rocks, an NMLC triple tube core barrel, which gives a core of about 50mm diameter, is usually used with water flush. The length of core recovered is compared to the length drilled and any length not recovered is shown as CORE LOSS. The locations of losses are determined on site by the supervising engineer; where the location is uncertain, the loss is placed at the top end of the drill run.

Standard Penetration Tests: Standard Penetration Tests (SPT) are used mainly in non-cohesive soils, but can also be used in cohesive soils as a means of indicating density or strength and also of obtaining a relatively undisturbed sample. The test procedure is described in Australian Standard 1289, "Methods of Testing Soils for Engineering Purposes" – Test F3.1.

The test is carried out in a borehole by driving a 50mm diameter split sample tube with a tapered shoe, under the impact of a 63kg hammer with a free fall of 760mm. It is normal for the tube to be driven in three successive 150mm increments and the 'N' value is taken as the number of blows for the last 300mm. In dense sands, very hard clays or weak rock, the full 450mm penetration may not be practicable and the test is discontinued.

The test results are reported in the following form:

- In the case where full penetration is obtained with successive blow counts for each 150mm of, say, 4, 6 and 7 blows, as: N = 13 (4, 6, 7)
- In a case where the test is discontinued short of full penetration, say after 15 blows for the first 150mm and 30 blows for the next 40mm, as: N>30 (15, 30/40mm)

The results of the test can be related empirically to the engineering properties of the soil. Occasionally, the drop hammer is used to drive 50mm diameter thin walled sample tubes (U50) in clays. In such circumstances, the test results are shown on the borehole logs in brackets.

A modification to the SPT test is where the same driving system is used with a solid 60 tipped steel cone of the same diameter as the SPT hollow sampler. The solid cone can be continuously driven for some distance in soft clays or loose sands, or may be used where damage would otherwise occur to the SPT. The results of this Solid Cone Penetration Test (SCPT) are shown as "Nc" on the borehole logs, together with the number of blows per 150mm penetration.

LOGS

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

The attached explanatory notes define the terms and symbols used in preparation of the logs.

Interpretation of the information shown on the logs, and its application to design and construction, should therefore take into account the spacing of boreholes or test pits, the method of drilling or excavation, the frequency of sampling and testing and the possibility of other than "straight line"

variations between the boreholes or test pits. Subsurface conditions between boreholes or test pits may vary significantly from conditions encountered at the borehole or test pit locations.

GROUNDWATER

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

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

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

FILL

The presence of fill materials can often be determined only by the inclusion of foreign objects (e.g. bricks, concrete, plastic, slag/ash, steel etc) or by distinctly unusual colour, texture or fabric. Identification of the extent of fill materials will also depend on investigation methods and frequency. Where natural soils similar to those at the site are used for fill, it may be difficult with limited testing and sampling to reliably determine the extent of the fill.

The presence of fill materials is usually regarded with caution as the possible variation in density, strength and material type is much greater than with natural soil deposits. If the volume and quality of fill is of importance to a project, then frequent test pit excavations are preferable to boreholes

LABORATORY TESTING

Laboratory testing has not been undertaken to confirm the soil classifications and rocks strengths indicated on the environmental logs unless noted in the report.

SITE ANOMALIES

In the event that conditions encountered on site during construction appear to vary from those which were expected from the information contained in the report, EIS should be notified immediately.

GRAPHIC LOG SYMBOLS FOR SOIL AND ROCKS

SOIL


FILL


TOPSOIL


CLAY (CL, CH)


SILT (ML, MH)


SAND (SP, SW)


GRAVEL (GP, GW)


SANDY CLAY (CL, CH)


SILTY CLAY (CL, CH)


CLAYEY SAND (SC)


SILTY SAND (SM)


GRAVELLY CLAY (CL, CH)


CLAYEY GRAVEL (GC)


SANDY SILT (ML)


PEAT AND ORGANIC SOILS

ROCK


CONGLOMERATE


SANDSTONE


SHALE


SILTSTONE, MUDSTONE, CLAYSTONE


LIMESTONE


PHYLLITE, SCHIST


TUFF


GRANITE, GABBRO


DOLERITE, DIORITE


BASALT, ANDESITE


QUARTZITE

DEFECTS AND INCLUSIONS


CLAY SEAM


SHEARED OR CRUSHED SEAM


BRECCIATED OR SHATTERED SEAM/ZONE


IRONSTONE GRAVEL


ORGANIC MATERIAL

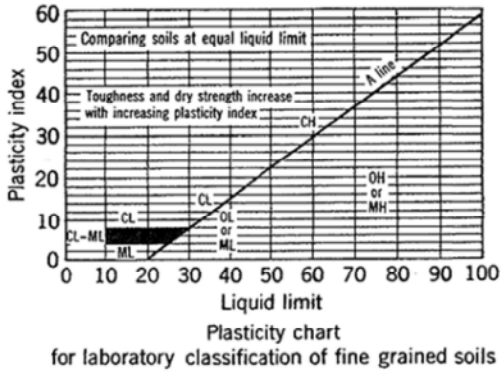
OTHER MATERIALS


CONCRETE


BITUMINOUS CONCRETE, COAL


COLLUVIUM

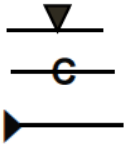
Field Identification Procedures (Excluding particles larger than 75 μm and basing fractions on estimated weights)						Group Symbols[a]	Typical Names	Information Required for Describing Soils	Laboratory Classification Criteria
Coarse-grained soils More than half of material is *larger* than 75 μm sieve size[b] (The 75 μm sieve size is about the smallest particle visible to naked eye)	Gravels More than half of coarse fraction is larger than 4 mm sieve size	Clean gravels (little or no fines)	Wide range in grain size and substantial amounts of all intermediate particle sizes			*GW*	Well graded gravels, gravel-sand mixtures, little or no fines	Give typical name; indicate approximate percentages of sand and gravel; maximum size; angularity, surface condition, and hardness of the coarse grains; local or geologic name and other pertinent descriptive information; and symbols in parentheses For undisturbed soils add information on stratification, degree of compactness, cementation, moisture conditions and drainage characteristics Example: *Silty sand*, gravelly; about 20% hard, angular gravel particles 12 mm maximum size; rounded and subangular sand grains coarse to fine, about 15% non-plastic fines with low dry strength; well compacted and moist in place; alluvial sand; (*SM*)	Use grain size curve in identifying the fractions as given under field identification Determine percentages of gravel and sand from grain size curve Depending on percentage of fines (fraction smaller than 75 μm sieve size) coarse grained soils are classified as follows: Less than 5% *GW, GP, SW, SP* More than 12% *GM, GC, SM, SC* 5% to 12% *Borderline* cases requiring use of dual symbols $C_U = \frac{D_{60}}{D_{10}}$ Greater than 4 $C_C = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ Between 1 and 3 Not meeting all gradation requirements for *GW* Atterberg limits below "A" line, or *PI* less than 4 — Above "A" line with *PI* between 4 and 7 are *borderline* cases requiring use of dual symbols Atterberg limits above "A" line, with *PI* greater than 7
			Predominantly one size or a range of sizes with some intermediate sizes missing			*GP*	Poorly graded gravels, gravel-sand mixtures, little or no fines		
		Gravels with fines (appreciable amount of fines)	Nonplastic fines (for identification procedures see *ML* below)			*GM*	Silty gravels, poorly graded gravel-sand-silt mixtures		
			Plastic fines (for identification procedures, see *CL* below)			*GC*	Clayey gravels, poorly graded gravel-sand-clay mixtures		
	Sands More than half of coarse fraction is smaller than 4 mm sieve size	Clean sands (little or no fines)	Wide range in grain sizes and substantial amounts of all intermediate particle sizes			*SW*	Well graded sands, gravelly sands, little or no fines		$C_U = \frac{D_{60}}{D_{10}}$ Greater than 6 $C_C = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ Between 1 and 3 Not meeting all gradation requirements for *SW* Atterberg limits below "A" line or *PI* less than 5 — Above "A" line with *PI* between 4 and 7 are *borderline* cases requiring use of dual symbols Atterberg limits below "A" line with *PI* greater than 7
			Predominantly one size or a range of sizes with some intermediate sizes missing			*SP*	Poorly graded sands, gravelly sands, little or no fines		
		Sands with fines (appreciable amount of fines)	Nonplastic fines (for identification procedures, see *ML* below)			*SM*	Silty sands, poorly graded sand-silt mixtures		
			Plastic fines (for identification procedures, see *CL* below)			*SC*	Clayey sands, poorly graded sand-clay mixtures		
Fine-grained soils More than half of material is *smaller* than 75 μm sieve size (The 75 μm sieve size is about the smallest particle visible to naked eye)	Identification Procedures on Fraction Smaller than 380 μm Sieve Size								
	Silts and clays liquid limit less than 50		Dry Strength (crushing characteristics)	Dilatancy (reaction to shaking)	Toughness (consistency near plastic limit)				
			None to slight	Quick to slow	None	*ML*	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands with slight plasticity	Give typical name; indicate degree and character of plasticity, amount and maximum size of coarse grains; colour in wet condition, odour if any, local or geologic name, and other pertinent descriptive information, and symbol in parentheses For undisturbed soils add information on structure, stratification, consistency in undisturbed and remoulded states, moisture and drainage conditions Example: *Clayey silt*, brown; slightly plastic; small percentage of fine sand; numerous vertical root holes; firm and dry in place; loess; (*ML*)	
			Medium to high	None to very slow	Medium	*CL*	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays		
			Slight to medium	Slow	Slight	*OL*	Organic silts and organic silt-clays of low plasticity		
	Silts and clays liquid limit greater than 50		Slight to medium	Slow to none	Slight to medium	*MH*	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts		
			High to very high	None	High	*CH*	Inorganic clays of high plasticity, fat clays		
			Medium to high	None to very slow	Slight to medium	*OH*	Organic clays of medium to high plasticity		
Highly Organic Soils			Readily identified by colour, odour, spongy feel and frequently by fibrous texture			*Pt*	Peat and other highly organic soils		



Plasticity chart
for laboratory classification of fine grained soils

Note: 1 Soils possessing characteristics of two groups are designated by combinations of group symbols (eg. GW-GC, well graded gravel-sand mixture with clay fines).
2 Soils with liquid limits of the order of 35 to 50 may be visually classified as being of medium plasticity.

LOG SYMBOLS

LOG COLUMN	SYMBOL	DEFINITION
Groundwater Record		Standing water level. Time delay following completion of drilling may be shown. Extent of borehole collapse shortly after drilling. Groundwater seepage into borehole or excavation noted during drilling or excavation.
Samples	ES U50 DB DS ASB ASS SAL	Soil sample taken over depth indicated, for environmental analysis. Undisturbed 50mm diameter tube sample taken over depth indicated. Bulk disturbed sample taken over depth indicated. Small disturbed bag sample taken over depth indicated. Soil sample taken over depth indicated, for asbestos screening. Soil sample taken over depth indicated, for acid sulfate soil analysis. Soil sample taken over depth indicated, for salinity analysis.
Field Tests	N = 17 4, 7, 10	Standard Penetration Test (SPT) performed between depths indicated by lines. Individual show blows per 150mm penetration. 'R' as noted below.
	N_c = 5 7 3 R	Solid Cone Penetration Test (SCPT) performed between depths indicated by lines. Individual figures show blows per 150mm penetration for 60 degree solid cone driven by SPT hammer. 'R' refers to apparent hammer refusal within the corresponding 150mm depth increment.
	VNS = 25 PID = 100	Vane shear reading in kPa of Undrained Shear Strength. Photoionisation detector reading in ppm (Soil sample heads pace test).
Moisture (Cohesive Soils) (Cohesionless)	MC > PL MC ≈ PL MC < PL D M W	Moisture content estimated to be greater than plastic limit. Moisture content estimated to be approximately equal to plastic limit. Moisture content estimated to be less than plastic limit. DRY – Runs freely through fingers. MOIST – Does not run freely but no free water visible on soil surface. WET – Free water visible on soil surface.
Strength (Consistency) Cohesive Soils	VS S F St VSt H ( )	VERY SOFT – Unconfined compressive strength less than 25kPa SOFT – Unconfined compressive strength 25-5 0kPa FIRM – Unconfined compressive strength 50-1 00kPa STIFF – Unconfined compressive strength 100- 200kPa VERY STIFF – Unconfined compressive strength 200- 400kPa HARD – Unconfined compressive strength greater than 400kPa Bracketed symbol indicates estimated consistency based o n tactile examination or other tests.
Density Index/ Relative Density (Cohesionless Soils)	VL L MD D VD ( )	**Density Index (ID) Range (%)** / **SPT ' N' Value Range (Blows/300mm)** Very Loose <15 / 0-4 Loose 15-35 / 4-10 Medium Dense 35-65 / 10-30 Dense 65-85 / 30-50 Very Dense >85 / >50 Bracketed symbol indicates estimated density based on ease of drilling or other tests.
Hand Penetrometer Readings	300 250	Numbers indicate individual test results in kPa on representative undisturbed material unless noted otherwise
Remarks	'V' bit 'TC' bit T_{60}	Hardened steel 'V' shaped bit. Tungsten carbide wing bit. Penetration of auger string in mm under static load of rig applied by drill head hydraulics without rotation of augers.

LOG SYMBOLS CONTINUED

ROCK STRENGTH

Rock strength is defined by the Point Load Strength Index (Is 50) and refers to the strength of the rock substance in the bedding. The test procedure is described by the International Journal of Rock Mechanics, Mining and Geomechanics Abstract Volume 22, No 2, 1985.

TERM	SYMBOL	Is (50) MPa	FIELD GUIDE
Extremely Low:	EL	0.03	Easily remoulded by hand to a material with soil properties.
Very Low:	VL	0.1	May be crumbled in the hand. Sandstone is "sugary" and friable.
Low:	L	0.3	A piece of core 150 mm long x 50mm dia. may be broken by hand and easily scored with a knife. Sharp edges of core may be friable and break during handling.
Medium Strength:	M	1	A piece of core 150 mm long x 50mm dia. can be broken by hand with difficulty. Readily scored with knife.
High:	H	3	A piece of core 150 mm long x 50mm dia. core cannot be broken by hand, can be slightly scratched or scored with knife; rock rings under hammer.
Very High:	VH	10	A piece of core 150 mm long x 50mm dia. may be broken with hand-held pick after more than one blow. Cannot be scratched with pen knife; rock rings under hammer.
Extremely High:	EH		A piece of core 150 mm long x 50mm dia. is very difficult to break with h and-held hammer . Rings when struck with a hammer.

ROCK STRENGTH

ABBREVIATION	DESCRIPTION	NOTES
Be	Bedding Plane Parting	Defect orientations measured relative to the normal to (i.e. relative to horizontal for vertical holes)
CS	Clay Seam	
J	Joint	
P	Planar	
Un	Undulating	
S	Smooth	
R	Rough	
IS	Iron stained	
XWS	Extremely Weathered Seam	
Cr	Crushed Seam	
60t	Thickness of defect in millimetres	

Appendix C: Laboratory Reports & COC Documents

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Envirolab Services Pty Ltd - Sydney | ABN 37 112 535 645

CERTIFICATE OF ANALYSIS 145327

Client:

Environmental Investigation Services
PO Box 976
North Ryde BC
NSW 1670

Attention: Geoff Fletcher

Sample log in details:

Your Reference:	**E29319K, Wentworth Park South**
No. of samples:	43 soil
Date samples received / completed instructions received	21/04/2016 / 21/04/2016

This report supersedes the previous report R00 due to an amendment to client sample ID (ELS #34).

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: / Issue Date:	29/04/16 / 30/05/16
Date of Preliminary Report:	Not Issued

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Accredited for compliance with ISO/IEC 17025. **Tests not covered by NATA are denoted with *.**

Results Approved By:

Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil						
Our Reference:	UNITS	145327-1	145327-4	145327-7	145327-9	145327-14
Your Reference	---------- -	BH1	BH2	BH3	BH4	BH5
Depth	----------	0.1-0.2	0.1-0.2	0.1-0.2	0.2-0.3	0.7-1.0
Date Sampled		20/04/2016	20/04/2016	20/04/2016	20/04/2016	20/04/2016
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	22/04/2016	22/04/2016	22/04/2016	22/04/2016	22/04/2016
Date analysed	-	22/04/2016	22/04/2016	22/04/2016	22/04/2016	22/04/2016
TRHC$_6$ - C$_9$	mg/kg	<25	<25	<25	<25	<25
TRHC$_6$ - C$_{10}$	mg/kg	<25	<25	<25	<25	<25
vTPHC$_6$ - C$_{10}$ less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	85	84	93	86	85

vTRH(C6-C10)/BTEXN in Soil						
Our Reference:	UNITS	145327-16	145327-19	145327-23	145327-25	145327-28
Your Reference	---------- -	BH6	BH7	BH8	BH9	BH10
Depth	----------	0.0-0.2	0.0-0.2	0.5-0.7	0.0-0.2	0.25-0.5
Date Sampled		20/04/2016	20/04/2016	20/04/2016	20/04/2016	20/04/2016
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	22/04/2016	22/04/2016	22/04/2016	22/04/2016	22/04/2016
Date analysed	-	22/04/2016	22/04/2016	22/04/2016	22/04/2016	22/04/2016
TRHC$_6$ - C$_9$	mg/kg	<25	<25	<25	<25	<25
TRHC$_6$ - C$_{10}$	mg/kg	<25	<25	<25	<25	<25
vTPHC$_6$ - C$_{10}$ less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	92	85	83	85	82

vTRH(C6-C10)/BTEXN in Soil						
Our Reference:	UNITS	145327-30	145327-32	145327-34	145327-36	145327-39
Your Reference	---------- -	BH11	BH12	BH13	BH14	BH15
Depth	----------	0.05-0.3	0.25-0.5	0.0-0.2	0.0-0.2	0.5-0.8
Date Sampled		20/04/2016	20/04/2016	20/04/2016	20/04/2016	20/04/2016
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	22/04/2016	22/04/2016	22/04/2016	22/04/2016	22/04/2016
Date analysed	-	22/04/2016	22/04/2016	22/04/2016	22/04/2016	22/04/2016
TRHC$_6$ - C$_9$	mg/kg	<25	<25	<25	<25	<25
TRHC$_6$ - C$_{10}$	mg/kg	<25	<25	<25	<25	<25
vTPHC$_6$ - C$_{10}$ less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	83	91	89	87	88

vTRH(C6-C10)/BTEXN in Soil			
Our Reference:	UNITS	145327-42	145327-43
Your Reference	---------- -	DupGFS3	TBS
Depth	----------	--	--
Date Sampled		20/04/2016	20/04/2016
Type of sample		soil	soil
Date extracted	-	22/04/2016	22/04/2016
Date analysed	-	22/04/2016	22/04/2016
TRHC$_6$ - C$_9$	mg/kg	<25	<25
TRHC$_6$ - C$_{10}$	mg/kg	<25	<25
vTPHC$_6$ - C$_{10}$ less BTEX (F1)	mg/kg	<25	<25
Benzene	mg/kg	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1
m+p-xylene	mg/kg	<2	<2
o-Xylene	mg/kg	<1	<1
naphthalene	mg/kg	<1	<1
Surrogate aaa-Trifluorotoluene	%	91	94

svTRH (C10-C40) in Soil						
Our Reference:	UNITS	145327-1	145327-4	145327-7	145327-9	145327-14
Your Reference	---------- -	BH1	BH2	BH3	BH4	BH5
Depth	----------	0.1-0.2	0.1-0.2	0.1-0.2	0.2-0.3	0.7-1.0
Date Sampled		20/04/2016	20/04/2016	20/04/2016	20/04/2016	20/04/2016
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	22/04/2016	22/04/2016	22/04/2016	22/04/2016	22/04/2016
Date analysed	-	23/04/2016	23/04/2016	23/04/2016	23/04/2016	23/04/2016
TRHC$_{10}$ - C$_{14}$	mg/kg	<50	<50	<50	<50	<50
TRHC$_{15}$ - C$_{28}$	mg/kg	<100	<100	<100	<100	<100
TRHC$_{29}$ - C$_{36}$	mg/kg	<100	280	320	<100	<100
TRH>C$_{10}$-C$_{16}$	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{10}$ - C$_{16}$ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{16}$-C$_{34}$	mg/kg	<100	210	270	<100	<100
TRH>C$_{34}$-C$_{40}$	mg/kg	<100	410	410	<100	<100
Surrogate o-Terphenyl	%	85	82	85	83	84

svTRH (C10-C40) in Soil						
Our Reference:	UNITS	145327-16	145327-19	145327-23	145327-25	145327-28
Your Reference	---------- -	BH6	BH7	BH8	BH9	BH10
Depth	----------	0.0-0.2	0.0-0.2	0.5-0.7	0.0-0.2	0.25-0.5
Date Sampled		20/04/2016	20/04/2016	20/04/2016	20/04/2016	20/04/2016
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	22/04/2016	22/04/2016	22/04/2016	22/04/2016	22/04/2016
Date analysed	-	23/04/2016	23/04/2016	23/04/2016	23/04/2016	23/04/2016
TRHC$_{10}$ - C$_{14}$	mg/kg	<50	<50	<50	<50	<50
TRHC$_{15}$ - C$_{28}$	mg/kg	<100	<100	450	100	150
TRHC$_{29}$ - C$_{36}$	mg/kg	100	<100	720	230	160
TRH>C$_{10}$-C$_{16}$	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{10}$ - C$_{16}$ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{16}$-C$_{34}$	mg/kg	120	110	1,000	270	270
TRH>C$_{34}$-C$_{40}$	mg/kg	<100	<100	510	190	110
Surrogate o-Terphenyl	%	91	89	94	83	85

svTRH (C10-C40) in Soil						
Our Reference:	UNITS	145327-30	145327-32	145327-34	145327-36	145327-39
Your Reference	---------- -	BH11	BH12	BH13	BH14	BH15
Depth	----------	0.05-0.3	0.25-0.5	0.0-0.2	0.0-0.2	0.5-0.8
Date Sampled		20/04/2016	20/04/2016	20/04/2016	20/04/2016	20/04/2016
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	22/04/2016	22/04/2016	22/04/2016	22/04/2016	22/04/2016
Date analysed	-	23/04/2016	23/04/2016	23/04/2016	23/04/2016	23/04/2016
TRHC$_{10}$ - C$_{14}$	mg/kg	<50	<50	<50	<50	<50
TRHC$_{15}$ - C$_{28}$	mg/kg	130	220	<100	<100	<100
TRHC$_{29}$ - C$_{36}$	mg/kg	120	160	<100	130	<100
TRH>C$_{10}$-C$_{16}$	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{10}$ - C$_{16}$ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{16}$-C$_{34}$	mg/kg	220	340	<100	160	<100
TRH>C$_{34}$-C$_{40}$	mg/kg	<100	<100	<100	110	<100
Surrogate o-Terphenyl	%	86	85	81	82	82

svTRH (C10-C40) in Soil		
Our Reference:	UNITS	145327-42
Your Reference	---------- -	DupGFS3
Depth	----------	--
Date Sampled		20/04/2016
Type of sample		soil
Date extracted	-	22/04/2016
Date analysed	-	23/04/2016
TRHC$_{10}$ - C$_{14}$	mg/kg	<50
TRHC$_{15}$ - C$_{28}$	mg/kg	<100
TRHC$_{29}$ - C$_{36}$	mg/kg	<100
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
Surrogate o-Terphenyl	%	85

