Gilbert & Sutherland
Specialist Soil and Water Scientists

Soil Contamination Assessment for Lot 4 DP1054848, Stott Street, Bilambil Heights.

Prepared for
Martin Findlater & Associates Pty Ltd

October, 2003

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1. Introduction

1.1 Background

Gilbert and Sutherland Pty Ltd (G&S) was commissioned by Martin Findlater and Associates Pty Ltd, to conduct a Soil Contamination Assessment within an investigation area as listed in Table 1.1.1 below. It is envisaged the site will be developed to form part of the 2(c) residential zone of a proposed subdivision. The site is located on both the western and eastern sides of Stott Street, Bilambil Heights, New South Wales as shown on Drawing Number GJ0309.2.1

Table 1.1.1 List of properties investigated for soil chemical residues.

Lot	DP	Owner
4	1054848	Dickinson, L & J.
Total investigation area within the proposed 2(c) residential zone is approximately 4.0ha		

1.2 Site history and assessment guidelines

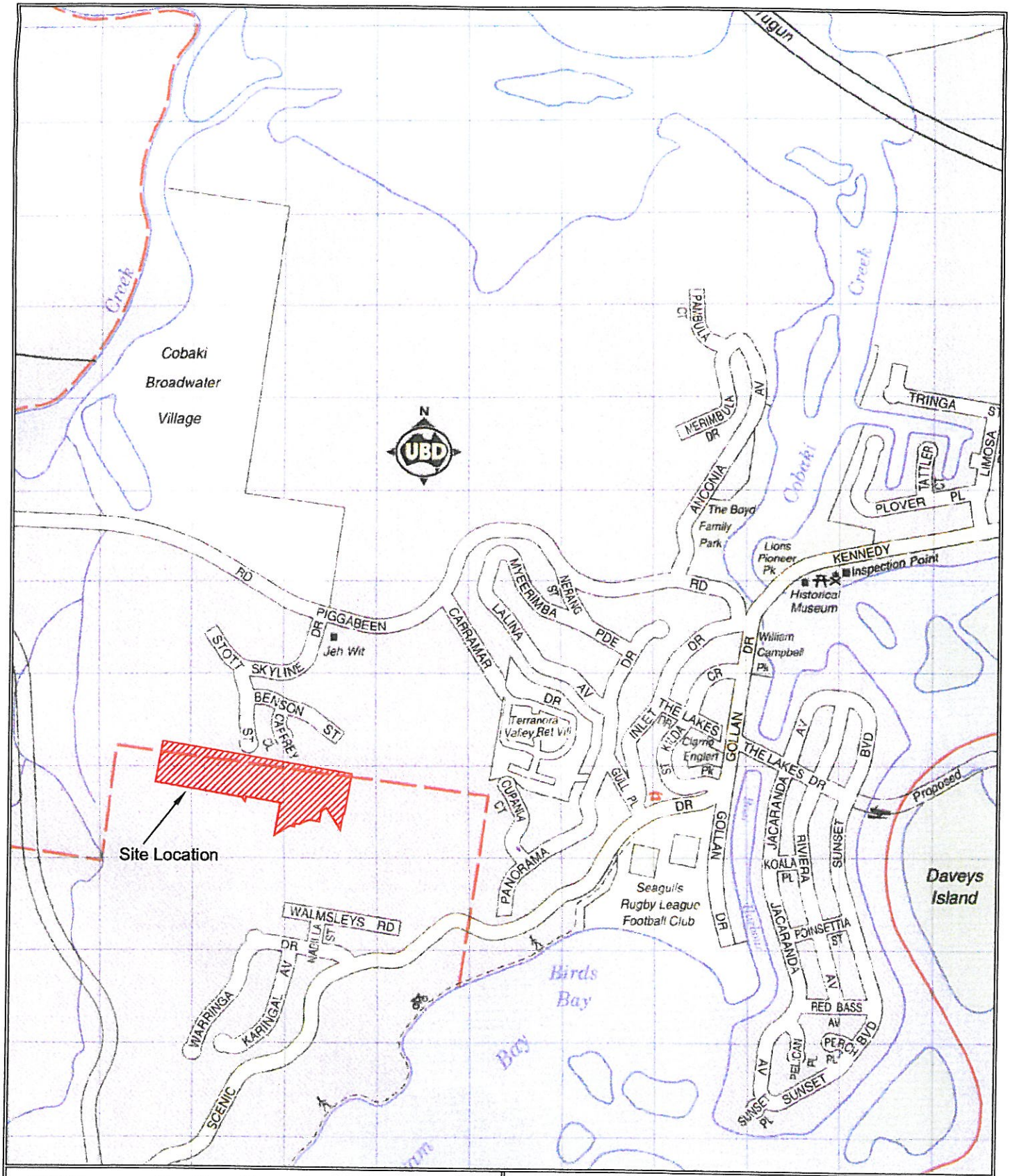
The background and site history made available to Gilbert and Sutherland staff was limited. The subject properties are rural zoned, however to cater for urban expansion within the area, future residential development of the above property is proposed. It is understood that parts of the property have been historically used for agricultural purposes. Existing passionfruit plantations and evidence of cultivation, presumably for future cropping, were observed within the property during field work undertaken by G&S. It is understood the area may have also been used for light grazing. Therefore, the present assessment was conducted in accordance with the following guidelines:

- Guidelines for Consultants Reporting on Contaminated Sites (NSW EPA 2000),
- Guidelines for Assessing Banana Plantation Sites (NSW EPA 1997),
- Contaminated Sites Sampling Design Guidelines (NSW EPA 1995),
- Assessment of Orchard and Market Garden Contaminated Sites Discussion Paper (NSW EPA 1995), and
- Guideline on the Investigation Levels for Soil and Groundwater, Schedule B (1), National Environment Protection Council.

1.3 Scope of works

The following scope of works was conducted by Gilbert and Sutherland:

- identify potential contamination types;
- discuss the site condition;
- provide an assessment of the site contamination and;
- determine the need for further investigations.



Gilbert & Sutherland

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PROJECT

SITE LOCATION

PROPOSED SUBDIVISON OF LOT 4 IN DP 1054848

STOTT STREET

BILAMBIL HEIGHTS, TERRANORA

Source: Brisbane UBD 43rd Edition

FIGURED DIMENSIONS TO BE READ IN PREFERENCE TO SCALING.	APPROVED	DRAWN C.M.A.	DRAWING No.
		DATE 29.09.03	CHECKED	GJ0309.2.1

2. Historical use of chemicals

Historically, a varied array of chemicals have known to be applied to many agricultural lands and given the nature and often extensive use of such chemicals, there is reason to suspect that trace amounts of these chemicals may still be present in the soil. Some of these chemicals are known to persist in the environment whilst others have little or no residual affect within the soil. Given that the majority of the modern agricultural chemicals are not persistent in the environment and the use of the more persistent chemicals has been restricted or prohibited since the mid 1980's, it is unlikely that high residual contamination would be found throughout any given site. However, the presence of contamination "hot spots" may result from spillage of chemicals within storage and mixing areas, mixing at higher concentrations than recommended by manufacturer's specifications or incorrect application methods.

