LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 12/1159243

SEARCH DATE	TIME	EDITION NO	DATE
17/2/2012	1:50 PM	2	12/5/2011

LAND

LOT 12 IN DEPOSITED PLAN 1159243
AT DUBBO
LOCAL GOVERNMENT AREA DUBBO
PARISH OF DUBBO COUNTY OF LINCOLN
TITLE DIAGRAM DP1159243

FIRST SCHEDULE

MACQUARIE AREA HEALTH SERVICE

SECOND SCHEDULE (9 NOTIFICATIONS)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 EXCEPTING LAND BELOW A DEPTH FROM THE SURFACE OF 20 METRES
3 LAND EXCLUDES MINERALS - SEE MEMORANDUM S700000B WITHIN THE PART SHOWN SO INDICATED IN THE TITLE DIAGRAM
4 DP1159243 EASEMENT FOR SERVICES 0.6 METRE(S) WIDE APPURTENANT TO THE LAND ABOVE DESCRIBED
5 DP1159243 EASEMENT TO DRAIN SEWAGE 2 METRE(S) WIDE AND VARIABLE AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM
6 DP1159243 EASEMENT FOR WATER SUPPLY 5 METRE(S) WIDE AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM
7 DP1159243 EASEMENT FOR SERVICES 1 METRE(S) WIDE AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM
8 DP1159243 EASEMENT TO DRAIN SEWAGE 5 METRE(S) WIDE AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM
9 AG229698 LEASE TO PLAYMATES COTTAGE CHILDCARE CENTRE DUBBO INC OF "PLAYMATES COTTAGE", CORNER COBBORA & MYALL STREET, DUBBO. EXPIRES: 31/12/2012. OPTION OF RENEWAL: 3 YEARS.

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

mg PRINTED ON 17/2/2012

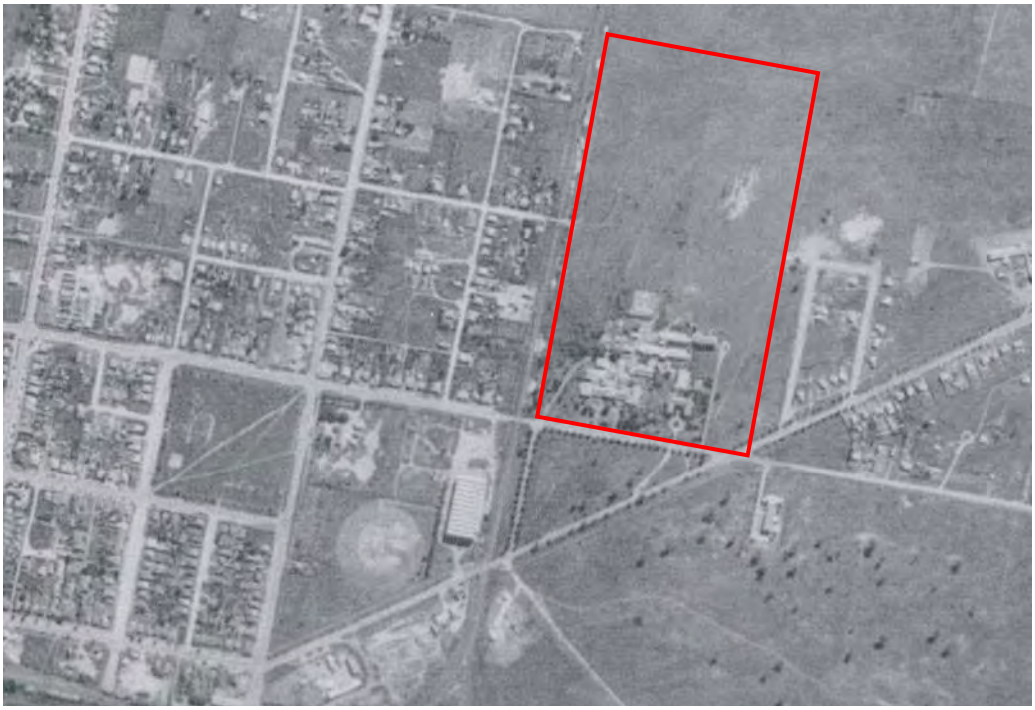


Photo 1 – Aerial photograph from 1959

Photo 2 – Aerial photograph from 1964

Douglas Partners Geotechnics / Environment / Groundwater	**Historical Aerial Photographs** **Dubbo Base Hospital** **Myall Street, Dubbo**	PROJECT:	72811.00
		PLATE No:	1
		REV:	0
	CLIENT: Health Infrastructure	DATE:	15-Mar-12

Photo 3 – Aerial photograph from 1971

Photo 4 – Aerial photograph from 1975

Douglas Partners Geotechnics | Environment | Groundwater	**Historical Aerial Photographs** **Dubbo Base Hospital** **Myall Street, Dubbo**	PROJECT:	72811.00
		PLATE No:	2
		REV:	0
	CLIENT: Health Infrastructure	DATE:	15-Mar-12

Photo 5 – Aerial photograph from 1980

Photo 6 – Aerial photograph from 1988

Douglas Partners Geotechnics / Environment / Groundwater	**Historical Aerial Photographs** **Dubbo Base Hospital** **Myall Street, Dubbo**	PROJECT:	72811.00
		PLATE No:	3
		REV:	0
	CLIENT: Health Infrastructure	DATE:	15-Mar-12

Photo 7 – Aerial photograph from 1991

Photo 8 – Aerial photograph from 1995

Douglas Partners Geotechnics | Environment | Groundwater	**Historical Aerial Photographs** **Dubbo Base Hospital** **Myall Street, Dubbo**	PROJECT:	72811.00
		PLATE No:	4
		REV:	0
	CLIENT: Health Infrastructure	DATE:	15-Mar-12

Photo 9 – Aerial photograph from 2001

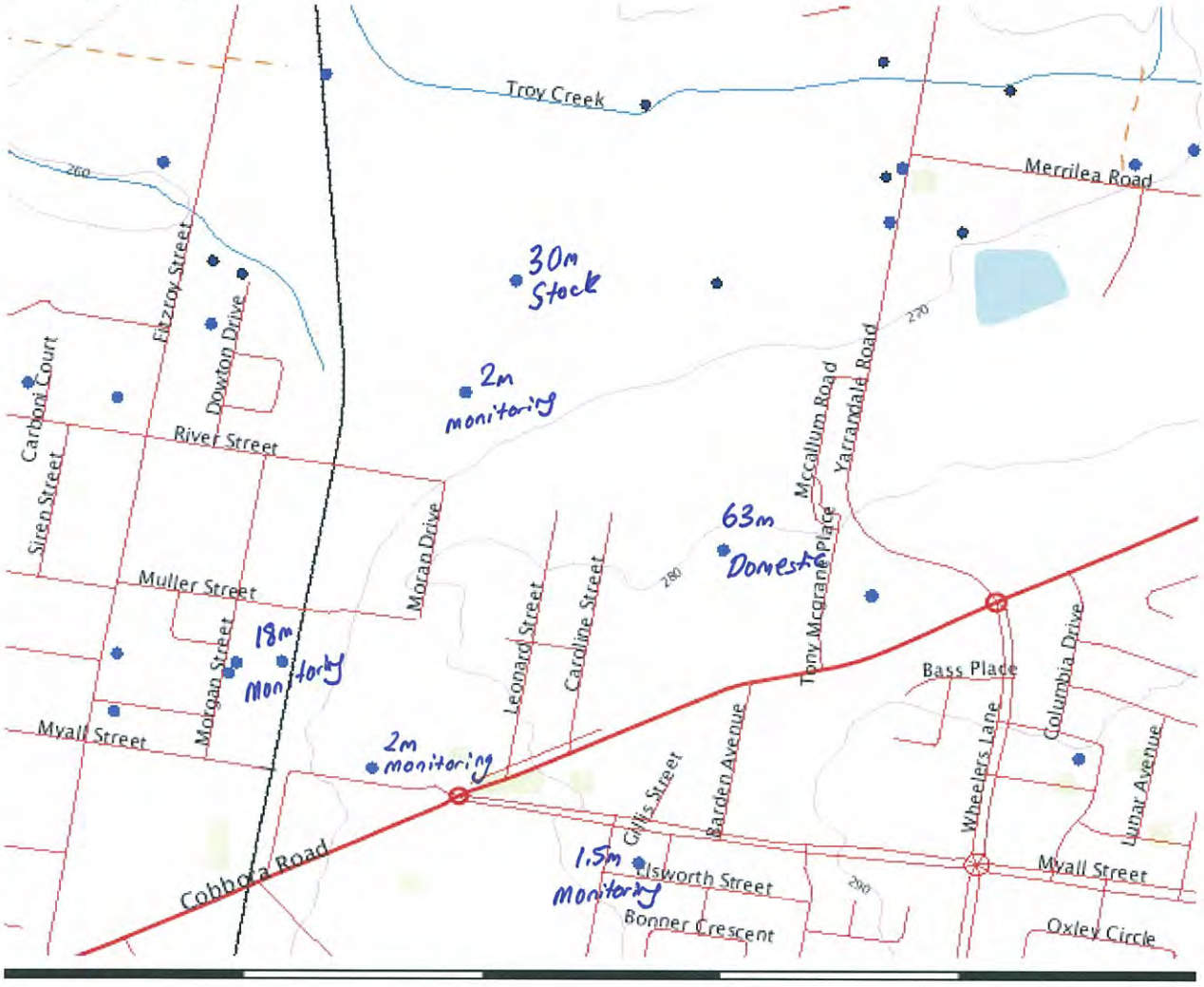
Photo 10 – Aerial photograph from 2005

Douglas Partners Geotechnics | Environment | Groundwater	**Historical Aerial Photographs** **Dubbo Base Hospital** **Myall Street, Dubbo**	PROJECT:	72811.00
		PLATE No:	5
		REV:	0
	CLIENT: Health Infrastructure	DATE:	15-Mar-12

