



Detailed Site Investigation:

Lots 2 & 3 on DP244652 Uriup Road, Bilambil, New South Wales.

Prepared for:

Jackson International Pty Ltd

August 2008

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for

Jackson International Pty Ltd

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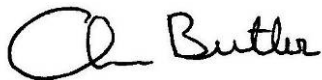
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1 INTRODUCTION

Precise Environmental (PE) was commissioned by Jackson International Pty Ltd (the client) to undertake a detailed site investigation (DSI) within the bounds of Lots 2 & 3 on DP244652 Urluij Road, Bilambil, New South Wales (the site).

The proposed scope of work was based on the outcome of PE's previously reported preliminary site investigation (PSI) of the site. The DSI scope of work was detailed in PE's proposal dated 4 July 2008, and written acceptance of the proposal by the client was received by PE on 7 July 2008.

This report combines both the PSI and the DSI scope of work.

1.1 Background

The site occupies an area of approximately 4.6 hectares and is currently vacant. The site has historically been used as a dairy, and as a quarry to extract soil and rock. Land filling has been conducted across the southern portion of the site. The source of the fill is unknown, however it is likely that much of the fill was imported from off-site. The potential also exists for significant volumes of building rubble and waste material to be present within the filled areas of the site.

It is understood that Jackson International Pty Ltd (Jackson International) propose to subdivide the site to create 57 residential allotments which will range in area from 450m² to 851m². Several open space areas and one commercial/retail allotment with an area of 1,30m² will also be provided. Darryl Anderson Consulting Pty Ltd, acting as the town planner for Jackson International has submitted documentation to the NSW Department of Planning seeking the Director General's requirements that will apply for consent for the development. The Director General's environmental assessment requirements (Major Project Application No. MP08-0034) with regard to contaminated land matters are as follows:

Identify any contamination on site including a detailed investigation of all materials deposited onsite and undertake appropriate mitigation measures in accordance with the provisions of SEPP 55 – Remediation of Land.

The location of the site is indicated in Figure 1 (Appendix A).

Site features referred to throughout this report are shown in Figures 1 to 8 (Appendix A) and Plates 1 to 10 (Appendix E).

1.2 Objectives

The objectives of the PSI were to:

- Discuss the site conditions.
- Identify all past and present potentially contaminating activities.
- Identify potential contaminant types.
- Assess the need for further investigations.

The objectives of the DSI were to:

- Evaluate the fill and natural soils across the site.

- Identify highly contaminated or leachable soils.
- Collect sufficient information to develop a remediation plan (if required).
- Assess the need for further investigations.

1.3 Scope of work

The PSI scope of work included:

- A detailed site inspection.
- Review of current and available historical certificates of land titles held by the NSW Department of Lands.
- Conduct a search of Tweed Shire Council (TSC) records available for the site.
- Search of the WorkCover NSW Dangerous Goods license records.
- Search of the NSW EPA website for records of licenses under the *Protection of the Environment Operations (POEO) Act 1997* or notices under the CLM Act.
- Search of the NSW Department of Primary Industries *Cattle Dip Site Locator*.
- Review of available aerial photographs held by TSC and NSW Department of Lands, comprising six aerial photographs of the site recorded in 1962, 1972, 1979, 1987, 1997 and approximately 2005.
- Review of available published information regarding site conditions, e.g. geology sheet, soil maps and notes, etc.
- Groundwater bore/monitoring well search of Department of Infrastructure, Planning and Natural Resources (DIPNR) licensed groundwater bores within a one kilometre radius of the site.
- Incorporation of the findings of these activities into a report.

The DSI scope of work comprised:

- Recovery of surface soil samples on a systematic (grid based) plan. The samples were analysed for heavy metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel, zinc) and selectively analysed for organochlorine (OCPs) & organophosphorus (OPPs) pesticides.
- Excavation of test pits across the southern filled portion of the site (adjacent to Hogans Road) on a systematic (grid based) plan.
- Recovery of soil samples from the test pits. The samples were representative of each general material type and natural soils underlying the fill. The samples were analysed for typical fill related contaminants consisting of heavy metals, OCPs, OPPs, polychlorinated biphenols (PCBs), total petroleum hydrocarbons (TPHs), benzene, toluene, ethylbenzene and xylenes (BTEX), polycyclic aromatic hydrocarbons (PAHs) and phenolic compounds. The samples were selectively analysed for asbestos and a fragment of fibrous cement sheeting recovered from TP6 was forwarded to the laboratory for asbestos identification.

- Recovery of soil samples from fill stockpiles. The samples were analysed for typical fill related contaminants consisting of total heavy metals, OCPs, OPPs, PCBs, TPHs, BTEX, PAHs and phenolic compounds. The samples were selectively analysed for asbestos.
- Preparation and analysis of field duplicates for the above described potential contaminants of concern.
- Incorporation of the findings of the DSI into this report.

Guidance considered in conducting this scope of work included:

- Australian Standard AS 4482.1 (2005) *Guide to sampling and investigation of potentially contaminated soil, Part 1: Non-Volatile and semi-volatile compounds.*
- Australian Standard AS 4482.2 (1999) *Guide to sampling and investigation of potentially contaminated soil, Part 2: Volatile substances.*
- Department of Environment and Conservation (2006) *Contaminated Sites: Guidelines for the NSW Site Auditor Scheme (2nd Addition).*
- Environment Protection Authority (1995) *Contaminated Sites: Sampling Design Guidelines.*
- Environment Protection Authority (1997) *Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites.*
- National Environment Protection Council (NEPC) (1999) *National Environmental Protection (Assessment of Site Contamination) Measure.* National Environment Protection Council Service Corporation, Adelaide, SA.

1.4 Limitations

The findings of this report are based on the objectives and scope of work outlined above. PE performed the services in a manner consistent with the normal level of care and expertise exercised by members of the environmental assessment profession. No warranties or guarantees, express or implied, are made. Subject to the scope of work, PE's assessment is limited strictly to identifying typical environmental conditions associated with the subject property, and does not include evaluation of any other issues. This report does not comment on any regulatory obligations based on the findings, for which a legal opinion should be sought. This report relates only to the objectives and scope of work stated, and does not relate to any other works undertaken for the Client.

The report and conclusions are based on the information obtained at the time of the assessment. Changes to the subsurface conditions may occur subsequent to the investigation described herein, through natural processes or through the intentional or accidental addition of contaminants, and these conditions may change with space and time.

The site history, and associated uses, areas of use, and potential contaminants, were determined based on the activities described in the scope of work. Additional site history information held by the Client, regulatory authorities, or in the public domain, which was not provided to PE or was not sourced by PE under the scope of work, may identify additional uses, areas of use and/or potential contaminants. The information sources referenced have been used to determine site history and desktop information regarding local subsurface conditions. While PE has used reasonable care to avoid

reliance on data and information that is inaccurate or unsuitable, PE is not able to verify the accuracy or completeness of all information and data made available.

Further chemicals or categories of chemicals may exist at the site, which were not identified in the site history, and which may not be expected at the site. The absence of any identified hazardous or toxic materials on the subject property, should not be interpreted as a warranty or guarantee that such materials do not exist on the site. If additional certainty is required, additional site history or desktop studies, or environmental sampling and analysis should be commissioned.

The results of this assessment are based upon site inspection and fieldwork conducted by PE personnel and information provided by the Client. All conclusions regarding the property area are the professional opinions of the PE personnel involved with the project, subject to the qualifications made above. While normal assessments of data reliability have been made, PE assume no responsibility or liability for errors in any data obtained from regulatory agencies, information from sources outside of PE or developments resulting from situations outside the scope of this project.

2 SITE IDENTIFICATION AND SURROUNDS

2.1 Site identification and land use

The site identification and land use details are provided in Table 2.1.

Table 2.1. Site details

Street address:	Urliup Road, Bilambil, New South Wales
Property description:	Lots 2 & 3 on DP244652
County:	Rous
Parish:	Terranora
Local government:	Tweed Shire Council
Zoning:	Local Environmental Plan – 2(d) Village
Elevation:	~2.7 m to ~26.0 m Australian Height Datum (AHD)
Land use – existing:	Vacant
Land use – proposed:	Mixed use - residential and commercial
Site Area:	~ 4.6 hectares

2.2 Surrounding land use and environment

The surrounding land use and environment as observed is described as follows:

- North – Urliup Road, then residential development zoned as 2(d) Village. The site directly opposite Urliup Road contains a former cattle tick dip known as the Bilambil Dip.
- South – Hogans Road, then rural residential development zoned as 1(a) Rural.
- East – Bilambil Road, then Bilambil Sports Field and Equestrian Grounds, and Bilambil Village Caravan Park, which is zoned as 6(a) Open Space and 6(b) Recreation.
- West – Bilambil creek and rural residential development zoned as 2(d) Village (north of Bilambil Creek) and 1(a) Rural. The site to the immediate west of Lot 3 has miscellaneous mechanical items, machinery and random salvaged items stored across the majority of the property.

3 ENVIRONMENTAL SETTING

3.1 Local meteorology

A summary of the climatic data for Coolangatta Airport (Latitude: 28.1656 S, Longitude: 153.5094 E, Elevation: 6.0m) is provided in Table 3.1.

Table 3.1. Climatic summary

	Temperature (°C)		Rainfall (mm)		Average monthly evaporation (mm)
	Mean Maximum	Mean Minimum	Average monthly	Highest monthly	
January	27.9	20.9	130.5	370.0	175
February	28.0	20.9	136.6	428.8	175
March	27.1	19.9	219.0	520.8	175
April	25.1	17.0	224.5	644.6	125
May	23.0	14.5	170.3	380.6	80
June	20.9	11.5	110.8	308.2	80
July	20.3	10.3	88.2	201.6	80
August	20.9	10.8	49.4	185.8	100
September	23.0	13.5	35.9	152.8	150
October	23.9	16.1	85.9	206.6	175
November	25.3	18.1	119.2	207.6	200
December	26.8	19.7	139.7	311.8	200

Table notes

- Data from 1982 to 2004 from Coolangatta Airport (Bureau of Meteorology climate averages website)

The highest maximum temperatures were recorded between December and March. Evaporation is also at its peak during this time. Average monthly rainfall is at its highest between November and June.

3.2 Topography and hydrology

The site contains a prominent summit with an elevation of approximately 26m AHD located centrally within the site. The southern and western face of the summit have been quarried to form an escarpment with steep to vertical faces approximately 15 m to 20 m high. Steeply to moderately inclined slopes fall from the summit to the east, north, and north-west. The southern and eastern most parts of the site are generally level with only slight undulations, ranging in elevation from approximately 2.7 m to 5.5 m AHD. A large dam is located adjacent the western site boundary. The western site boundary is defined by Bilambil Creek.

The majority of stormwater runoff is expected to flow to the east toward Bilambil Road, A portion of the runoff would flow to the south toward Hogans Road and to Bilambil Creek. The runoff is expected to eventually discharge to the Cobaki Broadwater, which is located approximately 3.5 km to the east of the site.

3.3 Geology and soils

3.3.1 GEOLOGY

The geology at the site is mapped at 1:100,000 as Palaeozoic Neranleigh-Fernvale Beds, comprising greywacke, argillite, quartzite, chert, shale, sandstone and greenstone (Geological Survey of Queensland – Murwillumbah Surface Geology 1:100,000, Sheet 9541, 1978).

3.3.2 SOILS

Morand (1994) describes the soil landscape at the site as *Burringbar*. The Burringbar soil landscape is described as high rolling to steep hills on metamorphics of the Neranleigh-Fernvale Group, with soil variations as follows:

- Shallow to moderately deep (<100cm), moderately well drained, stoney grey earths on crests and some slopes
- Deep (>100cm), moderately well drained, red podzolic soils on slopes of deeply weathered siltstone/mudstone/shale
- Shallow (50-100cm), poorly drained yellow podzolic soils on slopes of quartzite/phyllite
- Deep (>200cm), moderately well drained red earths on footslopes/lower slopes and
- Deep (>150cm), imperfectly drained, stoney yellow podzolic soils on old coastline.

3.3.3 GEOTECHNICAL INVESTIGATION

A preliminary geotechnical investigation was conducted at the site by Border-Tech in May 2008 (refer: *Preliminary Geotechnical Investigation, Lots 2 & 3 DP244652 Bilambil Road, Bilambil*; Project Ref: JW;jw:BT 18176-1; 21 May 2008). The investigation identified residual soil and rock on the slopes and alluvial soils on the lower lying southern and eastern parts of the site. Gravelly clay fill was identified to a depth of 1.5m below the ground surface level in the south-west corner of the site. None of the other boreholes were positioned to target fill materials.

3.4 Hydrogeology

An online search of DIPNR licensed groundwater bores was conducted on 25th June 2008. The search identified five licensed bores within a 1 km radius of the site, as shown in Table 3.4.

Table 3.4. Groundwater bores within 1 km of the site

Lic. /GW no.	Relative location to site	SWL (m)	Salinity ($\mu\text{S}/\text{cm}^2$)	Yield (L/s)	Authorised purpose	Geology
30BL153550 GW305233	200m south west	ND	ND	ND	Domestic	ND TD @ 35.0m
30BL179007 GW302893	950m west	ND	ND	ND	Farming stock	ND TD @ 1.0m
30BL144217 GW300185	800m north west	29.00	ND	0.41	Domestic stock	Topsoil @ 0.0m Clay @ 1.0m Sandstone @ 2.0m Bands of basalt and shale @ 20m – 44m TD @ 44.0m
30BL179006 GW302892	400m north	ND	ND	ND	Stock	ND TD @ 0.5m
30BL135785 GW064040	300m north	20.00	ND	1.18	Domestic stock	Clay @ 0.0m Shale @ 10.0m Basalt @ 13.0m (water bearing) TD @ 23.0m

The available information indicates that these bores are authorised for domestic use and stock watering. It is assumed that the domestic bores are predominantly used for irrigation supply, however depending on the quality, the extracted water may be used to supplement tank water supply during dry periods. Based on the topography and

geology of the site and surrounds, it is expected that groundwater would generally flow in an easterly direction, down the valley toward the Cobaki Broadwater.

The groundwater bore search results and the groundwater works summary reports are provided in Appendix B.

4 SITE HISTORY

4.1 Land use summary

The site has historically been used for cattle grazing and as a dairy. Anecdotal information suggests that dairy farming ceased at least 30 years ago. The site has also been used as a quarry since the early 1960s. Land filling has been conducted across the southern portion of the site. The source of the fill is unknown, however it is likely that of the majority of the fill was derived from on-site. It is possible that the fill contains building rubble and waste material.

4.1.1 HISTORICAL TITLES

A historical title search was undertaken on 27th May 2008 through the NSW Department of Lands. The title information obtained is summarised in Table 4.1.1. A copy of the historical title search documents is provided in Appendix C.

Table 4.1.1. Historical titles summary

Lot	Title reference	Dealing no.	Date Registered	Registered Owner
2 on DP244652	2/244652	AD 839350	20/03/2008	Jackson International Pty Ltd
3 on DP244652	3/244652	AD 839350	20/03/2008	Jackson International Pty Ltd
2 on DP244652	Vol 12174 Fol 147	N727064	07/02/1974	Ronald Edward Garbett and Birt Garbett (Contractors)
3 on DP244652	Vol 12174 Fol 148	N727064	07/02/1974	Ronald Edward Garbett and Birt Garbett (Contractors)
2 on DP244652	Vol 12174 Fol 147	N727063	28/08/1973	John Ewing Riley (Salesman)
3 on DP244652	Vol 12174 Fol 148	N727063	28/08/1973	John Ewing Riley (Salesman)
Part of Lot 4 on DP234523	Vol 11053 Fol 147	M788984	05/07/1972	Cooloon Guarantee Corporation Pty Ltd
Part of Lot 4 on DP234523	Vol 11053 Fol 147	M158407	29/01/1971	Change of name to Allan Salmon
Part of Lot 4 on DP234523	Vol 11053 Fol 147	L739392	18/02/1970	Alan Salmon (Queensland Farmer) and Dorothy Mary Salmon
Lot 4 on DP234523	Vol 11053 Fol 161	-	20/06/1969	Brigalow Development Corporation Pty Ltd

No titles were provided for Lot 4 on DP234523 prior to 1969. No indication of the activities conducted on the site by the proprietors can be ascertained from the titles.

4.1.2 AERIAL PHOTOGRAPH INTERPRETATION

Six aerial photographs of the site recorded in 1962, 1972, 1979, 1987, 1997 and 2005 were obtained from TSC and NSW Department of Lands and reviewed to establish the historic use of the site (refer Figures 2 to 7, Appendix A).

A summary of the information visible in the photographs is provided in Table 4.1.2.

Table 4.1.2. Description of aerial photograph detail.

Year	Description
1962 - Figure 2	<p>The site appears to have been completely cleared of remnant vegetation for what appears to be cattle grazing. It appears that some extractive works have been conducted on the south west side of the summit, and a track is visible joining this part of the site to Hogans Road. Two structures, possibly dairy sheds are located on the eastern slope, and what appears to be a shed is located near the base of the southern slopes. Several fenced paddocks appear to be located on the eastern part of the site. No cultivated areas are visible within the bounds of the site.</p> <p>Several surrounding sites have been developed including the Bilambil Sports Field, the Bilambil General Store, the Bilambil Dip, and the Bilambil Literary Society. The local area appears to be predominantly used for grazing purposes.</p>
1972 - Figure 3	<p>No changes are visible on the site since the 1962 photograph.</p> <p>The local area appears to have been further developed, with several new dwellings and the Bilambil Village Caravan Park visible in the photograph.</p>
1979 - Figure 4	<p>The extractive works have increased significantly since the 1972 photograph, now covering a large area across the southern and western slopes of the summit. Two small dams are present within the quarried area, and the shed located on the eastern slope remains. A track connecting the quarry area to the neighbouring site to the west is visible. A paddock on the northern slope appears to contain more vegetation than the remainder of the site.</p> <p>The local area appears to have been further developed. Additional residential dwellings are visible in the photograph. The Bilambil Sports Field appears to be undergoing further development.</p>
1987 - Figure 5	<p>The extractive works have continued and increased in area since the 1979 photograph. The quarry area now covers the entire southern face of the summit. Several stockpiles of soil, rock or waste are visible across the southern portion of the site. The previously identified shed is still present on the eastern slope. A new structure, which appears to be a shed is located the eastern boundary adjacent to Bilambil Road.</p> <p>A large area has been cleared of vegetation on the neighbouring site to the west. Bare soil is visible.</p>
1997 - Figure 6	<p>The extractive works have expanded to the north since the 1987 photograph. Both of the previously identified sheds have been removed. Additional areas of exposed soil or stockpiles are visible across most of the southern portion of the site, indicating potential land filling in this area. Based on the colour variation in the stockpiles, it appears that this material is from an off-site source.</p> <p>Further exposed soil surfaces are visible on the neighbouring site to the west, and it appears that numerous storage areas have been developed on this site.</p>
~2005 - Figure 7	<p>It appears that the extractive works have ceased. Vegetation regrowth is visible across much of the previously disturbed areas.</p> <p>It appears that additional mechanical items and machinery are being stored on the neighbouring site to the west.</p>

4.2 Site development

4.2.1 COUNCIL RECORDS

An application for a development consent search was made by PE on 27th May 2008. The search indicated that the following consents were granted for the site:

Property description	Development application	Approval date	Development type
Lot 2 on DP244652	DA06/0177	31/05/2006	Erection of an advertising sign
Lots 2 & 3 on DP244652	DA04/155	05/05/2004	Erection of an advertising sign

An application for a contaminated lands search was also made by PE on 27th May 2008. The search results provided the following information:

1. The site is located within 200m of the Bilambil cattle tick dip site.
2. A quarry has operated on the site.

4.3 Activities conducted

4.3.1 HISTORY OF FILLING

No records of filling of the site are available, however based on the available information, land filling has occurred across the southern portion of the site. Localised filling has also been identified across other parts of the site. Section 5.2 discusses the presence of fill as observed during the site inspection.

4.3.2 CHEMICAL USAGE AND STORAGE

A search of the NSW WorkCover dangerous goods licences listed on the Stored Chemical Information Database (SCID) was undertaken on 29th May 2008. No records pertaining to the site were located. A copy of the search results is provided in Appendix D.

A search of the online NSW Department of Primary Industries *Cattle Dip Site Locator* was undertaken on 5th June 2008. The search identified that the Bilambil cattle tick dip is located approximately 65m from the north-east corner of the site. The dip is generally down gradient of the subject site and is not expected to have impacted the site. The search indicates that arsenic, DDT, Dioxathion, Ethion and Ethion Chlordimeform were the chemicals used, and that the dip bath has been demolished and removed. A copy of the search results is provided in Appendix D.

4.3.3 WASTE MANAGEMENT

No specific information was obtained from Tweed Shire Council with respect to waste management. Section 5 discusses the presence of waste as observed during the site inspection.

4.3.4 SERVICES AND STORMWATER

No search was undertaken to identify services within the bounds of the site. Section 5 discusses the presence of services as observed during the site inspection.

4.3.5 ANECDOTAL INFORMATION

Doug and Nella Garbett were contacted to gain information on the history of the site. Mr Garbett is the son of the previous site owners (Ronald Edward Garbett and Birt Garbett) and lives on the neighbouring property to the west of the site (Lot 4 on DP244652). Mr & Mrs Garbett provided the following information:

- The shed located on the eastern slope was a dairy, some of which was constructed with fibro cement sheeting. The shed was demolished and the material removed from the site some time after 1997.
- The site had not been used as a dairy for at least 30 years, however cattle from a nearby dairy farm had occasionally been allowed to graze on the property.
- The shed located on the eastern boundary was constructed and used by the Bilambil Sports Club to store maintenance equipment.
- Several areas across the southern portion of the site which were previously excavated have been filled with soil and bush rocks (basalt floaters).
- Rubbish and waste materials from the local area were previously accepted on the site.

4.4 Licences, permits and notices

No record of a licence under the *Protection of the Environment Operations (POEO) Act 1997* or notices under the *Contaminated Land Management (CLM) Act* were found on the DEC website (accessed on 26th June 2008).

4.5 Integrity assessment

The historical information available for the site correlated well with the aerial photographs and site inspection findings. The physical features and activities are relatively obvious. The information was in general agreement and consistent with the physical features at the site, and the general site history is therefore considered reliable to support the conclusions made herein.

5 SITE FEATURES AND INSPECTION FINDINGS

5.1 Site features

Features observed during the site inspection are described in Table 5.1 and shown in Figures 1 to 7 (Appendix A) and Plates 1 to 10 (Appendix E). The site inspection did not constitute a full environmental site audit or hazardous materials survey.

Table 5.1. Site features

Feature	Description
Quarry	A large quarry used to extract soil and rock covers approximately 30% of the site area. The quarry consists of a steep to vertical rock face with a south to south-west aspect. The quarry contains numerous excavated depressions/bunkers, an excavated dam, and numerous stockpiles of soil, rock, and crushed concrete.
Landfill area	An area on the southern part of the site, adjacent to Hogans Road and Bilambil Creek, appears to have been filled with soil, bushrock and potentially some building rubble and general rubbish/waste. The extent and volume of this area is currently unknown.
Soil stockpiles	Numerous soil and rock stockpiles are present within the quarry area.
Dam	A shallow dam is located within the western part of the quarry area. It appears that the dam was created during the extraction of rock from the area. The dam was dry at the time of the DSI.
Bilambil Creek	Bilambil Creek defines the western boundary of the site. Riparian vegetation is present along the length of the site. The creek flows in a southerly direction.
Rubbish area	A rubbish area is located adjacent the eastern boundary, in the footprint of the previous shed. The rubbish includes timber, shopfitting cabinetry, office doors, timber pellets and carpet. A 5L container of Chemspray insecticide was also observed to be leaking onto the soil surface.
Miscellaneous rubbish	Occasional piles of anthropogenic material including a car chassis, timber, concrete piles, bricks etc. are scattered across the disturbed parts of the site.

5.2 Site inspection

Aspects to be assessed as part of the site inspection are shown in Table 5.2 (DEC 2006), along with the results of the site inspection undertaken on 5th June 2008.

Table 5.2. Site inspection findings

Aspects	Findings
Disturbed, discoloured or stained soil.	<p>No discoloured and/or stained soil was observed within the bounds of the site.</p> <p>Disturbed areas of soil were found throughout the quarry area and associated with the tracks that are located within the site. No recent soil disturbances were apparent.</p>
Bare soil patches.	Bare soil patches were observed on the tracks and across the areas that have been previously quarried.
Disturbed or distressed vegetation.	No disturbed or distressed vegetation was observed.
Presence of chemical containers, holding tanks etc.	A 5L container of Chemspray insecticide (active constituent: Dimethoate) was found within the rubbish area located adjacent to the eastern site boundary. The insecticide appeared to be leaking onto the soil surface (0.3 x 0.3m area affected). No additional chemical containers or holding tanks were observed on the site.
Chemical odour.	No chemical odours were identified, with the exception of those emanating from the insecticide container described in Section 5.1 and above.
Quality of surface water.	Surface waters identified during the site inspection were associated with the dam located adjacent the western site boundary and Bilambil Creek. No indicators of contamination were observed, however the water within the dam was very turbid, most likely as a result of prior rainfall and sediment migration from the site.
Condition of buildings, concrete, bitumen floors and roads etc.	<p>A detailed hazardous materials survey was not part of this scope of work, however the following general observations were made.</p> <p>The observed tracks appeared to be in fair condition, with evidence of only minor soil erosion. No built structures were identified within the site.</p> <p>No asbestos containing materials were identified within the rubbish areas, however one fragment of cement fibre sheeting (approximately 2 cm square) was found on the eastern slope of the site in the area of the previous dairy shed. This was removed.</p>
Presence of fill.	<p>Land filling was observed across the southern portion of the site in areas adjacent to Hogans Road and Bilambil Creek. Several localised areas of fill were also identified throughout the quarry area.</p> <p>Building rubble and other anthropogenic material was identified in some of the fill material.</p> <p>Numerous soil/rock stockpiles are present within the quarry area. Much of this material appears to have originated from the site.</p>

6 CONTAMINANTS AND MEDIA

6.1 Potential contaminants of concern

Based on the site history information and the findings of the site inspection, the potential contaminants of concern (PCoC) considered relevant to the site are shown in Table 6.1.

Table 6.1. PCoC

PCoC	Description and common relationship	Hotspot/area of potential concern
TPHs	Total petroleum hydrocarbons including volatile fractions (C6 – C9 TPHs) and semi-volatile fractions (C10 – C36 TPHs). Fuel constituents	Fill material.
BTEX	Benzene, toluene, ethyl benzene and xylenes. Volatile hydrocarbons. Fuel constituents.	
Lead	Pb. Fuel additive and paint constituent.	
PAHs	Polycyclic aromatic hydrocarbons. Semi volatile hydrocarbons. Fuel/diesel constituents.	
VOCs	Volatile organic compounds. Can be associated with solvents, fuel additives and wastes	
PCBs	Polychlorinated byphenols.	
Phenols	Semi volatile hydrocarbons. Waste oil constituent.	
Asbestos	Mineral fibres generally used to make building materials, brake pads, and insulation.	
Heavy Metals	Arsenic (As), cadmium (Cd), chromium (Cr), copper (Cu), lead (Pb), nickel (Ni), zinc (Zn), mercury (Hg). Pest control and wastes.	Fill material and surface soils.
OCPs	Organochlorine pesticides. Pest/weed control and wastes.	
OPPs	Organophosphorus pesticides. Pest/weed control and wastes.	

6.2 Relevant environmental media

Based on the site history and current site condition, the environmental media considered relevant are soils and surface water. Soil has been identified as relevant media due to the historical agricultural and quarrying activities that have occurred within the bounds of the site and the presence of fill.

Surface water is considered to be a secondary receptor and assessment of the adjacent Bilambil Creek may be required if soil contamination is identified. No surface water was present within the bounds of the site at the time of the DSI. Therefore, no assessment of surface waters has been undertaken as part of this assessment.

Groundwater is not considered relevant as no land uses onsite or immediately up-gradient to the site are considered to exhibit migration pathways for release of

potential contaminants to groundwater. Groundwater flow direction in the vicinity of the decommissioned Bilambil Dip is expected to the east, towards Bilambil Creek. Bilambil Creek is expected to experience uni-directional flow to the east.

Air is not considered relevant, given the extensive use of volatiles has not been identified, and dust generation is unlikely to occur under the normal conditions. Given the potential for asbestos to exist as a result of past practices, if works are undertaken in the filled areas which have the potential to create dust, additional asbestos related works should be conducted.

7 ENVIRONMENTAL CRITERIA

The soil assessment criteria are based on the Column 1 health-based investigation levels from DEC 2006 and the threshold concentrations for sensitive land use from EPA 1994. The soil results have also be compared against the Column 5 provisional phytotoxicity-based investigation levels from DEC 2006.

The assessment criteria are included in the attached analytical summary tables (Tables 1 to 10, Appendix G).

8 SOIL SAMPLING AND ANALYSIS PROGRAM

The soil sampling and analysis program was designed to characterise the surface soils and existing fill material. A broad grid was used to sample surface soils. Test pits were used to assess the potential filled areas of the site. A limited assessment of the underlying natural material was also undertaken.

A summary of the soil samples analysed during the DSI is shown in Table 8.1 below, and specific locations described in detail in the following sections:

Table 8.1: Analytical program summary

Target area	Heavy metals	OCPs	OPP's	PCBs	BTEX	TPHs	PAHs	Phenols	Asbestos
Surface soils	25	10	10	-	-	-	-	-	-
Potential filled areas	19	19	19	19	19	19	19	19	13
Fill stockpiles	3	3	3	3	3	3	3	3	2
TOTALS	47	32	32	22	22	22	22	22	15

The sample numbers, depths and respective locations are summarised in the analytical summary Tables 1 to 10, attached.

In addition to the above soil samples analysed, a small fragment of fibre cement sheet (1 x 1 cm) recovered from TP6 was forwarded to the laboratory for asbestos identification.

8.1 Field work

PE undertook the following:

- Recovery of twenty-five surface soil samples (SL1 to SL25) on a systematic (grid based) plan to 0.15m depth. The samples were recovered with hand tools.
- Excavation of ten test pits (TP1 to TP10) across the southern portion of the site (adjacent to Hogans Road) using a 20 tonne excavator to a maximum depth of 2 m. The sampling program was based on a combined systematic and targeted approach. Soil samples were collected from various depth intervals in each test pit and immediately screened for volatile organic compounds (VOCs) using a photoionisation detector (PID). Following PID screening the samples were stored in an insulated, ice-filled container. To further reduce potential loss of volatiles, samples jars were filled so no headspace was present. The lithological conditions encountered were recorded, which included observations such as odours or staining, and the material type, paying particular attention to the presence of fill material and potential asbestos containing materials.
- Recovery of three soil samples (S1 to S3) from fill stockpiles using a 20 tonne excavator.
- Recovery of representative field duplicate samples.

The sample locations are shown in Figure 1 (Appendix A). The sampling methodology is discussed in Appendix F and the lithological conditions are shown in Appendix G.

8.2 Sample analysis

The twenty-five surface soil samples were analysed for total heavy metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel, zinc) and selectively analysed for organochlorine (OCPs) & organophosphorus (OPPs) pesticides.

The nineteen soil samples recovered from the test pits were analysed for typical fill related contaminants consisting of total heavy metals, OCPs, OPPs, polychlorinated byphenols (PCBs), total petroleum hydrocarbons (TPHs), benzene, toluene, ethylbenzene and xylenes (BTEX), polycyclic aromatic hydrocarbons (PAHs) and phenolic compounds. The samples were selectively analysed for asbestos and a fragment of fibrous cement sheeting recovered from TP6 was forwarded to the laboratory for asbestos identification.

The three soil samples recovered from the fill stockpiles were analysed for typical fill related contaminants consisting of total heavy metals, OCPs, OPPs, PCBs, TPHs, BTEX, PAHs and phenolic compounds. Two of the samples (S1 & S3) were selectively analysed for asbestos.

Analysis of recovered field duplicates soil samples for the above described potential contaminants of concern.

9 QUALITY ASSURANCE / QUALITY CONTROL

Quality assurance (QA) and quality control (QC) information is included in Appendix F and includes the background to QA/QC, sampling procedures, laboratory performance and overall QA/QC summary.

9.1 Sampling procedure

Soil sampling was undertaken in accordance with PEs standard procedure, and is discussed further in the QA summary. The sampling included:

- appropriate methodologies for sample collection and handling;
- decontamination of sampling equipment;
- suitable sample containers; and
- appropriate documentation.

To assess the appropriateness of the sampling methodologies, QC samples are collected and analysed. The outcome of the QC assessment concluded that the field QA was generally sufficient to represent the current site conditions.

9.2 Laboratory

The laboratory QA/QC assessment is discussed in both the laboratory reports (Appendix H) and the QA/QC summary. The outcome of the assessment concluded that the laboratory data was of sufficient quality to represent the concentrations of PCOC in the samples analysed.

9.3 QA/QC Assessment

The assessment summarised in Appendix F found that the data is considered to be of suitable quality to support the conclusions made in this report.

10 RESULTS

10.1 Subsurface conditions

Soil profile descriptions were classified with reference to the Australian Soil Classification (Isbell 1996) and the Australian Soil and Land Survey Field Handbook (McDonald *et al.* 1990). The natural soils predominantly consisted of red brown medium to heavy clays.

Fill was identified across the southern portion of the site. The fill was generally consistent with the natural material described above and therefore, was likely to be derived from on-site. Test Pit 6 contained some building material and a small fragment of fibrous cement sheeting. Test Pit 10 contained some building material and motor vehicle parts. No odours were detected in the fill and no VOC concentrations were detected in soil sample headspace using a PID.

10.2 Soil analysis results

Analytical results are presented in Tables 1 to 11 (Appendix G), and summarised in the following sections. The laboratory certificates are attached in Appendix H.

10.2.1 METALS

Surface soils

Surface soil samples recovered by PE were analysed for concentrations of arsenic, cadmium, chromium, copper, lead, nickel, zinc and mercury. A summary of the results is provided Table 10.2.1a.

Table 10.2.1a: Summary of heavy metal concentrations in surface soils.

Metal (total)	Number	LOR (mg/kg)	Criteria (Column F) (mg/kg)	Range (mg/kg)	95 % UCL (mg/kg)
Arsenic	25	5	100	nd - 98	39
Cadmium	25	1	20	nd	-
Chromium (initial)	25	2	12% (III)	9 - 670	120
Chromium (retest)	6	2	12% (III)	26 - 690	585
Chromium (VI)	6	2	100	nd	-
Copper	25	5	1,000	7 - 114	74
Lead (initial)	25	5	300	nd - 313	75
Lead (retest)	1	5	300	58	-
Zinc	25	5	7,000	8 - 312	105
Nickel	25	2	600	2 - 44	21
Mercury	25	0.1	15	nd - 0.2	0.93

nd = not detected

Test pits

Soil samples recovered from the test pits were analysed for concentrations of arsenic, cadmium, chromium, copper, lead, nickel, zinc and mercury. A summary of the results is provided Table 10.2.1b.

Table 10.2.1b: Summary of heavy metal concentrations in test pits.

Metal (total)	Number	LOR (mg/kg)	Criteria (Column F) (mg/kg)	Range (mg/kg)	95 % UCL (mg/kg)
Arsenic	22	5	100	nd - 10	6
Cadmium	22	1	20	nd	-
Chromium (initial)	22	2	12% (III)	7 - 218	67
Chromium (retest)	1	2	12% (III)	246	-
Chromium (VI)	1	2	100	nd	-
Copper	22	5	1,000	6 - 102	39
Lead	22	5	300	6 - 105	36
Zinc	22	5	7,000	29 - 414	156
Nickel	22	2	600	2 - 329	184
Mercury	22	0.1	15	Nd - 0.1	-

nd = not detected

10.2.2 TPHs

Soil samples recovered from the test pits were analysed for TPHs. No detectable concentrations of volatile TPHs (C₆-C₉) or semi-volatile TPHs (C₁₀-C₃₆) were reported.

10.2.3 BTEX

Soil samples recovered from the test pits were analysed for BTEX. No detectable concentrations of BTEX compounds were reported.

10.2.4 PAHs

Soil samples recovered from the test pits were analysed for PAHs. No detectable concentrations of PAH compounds were reported.

10.2.5 OCPs & OPPsSurface soils

Surface samples recovered by PE were analysed for OCPs and OPPs. No detectable concentrations of OCPs and OPPs were reported.

Test pits

Soil samples recovered from the test pits were analysed for OCPs and OPPs. No detectable concentrations of OCPs and OPPs were reported.

10.2.6 PCBs

Soil samples recovered from the test pits were analysed for PCBs. No detectable concentrations of PCBs were reported.

10.2.7 PHENOLICS

Soil samples recovered from the test pits were analysed for phenolics. No detectable concentrations of phenolics were reported.

10.2.8 ASBESTOS

Fifteen soil samples recovered from the test pits were analysed for asbestos. No asbestos fibres were identified in the samples.

A small fragment of fibrous cement sheeting recovered from TP6 at 0.3-0.7 m was forwarded for asbestos identification. Chrysotile and amosite asbestos was identified in the sample. It is noted that no asbestos fibres were identified in the soil sample recovered from TP6 at 0.3-0.7 m.

10.2.9 TCLP

Seven samples were retrospectively selected for TCLP metals.

Samples were selected based on the highest reported concentrations of chromium and lead. A summary of the TCLP results is provided in Table 10.2.9.

Table 10.2.9: TCLP results (mg/L)

Description/Depth	Cr		Pb	
	Soil (mg/kg)	TCLP (mg/L)	Soil (mg/kg)	TCLP (mg/L)
SL17_0.0 - 0.15 m	144	nd	-	-
SL18_0.0 - 0.15 m	690	nd	-	-
SL19_0.0 - 0.15 m	200	nd	-	-
SL20_0.0 - 0.15 m	105	nd	-	-
SL21_0.0 - 0.15 m	114	nd	-	-
SL25_0.0 - 0.15 m	26	nd	58	nd
Stockpile 2_0.5-1.0 m	246	nd	-	-

nd = not detected

The TCLP results reported for the selected samples indicate that chromium and lead are not leachable.

11 DISCUSSION

Broad acre land use

Broad acre contamination associated with the historical land use activities has not been detected. However, this is based on a low density systematic sampling pattern of surface soils across the site. Whilst the adopted sampling frequency of twenty-five sampling points is less than the recommended (EPA 1995) sampling frequency of approximately fifty-three sampling points for a site of 4.6 hectares, it is considered sufficient to determine the potential for significant broad acre contamination.

Arsenic was detected above the EIL of 20 mg/kg at four of the twenty-five sampling locations and the calculated 95% UCL (39 mg/kg) was also above the EIL. However, none of the samples exceeded the residential land use criterion of 100 mg/kg and the calculated 95% UCL for arsenic is less than the residential criterion.

Six of the twenty-five samples reported concentrations of total chromium above the chromium (VI) criterion of 100 mg/kg for residential land use. The six samples were re-analysed for total chromium, chromium (VI) and TCLP analysis. The total chromium concentrations were consistent with the results previously reported and none of the samples reported detectable concentrations of chromium (VI). Hence the detected chromium species was considered to be chromium (III). None of the chromium (III) concentrations exceeded the residential land use criterion of 120 mg/kg (12 %). The calculated 95 % UCLs for chromium (120 mg/kg & 585 mg/kg) are also less than the residential land use criterion of 120 g/kg for chromium (III). The calculated 95 % UCLs for chromium (120 mg/kg) is also less than the EIL of 400 mg/kg for chromium (III).

Three of the twenty-five samples reported concentrations of copper above the EIL of 100 mg/kg. However calculated 95% UCL (75 mg/kg) is below the EIL and none of the samples reported concentrations above the residential land use criterion of 1,000 mg/kg.

One of the twenty-five samples analysed for lead reported a concentration of 313 mg/kg, which is greater than the residential land use criterion of 300 mg/kg. The sample was re-analysed with a reported result of 58 mg/kg, which is below the criterion. The calculated 95 % UCL for lead (75 mg /kg) is also below the 300 mg/kg criterion.

One of the twenty-five samples analysed for zinc reported a concentration of 312 mg/kg, which is greater than the EIL of 200 mg/kg. However calculated 95% UCL (105 mg/kg) is below the EIL and none of the samples reported concentrations above the residential land use criterion of 7,000 mg/kg.

Filled areas and stockpiled soil

The southern area of the site (adjacent to Hogans Road) has been subject to filling. Ten test pits were constructed across this area, with seven of the ten pits containing fill material. It was indicated in our PSI that the source of the material was potentially from off-site. After examination of the recovered material, it is now considered that the material has been derived from within the bounds of the site. It is characteristically red-brown in colour which matches the natural material identified on the site. The texture of the material also matches the natural material which is predominantly medium to heavy clay.

One of the stockpile samples (S2) reported a concentration of total chromium (218 mg/kg) above the chromium (VI) criterion of 100 mg/kg for residential land use. The sample was re-analysed for total chromium, chromium (VI) and TCLP analysis. The total chromium concentration (246 mg/kg) was consistent with the result previously reported

and no detectable concentration of chromium (VI) was reported for the sample. Hence the detected chromium species was considered to be chromium (III). The chromium (III) concentration did not exceed the residential land use criterion of 120 mg/kg (12 %).

The sample recovered from Stockpile 2 (S2) also reported a concentration of copper (102 mg/kg) above the EIL of 100 mg/kg. The concentration is considered to be negligible and is below the residential land use criterion of 1,000 mg/kg. The material appears to have been derived from on-site quarry operations rather than from off-site sources.

One sample recovered from TP10 (0.3-0.6m) reported a concentration of nickel (329 mg/kg) above the EIL of 60 mg/kg. The concentration is below the residential land use criterion of 600 mg/kg. The calculated 95% UCL (184 mg/kg) is also below the residential land use criterion.

One sample recovered from TP4 (0.0-0.1m) reported a concentration of zinc (414 mg/kg) above the EIL of 200 mg/kg. The concentration is below the residential land use criterion of 7,000 mg/kg. The calculated 95% UCL (156 mg/kg) is below the EIL and residential land use criterion.

Asbestos related impacts and the presence of waste materials

As discussed (Section 10.2.8), fifteen soil samples recovered from the test pits were analysed for asbestos. No asbestos fibres were identified in the samples, however a small fragment of fibrous cement sheeting recovered from TP6 (0.3-0.7 m) was found to contain chrysotile and amosite asbestos.

As this was the only fragment of asbestos identified during the DSI and as no asbestos fibres were identified in the corresponding soil sample (or any of the additional samples analysed), the potential asbestos impacts within the bounds of the site are likely to be negligible. Nevertheless, it is possible that the filled area contains more fragments of fibrous cement sheeting (potentially containing asbestos) that may not have been detected during the DSI. Subsequently, it is recommended that some additional test pits be excavated either prior to or during the construction phase of the development. If asbestos and/or other potentially contaminating material and/or rubbish are identified in the test pits (some general building waste was identified in TP6 & TP10 and some engine parts in TP10), the effected material should be appropriately classified and removed to landfill. On-site capping is not acceptable for high-density residential sites.

In addition, prior to the site being redeveloped, all general waste, rubbish and disused building materials must be removed from across the site.

12 CONCLUSION AND RECOMMENDATIONS

The Detailed Site Investigation conclusions are based on the information described in this report and appendices, and the conclusions should be read in conjunction with the complete report, including Section 1.4, Limitations and Section 11, Discussion.

A desktop site history and a site inspection were undertaken, which indicated that several potentially contaminating activities have been conducted on the site. The site has historically been used for cattle grazing and as a dairy. The site has also been used as a quarry to extract soil and rock since the early 1960s. Land filling has been conducted across the southern portion of the site and within localised areas associated with the quarry. Numerous soil/rock stockpiles are also present within the quarry area. The source of the fill material is unknown, however it is expected that the majority of the fill was derived from on-site.

A detailed soil sampling and analysis program was undertaken to determine if historical land use activities have caused land contamination and furthermore, to determine if the site is suitable (i.e. in its current state) for residential use.

The DSI investigation targeted surface soils, soil stockpiles and the filled areas along the southern boundary of the site. Contaminants of concern across the broader site were heavy metals, OCPs & OPPs. Contaminants of concern for fill and stockpiles were heavy metals, OCPs, OPPs, PCBs, TPHs, BTEX, PAHs, phenolic compounds and asbestos.

The results of the assessment indicate the following:

- Broad acre contamination associated with the historical land use activities has not been detected. This is based on a low density systematic sampling pattern of surface soils across the site. However the sampling frequency was considered sufficient to determine the potential for significant broad acre contamination that would restrict the site from being developed for residential use without appropriate management and/or remediation.
- With the exception of a small fragment of fibrous cement sheeting containing asbestos in Test Pit 6 and some general building waste (TP6 & TP10) and engine parts (TP10), no significant contamination was identified in the fill located across the southern portion of the site.

