

Borehole: BH14

Project: GJ0873

Client: Project 28

Northing: _____

Easting: _____

RL(m): _____

GILBERT+SUTHERLAND
agriculture - water - environment

Depth (m): 2

Logged by: NG

Drilled by: Mazlab

Start date: 10/11/09

Drilling Method: Solid Auger

Depth NSL(m)	Drilling			Soil Description				Depth NSL(m)
	Depth (RL) m	Method	Graphic log	Soil Description (as per McDonald et al 1990)	Aust. Soil Class.	Revised Standard Colour	Accessories	
1				SAND , Grey, fine grained, gradual change to,				1
2				SAND , Light grey, white seams, fine grained.				2
3								3
4								4
5								5
6								6
7								7

Borehole: BH15

Project: GJ0873

Client: Project 28

Northing: _____

Easting: _____

RL(m): _____

GILBERT+SUTHERLAND
agriculture - water - environment

Depth (m): 2

Logged by: NG

Drilled by: Mazlab

Start date: 10/11/09

Drilling Method: Solid Auger

Depth NSL(m)	Drilling			Soil Description				Depth NSL(m)
	Depth (RL) m	Method	Graphic log	Soil Description (as per McDonald et.al1990)	Aust. Soil Class.	Revised Standard Colour	Accessories	
1				SAND , Light grey/white, fine grained, dry, gradual change to;				1
2				SAND , Light grey/white, fine grained, wet, gradual change to;			Water table @ 1.2	2
3								3
4								4
5								5
6								6
7								7

Borehole: BH16

Project: GJ0873

Client: Project 28

Northing: _____

Easting: _____

RL(m): _____

GILBERT+SUTHERLAND
agriculture - water - environment

Depth (m): 7.9

Logged by: NG

Drilled by: Mazlab

Start date: 10/11/09

Drilling Method: Solid Auger

Depth NSL(m)	Drilling			Soil Description					Depth NSL(m)
	Depth (RL) m	Method	Graphic log	Soil Description (as per McDonald et.al1990)	Aust. Soil Class.	Revised Standard Colour	Accessories	Additional Comments	
1			Δ. Δ. Δ	SANDY LOAM , Fill, gradual change to; SAND , Grey, fine grained, moist, gradual change to;					1
2				SAND , Light grey/white, fine grained, moist, gradual change to;					2
3				SAND , Light grey/white, fine grained, wet, gradual change to;				Water table @ 1.2	3
4									4
5				SAND , Brown, fine grained, wet, gradual change to;					5
6									6
7				SAND , Indurated sands, bore hole terminated.					7

Borehole: BH17

Project: GJ0873

Client: Project 28

Northing: _____

Easting: _____

RL(m): _____

GILBERT+SUTHERLAND
agriculture - water - environment

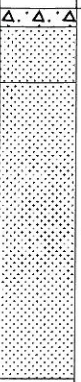
Depth (m): 2

Logged by: NG

Drilled by: Mazlab

Start date: 10/11/09

Drilling Method: Solid Auger

Depth NSL(m)	Drilling			Soil Description					Depth NSL(m)
	Depth (RL) m	Method	Graphic log	Soil Description (as per McDonald et al 1990)	Aust. Soil Class.	Revised Standard Colour	Accessories	Additional Comments	
1				SANDY LOAM , Fill, gradual change to; SAND , Grey, fine grained, gradual change to; SAND , Light grey/white, moist.				Water table @ 1.2	1
2									2
3									3
4									4
5									5
6									6
7									7

Borehole: BH18

Project: GJ0873

Client: Project 28

Northing: _____

Easting: _____

RL(m): _____

GILBERT+SUTHERLAND
agriculture - water - environment

Depth (m): 2

Logged by: NG

Drilled by: Mazlab

Start date: 10/11/09

Drilling Method: Solid Auger

Depth NSL(m)	Drilling			Soil Description					Depth NSL(m)
	Depth (RL) m	Method	Graphic log	Soil Description (as per McDonald et.al1990)	Aust. Soil Class	Revised Standard Colour	Accessories	Additional Comments	
				SANDY LOAM , Brown, fine grained, gradual change to,					
1				SAND , Grey, fine grained, moist, gradual change to,					1
2				SAND , Brown, fine grained.				Water table @ 1.2	2
3									3
4									4
5									5
6									6
7									7

Borehole: BH19

Project: GJ0873

Client: Project 28

Northing: _____

Easting: _____

RL(m): _____

GILBERT+SUTHERLAND
agriculture - water - environment

Depth (m): 2

Logged by: NG

Drilled by: Mazlab

Start date: 10/11/09

Drilling Method: Solid Auger

Depth NSL(m)	Drilling			Soil Description					Depth NSL(m)
	Depth (RL) m	Method	Graphic log	Soil Description (as per McDonald et.al1990)	Aust. Soil Class.	Revised Standard Colour	Accessories	Additional Comments	
1				SAND , White, very fine grained, dry, gradual change to;					1
2				SAND , Grey, fine grained, moist				Water table @ 1.3	2
3									3
4									4
5									5
6									6
7									7

Borehole: BH20

Project: GJ0873

Client: Project 28

Northing: _____

Easting: _____

RL(m): _____

GILBERT+SUTHERLAND
 agriculture - water - environment

Depth (m): 2.3

Logged by: NG

Drilled by: Mazlab

Start date: 10/11/09

Drilling Method: Solid Auger

Depth NSL(m)	Drilling			Soil Description					Depth NSL(m)
	Depth (RL) m	Method	Graphic log	Soil Description (as per McDonald et.al 1990)	Aust. Soil Class.	Revised Standard Colour	Accessories	Additional Comments	
			Δ Δ Δ	SANDY LOAM , Brown, fine grained, gradual change to;					
1				SAND , Light grey/white, fine grained, gradual change to;					1
2				SAND , White, very fine grained, dry				Water table @ 1.8	2
3									3
4									4
5									5
6									6
7									7