Dubbo Base Hospital

Map created with NSW Natural Resource Atlas - http://www.nratlas.nsw.gov.au

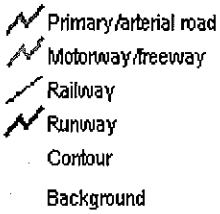
Thursday, February 09, 2012



0 2 Km

Legend

Symbol	Layer	Custodian
	Cities and large towns renderImage: Cannot build image from features	
Cowra	Populated places renderImage: Cannot build image from features	
	Towns	
	Groundwater Bores	
	Catchment Management Authority boundaries	
	Major rivers	
	Topographic base map	



Appendix C

Notes Relating to this Report
Field Work Results

About this Report

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Introduction

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

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

Copyright

Borehole and Test Pit Logs

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

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

Groundwater

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

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

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

Reports

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

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

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

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

About this Report

Site Anomalies

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

Information for Contractual Purposes

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

Site Inspection

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

Sampling Methods

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Sampling

Sampling is carried out during drilling or test pitting to allow engineering examination (and laboratory testing where required) of the soil or rock.

Disturbed samples taken during drilling provide information on colour, type, inclusions and, depending upon the degree of disturbance, some information on strength and structure.

Undisturbed samples are taken by pushing a thin-walled sample tube into the soil and withdrawing it to obtain a sample of the soil in a relatively undisturbed state. Such samples yield information on structure and strength, and are necessary for laboratory determination of shear strength and compressibility. Undisturbed sampling is generally effective only in cohesive soils.

Test Pits

Test pits are usually excavated with a backhoe or an excavator, allowing close examination of the in-situ soil if it is safe to enter into the pit. The depth of excavation is limited to about 3 m for a backhoe and up to 6 m for a large excavator. A potential disadvantage of this investigation method is the larger area of disturbance to the site.

Large Diameter Augers

Boreholes can be drilled using a rotating plate or short spiral auger, generally 300 mm or larger in diameter commonly mounted on a standard piling rig. The cuttings are returned to the surface at intervals (generally not more than 0.5 m) and are disturbed but usually unchanged in moisture content. Identification of soil strata is generally much more reliable than with continuous spiral flight augers, and is usually supplemented by occasional undisturbed tube samples.

Continuous Spiral Flight Augers

The borehole is advanced using 90-115 mm diameter continuous spiral flight augers which are withdrawn at intervals to allow sampling or in-situ testing. This is a relatively economical means of drilling in clays and sands above the water table. Samples are returned to the surface, or may be collected after withdrawal of the auger flights, but they are disturbed and may be mixed with soils from the sides of the hole. Information from the drilling (as distinct from specific sampling by SPTs or undisturbed samples) is of relatively low reliability, due to the remoulding, possible mixing or softening of samples by groundwater.

Non-core Rotary Drilling

The borehole is advanced using a rotary bit, with water or drilling mud 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 the rate of penetration. Where drilling mud is used this can mask the cuttings and reliable identification is only possible from separate sampling such as SPTs.

Continuous Core Drilling

A continuous core sample can be obtained using a diamond tipped core barrel, usually with a 50 mm internal diameter. Provided full core recovery is achieved (which is not always possible in weak rocks and granular soils), this technique provides a very reliable method of investigation.

Standard Penetration Tests

Standard penetration tests (SPT) are used as a means of estimating the density or strength of soils 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 6.3.1.

The test is carried out in a borehole by driving a 50 mm diameter split sample tube under the impact of a 63 kg hammer with a free fall of 760 mm. It is normal for the tube to be driven in three successive 150 mm increments and the 'N' value is taken as the number of blows for the last 300 mm. In dense sands, very hard clays or weak rock, the full 450 mm 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 150 mm of, say, 4, 6 and 7 as:

  4,6,7
  N=13

- In the case where the test is discontinued before the full penetration depth, say after 15 blows for the first 150 mm and 30 blows for the next 40 mm as:

  15, 30/40 mm

The results of the SPT tests can be related empirically to the engineering properties of the soils.

Dynamic Cone Penetrometer Tests / Perth Sand Penetrometer Tests

Dynamic penetrometer tests (DCP or PSP) are carried out by driving a steel rod into the ground using a standard weight of hammer falling a specified distance. As the rod penetrates the soil the number of blows required to penetrate each successive 150 mm depth are recorded. Normally there is a depth limitation of 1.2 m, but this may be extended in certain conditions by the use of extension rods. Two types of penetrometer are commonly used.

- Perth sand penetrometer - a 16 mm diameter flat ended rod is driven using a 9 kg hammer dropping 600 mm (AS 1289, Test 6.3.3). This test was developed for testing the density of sands and is mainly used in granular soils and filling.
- Cone penetrometer - a 16 mm diameter rod with a 20 mm diameter cone end is driven using a 9 kg hammer dropping 510 mm (AS 1289, Test 6.3.2). This test was developed initially for pavement subgrade investigations, and correlations of the test results with California Bearing Ratio have been published by various road authorities.

Description and Classification Methods

The methods of description and classification of soils and rocks used in this report are based on Australian Standard AS 1726, Geotechnical Site Investigations Code. In general, the descriptions include strength or density, colour, structure, soil or rock type and inclusions.

Soil Types

Soil types are described according to the predominant particle size, qualified by the grading of other particles present:

Type	Particle size (mm)
Boulder	>200
Cobble	63 - 200
Gravel	2.36 - 63
Sand	0.075 - 2.36
Silt	0.002 - 0.075
Clay	<0.002

The sand and gravel sizes can be further subdivided as follows:

Type	Particle size (mm)
Coarse gravel	20 - 63
Medium gravel	6 - 20
Fine gravel	2.36 - 6
Coarse sand	0.6 - 2.36
Medium sand	0.2 - 0.6
Fine sand	0.075 - 0.2

The proportions of secondary constituents of soils are described as:

Term	Proportion	Example
And	Specify	Clay (60%) and Sand (40%)
Adjective	20 - 35%	Sandy Clay
Slightly	12 - 20%	Slightly Sandy Clay
With some	5 - 12%	Clay with some sand
With a trace of	0 - 5%	Clay with a trace of sand

Definitions of grading terms used are:

- Well graded - a good representation of all particle sizes
- Poorly graded - an excess or deficiency of particular sizes within the specified range
- Uniformly graded - an excess of a particular particle size
- Gap graded - a deficiency of a particular particle size with the range

Cohesive Soils

Cohesive soils, such as clays, are classified on the basis of undrained shear strength. The strength may be measured by laboratory testing, or estimated by field tests or engineering examination. The strength terms are defined as follows:

Description	Abbreviation	Undrained shear strength (kPa)
Very soft	vs	<12
Soft	s	12 - 25
Firm	f	25 - 50
Stiff	st	50 - 100
Very stiff	vst	100 - 200
Hard	h	>200

Cohesionless Soils

Cohesionless soils, such as clean sands, are classified on the basis of relative density, generally from the results of standard penetration tests (SPT), cone penetration tests (CPT) or dynamic penetrometers (PSP). The relative density terms are given below:

Relative Density	Abbreviation	SPT N value	CPT qc value (MPa)
Very loose	vl	<4	<2
Loose	l	4 - 10	2 -5
Medium dense	md	10 - 30	5 - 15
Dense	d	30 - 50	15 - 25
Very dense	vd	>50	>25

Soil Descriptions

Soil Origin

It is often difficult to accurately determine the origin of a soil. Soils can generally be classified as:

- Residual soil - derived from in-situ weathering of the underlying rock;
- Transported soils - formed somewhere else and transported by nature to the site; or
- Filling - moved by man.

Transported soils may be further subdivided into:

- Alluvium - river deposits
- Lacustrine - lake deposits
- Aeolian - wind deposits
- Littoral - beach deposits
- Estuarine - tidal river deposits
- Talus - scree or coarse colluvium
- Slopewash or Colluvium - transported downslope by gravity assisted by water. Often includes angular rock fragments and boulders.

Rock Strength

Rock strength is defined by the Point Load Strength Index ($Is_{(50)}$) and refers to the strength of the rock substance and not the strength of the overall rock mass, which may be considerably weaker due to defects. The test procedure is described by Australian Standard 4133.4.1 - 1993. The terms used to describe rock strength are as follows:

Term	Abbreviation	Point Load Index $Is_{(50)}$ MPa	Approx Unconfined Compressive Strength MPa*
Extremely low	EL	<0.03	<0.6
Very low	VL	0.03 - 0.1	0.6 - 2
Low	L	0.1 - 0.3	2 - 6
Medium	M	0.3 - 1.0	6 - 20
High	H	1 - 3	20 - 60
Very high	VH	3 - 10	60 - 200
Extremely high	EH	>10	>200

* Assumes a ratio of 20:1 for UCS to $Is_{(50)}$

Degree of Weathering

The degree of weathering of rock is classified as follows:

Term	Abbreviation	Description
Extremely weathered	EW	Rock substance has soil properties, i.e. it can be remoulded and classified as a soil but the texture of the original rock is still evident.
Highly weathered	HW	Limonite staining or bleaching affects whole of rock substance and other signs of decomposition are evident. Porosity and strength may be altered as a result of iron leaching or deposition. Colour and strength of original fresh rock is not recognisable
Moderately weathered	MW	Staining and discolouration of rock substance has taken place
Slightly weathered	SW	Rock substance is slightly discoloured but shows little or no change of strength from fresh rock
Fresh stained	Fs	Rock substance unaffected by weathering but staining visible along defects
Fresh	Fr	No signs of decomposition or staining

Degree of Fracturing

The following classification applies to the spacing of natural fractures in diamond drill cores. It includes bedding plane partings, joints and other defects, but excludes drilling breaks.

