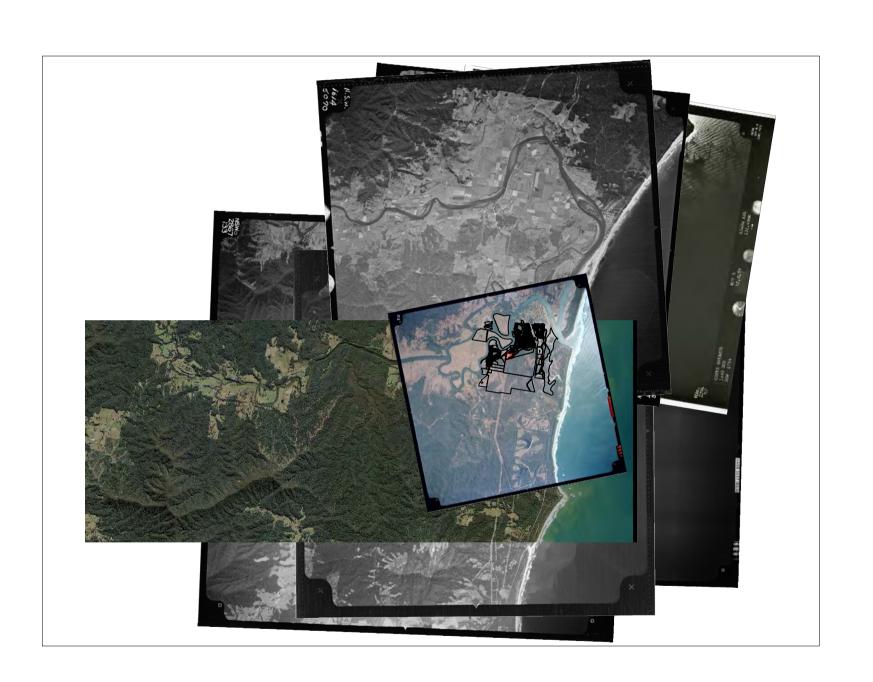
DUCED BY AN AUTODESK EDUCATIONAL PRODUCT



PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT

Appendix E - Borelogs



to: 16/08/2012

Bore No.: BH001

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 16/08/2012

Drill Co: GHD Driller: MK Rig Type: AS Total Depth (m): 1.5 Diameter (mm): 150

Easting: 500866 Northing: 6625256 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: JS Chec

Checked by: BC

Date	Drilled:	16/08/.	2012 (0) : 16/	08/2012	Diameter (mm): 150	Logge	a by: J	Checked by: BC	
		DR	ILLING							
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				0.00
- 0.0	AS		BH001_0.0-0.2			silty GRAVEL Trace Cobbles,brown	D			0.00
-			BH001_0.3-0.5			SILT Some Gravel, trace Cobbles, brown	D			-0.30 0.30
-			BH001_0.7-0.9	-		clayey SILT Trace Sand and Gravel,orange	M			-0.70 0.70
-1.0			_			siity CLAY	M			-1.00 1.00
-			BH001_1.0-1.2			Silly CLAY Trace Sand, orange				
-										-1.50
- - - - - - - - -										1.50 1.50
<u>-4.0</u>										Ш

NOTES:

Drilling	Appreviations:			Moisture	Consistency:			
RW(x)	Rotary Wash	PSC	(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
PD(x)	Percussion Down Hole	Η	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
Where "x	" is flushing medium: (W) Water	r, (M)	Mud, (A) Air, (F) Foam.					



to: 16/08/2012

Bore No.: BH002

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 16/08/2012

Drill Co: GHD Driller: MK Rig Type: AS Total Depth (m): 1.4 Diameter (mm): 150

Easting: 500865 Northing: 6625235 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: JS Chec

Checked by: BC

The content of the	Duto.					00/2012	Diamotor (min): 100	Loggo	,	onconce by: Bo	
The content of the			DR	ILLING							
AS	Depth (m)	pod				Graphic Log	Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	CONTAMINANT INDICATORS	
AS							Ground Surface:				0.00
The second coarge brown 10	- 0.0 -	AS		BH002_0.0-0.2	-		sandy SILT	D			
BH002_10-12	-			BH002_0.5-0.7	_		silty CLAY Trace Sand,orange/ brown	D		BHDUP06	0.50
Some Stift, trace Sand, orange/ brown 1,40 1,40	_ 1.0			BH002_1.0-1.2							-1.20
		НА					CLAY Some Silt, trace Sand,orange/ brown	M			
	- - -3.0										
								1		l	

NOTES:

- 1	Drilling /	Abbreviations:			Moisture	Consistency:			
1	RW(x)	Rotary Wash	PSC((x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
1	RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
1	PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
1	PD(x)	Percussion Down Hole	Η	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
-	Where "x"	' is flushing medium: (W) Wate	r, (M)	Mud, (A) Air, (F) Foam.					
- 1									



ENVIRONMENTAL - SOIL BORE

to: 16/08/2012

Bore No.: BH003

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 16/08/2012

Drill Co: GHD Driller: MK Rig Type: AS Total Depth (m): 1.2 Diameter (mm): 150

Easting: 500854 Northing: 6625193 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: JS Chec

Checked by: BC

Date	Drilled:	10/08/.	2012	0 : 10/	08/2012	Diameter (mm): 150	Logge	u by: .	JS Checked by: BC	
		DR	ILLING						OOMMENTS!	
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				0.00
- 0.0	AS		BH003_0.0-0.2		8-1-1/2-12-1 -5-1-1/2-12-1 8-1-1/2-12-1 -5-1/2-12-1	sandy SILT Some Gravel (fine grained),brown	D/M			
-						silty CLAY Some Sand,brown	M			-0.30 0.30
-			BH003_0.5-0.7			clayey SILT Trace Sand,dark brown	W			-0.70 0.70
-1.0			BH003_1.0-1.2							
										-1.20 1.20
- - -2.0										
-3.0 - -										
-4.0										

NOTES:

Drilling I	Abbreviations:			Moisture	Consistency:			
RW(x)	Rotary Wash	PSC	(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
PD(x)	Percussion Down Hole	Η	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
Where "x"	' is flushing medium: (W) Wate	r, (M)	Mud, (A) Air, (F) Foam.					
	-							



ENVIRONMENTAL - SOIL BORE

to: 16/08/2012

Bore No.: BH004

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 16/08/2012

Drill Co: GHD Driller: MK Rig Type: AS Total Depth (m): 2.2 Diameter (mm): 150

Easting: 500847 Northing: 6625160 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: JS Chec

Checked by: BC

Date	Drilled:	16/08/	2012 (0: 16/	08/2012	Diameter (mm): 150	Logge	a by:	JS Checked by: BC	
		DR	ILLING		1				COMMENTS	
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				0.00
- 0.0 -	AS		BH004_0.0-0.2			sandy SILT Trace Gravel (fine grained),brown	D		BHLABDUP02	0.00
-			BH004_0.5-0.7			sifty CLAY	M			-0.70 0.70
- -1.0						Some Sand,brown/ mottled grey silty SAND	W			-1.00 1.00
_	НА		BH004_1.0-1.2			dark grey				
-			BH004_1.5-1.7			clayey SILT Trace Sand,dark brown	W			-1.50 1.50
- _{2.0}			BH004_2.0-2.2			silty CLAY Trace Gravel (decreasing with depth),orange/ brown	W			-2.00 2.00
-										-2.20 2.20
-3.0										
-										
-4.0										

NOTES:

Drilling I	Abbreviations:			Moisture	Consistency:			
RW(x)	Rotary Wash	PSC((x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
PD(x)	Percussion Down Hole	Η	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
Where "x"	' is flushing medium: (W) Wate	r, (M)	Mud, (A) Air, (F) Foam.					
	-							



ENVIRONMENTAL - SOIL BORE

to: 14/08/2012

Bore No.: BH005

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 14/08/2012

Drill Co: GHD Driller: MK Rig Type: HA Total Depth (m): 2.2 Diameter (mm): 50 Easting: 500848
Northing: 6625138
Grid Ref: GDA94_MGA_zone_56
Elevation: 0
Logged by: JS Chec

Checked by: BC

Date	Dillieu.	14/00/	2012	10. 14/	00/2012	Diameter (mm). 50	Logge	u by.	JS Checked by. BC	
		DR	ILLING		_				OOMMENTS!	
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				0.00
-0.0	НА		BH005_0.0-0.2			silty SAND Trace Organic matter,dark brown silty SAND brown	W			0.00 0.00 -0.10 0.10
			BH005_0.3-0.5							
-						sandy SILT grey/ mottled	W			-0.80 0.80
-1.0			BH005_1.0-1.2			g-sy				
										-1 40
 						SILT	W			-1.40 1.40
-			BH005_1.5-1.8			Trace Sand, Organic matter,dark brown				
-2.0						sandy SILT brown	W			-1.90 1.90
			BH005_2.0-2.2							-2.20 2.20
- - -3.0 - -										2.20
-4.0										
NOTE	.c.									

NOTES:

Drilling I	Abbreviations:			Moisture	Consistency:			
RW(x)	Rotary Wash	PSC((x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
PD(x)	Percussion Down Hole	Η	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
Where "x"	' is flushing medium: (W) Wate	r, (M)	Mud, (A) Air, (F) Foam.					
	-							



Bore No.: BH006

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

to: 3/08/2012

Date Drilled: 3/08/2012

Drill Co: GHD Driller: JS Rig Type: HA Total Depth (m): 1 Diameter (mm): 50 Easting: 500824 Northing: 6625115 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: BC Chec

Checked by: BC

County C	Date	Dillieu.	3/00/20	J12 (C	0. 3/0	0/2012	Diameter (min). 50	Logge	u by.	bc Checkeu by. Bc	
Common			DR	ILLING							
Sandy SLT	Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill,	Elevation / Depth (m)
Sandy SLT							Ground Surface:				0.00
BHOUPOS 0.5-0.8 BHOUPOS 0.5-0.8 Trace Sand grey Trace	- 0.0 -	НА		BH006_0.0-0.3		**************************************	sandy SILT brown/ grey	W			0.00
BHOUPOS 0.5-0.8 BHOUPOS 0.5-0.8 Trace Sand grey Trace											
BHOUPOS 0.5-0.8 BHOUPOS 0.5-0.8 Trace Sand grey Trace	Γ										0.50
BH006_0.5-0.8 BH006_0.5-0.8 Section 100 S					-			10/		DUDUDOS	-0.50
	_			BH006_0.5-0.8	_		SILI Trace Sand,grey	VV		BRIJOPOO	0.30
											1.00
	1.0				1						1.00
	- - - - -2.0										
	-										
	L										
	-3.0 -										
	-										
	-										
	-										
4.0											
	-4.0										

NOTES:

Drilling I	Abbreviations:			Moisture	Consistency:			
RW(x)	Rotary Wash	PSC((x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
PD(x)	Percussion Down Hole	Η	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
Where "x"	' is flushing medium: (W) Wate	r, (M)	Mud, (A) Air, (F) Foam.					
	-							



to: 14/08/2012

Bore No.: BH010

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 14/08/2012

Drill Co: GHD Driller: MK Rig Type: HA Total Depth (m): 2 Diameter (mm): 50

Easting: 500864 Northing: 6625139 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: JS Chec

Checked by: BC

Date	Dillieu.	14/00/	2012	J. 14/1	00/2012	Diameter (min). 50	Logge	u by.	Checked by. BC	
		DR	ILLING							
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				
0.0	НА		BH010_0.0-0.2			sandy SILT Organic matter,dark brown	W			0.00 0.00 -0.20 0.20
						silty SAND	W			0.20
-			BH010_0.3-0.5			brown				
-										
-										
-1.0										
-			BH010_1.0-1.2							1.00
-					2-1-2-2 2-1-2-2 2-1-2-3-2	sandy SILT Organic matter,dark brown	W			-1.30 1.30
-			BH010_1.5-1.8							
2.0					を二十五十二 第二十二十二 <u>第二十二十</u>					-2.00 2.00
										2.00
L										
-										
-										
-3.0										
-										
-4.0										
$\overline{}$										-

NOTES:

- 1	Drilling /	Abbreviations:			Moisture	Consistency:			
1	RW(x)	Rotary Wash	PSC((x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
1	RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
1	PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
1	PD(x)	Percussion Down Hole	Η	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
-	Where "x"	' is flushing medium: (W) Wate	r, (M)	Mud, (A) Air, (F) Foam.					
- 1									



to: 16/08/2012

Bore No.: BH011

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 16/08/2012

Drill Co: GHD Driller: BL/BJ Rig Type: HA Total Depth (m): 0.6 Diameter (mm): 50

Easting: 500852 Northing: 6625112 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: BL/BJ Chec

Checked by: BC

├						· ,	1 7		,	-
		DR	ILLING						COMMENTS/	
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				
0.0	НА		BH011_0.0-0.2			silty CLAY Organic matter,grey	W			0.00
			BH011_0.2-0.4			SILT Organic matter,dark brown	W			-0.20 0.20 -0.40
			BH011_0.4-0.6			clayey SAND Gravel,dark grey	W			-0.40 0.40 -0.60 0.60
										0.60
-1.0										
-										
-										
-										
-2.0										
_										
-										
-3.0										
-										
-										
-										
4.0										

NOTES:

Drilling /	Abbreviations:			Moisture	Consistency:			
RW(x)	Rotary Wash	PSC	(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
PD(x)	Percussion Down Hole	Н	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
Where "x"	is flushing medium: (W) Wat	er, (M)	Mud, (A) Air, (F) Foam.					
	-							



to: 16/08/2012

Bore No.: BH012

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location: Date Drilled: 16/08/2012 to: 16/08/20

Drill Co: GHD Driller: BL/BJ Rig Type: HA Total Depth (m): 0.6 Diameter (mm): 50

Easting: 500845 Northing: 6625013 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: BL/BJ Chec

Checked by: BC

							- 33			
		DR	RILLING							
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
F	-			_		Ground Surface:	+-	<u> </u>		0.00
0.0	HA				7	candy SILT	M		BHDUP08	0.00
-			BH012_0.0-0.1	_		sandy SILT dark brown			BIBOI CO	-0.40 0.40
			BH012_0.4-0.6		7 9 7	sandy CLAY grey	W			
-					4					-0.60 0.60
- -1.0 -										0.00
- - -2.0										
- - -3.0										
- - - -										

NOTES:

Drilling I	Abbreviations:			Moisture	Consistency:			
RW(x)	Rotary Wash	PSC	(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
PD(x)	Percussion Down Hole	Н	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
Where "x	is flushing medium: (W) Water	er, (M)	Mud, (A) Air, (F) Foam.					



Bore No.: BH014

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location: Date Drilled: 16/08/2012 to: 16/08/20

to: 16/08/2012

Drill Co: GHD Driller: BL/BJ Rig Type: HA Total Depth (m): 0.6 Diameter (mm): 50

Easting: 500878 Northing: 6625064 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: BL/BJ Chec

Checked by: BC

							- 33			
		DR	RILLING							
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				0.00
0.0	НА		DU044 0 0 0 4			sity SAND	M			0.00
			BH014_0.0-0.1			silty SAND dark brown				-0.40 0.40
			BH014_0.4-0.6			clayey SAND orange	М			
										-0.60 0.60
- -1.0										
- -2.0 -										
- - -3.0										
- - -										

NOTES:

Drilling /	Abbreviations:			Moisture	Consistency:			
RW(x)	Rotary Wash	PSC	(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
PD(x)	Percussion Down Hole	Н	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
Where "x"	is flushing medium: (W) Wat	er, (M)	Mud, (A) Air, (F) Foam.					
	-							



to: 16/08/2012

Bore No.: BH020

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 16/08/2012

Drill Co: GHD Driller: MK Rig Type: AS Total Depth (m): 1.2 Diameter (mm): 150

Easting: 500895 Northing: 6625259 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: JS Chec

Checked by: BC

Duto					00/2012	Bramotor (mm). 100		,	onedica by. Bo	
		DR	ILLING							
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
0.0						Ground Surface:				0.00
_	AS		BH020_0.0-0.2			sandy SILT Some Clay,brown	M			0.00
_			BH020_0.3-0.5							
_						sandy CLAY Trace Silt,orange	M			-0.80 0.80
- 1.0			BH020_1.0-1.2							-1.20 1.20
_										1.20
_										
-2.0 -										
-										
-3.0										
-										
-										
- 4.0										
NOTE	-C.									

NOTES:

Drilling	Abbreviations:			Moisture	Consistency:			
RW(x)	Rotary Wash	PSC	(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
PD(x)	Percussion Down Hole	Η	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
Where "x	is flushing medium: (W) Wate	r, (M)	Mud, (A) Air, (F) Foam.					



to: 16/08/2012

Bore No.: BH021

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 16/08/2012

Drill Co: GHD Driller: MK
Rig Type: HA
Total Depth (m): 0.3
Diameter (mm): 50 Easting: 500886 Northing: 6625236 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: JS Chec

Checked by: BC

Date	Drilled:	10/08/	2012 10	J : 10/	08/2012	Diameter (mm): 50	Logge	a by: J	S Checked by: BC	
		DR	RILLING							
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				0.00
- 0.0	НА		BH021_0.0-0.2		8-1-1-3-1 8-1-1-3-1 8-1-1-3-1 8-1-1-3-1	sandy SILT brown	D			
						Auger Refusal, gravel and roots				-0.30 0.30
- - -1.0						Auger Retusal, graver and routs				0.30
- -2.0 -										
- -3.0 - -										
	FS·									

Drilling	Abbreviations:			Moisture	Consistency:			
RW(x)	Rotary Wash	PSC	(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
PD(x)	Percussion Down Hole	Η	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
Where "x	is flushing medium: (W) Wate	r, (M)	Mud, (A) Air, (F) Foam.					



ENVIRONMENTAL - SOIL BORE

to: 16/08/2012

Bore No.: BH022

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 16/08/2012

Drill Co: GHD Driller: MK

Rig Type: AS Total Depth (m): 0.8 Diameter (mm): 150

Easting: 500873 Northing: 6625212 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: JS Chec

Checked by: BC

Date	Dillieu.	10/00/.	2012	. 10/	00/2012	Diameter (min). 150	Logge	u by. J	os checked by. BC	
		DR	ILLING							
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				0.00
0.0	AS					SILT	M			0.00
			BH022_0.0-0.2			Some Gravel, some Sand, trace Cobbles, brown				
L				_						
										-0.30
						clayey SILT	M			-0.30 0.30
-						Some Sand, trace Gravel, brown				
†			BH022_0.5-0.7							
				-	=====					
										-0.80 0.80
						Auger Refusal- Cobbles				0.80
-1.0										
F										
 										
L										
-2.0										
†										
L										
-										
L										
-3.0										
F .										
 										
L										
-4.0										
NOTE	ς.									

NOTES:

ı	Drilling A	Abbreviations:			Moisture	Consistency:			
ı	RW(x)	Rotary Wash	PSC(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
ı	RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
ı	PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
ı	PD(x)	Percussion Down Hole	H	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
ı	Where "x	" is flushing medium: (W) Wa	ter, (M)	Mud, (A) Air, (F) Foam.					



to: 3/08/2012

Bore No.: BH023

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location: Date Drilled: 3/08/2012 to: 3/08/201

Drill Co: GHD Driller: JS Rig Type: HA Total Depth (m): 2 Diameter (mm): 50

Easting: 500899 Northing: 6625186 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: BL Chec

Checked by: BC

	DR	RILLING							
Depth (m) Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
0.0 HA		BH023_0.0-0.2			Ground Surface: SAND Trace Silt,grey/ brown	M			0.00
_		BH023_0.5-0.7			grey	W			-0.50 0.50
− 1.0		BH023_1.0-1.3							
-					SILT Trace Sand, Organic matter,black	W			-1.50 1.50
2.0		BH023_1.8-2.0							-2.00 2.00
-									
-									
-3.0 -									
- -									
_4.0									

NOTES:

- 1	Drilling /	Abbreviations:			Moisture	Consistency:			
1	RW(x)	Rotary Wash	PSC((x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
1	RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
1	PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
1	PD(x)	Percussion Down Hole	Η	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
-	Where "x"	' is flushing medium: (W) Wate	r, (M)	Mud, (A) Air, (F) Foam.					
- 1									



Bore No.: BH024

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 14/08/2012

to: 14/08/2012

Drill Co: GHD Driller: MK Rig Type: HA Total Depth (m): 4 Diameter (mm): 50

Easting: 500894 Northing: 6625143 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: JS Chec

Checked by: BC

Date	Di illeu.	14/00/	2012	0. 14/	00/2012	Diameter (min). 50	Logge	u by.	Checked by. BC	
		DR	RILLING							
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				0.00
-0.0	НА		BH024_0.0-0.2			silty SAND pale brown	W			0.00
										-0.30 0.30
-			BH024_0.3-0.5		7-1-1-1-1 7-1-1-1-1 7-1-1-1-1	sandy SILT grey	W			0.30
-					2 - 1 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 -					-0.90 0.90
					<u> </u>	sandy SILT	W			0.90
-1.0 -			BH024_1.0-1.2		8-3-8-3 8-3-8-3 8-3-8-3 8-3-8-3	Organic matter,brown				
_					2-3-2-3 2-3-2-3-3 2-3-2-3 2-3-2-3					
-			BH024_1.5-1.8							
										-2.00
-2.0						clayey SILT	W			-2.00 2.00
			BH024_2.0-2.2			Trace Sand, grey				
L			_							
					=====					
F					=====					
r										
L										
-3.0										
r										
L										
Γ					=====					
1										
L							1			-3.60
						clayey SILT	W			3.60
F										
1										
										-4.00
4.0										4.00

NOTES:

Drilling A	Abbreviations:			Moisture	Consistency:			
RW(x)	Rotary Wash	PSC(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
PD(x)	Percussion Down Hole	H	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
Where "x"	is flushing medium: (W) Water	, (M)	Mud, (A) Air, (F) Foam.					



to: 16/08/2012

Bore No.: BH027

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 16/08/2012

Driller: BL/BJ Rig Type: HA Total Depth (m): 0.6 Diameter (mm): 50

Drill Co: GHD

Easting: 500929 Northing: 6625080 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: BL/BJ Chec

Checked by: BC

Duto					00/2012	Diamotor (min): 66	Loggo	,	oncoked by: De	
		DR	ILLING							
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				0.00
0.0	HA		BH027_0.0-0.1		1 20 1 20 1	silty SAND	W			0.00
	ŀ		D11027_0.0 0.1	1		Organic matter,grey/ dark brown				
-			BH027_0.1-0.3	_						
L 1										-0.40 0.40
			DU027 0 4 0 /		4	sandy CLAY mottled grey/ orange	М			0.40
			BH027_0.4-0.6		9	motica grey, drange				-0.60
										-0.60 0.60
L										
-1.0										
F										
L										
-										
-2.0										
2.0										
-										
L										
F										
-3.0										
-										
F										
-										
-4.0										
NOTE	-									

NOTES:

ı	Drilling A	Abbreviations:			Moisture	Consistency:			
ı	RW(x)	Rotary Wash	PSC(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
ı	RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
ı	PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
ı	PD(x)	Percussion Down Hole	H	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
ı	Where "x	" is flushing medium: (W) Wa	ter, (M)	Mud, (A) Air, (F) Foam.					



Bore No.: BH028

(ST) Stiff (VST) Very Stiff (H) Hard

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 16/08/2012 to: 16/08/2012 Drill Co: GHD Driller: MK

Rig Type: AS Total Depth (m): 1 Diameter (mm): 150

Easting: 500874 Northing: 6625286 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: JS Chec

Checked by: BC

Date I	Drilled:	16/08/2	2012 to) : 16/	08/2012	Diameter (mm): 150	Logge	d by: .	JS Checked by: BC	
		DR	ILLING						COMMENTS/	
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				0.00
-0.0	AS		BH028_0.0-0.2			silty GRAVEL Trace Sand, Trace Cobbles,brown	D			
-			BH028_0.3-0.5		8 -	sandy SILT Some Gravel,brown	D/M			0.30
-						"II OLAY	M			-0.60 0.60
_						silty CLAY Trace Sand,orange/ brown	IVI			0.00
			BH028_0.8-1.0							
1.0										-1.00 1.00
- - - -2.0										
-3.0 -										
_ _ 4.0										
NOTE	_									

NOTES:

Drilling .	Abbreviations:			Moisture	Consistency:		
RW(x)	Rotary Wash	PSC((x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils
RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft
PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft
PD(x)	Percussion Down Hole	H	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm
Where "x	" is flushing medium: (W) Water	r, (M)	Mud, (A) Air, (F) Foam.				



to: 16/08/2012

Bore No.: BH029

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 16/08/2012

Drill Co: GHD Driller: MK Rig Type: AS Total Depth (m): 0.7 Diameter (mm): 150 Easting: 500870 Northing: 6625300 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: JS Chec

Checked by: BC

Date	Dillieu.	10/00/2	2012	0. 10/1	00/2012	Diameter (IIIII). 150	Logge	u by. J	os Checkeu by. BC	
		DR	ILLING							
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				0.00
0.0	AS		BH029_0.0-0.2			silty CLAY Some Sand and Gravel,yellow/ brown	M			0.00
-										
-										
-			BH029_0.5-0.7							
										-0.70 0.70
-1.0										
-										
-										
-										
-										
-2.0										
2.0										
-										
-										
-										
-										
-3.0										
3.0										
-										
-										
-										
-4.0										
NOTE	<u> </u>			•						

NOTES:

I	Drilling A	Abbreviations:			Moisture	Consistency:			
ı	RW(x)	Rotary Wash	PSC(x	() Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
ı	RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
ı	PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
ı	PD(x)	Percussion Down Hole	H	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
ľ	Where "x	is flushing medium: (W) Water	er, (M) l	Mud, (A) Air, (F) Foam.					