Borehole: BH21

Project: GJ0873

Client: Project 28

Northing: _____

Easting: _____

RL(m): _____

GILBERT+SUTHERLAND
agriculture - water - environment

Depth (m): 2

Logged by: NG

Drilled by: Mazlab

Start date: 10/11/09

Drilling Method: Solid Auger

Depth NSL(m)	Drilling			Soil Description				Depth NSL(m)
	Depth (RL) m	Method	Graphic log	Soil Description (as per McDonald et.al1990)	Aust. Soil Class.	Revised Standard Colour	Accessories	
1				SAND , White, light grey seams, very fine grained, gradual change to;				1
2				SAND , White, light grey seams, very fine grained, wet.				2
3								3
4								4
5								5
6								6
7								7

Borehole: BH22

Project: GJ0873

Client: Project 28

Northing: _____

Easting: _____

RL(m): _____

GILBERT+SUTHERLAND
agriculture - water - environment

Depth (m): 3.6

Logged by: NG

Drilled by: Mazlab

Start date: 10/11/09

Drilling Method: Solid Auger

Depth NSL(m)	Drilling			Soil Description				Depth NSL(m)
	Depth (RL) m	Method	Graphic log	Soil Description (as per McDonald et al 1990)	Aust. Soil Class.	Revised Standard Colour	Accessories	
1								1
2								2
3								3
4								4
5								5
6								6
7								7

Borehole: BH23

Project: GJ0873

Client: Project 28

Northing: _____

Easting: _____

RL(m): _____

GILBERT+SUTHERLAND agriculture - water - environment

Depth (m): 2

Logged by: NG

Drilled by: Mazlab

Start date: 10/11/09

Drilling Method: Solid Auger

Depth NSL(m)	Drilling			Soil Description					Depth NSL(m)
	Depth (RL) m	Method	Graphic log	Soil Description (as per McDonald et.al1990)	Aust. Soil Class.	Revised Standard Colour	Accessories	Additional Comments	
1				SAND , Grey/light grey, fine grained, dry, gradual change to;					1
2				SAND , Grey/light grey, fine grained, moist, gradual change to;					2
3				SAND , Black, grey seams, indurated sand				Water table @ 1.5	3
4									4
5									5
6									6
7									7

Borehole: BH24

Project: GJ0873

Client: Project 28

Northing: _____

Easting: _____

RL(m): _____

GILBERT+SUTHERLAND
agriculture - water - environment

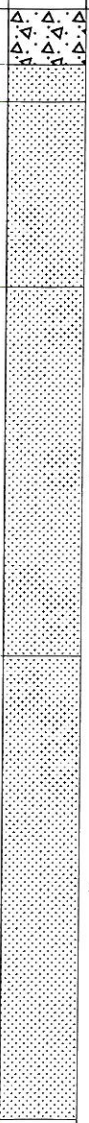
Depth (m): 6

Logged by: NG

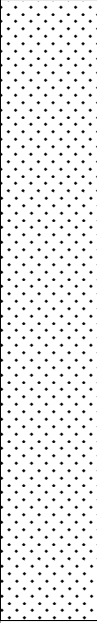
Drilled by: Mazlab

Start date: 10/11/09

Drilling Method: Solid Auger

Depth NSL(m)	Drilling			Soil Description				Depth NSL(m)
	Depth (RL) m	Method	Graphic log	Soil Description (as per McDonald et al 1990)	Aust. Soil Class	Revised Standard Colour	Accessories	
				SANDY LOAM , Fill, Brown/grey, fine grained, dry, gradual change to; SAND , Light grey, very fine grained, dry, gradual change to; SAND , Light grey, very fine grained, moist, gradual change to; SAND , Brown, very fine grained, moist, gradual change to; SAND , Black, very fine grained, moist.				
1								1
2								2
3								3
4								4
5								5
6								6
7								7

+ GILBERT SUTHERLAND

		Drilling		
Depth NSL(m)	Depth NSL (m)	Graphic log	Soil Description (As per McDonald et.al 1990)	Sample ID/Depth
			LOAMY SAND , Brown, fine to medium grained, few medium gravel, many organics and fine roots, moist, gradual change to;	
.1			SAND , Light grey, fine to medium grained, black sand lenses increasing with depth, few fine to medium roots, moist, borehole terminated.	
.2				
.3				
.4				

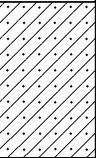
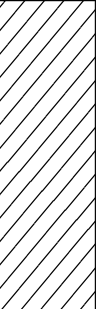
Borehole: BH2
Project: 10468
Client: Project 28 PTY LTD
Depth (m): 0.30
Logged by: ER & NG
Drilled by: JW & NG
Drill date: 27/01/2011



Drilling					
Depth NSL(m)	Depth NSL (m)	Graphic log	Soil Description (As per McDonald et.al 1990)	Sample ID/Depth	
.1			SANDY LOAM , Black, fine to medium grained sand, some fine gravel, moist, many fine roots, abrupt change to;		
			SAND , Light brown with orange lenses, fine to medium grained, moist, few fine roots, abrupt change to;		
			SILTY CLAY LOAM , Red, moist, very few fine roots, borehole terminated at 0.30m.		
.2					
.3					
.4					

Borehole: BH3
Project: 10468
Client: Project 28 PTY LTD
Depth (m): 0.30
Logged by: ER & NG
Drilled by: JW & NG
Drill date: 27/01/2011



Drilling					
Depth NSL(m)	Depth NSL (m)	Graphic log	Soil Description (As per McDonald et.al 1990)	Sample ID/Depth	
			SANDY CLAY , Brown with red mottles, moist, few organics, few fine roots, gradual change to;		
.1			MEDIUM CLAY , Brown with yellow mottles, some fine to medium grained sand, moist		
.2			MEDIUM CLAY , Brown with yellow mottles, some fine to medium grained sand, moist, borehole terminated at 0.30m.		
.3					
.4					