Term	Description
Fragmented	Fragments of <20 mm
Highly Fractured	Core lengths of 20-40 mm with some fragments
Fractured	Core lengths of 40-200 mm with some shorter and longer sections
Slightly Fractured	Core lengths of 200-1000 mm with some shorter and loner sections
Unbroken	Core lengths mostly > 1000 mm

Rock Descriptions

Rock Quality Designation

The quality of the cored rock can be measured using the Rock Quality Designation (RQD) index, defined as:

$$\text{RQD \%} = \frac{\text{cumulative length of 'sound' core sections} \geq \text{100 mm long}}{\text{total drilled length of section being assessed}}$$

where 'sound' rock is assessed to be rock of low strength or better. The RQD applies only to natural fractures. If the core is broken by drilling or handling (i.e. drilling breaks) then the broken pieces are fitted back together and are not included in the calculation of RQD.

Stratification Spacing

For sedimentary rocks the following terms may be used to describe the spacing of bedding partings:

Term	Separation of Stratification Planes
Thinly laminated	< 6 mm
Laminated	6 mm to 20 mm
Very thinly bedded	20 mm to 60 mm
Thinly bedded	60 mm to 0.2 m
Medium bedded	0.2 m to 0.6 m
Thickly bedded	0.6 m to 2 m
Very thickly bedded	> 2 m

Symbols & Abbreviations

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Introduction

These notes summarise abbreviations commonly used on borehole logs and test pit reports.

Drilling or Excavation Methods

C	Core Drilling
R	Rotary drilling
SFA	Spiral flight augers
NMLC	Diamond core - 52 mm dia
NQ	Diamond core - 47 mm dia
HQ	Diamond core - 63 mm dia
PQ	Diamond core - 81 mm dia

Water

▷	Water seep
▽	Water level

Sampling and Testing

A	Auger sample
B	Bulk sample
D	Disturbed sample
E	Environmental sample
U_{50}	Undisturbed tube sample (50mm)
W	Water sample
pp	pocket penetrometer (kPa)
PID	Photo ionisation detector
PL	Point load strength Is(50) MPa
S	Standard Penetration Test
V	Shear vane (kPa)

Description of Defects in Rock

The abbreviated descriptions of the defects should be in the following order: Depth, Type, Orientation, Coating, Shape, Roughness and Other. Drilling and handling breaks are not usually included on the logs.

Defect Type

B	Bedding plane
Cs	Clay seam
Cv	Cleavage
Cz	Crushed zone
Ds	Decomposed seam
F	Fault
J	Joint
Lam	lamination
Pt	Parting
Sz	Sheared Zone
V	Vein

Orientation

The inclination of defects is always measured from the perpendicular to the core axis.

h	horizontal
v	vertical
sh	sub-horizontal
sv	sub-vertical

Coating or Infilling Term

cln	clean
co	coating
he	healed
inf	infilled
stn	stained
ti	tight
vn	veneer

Coating Descriptor

ca	calcite
cbs	carbonaceous
cly	clay
fe	iron oxide
mn	manganese
slt	silty

Shape

cu	curved
ir	irregular
pl	planar
st	stepped
un	undulating

Roughness

po	polished
ro	rough
sl	slickensided
sm	smooth
vr	very rough

Other

fg	fragmented
bnd	band
qtz	quartz

Symbols & Abbreviations

Graphic Symbols for Soil and Rock

General


Asphalt


Road base


Concrete


Filling

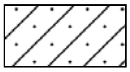
Soils


Topsoil

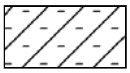

Peat


Clay

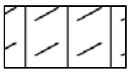

Silty clay

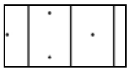

Sandy clay

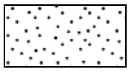

Gravelly clay

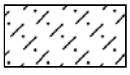

Shaly clay

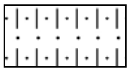

Silt


Clayey silt


Sandy silt

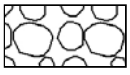

Sand

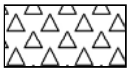

Clayey sand


Silty sand


Gravel


Sandy gravel


Cobbles, boulders

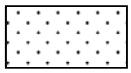

Talus

Sedimentary Rocks

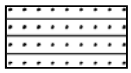

Boulder conglomerate

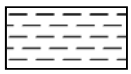

Conglomerate


Conglomeratic sandstone

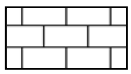

Sandstone


Siltstone


Laminite

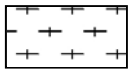

Mudstone, claystone, shale

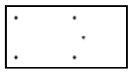

Coal


Limestone

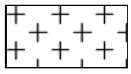
Metamorphic Rocks

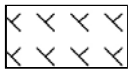

Slate, phyllite, schist

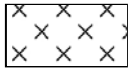

Gneiss

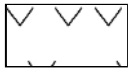

Quartzite

Igneous Rocks


Granite


Dolerite, basalt, andesite


Dacite, epidote


Tuff, breccia


Porphyry

BOREHOLE LOG

CLIENT: Health Infrastructure
PROJECT: Dubbo Base Hospital Redevelopment
LOCATION: Myall Street, Dubbo

SURFACE LEVEL: --
EASTING: 652730
NORTHING: 6431875
DIP/AZIMUTH: 90°/--

BORE No: BW1
PROJECT No: 72811
DATE: 9/2/2012
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 150mm)
	0.1	FILLING - dark brown, gravelly clay filling, damp (topsoil)		E	0.1		PID<1		
		SILTY CLAY - hard, red brown silty clay, medium to high plasticity		E	0.5		PID<1		
	0.8	SILTY CLAY - hard, orange brown, silty clay with some rounded gravel, medium plasticity		E	1.0		PID<1		
	1.5	GRAVELLY CLAY - very stiff, orange brown, subrounded to angular, fine gravelly clay							
	2.5	CLAYEY SAND - very stiff to hard, light grey and grey brown clayey sand (decomposed basalt)		A	3.0				
	3.2	CLAYEY SAND - very stiff to hard, light yellow brown, clayey sand (decomposed basalt)		A	3.3				
				A	4.5				
	5.0	Bore discontinued at 5.0m - target depth reached							

Dynamic Penetrometer Test (blows per 150mm): 5, 10, 15, 20; 1, 2, 3, 4

RIG: Terrazo Pengo **DRILLER:** G Miles **LOGGED:** A Podnar **CASING:** Uncased

TYPE OF BORING: 300mm diameter solid flight auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Health Infrastructure
PROJECT: Dubbo Base Hospital Redevelopment
LOCATION: Myall Street, Dubbo

SURFACE LEVEL: --
EASTING: 652817
NORTHING: 6431869
DIP/AZIMUTH: 90°/--

BORE No: BW2
PROJECT No: 72811
DATE: 9/2/2012
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 150mm)
	0.05	ASPHALT		E	0.1		PID<1		
	0.2	FILLING - dark orange brown grey, sandy gravel filling (roadbase), damp							
		FILLING - dark red brown, clayey sand filling, damp		E	0.4		PID<1		
	0.6	SILTY CLAY - hard, orange brown, silty clay with some fine subangular gravel							
	1			A	1.0				
		1.5m: band of subrounded gravel							
	2								
		2.5m: red brown, increasing gravel content							
	3			A	3.0				
	3.6	Bore discontinued at 3.6m - practical refusal on subrounded gravel in silty clay matrix		A	3.6				
	4								

Dynamic Penetrometer Test (blows per 150mm): 5, 10, 15, 20

RIG: Terrazo Pengo **DRILLER:** G Miles **LOGGED:** A Podnar **CASING:** Uncased

TYPE OF BORING: 300mm diameter solid flight auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Health Infrastructure
PROJECT: Dubbo Base Hospital Redevelopment
LOCATION: Myall Street, Dubbo

SURFACE LEVEL: --
EASTING: 652716
NORTHING: 6431697
DIP/AZIMUTH: 90°/--

BORE No: BW3
PROJECT No: 72811
DATE: 9/2/2012
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 150mm)
	0.05	ASPHALT		E	0.1		PID<1		
	0.2	FILLING - dark orange brown grey, sandy gravel filling (roadbase), damp							
		FILLING - dark red brown, clayey sand filling, damp		E	0.4		PID<1		
	0.6	SILTY CLAY - hard, orange brown, silty clay with some fine subangular gravel							
	1			E	1.0		PID<1		
		1.5m: band of subrounded gravel							
	2								
		2.5m: red brown, increasing gravel content							
	3			A	3.0				
	3.6	Bore discontinued at 3.6m - practical refusal on subrounded gravel in silty clay matrix		A	3.6				
	4								

Dynamic Penetrometer Test (blows per 150mm): 5, 10, 15, 20

RIG: Terrazo Pengo **DRILLER:** G Miles **LOGGED:** A Podnar **CASING:** Uncased

TYPE OF BORING: 300mm diameter solid flight auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Health Infrastructure
PROJECT: Dubbo Base Hospital Redevelopment
LOCATION: Myall Street, Dubbo