Brief descriptions of chemical residues most commonly found on agricultural lands are listed below:

Organochlorine pesticides (OC's)

- were first introduced in agriculture during the Second World War,
- have been used extensively in NSW i.e. small cropping and banana plantations,
- are stable against decomposition or degradation in the environment,
- have very low solubility in water and have high solubility in hydrocarbon-like environments, and
- have a relatively high toxicity to insects but low toxicity to humans.

Organophosphate pesticides (OP's)

- are generally non-persistent in the environment,
- generally decompose within days or weeks of application and thus are seldom found in food chains,
- are more acutely toxic to humans than OC's, and
- exposure to OP's is typically percutaneous or by inhalation.

Arsenic (As)

- compounds of arsenic are used in weedicides, termicides and pesticides,
- is a known carcinogenic in humans, and
- was replaced by OC's &OP's in the 1950's and 1960's, however is still in limited use today.

Cadmium (Cd)

- is a highly toxic, non-essential element with no known biological function,
- is an impurity in some phosphate fertilizers, and
- is bioavailable in soils.

Copper (Cu)

- is a constituent of many agricultural pesticides and fertilizers,
- is known to cause mucosal irritation of the eyes, and
- may in some instances cause pruritic dermatitis and allergic contact dermatitis in humans.

Lead (Pb)

- is a non-essential element with no known biological function,
- is comparatively less toxic and bioavailable than other heavy metals,
- was historically applied in agriculture via the compound lead arsenate $Pb_3(AsO_4)_2$.

Mercury (Hg)

- is a non-essential element with no known biological function,
- was used (alkyl-Hg's) to prevent fungal disease in germinating seeds resulting in the addition of large amounts of Hg to soils, and
- is a potent neurotoxin causing serious damage to the central nervous system.

Zinc (Zn)

- is a component and impurity in many agricultural fertilizers, and
- is commonly used as a rodenticide and pesticide.

3. Site description

3.1 Investigation area

As earlier noted, Lot 4 (DP 1054848) is situated predominantly on the western side of Stott street and also includes a smaller parcel of land to the east of Stott street behind an under construction aged care facility. The property is bound to the east by Stott Street, north by existing residential developments, east by remnant vegetation and to the south by cleared grazing land. The parcel of land to the east of Stott Street is bound in the north and west by existing or under construction residential developments, to the east by remnant vegetation and to the south by cleared grazing land.

The investigation area was defined as the land area from these two land parcels falling within the proposed 2(c) residential zone. Any other land which fell outside the boundaries of the proposed zone was excluded. The investigation area included approximately 4.0 hectares, as shown on Drawing GJ0309.2.2.

3.2 Geology and soils

Based on samples recovered from 0.0 to 0.15m depth and observations made during the contamination sampling regime, the predominant soil type encountered across the majority of the investigation area was ferrosol. Ferrosols have B2 horizons which are high in free iron oxide and lack a strong texture contrast between A and B horizons. These soils are widely recognised and utilised agriculturally due to their favourable physical properties, Isbell (1996)[1].

3.3 Topography and drainage

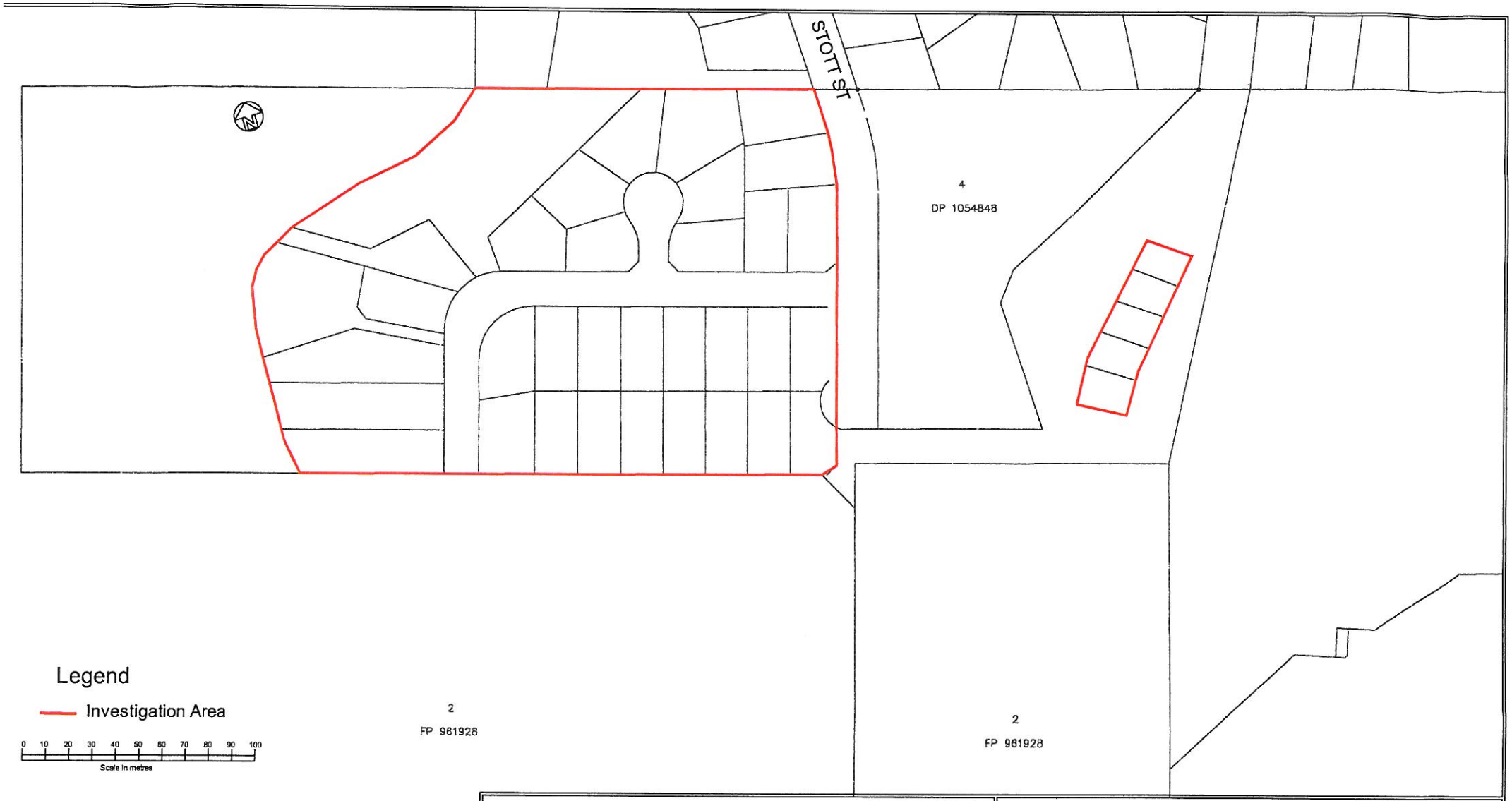
Topography of Lot 4 (on DP 1054848) to the west of Stott Street generally falls from east to west. The slope can generally be described as gently to moderately inclined (10^0), increasing towards steep (18^0) in the lower slopes, McDonald R C *et al* (1984)[2]. Runoff in this section of Lot 4 (on DP 1054848) would drain towards the western boundary.