Based on the scope of work undertaken and the results obtained during the DSI, the site appears to be suitable for residential use subject to the following additional work being undertaken (i.e. as a condition of development approval):

1. A general site clean-up is required. This includes the removal of all general waste, rubbish and disused building materials that are present on the site.
2. Additional test pits are to be excavated either prior to or during the construction phase of the development in the southern filled area of the site. If asbestos and/or other potentially contaminating material and/or rubbish are identified in the test pits (particularly in the vicinity of TP6 & TP10), the material must be excavated, stockpiled, classified and removed to landfill. This work is to be supervised by an appropriately qualified contaminated land consultant.

A report must be provided to Tweed Shire Council within 14 days following completion of this work. No dwellings are to be constructed on the site until this work has been carried out to the satisfaction of the supervising environmental consultant and Tweed Shire Council.

13 REFERENCES

Australian Standard AS 4482.1 (2005) *Guide to sampling and investigation of potentially contaminated soil, Part 1: Non-Volatile and semi-volatile compounds.*

Australian Standard AS 4482.2 (1999) *Guide to sampling and investigation of potentially contaminated soil, Part 2: Volatile substances.*

Department of Environmental and Conservation (2006) *Contaminated Sites: Guidelines for the NSW Site Auditor Scheme (2nd Addition).* DEC, Sydney, NSW.

Environment Protection Authority (December 1994) *Contaminated Sites: Guidelines for Assessing Service Station Sites.* NSW EPA, Chatswood, NSW.

Environment Protection Authority (1995) *Contaminated Sites: Sampling Design Guidelines.* NSW EPA, Chatswood, NSW.

Environment Protection Authority (November 1997) *Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites.* NSW EPA, Chatswood, NSW.

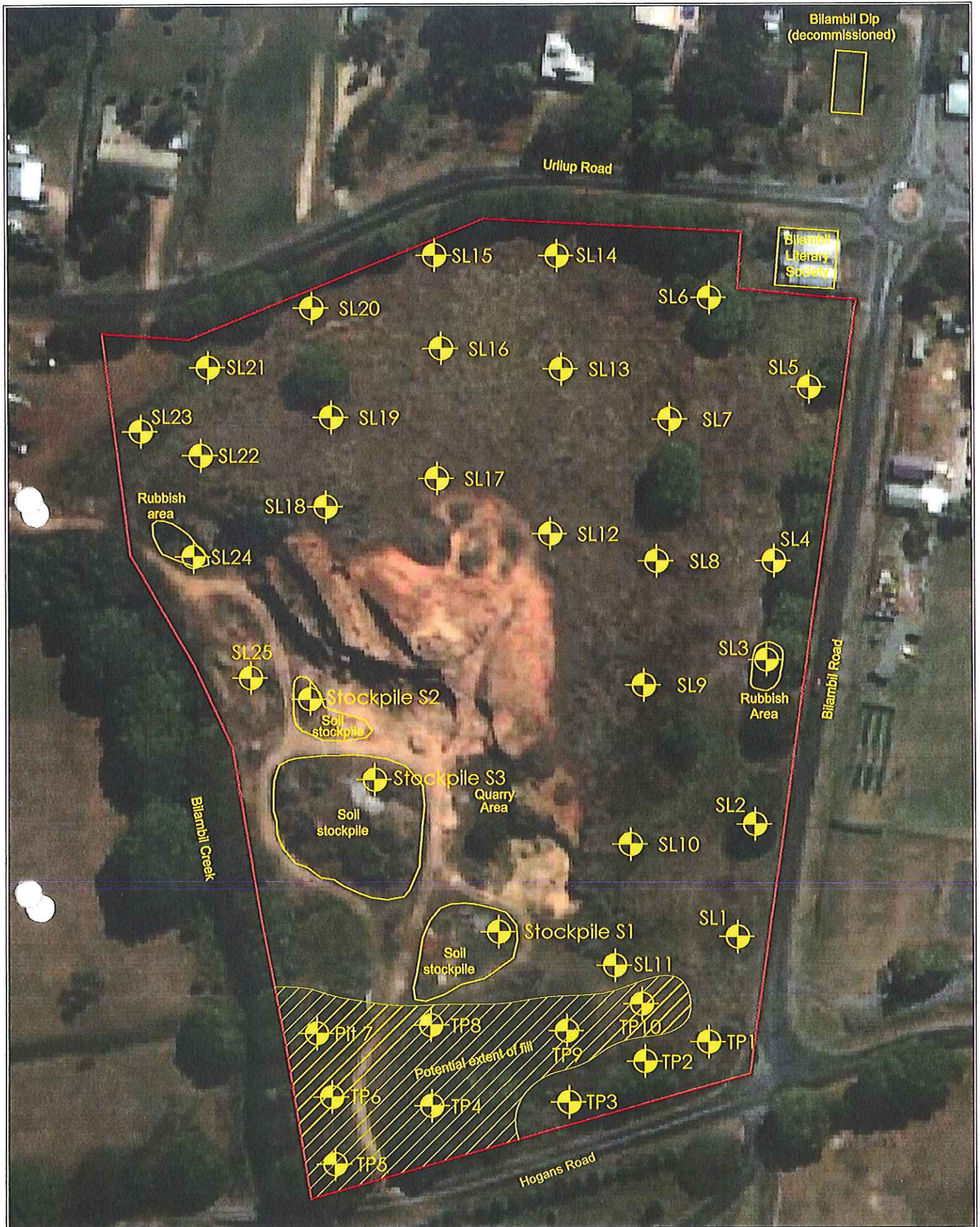
Geological Survey of Queensland (1978) Geology 1:100,000 Murwillumbah Sheet 9541.

Morand, D.T. (1996). *Soil Landscapes of the Murwillumbah-Tweed Heads 1:100 000 Sheet Report*, Department of Land and Water Conservation, Sydney.

National Environment Protection Council (NEPC) (1999a) *National Environmental Protection (Assessment of Site Contamination) Measure, Schedule B(7A) Guideline on Health-Based Investigation Levels.* National Environment Protection Council Service Corporation, Adelaide, SA.

Tweed Shire Council's Contaminated Land Policy.

APPENDIX A – FIGURES



CLIENT: JACKSON INTERNATIONAL PTY LTD	
SITE ADDRESS: LOTS 2 & 3 ON DP244652 URLIUP ROAD, BILAMBIL, NEW SOUTH WALES	
TITLE: SITE AND SAMPLING LOCATIONS	
DATE: 07.08.08	
PROJECT No: PE389.08	
FIGURE 1	



Unit 64 / 2 Arbour Avenue, Robina, Qld, 4226
 PO Box 4651, Robina Town Centre, Qld 4230
 Telephone: (07) 5593 3743
 Facsimile: (07) 5593 3435
 mail@preciseenvironmental.com.au



CLIENT: JACKSON INTERNATIONAL PTY LTD

SITE ADDRESS: LOTS 2 & 3 ON DP244652 URLIUP ROAD, BILAMBIL, NEW SOUTH WALES

TITLE: 1962 AERIAL PHOTOGRAPH

DATE: 23.06.08

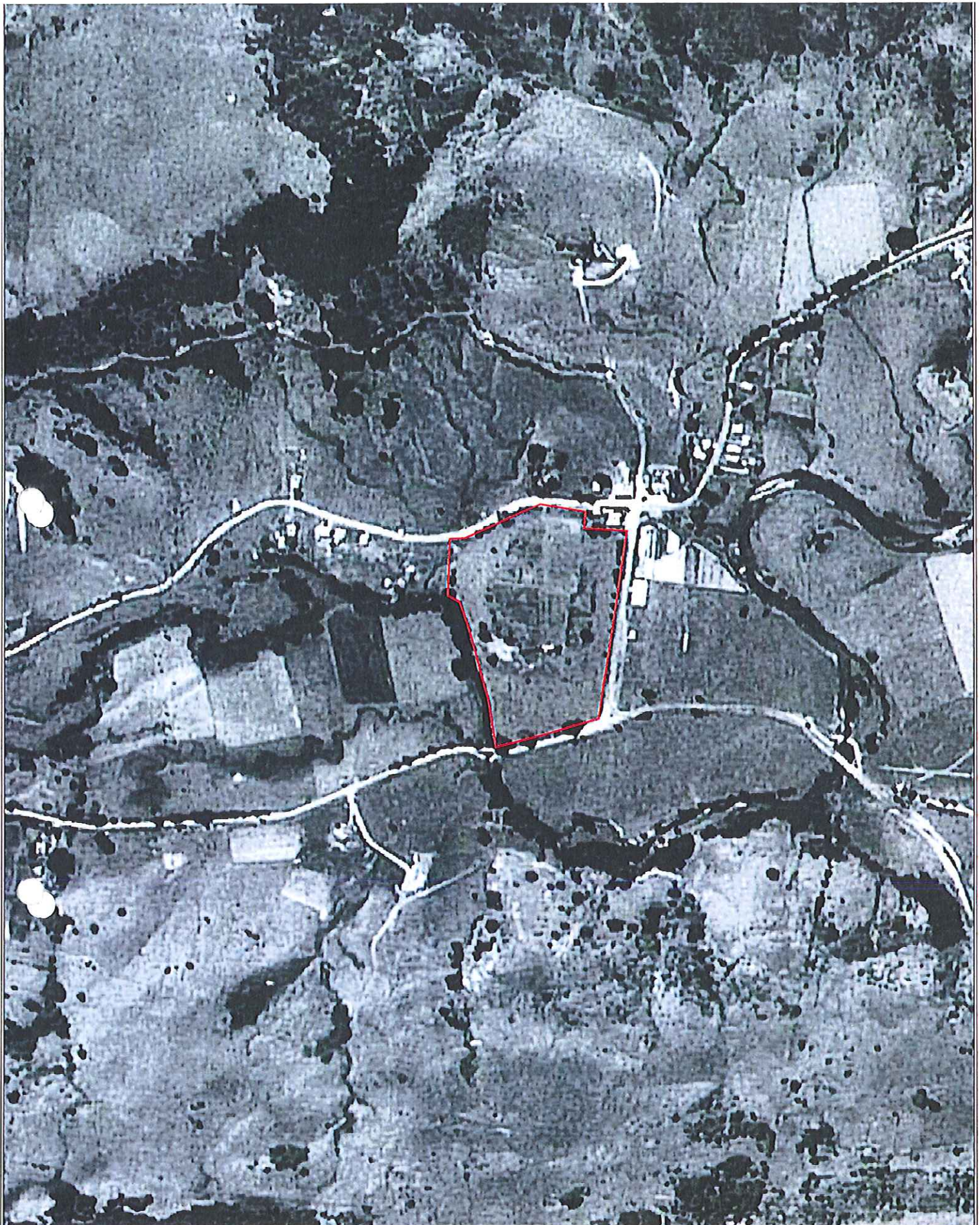
PROJECT No: PE389.08

FIGURE 2



PRECISE
ENVIRONMENTAL
consulting environmental scientists

Unit 64 / 2 Arbour Avenue, Robina, Qld, 4226
PO Box 4651, Robina Town Centre, Qld 4230
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Facsimile: (07) 5593 3435
mail@preciseenvironmental.com.au



CLIENT: JACKSON INTERNATIONAL PTY LTD

SITE ADDRESS: LOTS 2 & 3 ON DP244652 URLIUP ROAD, BILAMBIL, NEW SOUTH WALES

TITLE: 1972 AERIAL PHOTOGRAPH

DATE: 23.06.08

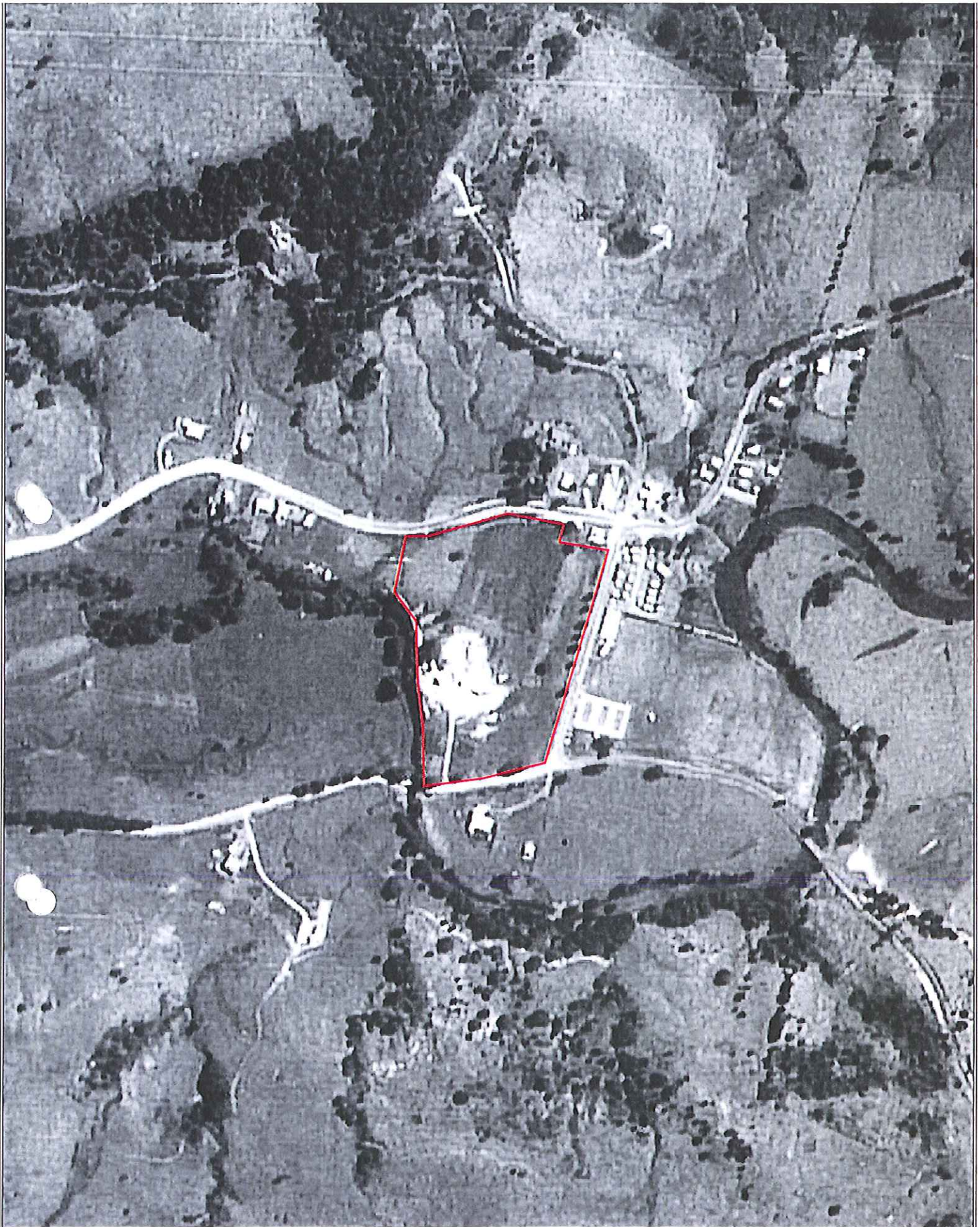
PROJECT No: PE389.08

FIGURE 3



PRECISE
ENVIRONMENTAL
consulting environmental scientists

Unit 64 / 2 Arbour Avenue, Robina, Qld, 4226
PO Box 4651, Robina Town Centre, Qld 4230
Telephone: (07) 5593 3743
Facsimile: (07) 5593 3435
mail@preciseenvironmental.com.au



CLIENT: JACKSON INTERNATIONAL PTY LTD

SITE ADDRESS: LOTS 2 & 3 ON DP244652 URLIUP ROAD, BILAMBIL, NEW SOUTH WALES

TITLE: 1979 AERIAL PHOTOGRAPH

DATE: 23.06.08

PROJECT No: PE389.08

FIGURE 4



PRECISE
ENVIRONMENTAL
consulting environmental scientists

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Facsimile: (07) 5593 3435
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CLIENT: JACKSON INTERNATIONAL PTY LTD

SITE ADDRESS: LOTS 2 & 3 ON DP244652 URLIUP ROAD, BILAMBIL, NEW SOUTH WALES

TITLE: 1987 AERIAL PHOTOGRAPH

DATE: 23.06.08

PROJECT No: PE389.08

FIGURE 5



Unit 64 / 2 Arbour Avenue, Robina, Qld, 4226
PO Box 4651, Robina Town Centre, Qld 4230
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Facsimile: (07) 5593 3435
mail@preciseenvironmental.com.au



CLIENT: JACKSON INTERNATIONAL PTY LTD

SITE ADDRESS: LOTS 2 & 3 ON DP244652 URLIUP ROAD, BILAMBIL, NEW SOUTH WALES

TITLE: 1997 AERIAL PHOTOGRAPH

DATE: 23.06.08

PROJECT No: PE389.08

FIGURE 6



PRECISE
ENVIRONMENTAL
containing environmental scientists

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PO Box 4651, Robina Town Centre, Qld 4230
Telephone: (07) 5593 3743
Facsimile: (07) 5593 3435
mail@preciseenvironmental.com.au



CLIENT: JACKSON INTERNATIONAL PTY LTD

SITE ADDRESS: LOTS 2 & 3 ON DP244652 URLIUP ROAD, BILAMBIL, NEW SOUTH WALES

TITLE: RECENT AERIAL PHOTOGRAPH

DATE: 23.06.08

PROJECT No: PE389.08

FIGURE 7



PRECISE
ENVIRONMENTAL
CONSULTING ENVIRONMENTAL SCIENTISTS

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APPENDIX B – BORE SEARCH RESULTS

Groundwater Works Summary

For information on the meaning of fields please see [Glossary](#)
 Document Generated on Thursday, June 26, 2008

[Print Report](#)

[Works Details](#) [Site Details](#) [Form A Licensed Construction](#) [Water Bearing Zones](#) [Drillers Log](#)

Work Requested -- GW305233

Works Details ([top](#))

GROUNDWATER NUMBER GW305233
 LIC-NUM 30BL153550
 AUTHORISED-PURPOSES DOMESTIC
 INTENDED-PURPOSES DOMESTIC
 WORK-TYPE Bore
 WORK-STATUS
 CONSTRUCTION-METHOD
 OWNER-TYPE
 COMMENCE-DATE
 COMPLETION-DATE 1993-12-01
 FINAL-DEPTH (metres) 35.00
 DRILLED-DEPTH (metres)
 CONTRACTOR-NAME
 DRILLER-NAME
 PROPERTY SPEED'S
 GWMA - SYDNEY BASIN
 GW-ZONE - OXLEY BASIN
 STANDING-WATER-LEVEL
 SALINITY
 YIELD

Site Details ([top](#))

REGION 30 - NORTH COAST
 RIVER-BASIN
 AREA-DISTRICT
 CMA-MAP
 GRID-ZONE
 SCALE
 ELEVATION
 ELEVATION-SOURCE
 NORTHING 6877379.00
 EASTING 545363.00
 LATITUDE 28 13' 43"
 LONGITUDE 153 27' 44"
 GS-MAP

AMG-ZONE 56
COORD-SOURCE
REMARK

Form-A ([top](#))

COUNTY ROUS
PARISH BERWICK
PORTION-LOT-DP 1 772129

Licensed ([top](#))

COUNTY ROUS
PARISH BERWICK
PORTION-LOT-DP 1 772129

Water Bearing Zones ([top](#))

no details

Drillers Log ([top](#))

no details

Warning To Clients: This raw data has been supplied to the Department of Infrastructure, Planning and Natural Resources (DIPNR) by drillers, licensees and other sources. The DIPNR does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

Groundwater Works Summary

For information on the meaning of fields please see [Glossary](#).
Document Generated on Thursday, June 26, 2008

[Print Report](#)

[Works Details](#) [Site Details](#) [Form A](#) [Licensed](#) [Construction](#) [Water Bearing Zones](#) [Drillers Log](#)

Work Requested -- GW302893

Works Details [\(top\)](#)

GROUNDWATER NUMBER GW302893
 LIC-NUM 30BL179007
 AUTHORISED-PURPOSES FARMING STOCK
 INTENDED-PURPOSES FARMING STOCK
 WORK-TYPE Bore
 WORK-STATUS
 CONSTRUCTION-METHOD
 OWNER-TYPE
 COMMENCE-DATE
 COMPLETION-DATE
 FINAL-DEPTH (metres) 1.00
 DRILLED-DEPTH (metres)
 CONTRACTOR-NAME
 DRILLER-NAME
 PROPERTY " GRESHAM'S "
 GWMA - SYDNEY BASIN
 GW-ZONE - OXLEY BASIN
 STANDING-WATER-LEVEL
 SALINITY
 YIELD

Site Details [\(top\)](#)

REGION 30 - NORTH COAST
 RIVER-BASIN
 AREA-DISTRICT
 CMA-MAP
 GRID-ZONE
 SCALE
 ELEVATION
 ELEVATION-SOURCE
 NORTHING 6877936.00
 EASTING 544399.00
 LATITUDE 28 13' 25"
 LONGITUDE 153 27' 9"
 GS-MAP

AMG-ZONE 56
COORD-SOURCE
REMARK

Form-A ([top](#))

COUNTY ROUS
PARISH TERRANORA
PORTION-LOT-DP LT 30 DP 821933

Licensed ([top](#))

COUNTY ROUS
PARISH BERWICK
PORTION-LOT-DP 30 821933

Water Bearing Zones ([top](#))

no details

Drillers Log ([top](#))

no details

Warning To Clients: This raw data has been supplied to the Department of Infrastructure, Planning and Natural Resources (DIPNR) by drillers, licensees and other sources. The DIPNR does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

Groundwater Works Summary

For information on the meaning of fields please see [Glossary](#)
 Document Generated on Thursday, June 26, 2008

[Print Report](#)

[Works Details](#) [Site Details](#) [Form A Licensed Construction](#) [Water Bearing Zones](#) [Drillers Log](#)

Work Requested -- GW300185

Works Details [\(top\)](#)

GROUNDWATER NUMBER GW300185
 LIC-NUM 30BL144217
 AUTHORISED-PURPOSES DOMESTIC STOCK
 INTENDED-PURPOSES DOMESTIC STOCK
 WORK-TYPE Bore
 WORK-STATUS (Unknown)
 CONSTRUCTION-METHOD Rotary Air
 OWNER-TYPE Private
 COMMENCE-DATE
 COMPLETION-DATE 1995-06-14
 FINAL-DEPTH (metres) 44.00
 DRILLED-DEPTH (metres) 44.00
 CONTRACTOR-NAME
 DRILLER-NAME
 PROPERTY FLANNERY'S
 GWMA - SYDNEY BASIN
 GW-ZONE - OXLEY BASIN
 STANDING-WATER-LEVEL 29.00
 SALINITY
 YIELD 0.41

Site Details [\(top\)](#)

REGION 30 - NORTH COAST
 RIVER-BASIN 201 - TWEED RIVER
 AREA-DISTRICT
 CMA-MAP
 GRID-ZONE
 SCALE
 ELEVATION
 ELEVATION-SOURCE
 NORTHING 6878227.00
 EASTING 544674.00
 LATITUDE 28 13' 16"
 LONGITUDE 153 27' 19"
 GS-MAP

AMG-ZONE 56
 COORD-SOURCE Map Interpretation
 REMARK

Form-A (top)

COUNTY ROUS
 PARISH BERWICK
 PORTION-LOT-DP LOT 3 DP814299

Licensed (top)

COUNTY ROUS
 PARISH BERWICK
 PORTION-LOT-DP 3 814299

Construction (top)

Negative depths indicate Above Ground Level;H-Hole;P-Pipe;OD-Outside Diameter;
 ID-Inside Diameter;C-Cemented;SL-Slot Length;A-Aperture;GS-Grain Size;Q-Quantity

HOLE- NO	PIPE- NO	COMPONENT- CODE	COMPONENT- TYPE	DEPTH- FROM (metres)	DEPTH- TO (metres)	OD (mm)	ID (mm)	INTERVAL	DETAIL
1		Hole	Hole	0.00	44.00	200			Rotary Air
1	1	Casing	PVC Class 9	0.00	44.00	125			Glued; Seated on Bottom
1	1	Opening	Slots - Vertical	26.00	44.00	125		1	PVC; Sawn; SL: 36mm; A: 3mm
1		Annulus	Waterworn/Rounded	25.00	44.00				Ungraded; GS: 4- 8mm; Q: .16m ³

Water Bearing Zones (top)

FROM- DEPTH (metres)	TO- DEPTH (metres)	THICKNESS (metres)	ROCK- CAT- DESC	S-W- L	D-D- L	YIELD	TEST- HOLE- DEPTH (metres)	DURATION	SALINITY
30.00	31.00	1.00		29.00	30.00	0.06	32.00	0.50	Good
41.00	42.00	1.00		20.00	38.00	0.35	44.00	0.50	Good

Drillers Log (top)

FROM	TO	THICKNESS	DESC	GEO-MATERIAL	COMMENT
0.00	1.00	1.00	TOPSOIL		
1.00	2.00	1.00	CLAY		
2.00	20.00	18.00	BROWN SANDSTONE		

20.00	30.00	10.00	BASALT
30.00	31.00	1.00	SHALE
31.00	41.00	10.00	BASALT
41.00	42.00	1.00	SHALE
42.00	44.00	2.00	BASALT

Warning To Clients: This raw data has been supplied to the Department of Infrastructure, Planning and Natural Resources (DIPNR) by drillers, licensees and other sources. The DIPNR does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

Groundwater Works Summary

For information on the meaning of fields please see [Glossary](#)
 Document Generated on Thursday, June 26, 2008

[Print Report](#)

[Works Details](#) [Site Details](#) [Form A Licensed Construction](#) [Water Bearing Zones](#) [Drillers Log](#)

Work Requested -- GW302892

Works Details ([top](#))

GROUNDWATER NUMBER GW302892
 LIC-NUM 30BL179006
 AUTHORISED-PURPOSES STOCK
 INTENDED-PURPOSES STOCK
 WORK-TYPE Bore
 WORK-STATUS
 CONSTRUCTION-METHOD
 OWNER-TYPE
 COMMENCE-DATE
 COMPLETION-DATE
 FINAL-DEPTH (metres) 0.50
 DRILLED-DEPTH (metres)
 CONTRACTOR-NAME
 DRILLER-NAME
 PROPERTY " GRESHAM'S "
 GWMA - SYDNEY BASIN
 GW-ZONE - OXLEY BASIN
 STANDING-WATER-LEVEL
 SALINITY
 YIELD

Site Details ([top](#))

REGION 30 - NORTH COAST
 RIVER-BASIN
 AREA-DISTRICT
 CMA-MAP
 GRID-ZONE
 SCALE
 ELEVATION
 ELEVATION-SOURCE
 NORTHING 6878339.00
 EASTING 545426.00
 LATITUDE 28 13' 12"
 LONGITUDE 153 27' 47"
 GS-MAP

AMG-ZONE 56
COORD-SOURCE
REMARK

Form-A ([top](#))

COUNTY ROUS
PARISH TERRANORA
PORTION-LOT-DP LT 5 DP 726427

Licensed ([top](#))

COUNTY ROUS
PARISH TERRANORA
PORTION-LOT-DP 5 726427

Water Bearing Zones ([top](#))

no details

Drillers Log ([top](#))

no details

Warning To Clients: This raw data has been supplied to the Department of Infrastructure, Planning and Natural Resources (DIPNR) by drillers, licensees and other sources. The DIPNR does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

Groundwater Works Summary

For information on the meaning of fields please see [Glossary](#).
Document Generated on Thursday, June 26, 2008

[Print Report](#)

[Works Details](#) [Site Details](#) [Form A Licensed Construction](#) [Water Bearing Zones](#) [Drillers Log](#)

Work Requested -- GW064040

Works Details ([top](#))

GROUNDWATER NUMBER GW064040
 LIC-NUM 30BL135785
 AUTHORISED-PURPOSES DOMESTIC STOCK
 INTENDED-PURPOSES DOMESTIC STOCK
 WORK-TYPE Bore
 WORK-STATUS (Unknown)
 CONSTRUCTION-METHOD Rotary Air
 OWNER-TYPE Private
 COMMENCE-DATE
 COMPLETION-DATE 1987-01-01
 FINAL-DEPTH (metres) 23.00
 DRILLED-DEPTH (metres) 23.00
 CONTRACTOR-NAME
 DRILLER-NAME
 PROPERTY N/A
 GWMA - SYDNEY BASIN
 GW-ZONE - OXLEY BASIN
 STANDING-WATER-LEVEL
 SALINITY
 YIELD

Site Details ([top](#))

REGION 30 - NORTH COAST
 RIVER-BASIN 201 - TWEED RIVER
 AREA-DISTRICT
 CMA-MAP 9541-1S
 GRID-ZONE 56/2
 SCALE 1:25,000
 ELEVATION
 ELEVATION-SOURCE (Unknown)
 NORTHING 6878177.00
 EASTING 545512.00
 LATITUDE 28 13' 17"
 LONGITUDE 153 27' 50"
 GS-MAP 0005B1

AMG-ZONE 56
 COORD-SOURCE GD.,ACC.MAP
 REMARK

Form-A (top)

COUNTY ROUS
 PARISH TERRANORA
 PORTION-LOT-DP L11 DP252868 (155)

Licensed (top)

COUNTY ROUS
 PARISH TERRANORA
 PORTION-LOT-DP PT LT11 DP252868

Construction (top)

Negative depths indicate Above Ground Level;H-Hole;P-Pipe;OD-Outside Diameter;
 ID-Inside Diameter;C-Cemented;SL-Slot Length;A-Aperture;GS-Grain Size;Q-Quantity

HOLE- NO	PIPE- NO	COMPONENT- CODE	COMPONENT- TYPE	DEPTH- FROM (metres)	DEPTH- TO (metres)	OD (mm)	ID (mm)	INTERVAL	DETAIL
1	1	Casing	P.V.C.	0.00	23.00	125			Seated on Bottom
1	1	Opening	Slots - Vertical	19.00	21.00	125		1	SL: 0mm; A: 3mm
1	1	Annulus	(Unknown)	18.00	23.00	0			Ungraded; GS: 3- 6mm

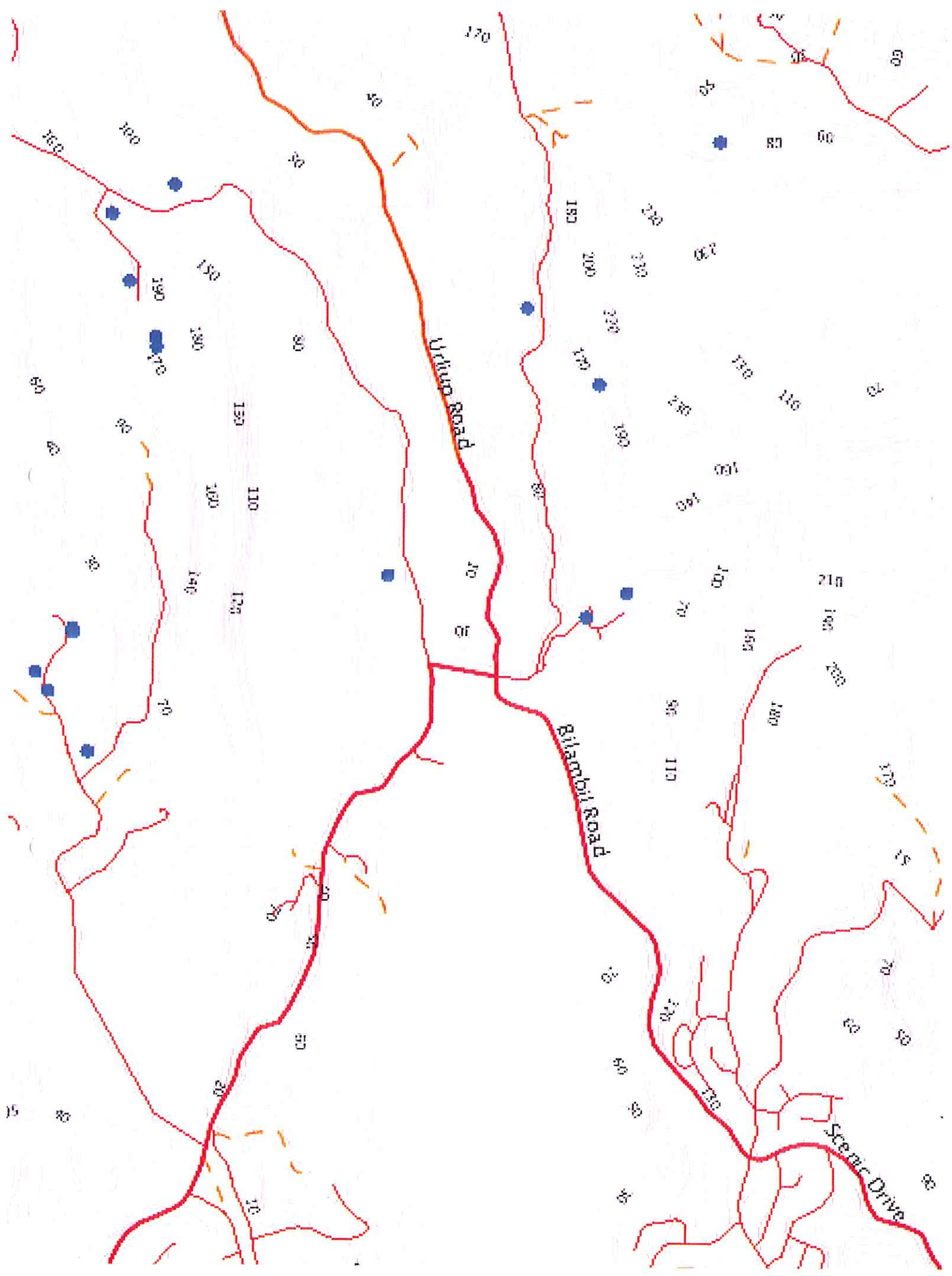
Water Bearing Zones (top)

FROM- DEPTH (metres)	TO- DEPTH (metres)	THICKNESS (metres)	ROCK- CAT- DESC	S-W- L	D- D- L	YIELD	TEST- HOLE- DEPTH (metres)	DURATION	SALINITY
20.00	21.00	1.00	Fractured	20.00		1.18			Good

Drillers Log (top)

FROM	TO	THICKNESS	DESC	GEO-MATERIAL	COMMENT
0.00	10.00	10.00	Clay		
10.00	13.00	3.00	Shale		
13.00	23.00	10.00	Basalt	Water Supply	

Warning To Clients: This raw data has been supplied to the Department of Infrastructure, Planning and Natural Resources (DIPNR) by drillers, licensees and other sources. The DIPNR does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.



APPENDIX C – LAND TITLES

Department of Lands

Land Administration & Management
Property & Spatial Information

Attn. David Bayel
Precise Environmental
P.O. Box 4651
ROBINA Town Centre QLD 4230

1 Prince Albert Road
Queens Square
SYDNEY NSW 2000
GPO Box 15
SYDNEY NSW 2001
DX 17 SYDNEY
www.lands.nsw.gov.au

Search Reference: 0280
Your Reference: PE389.08
Contact Person: Michelle Bennetts
Phone No.: (02) 8258 7578
Fax No.: (02) 9221 0612

Date: 4 June 2008

Re Subject land: Lots 2 and 3 in DP 244652

Dear Mr Bayel,

Reference is made to your facsimile dated the 27 May 2008 in respect of the above mentioned subject land.

Re: Lot 2 in DP 244652

Subject land formed Part of Lot 4 in DP 234523 being the land in Certificate of Title Volume 11053 Fol 161 issued on the 20 June 1969, with the registered proprietor being Brigalow Development Corporation Pty Ltd.

TITLE REFERENCE	DEALING NUMBER	DATE REGISTERED	REGISTERED PROPIETOR
Vol 11053 Fol 161	L739392 M158407 M788984	18/02/1970 29/01/1971 05/07/1972	Alan SALMON (Queensland Farmer) and his wife Dorothy Mary SALMON. Change of Name to Allan Salmon. Cooloon Guarantee Corporation Pty Ltd
Vol 12174 Fol 147	N727063 N727064	28/08/1973 07/02/1974	John Ewing RILEY (Salesman) Ronald Edward GARBETT and Birt GARBETT (Contractors)
2/244652	AD 839350	20/03/2008	Jackson International Pty Ltd

Certificate of Title Volume 12174 Folio 147 was converted to Computer Folio Identifier 2/244652 on the 7 September 1989. The current registered proprietor remains Jackson International Pty Ltd

Lease Number M508102, shown on Vol 11057 Fol 161, does not appear to affect subject land.

Lot 3 in DP 244652

Subject land formed Part of Lot 4 in DP 234523 being the land in Certificate of Title Volume 11053 Fol 161 issued on the 20 June 1969, with the registered proprietor being Brigalow Development Corporation Pty Ltd.

TITLE REFERENCE	DEALING NUMBER	DATE REGISTERED	REGISTERED PROPIETOR
Vol 11053 Fol 161	L739392 M158407 M788984	18/02/1970 29/01/1971 05/07/1972	Alan SALMON (Queensland Farmer) and his wife Dorothy Mary SALMON. Change of Name to Allan Salmon. Cooloon Guarantee Corporation Pty Ltd
Vol 12174 Fol 148	N727063 N727064	28/08/1973 07/02/1974	John Ewing RILEY (Salesman) Ronald Edward GARBETT and Birt GARBETT (Contractors)
3/244652	AD 839350	20/03/2008	Jackson International Pty Ltd

Certificate of Title Volume 12174 Folio 148 was converted to Computer Folio Identifier 3/244652 on the 7 September 1989. The current registered proprietor remains Jackson International Pty Ltd


Please find enclosed copies of all the relevant certificate of titles.

An invoice for the sum of \$392.50, being fees incurred in this matter. The receipt for payment is enclosed.

Please quote the above mentioned Search reference with any further correspondence.

Yours faithfully

Warwick Watkins
Registrar General

per: 
04/06/2008



Department of Lands

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 2/244652

SEARCH DATE	TIME	EDITION NO	DATE
-----	----	-----	----
27/5/2008	1:56 PM	1	20/3/2008

LAND

LOT 2 IN DEPOSITED PLAN 244652
 AT BILAMBIL
 LOCAL GOVERNMENT AREA TWEED
 PARISH OF TERRANORA COUNTY OF ROUS
 TITLE DIAGRAM DP244652

FIRST SCHEDULE

JACKSON INTERNATIONAL PTY LTD (T AD839350)

SECOND SCHEDULE (1 NOTIFICATION)

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

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***



Department of Lands

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE

27/5/2008 2:05PM

FOLIO: 2/244652

First Title(s): SEE PRIOR TITLE(S)
 Prior Title(s): VOL 12174 FOL 147

Recorded	Number	Type of Instrument	C.T. Issue
5/6/1987		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
7/9/1989		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
20/3/2008	AD839350	TRANSFER	EDITION 1

*** END OF SEARCH ***



LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 3/244652

SEARCH DATE	TIME	EDITION NO	DATE
-----	----	-----	----
27/5/2008	1:58 PM	1	20/3/2008

LAND

LOT 3 IN DEPOSITED PLAN 244652
 AT BILAMBIL
 LOCAL GOVERNMENT AREA TWEED
 PARISH OF TERRANORA COUNTY OF ROUS
 TITLE DIAGRAM DP244652

FIRST SCHEDULE

JACKSON INTERNATIONAL PTY LTD (T AD839350)

SECOND SCHEDULE (1 NOTIFICATION)

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

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

IN WALS

CIFICATE OF TITLE

AL PROPERTY ACT, 1900



12174

vn Grant Vol.1450 Fol.186
or Title Vol.11053 Fol.161

Vol. 12174 Fol. 147

Edition issued 2-8-1973



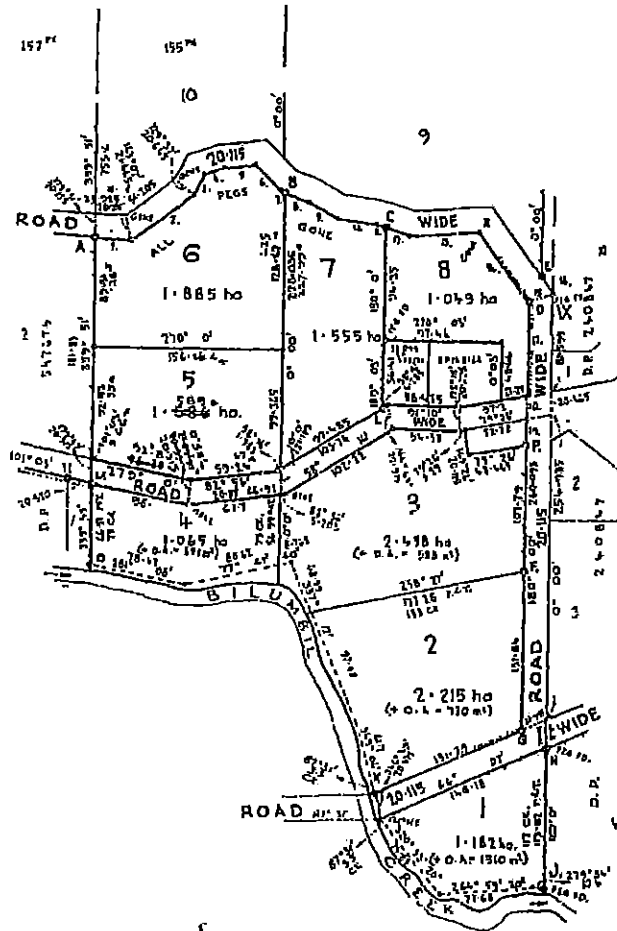
Ify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject
theless to such exceptions encumbrances and interests as are shown in the Second Schedule.

CANCELLED
Jawatson
Registrar General
SEE FIRST PLAN



PLAN SHOWING LOCATION OF LAND

LENGTHS ARE IN METRES



REFERENCE TO BOUNDARIES.

1.	95° 12'	31.70
2.	31° 43'	63.37
3.	22° 17'	19.13
4.	83° 31'	17.58
5.	81° 31'	21.51
6.	33° 17'	51.31
7.	107° 40'	2.475
8.	107° 40'	21.445
9.	119° 10'	23.047
10.	97° 30'	30.805
11.	104° 22'	9.54
12.	104° 22'	30.415
13.	86° 04'	54.89
14.	143° 33'	71.57
15.	71° 31'	21.6
16.	314° 33'	71.08
17.	180° 0'	78.8
18.	150° 0'	10.115
19.	180° 0'	10.115

REFERENCE TO CORNERS.

A.	135° 34'	C.T.P.	0.455
B.	160° 0'	.	0.455
C.	180° 0'	.	0.455
D.	143° 33'	SOMER	1.001 sq.
E.	315° 31'	C.T.P.	0.455 FD. (DP 24014)
F.	253° 31'	.	0.455
G.	336° 07'	.	0.455
H.	180° 0'	.	0.455 FD. (DP 240647)
I.	0° 0'	.	0.455
J.	342° 47'	.	0.455
K.	0° 0'	.	0.455
L.	359° 43'	.	0.055 FD. (DP 240748)
M.	359° 43'	.	1.08 FD. (DP 240749)
N.	0° 0'	TRAVEL	FD.
O.	90° 0'	0.18	0.455
P.	109° 0' 30"	.	0.020

ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 2 in Deposited Plan 244652 at Bilambil in the Shire of Tweed Parish of Terranora and County of Rous. EXCEPTING THEREOUT the minerals reserved by the Crown Grant.

FIRST SCHEDULE

~~COOLBON GUARANTEE CORPORATION PTY. LIMITED.~~

SECOND SCHEDULE

- Reservations and conditions, if any, contained in the Crown Grant above referred to.
- Mortgage No. M801833 to ~~Bank of Queensland Development & Finance Pty. Limited.~~ Entered 12-10-1972. Discharged N727062

Jawatson
Registrar General.

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

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

B308C
/Req: R39385C
/Doc: CT 12174-147
/Pt: 28-May-2008

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

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR



~~John Edgar Birt and Ronald Edward Garbett and Birt Garbett, both of Highfields, Contractors, as tenants in common, in equal shares.~~
Ronald Edward Garbett and Birt Garbett, both of Highfields, Contractors, as tenants in common, in equal shares.