SURFACE LEVEL: --
EASTING: 652852
NORTHING: 6431917
DIP/AZIMUTH: 90°/--

BORE No: CW1
PROJECT No: 72811
DATE: 9/2/2012
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 150mm)
	0.0	FILLING - dark red brown and grey, clayey sandy gravel filling (roadbase), damp		E	0.2		PID<1		
	0.3	SILTY CLAY - hard, red brown silty clay, medium to high plasticity		B	0.5				
	1				0.7				1
	1.5	SILTY CLAY - hard, yellow brown and yellow grey, silty clay with a trace of subrounded gravel		A	2.0				2
	3								3
	3.7	SILTY CLAY - hard, grey yellow brown, silty clay with some subrounded and angular gravel, damp		A	3.8				4
	4								
	5.0	Bore discontinued at 5.0m - target depth reached							

Dynamic Penetrometer Test (blows per 150mm): 5, 10, 15, 20

RIG: Terrazo Pengo **DRILLER:** G Miles **LOGGED:** A Podnar **CASING:** Uncased

TYPE OF BORING: 300mm diameter solid flight auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Health Infrastructure
PROJECT: Dubbo Base Hospital Redevelopment
LOCATION: Myall Street, Dubbo

SURFACE LEVEL: --
EASTING: 652881
NORTHING: 6431902
DIP/AZIMUTH: 90°/--

BORE No: CW2
PROJECT No: 72811
DATE: 9/2/2012
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 150mm)
	0.0	GARDEN BED MULCH							
	0.2	FILLING - dark red brown, silty clay filling with some gravel, moist		E	0.4		PID<1		
				A	0.5				
	0.6	SILTY CLAY - hard, red brown silty clay with a trace of subangular gravel, medium plasticity			0.7				
				B					
	1				1.0				1
	2								2
	2.4	SILTY CLAY - very stiff, yellow grey brown, silty clay with a trace of sand		A	2.5				
	3								3
	4			A	4.0				4
	5.0								

Bore discontinued at 5.0m - target depth reached

RIG: Terrazo Pengo **DRILLER:** G Miles **LOGGED:** A Podnar **CASING:** Uncased

TYPE OF BORING: 300mm diameter solid flight auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Health Infrastructure
PROJECT: Dubbo Base Hospital Redevelopment
LOCATION: Myall Street, Dubbo

SURFACE LEVEL: --
EASTING: 652880
NORTHING: 6431875
DIP/AZIMUTH: 90°/--

BORE No: CW3
PROJECT No: 72811
DATE: 9/2/2012
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 150mm)
	0.1	GARDEN BED MULCH							
		FILLING - dark red brown, gravelly clay filling, moist		E	0.2		PID<1		
	0.3	SILTY CLAY - hard, red brown silty clay, medium plasticity		A	0.5				
				B	0.7				
	1				1.0				
		1.6m: with some subrounded to subangular gravel		A	1.7				
	1.8	CLAYEY GRAVEL - grey yellow brown, subrounded clayey gravel, damp							
	1.9	Bore discontinued at 1.9m - practical refusal on clayey gravel							
	2								
	3								
	4								

Dynamic Penetrometer Test (blows per 150mm): 5, 10, 15, 20

RIG: Terrazo Pengo **DRILLER:** G Miles **LOGGED:** A Podnar **CASING:** Uncased

TYPE OF BORING: 300mm diameter solid flight auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Health Infrastructure
PROJECT: Dubbo Base Hospital Redevelopment
LOCATION: Myall Street, Dubbo

SURFACE LEVEL: --
EASTING: 652867
NORTHING: 6431807
DIP/AZIMUTH: 90°/--

BORE No: CW4
PROJECT No: 72811
DATE: 9/2/2012
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
	0.05	ASPHALT							
	0.15	FILLING - grey brown, sandy gravel filling (roadbase), humid		E	0.1		PID<1		
		SILTY CLAY - stiff to hard, orange brown silty clay with some gravel, low to medium plasticity		E/A	0.3		PID<1		
					0.5				
				B	0.7				
1				A	1.0				1
	1.8	CLAYEY GRAVEL - orange brown and grey brown, subrounded medium to coarse grained clayey gravel, damp							
2	2.1	SILTY CLAY - very stiff to hard, mottled light grey and brown, silty clay		A	2.0				2
		2.8m: with some gravel							
3				A	3.0				3
	3.5	SILTY CLAY - very stiff to hard, grey brown, silty clay with some gravel (to 30mm)							
4				A	4.0				4
	5.0	Bore discontinued at 5.0m - target depth reached							

RIG: Terrazo Pengo **DRILLER:** G Miles **LOGGED:** A Podnar **CASING:** Uncased

TYPE OF BORING: 300mm diameter solid flight auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Health Infrastructure
PROJECT: Dubbo Base Hospital Redevelopment
LOCATION: Myall Street, Dubbo

SURFACE LEVEL: --
EASTING: 652584
NORTHING: 6431995
DIP/AZIMUTH: 90°/--

BORE No: SD1
PROJECT No: 72811
DATE: 9/2/2012
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 150mm)
	0.2	FILLING - dark grey brown, sandy gravel filling with some clay and rootlets (topsoil), damp		E	0.1		PID<1		
		FILLING - red brown, silty clay filling with some gravel, moist to wet		E	0.4		PID<1		
	0.6	SILTY CLAY - very stiff then hard, red brown silty clay with a trace of gravel, medium plasticity		A	1.0				
	2.2	GRAVELLY CLAY - red brown and dark grey, gravelly and cobbly clay		A	2.0				
	2.5	Bore discontinued at 2.5m		A	2.4				

Dynamic Penetrometer Test (blows per 150mm): 5, 10, 15, 20; 1, 2, 3, 4

RIG: Terrazo Pengo **DRILLER:** G Miles **LOGGED:** A Podnar **CASING:** Uncased

TYPE OF BORING: 300mm diameter solid flight auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Health Infrastructure
PROJECT: Dubbo Base Hospital Redevelopment
LOCATION: Myall Street, Dubbo

SURFACE LEVEL: --
EASTING: 652592
NORTHING: 6431978
DIP/AZIMUTH: 90°/--

BORE No: SD2
PROJECT No: 72811
DATE: 9/2/2012
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 150mm)
	0.2	FILLING - dark grey brown, gravelly sand filling with a trace of clay and rootlets, damp		E	0.1		PID<1		
	0.7	SILTY CLAY - hard, orange brown, silty clay with a trace of gravel, low to medium plasticity		A	0.5				
	0.9	GRAVELLY CLAY - orange and grey brown gravelly clay							
	1	Bore discontinued at 0.9m - refusal on gravel							

Dynamic Penetrometer Test (blows per 150mm): 5, 10, 15, 20 >>

RIG: Terrazo Pengo **DRILLER:** G Miles **LOGGED:** A Podnar **CASING:** Uncased

TYPE OF BORING: 300mm diameter solid flight auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Health Infrastructure
PROJECT: Dubbo Base Hospital Redevelopment
LOCATION: Myall Street, Dubbo

SURFACE LEVEL: --
EASTING: 652604
NORTHING: 6431955
DIP/AZIMUTH: 90°/--

BORE No: SD3
PROJECT No: 72811
DATE: 9/2/2012
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
	0.2	FILLING - dark grey brown, sandy gravelly clay filling (topsoil), damp		E	0.1		PID<1		
	0.7	FILLING - dark grey and orange brown, silty clay filling with some building fragments, damp		E	0.4		PID<1		
	0.9	GRAVELLY CLAY - orange brown and dark grey, gravel and cobbly clay							
	1	Bore discontinued at 0.9m - refusal on gravel							
	2								
	3								
	4								

RIG: Terrazo Pengo **DRILLER:** G Miles **LOGGED:** A Podnar **CASING:** Uncased

TYPE OF BORING: 300mm diameter solid flight auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Appendix D

Summary of Laboratory Test Results

Table D1: Specific Contaminant Concentrations for Soil Samples

Sample/ Depth (m)	B	T	E	X	C_6-C_9	C_{10}-C_{14}	C_{15}-C_{28}	C_{29}-C_{36}	PAH	B(a)P	OCP	PCB	Phenol	Asbestos	As	Cd	Cr	Cu	Pb	Hg	Ni	Zn
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	Y/N	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Filling																						
BW1/0.1	<0.2	<0.5	<1.0	<2.0	<25	<50	110	140	<0.2	<0.05	<0.1	<0.1	<5	N	<4	<0.5	50	24	12	<0.1	17	48
BW2/0.3	<0.2	<0.5	<1.0	<2.0	<25	<50	<100	<100	<0.2	<0.05	<0.1	<0.1	<5	N	<4	<0.5	72	31	210	0.4	16	210
BW3/0.5	<0.2	<0.5	<1.0	<2.0	<25	<50	<100	<100	<0.2	<0.05	<0.1	<0.1	<5	N	<4	<0.5	46	14	9	<0.1	19	23
CW1/0.2	<0.2	<0.5	<1.0	<2.0	<25	<50	<100	<100	<0.2	<0.05	<0.1	<0.1	<5	N	<4	<0.5	35	16	10	<0.1	19	33
CW2/0.4	<0.2	<0.5	<1.0	<2.0	<25	<50	<100	<100	<0.2	<0.05	<0.1	<0.1	<5	N	<4	<0.5	120	18	10	<0.1	28	19
CW3/0.2	<0.2	<0.5	<1.0	<2.0	<25	<50	<100	<100	<0.2	<0.05	<0.1	<0.1	<5	N	<4	<0.5	88	18	10	0.6	25	22
SD1/0.4	<0.2	<0.5	<1.0	<2.0	<25	<50	<100	<100	<0.2	<0.05	<0.1	<0.1	<5	N	<4	<0.5	26	17	11	<0.1	14	37
SD2/0.1	<0.2	<0.5	<1.0	<2.0	<25	<50	<100	<100	<0.2	<0.05	<0.1	<0.1	<5	N	<4	<0.5	15	14	12	<0.1	12	41
SD3/0.4	<0.2	<0.5	<1.0	<2.0	<25	<50	<100	<100	3.3	0.2	<0.1	<0.1	<5	N	10	<0.5	26	36	64	<0.1	16	160
Natural Soil																						
CW4/0.3	<0.2	<0.5	<1.0	<2.0	<25	<50	<100	<100	<0.2	<0.05	<0.1	<0.1	<5	N	<4	<0.5	99	16	9	<0.1	20	17