+GILBERT SUTHERLAND

		Drilling		
Depth NSL(m)	Depth NSL (m)	Graphic log	Soil Description (As per McDonald et.al 1990)	Sample ID/Depth
.1			SAND , Grey, fine to medium grained, moist, abrupt change to;	
			LIGHT MEDIUM CLAY , Brown, moist, abrupt change to;	
.2			SAND , White, moist, abrupt change to;	
			SAND , Grey, moist, borehole terminated at 0.27m.	
.3				
.4				

Borehole: BH5
Project: 10468
Client: Project 28 PTY LTD
Depth (m): 0.30
Logged by: ER & NG
Drilled by: JW & NG
Drill date: 27/01/2011



Drilling					
Depth NSL(m)	Depth NSL (m)	Graphic log	Soil Description (As per McDonald et.al 1990)	Sample ID/Depth	
.1			SANDY LOAM , Few coarse gravel, moist, many fine to medium roots, some organics, moist, abrupt change to;		
			SAND , White, some clay, very few fine roots		
			LOAMY SAND , Black, fine to medium grained, some fine gravel, few charcoal, moist, abrupt change to;		
			SAND , Black with grey mottles, some charcoal, moist, some fine to medium roots, abrupt change to		
			SAND , Black with grey mottles, borehole terminated at 0.30m.		
.2					
.3					
.4					

Borehole: BH6
Project: 10468
Client: Project 28 PTY LTD
Depth (m): 0.30
Logged by: ER & NG
Drilled by: JW & NG
Drill date: 27/01/2011



Drilling					
Depth NSL(m)	Depth NSL (m)	Graphic log	Soil Description (As per McDonald et.al 1990)	Sample ID/Depth	
			SILTY LOAM , Some fine sand, many organics, abrupt change to;		
.1			MEDIUM CLAY , Red, some very fine roots, gradual change to;		
.2			HEAVY CLAY , Red, borehole terminated at 0.30m.		
.3					
.4					

Borehole: BH7
Project: 10468
Client: Project 28 PTY LTD
Depth (m): 0.30
Logged by: ER & NG
Drilled by: JW & NG
Drill date: 27/01/2011



Drilling					
Depth NSL(m)	Depth NSL (m)	Graphic log	Soil Description (As per McDonald et.al 1990)	Sample ID/Depth	
			LOAM , Brown, some fine to medium grained sand, moist, many fine to medium roots, many organics, gradual change to; LIGHT MEDIUM CLAY , Brown with red mottles, few very fine roots, gradual change to; MEDIUM HEAVY CLAY , Brown with red mottles, borehole terminated at 0.30m.		
.1					
.2					
.3					
.4					

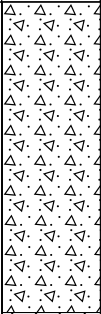
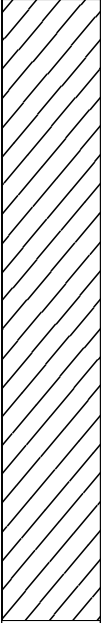
Borehole: BH8
Project: 10468
Client: Project 28 PTY LTD
Depth (m): 0.30
Logged by: ER & NG
Drilled by: JW & NG
Drill date: 27/01/2011



Drilling					
Depth NSL(m)	Depth NSL (m)	Graphic log	Soil Description (As per McDonald et.al 1990)	Sample ID/Depth	
			LOAM , Brown, many coarse gravel, fine to medium roots, some organics		
	.1		LIGHT MEDIUM CLAY , Brown with red mottles, moist, few fine roots		
	.2		MEDIUM CLAY , Red with yellow and grey mottles, moist, very few very fine to fine roots		
	.3		MEDIUM CLAY , Red with some yellow and grey mottles, some fine gravel, moist, gradual change to red medium clay, borehole terminated at 0.30m.		
	.4				

Borehole: BH9
Project: 10468
Client: Project 28 PTY LTD
Depth (m): 0.30
Logged by: ER & NG
Drilled by: JW & NG
Drill date: 27/01/2011



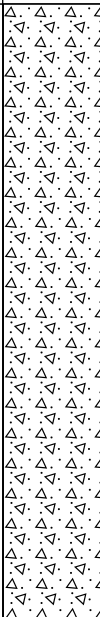
Drilling					
Depth NSL (m)	Depth NSL (m)	Graphic log	Soil Description (As per McDonald et.al 1990)	Sample ID/Depth	
			SANDY LOAM , Moist, some fine to medium roots increasing with depth		
.1			LIGHT MEDIUM CLAY , Brown with red mottles, some fine to medium sand, some fine to medium roots, gradual change to heavy clay, borehole terminated at 0.30m.		
.2					
.3					
.4					

Borehole: BH10
Project: 10468
Client: Project 28 PTY LTD
Depth (m): 0.30
Logged by: ER & NG
Drilled by: JW & NG
Drill date: 27/01/2011



Drilling			
Depth NSL(m)	Depth NSL (m)	Graphic log	Soil Description (As per McDonald et.al 1990)
			LOAM , Brown, few fine to medium sand, some fine gravel (decreasing with depth), some fine to medium roots (decreasing with depth)
.1			LIGHT MEDIUM CLAY , Brown with red mottles, moist, few very fine roots, gradual change to;
.2			CLAY LOAM , Brown, moist, some fine roots, borehole terminated at 0.30m.
.3			
.4			

**+ GILBERT
SUTHERLAND**

Drilling		Soil Description (As per McDonald et.al 1990)	Sample ID/Depth
Depth NSL(m)	Graphic log		
0.1		SANDY LOAM , Brown, some fine gravel, fine to medium grained sand, moist, some fine roots, few organics	
0.2		LIGHT CLAY , Brown with red mottles, few fine to very fine roots, few fine gravel, moist, borehole terminated at 0.30m.	
0.3			
0.4			