The parcel of land to the east of Stott street falls from west to east and with slopes being generally described as moderate to steeply inclined (10^0 - 18^0), McDonald R C *et al* (1984)[3]. Hence runoff in this section of Lot 4 (on DP 1054848) would drain to the east.

[1] Isbell, R. F. (1996) The Australian Soil Classification. CSIRO.
[2] McDonald R C, Isbell R F, Speight J G, Walker J & Hopkins M S. (1984) Australian Soil and Land Survey Field Handbook, Second Edition 1990, Inkata Press Pty Ltd
[3] Ibid.

3.4 Vegetation

Historical clearing of native vegetation for the purpose of primary production is evident across much of the investigation area within Lot 4 (on DP 1054848). It was estimated that the southern two thirds of the investigation area to the west of Stott street is presently used for horticultural purposes (passionfruit plantation), with the remaining third having recently been cultivated, presumably for future cropping. The parcel of land to the east of Stott street may have historically been cleared but is presently overgrown by tall (>2m) grasses.



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PROJECT

SITE LAYOUT

PROPOSED SUBDIVISON OF LOT 4 IN DP 1054848

STOTT STREET

BILAMBIL HEIGHTS, TERRANORA

FIGURED DIMENSIONS TO BE READ IN PREFERENCE TO SCALING.	APPROVED	SCALE AS SHOWN	DRAWN C.M.A
		DATE 26.09.03	DRAWING No. GJ0309.2.2

4. Subsurface investigation

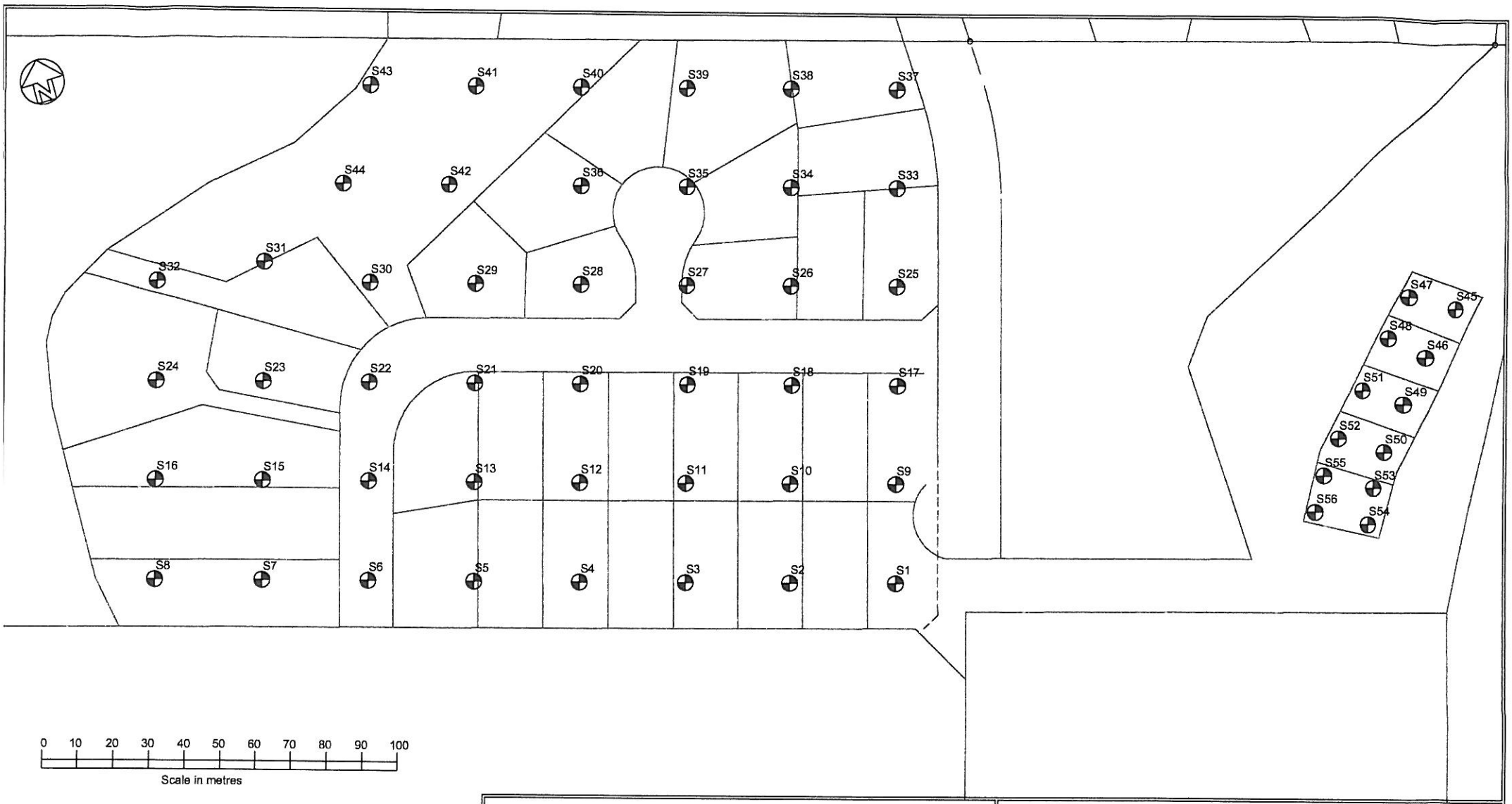
4.1 Fieldwork

Systematic sampling was conducted across the investigation area by experienced environmental scientists. All soil samples were collected from 0.0 – 0.15m depth near surface level (NSL) using a 60mm diameter push tube sampler. The sampler was washed thoroughly with Extran MA03 cleaner and re-rinsed in water prior to consecutive uses to prevent cross contamination. A total of fifty six (56) soil sub-samples were recovered from Lot 4 (on DP1054848) within the investigation area (forty four to the west of Stott Street and twelve from the parcel of land east of Stott Street). All sample locations are shown on Drawing Number GJ0309.1.3.

Upon recovery, samples were stored in an ice-filled insulated container and placed out of direct sunlight. The samples were composited by combining equal quantities of four (4) samples to form one (1) composite sample prior to being sent for laboratory analysis. Therefore, a total of eleven (11) composite samples (C1 – C11) from Lot 4 DP1054848 and three (3) composite samples (C12 – C14) from the parcel of land east of Stott Street, were formed

4.2 Laboratory analysis

All composite samples were analysed by Australian Laboratory Services (ALS) for organochlorine/ organophosphate pesticides, arsenic, cadmium, copper, lead, mercury and zinc. ALS is located at 32 Shand Street, Stafford, Brisbane, Queensland. ALS is a National Association of Testing Authorities, Australia (NATA) registered laboratory.



0 10 20 30 40 50 60 70 80 90 100

Scale in metres

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PROJECT

SUB-SAMPLE LOCATIONS

PROPOSED SUBDIVISON OF LOT 4 IN DP 1054848

STOTT STREET

BILAMBIL HEIGHTS, TERRANORA

FIGURED DIMENSIONS TO BE READ IN PREFERENCE TO SCALING.	APPROVED	SCALE AS SHOWN	DRAWN C.M.A
		DATE 26.09.03	

DRAWING No.

GJ0309.2.3

5. Results

5.1 Soil investigation trigger levels

The National Environment Protection Council (NEPM), Level A, Health Investigation Levels (HIL's) for frequently occurring substances are shown in Table 5.1.1 below. Consideration must be given to the future use of areas within the subject properties where results are found to exceed one or more of the HIL's. As composites were formed by combining equal amounts of four (4) sub samples, HIL's were adjusted for composite sampling by dividing by four (4).

Table 5.1.1 The NEPM HIL's for frequently occurring substances (mg/kg).

Analyte	Background ranges	HIL's (mg/kg)	HIL's adjusted for composite sampling
Metals/Metalloids			
Arsenic	1 - 50	100	25
Cadmium	1	20	5
Copper	2 - 100	1000	250
Lead	1 - 200	300	75
Zinc	10 - 300	7000	1750
Mercury (inorganic)	0.03	15	3.75
Organics			
Aldrin + Dieldrin (A+D)	-	10	2.5
Chlordane	-	50	12.5
DDT + DDD + DDE	-	200	50

Summaries of analytical results for the present investigation are shown in Table 5.1.2 below with results exceeding HIL's shown in bold. Laboratory certificates are attached in Appendix 1.

Table 5.1.2. Summary of analytical results

Composite (Sample) no.	As	Cd	Cu	Pb	Zn	Hg	Aldrin + Dieldrin	Chlordane	DDT + DDD + DDE
C1 (S1,S2,S3,S4)	7	1	235	9	166	0.1	<0.1	<0.1	<0.3
C2 (S5,S6,S7,S8)	4	<1	113	<1	48	<0.1	<0.1	<0.1	<0.3
C3 (S9,S10,S11,S12)	5	<1	**434**	1	93	<0.1	<0.1	<0.1	<0.3
C4 (S13,S14,S15,S16)	5	<1	226	<1	64	<0.1	<0.1	<0.1	<0.3
C5 (S17,S18,S19,S20)	3	<1	100	<1	88	<0.1	<0.1	<0.1	<0.3
C6 (S21,S22,S23,S24)	5	<1	**306**	2	68	0.1	<0.1	<0.1	<0.3
C7 (S25,S26,S27,S28)	1	<1	42	<1	89	<0.1	<0.1	<0.1	<0.3
C8 (S29,S30,S31,S32)	3	<1	44	<1	77	<0.1	<0.1	<0.1	<0.3
C9 (S33,S34,S35,S36)	1	<1	50	2	86	<0.1	<0.1	<0.1	<0.3
C10 (S37,S38,S39,S40)	<1	<1	33	<1	89	<0.1	<0.1	<0.1	<0.3
C11 (S41,S42,S43,S44)	1	<1	51	<1	81	0.1	<0.1	<0.1	<0.3
C12 (S45,S46,S47,S48)	2	<1	32	<1	82	0.1	<0.1	<0.1	<0.3
C13 (S49,S50,S51,S52)	<1	<1	28	<1	69	<0.1	<0.1	<0.1	<0.3
C14 (S53,S54,S55,S56)	2	<1	31	<1	63	<0.1	<0.1	<0.1	<0.3
Mean	<3	<1	123	<2	83	<0.1	<0.1	<0.1	<0.3

The concentrations of arsenic, cadmium, lead, zinc, mercury, and organochlorine compounds were below the adjusted HIL levels within all eleven (11) composite samples (C1 – C11) analysed from Lot 4 (DP 1054848) on the western side of Stott street. However, the concentration of copper (Cu) was above the adjusted HIL level (250 mg/ Kg) in two of the composite samples analysed. Composites C3 and C6 exhibited copper concentrations of 434 mg/kg, and 306 mg/kg respectively. The eight (8) sub-samples used to form composites C3 and C6 were subsequently analysed for copper concentration. The analytical results for these samples are shown in Table 5.1.3 below.

Table 5.1.3. Copper results (mg/kg).

Sample no.	Copper concentration (mg/kg)
S9	12
S10	981
S11	312
S12	271
S21	929
S22	420
S23	189
S24	73
Mean	398.38

Analysis of the eight sub-samples used to form composite samples C3 and C6, indicates that the concentration of copper within all of these samples was below the HIL of 1000 mg/kg.

6. Conclusions and recommendations

This Soil Contamination Assessment determined the occurrence and concentration of arsenic, cadmium, copper, lead, zinc, mercury, and organochlorine compounds existing in the natural surface soils of the investigation area. The analytical results confirm that none of these potentially contaminating substances were present in the site soils in concentrations exceeding the NEPC's Level A HIL's. The site is therefore considered to be uncontaminated and in relation to soil contamination issues, is suitable for the proposed residential development.

Based on this finding, it is considered by Gilbert and Sutherland, that no additional sampling or analysis is required.

Appendix 1. Laboratory certificates

ALS Environmental

CERTIFICATE OF ANALYSIS

CONTACT:	MR C BUTLER	BATCH:	EB58295
CLIENT:	GILBERT & SUTHERLAND PTY LTD	SUB BATCH:	0
ADDRESS:		LABORATORY:	BRISBANE
	P O BOX 4115	DATE RECEIVED:	10/09/2003
	ROBINA QLD 4230	DATE COMPLETED:	17/09/2003
		SAMPLE TYPE:	SOIL
ORDER No.:	GJ0309-2	No. of SAMPLES:	14
PROJECT:			

COMMENTS

Results apply to sample(s) as submitted. Samples as received digested by USEPA method 200.2 (modified) prior to the determination of metals. Results reported on a dry weight basis.

NOTES

This is the Final Report and supersedes any preliminary reports with this batch number.
All pages of this report have been checked and approved for release.

ISSUING LABORATORY: BRISBANE

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Email: michael.heery@alsenviro.com

Signatory

Batch: EB58295
Sub Batch: 0
Date of Issue: 17/09/2003
Client: GILBERT & SUTHERLAND PTY LTD
Client Reference:

CERTIFICATE OF ANALYSIS

				SAMPLE IDENTIFICATION									
		Laboratory I.D.		1	2	3	4	5	6	7	8	9	10
		Date Sampled		09/09/2003	09/09/2003	09/09/2003	09/09/2003	09/09/2003	09/09/2003	09/09/2003	09/09/2003	09/09/2003	09/09/2003
METHOD	ANALYSIS DESCRIPTION	UNIT	LOR	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
EA-055	Moisture Content (dried @ 103°C)	%	0.1	20.9	19.0	21.2	18.9	19.3	21.5	18.2	20.3	18.7	17.5
EG-005T	Arsenic - Total	mg/kg	1	7	4	5	5	3	5	1	3	1	<1
EG-005T	Cadmium - Total	mg/kg	1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1
EG-005T	Copper - Total	mg/kg	1	235	113	434	226	100	306	42	44	50	33
EG-005T	Lead - Total	mg/kg	1	9	<1	1	<1	<1	2	<1	<1	2	<1
EG-005T	Zinc - Total	mg/kg	1	166	48	93	64	88	68	89	77	86	89
EG-035T	Mercury - Total	mg/kg	0.1	0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1

Batch: EB58295
Sub Batch: 0
Date of Issue: 17/09/2003
Client: GILBERT & SUTHERLAND PTY LTD
Client Reference:

CERTIFICATE OF ANALYSIS

				SAMPLE IDENTIFICATION									
		Laboratory I.D.		11	12	13	14						
		Date Sampled		09/09/2003	09/09/2003	09/09/2003	09/09/2003						
METHOD	ANALYSIS DESCRIPTION	UNIT	LOR	C11	C12	C13	C14						
EA-055	Moisture Content (dried @ 103'C)	%	0.1	19.4	23.9	23.7	26.4						
EG-005T	Arsenic - Total	mg/kg	1	1	2	<1	2						
EG-005T	Cadmium - Total	mg/kg	1	<1	<1	<1	<1						
EG-005T	Copper - Total	mg/kg	1	51	32	28	31						
EG-005T	Lead - Total	mg/kg	1	<1	<1	<1	<1						
EG-005T	Zinc - Total	mg/kg	1	81	82	69	63						
EG-035T	Mercury - Total	mg/kg	0.1	0.1	0.1	<0.1	<0.1						

Batch: EB58295
Sub Batch: 0
Date of Issue: 17/09/2003
Client: GILBERT & SUTHERLAND PTY LTD
Client Reference:

QUALITY CONTROL REPORT

				SAMPLE IDENTIFICATION									
		Laboratory I.D.		200	201								
		Date Sampled		10/09/2003	10/09/2003								
METHOD	ANALYSIS DESCRIPTION	UNIT	LOR	Method Blank 1	Inorg 1 LCS % Rec								
				CHECKS AND SPIKES									
EA-055	Moisture Content (dried @ 103'C)	%	0.1	----	----								
EG-005T	Arsenic - Total	mg/kg	1	<1	101%								
EG-005T	Cadmium - Total	mg/kg	1	<1	105%								
EG-005T	Copper - Total	mg/kg	1	<1	107%								
EG-005T	Lead - Total	mg/kg	1	<1	106%								
EG-005T	Zinc - Total	mg/kg	1	<1	104%								
EG-035T	Mercury - Total	mg/kg	0.1	<0.1	96.0%								

QC REPORT

ALS Environmental

CERTIFICATE OF ANALYSIS

CONTACT:	MR C BUTLER	**BATCH:**	EB58295
CLIENT:	GILBERT & SUTHERLAND PTY LTD	**SUB BATCH:**	1
ADDRESS:	P O BOX 4115 ROBINA QLD 4230	**LABORATORY:**	BRISBANE
		DATE RECEIVED:	10/09/2003
		DATE COMPLETED:	17/09/2003
		SAMPLE TYPE:	SOIL
ORDER No.:	GJ0309-2	**No. of SAMPLES:**	14
PROJECT:			

COMMENTS

Results apply to sample(s) as submitted. Samples analysed on an as received basis. Results reported on a dry weight basis.

NOTES

This is the Final Report and supersedes any preliminary reports with this batch number.
All pages of this report have been checked and approved for release.

ISSUING LABORATORY: BRISBANE

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Signatory

Batch: EB58295
Sub Batch: 1
Date of Issue: 17/09/2003
Client: GILBERT & SUTHERLAND PTY LTD
Client Reference:

CERTIFICATE OF ANALYSIS

				SAMPLE IDENTIFICATION									
		Laboratory I.D.		1	2	3	4	5	6	7	8	9	10
		Date Sampled		09/09/2003	09/09/2003	09/09/2003	09/09/2003	09/09/2003	09/09/2003	09/09/2003	09/09/2003	09/09/2003	09/09/2003
METHOD	ANALYSIS DESCRIPTION	UNIT	LOR	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
EA-055	Moisture Content (dried @ 103'C)	%	0.1	20.9	19.0	21.2	18.9	19.3	21.5	18.2	20.3	18.7	17.5
EP-068A-SS	**ORGANOCHLORINE PESTICIDES**												
EP-068A-SS	alpha-BHC	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
EP-068A-SS	HCB	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
EP-068A-SS	beta-BHC & gamma-BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
EP-068A-SS	delta-BHC	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
EP-068A-SS	Heptachlor	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
EP-068A-SS	Aldrin	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
EP-068A-SS	Heptachlor epoxide	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
EP-068A-SS	Chlordane - trans	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
EP-068A-SS	Endosulfan 1	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
EP-068A-SS	Chlordane - cis	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
EP-068A-SS	Dieldrin	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
EP-068A-SS	DDE	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
EP-068A-SS	Endrin	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
EP-068A-SS	Endosulfan 2	mg/kg	0.05	<0.05	<0.05	0.11	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
EP-068A-SS	DDD	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
EP-068A-SS	Endrin aldehyde	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
EP-068A-SS	Endosulfan sulfate	mg/kg	0.05	0.07	0.26	0.26	0.10	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
EP-068A-SS	DDT	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
EP-068A-SS	Endrin ketone	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
EP-068A-SS	Methoxychlor	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
EP-068B-SS	**ORGANOPHOSPHORUS PESTICIDES**												
EP-068B-SS	Dichlorvos	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
EP-068B-SS	Demeton-S-methyl	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
EP-068B-SS	Monocroptophos	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
EP-068B-SS	Dimethoate	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
EP-068B-SS	Diazinon	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
EP-068B-SS	Chlorpyrifos-methyl	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
EP-068B-SS	Parathion-methyl	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
EP-068B-SS	Malathion	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
EP-068B-SS	Fenthion	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
EP-068B-SS	Chlorpyrifos	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
EP-068B-SS	Parathion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2

Batch: EB58295
Sub Batch: 1
Date of Issue: 17/09/2003
Client: GILBERT & SUTHERLAND PTY LTD
Client Reference:

CERTIFICATE OF ANALYSIS

				SAMPLE IDENTIFICATION									
		Laboratory I.D.		1	2	3	4	5	6	7	8	9	10
		Date Sampled		09/09/2003	09/09/2003	09/09/2003	09/09/2003	09/09/2003	09/09/2003	09/09/2003	09/09/2003	09/09/2003	09/09/2003
METHOD	ANALYSIS DESCRIPTION	UNIT	LOR	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
EP-068B-SS	Pirimphos-ethyl	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
EP-068B-SS	Chlorfenvinphos E	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
EP-068B-SS	Chlorfenvinphos Z	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
EP-068B-SS	Bromophos-ethyl	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
EP-068B-SS	Fenamiphos	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
EP-068B-SS	Prothiofos	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
EP-068B-SS	Ethion	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
EP-068B-SS	Carbophenothion	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
EP-068B-SS	Azinphos-methyl	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
EP-068S-SS	**ORGANOCHLORINE PESTICIDE SURROGATE**												
EP-068S-SS	Dibromo-DDE	%	1	105	105	87	101	90	95	96	96	93	98
EP-068T-SS	**ORGANOPHOSPHORUS PESTICIDE SURROGATE**												
EP-068T-SS	DEF	%	1	97	102	85	91	102	98	102	107	98	101

Batch: EB58295
Sub Batch: 1
Date of Issue: 17/09/2003
Client: GILBERT & SUTHERLAND PTY LTD
Client Reference:

CERTIFICATE OF ANALYSIS

				SAMPLE IDENTIFICATION									
		Laboratory I.D.		11	12	13	14						
		Date Sampled		09/09/2003	09/09/2003	09/09/2003	09/09/2003						
METHOD	ANALYSIS DESCRIPTION	UNIT	LOR	C11	C12	C13	C14						
EA-055	Moisture Content (dried @ 103°C)	%	0.1	19.4	23.9	23.7	26.4						
EP-068A-SS	**ORGANOCHLORINE PESTICIDES**												
EP-068A-SS	alpha-BHC	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05						
EP-068A-SS	HCB	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05						
EP-068A-SS	beta-BHC & gamma-BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1						
EP-068A-SS	delta-BHC	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05						
EP-068A-SS	Heptachlor	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05						
EP-068A-SS	Aldrin	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05						
EP-068A-SS	Heptachlor epoxide	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05						
EP-068A-SS	Chlordane - trans	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05						
EP-068A-SS	Endosulfan 1	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05						
EP-068A-SS	Chlordane - cis	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05						
EP-068A-SS	Dieldrin	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05						
EP-068A-SS	DDE	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05						
EP-068A-SS	Endrin	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05						
EP-068A-SS	Endosulfan 2	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05						
EP-068A-SS	DDD	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05						
EP-068A-SS	Endrin aldehyde	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05						
EP-068A-SS	Endosulfan sulfate	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05						
EP-068A-SS	DDT	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2						
EP-068A-SS	Endrin ketone	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05						
EP-068A-SS	Methoxychlor	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2						
EP-068B-SS	**ORGANOPHOSPHORUS PESTICIDES**												
EP-068B-SS	Dichlorvos	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05						
EP-068B-SS	Demeton-S-methyl	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05						
EP-068B-SS	Monocroptophos	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2						
EP-068B-SS	Dimethoate	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05						
EP-068B-SS	Diazinon	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05						
EP-068B-SS	Chlorpyrifos-methyl	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05						
EP-068B-SS	Parathion-methyl	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2						
EP-068B-SS	Malathion	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05						
EP-068B-SS	Fenthion	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05						
EP-068B-SS	Chlorpyrifos	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05						
EP-068B-SS	Parathion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2						

Batch: EB58295
Sub Batch: 1
Date of Issue: 17/09/2003
Client: GILBERT & SUTHERLAND PTY LTD
Client Reference:

CERTIFICATE OF ANALYSIS

				SAMPLE IDENTIFICATION									
		Laboratory I.D.		11	12	13	14						
		Date Sampled		09/09/2003	09/09/2003	09/09/2003	09/09/2003						
METHOD	ANALYSIS DESCRIPTION	UNIT	LOR	C11	C12	C13	C14						
EP-068B-SS	Pirimphos-ethyl	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05						
EP-068B-SS	Chlorfenvinphos E	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05						
EP-068B-SS	Chlorfenvinphos Z	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05						
EP-068B-SS	Bromophos-ethyl	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05						
EP-068B-SS	Fenamiphos	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05						
EP-068B-SS	Prothiofos	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05						
EP-068B-SS	Ethion	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05						
EP-068B-SS	Carbophenothion	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05						
EP-068B-SS	Azinphos-methyl	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05						
EP-068S-SS	ORGANOCHLORINE PESTICIDE SURROGATE												
EP-068S-SS	Dibromo-DDE	%	1	97	95	100	91						
EP-068T-SS	ORGANOPHOSPHORUS PESTICIDE SURROGATE												
EP-068T-SS	DEF	%	1	103	100	104	100						

Batch: EB58295
Sub Batch: 1
Date of Issue: 17/09/2003
Client: GILBERT & SUTHERLAND PTY LTD
Client Reference:

QUALITY CONTROL REPORT

				SAMPLE IDENTIFICATION										
		Laboratory I.D.		200	406	407								
		Date Sampled		10/09/2003	10/09/2003	10/09/2003								
METHOD	ANALYSIS DESCRIPTION	UNIT	LOR	Method Blank 1	OCOPS1446 SCS % Rec	OCOPS1446 DCS % Rec								
				CHECKS AND SPIKES										
EA-055	Moisture Content (dried @ 103°C)	%	0.1	----	----	----								
EP-068A-SS	ORGANOCHLORINE PESTICIDES													
EP-068A-SS	alpha-BHC	mg/kg	0.05	<0.05	101%	104%								
EP-068A-SS	HCB	mg/kg	0.05	<0.05	102%	99.6%								
EP-068A-SS	beta-BHC & gamma-BHC	mg/kg	0.1	<0.1	102%	101%								
EP-068A-SS	delta-BHC	mg/kg	0.05	<0.05	103%	100%								
EP-068A-SS	Heptachlor	mg/kg	0.05	<0.05	104%	103%								
EP-068A-SS	Aldrin	mg/kg	0.05	<0.05	103%	104%								
EP-068A-SS	Heptachlor epoxide	mg/kg	0.05	<0.05	108%	105%								
EP-068A-SS	Chlordane - trans	mg/kg	0.05	<0.05	103%	106%								
EP-068A-SS	Endosulfan 1	mg/kg	0.05	<0.05	107%	103%								
EP-068A-SS	Chlordane - cis	mg/kg	0.05	<0.05	106%	108%								
EP-068A-SS	Dieldrin	mg/kg	0.05	<0.05	107%	100%								
EP-068A-SS	DDE	mg/kg	0.05	<0.05	105%	107%								
EP-068A-SS	Endrin	mg/kg	0.05	<0.05	110%	108%								
EP-068A-SS	Endosulfan 2	mg/kg	0.05	<0.05	110%	106%								
EP-068A-SS	DDD	mg/kg	0.05	<0.05	108%	109%								
EP-068A-SS	Endrin aldehyde	mg/kg	0.05	<0.05	113%	96.2%								
EP-068A-SS	Endosulfan sulfate	mg/kg	0.05	<0.05	102%	104%								
EP-068A-SS	DDT	mg/kg	0.2	<0.2	103%	105%								
EP-068A-SS	Endrin ketone	mg/kg	0.05	<0.05	114%	115%								
EP-068A-SS	Methoxychlor	mg/kg	0.2	<0.2	106%	105%								
EP-068B-SS	ORGANOPHOSPHORUS PESTICIDES													
EP-068B-SS	Dichlorvos	mg/kg	0.05	<0.05	94.1%	91.4%								
EP-068B-SS	Demeton-S-methyl	mg/kg	0.05	<0.05	64.7%	65.3%								
EP-068B-SS	Monocroptophos	mg/kg	0.2	<0.2	55.3%	67.2%								
EP-068B-SS	Dimethoate	mg/kg	0.05	<0.05	67.7%	67.2%								
EP-068B-SS	Diazinon	mg/kg	0.05	<0.05	69.0%	72.0%								
EP-068B-SS	Chlorpyrifos-methyl	mg/kg	0.05	<0.05	102%	105%								
EP-068B-SS	Parathion-methyl	mg/kg	0.2	<0.2	103%	104%								
EP-068B-SS	Malathion	mg/kg	0.05	<0.05	103%	102%								
EP-068B-SS	Fenthion	mg/kg	0.05	<0.05	98.6%	99.6%								

QC REPORT

Batch: EB58295
Sub Batch: 1
Date of Issue: 17/09/2003
Client: GILBERT & SUTHERLAND PTY LTD
Client Reference:

QUALITY CONTROL REPORT

				SAMPLE IDENTIFICATION									
		Laboratory I.D.		200	406	407							
		Date Sampled		10/09/2003	10/09/2003	10/09/2003							
METHOD	ANALYSIS DESCRIPTION	UNIT	LOR	Method Blank 1	OCOPS1446 SCS % Rec	OCOPS1446 DCS % Rec							
				CHECKS AND SPIKES									
EP-068B-SS	Chlorpyrifos	mg/kg	0.05	<0.05	106%	104%							
EP-068B-SS	Parathion	mg/kg	0.2	<0.2	104%	106%							
EP-068B-SS	Pirimphos-ethyl	mg/kg	0.05	<0.05	72.2%	71.9%							
EP-068B-SS	Chlorfenvinphos E	mg/kg	0.05	<0.05	---	---							
EP-068B-SS	Chlorfenvinphos Z	mg/kg	0.05	<0.05	103%	103%							
EP-068B-SS	Bromophos-ethyl	mg/kg	0.05	<0.05	105%	104%							
EP-068B-SS	Fenamiphos	mg/kg	0.05	<0.05	99.5%	89.1%							
EP-068B-SS	Prothiofos	mg/kg	0.05	<0.05	101%	106%							
EP-068B-SS	Ethion	mg/kg	0.05	<0.05	105%	106%							
EP-068B-SS	Carbophenothion	mg/kg	0.05	<0.05	104%	104%							
EP-068B-SS	Azinphos-methyl	mg/kg	0.05	<0.05	93.9%	89.3%							
EP-068S-SS	ORGANOCHLORINE PESTICIDE SURROGATE												
EP-068S-SS	Dibromo-DDE	%	1	87	109	105							
EP-068T-SS	ORGANOPHOSPHORUS PESTICIDE SURROGATE												
EP-068T-SS	DEF	%	1	91	107	98							

QC REPORT

URGENT

CHAIN OF CUSTODY DOCUMENTATION

Client	Gilbert and Sutherland		
Postal Address:	PO Box 857, Robina QLD 4226		
Send Report to:	Chris Butler	*Send Invoice to:*	D. Endres (Robina)
Data Needed By:			
G&S Project ID:	GJ0309-2		
Comments:	Composite samples please homogenise!		

For:	Australian Laboratory Services
Address:	32 Shand Street, Stafford, Q4053
Tel:	073 243 7222
Fax:	073 243 7218

EB58295 5 (A) 10-9-03

ORG.

Sample ID	*Depth*	*Matrix*	*Date*	*Time*	OC	OP	Arsenic	Lead	Cadmium	Copper	Mercury	Zinc			Notes:
(1) C1		Soil	09.09.03		/	/	/	/	/	/	/	/			
(2) C2		Soil	09.09.03		/	/	/	/	/	/	/	/			
(3) C3		Soil	09.09.03		/	/	/	/	/	/	/	/			
(4) C4		Soil	09.09.03		/	/	/	/	/	/	/	/			
(5) C5		Soil	09.09.03		/	/	/	/	/	/	/	/			
(6) C6		Soil	09.09.03		/	/	/	/	/	/	/	/			
(7) C7		Soil	09.09.03		/	/	/	/	/	/	/	/			
(8) C8		Soil	09.09.03		/	/	/	/	/	/	/	/			
(9) C9		Soil	09.09.03		/	/	/	/	/	/	/	/			
(10) C10		Soil	09.09.03		/	/	/	/	/	/	/	/			
(11) C11		Soil	09.09.03		/	/	/	/	/	/	/	/			
(12) C12		Soil	09.09.03		/	/	/	/	/	/	/	/			
(13) C13		Soil	09.09.03		/	/	/	/	/	/	/	/			
(14) C14		Soil	09.09.03		/	/	/	/	/	/	/	/			

FAXED 10-9-03

-1 colour

Relinquished by:

Name: Chris Butler
of: G&S
Date: 09.09.03
Time:

Received by:

Name: K CURTAIN
of: ALS Environmental
Date: 10-9-03
Time: 8:30 am

ALS Environmental

ORGANICS QUALITY CONTROL REPORT

BATCH No. : EB58295 DATE BATCH RECEIVED : 10/09/03

CLIENT : Gilbert & Sutherland Pty Ltd DATE BATCH COMPLETED : 18/09/03

Where applicable, internal standards are added to sample extracts prior to instrumental analysis.
Absolute peak areas and retention times fall within the criteria specified in the individual methods.

Method Code	Test	Matrix	Method Reference		QC Lot Number	Date Samples Extracted	Date Samples Analysed
			Extraction	Analysis			
EP-068	Pesticides	Soil	Tumbler	USEPA 8270B	OCOPS1446	16/09/03	16/09/03

BATCH QUALITY CONTROL

ALS EP-068 : PESTICIDES

QC LOT No. : OCOPS1446
MATRIX: Soil

ANALYST: K. HEGARTY

COMPOUND	Blank Conc	Spike Level	SPIKE QC RESULTS				Control Limits		
			SCS Conc	DCS Conc	Average Rec.	RPD	Rec.		RPD
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	Low	High	%
EP-068A : ORGANOCHLORINE PESTICIDES									
a-BHC	<LOR	0.25	0.25	0.26	102	2	61	109	20
HCB	<LOR	0.25	0.25	0.25	101	2	61	111	20
b- & g-BHC	<LOR	0.50	0.51	0.50	101	1	66	113	20
d-BHC	<LOR	0.25	0.26	0.25	102	3	63	108	20
Heptachlor	<LOR	0.25	0.26	0.26	103 *	1	67	102	20
Aldrin	<LOR	0.25	0.26	0.26	103	1	61	107	20
Heptachlor epoxide	<LOR	0.25	0.27	0.26	107 *	2	63	103	20
trans-Chlordane	<LOR	0.25	0.26	0.26	104	3	60	104	20
Endosulfan 1	<LOR	0.25	0.27	0.26	105	4	65	115	20
cis-Chlordane	<LOR	0.25	0.26	0.27	107 *	2	61	102	20
Dieldrin	<LOR	0.25	0.27	0.25	104	7	63	112	20
DDE	<LOR	0.25	0.26	0.27	106 *	2	66	104	20
Endrin	<LOR	0.25	0.27	0.27	109	1	1	150	20
Endosulfan 2	<LOR	0.25	0.28	0.27	108	4	71	108	20
DDD	<LOR	0.25	0.27	0.27	108	0	65	108	20
Endrin aldehyde	<LOR	0.25	0.28	0.24	105	16	47	125	20
Endosulfan sulfate	<LOR	0.25	0.26	0.26	103	1	63	109	20
DDT	<LOR	0.25	0.26	0.26	104	2	60	115	20
Endrin ketone	<LOR	0.25	0.29	0.29	115	1	42	140	20
Methoxychlor	<LOR	0.25	0.26	0.26	105	1	61	113	20
EP-068B : ORGANOPHOSPHORUS PESTICIDES									
Dichlorvos	<LOR	0.25	0.24	0.23	93	3	62	101	20
Demeton-s-methyl	<LOR	0.25	0.16	0.16	65	1	44	111	20
Monocroptophos	<LOR	0.25	0.14	0.17	61	19	36	117	20
Dimethoate	<LOR	0.25	0.17	0.17	67	1	62	110	20
Diazinon	<LOR	0.25	0.17	0.18	71	4	61	103	20
Chlorpyrifos methyl	<LOR	0.25	0.25	0.26	104 *	3	70	102	20
Parathion methyl	<LOR	0.25	0.26	0.26	103	1	60	105	20
Malathion	<LOR	0.25	0.26	0.25	103	1	62	107	20
Fenthion	<LOR	0.25	0.25	0.25	99	1	60	100	20
Chlorpyrifos	<LOR	0.25	0.26	0.26	105	2	70	106	20
Parathion	<LOR	0.25	0.26	0.26	105	2	48	118	20
Pirimiphos ethyl	<LOR	0.25	0.18	0.18	72	0	58	98	20
Chlorfenvinphos E	<LOR	0.25	N/A	N/A	N/A		--	--	
Chlorfenvinphos Z	<LOR	0.25	0.26	0.26	103	0	60	122	20
Bromophos ethyl	<LOR	0.25	0.26	0.26	104	0	66	104	20
Fenamiphos	<LOR	0.25	0.25	0.22	94	11	57	101	20
Prothiofos	<LOR	0.25	0.25	0.26	104 *	4	65	101	20
Ethion	<LOR	0.25	0.26	0.27	105	1	62	107	20
Carbofenthion	<LOR	0.25	0.26	0.26	104 *	1	64	102	20
Azinphos methyl	<LOR	0.25	0.23	0.22	92	5	42	112	20
EP-068C : TRIAZINE PESTICIDES									
Simazine	<LOR	0.25	0.15	0.16	63	4	1	140	20
Atrazine	<LOR	0.25	0.21	0.20	82	4	65	109	20
EP-068D : SYNTHETIC PYRETHROIDS									
Cypermethrins	<LOR	0.25	0.27	0.26	106	3	63	119	20

COMMENTS:

1) The control limits are based on ALS laboratory statistical data. (Method QWI-ORG/07)

2) * : Recovery or RPD falls outside of the recommended control limits.

ALS Environmental

CERTIFICATE OF ANALYSIS

CONTACT:	MR R ROWE	**BATCH:**	EB58802
CLIENT:	GILBERT & SUTHERLAND PTY LTD	**SUB BATCH:**	0
ADDRESS:		**LABORATORY:**	BRISBANE
	P O BOX 4115	**DATE RECEIVED:**	30/09/2003
	ROBINA QLD 4230	**DATE COMPLETED:**	03/10/2003
		SAMPLE TYPE:	SOIL
ORDER No.:	GJ0309-2	**No. of SAMPLES:**	8
PROJECT:			

COMMENTS

Results apply to sample(s) as submitted. Samples as received digested by USEPA method 200.2 (modified) prior to the determination of metals. Results reported on a dry weight basis.

NOTES

This is the Final Report and supersedes any preliminary reports with this batch number.
All pages of this report have been checked and approved for release.

ISSUING LABORATORY: BRISBANE

Address
32 Shand Street
Stafford QLD 4053
Australia

Phone: 61-7-3243 7222
Fax: 61-7-3243 7218
Email: michael.heery@alsenviro.com

Signatory

Batch: EB58802
Sub Batch: 0
Date of Issue: 03/10/2003
Client: GILBERT & SUTHERLAND PTY LTD
Client Reference:

CERTIFICATE OF ANALYSIS

		Laboratory I.D.		SAMPLE IDENTIFICATION									
		Date Sampled		1	2	3	4	5	6	7	8		
				09/09/2003	09/09/2003	09/09/2003	09/09/2003	09/09/2003	09/09/2003	09/09/2003	09/09/2003		
METHOD	ANALYSIS DESCRIPTION	UNIT	LOR	S9	S10	S11	S12	S21	S22	S23	S24		
EA-055	Moisture Content (dried @ 103'C)	%	0.1	11.1	26.9	23.5	19.2	17.6	15.3	28.4	20.5		
EG-005T	Copper - Total	mg/kg	1	12	981	312	271	929	420	189	73		

Batch: EB58802
Sub Batch: 0
Date of Issue: 03/10/2003
Client: GILBERT & SUTHERLAND PTY LTD
Client Reference:

QUALITY CONTROL REPORT

				SAMPLE IDENTIFICATION									
		Laboratory I.D.		200	201								
		Date Sampled		30/09/2003	30/09/2003								
METHOD	ANALYSIS DESCRIPTION	UNIT	LOR	Method Blank 1	Inorg 1 LCS % Rec								
				CHECKS AND SPIKES									
EA-055	Moisture Content (dried @ 103°C)	%	0.1	----	----								
EG-005T	Copper - Total	mg/kg	1	<1	105%								

URGENT EDS0002 S E 30.9.03 2/10 URGENT

CHAIN OF CUSTODY DOCUMENTATION

Client	Gilbert and Sutherland		*For:* Australian Laboratory Services
Postal Address:	PO Box 857, Robina QLD 4226		*Address:* 32 Shand Street, Stafford, Q4053
Send Report to:	Royce Rowe	*Send Invoice to:* D. Endres (Robina)	*Tel:* 073 243 7222
Data Needed By:	URGENT (02.10.03)	*Report needed by:*	*Fax:* 073 243 7218
G&S Project ID:	GJ0309-2	*Quote Number:*	
Comments:			

FAXED 30.9.03

	Sample ID	*Matrix*	*Date*	*Time*	*Type and Pres*	Copper (Cu)	Notes:
1	S9	Soil	09.09.03		Glass Jar	/	
2	S10	Soil	09.09.04		Glass Jar	/	
3	S11	Soil	09.09.05		Glass Jar	/	
4	S12	Soil	09.09.06		Glass Jar	/	
5	S21	Soil	09.09.07		Glass Jar	/	
6	S22	Soil	09.09.08		Glass Jar	/	
7	S23	Soil	09.09.09		Glass Jar	/	
8	S24	Soil	09.09.10		Glass Jar	/	

Relinquished by:
Name: Royce Rowe
of: G&S
Date: 29.09.03
Time:

Received by:
Name: K-CURTAIN
of: ALS Environmental
Date: 30.9.03
Time: 8:30 am