Notes: B = Benzene; T = Toluene; E = Ethylbenzene; X = Xylene; C_6 – C_{36} = Total recoverable hydrocarbons; PAH = Polycyclic aromatic hydrocarbons; B(a)P = Benzo(a)pyrene; OCP = Organochlorine pesticides; OPP = Organophosphorus pesticides; PCB = Polychlorinated biphenyls; As = Arsenic; Cd = Cadmium; Cr = Chromium; Cu = Copper; Pb = Lead; Hg = Mercury; Ni = Nickel; Zn = Zinc; N/A = Not analysed; ** Denotes duplicate pair

Table D2: Guidelines for Soil Contamination Levels

Guideline	B	T	E	X	C_6-C_9	C_{10}-C_{14}	C_{15}-C_{28}	C_{29}-C_{36}	PAH	B(a)P	OCP	PCB	Phenol	Asbestos	As	Cd	Cr	Cu	Pb	Hg	Ni	Zn
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	Y/N	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
HIL[1]	-	-	-	-	-	-	-	-	40	2	Various	20	17000	-	200	40	200	2000	600	30	600	14000
Sensitive Use[2]	1	1.4/130	3.1/50	14/24	65	1000					-	-	-	-	-	-	-	-	-	-	-	-
PPIL[3]	-	-	-	-	-	-			-	-	-	-	-	-	20	3	400	100	600	1	60	200

Notes: [1] Health-based investigation levels for parks, recreational open space etc. from *Contaminated Sites: Guidelines for the NSW Site Auditor Scheme (2006)*

[2] Sensitive land use criteria from *Contaminated Sites: Guidelines for Assessing Service Station Sites (1994)*

[3] Provisional phytotoxicity-based investigation levels from *Contaminated Sites: Guidelines for the NSW Site Auditor Scheme (2006)*

Appendix E

Detailed Laboratory Test Results

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

CERTIFICATE OF ANALYSIS 69087

Client:
Douglas Partners
96 Hermitage Rd
West Ryde
NSW 2114

Attention: Peter Oitmaa

Sample log in details:

Your Reference:	**72811, Dubbo**		
No. of samples:	12 Soils		
Date samples received / completed instructions received	16/02/12	/	16/02/12

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:	23/02/12	/	23/02/12
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:

Nancy Zhang
Chemist

Rhian Morgan
Reporting Supervisor

Giovanni Agosti
Technical Manager

Paul Ching
Approved Signatory

Simon Mills
Group R&D/Quality Manager

NATA ACCREDITED FOR TECHNICAL COMPETENCE

vTRH & BTEX in Soil						
Our Reference:	UNITS	69087-1	69087-2	69087-3	69087-4	69087-5
Your Reference	----------	BW1	BW2	BW3	CW1	CW2
Depth	----------	0.1	0.3	0.5	0.2	0.4
Date Sampled		9/02/2012	9/02/2012	9/02/2012	9/02/2012	9/02/2012
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	17/02/2012	17/02/2012	17/02/2012	17/02/2012	17/02/2012
Date analysed	-	19/02/2012	19/02/2012	19/02/2012	19/02/2012	19/02/2012
vTRH C_6 - C_9	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
Surrogate aaa-Trifluorotoluene	%	95	94	100	104	92

vTRH & BTEX in Soil						
Our Reference:	UNITS	69087-6	69087-7	69087-8	69087-9	69087-10
Your Reference	----------	CW3	CW4	S01	S02	S03
Depth	----------	0.2	0.3	0.4	0.1	0.4
Date Sampled		9/02/2012	9/02/2012	9/02/2012	9/02/2012	9/02/2012
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	17/02/2012	17/02/2012	17/02/2012	17/02/2012	17/02/2012
Date analysed	-	19/02/2012	19/02/2012	19/02/2012	19/02/2012	19/02/2012
vTRH C_6 - C_9	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
Surrogate aaa-Trifluorotoluene	%	100	100	96	98	104

sTRH in Soil (C10-C36)						
Our Reference:	UNITS	69087-1	69087-2	69087-3	69087-4	69087-5
Your Reference	----------	BW1	BW2	BW3	CW1	CW2
Depth	----------	0.1	0.3	0.5	0.2	0.4
Date Sampled		9/02/2012	9/02/2012	9/02/2012	9/02/2012	9/02/2012
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	17/02/2012	17/02/2012	17/02/2012	17/02/2012	17/02/2012
Date analysed	-	18/02/2012	18/02/2012	18/02/2012	18/02/2012	18/02/2012
TRHC$_{10}$ - C$_{14}$	mg/kg	<50	<50	<50	<50	<50
TRHC$_{15}$ - C$_{28}$	mg/kg	110	<100	<100	<100	<100
TRHC$_{29}$ - C$_{36}$	mg/kg	140	<100	<100	<100	<100
Surrogate o-Terphenyl	%	81	95	93	96	94

sTRH in Soil (C10-C36)						
Our Reference:	UNITS	69087-6	69087-7	69087-8	69087-9	69087-10
Your Reference	----------	CW3	CW4	S01	S02	S03
Depth	----------	0.2	0.3	0.4	0.1	0.4
Date Sampled		9/02/2012	9/02/2012	9/02/2012	9/02/2012	9/02/2012
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	17/02/2012	17/02/2012	17/02/2012	17/02/2012	17/02/2012
Date analysed	-	18/02/2012	18/02/2012	18/02/2012	18/02/2012	18/02/2012
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	<100	<100	<100	<100
Surrogate o-Terphenyl	%	95	94	94	95	95

PAHs in Soil						
Our Reference:	UNITS	69087-1	69087-2	69087-3	69087-4	69087-5
Your Reference	----------	BW1	BW2	BW3	CW1	CW2
Depth	----------	0.1	0.3	0.5	0.2	0.4
Date Sampled		9/02/2012	9/02/2012	9/02/2012	9/02/2012	9/02/2012
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	17/02/2012	17/02/2012	17/02/2012	17/02/2012	17/02/2012
Date analysed	-	17/02/2012	17/02/2012	17/02/2012	17/02/2012	17/02/2012
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate p-Terphenyl-d_{14}	%	105	113	110	110	110

PAHs in Soil						
Our Reference:	UNITS	69087-6	69087-7	69087-8	69087-9	69087-10
Your Reference	----------	CW3	CW4	S01	S02	S03
Depth	----------	0.2	0.3	0.4	0.1	0.4
Date Sampled		9/02/2012	9/02/2012	9/02/2012	9/02/2012	9/02/2012
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	17/02/2012	17/02/2012	17/02/2012	17/02/2012	17/02/2012
Date analysed	-	17/02/2012	17/02/2012	17/02/2012	17/02/2012	17/02/2012
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.3
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.7
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.7
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.2
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.3
Benzo(b+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	0.4
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	0.20
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.3
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.2
Surrogate p-Terphenyl-d_{14}	%	117	110	114	105	109

Organochlorine Pesticides in soil						
Our Reference:	UNITS	69087-1	69087-2	69087-3	69087-4	69087-5
Your Reference	----------	BW1	BW2	BW3	CW1	CW2
Depth	----------	0.1	0.3	0.5	0.2	0.4
Date Sampled		9/02/2012	9/02/2012	9/02/2012	9/02/2012	9/02/2012
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	17/02/2012	17/02/2012	17/02/2012	17/02/2012	17/02/2012
Date analysed	-	20/02/2012	20/02/2012	20/02/2012	20/02/2012	20/02/2012
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 TCLMX	%	88	83	84	87	85

Organochlorine Pesticides in soil						
Our Reference:	UNITS	69087-6	69087-7	69087-8	69087-9	69087-10
Your Reference	----------	CW3	CW4	S01	S02	S03
Depth	----------	0.2	0.3	0.4	0.1	0.4
Date Sampled		9/02/2012	9/02/2012	9/02/2012	9/02/2012	9/02/2012
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	17/02/2012	17/02/2012	17/02/2012	17/02/2012	17/02/2012
Date analysed	-	20/02/2012	20/02/2012	20/02/2012	20/02/2012	20/02/2012
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 TCLMX	%	85	88	86	83	84

PCBs in Soil						
Our Reference:	UNITS	69087-1	69087-2	69087-3	69087-4	69087-5
Your Reference	----------	BW1	BW2	BW3	CW1	CW2
Depth	----------	0.1	0.3	0.5	0.2	0.4
Date Sampled		9/02/2012	9/02/2012	9/02/2012	9/02/2012	9/02/2012
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	17/02/2012	17/02/2012	17/02/2012	17/02/2012	17/02/2012
Date analysed	-	20/02/2012	20/02/2012	20/02/2012	20/02/2012	20/02/2012
Arochlor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	88	83	84	87	85