Borehole: BH12
Project: 10468
Client: Project 28 PTY LTD
Depth (m): 0.30
Logged by: ER & NG
Drilled by: JW & NG
Drill date: 27/01/2011



Drilling			
Depth NSL(m)	Depth NSL (m)	Graphic log	Soil Description (As per McDonald et.al 1990)
			Sample ID/Depth
			SANDY LOAM , Brown, moist, many fine to medium roots, some organics
			LIGHT CLAY , Brown with few orange mottles, some fine gravel, some fine to medium grained sand, moist, few fine roots
.1			
			SANDY LIGHT CLAY , Brown with few orange and grey mottles, few fine to medium grained sand, minor charcoal fragments, abrupt change to;
.2			
			SANDY LOAM , Grey, some clay, fine to medium grained, very moist, borehole terminated at 0.30m.
.3			
.4			

**+ GILBERT
SUTHERLAND**

Drilling	
Depth NSL(m)	Graphic log
Depth NSL (m)	Soil Description (As per McDonald et.al 1990)
.1	CLAY LOAM , Red, many fine to medium gravel, some fine to very fine roots.
.2	
.3	
.4	

Borehole: BH14
Project: 10468
Client: Project 28 PTY LTD
Depth (m): 0.30
Logged by: ER & NG
Drilled by: JW & NG
Drill date: 27/01/2011



Depth NSL(m)	Drilling		Soil Description (As per McDonald et.al 1990)	Sample ID/Depth
	Depth NSL (m)	Graphic log		

+GILBERT SUTHERLAND

Drilling	
Depth NSL(m)	Depth NSL (m)
Graphic log	
Soil Description (As per McDonald et.al 1990)	
Sample ID/Depth	
.1	
.2	
.3	
.4	

**+ GILBERT
SUTHERLAND**

Drilling				
Depth NSL(m)	Depth NSL (m)	Graphic log	Soil Description (As per McDonald et.al 1990)	Sample ID/Depth

+GILBERT SUTHERLAND

Drilling				
Depth NSL(m)	Depth NSL (m)	Graphic log	Soil Description (As per McDonald et.al 1990)	Sample ID/Depth

Borehole: BH18
Project: 10468
Client: Project 28 PTY LTD
Depth (m): 0.30
Logged by: ER & NG
Drilled by: JW & NG
Drill date: 27/01/2011



Drilling	
Depth NSL(m)	Graphic log
Depth NSL (m)	Soil Description (As per McDonald et.al 1990)
.1	CLAY LOAM , Red, many fine to medium gravel, some fine to very fine roots.
.2	
.3	
.4	

+GILBERT SUTHERLAND

Drilling				
Depth NSL(m)	Depth NSL (m)	Graphic log	Soil Description (As per McDonald et.al 1990)	Sample ID/Depth

+ GILBERT SUTHERLAND

Drilling				
Depth NSL(m)	Depth NSL (m)	Graphic log	Soil Description (As per McDonald et.al 1990)	Sample ID/Depth

+ GILBERT SUTHERLAND

Drilling				
Depth NSL(m)	Depth NSL (m)	Graphic log	Soil Description (As per McDonald et.al 1990)	Sample ID/Depth

Borehole: BH22
Project: 10468
Client: Project 28 PTY LTD
Depth (m): 0.30
Logged by: ER & NG
Drilled by: JW & NG
Drill date: 27/01/2011



Drilling					
Depth NSL(m)	Depth NSL (m)	Graphic log	Soil Description (As per McDonald et.al 1990)	Sample ID/Depth	
			LIGHT CLAY , Brown with yellow mottles		
			WEATHERED ROCK , Red, many fine to medium gravel, some very fine to fine roots borehole terminated at 0.30m.		
.1					
.2					
.3					
.4					

+ GILBERT SUTHERLAND

Drilling				
Depth NSL(m)	Depth NSL (m)	Graphic log	Soil Description (As per McDonald et.al 1990)	Sample ID/Depth
</				

+ GILBERT SUTHERLAND

Drilling				
Depth NSL(m)	Depth NSL (m)	Graphic log	Soil Description (As per McDonald et.al 1990)	Sample ID/Depth

+ GILBERT SUTHERLAND

Drilling				
Depth NSL(m)	Depth NSL (m)	Graphic log	Soil Description (As per McDonald et.al 1990)	Sample ID/Depth
</				

+ GILBERT SUTHERLAND

Drilling				
Depth NSL(m)	Depth NSL (m)	Graphic log	Soil Description (As per McDonald et.al 1990)	Sample ID/Depth

+ GILBERT SUTHERLAND

Drilling				
Depth NSL(m)	Depth NSL (m)	Graphic log	Soil Description (As per McDonald et.al 1990)	Sample ID/Depth

+ GILBERT SUTHERLAND

Drilling				
Depth NSL(m)	Depth NSL (m)	Graphic log	Soil Description (As per McDonald et.al 1990)	Sample ID/Depth

+ GILBERT SUTHERLAND

	Drilling		
Depth NSL(m)	Depth NSL (m)	Graphic log	
			Soil Description (As per McDonald et.al 1990) Sample ID/Depth
.1		LIGHT MEDIUM CLAY , Brown with yellow mottles, many very fine to very fine roots, some organics	
.2		CLAY LOAM , Brown, few fine roots, many fine to medium gravel, borehole terminated at 0.30m.	
.3			
.4			

+ GILBERT SUTHERLAND

Drilling				
Depth NSL(m)	Depth NSL (m)	Graphic log	Soil Description (As per McDonald et.al 1990)	Sample ID/Depth

Borehole: BH31
Project: 10468
Client: Project 28 PTY LTD
Depth (m): 0.30
Logged by: ER & NG
Drilled by: JW & NG
Drill date: 27/01/2011



Drilling					
Depth NSL(m)	Depth NSL (m)	Graphic log	Soil Description (As per McDonald et.al 1990)	Sample ID/Depth	
.1			SILTY CLAY , Brown, many medium to fine roots, very wet, many organics		
.2					
.3			CLAY LOAM , Red, many fine to medium gravel, wet, some fine to very fine roots.		
.4					

Borehole: BH33
Project: 10468
Client: Project 28 PTY LTD
Depth (m): 0.30
Logged by: ER & NG
Drilled by: JW & NG
Drill date: 1/02/2011



Depth NSL(m)	Drilling		Soil Description (As per McDonald et.al 1990)	Sample ID/Depth
	Depth NSL (m)	Graphic log		
0.1			SANDY LOAM , Black with grey mottles, minor clays, black sand, minor loams, moist.	
0.2				
0.3				
0.4				

Borehole: BH34
Project: 10468
Client: Project 28 PTY LTD
Depth (m): 0.30
Logged by: ER & NG
Drilled by: JW & NG
Drill date: 1/02/2011



Depth NSL(m)	Drilling		Soil Description (As per McDonald et.al 1990)	Sample ID/Depth
	Depth NSL (m)	Graphic log		
0.1			SANDY LOAM , Black with grey mottles, minor clays, black sand, minor loams, moist.	
0.2				
0.3				
0.4				

Borehole: BH35
Project: 10468
Client: Project 28 PTY LTD
Depth (m): 0.30
Logged by: ER & NG
Drilled by: JW & NG
Drill date: 1/02/2011



Depth NSL(m)	Drilling		Soil Description (As per McDonald et.al 1990)	Sample ID/Depth
	Depth NSL (m)	Graphic log		
0.1			SANDY LOAM , Black with grey mottles, minor clays, black sand, minor loams, moist.	
0.2				
0.3				
0.4				

Borehole: BH36
Project: 10468
Client: Project 28 PTY LTD
Depth (m): 0.30
Logged by: ER & NG
Drilled by: JW & NG
Drill date: 1/02/2011



Depth NSL(m)	Drilling		Soil Description (As per McDonald et.al 1990)	Sample ID/Depth
	Depth NSL (m)	Graphic log		
0.1			SANDY LOAM , Black with grey mottles, minor clays, black sand, minor loams, moist.	
0.2				
0.3				
0.4				

+ GILBERT SUTHERLAND

Drilling	
Depth NSL(m)	Graphic log
Depth NSL (m)	Soil Description (As per McDonald et.al 1990)
.1	SILTY LOAM , Dark brown, some fine to medium grained sand, moist, many organics, many fine roots
.2	CLAY LOAM , Red, few fine roots, moist, borehole terminated at 0.30m.
.3	
.4	

Borehole: BH38
Project: 10468
Client: Project 28 PTY LTD
Depth (m): 0.30
Logged by: ER & NG
Drilled by: JW & NG
Drill date: 1/02/2011



Drilling	
Depth NSL(m)	Graphic log
Depth NSL (m)	Soil Description (As per McDonald et.al 1990)
.1	SILTY LOAM , Dark brown, some fine to medium grained sand, many organics, many fine roots, moist
.2	CLAY LOAM , Red, moist, few fine roots, borehole terminated.
.3	
.4	

+ GILBERT SUTHERLAND

Drilling	
Depth NSL(m)	Graphic log
Depth NSL (m)	Soil Description (As per McDonald et.al 1990)
.1	SILTY LOAM , Dark brown, some fine to medium grained sand, moist, many organics, many fine roots
.2	CLAY LOAM , Red, few fine roots, moist, borehole terminated 0.30m.
.3	
.4	

Borehole: BH40
Project: 10468
Client: Project 28 PTY LTD
Depth (m): 0.30
Logged by: ER & NG
Drilled by: JW & NG
Drill date: 1/02/2011



Drilling	
Depth NSL(m)	Graphic log
Depth NSL (m)	Soil Description (As per McDonald et.al 1990)
.1	SILTY LOAM , Dark brown, some fine to medium grained sand, moist, many organics, many fine roots
.2	CLAY LOAM , Red, moist, few fine roots, borehole terminated at 0.30m.
.3	
.4	

Borehole: BH41
Project: 10468
Client: Project 28 PTY LTD
Depth (m): 0.30
Logged by: ER & NG
Drilled by: JW & NG
Drill date: 1/02/2011



Drilling	
Depth NSL(m)	Graphic log
Depth NSL (m)	Soil Description (As per McDonald et.al 1990)
.1	LOAM , Wet, many fine to medium roots, many organics.
.2	
.3	
.4	

Borehole: BH42
Project: 10468
Client: Project 28 PTY LTD
Depth (m): 0.30
Logged by: ER & NG
Drilled by: JW & NG
Drill date: 1/02/2011



Drilling	
Depth NSL(m)	Graphic log
Depth NSL (m)	Soil Description (As per McDonald et.al 1990)
.1	SILTY LOAM , Dark brown, some fine to medium grained sand, moist, many organics, many fine roots
.2	CLAY LOAM , Red, few fine roots, borehole terminated at 0.30m.
.3	
.4	

11 Appendix 5 – Survey meter calibration records



Australian Radiation Services Pty Ltd
PO Box 3103, Nunawading, Victoria, 3131
22 King Street, Blackburn, Victoria 3130
Telephone +61 3 9877 4898 Facsimile +61 3 9877 8272
Email: info@australian-radiation-services.com.au
Web Site: www.australian-radiation-services.com.au
ABN 66 006 528 267

Page 1 of 2

*Keeping
people safe.*

Certificate of Calibration

Certificate No.: 09-898

A. Issued to

Company Name: Radiation Professionals Pty.Ltd
Address: 27/133 Kewdale Road
Kewdale WA 6105

B. Instrument and use

Manufacturer: Ludlum Measurements Inc.
Model No.: 2241-3 / HP270
Serial No.: 248102 / 604064
Intended use: Beta and gamma contamination

Previous calibration: First Calibration by ARS

C. Details of calibration

Date: 29th January 2009
Type of test: Annual calibration.
Test conditions: The optimum settings including the high voltage (HV) were determined. The response of the monitor to a collimated beam of gamma rays from a ¹³⁷Cs source was also evaluated.
Test reference point: 15 mm from edge of beta shield. (Shield Closed)
Orientation: Vertical, radiation beam normal to side shield.
Uncertainties: The uncertainties stated in this report are expressed at the 95% confidence level.
Traceability: The output of the ¹³⁷Cs source is traceable to the Australian Primary Standard of Exposure.

D. Calibration conclusions

These results are typical for this type of instrument and comply with the manufacturer's specifications. The instrument is thus suitable for the use described in Section B for the following 12 months.

- Notes:
1. Before using this instrument the user should be familiar with its characteristics (energy dependence, directional dependence, etc.).
 2. Any alteration to the electronic settings or damage to the monitor will render the calibration void.

Calibrated by: Mr. Roland Sargent
Position: Senior Technical Officer
Signature: *[Signature]*

Reviewed by: Mr. Glenn Riley
Position: Health Physicist
Signature: *[Signature]*

Date: 29th January 2009

Date: 29th January 2009

Certificate No.: 09-898

E. Response (^{137}Cs – 662 keV)

Radiation Source	Instrument Range	Measured Reading ^a (cpm)	Actual Air Kerma Rate ($\mu\text{Gy}\cdot\text{h}^{-1}$)	Instrument Response ^b (cpm/ $\mu\text{Gy}\cdot\text{h}^{-1}$)
Background	Auto	14.4 ^c	0.08 ^d	N/A
^{137}Cs (370 MBq)	Auto	81.2	0.63	129
^{137}Cs (370 MBq)	Auto	176	1.24	141
^{137}Cs (370 MBq)	Auto	240	1.72	140
^{137}Cs (370 MBq)	Auto	319	2.43	131
^{137}Cs (3.7 GBq)	Auto	674	5.43	124
^{137}Cs (3.7 GBq)	Auto	1397	10.7	130
^{137}Cs (3.7 GBq)	Auto	1851	14.8	125
^{137}Cs (3.7 GBq)	Auto	2647	21.0	126
^{137}Cs (40 GBq)	Auto	8987	76.2	118
^{137}Cs (40 GBq)	Auto	17887	151	119
^{137}Cs (40 GBq)	Auto	24667	208	119
^{137}Cs (40 GBq)	Auto	33667	294	114

- a. Background correction has been applied.
b. Maximum estimated uncertainty for some measurements is $\pm 30\%$.
c. No background correction applies.
d. As measured using a Health Physics Instruments Model 1010 Tissue Equivalent Proportional Monitor.

F. High voltage

Source Used	Initial Setting	Final Setting
^{137}Cs	909 V	900 V



Department of Health
Government of Western Australia

Your Ref :
Our Ref : Anthony O'Brien
Enquiries to : J081117_1877
Mr Lewis Waters (08) 9346 2260

Report Number J081117_1877

A. Name and address of user:

Mining Radiation Safety Australia
27/133 Kewdale Road
KEWDALE WA 6105

B. Details of instrument:

Meter type: LUDLUM
Model: 2241-3
Serial number: 248102
RHS meter record number: 1877

C. Details of laboratory check:

Date: 11/12/2008
Type of test: Annual Laboratory Check
Test conditions: The instrument was tested over a range of ambient equivalent dose rates using Cs-137.
Traceability: All the equipment associated with the measurements performed in this report have calibrations directly traceable to national standards via the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA).

D. Results of laboratory check:

Meter Passed. Details over page.
Next check is due: 12/12/2009

Laboratory check performed by:

Mr Lewis Waters

Laboratory check approved by:

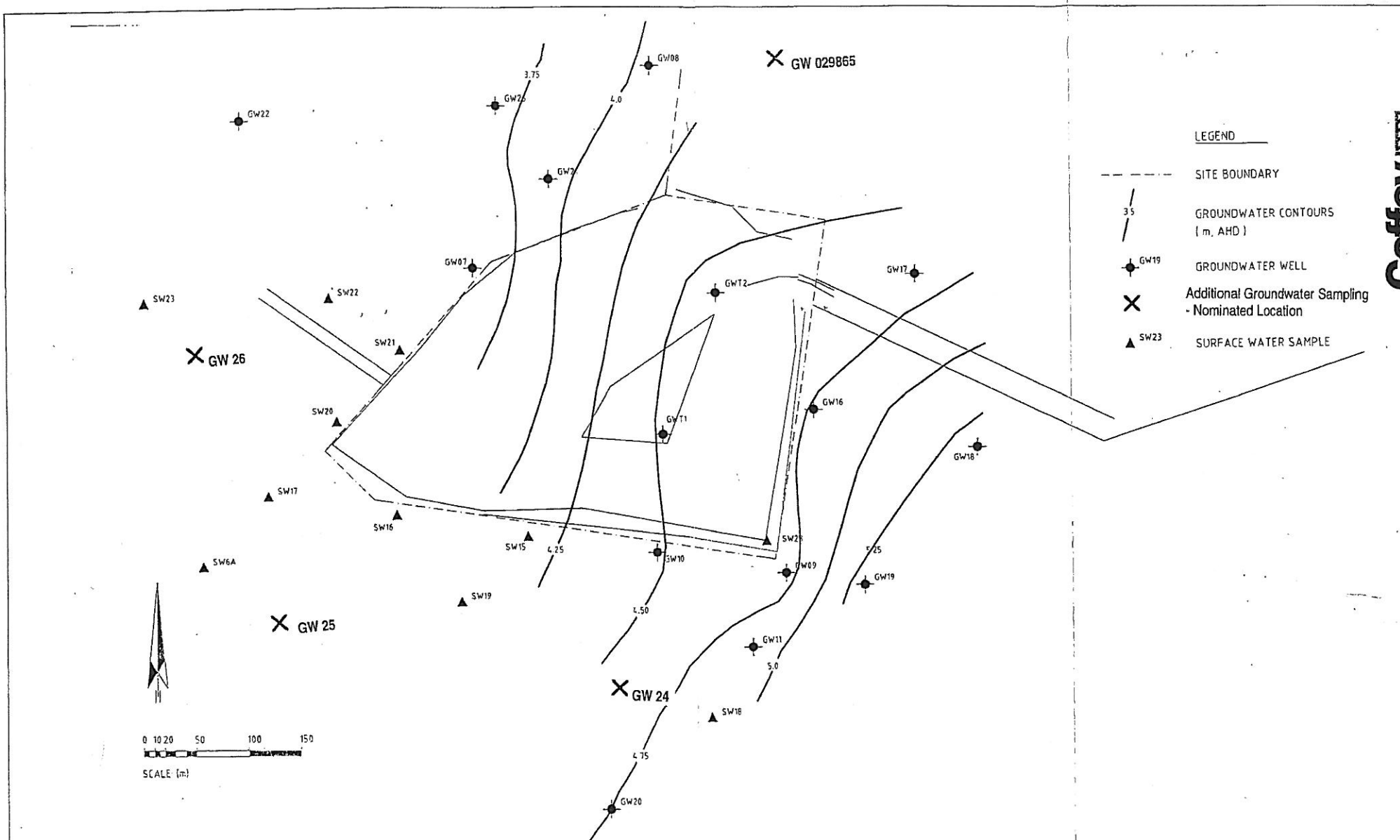
Mr Cameron Storm

Date:

11/12/2008

RADIATION HEALTH BRANCH
ENVIRONMENTAL HEALTH DIRECTORATE
Address all correspondence to the Managing Health Physicist
Letters Locked Bag 2006 Nedlands WA 6009
18 Verdun Street Nedlands WA 6009
Telephone (08) 9346 2260 Fax (08) 9381 1423
Email: radiation.health@health.wa.gov.au

12 Appendix 6 – Groundwater contours Coffey Geosciences 2003



Coffey Geosciences Pty Ltd					Geotechnical Resources Environmental Technical Project Management				
ACN 056 335 516					TWEED SHIRE COUNCIL				
					ASSESSMENT OF REMEDIATION OPTIONS & RAP				
					DEPOT ROAD LANDFILL, CUDGEN				
					PROPOSED SAMPLING LOCATIONS				
					Drawing no: FIGURE 2				
					Job no: B17578/1-E				

13 Appendix 7 – NATA certified laboratory document

CHAIN OF CUSTODY DOCUMENTATION



ALS Laboratory Group

CLIENT: Gilbert & Sutherland

SAMPLER: Jack Worcester

ADDRESS / OFFICE: 5/232 Robina Town Centre Drive, Robina

MOBILE:

PROJECT MANAGER (PM): Jack Worcester

PHONE: 07 5578 9944

PROJECT ID: 10468

EMAIL REPORT TO: worcester.jw@access.gs

SITE: Kings Forest

P.O. No.:

EMAIL INVOICE TO: Debra Endres (endres.dj@groupgs.com)

RESULTS REQUIRED (Date):

QUOTE NO.:

ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)

FOR LABORATORY USE ONLY

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

COOLER SEAL (if/else appropriate)

Intact: Yes No N/A

SAMPLE TEMPERATURE

CHILLED: Yes No

Notes:

Environmental Division
Brisbane

Work Order

EB1101638



Telephone : +61-7-3243 7222

SAMPLE INFORMATION (note: S = Soil, W=Water)					CONTAINER INFORMATION													
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	Suite S-6	Suite S14-A	NEPM 8 Suite metals	OC/OP pesticides								
1	BH1 0.0-0.15	Soil	24.01.11	PM	Ice/chill	1			X	X								
2	BH1 0.2-0.3	Soil	24.01.11	PM	Ice/chill	1	HOLD SAMPLE											
3	BH2 0.0-0.15	Soil	24.01.11	PM	Ice/chill	1	X	X	X	X								
4	BH2 0.2-0.3	Soil	24.01.11	PM	Ice/chill	1	X	X	X	X								
5	BH3 0.0-0.15	Soil	27.01.11	PM	Ice/chill	1	X	X										
6	BH3 0.2-0.3	Soil	27.01.11	PM	Ice/chill	1	X	X										
7	BH4 0.0-0.15	Soil	27.01.11	PM	Ice/chill	1	X	X										
8	BH4 0.2-0.3	Soil	27.01.11	PM	Ice/chill	1	X	X										
9	BH5 0.0-0.15	Soil	24.01.11	PM	Ice/chill	1	X	X										
10	BH5 0.2-0.3	Soil	24.01.11	PM	Ice/chill	1	X	X										
11	BH6 0.0-0.15	Soil	24.01.11	PM	Ice/chill	1	X	X										
12	BH6 0.2-0.3	Soil	24.01.11	PM	Ice/chill	1	X	X										

RELINQUISHED BY:

RECEIVED BY

METHOD OF SHIPMENT

Name: Jack Worcester

Date: 28.01.11

Name: JOSH D

Date: 31.1.11

Con' Note No:

Of: Gilbert & Sutherland

Time: 10:30am

Of: ALS

Time: 0930

Name:

Date:

Name:

Date:

Transport Co:

Of:

Time:

Of:

Time:

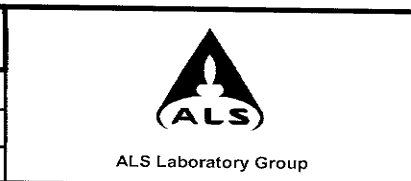
Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved;

V = VOA Vial HCl Preserved; VS = VOA Vial Sulphuric Preserved; SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass;

Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.

ALS LABORATORY GROUP

CHAIN OF CUSTODY DOCUMENTATION

**ANALYSIS REQUIRED** including **SUITES** (note - suite codes must be listed to attract suite prices)

Notes:

CONTAINER INFORMATION

[illegible]

METHOD OF SHIPMENT

Time:

V = VOA Vial HCl Preserved; VS = VOA Vial Sulphuric Preserved; SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass;
Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.

CHAIN OF CUSTODY DOCUMENTATION



ALS Laboratory Group

CLIENT: Gilbert & Sutherland		SAMPLER: Jack Worcester	
ADDRESS / OFFICE: 5/232 Robina Town Centre Drive, Robina		MOBILE:	
PROJECT MANAGER (PM): Jack Worcester		PHONE: 07 5578 9944	
PROJECT ID: 10468		EMAIL REPORT TO: worcester.jw@access.gs	
SITE: Kings Forest		P.O. No.:	
		EMAIL INVOICE TO: Debra Endres (endres.dj@groupgs.com)	

RESULTS REQUIRED (Date):	QUOTE NO.:	ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)
--------------------------	------------	--

FOR LABORATORY USE ONLY COOLER SEAL (circle appropriate) Intact: Yes No N/A SAMPLE TEMPERATURE CHILLED: Yes No	COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:															Notes:

SAMPLE INFORMATION (note: S = Soil, W=Water)					CONTAINER INFORMATION													
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	NEPM 8 Suite metals	OC/OP pesticides										
25	BH13 0.0-0.15	Soil	27.01.11	PM	Ice/chill	1	X	X										
26	BH13 0.2-0.3	Soil	27.01.11	PM	Ice/chill	1	HOLD SAMPLE											
27	BH14 0.0-0.15	Soil	27.01.11	PM	Ice/chill	1	X	X										
28	BH14 0.2-0.3	Soil	27.01.11	PM	Ice/chill	1	HOLD SAMPLE											
29	BH15 0.0-0.15	Soil	27.01.11	PM	Ice/chill	1	X	X										
30	BH15 0.2-0.3	Soil	27.01.11	PM	Ice/chill	1	HOLD SAMPLE											
31	BH16 0.0-0.15 snr	Soil	27.01.11	PM	Ice/chill	1	X	X										
32	BH16 0.2-0.3 snr	Soil	27.01.11	PM	Ice/chill	1	HOLD SAMPLE											
33	BH17 0.0-0.15	Soil	27.01.11	PM	Ice/chill	1	X	X										
34	BH17 0.2-0.3	Soil	27.01.11	PM	Ice/chill	1	HOLD SAMPLE											
35	BH18 0.0-0.15	Soil	27.01.11	PM	Ice/chill	1	X	X										
36	BH18 0.2-0.3	Soil	27.01.11	PM	Ice/chill	1	HOLD SAMPLE											

RELINQUISHED BY:		RECEIVED BY		METHOD OF SHIPMENT
Name: Jack Worcester	Date: 28.01.11	Name: JOSHUA	Date: 31.1.11	Con' Note No:
Of: Gilbert & Sutherland	Time: 10:30am	Of: ALS	Time: 0930	
Name:	Date:	Name:	Date:	Transport Co:
Of:	Time:	Of:	Time:	

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; V = VOA Via¹ HCl Preserved; VS = VOA Via¹ Sulphuric Preserved; SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.

ALS LABORATORY GROUP

CHAIN OF CUSTODY DOCUMENTATION						
CLIENT: Gilbert & Sutherland				SAMPLER: Jack Worcester		
ADDRESS / OFFICE: 5/232 Robina Town Centre Drive, Robina				MOBILE:		
PROJECT MANAGER (PM): Jack Worcester				PHONE: 07 5578 9944		
PROJECT ID: 10468				EMAIL REPORT TO: worcester.jw@access.gs		
SITE: Kings Forest P.O. No.:				EMAIL INVOICE TO: Debra Endres (endres.dj@groupgs.com)		
RESULTS REQUIRED (Date): QUOTE NO.:				ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)		
FOR LABORATORY USE ONLY		COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:		Notes:		
COOLER SEAL (circle appropriate) Intact: Yes No N/A						
SAMPLE TEMPERATURE CHILLED: Yes No						
SAMPLE INFORMATION (note: S = Soil, W=Water)				CONTAINER INFORMATION		
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles
37	BH19 0.0-0.15	Soil	27.01.11	PM	Ice/chill	1
38	BH19 0.2-0.3	Soil	27.01.11	PM	Ice/chill	1
39	BH20 0.0-0.15	Soil	27.01.11	PM	Ice/chill	1
40	BH20 0.2-0.3	Soil	27.01.11	PM	Ice/chill	1
41	BH21 0.0-0.15	Soil	27.01.11	PM	Ice/chill	1
42	BH21 0.2-0.3	Soil	27.01.11	PM	Ice/chill	1
43	BH22 0.0-0.15	Soil	27.01.11	PM	Ice/chill	1
44	BH22 0.2-0.3	Soil	27.01.11	PM	Ice/chill	1
45	BH28 0.0-0.15	Soil	27.01.11	PM	Ice/chill	1
46	BH28 0.2-0.3	Soil	27.01.11	PM	Ice/chill	1
47	BH29 0.0-0.15	Soil	27.01.11	PM	Ice/chill	1
48	BH29 0.2-0.3	Soil	27.01.11	PM	Ice/chill	1
RELINQUISHED BY:				RECEIVED BY		
Name: Jack Worcester		Date: 28.01.11		Name: JOSH D		Date: 31.1.11
Of: Gilbert & Sutherland		Time: 10:30am		Of: ALS		Time: 0930
Name:		Date:		Name:		Date:
Of:		Time:		Of:		Time:
METHOD OF SHIPMENT				Con' Note No:		
Transport Co:						
Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; V = VOA Via! HCl Preserved; VS = VOA Via! Sulphuric Preserved; SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.						