ENVIRONMENTAL - SOIL BORE

to: 16/08/2012

Bore No.: BH030

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 16/08/2012

Drill Co: GHD Driller: MK Rig Type: HA Total Depth (m): 2 Diameter (mm): 50

Easting: 500903 Northing: 6625217 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: JS Chec

Checked by: BC

Date	Date Drilled: 16/08/2012 to: 16/08/201				J8/2U12	Diameter (mm): 50	Logge	a by: .	JS Checked by: BC	
		DR	ILLING						001415170	
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				0.00
0.0	НА		BH030_0.0-0.2	_		silty SAND grey	D/M			0.00
-										
-			BH030_0.5-0.7							
- - _{1.0}										
- 1.0										
-										
-			BH030_1.5-1.7			clayey SILT	W			-1.70 1.70
2.0			BH030_1.8-2.0			dark brown				-2.00 2.00
-										2.00
-										
-										
- -3.0										
-										
-										
-										
- -4.0										
1.0							-			

NOTES:

ı	Drilling A	Abbreviations:			Moisture	Consistency:			
ı	RW(x)	Rotary Wash	PSC(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
ı	RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
ı	PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
ı	PD(x)	Percussion Down Hole	H	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
ı	Where "x	" is flushing medium: (W) Wa	ter, (M)	Mud, (A) Air, (F) Foam.					



Bore No.: BH031

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location: Date Drilled: 15/08/2012 to: 15/08/20

to: 15/08/2012

Drill Co: GHD Driller: MK Rig Type: HA Total Depth (m): 3 Diameter (mm): 50 Easting: 500917 Northing: 6625197 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: JS Chec

Checked by: BC

	DRILLING									
		DR	RILLING							
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				0.00
0.0	НА		BH031_0.0-0.2			silty SAND grey	М			0.00
-						brown/ grey	М			-0.50 0.50
- - - 1.0			BH031_0.5-0.7							-1.00 1.00
-			BH031_1.0-1.2	-		brown/ purple	M			1.00
-				-		clayey SILT Trace Sand,dark brown	W			-1.50 1.50
-2.0 -			BH031_1.8-2.0							
- - - -										-3.00 3.00
-4.0										

NOTES:

	Drilling I	Abbreviations:			Moisture	Consistency:			
- 1	RW(x)	Rotary Wash	PSC	(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
- 1	RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
- 1	PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
- 1	PD(x)	Percussion Down Hole	Η	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
- 1	Where "x	' is flushing medium: (W) Wate	r, (M)	Mud, (A) Air, (F) Foam.					



ENVIRONMENTAL - SOIL BORE

to: 14/08/2012

Bore No.: BH032

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 14/08/2012

Drill Co: GHD Driller: MK
Rig Type: HA
Total Depth (m): 1.8
Diameter (mm): 50

Easting: 500919
Northing: 6625151
Grid Ref: GDA94_MGA_zone_56
Elevation: 0
Logged by: JS Chec

Checked by: BC

Date	Date Diffied. 14/00/2012 to. 14/0		00/2012	Diameter (min). 50	Logge	u by.	Checked by. BC			
		DR	ILLING							
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				
-0.0	НА		BH032_0.0-0.2			silty SAND pale brown	W			0.00
-			BH032_0.3-0.5			sandy SILT grey/ brown	W			-0.30 0.30
-										-1.00
-1.0 -			BH032_1.0-1.2			SILT Trace Sand,brown	M			-1.00 1.00
-										
-			BH032_1.5-1.8							-1.80 1.80
-2.0										1.80
-										
-										
-3.0										
-										
-										
- 4.0										

NOTES:

Drilling I	Abbreviations:			Moisture	Consistency:			
RW(x)	Rotary Wash	PSC(x) Percussion Simultanous Casing		Abbreviations:	Granular Soils		Cohesive Soils	
RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
PD(x)	Percussion Down Hole	Η	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
Where "x"	' is flushing medium: (W) Wate	r, (M)	Mud, (A) Air, (F) Foam.					
	-							



Bore No.: BH034

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land

Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 15/08/2012

to: 15/08/2012

Drill Co: GHD Driller: BL/BJ Rig Type: HA Total Depth (m): 0.9 Diameter (mm): 50 Easting: 500968

Northing: 6625075 Grid Ref: GDA94_MGA_zone_56 Elevation: 0

Logged by: BL/BJ Checked by: BC

	Dimou.				00/2012	Diamotor (min): 66	Loggo		onconcu by: 50	
	DRILLING									
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				0.00
- 0.0 -	НА		BH034_0.0-0.1	-	8-1-1/2-1- 8-1-1/2-1- 8-1-1/2-8-1-	sandy SILT dark brown	M		BHDUP04	-0.30 0.30
-			BH034_0.3-0.5	-	6 5 6 5 8 5 6 8 5 6 8 5 6 8 5 6	sandy CLAY mottled grey/ orange	M			0.30
-			BH034_07-0.9		8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8					-0.90 0.90
-1.0 -										
-										
-2.0										
-										
-										
-3.0										
-										
-										
-4.0										
							I		l	+
LNIOTE	NOTES:									

NOTES:

Drilling	Abbreviations:		
RW(x)	Rotary Wash	PSC(x) Percussion Simultanous Casing
RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight
PC(x) PD(x)	Percussion Cable Tool	AH A	Augering - Hollow Flight
PD(x)	Percussion Down Hole	H	Hand Augering
Where "	v" is flushing medium: (W) W	later (M) N	And (A) Air (F) Foam

Moisture Abbreviations: D Dry M Moist W Wet	Consistency: Granular Soils
D Dry	(VL) Very Loose
M Moist	(L) Loose
W Wet	(MD) Medium Dense



to: 16/08/2012

Bore No.: BH039

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 16/08/2012

Drill Co: GHD Driller: MK Rig Type: AS Total Depth (m): 2.8 Diameter (mm): 150

Easting: 500876 Northing: 6625186 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: JS Chec

Checked by: BC

	DRILLING					T 33				
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
		Ь		5		Cround Curfoos	2	0		
0.0	AS		BH039_0.0-0.2			Ground Surface: sandy SILT Trace Clay and Gravel,brown	D			0.00
-				-		silty CLAY Some Sand, trace Gravel,brown/ orange	M			-0.30 0.30
-			BH039_0.5-0.7							
-1.0			DU000 4 0 4 0	-		brown	M			-0.90 0.90
-	НА		BH039_1.0-1.2	-		clausy SAMD	W			-1.30 1.30
-	120			-		clayey SAND Some Silt,grey	"			
			BH039_1.5-1.7	-						
-2.0				-						
-			BH039_2.0-2.2	_		clayey SILT	W			-2.20 2.20
-			BH039_2.2-2.4	_		Trace Sand,dark brown clayey SAND Some Silt,grey	W			-2.40 2.40
-										0.00
					The section of the se					-2.80 2.80
-3.0										
-										
-										
-										
-4.0										

NOTES:

- 1	Drilling /	Abbreviations:			Moisture	Consistency:			
1	RW(x)	Rotary Wash	PSC(x) Percussion Simultanous Casing		Abbreviations:	Granular Soils		Cohesive Soils	
1	RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
1	PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
1	PD(x)	Percussion Down Hole	Η	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
-	Where "x"	' is flushing medium: (W) Wate	r, (M)	Mud, (A) Air, (F) Foam.					
- 1									



Bore No.: BH040

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location: Date Drilled: 15/08/2012 to: 15/08/20

Drill Co: GHD Driller: MK

Rig Type: HA Total Depth (m): 0.5 Diameter (mm): 50

Easting: 500918 Northing: 6625272 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: JS Chec Checked by: BC

Loca Date	cation: te Drilled: 15/08/2012 to: 15/08/201			o : 15/	08/2012	Total Depth (m): 0.5 Diameter (mm): 50	Elevat Logge	ion: 0 d by: .	JS Checked by: BC	
		DR	ILLING							
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
0.0						Ground Surface:	D/14			0.00
_	НА		BH040_0.0-0.2			sandy SILT Trace Gravel (fine grained),brown	D/M			0.00
-			BH040_0.3-0.5		8-1-3-3- 3-1-3-3- 8-1-3-8-1					-0.50 0.50
										0.50
- - -1.0										
-										
_										
L										
-2.0										
L										
F										
_										
-3.0										
-										
-										
-										
-										
-4.0										

NOTES:

ı	Drilling A	Abbreviations:			Moisture	Consistency:			
ı	RW(x)	Rotary Wash	PSC	(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
ı	RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
ı	PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
ı	PD(x)	Percussion Down Hole	H	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
ı	Where "x	" is flushing medium: (W) Wat	er, (M)	Mud, (A) Air, (F) Foam.					
ı									



to: 16/08/2012

Bore No.: BH041

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 16/08/2012

Drill Co: GHD Driller: MK
Rig Type: HA
Total Depth (m): 1.2
Diameter (mm): 50

Easting: 500920 Northing: 6625231 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: JS Chec

Checked by: BC

Date	Drilled:	16/08/.	2012 10) : 16/	08/2012	Diameter (mm): 50	Logge	a by: J	S Checked by: BC	
		DR	ILLING							
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				0.00
-0.0	НА		BH041_0.0-0.2			silty SAND Trace Clay and Gravel,brown	М			0.00
_			BH041_0.5-0.7	-						
- _{1.0}			BH041_1.0-1.2	-			W			-1.00 1.00 -1.20 1.20
										1.20
-										
-2.0										
_										
-										
-3.0										
_										
-										
-4.0										

NOTES:

Drilling	Abbreviations:			Moisture	Consistency:			
RW(x)	Rotary Wash	PSC	(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
PD(x)	Percussion Down Hole	Η	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
Where "x	is flushing medium: (W) Wate	r, (M)	Mud, (A) Air, (F) Foam.					



ENVIRONMENTAL - SOIL BORE

Bore No.: BH042

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 14/08/2012

to: 14/08/2012

Drill Co: GHD Driller: MK
Rig Type: HA
Total Depth (m): 1.7
Diameter (mm): 50

Easting: 500939 Northing: 6625168 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: JS Chec

Checked by: BC

Date	Drilled:	14/08/2	2012 (() : 14/	08/2012	Diameter (mm): 50	Logge	a by: J	Checked by: BC	
		DR	RILLING						001415150/	
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				0.00
- 0.0 -	НА		BH042_0.0-0.2			silty SAND grey	М			0.00
-			BH042_0.3-0.5	-		sandy SILT Trace Wood,grey	W			-0.30 0.30
- 1.0					8 - 2 - 8					-1.00 1.00
-			BH042_1.0-1.2			SILT Trace Sand,dark brown	M			1.00
-				-						
-			BH042_1.5-1.7							-1.70 1.70
- -2.0										
-										
- -3.0										
-										
- 4.0										

NOTES:

ı	Drilling A	Abbreviations:			Moisture	Consistency:			
ı	RW(x)	Rotary Wash	PSC(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
ı	RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
ı	PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
ı	PD(x)	Percussion Down Hole	H	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
ı	Where "x	" is flushing medium: (W) Wa	ter, (M)	Mud, (A) Air, (F) Foam.					



to: 14/08/2012

Bore No.: BH043

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 14/08/2012

Drill Co: GHD Driller: MK
Rig Type: HA
Total Depth (m): 1.7
Diameter (mm): 50

Easting: 500950 Northing: 6625159 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: JS Chec

Checked by: BC

Date	Drilled:	14/00/	2012 10	J. 14/	08/2012	Diameter (mm): 50	Logge	u by: .	JS Checked by: BC	
		DR	ILLING						0014151707	
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				0.00
-0.0	НА		BH043_0.0-0.2			silty SAND brown	W			0.00
-			BH043_0.3-0.5	-						
							W			-0.80 0.80
-1.0					*	sandy SILT grey	W			-1.00 1.00
_			BH043_1.0-1.2			SILT Trace Sand,dark brown				1.00
-										
-			BH043_1.5-1.7							-1.70 1.70
-2.0										
-										
-										
-										
-3.0										
-										
<u> </u>										
-										
-4.0										

NOTES:

Drilling	Abbreviations:			Moisture	Consistency:			
RW(x)	Rotary Wash	PSC	(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
PD(x)	Percussion Down Hole	Η	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
Where "x	is flushing medium: (W) Wate	r, (M)	Mud, (A) Air, (F) Foam.					



ENVIRONMENTAL - SOIL BORE

Bore No.: BH046

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location: Date Drilled: 16/08/2012 to: 16/08/20

Drill Co: GHD Driller: MK

Rig Type: AS Total Depth (m): 0.7 Diameter (mm): 150

Easting: 500892 Northing: 6625291 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: JS Chec

Locat Date	tion: Drilled:	16/08/	2012 t	o : 16/	08/2012	Total Depth (m): 0.7 Diameter (mm): 150	Elevat Logge	ion: 0 d by: .	JS Checked by: BC	
		DR	ILLING						001111	
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
0.0	4.0					Ground Surface:				0.00
_	AS		BH046_0.0-0.2	_	8-1-1-1-1-1-1 -5-1-1-1-1-1-1 -5-1-1-1-1-1	sandy SILT Trace Clay,brown	D			0.00
					2					0.40
-					-	silty CLAY	D/M			-0.40 0.40
						Trace Sand,orange/ brown				
-			BH046_0.5-0.7							0.70
										-0.70 0.70
-										
1.0										
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<u> </u>										
-2.0										
 										
-3.0										
†										
 										
-4.0										

NOTES:

١	Drilling A	Abbreviations:			Moisture	Consistency:			
ı	RW(x)	Rotary Wash	PSC(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
ı	RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
ı	PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
ı	PD(x)	Percussion Down Hole	H	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
ı	Where "x	" is flushing medium: (W) Wa	er, (M)	Mud, (A) Air, (F) Foam.					



to: 16/08/2012

Bore No.: BH047

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 16/08/2012

Drill Co: GHD Driller: MK

Rig Type: AS Total Depth (m): 0.7 Diameter (mm): 150

Easting: 500862 Northing: 6625276 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: JS Chec Checked by: BC

	Dimou.				00/2012	Diamotor (min): 100	Loggo	,	onesica by: Be	
	DRILLING									
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				0.00
- 0.0	AS		BH047_0.0-0.2	-		sandy SILT Trace Clay,brown	D			
					<u> </u>		D/M			-0.50 0.50
L			DU047 0 F 0 7		74 7		D/IVI			0.50
			BH047_0.5-0.7							-0.70
										-0.70 0.70
- -1.0 -										
-										
-2.0 - -										
-3.0										
-										
-										
-4.0										
NOTE						<u> </u>			<u> </u>	

NOTES:

ı	Drilling A	Abbreviations:			Moisture	Consistency:			
ı	RW(x)	Rotary Wash	PSC(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
ı	RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
ı	PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
ı	PD(x)	Percussion Down Hole	H	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
ı	Where "x	" is flushing medium: (W) Wa	ter, (M)	Mud, (A) Air, (F) Foam.					



to: 16/08/2012

Bore No.: BH050

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 16/08/2012

Drill Co: GHD Driller: MK Rig Type: HA Total Depth (m): 1.2 Diameter (mm): 50 Easting: 500936 Northing: 6625239 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: JS Chec

Checked by: BC

Date	Dillieu.	10/00/	2012	10. 10/	00/2012	Diameter (min). 50	Logge	u by	Checked by. BC	
		DR	ILLING						OOMMENTS!	
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				0.00
0.0	НА		BH050_0.0-0.2		8-1-1/2-13-1- 5-1-1/2-13-1- 8-1-1/2-13-1-	sandy SILT grey	W			0.00
			BH050_0.2-0.4							-0.40 0.40
			BH050_0.5-0.7			sandy SILT Some Clay,dark brown	W			0.40
_			B11030_0.3-0.7							
-1.0					*	silty CLAY dark brown	W			-0.90 0.90
			BH050_1.0-1.2							-1.20 1.20
-										
-										
-										
-2.0										
-										
-										
-										
-3.0										
- _{4.0}										
NOTE	. C.			_			•			

NOTES:

Drilling I	Abbreviations:			Moisture	Consistency:			
RW(x)	Rotary Wash	PSC	(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
PD(x)	Percussion Down Hole	Η	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
Where "x	" is flushing medium: (W) Wate	r, (M)	Mud, (A) Air, (F) Foam.					



to: 15/08/2012

Bore No.: BH052

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 15/08/2012

Drill Co: GHD Driller: MK

Rig Type: HA Total Depth (m): 3 Diameter (mm): 50

Easting: 500954 Northing: 6625213 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: JS Chec

Checked by: BC

	Dimou.				00/2012	Diamotor (min): 00			onocked by: Be	
		DR	RILLING							
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				0.00
- 0.0	НА		BH052_0.0-0.2	-		silty SAND grey/ brown	M			0.00
_			BH052_0.5-0.7	-			W			-0.50 0.50
-1.0			BH052_1.0-1.2	_		clayey SILT Trace Sand,grey	W		BHDUP03	-0.80 0.80
-			51.002_1.0*1.2			dark brown				-1.20 1.20
- - -2.0			BH052_1.8-2.0	-		clayey SILT Trace Sand,grey	W			-1.80 1.80
-			BH052_2.3-2.5	_						
-			BH052_2.8-3.0	_						2.00
- 3.0										3.00
- -4.0										

NOTES:

Drilling I	Abbreviations:			Moisture	Consistency:				
RW(x)	Rotary Wash	PSC	(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils		
RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff	
PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff	
PD(x)	Percussion Down Hole	Н	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard	
Where "x	is flushing medium: (W) Wat	er, (M)	Mud, (A) Air, (F) Foam.						
	-								



to: 14/08/2012

Bore No.: BH053

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 14/08/2012

Drill Co: GHD Driller: MK Rig Type: HA Total Depth (m): 3.5 Diameter (mm): 50

Easting: 500967 Northing: 6625173 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: JS Chec

Checked by: BC

BH053_2.0.2.2 BH053_2.0.2.2 BH053_3.2.3.5 BH053_3.2.3.5	Date	Dillieu.	14/00/.	2012	J. 14/	00/2012	Diameter (mm). 50	Logge	u by. J	OS Checked by. BC	
Secondary Prince Secondary Prince Secondary States Secondary S			DR	ILLING							
0.0 HA BH053_0.0.02 Examples of the property o	Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill,	
SH053_0.0-2.2 St.U 1.000 Sh00, and show the control of the control							Ground Surface:				0.00
### PROS. 1.0-12 BH053, 1.0-12 BH053, 2.0-22 BH053, 2.3-5 BH053, 3.2-3-5	- 0.0	НА		BH053_0.0-0.2		7	sandy SILT grey	M			0.00
BH053_1.0-1.2 BH053_1.5-1.7 BH053_2.0-2.2 BH053_3.2-3.5 BH053_3.2-3.5 BH053_3.2-3.5 BH053_3.2-3.5	-			BH053_0.3-0.5							
BH053_1.0-1.2 BH053_1.5-1.7 BH053_2.0-2.2 BH053_3.2-3.5 BH053_3.2-3.5 BH053_3.2-3.5 BH053_3.2-3.5	-										-1.00
2.00 BH053_2.0.22 BH053_3.2.35 BH063_3.2.35 BH063_3.2.35	-			BH053_1.0-1.2	_		SILT Trace Sand,dark brown	W			1.00
BH053_2.0.2.2 Trace Sand.grey Trace Sand.grey BH053_3.2.3.5 BH053_3.2.3.5	-			BH053_1.5-1.7	_						
- 3.0 BH053_3.2.3.5 BH053_3.2.3.5 - 3.50	-2.0			RH053 2 0 2 2	-		clayey SILT Trace Sand.grev	W			-2.00 2.00
-3.0 BH053_3.2-3.5 -3.50 -4.0	-			B11035_2.0 2.2	_						
BH053_3.2-3.5	- -3.0				_						
	_			BH053_3.2-3.5							-3.50 3.50
	- 4.0										
		- Ç.									

NOTES:

Drilling A	Abbreviations:			Moisture	Consistency:			
RW(x)	Rotary Wash	PSC(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
PD(x)	Percussion Down Hole	H	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
Where "x"	is flushing medium: (W) Water	, (M)	Mud, (A) Air, (F) Foam.					



Bore No.: BH054

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location: Date Drilled: 14/08/2012 to: 14/08/20

Drill Co: GHD Driller: MK

Rig Type: HA Total Depth (m): 1.7 Diameter (mm): 50

Easting: 500957 Northing: 6625166 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: JS Chec Checked by: BC

Locat Date	tion: Drilled:	14/08/	2012	to: 14/	08/2012	Total Depth (m): 1.7 Diameter (mm): 50	Elevat Logge	ion: 0 ed by: .	JS Checked by: BC	
		DF	RILLING							
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
0.0	НА					Ground Surface: sity SAND	W			0.00
_			BH054_0.0-0.2			Crust at water level,brown				
-			BH054_0.3-0.5							
_										
_			BH054_0.7-0.9				W	-		-0.80 0.80
			21100 1_017 017			sandy SILT grey	l vv			
-1.0			BH054_1.0-1.2			SILT Trace Sand,dark brown	W			-1.00 1.00
-			_							
-										
			BH054_1.5-1.7							-1.70 1.70
-										1.70
-2.0										
-										
-										
-3.0										
-										
-										
-										
-4.0			l		ļ				I	

NOTES:

Drilling	Abbreviations:			Moisture	Consistency:			
RW(x)	Rotary Wash	PSC	(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
PD(x)	Percussion Down Hole	Η	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
Where "x	is flushing medium: (W) Wate	r, (M)	Mud, (A) Air, (F) Foam.					



Bore No.: BH056

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 15/08/2012 to: 15/08/2012

Drill Co: GHD Driller: MK Rig Type: HA Total Depth (m): 0.5 Diameter (mm): 50

Easting: 500968 Northing: 6625286 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: JS Chec Checked by: BC

Dute	Drilled:	13/00/	2012 10	J. 13/1	08/2012	Diameter (mm): 50	Logge	u by. J	S Checked by: BC	
		DR	RILLING							
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				
-0.0	НА		BH056_0.0-0.2			silty SAND brown	D			0.00
_			BH056_0.3-0.5			sandy SILT Some Clay,orange/ brown	М			-0.30 0.30 -0.50 0.50
-										0.50
<u> </u>										
-1.0 -										
-										
-										
-										
-2.0										
-										
-3.0										
-										
-										
<u>-4.0</u>										

NOTES:

GHD Soil Classifications: The GHD Soil Classification is based on Australian Standards AS 1726-1993. This log is not intended for geotechnical purposes. Drilling Abbreviations: Consistency:

Diming /	abbi e viations.			IVIOIS tui C	Consistency.
RW(x)	Rotary Wash	PSC	(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils
RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loos
PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose
PD(x)	Percussion Down Hole	Н	Hand Augering	W Wet	(MD) Medium I
Where "x	is flushing medium: (W) Water	er, (M)	Mud, (A) Air, (F) Foam.		
	RW(x) RT(x) PC(x) PD(x)	RT(x) Rotary Triple Tube PC(x) Percussion Cable Tool PD(x) Percussion Down Hole	RW(x) Rotary Wash PSC RT(x) Rotary Triple Tube AS PC(x) Percussion Cable Tool AH PD(x) Percussion Down Hole H	RW(x) Rotary Wash PSC(x) Percussion Simultanous Casing RT(x) Rotary Triple Tube AS Augering - Solid Flight PC(x) Percussion Cable Tool AH Augering - Hollow Flight	RW(x) Rotary Wash PSC(x) Percussion Simultanous Casing Abbreviations: RT(x) Rotary Triple Tube AS Augering - Solid Flight D Dry PC(x) Percussion Cable Tool AH Augering - Hollow Flight M Moist PD(x) Percussion Down Hole H Hand Augering W Wet



BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

Bore No.: BH057

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location: Date Drilled: 15/08/2012 to: 15/08/20

Drill Co: GHD Driller: MK

Rig Type: HA Total Depth (m): 0.5 Diameter (mm): 50

Easting: 500967 Northing: 6625255 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: JS Chec Checked by: BC

Cohesive Soils (VS) Very Soft (S) Soft (F) Firm

(ST) Stiff (VST) Very Stiff (H) Hard

Locat Date	tion: Drilled:	15/08/	2012 to	o : 15/	08/2012	Total Depth (m): 0.5 Diameter (mm): 50	Elevat Logge	ion: 0 ed by:	JS Checked by: BC	
		DR	RILLING							
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
0.0	110					Ground Surface:				0.00
-	НА		BH057_0.0-0.2	-			M			0.00
_			BH057_0.3-0.5							-0.50 0.50
_										0.50
_										
− 1.0										
_										
_										
-										
_										
— _{2.0}										
_										
- 3.0										
-										
-										
_										
-										
-4.0										
NOTE				•	•		,		•	•

NOTES:

1	Drilling A	Abbreviations:			Moisture	Consistency:	
1	RW(x)	Rotary Wash	PSC((x) Percussion Simultanous Casing	Abbreviations:	Granular Soils	
1	RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense
1	PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense
1	PD(x)	Percussion Down Hole	Н	Hand Augering	W Wet	(MD) Medium Dense	
Ŋ	Where "x"	is flushing medium: (W) Wate	r, (M)	Mud, (A) Air, (F) Foam.			



to: 15/08/2012

Bore No.: BH060

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 15/08/2012

Drill Co: n/a Driller: JS Rig Type: HA Total Depth (m): 0.7 Diameter (mm): 50 Easting: 500949 Northing: 6625255 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: JS Chec

Checked by: BC

	Dilliou.				00/2012	Diamotor (min): 00	Loggo	~ ~ j	onconcu by. Be	
		DR	ILLING							
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				0.00
- 0.0	НА		BH060_0.0-0.2			sandy SILT Some Gravel (approx. 3mm),brown	M		Possible fill material	0.00
-			BH060_0.3-0.5							-
Γ										-0.70
										-0.70 0.70
-1.0										
-										
-										
-										
-2.0										
-										
-										
- - _{3.0}										
-										
-										
- 4.0										
NOT										

NOTES:

١	Drilling A	Abbreviations:		Moisture	Consistency:			
ı	RW(x)	Rotary Wash	PSC(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
ı	RT(x)	Rotary Triple Tube	AS Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
ı	PC(x)	Percussion Cable Tool	AH Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
ı	PD(x)	Percussion Down Hole	H Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
ı	Where "x	" is flushing medium: (W) Wa	ter, (M) Mud, (A) Air, (F) Foam.					



BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

to: 15/08/2012

Bore No.: BH061

(ST) Stiff (VST) Very Stiff (H) Hard

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 15/08/2012

Drill Co: GHD Driller: MK

Rig Type: HA Total Depth (m): 0.5 Diameter (mm): 50

Easting: 500947 Northing: 6625280 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: JS Chec

Checked by: BC

Duto					00/2012	Diamotor (min): 00		u 25. s	oneonea by: Be	
		DR	ILLING							
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				0.00
- 0.0	НА		BH061_0.0-0.2	-		sandy SILT Trace Clay,orange/ brown	M			0.00
_			BH061_0.3-0.5							-0.50 0.50
- - -1.0 -										0.50
- - -2.0 -										
- -3.0 -										
_ 										

NOTES:

Drilling	Abbreviations:			Moisture	Consistency:		
RW(x)	Rotary Wash	PSC	(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils
RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft
PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft
PD(x)	Percussion Down Hole	Н	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm
Where ">	" is flushing medium: (W) Wat	er, (M)	Mud, (A) Air, (F) Foam.				



to: 15/08/2012

Bore No.: BH062

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 15/08/2012

Drill Co: GHD Driller: MK Rig Type: HA Total Depth (m): 0.5 Diameter (mm): 50

Easting: 500942 Northing: 6625313 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: JS Chec

Checked by: BC

	Dillieu.	10/00/2	2012	J. 15/1	J0/2U12	Diameter (min). 50	Logge	u by. s	os Checkeu by. BC	
		DR	ILLING							
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				0.00
0.0	НА		BH062_0.0-0.2	_		clayey SILT Some Sand,brown/ grey	M			0.00
			BH062_0.3-0.5							-0.50 0.50
- - -1.0 -										0.30
- - -2.0 -										
- -3.0 -										
_ 										

NOTES:

ı	Drilling A	Abbreviations:			Moisture	Consistency:			
ı	RW(x)	Rotary Wash	PSC(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
ı	RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
ı	PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
ı	PD(x)	Percussion Down Hole	H	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
ı	Where "x	" is flushing medium: (W) Wa	ter, (M)	Mud, (A) Air, (F) Foam.					



Bore No.: BH063

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 15/08/2012

to: 15/08/2012

Drill Co: GHD Driller: MK Rig Type: HA Total Depth (m): 0.5 Diameter (mm): 50

Easting: 500975 Northing: 6625321 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: JS Chec

Checked by: BC

Date	Drilled:	15/08/2	2012 to) : 15/0	08/2012	Diameter (mm): 50	Logge	d by:	JS Checked by: BC	
		DR	ILLING						OOMMENTS!	
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				0.00
- 0.0 -	НА		BH063_0.0-0.2			silty CLAY Some Sand,orange/ brown	M			0.00
_			BH063_0.3-0.5							
			Ы 1003_0.5-0.5							-0.50 0.50
										0.50
-										
-1.0										
-										
_										
-2.0										
-										
_										
-3.0										
-										
-										
- 4.0							1			
LNOTE										

NOTES:

GHD Soil Classifications: The GHD Soil Classification is based on Australian Standards AS 1726-1993. This log is not intended for geotechnical purposes. Consistency:

Drilling	Abbreviations:			Moisture
RW(x)	Rotary Wash	PSC	(x) Percussion Simultanous Casing	Abbrevia
RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry
PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist
PD(x)	Percussion Down Hole	H	Hand Augering	W Wet
Where "	x" is flushing medium: (W) W	ater. (M	Mud (A) Air (F) Foam	

Granular Soils
(VL) Very Loose
(L) Loose
(MD) Medium Dense

(D) Dense (VD) Very Dense

Cohesive Soils (VS) Very Soft (S) Soft (F) Firm



Bore No.: BH064

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location: Date Drilled: 15/08/2012 to: 15/08/20

to: 15/08/2012

Drill Co: GHD Driller: MK Rig Type: HA Total Depth (m): 0.5 Diameter (mm): 50

Easting: 500980

Northing: 6625343
Grid Ref: GDA94_MGA_zone_56
Elevation: 0
Logged by: JS
Chec

Checked by: BC

Date I	Drilled:	15/08/2	2012 to	ɔ : 15/0	08/2012	Diameter (mm): 50	Logge	d by:	JS Checked by: BC	
		DR	RILLING						0014151707	
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
				†		Ground Surface:				
- 0.0	НА		BH064_0.0-0.2			silty CLAY Trace Sand,brown	M			0.00
-			BH064_0.3-0.5			silty CLAY Trace Sand,orange/ brown	М			-0.30 0.30 -0.50 0.50
_										0.50
_										
- 1.0										
_										
-2.0										
-										
-										
- - _{3.0}										
-										
-										
-										
-										
-4.0				<u></u>						

NOTES:

GHD Soil Classifications: The GHD Soil Classification is based on Australian Standards AS 1726-1993. This log is not intended for geotechnical purposes. Consistency:

Drilling	Abbreviations:		
RW(x)	Rotary Wash	PSC(x) Percussion Simultanous Casing
RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight
PC(x) PD(x)	Percussion Cable Tool	AH	Augering - Hollow Flight
PD(x)	Percussion Down Hole	H	Hand Augering
Where "	v" ic fluching medium: (W) W	Jator (M)	Mud (A) Air (E) Foam

Moisture	Consistency:
Abbreviations:	Granular Soils
D Dry	(VL) Very Loose
M Moist	(L) Loose
W Wet	(MD) Medium Dense

(D) Dense (VD) Very Dense

Cohesive Soils (VS) Very Soft (S) Soft (F) Firm



Bore No.: BH065

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 15/08/2012

to: 15/08/2012

Drill Co: GHD Driller: MK

Rig Type: HA Total Depth (m): 0.5 Diameter (mm): 50

Easting: 501003

Northing: 6625341
Grid Ref: GDA94_MGA_zone_56
Elevation: 0
Logged by: JS Chec

Checked by: BC

Date	Dillieu.	13/00/2	2012 10	J. 13/1	J0/2U12	Diameter (min). 50	Logge	u by. 3	os Checkeu by. BC	
		DR	ILLING							
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				0.00
0.0	НА		BH065_0.0-0.2	_		silty CLAY Trace Sand,brown	M			0.00
-			BH065_0.3-0.5							-0.50 0.50
-										
-1.0 -										
-										
-2.0 -										
-										
-3.0										
-										
4.0										
NOTE										\vdash
11/10/11	- > ·									

NOTES:

GHD Soil Classifications: The GHD Soil Classification is based on Australian Standards AS 1726-1993. This log is not intended for geotechnical purposes.

Drilling	Abbreviations:			M
RW(x)	Rotary Wash	PSC	(x) Percussion Simultanous Casing	A
RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D
PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M
PD(x)	Percussion Down Hole	H	Hand Augering	W
Where '	'x" is flushing medium: (W) W	Jater (M	Mud (A) Air (F) Foam	

Moisture	Consistency:
Abbreviations:	Granular Soils
D Dry	(VL) Very Loose
M Moist	(L) Loose
W Wet	(MD) Medium Dense

(D) Dense (VD) Very Dense

Cohesive Soils (VS) Very Soft (S) Soft (F) Firm



to: 15/08/2012

Bore No.: BH066

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 15/08/2012

Drill Co: GHD Driller: MK
Rig Type: HA
Total Depth (m): 0.7
Diameter (mm): 50

Easting: 500992 Northing: 6625305 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: JS Chec

Checked by: BC

Date	Drilled:	15/08/.	2012	0 : 15/	08/2012	Diameter (mm): 50	Logge	a by: .	S Checked by: BC	
		DR	RILLING							
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				
- 0.0 -	НА		BH066_0.0-0.2			sandy SILT Trace Clay,orange/ brown	M			0.00
_			BH066_0.5-0.7							
	<u></u>									-0.70
- -1.0 -										0.70
-										
-2.0 -										
-										
-3.0 -										
- -										
-4.0										
NOT	FS:									

Drilling	Abbreviations:			Moisture	Consistency:			
RW(x)	Rotary Wash	PSC	(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
PD(x)	Percussion Down Hole	H	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
Where "x	" is flushing medium: (W) Wat	er, (M)	Mud, (A) Air, (F) Foam.					



BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

to: 15/08/2012

Bore No.: BH067

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 15/08/2012

Drill Co: GHD Driller: MK
Rig Type: HA
Total Depth (m): 0.7
Diameter (mm): 50

Easting: 501028 Northing: 6625327 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: JS Chec

Checked by: BC

Date	Date Diffied. 15/06/2012 to. 15/06/201			0. 13/	00/2012	Diameter (min). 50	Logge	u by. J	os checked by. BC	
		DR	ILLING							
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				0.00
0.0	HA					clayey SILT	М			0.00
			BH067_0.0-0.2		=====	brown				
L										
					=====					
F										
										-0.50 0.50
						CLAY	М			0.50
r			BH067_0.5-0.7			Some Silt,grey				
										-0.70 0.70
L										0.70
-1.0										
L										
Γ										
-										
-										
L										
-2.0										
-										
t										
L										
-3.0										
L										
-										
-										
<u>-4.0</u>										Щ
INOTE	-S.									

NOTES:

١	Drilling A	Abbreviations:			Moisture	Consistency:			
ı	RW(x)	Rotary Wash	PSC(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
ı	RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
ı	PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
ı	PD(x)	Percussion Down Hole	H	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
ı	Where "x	" is flushing medium: (W) Wa	er, (M)	Mud, (A) Air, (F) Foam.					



to: 15/08/2012

Bore No.: BH069

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 15/08/2012

Drill Co: GHD Driller: MK

Rig Type: HA Total Depth (m): 0.5 Diameter (mm): 50

Easting: 500988 Northing: 6625271 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: JS Chec

Checked by: BC

Duto.	Di illeu.	10/00/2	2012 (0	J. 13/1	00/2012	Diameter (IIIII). 50	Logge	u by. 3	os Checkeu by. BC	
		DR	ILLING							
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				0.00
- 0.0	НА		BH069_0.0-0.2			sandy SILT Trace Clay,brown	M			0.00
-			BH069_0.3-0.5		\$					-0.50 0.50
- -1.0										0.30
- - -2.0										
- -3.0 -										
- - -4.0 NOTE	-c.									

NOTES:

Drilling	Abbreviations:			Moisture	Consistency:			
RW(x)	Rotary Wash	PSC	(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
PD(x)	Percussion Down Hole	Н	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
Where "x	" is flushing medium: (W) Wat	er, (M)	Mud, (A) Air, (F) Foam.					



to: 15/08/2012

Bore No.: BH070

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 15/08/2012

Drill Co: GHD Driller: MK Rig Type: HA Total Depth (m): 0.7 Diameter (mm): 50

Easting: 501021 Northing: 6625316 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: JS Chec

Checked by: BC

	Dimou.				00/2012	Diamotor (min): 66	Loggo	,	onconcu by. Bo	
	DRILLING									
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
0.0						Ground Surface:				0.00
-	НА		BH070_0.0-0.2			clayey SAND Mottled orange and grey/ brown	M			0.00
F			BH070_0.5-0.7							
					Conclusion					-0.70 0.70
L										0.70
Γ										
-1.0										
L										
-										
-										
-2.0										
2.0										
-										
-										
-3.0										
-										
-										
-										
-4.0										
NOTE	C.									

NOTES:

١	Drilling A	Abbreviations:			Moisture	Consistency:			
ı	RW(x)	Rotary Wash	PSC(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
ı	RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
ı	PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
ı	PD(x)	Percussion Down Hole	H	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
ı	Where "x	" is flushing medium: (W) Wa	er, (M)	Mud, (A) Air, (F) Foam.					



BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

to: 15/08/2012

Bore No.: BH071

(ST) Stiff (VST) Very Stiff (H) Hard

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 15/08/2012

Drill Co: GHD Driller: MK

Rig Type: HA Total Depth (m): 0.7 Diameter (mm): 50

Easting: 501071 Northing: 6625320 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: JS Chec

Checked by: BC

Date	Di illeu.	13/00/2	2012	J. 13/1	00/2012	Diameter (min). 50	Logge	u by. s	os Checkeu by. BC	
		DR	ILLING							
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				0.00
0.0	HA		BH071_0.0-0.2			silty CLAY Some Sand,dark brown	М			0.00
-										
-			BH071_0.5-0.7							0.70
										-0.70 0.70
-1.0										
-										
_										
-										
-2.0										
-										
-										
-										
-3.0										
-										
-										
-4.0										
NOTE	. ç.									

NOTES:

Drilling A	Abbreviations:			Moisture	Consistency:		
RW(x)	Rotary Wash	PSC	(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils
RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft
PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft
PD(x)	Percussion Down Hole	H	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm
Where "x	" is flushing medium: (W) Water	r, (M)	Mud, (A) Air, (F) Foam.				



BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

to: 15/08/2012

Bore No.: BH072

(ST) Stiff (VST) Very Stiff (H) Hard

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 15/08/2012

Drill Co: GHD Driller: MK Rig Type: HA Total Depth (m): 0.7 Diameter (mm): 50

Easting: 501094 Northing: 6625331 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: JS Chec

Checked by: BC

	Dimou.				30/2012	Biamotor (mm): 00			onounce by: Bo	
	DRILLING									
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
0.0						Ground Surface:				0.00
- 0.0	НА		BH072_0.0-0.2			silty CLAY Some Sand,dark brown	W			0.00
-						grey				-0.40 0.40
-			BH072_0.5-0.7							-0.70 0.70
-1.0										
-										
-										
-										
-2.0										
-										
-										
-3.0										
-										
-										
1										
-4.0										
NOT									·	

NOTES:

- 1	Drilling .	Abbreviations:			Moisture	Consistency:				
- 1	RW(x)	Rotary Wash	PSC((x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils		
- 1	RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft		
- 1	PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft		
- 1	PD(x)	Percussion Down Hole	H	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm		
- 1	Where "x	" is flushing medium: (W) Wate	r, (M)	Mud, (A) Air, (F) Foam.						



to: 15/08/2012

Bore No.: BH073

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 15/08/2012

Drill Co: GHD Driller: MK

Rig Type: HA Total Depth (m): 1.2 Diameter (mm): 50

Easting: 501032 Northing: 6625306 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: JS Chec

Checked by: BC

	DDILLING			Diamotor (min): 00	55	u	oneskea by: Be			
		DR	ILLING							
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
0.0	110					Ground Surface:				0.00
_	НА		BH073_0.0-0.2	-		clayey SAND brown/ grey	M			0.00
_			BH073_0.5-0.7	_			W			-0.50 0.50
			BH073_1.0-1.2	_		sandy CLAY brown/ grey	W			-1.00 1.00
										-1.20 1.20
- - -2.0 -										
- -3.0 -										

NOTES:

ı	Drilling A	Abbreviations:			Moisture	Consistency:			
ı	RW(x)	Rotary Wash	PSC(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
ı	RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
ı	PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
ı	PD(x)	Percussion Down Hole	H	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
ı	Where "x	" is flushing medium: (W) Wa	ter, (M)	Mud, (A) Air, (F) Foam.					



to: 15/08/2012

Bore No.: BH074

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 15/08/2012

Drill Co: GHD Driller: MK Rig Type: HA Total Depth (m): 1 Diameter (mm): 50

Easting: 501025 Northing: 6625286 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: JS Chec

Checked by: BC

		10/00/2			00/2012	Diamotor (min): 66	33	u 25. s	oneonea by: Be	
	DRILLING									
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
0.0						Ground Surface:				0.00
-	НА		BH074_0.0-0.2			clayey SILT Some Sand,dark brown	M			0.00
-										-0.80 0.80
			BH074_0.8-1.0		2 - 12 - 12 - 12 - 12 - 12 - 12 - 12 -	sandy CLAY Trace Silt,brown/ grey	М			0.80
1.0			DI 1074_0.0-1.0		W					-1.00 1.00
_										1.00
-										
_										
-2.0										
_										
_										
-3.0										
_										
_										
_										
4.0										oxdot
INOT										

NOTES:

ı	Drilling A	Abbreviations:			Moisture	Consistency:			
ı	RW(x)	Rotary Wash	PSC(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
ı	RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
ı	PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
ı	PD(x)	Percussion Down Hole	H	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
ı	Where "x	" is flushing medium: (W) Wa	ter, (M)	Mud, (A) Air, (F) Foam.					



to: 15/08/2012

Bore No.: BH075

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 15/08/2012

Drill Co: GHD Driller: MK Rig Type: HA Total Depth (m): 2 Diameter (mm): 50

Easting: 501012 Northing: 6625245 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: JS Chec

Checked by: BC

DRILLING		2012 10	J. 13/	00/2012	Diameter (IIIII). 50	Logge	u by.	JS Checked by. BC		
		DR	ILLING							
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				0.00
-0.0	НА		BH075_0.0-0.2		8-1-1-1-1-1 -8-1-1-1-1-1 8-1-1-1-1-1	sandy SILT brown	D			0.00
-						grey				-0.70 0.70
-1.0 -			BH075_1.0-1.2	-	2 - 3 - 7 - 7 - 7 - 7 - 7 - 7 - 7 - 7 - 7	Some Clay,brown				-1.00 1.00
- -							W			<u>-1.50</u> 1.50
-				-	8 <u>= 1</u> -2-2 -5-3-5-5 8-3-3-6-3	dark brown			BHLABDUP01	-1.80 1.80
2.0			BH075_1.8-2.0		\$					-2.00 2.00
-										2.00
-										
-3.0										
-										
-										
4.0	L								l	

NOTES:

- 1	Drilling /	Abbreviations:			Moisture	Consistency:			
1	RW(x)	Rotary Wash	PSC((x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
1	RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
1	PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
1	PD(x)	Percussion Down Hole	Η	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
-	Where "x"	' is flushing medium: (W) Wate	r, (M)	Mud, (A) Air, (F) Foam.					



to: 15/08/2012

Bore No.: BH076

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 15/08/2012

Drill Co: GHD Driller: MK

Rig Type: HA Total Depth (m): 0.7 Diameter (mm): 50

Easting: 500991 Northing: 6625251 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: JS Chec

Checked by: BC

Duto					00/2012	Diamotor (min): 00	Loggo	,	onconcu by. Bo	
		DR	ILLING							
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				0.00
- 0.0	НА		BH076_0.0-0.2			clayey SILT Some Sand, Organic matter,dark brown	W			0.00
										0.40
_			BH076_0.3-0.5			SAND Trace Silt,grey	W			0.40
										-0.70
_										-0.70 0.70
-1.0 -										
_										
-2.0										
_										
_										
-3.0 -										
_										
-										
-4.0										
NOTE										

NOTES:

١	Drilling A	Abbreviations:			Moisture	Consistency:			
ı	RW(x)	Rotary Wash	PSC(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
ı	RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
ı	PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
ı	PD(x)	Percussion Down Hole	H	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
ı	Where "x	" is flushing medium: (W) Wa	ter, (M)	Mud, (A) Air, (F) Foam.					



Bore No.: BH077

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location: Date Drilled: 14/08/2012 to: 14/08/20

Drill Co: GHD Driller: MK Rig Type: HA Total Depth (m): 2.2 Diameter (mm): 50

Easting: 500997 Northing: 6625216 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: JS Chec

Locat Date	Location: Date Drilled: 14/08/2012 DRILLING			o: 14/	08/2012	Total Depth (m): 2.2 Diameter (mm): 50	Elevat Logge	ion: 0 ed by: .	JS Checked by: BC	
		DR	RILLING							
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
0.0	НА					Ground Surface:	D/M			0.00
_	на		BH077_0.0-0.2			sandy SILT grey mottled brown	D/W			0.00 -0.10 0.10
-			BH077_0.3-0.5							-0.50 0.50
-						clayey SILT Some Sand, Roots @ 0.8m,dark brown	M			0.50
-1.0				-		CLAY	M			-1.00 1.00
-			BH077_1.0-1.2			Stiff,grey				
-						SILT	W			-1.40 1.40
-			BH077_1.5-1.7			Trace Sand,dark brown				
-										-2.00
-2.0			BH077_2.0-2.2			black				-2.00 2.00 -2.20 2.20
_										2.20
_										
_										
-3.0										
-										
- -										
-										
-4.0										
NOTE					•	•			•	

NOTES:

וווווחש <i>ו</i>	Appreviations:			Moisture	Consistency:			
RW(x)	Rotary Wash	PSC((x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
PD(x)	Percussion Down Hole	Η	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
Where "x"	' is flushing medium: (W) Wate	r, (M)	Mud, (A) Air, (F) Foam.					
l								



BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

Bore No.: BH078

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location: Date Drilled: 14/08/2012 to: 14/08/20

Drill Co: GHD Driller: MK Rig Type: HA Total Depth (m): 1.7 Diameter (mm): 50

Easting: 501019 Northing: 6625227 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: JS Chec Checked by: BC

Locat Date	Location: Date Drilled: 14/08/2012 DRILLING			to: 14/	08/2012	Total Depth (m): 1.7 E 2012 Diameter (mm): 50 L			Elevation: 0 Logged by: JS Checked by: BC		
		DR	RILLING								
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components. Ground Surface:	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)	
0.0	НА				17 Page 117 C		D/M			0.00	
_	па		BH078_0.0-0.2			SAND Trace Silt, pale grey	D/IVI				
-			BH078_0.3-0.5			silty SAND Organic matter,dark brown	М			-0.30 0.30	
-										-1.00	
-1.0 -			BH078_1.0-1.2			sandy CLAY Trace Silt,dark brown	W			-1.00 1.00	
_					*	clayey SILT Trace Sand,dark brown	W			-1.40 1.40	
			BH078_1.5-1.7							-1.70	
- -2.0										1.70	
3.0											
- -											
-4.0											
NOTE										7	

NOTES:

Drilling I	Abbreviations:			Moisture	Consistency:			
RW(x)	Rotary Wash	PSC((x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
PD(x)	Percussion Down Hole	Η	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
Where "x"	' is flushing medium: (W) Wate	r, (M)	Mud, (A) Air, (F) Foam.					
	-							



to: 15/08/2012

Bore No.: BH079

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location: Date Drilled: 15/08/2012 to: 15/08/20

Drill Co: GHD Driller: MK Rig Type: HA Total Depth (m): 1 Diameter (mm): 50

Easting: 501042 Northing: 6625267 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: JS Chec

Checked by: BC

\vdash						· ,	- 55		,,	-
		DR	ILLING						COMMENTS/	
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				0.00
- 0.0	НА		BH079_0.0-0.2			SAND Trace Silt,pale grey	M			0.00
-						clayey SAND	M			-0.80 0.80
			BH079_0.8-1.0			brown/ grey				
1.0					2.7 4.7 F.					-1.00 1.00
- -										1.00
2.0										
-										
-										
-3.0										
-										
-										
-4.0										
NOT						i	1			-

NOTES:

Drilling I	Abbreviations:			Moisture	Consistency:			
RW(x)	Rotary Wash	PSC	(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
PD(x)	Percussion Down Hole	Н	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
Where "x	is flushing medium: (W) Water	er, (M)	Mud, (A) Air, (F) Foam.					



Bore No.: BH080

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 15/08/2012

to: 15/08/2012

Drill Co: GHD Driller: MK
Rig Type: HA
Total Depth (m): 1.2
Diameter (mm): 50

Easting: 501059 Northing: 6625289 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: JS Chec

Checked by: BC

Date	Dillieu.	13/06/	2012 ((J. 13/1	00/2012	Diameter (mm). 50	Logge	u by	DS Checked by. BC	
		DR	ILLING							
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				0.00
0.0	НА		BH080_0.0-0.2		8 0 10 2 10 8 0 10	sandy CLAY mottled orange/ grey	M			0.00
					8 3 4 3 4					
					8 4 8 8 4 8 8 6 8					
-					7 4 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7					
-1.0						silty SAND Some Clay,dark brown	M		BHDUP02	-1.00 1.00
			BH080_1.0-1.2			Some Clay,dark brown				-1.20 1.20
-										
-2.0										
2.0										
-3.0										
-4.0										
NOTE	ς.									