PCBs in Soil						
Our Reference:	UNITS	69087-6	69087-7	69087-8	69087-9	69087-10
Your Reference	----------	CW3	CW4	S01	S02	S03
Depth	----------	0.2	0.3	0.4	0.1	0.4
Date Sampled		9/02/2012	9/02/2012	9/02/2012	9/02/2012	9/02/2012
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	17/02/2012	17/02/2012	17/02/2012	17/02/2012	17/02/2012
Date analysed	-	20/02/2012	20/02/2012	20/02/2012	20/02/2012	20/02/2012
Arochlor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	85	88	86	83	84

Total Phenolics in Soil						
Our Reference:	UNITS	69087-1	69087-2	69087-3	69087-4	69087-5
Your Reference	----------	BW1	BW2	BW3	CW1	CW2
Depth	----------	0.1	0.3	0.5	0.2	0.4
Date Sampled		9/02/2012	9/02/2012	9/02/2012	9/02/2012	9/02/2012
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/02/2012	20/02/2012	20/02/2012	20/02/2012	20/02/2012
Date analysed	-	21/02/2012	21/02/2012	21/02/2012	21/02/2012	21/02/2012
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Total Phenolics in Soil						
Our Reference:	UNITS	69087-6	69087-7	69087-8	69087-9	69087-10
Your Reference	----------	CW3	CW4	S01	S02	S03
Depth	----------	0.2	0.3	0.4	0.1	0.4
Date Sampled		9/02/2012	9/02/2012	9/02/2012	9/02/2012	9/02/2012
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/02/2012	20/02/2012	20/02/2012	20/02/2012	20/02/2012
Date analysed	-	21/02/2012	21/02/2012	21/02/2012	21/02/2012	21/02/2012
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Acid Extractable metals in soil						
Our Reference:	UNITS	69087-1	69087-2	69087-3	69087-4	69087-5
Your Reference	----------	BW1	BW2	BW3	CW1	CW2
Depth	----------	0.1	0.3	0.5	0.2	0.4
Date Sampled		9/02/2012	9/02/2012	9/02/2012	9/02/2012	9/02/2012
Type of sample		Soil	Soil	Soil	Soil	Soil
Date digested	-	17/02/2012	17/02/2012	17/02/2012	17/02/2012	17/02/2012
Date analysed	-	17/02/2012	17/02/2012	17/02/2012	17/02/2012	17/02/2012
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	mg/kg	50	72	46	35	120
Copper	mg/kg	24	31	14	16	18
Lead	mg/kg	12	210	9	10	10
Mercury	mg/kg	<0.1	0.4	<0.1	<0.1	<0.1
Nickel	mg/kg	17	16	19	19	28
Zinc	mg/kg	48	210	23	33	19

Acid Extractable metals in soil						
Our Reference:	UNITS	69087-6	69087-7	69087-8	69087-9	69087-10
Your Reference	----------	CW3	CW4	S01	S02	S03
Depth	----------	0.2	0.3	0.4	0.1	0.4
Date Sampled		9/02/2012	9/02/2012	9/02/2012	9/02/2012	9/02/2012
Type of sample		Soil	Soil	Soil	Soil	Soil
Date digested	-	17/02/2012	17/02/2012	17/02/2012	17/02/2012	17/02/2012
Date analysed	-	17/02/2012	17/02/2012	17/02/2012	17/02/2012	17/02/2012
Arsenic	mg/kg	<4	<4	<4	<4	10
Cadmium	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	mg/kg	88	99	26	15	26
Copper	mg/kg	18	16	17	14	36
Lead	mg/kg	10	9	11	12	64
Mercury	mg/kg	0.6	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	25	20	14	12	16
Zinc	mg/kg	22	17	37	41	160

Miscellaneous Inorg - soil			
Our Reference:	UNITS	69087-11	69087-12
Your Reference	----------	BW1	BW3
Depth	----------	1.0	3.0
Date Sampled		9/02/2012	9/02/2012
Type of sample		Soil	Soil
Date prepared	-	20/02/2012	20/02/2012
Date analysed	-	20/02/2012	20/02/2012
pH 1:5 soil:water	pH Units	5.5	7.8
Electrical Conductivity 1:5 soil:water	µS/cm	86	93
Chloride, Cl 1:5 soil:water	mg/kg	63	72
Sulphate, SO4 1:5 soil:water	mg/kg	76	15

Moisture						
Our Reference:	UNITS	69087-1	69087-2	69087-3	69087-4	69087-5
Your Reference	----------	BW1	BW2	BW3	CW1	CW2
Depth	----------	0.1	0.3	0.5	0.2	0.4
Date Sampled		9/02/2012	9/02/2012	9/02/2012	9/02/2012	9/02/2012
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	17/02/2012	17/02/2012	17/02/2012	17/02/2012	17/02/2012
Date analysed	-	20/02/2012	20/02/2012	20/02/2012	20/02/2012	20/02/2012
Moisture	%	12	7.4	14	6.2	15

Moisture						
Our Reference:	UNITS	69087-6	69087-7	69087-8	69087-9	69087-10
Your Reference	----------	CW3	CW4	S01	S02	S03
Depth	----------	0.2	0.3	0.4	0.1	0.4
Date Sampled		9/02/2012	9/02/2012	9/02/2012	9/02/2012	9/02/2012
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	17/02/2012	17/02/2012	17/02/2012	17/02/2012	17/02/2012
Date analysed	-	20/02/2012	20/02/2012	20/02/2012	20/02/2012	20/02/2012
Moisture	%	14	14	17	18	15

Asbestos ID - soils						
Our Reference:	UNITS	69087-1	69087-2	69087-3	69087-4	69087-5
Your Reference	----------	BW1	BW2	BW3	CW1	CW2
Depth	----------	0.1	0.3	0.5	0.2	0.4
Date Sampled		9/02/2012	9/02/2012	9/02/2012	9/02/2012	9/02/2012
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	20/02/2012	20/02/2012	20/02/2012	20/02/2012	20/02/2012
Sample mass tested	g	Approx 40g	Approx 40g	Approx 40g	Approx 40g	Approx 40g
Sample Description	-	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg	No asbestos detected at reporting limit of 0.1g/kg	No asbestos detected at reporting limit of 0.1g/kg	No asbestos detected at reporting limit of 0.1g/kg	No asbestos detected at reporting limit of 0.1g/kg
Trace Analysis	-	No respirable fibres detected	No respirable fibres detected	No respirable fibres detected	No respirable fibres detected	No respirable fibres detected

Asbestos ID - soils						
Our Reference:	UNITS	69087-6	69087-7	69087-8	69087-9	69087-10
Your Reference	----------	CW3	CW4	S01	S02	S03
Depth	----------	0.2	0.3	0.4	0.1	0.4
Date Sampled		9/02/2012	9/02/2012	9/02/2012	9/02/2012	9/02/2012
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	20/02/2012	20/02/2012	20/02/2012	20/02/2012	20/02/2012
Sample mass tested	g	Approx 40g	Approx 40g	Approx 40g	Approx 40g	Approx 40g
Sample Description	-	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg	No asbestos detected at reporting limit of 0.1g/kg	No asbestos detected at reporting limit of 0.1g/kg	No asbestos detected at reporting limit of 0.1g/kg	No asbestos detected at reporting limit of 0.1g/kg
Trace Analysis	-	No respirable fibres detected	No respirable fibres detected	No respirable fibres detected	No respirable fibres detected	No respirable fibres 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.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID.
Org-012 subset	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS.
Org-005	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-030	Total Phenolics - determined colorimetrically following disitillation, based upon APHA 21st ED 5530 D.
Metals-020 ICP-AES	Determination of various metals by ICP-AES.
Metals-021 CV-AAS	Determination of Mercury by Cold Vapour AAS.
Inorg-001	pH - Measured using pH meter and electrode in accordance with APHA 21st ED, 4500-H+.
Inorg-002	Conductivity and Salinity - measured using a conductivity cell and dedicated meter, in accordance with APHA 21st ED 2510 and Rayment & Higginson.
Inorg-081	Anions - a range of Anions are determined by Ion Chromatography, in accordance with APHA 21st ED, 4110-B.
Inorg-008	Moisture content determined by heating at 105 deg C for a minimum of 4 hours.
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.