REGISTERED PROPRIETOR		NATURE	INSTRUMENT NUMBER	DATE	ENTERED	Signature of Registrar General
John Edgar Birt and Ronald Edward Garbett and Birt Garbett, both of Highfields, Contractors, as tenants in common, in equal shares.		Transfer	N/27065	29.8.1973	7.3.1974	[Signature]
Ronald Edward Garbett and Birt Garbett, both of Highfields, Contractors, as tenants in common, in equal shares.		Transfer	N/27064	7.2.1974.	7.3.1974.	[Signature]
SECOND SCHEDULE (continued)						
NATURE	INSTRUMENT NUMBER	DATE	PARTICULARS	ENTERED	Signature of Registrar General	CANCELLATION

11/1/74
3/11/74
Pl Lot 2, 1974
D.P. 240/52
required for
purpose
D.O. 22.11.76
Fol. 147

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

NEW SOUTH WALES

CERTIFICATE OF TITLE

REAL PROPERTY ACT, 1900



12174

Crown Grant Vol. 1850 Fol. 186

Prior Title Vol. 11053 Fol. 161

Vol. **12174** Fol. **148**

Edition Issued 2-8-1973



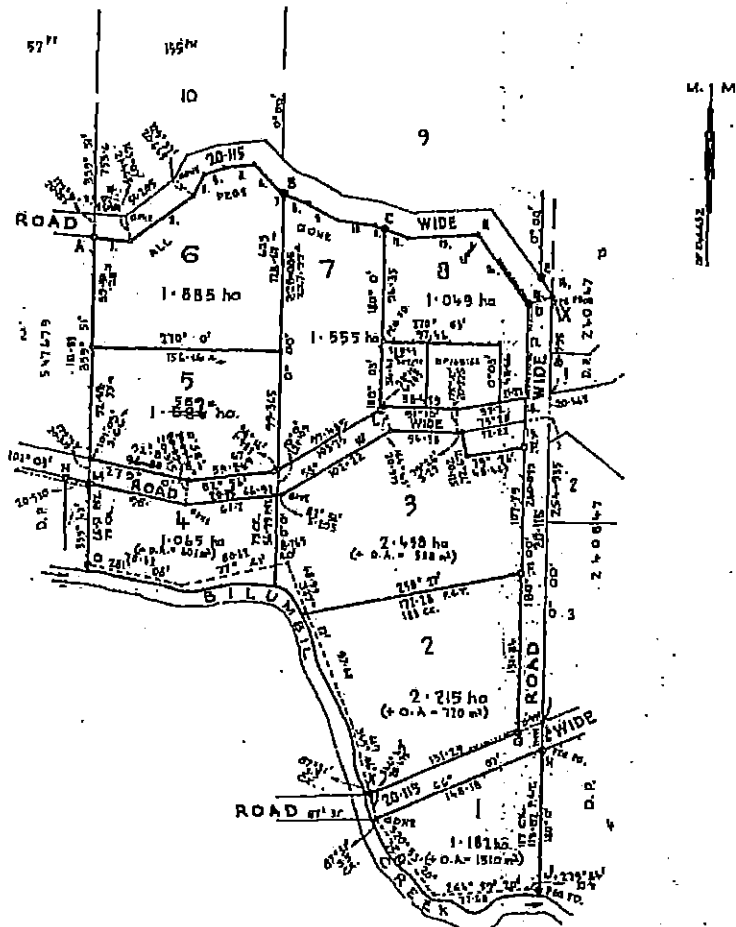
certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

CANCELLED
Jawatson
Registrar General
SEE AUTO FILE



PLAN SHOWING LOCATION OF LAND

LENGTHS ARE IN METRES



REFERENCE TO BOUNDARIES

NO.	DESCRIPTION	LENGTH (METRES)
1.	11° 10'	11.10
2.	11° 10'	11.10
3.	11° 10'	11.10
4.	11° 10'	11.10
5.	11° 10'	11.10
6.	11° 10'	11.10
7.	11° 10'	11.10
8.	11° 10'	11.10
9.	11° 10'	11.10
10.	11° 10'	11.10
11.	11° 10'	11.10
12.	11° 10'	11.10
13.	11° 10'	11.10
14.	11° 10'	11.10
15.	11° 10'	11.10
16.	11° 10'	11.10
17.	11° 10'	11.10
18.	11° 10'	11.10
19.	11° 10'	11.10

REFERENCE TO CORNERS

NO.	DESCRIPTION	LENGTH (METRES)
A.	179° 31'	0.455
B.	180° 0'	0.455
C.	180° 0'	0.455
D.	144° 33'	1.405 FD. (of 1405)
E.	315° 33'	0.455 FD. (of 1405)
F.	250° 33'	0.455
G.	332° 01'	0.455
H.	180° 0'	0.455 FD. (of 1405)
I.	0° 0'	0.455
J.	244° 33'	0.455
K.	244° 33'	0.455
L.	0° 0'	0.455
M.	332° 01'	0.455 FD. (of 1405)
N.	332° 01'	0.455 FD. (of 1405)
O.	0° 0'	0.455
P.	180° 0'	0.455
Q.	180° 0'	0.455

GRM

ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 3 in Deposited Plan 244652 at Bilambil in the Shire of Tweed Parish of Terranora and County of Rous. EXCEPTING THEREOUT the minerals reserved by the Crown Grant.

FIRST SCHEDULE

~~COOLCOON GUARANTEE CORPORATION LTD. LIMITED.~~

SECOND SCHEDULE

- Reservations and conditions, if any, contained in the Crown Grant above referred to.
- Mortgage No. M801 to Border Development & Finance Pty. Limited. Entered 11-10-1973.

Discharged: N727062

Jawatson
Registrar General.

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

B308C
/Req: R39335F
/Doc: CT 12174-148
/Prt: 28-May-2008

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

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

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR

~~John Irving Miller of Goodenough, Baltimore~~
~~of the State of Maryland~~

Ronald Edward Garbett and Bert Garbett, both of Hightfields, Contractors, as tenants in common, in equal shares.



Signature of Registrar General

1/17/74
3/74
R-74

NATURE		INSTRUMENT NUMBER		DATE		ENTERED		SIGNATURE OF REGISTRAR GENERAL	
Transfer		1727065		28.6.1973		15.1974		<i>[Signature]</i>	
Transfer		1727064		7.2.1974		7.3.1974		<i>[Signature]</i>	
CANCELLED									
FEE PAID									

SECOND SCHEDULE (continued)

NATURE		INSTRUMENT NUMBER		DATE		ENTERED		SIGNATURE OF REGISTRAR GENERAL		CANCELLATION	

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

NEW SOUTH WALES

CERTIFICATE OF TITLE
PROPERTY ACT, 1900, as amended.



11053

231
Crown Grants - Vol. 2011 Fol. 231
Vol. 1890 Fol. 186 Vol. 4384 Fol. 73
Prior Titles - Vol. 4384 Fol. 73
Vol. 3283 Fol. 62 Vol. 5021 Fol. 219

Vol. 11053 Fol. 161



Edition issued 20-6-1969

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

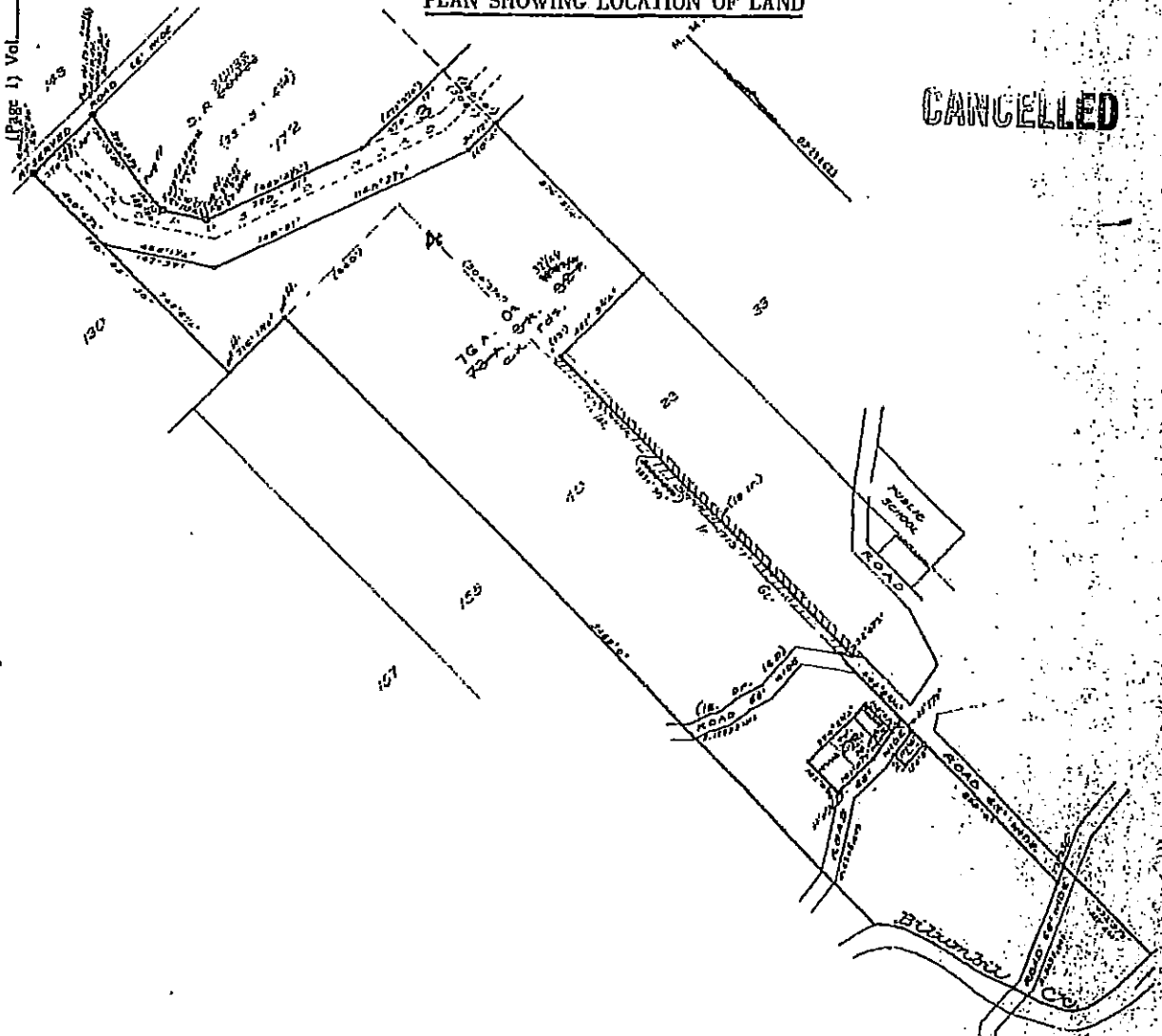
Witness

L. Balliner

Jawatson
Registrar General.



PLAN SHOWING LOCATION OF LAND



CANCELLED

ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 4 in Deposited Plan 234523 at Highfields in the Shire of Tweed Parish of Terranora and County of Ross EXCEPTING THEREOUT the roads shown in the plan hereon and the minerals reserved by the Crown Grants.

FIRST SCHEDULE

~~BRIGALOW DEVELOPMENT CORPORATION PTY. LIMITED.~~

SECOND SCHEDULE

1. Reservations and conditions, if any, contained in the Crown Grants above referred to.
2. ~~Caveat No. 2397023 as to the parts of the land above described formerly comprised in Certificates of Title Volume 3283 Folio 62 and Volume 5021 Folio 219. Entered 6-7-1964. Withdrawn 1-05-1964.~~
3. ~~Caveat No. 1545678 as to the parts formerly comprised in Certificate of Title Volume 4384 Folio 73. Entered 6-5-1964. Withdrawn 1-05-1964.~~

Jawatson
Registrar General.

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

B308C

Seq: R39733D
Doc: CT 11053-161
Prt: 28-May-2008

PERSONS ARE CAUTIONED AGAINST ALTERI

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

REGISTRATION HEREON
11053
Fol 161

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR		INSTRUMENT		ENTERED		SIGNATURE OF REGISTER GENERAL	
NATURE	NUMBER	DATE	ENTERED	SIGNATURE OF REGISTER GENERAL	NATURE	NUMBER	DATE
<p>Allen Selman of Kansas is the State of Kansas and is hereby assigned to the name of the state of Kansas Caden Guaranty Corporation, Ltd. Limited liability This deed is cancelled as to New Certificates of Title have issued on 2-8-1973 for lots in Deposited Plan No. 244652 as follows: Lots 1 to 10 Vol 12174 Pl. HC 117</p>	<p>1733352 1733353 1733354</p>	<p>12-11-1972 12-11-1972 12-11-1972</p>	<p>12-11-1972 12-11-1972 12-11-1972</p>	<p>Jensen Jensen Jensen</p>	<p>1733352 1733353 1733354</p>	<p>12-11-1972 12-11-1972 12-11-1972</p>	<p>Jensen Jensen Jensen</p>

Jensen
 REGISTERED GENERAL

SECOND SCHEDULE (continued)

INSTRUMENT		PARTICULARS		ENTERED		CANCELLATION	
NATURE	NUMBER	DATE	ENTERED	SIGNATURE OF REGISTER GENERAL	NATURE	NUMBER	DATE
<p>1733352 1733353 1733354</p>	<p>12-11-1972 12-11-1972 12-11-1972</p>	<p>Jensen Jensen Jensen</p>	<p>12-11-1972 12-11-1972 12-11-1972</p>	<p>Jensen Jensen Jensen</p>	<p>1733352 1733353 1733354</p>	<p>12-11-1972 12-11-1972 12-11-1972</p>	<p>Jensen Jensen Jensen</p>

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

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APPENDIX D – GOVERNMENT SEARCHES



**TWEED
SHIRE
COUNCIL**

Please Quote
Council Ref: LN 13009 and 13010 – Environmental Health
Your Ref No: PE389.08
For Enquiries
Please Contact: Jacqui Cord
Telephone: (02) 6670 2440

urlup rd

11 June 2008

Precise Environmental
Attn: David Bayel
PO Box 4651
ROBINA TOWN CENTRE Qld 4230

**Contaminated Lands Search Information Request
Lots 2 and 3 DP 244652, Uriup Road, Bilambil**

In reply to your enquiry to Council regarding the above referred properties, Council would like to advise that a search of its records disclosed the following:

1. The radial search revealed that "Bilambil" cattle dip site is within 200 metres of the subject properties.

Council is required to consider human and environmental health risks of all proposed development within a 200m radius of any cattle tick dip. Development within this buffer may not necessarily be prohibited however development may be constrained.

In light of the above search Council may require further information with any subsequent development application.

2. The Bilambil topographical map (1975), Council's aerial photography (1962, 1970 and 1987), and Council's data records reveal a quarry on the subject land.

Mining and extractive industries have been listed within the NSW State Government Guidelines as a potentially contaminating activity due to the association of the activity with chemical usage and heavy metals.

In light of the above search Council may require further information with any subsequent development application.

3. A site inspection of the subject land on 4 June 2008 revealed evidence of the quarry however no structures or machinery were present.

It should be noted that for the final determination to be made regarding contamination of a lot, an assessment would be necessary in accordance with the NSW Department of Environment and Climate Change (formerly NSW EPA) document '*Guidelines for Consultants Reporting on Contaminated Sites 1997*'.

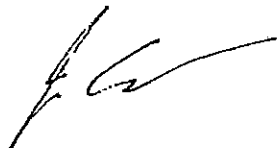


CIVIC AND CULTURAL CENTRE, MURWILLUMBAH
PO BOX 816, MURWILLUMBAH NSW 2484
TELEPHONE: (02) 6670 2400 FAX: (02) 6670 2429

PLEASE ADDRESS ALL COMMUNICATIONS TO THE GENERAL MANAGER
ABN 90 178 732 496
www.tweed.nsw.gov.au

You may contact the NSW Department of Primary Industries (DPI) - Agriculture for any additional information in respect to the proximity of any known dip site to the subject property and any implications that any such known dip site may have in respect to the occupation of the subject property. NSW DPI Agriculture maintains a web site for access to fundamental dip site information at www.agric.nsw.gov.au/tools/dipsite-locator.

Yours faithfully

A handwritten signature in black ink, appearing to read 'Jacquie Cord', written in a cursive style.

Jacqui Cord
Environmental Health Officer



**TWEED
SHIRE
COUNCIL**

Please Quote
Council Ref: PF0960/5
Your Ref No: PE389.08
For Enquiries
Please Contact: Lydia Reading
Telephone Direct (02) 6670 2524

[dltr]

11 June 2008

Precise Environmental
Attention: David Bale
PO Box 4651
ROBINA TOWN CENTRE QLD 4230

Dear Sir/Madam

Development Consent Search - Lots 2 and 3 DP 244652, Urliup Road, Bilambil

I refer to your letter dated 27 May 2008 with regards to the abovementioned and wish to advise the following.

Development Application DA04/0155 for a sign was granted consent 5 May 2004.

Development Application DA06/0177 for an advertising sign was granted consent 31 May 2006.

Please find a copy of the above development consents attached.

If you have any further enquiries please don't hesitate to contact Council offices on the above number during normal business hours.

Yours faithfully

per **Lindsay McGavin**
Acting Manager Development Assessment



CIVIC AND CULTURAL CENTRE, MURWILLUMBAH
PO BOX 816, MURWILLUMBAH NSW 2484
TELEPHONE: (02) 6670 2400 FAX: (02) 6670 2429

PLEASE ADDRESS ALL COMMUNICATIONS TO THE GENERAL MANAGER
ABN 90 178 732 496
www.tweed.nsw.gov.au

TWEED SHIRE COUNCIL

ENVIRONMENTAL PLANNING AND ASSESSMENT ACT, 1979

NOTICE OF DETERMINATION OF A DEVELOPMENT APPLICATION

To: Mr Mark Quinn
750 Carool Road
CAROOL NSW 2486

Pursuant to Section 81(1)(a) of the Act, notice is hereby given of the determination by the Tweed Shire Council of Development Application No. DA04/0155 relating to land described as:-

Lot 1 DP 783888
Lot 1 DP 240847
Lot 1 DP 937212
Lot 2 DP 244652
Lot 3 DP 244652
Lot 3 DP 814299
No. 266 Carool Road
Bilambil Road
Urliup Road
Carool

to be developed in accordance with plans and details submitted for the purpose of -

SIGN

The Development Application has been determined by the granting of consent subject to the conditions described below:-

GENERAL

1. The development shall be completed in accordance with the Statement of Environmental Effects and Plans Nos S1-5 and dated 28 March 2004, except where varied by these conditions. [GEN0010]
2. Any unauthorised signage affixed to a power line pole or similar is to be removed immediately upon issue of this consent. Any new signage is to be the subject of a fresh Development Application. [GENNS01]
3. All signage is to be contained within private property. [GENNS02]
4. On completion of work, a certificate signed by a practising structural engineer is to be submitted to Council to certify the structural adequacy of the structures. [POC0060]

COPY

TWEED SHIRE COUNCIL

ENVIRONMENTAL PLANNING AND ASSESSMENT ACT, 1979

NOTICE OF DETERMINATION OF A DEVELOPMENT APPLICATION

To: Penny Bros Pty Ltd
363 Carool Road
CAROOL NSW 2486

Pursuant to Section 81(1)(a) of the Act, notice is hereby given of the determination by the Tweed Shire Council of Development Application No. **DA06/0177** relating to land described as:-

**Lot 2 DP 244652
Carool Road
Bilambil**

to be developed in accordance with plans and details submitted for the purpose of –

ADVERTISING SIGN

The Development Application has been determined by the granting of consent subject to the conditions described below:-

GENERAL

1. In accordance with State Environmental Planning Policy No.64 this consent shall operate for a period not exceeding 15 years from the date on which the consent operates for the purposes of ss 81 & 83 of the Environmental Planning and Assessment Act, 1979.
2. No advertising signage lighting is approved by this consent.

[GENNS01]

The development shall be completed in accordance with the Statement of Environmental Effects, Site (820D dated March 2006) and Signage Plan prepared by Parameter Designs, except where varied by the conditions of this consent.

[GEN0005]

4. The issue of this Development Consent does not certify compliance with the relevant provisions of the Building Code of Australia.

[GEN0115]

PRIOR TO COMMENCEMENT OF WORK

5. The erection of a building in accordance with a development consent must not be commenced until:
 - (a) a construction certificate for the building work has been issued by the consent authority, the council (if the council is not the consent authority) or an accredited certifier, and
 - (b) the person having the benefit of the development consent has:

11. The Principal Certifying Authority is to be given a minimum of 48 hours notice prior to any critical stage inspection or any other inspection nominated by the Principal Certifying Authority via the notice under Section 81A of the Environmental Planning and Assessment Act 1979.

[DUR0405]

12. It is the responsibility of the applicant to restrict public access to the building site, building works or materials or equipment on the site when building work is not in progress or the site is otherwise unoccupied in accordance with WorkCover 2000 Regulations.

[DUR0415]

13. All work associated with this approval is to be carried out so as not to impact on the environment. All necessary precautions, covering and protection shall be taken to minimise impact from: -

- Noise, water or air pollution
- Minimise impact from dust during filling operations and also from construction vehicles
- No material is removed from the site by wind

[DUR1005]

14. The builder must provide an adequate trade waste service to ensure that all waste material is contained, and removed from the site for the period of construction.

[DUR2185]

PRIOR TO ISSUE OF OCCUPATION CERTIFICATE

15. A person must not commence occupation or use of the whole or any part of a new building or structure (within the meaning of Section 109H(4)) unless an occupation certificate has been issued in relation to the building or part (maximum 25 penalty units).

[POC0205]

16. A satisfactory final inspection of the building is to be carried out by Council prior to occupation or use commencing.

[POC0255]

17. Prior to the issue of a final occupation certificate, all conditions of consent are to be met.

[POC1055]

The reasons for the imposition of conditions are to minimise any adverse impact the development may cause and to give effect to the objectives of the Environmental Planning and Assessment Act, 1979.

The application was determined on: **24 May 2006**
The consent to operate from: **31 May 2006**
The consent to lapse on 31 May 2011 unless commenced prior to that date.

COPY



Home » Animals » Health, disease and pests » Cattle health and disease » Cattle tick » Cattle dipsite locator »

Cattle dip site locator

Dip site location

Dipname	BILAMBIL	<i>Note: Map references are for 25,000 series topographic and coordinates are in AGD66 AMG zone 56.</i>	
Road	URLIUP ROAD	Mapsheet	9541-I-S
Town/Locality	BILAMBIL	Easting	54561
Shire Council	TWEED	Northing	87766
Parish	TERRANORA	County	ROUS

Dip site status

IMPORTANT NOTE: Cattle dip site information provided by NSW DPI is based on our own hard copy files representing currently known data. NSW DPI is not a public consent authority for the development of land containing cattle dip sites. It is possible that the physical conditions of a cattle dip site - including soil, structures, access and usage - may have been changed due to extreme natural events or landowner and developer actions that NSW DPI cannot be aware of. For more specific and accurate status information a physical inspection should be made and enquiries should always be directed to the appropriate Shire Council.

Dip Status	DEMOLISHED	Licence/Lease Status	LAPSED
Land type	LEASE	Licence/Lease Expiry Date	
Explanation of status terms			

Chemical Details

IMPORTANT NOTE: Chemical history has been retrieved from a copied laboratory log. In some cases it may be confirmed by entries in the hard copy lease folder but generally the chemical record is based on this single lab document. It is possible that there are inaccuracies as well as errors made.

Chemicals used in dip bath	Date first used
ARSENIC	3/45
DDT	11/60
DIOXATHION	10/62
ETHION	10/65
ETHION CHLORDIMEFORM	1/73

Current Details

Current Chemical	NONE
Dip bath status/contents	REMOVE

[New search](#) | [Back](#)

The information contained in this web page is based on knowledge and understanding at the time of writing. However, because of advances in knowledge, users are reminded of the need to ensure that information upon which they rely is up to date and to check currency of the information with the appropriate officer of NSW Department of Primary Industries or the user's independent adviser.



Our Ref: D08/053923
Your Ref: David Bayel

6 June 2008

Attention: David Bayel
Precise Environmental
PO Box 4651
ROBINA TOWN CENTRE QLD 4230

Dear David,

RE SITE: Lots 2 & 3 Urliup Rd, Bilambil

I refer to your search request of 29th May 2008 requesting information on licences to Keep Dangerous Goods for the above site.

A search of the Stored Chemical Information Database (SCID) and the microfiche records held by WorkCover has not located any records pertaining to the above-mentioned premises.

If you have any further queries, please contact Dangerous Goods Licensing staff on (02) 4321 5500.


Naomi James
A/Senior Licensing Officer
Dangerous Goods

WorkCover. **Watching out for you.**

WorkCover NSW ABN 77 682 742 966 92-100 Donnison Street Gosford NSW 2250 Locked Bag 2906 Lisarow NSW 2252
Telephone 02 4321 5000 Facsimile 02 4325 4145 WorkCover Assistance Service 13 10 50
DX 731 Sydney Website www.workcover.nsw.gov.au

APPENDIX E – SITE PHOTOGRAPHS



Plate 1. View along eastern boundary to north



Plate 2. Rubbish Area 1 on eastern boundary



Plate 3. Dam located on western portion of site



Plate 4. Quarry face, view to north-west



Plate 5. View across site to south



Plate 6. View across site to west



Plate 5. View across site to south



Plate 6. View across site to west



Plate 7. Fill material with building rubble



Plate 8. General rubbish on site



Plate 9. Rubbish area located in gully



Plate 10. Fill material with general rubbish

APPENDIX F – QUALITY ASSURANCE / QUALITY CONTROL

Quality assurance (QA) review, Attachment – soil sampling.	
<i>Sampling and analytical methods</i>	
<p>The following sampling methods were used: The sampling was undertaken by Chris Butler and Luke Merzlikoff of Precise Environmental. The sampling was undertaken on 9 July 2008.</p> <p>Surface samples were collected via hand. All soil samples were collected into laboratory supplied jars, with minimal headspace, transported to the laboratory on ice under chain of custody documentation. Soil samples were analysed for heavy metal, OCPs and OPPs.</p> <p>Subsurface samples and fill stockpiles were collected using an excavator. The excavator was decontaminated between sample locations. All soil samples were collected into laboratory supplied jars, with minimal headspace, transported to the laboratory on ice under chain of custody documentation. Soil samples were analysed for heavy metal, OCPs, OPPs, PCBs, BTEX, TPHs, PAHs, phenols, and asbestos.</p> <p>The following laboratory and analytical methods were used: Australian laboratory services (ALS) Brisbane (EB prefix on laboratory reports) was the primary laboratory used, and ALS Sydney (ES prefix) for the inter-laboratory analysis, both of which are NATA accredited for the analysis undertaken. ALS referenced analytical methods which meet the NEPM requirements, and in particular, volatiles were analysed using purge and trap methodology.</p> <p>The laboratory reports for the analysis undertaken are as follows:</p> <ul style="list-style-type: none"> – EB0809213 (July 2008) – EB0809216 (July 2008) – EB0809896 (July 2008) – ES0810648 (August 2008) – EB0810658(August 2008) <p>Other laboratory reports have been included for asbestos analysis (Parsons Brinckerhoff & ASET.</p>	
<i>Field quality assurance</i>	
Representativeness	
QA components related to representativeness are shown below, along with the results in regard to this assessment:	
<ul style="list-style-type: none"> • Sampling appropriate for media and analytes? For media? (yes/no) Yes For analytes? (yes/no) Yes (Comments): 	
<ul style="list-style-type: none"> • Samples extracted and analysed within holding times? (yes/no) Yes (Comments): 	
Comparability	
QA components related to comparability are shown below, along with the results in regard to this assessment:	

Quality assurance (QA) review, Attachment – soil sampling.			
<ul style="list-style-type: none"> Standard operating procedures used for sample collection and handling? (yes/no) Yes (Comments): 			
<ul style="list-style-type: none"> Standard analytical methods used for all analyses? (yes/no) Yes (Comments): 			
<ul style="list-style-type: none"> Consistent field conditions and sampling staff? (yes/no) Yes (Comments): 			
<ul style="list-style-type: none"> Limits of reporting (LORs) appropriate and consistent? (yes/no) Yes (Comments): 			
Completeness			
QA components related to completeness are shown below, along with the results in regard to this assessment:			
<ul style="list-style-type: none"> Soil logs and chain of custody forms (COCs) completed and appropriate? Soil logs? (yes/no) Yes COCs? (yes/no) Yes (Comments): 			
<ul style="list-style-type: none"> Appropriate documentation? (yes/no) Yes (Comments): 			
<ul style="list-style-type: none"> Satisfactory frequency and result for QC samples? (yes/no) yes (Comments): See below. 			
<i>QA discussion and conclusions</i>			
The sampling and analytical methods described are generally appropriate. Therefore they are considered to be of suitable quality to support the conclusions made in the report.			

Quality control (QC) review, Attachment – soil sampling.			
Precision			
Measures for assessing precision are shown below, along with the results in regard to this assessment.			
• Field duplicates:			
Frequency sufficient? (yes/no)	Yes.	RPDs acceptable? (yes/no)	Yes (see comments).
(Comments) One result for lead (SL25 0.0-0.15m) reported an elevated concentration of 313 mg/kg. The sample was retested with a result of 58 mg/kg. It is likely that the distribution of lead in this sample is uneven. No other significant inconsistencies were reported.			
• Inter-laboratory duplicates:			
Frequency sufficient? (yes/no)	Yes	RPDs acceptable? (yes/no)	Yes
(Comments)			
• Laboratory duplicates:			
Frequency sufficient? (yes/no)	Yes	RPDs acceptable? (yes/no)	Yes
(Comments)			
Accuracy			
Measures for assessing accuracy are shown below, along with the results in regard to this assessment.			
• Surrogate spikes:			
Frequency sufficient? (yes/no)	Yes.	Recoveries (yes/no)	acceptable? Yes.
(Comments)			
• Matrix spikes (MSs):			
Frequency sufficient? (yes/no)	Yes	Recoveries (yes/no)	acceptable? Yes
(Comments)			
• Laboratory control samples (LCSs):			
Frequency sufficient? (yes/no)	Yes.	Recoveries (yes/no)	acceptable? Yes
(Comments)			
Representativeness			
Measures for assessing representativeness are shown below, along with the results in regard to this assessment.			
• Rinsate samples:			
Frequency sufficient? (yes/no)	Yes	Results acceptable? (yes/no)	N/A
(Comments) Majority of samples collected via gloved hand, therefore no rinsate. The subsurface samples collected using an excavator returned concentrations of contaminants less than the residential criteria, and in particular no organics were detected in these samples. Therefore the likelihood of cross contamination occurring and not being detected by the lack of rinsate sample analysis is considered to be low.			
• Trip blanks:			
Frequency sufficient? (yes/no)	Refer below	Results acceptable? (yes/no)	N/A
(Comments) Trip blank was misplaced during the field investigation. The lack of trip blanks was not considered to be detrimental to the investigation results.			
• Trip spikes:			
Frequency sufficient? (yes/no)	Refer below	Results acceptable? (yes/no)	N/A

Quality control (QC) review, Attachment – soil sampling.			
(Comments) Trip spike was misplaced during the field investigation. However, no VOCs were detected in the soil sample headspace using a PID.			

<ul style="list-style-type: none"> Laboratory blanks: 			
Frequency sufficient? (yes/no)	Yes.	Results acceptable? (yes/no)	Yes.
(Comments)			
<i>QC discussion and conclusions</i>			
<p>The QC assessment indicates that some QC samples were not collected and/or analysed however the laboratory results are generally within the predetermined ranges. Field duplicates show that the data is sufficiently precise and field methodology show that the data is representative, whilst the laboratory analytical data assessment indicates that the data is accurate.</p> <p>The analytical data is considered to be of sufficient quality to sustain the conclusions made in the report.</p>			

APPENDIX G – DATA SUMMARY TABLES

Table 1: Metals in surface soils (mg/kg)

Sample	Depth (m)	Description	Date	Arsenic	Cadmium	Chromium (Total)	Chromium (III) (Retest)	Chromium (VI) (Retest)	Chromium (TCLP) mg/L	Copper	Lead	Lead (Retest)	Lead (TCLP) mg/L	Mercury	Nickel	Zinc
LORs				5	1	2	2	1	0.1	5	5	5	0.1	0.1	2	5
SL1	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	16	nd	71	-	-	-	105	7	-	-	nd	25	34
SL2	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	15	nd	82	-	-	-	114	nd	-	-	nd	44	27
SL3	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	10	nd	32	-	-	-	17	15	-	-	nd	9	66
SL4	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	8	nd	48	-	-	-	11	13	-	-	nd	5	33
SL5	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	6	nd	40	-	-	-	25	40	-	-	0.2	4	185
SL6	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	nd	nd	16	-	-	-	nd	6	-	-	0.1	nd	14
SL7	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	6	nd	17	-	-	-	8	6	-	-	0.1	2	17
SL8	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	9	nd	35	-	-	-	13	8	-	-	0.1	4	19
SL9	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	13	nd	56	-	-	-	23	10	-	-	0.1	6	32
SL10	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	18	nd	88	-	-	-	32	14	-	-	nd	8	42
SL11	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	5	nd	23	-	-	-	28	18	-	-	nd	11	118
SL12	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	9	nd	53	-	-	-	20	6	-	-	nd	4	8
SL13	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	14	nd	20	-	-	-	16	6	-	-	nd	2	18
SL14	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	nd	nd	9	-	-	-	14	6	-	-	nd	nd	18
SL15	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	nd	nd	10	-	-	-	7	8	-	-	nd	nd	12
SL16	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	10	nd	22	-	-	-	13	6	-	-	nd	2	14
SL17	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	11	nd	138	144	nd	nd	43	5	-	-	nd	9	17
SL18	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	10	nd	670	690	nd	nd	56	nd	-	-	nd	22	16
SL19	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	13	nd	193	200	nd	nd	53	7	-	-	nd	16	20
SL20	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	8	nd	101	105	nd	nd	28	13	-	-	0.1	10	16
SL21	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	16	nd	125	114	nd	nd	71	10	-	-	0.1	24	22
SL22	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	48	nd	91	-	-	-	112	7	-	-	nd	20	23
SL23	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	98	nd	60	-	-	-	98	12	-	-	0.1	16	41
SL24	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	81	nd	37	-	-	-	74	11	-	-	0.1	13	19
SL25	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	31	nd	32	26	nd	nd	81	313	58	nd	nd	26	312
<i>Site soils statistics</i>																
Number of detects				22	-	25	6	-	-	24	23	1	-	9	22	25
Percentage non detect				12%	-	0%	0%	-	-	4%	8%	96%	-	64%	12%	0%
Maximum				98	-	670	690	-	-	114	313	58	-	0.2	44	312
Mean				20.7	-	82.8	213.2	-	-	44.3	23.8	58	-	0.1	12.8	45.7
Median				12	-	48	129	-	-	28	8	58	-	0	10	20
Minimum				5	-	9	26	-	-	7	5	58	-	0.1	2	8
Standard deviation				24.3	-	130.4	240.4	-	-	35.8	63.5	-	-	0.0	10.5	67.5
Co-efficient of variation				1.2	-	1.6	1.1	-	-	0.8	2.7	-	-	0.3	0.8	1.5
95% UCL				39	-	120	585	-	-	74	75	-	-	0.93	21	105
<i>Criteria</i>																
Residential land use				100	20	-	12%	100	-	1,000	300	300	-	15	600	7,000
Phytotoxicity				20	3	-	400	1	-	100	600	600	-	1	60	200

Notes:

LOR denotes limit of reporting (standard LOR unless otherwise shown)

nd denotes not detected

BOLD denotes exceeds DEC (2006) criteria

- denotes data set insufficient to perform

Table 2: OCPs in surface soils (mg/kg)

Sample	Depth (m)	Description	Date	alpha-BHC	Hexachlorobenzene (HCB)	beta-BHC	gamma-BHC	delta-BHC	Heptachlor	Heptachlor epoxide	Aldrin	Dieldrin	cis-Chlordane	trans-Chlordane	alpha-Endosulfan	4,4'-DDD	4,4'-DDT	4,4'-DDE	Endrin	beta-Endosulfan	Endrin aldehyde	Endosulfan sulfate	Endrin ketone	Methoxychlor	
LOR				0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.2	0.05	0.05	0.05	0.05	0.05	0.05	0.2	
SL1	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
SL2	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SL3	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SL4	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
SL5	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SL6	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
SL7	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SL8	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SL9	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
SL10	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SL11	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SL12	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
SL13	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SL14	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
SL15	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SL16	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
SL17	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SL18	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
SL19	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SL20	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SL21	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SL22	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
SL23	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SL24	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
SL25	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Criteria																									
Residential land use				-	-	-	-	-	10	10	50	-	200	-	-	-	-	-	-	-	-	-	-	-	
Phytotoxicity				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes:
LOR denotes limit of reporting (standard LOR unless otherwise shown)
nd denotes not detected
BOLD denotes exceeds DEC (2006) criteria
- denotes no DEC (2006) criteria

Table 3: OPPs in surface soil (mg/kg)

Sample	Depth (m)	Description	Date	Dichlorvos	Demeton-S-methyl	Monocrotophos	Dimehoate	Diazinon	Chlorpyrifos-methyl	Parathion-methyl	Malathion	Fenithion	Chlorpyrifos	Parathion	Pirimphos-ethyl	Chlorfenvinphos	Bromophos-ethyl	Fenamiphos	Prothiofos	Ethion	Carbophenothion	Azinphos Methyl	
LORs				0.05	0.05	0.2	0.05	0.05	0.05	0.2	0.05	0.05	0.2	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	
SL1	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
SL2	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SL3	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
SL4	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
SL5	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SL6	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
SL7	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SL8	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SL9	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
SL10	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SL11	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SL12	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
SL13	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SL14	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
SL15	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SL16	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
SL17	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SL18	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
SL19	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SL20	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SL21	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SL22	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
SL23	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SL24	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
SL25	0.0-0.15	SILTY MEDIUM CLAY, red brown, trace of roots, moist	9 July 2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Criteria																							
Residential land use				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phytotoxicity				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes:

LOR denotes limit of reporting (standard LOR unless otherwise shown)

nd denotes not detected

BOLD denotes exceeds DEC (2006) criteria

- denotes no DEC (2006) criteria

Table 4: Metals in sub-surface soil (mg/kg)

Sample	Depth (m)	Date	Arsenic	Cadmium	Chromium (Total)	Chromium (III)	Chromium (VI)	Chromium (TCLP) mg/L	Copper	Lead	Mercury	Nickel	Zinc
LORs			5	1	2	2	1	0.1	5	5	0.1	2	5
TP1	0.0 - 0.3	9 July 2008	nd	nd	16	-	-	-	10	10	nd	8	35
TP2	0.0 - 0.2	9 July 2008	nd	nd	19	-	-	-	13	13	nd	9	51
TP2	0.2 - 0.6	9 July 2008	nd	nd	19	-	-	-	9	10	nd	9	31
TP3	0.0 - 0.15	9 July 2008	5	nd	19	-	-	-	12	12	nd	9	51
TP3	0.4 - 1.0	9 July 2008	nd	nd	16	-	-	-	9	8	nd	8	29
TP4	0.0 - 0.1	9 July 2008	nd	nd	14	-	-	-	32	105	nd	8	414
TP4	0.1 - 0.5	9 July 2008	nd	nd	19	-	-	-	12	19	nd	11	71
TP4	0.5 - 0.7	9 July 2008	8	nd	7	-	-	-	8	16	nd	2	30
TP5	0.0 - 0.3	9 July 2008	7	nd	20	-	-	-	9	10	nd	11	38
TP5	0.3 - 0.6	9 July 2008	nd	nd	15	-	-	-	18	8	nd	12	64
TP5	1.0 - 1.3	9 July 2008	nd	nd	16	-	-	-	7	9	nd	9	30
TP6	0.0 - 0.3	9 July 2008	9	nd	10	-	-	-	19	11	nd	6	37
TP6	0.3 - 0.7	9 July 2008	nd	nd	25	-	-	-	16	21	0.1	12	93
TP6	0.7 - 1.5	9 July 2008	6	nd	14	-	-	-	19	18	nd	7	73
TP7	0.0 - 0.3	9 July 2008	nd	nd	16	-	-	-	15	6	nd	14	61
TP9	0.0 - 0.5	9 July 2008	nd	nd	32	-	-	-	22	8	nd	14	46
TP9	0.5 - 1.0	9 July 2008	nd	nd	20	-	-	-	11	11	nd	9	34
TP10	0.3 - 0.6	9 July 2008	6	nd	26	-	-	-	44	22	0.1	329	142
TP10	1.0 - 1.4	9 July 2008	nd	nd	22	-	-	-	34	38	0.1	14	138
Stockpile S1	0.5 - 1.0	9 July 2008	nd	nd	8	-	-	-	6	nd	nd	7	49
Stockpile S2	0.5 - 1.0	9 July 2008	10	nd	218	246	nd	nd	102	nd	nd	144	159
Stockpile S3	0.5 - 1.0	9 July 2008	nd	nd	10	-	-	-	9	8	nd	8	33
<i>Site soils statistics</i>													
Number of detects			7	0	22	1	0	0	22	20	3	22	22
Percentage non detect			68%	100%	0%	95%	100%	100%	0	0	0.9	0	0
Maximum			10	-	218	246	-	-	102	105	0.1	329	414
Mean			7.3	-	26.4	246.0	-	-	20	18	0.1	30	78
Median			7	-	18	246	-	-	13	11	0.1	9	50
Minimum			5	-	7	246	-	-	6	6	0.1	2	29
Standard deviation			1.8	-	43.2	-	-	-	21	22	0.0	73	84
Co-efficient of variation			0.2	-	1.6	-	-	-	1.0	1.2	0.0	2	1
95% UCL			6	-	67	-	-	-	39	36	-	184	156
<i>Criteria</i>													
Residential land use			100	20	-	12%	100	-	1,000	300	15	600	7,000
Phytotoxicity			20	3	-	400	1	-	100	600	1	60	200

Notes:

LOR denotes limit of reporting (standard LOR unless otherwise shown)

nd denotes not detected

BOLD denotes exceeds DEC (2006) criteria

- denotes data set insufficient to perform

Table 5: OCPs and PCBs in sub-surface soil (mg/kg)

Sample	Depth (m)	Date	alpha-BHC	Hexachlorobenzene (HCB)	beta-BHC	gamma-BHC	delta-BHC	Heptachlor	Heptachlor epoxide	Aldrin	Dieldrin	cis-Chlordane	trans-Chlordane	alpha-Endosulfan	4,4'-DDD	4,4'-DDT	4,4'-DDE	Endrin	beta-Endosulfan	Endrin aldehyde	Endosulfan sulfate	Endrin ketone	Methoxychlor	PCBs - total
LOR			0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.2	0.05	0.05	0.05	0.05	0.05	0.05	0.2	0.1
TP1	0.0 - 0.3	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TP2	0.0 - 0.2	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TP2	0.2 - 0.6	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TP3	0.0 - 0.15	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TP3	0.4 - 1.0	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TP4	0.0 - 0.1	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TP4	0.1 - 0.5	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TP4	0.5 - 0.7	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TP5	0.0 - 0.3	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TP5	0.3 - 0.6	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TP5	1.0 - 1.3	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TP6	0.0 - 0.3	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TP6	0.3 - 0.7	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TP6	0.7 - 1.5	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TP7	0.0 - 0.3	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TP9	0.0 - 0.5	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TP9	0.5 - 1.0	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TP10	0.3 - 0.6	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TP10	1.0 - 1.4	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Stockpile S1	0.5 - 1.0	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Stockpile S2	0.5 - 1.0	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Stockpile S3	0.5 - 1.0	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Criteria																								
Residential land use			-	-	-	-	-	10	10	50	-	200	-	-	-	-	-	-	-	-	-	-	-	10
Phytotoxicity			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes:

LOR denotes limit of reporting (standard LOR unless otherwise shown)

nd denotes not detected

BOLD denotes exceeds DEC (2006) criteria

- denotes no DEC (2006) criteria

Table 6: OPPs in sub-surface soil (mg/kg)

Sample	Depth (m)	Date	Dichloavos	Demeton-S-methyl	Monocrotophos	Dimethoate	Diazinon	Chlorpyrifos-methyl	Parathion-methyl	Malathion	Fenthion	Chlorpyrifos	Parathion	Plimphos-ethyl	Chlorfenvinphos	Bromophos-ethyl	Fenamiphos	Prothiofos	Ethion	Carbophenothion	Azinphos Methyl
LORs			0.05	0.05	0.2	0.05	0.05	0.05	0.2	0.05	0.05	0.05	0.2	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
TP1	0.0 - 0.3	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TP2	0.0 - 0.2	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TP2	0.2 - 0.6	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TP3	0.0 - 0.15	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TP3	0.4 - 1.0	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TP4	0.0 - 0.1	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TP4	0.1 - 0.5	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TP4	0.5 - 0.7	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TP5	0.0 - 0.3	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TP5	0.3 - 0.6	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TP5	1.0 - 1.3	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TP6	0.0 - 0.3	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TP6	0.3 - 0.7	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TP6	0.7 - 1.5	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TP7	0.0 - 0.3	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TP9	0.0 - 0.5	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TP9	0.5 - 1.0	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TP10	0.3 - 0.6	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TP10	1.0 - 1.4	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Stockpile S1	0.5 - 1.0	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Stockpile S2	0.5 - 1.0	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Stockpile S3	0.5 - 1.0	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Criteria																					
Residential land use			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phytotoxicity			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes:

LOR denotes limit of reporting (standard LOR unless otherwise shown)

nd denotes not detected

BOLD denotes exceeds DEC (2006) criteria

- denotes no DEC (2006) criteria

Table 7: BTEX and TPHs in sub-surface soil (mg/kg)

Sample	Depth	Date	Benzene	Toluene	Ethyl benzene	m&p-Xylenes	o-Xylene	TPHs C6 - C9	TPHs C10 - C14	TPHs C15 - C28	TPHs C29 - C36
LOR			0.2	0.5	0.5	0.5	0.5	10	50	100	100
TP1	0.0 - 0.3	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd
TP2	0.0 - 0.2	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd
TP2	0.2 - 0.6	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd
TP3	0.0 - 0.15	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd
TP3	0.4 - 1.0	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd
TP4	0.0 - 0.1	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd
TP4	0.1 - 0.5	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd
TP4	0.5 - 0.7	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd
TP5	0.0 - 0.3	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd
TP5	0.3 - 0.6	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd
TP5	1.0 - 1.3	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd
TP6	0.0 - 0.3	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd
TP6	0.3 - 0.7	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd
TP6	0.7 - 1.5	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd
TP7	0.0 - 0.3	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd
TP9	0.0 - 0.5	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd
TP9	0.5 - 1.0	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd
TP10	0.3 - 0.6	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd
TP10	1.0 - 1.4	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd
Stockpile S1	0.5 - 1.0	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd
Stockpile S2	0.5 - 1.0	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd
Stockpile S3	0.5 - 1.0	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd
Criteria											
Sensitive land use			1	130	50	25	65	1,000			

Notes:

LOR denotes limit of reporting (standard LOR unless otherwise shown)

nd denotes not detected

BOLD denotes exceeds DEC (2006) criteria

Table 8: PAHs in sub-surface soil (mg/kg)

Sample	Depth	Date	Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benz(a)anthracene	Chrysene	Benzo(b)&(k)fluoranthene	Benzo(a) pyrene	Indeno(1,2,3-c,d)pyrene	Dibenz(a,h)anthracene	Benzo(g,h,i)perylene	Total PAHs	
LOR			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	-	
TP1	0.0 - 0.3	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	-
TP2	0.0 - 0.2	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	-
TP2	0.2 - 0.6	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	-
TP3	0.0 - 0.15	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	-
TP3	0.4 - 1.0	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	-
TP4	0.0 - 0.1	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	-
TP4	0.1 - 0.5	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	-
TP4	0.5 - 0.7	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	-
TP5	0.0 - 0.3	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	-
TP5	0.3 - 0.6	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	-
TP5	1.0 - 1.3	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	-
TP6	0.0 - 0.3	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	-
TP6	0.3 - 0.7	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	-
TP6	0.7 - 1.5	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	-
TP7	0.0 - 0.3	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	-
TP9	0.0 - 0.5	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	-
TP9	0.5 - 1.0	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	-
TP10	0.3 - 0.6	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	-
TP10	1.0 - 1.4	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	-
Stockpile S1	0.5 - 1.0	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	-
Stockpile S2	0.5 - 1.0	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	-
Stockpile S3	0.5 - 1.0	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	-
Criteria																			
Residential land use			-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	20	

Notes:

LOR denotes limit of reporting (standard LOR unless otherwise shown)

BOLD denotes exceeds DEC (2006) criteria

- denotes no DEC (2006) criteria

Table 9: Phenols in sub-surface soil (mg/kg)

Sample	Depth	Date	Phenol	2-Chlorophenol	2-Methylphenol	3- & 4-Methylphenol	2-Nitrophenol	2,4-Dimethylphenol	2,4-Dichlorophenol	2,6-Dichlorophenol	4-Chloro-3-Methylphenol	2,4,6-Trichlorophenol	2,4,5-Trichlorophenol	Pentachlorophenol	Total Phenols
LOR			0.5	0.5	0.5	1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	2	-
TP1	0.0 - 0.3	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	-
TP2	0.0 - 0.2	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	-
TP2	0.2 - 0.6	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	-
TP3	0.0 - 0.15	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	-
TP3	0.4 - 1.0	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	-
TP4	0.0 - 0.1	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	-
TP4	0.1 - 0.5	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	-
TP4	0.5 - 0.7	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	-
TP5	0.0 - 0.3	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	-
TP5	0.3 - 0.6	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	-
TP5	1.0 - 1.3	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	-
TP6	0.0 - 0.3	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	-
TP6	0.3 - 0.7	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	-
TP6	0.7 - 1.5	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	-
TP7	0.0 - 0.3	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	-
TP9	0.0 - 0.5	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	-
TP9	0.5 - 1.0	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	-
TP10	0.3 - 0.6	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	-
TP10	1.0 - 1.4	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	-
Stockpile S1	0.5 - 1.0	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	-
Stockpile S2	0.5 - 1.0	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	-
Stockpile S3	0.5 - 1.0	9 July 2008	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	-
Criteria															
Residential land use			-	-	-	-	-	-	-	-	-	-	-	-	8,500
Phytotoxicity			-	-	-	-	-	-	-	-	-	-	-	-	70

Notes:

LOR denotes limit of reporting (standard LOR unless otherwise shown)

nd denotes not detected

BOLD denotes exceeds DEC (2006) criteria

- denotes no DEC (2006) criteria

Table 10: Asbestos in sub-surface soil

Sample	Depth (m)	Date	Type	Asbestos (Visual)
Site soils analytical				
TP1	0.0 - 0.3	9 July 2008	Soil	nd
TP2	0.0 - 0.2	9 July 2008	Soil	nd
TP2	0.2 - 0.6	9 July 2008	Soil	nd
TP3	0.4 - 1.0	9 July 2008	Soil	nd
TP4	0.1 - 0.5	9 July 2008	Soil	nd
TP4	0.5 - 0.7	9 July 2008	Soil	nd
TP5	0.3 - 0.6	9 July 2008	Soil	nd
TP5	1.0 - 1.3	9 July 2008	Soil	nd
TP6	0.3 - 0.7	9 July 2008	Soil	nd
TP6	0.3 - 0.7(A)	9 July 2008	Fibre cement sheet (1 x 1 cm)	Chrysotile & Amosite asbestos detected
TP6	0.7 - 1.5	9 July 2008	Soil	nd
TP9	0.0 - 0.5	9 July 2008	Soil	nd
TP10	0.3 - 0.6	9 July 2008	Soil	nd
TP10	1.0 - 1.4	9 July 2008	Soil	nd
Stockpile S1	0.5 - 1.0	9 July 2008	Soil	nd
Stockpile S3	0.5 - 1.0	9 July 2008	Soil	nd
<i>Criteria</i>				
Residential land use				nd

Notes:

LOR denotes limit of reporting (standard LOR unless otherwise shown)

nd denotes not detected

No current criterion for asbestos is endorsed by DEC (2006)

Table 11: QC soil analytical results

Analyte	LOR mg/kg	SL1 0.0-0.15	Duplicate A	RPD	SL1 0.0-0.15	RPD	SL24 0.0-0.15	Duplicate B	RPD	SL24 0.0-0.15	RPD	TP10 1.0-1.4	Duplicate C	RPD	TP10 1.0-1.4	RPD
		<i>Primary</i>	<i>Duplicate</i>	<i>%</i>	<i>Inter-lab duplicate</i>	<i>%</i>	<i>Primary</i>	<i>Duplicate</i>	<i>%</i>	<i>Inter-lab duplicate</i>	<i>%</i>	<i>Primary</i>	<i>Duplicate</i>	<i>%</i>	<i>Inter-lab duplicate</i>	<i>%</i>
	<i>Soil</i>	<i>Soil</i>	<i>Soil</i>		<i>Soil</i>		<i>Soil</i>	<i>Soil</i>		<i>Soil</i>		<i>Soil</i>	<i>Soil</i>		<i>Soil</i>	
Arsenic	5	16	13	21	18	12	81	81	0	90	14	nd	8	-	<5	-
Cadmium	1	nd	nd	-	nd	-	nd	nd	-	nd	-	nd	nd	-	<1	-
Chromium	2	71	79	11	97	40	37	42	13	39	6	22	28	24	20	9
Copper	5	105	106	1	127	26	74	76	3	71	5	34	43	23	32	6
Lead	5	7	6	15	15	74	11	12	9	15	34	38	38	0	52	44
Nickel	2	25	30	18	26	4	13	13	0	11	22	14	17	19	21	39
Zinc	5	34	42	21	42	23	19	18	5	21	13	138	162	16	211	55
Mercury	0.1	nd	nd	-	nd	-	0.1	nd	-	0.1	0	0.1	0.1	0	0.1	0
Total Polychlorinated biphenyls	0.1	-	-	-	-	-	-	-	-	-	-	nd	nd	-	nd	-
OCPs	0.05-0.2	nd	nd	-	nd	-	nd	nd	-	nd	-	nd	nd	-	nd	-
OPPs	0.05-0.2	nd	nd	-	nd	-	nd	nd	-	nd	-	nd	nd	-	nd	-
Phenols	0.5-2	-	-	-	-	-	-	-	-	-	-	nd	nd	-	nd	-
Naphthalene	0.5	-	-	-	-	-	-	-	-	-	-	nd	nd	-	nd	-
Acenaphthylene	0.5	-	-	-	-	-	-	-	-	-	-	nd	nd	-	nd	-
Acenaphthene	0.5	-	-	-	-	-	-	-	-	-	-	nd	nd	-	nd	-
Fluorene	0.5	-	-	-	-	-	-	-	-	-	-	nd	nd	-	nd	-
Phenanthrene	0.5	-	-	-	-	-	-	-	-	-	-	nd	nd	-	nd	-
Anthracene	0.5	-	-	-	-	-	-	-	-	-	-	nd	nd	-	nd	-
Fluoranthene	0.5	-	-	-	-	-	-	-	-	-	-	nd	nd	-	nd	-
Pyrene	0.5	-	-	-	-	-	-	-	-	-	-	nd	nd	-	nd	-
Benz(a)anthracene	0.5	-	-	-	-	-	-	-	-	-	-	nd	nd	-	nd	-
Chrysene	0.5	-	-	-	-	-	-	-	-	-	-	nd	nd	-	nd	-
Benzo(b)fluoranthene	0.5	-	-	-	-	-	-	-	-	-	-	nd	nd	-	nd	-
Benzo(k)fluoranthene	0.5	-	-	-	-	-	-	-	-	-	-	nd	nd	-	nd	-
Benzo(a)pyrene	0.5	-	-	-	-	-	-	-	-	-	-	nd	nd	-	nd	-
Indeno(1,2,3.cd)pyrene	0.5	-	-	-	-	-	-	-	-	-	-	nd	nd	-	nd	-
Dibenz(a,h)anthracene	0.5	-	-	-	-	-	-	-	-	-	-	nd	nd	-	nd	-
Benzo(g,h,i)perylene	0.5	-	-	-	-	-	-	-	-	-	-	nd	nd	-	nd	-
C6 - C9 Fraction	2	-	-	-	-	-	-	-	-	-	-	nd	nd	-	nd	-
C10 - C14 Fraction	50	-	-	-	-	-	-	-	-	-	-	nd	nd	-	nd	-
C15 - C28 Fraction	100	-	-	-	-	-	-	-	-	-	-	nd	nd	-	nd	-
C29 - C36 Fraction	100	-	-	-	-	-	-	-	-	-	-	nd	nd	-	nd	-
Benzene	0.2	-	-	-	-	-	-	-	-	-	-	nd	nd	-	nd	-
Toluene	0.5	-	-	-	-	-	-	-	-	-	-	nd	nd	-	nd	-
Ethylbenzene	0.5	-	-	-	-	-	-	-	-	-	-	nd	nd	-	nd	-
meta- & para-Xylene	0.5	-	-	-	-	-	-	-	-	-	-	nd	nd	-	nd	-
ortho-Xylene	0.5	-	-	-	-	-	-	-	-	-	-	nd	nd	-	nd	-
Asbestos	0.5	-	-	-	-	-	-	-	-	-	-	nd	nd*	-	nd	-

* Duplicate C - Incorrectly reported as Duplicate L

APPENDIX H – LABORATORY CERTIFICATES



Environmental Division

SAMPLE RECEIPT NOTIFICATION (SRN)
Comprehensive Report

Work Order : EB0809213

Client	: PRECISE ENVIRONMENTAL PTY LTD	Laboratory	: Environmental Division Brisbane
Contact	: RESULTS ADDRESS	Contact	: Tim Kilmister
Address	: PO BOX 4651 ROBINA TOWN CENTRE QLD, AUSTRALIA 4230	Address	: 32 Shand Street Stafford QLD Australia 4053
E-mail	: mail@preciseenvironmental.com.au	E-mail	: Services.Brisbane@alsenviro.com
Telephone	: +61 07 55933743	Telephone	: +61-7-3243 7222
Facsimile	: +61 07 55933435	Facsimile	: +61-7-3243 7218
Project	: PE389.08	Page	: 1 of 3
Order number	: ----		
C-O-C number	: ----	Quote number	: EB2008PREENV0127 (BN/170/08)
Site	: ----		
Sampler	: C.B., L.M.	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement

Dates

Date Samples Received	: 10-JUL-2008	Issue Date	: 14-JUL-2008 12:40
Client Requested Due Date	: 16-JUL-2008	Scheduled Reporting Date	: 18-JUL-2008

Delivery Details

Mode of Delivery	: Carrier	Temperature	: 4.2 C - Ice present
No. of coolers/boxes	: 1 MEDIUM	No. of samples received	: 24
Security Seal	: Intact.	No. of samples analysed	: 23

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Requested Deliverables
- **Samples received in appropriately pretreated and preserved containers.**
- **Sample(s) have been received within recommended holding times.**
- **Asbestos analysis will be subcontracted to Parson's Brinckerhoff.**
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Please direct any queries related to sample condition / numbering / breakages to Maggie Kahi.
- Analytical work for this work order will be conducted at ALS Brisbane.
- Sample Disposal - Aqueous (14 days), Solid (90 days) from date of completion of work order.



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- No sample container / preservation non-compliance exist.

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	(On Hold) SOIL No analysis requested	SOIL - S-19 TPH/TEX/P/Ph/OC/OP/PCB/8 metals
EB0809213-001	09-JUL-2008 15:00	TP1 0.0 - 0.3		✓
EB0809213-002	09-JUL-2008 15:00	TP2 0.0 - 0.2		✓
EB0809213-003	09-JUL-2008 15:00	TP2 0.2 - 0.6		✓
EB0809213-004	09-JUL-2008 15:00	TP3 0.0 - 0.15		✓
EB0809213-005	09-JUL-2008 15:00	TP3 0.4 - 1.0		✓
EB0809213-006	09-JUL-2008 15:00	TP4 0.0 - 0.1		✓
EB0809213-007	09-JUL-2008 15:00	TP4 0.1 - 0.5		✓
EB0809213-008	09-JUL-2008 15:00	TP4 0.5 - 0.7		✓
EB0809213-009	09-JUL-2008 15:00	TP5 0.0 - 0.3		✓
EB0809213-010	09-JUL-2008 15:00	TP5 0.3 - 0.6		✓
EB0809213-011	09-JUL-2008 15:00	TP5 1.0 - 1.3		✓
EB0809213-012	09-JUL-2008 15:00	TP6 0.0 - 0.3		✓
EB0809213-013	09-JUL-2008 15:00	TP6 0.3 - 0.7		✓
EB0809213-014	09-JUL-2008 15:00	TP6 0.3 - 0.7(A)	✓	
EB0809213-015	09-JUL-2008 15:00	TP6 0.7 - 1.5		✓
EB0809213-016	09-JUL-2008 15:00	TP7 0.0 - 0.3		✓
EB0809213-017	09-JUL-2008 15:00	TP9 0.0 - 0.5		✓
EB0809213-018	09-JUL-2008 15:00	TP9 0.5 - 1.0		✓
EB0809213-019	09-JUL-2008 15:00	TP10 0.3 - 0.6		✓
EB0809213-020	09-JUL-2008 15:00	TP10 1.0 - 1.4		✓
EB0809213-021	09-JUL-2008 15:00	Stockpile S1		✓
EB0809213-022	09-JUL-2008 15:00	Stockpile S2		✓
EB0809213-023	09-JUL-2008 15:00	Stockpile S3		✓
EB0809213-024	09-JUL-2008 15:00	Duplicate C		✓



Requested Deliverables

RESULTS ADDRESS

- *AU Certificate of Analysis - NATA
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep)
- *AU QC Report \bar{i} DEFAULT (Anon QC Rep) - NATA
- A4 - AU Sample Receipt Notification - Environmental
- Default - Chain of Custody
- EDI Format - ENMRG
- EDI Format - XTab
- Trigger - Subcontract Report

Email mail@preciseenvironmental.com.au
Email mail@preciseenvironmental.com.au
Email mail@preciseenvironmental.com.au
Email mail@preciseenvironmental.com.au
Email mail@preciseenvironmental.com.au
Email mail@preciseenvironmental.com.au
Email mail@preciseenvironmental.com.au
Email mail@preciseenvironmental.com.au

THE ACCOUNTS PAYABLE

- A4 - AU Tax Invoice

Email envlims_invoicing.eb@alsenviro.com



Environmental Division

CERTIFICATE OF ANALYSIS

Work Order	: EB0809213	Page	: 1 of 24
Client	: PRECISE ENVIRONMENTAL PTY LTD	Laboratory	: Environmental Division Brisbane
Contact	: RESULTS ADDRESS	Contact	: Tim Kilmister
Address	: PO BOX 4651 ROBINA TOWN CENTRE QLD, AUSTRALIA 4230	Address	: 32 Shand Street Stafford QLD Australia 4053
E-mail	: mail@preciseenvironmental.com.au	E-mail	: Services.Brisbane@alsenviro.com
Telephone	: +61 07 55933743	Telephone	: +61-7-3243 7222
Facsimile	: +61 07 55933435	Facsimile	: +61-7-3243 7218
Project	: PE389.08	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Order number	: ----	Date Samples Received	: 10-JUL-2008
C-O-C number	: ----	Issue Date	: 18-JUL-2008
Sampler	: C.B., L.M.	No. of samples received	: 24
Site	: ----	No. of samples analysed	: 23
Quote number	: BN/170/08		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits



NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Kim McCabe	Senior Inorganic Chemist	Inorganics
Matthew Goodwin	Senior Organic Chemist	Inorganics
Matthew Goodwin	Senior Organic Chemist	Organics
Minh Wills	Senior Analyst	Inorganics
Minh Wills	Senior Analyst	Organics
Phillip Kennedy	2IC Environmental Laboratory	Inorganics
Stephen Hislop	Senior Inorganic Chemist	Inorganics

Environmental Division Brisbane
Part of the **ALS Laboratory Group**

32 Shand Street Stafford QLD Australia 4053
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A Campbell Brothers Limited Company





General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client.

Key : CAS Number = Chemistry Abstract Services number

LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting

- **Pesticides: Sample TP9 0.5-1.0 showed poor matrix spike recovery due to matrix interference. Confirmed by visual inspection.**
- **Semivolatile TPH: Poor matrix spike recovery due to sample heterogeneity. Confirmed by visual inspection.**



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

Compound	CAS Number	LOR	Unit	TP1 0.0 - 0.3	TP2 0.0 - 0.2	TP2 0.2 - 0.6	TP3 0.0 - 0.15	TP3 0.4 - 1.0
				09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00
				EB0809213-001	EB0809213-002	EB0809213-003	EB0809213-004	EB0809213-005
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	----	1.0	%	8.5	25.7	17.5	26.8	17.5
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	5	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	16	19	19	19	16
Copper	7440-50-8	5	mg/kg	10	13	9	12	9
Lead	7439-92-1	5	mg/kg	10	13	10	12	8
Nickel	7440-02-0	2	mg/kg	8	9	9	9	8
Zinc	7440-66-6	5	mg/kg	35	51	31	51	29
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.10	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

Compound	CAS Number	LOR	Unit	TP1 0.0 - 0.3	TP2 0.0 - 0.2	TP2 0.2 - 0.6	TP3 0.0 - 0.15	TP3 0.4 - 1.0
				09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00
				EB0809213-001	EB0809213-002	EB0809213-003	EB0809213-004	EB0809213-005
EP068B: Organophosphorus Pesticides (OP) - Continued								
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP075(SIM)A: Phenolic Compounds								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1.0	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

Compound	CAS Number	LOR	Unit	TP1 0.0 - 0.3	TP2 0.0 - 0.2	TP2 0.2 - 0.6	TP3 0.0 - 0.15	TP3 0.4 - 1.0
				09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00
				EB0809213-001	EB0809213-002	EB0809213-003	EB0809213-004	EB0809213-005
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
EP080: BTEX								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	86.7	80.2	77.5	77.0	72.8
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.1	%	58.6	56.5	58.2	56.9	55.8
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.1	%	61.9	60.5	62.4	60.8	59.4
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	99.8	103	108	103	104
2-Chlorophenol-D4	93951-73-6	0.1	%	98.8	104	110	104	107
2,4,6-Tribromophenol	118-79-6	0.1	%	81.6	66.9	88.4	72.9	81.6
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	102	106	114	99.8	104
Anthracene-d10	1719-06-8	0.1	%	90.2	89.3	90.4	85.6	86.6
4-Terphenyl-d14	1718-51-0	0.1	%	106	104	111	101	105
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	87.6	88.2	88.0	94.6	81.5



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

				TP1 0.0 - 0.3	TP2 0.0 - 0.2	TP2 0.2 - 0.6	TP3 0.0 - 0.15	TP3 0.4 - 1.0
				09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00
Compound	CAS Number	LOR	Unit	EB0809213-001	EB0809213-002	EB0809213-003	EB0809213-004	EB0809213-005
EP080S: TPH(V)/BTEX Surrogates - Continued								
Toluene-D8	2037-26-5	0.1	%	91.1	89.7	90.8	91.3	84.5
4-Bromofluorobenzene	460-00-4	0.1	%	88.5	93.0	88.9	92.6	85.8



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

Compound	CAS Number	LOR	Unit	TP4 0.0 - 0.1	TP4 0.1 - 0.5	TP4 0.5 - 0.7	TP5 0.0 - 0.3	TP5 0.3 - 0.6
				09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00
				EB0809213-006	EB0809213-007	EB0809213-008	EB0809213-009	EB0809213-010
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	----	1.0	%	16.9	24.7	18.5	25.3	9.9
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	<5	8	7	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	14	19	7	20	15
Copper	7440-50-8	5	mg/kg	32	12	8	9	18
Lead	7439-92-1	5	mg/kg	105	19	16	10	8
Nickel	7440-02-0	2	mg/kg	8	11	2	11	12
Zinc	7440-66-6	5	mg/kg	414	71	30	38	64
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.10	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

Compound	CAS Number	LOR	Unit	TP4 0.0 - 0.1	TP4 0.1 - 0.5	TP4 0.5 - 0.7	TP5 0.0 - 0.3	TP5 0.3 - 0.6
				09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00
				EB0809213-006	EB0809213-007	EB0809213-008	EB0809213-009	EB0809213-010
EP068B: Organophosphorus Pesticides (OP) - Continued								
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP075(SIM)A: Phenolic Compounds								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1.0	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

Compound	CAS Number	LOR	Unit	TP4 0.0 - 0.1	TP4 0.1 - 0.5	TP4 0.5 - 0.7	TP5 0.0 - 0.3	TP5 0.3 - 0.6
				09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00
				EB0809213-006	EB0809213-007	EB0809213-008	EB0809213-009	EB0809213-010
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
EP080: BTEX								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	75.5	75.3	69.4	76.8	76.9
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.1	%	56.2	56.6	53.3	57.7	59.5
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.1	%	60.7	61.7	57.4	61.9	63.8
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	105	99.0	110	92.3	100
2-Chlorophenol-D4	93951-73-6	0.1	%	108	99.1	113	92.2	95.2
2,4,6-Tribromophenol	118-79-6	0.1	%	85.1	61.8	94.2	87.6	66.3
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	109	105	108	96.6	80.5
Anthracene-d10	1719-06-8	0.1	%	93.1	86.8	90.0	87.2	101
4-Terphenyl-d14	1718-51-0	0.1	%	111	105	111	106	96.7
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	89.7	83.9	90.5	82.4	81.9



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

				TP4 0.0 - 0.1	TP4 0.1 - 0.5	TP4 0.5 - 0.7	TP5 0.0 - 0.3	TP5 0.3 - 0.6
				09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00
Compound	CAS Number	LOR	Unit	EB0809213-006	EB0809213-007	EB0809213-008	EB0809213-009	EB0809213-010
EP080S: TPH(V)/BTEX Surrogates - Continued								
Toluene-D8	2037-26-5	0.1	%	87.9	84.6	89.3	84.3	82.5
4-Bromofluorobenzene	460-00-4	0.1	%	89.9	86.9	92.0	88.7	85.9



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

Compound	CAS Number	LOR	Unit	TP5 1.0 - 1.3	TP6 0.0 - 0.3	TP6 0.3 - 0.7	TP6 0.7 - 1.5	TP7 0.0 - 0.3
				09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00
				EB0809213-011	EB0809213-012	EB0809213-013	EB0809213-015	EB0809213-016
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	----	1.0	%	15.7	17.4	7.9	6.1	22.3
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	9	<5	6	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	16	10	25	14	16
Copper	7440-50-8	5	mg/kg	7	19	16	19	15
Lead	7439-92-1	5	mg/kg	9	11	21	18	6
Nickel	7440-02-0	2	mg/kg	9	6	12	7	14
Zinc	7440-66-6	5	mg/kg	30	37	93	73	61
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.10	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

Compound	CAS Number	LOR	Unit	TP5 1.0 - 1.3	TP6 0.0 - 0.3	TP6 0.3 - 0.7	TP6 0.7 - 1.5	TP7 0.0 - 0.3
				09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00
				EB0809213-011	EB0809213-012	EB0809213-013	EB0809213-015	EB0809213-016
EP068B: Organophosphorus Pesticides (OP) - Continued								
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP075(SIM)A: Phenolic Compounds								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1.0	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

Compound	CAS Number	LOR	Unit	TP5 1.0 - 1.3	TP6 0.0 - 0.3	TP6 0.3 - 0.7	TP6 0.7 - 1.5	TP7 0.0 - 0.3
				09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00
				EB0809213-011	EB0809213-012	EB0809213-013	EB0809213-015	EB0809213-016
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
EP080: BTEX								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	69.7	71.4	79.2	73.6	74.4
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.1	%	56.2	58.0	61.6	59.8	57.2
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.1	%	58.9	63.9	66.1	63.7	60.8
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	94.5	101	99.8	106	118
2-Chlorophenol-D4	93951-73-6	0.1	%	92.9	97.2	96.5	101	114
2,4,6-Tribromophenol	118-79-6	0.1	%	66.3	73.3	67.4	67.2	76.5
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	93.9	97.8	97.8	92.0	102
Anthracene-d10	1719-06-8	0.1	%	88.0	102	101	82.3	108
4-Terphenyl-d14	1718-51-0	0.1	%	72.3	94.9	96.7	93.2	102
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	82.0	85.3	93.0	99.1	88.8



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

				TP5 1.0 - 1.3	TP6 0.0 - 0.3	TP6 0.3 - 0.7	TP6 0.7 - 1.5	TP7 0.0 - 0.3
				09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00
Compound	CAS Number	LOR	Unit	EB0809213-011	EB0809213-012	EB0809213-013	EB0809213-015	EB0809213-016
EP080S: TPH(V)/BTEX Surrogates - Continued								
Toluene-D8	2037-26-5	0.1	%	83.7	84.6	89.3	91.4	81.6
4-Bromofluorobenzene	460-00-4	0.1	%	87.3	85.2	89.1	96.4	82.7



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

Compound	CAS Number	LOR	Unit	TP9 0.0 - 0.5	TP9 0.5 - 1.0	TP10 0.3 - 0.6	TP10 1.0 - 1.4	Stockpile S1
				09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00
				EB0809213-017	EB0809213-018	EB0809213-019	EB0809213-020	EB0809213-021
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	----	1.0	%	27.6	18.0	25.4	25.9	15.6
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	<5	6	<5	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	32	20	26	22	8
Copper	7440-50-8	5	mg/kg	22	11	44	34	6
Lead	7439-92-1	5	mg/kg	8	11	22	38	<5
Nickel	7440-02-0	2	mg/kg	14	9	329	14	7
Zinc	7440-66-6	5	mg/kg	46	34	142	138	49
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.1	0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.10	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

Compound	CAS Number	LOR	Unit	TP9 0.0 - 0.5	TP9 0.5 - 1.0	TP10 0.3 - 0.6	TP10 1.0 - 1.4	Stockpile S1
				09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00
				EB0809213-017	EB0809213-018	EB0809213-019	EB0809213-020	EB0809213-021
EP068B: Organophosphorus Pesticides (OP) - Continued								
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP075(SIM)A: Phenolic Compounds								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1.0	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

Compound	CAS Number	LOR	Unit	TP9 0.0 - 0.5	TP9 0.5 - 1.0	TP10 0.3 - 0.6	TP10 1.0 - 1.4	Stockpile S1
				09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00
				EB0809213-017	EB0809213-018	EB0809213-019	EB0809213-020	EB0809213-021
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
EP080: BTEX								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	50.0	49.5	50.8	51.5	55.1
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.1	%	53.6	52.6	53.3	52.6	56.2
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.1	%	57.4	56.7	57.8	57.1	60.0
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	103	96.4	99.9	98.5	85.4
2-Chlorophenol-D4	93951-73-6	0.1	%	98.9	94.7	97.7	95.0	93.3
2,4,6-Tribromophenol	118-79-6	0.1	%	71.2	67.8	68.5	66.1	82.5
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	96.8	91.8	93.7	91.9	99.0
Anthracene-d10	1719-06-8	0.1	%	105	99.5	103	87.4	116
4-Terphenyl-d14	1718-51-0	0.1	%	98.1	95.6	100	97.0	135
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	97.3	92.6	95.9	91.5	90.8



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

				TP9 0.0 - 0.5	TP9 0.5 - 1.0	TP10 0.3 - 0.6	TP10 1.0 - 1.4	Stockpile S1
				09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00
Compound	CAS Number	LOR	Unit	EB0809213-017	EB0809213-018	EB0809213-019	EB0809213-020	EB0809213-021
EP080S: TPH(V)/BTEX Surrogates - Continued								
Toluene-D8	2037-26-5	0.1	%	85.4	85.6	88.0	81.1	84.8
4-Bromofluorobenzene	460-00-4	0.1	%	89.5	86.7	87.1	83.1	84.3



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

Compound	CAS Number	LOR	Unit	Stockpile S2	Stockpile S3	Duplicate C		
				09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	----	----
				EB0809213-022	EB0809213-023	EB0809213-024	----	----
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	----	1.0	%	18.6	11.9	28.0	----	----
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	10	<5	8	----	----
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	----	----
Chromium	7440-47-3	2	mg/kg	218	10	28	----	----
Copper	7440-50-8	5	mg/kg	102	9	43	----	----
Lead	7439-92-1	5	mg/kg	<5	8	38	----	----
Nickel	7440-02-0	2	mg/kg	144	8	17	----	----
Zinc	7440-66-6	5	mg/kg	159	33	162	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.1	----	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.10	mg/kg	<0.10	<0.10	<0.10	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	<0.2	----	----
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	<0.2	----	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	<0.05	----	----



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

Compound	CAS Number	LOR	Unit	Stockpile S2	Stockpile S3	Duplicate C		
				09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	----	----
				EB0809213-022	EB0809213-023	EB0809213-024	----	----
EP068B: Organophosphorus Pesticides (OP) - Continued								
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<0.2	----	----
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	----	----
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	<0.2	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
EP075(SIM)A: Phenolic Compounds								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
3- & 4-Methylphenol	1319-77-3	1.0	mg/kg	<1.0	<1.0	<1.0	----	----
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Pentachlorophenol	87-86-5	2.0	mg/kg	<2.0	<2.0	<2.0	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

Compound	CAS Number	LOR	Unit	Stockpile S2	Stockpile S3	Duplicate C		
				09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	----	----
				EB0809213-022	EB0809213-023	EB0809213-024	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	----	----
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	----	----
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	----	----
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	----	----
EP080: BTEX								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	----	----
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	49.5	52.3	50.3	----	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.1	%	55.3	56.0	54.9	----	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.1	%	59.2	60.0	59.2	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	106	108	80.4	----	----
2-Chlorophenol-D4	93951-73-6	0.1	%	101	102	76.4	----	----
2,4,6-Tribromophenol	118-79-6	0.1	%	74.4	41.6	51.8	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	98.9	100	79.4	----	----
Anthracene-d10	1719-06-8	0.1	%	97.4	103	82.3	----	----
4-Terphenyl-d14	1718-51-0	0.1	%	94.8	99.7	77.4	----	----
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	98.8	114	85.7	----	----



Analytical Results

Sub-Matrix: **SOIL**

Client sample ID

Client sampling date / time

				Stockpile S2	Stockpile S3	Duplicate C	----	----
				09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	----	----
<i>Compound</i>	<i>CAS Number</i>	<i>LOR</i>	<i>Unit</i>	EB0809213-022	EB0809213-023	EB0809213-024	----	----
EP080S: TPH(V)/BTEX Surrogates - Continued								
Toluene-D8	2037-26-5	0.1	%	87.1	107	81.2	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	87.3	109	79.3	----	----



Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	10	164
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	10	136
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	10	110
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	24	113
2-Chlorophenol-D4	93951-73-6	23	134
2,4,6-Tribromophenol	118-79-6	19	115
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	30	115
Anthracene-d10	1719-06-8	27	133
4-Terphenyl-d14	1718-51-0	18	137
EP080S: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	80	121
Toluene-D8	2037-26-5	81	117
4-Bromofluorobenzene	460-00-4	74	121



Environmental Division

QUALITY CONTROL REPORT

Work Order	: EB0809213	Page	: 1 of 23
Client	: PRECISE ENVIRONMENTAL PTY LTD	Laboratory	: Environmental Division Brisbane
Contact	: RESULTS ADDRESS	Contact	: Tim Kilmister
Address	: PO BOX 4651 ROBINA TOWN CENTRE QLD, AUSTRALIA 4230	Address	: 32 Shand Street Stafford QLD Australia 4053
E-mail	: mail@preciseenvironmental.com.au	E-mail	: Services.Brisbane@alsenviro.com
Telephone	: +61 07 55933743	Telephone	: +61-7-3243 7222
Facsimile	: +61 07 55933435	Facsimile	: +61-7-3243 7218
Project	: PE389.08	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: ----	Date Samples Received	: 10-JUL-2008
C-O-C number	: ----	Issue Date	: 18-JUL-2008
Sampler	: C.B., L.M.	No. of samples received	: 24
Order number	: ----	No. of samples analysed	: 23
Quote number	: BN/170/08		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits



NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Kim McCabe	Senior Inorganic Chemist	Inorganics
Matthew Goodwin	Senior Organic Chemist	Inorganics
Matthew Goodwin	Senior Organic Chemist	Organics
Minh Wills	Senior Analyst	Inorganics
Minh Wills	Senior Analyst	Organics
Phillip Kennedy	2IC Environmental Laboratory	Inorganics
Stephen Hislop	Senior Inorganic Chemist	Inorganics



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key :
Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = Chemistry Abstract Services number
LOR = Limit of reporting
RPD = Relative Percentage Difference
= Indicates failed QC



Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR:- No Limit; Result between 10 and 20 times LOR:- 0% - 50%; Result > 20 times LOR:- 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EA055: Moisture Content (QC Lot: 705883)									
EB0809213-004	TP3 0.0 - 0.15	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	26.8	26.5	1.2	0% - 20%
EB0809213-011	TP5 1.0 - 1.3	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	15.7	15.7	0.0	0% - 50%
EA055: Moisture Content (QC Lot: 705884)									
EB0809216-001	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	13.9	19.8	35.4	0% - 50%
EB0809216-008	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	27.6	28.0	1.7	0% - 20%
EG005T: Total Metals by ICP-AES (QC Lot: 706108)									
EB0809165-015	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	5	5	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	47	41	13.8	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	19	18	6.2	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	263	265	0.9	0% - 20%
EB0809213-009	TP5 0.0 - 0.3	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	20	23	9.8	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	11	12	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	7	6	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	9	10	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	10	11	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	38	43	11.7	No Limit
EG005T: Total Metals by ICP-AES (QC Lot: 706114)									
EB0809213-013	TP6 0.3 - 0.7	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	25	20	19.2	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	12	11	9.1	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	16	15	6.8	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	21	19	9.8	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	93	89	3.8	0% - 50%
		EB0809213-024	Duplicate C	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1
EG005T: Chromium	7440-47-3			2	mg/kg	28	22	25.2	0% - 50%
EG005T: Nickel	7440-02-0			2	mg/kg	17	16	10.5	No Limit
EG005T: Arsenic	7440-38-2			5	mg/kg	8	5	49.0	No Limit
EG005T: Copper	7440-50-8			5	mg/kg	43	45	3.6	No Limit
EG005T: Lead	7439-92-1			5	mg/kg	38	28	32.5	No Limit
EG005T: Zinc	7440-66-6			5	mg/kg	162	154	5.1	0% - 20%



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 706109)									
EB0809165-015	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EB0809213-009	TP5 0.0 - 0.3	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 706115)									
EB0809213-013	TP6 0.3 - 0.7	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.1	<0.1	0.0	No Limit
EB0809213-024	Duplicate C	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.1	0.1	0.0	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 705632)									
EB0809213-001	TP1 0.0 - 0.3	EP066: Total Polychlorinated biphenyls	----	0.10	mg/kg	<0.10	<0.10	0.0	No Limit
EB0809213-009	TP5 0.0 - 0.3	EP066: Total Polychlorinated biphenyls	----	0.10	mg/kg	<0.10	<0.10	0.0	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 705645)									
EB0809213-017	TP9 0.0 - 0.5	EP066: Total Polychlorinated biphenyls	----	0.10	mg/kg	<0.10	<0.10	0.0	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 705633)									
EB0809213-001	TP1 0.0 - 0.3	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit		
EB0809213-009	TP5 0.0 - 0.3	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP068A: Organochlorine Pesticides (OC) (QC Lot: 705633) - continued									
EB0809213-009	TP5 0.0 - 0.3	EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 705644)									
EB0809213-017	TP9 0.0 - 0.5	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit		
EB0809216-006	Anonymous	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP068A: Organochlorine Pesticides (OC) (QC Lot: 705644) - continued									
EB0809216-006	Anonymous	EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit		
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 705633)									
EB0809213-001	TP1 0.0 - 0.3	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit		
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit		
EB0809213-009	TP5 0.0 - 0.3	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 705633) - continued									
EB0809213-009	TP5 0.0 - 0.3	EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit		
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit		
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 705644)									
EB0809213-017	TP9 0.0 - 0.5	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit		
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit		
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit		
EB0809216-006	Anonymous	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report							
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)		
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 705644) - continued											
EB0809216-006	Anonymous	EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit		
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit				
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit				
EP075(SIM)A: Phenolic Compounds (QC Lot: 705689)											
EB0809165-001	Anonymous	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1.0	mg/kg	<1.0	<1.0	0.0	No Limit		
		EP075(SIM): Pentachlorophenol	87-86-5	2.0	mg/kg	<2.0	<2.0	0.0	No Limit		
		EB0809213-001	TP1 0.0 - 0.3	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
				EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): 2-Methylphenol	95-48-7			0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP075(SIM): 2-Nitrophenol	88-75-5			0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP075(SIM): 2,4-Dimethylphenol	105-67-9			0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP075(SIM): 2,4-Dichlorophenol	120-83-2			0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP075(SIM): 2,6-Dichlorophenol	87-65-0			0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit				



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075(SIM)A: Phenolic Compounds (QC Lot: 705689) - continued									
EB0809213-001	TP1 0.0 - 0.3	EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1.0	mg/kg	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2.0	mg/kg	<2.0	<2.0	0.0	No Limit
EP075(SIM)A: Phenolic Compounds (QC Lot: 706131)									
EB0809213-010	TP5 0.3 - 0.6	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1.0	mg/kg	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2.0	mg/kg	<2.0	<2.0	0.0	No Limit
EB0809213-021	Stockpile S1	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1.0	mg/kg	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2.0	mg/kg	<2.0	<2.0	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 705689)									
EB0809165-001	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 705689) - continued									
EB0809165-001	Anonymous	EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EB0809213-001	TP1 0.0 - 0.3	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 706131)							
EB0809213-010	TP5 0.3 - 0.6	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 706131) - continued									
EB0809213-010	TP5 0.3 - 0.6	EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EB0809213-021	Stockpile S1	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
	EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 705087)									
EB0809054-028	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EB0809213-008	TP4 0.5 - 0.7	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 705209)									
EB0809213-015	TP6 0.7 - 1.5	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EB0809304-001	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 705688)									
EB0809165-001	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EB0809213-001	TP1 0.0 - 0.3	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 706130)									
EB0809213-010	TP5 0.3 - 0.6	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EB0809213-021	Stockpile S1	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080: BTEX (QC Lot: 705087)									
EB0809054-028	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP080: BTEX (QC Lot: 705087) - continued									
EB0809054-028	Anonymous	EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EB0809213-008	TP4 0.5 - 0.7	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP080: BTEX (QC Lot: 705209)									
EB0809213-015	TP6 0.7 - 1.5	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EB0809304-001	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: SOIL

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
						LCS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 706108)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	13.8 mg/kg	101	79.7	120
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	2.82 mg/kg	85.8	80.9	115
EG005T: Chromium	7440-47-3	2	mg/kg	<2	61.6 mg/kg	109	87.2	121
EG005T: Copper	7440-50-8	5	mg/kg	<5	54.7 mg/kg	103	90.2	122
EG005T: Lead	7439-92-1	5	mg/kg	<5	55.5 mg/kg	99.8	85.9	116
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.1 mg/kg	106	87.8	122
EG005T: Zinc	7440-66-6	5	mg/kg	<5	105 mg/kg	102	86.7	119
EG005T: Total Metals by ICP-AES (QCLot: 706114)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	13.8 mg/kg	101	79.7	120
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	2.82 mg/kg	90.0	80.9	115
EG005T: Chromium	7440-47-3	2	mg/kg	<2	61.6 mg/kg	96.0	87.2	121
EG005T: Copper	7440-50-8	5	mg/kg	<5	54.7 mg/kg	98.0	90.2	122
EG005T: Lead	7439-92-1	5	mg/kg	<5	55.5 mg/kg	94.8	85.9	116
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.1 mg/kg	97.0	87.8	122
EG005T: Zinc	7440-66-6	5	mg/kg	<5	105 mg/kg	95.3	86.7	119
EG035T: Total Recoverable Mercury by FIMS (QCLot: 706109)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	----	----	----	----
		0.10	mg/kg	----	1.34 mg/kg	112	79.5	129
EG035T: Total Recoverable Mercury by FIMS (QCLot: 706115)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	----	----	----	----
		0.10	mg/kg	----	1.34 mg/kg	108	79.5	129
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 705632)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	----	0.5 mg/kg	81.5	53.8	105
		0.10	mg/kg	<0.10	----	----	----	----
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 705645)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	----	0.5 mg/kg	73.3	53.8	105
		0.10	mg/kg	<0.10	----	----	----	----
EP068A: Organochlorine Pesticides (OC) (QCLot: 705633)								
EP068: alpha-BHC	319-84-6	0.025	mg/kg	----	0.25 mg/kg	77.4	58.4	114
		0.05	mg/kg	<0.05	----	----	----	----
EP068: Hexachlorobenzene (HCB)	118-74-1	0.025	mg/kg	----	0.25 mg/kg	78.2	57.7	107
		0.05	mg/kg	<0.05	----	----	----	----
EP068: beta-BHC	319-85-7	0.025	mg/kg	----	0.25 mg/kg	76.8	59.3	113
		0.05	mg/kg	<0.05	----	----	----	----



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
EP068A: Organochlorine Pesticides (OC) (QCLot: 705633) - continued									
EP068: gamma-BHC	58-89-9	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	88.1 ----	59.1 ----	113 ----	
EP068: delta-BHC	319-86-8	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	74.6 ----	56 ----	117 ----	
EP068: Heptachlor	76-44-8	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	89.8 ----	57.3 ----	119 ----	
EP068: Aldrin	309-00-2	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	75.9 ----	58.2 ----	111 ----	
EP068: Heptachlor epoxide	1024-57-3	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	83.3 ----	60.4 ----	113 ----	
EP068: trans-Chlordane	5103-74-2	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	78.1 ----	60.3 ----	114 ----	
EP068: alpha-Endosulfan	959-98-8	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	75.8 ----	56 ----	117 ----	
EP068: cis-Chlordane	5103-71-9	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	79.5 ----	60.8 ----	113 ----	
EP068: Dieldrin	60-57-1	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	73.4 ----	58.8 ----	113 ----	
EP068: 4.4'-DDE	72-55-9	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	73.4 ----	61.2 ----	115 ----	
EP068: Endrin	72-20-8	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	77.6 ----	47 ----	133 ----	
EP068: beta-Endosulfan	33213-65-9	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	78.0 ----	58.5 ----	114 ----	
EP068: 4.4'-DDD	72-54-8	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	81.6 ----	58.4 ----	118 ----	
EP068: Endrin aldehyde	7421-93-4	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	76.9 ----	46.3 ----	115 ----	
EP068: Endosulfan sulfate	1031-07-8	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	88.8 ----	53.6 ----	120 ----	
EP068: 4.4'-DDT	50-29-3	0.025 0.2	mg/kg mg/kg	---- <0.2	0.25 mg/kg ----	91.4 ----	52.6 ----	129 ----	
EP068: Endrin ketone	53494-70-5	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	82.5 ----	51.6 ----	124 ----	
EP068: Methoxychlor	72-43-5	0.025 0.2	mg/kg mg/kg	---- <0.2	0.25 mg/kg ----	91.6 ----	52.4 ----	129 ----	
EP068A: Organochlorine Pesticides (OC) (QCLot: 705644)									
EP068: alpha-BHC	319-84-6	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	73.4 ----	58.4 ----	114 ----	



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
EP068A: Organochlorine Pesticides (OC) (QCLot: 705644) - continued									
EP068: Hexachlorobenzene (HCB)	118-74-1	0.025	mg/kg	----	0.25 mg/kg	74.8	57.7	107	
		0.05	mg/kg	<0.05	----	----	----	----	
EP068: beta-BHC	319-85-7	0.025	mg/kg	----	0.25 mg/kg	72.7	59.3	113	
		0.05	mg/kg	<0.05	----	----	----	----	
EP068: gamma-BHC	58-89-9	0.025	mg/kg	----	0.25 mg/kg	72.1	59.1	113	
		0.05	mg/kg	<0.05	----	----	----	----	
EP068: delta-BHC	319-86-8	0.025	mg/kg	----	0.25 mg/kg	73.8	56	117	
		0.05	mg/kg	<0.05	----	----	----	----	
EP068: Heptachlor	76-44-8	0.025	mg/kg	----	0.25 mg/kg	72.8	57.3	119	
		0.05	mg/kg	<0.05	----	----	----	----	
EP068: Aldrin	309-00-2	0.025	mg/kg	----	0.25 mg/kg	84.5	58.2	111	
		0.05	mg/kg	<0.05	----	----	----	----	
EP068: Heptachlor epoxide	1024-57-3	0.025	mg/kg	----	0.25 mg/kg	80.1	60.4	113	
		0.05	mg/kg	<0.05	----	----	----	----	
EP068: trans-Chlordane	5103-74-2	0.025	mg/kg	----	0.25 mg/kg	77.6	60.3	114	
		0.05	mg/kg	<0.05	----	----	----	----	
EP068: alpha-Endosulfan	959-98-8	0.025	mg/kg	----	0.25 mg/kg	73.1	56	117	
		0.05	mg/kg	<0.05	----	----	----	----	
EP068: cis-Chlordane	5103-71-9	0.025	mg/kg	----	0.25 mg/kg	77.4	60.8	113	
		0.05	mg/kg	<0.05	----	----	----	----	
EP068: Dieldrin	60-57-1	0.025	mg/kg	----	0.25 mg/kg	74.5	58.8	113	
		0.05	mg/kg	<0.05	----	----	----	----	
EP068: 4,4'-DDE	72-55-9	0.025	mg/kg	----	0.25 mg/kg	74.9	61.2	115	
		0.05	mg/kg	<0.05	----	----	----	----	
EP068: Endrin	72-20-8	0.025	mg/kg	----	0.25 mg/kg	76.3	47	133	
		0.05	mg/kg	<0.05	----	----	----	----	
EP068: beta-Endosulfan	33213-65-9	0.025	mg/kg	----	0.25 mg/kg	74.4	58.5	114	
		0.05	mg/kg	<0.05	----	----	----	----	
EP068: 4,4'-DDD	72-54-8	0.025	mg/kg	----	0.25 mg/kg	76.5	58.4	118	
		0.05	mg/kg	<0.05	----	----	----	----	
EP068: Endrin aldehyde	7421-93-4	0.025	mg/kg	----	0.25 mg/kg	74.7	46.3	115	
		0.05	mg/kg	<0.05	----	----	----	----	
EP068: Endosulfan sulfate	1031-07-8	0.025	mg/kg	----	0.25 mg/kg	75.7	53.6	120	
		0.05	mg/kg	<0.05	----	----	----	----	
EP068: 4,4'-DDT	50-29-3	0.025	mg/kg	----	0.25 mg/kg	71.3	52.6	129	
		0.2	mg/kg	<0.2	----	----	----	----	
EP068: Endrin ketone	53494-70-5	0.025	mg/kg	----	0.25 mg/kg	72.6	51.6	124	
		0.05	mg/kg	<0.05	----	----	----	----	
EP068: Methoxychlor	72-43-5	0.025	mg/kg	----	0.25 mg/kg	74.1	52.4	129	
		0.2	mg/kg	<0.2	----	----	----	----	



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
				Result	Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
						LCS	Low	High
EP068B: Organophosphorus Pesticides (OP) (QCLot: 705633)								
EP068: Dichlorvos	62-73-7	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	68.4 ----	43.9 ----	113 ----
EP068: Demeton-S-methyl	919-86-8	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	# 29.7 ----	31.8 ----	112 ----
EP068: Monocrotophos	6923-22-4	0.025 0.2	mg/kg mg/kg	---- <0.2	0.25 mg/kg ----	47.6 ----	33 ----	130 ----
EP068: Dimethoate	60-51-5	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	74.7 ----	46.4 ----	129 ----
EP068: Diazinon	333-41-5	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	80.8 ----	57.1 ----	114 ----
EP068: Chlorpyrifos-methyl	5598-13-0	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	75.6 ----	58.9 ----	113 ----
EP068: Parathion-methyl	298-00-0	0.025 0.2	mg/kg mg/kg	---- <0.2	0.25 mg/kg ----	74.9 ----	54.8 ----	112 ----
EP068: Malathion	121-75-5	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	79.9 ----	57.8 ----	119 ----
EP068: Fenthion	55-38-9	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	# 67.5 ----	68 ----	109 ----
EP068: Chlorpyrifos	2921-88-2	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	75.8 ----	62.2 ----	115 ----
EP068: Parathion	56-38-2	0.025 0.2	mg/kg mg/kg	---- <0.2	0.25 mg/kg ----	74.9 ----	54.7 ----	113 ----
EP068: Pirimphos-ethyl	23505-41-1	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	78.3 ----	51.9 ----	121 ----
EP068: Chlorfenvinphos	470-90-6	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	76.5 ----	58 ----	118 ----
EP068: Bromophos-ethyl	4824-78-6	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	73.1 ----	59.8 ----	115 ----
EP068: Fenamiphos	22224-92-6	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	64.9 ----	32.5 ----	101 ----
EP068: Prothiofos	34643-46-4	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	75.1 ----	59.6 ----	116 ----
EP068: Ethion	563-12-2	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	81.9 ----	58.4 ----	115 ----
EP068: Carbophenothion	786-19-6	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	72.0 ----	56.9 ----	117 ----
EP068: Azinphos Methyl	86-50-0	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	61.3 ----	42 ----	130 ----
EP068B: Organophosphorus Pesticides (OP) (QCLot: 705644)								



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
				Result	Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
						LCS	Low	High
EP068B: Organophosphorus Pesticides (OP) (QCLot: 705644) - continued								
EP068: Dichlorvos	62-73-7	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	66.8 ----	43.9 ----	113 ----
EP068: Demeton-S-methyl	919-86-8	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	# 20.7 ----	31.8 ----	112 ----
EP068: Monocrotophos	6923-22-4	0.025 0.2	mg/kg mg/kg	---- <0.2	0.25 mg/kg ----	73.5 ----	33 ----	130 ----
EP068: Dimethoate	60-51-5	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	72.4 ----	46.4 ----	129 ----
EP068: Diazinon	333-41-5	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	74.7 ----	57.1 ----	114 ----
EP068: Chlorpyrifos-methyl	5598-13-0	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	75.1 ----	58.9 ----	113 ----
EP068: Parathion-methyl	298-00-0	0.025 0.2	mg/kg mg/kg	---- <0.2	0.25 mg/kg ----	75.4 ----	54.8 ----	112 ----
EP068: Malathion	121-75-5	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	79.9 ----	57.8 ----	119 ----
EP068: Fenthion	55-38-9	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	68.3 ----	68 ----	109 ----
EP068: Chlorpyrifos	2921-88-2	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	74.5 ----	62.2 ----	115 ----
EP068: Parathion	56-38-2	0.025 0.2	mg/kg mg/kg	---- <0.2	0.25 mg/kg ----	97.3 ----	54.7 ----	113 ----
EP068: Pirimphos-ethyl	23505-41-1	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	74.9 ----	51.9 ----	121 ----
EP068: Chlorfenvinphos	470-90-6	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	75.0 ----	58 ----	118 ----
EP068: Bromophos-ethyl	4824-78-6	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	75.5 ----	59.8 ----	115 ----
EP068: Fenamiphos	22224-92-6	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	72.8 ----	32.5 ----	101 ----
EP068: Prothiofos	34643-46-4	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	77.0 ----	59.6 ----	116 ----
EP068: Ethion	563-12-2	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	79.7 ----	58.4 ----	115 ----
EP068: Carbophenothion	786-19-6	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	72.7 ----	56.9 ----	117 ----
EP068: Azinphos Methyl	86-50-0	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	89.3 ----	42 ----	130 ----
EP075(SIM)A: Phenolic Compounds (QCLot: 705689)								
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	5.0 mg/kg	113	61	119



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
EP075(SIM)A: Phenolic Compounds (QCLot: 705689) - continued									
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	5.0 mg/kg	109	63	117	
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	5.0 mg/kg	114	62	119	
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1.0	mg/kg	<1.0	10 mg/kg	119	57	120	
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	5.0 mg/kg	112	49	125	
EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	5.0 mg/kg	116	58	116	
EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	5.0 mg/kg	110	58	116	
EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	5.0 mg/kg	100	59	119	
EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	5.0 mg/kg	102	61	121	
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	5.0 mg/kg	108	55	116	
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	5.0 mg/kg	78.3	53	116	
EP075(SIM): Pentachlorophenol	87-86-5	2.0	mg/kg	<2.0	10 mg/kg	73.3	41	137	
EP075(SIM)A: Phenolic Compounds (QCLot: 706131)									
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	5.0 mg/kg	91.7	61	119	
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	5.0 mg/kg	89.9	63	117	
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	5.0 mg/kg	94.0	62	119	
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1.0	mg/kg	<1.0	10 mg/kg	96.3	57	120	
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	5.0 mg/kg	108	49	125	
EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	5.0 mg/kg	99.8	58	116	
EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	5.0 mg/kg	89.8	58	116	
EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	5.0 mg/kg	80.6	59	119	
EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	5.0 mg/kg	72.0	61	121	
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	5.0 mg/kg	81.3	55	116	
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	5.0 mg/kg	71.9	53	116	
EP075(SIM): Pentachlorophenol	87-86-5	2.0	mg/kg	<2.0	10 mg/kg	76.6	41	137	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 705689)									
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	5.0 mg/kg	98.0	66	114	
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	5.0 mg/kg	99.7	63	113	
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	5.0 mg/kg	94.8	65	114	
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	5.0 mg/kg	97.0	65	111	
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	5.0 mg/kg	97.5	60	112	
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	5.0 mg/kg	95.2	65	110	
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	5.0 mg/kg	94.3	64	111	
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	5.0 mg/kg	94.1	64	111	
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	5.0 mg/kg	92.1	61	115	
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	5.0 mg/kg	81.0	57	114	
EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	5.0 mg/kg	101	46	124	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	5.0 mg/kg	95.4	48	124	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	5.0 mg/kg	105	55	116	
EP075(SIM): Indeno(1,2,3-cd)pyrene	193-39-5	0.5	mg/kg	<0.5	5.0 mg/kg	98.1	52	130	



Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 705689) - continued									
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	5.0 mg/kg	100	54	129	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	5.0 mg/kg	97.8	52	128	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 706131)									
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	5.0 mg/kg	84.0	66	114	
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	5.0 mg/kg	84.4	63	113	
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	5.0 mg/kg	82.3	65	114	
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	5.0 mg/kg	81.5	65	111	
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	5.0 mg/kg	85.2	60	112	
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	5.0 mg/kg	81.8	65	110	
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	5.0 mg/kg	77.3	64	111	
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	5.0 mg/kg	81.7	64	111	
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	5.0 mg/kg	84.2	61	115	
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	5.0 mg/kg	77.1	57	114	
EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	5.0 mg/kg	97.7	46	124	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	5.0 mg/kg	94.8	48	124	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	5.0 mg/kg	109	55	116	
EP075(SIM): Indeno(1,2,3-cd)pyrene	193-39-5	0.5	mg/kg	<0.5	5.0 mg/kg	122	52	130	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	5.0 mg/kg	# 132	54	129	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	5.0 mg/kg	119	52	128	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 705087)									
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	87.3	71	123	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 705209)									
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	102	71	123	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 705688)									
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	237 mg/kg	94.5	67.9	112	
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	459 mg/kg	101	76.2	117	
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	----	----	----	----	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 706130)									
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	237 mg/kg	88.7	67.9	112	
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	459 mg/kg	91.2	76.2	117	
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	----	----	----	----	
EP080: BTEX (QCLot: 705087)									
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	88.5	78	121	
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	87.0	78	121	
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	88.5	72	119	
EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	1 mg/kg	87.7	68	121	
	106-42-3								
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	86.8	70	118	



Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
EP080: BTEX (QCLot: 705209)									
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	94.4	78	121	
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	91.6	78	121	
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	87.8	72	119	
EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	1 mg/kg	91.9	68	121	
	106-42-3								
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	85.8	70	118	



Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike	Recovery Limits (%)		
				Concentration	MS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 706108)							
EB0809165-017	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	90.5	70	130
		EG005T: Cadmium	7440-43-9	25 mg/kg	94.2	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	96.8	70	130
		EG005T: Copper	7440-50-8	50 mg/kg	95.0	70	130
		EG005T: Lead	7439-92-1	50 mg/kg	96.8	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	95.6	70	130
		EG005T: Zinc	7440-66-6	5 mg/kg	110	70	130
EG005T: Total Metals by ICP-AES (QCLot: 706114)							
EB0809213-015	TP6 0.7 - 1.5	EG005T: Arsenic	7440-38-2	50 mg/kg	71.2	70	130
		EG005T: Cadmium	7440-43-9	25 mg/kg	89.3	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	90.8	70	130
		EG005T: Copper	7440-50-8	50 mg/kg	94.3	70	130
		EG005T: Lead	7439-92-1	50 mg/kg	82.1	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	91.2	70	130
		EG005T: Zinc	7440-66-6	5 mg/kg	# Not Determined	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 706109)							
EB0809165-017	Anonymous	EG035T: Mercury	7439-97-6	5.0 mg/kg	99.6	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 706115)							
EB0809213-015	TP6 0.7 - 1.5	EG035T: Mercury	7439-97-6	5.0 mg/kg	102	70	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 705632)							
EB0809213-002	TP2 0.0 - 0.2	EP066: Total Polychlorinated biphenyls	----	0.5 mg/kg	86.8	70	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 705645)							
EB0809213-018	TP9 0.5 - 1.0	EP066: Total Polychlorinated biphenyls	----	0.5 mg/kg	70.1	70	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 705633)							
EB0809213-002	TP2 0.0 - 0.2	EP068: gamma-BHC	58-89-9	0.25 mg/kg	73.1	70	130
		EP068: Heptachlor	76-44-8	0.25 mg/kg	84.0	70	130
		EP068: Aldrin	309-00-2	0.25 mg/kg	75.4	70	130
		EP068: Dieldrin	60-57-1	0.25 mg/kg	72.1	70	130
		EP068: Endrin	72-20-8	1.0 mg/kg	86.6	70	130
		EP068: 4.4'-DDT	50-29-3	1.0 mg/kg	73.3	70	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 705644)							
EB0809213-018	TP9 0.5 - 1.0	EP068: gamma-BHC	58-89-9	0.25 mg/kg	73.7	70	130
		EP068: Heptachlor	76-44-8	0.25 mg/kg	98.4	70	130
		EP068: Aldrin	309-00-2	0.25 mg/kg	73.2	70	130

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 Work Order : EB0809213
 Client : PRECISE ENVIRONMENTAL PTY LTD
 Project : PE389.08



Sub-Matrix: SOIL

				Matrix Spike (MS) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike	Spike Recovery (%)		Recovery Limits (%)	
				Concentration	MS	Low	High	
EP068A: Organochlorine Pesticides (OC) (QCLot: 705644) - continued								
EB0809213-018	TP9 0.5 - 1.0	EP068: Dieldrin	60-57-1	0.25 mg/kg	70.6	70	130	
		EP068: Endrin	72-20-8	1.0 mg/kg	85.7	70	130	
		EP068: 4.4'-DDT	50-29-3	1.0 mg/kg	70.3	70	130	
EP068B: Organophosphorus Pesticides (OP) (QCLot: 705633)								
EB0809213-002	TP2 0.0 - 0.2	EP068: Diazinon	333-41-5	0.25 mg/kg	72.1	70	130	
		EP068: Chlorpyrifos-methyl	5598-13-0	0.25 mg/kg	70.4	70	130	
		EP068: Pirimphos-ethyl	23505-41-1	0.25 mg/kg	70.3	70	130	
		EP068: Bromophos-ethyl	4824-78-6	0.25 mg/kg	71.1	70	130	
		EP068: Prothiofos	34643-46-4	0.25 mg/kg	71.3	70	130	
EP068B: Organophosphorus Pesticides (OP) (QCLot: 705644)								
EB0809213-018	TP9 0.5 - 1.0	EP068: Diazinon	333-41-5	0.25 mg/kg	74.3	70	130	
		EP068: Chlorpyrifos-methyl	5598-13-0	0.25 mg/kg	72.1	70	130	
		EP068: Pirimphos-ethyl	23505-41-1	0.25 mg/kg	73.1	70	130	
		EP068: Bromophos-ethyl	4824-78-6	0.25 mg/kg	70.7	70	130	
		EP068: Prothiofos	34643-46-4	0.25 mg/kg	# 67.5	70	130	
EP075(SIM)A: Phenolic Compounds (QCLot: 705689)								
EB0809165-003	Anonymous	EP075(SIM): Phenol	108-95-2	2.5 mg/kg	102	70	130	
		EP075(SIM): 2-Chlorophenol	95-57-8	2.5 mg/kg	98.7	70	130	
		EP075(SIM): 2-Nitrophenol	88-75-5	2.5 mg/kg	121	70	130	
		EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	2.5 mg/kg	86.4	70	130	
		EP075(SIM): Pentachlorophenol	87-86-5	2.5 mg/kg	80.7	70	130	
EP075(SIM)A: Phenolic Compounds (QCLot: 706131)								
EB0809213-011	TP5 1.0 - 1.3	EP075(SIM): Phenol	108-95-2	2.5 mg/kg	108	70	130	
		EP075(SIM): 2-Chlorophenol	95-57-8	2.5 mg/kg	109	70	130	
		EP075(SIM): 2-Nitrophenol	88-75-5	2.5 mg/kg	120	70	130	
		EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	2.5 mg/kg	87.1	70	130	
		EP075(SIM): Pentachlorophenol	87-86-5	2.5 mg/kg	86.0	70	130	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 705689)								
EB0809165-003	Anonymous	EP075(SIM): Acenaphthene	83-32-9	2.5 mg/kg	90.6	70	130	
		EP075(SIM): Pyrene	129-00-0	2.5 mg/kg	96.2	70	130	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 706131)								
EB0809213-011	TP5 1.0 - 1.3	EP075(SIM): Acenaphthene	83-32-9	2.5 mg/kg	95.2	70	130	
		EP075(SIM): Pyrene	129-00-0	2.5 mg/kg	96.3	70	130	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 705087)								
EB0809213-013	TP6 0.3 - 0.7	EP080: C6 - C9 Fraction	----	28 mg/kg	72.1	70	130	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 705209)								
EB0809213-016	TP7 0.0 - 0.3	EP080: C6 - C9 Fraction	----	28 mg/kg	70.2	70	130	



Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike	Spike Recovery (%)	Recovery Limits (%)	
				Concentration	MS	Low	High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 705688)							
EB0809165-003	Anonymous	EP071: C10 - C14 Fraction	----	237 mg/kg	120	70	130
		EP071: C15 - C28 Fraction	----	459 mg/kg	# 142	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 706130)							
EB0809213-011	TP5 1.0 - 1.3	EP071: C10 - C14 Fraction	----	237 mg/kg	82.8	70	130
		EP071: C15 - C28 Fraction	----	459 mg/kg	93.1	70	130
EP080: BTEX (QCLot: 705087)							
EB0809213-013	TP6 0.3 - 0.7	EP080: Benzene	71-43-2	2 mg/kg	73.4	70	130
		EP080: Toluene	108-88-3	2 mg/kg	72.0	70	130
EP080: BTEX (QCLot: 705209)							
EB0809213-016	TP7 0.0 - 0.3	EP080: Benzene	71-43-2	2 mg/kg	81.7	70	130
		EP080: Toluene	108-88-3	2 mg/kg	79.8	70	130



Environmental Division

INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: EB0809213	Page	: 1 of 10
Client	: PRECISE ENVIRONMENTAL PTY LTD	Laboratory	: Environmental Division Brisbane
Contact	: RESULTS ADDRESS	Contact	: Tim Kilmister
Address	: PO BOX 4651 ROBINA TOWN CENTRE QLD, AUSTRALIA 4230	Address	: 32 Shand Street Stafford QLD Australia 4053
E-mail	: mail@preciseenvironmental.com.au	E-mail	: Services.Brisbane@alsenviro.com
Telephone	: +61 07 55933743	Telephone	: +61-7-3243 7222
Facsimile	: +61 07 55933435	Facsimile	: +61-7-3243 7218
Project	: PE389.08	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
C-O-C number	: ----	Date Samples Received	: 10-JUL-2008
Sampler	: C.B., L.M.	Issue Date	: 18-JUL-2008
Order number	: ----		
Quote number	: BN/170/08	No. of samples received	: 24
		No. of samples analysed	: 23

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Interpretive Quality Control Report contains the following information:

- Analysis Holding Time Compliance
- Quality Control Parameter Frequency Compliance
- Brief Method Summaries
- Summary of Outliers

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Analysis Holding Time Compliance

The following report summarises extraction / preparation and analysis times and compares with recommended holding times. Dates reported represent first date of extraction or analysis and precludes subsequent dilutions and reruns. Information is also provided re the sample container (preservative) from which the analysis aliquot was taken. Elapsed period to analysis represents number of days from sampling where no extraction / digestion is involved or period from extraction / digestion where this is present. For composite samples, sampling date is assumed to be that of the oldest sample contributing to the composite. Sample date for laboratory produced leachates is assumed as the completion date of the leaching process. Outliers for holding time are based on USEPA SW 846, APHA, AS and NEPM (1999). A listing of breaches is provided in the Summary of Outliers.

Holding times for leachate methods (excluding elutriates) vary according to the analytes being determined on the resulting solution. For non-volatile analytes, the holding time compliance assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These soil holding times are: Organics (14 days); Mercury (28 days) & other metals (180 days). A recorded breach therefore does not guarantee a breach for all non-volatile parameters.

Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EA055: Moisture Content								
Soil Glass Jar - Unpreserved								
TP1 0.0 - 0.3, TP2 0.2 - 0.6, TP3 0.4 - 1.0, TP4 0.1 - 0.5, TP5 0.0 - 0.3, TP5 1.0 - 1.3, TP6 0.3 - 0.7, TP7 0.0 - 0.3, TP9 0.5 - 1.0, TP10 1.0 - 1.4, Stockpile S2, Duplicate C	TP2 0.0 - 0.2, TP3 0.0 - 0.15, TP4 0.0 - 0.1, TP4 0.5 - 0.7, TP5 0.3 - 0.6, TP6 0.0 - 0.3, TP6 0.7 - 1.5, TP9 0.0 - 0.5, TP10 0.3 - 0.6, Stockpile S1, Stockpile S3,	09-JUL-2008	----	----	----	15-JUL-2008	16-JUL-2008	✓
EG005T: Total Metals by ICP-AES								
Soil Glass Jar - Unpreserved								
TP1 0.0 - 0.3, TP2 0.2 - 0.6, TP3 0.4 - 1.0, TP4 0.1 - 0.5, TP5 0.0 - 0.3, TP5 1.0 - 1.3, TP6 0.3 - 0.7, TP7 0.0 - 0.3, TP9 0.5 - 1.0, TP10 1.0 - 1.4, Stockpile S2, Duplicate C	TP2 0.0 - 0.2, TP3 0.0 - 0.15, TP4 0.0 - 0.1, TP4 0.5 - 0.7, TP5 0.3 - 0.6, TP6 0.0 - 0.3, TP6 0.7 - 1.5, TP9 0.0 - 0.5, TP10 0.3 - 0.6, Stockpile S1, Stockpile S3,	09-JUL-2008	15-JUL-2008	05-JAN-2009	✓	16-JUL-2008	05-JAN-2009	✓



Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EG035T: Total Recoverable Mercury by FIMS								
Soil Glass Jar - Unpreserved TP1 0.0 - 0.3, TP2 0.2 - 0.6, TP3 0.4 - 1.0, TP4 0.1 - 0.5, TP5 0.0 - 0.3, TP5 1.0 - 1.3, TP6 0.3 - 0.7, TP7 0.0 - 0.3, TP9 0.5 - 1.0, TP10 1.0 - 1.4, Stockpile S2, Duplicate C	TP2 0.0 - 0.2, TP3 0.0 - 0.15, TP4 0.0 - 0.1, TP4 0.5 - 0.7, TP5 0.3 - 0.6, TP6 0.0 - 0.3, TP6 0.7 - 1.5, TP9 0.0 - 0.5, TP10 0.3 - 0.6, Stockpile S1, Stockpile S3,	09-JUL-2008	15-JUL-2008	05-JAN-2009	✓	17-JUL-2008	06-AUG-2008	✓
EP066: Polychlorinated Biphenyls (PCB)								
Soil Glass Jar - Unpreserved TP1 0.0 - 0.3, TP2 0.2 - 0.6, TP3 0.4 - 1.0, TP4 0.1 - 0.5, TP5 0.0 - 0.3, TP5 1.0 - 1.3, TP6 0.3 - 0.7, TP7 0.0 - 0.3, TP9 0.5 - 1.0, TP10 1.0 - 1.4, Stockpile S2, Duplicate C	TP2 0.0 - 0.2, TP3 0.0 - 0.15, TP4 0.0 - 0.1, TP4 0.5 - 0.7, TP5 0.3 - 0.6, TP6 0.0 - 0.3, TP6 0.7 - 1.5, TP9 0.0 - 0.5, TP10 0.3 - 0.6, Stockpile S1, Stockpile S3,	09-JUL-2008	15-JUL-2008	23-JUL-2008	✓	17-JUL-2008	24-AUG-2008	✓
EP068A: Organochlorine Pesticides (OC)								
Soil Glass Jar - Unpreserved TP1 0.0 - 0.3, TP2 0.2 - 0.6, TP3 0.4 - 1.0, TP4 0.1 - 0.5, TP5 0.0 - 0.3, TP5 1.0 - 1.3, TP6 0.3 - 0.7, TP7 0.0 - 0.3, TP9 0.5 - 1.0, TP10 1.0 - 1.4, Stockpile S2, Duplicate C	TP2 0.0 - 0.2, TP3 0.0 - 0.15, TP4 0.0 - 0.1, TP4 0.5 - 0.7, TP5 0.3 - 0.6, TP6 0.0 - 0.3, TP6 0.7 - 1.5, TP9 0.0 - 0.5, TP10 0.3 - 0.6, Stockpile S1, Stockpile S3,	09-JUL-2008	15-JUL-2008	23-JUL-2008	✓	17-JUL-2008	24-AUG-2008	✓



Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EP068B: Organophosphorus Pesticides (OP)								
Soil Glass Jar - Unpreserved TP1 0.0 - 0.3, TP2 0.2 - 0.6, TP3 0.4 - 1.0, TP4 0.1 - 0.5, TP5 0.0 - 0.3, TP5 1.0 - 1.3, TP6 0.3 - 0.7, TP7 0.0 - 0.3, TP9 0.5 - 1.0, TP10 1.0 - 1.4, Stockpile S2, Duplicate C	TP2 0.0 - 0.2, TP3 0.0 - 0.15, TP4 0.0 - 0.1, TP4 0.5 - 0.7, TP5 0.3 - 0.6, TP6 0.0 - 0.3, TP6 0.7 - 1.5, TP9 0.0 - 0.5, TP10 0.3 - 0.6, Stockpile S1, Stockpile S3,	09-JUL-2008	15-JUL-2008	23-JUL-2008	✓	17-JUL-2008	24-AUG-2008	✓
EP075(SIM)A: Phenolic Compounds								
Soil Glass Jar - Unpreserved TP1 0.0 - 0.3, TP2 0.2 - 0.6, TP3 0.4 - 1.0, TP4 0.1 - 0.5, TP5 0.0 - 0.3	TP2 0.0 - 0.2, TP3 0.0 - 0.15, TP4 0.0 - 0.1, TP4 0.5 - 0.7,	09-JUL-2008	15-JUL-2008	23-JUL-2008	✓	17-JUL-2008	24-AUG-2008	✓
Soil Glass Jar - Unpreserved TP5 0.3 - 0.6, TP6 0.0 - 0.3, TP6 0.7 - 1.5, TP9 0.0 - 0.5, TP10 0.3 - 0.6, Stockpile S1, Stockpile S3,	TP5 1.0 - 1.3, TP6 0.3 - 0.7, TP7 0.0 - 0.3, TP9 0.5 - 1.0, TP10 1.0 - 1.4, Stockpile S2, Duplicate C	09-JUL-2008	16-JUL-2008	23-JUL-2008	✓	16-JUL-2008	25-AUG-2008	✓



Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Soil Glass Jar - Unpreserved								
TP1 0.0 - 0.3, TP2 0.2 - 0.6, TP3 0.4 - 1.0, TP4 0.1 - 0.5, TP5 0.0 - 0.3	TP2 0.0 - 0.2, TP3 0.0 - 0.15, TP4 0.0 - 0.1, TP4 0.5 - 0.7,	09-JUL-2008	15-JUL-2008	23-JUL-2008	✓	17-JUL-2008	24-AUG-2008	✓
Soil Glass Jar - Unpreserved								
TP5 0.3 - 0.6, TP6 0.0 - 0.3, TP6 0.7 - 1.5, TP9 0.0 - 0.5, TP10 0.3 - 0.6, Stockpile S1, Stockpile S3,	TP5 1.0 - 1.3, TP6 0.3 - 0.7, TP7 0.0 - 0.3, TP9 0.5 - 1.0, TP10 1.0 - 1.4, Stockpile S2, Duplicate C	09-JUL-2008	16-JUL-2008	23-JUL-2008	✓	16-JUL-2008	25-AUG-2008	✓



Matrix: SOIL

Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EP080/071: Total Petroleum Hydrocarbons								
Soil Glass Jar - Unpreserved TP1 0.0 - 0.3, TP2 0.2 - 0.6, TP3 0.4 - 1.0, TP4 0.1 - 0.5, TP5 0.0 - 0.3, TP5 1.0 - 1.3, TP6 0.3 - 0.7, TP7 0.0 - 0.3, TP9 0.5 - 1.0, TP10 1.0 - 1.4, Stockpile S2, Duplicate C	TP2 0.0 - 0.2, TP3 0.0 - 0.15, TP4 0.0 - 0.1, TP4 0.5 - 0.7, TP5 0.3 - 0.6, TP6 0.0 - 0.3, TP6 0.7 - 1.5, TP9 0.0 - 0.5, TP10 0.3 - 0.6, Stockpile S1, Stockpile S3,	09-JUL-2008	14-JUL-2008	23-JUL-2008	✓	15-JUL-2008	23-JUL-2008	✓
Soil Glass Jar - Unpreserved TP1 0.0 - 0.3, TP2 0.2 - 0.6, TP3 0.4 - 1.0, TP4 0.1 - 0.5, TP5 0.0 - 0.3	TP2 0.0 - 0.2, TP3 0.0 - 0.15, TP4 0.0 - 0.1, TP4 0.5 - 0.7,	09-JUL-2008	15-JUL-2008	23-JUL-2008	✓	17-JUL-2008	24-AUG-2008	✓
Soil Glass Jar - Unpreserved TP5 0.3 - 0.6, TP6 0.0 - 0.3, TP6 0.7 - 1.5, TP9 0.0 - 0.5, TP10 0.3 - 0.6, Stockpile S1, Stockpile S3,	TP5 1.0 - 1.3, TP6 0.3 - 0.7, TP7 0.0 - 0.3, TP9 0.5 - 1.0, TP10 1.0 - 1.4, Stockpile S2, Duplicate C	09-JUL-2008	16-JUL-2008	23-JUL-2008	✓	16-JUL-2008	25-AUG-2008	✓
EP080: BTEX								
Soil Glass Jar - Unpreserved TP1 0.0 - 0.3, TP2 0.2 - 0.6, TP3 0.4 - 1.0, TP4 0.1 - 0.5, TP5 0.0 - 0.3, TP5 1.0 - 1.3, TP6 0.3 - 0.7, TP7 0.0 - 0.3, TP9 0.5 - 1.0, TP10 1.0 - 1.4, Stockpile S2, Duplicate C	TP2 0.0 - 0.2, TP3 0.0 - 0.15, TP4 0.0 - 0.1, TP4 0.5 - 0.7, TP5 0.3 - 0.6, TP6 0.0 - 0.3, TP6 0.7 - 1.5, TP9 0.0 - 0.5, TP10 0.3 - 0.6, Stockpile S1, Stockpile S3,	09-JUL-2008	14-JUL-2008	23-JUL-2008	✓	15-JUL-2008	23-JUL-2008	✓



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(where) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: * = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Reaular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Moisture Content	EA055-103	4	40	10.0	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	4	35	11.4	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Pesticides by GCMS	EP068	4	37	10.8	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	3	25	12.0	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	4	40	10.0	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	4	39	10.3	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	4	38	10.5	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	4	30	13.3	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	2	35	5.7	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Pesticides by GCMS	EP068	2	37	5.4	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	2	25	8.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	2	40	5.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	39	5.1	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	2	38	5.3	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	2	30	6.7	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	2	35	5.7	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Pesticides by GCMS	EP068	2	37	5.4	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	2	25	8.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	2	40	5.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	39	5.1	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	2	38	5.3	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	2	30	6.7	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	2	35	5.7	5.0	✓	ALS QCS3 requirement
Pesticides by GCMS	EP068	2	37	5.4	5.0	✓	ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	2	25	8.0	5.0	✓	ALS QCS3 requirement
Total Mercury by FIMS	EG035T	2	40	5.0	5.0	✓	ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	39	5.1	5.0	✓	ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	2	38	5.3	5.0	✓	ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	2	30	6.7	5.0	✓	ALS QCS3 requirement



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Asbestos - Count (Solid)	ASB-SOL	SOIL	Asbestos Count on solid matrices using PLM conducted by Subcontracting Laboratory
Moisture Content	EA055-103	SOIL	A gravimetric procedure based on weight loss over a 12 hour drying period at 103-105 degrees C. This method is compliant with NEPM (1999) Schedule B(3) (Method 102)
Total Metals by ICP-AES	EG005T	SOIL	(APHA 21st ed., 3120; USEPA SW 846 - 6010) (ICPAES) Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (1999) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	AS 3550, APHA 21st ed., 3112 Hg - B (Flow-injection (SnCl ₂)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (1999) Schedule B(3)
Polychlorinated Biphenyls (PCB)	EP066	SOIL	(USEPA SW 846 - 8270B) Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Method 504)
Pesticides by GCMS	EP068	SOIL	(USEPA SW 846 - 8270B) Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (1999) Schedule B(3) (Method 504,505)
TPH - Semivolatile Fraction	EP071	SOIL	(USEPA SW 846 - 8015A) Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C36. This method is compliant with NEPM (1999) Schedule B(3) (Method 506.1)
PAH/Phenols (SIM)	EP075(SIM)	SOIL	(USEPA SW 846 - 8270B) Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Method 502 and 507)
TPH Volatiles/BTEX	EP080	SOIL	(USEPA SW 846 - 8260B) Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Method 501)

Preparation Methods	Method	Matrix	Method Descriptions
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	USEPA 200.2 Mod. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (1999) Schedule B(3) (Method 202)
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	(USEPA SW 846 - 5030A) 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids (Option A - Concentrating)	ORG17A	SOIL	In-house, Mechanical agitation (tumbler). 20g of sample, Na ₂ SO ₄ and surrogate are extracted with 150mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.

Page : 9 of 10
Work Order : EB0809213
Client : PRECISE ENVIRONMENTAL PTY LTD
Project : PE389.08



<i>Preparation Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
Tumbler Extraction of Solids (Option B - Non-concentrating)	ORG17B	SOIL	In-house, Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 20mL 1:1 DCM/Acetone by end over end tumble. The solvent is transferred directly to a GC vial for analysis.



Summary of Outliers

Outliers : Quality Control Samples

The following report highlights outliers flagged in the Quality Control (QC) Report. Surrogate recovery limits are static and based on USEPA SW846 or ALS-QWI/EN/38 (in the absence of specific USEPA limits). This report displays QC Outliers (breaches) only.

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries							
EP068B: Organophosphorus Pesticides (OP)	793719-002	----	Demeton-S-methyl	919-86-8	20.7 %	31.8-112%	Recovery less than lower control limit
EP068B: Organophosphorus Pesticides (OP)	793705-008	----	Demeton-S-methyl	919-86-8	29.7 %	31.8-112%	Recovery less than lower control limit
EP068B: Organophosphorus Pesticides (OP)	793705-008	----	Fenthion	55-38-9	67.5 %	68-109%	Recovery less than lower control limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons	794343-006	----	Dibenz(a,h)anthracene	53-70-3	132 %	54-129%	Recovery greater than upper control limit
Matrix Spike (MS) Recoveries							
EG005T: Total Metals by ICP-AES	EB0809213-015	TP6 0.7 - 1.5	Zinc	7440-66-6	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.
EP068B: Organophosphorus Pesticides (OP)	EB0809213-018	TP9 0.5 - 1.0	Prothiofos	34643-46-4	67.5 %	70-130%	Recovery less than lower data quality objective
EP080/071: Total Petroleum Hydrocarbons	EB0809165-003	Anonymous	C15 - C28 Fraction	----	142 %	70-130%	Recovery greater than upper data quality objective

- For all matrices, no Method Blank value outliers occur.
- For all matrices, no Duplicate outliers occur.

Regular Sample Surrogates

Sub-Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Samples Submitted							
EP075(SIM)S: Phenolic Compound Surrogates	EB0809213-016	TP7 0.0 - 0.3	Phenol-d6	13127-88-3	118 %	24-113 %	Recovery greater than upper data quality objective

Outliers : Analysis Holding Time Compliance

This report displays Holding Time breaches only. Only the respective Extraction / Preparation and/or Analysis component is/are displayed.

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

The following report highlights breaches in the Frequency of Quality Control Samples.

- No Quality Control Sample Frequency Outliers exist.



Environmental Division

SAMPLE RECEIPT NOTIFICATION (SRN)
Comprehensive Report

Work Order : EB0809216

Client	: PRECISE ENVIRONMENTAL PTY LTD	Laboratory	: Environmental Division Brisbane
Contact	: MR CHRIS BUTLER	Contact	: Tim Kilmister
Address	: PO BOX 4651 ROBINA TOWN CENTRE QLD, AUSTRALIA 4230	Address	: 32 Shand Street Stafford QLD Australia 4053
E-mail	: mail@preciseenvironmental.com.au	E-mail	: Services.Brisbane@alsenviro.com
Telephone	: +61 55933743	Telephone	: +61-7-3243 7222
Facsimile	: +61 07 55933435	Facsimile	: +61-7-3243 7218
Project	: PE389.08	Page	: 1 of 3
Order number	: ----		
C-O-C number	: ----	Quote number	: EB2008PREENV0127 (BN/170/08)
Site	: ----		
Sampler	: CB,LM	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement

Dates

Date Samples Received	: 10-JUL-2008	Issue Date	: 14-JUL-2008 13:34
Client Requested Due Date	: 16-JUL-2008	Scheduled Reporting Date	: 18-JUL-2008

Delivery Details

Mode of Delivery	: Carrier	Temperature	: 4.2 C - Ice bricks present
No. of coolers/boxes	: 1 MEDIUM	No. of samples received	: 27
Security Seal	: Intact.	No. of samples analysed	: 27

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Requested Deliverables
- **Samples received in appropriately pretreated and preserved containers.**
- **Sample(s) have been received within recommended holding times.**
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Please direct any queries related to sample condition / numbering / breakages to Maggie Kahi.
- Analytical work for this work order will be conducted at ALS Brisbane.
- Sample Disposal - Aqueous (14 days), Solid (90 days) from date of completion of work order.



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- No sample container / preservation non-compliance exist.

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	SOIL - S-02 8 Metals (incl. Digestion)	SOIL - S-12 OC/OP Pesticides
EB0809216-001	09-JUL-2008 15:00	SL1 0.0-0.15	✓	✓
EB0809216-002	09-JUL-2008 15:00	SL2 0.0-0.15	✓	
EB0809216-003	09-JUL-2008 15:00	SL3 0.0-0.15	✓	
EB0809216-004	09-JUL-2008 15:00	SL4 0.0-0.15	✓	✓
EB0809216-005	09-JUL-2008 15:00	SL5 0.0-0.15	✓	
EB0809216-006	09-JUL-2008 15:00	SL6 0.0-0.15	✓	✓
EB0809216-007	09-JUL-2008 15:00	SL7 0.0-0.15	✓	
EB0809216-008	09-JUL-2008 15:00	SL8 0.0-0.15	✓	
EB0809216-009	09-JUL-2008 15:00	SL9 0.0-0.15	✓	✓
EB0809216-010	09-JUL-2008 15:00	SL10 0.0-0.15	✓	
EB0809216-011	09-JUL-2008 15:00	SL11 0.0-0.15	✓	
EB0809216-012	09-JUL-2008 15:00	SL12 0.0-0.15	✓	✓
EB0809216-013	09-JUL-2008 15:00	SL13 0.0-0.15	✓	
EB0809216-014	09-JUL-2008 15:00	SL14 0.0-0.15	✓	✓
EB0809216-015	09-JUL-2008 15:00	SL15 0.0-0.15	✓	
EB0809216-016	09-JUL-2008 15:00	SL16 0.0-0.15	✓	✓
EB0809216-017	09-JUL-2008 15:00	SL17 0.0-0.15	✓	
EB0809216-018	09-JUL-2008 15:00	SL18 0.0-0.15	✓	✓
EB0809216-019	09-JUL-2008 15:00	SL19 0.0-0.15	✓	
EB0809216-020	09-JUL-2008 15:00	SL20 0.0-0.15	✓	
EB0809216-021	09-JUL-2008 15:00	SL21 0.0-0.15	✓	
EB0809216-022	09-JUL-2008 15:00	SL22 0.0-0.15	✓	✓
EB0809216-023	09-JUL-2008 15:00	SL23 0.0-0.15	✓	
EB0809216-024	09-JUL-2008 15:00	SL24 0.0-0.15	✓	✓
EB0809216-025	09-JUL-2008 15:00	SL25 0.0-0.15	✓	
EB0809216-026	09-JUL-2008 15:00	Duplicate A	✓	✓
EB0809216-027	09-JUL-2008 15:00	Duplicate B	✓	



Environmental Division

CERTIFICATE OF ANALYSIS

Work Order	: EB0809216	Page	: 1 of 15
Client	: PRECISE ENVIRONMENTAL PTY LTD	Laboratory	: Environmental Division Brisbane
Contact	: MR CHRIS BUTLER	Contact	: Tim Kilmister
Address	: PO BOX 4651 ROBINA TOWN CENTRE QLD, AUSTRALIA 4230	Address	: 32 Shand Street Stafford QLD Australia 4053
E-mail	: mail@preciseenvironmental.com.au	E-mail	: Services.Brisbane@alsenviro.com
Telephone	: +61 55933743	Telephone	: +61-7-3243 7222
Facsimile	: +61 07 55933435	Facsimile	: +61-7-3243 7218
Project	: PE389.08	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Order number	: ----	Date Samples Received	: 10-JUL-2008
C-O-C number	: ----	Issue Date	: 18-JUL-2008
Sampler	: CB,LM	No. of samples received	: 27
Site	: ----	No. of samples analysed	: 27
Quote number	: BN/170/08		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits



NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
Matthew Goodwin	Senior Organic Chemist	Inorganics
Matthew Goodwin	Senior Organic Chemist	Organics
Phillip Kennedy	2IC Environmental Laboratory	Inorganics

Environmental Division Brisbane

Part of the **ALS Laboratory Group**

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A Campbell Brothers Limited Company



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client.

Key : CAS Number = Chemistry Abstract Services number

LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting

- **Pesticides: Poor matrix spike recovery due to matrix interference. Confirmed by visual inspection.**



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

Compound	CAS Number	LOR	Unit	SL1 0.0-0.15	SL2 0.0-0.15	SL3 0.0-0.15	SL4 0.0-0.15	SL5 0.0-0.15
				09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00
				EB0809216-001	EB0809216-002	EB0809216-003	EB0809216-004	EB0809216-005
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	----	1.0	%	13.9	19.4	32.6	23.8	33.6
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	16	15	10	8	6
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	71	82	32	48	40
Copper	7440-50-8	5	mg/kg	105	114	17	11	25
Lead	7439-92-1	5	mg/kg	7	<5	15	13	40
Nickel	7440-02-0	2	mg/kg	25	44	9	5	4
Zinc	7440-66-6	5	mg/kg	34	27	66	33	185
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	0.2
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	----	----	<0.05	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	----	----	<0.05	----
beta-BHC	319-85-7	0.05	mg/kg	<0.05	----	----	<0.05	----
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	----	----	<0.05	----
delta-BHC	319-86-8	0.05	mg/kg	<0.05	----	----	<0.05	----
Heptachlor	76-44-8	0.05	mg/kg	<0.05	----	----	<0.05	----
Aldrin	309-00-2	0.05	mg/kg	<0.05	----	----	<0.05	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	----	----	<0.05	----
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	----	----	<0.05	----
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	----	----	<0.05	----
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	----	----	<0.05	----
Dieldrin	60-57-1	0.05	mg/kg	<0.05	----	----	<0.05	----
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	----	----	<0.05	----
Endrin	72-20-8	0.05	mg/kg	<0.05	----	----	<0.05	----
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	----	----	<0.05	----
4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	----	----	<0.05	----
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	----	----	<0.05	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	----	----	<0.05	----
4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	----	----	<0.2	----
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	----	----	<0.05	----
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	----	----	<0.2	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	----	----	<0.05	----
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	----	----	<0.05	----
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	----	----	<0.2	----
Dimethoate	60-51-5	0.05	mg/kg	<0.05	----	----	<0.05	----



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

Compound	CAS Number	LOR	Unit	SL1 0.0-0.15	SL2 0.0-0.15	SL3 0.0-0.15	SL4 0.0-0.15	SL5 0.0-0.15
				09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00
				EB0809216-001	EB0809216-002	EB0809216-003	EB0809216-004	EB0809216-005
EP068B: Organophosphorus Pesticides (OP) - Continued								
Diazinon	333-41-5	0.05	mg/kg	<0.05	----	----	<0.05	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	----	----	<0.05	----
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	----	----	<0.2	----
Malathion	121-75-5	0.05	mg/kg	<0.05	----	----	<0.05	----
Fenthion	55-38-9	0.05	mg/kg	<0.05	----	----	<0.05	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	----	----	<0.05	----
Parathion	56-38-2	0.2	mg/kg	<0.2	----	----	<0.2	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	----	----	<0.05	----
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	----	----	<0.05	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	----	----	<0.05	----
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	----	----	<0.05	----
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	----	----	<0.05	----
Ethion	563-12-2	0.05	mg/kg	<0.05	----	----	<0.05	----
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	----	----	<0.05	----
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	----	----	<0.05	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.1	%	55.4	----	----	53.5	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.1	%	60.8	----	----	58.1	----



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

Compound	CAS Number	LOR	Unit	SL6 0.0-0.15	SL7 0.0-0.15	SL8 0.0-0.15	SL9 0.0-0.15	SL10 0.0-0.15
				09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00
				EB0809216-006	EB0809216-007	EB0809216-008	EB0809216-009	EB0809216-010
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	----	1.0	%	23.3	26.3	27.6	30.0	27.3
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	6	9	13	18
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	16	17	35	56	88
Copper	7440-50-8	5	mg/kg	<5	8	13	23	32
Lead	7439-92-1	5	mg/kg	6	6	8	10	14
Nickel	7440-02-0	2	mg/kg	<2	2	4	6	8
Zinc	7440-66-6	5	mg/kg	14	17	19	32	42
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	0.1	0.1	0.1	0.1	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	----	----	<0.05	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	----	----	<0.05	----
beta-BHC	319-85-7	0.05	mg/kg	<0.05	----	----	<0.05	----
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	----	----	<0.05	----
delta-BHC	319-86-8	0.05	mg/kg	<0.05	----	----	<0.05	----
Heptachlor	76-44-8	0.05	mg/kg	<0.05	----	----	<0.05	----
Aldrin	309-00-2	0.05	mg/kg	<0.05	----	----	<0.05	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	----	----	<0.05	----
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	----	----	<0.05	----
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	----	----	<0.05	----
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	----	----	<0.05	----
Dieldrin	60-57-1	0.05	mg/kg	<0.05	----	----	<0.05	----
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	----	----	<0.05	----
Endrin	72-20-8	0.05	mg/kg	<0.05	----	----	<0.05	----
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	----	----	<0.05	----
4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	----	----	<0.05	----
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	----	----	<0.05	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	----	----	<0.05	----
4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	----	----	<0.2	----
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	----	----	<0.05	----
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	----	----	<0.2	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	----	----	<0.05	----
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	----	----	<0.05	----
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	----	----	<0.2	----
Dimethoate	60-51-5	0.05	mg/kg	<0.05	----	----	<0.05	----



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

Compound	CAS Number	LOR	Unit	SL6 0.0-0.15	SL7 0.0-0.15	SL8 0.0-0.15	SL9 0.0-0.15	SL10 0.0-0.15
				09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00
				EB0809216-006	EB0809216-007	EB0809216-008	EB0809216-009	EB0809216-010
EP068B: Organophosphorus Pesticides (OP) - Continued								
Diazinon	333-41-5	0.05	mg/kg	<0.05	----	----	<0.05	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	----	----	<0.05	----
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	----	----	<0.2	----
Malathion	121-75-5	0.05	mg/kg	<0.05	----	----	<0.05	----
Fenthion	55-38-9	0.05	mg/kg	<0.05	----	----	<0.05	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	----	----	<0.05	----
Parathion	56-38-2	0.2	mg/kg	<0.2	----	----	<0.2	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	----	----	<0.05	----
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	----	----	<0.05	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	----	----	<0.05	----
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	----	----	<0.05	----
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	----	----	<0.05	----
Ethion	563-12-2	0.05	mg/kg	<0.05	----	----	<0.05	----
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	----	----	<0.05	----
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	----	----	<0.05	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.1	%	55.5	----	----	48.7	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.1	%	60.4	----	----	53.5	----



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

Compound	CAS Number	LOR	Unit	SL11 0.0-0.15	SL12 0.0-0.15	SL13 0.0-0.15	SL14 0.0-0.15	SL15 0.0-0.15
				09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00
				EB0809216-011	EB0809216-012	EB0809216-013	EB0809216-014	EB0809216-015
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	----	1.0	%	32.2	21.6	31.4	32.0	24.6
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	5	9	14	<5	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	23	53	20	9	10
Copper	7440-50-8	5	mg/kg	28	20	16	14	7
Lead	7439-92-1	5	mg/kg	18	6	6	6	8
Nickel	7440-02-0	2	mg/kg	11	4	2	<2	<2
Zinc	7440-66-6	5	mg/kg	118	8	18	18	12
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	----	<0.05	----	<0.05	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	----	<0.05	----	<0.05	----
beta-BHC	319-85-7	0.05	mg/kg	----	<0.05	----	<0.05	----
gamma-BHC	58-89-9	0.05	mg/kg	----	<0.05	----	<0.05	----
delta-BHC	319-86-8	0.05	mg/kg	----	<0.05	----	<0.05	----
Heptachlor	76-44-8	0.05	mg/kg	----	<0.05	----	<0.05	----
Aldrin	309-00-2	0.05	mg/kg	----	<0.05	----	<0.05	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg	----	<0.05	----	<0.05	----
trans-Chlordane	5103-74-2	0.05	mg/kg	----	<0.05	----	<0.05	----
alpha-Endosulfan	959-98-8	0.05	mg/kg	----	<0.05	----	<0.05	----
cis-Chlordane	5103-71-9	0.05	mg/kg	----	<0.05	----	<0.05	----
Dieldrin	60-57-1	0.05	mg/kg	----	<0.05	----	<0.05	----
4,4'-DDE	72-55-9	0.05	mg/kg	----	<0.05	----	<0.05	----
Endrin	72-20-8	0.05	mg/kg	----	<0.05	----	<0.05	----
beta-Endosulfan	33213-65-9	0.05	mg/kg	----	<0.05	----	<0.05	----
4,4'-DDD	72-54-8	0.05	mg/kg	----	<0.05	----	<0.05	----
Endrin aldehyde	7421-93-4	0.05	mg/kg	----	<0.05	----	<0.05	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg	----	<0.05	----	<0.05	----
4,4'-DDT	50-29-3	0.2	mg/kg	----	<0.2	----	<0.2	----
Endrin ketone	53494-70-5	0.05	mg/kg	----	<0.05	----	<0.05	----
Methoxychlor	72-43-5	0.2	mg/kg	----	<0.2	----	<0.2	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	----	<0.05	----	<0.05	----
Demeton-S-methyl	919-86-8	0.05	mg/kg	----	<0.05	----	<0.05	----
Monocrotophos	6923-22-4	0.2	mg/kg	----	<0.2	----	<0.2	----
Dimethoate	60-51-5	0.05	mg/kg	----	<0.05	----	<0.05	----



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

Compound	CAS Number	LOR	Unit	SL11 0.0-0.15	SL12 0.0-0.15	SL13 0.0-0.15	SL14 0.0-0.15	SL15 0.0-0.15
				09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00
				EB0809216-011	EB0809216-012	EB0809216-013	EB0809216-014	EB0809216-015
EP068B: Organophosphorus Pesticides (OP) - Continued								
Diazinon	333-41-5	0.05	mg/kg	----	<0.05	----	<0.05	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	----	<0.05	----	<0.05	----
Parathion-methyl	298-00-0	0.2	mg/kg	----	<0.2	----	<0.2	----
Malathion	121-75-5	0.05	mg/kg	----	<0.05	----	<0.05	----
Fenthion	55-38-9	0.05	mg/kg	----	<0.05	----	<0.05	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	----	<0.05	----	<0.05	----
Parathion	56-38-2	0.2	mg/kg	----	<0.2	----	<0.2	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	----	<0.05	----	<0.05	----
Chlorfenvinphos	470-90-6	0.05	mg/kg	----	<0.05	----	<0.05	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	----	<0.05	----	<0.05	----
Fenamiphos	22224-92-6	0.05	mg/kg	----	<0.05	----	<0.05	----
Prothiofos	34643-46-4	0.05	mg/kg	----	<0.05	----	<0.05	----
Ethion	563-12-2	0.05	mg/kg	----	<0.05	----	<0.05	----
Carbophenothion	786-19-6	0.05	mg/kg	----	<0.05	----	<0.05	----
Azinphos Methyl	86-50-0	0.05	mg/kg	----	<0.05	----	<0.05	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.1	%	----	54.2	----	53.4	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.1	%	----	59.3	----	58.1	----



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

Compound	CAS Number	LOR	Unit	SL16 0.0-0.15	SL17 0.0-0.15	SL18 0.0-0.15	SL19 0.0-0.15	SL20 0.0-0.15
				09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00
				EB0809216-016	EB0809216-017	EB0809216-018	EB0809216-019	EB0809216-020
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	----	1.0	%	28.2	32.6	23.2	31.2	30.7
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	10	11	10	13	8
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	22	138	670	193	101
Copper	7440-50-8	5	mg/kg	13	43	56	53	28
Lead	7439-92-1	5	mg/kg	6	5	<5	7	13
Nickel	7440-02-0	2	mg/kg	2	9	22	16	10
Zinc	7440-66-6	5	mg/kg	14	17	16	20	16
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	----	<0.05	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	----	<0.05	----	----
beta-BHC	319-85-7	0.05	mg/kg	<0.05	----	<0.05	----	----
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	----	<0.05	----	----
delta-BHC	319-86-8	0.05	mg/kg	<0.05	----	<0.05	----	----
Heptachlor	76-44-8	0.05	mg/kg	<0.05	----	<0.05	----	----
Aldrin	309-00-2	0.05	mg/kg	<0.05	----	<0.05	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	----	<0.05	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	----	<0.05	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	----	<0.05	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	----	<0.05	----	----
Dieldrin	60-57-1	0.05	mg/kg	<0.05	----	<0.05	----	----
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	----	<0.05	----	----
Endrin	72-20-8	0.05	mg/kg	<0.05	----	<0.05	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	----	<0.05	----	----
4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	----	<0.05	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	----	<0.05	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	----	<0.05	----	----
4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	----	<0.2	----	----
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	----	<0.05	----	----
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	----	<0.2	----	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	----	<0.05	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	----	<0.05	----	----
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	----	<0.2	----	----
Dimethoate	60-51-5	0.05	mg/kg	<0.05	----	<0.05	----	----



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

Compound	CAS Number	LOR	Unit	SL16 0.0-0.15	SL17 0.0-0.15	SL18 0.0-0.15	SL19 0.0-0.15	SL20 0.0-0.15
				09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00
				EB0809216-016	EB0809216-017	EB0809216-018	EB0809216-019	EB0809216-020
EP068B: Organophosphorus Pesticides (OP) - Continued								
Diazinon	333-41-5	0.05	mg/kg	<0.05	----	<0.05	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	----	<0.05	----	----
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	----	<0.2	----	----
Malathion	121-75-5	0.05	mg/kg	<0.05	----	<0.05	----	----
Fenthion	55-38-9	0.05	mg/kg	<0.05	----	<0.05	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	----	<0.05	----	----
Parathion	56-38-2	0.2	mg/kg	<0.2	----	<0.2	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	----	<0.05	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	----	<0.05	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	----	<0.05	----	----
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	----	<0.05	----	----
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	----	<0.05	----	----
Ethion	563-12-2	0.05	mg/kg	<0.05	----	<0.05	----	----
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	----	<0.05	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	----	<0.05	----	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.1	%	53.6	----	48.0	----	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.1	%	58.4	----	51.5	----	----



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

Compound	CAS Number	LOR	Unit	SL21 0.0-0.15	SL22 0.0-0.15	SL23 0.0-0.15	SL24 0.0-0.15	SL25 0.0-0.15
				09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00
				EB0809216-021	EB0809216-022	EB0809216-023	EB0809216-024	EB0809216-025
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	----	1.0	%	31.8	31.2	30.1	19.6	20.7
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	16	48	98	81	31
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	125	91	60	37	32
Copper	7440-50-8	5	mg/kg	71	112	98	74	81
Lead	7439-92-1	5	mg/kg	10	7	12	11	313
Nickel	7440-02-0	2	mg/kg	24	20	16	13	26
Zinc	7440-66-6	5	mg/kg	22	23	41	19	312
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	0.1	<0.1	0.1	0.1	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	----	<0.05	----	<0.05	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	----	<0.05	----	<0.05	----
beta-BHC	319-85-7	0.05	mg/kg	----	<0.05	----	<0.05	----
gamma-BHC	58-89-9	0.05	mg/kg	----	<0.05	----	<0.05	----
delta-BHC	319-86-8	0.05	mg/kg	----	<0.05	----	<0.05	----
Heptachlor	76-44-8	0.05	mg/kg	----	<0.05	----	<0.05	----
Aldrin	309-00-2	0.05	mg/kg	----	<0.05	----	<0.05	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg	----	<0.05	----	<0.05	----
trans-Chlordane	5103-74-2	0.05	mg/kg	----	<0.05	----	<0.05	----
alpha-Endosulfan	959-98-8	0.05	mg/kg	----	<0.05	----	<0.05	----
cis-Chlordane	5103-71-9	0.05	mg/kg	----	<0.05	----	<0.05	----
Dieldrin	60-57-1	0.05	mg/kg	----	<0.05	----	<0.05	----
4,4'-DDE	72-55-9	0.05	mg/kg	----	<0.05	----	<0.05	----
Endrin	72-20-8	0.05	mg/kg	----	<0.05	----	<0.05	----
beta-Endosulfan	33213-65-9	0.05	mg/kg	----	<0.05	----	<0.05	----
4,4'-DDD	72-54-8	0.05	mg/kg	----	<0.05	----	<0.05	----
Endrin aldehyde	7421-93-4	0.05	mg/kg	----	<0.05	----	<0.05	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg	----	<0.05	----	<0.05	----
4,4'-DDT	50-29-3	0.2	mg/kg	----	<0.2	----	<0.2	----
Endrin ketone	53494-70-5	0.05	mg/kg	----	<0.05	----	<0.05	----
Methoxychlor	72-43-5	0.2	mg/kg	----	<0.2	----	<0.2	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	----	<0.05	----	<0.05	----
Demeton-S-methyl	919-86-8	0.05	mg/kg	----	<0.05	----	<0.05	----
Monocrotophos	6923-22-4	0.2	mg/kg	----	<0.2	----	<0.2	----
Dimethoate	60-51-5	0.05	mg/kg	----	<0.05	----	<0.05	----



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

Compound	CAS Number	LOR	Unit	SL21 0.0-0.15	SL22 0.0-0.15	SL23 0.0-0.15	SL24 0.0-0.15	SL25 0.0-0.15
				09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00
				EB0809216-021	EB0809216-022	EB0809216-023	EB0809216-024	EB0809216-025
EP068B: Organophosphorus Pesticides (OP) - Continued								
Diazinon	333-41-5	0.05	mg/kg	----	<0.05	----	<0.05	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	----	<0.05	----	<0.05	----
Parathion-methyl	298-00-0	0.2	mg/kg	----	<0.2	----	<0.2	----
Malathion	121-75-5	0.05	mg/kg	----	<0.05	----	<0.05	----
Fenthion	55-38-9	0.05	mg/kg	----	<0.05	----	<0.05	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	----	<0.05	----	<0.05	----
Parathion	56-38-2	0.2	mg/kg	----	<0.2	----	<0.2	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	----	<0.05	----	<0.05	----
Chlorfenvinphos	470-90-6	0.05	mg/kg	----	<0.05	----	<0.05	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	----	<0.05	----	<0.05	----
Fenamiphos	22224-92-6	0.05	mg/kg	----	<0.05	----	<0.05	----
Prothiofos	34643-46-4	0.05	mg/kg	----	<0.05	----	<0.05	----
Ethion	563-12-2	0.05	mg/kg	----	<0.05	----	<0.05	----
Carbophenothion	786-19-6	0.05	mg/kg	----	<0.05	----	<0.05	----
Azinphos Methyl	86-50-0	0.05	mg/kg	----	<0.05	----	<0.05	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.1	%	----	57.5	----	55.6	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.1	%	----	61.4	----	55.9	----



Analytical Results

Sub-Matrix: **SOIL**

Client sample ID

Client sampling date / time

				Duplicate A	Duplicate B	---	---	---
				09-JUL-2008 15:00	09-JUL-2008 15:00	---	---	---
Compound	CAS Number	LOR	Unit	EB0809216-026	EB0809216-027	---	---	---
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	---	1.0	%	16.3	17.3	---	---	---
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	13	81	---	---	---
Cadmium	7440-43-9	1	mg/kg	<1	<1	---	---	---
Chromium	7440-47-3	2	mg/kg	79	42	---	---	---
Copper	7440-50-8	5	mg/kg	106	76	---	---	---
Lead	7439-92-1	5	mg/kg	6	12	---	---	---
Nickel	7440-02-0	2	mg/kg	30	13	---	---	---
Zinc	7440-66-6	5	mg/kg	42	18	---	---	---
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	0.1	---	---	---
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	---	---	---	---
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	---	---	---	---
beta-BHC	319-85-7	0.05	mg/kg	<0.05	---	---	---	---
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	---	---	---	---
delta-BHC	319-86-8	0.05	mg/kg	<0.05	---	---	---	---
Heptachlor	76-44-8	0.05	mg/kg	<0.05	---	---	---	---
Aldrin	309-00-2	0.05	mg/kg	<0.05	---	---	---	---
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	---	---	---	---
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	---	---	---	---
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	---	---	---	---
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	---	---	---	---
Dieldrin	60-57-1	0.05	mg/kg	<0.05	---	---	---	---
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	---	---	---	---
Endrin	72-20-8	0.05	mg/kg	<0.05	---	---	---	---
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	---	---	---	---
4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	---	---	---	---
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	---	---	---	---
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	---	---	---	---
4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	---	---	---	---
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	---	---	---	---
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	---	---	---	---
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	---	---	---	---
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	---	---	---	---
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	---	---	---	---
Dimethoate	60-51-5	0.05	mg/kg	<0.05	---	---	---	---



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

				Duplicate A	Duplicate B	---	---	---
				09-JUL-2008 15:00	09-JUL-2008 15:00	---	---	---
Compound	CAS Number	LOR	Unit	EB0809216-026	EB0809216-027	---	---	---
EP068B: Organophosphorus Pesticides (OP) - Continued								
Diazinon	333-41-5	0.05	mg/kg	<0.05	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	----	----	----	----
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	----	----	----	----
Malathion	121-75-5	0.05	mg/kg	<0.05	----	----	----	----
Fenthion	55-38-9	0.05	mg/kg	<0.05	----	----	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	----	----	----	----
Parathion	56-38-2	0.2	mg/kg	<0.2	----	----	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	----	----	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	----	----	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	----	----	----	----
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	----	----	----	----
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	----	----	----	----
Ethion	563-12-2	0.05	mg/kg	<0.05	----	----	----	----
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	----	----	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	----	----	----	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.1	%	50.3	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.1	%	51.8	----	----	----	----



Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	10	136
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	10	110



Environmental Division

QUALITY CONTROL REPORT

Work Order	: EB0809216	Page	: 1 of 10
Client	: PRECISE ENVIRONMENTAL PTY LTD	Laboratory	: Environmental Division Brisbane
Contact	: MR CHRIS BUTLER	Contact	: Tim Kilmister
Address	: PO BOX 4651 ROBINA TOWN CENTRE QLD, AUSTRALIA 4230	Address	: 32 Shand Street Stafford QLD Australia 4053
E-mail	: mail@preciseenvironmental.com.au	E-mail	: Services.Brisbane@alsenviro.com
Telephone	: +61 55933743	Telephone	: +61-7-3243 7222
Facsimile	: +61 07 55933435	Facsimile	: +61-7-3243 7218
Project	: PE389.08	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: ----	Date Samples Received	: 10-JUL-2008
C-O-C number	: ----	Issue Date	: 18-JUL-2008
Sampler	: CB,LM	No. of samples received	: 27
Order number	: ----	No. of samples analysed	: 27
Quote number	: BN/170/08		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits



NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Matthew Goodwin	Senior Organic Chemist	Inorganics
Matthew Goodwin	Senior Organic Chemist	Organics
Phillip Kennedy	2IC Environmental Laboratory	Inorganics

Environmental Division Brisbane

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General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
 CAS Number = Chemistry Abstract Services number
 LOR = Limit of reporting
 RPD = Relative Percentage Difference
 # = Indicates failed QC



Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR:- No Limit; Result between 10 and 20 times LOR:- 0% - 50%; Result > 20 times LOR:- 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EA055: Moisture Content (QC Lot: 705884)									
EB0809216-001	SL1 0.0-0.15	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	13.9	19.8	35.4	0% - 50%
EB0809216-008	SL8 0.0-0.15	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	27.6	28.0	1.7	0% - 20%
EA055: Moisture Content (QC Lot: 705885)									
EB0809216-021	SL21 0.0-0.15	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	31.8	32.1	0.9	0% - 20%
EG005T: Total Metals by ICP-AES (QC Lot: 706114)									
EB0809213-013	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	25	20	19.2	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	12	11	9.1	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	16	15	6.8	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	21	19	9.8	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	93	89	3.8	0% - 50%
EB0809213-024	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	28	22	25.2	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	17	16	10.5	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	8	5	49.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	43	45	3.6	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	38	28	32.5	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	162	154	5.1	0% - 20%
EG005T: Total Metals by ICP-AES (QC Lot: 706116)									
EB0809216-010	SL10 0.0-0.15	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	88	103	15.9	0% - 20%
		EG005T: Nickel	7440-02-0	2	mg/kg	8	7	17.1	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	18	21	15.2	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	32	31	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	14	13	10.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	42	36	15.2	No Limit
EB0809216-020	SL20 0.0-0.15	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	101	114	12.3	0% - 20%
		EG005T: Nickel	7440-02-0	2	mg/kg	10	10	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	8	9	17.7	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	28	30	4.2	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	13	13	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	16	16	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 706115)									



Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 706115) - continued									
EB0809213-013	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.1	<0.1	0.0	No Limit
EB0809213-024	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.1	0.1	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 706117)									
EB0809216-010	SL10 0.0-0.15	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EB0809216-020	SL20 0.0-0.15	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.1	0.1	0.0	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 705644)									
EB0809213-017	Anonymous	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit		
EB0809216-006	SL6 0.0-0.15	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP068A: Organochlorine Pesticides (OC) (QC Lot: 705644) - continued									
EB0809216-006	SL6 0.0-0.15	EP068: 4.4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 705644)									
EB0809213-017	Anonymous	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit		
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit		
EB0809216-006	SL6 0.0-0.15	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		



Sub-Matrix: **SOIL**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 705644) - continued									
EB0809216-006	SL6 0.0-0.15	EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: SOIL

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High	
EG005T: Total Metals by ICP-AES (QCLot: 706114)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	13.8 mg/kg	101	79.7	120
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	2.82 mg/kg	90.0	80.9	115
EG005T: Chromium	7440-47-3	2	mg/kg	<2	61.6 mg/kg	96.0	87.2	121
EG005T: Copper	7440-50-8	5	mg/kg	<5	54.7 mg/kg	98.0	90.2	122
EG005T: Lead	7439-92-1	5	mg/kg	<5	55.5 mg/kg	94.8	85.9	116
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.1 mg/kg	97.0	87.8	122
EG005T: Zinc	7440-66-6	5	mg/kg	<5	105 mg/kg	95.3	86.7	119
EG005T: Total Metals by ICP-AES (QCLot: 706116)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	13.8 mg/kg	103	79.7	120
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	2.82 mg/kg	93.3	80.9	115
EG005T: Chromium	7440-47-3	2	mg/kg	<2	61.6 mg/kg	98.6	87.2	121
EG005T: Copper	7440-50-8	5	mg/kg	<5	54.7 mg/kg	100	90.2	122
EG005T: Lead	7439-92-1	5	mg/kg	<5	55.5 mg/kg	98.4	85.9	116
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.1 mg/kg	100	87.8	122
EG005T: Zinc	7440-66-6	5	mg/kg	<5	105 mg/kg	98.1	86.7	119
EG035T: Total Recoverable Mercury by FIMS (QCLot: 706115)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	----	----	----	----
		0.10	mg/kg	----	1.34 mg/kg	108	79.5	129
EG035T: Total Recoverable Mercury by FIMS (QCLot: 706117)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	----	----	----	----
		0.10	mg/kg	----	1.34 mg/kg	108	79.5	129
EP068A: Organochlorine Pesticides (OC) (QCLot: 705644)								
EP068: alpha-BHC	319-84-6	0.025	mg/kg	----	0.25 mg/kg	73.4	58.4	114
		0.05	mg/kg	<0.05	----	----	----	----
EP068: Hexachlorobenzene (HCB)	118-74-1	0.025	mg/kg	----	0.25 mg/kg	74.8	57.7	107
		0.05	mg/kg	<0.05	----	----	----	----
EP068: beta-BHC	319-85-7	0.025	mg/kg	----	0.25 mg/kg	72.7	59.3	113
		0.05	mg/kg	<0.05	----	----	----	----
EP068: gamma-BHC	58-89-9	0.025	mg/kg	----	0.25 mg/kg	72.1	59.1	113
		0.05	mg/kg	<0.05	----	----	----	----
EP068: delta-BHC	319-86-8	0.025	mg/kg	----	0.25 mg/kg	73.8	56	117
		0.05	mg/kg	<0.05	----	----	----	----
EP068: Heptachlor	76-44-8	0.025	mg/kg	----	0.25 mg/kg	72.8	57.3	119
		0.05	mg/kg	<0.05	----	----	----	----



Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
EP068A: Organochlorine Pesticides (OC) (QCLot: 705644) - continued									
EP068: Aldrin	309-00-2	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	84.5 ----	58.2 ----	111 ----	
EP068: Heptachlor epoxide	1024-57-3	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	80.1 ----	60.4 ----	113 ----	
EP068: trans-Chlordane	5103-74-2	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	77.6 ----	60.3 ----	114 ----	
EP068: alpha-Endosulfan	959-98-8	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	73.1 ----	56 ----	117 ----	
EP068: cis-Chlordane	5103-71-9	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	77.4 ----	60.8 ----	113 ----	
EP068: Dieldrin	60-57-1	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	74.5 ----	58.8 ----	113 ----	
EP068: 4,4'-DDE	72-55-9	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	74.9 ----	61.2 ----	115 ----	
EP068: Endrin	72-20-8	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	76.3 ----	47 ----	133 ----	
EP068: beta-Endosulfan	33213-65-9	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	74.4 ----	58.5 ----	114 ----	
EP068: 4,4'-DDD	72-54-8	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	76.5 ----	58.4 ----	118 ----	
EP068: Endrin aldehyde	7421-93-4	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	74.7 ----	46.3 ----	115 ----	
EP068: Endosulfan sulfate	1031-07-8	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	75.7 ----	53.6 ----	120 ----	
EP068: 4,4'-DDT	50-29-3	0.025 0.2	mg/kg mg/kg	---- <0.2	0.25 mg/kg ----	71.3 ----	52.6 ----	129 ----	
EP068: Endrin ketone	53494-70-5	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	72.6 ----	51.6 ----	124 ----	
EP068: Methoxychlor	72-43-5	0.025 0.2	mg/kg mg/kg	---- <0.2	0.25 mg/kg ----	74.1 ----	52.4 ----	129 ----	
EP068B: Organophosphorus Pesticides (OP) (QCLot: 705644)									
EP068: Dichlorvos	62-73-7	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	66.8 ----	43.9 ----	113 ----	
EP068: Demeton-S-methyl	919-86-8	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	# 20.7 ----	31.8 ----	112 ----	
EP068: Monocrotophos	6923-22-4	0.025 0.2	mg/kg mg/kg	---- <0.2	0.25 mg/kg ----	73.5 ----	33 ----	130 ----	
EP068: Dimethoate	60-51-5	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	72.4 ----	46.4 ----	129 ----	



Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
				Result	Spike Concentration	Spike Recovery (%)		
						LCS	Low	High
EP068B: Organophosphorus Pesticides (OP) (QCLot: 705644) - continued								
EP068: Diazinon	333-41-5	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	74.7 ----	57.1 ----	114 ----
EP068: Chlorpyrifos-methyl	5598-13-0	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	75.1 ----	58.9 ----	113 ----
EP068: Parathion-methyl	298-00-0	0.025 0.2	mg/kg mg/kg	---- <0.2	0.25 mg/kg ----	75.4 ----	54.8 ----	112 ----
EP068: Malathion	121-75-5	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	79.9 ----	57.8 ----	119 ----
EP068: Fenthion	55-38-9	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	68.3 ----	68 ----	109 ----
EP068: Chlorpyrifos	2921-88-2	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	74.5 ----	62.2 ----	115 ----
EP068: Parathion	56-38-2	0.025 0.2	mg/kg mg/kg	---- <0.2	0.25 mg/kg ----	97.3 ----	54.7 ----	113 ----
EP068: Pirimphos-ethyl	23505-41-1	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	74.9 ----	51.9 ----	121 ----
EP068: Chlorfenvinphos	470-90-6	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	75.0 ----	58 ----	118 ----
EP068: Bromophos-ethyl	4824-78-6	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	75.5 ----	59.8 ----	115 ----
EP068: Fenamiphos	22224-92-6	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	72.8 ----	32.5 ----	101 ----
EP068: Prothiofos	34643-46-4	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	77.0 ----	59.6 ----	116 ----
EP068: Ethion	563-12-2	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	79.7 ----	58.4 ----	115 ----
EP068: Carbophenothion	786-19-6	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	72.7 ----	56.9 ----	117 ----
EP068: Azinphos Methyl	86-50-0	0.025 0.05	mg/kg mg/kg	---- <0.05	0.25 mg/kg ----	89.3 ----	42 ----	130 ----



Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike	Recovery Limits (%)		
				Concentration	MS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 706114)							
EB0809213-015	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	71.2	70	130
		EG005T: Cadmium	7440-43-9	25 mg/kg	89.3	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	90.8	70	130
		EG005T: Copper	7440-50-8	50 mg/kg	94.3	70	130
		EG005T: Lead	7439-92-1	50 mg/kg	82.1	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	91.2	70	130
		EG005T: Zinc	7440-66-6	5 mg/kg	# Not Determined	70	130
EG005T: Total Metals by ICP-AES (QCLot: 706116)							
EB0809216-011	SL11 0.0-0.15	EG005T: Arsenic	7440-38-2	50 mg/kg	71.9	70	130
		EG005T: Cadmium	7440-43-9	25 mg/kg	88.6	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	88.6	70	130
		EG005T: Copper	7440-50-8	50 mg/kg	98.0	70	130
		EG005T: Lead	7439-92-1	50 mg/kg	94.9	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	89.1	70	130
		EG005T: Zinc	7440-66-6	5 mg/kg	# Not Determined	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 706115)							
EB0809213-015	Anonymous	EG035T: Mercury	7439-97-6	5.0 mg/kg	102	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 706117)							
EB0809216-011	SL11 0.0-0.15	EG035T: Mercury	7439-97-6	5.0 mg/kg	97.0	70	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 705644)							
EB0809213-018	Anonymous	EP068: gamma-BHC	58-89-9	0.25 mg/kg	73.7	70	130
		EP068: Heptachlor	76-44-8	0.25 mg/kg	98.4	70	130
		EP068: Aldrin	309-00-2	0.25 mg/kg	73.2	70	130
		EP068: Dieldrin	60-57-1	0.25 mg/kg	70.6	70	130
		EP068: Endrin	72-20-8	1.0 mg/kg	85.7	70	130
		EP068: 4.4'-DDT	50-29-3	1.0 mg/kg	70.3	70	130
		EP068B: Organophosphorus Pesticides (OP) (QCLot: 705644)					
EB0809213-018	Anonymous	EP068: Diazinon	333-41-5	0.25 mg/kg	74.3	70	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.25 mg/kg	72.1	70	130
		EP068: Pirimphos-ethyl	23505-41-1	0.25 mg/kg	73.1	70	130
		EP068: Bromophos-ethyl	4824-78-6	0.25 mg/kg	70.7	70	130
		EP068: Prothiofos	34643-46-4	0.25 mg/kg	# 67.5	70	130



Environmental Division

INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: EB0809216	Page	: 1 of 7
Client	: PRECISE ENVIRONMENTAL PTY LTD	Laboratory	: Environmental Division Brisbane
Contact	: MR CHRIS BUTLER	Contact	: Tim Kilmister
Address	: PO BOX 4651 ROBINA TOWN CENTRE QLD, AUSTRALIA 4230	Address	: 32 Shand Street Stafford QLD Australia 4053
E-mail	: mail@preciseenvironmental.com.au	E-mail	: Services.Brisbane@alsenviro.com
Telephone	: +61 55933743	Telephone	: +61-7-3243 7222
Facsimile	: +61 07 55933435	Facsimile	: +61-7-3243 7218
Project	: PE389.08	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
C-O-C number	: ----	Date Samples Received	: 10-JUL-2008
Sampler	: CB,LM	Issue Date	: 18-JUL-2008
Order number	: ----		
Quote number	: BN/170/08	No. of samples received	: 27
		No. of samples analysed	: 27

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Interpretive Quality Control Report contains the following information:

- Analysis Holding Time Compliance
- Quality Control Parameter Frequency Compliance
- Brief Method Summaries
- Summary of Outliers

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Analysis Holding Time Compliance

The following report summarises extraction / preparation and analysis times and compares with recommended holding times. Dates reported represent first date of extraction or analysis and precludes subsequent dilutions and reruns. Information is also provided re the sample container (preservative) from which the analysis aliquot was taken. Elapsed period to analysis represents number of days from sampling where no extraction / digestion is involved or period from extraction / digestion where this is present. For composite samples, sampling date is assumed to be that of the oldest sample contributing to the composite. Sample date for laboratory produced leachates is assumed as the completion date of the leaching process. Outliers for holding time are based on USEPA SW 846, APHA, AS and NEPM (1999). A listing of breaches is provided in the Summary of Outliers.

Holding times for leachate methods (excluding elutriates) vary according to the analytes being determined on the resulting solution. For non-volatile analytes, the holding time compliance assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These soil holding times are: Organics (14 days); Mercury (28 days) & other metals (180 days). A recorded breach therefore does not guarantee a breach for all non-volatile parameters.

Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EA055: Moisture Content								
Soil Glass Jar - Unpreserved								
SL1 0.0-0.15, SL3 0.0-0.15, SL5 0.0-0.15, SL7 0.0-0.15, SL9 0.0-0.15, SL11 0.0-0.15, SL13 0.0-0.15, SL15 0.0-0.15, SL17 0.0-0.15, SL19 0.0-0.15, SL21 0.0-0.15, SL23 0.0-0.15, SL25 0.0-0.15, Duplicate B	SL2 0.0-0.15, SL4 0.0-0.15, SL6 0.0-0.15, SL8 0.0-0.15, SL10 0.0-0.15, SL12 0.0-0.15, SL14 0.0-0.15, SL16 0.0-0.15, SL18 0.0-0.15, SL20 0.0-0.15, SL22 0.0-0.15, SL24 0.0-0.15, Duplicate A,	09-JUL-2008	----	----	----	15-JUL-2008	16-JUL-2008	✓



Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG005T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved							
SL1 0.0-0.15, SL2 0.0-0.15, SL3 0.0-0.15, SL4 0.0-0.15, SL5 0.0-0.15, SL6 0.0-0.15, SL7 0.0-0.15, SL8 0.0-0.15, SL9 0.0-0.15, SL10 0.0-0.15, SL11 0.0-0.15, SL12 0.0-0.15, SL13 0.0-0.15, SL14 0.0-0.15, SL15 0.0-0.15, SL16 0.0-0.15, SL17 0.0-0.15, SL18 0.0-0.15, SL19 0.0-0.15, SL20 0.0-0.15, SL21 0.0-0.15, SL22 0.0-0.15, SL23 0.0-0.15, SL24 0.0-0.15, SL25 0.0-0.15, Duplicate A, Duplicate B	09-JUL-2008	15-JUL-2008	05-JAN-2009	✓	16-JUL-2008	05-JAN-2009	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved							
SL1 0.0-0.15, SL2 0.0-0.15, SL3 0.0-0.15, SL4 0.0-0.15, SL5 0.0-0.15, SL6 0.0-0.15, SL7 0.0-0.15, SL8 0.0-0.15, SL9 0.0-0.15, SL10 0.0-0.15, SL11 0.0-0.15, SL12 0.0-0.15, SL13 0.0-0.15, SL14 0.0-0.15, SL15 0.0-0.15, SL16 0.0-0.15, SL17 0.0-0.15, SL18 0.0-0.15, SL19 0.0-0.15, SL20 0.0-0.15, SL21 0.0-0.15, SL22 0.0-0.15, SL23 0.0-0.15, SL24 0.0-0.15, SL25 0.0-0.15, Duplicate A, Duplicate B	09-JUL-2008	15-JUL-2008	05-JAN-2009	✓	17-JUL-2008	06-AUG-2008	✓
EP068A: Organochlorine Pesticides (OC)							
Soil Glass Jar - Unpreserved							
SL1 0.0-0.15, SL4 0.0-0.15, SL6 0.0-0.15, SL9 0.0-0.15, SL12 0.0-0.15, SL14 0.0-0.15, SL16 0.0-0.15, SL18 0.0-0.15, SL22 0.0-0.15, SL24 0.0-0.15, Duplicate A	09-JUL-2008	15-JUL-2008	23-JUL-2008	✓	17-JUL-2008	24-AUG-2008	✓



Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EP068B: Organophosphorus Pesticides (OP)								
Soil Glass Jar - Unpreserved								
SL1 0.0-0.15, SL6 0.0-0.15, SL12 0.0-0.15, SL16 0.0-0.15, SL22 0.0-0.15, Duplicate A	SL4 0.0-0.15, SL9 0.0-0.15, SL14 0.0-0.15, SL18 0.0-0.15, SL24 0.0-0.15,	09-JUL-2008	15-JUL-2008	23-JUL-2008	✓	17-JUL-2008	24-AUG-2008	✓



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(where) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Reaular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Moisture Content	EA055-103	3	30	10.0	10.0	✔	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Pesticides by GCMS	EP068	2	19	10.5	10.0	✔	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	4	38	10.5	10.0	✔	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	4	38	10.5	10.0	✔	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
Pesticides by GCMS	EP068	1	19	5.3	5.0	✔	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	2	38	5.3	5.0	✔	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	38	5.3	5.0	✔	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)							
Pesticides by GCMS	EP068	1	19	5.3	5.0	✔	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	2	38	5.3	5.0	✔	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	38	5.3	5.0	✔	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)							
Pesticides by GCMS	EP068	1	19	5.3	5.0	✔	ALS QCS3 requirement
Total Mercury by FIMS	EG035T	2	38	5.3	5.0	✔	ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	38	5.3	5.0	✔	ALS QCS3 requirement



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055-103	SOIL	A gravimetric procedure based on weight loss over a 12 hour drying period at 103-105 degrees C. This method is compliant with NEPM (1999) Schedule B(3) (Method 102)
Total Metals by ICP-AES	EG005T	SOIL	(APHA 21st ed., 3120; USEPA SW 846 - 6010) (ICPAES) Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (1999) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	AS 3550, APHA 21st ed., 3112 Hg - B (Flow-injection (SnCl ₂)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (1999) Schedule B(3)
Pesticides by GCMS	EP068	SOIL	(USEPA SW 846 - 8270B) Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (1999) Schedule B(3) (Method 504,505)
Preparation Methods	Method	Matrix	Method Descriptions
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	USEPA 200.2 Mod. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (1999) Schedule B(3) (Method 202)
Tumbler Extraction of Solids (Option A - Concentrating)	ORG17A	SOIL	In-house, Mechanical agitation (tumbler). 20g of sample, Na ₂ SO ₄ and surrogate are extracted with 150mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.



Summary of Outliers

Outliers : Quality Control Samples

The following report highlights outliers flagged in the Quality Control (QC) Report. Surrogate recovery limits are static and based on USEPA SW846 or ALS-QWI/EN/38 (in the absence of specific USEPA limits). This report displays QC Outliers (breaches) only.

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries							
EP068B: Organophosphorus Pesticides (OP)	793719-002	----	Demeton-S-methyl	919-86-8	20.7 %	31.8-112%	Recovery less than lower control limit
Matrix Spike (MS) Recoveries							
EG005T: Total Metals by ICP-AES	EB0809213-015	Anonymous	Zinc	7440-66-6	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.
EG005T: Total Metals by ICP-AES	EB0809216-011	SL11 0.0-0.15	Zinc	7440-66-6	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.
EP068B: Organophosphorus Pesticides (OP)	EB0809213-018	Anonymous	Prothiofos	34643-46-4	67.5 %	70-130%	Recovery less than lower data quality objective

- For all matrices, no Method Blank value outliers occur.
- For all matrices, no Duplicate outliers occur.

Regular Sample Surrogates

- For all regular sample matrices, no surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

This report displays Holding Time breaches only. Only the respective Extraction / Preparation and/or Analysis component is/are displayed.

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

The following report highlights breaches in the Frequency of Quality Control Samples.

- No Quality Control Sample Frequency Outliers exist.

CHAIN OF CUSTODY DOCUMENTATION

CLIENT: PRECISE ENVIRONMENTAL		LABORATORY BATCH NO.:		Australian Laboratory Services Pty Ltd
POSTAL ADDRESS: PO Box 4651 Robina Town Centre, Queensland, 4230		SAMPLERS: Chris Butler, Luke Merzlikoff		
SEND REPORT TO: Chris Butler		PHONE: 07 5593 3743 E-MAIL: mail@preciseenvironmental.com.au		
DATA NEEDED BY: 16.07.2008		REPORT NEEDED BY: 16.07.2008		REPORT FORMAT: <input type="checkbox"/> HARD: <input type="checkbox"/> FAX: <input type="checkbox"/> DISK: <input type="checkbox"/> BULLETIN BOARD: <input type="checkbox"/> E-MAIL: YES
PROJECT ID: PE389.08	QUOTE NO.: BN/170/08	QC LEVEL: QCS1: <input type="checkbox"/> QCS2: <input type="checkbox"/> QCS3: <input type="checkbox"/> QCS4: <input type="checkbox"/>		

P.O. NO.:	COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:	ANALYSIS REQUIRED									
FOR LAB USE ONLY COOLER SEAL Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Broken <input type="checkbox"/> Intact <input checked="" type="checkbox"/>	PLEASE SEND INTERLAB TO SYDNEY ALS										NOTES
COOLER TEMP: 4.2 deg.C											

SAMPLE DATA				CONTAINER DATA													NOTES					
SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	NO.	pH	S-2 METALS	ASBESTOS	S-19													
1 TP1 0.0 - 0.3	Soil	09.07.08		S				X	X													
2 TP2 0.0 - 0.2	Soil	09.07.08		S				X	X													
3 TP2 0.2 - 0.6	Soil	09.07.08		S				X	X													
4 TP3 0.0 - 0.15	Soil	09.07.08		S				X	X													
5 TP3 0.4 - 1.0	Soil	09.07.08		S				X	X													
6 TP4 0.0 - 0.1	Soil	09.07.08		S				X	X													
7 TP4 0.1 - 0.5	Soil	09.07.08		S				X	X													
8 TP4 0.5 - 0.7	Soil	09.07.08		S				X	X													
9 TP5 0.0 - 0.3	Soil	09.07.08		S				X	X													
10 TP5 0.3 - 0.6	Soil	09.07.08		S				X	X													
11 TP5 1.0 - 1.3	Soil	09.07.08		S				X	X													
12 TP6 0.0 - 0.3	Soil	09.07.08		S				X	X													
13 TP6 0.3 - 0.7	Soil	09.07.08		S				X	X													
14 TP6 0.3 - 0.7(A)	Soil	09.07.08		S				X	X													
15 TP6 0.7 - 1.5	Soil	09.07.08		S				X	X													
16 TP7 0.0 - 0.3	Soil	09.07.08		S				X	X													
17 TP9 0.0 - 0.5	Soil	09.07.08		S				X	X													
18 TP9 0.5 - 1.0	Soil	09.07.08		S				X	X													
19 TP10 0.3 - 0.6	Soil	09.07.08		S				X	X													
20 TP10 1.0 - 1.4	Soil	09.07.08		S				X	X													
21 Stockpile S1	Soil	09.07.08		S				X	X													
22 Stockpile S2	Soil	09.07.08		S				X	X													
23 Stockpile S3	Soil	09.07.08		S				X	X													
								X	X													
24 TP10 1.0 - 1.4 - Interlab	Soil	09.07.08		S				X	X													INTERLAB - SYDNEY ALS
Duplicate C	Soil	09.07.08		S				X	X													

Environmental Division
Brisbane
Work Order
EB0809213



Telephone : + 61-7-3243 7222

NAME: Chris Butler	DATE: 10.07.08	NAME: <i>[Signature]</i>	DATE: 10/7	CONSIGNMENT NOTE NO. 40200926573
OF: PRECISE ENVIRONMENTAL		OF: <i>[Signature]</i>	TIME: 1330	
NAME:	DATE:	NAME:	DATE:	TRANSPORT CO. NAME.
OF:		OF:	TIME:	COURIERS PLEASE

*Container Type and Preservative Codes: P = Neutral Plastic; N = Nitric Acid Preserved; C = Sodium Hydroxide Preserved; J = Solvent Washed Acid Rinced Jar; S = Solvent Washed Acid Rinced Glass Bottle;
 VC = Hydrochloric Acid Preserved Vial; VS = Sulfuric Acid Preserved Vial; BS = Sulfuric Acid Preserved Glass Bottle; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle;
 O = Other.



**Parsons
Brinckerhoff
Australia
Pty Limited** Level 4, 69 Ann Street
Brisbane QLD 4000
GPO Box 2907
Brisbane QLD 4001
Telephone +61 7 3854 6200
Facsimile +61 7 3854 6500
Email brisbane@pb.com.au

ABN 80 078 004 798
NCSI Certified Quality System ISO 9001

Certificate of Analysis

CLIENT:	ALS Environmental	CERTIFICATE NO	2139079C-3798
CLIENT ADDRESS:	32 Shand Street, Stafford QLD 4053	DATE SAMPLED:	9/07/2008
TELEPHONE:	07 3243 7222	DATE RECEIVED:	14/07/2008
FAX:	07 3243 7181	DATE ANALYSED:	18/07/2008
CONTACT:	Christian Villegas		
LOCATION:	EB0809213		
SAMPLED BY:	As Received		
TEST METHOD:	Qualitative identification of asbestos types in bulk samples at Parsons Brinckerhoff Queensland Laboratory by polarised light microscopy, including dispersion staining techniques using Parsons Brinckerhoff in-house method No.1 and N.A.T.A accreditation No.9607. This document is issued in accordance with NATA's accreditation requirements. Accredited for compliance with ISO/IEC:17025.		

<u>Lab Number</u>	<u>Sample Id</u>	<u>Sample Description</u>	<u>Sample Dimensions cm</u>	<u>Identification Type</u>
M001	1 TP1 0.0-0.3	Soil	N/A	NAD
M002	2 TP2 0.0-0.2	Soil	N/A	NAD
M003	3 TP2 0.2-0.6	Soil	N/A	NAD
M004	5 TP3 0.4-1.0	Soil	N/A	NAD
M005	7 TP4 0.1-0.5	Soil	N/A	NAD
M006	8 TP4 0.5-0.7	Soil	N/A	NAD
M007	10 TP5 0.3-0.6	Soil	N/A	NAD
M008	11 TP5 1.0-1.3	Soil	N/A	NAD

LEGEND

- NAD - No Asbestos Detected
- CH - Chrysotile Asbestos Detected
- A - Amosite Asbestos Detected
- C - Crocidolite Asbestos Detected
- UMF - Unknown Mineral Fibres Detected



ACCREDITED FOR
**TECHNICAL
COMPETENCE**

Notes:

If no asbestos is detected in vinyl tiles, mastics, sealants, epoxy resins and ore samples then confirmation by another independent analytical technique is advised due to the nature of the samples.

The results contained within this report relate only to the sample(s) submitted for testing. PB accepts no responsibility for the initial collection, packaging or transportation of samples submitted by external persons. NATA does not accredit sampling. This document may not be reproduced except in full.

Approved Identifier
Name: Michael Shepherd
Signature

Approved Signatory
Name: Michael Shepherd
Signature

AUTHORISATION DATE
18/07/2008



**Parsons
Brinckerhoff
Australia
Pty Limited** Level 4, 69 Ann Street
Brisbane QLD 4000
GPO Box 2907
Brisbane QLD 4001
Telephone +61 7 3854 6200
Facsimile +61 7 3854 6500
Email brisbane@pb.com.au

ABN 80 078 004 798
NCSI Certified Quality System ISO 9001

Certificate of Analysis

Certificate: ALS Environmental

Certificate NO: 2139079C-3798

LOCATION: EB0809213

<u>Lab Number</u>	<u>Sample Id</u>	<u>Sample Description</u>	<u>Sample Dimensions</u> cm	<u>Identification Type</u>
M009	13 TP6 0.3-0.7	Soil	N/A	NAD
M010	14 TP6 0.3-0.7(A)	Fibrous Cement Sheeting	1 x 1	CH, A
M011	15 TP6 0.7-1.5	Soil	N/A	NAD
M012	17 TP9 0.0-0.5	Soil	N/A	NAD
M013	19 TP10 0.3-0.6	Soil	N/A	NAD
M014	20 TP10 1.0-1.4	Soil	N/A	NAD
M015	21 Stock pile S1	Soil	N/A	NAD
M016	23 Stock pile S3	Soil	N/A	NAD
M017	24 Duplicate L	Soil	N/A	NAD

LEGEND

- NAD - No Asbestos Detected
- CH - Chrysotile Asbestos Detected
- A - Amosite Asbestos Detected
- C - Crocidolite Asbestos Detected
- UMF - Unknown Mineral Fibres Detected



Notes:

If no asbestos is detected in vinyl tiles, mastics, sealants, epoxy resins and ore samples then confirmation by another independent analytical technique is advised due to the nature of the samples.

The results contained within this report relate only to the sample(s) submitted for testing. PB accepts no responsibility for the initial collection, packaging or transportation of samples submitted by external persons. NATA does not accredit sampling. This document may not be reproduced except in full.

Approved Identifier

Name: Michael Shepherd

Signature

Approved Signatory

Name: Michael Shepherd

Signature

AUTHORISATION DATE

18/07/2008



Environmental Division

SAMPLE RECEIPT NOTIFICATION (SRN)
Comprehensive Report

Work Order : EB0809896

Client	: PRECISE ENVIRONMENTAL PTY LTD	Laboratory	: Environmental Division Brisbane
Contact	: MR LUKE MERZLIKOFF	Contact	: Tim Kilmister
Address	: PO BOX 4424 ROBINA TOWN CENTRE QLD, AUSTRALIA 4230	Address	: 32 Shand Street Stafford QLD Australia 4053
E-mail	: mail@preciseenvironmental.com.au	E-mail	: Services.Brisbane@alsenviro.com
Telephone	: +61 07 55933743	Telephone	: +61-7-3243 7222
Facsimile	: +61 07 55933435	Facsimile	: +61-7-3243 7218
Project	: PE389.08	Page	: 1 of 2
Order number	: ----		
C-O-C number	: ----	Quote number	: EB2008PREENV0127 (BN/170/08)
Site	: ----		
Sampler	: C.B / L.M	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement

Dates

Date Samples Received	: 25-JUL-2008	Issue Date	: 25-JUL-2008 10:31
Client Requested Due Date	: 30-JUL-2008	Scheduled Reporting Date	: 30-JUL-2008

Delivery Details

Mode of Delivery	: Samples on hand	Temperature	: AMBIENT
No. of coolers/boxes	: REBATCH	No. of samples received	: 7
Security Seal	: Intact.	No. of samples analysed	: 7

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Requested Deliverables
- **Samples received in appropriately pretreated and preserved containers.**
- **Sample(s) have been received within recommended holding times.**
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Please direct any queries related to sample condition / numbering / breakages to Maggie Kahi.
- Analytical work for this work order will be conducted at ALS Brisbane.
- Sample Disposal - Aqueous (14 days), Solid (90 days) from date of completion of work order.



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- No sample container / preservation non-compliance exist.

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing

Matrix: SOIL

Laboratory sample ID	Client sampling date / time	Client sample ID	SOIL - EA055-103 Moisture Content	SOIL - EG005C Leachable Metals by ICPAES	SOIL - EG005T (solids) Total Metals by ICP-AES	SOIL - EG050G Hexavalent Chromium By Discrete Analyser	SOIL - TCLP TCLP Leach
EB0809896-001	09-JUL-2008 10:00	SL17 0.0-0.15		✓			
	09-JUL-2008 15:00	SL17 0.0-0.15	✓		✓	✓	✓
EB0809896-002	09-JUL-2008 10:00	SL18 0.0-0.15		✓			
	09-JUL-2008 15:00	SL18 0.0-0.15	✓		✓	✓	✓
EB0809896-003	09-JUL-2008 10:00	SL19 0.0-0.15		✓			
	09-JUL-2008 15:00	SL19 0.0-0.15	✓		✓	✓	✓
EB0809896-004	09-JUL-2008 10:00	SL20 0.0-0.15		✓			
	09-JUL-2008 15:00	SL20 0.0-0.15	✓		✓	✓	✓
EB0809896-005	09-JUL-2008 10:00	SL21 0.0-0.15		✓			
	09-JUL-2008 15:00	SL21 0.0-0.15	✓		✓	✓	✓
EB0809896-006	09-JUL-2008 10:00	SL25 0.0-0.15		✓			
	09-JUL-2008 15:00	SL25 0.0-0.15	✓		✓	✓	✓
EB0809896-007	09-JUL-2008 10:00	Stockpile S2		✓			
	09-JUL-2008 15:00	Stockpile S2	✓		✓	✓	✓

Requested Deliverables

MR CHRIS BUTLER

- *AU Certificate of Analysis - NATA
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep)
- *AU QC Report ζ DEFAULT (Anon QC Rep) - NATA
- A4 - AU Sample Receipt Notification - Environmental
- Default - Chain of Custody
- EDI Format - ENMRG
- EDI Format - XTab

Email mail@preciseenvironmental.com.au
Email mail@preciseenvironmental.com.au
Email mail@preciseenvironmental.com.au
Email mail@preciseenvironmental.com.au
Email mail@preciseenvironmental.com.au
Email mail@preciseenvironmental.com.au
Email mail@preciseenvironmental.com.au

MR LUKE MERZLIKOFF

- *AU Certificate of Analysis - NATA
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep)
- *AU QC Report ζ DEFAULT (Anon QC Rep) - NATA
- A4 - AU Sample Receipt Notification - Environmental
- Default - Chain of Custody
- EDI Format - ENMRG
- EDI Format - XTab

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Email mail@preciseenvironmental.com.au
Email mail@preciseenvironmental.com.au
Email mail@preciseenvironmental.com.au

THE ACCOUNTS PAYABLE

- A4 - AU Tax Invoice

Email envlims_invoicing.eb@alsenviro.com

30/7 05

Carsten Emrich

From: Michael Heery
Sent: Friday, July 25, 2008 8:54 AM
To: Carsten Emrich
Cc: Tim Kilmister; Phillip Kennedy
Subject: FW:
Importance: High

Carsten,

Can you get this rebatch underway please. Given that the interlab samples to Sydney were missed, we should aim to get the total analysis out in the requested 3 days. If you don't think the TCLP's will be possible, give Chris a call and let him know.

Mick

Michael Heery
 Business Manager - Queensland
ALS Laboratory Group
Environmental Division
 Phone: +61 7 3243 7222
 Fax: +61 7 3243 7218
 Mobile: 0437 011 925
www.alsglobal.com

Environmental Division
 Brisbane
 Work Order

EB0809896



Telephone : +61-7-3243 7222

From: Precise Environmental [mailto:mail@preciseenvironmental.com.au]
Sent: Thursday, 24 July 2008 9:04 PM
To: Michael Heery
Cc: 'John Sherwood'
Subject:
Importance: High

Michael,

Can you please arrange the following additional testing with a three (3) day turnaround.

EB0809216

1. EB0809216-017 Total chromium, chromium VI, chromium TCLP
2. EB0809216-018 Total chromium, chromium VI, chromium TCLP
3. EB0809216-019 Total chromium, chromium VI, chromium TCLP
4. EB0809216-020 Total chromium, chromium VI, chromium TCLP
5. EB0809216-021 Total chromium, chromium VI, chromium TCLP
6. EB0809216-025 Total chromium, chromium VI, chromium TCLP
7. EB0809216-025 Lead, Lead TCLP

EB0809213

1. EB0809213-022 Total chromium, chromium VI, chromium TCLP

Also, can you please check on the interlab duplicates (Sydney) for the subject work orders.

Regards

Chris Butler
 Director | Senior Environmental Scientist

7/25/2008



Environmental Division

CERTIFICATE OF ANALYSIS

Work Order	: EB0809896	Page	: 1 of 6
Client	: PRECISE ENVIRONMENTAL PTY LTD	Laboratory	: Environmental Division Brisbane
Contact	: MR LUKE MERZLIKOFF	Contact	: Tim Kilmister
Address	: PO BOX 4424 ROBINA TOWN CENTRE QLD, AUSTRALIA 4230	Address	: 32 Shand Street Stafford QLD Australia 4053
E-mail	: mail@preciseenvironmental.com.au	E-mail	: Services.Brisbane@alsenviro.com
Telephone	: +61 07 55933743	Telephone	: +61-7-3243 7222
Facsimile	: +61 07 55933435	Facsimile	: +61-7-3243 7218
Project	: PE389.08	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Order number	: ----	Date Samples Received	: 25-JUL-2008
C-O-C number	: ----	Issue Date	: 30-JUL-2008
Sampler	: C.B / L.M	No. of samples received	: 7
Site	: ----	No. of samples analysed	: 7
Quote number	: BN/170/08		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results



NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Kim McCabe	Senior Inorganic Chemist	Inorganics

Environmental Division Brisbane

Part of the **ALS Laboratory Group**

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General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client.

Key : CAS Number = Chemistry Abstract Services number

LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

				SL17 0.0-0.15	SL18 0.0-0.15	SL19 0.0-0.15	SL20 0.0-0.15	SL21 0.0-0.15
				09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00	09-JUL-2008 15:00
Compound	CAS Number	LOR	Unit	EB0809896-001	EB0809896-002	EB0809896-003	EB0809896-004	EB0809896-005
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	----	1.0	%	36.6	24.4	34.1	31.0	33.0
EG005T: Total Metals by ICP-AES								
Chromium	7440-47-3	2	mg/kg	144	690	200	105	114
EG050G: Hexavalent Chromium by Discrete Analyser								
Hexavalent Chromium - Soluble	----	1.0	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
EN33: TCLP Leach								
Initial pH	----	0.1	pH Unit	5.6	5.1	5.2	5.5	5.4
After HCl pH	----	0.1	pH Unit	1.3	1.3	1.3	1.4	1.3
Extraction Fluid Number	----	1	-	1	1	1	1	1
Final pH	----	0.1	pH Unit	4.9	4.9	4.9	4.9	4.9



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

				SL25 0.0-0.15	Stockpile S2	----	----	----
				09-JUL-2008 15:00	09-JUL-2008 15:00	----	----	----
Compound	CAS Number	LOR	Unit	EB0809896-006	EB0809896-007	----	----	----
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	----	1.0	%	18.1	19.4	----	----	----
EG005T: Total Metals by ICP-AES								
Chromium	7440-47-3	2	mg/kg	26	246	----	----	----
Lead	7439-92-1	5	mg/kg	58	----	----	----	----
EG050G: Hexavalent Chromium by Discrete Analyser								
Hexavalent Chromium - Soluble	----	1.0	mg/kg	<1.0	<1.0	----	----	----
EN33: TCLP Leach								
Initial pH	----	0.1	pH Unit	6.1	5.8	----	----	----
After HCl pH	----	0.1	pH Unit	1.2	1.3	----	----	----
Extraction Fluid Number	----	1	-	1	1	----	----	----
Final pH	----	0.1	pH Unit	4.9	4.9	----	----	----



Analytical Results

Sub-Matrix: **TCLP LEACHATE**

Client sample ID

Client sampling date / time

				SL17 0.0-0.15	SL18 0.0-0.15	SL19 0.0-0.15	SL20 0.0-0.15	SL21 0.0-0.15
				29-JUL-2008 11:16	29-JUL-2008 11:16	29-JUL-2008 11:16	29-JUL-2008 11:16	29-JUL-2008 11:16
<i>Compound</i>	<i>CAS Number</i>	<i>LOR</i>	<i>Unit</i>	EB0809896-001	EB0809896-002	EB0809896-003	EB0809896-004	EB0809896-005
EG005C: Leachable Metals by ICPAES								
Chromium	7440-47-3	0.1	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1



Analytical Results

Sub-Matrix: **TCLP LEACHATE**

Client sample ID

Client sampling date / time

				SL25 0.0-0.15	Stockpile S2	----	----	----
				29-JUL-2008 11:16	29-JUL-2008 11:16	----	----	----
<i>Compound</i>	<i>CAS Number</i>	<i>LOR</i>	<i>Unit</i>	EB0809896-006	EB0809896-007	----	----	----
EG005C: Leachable Metals by ICPAES								
Chromium	7440-47-3	0.1	mg/L	<0.1	<0.1	----	----	----
Lead	7439-92-1	0.1	mg/L	<0.1	----	----	----	----



Environmental Division

QUALITY CONTROL REPORT

Work Order	: EB0809896	Page	: 1 of 5
Client	: PRECISE ENVIRONMENTAL PTY LTD	Laboratory	: Environmental Division Brisbane
Contact	: MR LUKE MERZLIKOFF	Contact	: Tim Kilmister
Address	: PO BOX 4424 ROBINA TOWN CENTRE QLD, AUSTRALIA 4230	Address	: 32 Shand Street Stafford QLD Australia 4053
E-mail	: mail@preciseenvironmental.com.au	E-mail	: Services.Brisbane@alsenviro.com
Telephone	: +61 07 55933743	Telephone	: +61-7-3243 7222
Facsimile	: +61 07 55933435	Facsimile	: +61-7-3243 7218
Project	: PE389.08	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: ----	Date Samples Received	: 25-JUL-2008
C-O-C number	: ----	Issue Date	: 30-JUL-2008
Sampler	: C.B / L.M	No. of samples received	: 7
Order number	: ----	No. of samples analysed	: 7
Quote number	: BN/170/08		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits



NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Kim McCabe	Senior Inorganic Chemist	Inorganics

Environmental Division Brisbane

Part of the **ALS Laboratory Group**

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General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
 CAS Number = Chemistry Abstract Services number
 LOR = Limit of reporting
 RPD = Relative Percentage Difference
 # = Indicates failed QC



Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR:- No Limit; Result between 10 and 20 times LOR:- 0% - 50%; Result > 20 times LOR:- 0% - 20%.

Sub-Matrix: SOIL

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EA055: Moisture Content (QC Lot: 716030)									
EB0809870-004	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	7.1	7.2	0.0	No Limit
EB0809896-003	SL19 0.0-0.15	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	34.1	36.0	5.2	0% - 20%
EG005T: Total Metals by ICP-AES (QC Lot: 716036)									
EB0809870-001	Anonymous	EG005T: Chromium	7440-47-3	2	mg/kg	2	2	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	6	6	0.0	No Limit
EB0809896-001	SL17 0.0-0.15	EG005T: Chromium	7440-47-3	2	mg/kg	144	145	0.0	0% - 20%
		EG005T: Lead	7439-92-1	5	mg/kg	6	5	0.0	No Limit
EG050G: Hexavalent Chromium by Discrete Analyser (QC Lot: 716243)									
EB0809896-001	SL17 0.0-0.15	EG050G: Hexavalent Chromium - Soluble	----	1.0	mg/kg	<1.0	<1.0	0.0	No Limit

Sub-Matrix: WATER

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG005C: Leachable Metals by ICPAES (QC Lot: 717530)									
EB0809728-001	Anonymous	EG005C: Chromium	7440-47-3	0.1	mg/L	<0.1	<0.1	0.0	No Limit
		EG005C: Lead	7439-92-1	0.1	mg/L	0.1	0.1	0.0	No Limit
EB0809953-001	Anonymous	EG005C: Chromium	7440-47-3	0.1	mg/L	<0.1	<0.1	0.0	No Limit
		EG005C: Lead	7439-92-1	0.1	mg/L	<0.1	<0.1	0.0	No Limit



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: SOIL

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High	
EG005T: Total Metals by ICP-AES (QCLot: 716036)								
EG005T: Chromium	7440-47-3	2	mg/kg	<2	61.6 mg/kg	96.8	87.2	121
EG005T: Lead	7439-92-1	5	mg/kg	<5	55.5 mg/kg	94.9	85.9	116
EG050G: Hexavalent Chromium by Discrete Analyser (QCLot: 716243)								
EG050G: Hexavalent Chromium - Soluble	----	1	mg/kg	----	0.5 mg/kg	104	70	130
		1.0	mg/kg	<1.0	----	----	----	----



Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

				<i>Matrix Spike (MS) Report</i>			
				<i>Spike</i>	<i>Spike Recovery (%)</i>	<i>Recovery Limits (%)</i>	
<i>Laboratory sample ID</i>	<i>Client sample ID</i>	<i>Method: Compound</i>	<i>CAS Number</i>	<i>Concentration</i>	<i>MS</i>	<i>Low</i>	<i>High</i>
EG005T: Total Metals by ICP-AES (QCLot: 716036)							
EB0809712-002	Anonymous	EG005T: Chromium	7440-47-3	50 mg/kg	96.6	70	130
		EG005T: Lead	7439-92-1	50 mg/kg	99.8	70	130
EG050G: Hexavalent Chromium by Discrete Analyser (QCLot: 716243)							
EB0809896-002	SL18 0.0-0.15	EG050G: Hexavalent Chromium - Soluble	----	2.5 mg/kg	96.7	70	130



Environmental Division

INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: EB0809896	Page	: 1 of 5
Client	: PRECISE ENVIRONMENTAL PTY LTD	Laboratory	: Environmental Division Brisbane
Contact	: MR LUKE MERZLIKOFF	Contact	: Tim Kilmister
Address	: PO BOX 4424 ROBINA TOWN CENTRE QLD, AUSTRALIA 4230	Address	: 32 Shand Street Stafford QLD Australia 4053
E-mail	: mail@preciseenvironmental.com.au	E-mail	: Services.Brisbane@alsenviro.com
Telephone	: +61 07 55933743	Telephone	: +61-7-3243 7222
Facsimile	: +61 07 55933435	Facsimile	: +61-7-3243 7218
Project	: PE389.08	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
C-O-C number	: ----	Date Samples Received	: 25-JUL-2008
Sampler	: C.B / L.M	Issue Date	: 30-JUL-2008
Order number	: ----		
Quote number	: BN/170/08	No. of samples received	: 7
		No. of samples analysed	: 7

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Interpretive Quality Control Report contains the following information:

- Analysis Holding Time Compliance
- Quality Control Parameter Frequency Compliance
- Brief Method Summaries
- Summary of Outliers

Environmental Division Brisbane

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Analysis Holding Time Compliance

The following report summarises extraction / preparation and analysis times and compares with recommended holding times. Dates reported represent first date of extraction or analysis and precludes subsequent dilutions and reruns. Information is also provided re the sample container (preservative) from which the analysis aliquot was taken. Elapsed period to analysis represents number of days from sampling where no extraction / digestion is involved or period from extraction / digestion where this is present. For composite samples, sampling date is assumed to be that of the oldest sample contributing to the composite. Sample date for laboratory produced leachates is assumed as the completion date of the leaching process. Outliers for holding time are based on USEPA SW 846, APHA, AS and NEPM (1999). A listing of breaches is provided in the Summary of Outliers.

Holding times for leachate methods (excluding elutriates) vary according to the analytes being determined on the resulting solution. For non-volatile analytes, the holding time compliance assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These soil holding times are: Organics (14 days); Mercury (28 days) & other metals (180 days). A recorded breach therefore does not guarantee a breach for all non-volatile parameters.

Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EA055: Moisture Content								
Soil Glass Jar - Unpreserved SL17 0.0-0.15, SL19 0.0-0.15, SL21 0.0-0.15, Stockpile S2	SL18 0.0-0.15, SL20 0.0-0.15, SL25 0.0-0.15,	09-JUL-2008	----	----	----	28-JUL-2008	16-JUL-2008	*
EG005C: Leachable Metals by ICPAES								
Clear Plastic Bottle - Nitric Acid; Unfiltered SL17 0.0-0.15, SL19 0.0-0.15, SL21 0.0-0.15, Stockpile S2	SL18 0.0-0.15, SL20 0.0-0.15, SL25 0.0-0.15,	29-JUL-2008	29-JUL-2008	25-JAN-2009	✓	29-JUL-2008	25-JAN-2009	✓
EG005T: Total Metals by ICP-AES								
Soil Glass Jar - Unpreserved SL17 0.0-0.15, SL19 0.0-0.15, SL21 0.0-0.15, Stockpile S2	SL18 0.0-0.15, SL20 0.0-0.15, SL25 0.0-0.15,	09-JUL-2008	28-JUL-2008	05-JAN-2009	✓	28-JUL-2008	05-JAN-2009	✓
EG050G: Hexavalent Chromium by Discrete Analyser								
Soil Glass Jar - Unpreserved SL17 0.0-0.15, SL19 0.0-0.15, SL21 0.0-0.15, Stockpile S2	SL18 0.0-0.15, SL20 0.0-0.15, SL25 0.0-0.15,	09-JUL-2008	---	06-AUG-2008	----	30-JUL-2008	06-AUG-2008	✓
EN33: TCLP Leach								
Lab Split: Leach for metals excl. Hg SL17 0.0-0.15, SL19 0.0-0.15, SL21 0.0-0.15, Stockpile S2	SL18 0.0-0.15, SL20 0.0-0.15, SL25 0.0-0.15,	09-JUL-2008	---	---	----	29-JUL-2008	05-JAN-2009	✓



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(where) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Regular	Actual	Expected	Evaluation	
Analytical Methods							
Laboratory Duplicates (DUP)							
Hexavalent Soluble By Discrete Analyser	EG050G	1	7	14.3	10.0	✔	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Moisture Content	EA055-103	2	19	10.5	10.0	✔	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	15	13.3	10.0	✔	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
Hexavalent Soluble By Discrete Analyser	EG050G	1	7	14.3	5.0	✔	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	15	6.7	5.0	✔	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)							
Hexavalent Soluble By Discrete Analyser	EG050G	1	7	14.3	5.0	✔	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	15	6.7	5.0	✔	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)							
Hexavalent Soluble By Discrete Analyser	EG050G	1	7	14.3	5.0	✔	ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	15	6.7	5.0	✔	ALS QCS3 requirement



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055-103	SOIL	A gravimetric procedure based on weight loss over a 12 hour drying period at 103-105 degrees C. This method is compliant with NEPM (1999) Schedule B(3) (Method 102)
Leachable Metals by ICPAES	EG005C	SOIL	APHA 21st ed., 3120; USEPA SW 846 - 6010 The ICPAES technique ionises leachate sample atoms emitting a characteristic spectrum. This spectrum is then compared against matrix matched standards for quantification. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Total Metals by ICP-AES	EG005T	SOIL	(APHA 21st ed., 3120; USEPA SW 846 - 6010) (ICPAES) Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (1999) Schedule B(3)
Hexavalent Soluble By Discrete Analyser	EG050G	SOIL	APHA 21st ed., 3500 Cr-A & B. Hexavalent chromium is determined directly on water sample by Seal Discrete Analyser as received by pH adjustment and colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Preparation Methods	Method	Matrix	Method Descriptions
Digestion for Total Recoverable Metals	EN25C	SOIL	USEPA SW846-3005 Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
TCLP for Non & Semivolatile Analytes	EN33a	SOIL	(USEPA SW846-1311, ALS QWI-EN/33) The TCLP procedure is designed to determine the mobility of both organic and inorganic analytes present in wastes. The standard TCLP leach is for non-volatile and Semivolatile test parameters.
1:5 solid / water leach for soluble analytes	EN34	SOIL	10 g of soil is mixed with 50 mL of distilled water and tumbled end over end for 1 hour. Water soluble salts are leached from the soil by the continuous suspension. Samples are settled and the water filtered off for analysis.
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	USEPA 200.2 Mod. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (1999) Schedule B(3) (Method 202)



Summary of Outliers

Outliers : Quality Control Samples

The following report highlights outliers flagged in the Quality Control (QC) Report. Surrogate recovery limits are static and based on USEPA SW846 or ALS-QWI/EN/38 (in the absence of specific USEPA limits). This report displays QC Outliers (breaches) only.

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EG005C: Leachable Metals by ICPAES	EB0809884-001	Anonymous	Lead	7439-92-1	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.

- For all matrices, no Method Blank value outliers occur.
- For all matrices, no Duplicate outliers occur.
- For all matrices, no Laboratory Control outliers occur.

Regular Sample Surrogates

- For all regular sample matrices, no surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

This report displays Holding Time breaches only. Only the respective Extraction / Preparation and/or Analysis component is/are displayed.

Matrix: **SOIL**

Method	Extraction / Preparation			Analysis			
	Container / Client Sample ID(s)	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EA055: Moisture Content							
Soil Glass Jar - Unpreserved							
SL17 0.0-0.15, SL19 0.0-0.15, SL21 0.0-0.15, Stockpile S2	SL18 0.0-0.15, SL20 0.0-0.15, SL25 0.0-0.15,	----	----	----	28-JUL-2008	16-JUL-2008	12

Outliers : Frequency of Quality Control Samples

The following report highlights breaches in the Frequency of Quality Control Samples.

- No Quality Control Sample Frequency Outliers exist.



Environmental Division

SAMPLE RECEIPT NOTIFICATION (SRN)
Comprehensive Report

Work Order : ES0810658

Client	: PRECISE ENVIRONMENTAL PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: MR CHRIS BUTLER	Contact	: Victor Kedicioglu
Address	: PO BOX 4424 ROBINA TOWN CENTRE QLD, AUSTRALIA 4230	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: mail@preciseenvironmental.com.au	E-mail	: victor.kedicioglu@alsenviro.com
Telephone	: +61 55933743	Telephone	: +61-2-8784 8555
Facsimile	: +61 07 55933435	Facsimile	: +61-2-8784 8500
Project	: PE389.08	Page	: 1 of 2
Order number	: ----		
C-O-C number	: ----	Quote number	: EB2008PREENV0127 (BN/170/08)
Site	: ----		
Sampler	: CB, LM	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement

Dates

Date Samples Received	: 24-JUL-2008	Issue Date	: 25-JUL-2008 17:33
Client Requested Due Date	: 16-JUL-2008	Scheduled Reporting Date	: 04-AUG-2008

Delivery Details

Mode of Delivery	: Carrier	Temperature	: CHILLED - Ice present
No. of coolers/boxes	: 1 HARD	No. of samples received	: 1
Security Seal	: Intact.	No. of samples analysed	: 1

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Requested Deliverables
- Samples received in appropriately pretreated and preserved containers.
- Asbestos analysis will be subcontracted to ASET.
- **Samples received in appropriately pretreated and preserved containers.**
- **Sample(s) have been received within recommended holding times.**
- **Sample(s) requiring volatile organic compound analysis received in airtight containers (ZHE).**
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Please direct any queries related to sample condition / numbering / breakages to Nanthini Coilparampil
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (14 days), Solid (90 days) from date of completion of work order.



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- No sample container / preservation non-compliance exist.

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing

Matrix: SOIL

Laboratory sample ID	Client sampling date / time	Client sample ID	SOIL - S-19 TPH/BTEX/Ph/OC/OP/PCB/8 metals
ES0810658-001	09-JUL-2008 15:00	TP10 1.0-1.4 - INTER...	✓

Requested Deliverables

MR CHRIS BUTLER

- | | | |
|--|-------|----------------------------------|
| - *AU Certificate of Analysis - NATA | Email | mail@preciseenvironmental.com.au |
| - *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) | Email | mail@preciseenvironmental.com.au |
| - *AU QC Report \bar{x} DEFAULT (Anon QC Rep) - NATA | Email | mail@preciseenvironmental.com.au |
| - A4 - AU Sample Receipt Notification - Environmental | Email | mail@preciseenvironmental.com.au |
| - Default - Chain of Custody | Email | mail@preciseenvironmental.com.au |
| - EDI Format - ENMRG | Email | mail@preciseenvironmental.com.au |
| - Trigger - Subcontract Report | Email | mail@preciseenvironmental.com.au |

RESULTS ADDRESS

- | | | |
|--|-------|----------------------------------|
| - *AU Certificate of Analysis - NATA | Email | mail@preciseenvironmental.com.au |
| - *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) | Email | mail@preciseenvironmental.com.au |
| - *AU QC Report \bar{x} DEFAULT (Anon QC Rep) - NATA | Email | mail@preciseenvironmental.com.au |
| - A4 - AU Sample Receipt Notification - Environmental | Email | mail@preciseenvironmental.com.au |
| - Default - Chain of Custody | Email | mail@preciseenvironmental.com.au |
| - EDI Format - ENMRG | Email | mail@preciseenvironmental.com.au |
| - Trigger - Subcontract Report | Email | mail@preciseenvironmental.com.au |

THE ACCOUNTS PAYABLE

- | | | |
|-----------------------|-------|------------------------------------|
| - A4 - AU Tax Invoice | Email | envlims_invoicing.eb@alsenviro.com |
|-----------------------|-------|------------------------------------|



Environmental Division

CERTIFICATE OF ANALYSIS

Work Order	: ES0810658	Page	: 1 of 8
Client	: PRECISE ENVIRONMENTAL PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: RESULTS ADDRESS	Contact	: Victor Kedicioglu
Address	: PO BOX 4424	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
	ROBINA TOWN CENTRE QLD, AUSTRALIA 4230		
E-mail	: mail@preciseenvironmental.com.au	E-mail	: victor.kedicioglu@alsenviro.com
Telephone	: +61 07 55933743	Telephone	: +61-2-8784 8555
Facsimile	: +61 07 55933435	Facsimile	: +61-2-8784 8500
Project	: PE389.08	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 24-JUL-2008
Sampler	: CB, LM	Issue Date	: 04-AUG-2008
Site	: ----		
Quote number	: BN/170/08	No. of samples received	: 1
		No. of samples analysed	: 1

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits



NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Celine Conceicao	Spectroscopist	Inorganics
Edwandy Fadjar	Senior Organic Chemist	Organics
Hoang Nguyen	Inorganic Chemist	Inorganics
Sanjeshni Jyoyi Mala	Senior Chemist Volatile	Organics
Victor Kedicioglu	Business Manager - NSW	Inorganics

Environmental Division Sydney
Part of the **ALS Laboratory Group**

277-289 Woodpark Road Smithfield NSW Australia 2164
Tel. +61-2-8784 8555 Fax. +61-2-8784 8500 www.alsglobal.com

A Campbell Brothers Limited Company





General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client.

Key : CAS Number = Chemistry Abstract Services number

LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting

- **EG005T: Poor precision was obtained for Zn on batch ES0810546#6 due to sample heterogeneity.**
- **EP071, EP080, EP075(SIM), EP068: Samples not received in a suitable timeframe to conduct the analysis within the recommended holding time.**



Analytical Results

Sub-Matrix: **SOIL**

Client sample ID

Client sampling date / time

Compound	CAS Number	LOR	Unit	TP10 1.0-1.4 - INTERLAB				
				09-JUL-2008 15:00				
				ES0810658-001				
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)		1.0	%	26.8				
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5				
Cadmium	7440-43-9	1	mg/kg	<1				
Chromium	7440-47-3	2	mg/kg	20				
Copper	7440-50-8	5	mg/kg	32				
Lead	7439-92-1	5	mg/kg	52				
Nickel	7440-02-0	2	mg/kg	21				
Zinc	7440-66-6	5	mg/kg	211				
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	0.1				
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls		0.10	mg/kg	<0.10				
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05				
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05				
beta-BHC	319-85-7	0.05	mg/kg	<0.05				
gamma-BHC	58-89-9	0.05	mg/kg	<0.05				
delta-BHC	319-86-8	0.05	mg/kg	<0.05				
Heptachlor	76-44-8	0.05	mg/kg	<0.05				
Aldrin	309-00-2	0.05	mg/kg	<0.05				
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05				
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05				
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05				
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05				
Dieldrin	60-57-1	0.05	mg/kg	<0.05				
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05				
Endrin	72-20-8	0.05	mg/kg	<0.05				
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05				
4,4'-DDD	72-54-8	0.05	mg/kg	<0.05				
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05				
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05				
4,4'-DDT	50-29-3	0.2	mg/kg	<0.2				
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05				
Methoxychlor	72-43-5	0.2	mg/kg	<0.2				
EP068B: Organophosphorus Pesticides (OP)								



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

				TP10 1.0-1.4 - INTERLAB	---	---	---	---
				09-JUL-2008 15:00	---	---	---	---
Compound	CAS Number	LOR	Unit	ES0810658-001	---	---	---	---
EP068B: Organophosphorus Pesticides (OP) - Continued								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	---	---	---	---
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	---	---	---	---
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	---	---	---	---
Dimethoate	60-51-5	0.05	mg/kg	<0.05	---	---	---	---
Diazinon	333-41-5	0.05	mg/kg	<0.05	---	---	---	---
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	---	---	---	---
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	---	---	---	---
Malathion	121-75-5	0.05	mg/kg	<0.05	---	---	---	---
Fenthion	55-38-9	0.05	mg/kg	<0.05	---	---	---	---
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	---	---	---	---
Parathion	56-38-2	0.2	mg/kg	<0.2	---	---	---	---
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	---	---	---	---
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	---	---	---	---
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	---	---	---	---
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	---	---	---	---
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	---	---	---	---
Ethion	563-12-2	0.05	mg/kg	<0.05	---	---	---	---
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	---	---	---	---
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	---	---	---	---
EP075(SIM)A: Phenolic Compounds								
Phenol	108-95-2	0.5	mg/kg	<0.5	---	---	---	---
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	---	---	---	---
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	---	---	---	---
3- & 4-Methylphenol	1319-77-3	1.0	mg/kg	<1.0	---	---	---	---
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	---	---	---	---
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	---	---	---	---
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	---	---	---	---
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	---	---	---	---
4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	---	---	---	---
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	---	---	---	---
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	---	---	---	---
Pentachlorophenol	87-86-5	2.0	mg/kg	<2.0	---	---	---	---
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	---	---	---	---
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	---	---	---	---
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	---	---	---	---
Fluorene	86-73-7	0.5	mg/kg	<0.5	---	---	---	---



Analytical Results

Sub-Matrix: **SOIL**

Client sample ID

Client sampling date / time

				TP10 1.0-1.4 - INTERLAB	---	---	---	---
				09-JUL-2008 15:00	---	---	---	---
Compound	CAS Number	LOR	Unit	ES0810658-001	---	---	---	---
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	---	---	---	---
Anthracene	120-12-7	0.5	mg/kg	<0.5	---	---	---	---
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	---	---	---	---
Pyrene	129-00-0	0.5	mg/kg	<0.5	---	---	---	---
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	---	---	---	---
Chrysene	218-01-9	0.5	mg/kg	<0.5	---	---	---	---
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	---	---	---	---
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	---	---	---	---
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	---	---	---	---
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	---	---	---	---
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	---	---	---	---
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	---	---	---	---
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	---	---	---	---
C10 - C14 Fraction	----	50	mg/kg	<50	---	---	---	---
C15 - C28 Fraction	----	100	mg/kg	<100	---	---	---	---
C29 - C36 Fraction	----	100	mg/kg	<100	---	---	---	---
EP080: BTEX								
Benzene	71-43-2	0.2	mg/kg	<0.2	---	---	---	---
Toluene	108-88-3	0.5	mg/kg	<0.5	---	---	---	---
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	---	---	---	---
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	---	---	---	---
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	---	---	---	---
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	82.0	---	---	---	---
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.1	%	116	---	---	---	---
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.1	%	82.1	---	---	---	---
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	94.3	---	---	---	---
2-Chlorophenol-D4	93951-73-6	0.1	%	88.1	---	---	---	---
2,4,6-Tribromophenol	118-79-6	0.1	%	57.1	---	---	---	---
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	94.3	---	---	---	---
Anthracene-d10	1719-06-8	0.1	%	90.8	---	---	---	---



Analytical Results

Sub-Matrix: **SOIL**

Client sample ID

Client sampling date / time

Compound	CAS Number	LOR	Unit	TP10 1.0-1.4 - INTERLAB				
				09-JUL-2008 15:00	----	----	----	----
				ES0810658-001	----	----	----	----
EP075(SIM)T: PAH Surrogates - Continued								
4-Terphenyl-d14	1718-51-0	0.1	%	89.3	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	83.0	----	----	----	----
Toluene-D8	2037-26-5	0.1	%	81.2	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	83.0	----	----	----	----



Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	10	164
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	10	136
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	10	136
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	24	113
2-Chlorophenol-D4	93951-73-6	23	134
2,4,6-Tribromophenol	118-79-6	19	122
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	30	115
Anthracene-d10	1719-06-8	27	133
4-Terphenyl-d14	1718-51-0	18	137
EP080S: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	80	120
Toluene-D8	2037-26-5	81	117
4-Bromofluorobenzene	460-00-4	74	121



Environmental Division

QUALITY CONTROL REPORT

Work Order	: ES0810658	Page	: 1 of 11
Client	: PRECISE ENVIRONMENTAL PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: RESULTS ADDRESS	Contact	: Victor Kedicioglu
Address	: PO BOX 4424	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
	ROBINA TOWN CENTRE QLD, AUSTRALIA 4230		
E-mail	: mail@preciseenvironmental.com.au	E-mail	: victor.kedicioglu@alsenviro.com
Telephone	: +61 07 55933743	Telephone	: +61-2-8784 8555
Facsimile	: +61 07 55933435	Facsimile	: +61-2-8784 8500
Project	: PE389.08	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
C-O-C number	: ----	Date Samples Received	: 24-JUL-2008
Sampler	: CB, LM	Issue Date	: 04-AUG-2008
Order number	: ----		
Quote number	: BN/170/08	No. of samples received	: 1
		No. of samples analysed	: 1

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits



NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Celine Conceicao	Spectroscopist	Inorganics
Edwandy Fadjar	Senior Organic Chemist	Organics
Hoa Nguyen	Inorganic Chemist	Inorganics
Sanjeshni Jyoyi Mala	Senior Chemist Volatile	Organics
Victor Kedicioglu	Business Manager - NSW	Inorganics



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key :
Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = Chemistry Abstract Services number
LOR = Limit of reporting
RPD = Relative Percentage Difference
= Indicates failed QC



Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR:- No Limit; Result between 10 and 20 times LOR:- 0% - 50%; Result > 20 times LOR:- 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EA055: Moisture Content (QC Lot: 715761)									
ES0810658-001	TP10 1.0-1.4 - INTERLAB	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	26.8	25.6	4.8	0% - 20%
ES0810711-008	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	12.2	12.3	0.0	0% - 50%
EG005T: Total Metals by ICP-AES (QC Lot: 716437)									
ES0810493-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	530	534	0.7	0% - 20%
		EG005T: Chromium	7440-47-3	2	mg/kg	911	922	1.2	0% - 20%
		EG005T: Nickel	7440-02-0	2	mg/kg	58	58	0.0	0% - 20%
		EG005T: Arsenic	7440-38-2	5	mg/kg	22	23	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	1700	1700	0.0	0% - 20%
		EG005T: Lead	7439-92-1	5	mg/kg	19100	18600	2.3	0% - 20%
		EG005T: Zinc	7440-66-6	5	mg/kg	386000	362000	6.2	0% - 20%
ES0810546-006	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	11	12	11.7	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	11	10	10.3	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	7	7	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	210	205	2.4	0% - 20%
		EG005T: Lead	7439-92-1	5	mg/kg	19	17	8.7	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	104	85	# 20.0	0% - 50%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 716438)									
ES0810546-006	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 716401)									
ES0810726-001	Anonymous	EP066: Total Polychlorinated biphenyls	----	0.10	mg/kg	<0.10	<0.10	0.0	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 716402)									
ES0810726-001	Anonymous	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	0.08	0.07	17.3	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP068A: Organochlorine Pesticides (OC) (QC Lot: 716402) - continued									
ES0810726-001	Anonymous	EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4'-DDD	72-54-8	0.05	mg/kg	0.10	0.11	10.7	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 716402)									
ES0810726-001	Anonymous	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit		
EP075(SIM)A: Phenolic Compounds (QC Lot: 715765)									
ES0810711-001	Anonymous	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	0.5	mg/kg	<0.8	<0.8	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit



Sub-Matrix: **SOIL**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075(SIM)A: Phenolic Compounds (QC Lot: 715765) - continued									
ES0810711-001	Anonymous	EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2.0	mg/kg	<2.0	<2.0	0.0	No Limit
ES0810711-009	Anonymous	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	0.5	mg/kg	<0.8	<0.8	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2.0	mg/kg	<2.0	<2.0	0.0	No Limit
		EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 715765)							
ES0810711-001	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1,2,3-cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		ES0810711-009	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5
EP075(SIM): Acenaphthylene	208-96-8			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): Acenaphthene	83-32-9			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): Fluorene	86-73-7			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): Phenanthrene	85-01-8			0.5	mg/kg	1.4	1.4	0.0	No Limit
EP075(SIM): Anthracene	120-12-7			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): Fluoranthene	206-44-0			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		



Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 715765) - continued									
ES0810711-009	Anonymous	EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 715764)									
ES0810711-001	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	120	19.4	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
ES0810711-009	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	620	650	6.1	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	280	320	15.9	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 716012)									
ES0810711-010	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES0810682-005	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080: BTEX (QC Lot: 716012)									
ES0810711-010	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
ES0810682-005	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
EG005T: Total Metals by ICP-AES (QCLot: 716437)									
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	13.1 mg/kg	104	90.1	124	
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	2.76 mg/kg	99.0	83.3	111	
EG005T: Chromium	7440-47-3	2	mg/kg	<2	60.9 mg/kg	101	89.2	117	
EG005T: Copper	7440-50-8	5	mg/kg	<5	54.7 mg/kg	100	90.1	114	
EG005T: Lead	7439-92-1	5	mg/kg	<5	55.2 mg/kg	94.5	85.2	111	
EG005T: Nickel	7440-02-0	2	mg/kg	<2	54.8 mg/kg	101	88.3	116	
EG005T: Zinc	7440-66-6	5	mg/kg	<5	104 mg/kg	100	81.9	112	
EG035T: Total Recoverable Mercury by FIMS (QCLot: 716438)									
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	1.4 mg/kg	107	67	118	
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 716401)									
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	----	0.5 mg/kg	91.1	57.4	117	
		0.10	mg/kg	<0.10	----	----	----	----	
EP068A: Organochlorine Pesticides (OC) (QCLot: 716402)									
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.25 mg/kg	74.4	60.8	116	
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.25 mg/kg	75.6	59.4	115	
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.25 mg/kg	85.2	59.8	117	
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.25 mg/kg	74.0	59.8	118	
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.25 mg/kg	78.0	65.8	114	
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.25 mg/kg	75.0	65.6	115	
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.25 mg/kg	83.1	67	113	
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.25 mg/kg	84.3	65.6	113	
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.25 mg/kg	82.4	60.7	113	
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.25 mg/kg	73.9	65.8	116	
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.25 mg/kg	92.6	57.3	120	
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.25 mg/kg	75.8	67.4	116	
EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	0.25 mg/kg	77.3	67.5	114	
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.25 mg/kg	74.6	63	121	
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.25 mg/kg	77.5	66.1	117	
EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	0.25 mg/kg	77.9	65.3	116	
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.25 mg/kg	77.7	57.3	115	
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.25 mg/kg	76.3	63.6	119	
EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	0.25 mg/kg	61.1	58.4	127	
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.25 mg/kg	73.4	63.6	117	
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.25 mg/kg	67.3	50.4	132	



Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
EP068B: Organophosphorus Pesticides (OP) (QCLot: 716402)									
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.25 mg/kg	102	25.5	124	
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.25 mg/kg	118	10.1	159	
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.25 mg/kg	95.4	2.88	149	
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.25 mg/kg	90.2	48.6	126	
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.25 mg/kg	83.6	64.9	111	
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.25 mg/kg	80.7	65.1	111	
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.25 mg/kg	85.4	61.4	113	
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.25 mg/kg	88.0	60.4	127	
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.25 mg/kg	93.8	64.7	110	
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.25 mg/kg	83.4	64.2	111	
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.25 mg/kg	85.7	60	116	
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.25 mg/kg	86.3	64.8	111	
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.25 mg/kg	90.5	61.4	123	
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.25 mg/kg	97.8	64.3	114	
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.25 mg/kg	94.6	45.5	128	
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.25 mg/kg	78.0	65.4	111	
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.25 mg/kg	80.5	62	116	
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.25 mg/kg	82.3	59.5	119	
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.25 mg/kg	76.3	29.8	137	
EP075(SIM)A: Phenolic Compounds (QCLot: 715765)									
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	4 mg/kg	108	73.9	115	
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	4 mg/kg	107	80.2	115	
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	4 mg/kg	106	76.8	114	
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1.0	mg/kg	<1.0	8 mg/kg	105	72	119	
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	4 mg/kg	81.2	60.3	117	
EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	4 mg/kg	104	74.5	119	
EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	4 mg/kg	98.2	71.6	113	
EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	4 mg/kg	98.0	74.8	115	
EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	4 mg/kg	90.1	76.4	114	
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	4 mg/kg	87.9	62.2	115	
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	4 mg/kg	85.9	68.9	112	
EP075(SIM): Pentachlorophenol	87-86-5	1.0	mg/kg	<1.0	8 mg/kg	21.4	1.23	91.6	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 715765)									
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	4 mg/kg	# 113	81.9	113	
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	4 mg/kg	# 117	79.6	113	
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	4 mg/kg	110	81.5	112	
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	4 mg/kg	# 114	79.9	112	
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	4 mg/kg	114	79.4	114	
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	4 mg/kg	# 117	81.1	112	



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 715765) - continued									
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	4 mg/kg	# 116	78.8	113	
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	4 mg/kg	# 116	78.9	113	
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	4 mg/kg	104	77.2	112	
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	4 mg/kg	109	79.8	114	
EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	4 mg/kg	83.4	71.8	118	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	4 mg/kg	110	74.2	117	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	4 mg/kg	105	76.4	113	
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	4 mg/kg	82.6	71	113	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	4 mg/kg	82.5	71.7	113	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	4 mg/kg	82.4	72.4	114	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 715764)									
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	200 mg/kg	98.0	75.2	116	
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	200 mg/kg	97.0	75.3	113	
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	200 mg/kg	91.0	72.6	117	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 716012)									
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	89.8	68.4	128	
EP080: BTEX (QCLot: 716012)									
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	111	67.5	125	
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	95.3	69	122	
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	102	65.3	126	
EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	2 mg/kg	94.0	66.5	124	
	106-42-3								
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	95.1	66.7	123	



Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike	Spike Recovery (%)		Recovery Limits (%)		
				Concentration	MS	Low	High		
EG005T: Total Metals by ICP-AES (QCLot: 716437)									
ES0810546-006	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	102	70	130		
		EG005T: Cadmium	7440-43-9	50 mg/kg	95.9	70	130		
		EG005T: Chromium	7440-47-3	50 mg/kg	102	70	130		
		EG005T: Copper	7440-50-8	250 mg/kg	107	70	130		
		EG005T: Lead	7439-92-1	250 mg/kg	96.7	70	130		
		EG005T: Nickel	7440-02-0	50 mg/kg	102	70	130		
		EG005T: Zinc	7440-66-6	250 mg/kg	89.2	70	130		
EG035T: Total Recoverable Mercury by FIMS (QCLot: 716438)									
ES0810546-006	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	120	70	130		
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 716401)									
ES0810726-001	Anonymous	EP066: Total Polychlorinated biphenyls	----	0.5 mg/kg	84.0	70	130		
EP068A: Organochlorine Pesticides (OC) (QCLot: 716402)									
ES0810726-001	Anonymous	EP068: gamma-BHC	58-89-9	0.25 mg/kg	# 72.1	75.65	110.44		
		EP068: Heptachlor	76-44-8	0.25 mg/kg	74.5	72.2	106.71		
		EP068: Aldrin	309-00-2	0.25 mg/kg	78.6	77.54	107.0		
		EP068: Dieldrin	60-57-1	0.25 mg/kg	88.2	76.37	109.7		
		EP068: Endrin	72-20-8	1 mg/kg	83.7	68.51	119.47		
		EP068: 4,4'-DDT	50-29-3	1 mg/kg	# 64.9	67.12	118.10		
EP068B: Organophosphorus Pesticides (OP) (QCLot: 716402)									
ES0810726-001	Anonymous	EP068: Diazinon	333-41-5	0.25 mg/kg	86.8	75.85	107.06		
		EP068: Chlorpyrifos-methyl	5598-13-0	0.25 mg/kg	82.5	74.84	107.91		
		EP068: Pirimphos-ethyl	23505-41-1	0.25 mg/kg	93.3	67.98	109.42		
		EP068: Bromophos-ethyl	4824-78-6	0.25 mg/kg	93.1	74.94	107.37		
		EP068: Prothiofos	34643-46-4	0.25 mg/kg	91.9	75.45	106.05		
EP075(SIM)A: Phenolic Compounds (QCLot: 715765)									
ES0810711-001	Anonymous	EP075(SIM): Phenol	108-95-2	10 mg/kg	120	70	130		
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	112	70	130		
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	92.9	60	130		
		EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	10 mg/kg	98.3	70	130		
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	48.2	20	130		
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 715765)									
ES0810711-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	106	70	130		
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	115	70	130		
EP080/071: Total Petroleum Hydrocarbons (QCLot: 715764)									



Sub-Matrix: **SOIL**

				<i>Matrix Spike (MS) Report</i>			
<i>Laboratory sample ID</i>	<i>Client sample ID</i>	<i>Method: Compound</i>	<i>CAS Number</i>	<i>Spike</i>	<i>Spike Recovery (%)</i>	<i>Recovery Limits (%)</i>	
				<i>Concentration</i>	<i>MS</i>	<i>Low</i>	<i>High</i>
EP080/071: Total Petroleum Hydrocarbons (QCLot: 715764) - continued							
ES0810711-001	Anonymous	EP071: C10 - C14 Fraction	----	790 mg/kg	89.1	70	130
		EP071: C15 - C28 Fraction	----	3490 mg/kg	92.0	70	130
		EP071: C29 - C36 Fraction	----	2400 mg/kg	114	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 716012)							
ES0810711-010	Anonymous	EP080: C6 - C9 Fraction	----	26 mg/kg	102	70	130
EP080: BTEX (QCLot: 716012)							
ES0810711-010	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	98.8	70	130
		EP080: Toluene	108-88-3	2.5 mg/kg	109	70	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	111	70	130
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	116	70	130
			106-42-3				
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	110	70	130



Environmental Division

INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: ES0810658	Page	: 1 of 7
Client	: PRECISE ENVIRONMENTAL PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: RESULTS ADDRESS	Contact	: Victor Kedicioglu
Address	: PO BOX 4424 ROBINA TOWN CENTRE QLD, AUSTRALIA 4230	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: mail@preciseenvironmental.com.au	E-mail	: victor.kedicioglu@alsenviro.com
Telephone	: +61 07 55933743	Telephone	: +61-2-8784 8555
Facsimile	: +61 07 55933435	Facsimile	: +61-2-8784 8500
Project	: PE389.08	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
C-O-C number	: ----	Date Samples Received	: 24-JUL-2008
Sampler	: CB, LM	Issue Date	: 04-AUG-2008
Order number	: ----		
Quote number	: BN/170/08	No. of samples received	: 1
		No. of samples analysed	: 1

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Interpretive Quality Control Report contains the following information:

- Analysis Holding Time Compliance
- Quality Control Parameter Frequency Compliance
- Brief Method Summaries
- Summary of Outliers



Analysis Holding Time Compliance

The following report summarises extraction / preparation and analysis times and compares with recommended holding times. Dates reported represent first date of extraction or analysis and precludes subsequent dilutions and reruns. Information is also provided re the sample container (preservative) from which the analysis aliquot was taken. Elapsed period to analysis represents number of days from sampling where no extraction / digestion is involved or period from extraction / digestion where this is present. For composite samples, sampling date is assumed to be that of the oldest sample contributing to the composite. Sample date for laboratory produced leachates is assumed as the completion date of the leaching process. Outliers for holding time are based on USEPA SW 846, APHA, AS and NEPM (1999). A listing of breaches is provided in the Summary of Outliers.

Holding times for leachate methods (excluding elutriates) vary according to the analytes being determined on the resulting solution. For non-volatile analytes, the holding time compliance assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These soil holding times are: Organics (14 days); Mercury (28 days) & other metals (180 days). A recorded breach therefore does not guarantee a breach for all non-volatile parameters.

Matrix: **SOIL**

Evaluation: ✘ = Holding time breach ; ✔ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content							
Soil Glass Jar - Unpreserved TP10 1.0-1.4 - INTERLAB	09-JUL-2008	----	----	----	28-JUL-2008	16-JUL-2008	✘
EG005T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved TP10 1.0-1.4 - INTERLAB	09-JUL-2008	28-JUL-2008	05-JAN-2009	✔	29-JUL-2008	05-JAN-2009	✔
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved TP10 1.0-1.4 - INTERLAB	09-JUL-2008	28-JUL-2008	05-JAN-2009	✔	29-JUL-2008	06-AUG-2008	✔
EP066: Polychlorinated Biphenyls (PCB)							
Soil Glass Jar - Unpreserved TP10 1.0-1.4 - INTERLAB	09-JUL-2008	28-JUL-2008	23-JUL-2008	✘	29-JUL-2008	06-SEP-2008	✔
EP068A: Organochlorine Pesticides (OC)							
Soil Glass Jar - Unpreserved TP10 1.0-1.4 - INTERLAB	09-JUL-2008	28-JUL-2008	23-JUL-2008	✘	29-JUL-2008	06-SEP-2008	✔
EP068B: Organophosphorus Pesticides (OP)							
Soil Glass Jar - Unpreserved TP10 1.0-1.4 - INTERLAB	09-JUL-2008	28-JUL-2008	23-JUL-2008	✘	29-JUL-2008	06-SEP-2008	✔
EP075(SIM)A: Phenolic Compounds							
Soil Glass Jar - Unpreserved TP10 1.0-1.4 - INTERLAB	09-JUL-2008	28-JUL-2008	23-JUL-2008	✘	28-JUL-2008	06-SEP-2008	✔
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved TP10 1.0-1.4 - INTERLAB	09-JUL-2008	28-JUL-2008	23-JUL-2008	✘	28-JUL-2008	06-SEP-2008	✔
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved TP10 1.0-1.4 - INTERLAB	09-JUL-2008	28-JUL-2008	23-JUL-2008	✘	28-JUL-2008	06-SEP-2008	✔
EP080: BTEX							
Soil Glass Jar - Unpreserved TP10 1.0-1.4 - INTERLAB	09-JUL-2008	28-JUL-2008	23-JUL-2008	✘	28-JUL-2008	23-JUL-2008	✘



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(where) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: * = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Reaular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Moisture Content	EA055-103	2	16	12.5	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	2	13	15.4	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Pesticides by GCMS	EP068	1	6	16.7	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	8	12.5	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	4	25.0	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	20	10.0	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	2	13	15.4	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	2	20	10.0	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	1	13	7.7	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Pesticides by GCMS	EP068	1	6	16.7	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	8	12.5	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	4	25.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	20	5.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	13	7.7	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	20	5.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	1	13	7.7	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Pesticides by GCMS	EP068	1	6	16.7	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	8	12.5	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	4	25.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	20	5.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	13	7.7	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	20	5.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	1	13	7.7	5.0	✓	ALS QCS3 requirement
Pesticides by GCMS	EP068	1	6	16.7	5.0	✓	ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	8	12.5	5.0	✓	ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	4	25.0	5.0	✓	ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	20	5.0	5.0	✓	ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	13	7.7	5.0	✓	ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	20	5.0	5.0	✓	ALS QCS3 requirement



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Asbestos - Count (Solid)	ASB-SOL	SOIL	Asbestos Count on solid matrices using PLM conducted by Subcontracting Laboratory
Moisture Content	EA055-103	SOIL	A gravimetric procedure based on weight loss over a 12 hour drying period at 103-105 degrees C. This method is compliant with NEPM (1999) Schedule B(3) (Method 102)
Total Metals by ICP-AES	EG005T	SOIL	(APHA 21st ed., 3120; USEPA SW 846 - 6010) (ICPAES) Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (1999) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	AS 3550, APHA 21st ed., 3112 Hg - B (Flow-injection (SnCl ₂)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (1999) Schedule B(3)
Polychlorinated Biphenyls (PCB)	EP066	SOIL	(USEPA SW 846 - 8270B) Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Method 504)
Pesticides by GCMS	EP068	SOIL	(USEPA SW 846 - 8270B) Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (1999) Schedule B(3) (Method 504,505)
TPH - Semivolatile Fraction	EP071	SOIL	(USEPA SW 846 - 8015A) Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C36. This method is compliant with NEPM (1999) Schedule B(3) (Method 506.1)
PAH/Phenols (SIM)	EP075(SIM)	SOIL	(USEPA SW 846 - 8270B) Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Method 502 and 507)
TPH Volatiles/BTEX	EP080	SOIL	(USEPA SW 846 - 8260B) Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Method 501)

Preparation Methods	Method	Matrix	Method Descriptions
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	USEPA 200.2 Mod. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (1999) Schedule B(3) (Method 202)
Methanolic Extraction of Soils for Purge and Trap	* ORG16	SOIL	(USEPA SW 846 - 5030A) 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids (Option A - Concentrating)	ORG17A	SOIL	In-house, Mechanical agitation (tumbler). 20g of sample, Na ₂ SO ₄ and surrogate are extracted with 150mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.

Page : 5 of 7
Work Order : ES0810658
Client : PRECISE ENVIRONMENTAL PTY LTD
Project : PE389.08



<i>Preparation Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
Tumbler Extraction of Solids (Option B - Non-concentrating)	ORG17B	SOIL	In-house, Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 20mL 1:1 DCM/Acetone by end over end tumble. The solvent is transferred directly to a GC vial for analysis.



Summary of Outliers

Outliers : Quality Control Samples

The following report highlights outliers flagged in the Quality Control (QC) Report. Surrogate recovery limits are static and based on USEPA SW846 or ALS-QWI/EN/38 (in the absence of specific USEPA limits). This report displays QC Outliers (breaches) only.

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Duplicate (DUP) RPDs							
EG005T: Total Metals by ICP-AES	ES0810546-006	Anonymous	Zinc	7440-66-6	20.0 %	0-20%	RPD exceeds LOR based limits
Laboratory Control Spike (LCS) Recoveries							
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons	805783-007	----	Naphthalene	91-20-3	113 %	81.9-113%	Recovery greater than upper control limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons	805783-007	----	Acenaphthylene	208-96-8	117 %	79.6-113%	Recovery greater than upper control limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons	805783-007	----	Fluorene	86-73-7	114 %	79.9-112%	Recovery greater than upper control limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons	805783-007	----	Anthracene	120-12-7	117 %	81.1-112%	Recovery greater than upper control limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons	805783-007	----	Fluoranthene	206-44-0	116 %	78.8-113%	Recovery greater than upper control limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons	805783-007	----	Pyrene	129-00-0	116 %	78.9-113%	Recovery greater than upper control limit
Matrix Spike (MS) Recoveries							
EP068A: Organochlorine Pesticides (OC)	ES0810726-001	Anonymous	gamma-BHC	58-89-9	72.1 %	75.65-110.44 %	Recovery less than lower data quality objective
EP068A: Organochlorine Pesticides (OC)	ES0810726-001	Anonymous	4,4'-DDT	50-29-3	64.9 %	67.12-118.10 %	Recovery less than lower data quality objective

- For all matrices, no Method Blank value outliers occur.

Regular Sample Surrogates

- For all regular sample matrices, no surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

This report displays Holding Time breaches only. Only the respective Extraction / Preparation and/or Analysis component is/are displayed.

Matrix: **SOIL**

Method Container / Client Sample ID(s)	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EA055: Moisture Content						



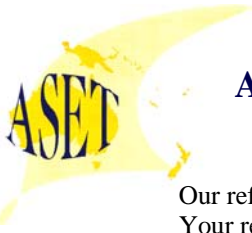
Matrix: **SOIL**

Method Container / Client Sample ID(s)	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EA055: Moisture Content - Analysis Holding Time Compliance						
Soil Glass Jar - Unpreserved TP10 1.0-1.4 - INTERLAB	----	----	----	28-JUL-2008	16-JUL-2008	12
EP066: Polychlorinated Biphenyls (PCB)						
Soil Glass Jar - Unpreserved TP10 1.0-1.4 - INTERLAB	28-JUL-2008	23-JUL-2008	5	----	----	----
EP068A: Organochlorine Pesticides (OC)						
Soil Glass Jar - Unpreserved TP10 1.0-1.4 - INTERLAB	28-JUL-2008	23-JUL-2008	5	----	----	----
EP068B: Organophosphorus Pesticides (OP)						
Soil Glass Jar - Unpreserved TP10 1.0-1.4 - INTERLAB	28-JUL-2008	23-JUL-2008	5	----	----	----
EP075(SIM)A: Phenolic Compounds						
Soil Glass Jar - Unpreserved TP10 1.0-1.4 - INTERLAB	28-JUL-2008	23-JUL-2008	5	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons						
Soil Glass Jar - Unpreserved TP10 1.0-1.4 - INTERLAB	28-JUL-2008	23-JUL-2008	5	----	----	----
EP080/071: Total Petroleum Hydrocarbons						
Soil Glass Jar - Unpreserved TP10 1.0-1.4 - INTERLAB	28-JUL-2008	23-JUL-2008	5	----	----	----
EP080: BTEX						
Soil Glass Jar - Unpreserved TP10 1.0-1.4 - INTERLAB	28-JUL-2008	23-JUL-2008	5	28-JUL-2008	23-JUL-2008	5

Outliers : Frequency of Quality Control Samples

The following report highlights breaches in the Frequency of Quality Control Samples.

- No Quality Control Sample Frequency Outliers exist.



AUSTRALIAN SAFER ENVIRONMENT & TECHNOLOGY PTY LTD

ABN 36 088 095 112

Our ref : ASET15841/ 19021 / 1 - 1

Your ref :ES0810658

NATA Accreditation No: 14484

29 July 2008

Australian Laboratory Services Pty Ltd
277, Woodpark Road,
Smithfield,
NSW 2164.

Attn:Mr Victor Kediciglu

Fax No:02-87848500

Dear Victor,

Asbestos Identification

This report presents the results of one sample, forwarded by Australian Laboratory Services Pty Ltd on 28 July 2008, for analysis for asbestos.

1.Introduction:One sample forwarded was examined and analysed for the presence of asbestos.

2. Methods : The sample was examined under a Stereo Microscope and selected fibres were analysed by Polarized Light Microscopy in conjunction with dispersion Staining method (**Safer Environment Method 1.**)

3. Results : **Sample No. 1. ASET15841 / 19021 / 1. ES0810658 - 001 - TP 10 - 1.0 - 1.4 - Interlab.**
Approx dimensions 5.0 cm x 5.0 cm x 0.55 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of plaster and organic fibres.
No asbestos detected.

Analysed and reported by,

Mahen De Silva . BSc. MSc. Grad Dip (Occ Hyg)
Occupational Hygienist / Approved Signatory.
Approved Identifier.



This document is issued in accordance with NATA's Accreditation requirements. Accredited for compliance with ISO/IEC 17025.

SUITE 710 / 90 GEORGE STREET, HORNSBY NSW 2077 – P.O. BOX 1644 HORNSBY WESTFIELD NSW 1635

PHONE: (02) 99872183 FAX: (02)99872151 EMAIL: aset@bigpond.net.au WEBSITE: www.aset.com.au

OCCUPATIONAL HEALTH & SAFETY STUDIES • INDOOR AIR QUALITY SURVEYS • HAZARDOUS MATERIAL SURVEYS • RADIATION SURVEYS • ASBESTOS SURVEYS
ASBESTOS DETECTION & IDENTIFICATION • REPAIR & CALIBRATION OF SCIENTIFIC EQUIPMENT • AIRBORNE FIBRE & SILICA MONITORING



Environmental Division

SAMPLE RECEIPT NOTIFICATION (SRN)
Comprehensive Report

Work Order : ES0810648

Client	: PRECISE ENVIRONMENTAL PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: MR CHRIS BUTLER	Contact	: Victor Kedicioglu
Address	: PO BOX 4424 ROBINA TOWN CENTRE QLD, AUSTRALIA 4230	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: mail@preciseenvironmental.com.au	E-mail	: victor.kedicioglu@alsenviro.com
Telephone	: +61 55933743	Telephone	: +61-2-8784 8555
Facsimile	: +61 07 55933435	Facsimile	: +61-2-8784 8500
Project	: PE398.08	Page	: 1 of 2
Order number	: ----		
C-O-C number	: ----	Quote number	: EB2008PREENV0127 (BN/170/08)
Site	: ----		
Sampler	: CB,LM	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement

Dates

Date Samples Received	: 24-JUL-2008	Issue Date	: 28-JUL-2008 14:06
Client Requested Due Date	: 16-JUL-2008	Scheduled Reporting Date	: 04-AUG-2008

Delivery Details

Mode of Delivery	: Carrier	Temperature	: CHILLED - Ice present
No. of coolers/boxes	: 1 HARD	No. of samples received	: 2
Security Seal	: Intact.	No. of samples analysed	: 2

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Requested Deliverables
- **Samples received in appropriately pretreated and preserved containers.**
- **Breaches in recommended extraction / analysis holding times may occur. Please contact ALS for further information (Nanthini Coilparampil).**
- **Holding times on soil for Semi-volatile analysis is 14 days from sampling.**
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Please direct any queries related to sample condition / numbering / breakages to Nanthini Coilparampil
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (14 days), Solid (90 days) from date of completion of work order.



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- No sample container / preservation non-compliance exist.

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing

Matrix: SOIL

Laboratory sample ID	Client sampling date / time	Client sample ID	SOIL - S-02 8 Metals (incl. Digestion)	SOIL - S-12 OC/OP Pesticides
ES0810648-001	09-JUL-2008 15:00	SL1 0.0-0.15	✓	✓
ES0810648-002	09-JUL-2008 15:00	SL24 0.0-0.15	✓	

Requested Deliverables

MR CHRIS BUTLER

- *AU Certificate of Analysis - NATA
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep)
- *AU QC Report \checkmark DEFAULT (Anon QC Rep) - NATA
- A4 - AU Sample Receipt Notification - Environmental
- A4 - AU Tax Invoice
- Default - Chain of Custody
- EDI Format - ENMRG

Email mail@preciseenvironmental.com.au
 Email mail@preciseenvironmental.com.au
 Email mail@preciseenvironmental.com.au
 Email mail@preciseenvironmental.com.au
 Email mail@preciseenvironmental.com.au
 Email mail@preciseenvironmental.com.au
 Email mail@preciseenvironmental.com.au

THE ACCOUNTS PAYABLE

- A4 - AU Tax Invoice

Email envlims_invoicing.eb@alsenviro.com



Environmental Division

CERTIFICATE OF ANALYSIS

Work Order	: ES0810648	Page	: 1 of 6
Client	: PRECISE ENVIRONMENTAL PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: MR CHRIS BUTLER	Contact	: Victor Kedicioglu
Address	: PO BOX 4424 ROBINA TOWN CENTRE QLD, AUSTRALIA 4230	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: mail@preciseenvironmental.com.au	E-mail	: victor.kedicioglu@alsenviro.com
Telephone	: +61 55933743	Telephone	: +61-2-8784 8555
Facsimile	: +61 07 55933435	Facsimile	: +61-2-8784 8500
Project	: PE398.08	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Order number	: ----	Date Samples Received	: 24-JUL-2008
C-O-C number	: ----	Issue Date	: 04-AUG-2008
Sampler	: CB,LM	No. of samples received	: 2
Site	: ----	No. of samples analysed	: 2
Quote number	: BN/170/08		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits



NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Celine Conceicao	Spectroscopist	Inorganics
Edwandy Fadjar	Senior Organic Chemist	Inorganics
Edwandy Fadjar	Senior Organic Chemist	Organics
Hoang Nguyen	Inorganic Chemist	Inorganics
Victor Kedicioglu	Business Manager - NSW	Inorganics

Environmental Division Sydney
Part of the **ALS Laboratory Group**

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Tel. +61-2-8784 8555 Fax. +61-2-8784 8500 www.alsglobal.com

A Campbell Brothers Limited Company





General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client.

Key : CAS Number = Chemistry Abstract Services number

LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting

- **EG005T: Poor precision was obtained for Zn on batch ES0810546#6 due to sample heterogeneity.**



Analytical Results

Sub-Matrix: **SOIL**

				Client sample ID				
				SL1 0.0-0.15	SL24 0.0-0.15	---	---	---
				09-JUL-2008 15:00	09-JUL-2008 15:00	---	---	---
				Client sampling date / time				
Compound	CAS Number	LOR	Unit	ES0810648-001	ES0810648-002	---	---	---
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	---	1.0	%	17.5	16.4	---	---	---
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	18	90	---	---	---
Cadmium	7440-43-9	1	mg/kg	<1	<1	---	---	---
Chromium	7440-47-3	2	mg/kg	97	39	---	---	---
Copper	7440-50-8	5	mg/kg	127	71	---	---	---
Lead	7439-92-1	5	mg/kg	15	15	---	---	---
Nickel	7440-02-0	2	mg/kg	26	11	---	---	---
Zinc	7440-66-6	5	mg/kg	42	21	---	---	---
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	0.1	---	---	---
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	---	---	---
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	---	---	---
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	---	---	---
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	---	---	---
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	---	---	---
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	---	---	---
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	---	---	---
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	---	---	---
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	---	---	---
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	---	---	---
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	---	---	---
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	---	---	---
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	---	---	---
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	---	---	---
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	---	---	---
4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	---	---	---
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	---	---	---
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	---	---	---
4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	---	---	---
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	---	---	---
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	---	---	---
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	---	---	---
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	---	---	---
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	---	---	---
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	---	---	---



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

				SL1 0.0-0.15	SL24 0.0-0.15	----	----	----
				09-JUL-2008 15:00	09-JUL-2008 15:00	----	----	----
Compound	CAS Number	LOR	Unit	ES0810648-001	ES0810648-002	----	----	----
EP068B: Organophosphorus Pesticides (OP) - Continued								
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	----	----	----
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	----	----	----
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	----	----	----
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	----	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	----	----	----
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	----	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	----	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	----	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	----	----	----
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	----	----	----
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	----	----	----
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	----	----	----
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	----	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	----	----	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.1	%	100	130	----	----	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.1	%	79.1	94.0	----	----	----



Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	10	136
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	10	136



Environmental Division

QUALITY CONTROL REPORT

Work Order	: ES0810648	Page	: 1 of 7
Client	: PRECISE ENVIRONMENTAL PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: MR CHRIS BUTLER	Contact	: Victor Kedicioglu
Address	: PO BOX 4424	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
	ROBINA TOWN CENTRE QLD, AUSTRALIA 4230		
E-mail	: mail@preciseenvironmental.com.au	E-mail	: victor.kedicioglu@alsenviro.com
Telephone	: +61 55933743	Telephone	: +61-2-8784 8555
Facsimile	: +61 07 55933435	Facsimile	: +61-2-8784 8500
Project	: PE398.08	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
C-O-C number	: ----	Date Samples Received	: 24-JUL-2008
Sampler	: CB,LM	Issue Date	: 04-AUG-2008
Order number	: ----		
Quote number	: BN/170/08	No. of samples received	: 2
		No. of samples analysed	: 2

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits



NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Celine Conceicao	Spectroscopist	Inorganics
Edwandy Fadjar	Senior Organic Chemist	Inorganics
Edwandy Fadjar	Senior Organic Chemist	Organics
Hoa Nguyen	Inorganic Chemist	Inorganics
Victor Kedicioglu	Business Manager - NSW	Inorganics



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
 CAS Number = Chemistry Abstract Services number
 LOR = Limit of reporting
 RPD = Relative Percentage Difference
 # = Indicates failed QC



Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR:- No Limit; Result between 10 and 20 times LOR:- 0% - 50%; Result > 20 times LOR:- 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EA055: Moisture Content (QC Lot: 716616)									
ES0810493-016	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	9.7	9.5	1.6	No Limit
ES0810645-004	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	9.6	12.3	25.0	0% - 50%
EG005T: Total Metals by ICP-AES (QC Lot: 716437)									
ES0810493-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	530	534	0.7	0% - 20%
		EG005T: Chromium	7440-47-3	2	mg/kg	911	922	1.2	0% - 20%
		EG005T: Nickel	7440-02-0	2	mg/kg	58	58	0.0	0% - 20%
		EG005T: Arsenic	7440-38-2	5	mg/kg	22	23	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	1700	1700	0.0	0% - 20%
		EG005T: Lead	7439-92-1	5	mg/kg	19100	18600	2.3	0% - 20%
		EG005T: Zinc	7440-66-6	5	mg/kg	386000	362000	6.2	0% - 20%
ES0810546-006	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	11	12	11.7	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	11	10	10.3	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	7	7	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	210	205	2.4	0% - 20%
		EG005T: Lead	7439-92-1	5	mg/kg	19	17	8.7	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	104	85	# 20.0	0% - 50%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 716438)									
ES0810546-006	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 716402)									
ES0810726-001	Anonymous	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	0.08	0.07	17.3	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP068A: Organochlorine Pesticides (OC) (QC Lot: 716402) - continued									
ES0810726-001	Anonymous	EP068: 4.4'-DDD	72-54-8	0.05	mg/kg	0.10	0.11	10.7	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 716402)									
ES0810726-001	Anonymous	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit		



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
EG005T: Total Metals by ICP-AES (QCLot: 716437)									
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	13.1 mg/kg	104	90.1	124	
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	2.76 mg/kg	99.0	83.3	111	
EG005T: Chromium	7440-47-3	2	mg/kg	<2	60.9 mg/kg	101	89.2	117	
EG005T: Copper	7440-50-8	5	mg/kg	<5	54.7 mg/kg	100	90.1	114	
EG005T: Lead	7439-92-1	5	mg/kg	<5	55.2 mg/kg	94.5	85.2	111	
EG005T: Nickel	7440-02-0	2	mg/kg	<2	54.8 mg/kg	101	88.3	116	
EG005T: Zinc	7440-66-6	5	mg/kg	<5	104 mg/kg	100	81.9	112	
EG035T: Total Recoverable Mercury by FIMS (QCLot: 716438)									
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	1.4 mg/kg	107	67	118	
EP068A: Organochlorine Pesticides (OC) (QCLot: 716402)									
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.25 mg/kg	74.4	60.8	116	
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.25 mg/kg	75.6	59.4	115	
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.25 mg/kg	85.2	59.8	117	
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.25 mg/kg	74.0	59.8	118	
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.25 mg/kg	78.0	65.8	114	
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.25 mg/kg	75.0	65.6	115	
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.25 mg/kg	83.1	67	113	
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.25 mg/kg	84.3	65.6	113	
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.25 mg/kg	82.4	60.7	113	
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.25 mg/kg	73.9	65.8	116	
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.25 mg/kg	92.6	57.3	120	
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.25 mg/kg	75.8	67.4	116	
EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	0.25 mg/kg	77.3	67.5	114	
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.25 mg/kg	74.6	63	121	
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.25 mg/kg	77.5	66.1	117	
EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	0.25 mg/kg	77.9	65.3	116	
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.25 mg/kg	77.7	57.3	115	
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.25 mg/kg	76.3	63.6	119	
EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	0.25 mg/kg	61.1	58.4	127	
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.25 mg/kg	73.4	63.6	117	
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.25 mg/kg	67.3	50.4	132	
EP068B: Organophosphorus Pesticides (OP) (QCLot: 716402)									
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.25 mg/kg	102	25.5	124	
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.25 mg/kg	118	10.1	159	



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
				Result	Spike Concentration	Spike Recovery (%)		
					Recovery Limits (%)	Low	High	
EP068B: Organophosphorus Pesticides (OP) (QCLot: 716402) - continued								
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.25 mg/kg	95.4	2.88	149
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.25 mg/kg	90.2	48.6	126
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.25 mg/kg	83.6	64.9	111
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.25 mg/kg	80.7	65.1	111
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.25 mg/kg	85.4	61.4	113
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.25 mg/kg	88.0	60.4	127
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.25 mg/kg	93.8	64.7	110
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.25 mg/kg	83.4	64.2	111
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.25 mg/kg	85.7	60	116
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.25 mg/kg	86.3	64.8	111
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.25 mg/kg	90.5	61.4	123
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.25 mg/kg	97.8	64.3	114
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.25 mg/kg	94.6	45.5	128
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.25 mg/kg	78.0	65.4	111
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.25 mg/kg	80.5	62	116
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.25 mg/kg	82.3	59.5	119
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.25 mg/kg	76.3	29.8	137



Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report			
				Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
					MS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 716437)							
ES0810546-006	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	102	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	95.9	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	102	70	130
		EG005T: Copper	7440-50-8	250 mg/kg	107	70	130
		EG005T: Lead	7439-92-1	250 mg/kg	96.7	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	102	70	130
		EG005T: Zinc	7440-66-6	250 mg/kg	89.2	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 716438)							
ES0810546-006	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	120	70	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 716402)							
ES0810726-001	Anonymous	EP068: gamma-BHC	58-89-9	0.25 mg/kg	# 72.1	75.65	110.44
		EP068: Heptachlor	76-44-8	0.25 mg/kg	74.5	72.2	106.71
		EP068: Aldrin	309-00-2	0.25 mg/kg	78.6	77.54	107.0
		EP068: Dieldrin	60-57-1	0.25 mg/kg	88.2	76.37	109.7
		EP068: Endrin	72-20-8	1 mg/kg	83.7	68.51	119.47
		EP068: 4.4'-DDT	50-29-3	1 mg/kg	# 64.9	67.12	118.10
EP068B: Organophosphorus Pesticides (OP) (QCLot: 716402)							
ES0810726-001	Anonymous	EP068: Diazinon	333-41-5	0.25 mg/kg	86.8	75.85	107.06
		EP068: Chlorpyrifos-methyl	5598-13-0	0.25 mg/kg	82.5	74.84	107.91
		EP068: Pirimphos-ethyl	23505-41-1	0.25 mg/kg	93.3	67.98	109.42
		EP068: Bromophos-ethyl	4824-78-6	0.25 mg/kg	93.1	74.94	107.37
		EP068: Prothiofos	34643-46-4	0.25 mg/kg	91.9	75.45	106.05



Environmental Division

INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: ES0810648	Page	: 1 of 5
Client	: PRECISE ENVIRONMENTAL PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: MR CHRIS BUTLER	Contact	: Victor Kedicioglu
Address	: PO BOX 4424 ROBINA TOWN CENTRE QLD, AUSTRALIA 4230	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
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Facsimile	: +61 07 55933435	Facsimile	: +61-2-8784 8500
Project	: PE398.08	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
C-O-C number	: ----	Date Samples Received	: 24-JUL-2008
Sampler	: CB,LM	Issue Date	: 04-AUG-2008
Order number	: ----		
Quote number	: BN/170/08	No. of samples received	: 2
		No. of samples analysed	: 2

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Interpretive Quality Control Report contains the following information:

- Analysis Holding Time Compliance
- Quality Control Parameter Frequency Compliance
- Brief Method Summaries
- Summary of Outliers



Analysis Holding Time Compliance

The following report summarises extraction / preparation and analysis times and compares with recommended holding times. Dates reported represent first date of extraction or analysis and precludes subsequent dilutions and reruns. Information is also provided re the sample container (preservative) from which the analysis aliquot was taken. Elapsed period to analysis represents number of days from sampling where no extraction / digestion is involved or period from extraction / digestion where this is present. For composite samples, sampling date is assumed to be that of the oldest sample contributing to the composite. Sample date for laboratory produced leachates is assumed as the completion date of the leaching process. Outliers for holding time are based on USEPA SW 846, APHA, AS and NEPM (1999). A listing of breaches is provided in the Summary of Outliers.

Holding times for leachate methods (excluding elutriates) vary according to the analytes being determined on the resulting solution. For non-volatile analytes, the holding time compliance assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These soil holding times are: Organics (14 days); Mercury (28 days) & other metals (180 days). A recorded breach therefore does not guarantee a breach for all non-volatile parameters.

Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EA055: Moisture Content								
Soil Glass Jar - Unpreserved SL1 0.0-0.15, SL24 0.0-0.15	09-JUL-2008	----	----	----	28-JUL-2008	16-JUL-2008	*	
EG005T: Total Metals by ICP-AES								
Soil Glass Jar - Unpreserved SL1 0.0-0.15, SL24 0.0-0.15	09-JUL-2008	28-JUL-2008	05-JAN-2009	✓	29-JUL-2008	05-JAN-2009	✓	
EG035T: Total Recoverable Mercury by FIMS								
Soil Glass Jar - Unpreserved SL1 0.0-0.15, SL24 0.0-0.15	09-JUL-2008	28-JUL-2008	05-JAN-2009	✓	29-JUL-2008	06-AUG-2008	✓	
EP068A: Organochlorine Pesticides (OC)								
Soil Glass Jar - Unpreserved SL1 0.0-0.15, SL24 0.0-0.15	09-JUL-2008	28-JUL-2008	23-JUL-2008	*	29-JUL-2008	06-SEP-2008	✓	
EP068B: Organophosphorus Pesticides (OP)								
Soil Glass Jar - Unpreserved SL1 0.0-0.15, SL24 0.0-0.15	09-JUL-2008	28-JUL-2008	23-JUL-2008	*	29-JUL-2008	06-SEP-2008	✓	



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(where) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Reaular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Moisture Content	EA055-103	2	20	10.0	10.0	✔	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Pesticides by GCMS	EP068	1	6	16.7	10.0	✔	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	4	25.0	10.0	✔	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	20	10.0	10.0	✔	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
Pesticides by GCMS	EP068	1	6	16.7	5.0	✔	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	4	25.0	5.0	✔	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	20	5.0	5.0	✔	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)							
Pesticides by GCMS	EP068	1	6	16.7	5.0	✔	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	4	25.0	5.0	✔	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	20	5.0	5.0	✔	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)							
Pesticides by GCMS	EP068	1	6	16.7	5.0	✔	ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	4	25.0	5.0	✔	ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	20	5.0	5.0	✔	ALS QCS3 requirement



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055-103	SOIL	A gravimetric procedure based on weight loss over a 12 hour drying period at 103-105 degrees C. This method is compliant with NEPM (1999) Schedule B(3) (Method 102)
Total Metals by ICP-AES	EG005T	SOIL	(APHA 21st ed., 3120; USEPA SW 846 - 6010) (ICPAES) Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (1999) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	AS 3550, APHA 21st ed., 3112 Hg - B (Flow-injection (SnCl ₂)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (1999) Schedule B(3)
Pesticides by GCMS	EP068	SOIL	(USEPA SW 846 - 8270B) Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (1999) Schedule B(3) (Method 504,505)
Preparation Methods	Method	Matrix	Method Descriptions
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	USEPA 200.2 Mod. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (1999) Schedule B(3) (Method 202)
Tumbler Extraction of Solids (Option A - Concentrating)	ORG17A	SOIL	In-house, Mechanical agitation (tumbler). 20g of sample, Na ₂ SO ₄ and surrogate are extracted with 150mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.



Summary of Outliers

Outliers : Quality Control Samples

The following report highlights outliers flagged in the Quality Control (QC) Report. Surrogate recovery limits are static and based on USEPA SW846 or ALS-QWI/EN/38 (in the absence of specific USEPA limits). This report displays QC Outliers (breaches) only.

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Duplicate (DUP) RPDs							
EG005T: Total Metals by ICP-AES	ES0810546-006	Anonymous	Zinc	7440-66-6	20.0 %	0-20%	RPD exceeds LOR based limits
Matrix Spike (MS) Recoveries							
EP068A: Organochlorine Pesticides (OC)	ES0810726-001	Anonymous	gamma-BHC	58-89-9	72.1 %	75.65-110.44 %	Recovery less than lower data quality objective
EP068A: Organochlorine Pesticides (OC)	ES0810726-001	Anonymous	4.4'-DDT	50-29-3	64.9 %	67.12-118.10 %	Recovery less than lower data quality objective

- For all matrices, no Method Blank value outliers occur.
- For all matrices, no Laboratory Control outliers occur.

Regular Sample Surrogates

- For all regular sample matrices, no surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

This report displays Holding Time breaches only. Only the respective Extraction / Preparation and/or Analysis component is/are displayed.

Matrix: **SOIL**

Method	Container / Client Sample ID(s)	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EA055: Moisture Content							
Soil Glass Jar - Unpreserved	SL1 0.0-0.15, SL24 0.0-0.15	----	----	----	28-JUL-2008	16-JUL-2008	12
EP068A: Organochlorine Pesticides (OC)							
Soil Glass Jar - Unpreserved	SL1 0.0-0.15, SL24 0.0-0.15	28-JUL-2008	23-JUL-2008	5	----	----	----
EP068B: Organophosphorus Pesticides (OP)							
Soil Glass Jar - Unpreserved	SL1 0.0-0.15, SL24 0.0-0.15	28-JUL-2008	23-JUL-2008	5	----	----	----

Outliers : Frequency of Quality Control Samples

The following report highlights breaches in the Frequency of Quality Control Samples.

- No Quality Control Sample Frequency Outliers exist.