NOTES:

Drilling	Abbreviations:			Moisture	Consistency:			
RW(x)	Rotary Wash	PSC	(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
PD(x)	Percussion Down Hole	Η	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
Where "x	is flushing medium: (W) Wate	r, (M)	Mud, (A) Air, (F) Foam.					



to: 15/08/2012

Bore No.: BH081

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 15/08/2012

Drill Co: GHD Driller: MK
Rig Type: HA
Total Depth (m): 1.8
Diameter (mm): 50

Easting: 501064 Northing: 6625271 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: JS Chec

Checked by: BC

Date	Dillieu.	13/00/	2012	J. 13/1	00/2012	Diameter (min). 50	Logge	u by.	Checked by. BC	
		DR	ILLING							
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				0.00
- 0.0	НА		BH081_0.0-0.2			clayey SAND Roots,brown	М			0.00
-										
-						CLAY mottled white/ orange	M			-0.70 0.70
1										-1.00
-1.0 -			BH081_1.0-1.2			clayey SILT Trace Sand,dark brown	M			-1.00 1.00
										-1.30 1.30
-						CLAY mottled pale grey/ orange	M			1.30 -1.50 1.50
					7—————————————————————————————————————	sandy CLAY	W			1.50
			BH081_1.6-1.8			grey				-1.80 1.80
										1.80
-2.0										
2.0										
-										
L										
-										
L										
-3.0										
L										
-										
L										
F .										
L										
- 4.0							<u> </u>			\Box

NOTES:

- 1	Drilling /	Abbreviations:			Moisture	Consistency:			
1	RW(x)	Rotary Wash	PSC((x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
1	RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
1	PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
1	PD(x)	Percussion Down Hole	Η	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
-	Where "x"	' is flushing medium: (W) Wate	r, (M)	Mud, (A) Air, (F) Foam.					



Bore No.: BH082

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 14/08/2012

to: 14/08/2012

Drill Co: GHD Driller: MK
Rig Type: HA
Total Depth (m): 1.7
Diameter (mm): 50

Easting: 501046
Northing: 6625229
Grid Ref: GDA94_MGA_zone_56
Elevation: 0
Logged by: JS Chec

Checked by: BC

Date D	rillea:	14/08/	2012 1	. 0 : 14/0	08/2012	Diameter (mm): 50	Logge	a by: .	JS Checked by: BC	
		DR	ILLING						COMMENTS	
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				0.00
0.0	HA		BH082_0.0-0.2			CLAY mottled pale grey/ orange	D/M			0.00
-			BH082_0.3-0.5							
_										
										1.00
-1.0			BH082_1.0-1.2			SAND Some Silt, trace Clay,grey	W			-1.00 1.00 -1.20 1.20
_						SILT Trace Sand,dark brown	M/W			1.20
-			BH082_1.5-1.7							-1.70 1.70
- -2.0										
_										
-										
-										
-3.0										
-										
- -4.0										
				_	· · · · · · · · · · · · · · · · · · ·				·	1

NOTES:

ı	Drilling .	Abbreviations:			Moisture	Consistency:			
ı	RW(x)	Rotary Wash	PSC	(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
ı	RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
ı	PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
ı	PD(x)	Percussion Down Hole	Η	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
ı	Where "x	" is flushing medium: (W) Wat	er, (M	Mud, (A) Air, (F) Foam.					
п									



Bore No.: BH083

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 14/08/2012

to: 14/08/2012

Drill Co: GHD Driller: MK Rig Type: HA Total Depth (m): 1.7 Diameter (mm): 50 Easting: 501076
Northing: 6625232
Grid Ref: GDA94_MGA_zone_56
Elevation: 0
Logged by: JS Chec

Checked by: BC

Date	DRILLING to: 14/08/20) : 14/	08/2012	Diameter (mm): 50	Logge	a by: .	JS Checked by: BC	
		DR	ILLING						0014151170/	
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				0.00
-0.0	НА		BH083_0.0-0.2			silty SAND mottled brown	М			0.00
-			BH083_0.3-0.5			clayey SILT Some Sand,dark brown	М			-0.30 0.30
-										0.00
						SILT	M			0.90
-1.0			BH083_1.0-1.2			Trace Sand,dark brown silty CLAY Some Sand,brown	W			-0.90 0.90 -1.00 1.00
-										
-			BH083_1.5-1.7							-1.70 1.70
- -2.0										
-										
-3.0 -										
-										
- -4.0										

NOTES:

	Drilling I	Abbreviations:			Moisture	Consistency:			
- 1	RW(x)	Rotary Wash	PSC	(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
- 1	RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
- 1	PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
- 1	PD(x)	Percussion Down Hole	Η	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
- 1	Where "x	' is flushing medium: (W) Wate	r, (M)	Mud, (A) Air, (F) Foam.					
- 1									



to: 15/08/2012

Bore No.: BH084

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 15/08/2012

Drill Co: GHD Driller: MK
Rig Type: HA
Total Depth (m): 1.7
Diameter (mm): 50

Easting: 501077 Northing: 6625256 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: JS Chec Checked by: BC

Date	Date Drilled: 15/08/2012 to: 15/08/2013 DRILLING) : 15/1	08/2012	Diameter (mm): 50	Logge	a by: J	S Checked by: BC	
		DR	ILLING							
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				0.00
- 0.0	НА		BH084_0.0-0.2		8-1-1-8-1 8-1-1-8-1 8-1-1-8-1 8-1-1-8-1 8-1-1-8-1	sandy SILT Trace Clay,brown	D			0.00
-			BH084_0.5-0.7		7 - 7 - 7 - 7 - 7 - 7 - 7 - 7 - 7 - 7 -	silty CLAY pale brown	M			-0.50 0.50
-										-1.00
—1.0 –			BH084_1.0-1.2			clayey SILT Trace Sand,dark brown	W			-1.00 1.00
-			BH084_1.5-1.7			silty CLAY Trace Sand,dark brown	W			-1.40 1.40
										-1.70 1.70
- -2.0 -										1.70
-										
-3.0 -										
-										
-4.0										

NOTES:

Drilling	Abbreviations:			Moisture	Consistency:			
RW(x)	Rotary Wash	PSC	(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
PD(x)	Percussion Down Hole	H	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
Where "x	" is flushing medium: (W) Wa	ter, (M) Mud, (A) Air, (F) Foam.					



to: 15/08/2012

Bore No.: BH091

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 15/08/2012

Drill Co: GHD Driller: BL/BJ Rig Type: HA Total Depth (m): 0.5 Diameter (mm): 50

Easting: 501108 Northing: 6625107 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: BL/BJ Chec

Checked by: BC

_							1 33			$\overline{}$
Depth (m)	DRILLING Wethord Drilling Methord Drilling Methord Drilling Methord ID Sample ID		Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)	
De	Dr			W	Ğ		ĕ	ర		
0.0						Ground Surface:				0.00
0.0	НА		BH091_0.0-0.1			SILT Some Clay,brown	М			0.00
						Some Clay, brown				
-			BH091_0.1-0.3							
-			BH091_0.3-0.5							
			2.1071_0.0 0.0							-0.50 0.50
										0.50
-										
-1.0										
1.0										
-										
-										
-2.0										
-										
-										
-3.0										
L										
-										
F										
-4.0										
NOTE		· ·			· · · · · · · · · · · · · · · · · · ·					

NOTES:

Drilling /	Abbreviations:			Moisture	Consistency:			
RW(x)	Rotary Wash	PSC	(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
PD(x)	Percussion Down Hole	Н	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
Where "x"	is flushing medium: (W) Wat	er, (M)	Mud, (A) Air, (F) Foam.					
	-							



Bore No.: BH093

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 15/08/2012

to: 15/08/2012

Drill Co: GHD Driller: BL/BJ Rig Type: HA Total Depth (m): 1 Diameter (mm): 50

Easting: 501133 Northing: 6625139 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: BL/BJ Chec

Checked by: BC

Date	Date Drilled: 15/08/2012 to: 15/08/201.					Diameter (mm): 50	Logge	a by: I	BL/BJ Checked by: BC	
		DR	ILLING							
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				0.00
0.0	НА		BH093_0.0-0.1			SILT Organic matter,dark brown	М			
			BH093_0.2-0.4			silty CLAY dark grey	М			-0.20 0.20
			BH093_0.4-0.6							
										-0.80 0.80
1.0			BH093_0.8-1.0			silty CLAY grey	W			-1.00 1.00
										1.00
-2.0										
2.0										
-3.0										
-4.0										
1.0						<u> </u>				-

NOTES:

GHD Soil Classifications: The GHD Soil Classification is based on Australian Standards AS 1726-1993. This log is not intended for geotechnical purposes.

Drilling	Abbreviations:			
RW(x)	Rotary Wash	PSC(x) Percussion Simultanous Casing	
RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	
PC(x) PD(x)	Percussion Cable Tool	AH .	Augering - Hollow Flight	
PD(x)	Percussion Down Hole	H	Hand Augering	
Where "	y" is flushing medium: (W) W	Jater (M) N	And (A) Air (E) Foam	

Moisture Abbreviations: D Dry M Moist W Wet	Consistency: Granular Soils
D Dry	(VL) Very Loose
M Moist	(L) Loose
W Wet	(MD) Medium Dense

(D) Dense (VD) Very Dense

Cohesive Soils (VS) Very Soft (S) Soft (F) Firm



BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

to: 16/08/2012

Bore No.: BH100

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 16/08/2012

Drill Co: GHD Driller: MK
Rig Type: HA
Total Depth (m): 0.5
Diameter (mm): 50

Easting: 500848
Northing: 6625241
Grid Ref: GDA94_MGA_zone_56
Elevation: 0
Logged by: JS Chec

Checked by: BC

		10/00/			00/2012	Diamotor (min): 00	Loggo		oneonea by. Be	
	DRILLING									
Depth (m)	Drilling Method	PID (ppm) PID (ppm) Water Graphic Log		Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)	
L						Ground Surface:				0.00
0.0	НА		BH100_0.0-0.2			SILT Some Gravel,grey/ brown	D			0.00 0.00 -0.20
						silty CLAY Trace Gravel,orange/ brown	М			-0.20 0.20
			BH100_0.3-0.5							-0.50 0.50
_										
-1.0										
_										
_										
_										
_										
-2.0										
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_										
-3.0										
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- - _{4.0}										
NOT!	-0		1		1					

NOTES:

Drilling I	Abbreviations:			Moisture	Consistency:			
RW(x)	Rotary Wash	PSC	(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
PD(x)	Percussion Down Hole	Н	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
Where "x	is flushing medium: (W) Water	er, (M)	Mud, (A) Air, (F) Foam.					



Bore No.: BH101

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location: Date Drilled: 16/08/2012 to: 16/08/20

to: 16/08/2012

Drill Co: GHD Driller: MK Rig Type: HA Total Depth (m): 1.2 Diameter (mm): 50

Easting: 500830 Northing: 6625169 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: JS Chec Checked by: BC

Date Drilled: 16/08/2012 to: 16/08/2012				0 : 16/	08/2012	Diameter (mm): 50	Logge	d by: .	JS Checked by: BC	
		DR	ILLING						COMMENTS/	
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				0.00
- 0.0	НА		BH101_0.0-0.2			clayey SILT orange/ brown	W			0.00
-										-0.50 0.50
-			BH101_0.5-0.7			silty CLAY mottled orange/ grey/ brown	M			0.50
- - _{1.0}						orange				-0.90 0.90
1.0			BH101_1.0-1.2							-1.20 1.20
										1120
-										
-2.0										
-										
-										
-										
-3.0										
-										
-										
<u>-4.0</u>										

NOTES:

ı	Drilling A	Abbreviations:			Moisture	Consistency:			
ı	RW(x)	Rotary Wash	PSC(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
ı	RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
ı	PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
ı	PD(x)	Percussion Down Hole	H	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
ı	Where "x	" is flushing medium: (W) Wa	ter, (M)	Mud, (A) Air, (F) Foam.					



Bore No.: SE001

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location: Date Drilled: 14/08/2012 to: 14/08/20

Drill Co: GHD Driller: BL/BJ

Rig Type: HA Total Depth (m): 0.7 Diameter (mm): 50

Easting: 500894 Northing: 6625123 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: BL/BJ Chec Checked by: BC

Locat Date	ocation: Date Drilled: 14/08/2012			to: 14/	08/2012	Total Depth (m): 0.7 Diameter (mm): 50	Elevat Logge	ion: 0 d by: 1	BL/BJ Checked by: BC	
		DR	ILLING							
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
0.0	110				**************************************	Ground Surface:	14/			0.00
	НА		SE001_0.0-0.1		-	silty SAND brown	W			0.00 0.00 -0.10 0.10 -0.20 0.20
_			SE001_0.1-0.2			CLAY	W			-0.20
						Trace Sand, grey	W			0.20
						silty CLAY Trace sand, Organic matter,black				
			CE001 0 4 0 /			Ü				
			SE001_0.4-0.6							
										-0.70 0.70
										0.70
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Drilling /	Appreviations:			Moisture	Consistency:			
RW(x)	Rotary Wash	PSC	(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
PD(x)	Percussion Down Hole	Η	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
Where "x	is flushing medium: (W) Wate	r, (M)	Mud, (A) Air, (F) Foam.					



to: 14/08/2012

Bore No.: SE002

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 14/08/2012

Drill Co: GHD Driller: BL/BJ Rig Type: HA Total Depth (m): 0.7 Diameter (mm): 50 Easting: 500896 Northing: 6625113 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: BL/BJ Chec

Checked by: BC

Date	Di illeu.	14/00/2	2012 10	J. 14/1	00/2012	Diameter (min). 50	Logge	u by. i	JL/DJ	Checked by. BC	
		DR	ILLING								
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.		Consistency	CONTAMINA Odours, stainir separate phase	MMENTS/ NT INDICATORS ng, waste materials, liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:					0.00
0.0	HA		SE002_0.0-0.1		7-37	sandy SILT	W				0.00 0.00 -0.10
			32002_0.0 0.1	1		Organic matter,grey	W				0.10
L I						CLAY					
						Tr. Sand, Organic matter,black					
			SE002_0.3-0.5								0.50
				1	Or. Us.	sandy CLAY	W				-0.50 0.50
L			SE002_0.5-0.7			Organic matter,dark grey					0.00
			32002_0.5-0.7		9 to						-0.70
											-0.70 0.70
-											
_10											
-1.0											
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- 1	Drilling /	Abbreviations:			Moisture	Consistency:			
1	RW(x)	Rotary Wash	PSC((x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
1	RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
1	PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
1	PD(x)	Percussion Down Hole	Η	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
-	Where "x"	' is flushing medium: (W) Wate	r, (M)	Mud, (A) Air, (F) Foam.					



Bore No.: SE003

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 16/08/2012

to: 16/08/2012

Drill Co: GHD Driller: BL/BJ Rig Type: HA Total Depth (m): 0.6 Diameter (mm): 50

Easting: 500911 Northing: 6625118 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: BL/BJ Chec

Checked by: BC

		DE	NI LINIC						,	\Box
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol): Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
	D	Д		>	9		Σ	S		
0.0	НА					Ground Surface:	W			0.00
	ПА		SE003_0.0-0.1			SILT Organic matter,grey	VV			0.00
						organio matterigioj				-0.20
						SILT	W			-0.20 0.20
			SE003_0.2-0.4			Organic matter,dark brown				0.40
-				-		situ CLAV	W			-0.40 0.40
			SE003_0.4-0.6			silty CLAY dark brown				
										-0.60 0.60
										0.60
 										
-1.0										
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- 1	Drilling /	Abbreviations:			Moisture	Consistency:			
1	RW(x)	Rotary Wash PSC(x) Percussion Simultanous Casing		Abbreviations:	Granular Soils		Cohesive Soils		
1	RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
1	PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
-	PD(x)	Percussion Down Hole	Η	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
-	Where "x"	' is flushing medium: (W) Wate	r, (M)	Mud, (A) Air, (F) Foam.					
- 1	I								



to: 16/08/2012

Bore No.: SE004

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 16/08/2012

Drill Co: GHD Driller: BL/BJ Rig Type: HA Total Depth (m): 0.6 Diameter (mm): 50 Easting: 500881 Northing: 6625094 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: BL/BJ Chec

Checked by: BC

Date	Dillieu.	illed. 10/00/2012 to. 10/00/2012 Diameter (IIIII). 50		Diameter (min). 50	Logge	u by.	bl/b) Checked by. bc			
		DR	ILLING							
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				0.00
0.0	HA		CEDUDOE			SILT	W			0.00
			SEDUP05			Organic matter, dark brown				
										-0.20
			SE004_0.2-0.3			silty CLAY	W		SEDUP05	-0.20 0.20 -0.30 0.30
			3E004_0.2-0.3			Organic matter, dark brown	W			-0.30
						SILT	VV			0.30
						Organic matter, dark brown				
			SE004_0.4-0.6			•				
										-0.60 0.60
										0.60
L										
-1.0										
F										
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١	Drilling A	Abbreviations:			Moisture	Consistency:				
ı	RW(x)	Rotary Wash	PSC(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils		
ı	RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff	
ı	PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff	
ı	PD(x)	Percussion Down Hole	H	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard	
ı	Where "x	" is flushing medium: (W) Wa	er, (M)	Mud, (A) Air, (F) Foam.						



to: 16/08/2012

Bore No.: SE005

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 16/08/2012

Drill Co: GHD Driller: BL/BJ Rig Type: HA Total Depth (m): 0.1 Diameter (mm): 50

Easting: 500918 Northing: 6625101 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: BL/BJ Chec

Checked by: BC

Date	Drilled:	10/08/.	2012 (0) : 10/	08/2012	Diameter (mm): 50	Logge	u by: i	BL/BJ Checked by: BC	
		DR	ILLING						0014151170/	
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
-0.0						Ground Surface:				0.00
0.0	HA		SE005_0.0-0.1			clayey SILT Organic matter,dark brown	W			0.00
- - - -1.0			35003_0.00.1			Organic matter,dark brown				0.00 0.00 -0.10 0.10
- -2.0 -										
- -3.0 -										
	FS									

Drilling	Abbreviations:			Moisture	Consistency:			
RW(x)	Rotary Wash	PSC	(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
PD(x)	Percussion Down Hole	H	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
Where "x	" is flushing medium: (W) Wat	er, (M)	Mud, (A) Air, (F) Foam.					



to: 14/08/2012

Bore No.: SE010

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 14/08/2012

Drill Co: GHD Driller: BL/BJ Rig Type: HA Total Depth (m): 1.4 Diameter (mm): 50

Easting: 500930 Northing: 6625143 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: BL/BJ Chec

Checked by: BC

Continue Continue	Date	Dillieu.	14/00/.	2012 10	J. 14/0	J0/2U12	Diameter (min). 50	Logge	u by. i	DL/DJ	Checked by. BC	
String Book Sample D			DR	ILLING								
CLAY Some Still, trace Sord grey SE010_0.6-0.8 SE010_0.6-0.8 SE010_0.6-0.8 Sill Taxee Sord Grey Some Clay and Sord Organic multion black	Depth (m)	Drilling Method	PID (ppm)	Sample ID			Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	CONTAMIN	ANT INDICATORS ing, waste materials, e liquids, imported fill,	Elevation / Depth (m)
SEDI C.D. 1-0.3 SETUP. O.A. 0.8 SILL Some City and Sand, Organic matter Mack T.D. Some City and Sand, Organic matter Mack												0.00
SEO10,04-0.8 SLT Some Clay and Sand, Organic matter black	0.0	НА					CLAY Some Silt, trace Sand.grey	W				0.00
SEDIO_0.6-0.8	-			SE010_0.1-0.3								
SEDIO_0.6-0.8	-											
- 1.40 - 1.40 - 1.40 - 1.40 - 1.40 - 1.40 - 1.40 - 1.40 - 1.40 - 1.40 - 1.40 - 1.40 - 1.40 - 1.40 - 1.40 - 1.40 - 1.40 - 1.40	_			SE010_0.6-0.8	_		SILT Some Clay and Sand, Organic matter,black	W				-0.60 0.60
- 1.40 - 1.40 - 1.40 - 1.40 - 1.40 - 1.40 - 1.40 - 1.40 - 1.40 - 1.40 - 1.40 - 1.40 - 1.40 - 1.40 - 1.40 - 1.40 - 1.40 - 1.40	-1.0				_							
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Drilling /	Appreviations:			Moisture	Consistency:			
RW(x)	Rotary Wash	PSC	(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
PD(x)	Percussion Down Hole	Η	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
Where "x	is flushing medium: (W) Wate	r, (M)	Mud, (A) Air, (F) Foam.					



to: 14/08/2012

Bore No.: SE011

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 14/08/2012

Drill Co: GHD Driller: BL/BJ Rig Type: HA Total Depth (m): 1.1 Diameter (mm): 50

Easting: 500935 Northing: 6625135 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: BL/BJ Chec

Checked by: BC

Date	Date Drilled: 14/08/2012 to: DRILLING): 14/	08/2012	Diameter (mm): 50	Logge	a by: I	BL/BJ Checked by: BC		
		DR	ILLING						00111151170	
Depth (m)	Drilling Method PID (ppm) Sample ID				Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
0.0						Ground Surface:				0.00
0.0	НА		SE011_0.0-0.1			CLAY Some Silt, trace Sand,grey	W			0.00
						Some Sill, trace Samu, grey				-0.20
						Organic matter,black				-0.20 0.20
 			SE011_0.3-0.5							
-										
-			SE011_0.7-0.9							
-1.0										
1.0										-1.10 1.10
										1.10
 										
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Drilling /	Appreviations:			Moisture	Consistency:			
RW(x)	Rotary Wash	PSC	(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
PD(x)	Percussion Down Hole	Η	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
Where "x	is flushing medium: (W) Wate	r, (M)	Mud, (A) Air, (F) Foam.					



to: 14/08/2012

Bore No.: SE012

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 14/08/2012

Drill Co: GHD Driller: BL/BJ Rig Type: HA Total Depth (m): 1.2 Diameter (mm): 50 Easting: 500942 Northing: 6625127 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: BL/BJ Chec

Checked by: BC

Date	Di illeu.	14/00/	2012	J. 14/0	J0/2U12	Diameter (IIIII). 50	Logge	u by. i	כלוטט	Checked by. BC	
		DR	ILLING								
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	CONTA Odours, separate	COMMENTS/ MINANT INDICATORS staining, waste materials, phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:					0.00 0.00 -0.10 0.10
0.0	HA		SE012_0.0-0.1			silty CLAY	W				0.00
			3L012_0.0-0.1		THE E	Trace Sand, grey	W				-0.10 0.10
L						silty CLAY	**				0.10
						Trace Sand, Organic matter increasing with depth,black					
L			SE012_0.3-0.5								
			3L012_0.3-0.3								
- 1											
F 1											
-1.0				1							
			SE012_1.0-1.2								
											-1.20 1.20
											1.20
- 1											
F 1											
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RW(x)	Rotary Wash	PSC((x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
PD(x)	Percussion Down Hole	Η	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
Where "x"	' is flushing medium: (W) Wate	r, (M)	Mud, (A) Air, (F) Foam.					
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ENVIRONMENTAL - SOIL BORE

to: 16/08/2012

Bore No.: SE013

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 16/08/2012

Drill Co: GHD Driller: BL/BJ

Rig Type: HA Total Depth (m): 0.7 Diameter (mm): 50

Easting: 500949 Northing: 6625120 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: BL/BJ Chec

Checked by: BC

Date	Dillieu.	10/00/	2012	U. 10/0	00/2012	Diameter (min). 50	Logge	u by.	Checked by. BC	
		DR	RILLING							
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				0.00
0.0	HA		SEDUP04			SILT	W		SEDUP04	0.00
	1 1		3LDUF04	-		Some grey clay, Organic matter, black				- 1
	1 1									-0.20
Г	1 1					silty CLAY	W			-0.20 0.20
	1 1			-		Organic matter, dark brown				
	1 1									
Γ			SE013_0.3-0.5							0.50
				-		CILT	W			-0.50 0.50
L			05010 05 07			SILT Organic matter,black	**			0.50
	1 1		SE013_0.5-0.7			Organic matter, black				0.70
				+						-0.70 0.70
L										""
-1.0										
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Drilling	Abbreviations:			Moisture	Consistency:			
RW(x)	Rotary Wash	PSC	(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
PD(x)	Percussion Down Hole	H	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
Where "x	" is flushing medium: (W) Wat	er, (M)	Mud, (A) Air, (F) Foam.					



Bore No.: SE014

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 15/08/2012 to: 15/08/2012

Drill Co: GHD Driller: BL/BJ Rig Type: HA Total Depth (m): 0.6 Diameter (mm): 50

Easting: 500972 Northing: 6625090 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: BL/BJ Chec

Checked by: BC

Date	Drilled:	15/08/2	2012 10) : 15/	08/2012	Diameter (mm): 50	Logge	a by: i	BL/BJ Checked by: BC	
		DR	ILLING							
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				0.00
0.0	НА		SF014 0.0-0.05			silty CLAY	W			0.00
						grey	VV			
-						SILT Organic matter,dark brown	W	<u> </u>		-0.20 0.20
			SE014_0.2-0.4			silty CLAY	"			0.20
			02011_012 011			brown/ grey				-0.40
						SILT	W			0.40
			SE014_0.4-0.6			Organic matter,dark brown				-0.60
										-0.60 0.60
-										
-1.0										
- 1										
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- 1										
-										
-2.0										
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-										
-3.0										
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- 4.0							1		<u> </u>	

NOTES:

Drilling	Appreviations:			Moisture	Consistency:			
RW(x)	Rotary Wash	PSC	(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
PD(x)	Percussion Down Hole	Η	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
Where "x	" is flushing medium: (W) Water	r, (M)	Mud, (A) Air, (F) Foam.					



Bore No.: SE020

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 14/08/2012 to: 14/08/2012 Drill Co: GHD Driller: BL/BJ

Rig Type: HA Total Depth (m): 0.7 Diameter (mm): 50

Easting: 500974 Northing: 6625148 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: BL/BJ Chec

Checked by: BC

Date	Di illeu.	14/00/2	2012 (0. 14/0	J0/2U12	Diameter (min). 50	Logge	u by. i	סנוטט	Checked by. BC	
		DR	ILLING								
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	CONT. Odours, separate	COMMENTS/ AMINANT INDICATORS staining, waste materials, phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:					0.00 0.00 -0.10 0.10
0.0	HA		SE020_0.0-0.1			CLAY	W				0.00
			3L020_0.0-0.1	-		Trace Sand,grey	W				0.10
L						silty CLAY	VV				0.10
						Trace Sand, Organic matter, black					
			SE020_0.2-0.4								
F 1				-							
F 1											
											-0.70 0.70
											0.70
F											
L ₁₀											
-1.0											
- 1											
F 1											
L I											
-2.0											
F 1											
L											
- 1											
 											
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-3.0											
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-4.0											
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Drilling A	Abbreviations:			Moisture	Consistency:			
RW(x)	Rotary Wash	PSC(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
PD(x)	Percussion Down Hole	H	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
Where "x	" is flushing medium: (W) Wa	ter, (M)	Mud, (A) Air, (F) Foam.					
				1	1			



ENVIRONMENTAL - SOIL BORE

Bore No.: SE021

(ST) Stiff (VST) Very Stiff (H) Hard

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 14/08/2012

to: 14/08/2012

Drill Co: GHD Driller: BL/BJ Rig Type: HA Total Depth (m): 0.7 Diameter (mm): 50

Easting: 500981 Northing: 6625143 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: BL/BJ Chec

Checked by: BC

Date	Drilled:	14/08/.	2012 t	0: 14/0	J8/2012	Diameter (mm): 50	Logge	a by: i	BL/BJ	Checked by: BC	
		DR	RILLING								
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	l CONTA	COMMENTS/ MINANT INDICATORS staining, waste materials, shase liquids, imported fill, ash.	Elevation / Depth (m)
-0.0						Ground Surface:					0.00
0.0	HA		SE021_0.0-0.1			silty CLAY	W				0.00 0.00 -0.10 0.10
						Some Sand,grey silty CLAY	W				0.10
						Organic matter,black					
				1		•					
F			SE021_0.3-0.5		=====						
			_								
L											
											-0.70 0.70
											0.70
1.0											
-											
L											
F											
-2.0											
L											
F											
F											
-3.0											
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1											
F											
1											
-4.0											
NOTI	ES:			•							

Drilling A	Abbreviations:			Moisture	Consistency:		
RW(x)	Rotary Wash	PSC	(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils
RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft
PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft
PD(x)	Percussion Down Hole	H	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm
Where "x	" is flushing medium: (W) Water	r, (M)	Mud, (A) Air, (F) Foam.				



ENVIRONMENTAL - SOIL BORE

Bore No.: SE022

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 15/08/2012 to: 15/08/2012

Drill Co: GHD Driller: BL/BJ Rig Type: HA Total Depth (m): 0.6 Diameter (mm): 50 Easting: 501015 Northing: 6625119 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: BL/BJ Chec

Checked by: BC

Date					00/2012	Diamotor (min): 00	Loggo	,	onecked by: Be	
		DR	ILLING							
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				0.00
0.0	НА		SE022 0.0-0.05			silty CLAY	W			0.00
						grey	W			
						SILT				-0.20
						Organic matter,dark brown	W			-0.20 0.20
			SE022_0.2-0.4			silty CLAY				
L						brown/ grov				-0.40 0.40
						SILT	W			0.40
			SE022_0.4-0.6			Organic matter,dark brown				
-										-0.60 0.60
										0.00
F 1										
L										
-1.0										
-										
-										
L I										
-2.0										
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L										
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-3.0										
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F										
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-4.0										
NOTE										-

NOTES:

Drilling	Abbreviations:			Moisture	Consistency:			
RW(x)	Rotary Wash	PSC(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
PD(x)	Percussion Down Hole	H	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
Where ":	x" is flushing medium: (W) Wa	ater, (M)	Mud, (A) Air, (F) Foam.		1			



ENVIRONMENTAL - SOIL BORE

Bore No.: SE030

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 14/08/2012

to: 14/08/2012

Drill Co: GHD Driller: BL/BJ Rig Type: HA Total Depth (m): 0.5 Diameter (mm): 50

Easting: 500980 Northing: 6625193 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: BL/BJ Chec Checked by: BC

Duto					30/2012	Diamotor (min): 00	Loggo	,	onconcu by: Be	
		DR	ILLING							
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				0.00
0.0	HA		SE030_0.0-0.1			clayey SILT	W			0.00
			32030_0.0 0.1	1		brown				
L										-0.20 0.20
						silty CLAY	W			0.20
						grey				
F			SE030_0.3-0.5							
										-0.50 0.50
										0.50
F										
L										
-1.0										
"										
-										
L										
F										
 										
-2.0										
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-4.0										
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NOTES:

Drilling	Abbreviations:			Moisture	Consistency:			
RW(x)	Rotary Wash	PSC(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
PD(x)	Percussion Down Hole	H	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
Where ":	x" is flushing medium: (W) Wa	ater, (M)	Mud, (A) Air, (F) Foam.		1			



ENVIRONMENTAL - SOIL BORE

Bore No.: SE031

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Drill Co: GHD Driller: BL/BJ

Rig Type: HA Total Depth (m): 0.7 Diameter (mm): 50

Easting: 500989 Northing: 6625182 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: BL/BJ Chec Checked by: BC

Location: Date Drilled: 14/08/2012 to: 14/08/2012 DRILLING		08/2012	Total Depth (m): 0.7 Diameter (mm): 50	Elevat Logge	ion: 0 d by: l	BL/BJ Checked by: BC				
		DR	ILLING						00111111111	
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
0.0	НА					Ground Surface:	W			0.00
	ПА		SE031_0.0-0.1			CLAY Trace Sand,grey				
_			SE031_0.2-0.4			silty CLAY Some Sand, Organic matter,black	W			-0.20 0.20
_			SE031_0.5-0.7							-0.70
_										-0.70 0.70
-1.0										
-										
-										
-2.0										
-										
-										
-3.0										
3.0										
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-4.0]					

NOTES:

Drilling I	Abbreviations:			Moisture	Consistency:			
RW(x)	Rotary Wash	PSC	(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
PD(x)	Percussion Down Hole	Н	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
Where "x	is flushing medium: (W) Water	er, (M)	Mud, (A) Air, (F) Foam.					



to: 14/08/2012

Bore No.: SE032

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 14/08/2012

Drill Co: GHD Driller: BL/BJ

Rig Type: HA Total Depth (m): 0.7 Diameter (mm): 50

Easting: 500999 Northing: 6625175 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: BL/BJ Chec Checked by: BC

DRILLING Sample III	24.0	Dimou.				00/2012	Diamotor (min): 66	Loggo	,	onconca by: Bo	
The content of the			DR	ILLING							
SERVE 0.00.01 SE	Depth (m)	Drilling Method			Water	Graphic Log	Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
SE012_0.1-0.3 Significant Some Sand, Organic meater, abox Some							Ground Surface:				0.00
SE012_0.1-0.3 Significant Some Sand, Organic meater, abox Some	0.0	HA		SE032 0.0-0.1			silty CLAY	W			0.00
SF032_0.1-0.3				32002_0.0 0.1			Some Sand, grey	W		SEDUP01	0.10
- 10	L I			SE032 0 1 0 3			clayey SILT			0220.0.	
- 110 - 10 - 10 - 10 - 10 - 10 - 10 - 1				32032_0.1-0.3			Some Sand, Organic matter,black				
	- 1										
											0.70
											0.70
	L I										0.70
	1.0										
	-										
	-										
	Γ										
	-2.0										
- - - - -4.0											
- - - - -4.0											
- - - - -4.0	F										
- - - - -4.0											
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NOTES:

ı	Drilling A	Abbreviations:			Moisture	Consistency:			
ı	RW(x)	Rotary Wash	PSC(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
ı	RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
ı	PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
ı	PD(x)	Percussion Down Hole	H	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
ı	Where "x	" is flushing medium: (W) Wa	ter, (M)	Mud, (A) Air, (F) Foam.					



Bore No.: SE033

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 15/08/2012 to: 15/08/2012

Drill Co: GHD Driller: BL/BJ Rig Type: HA Total Depth (m): 0.6 Diameter (mm): 50 Easting: 501021 Northing: 6625185 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: BL/BJ Chec

Checked by: BC

Second S	Date	Di illeu.	13/06/	2012 10	J. 13/1	00/2012	Diameter (min). 50	Logge	u by.	DL/DJ	Checked by. BC	
Section Part Section Section Part Section Section Part S			DR	ILLING								
HA	Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	CONTAI	MINANT INDICATORS staining, waste materials, hase liquids, imported fill,	Elevation / Depth (m)
HA							Ground Surface:					0.00
SE033_0.40.6 SE	0.0	HA		SF033 0.0-0.05				W				0.00
SE033_0.4-0.6 SE033_0.4-0.							grey	W				
SE033_0.4-0.6 SE033_0.4-0.							SILT					-0.20
SERV3_0.4-0.6 SE							Organic matter, dark brown	W				0.20
SE032_04-06				SE033_0.2-0.4								
SE033_0.4.0.6 SE033_	L I						bround grou					-0.40
- 10							SILT	W				0.40
- 10				SE033_0.4-0.6			Organic matter,dark brown					
- 10							-					-0.60
												0.00
	F 1											
	1.0											
	L											
	L											
	F 1											
- - - - 	-2.0											
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NOTES:

ŀ	Drilling A	Abbreviations:			Moisture	Consistency:			
þ	RW(x)	Rotary Wash	PSC(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
þ	RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
þ	PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
þ	PD(x)	Percussion Down Hole	H	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
h	Where "x	is flushing medium: (W) Water	r, (M) l	Mud, (A) Air, (F) Foam.					



to: 14/08/2012

Bore No.: SE040

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 14/08/2012

Drill Co: GHD Driller: BL/BJ Rig Type: HA Total Depth (m): 0.5 Diameter (mm): 50 Easting: 501038 Northing: 6625212 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: BL/BJ Chec

Checked by: BC

		DD				,	T 33			$\overline{}$
Depth (m)	Drilling Method	PID (ppm)	ILLING Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
De	Dri	Ē		×	ō		ĕ	ప		
0.0						Ground Surface:				0.00
0.0	НА					SILT Organic matter,dark brown	W			0.00
						Organic matter, dark brown				-0.20
						CLAY	W			-0.20 0.20
						Trace Sand,grey				
 			SE040_0.3-0.5							0.50
										-0.50 0.50
-										
L										
-1.0										
-										
F										
L										
-2.0										
-										
L										
 										
-3.0										
 										
†										
F										
-4.0										
NOTE										

NOTES:

Drilling I	Abbreviations:			Moisture	Consistency:			
RW(x)	Rotary Wash	PSC	(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
PD(x)	Percussion Down Hole	Н	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
Where "x	is flushing medium: (W) Water	er, (M)	Mud, (A) Air, (F) Foam.					



to: 14/08/2012

Bore No.: SE041

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 14/08/2012

Drill Co: GHD Driller: BL/BJ Rig Type: HA Total Depth (m): 0.7 Diameter (mm): 50

Easting: 501041 Northing: 6625205 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: BL/BJ Chec

Checked by: BC

Date	Di illeu.	14/00/2	2012 10	J. 14/\	J0/2U12	Diameter (min). 50	Logge	u by. i	bl/bj Checked by. b	C
		DR	ILLING							
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staiining, waste material separate phase liquids, imported ash.	Elevation / Depth (m)
						Ground Surface:				0.00
0.0	HA		SE041_0.0-0.05			CLAY	W			0.00
						Some Sand, grey	W			
-			SE041_0.1-0.3			silty CLAY Organic matter,black				
L										-0.40 0.40
						clayey SILT	W			0.40
				-		Organic matter,black				
L			SE041_0.5-0.7							
			3L041_0.5-0.7							-0.70
										-0.70 0.70
-										
-1.0										
L										
-										
F										
-2.0										
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NOTE	- C ·									

NOTES:

- 1	Drilling /	Abbreviations:			Moisture	Consistency:			
1	RW(x)	Rotary Wash	PSC((x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
1	RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
1	PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
1	PD(x)	Percussion Down Hole	Η	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
-	Where "x"	' is flushing medium: (W) Wate	r, (M)	Mud, (A) Air, (F) Foam.					
- 1									



to: 14/08/2012

Bore No.: SE042

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 14/08/2012

Drill Co: GHD Driller: BL/BJ Rig Type: HA Total Depth (m): 0.7 Diameter (mm): 50

Easting: 501046 Northing: 6625195 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: BL/BJ Chec

Checked by: BC

	Dimou.				30/2012	Diamotor (min): 00	Loggo		onconcu by: Be	
		DR	ILLING							
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				0.00 0.00 -0.10
0.0	НА		SE042_0.0-0.1			silty CLAY	W			0.00
			3L042_0.0-0.1	1		grey	W			0.10
L				1		clayey SILT	**			0.10
						Organic matter,dark brown				
			SE042_0.2-0.4							
- 1				-						
F										
										-0.70 0.70
										0.70
-1.0										
1.0										
F										
F										
L										
-2.0										
F 1										
-										
F										
-3.0										
F										
F										
-4.0										
NOTE										

NOTES:

Drilling	Abbreviations:			Moisture	Consistency:			
RW(x)	Rotary Wash	PSC	(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
PD(x)	Percussion Down Hole	Н	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
Where "x	" is flushing medium: (W) Wat	er, (M)	Mud, (A) Air, (F) Foam.					



to: 14/08/2012

Bore No.: SE043

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 14/08/2012

Drill Co: GHD Driller: BL/BJ Rig Type: HA Total Depth (m): 0.5 Diameter (mm): 50

Easting: 501077 Northing: 6625201 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: BL/BJ Chec

Checked by: BC

DRILLING	
CONTAMIN. CONT	MMENTS/ ANT INDICATORS ing, waste materials, e liquids, imported fill, ash.
Ground Surface:	0.00
0.0 HA SE043_0.0-0.1 SILT W	0.00 0.00 -0.10
Organic, dark brown	0.10
sandy CLAY	
trace Silt, brown/ grey	-0.30
SILT W	-0.30 0.30
- SE043_0.3-0.5 SILT W Organic,dark brown	
	-0.50 0.50
	0.50
-4.0	
NOTES:	

NOTES:

ı	Drilling A	Abbreviations:			Moisture	Consistency:			
ı	RW(x)	Rotary Wash	PSC(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
ı	RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
ı	PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
ı	PD(x)	Percussion Down Hole	H	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
ı	Where "x	" is flushing medium: (W) Wa	ter, (M)	Mud, (A) Air, (F) Foam.					



Bore No.: SE050

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 15/08/2012

to: 15/08/2012

Drill Co: GHD Driller: BL/BJ Rig Type: HA Total Depth (m): 0.6 Diameter (mm): 50

Easting: 500971 Northing: 6625229 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: BL/BJ Chec Checked by: BC

	Dimou.				00/2012	Diamotor (mm): 00	Loggo		oneoked by: Bo	
		DF	RILLING							
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
	1					Ground Surface:				0.00
0.0	НА		SE050_0.0-0.1			GRAVEL Some Sand,light brown	W		SEDUP03/ SELABDUP01	0.00
_			SE050_0.2-0.4			silty CLAY grey	W			0.20
			SE050_0.4-0.6			SILT Organic matter,dark brown	W			0.40
				<u> </u>						-0.60 0.60
-1.0										
-2.0										
2.0										
_										
_										
_										
-3.0										
_										
_4.0										
INOT										

NOTES:

- 1	Drilling A	Abbreviations:		Moisture	Consistency:			
-	RW(x)	Rotary Wash	PSC(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
-	RT(x)	Rotary Triple Tube	AS Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
ı	PC(x)	Percussion Cable Tool	AH Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
-	PD(x)	Percussion Down Hole	H Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
- 1	Where "x	" is flushing medium: (W) Water	er, (M) Mud, (A) Air, (F) Foam.					



to: 14/08/2012

Bore No.: SE051

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 14/08/2012

Drill Co: GHD Driller: BL/BJ Rig Type: HA Total Depth (m): 0.5 Diameter (mm): 50

Easting: 500991 Northing: 6625234 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: BL/BJ Chec

Checked by: BC

	Dilliou.				30/2012	Diamotor (min): 00	Loggo		onconcu by: Be	
		DR	ILLING							
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.		Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
L						Ground Surface:				0.00
0.0	HA		SE051_0.0-0.1			silty CLAY Trace Sand,grey	W			0.00
			SE051_0.0-0.1			Trace Sand, grey				
						3				-0.20
						silty CLAY	W			-0.20 0.20
				-		Some Sand, Organic matter,dark brown				
Γ			SE051_0.3-0.5							0.50
										-0.50 0.50
										0.50
Г										
Γ										
L										
-1.0										
1										
L										
F										
F										
F										
-2.0										
Г										
-										
1										
F										
-3.0										
r										
1										
Γ										
1										
L										
L										
-4.0										
	-4.0						1	-		

NOTES:

Drilling I	Abbreviations:			Moisture	Consistency:			
RW(x)	Rotary Wash	PSC((x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
PD(x)	Percussion Down Hole	Η	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
Where "x"	' is flushing medium: (W) Wate	r, (M)	Mud, (A) Air, (F) Foam.					
	-							



to: 14/08/2012

Bore No.: SE052

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 14/08/2012

Drill Co: GHD Driller: BL/BJ Rig Type: HA Total Depth (m): 0.3 Diameter (mm): 50

Easting: 501003 Northing: 6625245 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: BL/BJ Chec

Checked by: BC

					J0/2012	Biamotor (min): 00			oneonea by: Be	
	DRILLING									
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				0.00
- 0.0	НА		SE052_0.0-0.1			silty SAND grey	W			-0.30 0.30
- - -1.0 -										
- -2.0 -										
- - -3.0										
- - -	50 .									

NOTES:

ı	Drilling A	Abbreviations:			Moisture	Consistency:			
ı	RW(x)	Rotary Wash	PSC(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
ı	RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
ı	PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
PD(x) Percussion Down Hole H Hand Augering				Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
ı	Where "x	" is flushing medium: (W) Water	er, (M)	Mud, (A) Air, (F) Foam.					



ENVIRONMENTAL - SOIL BORE

Bore No.: SE053

(ST) Stiff (VST) Very Stiff (H) Hard

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 15/08/2012

to: 15/08/2012

Drill Co: GHD Driller: BL/BJ Rig Type: HA Total Depth (m): 0.1 Diameter (mm): 50

Easting: 501017 Northing: 6625253 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: BL/BJ Chec Checked by: BC

Date	Date Drilled: 15/08/2012 to: 15/08/2012): 15/U	J8/2U12	Diameter (mm): 50 Logged by: BL/BJ		BL/BJ Checked by: BC		
		DR	ILLING						0014151170/	
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.		Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				0.00
0.0	НА		SE053_0.0-0.1		7 - 10 h	sandy CLAY	W			0.00
			SEU03_U.U-U.1			grey				0.00 0.00 -0.10 0.10
- -2.0 -										
- -3.0 - -										
- -4.0 NOTI	FS:									

Drilling .	Abbreviations:		Moisture	Consistency:		
RW(x)	Rotary Wash	PSC(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils
RT(x)	Rotary Triple Tube	AS Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft
PC(x)	Percussion Cable Tool	AH Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft
PD(x)	Percussion Down Hole	H Hand Augering	W Wet	(MD) Medium Dense		(F) Firm
Where "x	" is flushing medium: (W) Wate	er, (M) Mud, (A) Air, (F) Foam.				



Bore No.: SE054

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land

Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 15/08/2012 to: 15/08/2012

Drill Co: GHD Driller: BL/BJ Rig Type: HA Total Depth (m): 0.6 Diameter (mm): 50

Easting: 501057

Northing: 6625252 Grid Ref: GDA94_MGA_zone_56 Elevation: 0

Logged by: BL/BJ Checked by: BC

Date	Di illeu.	13/00/2	2012 10	J. 13/1	00/2012	Diameter (min). 50	Logge	u by.	Cliecked by. BC	
		DR	ILLING							
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.		Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Eleva
						Ground Surface:				0.00
0.0	HA		SE054_0.0-0.1			silty CLAY	W		SEDUP02	0.00 0.00 -0.10
				1	74777	grey	W			0.10
- 1			SE054_0.1-0.3			sandy SILT				
			_]	7-I-3-7-I-I	brown				-0.30 0.30
					Z5,23	Organic matter	W			0.30
				1						
			SE054_0.4-0.6							
					\$5.7KG					-0.60 0.60
										0.00
-1.0										
- 1										
L										
-										
-2.0										
2.0										
F										
_										
t										
-										
_										
-3.0										
F										
L										
-										
L										
-4.0										
NOTE	ς.									

NOTES:

Drilling	Abbreviations:			Moisture	Consistency:
RW(x)	Rotary Wash	PSC	(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils
RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loo
PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose
PD(x)	Percussion Down Hole	H	Hand Augering	W Wet	(MD) Medium
Where "	x" is flushing medium: (W) V	Vater. (M)	Mud. (A) Air. (F) Foam.		

Granular Soils	
(VL) Very Loose	(D) Dense
(L) Loose	(VD) Very De
(L) Loose (MD) Medium Dense	



ENVIRONMENTAL - SOIL BORE

to: 15/08/2012

Bore No.: SE055

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 15/08/2012

Drill Co: GHD Driller: BL/BJ Rig Type: HA Total Depth (m): 0.1 Diameter (mm): 50 Easting: 501049 Northing: 6625272 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: BL/BJ Chec

Checked by: BC

Date	Date Drilled: 15/08/2012 to: 15/08/20): ID/(J8/2012	Diameter (mm): 50	ogged by: BL/BJ Checked by: BC				
		DR	ILLING								
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)	
						Ground Surface:				0.00	
0.0	HA		SE055_0.0-0.1			silty SAND	W			0.00	
- - - -1.0			SE055_0.0-0.1			grey				0.00 0.00 -0.10 0.10	
- -2.0 -											
- -3.0 - -											
	FS:										

ı	Drilling A	Abbreviations:			Moisture	Consistency:			
ı	RW(x)	Rotary Wash	PSC	(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
ı	RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
ı	PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
ı	PD(x)	Percussion Down Hole	H	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
ı	Where "x	" is flushing medium: (W) Wat	er, (M)	Mud, (A) Air, (F) Foam.					



to: 15/08/2012

Bore No.: SE056

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 15/08/2012

Drill Co: GHD Driller: BL/BJ Rig Type: HA Total Depth (m): 0.4 Diameter (mm): 50

Easting: 501039 Northing: 6625294 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: BL/BJ Chec

Checked by: BC

Date	Di illeu.	13/00/2	2012). 15/0	J0/2U12	Diameter (min). 50	Logge	u by. i	ol/DJ CileCi	teu by. BC	
		DR	ILLING								
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENT CONTAMINANT INI Odours, staining, was separate phase liquids ash.	DICATORS	Elevation / Depth (m)
						Ground Surface:					0.00
0.0	НА		SF056_0.0-0.05			SILT	W				0.00
			SE056_0.05-0.15		Anna Alexander	Organic matter					-0.15 0.15
- 1						silty SAND /	W				0.15
			CE0E(0.2.0.4			grey					
			SE056_0.2-0.4			silty CLAY Some Sand,grey					-0.40
						Some Sand, grey					-0.40 0.40
L											
-											
-1.0											
1.0											
-											
L											
- 1											
L											
-2.0											
L											
-											
L											
F											
-3.0											
3.0											
F											
L											
-											
L											
<u>-4.0</u>											
NOTE	ς.										

NOTES:

						* *		
Drilling A	Abbreviations:			Moisture	Consistency:			
RW(x)	Rotary Wash	PSC(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
PD(x)	Percussion Down Hole	H	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
Where "x	" is flushing medium: (W) Wa	ter, (M)	Mud, (A) Air, (F) Foam.					
1				I	I			



Bore No.: SE057

(ST) Stiff (VST) Very Stiff (H) Hard

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land

Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 15/08/2012

to: 15/08/2012

Drill Co: GHD Driller: BL/BJ Rig Type: HA Total Depth (m): 0.5 Diameter (mm): 50 Easting: 501065

Northing: 6625302 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: BL/BJ Chec

Checked by: BC

Duto					00/2012	Diamotor (min): 00	33	u 2 j	oneonea by: Be	
	DRILLING									
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				0.00
0.0	HA		SE057_0.0-0.1			CLAY	W			0.00
			SE057_0.0-0.1	-		Organic matter,black				
						•				-0.20
						CLAY	W			-0.20 0.20
			SE057_0.2-0.4			Trace Sand, brown/ grey				
						• •				
Г										0.50
										-0.50 0.50
L										0.50
L										
-1.0										
"										
F 1										
F 1										
Г										
L										
-2.0										
2.0										
F 1										
F										
-										
-3.0										
F										
Γ										
L I										
F										
-4.0										
NOTE										

NOTES:

Drilling A	Abbreviations:			Moisture	Consistency:		
RW(x)	Rotary Wash	PSC(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils
RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft
PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft
PD(x)	Percussion Down Hole	Н	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm
Where "x	" is flushing medium: (W) Water	er. (M)	Mud. (A) Air. (F) Foam.				



Bore No.: SE060

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 15/08/2012

to: 15/08/2012

Drill Co: GHD Driller: BL/BJ Rig Type: HA Total Depth (m): 0.7 Diameter (mm): 50

Easting: 501103 Northing: 6625215 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: BL/BJ Chec

Checked by: BC

	Dimou.				30/2012	Diamotor (min): 00	- 33	u	onconce by: Bo	
	DRILLING									
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				0.00
0.0	HA		SE060_0.0-0.1			silty CLAY Some Sand,brown/ grey	W			0.00
			SE060_0.2-0.4							-0.40 0.40
			SE060_0.5-0.7			GRAVEL Some Sand	W			0.40
_										-0.70 0.70
-1.0										
_										
_										
-2.0 -										
_										
_										
- -3.0										
_										
-										
_										
_4.0										
NOTE										

NOTES:

ı	Drilling A	Abbreviations:			Moisture	Consistency:			
ı	RW(x)	Rotary Wash	PSC(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
ı	RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
ı	PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
ı	PD(x)	Percussion Down Hole	H	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
ı	Where "x	" is flushing medium: (W) Wa	ter, (M)	Mud, (A) Air, (F) Foam.					



ENVIRONMENTAL - SOIL BORE

Bore No.: SE061

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 15/08/2012

to: 15/08/2012

Drill Co: GHD Driller: BL/BJ Rig Type: HA Total Depth (m): 0.7 Diameter (mm): 50

Easting: 501096 Northing: 6625230 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: BL/BJ Chec

Checked by: BC

(ST) Stiff (VST) Very Stiff (H) Hard

Date	Date Drilled: 15/08/2012 to: 15/08/2012				08/2012	Diameter (mm): 50	Logge	d by:	BL/BJ Checked by: BC	
		DR	RILLING						COMMENTS/	
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
0.0						Ground Surface:				0.00
0.0	НА		SE061_0.0-0.1			silty CLAY Some Sand,brown/ grey	W			0.00
						Some Sand, brown grey				
			SE061_0.2-0.4							-0.40
						GRAVEL	W			-0.40 0.40
						Some Sand				
 			SE061_0.5-0.7							0.70
					0 < 0 0 0 0 0					-0.70 0.70
F										
-1.0										
F										
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-3.0										
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NOTES:

- 1	Drilling .	Abbreviations:			Moisture	Consistency:		
- 1	RW(x)	Rotary Wash	PSC((x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils
- 1	RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft
- 1	PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft
- 1	PD(x)	Percussion Down Hole	Н	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm
- 1	Where "x	" is flushing medium: (W) Wate	r, (M)	Mud, (A) Air, (F) Foam.				



Bore No.: SE062

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 15/08/2012

to: 15/08/2012

Drill Co: GHD Driller: BL/BJ Rig Type: HA Total Depth (m): 0.6 Diameter (mm): 50

Easting: 501098 Northing: 6625257 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: BL/BJ Chec Checked by: BC

Duto.					00/2012	Blamotor (min): 00	Loggo		oneokea by: Be	
		DR	ILLING							
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				
0.0	HA					SILT	W			0.00
			SE062_0.0-0.1			Trace Sand, Organic matter,black				-0.20 0.20 -0.30 0.30
			SE062_0.2-0.3		F	sandy CLAY	W			0.20
	}		3L002_0.2-0.3	-		dark grey	W			-0.30
L						SILT	**			0.50
						Organic matter,black				
			SE062_0.4-0.6							
										-0.60
										0.60
-1.0										
F										
F										
F										
F										
-2.0										
F										
-										
F										
F										
-3.0										
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NOTES:

ı	Drilling A	Abbreviations:			Moisture	Consistency:			
١	RW(x)	Rotary Wash	PSC(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
١	RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
١	PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
ı	PD(x)	Percussion Down Hole	H	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
۱	Where "x	" is flushing medium: (W) Water	er, (M)	Mud, (A) Air, (F) Foam.					



Bore No.: SE063

Page: 1 of 1

Proje Proje Locat	ct: Urur ct No .:	iga Anti 221625			_and 08/2012	Drill Co: GHD Driller: BL/BJ Rig Type: HA Total Depth (m): 0.6 Diameter (mm): 50	Eastin Northi Grid R Elevat Logge	ng: 66 lef: GD ion: 0	25269 A94_MGA_zone_56	
Depth (m)	Drilling Method	DR (mdd) OIA	ILLING Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
0.0	НА		SE063_0.0-0.1			Ground Surface: SILT Trace Sand, Organic matter, black	W			0.00
			SE063_0.2-0.3		()	sandy CLAY	W			-0.20 0.20 -0.30
-			SE063_0.4-0.6			dark grey SILT Organic matter,black	W			0.30
										-0.60 0.60
— —1.0										
-										
-										
- 2.0										
-										
-										
-										
-3.0 -										
-										
-4.0										

NOTES:

D	rilling .	Abbreviations:			Moisture	Consistency:			
R	RW(x)	Rotary Wash	PSC((x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
R	P(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
P	C(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
P	D(x)	Percussion Down Hole	H	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
W	Vhere "x	" is flushing medium: (W) Wat	er, (M)	Mud, (A) Air, (F) Foam.					



Bore No.: SE064

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 15/08/2012

to: 15/08/2012

Drill Co: GHD Driller: BL/BJ Rig Type: HA Total Depth (m): 0.6 Diameter (mm): 50 Easting: 501125 Northing: 6625245 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: BL/BJ Chec

Checked by: BC

	Dilliou.				00/2012	Blamotor (min): 66	Loggo	j	onesica by: Be	
		DR	ILLING							
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				
0.0	HA					SILT	W			0.00
			SE064_0.0-0.1			Trace Sand, Organic matter,black				-0.20 0.20 -0.30 0.30
			SE064_0.2-0.3		7	sandy CLAY	W			0.20
			3L004_0.2-0.3	1		dark grey	W			-0.30
L						SILT	**			0.00
			SE064_0.4-0.6			Organic matter,black				-0.60
										0.60
-1.0										0.60
-										
- -2.0										
-										
_										
-3.0										
_										
-										
1										
1										1 1
-4.0										<u>L</u>
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NOTES:

ı	Drilling A	Abbreviations:			Moisture	Consistency:			
ı	RW(x)	Rotary Wash	PSC(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
ı	RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
ı	PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
ı	PD(x)	Percussion Down Hole	H	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
ı	Where "x	" is flushing medium: (W) Wa	ter, (M)	Mud, (A) Air, (F) Foam.					



to: 15/08/2012

Bore No.: SE065

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 15/08/2012

Drill Co: GHD Driller: BL/BJ Rig Type: HA Total Depth (m): 0.6 Diameter (mm): 50

Easting: 501153 Northing: 6625264 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: BL/BJ Chec

Checked by: BC

Date	Dillieu.	13/00/2	2012 (J. 13/1	00/2012	Diameter (min). 50	Logge	u by. i	JL/DJ	Checked by. BC	
		DR	ILLING								
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	CONTAMIN	MMENTS/ ANT INDICATORS ing, waste materials, e liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:					0.00
0.0	HA		SE065_0.0-0.1			SILT	W				0.00
			3L003_0.0-0.1	1		Trace Sand, Organic matter, black					
L											-0.20
			SE065_0.2-0.3		9	sandy CLAY	W				-0.20 0.20 -0.30 0.30
						dark grey	W				0.30
-						SILT					
			050/5 0 4 0 /			Organic matter,black					
			SE065_0.4-0.6								-0.60
											-0.60 0.60
Γ											
-1.0											
1											
-											
F											
F											
-2.0											
F											
F											
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-3.0											
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NOTES:

Ī	Drilling A	Abbreviations:			Moisture	Consistency:			
ŀ	RW(x)	Rotary Wash	PSC(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
1	RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
ŀ	PC(x)	Percussion Cable Tool	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff	
ŀ	PD(x)	Percussion Down Hole	H	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
ľ	Where "x	is flushing medium: (W) Wat	ter, (M) N	ſud, (A) Air, (F) Foam.					



to: 15/08/2012

Bore No.: SE066

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 15/08/2012

Drill Co: GHD Driller: BL/BJ Rig Type: HA Total Depth (m): 0.6 Diameter (mm): 50

Easting: 501138 Northing: 6625278 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: BL/BJ Chec

Checked by: BC

						Diamotor (min): 00		u 25.	onconce by: Bo	
		DR	ILLING							
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				0.00
0.0	НА		SE066_0.0-0.1			SILT Trace Sand, Organic matter,black	W			
			SE066_0.2-0.3	1	7 <u></u>	sandy CLAY	W			0.20
			3E000_0.2-0.3	+		dark grey	W			-0.20 0.20 -0.30 0.30
			SE066_0.4-0.6			SILT Organic matter,black				
										-0.60 0.60
- 1.0										0.60
- - - -2.0										
- - - -3.0										
- - - - NOTE										

NOTES:

ı	Drilling A	Abbreviations:			Moisture	Consistency:			
ı	RW(x)	Rotary Wash	PSC(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
ı	RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
ı	PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
ı	PD(x)	Percussion Down Hole	H	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
ı	Where "x	" is flushing medium: (W) Wa	ter, (M)	Mud, (A) Air, (F) Foam.					



to: 15/08/2012

Bore No.: SE067

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 15/08/2012

Drill Co: GHD Driller: BL/BJ Rig Type: HA Total Depth (m): 0.6 Diameter (mm): 50

Easting: 501173 Northing: 6625295 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: BL/BJ Chec

Checked by: BC

Date	Di illeu.	13/00/2	2012 10	J. 13/1	00/2012	Diameter (min). 50	Logge	u by. i	DL/DJ C	necked by. BC	
		DR	ILLING								
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	CONTAMINAN Odours, staining separate phase lie	MENTS/ T INDICATORS , waste materials, quids, imported fill, sh.	Elevation / Depth (m)
						Ground Surface:					0.00
0.0	HA		SE067_0.0-0.1			SILT	W				0.00
			SE007_0.0-0.1			Trace Sand, Organic matter, black					
						· ·					-0.20
Г			SE067_0.2-0.3		7-27-	sandy CLAY	W				-0.20 0.20 -0.30 0.30
	ŀ		3EU01_U.2-U.3			dark grey	W				-0.30
						SILT	vv				0.30
						Organic matter,black					
			SE067_0.4-0.6								
											-0.60 0.60
											0.60
-											
-1.0											
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NOTES:

ı	Drilling A	Abbreviations:			Moisture	Consistency:			
ı	RW(x)	Rotary Wash	PSC(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
ı	RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
ı	PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
ı	PD(x)	Percussion Down Hole	H	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
ı	Where "x	" is flushing medium: (W) Wa	ter, (M)	Mud, (A) Air, (F) Foam.					



ENVIRONMENTAL - SOIL BORE

to: 15/08/2012

Bore No.: SE068

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 15/08/2012

Drill Co: GHD Driller: BL/BJ Rig Type: HA Total Depth (m): 0.6 Diameter (mm): 50

Easting: 501193 Northing: 6625321 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: BL/BJ Chec

Checked by: BC

Date Drilled: 15/08/2012 to: 15/08/2012) : 15/	08/2012	Diameter (mm): 50	Logge	a by: I	BL/BJ Checked by: BC		
		DR	ILLING						001111511501	
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				0.00
0.0	НА		SE068_0.0-0.1			SILT Trace Sand, Organic matter,black	W			0.00
-			050/0.000	1	F)	sandy CLAY	W			-0.20 0.20 -0.30 0.30
			SE068_0.2-0.3	-		dark grey	W			-0.30
L						SILT	VV			0.30
			SE068_0.4-0.6			Organic matter,black				-0.60
										-0.60 0.60
-1.0										
_										
-										
-										
-2.0										
-										
-										
-3.0										
-										
-										
-4.0										

NOTES:

Drilling A	Abbreviations:			Moisture	Consistency:			
RW(x)	Rotary Wash	PSC	(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
PD(x)	Percussion Down Hole	Η	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
Where "x	" is flushing medium: (W) Wat	er, (M)	Mud, (A) Air, (F) Foam.					
	-							



to: 16/08/2012

Bore No.: SE102

Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land Project: Urunga Antimony RAP Project No.: 2216251 Location:

Date Drilled: 16/08/2012

Drill Co: GHD Driller: JS Rig Type: HA Total Depth (m): 0.2 Diameter (mm): 50

Easting: 500829 Northing: 6625097 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: JS Chec

Checked by: BC

	Dilliou.				00/2012	Blamotor (min): 66	Loggo	,	onesica by: Be	
		DR	ILLING							
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials, separate phase liquids, imported fill, ash.	Elevation / Depth (m)
						Ground Surface:				0.00
0.0						SILT	W			0.00
			SE102_0.0-0.2			Trace Clay and Sand, dark brown				
										-0.20 0.20
-										0.20
—1.0 —										
-										
-2.0										
L										
Γ										
-										
Γ										
F										
-3.0										
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r										
-4.0										
NOT										

NOTES:

ı	Drilling A	Abbreviations:			Moisture	Consistency:			
ı	RW(x)	Rotary Wash	PSC(x) Percussion Simultanous Casing	Abbreviations:	Granular Soils		Cohesive Soils	
ı	RT(x)	Rotary Triple Tube	AS	Augering - Solid Flight	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff
ı	PC(x)	Percussion Cable Tool	AH	Augering - Hollow Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff
ı	PD(x)	Percussion Down Hole	H	Hand Augering	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard
ı	Where "x	" is flushing medium: (W) Wa	ter, (M)	Mud, (A) Air, (F) Foam.					

Appendix F - Laboratory Reports





Environmental Division

CERTIFICATE OF ANALYSIS

Work Order : **ES1219239** Page : 1 of 3

Client : GHD PTY LTD Laboratory : Environmental Division Sydney

Contact : MR BEN LUFFMAN Contact : Angelene Kumar

Address : 230 HARBOUR DRIVE Address : 277-289 Woodpark Road Smithfield NSW Australia 2164

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 Telephone
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Project : 2216251-URUNGA QC Level : NEPM 1999 Schedule B(3) and ALS QCS3 requirement

Order number : ----

 C-O-C number
 : 158501
 Date Samples Received
 : 08-AUG-2012

 Sampler
 : JS
 Issue Date
 : 10-AUG-2012

Site : ----

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

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

Celine Conceicao Senior Spectroscopist Sydney Inorganics

Address 277-289 Woodpark Road Smithfield NSW Australia 2164 | PHONE +61-2-8784 8555 | Facsimile +61-2-8784 8500 Environmental Division Sydney ABN 84 009 936 029 Part of the ALS Group A Campbell Brothers Limited Company



 Page
 : 2 of 3

 Work Order
 : ES1219239

 Client
 : GHD PTY LTD

 Project
 : 2216251-URUNGA



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 sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Key: CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

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

 Page
 : 3 of 3

 Work Order
 : ES1219239

 Client
 : GHD PTY LTD

 Project
 : 2216251-URUNGA



Sub-Matrix: SOIL		Cli	ent sample ID	BH006 0.0-0.3	BH23 0.0-0.2	BH23 0.5-0.7	
Sub-Iviatrix. SOIL		On	on campio ib	D11000_0.0-0.3	D1123_0.0-0.2	D1123_0.5-0.7	
	CI	ient sampli	ing date / time	03-AUG-2012 15:00	03-AUG-2012 15:00	03-AUG-2012 15:00	
Compound	CAS Number	LOR	Unit	ES1219239-001	ES1219239-003	ES1219239-004	
EA055: Moisture Content							
Moisture Content (dried @ 103°C)		1.0	%	36.2	16.5	18.4	
EG005T: Total Metals by ICP-AES							
Antimony	7440-36-0	5	mg/kg	1950	13200	8650	
Arsenic	7440-38-2	5	mg/kg	702	6860	4110	
EG035T: Total Recoverable Mercury by	FIMS						
Mercury	7439-97-6	0.1	mg/kg	2.3	146	42.8	





Environmental Division

CERTIFICATE OF ANALYSIS

Work Order : **ES1220305** Page : 1 of 33

Amendment : 1

Client : GHD PTY LTD Laboratory : Environmental Division Sydney

Contact : MR BEN LUFFMAN Contact : Angelene Kumar

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Project : 2216251 QC Level : NEPM 1999 Schedule B(3) and ALS QCS3 requirement

Order number : ----

 C-O-C number
 : -- Date Samples Received
 : 22-AUG-2012

 Sampler
 : JS
 Issue Date
 : 13-NOV-2012

Site : HILLSIDE DR, URUNGA

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

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.

Position	Accreditation Category	
	Newcastle	
Senior Spectroscopist	Sydney Inorganics	
Inorganic Chemist	Sydney Inorganics	
Senior Inorganic Chemist	Brisbane Inorganics	
Senior Inorganic Chemist	Stafford Minerals - AY	
Laboratory Manager - Inorganics	Sydney Inorganics	
Senior Inorganic Chemist	Sydney Inorganics	
	Senior Spectroscopist Inorganic Chemist Senior Inorganic Chemist Senior Inorganic Chemist Laboratory Manager - Inorganics	Senior Spectroscopist Sydney Inorganics Inorganic Chemist Sydney Inorganics Senior Inorganic Chemist Brisbane Inorganics Senior Inorganic Chemist Stafford Minerals - AY Laboratory Manager - Inorganics Sydney Inorganics

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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 sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Key: CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

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

- EG005: Poor precision was obtained for some elements on sample ES1220305#18 due to sample heterogeneity. Results have been confirmed by re-extraction and reanalysis.
- EG005T: Poor precision was obtained for Aluminium on sample Es1220305#44 and for Copper on sample ES1220305#86 due to sample heterogeneity.
- It is recognised that total analyte concentration is less than (1M) HCI Extractable concentration for some samples. However, the difference is within experimental variation of the
 methods.
- Some of samples' IDs were changed after Brian's email request on 07/09/2012.
- This report has been amended following changes to the analytical data reported. The quality system is being utilised to resolve this issue. The specific data affected includes Arsenic result for sample 10 reported by EG005T analysis.

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Sub-Matrix: SOIL		Cli	ent sample ID	BH074_0.8-1.0	BH064_0.0-0.2	BH064_0.3-0.5	BH073_0.0-0.2	BH073_0.5-0.7
	CI	ient sampli	ng date / time	15-AUG-2012 15:00				
Compound	CAS Number	LOR	Unit	ES1220305-001	ES1220305-002	ES1220305-003	ES1220305-004	ES1220305-005
EA002 : pH (Soils)								
pH Value		0.1	pH Unit	5.0	5.6	5.3	3.2	3.4
EA055: Moisture Content								
Moisture Content (dried @ 103°C)		1.0	%	12.5	24.5	22.0	10.5	14.9
EG005T: Total Metals by ICP-AES								
Antimony	7440-36-0	5	mg/kg	<5	<5	<5	295	405
Arsenic	7440-38-2	5	mg/kg	<5	<5	7	496	416
EG035T: Total Recoverable Mercury by F	IMS							
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	47.5	57.8
EK026G: Total Cyanide By Discrete Analy	/ser							
Total Cyanide	57-12-5	1	mg/kg	1	1	1	<1	<1

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Sub-Matrix: SOIL		Clie	ent sample ID	BH056_0.3-0.5	BH075_1.8-2.0	BH060_0.0-0.2	BH82_1.5-1.7	BH034_0.0-0.1
	Cli	ent sampli	ng date / time	15-AUG-2012 15:00				
Compound	CAS Number	LOR	Unit	ES1220305-006	ES1220305-007	ES1220305-008	ES1220305-009	ES1220305-010
EA150: Particle Sizing								
+75µm		1	%					77
+150µm		1	%					73
+300µm		1	%					26
+425µm		1	%					6
+600µm		1	%					1
+1180µm		1	%					<1
+2.36mm		1	%					<1
+4.75mm		1	%					<1
+9.5mm		1	%					<1
+19.0mm		1	%					<1
+37.5mm		1	%					<1
+75.0mm		1	%					<1
EA002 : pH (Soils)								
pH Value		0.1	pH Unit	5.0		4.6	5.6	3.0
EA055: Moisture Content								
Moisture Content (dried @ 103°C)		1.0	%	11.6	39.4	12.0	66.2	16.6
EA150: Soil Classification based on Par	rticle Size							
Clay (<2 µm)		1	%					14
Silt (2-60 μm)		1	%					7
Sand (0.06-2.00 mm)		1	%					79
Gravel (>2mm)		1	%					<1
Cobbles (>6cm)		1	%					<1
ED007: Exchangeable Cations								
Exchangeable Calcium		0.1	meq/100g					0.2
Exchangeable Magnesium		0.1	meq/100g					0.5
Exchangeable Potassium		0.1	meq/100g					<0.1
Exchangeable Sodium		0.1	meq/100g					0.1
Cation Exchange Capacity		0.1	meq/100g					0.9
EG005T: Total Metals by ICP-AES								
Aluminium	7429-90-5	50	mg/kg					410
Antimony	7440-36-0	5	mg/kg	<5	36	160	92	12400
Arsenic	7440-38-2	5	mg/kg	<5	129	66	1510	6900
Cadmium	7440-43-9	1	mg/kg		3			<1
Chromium	7440-47-3	2	mg/kg		10			3
Copper	7440-50-8	5	mg/kg		30			8
Lead	7439-92-1	5	mg/kg		17			138

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Sub-Matrix: SOIL		Clie	ent sample ID	BH056_0.3-0.5	BH075_1.8-2.0	BH060_0.0-0.2	BH82_1.5-1.7	BH034_0.0-0.1
	Cl	ient sampli	ng date / time	15-AUG-2012 15:00				
Compound	CAS Number	LOR	Unit	ES1220305-006	ES1220305-007	ES1220305-008	ES1220305-009	ES1220305-010
EG005T: Total Metals by ICP-AES - Contin	ued							
Nickel	7440-02-0	2	mg/kg		3			<2
Zinc	7440-66-6	5	mg/kg		76			10
EG035T: Total Recoverable Mercury by F	FIMS							
Mercury	7439-97-6	0.1	mg/kg	<0.1	0.2	1.1	1.3	68.6
EK026G: Total Cyanide By Discrete Analy	yser							
Total Cyanide	57-12-5	1	mg/kg	<1		2	9	16
EN33: TCLP Leach								
Initial pH		0.1	pH Unit					3.6
Extraction Fluid Number		1	-					1
Final pH		0.1	pH Unit					4.9
EP003: Total Organic Carbon (TOC) in So	oil							
Total Organic Carbon		0.02	%					2.03

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Sub-Matrix: SOIL		Cli	ent sample ID	BH014_0.0-0.1	BH071_0.5-0.7	BH091_0.0-0.1	BH002_0.5-0.7	BH004_1.0-1.2
	Cli	ent sampli	ng date / time	15-AUG-2012 15:00	15-AUG-2012 15:00	15-AUG-2012 15:00	16-AUG-2012 15:00	16-AUG-2012 15:00
Compound	CAS Number	LOR	Unit	ES1220305-011	ES1220305-012	ES1220305-013	ES1220305-014	ES1220305-015
EA150: Particle Sizing								
+75µm		1	%	72				
+150µm		1	%	69				
+300µm		1	%	32				
+425µm		1	%	12				
+600µm		1	%	7				
+1180µm		1	%	5				
+2.36mm		1	%	4				
+4.75mm		1	%	2				
+9.5mm		1	%	<1				
+19.0mm		1	%	<1				
+37.5mm		1	%	<1				
+75.0mm		1	%	<1				
EA002 : pH (Soils)								
pH Value		0.1	pH Unit	4.7	5.4	5.1		
EA055: Moisture Content								
Moisture Content (dried @ 103°C)		1.0	%	34.8	21.3	28.2	16.8	28.6
EA150: Soil Classification based on Pa	rticle Size							
Clay (<2 µm)		1	%	14				
Silt (2-60 µm)		1	%	13				
Sand (0.06-2.00 mm)		1	%	69				
Gravel (>2mm)		1	%	4				
Cobbles (>6cm)		1	%	<1				
ED007: Exchangeable Cations								
Exchangeable Calcium		0.1	meq/100g	0.2	1.0			
Exchangeable Magnesium		0.1	meq/100g	0.5	0.9			
Exchangeable Potassium		0.1	meq/100g	<0.1	0.2			
Exchangeable Sodium		0.1	meq/100g	0.2	0.2			
Cation Exchange Capacity		0.1	meq/100g	1.0	2.2			
EG005T: Total Metals by ICP-AES								
Aluminium	7429-90-5	50	mg/kg	4660	5440			
Antimony	7440-36-0	5	mg/kg	7	<5	<5	<5	2050
Arsenic	7440-38-2	5	mg/kg	7	<5	5	<5	1160
Cadmium	7440-43-9	1	mg/kg	<1	<1		<1	<1
Chromium	7440-47-3	2	mg/kg	5	4		11	16
Copper	7440-50-8	5	mg/kg	<5	<5		7	166
Lead	7439-92-1	5	mg/kg	8	8		6	116

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Sub-Matrix: SOIL		Clie	ent sample ID	BH014_0.0-0.1	BH071_0.5-0.7	BH091_0.0-0.1	BH002_0.5-0.7	BH004_1.0-1.2
	CI	ient sampli	ng date / time	15-AUG-2012 15:00	15-AUG-2012 15:00	15-AUG-2012 15:00	16-AUG-2012 15:00	16-AUG-2012 15:00
Compound	CAS Number	LOR	Unit	ES1220305-011	ES1220305-012	ES1220305-013	ES1220305-014	ES1220305-015
EG005T: Total Metals by ICP-AES - Contin	ued							
Nickel	7440-02-0	2	mg/kg	<2	<2		<2	5
Zinc	7440-66-6	5	mg/kg	<5	8		13	95
EG035T: Total Recoverable Mercury by F	FIMS							
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.1	<0.1	28.9
EK026G: Total Cyanide By Discrete Analy	/ser							
Total Cyanide	57-12-5	1	mg/kg	2	<1	3		
EN33: TCLP Leach								
Initial pH		0.1	pH Unit	4.8	5.7	5.1		
After HCI pH		0.1	pH Unit		1.6	1.6		
Extraction Fluid Number		1	-	1	1	1		
Final pH		0.1	pH Unit	4.9	4.9	4.9		
EP003: Total Organic Carbon (TOC) in So	il							
Total Organic Carbon		0.02	%	2.88	1.74			

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Sub-Matrix: SOIL		Cli	ent sample ID	SE001_0.0-0.1	SE001_0.1-0.2	SE002_0.0-0.1	SE002_0.3-0.5	SE003_0.0-0.1
	Clie	ent sampli	ing date / time	14-AUG-2012 15:00				
Compound	CAS Number	LOR	Unit	ES1220305-016	ES1220305-017	ES1220305-018	ES1220305-019	ES1220305-020
EA002 : pH (Soils)								
pH Value		0.1	pH Unit	5.1	4.8	5.0	5.9	5.2
EA055: Moisture Content								
Moisture Content (dried @ 103°C)		1.0	%	25.7	39.3	73.3	72.4	49.3
ED007: Exchangeable Cations								
Exchangeable Calcium		0.1	meq/100g			1.7		
Exchangeable Magnesium		0.1	meq/100g			1.4		
Exchangeable Potassium		0.1	meq/100g			1.1		
Exchangeable Sodium		0.1	meq/100g			0.6		
Cation Exchange Capacity		0.1	meq/100g			4.8		
EG005-SDH: 1M HCI-Extractable Meta	Is by ICPAES							
Aluminium	7429-90-5	50	mg/kg			2300		
Antimony	7440-36-0	1.0	mg/kg			1680		
Arsenic	7440-38-2	1.0	mg/kg			57.9		
Cadmium	7440-43-9	0.1	mg/kg			0.3		
Cobalt	7440-48-4	0.5	mg/kg			0.8		
Chromium	7440-47-3	1.0	mg/kg			61.8		
Copper	7440-50-8	1.0	mg/kg			1450		
Iron	7439-89-6	50	mg/kg			5780		
Lead	7439-92-1	1.0	mg/kg			1010		
Manganese	7439-96-5	10	mg/kg			36		
Nickel	7440-02-0	1.0	mg/kg			1.2		
Silver	7440-22-4	1.0	mg/kg			<1.0		
Vanadium	7440-62-2	2.0	mg/kg			15.9		
Zinc	7440-66-6	1.0	mg/kg			53.2		
EG005T: Total Metals by ICP-AES								
Aluminium	7429-90-5	50	mg/kg	2180		10300		8510
Antimony	7440-36-0	5	mg/kg	3980	9260	4440	1200	2120
Arsenic	7440-38-2	5	mg/kg	1980	5410	225	295	176
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	3	<1
Chromium	7440-47-3	2	mg/kg	22	112	1450	253	323
Copper	7440-50-8	5	mg/kg	574	491	1900	1100	1040
Lead	7439-92-1	5	mg/kg	405	1760	1170	216	538
Nickel	7440-02-0	2	mg/kg	<2	<2	4	13	5
Zinc	7440-66-6	5	mg/kg	142	149	145	140	63
EG020-SDH: 1M HCl Extractable meta	Is by ICPMS							
Selenium	7782-49-2	0.5	mg/kg			1.2		

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Sub-Matrix: SOIL		Cli	ent sample ID	SE001_0.0-0.1	SE001_0.1-0.2	SE002_0.0-0.1	SE002_0.3-0.5	SE003_0.0-0.1
	CI	ient sampli	ng date / time	14-AUG-2012 15:00				
Compound	CAS Number	LOR	Unit	ES1220305-016	ES1220305-017	ES1220305-018	ES1220305-019	ES1220305-020
EG035T: Total Recoverable Mercu	ury by FIMS							
Mercury	7439-97-6	0.1	mg/kg	58.9	32.2	87.6	9.8	23.4
EK026G: Total Cyanide By Discret	te Analyser							
Total Cyanide	57-12-5	1	mg/kg	<1	8	2	2	<1
EP003: Total Organic Carbon (TO	C) in Soil							
Total Organic Carbon		0.02	%			5.25		

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Sub-Matrix: SOIL		Cli	ent sample ID	SE003_0.2-0.4	SE010_0.1-0.3	SE010_0.6-0.8	SE011_0.0-0.1	SE012_0.0-0.1
	Clie	ent sampli	ing date / time	14-AUG-2012 15:00				
Compound	CAS Number	LOR	Unit	ES1220305-021	ES1220305-022	ES1220305-023	ES1220305-024	ES1220305-026
EA002 : pH (Soils)								
pH Value		0.1	pH Unit	5.0	4.9	5.8	5.8	5.4
EA055: Moisture Content								
Moisture Content (dried @ 103°C)		1.0	%	75.2	47.0	42.4	45.7	77.9
ED007: Exchangeable Cations								
Exchangeable Calcium		0.1	meq/100g				2.4	
Exchangeable Magnesium		0.1	meq/100g				1.9	
Exchangeable Potassium		0.1	meq/100g				1.0	
Exchangeable Sodium		0.1	meq/100g				0.6	
Cation Exchange Capacity		0.1	meq/100g				6.0	
EG005-SDH: 1M HCI-Extractable Metal	ls by ICPAES							
Aluminium	7429-90-5	50	mg/kg				820	
Antimony	7440-36-0	1.0	mg/kg				877	
Arsenic	7440-38-2	1.0	mg/kg				139	
Cadmium	7440-43-9	0.1	mg/kg				<0.1	
Cobalt	7440-48-4	0.5	mg/kg				0.5	
Chromium	7440-47-3	1.0	mg/kg				5.9	
Copper	7440-50-8	1.0	mg/kg				160	
Iron	7439-89-6	50	mg/kg				2870	
Lead	7439-92-1	1.0	mg/kg				703	
Manganese	7439-96-5	10	mg/kg				15	
Nickel	7440-02-0	1.0	mg/kg				<1.0	
Silver	7440-22-4	1.0	mg/kg				<1.0	
Vanadium	7440-62-2	2.0	mg/kg				3.4	
Zinc	7440-66-6	1.0	mg/kg				14.2	
EG005T: Total Metals by ICP-AES								
Aluminium	7429-90-5	50	mg/kg		10800		5250	11000
Antimony	7440-36-0	5	mg/kg	959	4210	49	4640	9020
Arsenic	7440-38-2	5	mg/kg	813	1140	29	1020	1390
Cadmium	7440-43-9	1	mg/kg	6	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	42	115	10	74	125
Copper	7440-50-8	5	mg/kg	1270	1340	8	247	750
Lead	7439-92-1	5	mg/kg	44	546	9	1230	1790
Nickel	7440-02-0	2	mg/kg	26	16	3	2	6
Zinc	7440-66-6	5	mg/kg	288	58	<5	33	106
EG020-SDH: 1M HCl Extractable meta	ls by ICPMS							
Selenium	7782-49-2	0.5	mg/kg				0.7	

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Sub-Matrix: SOIL		Cli	ent sample ID	SE003_0.2-0.4	SE010_0.1-0.3	SE010_0.6-0.8	SE011_0.0-0.1	SE012_0.0-0.1
	CI	ient sampli	ng date / time	14-AUG-2012 15:00				
Compound	CAS Number	LOR	Unit	ES1220305-021	ES1220305-022	ES1220305-023	ES1220305-024	ES1220305-026
EG035T: Total Recoverable Mercury	y by FIMS							
Mercury	7439-97-6	0.1	mg/kg	1.1	26.4	0.3	56.7	55.6
EK026G: Total Cyanide By Discrete	Analyser							
Total Cyanide	57-12-5	1	mg/kg	2	77	1	8	19
EP003: Total Organic Carbon (TOC)	in Soil							
Total Organic Carbon		0.02	%				5.94	

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Sub-Matrix: SOIL		Clie	ent sample ID	SE012_0.3-0.5	SE013_0.3-0.5	SE060_0.0-0.1	SE033_0.0-0.05	SE102_0.0-0.2
	Cli	ent sampli	ng date / time	14-AUG-2012 15:00	16-AUG-2012 15:00	15-AUG-2012 15:00	16-AUG-2012 15:00	16-AUG-2012 15:00
Compound	CAS Number	LOR	Unit	ES1220305-027	ES1220305-028	ES1220305-029	ES1220305-030	ES1220305-031
EA002 : pH (Soils)								
pH Value		0.1	pH Unit	5.2				
EA055: Moisture Content								
Moisture Content (dried @ 103°C)		1.0	%	70.0	43.9			75.2
ED007: Exchangeable Cations								
Exchangeable Calcium		0.1	meq/100g			8.8	2.9	
Exchangeable Magnesium		0.1	meq/100g			7.3	2.4	
Exchangeable Potassium		0.1	meq/100g			0.6	1.5	
Exchangeable Sodium		0.1	meq/100g			2.7	1.2	
Cation Exchange Capacity		0.1	meq/100g			19.4	8.0	
EG005T: Total Metals by ICP-AES								
Antimony	7440-36-0	5	mg/kg	239	28			744
Arsenic	7440-38-2	5	mg/kg	459	74			18
Cadmium	7440-43-9	1	mg/kg	<1	<1			<1
Chromium	7440-47-3	2	mg/kg	25	13			17
Copper	7440-50-8	5	mg/kg	229	13			708
Lead	7439-92-1	5	mg/kg	127	12			74
Nickel	7440-02-0	2	mg/kg	15	4			11
Zinc	7440-66-6	5	mg/kg	82	10			39
EG035T: Total Recoverable Mercury I	y FIMS							
Mercury	7439-97-6	0.1	mg/kg	1.4	0.2			0.3
EK026G: Total Cyanide By Discrete A	nalyser							
Total Cyanide	57-12-5	1	mg/kg	8				
EP003: Total Organic Carbon (TOC) in	Soil							
Total Organic Carbon		0.02	%			19.4	10.3	

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ub-Matrix: SOIL		Clie	ent sample ID	SEDUP04	SE020_0.0-0.1	SE020_0.2-0.4	SE021_0.0-0.1	SE030_0.0-0.1
	Clie	ent sampli	ng date / time	16-AUG-2012 15:00	14-AUG-2012 15:00	14-AUG-2012 15:00	14-AUG-2012 15:00	14-AUG-2012 15:00
Compound	CAS Number	LOR	Unit	ES1220305-034	ES1220305-035	ES1220305-036	ES1220305-037	ES1220305-039
EA002 : pH (Soils)								
pH Value		0.1	pH Unit	5.0	4.8	5.4	4.4	5.6
EA055: Moisture Content								
Moisture Content (dried @ 103°C)		1.0	%	69.2	47.8	54.6	43.4	39.1
ED007: Exchangeable Cations								
Exchangeable Calcium		0.1	meq/100g				7.9	2.9
Exchangeable Magnesium		0.1	meq/100g				8.1	1.7
Exchangeable Potassium		0.1	meq/100g				0.6	0.7
Exchangeable Sodium		0.1	meq/100g				3.5	1.2
Cation Exchange Capacity		0.1	meq/100g				20.2	6.5
EG005-SDH: 1M HCI-Extractable Meta	s by ICPAES							
Aluminium	7429-90-5	50	mg/kg				770	1160
Antimony	7440-36-0	1.0	mg/kg				1480	1360
Arsenic	7440-38-2	1.0	mg/kg				111	1180
Cadmium	7440-43-9	0.1	mg/kg				0.2	0.2
Cobalt	7440-48-4	0.5	mg/kg				0.8	0.5
Chromium	7440-47-3	1.0	mg/kg				3.1	3.3
Copper	7440-50-8	1.0	mg/kg				148	122
Iron	7439-89-6	50	mg/kg				3440	9340
Lead	7439-92-1	1.0	mg/kg				1010	106
Manganese	7439-96-5	10	mg/kg				10	21
Nickel	7440-02-0	1.0	mg/kg				<1.0	<1.0
Silver	7440-22-4	1.0	mg/kg				<1.0	<1.0
Vanadium	7440-62-2	2.0	mg/kg				2.5	6.4
Zinc	7440-66-6	1.0	mg/kg				27.7	32.3
EG005T: Total Metals by ICP-AES								
Aluminium	7429-90-5	50	mg/kg		3680			3300
Antimony	7440-36-0	5	mg/kg	3770	7450	48	9570	4720
Arsenic	7440-38-2	5	mg/kg	1200	985	542	1260	2530
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	23	88	15	24	9
Copper	7440-50-8	5	mg/kg	377	122	12	222	120
Lead	7439-92-1	5	mg/kg	587	1270	24	1730	160
Nickel	7440-02-0	2	mg/kg	6	4	5	3	<2
Zinc	7440-66-6	5	mg/kg	79	52	12	57	45
EG020-SDH: 1M HCl Extractable metal	ls by ICPMS							
Selenium	7782-49-2	0.5	mg/kg				0.7	0.5

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Sub-Matrix: SOIL		Client sample ID			SE020_0.0-0.1	SE020_0.2-0.4	SE021_0.0-0.1	SE030_0.0-0.1
	CI	ient sampli	ng date / time	16-AUG-2012 15:00	14-AUG-2012 15:00	14-AUG-2012 15:00	14-AUG-2012 15:00	14-AUG-2012 15:00
Compound	CAS Number	LOR	Unit	ES1220305-034	ES1220305-035	ES1220305-036	ES1220305-037	ES1220305-039
EG035T: Total Recoverable Mercu	iry by FIMS							
Mercury	7439-97-6	0.1	mg/kg	19.4	60.0	0.5	73.3	18.4
EK026G: Total Cyanide By Discrete	e Analyser							
Total Cyanide	57-12-5	1	mg/kg	28	235	5	61	20
EP003: Total Organic Carbon (TOC	c) in Soil							
Total Organic Carbon		0.02	%				14.8	2.50

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Sub-Matrix: SOIL		Clie	ent sample ID	SE030_0.3-0.5	SE031_0.0-0.1	SE040_0.3-0.5	SE042_0.0-0.1	SE050_0.0-0.1
	Clie	ent sampli	ng date / time	14-AUG-2012 15:00	14-AUG-2012 15:00	14-AUG-2012 15:00	14-AUG-2012 15:00	15-AUG-2012 15:00
Compound	CAS Number	LOR	Unit	ES1220305-040	ES1220305-041	ES1220305-042	ES1220305-043	ES1220305-044
EA002 : pH (Soils)								
pH Value		0.1	pH Unit	7.2	4.6	5.3		4.3
EA055: Moisture Content								
Moisture Content (dried @ 103°C)		1.0	%	24.2	33.9	26.8	78.3	14.5
ED007: Exchangeable Cations								
Exchangeable Calcium		0.1	meq/100g			2.0		
Exchangeable Magnesium		0.1	meq/100g			3.1		
Exchangeable Potassium		0.1	meq/100g			0.6		
Exchangeable Sodium		0.1	meq/100g			0.9		
Cation Exchange Capacity		0.1	meq/100g			6.6		
EG005-SDH: 1M HCI-Extractable Metals	by ICPAES							
Aluminium	7429-90-5	50	mg/kg		290	340		
Antimony	7440-36-0	1.0	mg/kg		796	33.3		
Arsenic	7440-38-2	1.0	mg/kg		286	23.9		
Cadmium	7440-43-9	0.1	mg/kg		<0.1	<0.1		
Cobalt	7440-48-4	0.5	mg/kg		<0.5	<0.5		
Chromium	7440-47-3	1.0	mg/kg		2.7	<1.0		
Copper	7440-50-8	1.0	mg/kg		33.8	6.1		
Iron	7439-89-6	50	mg/kg		2210	10400		
Lead	7439-92-1	1.0	mg/kg		399	4.5		
Manganese	7439-96-5	10	mg/kg		<10	24		
Nickel	7440-02-0	1.0	mg/kg		<1.0	<1.0		
Silver	7440-22-4	1.0	mg/kg		<1.0	<1.0		
Vanadium	7440-62-2	2.0	mg/kg		<2.0	6.8		
Zinc	7440-66-6	1.0	mg/kg		10.8	6.7		
EG005T: Total Metals by ICP-AES								
Aluminium	7429-90-5	50	mg/kg					990
Antimony	7440-36-0	5	mg/kg	342	5920	34	11900	626
Arsenic	7440-38-2	5	mg/kg	292	1210	57	1430	1370
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	2	<1
Chromium	7440-47-3	2	mg/kg	7	14	10	54	4
Copper	7440-50-8	5	mg/kg	7	44	6	980	47
Lead	7439-92-1	5	mg/kg	19	761	8	3280	69
Nickel	7440-02-0	2	mg/kg	2	<2	<2	9	<2
Zinc	7440-66-6	5	mg/kg	10	30	<5	347	20
EG020-SDH: 1M HCl Extractable metals	by ICPMS							
Selenium	7782-49-2	0.5	mg/kg		<0.5	<0.5		

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Sub-Matrix: SOIL		Cli	ent sample ID	SE030_0.3-0.5	SE031_0.0-0.1	SE040_0.3-0.5	SE042_0.0-0.1	SE050_0.0-0.1
	C	ient sampli	ng date / time	14-AUG-2012 15:00	14-AUG-2012 15:00	14-AUG-2012 15:00	14-AUG-2012 15:00	15-AUG-2012 15:00
Compound	CAS Number	LOR	Unit	ES1220305-040	ES1220305-041	ES1220305-042	ES1220305-043	ES1220305-044
EG035T: Total Recoverable Merc	cury by FIMS							
Mercury	7439-97-6	0.1	mg/kg	1.5	38.3	0.2	122	1.9
EK026G: Total Cyanide By Discre	ete Analyser							
Total Cyanide	57-12-5	1	mg/kg	<1	46	1		<1
EP003: Total Organic Carbon (TC	DC) in Soil							
Total Organic Carbon		0.02	%			0.21		

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Sub-Matrix: SOIL		Clie	ent sample ID	SE050_0.2-0.4	SEDUP03	SE051_0.0-0.1	SE051_0.3-0.5	SE052_0.0-0.1
	Cli	ient sampli	ng date / time	15-AUG-2012 15:00	15-AUG-2012 15:00	14-AUG-2012 15:00	14-AUG-2012 15:00	14-AUG-2012 15:00
Compound	CAS Number	LOR	Unit	ES1220305-045	ES1220305-046	ES1220305-047	ES1220305-048	ES1220305-049
EA002 : pH (Soils)								
pH Value		0.1	pH Unit	4.5	4.1	4.4	5.4	4.9
EA055: Moisture Content								
Moisture Content (dried @ 103°C)		1.0	%	29.8	11.0	34.7	30.9	17.7
EG005-SDH: 1M HCI-Extractable Me	etals by ICPAES							
Aluminium	7429-90-5	50	mg/kg			450		190
Antimony	7440-36-0	1.0	mg/kg			471		12.2
Arsenic	7440-38-2	1.0	mg/kg			458		16.3
Cadmium	7440-43-9	0.1	mg/kg			0.2		<0.1
Cobalt	7440-48-4	0.5	mg/kg			<0.5		<0.5
Chromium	7440-47-3	1.0	mg/kg			1.9		<1.0
Copper	7440-50-8	1.0	mg/kg			41.7		4.8
Iron	7439-89-6	50	mg/kg			1840		350
Lead	7439-92-1	1.0	mg/kg			365		2.0
Manganese	7439-96-5	10	mg/kg			<10		<10
Nickel	7440-02-0	1.0	mg/kg			<1.0		<1.0
Silver	7440-22-4	1.0	mg/kg			<1.0		<1.0
Vanadium	7440-62-2	2.0	mg/kg			<2.0		3.9
Zinc	7440-66-6	1.0	mg/kg			7.1		14.6
EG005T: Total Metals by ICP-AES								
Antimony	7440-36-0	5	mg/kg	4900	412	4820	76	21
Arsenic	7440-38-2	5	mg/kg	2030	800	2490	556	64
Cadmium	7440-43-9	1	mg/kg	1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	7	3	11	13	4
Copper	7440-50-8	5	mg/kg	274	28	67	47	16
Lead	7439-92-1	5	mg/kg	446	61	696	64	<5
Nickel	7440-02-0	2	mg/kg	<2	<2	<2	6	<2
Zinc	7440-66-6	5	mg/kg	32	12	24	61	27
EG020-SDH: 1M HCI Extractable me	etals by ICPMS							
Selenium	7782-49-2	0.5	mg/kg			<0.5		<0.5
EG035T: Total Recoverable Mercur	y by FIMS							
Mercury	7439-97-6	0.1	mg/kg	39.8	2.3	11.8	5.1	0.1
EK026G: Total Cyanide By Discrete	Analyser							
Total Cyanide	57-12-5	1	mg/kg	16	<1	4	2	<1

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Sub-Matrix: SOIL		Clie	ent sample ID	SE053_0.0-0.1	SE054_0.0-0.1	SE055_0.0-0.1	SE056_0.05-0.15	SE057_0.2-0.4
	Cli	ent samplii	ng date / time	15-AUG-2012 15:00	15-AUG-2012 15:00	15-AUG-2012 15:00	15-AUG-2012 15:00	16-AUG-2012 15:00
Compound	CAS Number	LOR	Unit	ES1220305-050	ES1220305-051	ES1220305-052	ES1220305-053	ES1220305-054
EA002 : pH (Soils)								
pH Value		0.1	pH Unit				5.5	5.6
EA055: Moisture Content								
Moisture Content (dried @ 103°C)		1.0	%	23.0	58.1	28.4	27.8	45.3
EG005-SDH: 1M HCI-Extractable Metals	by ICPAES							
Aluminium	7429-90-5	50	mg/kg	4620	2760		870	1570
Antimony	7440-36-0	1.0	mg/kg	3.8	135		6.1	66.1
Arsenic	7440-38-2	1.0	mg/kg	11.0	27.2		14.8	80.8
Cadmium	7440-43-9	0.1	mg/kg	0.1	2.1		6.0	1.4
Cobalt	7440-48-4	0.5	mg/kg	<0.5	0.8		<0.5	0.9
Chromium	7440-47-3	1.0	mg/kg	2.2	<1.0		<1.0	1.5
Copper	7440-50-8	1.0	mg/kg	2.2	95.8		334	197
Iron	7439-89-6	50	mg/kg	940	2930		2040	4550
Lead	7439-92-1	1.0	mg/kg	1.6	78.0		10.2	86.1
Manganese	7439-96-5	10	mg/kg	<10	11		<10	13
Nickel	7440-02-0	1.0	mg/kg	<1.0	1.4		<1.0	1.1
Silver	7440-22-4	1.0	mg/kg	<1.0	<1.0		<1.0	<1.0
Vanadium	7440-62-2	2.0	mg/kg	6.7	23.0		2.6	14.9
Zinc	7440-66-6	1.0	mg/kg	90.6	669		1730	267
EG005T: Total Metals by ICP-AES								
Antimony	7440-36-0	5	mg/kg	15	311	6	8	108
Arsenic	7440-38-2	5	mg/kg	91	179	11	31	208
Cadmium	7440-43-9	1	mg/kg	<1	3	<1	8	3
Chromium	7440-47-3	2	mg/kg	6	27	3	4	30
Copper	7440-50-8	5	mg/kg	12	268	35	415	232
Lead	7439-92-1	5	mg/kg	5	136	14	22	88
Nickel	7440-02-0	2	mg/kg	2	7	<2	<2	7
Zinc	7440-66-6	5	mg/kg	97	925	238	2150	459
EG020-SDH: 1M HCl Extractable metals	by ICPMS							
Selenium	7782-49-2	0.5	mg/kg	0.8	1.4		0.7	1.0
EG035T: Total Recoverable Mercury by	y FIMS							
Mercury	7439-97-6	0.1	mg/kg	<0.1	1.5	<0.1	<0.1	0.7
EK026G: Total Cyanide By Discrete An	alyser							
Total Cyanide	57-12-5	1	mg/kg				<1	4

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Sub-Matrix: SOIL		Clie	ent sample ID	SE061_0.0-0.1	SE005_0.0-0.1	SEDUP05	SE014_0.0-0.05	SE022_0.0-0.05
	Clie		ng date / time	15-AUG-2012 15:00	16-AUG-2012 15:00	16-AUG-2012 15:00	15-AUG-2012 15:00	15-AUG-2012 15:00
		LOR	Unit	ES1220305-055	ES1220305-056	ES1220305-057	ES1220305-058	ES1220305-059
Compound	CAS Number	LUR	Unit	20122000-000	20122000-000	20122000-001	20122000-000	20122000-003
EA002 : pH (Soils)		0.4						
pH Value		0.1	pH Unit	6.4	5.2	4.8	4.4	4.9
EA055: Moisture Content								
Moisture Content (dried @ 103°C)		1.0	%	43.8	74.2	32.8	81.3	75.9
ED007: Exchangeable Cations								
Exchangeable Calcium		0.1	meq/100g	5.8			4.7	
Exchangeable Magnesium		0.1	meq/100g	5.7			4.1	
Exchangeable Potassium		0.1	meq/100g	0.4			1.2	
Exchangeable Sodium		0.1	meq/100g	1.4			1.0	
Cation Exchange Capacity		0.1	meq/100g	13.3			11.0	
EG005-SDH: 1M HCI-Extractable Metals	by ICPAES							
Aluminium	7429-90-5	50	mg/kg	820	10900	1400	4950	7520
Antimony	7440-36-0	1.0	mg/kg	3.9	96.0	2.7	2640	532
Arsenic	7440-38-2	1.0	mg/kg	7.3	28.3	3.5	65.5	43.4
Cadmium	7440-43-9	0.1	mg/kg	<0.1	0.4	<0.1	0.4	0.2
Cobalt	7440-48-4	0.5	mg/kg	<0.5	1.4	<0.5	3.0	3.4
Chromium	7440-47-3	1.0	mg/kg	<1.0	3.5	<1.0	<1.0	1.0
Copper	7440-50-8	1.0	mg/kg	<1.0	37.8	2.2	311	42.5
Iron	7439-89-6	50	mg/kg	1470	3840	1120	8600	8010
Lead	7439-92-1	1.0	mg/kg	<1.0	25.5	2.9	693	191
Manganese	7439-96-5	10	mg/kg	<10	22	<10	42	52
Nickel	7440-02-0	1.0	mg/kg	<1.0	2.6	<1.0	6.5	6.2
Silver	7440-22-4	1.0	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
Vanadium	7440-62-2	2.0	mg/kg	14.0	32.7	10.7	25.8	47.4
Zinc	7440-66-6	1.0	mg/kg	5.1	93.6	3.1	83.1	43.5
EG005T: Total Metals by ICP-AES								
Aluminium	7429-90-5	50	mg/kg					18400
Antimony	7440-36-0	5	mg/kg	<5	188	<5	6640	2690
Arsenic	7440-38-2	5	mg/kg	12	83	7	861	747
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	15	15	10	17	20
Copper	7440-50-8	5	mg/kg	9	310	8	402	88
Lead	7439-92-1	5	mg/kg	7	54	6	931	261
Nickel	7440-02-0	2	mg/kg	6	6	4	8	12
Zinc	7440-66-6	5	mg/kg	21	135	6	230	91
EG020-SDH: 1M HCl Extractable metals	by ICPMS							
Selenium	7782-49-2	0.5	mg/kg	0.8	1.3	0.6	1.6	1.9

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Sub-Matrix: SOIL		Cli	ent sample ID	SE061_0.0-0.1	SE005_0.0-0.1	SEDUP05	SE014_0.0-0.05	SE022_0.0-0.05		
	C	ient sampli	ing date / time	15-AUG-2012 15:00	16-AUG-2012 15:00	16-AUG-2012 15:00	15-AUG-2012 15:00	15-AUG-2012 15:00		
Compound	CAS Number	LOR	Unit	ES1220305-055	ES1220305-056	ES1220305-057	ES1220305-058	ES1220305-059		
EG035T: Total Recoverable Merc	ury by FIMS									
Mercury	7439-97-6	0.1	mg/kg	0.1	0.6	<0.1	20.3	6.9		
EK026G: Total Cyanide By Discre	te Analyser									
Total Cyanide	57-12-5	1	mg/kg	<1	<1	<1	66	46		
EP003: Total Organic Carbon (TOC) in Soil										
Total Organic Carbon		0.02	%	1.69			20.1			

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Sub-Matrix: SOIL		Cli	ent sample ID	SE022_0.2-0.4	SE043_0.1-0.3	SE064_0.0-0.1	SE062_0.0-0.1	SE062_0.2-0.3
	Clie	ent sampli	ing date / time	15-AUG-2012 15:00	15-AUG-2012 15:00	16-AUG-2012 15:00	15-AUG-2012 15:00	15-AUG-2012 15:00
Compound	CAS Number	LOR	Unit	ES1220305-060	ES1220305-061	ES1220305-062	ES1220305-063	ES1220305-064
EA002 : pH (Soils)								
pH Value		0.1	pH Unit		5.5	5.3	4.7	5.7
EA055: Moisture Content								
Moisture Content (dried @ 103°C)		1.0	%	50.7	34.5	84.8	72.8	30.3
ED007: Exchangeable Cations								
Exchangeable Calcium		0.1	meg/100g			6.3		
Exchangeable Magnesium		0.1	meq/100g			6.8		
Exchangeable Potassium		0.1	meq/100g			0.4		
Exchangeable Sodium		0.1	meq/100g			3.6		
Cation Exchange Capacity		0.1	meq/100g			17.2		
EG005-SDH: 1M HCI-Extractable Meta	Is by ICPAES							
Aluminium	7429-90-5	50	mg/kg		580	6560	3950	1190
Antimony	7440-36-0	1.0	mg/kg		7.4	266	1020	2.9
Arsenic	7440-38-2	1.0	mg/kg		2.5	74.6	27.3	2.3
Cadmium	7440-43-9	0.1	mg/kg		<0.1	1.6	6.3	<0.1
Cobalt	7440-48-4	0.5	mg/kg		<0.5	4.4	2.8	0.5
Chromium	7440-47-3	1.0	mg/kg		<1.0	<1.0	<1.0	<1.0
Copper	7440-50-8	1.0	mg/kg		1.4	169	131	3.2
Iron	7439-89-6	50	mg/kg		600	12800	7750	1250
Lead	7439-92-1	1.0	mg/kg		2.6	87.4	155	4.4
Manganese	7439-96-5	10	mg/kg		<10	56	36	<10
Nickel	7440-02-0	1.0	mg/kg		<1.0	8.2	5.3	<1.0
Silver	7440-22-4	1.0	mg/kg		<1.0	<1.0	<1.0	<1.0
Vanadium	7440-62-2	2.0	mg/kg		6.6	42.5	23.3	10.7
Zinc	7440-66-6	1.0	mg/kg		1.8	526	512	5.0
EG005T: Total Metals by ICP-AES								
Aluminium	7429-90-5	50	mg/kg				11200	4790
Antimony	7440-36-0	5	mg/kg	58	10	4210	3120	<5
Arsenic	7440-38-2	5	mg/kg	115	9	2230	352	6
Cadmium	7440-43-9	1	mg/kg	<1	<1	2	2	<1
Chromium	7440-47-3	2	mg/kg	17	8	42	28	8
Copper	7440-50-8	5	mg/kg	9	6	653	767	6
Lead	7439-92-1	5	mg/kg	14	7	449	620	5
Nickel	7440-02-0	2	mg/kg	8	2	10	10	3
Zinc	7440-66-6	5	mg/kg	12	6	449	577	<5
EG020-SDH: 1M HCl Extractable meta	ls by ICPMS							
Selenium	7782-49-2	0.5	mg/kg		<0.5	1.9	1.1	0.6

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Sub-Matrix: SOIL		Cli	ent sample ID	SE022_0.2-0.4	SE043_0.1-0.3	SE064_0.0-0.1	SE062_0.0-0.1	SE062_0.2-0.3
	CI	ient sampli	ng date / time	15-AUG-2012 15:00	15-AUG-2012 15:00	16-AUG-2012 15:00	15-AUG-2012 15:00	15-AUG-2012 15:00
Compound	CAS Number	LOR	Unit	ES1220305-060	ES1220305-061	ES1220305-062	ES1220305-063	ES1220305-064
EG035T: Total Recoverable Merc	cury by FIMS							
Mercury	7439-97-6	0.1	mg/kg	0.1	<0.1	4.4	8.1	<0.1
EK026G: Total Cyanide By Discre	ete Analyser							
Total Cyanide	57-12-5	1	mg/kg		<1	<2	34	<1
EP003: Total Organic Carbon (TC	OC) in Soil							
Total Organic Carbon		0.02	%			17.3		

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Sub-Matrix: SOIL		Clie	ent sample ID	SE066_0.0-0.1	SE013_0.0-0.1	BH031_0.0-0.2	BH031_0.5-0.7	BH031_1.8-2.0
	Clie	ent sampli	ng date / time	15-AUG-2012 15:00	16-AUG-2012 15:00	15-AUG-2012 15:00	15-AUG-2012 15:00	15-AUG-2012 15:00
Compound	CAS Number	LOR	Unit	ES1220305-065	ES1220305-066	ES1220305-067	ES1220305-068	ES1220305-069
EA150: Particle Sizing								
+75μm		1	%			76	72	20
+150µm		1	%			53	47	12
+300µm		1	%			25	20	6
+425µm		1	%			14	10	4
+600µm		1	%			8	5	2
+1180µm		1	%			2	<1	1
+2.36mm		1	%			<1	<1	<1
+4.75mm		1	%			<1	<1	<1
+9.5mm		1	%			<1	<1	<1
+19.0mm		1	%			<1	<1	<1
+37.5mm		1	%			<1	<1	<1
+75.0mm		1	%			<1	<1	<1
EA002 : pH (Soils)								
pH Value		0.1	pH Unit	5.0	4.5			
EA055: Moisture Content								
Moisture Content (dried @ 103°C)		1.0	%	79.0	66.5			
EA150: Soil Classification based on Particle	e Size							
Clay (<2 µm)		1	%			9	9	36
Silt (2-60 µm)		1	%			14	17	44
Sand (0.06-2.00 mm)		1	%			77	74	19
Gravel (>2mm)		1	%			<1	<1	1
Cobbles (>6cm)		1	%			<1	<1	<1
EG005-SDH: 1M HCI-Extractable Metals by	ICPAES							
Aluminium	7429-90-5	50	mg/kg	3340	2660			
Antimony	7440-36-0	1.0	mg/kg	90.9	972			
Arsenic	7440-38-2	1.0	mg/kg	91.4	105			
Cadmium	7440-43-9	0.1	mg/kg	4.8	0.2			
Cobalt	7440-48-4	0.5	mg/kg	3.2	1.9			
Chromium	7440-47-3	1.0	mg/kg	<1.0	1.2			
Copper	7440-50-8	1.0	mg/kg	70.5	144			
Iron	7439-89-6	50	mg/kg	6900	4520			
Lead	7439-92-1	1.0	mg/kg	26.9	415			
Manganese	7439-96-5	10	mg/kg	40	33			
Nickel	7440-02-0	1.0	mg/kg	6.4	4.1			
Silver	7440-22-4	1.0	mg/kg	<1.0	<1.0			
Vanadium	7440-62-2	2.0		17.2	16.8			

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Sub-Matrix: SOIL		Cli	ent sample ID	SE066_0.0-0.1	SE013_0.0-0.1	BH031_0.0-0.2	BH031_0.5-0.7	BH031_1.8-2.0
	Cli	ent sampli	ing date / time	15-AUG-2012 15:00	16-AUG-2012 15:00	15-AUG-2012 15:00	15-AUG-2012 15:00	15-AUG-2012 15:00
Compound	CAS Number	LOR	Unit	ES1220305-065	ES1220305-066	ES1220305-067	ES1220305-068	ES1220305-069
EG005-SDH: 1M HCI-Extractable	Metals by ICPAES - Cont	inued						
Zinc	7440-66-6	1.0	mg/kg	953	43.6			
EG005T: Total Metals by ICP-AE	S							
Aluminium	7429-90-5	50	mg/kg		6220			
Antimony	7440-36-0	5	mg/kg	130	8900			
Arsenic	7440-38-2	5	mg/kg	286	1660			
Cadmium	7440-43-9	1	mg/kg	4	<1			
Chromium	7440-47-3	2	mg/kg	12	29			
Copper	7440-50-8	5	mg/kg	87	230			
Lead	7439-92-1	5	mg/kg	21	1500			
Nickel	7440-02-0	2	mg/kg	10	5			
Zinc	7440-66-6	5	mg/kg	1130	73			
EG020-SDH: 1M HCl Extractable	metals by ICPMS							
Selenium	7782-49-2	0.5	mg/kg	1.0	0.8			
EG035T: Total Recoverable Mer	cury by FIMS							
Mercury	7439-97-6	0.1	mg/kg	0.2	48.6			
EK026G: Total Cyanide By Discr	ete Analyser							
Total Cyanide	57-12-5	1	mg/kg	4	82			

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Sub-Matrix: SOIL		Clie	ent sample ID	BH031_1.0-1.2	BHDUP07	BHDUP06	BH053_0.3-0.5	BH053_1.5-1.7
	CI	ient sampli	ng date / time	15-AUG-2012 15:00	16-AUG-2012 15:00	16-AUG-2012 15:00	14-AUG-2012 15:00	14-AUG-2012 15:00
Compound	CAS Number	LOR	Unit	ES1220305-070	ES1220305-074	ES1220305-078	ES1220305-079	ES1220305-080
EA002 : pH (Soils)								
pH Value		0.1	pH Unit				5.2	5.9
EA055: Moisture Content								
Moisture Content (dried @ 103°C)		1.0	%	24.2	26.3	16.3	22.5	65.4
ED007: Exchangeable Cations								
Exchangeable Calcium		0.1	meq/100g				0.2	7.0
Exchangeable Magnesium		0.1	meq/100g				0.3	7.7
Exchangeable Potassium		0.1	meq/100g				0.5	0.6
Exchangeable Sodium		0.1	meq/100g				0.4	3.8
Cation Exchange Capacity		0.1	meq/100g				1.5	19.2
EG005T: Total Metals by ICP-AES								
Aluminium	7429-90-5	50	mg/kg				1370	17300
Antimony	7440-36-0	5	mg/kg	9670	3290	<5	5320	150
Arsenic	7440-38-2	5	mg/kg	5280	126	5	3560	1330
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	9	10	13	11	18
Copper	7440-50-8	5	mg/kg	21	34	7	26	22
Lead	7439-92-1	5	mg/kg	133	64	5	329	25
Nickel	7440-02-0	2	mg/kg	9	20	<2	3	9
Zinc	7440-66-6	5	mg/kg	24	82	15	19	14
EG035T: Total Recoverable Mercury by	y FIMS							
Mercury	7439-97-6	0.1	mg/kg	58.3	1.3	<0.1	35.8	1.2
EK026G: Total Cyanide By Discrete An	alyser							
Total Cyanide	57-12-5	1	mg/kg				39	15
EN33: TCLP Leach								
Initial pH		0.1	pH Unit				5.8	6.0
After HCI pH		0.1	pH Unit				1.6	1.7
Extraction Fluid Number		1	-				1	1
Final pH		0.1	pH Unit				4.9	4.9
EP003: Total Organic Carbon (TOC) in	Soil							
Total Organic Carbon		0.02	%				0.20	9.46

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Sub-Matrix: SOIL		Cli	ent sample ID	BH053_3.2-3.5	BH001_0.3-0.5	BH024_0.3-0.5	BH024_1.0-1.2	BH024_2.0-2.2
	CI	ient sampli	ng date / time	14-AUG-2012 15:00	16-AUG-2012 15:00	14-AUG-2012 15:00	14-AUG-2012 15:00	14-AUG-2012 15:00
Compound	CAS Number	LOR	Unit	ES1220305-081	ES1220305-082	ES1220305-083	ES1220305-084	ES1220305-085
EA002 : pH (Soils)								
pH Value		0.1	pH Unit	7.5	3.6	4.0	6.1	6.1
EA055: Moisture Content								
Moisture Content (dried @ 103°C)		1.0	%	21.9	5.4	34.2	41.0	35.3
ED007: Exchangeable Cations								
Exchangeable Calcium		0.1	meq/100g	2.0				
Exchangeable Magnesium		0.1	meq/100g	3.5				
Exchangeable Potassium		0.1	meq/100g	0.4				
Exchangeable Sodium		0.1	meq/100g	2.4				
Cation Exchange Capacity		0.1	meq/100g	8.3				
EG005T: Total Metals by ICP-AES								
Aluminium	7429-90-5	50	mg/kg	6780	2970			
Antimony	7440-36-0	5	mg/kg	23	3660	6640	192	31
Arsenic	7440-38-2	5	mg/kg	80	1520	4050	130	33
Cadmium	7440-43-9	1	mg/kg	<1	<1			
Chromium	7440-47-3	2	mg/kg	11	7			
Copper	7440-50-8	5	mg/kg	<5	630			
Lead	7439-92-1	5	mg/kg	14	18			
Nickel	7440-02-0	2	mg/kg	<2	2			
Zinc	7440-66-6	5	mg/kg	<5	30			
EG035T: Total Recoverable Mercury	by FIMS							
Mercury	7439-97-6	0.1	mg/kg	0.4	38.3			
EK026G: Total Cyanide By Discrete A	Analyser							
Total Cyanide	57-12-5	1	mg/kg	<1	<1	32	3	1
EN33: TCLP Leach								
Initial pH		0.1	pH Unit	8.2		4.7	6.1	6.1
After HCI pH		0.1	pH Unit	1.6			1.8	1.7
Extraction Fluid Number		1	-	1		1	1	1
Final pH		0.1	pH Unit	4.9		4.9	4.9	4.9
EP003: Total Organic Carbon (TOC) i	n Soil							
Total Organic Carbon		0.02	%	0.29				

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ALS

Sub-Matrix: SOIL	CI		ent sample ID	BH004_0.0-0.2 16-AUG-2012 15:00	BH077_0.3-0.5 14-AUG-2012 15:00	BH077_1.0-1.2 14-AUG-2012 15:00	BH077_1.5-1.7 14-AUG-2012 15:00	BH084_1.0-1.2 15-AUG-2012 15:00
		LOR	Unit	ES1220305-086	ES1220305-087	ES1220305-089	ES1220305-090	ES1220305-091
Compound	CAS Number	LOR	Onit		20122000	20122000		20.22000
EA002 : pH (Soils)		0.1	pH Unit			4.0	5.2	F 9
pH Value		0.1	pH Unit		3.4	4.8	5.2	5.3
EA055: Moisture Content			24					
Moisture Content (dried @ 103°C)		1.0	%	9.2	41.0	20.8	63.4	42.9
ED007: Exchangeable Cations								
Exchangeable Calcium		0.1	meq/100g		1.0	0.6	7.8	
Exchangeable Magnesium		0.1	meq/100g		0.4	0.7	8.7	
Exchangeable Potassium		0.1	meq/100g		0.4	0.4	0.7	
Exchangeable Sodium		0.1	meq/100g		0.5	0.4	4.2	
Cation Exchange Capacity		0.1	meq/100g		2.2	2.0	21.3	
EG005T: Total Metals by ICP-AES								
Aluminium	7429-90-5	50	mg/kg		9100	10300	14500	
Antimony	7440-36-0	5	mg/kg	4700	93	36	882	2730
Arsenic	7440-38-2	5	mg/kg	1950	157	156	2130	518
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	
Chromium	7440-47-3	2	mg/kg	18	15	14	17	
Copper	7440-50-8	5	mg/kg	136	28	10	51	
Lead	7439-92-1	5	mg/kg	150	24	17	170	
Nickel	7440-02-0	2	mg/kg	<2	5	3	8	
Zinc	7440-66-6	5	mg/kg	47	9	11	33	
EG035T: Total Recoverable Mercui	ry by FIMS							
Mercury	7439-97-6	0.1	mg/kg	61.2	0.8	0.6	5.4	5.1
EK026G: Total Cyanide By Discrete	Analyser							
Total Cyanide	57-12-5	1	mg/kg		1	<1	19	22
EN33: TCLP Leach	32 0							!
Initial pH		0.1	pH Unit		3.8	4.5	6.0	5.9
After HCI pH		0.1	pH Unit				1.8	1.7
Extraction Fluid Number		1	-		1	1	1	1
Final pH		0.1	pH Unit		4.8	4.9	4.9	4.9
•			p 5				*	•
EP003: Total Organic Carbon (TOC		0.02	%		15.5	0.30	17.6	
Total Organic Carbon		0.02	/0		15.5	0.30	17.0	

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Sub-Matrix: SOIL		Clie	ent sample ID	BH084_1.5-1.7	TB01	TB02	BRICK01	BRICK02
					(AKA TRIP BLANK 8)	(AKA TRIP BLANK 9)		
	ient sampli	ng date / time	15-AUG-2012 15:00	06-AUG-2012 15:00	06-AUG-2012 15:00	17-AUG-2012 15:00	17-AUG-2012 15:00	
Compound	CAS Number	LOR	Unit	ES1220305-092	ES1220305-096	ES1220305-097	ES1220305-111	ES1220305-112
EA002 : pH (Soils)								
pH Value		0.1	pH Unit	5.6				
EA055: Moisture Content								
Moisture Content (dried @ 103°C)		1.0	%	64.5			2.6	1.2
EG005T: Total Metals by ICP-AES								
Antimony	7440-36-0	5	mg/kg	3220	<5	<5	<5	<5
Arsenic	7440-38-2	5	mg/kg	387	<5	<5	<5	7
Cadmium	7440-43-9	1	mg/kg				<1	<1
Chromium	7440-47-3	2	mg/kg				6	11
Copper	7440-50-8	5	mg/kg				<5	6
Lead	7439-92-1	5	mg/kg				<5	6
Nickel	7440-02-0	2	mg/kg				3	6
Zinc	7440-66-6	5	mg/kg				10	14
EG035T: Total Recoverable Mercury by F	IMS							
Mercury	7439-97-6	0.1	mg/kg	<0.1			<0.1	<0.1
EK026G: Total Cyanide By Discrete Analy	ser							
Total Cyanide	57-12-5	1	mg/kg	83				
EN33: TCLP Leach								
Initial pH		0.1	pH Unit	5.9				
After HCI pH		0.1	pH Unit	1.7				
Extraction Fluid Number		1	-	1				
Final pH		0.1	pH Unit	4.9				

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Sub-Matrix: SOIL		Clie	ent sample ID	SE004_0.0-0.1	SE011_0.3-0.5	 	
	Client sampling date / time			16-AUG-2012 15:00	14-AUG-2012 15:00	 	
Compound	CAS Number	LOR	Unit	ES1220305-144	ES1220305-145	 	
EA002 : pH (Soils)							
pH Value		0.1	pH Unit	5.0	5.2	 	
EA055: Moisture Content							
Moisture Content (dried @ 103°C)		1.0	%	80.5	30.6	 	
EG005-SDH: 1M HCI-Extractable Metals b	ov ICPAES						
Aluminium	7429-90-5	50	mg/kg	7550		 	
Antimony	7440-36-0	1.0	mg/kg	92.4		 	
Arsenic	7440-38-2	1.0	mg/kg	11.7		 	
Cadmium	7440-43-9	0.1	mg/kg	0.3		 	
Cobalt	7440-48-4	0.5	mg/kg	1.4		 	
Chromium	7440-47-3	1.0	mg/kg	<1.0		 	
Copper	7440-50-8	1.0	mg/kg	50.4		 	
Iron	7439-89-6	50	mg/kg	7050		 	
Lead	7439-92-1	1.0	mg/kg	28.6		 	
Manganese	7439-96-5	10	mg/kg	35		 	
Nickel	7440-02-0	1.0	mg/kg	3.9		 	
Silver	7440-22-4	1.0	mg/kg	<1.0		 	
Vanadium	7440-62-2	2.0	mg/kg	40.3		 	
Zinc	7440-66-6	1.0	mg/kg	70.0		 	
EG005T: Total Metals by ICP-AES							
Antimony	7440-36-0	5	mg/kg	242	<5	 	
Arsenic	7440-38-2	5	mg/kg	22	17	 	
Cadmium	7440-43-9	1	mg/kg	<1	<1	 	
Chromium	7440-47-3	2	mg/kg	15	10	 	
Copper	7440-50-8	5	mg/kg	73	8	 	
Lead	7439-92-1	5	mg/kg	37	<5	 	
Nickel	7440-02-0	2	mg/kg	6	3	 	
Zinc	7440-66-6	5	mg/kg	74	<5	 	
EG020-SDH: 1M HCl Extractable metals b	OY ICPMS						
Selenium	7782-49-2	0.5	mg/kg	1.4		 	
EG035T: Total Recoverable Mercury by F	FIMS						
Mercury	7439-97-6	0.1	mg/kg	0.2	<0.1	 	
EK026G: Total Cyanide By Discrete Analy	yser						
Total Cyanide	57-12-5	1	mg/kg	2	<1	 	