QUALITY CONTROL vTRH & BTEX in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base || Duplicate || %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			17/02/2012	69087-1	17/02/2012 || 17/02/2012	LCS-4	17/02/2012
Date analysed	-			19/02/2012	69087-1	19/02/2012 || 19/02/2012	LCS-4	19/02/2012
vTRH C_6 - C_9	mg/kg	25	Org-016	<25	69087-1	<25 || <25	LCS-4	89%
Benzene	mg/kg	0.2	Org-016	<0.2	69087-1	<0.2 || <0.2	LCS-4	77%
Toluene	mg/kg	0.5	Org-016	<0.5	69087-1	<0.5 || <0.5	LCS-4	88%
Ethylbenzene	mg/kg	1	Org-016	<1	69087-1	<1 || <1	LCS-4	91%
m+p-xylene	mg/kg	2	Org-016	<2	69087-1	<2 || <2	LCS-4	95%
o-Xylene	mg/kg	1	Org-016	<1	69087-1	<1 || <1	LCS-4	95%
Surrogate aaa-Trifluorotoluene	%		Org-016	107	69087-1	95 || 97 || RPD: 2	LCS-4	99%

QUALITY CONTROL sTRH in Soil (C10-C36)	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base || Duplicate || %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			17/02/2012	69087-1	17/02/2012 || 17/02/2012	LCS-4	17/02/2012
Date analysed	-			18/02/2012	69087-1	18/02/2012 || 18/02/2012	LCS-4	18/02/2012
TRH C_{10} - C_{14}	mg/kg	50	Org-003	<50	69087-1	<50 || <50	LCS-4	121%
TRH C_{15} - C_{28}	mg/kg	100	Org-003	<100	69087-1	110 || 110 || RPD: 0	LCS-4	104%
TRH C_{29} - C_{36}	mg/kg	100	Org-003	<100	69087-1	140 || 140 || RPD: 0	LCS-4	93%
Surrogate o-Terphenyl	%		Org-003	93	69087-1	81 || 96 || RPD: 17	LCS-4	101%

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base || Duplicate || %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			17/02/2012	69087-1	17/02/2012 || 17/02/2012	LCS-4	17/02/2012
Date analysed	-			17/02/2012	69087-1	17/02/2012 || 17/02/2012	LCS-4	17/02/2012
Naphthalene	mg/kg	0.1	Org-012 subset	<0.1	69087-1	<0.1 || <0.1	LCS-4	104%
Acenaphthylene	mg/kg	0.1	Org-012 subset	<0.1	69087-1	<0.1 || <0.1	[NR]	[NR]
Acenaphthene	mg/kg	0.1	Org-012 subset	<0.1	69087-1	<0.1 || <0.1	[NR]	[NR]
Fluorene	mg/kg	0.1	Org-012 subset	<0.1	69087-1	<0.1 || <0.1	LCS-4	106%
Phenanthrene	mg/kg	0.1	Org-012 subset	<0.1	69087-1	<0.1 || <0.1	LCS-4	103%
Anthracene	mg/kg	0.1	Org-012 subset	<0.1	69087-1	<0.1 || <0.1	[NR]	[NR]
Fluoranthene	mg/kg	0.1	Org-012 subset	<0.1	69087-1	<0.1 || <0.1	LCS-4	105%
Pyrene	mg/kg	0.1	Org-012 subset	<0.1	69087-1	<0.1 || 0.1	LCS-4	109%
Benzo(a)anthracene	mg/kg	0.1	Org-012 subset	<0.1	69087-1	<0.1 || <0.1	[NR]	[NR]
Chrysene	mg/kg	0.1	Org-012 subset	<0.1	69087-1	<0.1 || <0.1	LCS-4	101%

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Benzo(b+k)fluoranthene	mg/kg	0.2	Org-012 subset	<0.2	69087-1	<0.2 || <0.2	[NR]	[NR]
Benzo(a)pyrene	mg/kg	0.05	Org-012 subset	<0.05	69087-1	<0.05 || <0.05	LCS-4	102%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012 subset	<0.1	69087-1	<0.1 || <0.1	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012 subset	<0.1	69087-1	<0.1 || <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012 subset	<0.1	69087-1	<0.1 || <0.1	[NR]	[NR]
Surrogate p-Terphenyl-d_{14}	%		Org-012 subset	105	69087-1	105 || 110 || RPD: 5	LCS-4	109%

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	-			17/02/2012	69087-1	17/02/2012 || 17/02/2012	LCS-2	17/02/2012
Date analysed	-			20/02/2012	69087-1	20/02/2012 || 20/02/2012	LCS-2	20/02/2012
HCB	mg/kg	0.1	Org-005	<0.1	69087-1	<0.1 || <0.1	[NR]	[NR]
alpha-BHC	mg/kg	0.1	Org-005	<0.1	69087-1	<0.1 || <0.1	LCS-2	95%
gamma-BHC	mg/kg	0.1	Org-005	<0.1	69087-1	<0.1 || <0.1	[NR]	[NR]
beta-BHC	mg/kg	0.1	Org-005	<0.1	69087-1	<0.1 || <0.1	LCS-2	102%
Heptachlor	mg/kg	0.1	Org-005	<0.1	69087-1	<0.1 || <0.1	LCS-2	91%
delta-BHC	mg/kg	0.1	Org-005	<0.1	69087-1	<0.1 || <0.1	[NR]	[NR]
Aldrin	mg/kg	0.1	Org-005	<0.1	69087-1	<0.1 || <0.1	LCS-2	87%
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	69087-1	<0.1 || <0.1	LCS-2	95%
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	69087-1	<0.1 || <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	69087-1	<0.1 || <0.1	[NR]	[NR]
Endosulfan I	mg/kg	0.1	Org-005	<0.1	69087-1	<0.1 || <0.1	[NR]	[NR]
pp-DDE	mg/kg	0.1	Org-005	<0.1	69087-1	<0.1 || <0.1	LCS-2	96%
Dieldrin	mg/kg	0.1	Org-005	<0.1	69087-1	<0.1 || <0.1	LCS-2	101%
Endrin	mg/kg	0.1	Org-005	<0.1	69087-1	<0.1 || <0.1	LCS-2	95%
pp-DDD	mg/kg	0.1	Org-005	<0.1	69087-1	<0.1 || <0.1	LCS-2	104%
Endosulfan II	mg/kg	0.1	Org-005	<0.1	69087-1	<0.1 || <0.1	[NR]	[NR]
pp-DDT	mg/kg	0.1	Org-005	<0.1	69087-1	<0.1 || <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	69087-1	<0.1 || <0.1	[NR]	[NR]
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	69087-1	<0.1 || <0.1	LCS-2	97%
Methoxychlor	mg/kg	0.1	Org-005	<0.1	69087-1	<0.1 || <0.1	[NR]	[NR]
Surrogate TCLMX	%		Org-005	83	69087-1	88 || 82 || RPD: 7	LCS-2	84%

QUALITY CONTROL PCBs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			17/02/2012	69087-1	17/02/2012 || 17/02/2012	LCS-2	17/02/2012
Date analysed	-			20/02/2012	69087-1	20/02/2012 || 20/02/2012	LCS-2	20/02/2012
Arochlor 1016	mg/kg	0.1	Org-006	<0.1	69087-1	<0.1 || <0.1	[NR]	[NR]
Arochlor 1221	mg/kg	0.1	Org-006	<0.1	69087-1	<0.1 || <0.1	[NR]	[NR]
Arochlor 1232	mg/kg	0.1	Org-006	<0.1	69087-1	<0.1 || <0.1	[NR]	[NR]
Arochlor 1242	mg/kg	0.1	Org-006	<0.1	69087-1	<0.1 || <0.1	[NR]	[NR]
Arochlor 1248	mg/kg	0.1	Org-006	<0.1	69087-1	<0.1 || <0.1	[NR]	[NR]
Arochlor 1254	mg/kg	0.1	Org-006	<0.1	69087-1	<0.1 || <0.1	LCS-2	96%
Arochlor 1260	mg/kg	0.1	Org-006	<0.1	69087-1	<0.1 || <0.1	[NR]	[NR]
Surrogate TCLMX	%		Org-006	83	69087-1	88 || 82 || RPD: 7	LCS-2	95%

QUALITY CONTROL Total Phenolics in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			20/02/2012	69087-1	20/02/2012 || 20/02/2012	LCS-1	20/02/2012
Date analysed	-			21/02/2012	69087-1	21/02/2012 || 21/02/2012	LCS-1	21/02/2012
Total Phenolics (as Phenol)	mg/kg	5	Inorg-030	<5	69087-1	<5 || <5	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	-			17/02/2012	69087-1	17/02/2012 || 17/02/2012	LCS-1	17/02/2012
Date analysed	-			17/02/2012	69087-1	17/02/2012 || 17/02/2012	LCS-1	17/02/2012
Arsenic	mg/kg	4	Metals-020 ICP-AES	<4	69087-1	<4 || <4	LCS-1	104%
Cadmium	mg/kg	0.5	Metals-020 ICP-AES	<0.5	69087-1	<0.5 || <0.5	LCS-1	101%
Chromium	mg/kg	1	Metals-020 ICP-AES	<1	69087-1	50 || 39 || RPD: 25	LCS-1	104%
Copper	mg/kg	1	Metals-020 ICP-AES	<1	69087-1	24 || 31 || RPD: 25	LCS-1	106%
Lead	mg/kg	1	Metals-020 ICP-AES	<1	69087-1	12 || 12 || RPD: 0	LCS-1	102%
Mercury	mg/kg	0.1	Metals-021 CV-AAS	<0.1	69087-1	<0.1 || <0.1	LCS-1	118%
Nickel	mg/kg	1	Metals-020 ICP-AES	<1	69087-1	17 || 25 || RPD: 38	LCS-1	105%
Zinc	mg/kg	1	Metals-020 ICP-AES	<1	69087-1	48 || 42 || RPD: 13	LCS-1	104%

QUALITY CONTROL Miscellaneous Inorg - soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date prepared	-			20/02/2012	[NT]	[NT]	LCS-1	20/02/2012
Date analysed	-			20/02/2012	[NT]	[NT]	LCS-1	20/02/2012
pH 1:5 soil:water	pH Units		Inorg-001	[NT]	[NT]	[NT]	LCS-1	101%
Electrical Conductivity 1:5 soil:water	µS/cm	1	Inorg-002	<1	[NT]	[NT]	LCS-1	109%
Chloride, Cl 1:5 soil:water	mg/kg	2	Inorg-081	<2	[NT]	[NT]	LCS-1	108%
Sulphate, SO4 1:5 soil:water	mg/kg	2	Inorg-081	<2	[NT]	[NT]	LCS-1	97%