PAHs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ---------- - ---------- 	145327-1 BH1 0.1-0.2 20/04/2016 soil	145327-4 BH2 0.1-0.2 20/04/2016 soil	145327-7 BH3 0.1-0.2 20/04/2016 soil	145327-9 BH4 0.2-0.3 20/04/2016 soil	145327-14 BH5 0.7-1.0 20/04/2016 soil
Date extracted	-	22/04/2016	22/04/2016	22/04/2016	22/04/2016	22/04/2016
Date analysed	-	22/04/2016	22/04/2016	22/04/2016	22/04/2016	22/04/2016
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.2
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.5	<0.1	0.2	0.2	1.5
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	0.6
Fluoranthene	mg/kg	1.3	0.2	0.5	0.2	4.5
Pyrene	mg/kg	1.4	0.2	0.6	0.2	4.8
Benzo(a)anthracene	mg/kg	1	0.1	0.3	0.1	3.4
Chrysene	mg/kg	0.8	0.1	0.3	0.1	2.8
Benzo(b,j+k)fluoranthene	mg/kg	1	0.2	0.5	<0.2	4.8
Benzo(a)pyrene	mg/kg	0.87	0.1	0.3	0.05	3.1
Indeno(1,2,3-c,d)pyrene	mg/kg	0.7	0.1	0.2	<0.1	2.2
Dibenzo(a,h)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	0.3
Benzo(g,h,i)perylene	mg/kg	0.5	0.1	0.2	<0.1	1.7
Benzo(a)pyrene TEQ calc (zero)	mg/kg	1.3	<0.5	<0.5	<0.5	4.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	1.3	<0.5	<0.5	<0.5	4.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	1.3	<0.5	0.5	<0.5	4.5
Total Positive PAHs	mg/kg	8.6	1.3	3.3	0.90	30
Surrogate p-Terphenyl-d14	%	99	99	96	102	105

PAHs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ---------- - ---------- 	145327-16 BH6 0.0-0.2 20/04/2016 soil	145327-19 BH7 0.0-0.2 20/04/2016 soil	145327-23 BH8 0.5-0.7 20/04/2016 soil	145327-25 BH9 0.0-0.2 20/04/2016 soil	145327-28 BH10 0.25-0.5 20/04/2016 soil
Date extracted	-	22/04/2016	22/04/2016	22/04/2016	22/04/2016	22/04/2016
Date analysed	-	22/04/2016	22/04/2016	22/04/2016	22/04/2016	22/04/2016
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.5
Acenaphthylene	mg/kg	0.3	0.3	0.3	0.2	0.7
Acenaphthene	mg/kg	<0.1	0.1	<0.1	<0.1	0.1
Fluorene	mg/kg	0.2	0.3	<0.1	<0.1	0.2
Phenanthrene	mg/kg	2.0	4.3	2.3	1.9	4.1
Anthracene	mg/kg	0.7	0.9	0.7	0.6	1.2
Fluoranthene	mg/kg	2.9	7.6	6.8	5.0	9.2
Pyrene	mg/kg	3.0	7.0	6.9	4.9	9.2
Benzo(a)anthracene	mg/kg	2.1	3.1	4.9	3.0	6.0
Chrysene	mg/kg	1.9	2.7	4.4	2.7	4.8
Benzo(b,j+k)fluoranthene	mg/kg	3.4	5.0	7.8	5.0	8.6
Benzo(a)pyrene	mg/kg	2.2	3.2	5.0	3.3	5.5
Indeno(1,2,3-c,d)pyrene	mg/kg	1.5	2.5	3.5	2.6	3.6
Dibenzo(a,h)anthracene	mg/kg	0.3	0.3	0.8	0.5	0.8
Benzo(g,h,i)perylene	mg/kg	1.1	2.0	2.7	2.0	2.7
Benzo(a)pyrene TEQ calc (zero)	mg/kg	3.3	4.5	7.5	4.9	8.2
Benzo(a)pyrene TEQ calc(half)	mg/kg	3.3	4.5	7.5	4.9	8.2
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	3.3	4.5	7.5	4.9	8.2
Total Positive PAHs	mg/kg	22	39	46	32	57
Surrogate p-Terphenyl-d14	%	102	94	96	95	96

PAHs in Soil Our Reference: Your Reference	UNITS ----------	145327-30 BH11	145327-32 BH12	145327-34 BH13	145327-36 BH14	145327-39 BH15
Depth	-	0.05-0.3	0.25-0.5	0.0-0.2	0.0-0.2	0.5-0.8
Date Sampled	----------	20/04/2016	20/04/2016	20/04/2016	20/04/2016	20/04/2016
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	22/04/2016	22/04/2016	22/04/2016	22/04/2016	22/04/2016
Date analysed	-	22/04/2016	22/04/2016	22/04/2016	22/04/2016	22/04/2016
Naphthalene	mg/kg	<0.1	0.6	<0.1	0.1	<0.1
Acenaphthylene	mg/kg	<0.1	1.4	<0.1	0.3	0.2
Acenaphthene	mg/kg	<0.1	0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	0.4	<0.1	0.1	<0.1
Phenanthrene	mg/kg	0.7	7.3	0.2	2.4	1
Anthracene	mg/kg	0.2	2.0	<0.1	0.7	0.2
Fluoranthene	mg/kg	1.6	24	0.6	4.1	2.6
Pyrene	mg/kg	1.5	24	0.9	4.4	2.5
Benzo(a)anthracene	mg/kg	1.1	13	0.4	2.4	1.6
Chrysene	mg/kg	0.9	10	0.4	2.0	1.4
Benzo(b,j+k)fluoranthene	mg/kg	2	19	0.8	3.0	2.5
Benzo(a)pyrene	mg/kg	0.94	12	0.4	2.0	1.5
Indeno(1,2,3-c,d)pyrene	mg/kg	0.7	7.9	0.4	1.3	1.1
Dibenzo(a,h)anthracene	mg/kg	0.1	1.7	<0.1	0.2	0.2
Benzo(g,h,i)perylene	mg/kg	0.5	6.3	0.3	1.0	0.8
Benzo(a)pyrene TEQ calc (zero)	mg/kg	1.4	18	0.6	2.9	2.2
Benzo(a)pyrene TEQ calc(half)	mg/kg	1.4	18	0.7	2.9	2.2
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	1.4	18	0.7	2.9	2.2
Total Positive PAHs	mg/kg	10	130	4.4	24	16
Surrogate p-Terphenyl-d14	%	94	99	92	88	94

PAHs in Soil		
Our Reference:	UNITS	145327-42
Your Reference	---------- -	DupGFS3
Depth	----------	--
Date Sampled		20/04/2016
Type of sample		soil
Date extracted	-	22/04/2016
Date analysed	-	22/04/2016
Naphthalene	mg/kg	<0.1
Acenaphthylene	mg/kg	0.1
Acenaphthene	mg/kg	<0.1
Fluorene	mg/kg	<0.1
Phenanthrene	mg/kg	0.6
Anthracene	mg/kg	0.2
Fluoranthene	mg/kg	1.6
Pyrene	mg/kg	1.7
Benzo(a)anthracene	mg/kg	1
Chrysene	mg/kg	0.8
Benzo(b,j+k)fluoranthene	mg/kg	1
Benzo(a)pyrene	mg/kg	0.93
Indeno(1,2,3-c,d)pyrene	mg/kg	0.7
Dibenzo(a,h)anthracene	mg/kg	0.1
Benzo(g,h,i)perylene	mg/kg	0.6
Benzo(a)pyrene TEQ calc (zero)	mg/kg	1.4
Benzo(a)pyrene TEQ calc(half)	mg/kg	1.4
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	1.4
Total Positive PAHs	mg/kg	9.8
Surrogate p-Terphenyl-d14	%	102

Organochlorine Pesticides in soil						
Our Reference:	UNITS	145327-1	145327-4	145327-7	145327-9	145327-14
Your Reference	----------	BH1	BH2	BH3	BH4	BH5
Depth	- ----------	0.1-0.2	0.1-0.2	0.1-0.2	0.2-0.3	0.7-1.0
Date Sampled		20/04/2016	20/04/2016	20/04/2016	20/04/2016	20/04/2016
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	22/04/2016	22/04/2016	22/04/2016	22/04/2016	22/04/2016
Date analysed	-	23/04/2016	23/04/2016	23/04/2016	23/04/2016	23/04/2016
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	1.8	<0.1
Dieldrin	mg/kg	<0.1	<0.1	0.2	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	90	89	91	92	93

Organochlorine Pesticides in soil						
Our Reference:	UNITS	145327-16	145327-19	145327-23	145327-25	145327-28
Your Reference	----------	BH6	BH7	BH8	BH9	BH10
	-					
Depth	----------	0.0-0.2	0.0-0.2	0.5-0.7	0.0-0.2	0.25-0.5
Date Sampled		20/04/2016	20/04/2016	20/04/2016	20/04/2016	20/04/2016
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	22/04/2016	22/04/2016	22/04/2016	22/04/2016	22/04/2016
Date analysed	-	23/04/2016	23/04/2016	23/04/2016	23/04/2016	23/04/2016
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	107	91	92	84	83

Organochlorine Pesticides in soil						
Our Reference:	UNITS	145327-30	145327-32	145327-34	145327-36	145327-39
Your Reference	----------	BH11	BH12	BH13	BH14	BH15
Depth	- ----------	0.05-0.3	0.25-0.5	0.0-0.2	0.0-0.2	0.5-0.8
Date Sampled		20/04/2016	20/04/2016	20/04/2016	20/04/2016	20/04/2016
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	22/04/2016	22/04/2016	22/04/2016	22/04/2016	22/04/2016
Date analysed	-	23/04/2016	23/04/2016	23/04/2016	23/04/2016	23/04/2016
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	80	86	86	83	85

Organochlorine Pesticides in soil		
Our Reference:	UNITS	145327-42
Your Reference	---------- -	DupGFS3
Depth	----------	--
Date Sampled		20/04/2016
Type of sample		soil
Date extracted	-	22/04/2016
Date analysed	-	23/04/2016
HCB	mg/kg	<0.1
alpha-BHC	mg/kg	<0.1
gamma-BHC	mg/kg	<0.1
beta-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
pp-DDD	mg/kg	<0.1
Endosulfan II	mg/kg	<0.1
pp-DDT	mg/kg	<0.1
Endrin Aldehyde	mg/kg	<0.1
Endosulfan Sulphate	mg/kg	<0.1
Methoxychlor	mg/kg	<0.1
Surrogate TCMX	%	90

Organophosphorus Pesticides Our Reference: Your Reference	UNITS ----------	145327-1 BH1	145327-4 BH2	145327-7 BH3	145327-9 BH4	145327-14 BH5
Depth	----------	0.1-0.2	0.1-0.2	0.1-0.2	0.2-0.3	0.7-1.0
Date Sampled		20/04/2016	20/04/2016	20/04/2016	20/04/2016	20/04/2016
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	22/04/2016	22/04/2016	22/04/2016	22/04/2016	22/04/2016
Date analysed	-	23/04/2016	23/04/2016	23/04/2016	23/04/2016	23/04/2016
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	90	89	91	92	93

Organophosphorus Pesticides Our Reference: Your Reference	UNITS ----------	145327-16 BH6	145327-19 BH7	145327-23 BH8	145327-25 BH9	145327-28 BH10
Depth	----------	0.0-0.2	0.0-0.2	0.5-0.7	0.0-0.2	0.25-0.5
Date Sampled		20/04/2016	20/04/2016	20/04/2016	20/04/2016	20/04/2016
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	22/04/2016	22/04/2016	22/04/2016	22/04/2016	22/04/2016
Date analysed	-	23/04/2016	23/04/2016	23/04/2016	23/04/2016	23/04/2016
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	107	91	92	84	83

Organophosphorus Pesticides Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ---------- - ---------- 	145327-30 BH11 0.05-0.3 20/04/2016 soil	145327-32 BH12 0.25-0.5 20/04/2016 soil	145327-34 BH13 0.0-0.2 20/04/2016 soil	145327-36 BH14 0.0-0.2 20/04/2016 soil	145327-39 BH15 0.5-0.8 20/04/2016 soil
Date extracted	-	22/04/2016	22/04/2016	22/04/2016	22/04/2016	22/04/2016
Date analysed	-	23/04/2016	23/04/2016	23/04/2016	23/04/2016	23/04/2016
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	80	86	86	83	85

Organophosphorus Pesticides Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ---------- - ---------- 	145327-42 DupGFS3 -- 20/04/2016 soil
Date extracted	-	22/04/2016
Date analysed	-	23/04/2016
Azinphos-methyl (Guthion)	mg/kg	<0.1
Bromophos-ethyl	mg/kg	<0.1
Chlorpyriphos	mg/kg	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1
Diazinon	mg/kg	<0.1
Dichlorvos	mg/kg	<0.1
Dimethoate	mg/kg	<0.1
Ethion	mg/kg	<0.1
Fenitrothion	mg/kg	<0.1
Malathion	mg/kg	<0.1
Parathion	mg/kg	<0.1
Ronnel	mg/kg	<0.1
Surrogate TCMX	%	90

PCBs in Soil						
Our Reference:	UNITS	145327-1	145327-4	145327-7	145327-9	145327-14
Your Reference	----------	BH1	BH2	BH3	BH4	BH5
Depth	- ----------	0.1-0.2	0.1-0.2	0.1-0.2	0.2-0.3	0.7-1.0
Date Sampled		20/04/2016	20/04/2016	20/04/2016	20/04/2016	20/04/2016
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	22/04/2016	22/04/2016	22/04/2016	22/04/2016	22/04/2016
Date analysed	-	23/04/2016	23/04/2016	23/04/2016	23/04/2016	23/04/2016
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	90	89	91	92	93

PCBs in Soil						
Our Reference:	UNITS	145327-16	145327-19	145327-23	145327-25	145327-28
Your Reference	----------	BH6	BH7	BH8	BH9	BH10
Depth	- ----------	0.0-0.2	0.0-0.2	0.5-0.7	0.0-0.2	0.25-0.5
Date Sampled		20/04/2016	20/04/2016	20/04/2016	20/04/2016	20/04/2016
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	22/04/2016	22/04/2016	22/04/2016	22/04/2016	22/04/2016
Date analysed	-	23/04/2016	23/04/2016	23/04/2016	23/04/2016	23/04/2016
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.2
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.2
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.2
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.2
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.2
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.2
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.2
Surrogate TCLMX	%	107	91	92	84	83

PCBs in Soil						
Our Reference:	UNITS	145327-30	145327-32	145327-34	145327-36	145327-39
Your Reference	---------- -	BH11	BH12	BH13	BH14	BH15
Depth	----------	0.05-0.3	0.25-0.5	0.0-0.2	0.0-0.2	0.5-0.8
Date Sampled		20/04/2016	20/04/2016	20/04/2016	20/04/2016	20/04/2016
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	22/04/2016	22/04/2016	22/04/2016	22/04/2016	22/04/2016
Date analysed	-	23/04/2016	23/04/2016	23/04/2016	23/04/2016	23/04/2016
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	80	86	86	83	85

PCBs in Soil		
Our Reference:	UNITS	145327-42
Your Reference	---------- -	DupGFS3
Depth	----------	--
Date Sampled		20/04/2016
Type of sample		soil
Date extracted	-	22/04/2016
Date analysed	-	23/04/2016
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
Surrogate TCLMX	%	90

Acid Extractable metals in soil						
Our Reference:	UNITS	145327-1	145327-4	145327-7	145327-9	145327-14
Your Reference	---------- -	BH1	BH2	BH3	BH4	BH5
Depth	----------	0.1-0.2	0.1-0.2	0.1-0.2	0.2-0.3	0.7-1.0
Date Sampled		20/04/2016	20/04/2016	20/04/2016	20/04/2016	20/04/2016
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	22/04/2016	22/04/2016	22/04/2016	22/04/2016	22/04/2016
Date analysed	-	22/04/2016	22/04/2016	22/04/2016	22/04/2016	22/04/2016
Arsenic	mg/kg	5	<4	<4	<4	6
Cadmium	mg/kg	<0.4	<0.4	9.0	<0.4	<0.4
Chromium	mg/kg	10	7	10	6	11
Copper	mg/kg	29	44	48	22	120
Lead	mg/kg	100	31	100	10	230
Mercury	mg/kg	0.2	<0.1	0.1	<0.1	0.8
Nickel	mg/kg	3	8	12	13	7
Zinc	mg/kg	140	41	150	16	210

Acid Extractable metals in soil						
Our Reference:	UNITS	145327-16	145327-19	145327-23	145327-25	145327-28
Your Reference	---------- -	BH6	BH7	BH8	BH9	BH10
Depth	----------	0.0-0.2	0.0-0.2	0.5-0.7	0.0-0.2	0.25-0.5
Date Sampled		20/04/2016	20/04/2016	20/04/2016	20/04/2016	20/04/2016
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	22/04/2016	22/04/2016	22/04/2016	22/04/2016	22/04/2016
Date analysed	-	22/04/2016	22/04/2016	22/04/2016	22/04/2016	22/04/2016
Arsenic	mg/kg	6	5	6	11	6
Cadmium	mg/kg	<0.4	<0.4	1	0.4	<0.4
Chromium	mg/kg	10	10	11	10	14
Copper	mg/kg	54	41	220	100	97
Lead	mg/kg	140	160	180	310	260
Mercury	mg/kg	0.5	0.4	0.8	0.7	0.6
Nickel	mg/kg	6	6	17	9	12
Zinc	mg/kg	130	140	460	580	350

Acid Extractable metals in soil						
Our Reference:	UNITS	145327-30	145327-32	145327-34	145327-36	145327-39
Your Reference	---------- -	BH11	BH12	BH13	BH14	BH15
Depth	----------	0.05-0.3	0.25-0.5	0.0-0.2	0.0-0.2	0.5-0.8
Date Sampled		20/04/2016	20/04/2016	20/04/2016	20/04/2016	20/04/2016
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	22/04/2016	22/04/2016	22/04/2016	22/04/2016	22/04/2016
Date analysed	-	22/04/2016	22/04/2016	22/04/2016	22/04/2016	22/04/2016
Arsenic	mg/kg	<4	10	<4	<4	7
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	0.4
Chromium	mg/kg	8	17	9	7	12
Copper	mg/kg	46	31	23	24	110
Lead	mg/kg	110	200	18	110	230
Mercury	mg/kg	0.2	0.7	<0.1	0.2	0.8
Nickel	mg/kg	17	4	7	4	10
Zinc	mg/kg	79	110	45	120	150

Acid Extractable metals in soil			
Our Reference:	UNITS	145327-42	145327-44
Your Reference	---------- -	DupGFS3	BH10 - TRIPLICATE
Depth	----------	--	0.25-0.5
Date Sampled		20/04/2016	20/04/2016
Type of sample		soil	soil
Date prepared	-	22/04/2016	22/04/2016
Date analysed	-	22/04/2016	22/04/2016
Arsenic	mg/kg	<4	7
Cadmium	mg/kg	<0.4	<0.4
Chromium	mg/kg	10	14
Copper	mg/kg	26	270
Lead	mg/kg	190	430
Mercury	mg/kg	0.2	0.6
Nickel	mg/kg	4	8
Zinc	mg/kg	170	290

Moisture						
Our Reference:	UNITS	145327-1	145327-4	145327-7	145327-9	145327-14
Your Reference	---------- -	BH1	BH2	BH3	BH4	BH5
Depth	----------	0.1-0.2	0.1-0.2	0.1-0.2	0.2-0.3	0.7-1.0
Date Sampled		20/04/2016	20/04/2016	20/04/2016	20/04/2016	20/04/2016
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	22/04/2016	22/04/2016	22/04/2016	22/04/2016	22/04/2016
Date analysed	-	26/04/2016	26/04/2016	26/04/2016	26/04/2016	26/04/2016
Moisture	%	16	16	16	12	12

Moisture						
Our Reference:	UNITS	145327-16	145327-19	145327-23	145327-25	145327-28
Your Reference	---------- -	BH6	BH7	BH8	BH9	BH10
Depth	----------	0.0-0.2	0.0-0.2	0.5-0.7	0.0-0.2	0.25-0.5
Date Sampled		20/04/2016	20/04/2016	20/04/2016	20/04/2016	20/04/2016
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	22/04/2016	22/04/2016	22/04/2016	22/04/2016	22/04/2016
Date analysed	-	26/04/2016	26/04/2016	26/04/2016	26/04/2016	26/04/2016
Moisture	%	14	15	13	15	14

Moisture						
Our Reference:	UNITS	145327-30	145327-32	145327-34	145327-36	145327-39
Your Reference	---------- -	BH11	BH12	BH13	BH14	BH15
Depth	----------	0.05-0.3	0.25-0.5	0.0-0.2	0.0-0.2	0.5-0.8
Date Sampled		20/04/2016	20/04/2016	20/04/2016	20/04/2016	20/04/2016
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	22/04/2016	22/04/2016	22/04/2016	22/04/2016	22/04/2016
Date analysed	-	26/04/2016	26/04/2016	26/04/2016	26/04/2016	26/04/2016
Moisture	%	14	15	12	12	13

Moisture			
Our Reference:	UNITS	145327-42	145327-43
Your Reference	---------- -	DupGFS3	TBS
Depth	----------	--	--
Date Sampled		20/04/2016	20/04/2016
Type of sample		soil	soil
Date prepared	-	22/04/2016	22/04/2016
Date analysed	-	26/04/2016	26/04/2016
Moisture	%	12	<0.1

Asbestos ID - soils						
Our Reference:	UNITS	145327-1	145327-4	145327-7	145327-9	145327-14
Your Reference	---------- -	BH1	BH2	BH3	BH4	BH5
Depth	----------	0.1-0.2	0.1-0.2	0.1-0.2	0.2-0.3	0.7-1.0
Date Sampled		20/04/2016	20/04/2016	20/04/2016	20/04/2016	20/04/2016
Type of sample		soil	soil	soil	soil	soil
Date analysed	-	28/04/2016	28/04/2016	28/04/2016	28/04/2016	28/04/2016
Sample mass tested	g	Approx 55g	Approx 50g	Approx 35g	Approx 55g	Approx 50g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Grey fine grained soils & rocks	Grey fine grained soils & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference:	UNITS	145327-16	145327-19	145327-23	145327-25	145327-28
Your Reference	---------- -	BH6	BH7	BH8	BH9	BH10
Depth	----------	0.0-0.2	0.0-0.2	0.5-0.7	0.0-0.2	0.25-0.5
Date Sampled		20/04/2016	20/04/2016	20/04/2016	20/04/2016	20/04/2016
Type of sample		soil	soil	soil	soil	soil
Date analysed	-	28/04/2016	28/04/2016	28/04/2016	28/04/2016	28/04/2016
Sample mass tested	g	Approx 25g	Approx 25g	Approx 30g	Approx 45g	Approx 30g
Sample Description	-	Dark Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Grey coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference:	UNITS	145327-30	145327-32	145327-34	145327-36	145327-39
Your Reference	---------- -	BH11	BH12	BH13	BH14	BH15
Depth	----------	0.05-0.3	0.25-0.5	0.0-0.2	0.0-0.2	0.5-0.8
Date Sampled		20/04/2016	20/04/2016	20/04/2016	20/04/2016	20/04/2016
Type of sample		soil	soil	soil	soil	soil
Date analysed	-	28/04/2016	28/04/2016	28/04/2016	28/04/2016	28/04/2016
Sample mass tested	g	Approx 30g	Approx 35g	Approx 30g	Approx 35g	Approx 35g
Sample Description	-	Black coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Grey coarse-grained soil & rocks	Brown fine grained soils & rocks	Black coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Method ID	Methodology Summary
Org-016	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-014	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-003	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-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'TEQ 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. 'TEQ 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 contr bute to the TEQ calculation are present but below PQL. 3. 'TEQ half PQL' values are assuming all contr buting 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-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-008	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Inorg-008	Moisture content determined by heating at 105+/-5 deg C for a minimum of 12 hours.
ASB-001	Asbestos ID - Qualitative identification of asbestos in bu k samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.

QUALITY CONTROL vTRH(C6-C10)/BTEXN in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base || Duplicate || %RPD	Spike Sm#	Sp ke % Recovery
Date extracted	-			22/04/2016	145327-1	22/04/2016 || 22/04/2016	LCS-7	22/04/2016
Date analysed	-			22/04/2016	145327-1	22/04/2016 || 22/04/2016	LCS-7	22/04/2016
TRHC6 - C9	mg/kg	25	Org-016	<25	145327-1	<25 || <25	LCS-7	106%
TRHC6 - C10	mg/kg	25	Org-016	<25	145327-1	<25 || <25	LCS-7	106%
Benzene	mg/kg	0.2	Org-016	<0.2	145327-1	<0.2 || <0.2	LCS-7	97%
Toluene	mg/kg	0.5	Org-016	<0.5	145327-1	<0.5 || <0.5	LCS-7	108%
Ethy benzene	mg/kg	1	Org-016	<1	145327-1	<1 || <1	LCS-7	106%
m+p-xylene	mg/kg	2	Org-016	<2	145327-1	<2 || <2	LCS-7	109%
o-Xylene	mg/kg	1	Org-016	<1	145327-1	<1 || <1	LCS-7	103%
naphthalene	mg/kg	1	Org-014	<1	145327-1	<1 || <1	[NR]	[NR]
Surrogate aaa-Trifluorotoluene	%		Org-016	89	145327-1	85 || 84 || RPD: 1	LCS-7	90%

QUALITY CONTROL svTRH (C10-C40) in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base || Duplicate || %RPD	Spike Sm#	Sp ke % Recovery
Date extracted	-			22/04/2016	145327-1	22/04/2016 || 22/04/2016	LCS-7	22/04/2016
Date analysed	-			23/04/2016	145327-1	23/04/2016 || 23/04/2016	LCS-7	23/04/2016
TRHC10 - C14	mg/kg	50	Org-003	<50	145327-1	<50 || <50	LCS-7	121%
TRHC15 - C28	mg/kg	100	Org-003	<100	145327-1	<100 || <100	LCS-7	109%
TRHC29 - C36	mg/kg	100	Org-003	<100	145327-1	<100 || <100	LCS-7	111%
TRH>C10-C16	mg/kg	50	Org-003	<50	145327-1	<50 || <50	LCS-7	121%
TRH>C16-C34	mg/kg	100	Org-003	<100	145327-1	<100 || <100	LCS-7	109%
TRH>C34-C40	mg/kg	100	Org-003	<100	145327-1	<100 || <100	LCS-7	111%
Surrogate o-Terphenyl	%		Org-003	94	145327-1	85 || 85 || RPD: 0	LCS-7	102%

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base || Duplicate || %RPD	Spike Sm#	Sp ke % Recovery
Date extracted	-			22/04/2016	145327-1	22/04/2016 || 22/04/2016	LCS-7	22/04/2016
Date analysed	-			22/04/2016	145327-1	22/04/2016 || 22/04/2016	LCS-7	22/04/2016
Naphthalene	mg/kg	0.1	Org-012	<0.1	145327-1	<0.1 || <0.1	LCS-7	90%
Acenaphthylene	mg/kg	0.1	Org-012	<0.1	145327-1	<0.1 || 0.1	[NR]	[NR]
Acenaphthene	mg/kg	0.1	Org-012	<0.1	145327-1	<0.1 || <0.1	[NR]	[NR]
Fluorene	mg/kg	0.1	Org-012	<0.1	145327-1	<0.1 || <0.1	LCS-7	92%
Phenanthrene	mg/kg	0.1	Org-012	<0.1	145327-1	0.5 || 0.7 || RPD: 33	LCS-7	96%
Anthracene	mg/kg	0.1	Org-012	<0.1	145327-1	0.1 || <0.1	[NR]	[NR]
Fluoranthene	mg/kg	0.1	Org-012	<0.1	145327-1	1.3 || 1.6 || RPD: 21	LCS-7	93%
Pyrene	mg/kg	0.1	Org-012	<0.1	145327-1	1.4 || 1.7 || RPD: 19	LCS-7	99%
Benzo(a)anthracene	mg/kg	0.1	Org-012	<0.1	145327-1	1 || 1.0 || RPD: 0	[NR]	[NR]
Chrysene	mg/kg	0.1	Org-012	<0.1	145327-1	0.8 || 1 || RPD: 22	LCS-7	78%
Benzo(b,j +k)fluoranthene	mg/kg	0.2	Org-012	<0.2	145327-1	1 || 2 || RPD: 67	[NR]	[NR]

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base || Duplicate || %RPD	Spike Sm#	Sp ke % Recovery
Benzo(a)pyrene	mg/kg	0.05	Org-012	<0.05	145327-1	0.87 || 1.0 || RPD: 14	LCS-7	104%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012	<0.1	145327-1	0.7 || 0.8 || RPD: 13	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012	<0.1	145327-1	0.1 || 0.1 || RPD: 0	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012	<0.1	145327-1	0.5 || 0.6 || RPD: 18	[NR]	[NR]
Surrogate p-Terphenyl-d14	%		Org-012	106	145327-1	99 || 89 || RPD: 11	LCS-7	115%

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base || Duplicate || %RPD	Spike Sm#	Sp ke % Recovery
Date extracted	-			22/04/2016	145327-1	22/04/2016 || 22/04/2016	LCS-7	22/04/2016
Date analysed	-			23/04/2016	145327-1	23/04/2016 || 23/04/2016	LCS-7	23/04/2016
HCB	mg/kg	0.1	Org-005	<0.1	145327-1	<0.1 || <0.1	[NR]	[NR]
alpha-BHC	mg/kg	0.1	Org-005	<0.1	145327-1	<0.1 || <0.1	LCS-7	80%
gamma-BHC	mg/kg	0.1	Org-005	<0.1	145327-1	<0.1 || <0.1	[NR]	[NR]
beta-BHC	mg/kg	0.1	Org-005	<0.1	145327-1	<0.1 || <0.1	LCS-7	76%
Heptachlor	mg/kg	0.1	Org-005	<0.1	145327-1	<0.1 || <0.1	LCS-7	79%
delta-BHC	mg/kg	0.1	Org-005	<0.1	145327-1	<0.1 || <0.1	[NR]	[NR]
Aldrin	mg/kg	0.1	Org-005	<0.1	145327-1	<0.1 || <0.1	LCS-7	80%
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	145327-1	<0.1 || <0.1	LCS-7	79%
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	145327-1	<0.1 || <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	145327-1	<0.1 || <0.1	[NR]	[NR]
Endosulfan I	mg/kg	0.1	Org-005	<0.1	145327-1	<0.1 || <0.1	[NR]	[NR]
pp-DDE	mg/kg	0.1	Org-005	<0.1	145327-1	<0.1 || <0.1	LCS-7	81%
Dieldrin	mg/kg	0.1	Org-005	<0.1	145327-1	<0.1 || <0.1	LCS-7	82%
Endrin	mg/kg	0.1	Org-005	<0.1	145327-1	<0.1 || <0.1	LCS-7	86%
pp-DDD	mg/kg	0.1	Org-005	<0.1	145327-1	<0.1 || <0.1	LCS-7	85%
Endosulfan II	mg/kg	0.1	Org-005	<0.1	145327-1	<0.1 || <0.1	[NR]	[NR]
pp-DDT	mg/kg	0.1	Org-005	<0.1	145327-1	<0.1 || <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	145327-1	<0.1 || <0.1	[NR]	[NR]
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	145327-1	<0.1 || <0.1	LCS-7	87%
Methoxychlor	mg/kg	0.1	Org-005	<0.1	145327-1	<0.1 || <0.1	[NR]	[NR]
Surrogate TCMX	%		Org-005	94	145327-1	90 || 86 || RPD: 5	LCS-7	96%

QUALITY CONTROL Organophosphorus Pesticides	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base || Duplicate || %RPD	Spike Sm#	Sp ke % Recovery
Date extracted	-			22/04/2016	145327-1	22/04/2016 || 22/04/2016	LCS-7	22/04/2016
Date analysed	-			23/04/2016	145327-1	23/04/2016 || 23/04/2016	LCS-7	23/04/2016
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008	<0.1	145327-1	<0.1 || <0.1	[NR]	[NR]
Bromophos-ethyl	mg/kg	0.1	Org-008	<0.1	145327-1	<0.1 || <0.1	[NR]	[NR]
Chlorpyriphos	mg/kg	0.1	Org-008	<0.1	145327-1	<0.1 || <0.1	LCS-7	88%
Chlorpyriphos-methyl	mg/kg	0.1	Org-008	<0.1	145327-1	<0.1 || <0.1	[NR]	[NR]
Diazinon	mg/kg	0.1	Org-008	<0.1	145327-1	<0.1 || <0.1	[NR]	[NR]
Dichlorvos	mg/kg	0.1	Org-008	<0.1	145327-1	<0.1 || <0.1	LCS-7	77%
Dimethoate	mg/kg	0.1	Org-008	<0.1	145327-1	<0.1 || <0.1	[NR]	[NR]
Ethion	mg/kg	0.1	Org-008	<0.1	145327-1	<0.1 || <0.1	LCS-7	92%
Fenitrothion	mg/kg	0.1	Org-008	<0.1	145327-1	<0.1 || <0.1	LCS-7	94%
Malathion	mg/kg	0.1	Org-008	<0.1	145327-1	<0.1 || <0.1	LCS-7	75%
Parathion	mg/kg	0.1	Org-008	<0.1	145327-1	<0.1 || <0.1	LCS-7	116%
Ronnel	mg/kg	0.1	Org-008	<0.1	145327-1	<0.1 || <0.1	LCS-7	96%
Surrogate TCMX	%		Org-008	94	145327-1	90 || 86 || RPD: 5	LCS-7	90%

QUALITY CONTROL PCBs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base || Duplicate || %RPD	Spike Sm#	Sp ke % Recovery
Date extracted	-			22/04/2016	145327-1	22/04/2016 || 22/04/2016	LCS-7	22/04/2016
Date analysed	-			23/04/2016	145327-1	23/04/2016 || 23/04/2016	LCS-7	23/04/2016
Aroclor 1016	mg/kg	0.1	Org-006	<0.1	145327-1	<0.1 || <0.1	[NR]	[NR]
Aroclor 1221	mg/kg	0.1	Org-006	<0.1	145327-1	<0.1 || <0.1	[NR]	[NR]
Aroclor 1232	mg/kg	0.1	Org-006	<0.1	145327-1	<0.1 || <0.1	[NR]	[NR]
Aroclor 1242	mg/kg	0.1	Org-006	<0.1	145327-1	<0.1 || <0.1	[NR]	[NR]
Aroclor 1248	mg/kg	0.1	Org-006	<0.1	145327-1	<0.1 || <0.1	[NR]	[NR]
Aroclor 1254	mg/kg	0.1	Org-006	<0.1	145327-1	<0.1 || <0.1	LCS-7	103%
Aroclor 1260	mg/kg	0.1	Org-006	<0.1	145327-1	<0.1 || <0.1	[NR]	[NR]
Surrogate TCLMX	%		Org-006	94	145327-1	90 || 86 || RPD: 5	LCS-7	90%

QUALITY CONTROL Acid Extractable metals in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base || Duplicate || %RPD	Spike Sm#	Sp ke % Recovery
Date prepared	-			22/04/2016	145327-1	22/04/2016 || 22/04/2016	LCS-7	22/04/2016
Date analysed	-			22/04/2016	145327-1	22/04/2016 || 22/04/2016	LCS-7	22/04/2016
Arsenic	mg/kg	4	Metals-020	<4	145327-1	5 || 4 || RPD: 22	LCS-7	115%
Cadmium	mg/kg	0.4	Metals-020	<0.4	145327-1	<0.4 || <0.4	LCS-7	108%
Chromium	mg/kg	1	Metals-020	<1	145327-1	10 || 8 || RPD: 22	LCS-7	108%
Copper	mg/kg	1	Metals-020	<1	145327-1	29 || 31 || RPD: 7	LCS-7	111%
Lead	mg/kg	1	Metals-020	<1	145327-1	100 || 80 || RPD: 22	LCS-7	108%
Mercury	mg/kg	0.1	Metals-021	<0.1	145327-1	0.2 || 0.1 || RPD: 67	LCS-7	92%
Nickel	mg/kg	1	Metals-020	<1	145327-1	3 || 3 || RPD: 0	LCS-7	103%
Zinc	mg/kg	1	Metals-020	<1	145327-1	140 || 120 || RPD: 15	LCS-7	105%

QUALITY CONTROL vTRH(C6-C10)/BTEXN in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Sp ke % Recovery
Date extracted	-	145327-28	22/04/2016 || 22/04/2016	145327-4	22/04/2016
Date analysed	-	145327-28	22/04/2016 || 22/04/2016	145327-4	22/04/2016
TRHC6 - C9	mg/kg	145327-28	<25 || <25	145327-4	103%
TRHC6 - C10	mg/kg	145327-28	<25 || <25	145327-4	103%
Benzene	mg/kg	145327-28	<0.2 || <0.2	145327-4	99%
Toluene	mg/kg	145327-28	<0.5 || <0.5	145327-4	105%
Ethy benzene	mg/kg	145327-28	<1 || <1	145327-4	102%
m+p-xylene	mg/kg	145327-28	<2 || <2	145327-4	105%
o-Xylene	mg/kg	145327-28	<1 || <1	145327-4	100%
naphthalene	mg/kg	145327-28	<1 || <1	[NR]	[NR]
Surrogate aaa-Trifluorotoluene	%	145327-28	82 || 88 || RPD: 7	145327-4	85%

QUALITY CONTROL svTRH (C10-C40) in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Sp ke % Recovery
Date extracted	-	145327-28	22/04/2016 || 22/04/2016	145327-4	22/04/2016
Date analysed	-	145327-28	23/04/2016 || 23/04/2016	145327-4	23/04/2016
TRHC10 - C14	mg/kg	145327-28	<50 || <50	145327-4	130%
TRHC15 - C28	mg/kg	145327-28	150 || 120 || RPD: 22	145327-4	#
TRHC29 - C36	mg/kg	145327-28	160 || 120 || RPD: 29	145327-4	#
TRH>C10-C16	mg/kg	145327-28	<50 || <50	145327-4	130%
TRH>C16-C34	mg/kg	145327-28	270 || 200 || RPD: 30	145327-4	#
TRH>C34-C40	mg/kg	145327-28	110 || <100	145327-4	#
Surrogate o-Terphenyl	%	145327-28	85 || 83 || RPD: 2	145327-4	82%

QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	145327-28	22/04/2016 || 22/04/2016	145327-4	22/04/2016
Date analysed	-	145327-28	22/04/2016 || 22/04/2016	145327-4	22/04/2016
Naphthalene	mg/kg	145327-28	0.5 || 0.1 || RPD: 133	145327-4	90%
Acenaphthylene	mg/kg	145327-28	0.7 || 0.4 || RPD: 55	[NR]	[NR]
Acenaphthene	mg/kg	145327-28	0.1 || <0.1	[NR]	[NR]
Fluorene	mg/kg	145327-28	0.2 || 0.1 || RPD: 67	145327-4	92%
Phenanthrene	mg/kg	145327-28	4.1 || 3.5 || RPD: 16	145327-4	105%
Anthracene	mg/kg	145327-28	1.2 || 1.1 || RPD: 9	[NR]	[NR]
Fluoranthene	mg/kg	145327-28	9.2 || 7.5 || RPD: 20	145327-4	111%
Pyrene	mg/kg	145327-28	9.2 || 7.8 || RPD: 16	145327-4	116%
Benzo(a)anthracene	mg/kg	145327-28	6.0 || 4.5 || RPD: 29	[NR]	[NR]
Chrysene	mg/kg	145327-28	4.8 || 3.9 || RPD: 21	145327-4	84%
Benzo(b,j+k)fluoranthene	mg/kg	145327-28	8.6 || 6.6 || RPD: 26	[NR]	[NR]
Benzo(a)pyrene	mg/kg	145327-28	5.5 || 4.2 || RPD: 27	145327-4	114%
Indeno(1,2,3-c,d)pyrene	mg/kg	145327-28	3.6 || 2.9 || RPD: 22	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	145327-28	0.8 || 0.4 || RPD: 67	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	145327-28	2.7 || 2.1 || RPD: 25	[NR]	[NR]
Surrogate p-Terphenyl-d14	%	145327-28	96 || 94 || RPD: 2	145327-4	104%
QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	145327-28	22/04/2016 || 22/04/2016	145327-4	22/04/2016
Date analysed	-	145327-28	23/04/2016 || 23/04/2016	145327-4	23/04/2016
HCB	mg/kg	145327-28	<0.1 || <0.1	[NR]	[NR]
alpha-BHC	mg/kg	145327-28	<0.1 || <0.1	145327-4	77%
gamma-BHC	mg/kg	145327-28	<0.1 || <0.1	[NR]	[NR]
beta-BHC	mg/kg	145327-28	<0.1 || <0.1	145327-4	74%
Heptachlor	mg/kg	145327-28	<0.1 || <0.1	145327-4	75%
delta-BHC	mg/kg	145327-28	<0.1 || <0.1	[NR]	[NR]
Aldrin	mg/kg	145327-28	<0.1 || <0.1	145327-4	77%
Heptachlor Epoxide	mg/kg	145327-28	<0.1 || <0.1	145327-4	76%
gamma-Chlordane	mg/kg	145327-28	<0.1 || <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	145327-28	<0.1 || <0.1	[NR]	[NR]
Endosulfan I	mg/kg	145327-28	<0.1 || <0.1	[NR]	[NR]
pp-DDE	mg/kg	145327-28	<0.1 || <0.1	145327-4	78%
Dieldrin	mg/kg	145327-28	<0.1 || <0.1	145327-4	80%
Endrin	mg/kg	145327-28	<0.1 || <0.1	145327-4	83%
pp-DDD	mg/kg	145327-28	<0.1 || <0.1	145327-4	81%
Endosulfan II	mg/kg	145327-28	<0.1 || <0.1	[NR]	[NR]
pp-DDT	mg/kg	145327-28	<0.1 || <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	145327-28	<0.1 || <0.1	[NR]	[NR]
Endosulfan Sulphate	mg/kg	145327-28	<0.1 || <0.1	145327-4	82%

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Sp ke % Recovery
Methoxychlor	mg/kg	145327-28	<0.1 || <0.1	[NR]	[NR]
Surrogate TCMX	%	145327-28	83 || 88 || RPD: 6	145327-4	83%
QUALITY CONTROL Organophosphorus Pesticides	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Sp ke % Recovery
Date extracted	-	145327-28	22/04/2016 || 22/04/2016	145327-4	22/04/2016
Date analysed	-	145327-28	23/04/2016 || 23/04/2016	145327-4	23/04/2016
Azinphos-methyl (Guthion)	mg/kg	145327-28	<0.1 || <0.1	[NR]	[NR]
Bromophos-ethyl	mg/kg	145327-28	<0.1 || <0.1	[NR]	[NR]
Chlorpyriphos	mg/kg	145327-28	<0.1 || <0.1	145327-4	83%
Chlorpyriphos-methyl	mg/kg	145327-28	<0.1 || <0.1	[NR]	[NR]
Diazinon	mg/kg	145327-28	<0.1 || <0.1	[NR]	[NR]
Dichlorvos	mg/kg	145327-28	<0.1 || <0.1	145327-4	67%
Dimethoate	mg/kg	145327-28	<0.1 || <0.1	[NR]	[NR]
Ethion	mg/kg	145327-28	<0.1 || <0.1	145327-4	84%
Fenitrothion	mg/kg	145327-28	<0.1 || <0.1	145327-4	96%
Malathion	mg/kg	145327-28	<0.1 || <0.1	145327-4	75%
Parathion	mg/kg	145327-28	<0.1 || <0.1	145327-4	97%
Ronnel	mg/kg	145327-28	<0.1 || <0.1	145327-4	88%
Surrogate TCMX	%	145327-28	83 || 88 || RPD: 6	145327-4	83%
QUALITY CONTROL PCBs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Sp ke % Recovery
Date extracted	-	145327-28	22/04/2016 || 22/04/2016	145327-4	22/04/2016
Date analysed	-	145327-28	23/04/2016 || 23/04/2016	145327-4	23/04/2016
Aroclor 1016	mg/kg	145327-28	<0.2 || <0.2	[NR]	[NR]
Aroclor 1221	mg/kg	145327-28	<0.2 || <0.2	[NR]	[NR]
Aroclor 1232	mg/kg	145327-28	<0.2 || <0.2	[NR]	[NR]
Aroclor 1242	mg/kg	145327-28	<0.2 || <0.2	[NR]	[NR]
Aroclor 1248	mg/kg	145327-28	<0.2 || <0.2	[NR]	[NR]
Aroclor 1254	mg/kg	145327-28	<0.2 || <0.2	145327-4	100%
Aroclor 1260	mg/kg	145327-28	<0.2 || <0.2	[NR]	[NR]
Surrogate TCLMX	%	145327-28	83 || 88 || RPD: 6	145327-4	83%

QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date prepared	-	145327-28	22/04/2016 || 22/04/2016	145327-4	22/04/2016
Date analysed	-	145327-28	22/04/2016 || 22/04/2016	145327-4	22/04/2016
Arsenic	mg/kg	145327-28	6 || 5 || RPD: 18	145327-4	100%
Cadmium	mg/kg	145327-28	<0.4 || <0.4	145327-4	98%
Chromium	mg/kg	145327-28	14 || 14 || RPD: 0	145327-4	100%
Copper	mg/kg	145327-28	97 || 170 || RPD: 55	145327-4	108%
Lead	mg/kg	145327-28	260 || 1600 || RPD: 144	145327-4	126%
Mercury	mg/kg	145327-28	0.6 || 0.7 || RPD: 15	145327-4	90%
Nickel	mg/kg	145327-28	12 || 10 || RPD: 18	145327-4	101%
Zinc	mg/kg	145327-28	350 || 310 || RPD: 12	145327-4	103%

Report Comments:

Acid Extractable Metals in Soil: The laboratory RPD acceptance criteria has been exceeded for 145327-28 for Cu, Pb. Therefore a triplicate result has been issued as laboratory sample number 145327-44.

TRH_S(semivol):# Percent recovery is not possible to report as the high concentration of analytes in the sample/s have caused interference.

PCB in soil: PQL has been raised due to interference from analytes(other than those being tested) in the sample/s.

Asbestos: Excessive sample volume was provided for asbestos analysis. A portion of the supplied sample was sub-sampled according to Envirolab procedures. We cannot guarantee that this sub-sample is indicative of the entire sample. Envirolab recommends supplying 40-50g (50mL) of sample in its own container as per AS4964-2004.
Note: Samples 145327-1 & 4 were sub-sampled from bags provided by the client.

Asbestos ID was analysed by Approved Identifier:	Not applicable for this job
Asbestos ID was authorised by Approved Signatory:	Not applicable for this job

INS: Insufficient sample for this test	PQL: Practical Quantitation Limit	NT: Not tested
NR: Test not required	RPD: Relative Percent Difference	NA: Test not required
<: Less than	>: Greater than	LCS: Laboratory Control Sample

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.

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: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.
Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-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.

SAMPLE RECEIPT ADVICE

Client Details	
Client	Environmental Investigation Services
Attention	

Sample Login Details	
Your Reference	E29319K, Wentworth Park South
Envirolab Reference	**145327**
Date Sample Received	21/04/2016
Date Instructions Received	21/04/2016
Date Results Expected to be Reported	**29/04/2016**

Sample Condition	
Samples received in appropriate condition for analysis	YES
No. of Samples Provided	43 soil
Turnaround Time Requested	Standard
Temperature on receipt (°C)	12.4
Cooling Method	Ice Pack
Sampling Date Provided	YES

Comments
Samples will be held for 1 month for water samples and 2 months for soil samples from date of receipt of samples

Please direct any queries to:

Phone:	Phone:
Fax:	Fax:
Email:	Email:

Sample and Testing Details on following page

Sample Id	*vTRH(C6-C10)/BTEXN in Soil*	*svTRH (C10-C40) in Soil*	*PAHs in Soil*	*Organochlorine Pesticides in soil*	*Organophosphorus Pesticides*	*PCBs in Soil*	*Acid Extractable metals in soil*	*Asbestos ID - soils*	*On Hold*
BH1-0.1-0.2	✓	✓	✓	✓	✓	✓	✓	✓	
BH1-0.8-1.0									✓
BH1-2.3-2.5									✓
BH2-0.1-0.2	✓	✓	✓	✓	✓	✓	✓	✓	
BH2-1.0-1.1									✓
BH2-2.7-3.15									✓
BH3-0.1-0.2	✓	✓	✓	✓	✓	✓	✓	✓	
BH3-1.0-1.1									✓
BH4-0.2-0.3	✓	✓	✓	✓	✓	✓	✓	✓	
BH4-0.5-0.95									✓
BH4-1.3-1.5									✓
BH3-2.0-2.2									✓
BH5-0.0-0.2									✓
BH5-0.7-1.0	✓	✓	✓	✓	✓	✓	✓	✓	
BH5-1.3-1.5									✓
BH6-0.0-0.2	✓	✓	✓	✓	✓	✓	✓	✓	
BH6-0.5-0.8									✓
BH6-1.3-1.5									✓
BH7-0.0-0.2	✓	✓	✓	✓	✓	✓	✓	✓	
BH7-0.7-1.0									✓
BH7-1.3-1.5									✓
BH8-0.0-0.2									✓
BH8-0.5-0.7	✓	✓	✓	✓	✓	✓	✓	✓	
BH8-1.3-1.5									✓
BH9-0.0-0.2	✓	✓	✓	✓	✓	✓	✓	✓	
BH9-0.5-0.7									✓
BH9-1.3-1.5									✓
BH10-0.25-0.5	✓	✓	✓	✓	✓	✓	✓	✓	
BH10-1.1-1.3									✓
BH11-0.05-0.3	✓	✓	✓	✓	✓	✓	✓	✓	
BH11-0.8-1.1									✓
BH12-0.25-0.5	✓	✓	✓	✓	✓	✓	✓	✓	
BH12-1.3-1.5									✓
BH12-0.0-0.2	✓	✓	✓	✓	✓	✓	✓	✓	
BH13-0.5-0.8									✓
BH14-0.0-0.2	✓	✓	✓	✓	✓	✓	✓	✓	
BH14-0.7-1.0									✓
BH15-0.0-0.2									✓
BH15-0.5-0.8	✓	✓	✓	✓	✓	✓	✓	✓	
BH15-1.3-1.5									✓
DupGFS1---									✓

Sample Id	*vTRH(C6-C10)/BTEXN in Soil*	*svTRH (C10-C40) in Soil*	*PAHs in Soil*	*Organochlorine Pesticides in soil*	*Organophosphorus Pesticides*	*PCBs in Soil*	*Acid Extractable metals in soil*	*Asbestos ID - soils*	*On Hold*
DupGFS3---	✓	✓	✓	✓	✓	✓	✓		
TBS---	✓								

SAMPLE AND CHAIN OF CUSTODY FORM

TO:		FROM:
ENVIROLAB SERVICES PTY LTD 12 ASHLEY STREET CHATSWOOD NSW 2067 P: (02) 99106200 F: (02) 99106201 Attention:	EIS Job Number: E29319K Date Results Required: STANDARD Page: 1 of 2	ENVIRONMENTAL INVESTIGATION SERVICES REAR OF 115 WICKS ROAD MACQUARIE PARK, NSW 2113 P: 02-9888 5000 F: 02-9888 5001 Attention:

Location: Wentworth Park South

Sampler: GF + NC

Sample Preserved in Esky on Ice

Tests Required

Date Sampled	Lab Ref:	Sample Number	Depth (m)	Sample Container	PID	Sample Description	Combo 6	Combo 6a	BTEX	Asbestos
20/4/16	1	BH1	0.1-0.2	G,A	0	Fill		X		
	2		0.8-1.0		0					
	3		2.3-2.5		0					
	4	BH2	0.1-0.2		0			X		
	5		1-1.1		0					
	6		2.7-3.15		0					
	7	BH3	0.1-0.2		0			X		
	8		1-1.1		0					
	9	BH4	0.2-0.3		0			X		
	10		0.5-0.95		0					
	11		1.3-1.5		0					
	12	BH3 (clean)	2-2.2		0					
	13	BA5	0-0.2		0					
	14		0.7-1.0		0			X		
	15		1.3-1.5		0					
	16	BH6	0-0.2		0			X		
	17		0.5-0.8		0					
	18		1.3-1.5		0					
	19	BH7	0-0.2		0			X		
	20		0.7-1.0		0					
	21		1.3-1.5		0					
	22	BH8	0-0.2		0					
	23		0.5-0.7		0			X		
	24		1.3-1.5		0					
	25	BH9	0-0.2		0			X		

145329

ENVIROLAB

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 145329

Date Received: 21/4/16

Time Received: 1700

Received by: JAG

Temp: Cool/Ambient

Cooling: Ice/Icepack

Security: Intact/Broken/None

Remarks (comments/detection limits required):
Please send Dup GFS2 to Envirolab sister lab as inter lab Dup.

Sample Containers:
G - 250mg Glass Jar
A - Ziplock Asbestos Bag
P - Plastic Bag

Relinquished By:	Date:	Time:	Received By:	Date:
	21/4/16	15:21	ELS Syd	21/4/16 1700

SAMPLE AND CHAIN OF CUSTODY FORM

TO:		FROM:
ENVIROLAB SERVICES PTY LTD	EIS Job Number: E29319K	ENVIRONMENTAL INVESTIGATION SERVICES
12 ASHLEY STREET		REAR OF 115 WICKS ROAD
CHATSWOOD NSW 2067	Date Results Required: STANDARD	MACQUARIE PARK, NSW 2113
P: (02) 99106200		P: 02-9888 5000 F: 02-9888 5001
F: (02) 99106201	Page: 2 of 2	
Attention:		Attention:

Location:	Wentworth Park South	Sample Preserved in Esky on Ice
Sampler:	GF + NC	Tests Required

Date Sampled	Lab Ref:	Sample Number	Depth (m)	Sample Container	PID	Sample Description	Combo 6	Combo 6a	BTEX	Asbestos
~~20/4/16~~										
20/4/16	26	BH9	0.5–0.7	G, A	0	Fill				
	27	↓	1.3–1.5		0					
	28	BH 10	0.25–0.5		0			X		
	29	↓	1.1–1.3		0					
	30	BH 11	0.05–0.3		0			X		
	31	↓	0.8–1.1		0					
	32	BH 12	0.25–0.5		0			X		
	33	↓	1.3–1.5		0					
	34	BH 13	0–0.2		0			X		
	35	↓	0.5–0.8		0					
	36	BH 14	0–0.2		0			X		
	37	↓	0.7–1.0		0					
	38	BH 15	0–0.2		0					
	39	↓	0.5–0.8		0			X		
	40	↓	1.3–1.5	↓	0	↓				
	41	Dup GFS1	—	G	—	Soil				
	*	Dup GFS2	—	↓	—	↓	X			
	42	Dup GFS3	—		—		X			
↓	43	TBS	—	↓	—	↓			X	

145327

Remarks (comments/detection limits required):
Please Send Dup GFS2 to Envirolab
Sister lab as Inter lab Dup

Sample Containers:
G - 250mg Glass Jar
A - Ziplock Asbestos Bag
P - Plastic Bag

Relinquished By:	Date:	Time:	Received By:	Date:
	21/4/16	15:21	ELS Syd	21/4/16 1700

12 Ashley Street, Chatswood, NSW 2067
tel: +61 2 9910 6200

email: sydney@envirolab.com.au
envirolab.com.au

Envirolab Services Pty Ltd - Sydney | ABN 37 112 535 645

CERTIFICATE OF ANALYSIS 145327-A

Client:
Environmental Investigation Services
PO Box 976
North Ryde BC
NSW 1670

Attention:

Sample log in details:

Your Reference:	**E29319K, Wentworth Park South**
No. of samples:	Additional Testing on 3 Soils
Date samples received / completed instructions received	21/04/2016 / 02/05/16

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: / Issue Date:	9/05/16 / 4/05/16
Date of Preliminary Report:	Not Issued

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Accredited for compliance with ISO/IEC 17025. **Tests not covered by NATA are denoted with *.**

Results Approved By:

Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil				
Our Reference:	UNITS	145327-A-13	145327-A-22	145327-A-38
Your Reference	---------- -	BH5	BH8	BH15
Depth	----------	0.0-0.2	0.0-0.2	0.0-0.2
Date Sampled		20/04/2016	20/04/2016	20/04/2016
Type of sample		soil	soil	soil
Date extracted	-	03/05/2016	03/05/2016	03/05/2016
Date analysed	-	04/05/2016	04/05/2016	04/05/2016
TRHC$_6$ - C$_9$	mg/kg	<25	<25	<25
TRHC$_6$ - C$_{10}$	mg/kg	<25	<25	<25
vTPHC$_6$ - C$_{10}$ less BTEX (F1)	mg/kg	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	86	84	90

svTRH (C10-C40) in Soil				
Our Reference:	UNITS	145327-A-13	145327-A-22	145327-A-38
Your Reference	----------	BH5	BH8	BH15
Depth	- ----------	0.0-0.2	0.0-0.2	0.0-0.2
Date Sampled		20/04/2016	20/04/2016	20/04/2016
Type of sample		soil	soil	soil
Date extracted	-	03/05/2016	03/05/2016	03/05/2016
Date analysed	-	03/05/2016	03/05/2016	03/05/2016
TRHC$_{10}$ - C$_{14}$	mg/kg	<50	<50	<50
TRHC$_{15}$ - C$_{28}$	mg/kg	<100	<100	140
TRHC$_{29}$ - C$_{36}$	mg/kg	<100	100	150
TRH>C$_{10}$-C$_{16}$	mg/kg	<50	<50	<50
TRH>C$_{10}$ - C$_{16}$ less Naphthalene (F2)	mg/kg	<50	<50	<50
TRH>C$_{16}$-C$_{34}$	mg/kg	<100	<100	250
TRH>C$_{34}$-C$_{40}$	mg/kg	110	<100	<100
Surrogate o-Terphenyl	%	81	92	93

PAHs in Soil Our Reference: Your Reference	UNITS ---------- -	145327-A-13 BH5	145327-A-22 BH8	145327-A-38 BH15
Depth	----------	0.0-0.2	0.0-0.2	0.0-0.2
Date Sampled		20/04/2016	20/04/2016	20/04/2016
Type of sample		soil	soil	soil
Date extracted	-	03/05/2016	03/05/2016	03/05/2016
Date analysed	-	03/05/2016	03/05/2016	03/05/2016
Naphthalene	mg/kg	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	0.1	0.5
Acenaphthene	mg/kg	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	0.1
Phenanthrene	mg/kg	<0.1	0.8	6.9
Anthracene	mg/kg	<0.1	0.2	1.5
Fluoranthene	mg/kg	0.2	2.1	10
Pyrene	mg/kg	0.2	2.1	9.6
Benzo(a)anthracene	mg/kg	0.1	1.2	5.6
Chrysene	mg/kg	0.2	1.2	4.2
Benzo(b,j+k)fluoranthene	mg/kg	0.3	2.0	7.4
Benzo(a)pyrene	mg/kg	0.2	1.2	4.9
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	0.7	2.8
Dibenzo(a,h)anthracene	mg/kg	<0.1	0.1	0.5
Benzo(g,h,i)perylene	mg/kg	0.1	0.7	2.7
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	1.7	7.0
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	1.7	7.0
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	1.7	7.0
Total Positive PAHs	mg/kg	1.4	12	57
Surrogate p-Terphenyl-d14	%	88	97	94

Organochlorine Pesticides in soil				
Our Reference:	UNITS	145327-A-13	145327-A-22	145327-A-38
Your Reference	----------	BH5	BH8	BH15
	-			
Depth	----------	0.0-0.2	0.0-0.2	0.0-0.2
Date Sampled		20/04/2016	20/04/2016	20/04/2016
Type of sample		soil	soil	soil
Date extracted	-	03/05/2016	03/05/2016	03/05/2016
Date analysed	-	03/05/2016	03/05/2016	03/05/2016
HCB	mg/kg	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	0.6
Endrin	mg/kg	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1
Surrogate TCMX	%	95	105	97

Organophosphorus Pesticides Our Reference: Your Reference	UNITS ---------- -	145327-A-13 BH5	145327-A-22 BH8	145327-A-38 BH15
Depth	----------	0.0-0.2	0.0-0.2	0.0-0.2
Date Sampled		20/04/2016	20/04/2016	20/04/2016
Type of sample		soil	soil	soil
Date extracted	-	03/05/2016	03/05/2016	03/05/2016
Date analysed	-	03/05/2016	03/05/2016	03/05/2016
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1
Surrogate TCMX	%	95	105	97

PCBs in Soil				
Our Reference:	UNITS	145327-A-13	145327-A-22	145327-A-38
Your Reference	----------	BH5	BH8	BH15
Depth	- ----------	0.0-0.2	0.0-0.2	0.0-0.2
Date Sampled		20/04/2016	20/04/2016	20/04/2016
Type of sample		soil	soil	soil
Date extracted	-	03/05/2016	03/05/2016	03/05/2016
Date analysed	-	03/05/2016	03/05/2016	03/05/2016
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1
Surrogate TCLMX	%	95	105	97

Acid Extractable metals in soil				
Our Reference:	UNITS	145327-A-13	145327-A-22	145327-A-38
Your Reference	----------	BH5	BH8	BH15
Depth	- ----------	0.0-0.2	0.0-0.2	0.0-0.2
Date Sampled		20/04/2016	20/04/2016	20/04/2016
Type of sample		soil	soil	soil
Date prepared	-	03/05/2016	03/05/2016	03/05/2016
Date analysed	-	03/05/2016	03/05/2016	03/05/2016
Arsenic	mg/kg	<4	5	4
Cadmium	mg/kg	<0.4	0.5	<0.4
Chromium	mg/kg	9	11	10
Copper	mg/kg	28	50	48
Lead	mg/kg	57	190	100
Mercury	mg/kg	0.1	0.4	0.3
Nickel	mg/kg	10	8	19
Zinc	mg/kg	66	160	160

Moisture Our Reference: Your Reference	UNITS ---------- -	145327-A-13 BH5	145327-A-22 BH8	145327-A-38 BH15
Depth	----------	0.0-0.2	0.0-0.2	0.0-0.2
Date Sampled		20/04/2016	20/04/2016	20/04/2016
Type of sample		soil	soil	soil
Date prepared	-	3/05/2016	3/05/2016	3/05/2016
Date analysed	-	4/05/2016	4/05/2016	4/05/2016
Moisture	%	16	30	11

Asbestos ID - soils				
Our Reference:	UNITS	145327-A-13	145327-A-22	145327-A-38
Your Reference	---------- -	BH5	BH8	BH15
Depth	----------	0.0-0.2	0.0-0.2	0.0-0.2
Date Sampled		20/04/2016	20/04/2016	20/04/2016
Type of sample		soil	soil	soil
Date analysed	-	4/05/2016	4/05/2016	4/05/2016
Sample mass tested	g	Approx. 55g	Approx. 25g	Approx. 50g
Sample Description	-	Brown fine-grained soil and rocks	Brown fine-grained soil and rocks	Brown fine-grained soil and rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected

Method ID	Methodology Summary
Org-016	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-014	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-003	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-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'TEQ 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. 'TEQ 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 contr bute to the TEQ calculation are present but below PQL. 3. 'TEQ half PQL' values are assuming all contr buting 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-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-008	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Metals-020 ICP-AES	Determination of various metals by ICP-AES.
Metals-021 CV-AAS	Determination of Mercury by Cold Vapour AAS.
Inorg-008	Moisture content determined by heating at 105+/-5 deg C for a minimum of 12 hours.
ASB-001	Asbestos ID - Qualitative identification of asbestos in bu k samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.

QUALITY CONTROL vTRH(C6-C10)/BTEXN in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Sp ke % Recovery
Date extracted	-			03/05/2016	[NT]	[NT]	LCS-1	03/05/2016
Date analysed	-			04/05/2016	[NT]	[NT]	LCS-1	04/05/2016
TRHC6 - C9	mg/kg	25	Org-016	<25	[NT]	[NT]	LCS-1	94%
TRHC6 - C10	mg/kg	25	Org-016	<25	[NT]	[NT]	LCS-1	94%
Benzene	mg/kg	0.2	Org-016	<0.2	[NT]	[NT]	LCS-1	90%
Toluene	mg/kg	0.5	Org-016	<0.5	[NT]	[NT]	LCS-1	96%
Ethy benzene	mg/kg	1	Org-016	<1	[NT]	[NT]	LCS-1	95%
m+p-xylene	mg/kg	2	Org-016	<2	[NT]	[NT]	LCS-1	95%
o-Xylene	mg/kg	1	Org-016	<1	[NT]	[NT]	LCS-1	93%
naphthalene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
Surrogate aaa-Trifluorotoluene	%		Org-016	94	[NT]	[NT]	LCS-1	104%
QUALITY CONTROL svTRH (C10-C40) in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Sp ke % Recovery
Date extracted	-			03/05/2016	[NT]	[NT]	LCS-1	03/05/2016
Date analysed	-			03/05/2016	[NT]	[NT]	LCS-1	03/05/2016
TRHC10 - C14	mg/kg	50	Org-003	<50	[NT]	[NT]	LCS-1	102%
TRHC15 - C28	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-1	107%
TRHC29 - C36	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-1	97%
TRH>C10-C16	mg/kg	50	Org-003	<50	[NT]	[NT]	LCS-1	102%
TRH>C16-C34	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-1	107%
TRH>C34-C40	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-1	97%
Surrogate o-Terphenyl	%		Org-003	82	[NT]	[NT]	LCS-1	96%
QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Sp ke % Recovery
Date extracted	-			03/05/2016	[NT]	[NT]	LCS-1	03/05/2016
Date analysed	-			03/05/2016	[NT]	[NT]	LCS-1	03/05/2016
Naphthalene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	LCS-1	97%
Acenaphthylene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NR]	[NR]
Acenaphthene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NR]	[NR]
Fluorene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	LCS-1	102%
Phenanthrene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	LCS-1	104%
Anthracene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NR]	[NR]
Fluoranthene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	LCS-1	89%
Pyrene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	LCS-1	93%
Benzo(a)anthracene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NR]	[NR]
Chrysene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	LCS-1	83%
Benzo(b,j +k)fluoranthene	mg/kg	0.2	Org-012	<0.2	[NT]	[NT]	[NR]	[NR]

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Sp ke % Recovery
Benzo(a)pyrene	mg/kg	0.05	Org-012	<0.05	[NT]	[NT]	LCS-1	110%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NR]	[NR]
Surrogate p-Terphenyl-d14	%		Org-012	88	[NT]	[NT]	LCS-1	109%
QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Sp ke % Recovery
Date extracted	-			03/05/2016	[NT]	[NT]	LCS-1	03/05/2016
Date analysed	-			03/05/2016	[NT]	[NT]	LCS-1	03/05/2016
HCB	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
alpha-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-1	70%
gamma-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
beta-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-1	81%
Heptachlor	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-1	85%
delta-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Aldrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-1	96%
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-1	84%
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Endosulfan I	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
pp-DDE	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-1	82%
Dieldrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-1	88%
Endrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-1	95%
pp-DDD	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-1	78%
Endosulfan II	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
pp-DDT	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-1	73%
Methoxychlor	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Surrogate TCMX	%		Org-005	99	[NT]	[NT]	LCS-1	115%

QUALITY CONTROL Organophosphorus Pesticides	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Sp ke % Recovery
Date extracted	-			03/05/2016	[NT]	[NT]	LCS-1	03/05/2016
Date analysed	-			03/05/2016	[NT]	[NT]	LCS-1	03/05/2016
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NR]	[NR]
Bromophos-ethyl	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NR]	[NR]
Chlorpyriphos	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	LCS-1	90%
Chlorpyriphos-methyl	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NR]	[NR]
Diazinon	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NR]	[NR]
Dichlorvos	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	LCS-1	102%
Dimethoate	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NR]	[NR]
Ethion	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	LCS-1	85%
Fenitrothion	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	LCS-1	87%
Malathion	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	LCS-1	80%
Parathion	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	LCS-1	91%
Ronnel	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	LCS-1	94%
Surrogate TCMX	%		Org-008	99	[NT]	[NT]	LCS-1	97%

QUALITY CONTROL PCBs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Sp ke % Recovery
Date extracted	-			03/05/2016	[NT]	[NT]	LCS-1	03/05/2016
Date analysed	-			03/05/2016	[NT]	[NT]	LCS-1	03/05/2016
Aroclor 1016	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Aroclor 1221	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Aroclor 1232	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Aroclor 1242	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Aroclor 1248	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Aroclor 1254	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	LCS-1	108%
Aroclor 1260	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Surrogate TCLMX	%		Org-006	99	[NT]	[NT]	LCS-1	97%

QUALITY CONTROL Acid Extractable metals in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Sp ke % Recovery
Date prepared	-			03/05/2016	[NT]	[NT]	LCS-1	03/05/2016
Date analysed	-			03/05/2016	[NT]	[NT]	LCS-1	03/05/2016
Arsenic	mg/kg	4	Metals-020 ICP-AES	<4	[NT]	[NT]	LCS-1	111%
Cadmium	mg/kg	0.4	Metals-020 ICP-AES	<0.4	[NT]	[NT]	LCS-1	104%
Chromium	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-1	109%
Copper	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-1	109%
Lead	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-1	103%
Mercury	mg/kg	0.1	Metals-021 CV-AAS	<0.1	[NT]	[NT]	LCS-1	88%
Nickel	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-1	102%
Zinc	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-1	105%

Report Comments:

Asbestos: A portion of the supplied sample was sub-sampled for asbestos analysis according to Envirolab procedures. We cannot guarantee that this sub-sample is indicative of the entire sample. Envirolab recommends supplying 40-50g of sample in its own container.

Note: Samples 145327-A-13,22,38 were sub-sampled from jars provided by the client.

Asbestos ID was analysed by Approved Identifier: Paul Ching

Asbestos ID was authorised by Approved Signatory: Lulu Scott

INS: Insufficient sample for this test
NR: Test not required
<: Less than

PQL: Practical Quantitation Limit
RPD: Relative Percent Difference
>: Greater than

NT: Not tested
NA: Test not required
LCS: Laboratory Control Sample

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.

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: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.
Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-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.

From:
Sent: Monday, 2 May 2016 10:47 AM
To:
Subject: Additional testing 145327 E29319K, Wentworth Park South

Hi

Could we please schedule the following additional testing from the above lab report on a standard turnaround please:

13 • BH5 (0-0.2m) Combo 6a;
22 • BH8 (0-0.2m) Combo 6a; and
38 • BH15 (0-0.2m) Combo 6a.

Envirolab Ref. 145327 A
DJe: 9/5/16
std TIA.

Regards,

Environmental Scientist

www.jkgroup.net.au
Environmental Investigation Services
CONSULTING ENVIRONMENTAL ENGINEERS AND SCIENTISTS
PO Box 976, North Ryde BC NSW 1670
115 Wicks Rd, Macquarie Park NSW 2113
T: +612 9888 5000 F: +612 9888 5001

12 Ashley Street, Chatswood, NSW 2067
tel: +61 2 9910 6200

email: sydney@envirolab.com.au
envirolab.com.au

Envirolab Services Pty Ltd - Sydney | ABN 37 112 535 645

CERTIFICATE OF ANALYSIS 145327-B

Client:
Environmental Investigation Services
PO Box 976
North Ryde BC
NSW 1670

Attention:

Sample log in details:

Your Reference:	**E29319K, Wentworth Park South**
No. of samples:	Additional Testing on 11 Soils
Date samples received / completed instructions received	21/04/2016 / 03/05/16

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: / Issue Date:	10/05/16 / 9/05/16
Date of Preliminary Report:	Not Issued

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Accredited for compliance with ISO/IEC 17025. **Tests not covered by NATA are denoted with *.**

Results Approved By:

Laboratory Manager

Metals in TCLP USEPA1311						
Our Reference:	UNITS	145327-B-1	145327-B-14	145327-B-16	145327-B-19	145327-B-23
Your Reference	---------- -	BH1	BH5	BH6	BH7	BH8
Depth	----------	0.1-0.2	0.7-1.0	0.0-0.2	0.0-0.2	0.5-0.7
Date Sampled		20/04/2016	20/04/2016	20/04/2016	20/04/2016	20/04/2016
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	04/05/2016	04/05/2016	04/05/2016	04/05/2016	04/05/2016
Date analysed	-	[NA]	04/05/2016	04/05/2016	04/05/2016	04/05/2016
pH of soil for fluid# determ.	pH units	6.1	7.7	5.7	8.5	7.4
pH of soil TCLP (after HCl)	pH units	1.7	1.8	1.6	1.7	1.6
Extraction fluid used	-	1	1	1	1	1
pH of final Leachate	pH units	5.0	5.0	5.0	5.0	5.2
Lead in TCLP	mg/L	[NA]	0.1	<0.03	0.08	0.06

Metals in TCLP USEPA1311						
Our Reference:	UNITS	145327-B-25	145327-B-28	145327-B-30	145327-B-32	145327-B-36
Your Reference	---------- -	BH9	BH10	BH11	BH12	BH14
Depth	----------	0.0-0.2	0.25-0.5	0.05-0.3	0.25-0.5	0.0-0.2
Date Sampled		20/04/2016	20/04/2016	20/04/2016	20/04/2016	20/04/2016
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	04/05/2016	04/05/2016	04/05/2016	04/05/2016	04/05/2016
Date analysed	-	04/05/2016	04/05/2016	04/05/2016	04/05/2016	04/05/2016
pH of soil for fluid# determ.	pH units	5.9	9.0	9.7	9.2	9.5
pH of soil TCLP (after HCl)	pH units	1.7	1.7	1.8	1.7	1.6
Extraction fluid used	-	1	1	1	1	1
pH of final Leachate	pH units	5.0	5.0	5.5	6.2	5.4
Lead in TCLP	mg/L	0.1	0.09	<0.03	0.1	0.07

Metals in TCLP USEPA1311		
Our Reference:	UNITS	145327-B-39
Your Reference	---------- -	BH15
Depth	----------	0.5-0.8
Date Sampled		20/04/2016
Type of sample		soil
Date extracted	-	04/05/2016
Date analysed	-	04/05/2016
pH of soil for fluid# determ.	pH units	8.1
pH of soil TCLP (after HCl)	pH units	1.6
Extraction fluid used	-	1
pH of final Leachate	pH units	5.4
Lead in TCLP	mg/L	0.2

PAHs in TCLP (USEPA 1311)						
Our Reference:	UNITS	145327-B-1	145327-B-14	145327-B-16	145327-B-19	145327-B-23
Your Reference	----------	BH1	BH5	BH6	BH7	BH8
Depth	- ----------	0.1-0.2	0.7-1.0	0.0-0.2	0.0-0.2	0.5-0.7
Date Sampled		20/04/2016	20/04/2016	20/04/2016	20/04/2016	20/04/2016
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	04/05/2016	04/05/2016	04/05/2016	04/05/2016	04/05/2016
Date analysed	-	04/05/2016	04/05/2016	04/05/2016	04/05/2016	04/05/2016
Naphthalene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Acenaphthylene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Acenaphthene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Fluorene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Phenanthrene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Anthracene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Fluoranthene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Pyrene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Benzo(a)anthracene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Chrysene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Benzo(bjk)fluoranthene in TCLP	mg/L	<0.002	<0.002	<0.002	<0.002	<0.002
Benzo(a)pyrene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Indeno(1,2,3-c,d)pyrene - TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Dibenzo(a,h)anthracene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Benzo(g,h,i)perylene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Total +ve PAH's	mg/L	NIL (+)VE	NIL (+)VE	NIL (+)VE	NIL (+)VE	NIL (+)VE
Surrogate p-Terphenyl-d14	%	100	102	97	103	103

PAHs in TCLP (USEPA 1311)						
Our Reference:	UNITS	145327-B-25	145327-B-28	145327-B-30	145327-B-32	145327-B-36
Your Reference	----------	BH9	BH10	BH11	BH12	BH14
Depth	- ----------	0.0-0.2	0.25-0.5	0.05-0.3	0.25-0.5	0.0-0.2
Date Sampled		20/04/2016	20/04/2016	20/04/2016	20/04/2016	20/04/2016
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	04/05/2016	04/05/2016	04/05/2016	04/05/2016	04/05/2016
Date analysed	-	04/05/2016	04/05/2016	04/05/2016	04/05/2016	04/05/2016
Naphthalene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Acenaphthylene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Acenaphthene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Fluorene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Phenanthrene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Anthracene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Fluoranthene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Pyrene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Benzo(a)anthracene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Chrysene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Benzo(bjk)fluoranthene in TCLP	mg/L	<0.002	<0.002	<0.002	<0.002	<0.002
Benzo(a)pyrene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Indeno(1,2,3-c,d)pyrene - TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Dibenzo(a,h)anthracene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Benzo(g,h,i)perylene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Total +ve PAH's	mg/L	NIL (+)VE	NIL (+)VE	NIL (+)VE	NIL (+)VE	NIL (+)VE
Surrogate p-Terphenyl-d14	%	104	97	97	119	106

PAHs in TCLP (USEPA 1311)		
Our Reference:	UNITS	145327-B-39
Your Reference	----------	BH15
	-	
Depth	----------	0.5-0.8
Date Sampled		20/04/2016
Type of sample		soil
Date extracted	-	04/05/2016
Date analysed	-	04/05/2016
Naphthalene in TCLP	mg/L	<0.001
Acenaphthylene in TCLP	mg/L	<0.001
Acenaphthene in TCLP	mg/L	<0.001
Fluorene in TCLP	mg/L	<0.001
Phenanthrene in TCLP	mg/L	<0.001
Anthracene in TCLP	mg/L	<0.001
Fluoranthene in TCLP	mg/L	<0.001
Pyrene in TCLP	mg/L	<0.001
Benzo(a)anthracene in TCLP	mg/L	<0.001
Chrysene in TCLP	mg/L	<0.001
Benzo(bjk)fluoranthene in TCLP	mg/L	<0.002
Benzo(a)pyrene in TCLP	mg/L	<0.001
Indeno(1,2,3-c,d)pyrene - TCLP	mg/L	<0.001
Dibenzo(a,h)anthracene in TCLP	mg/L	<0.001
Benzo(g,h,i)perylene in TCLP	mg/L	<0.001
Total +ve PAH's	mg/L	NIL (+)VE
Surrogate p-Terphenyl-d14	%	105

Method ID	Methodology Summary
Inorg-004	Toxicity Characteristic Leaching Procedure (TCLP) using in house method INORG-004.
EXTRACT.7	Toxicity Characteristic Leaching Procedure (TCLP).
Inorg-001	pH - Measured using pH meter and electrode in accordance with APHA latest edition, 4500-H+. Please note that the results for water analyses are indicative only, as analysis outside of the APHA storage times.
Metals-020 ICP-AES	Determination of various metals by ICP-AES.
Org-012	Leachates are extracted with Dichloromethane and analysed by GC-MS.
Org-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013.
Org-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS.

QUALITY CONTROL Metals in TCLP USEPA1311	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Sp ke % Recovery
Date extracted	-			04/05/2016	145327-B-25	04/05/2016 II 04/05/2016	LCS-W1	04/05/2016
Date analysed	-			04/05/2016	145327-B-25	04/05/2016 II 04/05/2016	LCS-W1	04/05/2016
Lead in TCLP	mg/L	0.03	Metals-020 ICP-AES	<0.03	145327-B-25	0.1 II 0.1 II RPD: 0	LCS-W1	94%
QUALITY CONTROL PAHs in TCLP (USEPA 1311)	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Sp ke % Recovery
Date extracted	-			04/05/2016	[NT]	[NT]	LCS-W1	04/05/2016
Date analysed	-			04/05/2016	[NT]	[NT]	LCS-W1	04/05/2016
Naphthalene in TCLP	mg/L	0.001	Org-012	<0.001	[NT]	[NT]	LCS-W1	70%
Acenaphthylene in TCLP	mg/L	0.001	Org-012	<0.001	[NT]	[NT]	[NR]	[NR]
Acenaphthene in TCLP	mg/L	0.001	Org-012	<0.001	[NT]	[NT]	[NR]	[NR]
Fluorene in TCLP	mg/L	0.001	Org-012	<0.001	[NT]	[NT]	LCS-W1	76%
Phenanthrene in TCLP	mg/L	0.001	Org-012	<0.001	[NT]	[NT]	LCS-W1	80%
Anthracene in TCLP	mg/L	0.001	Org-012	<0.001	[NT]	[NT]	[NR]	[NR]
Fluoranthene in TCLP	mg/L	0.001	Org-012	<0.001	[NT]	[NT]	LCS-W1	78%
Pyrene in TCLP	mg/L	0.001	Org-012	<0.001	[NT]	[NT]	LCS-W1	83%
Benzo(a)anthracene in TCLP	mg/L	0.001	Org-012	<0.001	[NT]	[NT]	[NR]	[NR]
Chrysene in TCLP	mg/L	0.001	Org-012	<0.001	[NT]	[NT]	LCS-W1	70%
Benzo(bjk)fluoranthene in TCLP	mg/L	0.002	Org-012	<0.002	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene in TCLP	mg/L	0.001	Org-012	<0.001	[NT]	[NT]	LCS-W1	91%
Indeno(1,2,3-c,d)pyrene -TCLP	mg/L	0.001	Org-012	<0.001	[NT]	[NT]	[NR]	[NR]
Dibenzo(a,h)anthracene in TCLP	mg/L	0.001	Org-012	<0.001	[NT]	[NT]	[NR]	[NR]
Benzo(g,h,i)perylene in TCLP	mg/L	0.001	Org-012	<0.001	[NT]	[NT]	[NR]	[NR]
Surrogate p-Terphenyl-d14	%		Org-012	119	[NT]	[NT]	LCS-W1	94%

Report Comments:

Asbestos ID was analysed by Approved Identifier:	Not applicable for this job
Asbestos ID was authorised by Approved Signatory:	Not applicable for this job

INS: Insufficient sample for this test	PQL: Practical Quantitation Limit	NT: Not tested
NR: Test not required	RPD: Relative Percent Difference	NA: Test not required
<: Less than	>: Greater than	LCS: Laboratory Control Sample

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.

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: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.
Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-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.

From:
Sent: Tuesday, 3 May 2016 8:33 AM
To:
Subject: 145327 E29319K, Wentworth Park South

Importance: High

Hi

Could we schedule the following additional testing from the above lab report on a standard turnaround please:

1 • BH1 (0.1-0.2m) TCLP PAHs;
14 • BH5 (0.7-1.0m) TCLP lead and PAHs;
16 • BH6 (0.0-0.2m) TCLP lead and PAHs;
19 • BH7 (0.0-0.2m) TCLP lead and PAHs;
23 • BH8 (0.5-0.7m) TCLP lead and PAHs;
25 • BH9 (0.0-0.2m) TCLP lead and PAHs;
28 • BH10 (0.25-0.5m) TCLP lead and PAHs;
30 • BH11 (0.05-0.3m) TCLP lead and PAHs;
32 • BH12 (0.25-0.5m) TCLP lead and PAHs;
36 • BH14 (0.0-0.2m) TCLP lead and PAHs; and
39 • BH15 (0.5-0.8m) TCLP lead and PAHs.

Envirolab Ref: 145327 B
Due: 10/5/16
Std TAT.

Regards,

Environmental Scientist

www.jkgroup.net.au

Environmental Investigation Services
CONSULTING ENVIRONMENTAL ENGINEERS AND SCIENTISTS
PO Box 976, North Ryde BC NSW 1670
115 Wicks Rd, Macquarie Park NSW 2113
T: +612 9888 5000 F: +612 9888 5001

12 Ashley Street, Chatswood, NSW 2067
tel: +61 2 9910 6200

email: sydney@envirolab.com.au
envirolab.com.au

Envirolab Services Pty Ltd - Sydney | ABN 37 112 535 645

CERTIFICATE OF ANALYSIS 145327-C

Client:
Environmental Investigation Services
PO Box 976
North Ryde BC
NSW 1670

Attention:

Sample log in details:

Your Reference:	**E29319K, Wentworth Park South**
No. of samples:	Additional Testing on 2 Soils
Date samples received / completed instructions received	21/04/2016 / 10/05/16

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: / Issue Date:	16/05/16 / 12/05/16
Date of Preliminary Report:	Not Issued

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Accredited for compliance with ISO/IEC 17025. **Tests not covered by NATA are denoted with *.**

Results Approved By:

Laboratory Manager

Metals in TCLP USEPA1311			
Our Reference:	UNITS	145327-C-22	145327-C-38
Your Reference	----------	BH8	BH15
	-		
Depth	----------	0.0-0.2	0.0-0.2
Date Sampled		20/04/2016	20/04/2016
Type of sample		soil	soil
Date extracted	-	11/05/2016	11/05/2016
Date analysed	-	11/05/2016	11/05/2016
pH of soil for fluid# determ.	pH units	5.0	5.0
pH of soil TCLP (after HCl)	pH units	1.3	1.3
Extraction fluid used	-	1	1
pH of final Leachate	pH units	5.0	5.0
Lead in TCLP	mg/L	0.04	[NA]

PAHs in TCLP (USEPA 1311)			
Our Reference:	UNITS	145327-C-22	145327-C-38
Your Reference	----------	BH8	BH15
	-		
Depth	----------	0.0-0.2	0.0-0.2
Date Sampled		20/04/2016	20/04/2016
Type of sample		soil	soil
Date extracted	-	11/05/2016	11/05/2016
Date analysed	-	11/05/2016	11/05/2016
Naphthalene in TCLP	mg/L	<0.001	<0.001
Acenaphthylene in TCLP	mg/L	<0.001	<0.001
Acenaphthene in TCLP	mg/L	<0.001	<0.001
Fluorene in TCLP	mg/L	<0.001	<0.001
Phenanthrene in TCLP	mg/L	<0.001	0.001
Anthracene in TCLP	mg/L	<0.001	<0.001
Fluoranthene in TCLP	mg/L	<0.001	<0.001
Pyrene in TCLP	mg/L	<0.001	<0.001
Benzo(a)anthracene in TCLP	mg/L	<0.001	<0.001
Chrysene in TCLP	mg/L	<0.001	<0.001
Benzo(bjk)fluoranthene in TCLP	mg/L	<0.002	<0.002
Benzo(a)pyrene in TCLP	mg/L	<0.001	<0.001
Indeno(1,2,3-c,d)pyrene - TCLP	mg/L	<0.001	<0.001
Dibenzo(a,h)anthracene in TCLP	mg/L	<0.001	<0.001
Benzo(g,h,i)perylene in TCLP	mg/L	<0.001	<0.001
Total +ve PAH's	mg/L	NIL (+)VE	0.001
Surrogate p-Terphenyl-d14	%	65	74

Method ID	Methodology Summary
Inorg-004	Toxicity Characteristic Leaching Procedure (TCLP) using in house method INORG-004.
EXTRACT.7	Toxicity Characteristic Leaching Procedure (TCLP).
Inorg-001	pH - Measured using pH meter and electrode in accordance with APHA latest edition, 4500-H+. Please note that the results for water analyses are indicative only, as analysis outside of the APHA storage times.
Metals-020 ICP-AES	Determination of various metals by ICP-AES.
Org-012	Leachates are extracted with Dichloromethane and analysed by GC-MS.
Org-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013.
Org-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS.

QUALITY CONTROL Metals in TCLP USEPA1311	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Sp ke % Recovery
Date extracted	-			11/05/2016	[NT]	[NT]	LCS-W1	11/05/2016
Date analysed	-			11/05/2016	[NT]	[NT]	LCS-W1	11/05/2016
Lead in TCLP	mg/L	0.03	Metals-020 ICP-AES	<0.03	[NT]	[NT]	LCS-W1	102%
QUALITY CONTROL PAHs in TCLP (USEPA 1311)	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Sp ke % Recovery
Date extracted	-			11/05/2016	[NT]	[NT]	LCS-W1	11/05/2016
Date analysed	-			11/05/2016	[NT]	[NT]	LCS-W1	11/05/2016
Naphthalene in TCLP	mg/L	0.001	Org-012	<0.001	[NT]	[NT]	LCS-W1	66%
Acenaphthylene in TCLP	mg/L	0.001	Org-012	<0.001	[NT]	[NT]	[NR]	[NR]
Acenaphthene in TCLP	mg/L	0.001	Org-012	<0.001	[NT]	[NT]	[NR]	[NR]
Fluorene in TCLP	mg/L	0.001	Org-012	<0.001	[NT]	[NT]	LCS-W1	72%
Phenanthrene in TCLP	mg/L	0.001	Org-012	<0.001	[NT]	[NT]	LCS-W1	81%
Anthracene in TCLP	mg/L	0.001	Org-012	<0.001	[NT]	[NT]	[NR]	[NR]
Fluoranthene in TCLP	mg/L	0.001	Org-012	<0.001	[NT]	[NT]	LCS-W1	72%
Pyrene in TCLP	mg/L	0.001	Org-012	<0.001	[NT]	[NT]	LCS-W1	75%
Benzo(a)anthracene in TCLP	mg/L	0.001	Org-012	<0.001	[NT]	[NT]	[NR]	[NR]
Chrysene in TCLP	mg/L	0.001	Org-012	<0.001	[NT]	[NT]	LCS-W1	68%
Benzo(bjk)fluoranthene in TCLP	mg/L	0.002	Org-012	<0.002	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene in TCLP	mg/L	0.001	Org-012	<0.001	[NT]	[NT]	LCS-W1	71%
Indeno(1,2,3-c,d)pyrene -TCLP	mg/L	0.001	Org-012	<0.001	[NT]	[NT]	[NR]	[NR]
Dibenzo(a,h)anthracene in TCLP	mg/L	0.001	Org-012	<0.001	[NT]	[NT]	[NR]	[NR]
Benzo(g,h,i)perylene in TCLP	mg/L	0.001	Org-012	<0.001	[NT]	[NT]	[NR]	[NR]
Surrogate p-Terphenyl-d14	%		Org-012	72	[NT]	[NT]	LCS-W1	74%

Report Comments:
Analysed outside of holding time

Asbestos ID was analysed by Approved Identifier:	Not applicable for this job
Asbestos ID was authorised by Approved Signatory:	Not applicable for this job

INS: Insufficient sample for this test	PQL: Practical Quantitation Limit	NT: Not tested
NR: Test not required	RPD: Relative Percent Difference	NA: Test not required
<: Less than	>: Greater than	LCS: Laboratory Control Sample

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.

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: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.
Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-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.

From:
Sent: Tuesday, 10 May 2016 8:24 AM
To:
Subject: 145327-B E29319K, Wentworth Park South

Importance: High

145327-C

Hi

Could we please schedule additional analysis of the below samples from the above lab report: Run 165.

- BH8 (0.0-0.2m) TCLP lead and PAHs; and -22
- BH15 (0.0-0.2m) TCLP PAHs - 38

Regards,

Environmental Scientist

www.jkgroup.net.au

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Envirolab Services (WA) Pty Ltd trading as
MPL Laboratories | ABN 53 140 099 207

CERTIFICATE OF ANALYSIS 179923

Client:
Environmental Investigation Services
115 Wicks Road
MACQUARIE PARK
NSW 2113

Attention:

Sample log in details:

Your Reference:	**E29319K**
No. of samples:	1 Soil
Date samples received:	27/04/2016
Date completed instructions received:	27/04/2016
Location:	

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 pages of this report for any comments relating to the results.

Report Details:

Date results requested by:	3/05/16
Date of Preliminary Report:	Not issued
Issue Date:	2/05/16

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Accredited for compliance with ISO/IEC 17025.
Tests not covered by NATA are denoted with *.

Results Approved By:

Operations Manager

svTRH(C10-C36) in soil Our Reference: Your Reference Type of sample	UNITS ---------- ----------	179923-1 DUP G FS2 Soil
Date extracted	-	28/04/2016
Date analysed	-	28/04/2016
TRH C_{10} - C_{14}	mg/kg	<50
TRH C_{15} - C_{28}	mg/kg	<100
TRH C_{29} - C_{36}	mg/kg	<100
TRH >C_{10} - C_{16}	mg/kg	<50
TRH >C_{10}-C_{16} less N (F2)	mg/kg	<50
TRH >C_{16} - C_{34}	mg/kg	130
TRH >C_{34} - C_{40}	mg/kg	<100
Surrogate o-Terphenyl	%	98

vTRH(C6-C10)/MBTEXN in soil Our Reference: Your Reference Type of sample	UNITS ---------- ----------	179923-1 DUP G FS2 Soil
Date extracted	-	28/04/2016
Date analysed	-	29/04/2016
TRHC$_6$ - C$_9$	mg/kg	<25
TRHC$_6$ - C$_{10}$	mg/kg	<25
TRHC$_6$-C$_{10}$ less BTEX (F1)	mg/kg	<25
MTBE	mg/kg	<0.5
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
Surrogate aaa-Trifluorotoluene	%	91

PAHs in Soil Our Reference: Your Reference Type of sample	UNITS ---------- ----------	179923-1 DUP G FS2 Soil
Date extracted	-	28/04/2016
Date analysed	-	29/04/2016
Naphthalene	mg/kg	<0.1
Acenaphthylene	mg/kg	0.1
Acenaphthene	mg/kg	<0.1
Fluorene	mg/kg	0.1
Phenanthrene	mg/kg	1.5
Anthracene	mg/kg	0.4
Fluoranthene	mg/kg	4.2
Pyrene	mg/kg	4.0
Benzo(a)anthracene	mg/kg	2.0
Chrysene	mg/kg	1.8
Benzo(b,j+k)fluoranthene	mg/kg	3.9
Benzo(a)pyrene	mg/kg	2.1
Indeno(1,2,3-c,d)pyrene	mg/kg	1.2
Dibenzo(a,h)anthracene	mg/kg	0.2
Benzo(g,h,i)perylene	mg/kg	1.1
Benzo(a)pyrene TEQ calc (zero)	mg/kg	3.1
Benzo(a)pyrene TEQ calc(half)	mg/kg	3.1
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	3.1
Total Positive PAHs	mg/kg	23
p-Terphenyl-D_{14}	%	105

Acid Extractable metals in soil Our Reference: Your Reference Type of sample	UNITS ---------- ----------	179923-1 DUP G FS2 Soil
Date digested	-	28/04/2016
Date analysed	-	5/02/2016
Arsenic	mg/kg	5
Cadmium	mg/kg	0.5
Chromium	mg/kg	11
Copper	mg/kg	34
Lead	mg/kg	150
Mercury	mg/kg	0.4
Nickel	mg/kg	7
Zinc	mg/kg	900

Organochlorine Pesticides in soil Our Reference: Your Reference Type of sample	UNITS ---------- ----------	179923-1 DUP G FS2 Soil
Date extracted	-	28/04/2016
Date analysed	-	29/04/2016
Hexachlorobenzene (HCB)	mg/kg	<0.1
a-BHC	mg/kg	<0.1
b-BHC	mg/kg	<0.1
Lindane (g-BHC)	mg/kg	<0.1
d-BHC	mg/kg	<0.1
Heptachlor	mg/kg	<0.1
Aldrin	mg/kg	<0.1
Heptachlor Epoxide	mg/kg	<0.1
a-Chlordane	mg/kg	<0.1
g-Chlordane	mg/kg	<0.1
a-Endosulphan	mg/kg	<0.1
p,p'-DDE	mg/kg	<0.1
Dieldrin	mg/kg	<0.1
Endrin	mg/kg	<0.1
p,p`-DDD	mg/kg	<0.1
b-Endosulphan	mg/kg	<0.1
Endrin Aldehyde	mg/kg	<0.1
Endosulfan Sulphate	mg/kg	<0.1
p,p'-DDT	mg/kg	<0.1
Endrin Ketone	mg/kg	<0.1
Methoxychlor	mg/kg	<0.1

Organophosphorus Pesticides Our Reference: Your Reference Type of sample	UNITS ---------- ----------	179923-1 DUP G FS2 Soil
Date extracted	-	28/04/2016
Date analysed	-	29/04/2016
Diazinon (Dimpylate)	mg/kg	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1
Ronnel	mg/kg	<0.1
Fenitrothion	mg/kg	<0.1
Malathion (Maldison)	mg/kg	<0.1
Chlorpyrifos (ethyl)	mg/kg	<0.1
Parathion (ethyl)	mg/kg	<0.1
Ethion	mg/kg	<0.1
Bromophos Ethyl	mg/kg	<0.1
Dimethoate	mg/kg	<0.1
Dichlorvos	mg/kg	<0.1
Azinphos Methyl (Guthion)	mg/kg	<0.1
p-Terphenyl-D_{14}	%	105

PCBs in Soil Our Reference: Your Reference Type of sample	UNITS ---------- ----------	179923-1 DUP G FS2 Soil
Date extracted	-	28/04/2016
Date analysed	-	29/04/2016
Arochlor 1016	mg/kg	<0.1
Arochlor 1221	mg/kg	<0.1
Arochlor 1232	mg/kg	<0.1
Arochlor 1242	mg/kg	<0.1
Arochlor 1248	mg/kg	<0.1
Arochlor 1254	mg/kg	<0.1
Arochlor 1260	mg/kg	<0.1

Moisture		
Our Reference:	UNITS	179923-1
Your Reference	----------	DUP G FS2
Type of sample	----------	Soil
Date prepared	-	28/04/2016
Date analysed	-	29/04/2016
Moisture	%	23

Method ID	Methodology Summary
ORG-003	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-016	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-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM draft B1 Guideline on Investigation Levels for Soil and Groundwater.
ORG-012	For soil results:- 1. 'TEQ 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. 'TEQ 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 contr bute to the TEQ calculation are present but below PQL. 3. 'TEQ half PQL' values are assuming all contr buting 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-004	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS.
METALS-020	Metals in soil and water by ICP-OES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
ORG-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS.
ORG-008/015	Organophosphorus Pesticides in soil by DCM:Acetone extraction and water by DCM extraction with determination by GC-ECD/GC-MS.
ORG-008	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
ORG-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
INORG-008	Moisture content determined by heating at 105 deg C for a minimum of 12 hours.

QUALITY CONTROL svTRH(C10-C36) in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			28/04/2016	[NT]	[NT]	LCS-1	28/04/2016
Date analysed	-			28/04/2016	[NT]	[NT]	LCS-1	28/04/2016
TRHC$_{10}$ - C$_{14}$	mg/kg	50	ORG-003	<50	[NT]	[NT]	LCS-1	98%
TRHC$_{15}$ - C$_{28}$	mg/kg	100	ORG-003	<100	[NT]	[NT]	LCS-1	117%
TRHC$_{29}$ - C$_{36}$	mg/kg	100	ORG-003	<100	[NT]	[NT]	LCS-1	106%
TRH>C$_{10}$ - C$_{16}$	mg/kg	50	ORG-003	<50	[NT]	[NT]	LCS-1	110%
TRH>C$_{16}$ - C$_{34}$	mg/kg	100	ORG-003	<100	[NT]	[NT]	LCS-1	114%
TRH>C$_{34}$ - C$_{40}$	mg/kg	100	ORG-003	<100	[NT]	[NT]	LCS-1	111%
Surrogate o-Terphenyl	%		ORG-003	99	[NT]	[NT]	LCS-1	101%
QUALITY CONTROL vTRH(C6-C10)/MBTEXN in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			28/04/2016	[NT]	[NT]	LCS-1	28/04/2016
Date analysed	-			29/04/2016	[NT]	[NT]	LCS-1	29/04/2016
TRHC$_{6}$ - C$_{9}$	mg/kg	25	ORG-016	<25	[NT]	[NT]	LCS-1	93%
TRHC$_{6}$ - C$_{10}$	mg/kg	25	ORG-016	<25	[NT]	[NT]	LCS-1	93%
MTBE	mg/kg	0.5	ORG-016	<0.5	[NT]	[NT]	[NR]	[NR]
Benzene	mg/kg	0.2	ORG-016	<0.2	[NT]	[NT]	LCS-1	95%
Toluene	mg/kg	0.5	ORG-016	<0.5	[NT]	[NT]	LCS-1	94%
Ethylbenzene	mg/kg	1	ORG-016	<1	[NT]	[NT]	LCS-1	88%
m+p-xylene	mg/kg	2	ORG-016	<2	[NT]	[NT]	LCS-1	94%
o-xylene	mg/kg	1	ORG-016	<1	[NT]	[NT]	LCS-1	87%
Naphthalene	mg/kg	1	ORG-016	<1	[NT]	[NT]	[NR]	[NR]
Surrogate aaa-Trifluorotoluene	%		ORG-016	104	[NT]	[NT]	LCS-1	101%

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			28/04/2016	[NT]	[NT]	LCS-1	28/04/2016
Date analysed	-			29/04/2016	[NT]	[NT]	LCS-1	29/04/2016
Naphthalene	mg/kg	0.1	ORG-012	<0.1	[NT]	[NT]	LCS-1	98%
Acenaphthylene	mg/kg	0.1	ORG-012	<0.1	[NT]	[NT]	[NR]	[NR]
Acenaphthene	mg/kg	0.1	ORG-012	<0.1	[NT]	[NT]	[NR]	[NR]
Fluorene	mg/kg	0.1	ORG-012	<0.1	[NT]	[NT]	LCS-1	100%
Phenanthrene	mg/kg	0.1	ORG-012	<0.1	[NT]	[NT]	LCS-1	93%
Anthracene	mg/kg	0.1	ORG-012	<0.1	[NT]	[NT]	[NR]	[NR]
Fluoranthene	mg/kg	0.1	ORG-012	<0.1	[NT]	[NT]	LCS-1	103%
Pyrene	mg/kg	0.1	ORG-012	<0.1	[NT]	[NT]	LCS-1	103%
Benzo(a)anthracene	mg/kg	0.1	ORG-012	<0.1	[NT]	[NT]	[NR]	[NR]
Chrysene	mg/kg	0.1	ORG-012	<0.1	[NT]	[NT]	LCS-1	100%
Benzo(b,j+k) fluoranthene	mg/kg	0.2	ORG-012	<0.2	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene	mg/kg	0.05	ORG-012	<0.05	[NT]	[NT]	LCS-1	106%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	ORG-012	<0.1	[NT]	[NT]	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	0.1	ORG-012	<0.1	[NT]	[NT]	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	0.1	ORG-012	<0.1	[NT]	[NT]	[NR]	[NR]
p-Terphenyl-D_{14}	%		ORG-012	101	[NT]	[NT]	LCS-1	101%

QUALITY CONTROL Acid Extractable metals in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date digested	-			5/02/2016	[NT]	[NT]	LCS-1	5/02/2016
Date analysed	-			5/02/2016	[NT]	[NT]	LCS-1	5/02/2016
Arsenic	mg/kg	2	METALS-020	<2	[NT]	[NT]	LCS-1	95%
Cadmium	mg/kg	0.4	METALS-020	<0.4	[NT]	[NT]	LCS-1	100%
Chromium	mg/kg	1	METALS-020	<1	[NT]	[NT]	LCS-1	101%
Copper	mg/kg	1	METALS-020	<1	[NT]	[NT]	LCS-1	105%
Lead	mg/kg	1	METALS-020	<1	[NT]	[NT]	LCS-1	100%
Mercury	mg/kg	0.1	Metals-021	<0.1	[NT]	[NT]	LCS-1	96%
Nickel	mg/kg	1	METALS-020	<1	[NT]	[NT]	LCS-1	102%
Zinc	mg/kg	1	METALS-020	<1	[NT]	[NT]	LCS-1	100%

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			28/04/2016	[NT]	[NT]	LCS-1	28/04/2016
Date analysed	-			29/04/2016	[NT]	[NT]	LCS-1	29/04/2016
Hexachlorobenzene (HCB)	mg/kg	0.1	ORG-012	<0.1	[NT]	[NT]	[NR]	[NR]
a-BHC	mg/kg	0.1	ORG-012	<0.1	[NT]	[NT]	LCS-1	102%
b-BHC	mg/kg	0.1	ORG-012	<0.1	[NT]	[NT]	LCS-1	115%
Lindane (g-BHC)	mg/kg	0.1	ORG-012	<0.1	[NT]	[NT]	[NR]	[NR]
d-BHC	mg/kg	0.1	ORG-012	<0.1	[NT]	[NT]	[NR]	[NR]
Heptachlor	mg/kg	0.1	ORG-012	<0.1	[NT]	[NT]	LCS-1	99%
Aldrin	mg/kg	0.1	ORG-012	<0.1	[NT]	[NT]	LCS-1	99%
Heptachlor Epoxide	mg/kg	0.1	ORG-012	<0.1	[NT]	[NT]	LCS-1	108%
a-Chlordane	mg/kg	0.1	ORG-012	<0.1	[NT]	[NT]	[NR]	[NR]
g-Chlordane	mg/kg	0.1	ORG-012	<0.1	[NT]	[NT]	[NR]	[NR]
a-Endosulphan	mg/kg	0.1	ORG-012	<0.1	[NT]	[NT]	[NR]	[NR]
p,p'-DDE	mg/kg	0.1	ORG-012	<0.1	[NT]	[NT]	LCS-1	107%
Dieldrin	mg/kg	0.1	ORG-012	<0.1	[NT]	[NT]	LCS-1	101%
Endrin	mg/kg	0.1	ORG-012	<0.1	[NT]	[NT]	LCS-1	88%
p,p`-DDD	mg/kg	0.1	ORG-012	<0.1	[NT]	[NT]	[NR]	[NR]
b-Endosulphan	mg/kg	0.1	ORG-012	<0.1	[NT]	[NT]	[NR]	[NR]
Endrin Aldehyde	mg/kg	0.1	ORG-012	<0.1	[NT]	[NT]	[NR]	[NR]
Endosulfan Sulphate	mg/kg	0.1	ORG-012	<0.1	[NT]	[NT]	LCS-1	126%
p,p'-DDT	mg/kg	0.1	ORG-012	<0.1	[NT]	[NT]	[NR]	[NR]
Endrin Ketone	mg/kg	0.1	ORG-012	<0.1	[NT]	[NT]	[NR]	[NR]
Methoxychlor	mg/kg	0.1	ORG-012	<0.1	[NT]	[NT]	[NR]	[NR]

QUALITY CONTROL Organophosphorus Pesticides	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			28/04/2016	[NT]	[NT]	LCS-1	28/04/2016
Date analysed	-			29/04/2016	[NT]	[NT]	LCS-1	29/04/2016
Diazinon (Dimpylate)	mg/kg	0.1	ORG-008/015	<0.1	[NT]	[NT]	[NR]	[NR]
Chlorpyrifos-methyl	mg/kg	0.1	ORG-008/015	<0.1	[NT]	[NT]	LCS-1	121%
Ronnel	mg/kg	0.1	ORG-008/015	<0.1	[NT]	[NT]	[NR]	[NR]
Fenitrothion	mg/kg	0.1	ORG-008/015	<0.1	[NT]	[NT]	LCS-1	138%
Malathion (Maldison)	mg/kg	0.1	ORG-008/015	<0.1	[NT]	[NT]	[NR]	[NR]
Chlorpyrifos (ethyl)	mg/kg	0.1	ORG-008/015	<0.1	[NT]	[NT]	LCS-1	119%
Parathion (ethyl)	mg/kg	0.1	ORG-008/015	<0.1	[NT]	[NT]	[NR]	[NR]
Ethion	mg/kg	0.1	ORG-008/015	<0.1	[NT]	[NT]	[NR]	[NR]
Bromophos Ethyl	mg/kg	0.1	ORG-008/015	<0.1	[NT]	[NT]	[NR]	[NR]
Dimethoate	mg/kg	0.1	ORG-008/015	<0.1	[NT]	[NT]	[NR]	[NR]
Dichlorvos	mg/kg	0.1	ORG-008	<0.1	[NT]	[NT]	[NR]	[NR]
Azinphos Methyl (Guthion)	mg/kg	0.1	ORG-008	<0.1	[NT]	[NT]	[NR]	[NR]
p-Terphenyl-D_{14}	%		ORG-008/015	101	[NT]	[NT]	LCS-1	101%

QUALITY CONTROL PCBs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			28/04/2016	[NT]	[NT]	LCS-1	28/04/2016
Date analysed	-			29/04/2016	[NT]	[NT]	LCS-1	29/04/2016
Arochlor 1016	mg/kg	0.1	ORG-006	<0.1	[NT]	[NT]	[NR]	[NR]
Arochlor 1221	mg/kg	0.1	ORG-006	<0.1	[NT]	[NT]	[NR]	[NR]
Arochlor 1232	mg/kg	0.1	ORG-006	<0.1	[NT]	[NT]	[NR]	[NR]
Arochlor 1242	mg/kg	0.1	ORG-006	<0.1	[NT]	[NT]	[NR]	[NR]
Arochlor 1248	mg/kg	0.1	ORG-006	<0.1	[NT]	[NT]	[NR]	[NR]
Arochlor 1254	mg/kg	0.1	ORG-006	<0.1	[NT]	[NT]	[NR]	[NR]
Arochlor 1260	mg/kg	0.1	ORG-006	<0.1	[NT]	[NT]	[NR]	[NR]

QUALITY CONTROL Moisture	UNITS	PQL	METHOD	Blank
Date prepared	-			28/04/2016
Date analysed	-			29/04/2016
Moisture	%	0.1	INORG-008	<0.10

QUALITY CONTROL svTRH(C10-C36) in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Sp ke % Recovery
Date extracted	-	[NT]	[NT]	179923-1	28/04/2016
Date analysed	-	[NT]	[NT]	179923-1	28/04/2016
TRHC$_{10}$ - C$_{14}$	mg/kg	[NT]	[NT]	179923-1	94%
TRHC$_{15}$ - C$_{28}$	mg/kg	[NT]	[NT]	179923-1	120%
TRHC$_{29}$ - C$_{36}$	mg/kg	[NT]	[NT]	179923-1	89%
TRH>C$_{10}$ - C$_{16}$	mg/kg	[NT]	[NT]	179923-1	107%
TRH>C$_{16}$ - C$_{34}$	mg/kg	[NT]	[NT]	179923-1	122%
TRH>C$_{34}$ - C$_{40}$	mg/kg	[NT]	[NT]	179923-1	89%
Surrogate o-Terphenyl	%	[NT]	[NT]	179923-1	108%

QUALITY CONTROL vTRH(C6-C10)/MBTEXN in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Sp ke % Recovery
Date extracted	-	[NT]	[NT]	179923-1	28/04/2016
Date analysed	-	[NT]	[NT]	179923-1	29/04/2016
TRHC$_{6}$ - C$_{9}$	mg/kg	[NT]	[NT]	179923-1	92%
TRHC$_{6}$ - C$_{10}$	mg/kg	[NT]	[NT]	179923-1	92%
MTBE	mg/kg	[NT]	[NT]	[NR]	[NR]
Benzene	mg/kg	[NT]	[NT]	179923-1	93%
Toluene	mg/kg	[NT]	[NT]	179923-1	92%
Ethy benzene	mg/kg	[NT]	[NT]	179923-1	88%
m+p-xylene	mg/kg	[NT]	[NT]	179923-1	93%
o-xylene	mg/kg	[NT]	[NT]	179923-1	92%

QUALITY CONTROL vTRH(C6-C10)/MBTEXN in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Sp ke % Recovery
Naphthalene	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate aaa-Trifluorotoluene	%	[NT]	[NT]	179923-1	92%
QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Sp ke % Recovery
Date extracted	-	[NT]	[NT]	179923-1	28/04/2016
Date analysed	-	[NT]	[NT]	179923-1	29/04/2016
Naphthalene	mg/kg	[NT]	[NT]	179923-1	108%
Acenaphthylene	mg/kg	[NT]	[NT]	[NR]	[NR]
Acenaphthene	mg/kg	[NT]	[NT]	[NR]	[NR]
Fluorene	mg/kg	[NT]	[NT]	179923-1	125%
Phenanthrene	mg/kg	[NT]	[NT]	179923-1	*
Anthracene	mg/kg	[NT]	[NT]	[NR]	[NR]
Fluoranthene	mg/kg	[NT]	[NT]	179923-1	*
Pyrene	mg/kg	[NT]	[NT]	179923-1	*
Benzo(a)anthracene	mg/kg	[NT]	[NT]	[NR]	[NR]
Chrysene	mg/kg	[NT]	[NT]	179923-1	*
Benzo(b,j+k)fluoranthene	mg/kg	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene	mg/kg	[NT]	[NT]	179923-1	*
Indeno(1,2,3-c,d)pyrene	mg/kg	[NT]	[NT]	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	[NT]	[NT]	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	[NT]	[NT]	[NR]	[NR]
p-Terphenyl-D_{14}	%	[NT]	[NT]	179923-1	106%

QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Sp ke % Recovery
Date digested	-	[NT]	[NT]	179923-1	28/04/2016
Date analysed	-	[NT]	[NT]	179923-1	5/02/2016
Arsenic	mg/kg	[NT]	[NT]	179923-1	99%
Cadmium	mg/kg	[NT]	[NT]	179923-1	97%
Chromium	mg/kg	[NT]	[NT]	179923-1	107%
Copper	mg/kg	[NT]	[NT]	179923-1	127%
Lead	mg/kg	[NT]	[NT]	179923-1	130%
Mercury	mg/kg	[NT]	[NT]	179923-1	103%
Nickel	mg/kg	[NT]	[NT]	179923-1	103%
Zinc	mg/kg	[NT]	[NT]	179923-1	127%
QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Sp ke % Recovery
Date extracted	-	[NT]	[NT]	179923-1	28/04/2016
Date analysed	-	[NT]	[NT]	179923-1	29/04/2016
Hexachlorobenzene (HCB)	mg/kg	[NT]	[NT]	[NR]	[NR]
a-BHC	mg/kg	[NT]	[NT]	179923-1	106%
b-BHC	mg/kg	[NT]	[NT]	179923-1	111%
Lindane (g-BHC)	mg/kg	[NT]	[NT]	[NR]	[NR]
d-BHC	mg/kg	[NT]	[NT]	[NR]	[NR]
Heptachlor	mg/kg	[NT]	[NT]	179923-1	109%
Aldrin	mg/kg	[NT]	[NT]	179923-1	109%
Heptachlor Epoxide	mg/kg	[NT]	[NT]	179923-1	115%
a-Chlordane	mg/kg	[NT]	[NT]	[NR]	[NR]
g-Chlordane	mg/kg	[NT]	[NT]	[NR]	[NR]
a-Endosulphan	mg/kg	[NT]	[NT]	[NR]	[NR]
p,p'-DDE	mg/kg	[NT]	[NT]	179923-1	115%
Dieldrin	mg/kg	[NT]	[NT]	179923-1	109%
Endrin	mg/kg	[NT]	[NT]	179923-1	111%
p,p`-DDD	mg/kg	[NT]	[NT]	[NR]	[NR]
b-Endosulphan	mg/kg	[NT]	[NT]	[NR]	[NR]
Endrin Aldehyde	mg/kg	[NT]	[NT]	[NR]	[NR]
Endosulfan Sulphate	mg/kg	[NT]	[NT]	179923-1	137%
p,p'-DDT	mg/kg	[NT]	[NT]	[NR]	[NR]
Endrin Ketone	mg/kg	[NT]	[NT]	[NR]	[NR]
Methoxychlor	mg/kg	[NT]	[NT]	[NR]	[NR]

QUALITY CONTROL Organophosphorus Pesticides	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Sp ke % Recovery
Date extracted	-	[NT]	[NT]	179923-1	28/04/2016
Date analysed	-	[NT]	[NT]	179923-1	29/04/2016
Diazinon (Dimpylate)	mg/kg	[NT]	[NT]	[NR]	[NR]
Chlorpyrifos-methyl	mg/kg	[NT]	[NT]	179923-1	130%
Ronnel	mg/kg	[NT]	[NT]	[NR]	[NR]
Fenitrothion	mg/kg	[NT]	[NT]	[NR]	[NR]
Malathion (Maldison)	mg/kg	[NT]	[NT]	[NR]	[NR]
Chlorpyrifos (ethyl)	mg/kg	[NT]	[NT]	179923-1	127%
Parathion (ethyl)	mg/kg	[NT]	[NT]	[NR]	[NR]
Ethion	mg/kg	[NT]	[NT]	[NR]	[NR]
Bromophos Ethyl	mg/kg	[NT]	[NT]	[NR]	[NR]
Dimethoate	mg/kg	[NT]	[NT]	[NR]	[NR]
Dichlorvos	mg/kg	[NT]	[NT]	[NR]	[NR]
Azinphos Methyl (Guthion)	mg/kg	[NT]	[NT]	[NR]	[NR]
p-Terphenyl-D_{14}	%	[NT]	[NT]	179923-1	106%
QUALITY CONTROL PCBs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Sp ke % Recovery
Date extracted	-	[NT]	[NT]	179923-1	28/04/2016
Date analysed	-	[NT]	[NT]	179923-1	29/04/2016
Arochlor 1016	mg/kg	[NT]	[NT]	[NR]	[NR]
Arochlor 1221	mg/kg	[NT]	[NT]	[NR]	[NR]
Arochlor 1232	mg/kg	[NT]	[NT]	[NR]	[NR]
Arochlor 1242	mg/kg	[NT]	[NT]	[NR]	[NR]
Arochlor 1248	mg/kg	[NT]	[NT]	[NR]	[NR]
Arochlor 1254	mg/kg	[NT]	[NT]	[NR]	[NR]
Arochlor 1260	mg/kg	[NT]	[NT]	[NR]	[NR]

Report Comments:

* Percent recovery is not possible to report as the high concentration of analytes in the sample/s have caused interference.

Asbestos Signatories:

Asbestos was analysed by Approved Identifier: Not applicable for this job
Airborne fibres were analysed by Approved Counter: Not applicable for this job

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

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

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.

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: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.
Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-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.

mpl Laboratories
Part of the Envirolab Group ENVIROLAB
16 - 18 Hayden Court, Myaree, Western Australia 6154
PO Box 4023 Myaree BC, Western Australia 6960
Tel: +61 8 9317 2505 / Fax: +61 8 9317 4163
email: laboratory@mpl.com.au
www.mpl.com.au
Envirolab Services (WA) Pty Ltd ABN 53 140 099 207

SAMPLE RECEIPT ADVICE

Client Details	
Client	Environmental Investigation Services
Attention	

Sample Login Details	
Your Reference	E29319K
Envirolab Reference	**179923**
Date Sample Received	27/04/2016
Date Instructions Received	27/04/2016
Date Results Expected to be Reported	**03/05/2016**

Sample Condition	
Samples received in appropriate condition for analysis	YES
No. of Samples Provided	1 Soil
Turnaround Time Requested	Standard
Temperature on receipt (°C)	18
Cooling Method	Ice Pack
Sampling Date Provided	Not Provided on COC

Comments
Samples will be held for 1 month for water samples and 2 months for soil samples from date of receipt of samples

Please direct any queries to:

Phone:	Phone:
Fax:	Fax:
Email:	Email:

Sample and Testing Details on following page

Part of the Envirolab Group

16 - 18 Hayden Court, Myaree, Western Australia 6154
PO Box 4023 Myaree BC, Western Australia 6960
Tel: +61 8 9317 2505 / Fax: +61 8 9317 4163
email: laboratory@mpl.com.au
www.mpl.com.au
Envirolab Services (WA) Pty Ltd ABN 53 140 099 207

Sample Id	svTRH(C10-C36) in soil	vTRH(C6-C10)/MBTEXN in soil	PAHs in Soil	Acid Extractable metals in soil	Organochlorine Pesticides in soil	Organophosphorus Pesticides	PCBs in Soil
DUP G FS2	✓	✓	✓	✓	✓	✓	✓

SAMPLE AND CHAIN OF CUSTODY FORM

TO:		FROM:
ENVIROLAB SERVICES PTY LTD 12 ASHLEY STREET CHATSWOOD NSW 2067 P: (02) 99106200 F: (02) 99106201 Attention:	EIS Job Number: E29319K Date Results Required: STANDARD Page: 2 of 2	ENVIRONMENTAL INVESTIGATION SERVICES REAR OF 115 WICKS ROAD MACQUARIE PARK, NSW 2113 P: 02-9888 5000 F: 02-9888 5001 Attention:

Location: Wentworth Park South — Sample Preserved in Esky on Ice

Sampler: GF + NC — Tests Required

Date Sampled	Lab Ref:	Sample Number	Depth (m)	Sample Container	PID	Sample Description	Combo 6	Combo 6a	BTEX	Asbestos
20/4/16										
20/4/16	26	BH9	0.5–0.7	G, A	0	Fill				
	27	↓	1.3–1.5		0					
	28	BH10	0.25–0.5		0			X		
	29	↓	1.1–1.3		0					
	30	BH11	0.05–0.3		0			X		
	31	↓	0.8–1.1		0					
	32	BH12	0.25–0.5		0			X		
	33	↓	1.3–1.5		0					
	34	BH13	0–0.2		0			X		
	35	↓	0.5–0.8		0					
	36	BH14	0–0.2		0			X		
	37	↓	0.7–1.0		0					
	38	BH15	0–0.2		0					
	39	↓	0.5–0.8		0			X		
	40	↓	1.3–1.5	↓	0	↓				
	41	Dup GFS1	—	G	—	Soil				
	*	Dup GFS2	—	↓	—	↓	X			
	42	Dup GFS3	—		—		X			
↓	43	TBS	—	↓	—	↓			X	

Envirolab Laboratories
Job No.- 179923
Date Rec.- 21/4/16
Time Rec.- 1150
Rec By.- mc
TAT Req.- SAME / 1 / 2 / 3 / STD
Temp.- Cool / Ambient
Cooling.- Ice / Ice pack / None
Security Seal.- Yes / No

145327

Remarks (comments/detection limits required):
Please Send Dup GFS2 to Envirolab Sister lab as Inter lab Dup

Sample Containers:
G - 250mg Glass Jar
A - Ziplock Asbestos Bag
P - Plastic Bag

Relinquished By:	Date:	Time:	Received By:	Date:
	21/4/16	15:21		21/4/16 1700

22/04/16

SGS LEEDER CONSULTING

Unit 3-5/18 Redland Drive
Mitcham, VIC, 3132
Telephone (03) 9874 1988
Fax (03) 9874 1933

19 May 2016

Environmental Investigation Services
115 Wicks Road
Macquarie Park NSW 2113

Dear

Please find the attached replacement report for M160871 which is numbered M160871R1.

The report has been reissued with TPH NEPM results as requested by the client.
Please destroy the Original Report.

If you have any questions regarding this please contact me on

Thank-you

Regards,

Business Manager

SGS Leeder Consulting

SGS LEEDER CONSULTING

A.B.N. 44 000 964 278
3 - 5, 18 Redland Drive
Mitcham, Vic, 3132
Telephone: (03) 9874 1988
Fax: (03) 9874 1933

Chartered Chemists

19-May-2016

REPORT NUMBER: M160871R1
Site/Client Ref: Wentworth Park, Ultimo
Order No: E29319K

Environmental Investigation Services

115 Wicks Road
Macquarie Park

New South Wales 2113
Attention:

CERTIFICATE OF ANALYSIS

This report replaces previous report dated 17-May-2016

SAMPLES:	Five samples were received for analysis
DATE RECEIVED:	**9-May-2016**
DATE COMMENCED:	**9-May-2016**
METHODS:	See Attached Results
RESULTS:	Please refer to attached pages for results.

Note: Results are based on samples as received at SGS Leeder Consulting's laboratories

REPORTED BY:

Senior Chemist

NATA
WORLD RECOGNISED ACCREDITATION

NATA Accredited Laboratory Number: 14429

Accredited for compliance with ISO/IEC 17025.

The sampling for the samples in this report was carried out in accordance with SGS Leeder Consulting's NATA accredited sampling methods

ANALYTICAL RESULTS

Matrix: Passive Sampler
Method: MA-5.WL.04 Volatile Organics
Sample units are expressed in µg/m³

Test Started: 12/05/2016

Analyte Name	Sampled Date / PQL	Leeder ID: 2016013284 Client ID: PSV10 1601-AN-LU-052 5/05/2016	Leeder ID: 2016013285 Client ID: PSV13 1601-AN-LU-053 5/05/2016	Leeder ID: 2016013286 Client ID: PSV7 1601-AN-LU-054 5/05/2016	Leeder ID: 2016013287 Client ID: PSV5 1601-AN-LU-055 5/05/2016	Leeder ID: 2016013288 Client ID: PSV5 Field Dup 1601-AN-LU-056 5/05/2016
Benzene		<3.7	<3.7	<3.7	<3.7	<3.7
2-butanone(MEK)		<7.2	<7.2	<7.2	<7.2	<7.2
Carbon tetrachloride		<5.8	<5.8	<5.8	<5.8	<5.8
Chlorobenzene		<2.2	<2.2	<2.2	<2.2	<2.2
Chloroform		<4.6	<4.6	<4.6	<4.6	<4.6
12-Dichlorobenzene		<1.2	<1.2	<1.2	<1.2	<1.2
13-Dichlorobenzene		<1.4	<1.4	<1.4	<1.4	<1.4
14-Dichlorobenzene		<1.3	<1.3	<1.3	<1.3	<1.3
1,1-Dichloroethane		<9.3	<9.3	<9.3	<9.3	<9.3
12-Dichloroethane		<3.7	<3.7	<3.7	<3.7	<3.7
1,1-Dichloroethene		<11	<11	<11	<11	<11
cis-1,2-Dichloroethene		<4.7	<4.7	<4.7	<4.7	<4.7
trans-1,2-Dichloroethene		<4.9	<4.9	<4.9	<4.9	<4.9
Ethylbenzene		3.5	<2.0	<2.0	<2.0	<2.0
Hexane		47	<4.9	9.0	<4.9	5.7
Isopropylbenzene		<0.96	<0.96	<0.96	<0.96	<0.96
Naphthalene		<2.5	<2.5	57	<2.5	<2.5
Tetrachloroethene		<2.2	<2.2	<2.2	<2.2	<2.2
Toluene		11	3.8	13	3.5	3.8
111-Trichloroethane		<7.2	<7.2	<7.2	<7.2	<7.2
112-Trichloroethane		<2.8	<2.8	<2.8	<2.8	<2.8
Trichloroethene		<2.8	<2.8	<2.8	<2.8	<2.8
124-Trimethylbenzene		16	<1.4	2.7	<1.4	<1.4
Vinyl Chloride		<18	<18	<18	<18	<18
o-Xylene		7.4	<2.1	3.2	<2.1	<2.1
m&p-Xylenes		15	<2.1	5.6	<2.1	<2.1
Dichlorodifluoromethane		<49	<49	<49	<49	<49
Trichlorofluoromethane		<18	<18	<18	<18	<18
124-Trichlorobenzene		<2.0	<2.0	<2.0	<2.0	<2.0
123-Trichlorobenzene		<1.2	<1.2	<1.2	<1.2	<1.2
Halothane		<17	<17	<17	<17	<17

ANALYTICAL RESULTS

Matrix: Passive Sampler
Method: MA-5.WL.03 Volatile Organics
Sample units are expressed in µg total

Test Started: 12/05/2016

Analyte Name	Leeder ID / Client ID / Sampled Date / PQL	2016013289 Method Blank
Benzene	0.05	nd
2-butanone(MEK)	0.05	nd
Carbon tetrachloride	0.05	nd
Chlorobenzene	0.05	nd
Chloroform	0.05	nd
12-Dichlorobenzene	0.05	nd
13-Dichlorobenzene	0.05	nd
14-Dichlorobenzene	0.05	nd
1,1-Dichloroethane	0.05	nd
12-Dichloroethane	0.05	nd
1,1-Dichloroethene	0.05	nd
cis-1,2-Dichloroethene	0.05	nd
trans-1,2-Dichloroethene	0.05	nd
Ethylbenzene	0.05	nd
Hexane	0.05	nd
Isopropylbenzene	0.05	nd
Naphthalene	0.05	nd
Tetrachloroethene	0.05	nd
Toluene	0.05	nd
111-Trichloroethane	0.05	nd
112-Trichloroethane	0.05	nd
Trichloroethene	0.05	nd
124-Trimethylbenzene	0.05	nd
Vinyl Chloride	0.05	nd
o-Xylene	0.05	nd
m&p-Xylenes	0.05	nd
Dichlorodifluoromethane	0.05	nd
Trichlorofluoromethane	0.05	nd
124-Trichlorobenzene	0.05	nd
123-Trichlorobenzene	0.05	nd
Halothane	0.05	nd

ANALYTICAL RESULTS

Matrix: Passive Sampler
Method: MA-30.AIR.04 Total Recoverable Hydrocarbons
Sample units are expressed in mg/m³ Test Started: 12/05/2016

Analyte Name	Sampled Date / PQL	Leeder ID: 2016013284 Client ID: PSV10 1601-AN-LU-052 Sampled Date: 5/05/2016	Leeder ID: 2016013285 Client ID: PSV13 1601-AN-LU-053 Sampled Date: 5/05/2016	Leeder ID: 2016013286 Client ID: PSV7 1601-AN-LU-054 Sampled Date: 5/05/2016	Leeder ID: 2016013287 Client ID: PSV5 1601-AN-LU-055 Sampled Date: 5/05/2016
C6-C10 (ex BTEX)		2.8	<0.5	1.3	<0.5
>C10-C16 (less Naphthalene)		12	8.9	18	1.7

Matrix: Passive Sampler
Method: MA-30.AIR.03 Total Recoverable Hydrocarbons
Sample units are expressed in µg total Test Started: 12/05/2016

Analyte Name	Sampled Date / PQL	Leeder ID: 2016013289 Client ID: Method Blank
C6-C10 (ex BTEX)	5	nd
>C10-C16 (less Naphthalene)	5	nd

QA/QC RESULTS

Matrix: Passive Sampler
Method: MA-5.WL.03 Volatile Organics
Quality Control Results are expressed in Percent Recovery of expected result

Test Started: 12/05/2016

Analyte Name	Leeder ID / Client ID / Sampled Date / PQL	2016013290 Method Spike	2016013291 Method Spike Dup
Benzene		99	101
Chlorobenzene		98	97
12-Dichlorobenzene		100	102
13-Dichlorobenzene		105	105
14-Dichlorobenzene		96	100
Ethylbenzene		97	97
Toluene		99	97
o-Xylene		98	99
m&p-Xylenes		99	99

QUALIFIERS / NOTES FOR REPORTED RESULTS

PQL	Practical Quantitation Limit
nd	Not Detected – The analyte was not detected above the reported PQL.
is	Insufficient Sample to perform this analysis.
T	Tentative identification based on computer library search of mass spectra.
NC	Not calculated and/or Results below PQL
NV	No Vacuum, Canister received above standard atmospheric pressure
nr	Not Requested for analysis.
R	Rejected Result – results for this analysis failed QC checks.
SQ	Semi-Quantitative result – quantitation based on a generic response factor for this class of analyte.
IM	Inappropriate method of analysis for this compound
U	Unable to provide Quality Control data – high levels of compounds in sample interfered with analysis of QC results.
UF	Unable to provide Quality Control data- Surrogates failed QC checks due to sample matrix effects
L	Analyte detected at a level above the linear response of calibration curve.
E	Estimated result. NATA accreditation does not cover estimated results.
C1	These compounds co-elute.
--	Parameter Not Determined
CT	Elevated concentration. Results reported from carbon tube analysis
**	Sample shows non-petroleum hydrocarbon profile

APPENDIX ONE.

CHAIN OF CUSTODY DOCUMENT

Passive Sample Collection

Unit 4, 18 Redland Drive
Mitcham VIC 3132
Ph: (03) 9874 1988 Fax: (03) 9874 1933

SGS LEEDER CONSULTING

Email report to:

Project Manager:
Sampled by: (Print and Sign)
Company EIS (JK Group)
Address City Macquarie Park
State NSW Post Code
Phone: Fax:
ABN:

Project Info
Purchase Order Number:
Suburb & State: Wentworth Park.
Project Number: M160871
Project Name: Wentworth Park

Turn Around Time
Normal: ✓
Rapid:
(surcharges apply)
Specify: (days)

Lab ID	Field Sample I.D. (Location)	Sampler I.D (WMS Code)	Date of Deployment	Time of Deployment	Date of Retrieval	Time of Retrieval	Analysis Required	Indoor Air	Outdoor Air	Workplace Monitoring	Other (SIL GAS)
	PSV 10	1601-AN-LW-052	21/4/16	10:55	5/5/16	07:44	VOC's				
	PSV 13	053	"	11:07	"	07:51	"				
	PSV 7	054	"	11:28	"	07:57	"				
	PSV 5	055	"	11:40	"	08:03	"				
	PSV 5 Dup	056	"	11:52	"	08:05	"				

Relinquished By: Name, Signature, Date/Time 5/5/16 5pm.	Received by: Name, Signature, Date/Time
Relinquished By: Name, Signature, Date/Time	Received by: Name, Signature, Date/Time
Relinquished By: Name, Signature, Date/Time	Received by: Name, Signature, Date/Time

Air Temp and Weather Description: ~20°-26° Ambient Daily

Notes: Dry holes at all locations, good seals.

From:
Sent: Tuesday, 17 May 2016 3:37 PM
To: AU.SampleReceipt.Mitcham (Melbourne)
Subject: RE: SRA For Wentworth Park, Ultimo Our Ref M160871

Hi

As per our phone conversation could we please get all of the samplers (except PSV5 DUP) analysed for TRH/TPH (NEPM Fractions) as well as the requested VOCs. Please call if you require anything further

Regards,

Environmental Scientist

www.jkgroup.net.au

Environmental Investigation Services
CONSULTING ENVIRONMENTAL ENGINEERS AND SCIENTISTS
PO Box 976, North Ryde BC NSW 1670
115 Wicks Rd, Macquarie Park NSW 2113
T: +612 9888 5000 F: +612 9888 5001

Appendix D: Report Explanatory Notes

STANDARD SAMPLING PROCEDURE

These protocols specify the basic procedures to be used when sampling soils or groundwater for environmental site assessments undertaken by EIS.

The purpose of these protocols is to provide standard methods for: sampling, decontamination procedures for sampling equipment, sample preservation, sample storage and sample handling. Deviations from these procedures must be recorded.

Soil Sampling

- Prepare a borehole/test pit log or made a note of the sample description for stockpiles.
- Layout sampling equipment on clean plastic sheeting to prevent direct contact with ground surface. The work area should be at a distance from the drill rig/excavator such that the machine can operate in a safe manner.
- Ensure all sampling equipment has been decontaminated prior to use.
- Remove any surface debris from the immediate area of the sampling location.
- Collect samples and place in glass jar with a Teflon seal. This should be undertaken as quickly as possible to prevent the loss of any volatiles. If possible, fill the glass jars completely.
- Collect samples for asbestos analysis and place in a zip-lock plastic bag.
- Label the sampling containers with the EIS job number, sample location (eg. BH1), sampling depth interval and date. If more than one sample container is used, this should also be indicated (eg. 2 = Sample jar 1 of 2 jars).
- Photoionisation detector (PID) screening of volatile organic compounds (VOCs) should be undertaken on samples using the soil sample headspace method. Headspace measurements are taken following equilibration of the headspace gasses in partly filled zip-lock plastic bags. PID headspace data is recorded on the borehole/test pit log and the chain of custody forms.
- Record the lithology of the sample and sample depth on the borehole/test pit log generally in accordance with AS1726-1993[21].
- Store the sample in a sample container cooled with ice or chill packs. On completion of the sampling the sample container should be delivered to the lab immediately or stored in the refrigerator prior to delivery to the lab. All samples are preserved in accordance with the standards outlined in the report.
- Check for the presence of groundwater after completion of each borehole using an electronic dip metre or water whistle. Boreholes should be left open until the end of fieldwork. All groundwater levels in the boreholes should be rechecked on the completion of the fieldwork.
- Backfill the boreholes/test pits with the excavation cuttings or clean sand prior to leaving the site.

Decontamination Procedures for Soil Sampling Equipment

- All sampling equipment should be decontaminated between every sampling location. This excludes single use PVC tubing used for push tubes etc. Equipment and materials required for the decontamination include:
  - Phosphate free detergent (Decon 90);
  - Potable water;
  - Stiff brushes; and
  - Plastic sheets.

[21] Standards Australia, (1993), *Geotechnical Site Investigations.* (AS1726-1993)

- Ensure the decontamination materials are clean prior to proceeding with the decontamination.
- Fill both buckets with clean potable water and add phosphate free detergent to one bucket.
- In the bucket containing the detergent, scrub the sampling equipment until all the material attached to the equipment has been removed.
- Rinse sampling equipment in the bucket containing potable water.
- Place cleaned equipment on clean plastic sheets.

If all materials are not removed by this procedure, high-pressure water cleaning is recommended. If any equipment is not completely decontaminated by both these processes, then the equipment should not be used until it has been thoroughly cleaned.

Groundwater Sampling

Groundwater samples are more sensitive to contamination than soil samples and therefore adhesion to this protocol is particularly important to obtain reliable, reproducible results. The recommendations detailed in AS/NZS 5667.1:1998 are considered to form a minimum standard.

The basis of this protocol is to maintain the security of the borehole and obtain accurate and representative groundwater samples. The following procedure should be used for collection of groundwater samples from previously installed groundwater monitoring wells.

- After monitoring well installation, at least three bore volumes should be pumped from the monitoring wells (well development) to remove any water introduced during the drilling process and/or the water that is disturbed during installation of the monitoring well. This should be completed prior to purging and sampling.
- Groundwater monitoring wells should then be left to recharge for at least three days before purging and sampling. Prior to purging or sampling, the condition of each well should observed and any anomalies recorded on the field data sheets. The following information should be noted: the condition of the well, noting any signs of damage, tampering or complete destruction; the condition and operation of the well lock; the condition of the protective casing and the cement footing (raised or cracked); and, the presence of water between protective casing and well.
- Take the groundwater level from the collar of the piezometer/monitoring well using an electronic dip meter. The collar level should be taken (if required) during the site visit using a dumpy level and staff.
- Purging and sampling of piezometers/monitoring wells is done on the same site visit when using micro-purge (or other low flow) techniques.
- Layout and organize all equipment associated with groundwater sampling in a location where they will not interfere with the sampling procedure and will not pose a risk of contaminating samples. Equipment generally required includes:
  - Micropore filtration system or Stericup single-use filters (for heavy metals samples);
  - Filter paper for Micropore filtration system; Bucket with volume increments;
  - Sample containers: teflon bottles with 1 ml nitric acid, 75mL glass vials with 1 mL hydrochloric acid, 1 L amber glass bottles;
  - Bucket with volume increments;
  - Flow cell;
  - pH/EC/Eh/T meters;
  - Plastic drums used for transportation of purged water;
  - Esky and ice;
  - Nitrile gloves;
  - Distilled water (for cleaning);
  - Electronic dip meter;

- Low flow pump pack and associated tubing; and
- Groundwater sampling forms.

- If single-use stericup filtration is not used, clean the Micropore filtration system thoroughly with distilled water prior to use and between each sample. Filter paper should be changed between samples. 0.45um filter paper should be placed below the glass fibre filter paper in the filtration system.
- Ensure all non-disposable sampling equipment is decontaminated or that new disposable equipment is available prior to any work commencing at a new location. The procedure for decontamination of groundwater equipment is outlined at the end of this section.
- Disposable gloves should be used whenever samples are taken to protect the sampler and to assist in avoidance of contamination.
- Groundwater samples are obtained from the monitoring wells using low flow/micro-purge sampling equipment to reduce the disturbance of the water column and loss of volatiles.
- During pumping to purge the well, the pH, temperature, conductivity, dissolved oxygen, redox potential and groundwater levels are monitored (where possible) using calibrated field instruments to assess the development of steady state conditions. Steady state conditions are generally considered to have been achieved when the difference in the pH measurements was less than 0.2 units and the difference in conductivity was less than 10%.
- All measurements are recorded on specific data sheets.
- Once steady state conditions are considered to have been achieved, groundwater samples are obtained directly from the pump tubing and placed in appropriate glass bottles, BTEX vials or plastic bottles.
- All samples are preserved in accordance with water sampling requirements detailed in the NEPM 2013 and placed in an insulated container with ice. Groundwater samples are preserved by immediate storage in an insulated sample container with ice as outlined in the report text.
- Record the sample on the appropriate log in accordance with AS1726:1993. At the end of each water sampling complete a chain of custody form.

Decontamination Procedures for Groundwater Sampling Equipment

- All equipment associated with the groundwater sampling procedure (other than single-use items) should be decontaminated between every sampling location.
- The following equipment and materials are required for the decontamination procedure:
  - Phosphate free detergent;
  - Potable water;
  - Distilled water; and
  - Plastic Sheets or bulk bags (plastic bags).
- Fill one bucket with clean potable water and phosphate free detergent, and one bucket with distilled water.
- Flush potable water and detergent through pump head. Wash sampling equipment and pump head using brushes in the bucket containing detergent until all materials attached to the equipment are removed.
- Flush pump head with distilled water.
- Change water and detergent solution after each sampling location.
- Rinse sampling equipment in the bucket containing distilled water.
- Place cleaned equipment on clean plastic sheets.
- If all materials are not removed by this procedure that equipment should not be used until it has been thoroughly cleaned

QA/QC DEFINITIONS

The QA/QC terms used in this report are defined below. The definitions are in accordance with US EPA publication SW-846, entitled *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods* (1994[22]) methods and those described in *Environmental Sampling and Analysis, A Practical Guide,* (H. Keith 1991[23]).

Practical Quantitation Limit (PQL), Limit of Reporting (LOR) & Estimated Quantitation Limit (EQL)

These terms all refer to the concentration above which results can be expressed with a minimum 95% confidence level. The laboratory reporting limits are generally set at ten times the standard deviation for the Method Detection limit (MDL) for each specific analyte. For the purposes of this report the LOR, PQL, and EQL are considered to be equivalent.

When assessing laboratory data it should be borne in mind that values at or near the PQL have two important limitations.

"The uncertainty of the measurement value can approach, and even equal, the reported value. Secondly, confirmation of the analytes reported is virtually impossible unless identification uses highly selective methods. These issues diminish when reliably measurable amounts of analytes are present. Accordingly, legal and regulatory actions should be limited to data at or above the reliable detection limit" Keith 1991.

Precision

The degree to which data generated from repeated measurements differ from one another due to random errors. Precision is measured using the standard deviation or Relative Percent Difference (RPD). Acceptable targets for precision in this report will be less than 50% RPD for concentrations greater than ten times the PQL, less than 75% RPD for concentrations between five and ten times the PQL and less than 100% RPD for concentrations that are less than five times the PQL.

Accuracy

Accuracy is a measure of the agreement between an experimental result and the true value of the parameter being measured. The assessment of accuracy for an analysis can be achieved through the analysis of known reference materials or assessed by the analysis of surrogates, field blanks, trip spikes and matrix spikes.

The proximity of an averaged result to the true value, where all random errors have been statistically removed. Accuracy is measured by percent recovery. Acceptable limits for accuracy generally lie between 70% to 130% recoveries. Certain laboratory methods may allow for values that lie outside these limits.

Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents a characteristic of a population, parameter variations at a sampling point, or an environmental condition. Representativeness is primarily dependent upon the design and implementation of the sampling program. Representativeness of the data is partially ensured by the avoidance of contamination, adherence to sample handing and analysis protocols and use of proper chain-of-custody and documentation procedures.

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[22] US EPA, (1994), *SW-846: Test Methods for Evaluating Solid Waste, Physical/Chemical Methods.* (US EPA SW-846)

[23] Keith., H, (1991), *Environmental Sampling and Analysis, A Practical Guide.*

Completeness

Completeness is a measure of the number of valid measurements in a data set compared to the total number of measurements made and overall performance against DQIs. The following information is assessed for completeness:

- Chain-of-custody forms; Sample receipt form;
- All sample results reported; All blank data reported;
- All laboratory duplicate and RPDs calculated;
- All surrogate spike data reported;
- All matrix spike and lab control spike (LCS) data reported and RPDs calculated;
- Spike recovery acceptable limits reported; and
- NATA stamp on reports.

Comparability

Comparability is the evaluation of the similarity of conditions (eg. sample depth, sample homogeneity) under which separate sets of data are produced. Data comparability checks include a bias assessment that may arise from the following sources:

- Collection and analysis of samples by different personnel; Use of different techniques;
- Collection and analysis by the same personnel using the same methods but at different times; and
- Spatial and temporal changes (due to environmental dynamics).

Blanks

The purpose of laboratory and field blanks is to check for artifacts and interferences that may arise during sampling and analysis.

Matrix Spikes

Samples are spiked with laboratory grade standards to detect interactive effects between the sample matrix and the analytes being measured. Matrix Spikes are reported as a percent recovery and are prepared for 1 in every 20 samples. Sample batches that contain less than 20 samples may be reported with a Matrix Spike from another batch. The percent recovery is calculated using the formula below. Acceptable recovery limits are 70% to 130%.

$$\frac{\text{(Spike Sample Result – Sample Result) x 100}}{\text{Concentration of Spike Added}}$$

Surrogate Spikes

Samples are spiked with a known concentration of compounds that are chemically related to the analyte being investigated but unlikely to be detected in the environment. The purpose of the Surrogate Spikes is to check the accuracy of the analytical technique. Surrogate Spikes are reported as percent recovery.

Duplicates

Laboratory duplicates measure precision, expressed as Relative Percent Difference. Duplicates are prepared from a single field sample and analysed as two separate extraction procedures in the laboratory. The RPD is calculated using the formula where D1 is the sample concentration and D2 is the duplicate sample concentration:

$$\frac{(D1 - D2) \times 100}{\{(D1 + D2)/2\}}$$

Appendix E: Field Work Documents

Job No: E29319K
Address: Wentworth Park South
Recorded by: GF
Monitoring Well No: 6
Weather Conditions:
SWL (m): DRY
PID (ppm): 0
Pressure (hPa): 1021

Date: 5/05/2016

EIS

Time	Pressure	CH4 %v/v	CO2 %v/v	O2 %v/v	CH4 %LEL	H2S ppm	CO ppm	DP Pa	Flow Measurements L/H
30 sec	1021	0	14.1	2.1	<	0	0	0	0
1min	-	0	14.3	2.0	<	0	0	0	0
1 min 30 sec	-	0	14.3	1.9	<	0	0	0	0
2 min	-	0	14.3	1.9	<	0	0	0	0
2 min 30 sec	-	0	14.3	1.8	<	0	0	0	0
3 min	-	0	14.3	1.8	<	0	0	0	0
3 min 30 sec	-	0	14.4	1.7	<	0	0	0	0
4min	-	0	14.4	1.7	<	0	0	0	0
4 min 30 sec	-	0	14.4	1.7	<	0	0	0	0
5 min	1021	0	14.4	1.7	<	0	0	0	0

Notes:
Standing Water Level (SWL) is in meters below ground level

Job No: E29319K
Address: Wentworth Park South
Recorded by: GF
Monitoring Well No: 8
Weather Conditions:
SWL (m): PM
PID (ppm): 0
Pressure (hPa): 1020

Date: 5/05/2016

EIS

Time	Pressure	CH4 %v/v	CO2 %v/v	O2 %v/v	CH4 %LEL	H2S ppm	CO ppm	DP Pa	Flow Measurements L/H
30 sec	1021	0	9.0	11.8	<	0	0	0	0
1min	-	0	9.1	11.7	<	0	0	0	0
1 min 30 sec	-	0	9.1	11.7	<	0	0	0	0
2 min	-	0	9.1	11.6	<	0	0	0	0
2 min 30 sec	-	0	9.1	11.6	<	0	0	0	0
3 min	-	0	9.1	11.6	<	0	0	0	0
3 min 30 sec	-	0	9.1	11.6	<	0	0	0	0
4min	-	0	9.1	11.6	<	0	0	0	0
4 min 30 sec	-	0	9.1	11.6	<	0	0	0	0
5 min	1020	0	9.1	11.6	<	0	0	0	0

Notes:
Standing Water Level (SWL) is in meters below ground level

Job No: E29319K
Address: Wentworth Park South
Recorded by: GF
Monitoring Well No: 11
Weather Conditions:
SWL (m): Dry
PID (ppm): 0.2
Pressure (hPa): 1023

Date: 5/05/2016

Time	Pressure	CH4 %v/v	CO2 %v/v	O2 %v/v	CH4 %LEL	H2S ppm	CO ppm	DP Pa	Flow Measurements L/H
30 sec	1023	0	11.7	3.5	<	0	0	0	0
1min	-	0	11.8	3.4	<	0	0	0	0
1 min 30 sec	-	0	11.8	3.2	<	0	0	0	0
2 min	-	0	11.9	3.1	<	0	0	0	0
2 min 30 sec	-	0	11.9	3.0	<	0	0	0	0
3 min	-	0	12.0	3.0	<	0	0	0	0
3 min 30 sec	-	0	12.0	3.0	<	0	0	0	0
4min	-	0	12.0	3.0	<	0	0	0	0
4 min 30 sec	-	0	12.0	3.0	<	0	0	0	0
5 min	1023							0	0

Notes:
Standing Water Level (SWL) is in meters below ground level

Job No: E29319K
Address: Wentworth Park South
Recorded by: GF
Monitoring Well No: 15
Weather Conditions:
SWL (m): —
PID (ppm): —
Pressure (hPa): 1022

Date: 5/05/2016

EIS

Time	Pressure	CH4 %v/v	CO2 %v/v	O2 %v/v	CH4 %LEL	H2S ppm	CO ppm	DP Pa	Flow Measurements L/H
30 sec	1022	0	8.9	11.0	<	0	0	0	0
1min	-	0	8.7	11.4	<	0	0	0	0
1 min 30 sec	-	0	8.6	11.8	<	0	0	0	0
2 min	-	0	8.5	12.0	<	0	0	0	0
2 min 30 sec	-	0	8.4	12.5	<	0	0	0	0
3 min	-	0	8.2	12.7	<	0	0	0	0
3 min 30 sec	-	0	8.2	12.9	<	0	0	0	0
4min	-	0	8.1	13.1	<	0	0	0	0
4 min 30 sec	-	0	8.1	13.1	<	0	0	0	0
5 min	1022	0	8.1	13.0	<	0	0	0	0

Notes:
Standing Water Level (SWL) is in meters below ground level