QUALITY CONTROL Moisture	UNITS	PQL	METHOD	Blank
Date prepared	-			[NT]
Date analysed	-			[NT]
Moisture	%	0.1	Inorg-008	[NT]

QUALITY CONTROL Asbestos ID - soils	UNITS	PQL	METHOD	Blank
Date analysed	-			[NT]

QUALITY CONTROL vTRH & BTEX in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	69087-2	17/02/2012
Date analysed	-	[NT]	[NT]	69087-2	19/02/2012
vTRH C_6 - C_9	mg/kg	[NT]	[NT]	69087-2	94%
Benzene	mg/kg	[NT]	[NT]	69087-2	80%
Toluene	mg/kg	[NT]	[NT]	69087-2	92%
Ethylbenzene	mg/kg	[NT]	[NT]	69087-2	96%
m+p-xylene	mg/kg	[NT]	[NT]	69087-2	101%
o-Xylene	mg/kg	[NT]	[NT]	69087-2	101%
Surrogate aaa-Trifluorotoluene	%	[NT]	[NT]	69087-2	105%

QUALITY CONTROL sTRH in Soil (C10-C36)	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	69087-2	17/02/2012
Date analysed	-	[NT]	[NT]	69087-2	18/02/2012
TRH C_{10} - C_{14}	mg/kg	[NT]	[NT]	69087-2	108%
TRH C_{15} - C_{28}	mg/kg	[NT]	[NT]	69087-2	100%
TRH C_{29} - C_{36}	mg/kg	[NT]	[NT]	69087-2	94%
Surrogate o-Terphenyl	%	[NT]	[NT]	69087-2	98%

QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	69087-2	17/02/2012
Date analysed	-	[NT]	[NT]	69087-2	17/02/2012
Naphthalene	mg/kg	[NT]	[NT]	69087-2	99%
Acenaphthylene	mg/kg	[NT]	[NT]	[NR]	[NR]
Acenaphthene	mg/kg	[NT]	[NT]	[NR]	[NR]
Fluorene	mg/kg	[NT]	[NT]	69087-2	100%
Phenanthrene	mg/kg	[NT]	[NT]	69087-2	98%
Anthracene	mg/kg	[NT]	[NT]	[NR]	[NR]
Fluoranthene	mg/kg	[NT]	[NT]	69087-2	97%
Pyrene	mg/kg	[NT]	[NT]	69087-2	99%
Benzo(a)anthracene	mg/kg	[NT]	[NT]	[NR]	[NR]
Chrysene	mg/kg	[NT]	[NT]	69087-2	96%
Benzo(b+k)fluoranthene	mg/kg	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene	mg/kg	[NT]	[NT]	69087-2	109%
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]
Surrogate p-Terphenyl-d_{14}	%	[NT]	[NT]	69087-2	102%

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	69087-2	17/02/2012
Date analysed	-	[NT]	[NT]	69087-2	20/02/2012
HCB	mg/kg	[NT]	[NT]	[NR]	[NR]
alpha-BHC	mg/kg	[NT]	[NT]	69087-2	92%
gamma-BHC	mg/kg	[NT]	[NT]	[NR]	[NR]
beta-BHC	mg/kg	[NT]	[NT]	69087-2	97%
Heptachlor	mg/kg	[NT]	[NT]	69087-2	82%
delta-BHC	mg/kg	[NT]	[NT]	[NR]	[NR]
Aldrin	mg/kg	[NT]	[NT]	69087-2	84%
Heptachlor Epoxide	mg/kg	[NT]	[NT]	69087-2	91%
gamma-Chlordane	mg/kg	[NT]	[NT]	[NR]	[NR]
alpha-chlordane	mg/kg	[NT]	[NT]	[NR]	[NR]
Endosulfan I	mg/kg	[NT]	[NT]	[NR]	[NR]
pp-DDE	mg/kg	[NT]	[NT]	69087-2	92%
Dieldrin	mg/kg	[NT]	[NT]	69087-2	96%
Endrin	mg/kg	[NT]	[NT]	69087-2	87%
pp-DDD	mg/kg	[NT]	[NT]	69087-2	97%
Endosulfan II	mg/kg	[NT]	[NT]	[NR]	[NR]
pp-DDT	mg/kg	[NT]	[NT]	[NR]	[NR]
Endrin Aldehyde	mg/kg	[NT]	[NT]	[NR]	[NR]

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Endosulfan Sulphate	mg/kg	[NT]	[NT]	69087-2	87%
Methoxychlor	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate TCLMX	%	[NT]	[NT]	69087-2	63%
QUALITY CONTROL PCBs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	69087-2	17/02/2012
Date analysed	-	[NT]	[NT]	69087-2	20/02/2012
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]	69087-2	94%
Arochlor 1260	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate TCLMX	%	[NT]	[NT]	69087-2	102%
QUALITY CONTROL Total Phenolics in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	69087-2	20/02/2012
Date analysed	-	[NT]	[NT]	69087-2	21/02/2012
Total Phenolics (as Phenol)	mg/kg	[NT]	[NT]	69087-2	93%
QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date digested	-	[NT]	[NT]	69087-2	17/02/2012
Date analysed	-	[NT]	[NT]	69087-2	17/02/2012
Arsenic	mg/kg	[NT]	[NT]	69087-2	85%
Cadmium	mg/kg	[NT]	[NT]	69087-2	80%
Chromium	mg/kg	[NT]	[NT]	69087-2	76%
Copper	mg/kg	[NT]	[NT]	69087-2	100%
Lead	mg/kg	[NT]	[NT]	69087-2	#
Mercury	mg/kg	[NT]	[NT]	69087-2	105%
Nickel	mg/kg	[NT]	[NT]	69087-2	87%
Zinc	mg/kg	[NT]	[NT]	69087-2	#

Report Comments:

Asbestos: A portion of the supplied sample was sub-sampled for asbestos according to Envirolab procedures. We cannot guarantee that this sub-sample is indicative of the entire sample. Envirolab recommends supplying 30-40g of sample in its own container.

Acid Extractable Metals in Soil:# Percent recovery is not possible to report due to the high concentration of the element/s in the sample/s. However an acceptable recovery was obtained for the LCS.

Asbestos ID was analysed by Approved Identifier:	Paul Ching
Asbestos ID was authorised by Approved Signatory:	Paul Ching

INS: Insufficient sample for this test	PQL: Practical Quantitation Limit	NT: Not tested
NA: 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 batched of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.
Matrix Spikes and LCS: Generally 70-130% for inorganics/metals; 60-140% for organics and 10-140% for SVOC and speciated phenols is acceptable.

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

SAMPLE RECEIPT ADVICE

Client:

Douglas Partners
96 Hermitage Rd
West Ryde NSW 2114

ph: 02 9809 0666
Fax: 02 9809 4095

Attention: Peter Oitmaa

Sample log in details:

Your reference:	**72811, Dubbo**
Envirolab Reference:	**69087**
Date received:	16/02/12
Date results expected to be reported:	**23/02/12**

Samples received in appropriate condition for analysis:	YES
No. of samples provided	12 Soils
Turnaround time requested:	Standard
Temperature on receipt	Cool
Cooling Method:	Ice Pack

Comments:

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

Contact details:

Please direct any queries to Aileen Hie or Jacinta Hurst
ph: 02 9910 6200 fax: 02 9910 6201
email: ahie@envirolabservices.com.au or jhurst@envirolabservices.com.au

Douglas Partners
Geotechnics · Environment · Groundwater

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

CHAIN OF CUSTODY

Job No: 69087

Project Name: Dubbo
Project No: 72811 Sampler: AP
Project Mgr: Peter Oitmaa Mob. Phone: 0412 574 5[illegible]
Email: peter.oitmaa@douglaspartners.com.au
Date Required: Std Lab Quote No. .....

Date Received: 16/2/12 To: Envirolab Services
Time Received: 13:55
Received by: JHie
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

12 Ashley Street, Chatswood NSW 2067
Attn: Tania Notaras
Phone: 02 9910 6200 Fax: 02 9910 6201
Email: tnotaras@envirolabservices.com.au

Sample ID	Sample Depth	Lab ID	Sampling Date	Sample Type S - soil W - water	Container type	Analytes: 8 Metals (As, Cd, Cr, Cu, Pb, Hg, Zn, Ni)	BTEX/ TPH	PAH	OCP/ ~~OPP~~	PCB	Phenols	Asbestos	~~TCLP~~ (Metals/ ~~PAH~~) pH, EC, Cl^-, SO_4^{2-}	Notes
BW1	0.1	1	9/2	S	Jar									Package 7a
BW2	0.3	2												
BW3	0.5	3												
CW1	0.2	4												
CW2	0.4	5												
CW3	0.2	6												
CW4	0.3	7												
SO1	0.4	8												
SO2	0.1	9												
SO3	0.4	10												
BW1	1.0	11			Bag									
BW3	3.0	12												

Lab Report No. .....
Send Results to: Douglas Partners Address: 96 Hermitage Road, West Ryde 2114
Phone: (02) 9809 0666
Fax: (02) 9809 4095

Relinquished by: P. Oitmaa Signed: Date & Time: 16.2 1200hrs Received By: Date & Time: 16/2/12 13:55.
Relinquished by: Signed: Date & Time: Received By: Date & Time: