

# Appendices

# Appendix E - Borelogs



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

Bore No.: BH001
Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land	Drill Co: GHD	Easting: 500866
Project: Urunga Antimony RAP	Driller: MK	Northing: 6625256
Project No.: 2216251	Rig Type: AS	Grid Ref: GDA94_MGA_zone_56
Location:	Total Depth (m): 1.5	Elevation: 0
Date Drilled: 16/08/2012	to: 16/08/2012	Diameter (mm): 150
		Logged by: JS
		Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	AS					Ground Surface:				0.00
			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			BH001_1.0-1.2			silty CLAY Trace Sand,orange	M			-1.00 1.00
										-1.50 1.50
2.0										
3.0										
4.0										

NOTES:

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

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



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

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 to: 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 Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	AS		BH002_0.0-0.2						0.00	
						sandy SILT Trace Clay, trace Gravel (fine grained), brown	D			0.00
			BH002_0.5-0.7			silty CLAY Trace Sand, orange/ brown	D		BHDUP06	-0.50 0.50
			BH002_1.0-1.2							-1.20 1.20
1.0	HA				CLAY Some Silt, trace Sand, orange/ brown	M			-1.40 1.40	
2.0										
3.0										
4.0										

**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  
 RT(x) Rotary Triple Tube  
 PC(x) Percussion Cable Tool  
 PD(x) Percussion Down Hole  
 Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.

PSC(x) Percussion Simultaneous Casing  
 AS Augering - Solid Flight  
 AH Augering - Hollow Flight  
 H Hand Augering

**Moisture Abbreviations:**

D Dry  
 M Moist  
 W Wet

**Consistency:**

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

**Cohesive Soils**

(VS) Very Soft (ST) Stiff  
 (S) Soft (VST) Very Stiff  
 (F) Firm (H) Hard



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

Bore No.: BH003
Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land	Drill Co: GHD	Easting: 500854
Project: Urunga Antimony RAP	Driller: MK	Northing: 6625193
Project No.: 2216251	Rig Type: AS	Grid Ref: GDA94_MGA_zone_56
Location:	Total Depth (m): 1.2	Elevation: 0
Date Drilled: 16/08/2012	to: 16/08/2012	Diameter (mm): 150
		Logged by: JS
		Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	AS					Ground Surface:				0.00
			BH003_0.0-0.2			sandy SILT Some Gravel (fine grained), brown	D/M			0.00
						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										-1.20 1.20
			BH003_1.0-1.2							
2.0										
3.0										
4.0										

NOTES:

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

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



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

Bore No.: BH004
Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land	Drill Co: GHD	Easting: 500847
Project: Urunga Antimony RAP	Driller: MK	Northing: 6625160
Project No.: 2216251	Rig Type: AS	Grid Ref: GDA94_MGA_zone_56
Location:	Total Depth (m): 2.2	Elevation: 0
Date Drilled: 16/08/2012	to: 16/08/2012	Diameter (mm): 150
		Logged by: JS
		Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water					
0.0	AS		BH004_0.0-0.2		Ground Surface: sandy SILT Trace Gravel (fine grained), brown	D		BHLABDUP02	0.00
			BH004_0.5-0.7						-0.70
					silty CLAY Some Sand, brown/ mottled grey	M			0.70
1.0			BH004_1.0-1.2		silty SAND dark grey	W			-1.00
	HA								-1.50
			BH004_1.5-1.7		clayey SILT Trace Sand, dark brown	W			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:**

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

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



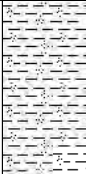
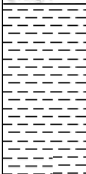


# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

Bore No.: BH006
Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land	Drill Co: GHD	Easting: 500824
Project: Urunga Antimony RAP	Driller: JS	Northing: 6625115
Project No.: 2216251	Rig Type: HA	Grid Ref: GDA94_MGA_zone_56
Location:	Total Depth (m): 1	Elevation: 0
Date Drilled: 3/08/2012	Diameter (mm): 50	Logged by: BC
to: 3/08/2012		Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA		BH006_0.0-0.3			sandy SILT brown/ grey	W			0.00 0.00
			BH006_0.5-0.8				SILT Trace Sand, grey	W	BHDUP06	
1.0										
2.0										
3.0										
4.0										

**NOTES:**

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

<b>Drilling Abbreviations:</b> RW(x) Rotary Wash RT(x) Rotary Triple Tube PC(x) Percussion Cable Tool PD(x) Percussion Down Hole Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.	<b>Moisture Abbreviations:</b> D Dry M Moist W Wet	<b>Consistency:</b> <b>Granular Soils</b> (VL) Very Loose (D) Dense (L) Loose (VD) Very Dense (MD) Medium Dense <b>Cohesive Soils</b> (VS) Very Soft (ST) Stiff (S) Soft (VST) Very Stiff (F) Firm (H) Hard
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# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

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 to: 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 Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA					Ground Surface:				0.00
			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
			BH011_0.4-0.6			clayey SAND Gravel, dark grey	W			-0.40 0.40
1.0										
2.0										
3.0										
4.0										

**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  
 RT(x) Rotary Triple Tube  
 PC(x) Percussion Cable Tool  
 PD(x) Percussion Down Hole  
 Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.

PSC(x) Percussion Simultaneous Casing  
 AS Augering - Solid Flight  
 AH Augering - Hollow Flight  
 H Hand Augering

**Moisture Abbreviations:**

D Dry  
 M Moist  
 W Wet

**Consistency:**

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

**Cohesive Soils**

(VS) Very Soft (ST) Stiff  
 (S) Soft (VST) Very Stiff  
 (F) Firm (H) Hard



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

Bore No.: BH012
Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land	Drill Co: GHD	Easting: 500845
Project: Urunga Antimony RAP	Driller: BL/BJ	Northing: 6625013
Project No.: 2216251	Rig Type: HA	Grid Ref: GDA94_MGA_zone_56
Location:	Total Depth (m): 0.6	Elevation: 0
Date Drilled: 16/08/2012	to: 16/08/2012	Diameter (mm): 50
		Logged by: BL/BJ
		Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA		BH012_0.0-0.1			M		BHDUP08	0.00	
						sandy SILT dark brown				0.00
			BH012_0.4-0.6			W			-0.40	
						sandy CLAY grey				0.40
1.0									-0.60	
2.0									0.60	
3.0										
4.0										

**NOTES:**

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

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



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

Bore No.: BH014
Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land	Drill Co: GHD	Easting: 500878
Project: Urunga Antimony RAP	Driller: BL/BJ	Northing: 6625064
Project No.: 2216251	Rig Type: HA	Grid Ref: GDA94_MGA_zone_56
Location:	Total Depth (m): 0.6	Elevation: 0
Date Drilled: 16/08/2012	to: 16/08/2012	Diameter (mm): 50
	Logged by: BL/BJ	Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA					Ground Surface:				0.00
			BH014_0.0-0.1			silty SAND dark brown	M			0.00
						clayey SAND orange	M			-0.40
			BH014_0.4-0.6							0.40
										-0.60
										0.60
1.0										
2.0										
3.0										
4.0										

NOTES:

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

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



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

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 to: 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 Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	AS		BH020_0.0-0.2			Ground Surface: sandy SILT Some Clay,brown	M		0.00	
			BH020_0.3-0.5							
1.0			BH020_1.0-1.2			sandy CLAY Trace Silt,orange	M		-0.80	
2.0										
3.0										
4.0										

**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  
 RT(x) Rotary Triple Tube  
 PC(x) Percussion Cable Tool  
 PD(x) Percussion Down Hole  
 Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.

PSC(x) Percussion Simultaneous Casing  
 AS Augering - Solid Flight  
 AH Augering - Hollow Flight  
 H Hand Augering

**Moisture Abbreviations:**

D Dry  
 M Moist  
 W Wet

**Consistency:**

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

**Cohesive Soils**

(VS) Very Soft (ST) Stiff  
 (S) Soft (VST) Very Stiff  
 (F) Firm (H) Hard



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

Bore No.: BH021
Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land	Drill Co: GHD	Easting: 500886
Project: Urunga Antimony RAP	Driller: MK	Northing: 6625236
Project No.: 2216251	Rig Type: HA	Grid Ref: GDA94_MGA_zone_56
Location:	Total Depth (m): 0.3	Elevation: 0
Date Drilled: 16/08/2012	to: 16/08/2012	Diameter (mm): 50
		Logged by: JS
		Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA		BH021_0.0-0.2			Ground Surface:			0.00	
						sandy SILT brown	D			0.00
						Auger Refusal, gravel and roots				-0.30 0.30
1.0										
2.0										
3.0										
4.0										

NOTES:

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

<b>Drilling Abbreviations:</b>		<b>Moisture Abbreviations:</b>		<b>Consistency:</b>		<b>Cohesive Soils</b>	
RW(x) Rotary Wash	PSC(x) Percussion Simultaneous Casing	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff	
RT(x) Rotary Triple Tube	AS Augering - Solid Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff	
PC(x) Percussion Cable Tool	AH Augering - Hollow Flight	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard	
PD(x) Percussion Down Hole	H Hand Augering						

Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

Bore No.: BH022
Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land	Drill Co: GHD	Easting: 500873
Project: Urunga Antimony RAP	Driller: MK	Northing: 6625212
Project No.: 2216251	Rig Type: AS	Grid Ref: GDA94_MGA_zone_56
Location:	Total Depth (m): 0.8	Elevation: 0
Date Drilled: 16/08/2012	to: 16/08/2012	Diameter (mm): 150
		Logged by: JS
		Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	AS		BH022_0.0-0.2			SILT Some Gravel, some Sand, trace Cobbles, brown	M		0.00	
			BH022_0.5-0.7				clayey SILT Some Sand, trace Gravel, brown	M		-0.30 0.30
1.0						Auger Refusal- Cobbles				-0.80 0.80
2.0										
3.0										
4.0										

NOTES:

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

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









# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

Bore No.: BH027
Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land	Drill Co: GHD	Easting: 500929
Project: Urunga Antimony RAP	Driller: BL/BJ	Northing: 6625080
Project No.: 2216251	Rig Type: HA	Grid Ref: GDA94_MGA_zone_56
Location:	Total Depth (m): 0.6	Elevation: 0
Date Drilled: 16/08/2012	to: 16/08/2012	Diameter (mm): 50
	Logged by: BL/BJ	Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA					Ground Surface:				0.00
			BH027_0.0-0.1			silty SAND Organic matter, grey/ dark brown	W			0.00
			BH027_0.1-0.3							-0.40
			BH027_0.4-0.6			sandy CLAY mottled grey/ orange	M			0.40
										-0.60
1.0										0.60
2.0										
3.0										
4.0										

NOTES:

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

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



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

Bore No.: BH028
Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land	Drill Co: GHD	Easting: 500874
Project: Urunga Antimony RAP	Driller: MK	Northing: 6625286
Project No.: 2216251	Rig Type: AS	Grid Ref: GDA94_MGA_zone_56
Location:	Total Depth (m): 1	Elevation: 0
Date Drilled: 16/08/2012	to: 16/08/2012	Diameter (mm): 150
		Logged by: JS
		Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	AS		BH028_0.0-0.2						0.00	
						Ground Surface:				0.00
			BH028_0.3-0.5			silty GRAVEL Trace Sand, Trace Cobbles, brown	D			-0.30
						sandy SILT Some Gravel, brown	D/M			0.30
									-0.60	
			BH028_0.8-1.0			silty CLAY Trace Sand, orange/ brown	M		0.60	
1.0									-1.00	
									1.00	
2.0										
3.0										
4.0										

NOTES:

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

<b>Drilling Abbreviations:</b>		<b>Moisture Abbreviations:</b>		<b>Consistency:</b>		<b>Cohesive Soils</b>	
RW(x) Rotary Wash	PSC(x) Percussion Simultaneous Casing	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff	
RT(x) Rotary Triple Tube	AS Augering - Solid Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff	
PC(x) Percussion Cable Tool	AH Augering - Hollow Flight	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard	
PD(x) Percussion Down Hole	H Hand Augering						

Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

Bore No.: BH029
Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land	Drill Co: GHD	Easting: 500870
Project: Urunga Antimony RAP	Driller: MK	Northing: 6625300
Project No.: 2216251	Rig Type: AS	Grid Ref: GDA94_MGA_zone_56
Location:	Total Depth (m): 0.7	Elevation: 0
Date Drilled: 16/08/2012	to: 16/08/2012	Diameter (mm): 150
		Logged by: JS
		Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	AS		BH029_0.0-0.2			M			0.00	
			BH029_0.5-0.7						-0.70	
1.0									0.70	
2.0										
3.0										
4.0										

NOTES:

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

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



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

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 to: 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 Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA					Ground Surface:				0.00
			BH030_0.0-0.2			silty SAND grey	D/M			0.00
			BH030_0.5-0.7							
			BH030_1.5-1.7							
			BH030_1.8-2.0							
						clayey SILT dark brown	W			-1.70 1.70
2.0										-2.00 2.00
3.0										
4.0										

**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  
 RT(x) Rotary Triple Tube  
 PC(x) Percussion Cable Tool  
 PD(x) Percussion Down Hole  
 Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.

PSC(x) Percussion Simultaneous Casing  
 AS Augering - Solid Flight  
 AH Augering - Hollow Flight  
 H Hand Augering

**Moisture Abbreviations:**

D Dry  
 M Moist  
 W Wet

**Consistency:**

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

**Cohesive Soils**

(VS) Very Soft (ST) Stiff  
 (S) Soft (VST) Very Stiff  
 (F) Firm (H) Hard



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

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: 15/08/2012

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 Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA					Ground Surface:				0.00
			BH031_0.0-0.2			silty SAND grey	M			0.00
			BH031_0.5-0.7			brown/ grey	M			-0.50 0.50
1.0			BH031_1.0-1.2			brown/ purple	M			-1.00 1.00
			BH031_1.8-2.0			clayey SILT Trace Sand, dark brown	W			-1.50 1.50
3.0										-3.00 3.00
4.0										

**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  
 RT(x) Rotary Triple Tube  
 PC(x) Percussion Cable Tool  
 PD(x) Percussion Down Hole  
 Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.

PSC(x) Percussion Simultaneous Casing  
 AS Augering - Solid Flight  
 AH Augering - Hollow Flight  
 H Hand Augering

**Moisture Abbreviations:**

D Dry  
 M Moist  
 W Wet

**Consistency:**

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

**Cohesive Soils**

(VS) Very Soft (ST) Stiff  
 (S) Soft (VST) Very Stiff  
 (F) Firm (H) Hard



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

Bore No.: BH032
Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land	Drill Co: GHD	Easting: 500919
Project: Urunga Antimony RAP	Driller: MK	Northing: 6625151
Project No.: 2216251	Rig Type: HA	Grid Ref: GDA94_MGA_zone_56
Location:	Total Depth (m): 1.8	Elevation: 0
Date Drilled: 14/08/2012	to: 14/08/2012	Diameter (mm): 50
		Logged by: JS
		Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA		BH032_0.0-0.2			W			0.00	
			BH032_0.3-0.5			W				-0.30 0.30
1.0			BH032_1.0-1.2			M				-1.00 1.00
			BH032_1.5-1.8							-1.80 1.80
2.0										
3.0										
4.0										

**NOTES:**

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

<b>Drilling Abbreviations:</b> RW(x) Rotary Wash RT(x) Rotary Triple Tube PC(x) Percussion Cable Tool PD(x) Percussion Down Hole Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.	<b>Moisture Abbreviations:</b> D Dry M Moist W Wet	<b>Consistency:</b> <b>Granular Soils</b> (VL) Very Loose (D) Dense (L) Loose (VD) Very Dense (MD) Medium Dense	<b>Cohesive Soils</b> (VS) Very Soft (ST) Stiff (S) Soft (VST) Very Stiff (F) Firm (H) Hard
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# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

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

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA		BH034_0.0-0.1			M		BHDUP04	0.00	
			BH034_0.3-0.5			M			-0.30	
			BH034_07-0.9						0.30	
									-0.90	
1.0									0.90	
2.0										
3.0										
4.0										

**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  
 RT(x) Rotary Triple Tube  
 PC(x) Percussion Cable Tool  
 PD(x) Percussion Down Hole  
 Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.

PSC(x) Percussion Simultaneous Casing  
 AS Augering - Solid Flight  
 AH Augering - Hollow Flight  
 H Hand Augering

**Moisture Abbreviations:**

D Dry  
 M Moist  
 W Wet

**Consistency:**

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

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

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





# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

Bore No.: BH039
Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land	Drill Co: GHD	Easting: 500876
Project: Urunga Antimony RAP	Driller: MK	Northing: 6625186
Project No.: 2216251	Rig Type: AS	Grid Ref: GDA94_MGA_zone_56
Location:	Total Depth (m): 2.8	Elevation: 0
Date Drilled: 16/08/2012	to: 16/08/2012	Diameter (mm): 150
	Logged by: JS	Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water					
0.0	AS		BH039_0.0-0.2		Ground Surface: sandy SILT Trace Clay and Gravel,brown	D			0.00 0.00
					silty CLAY Some Sand, trace Gravel,brown/ orange	M			-0.30 0.30
			BH039_0.5-0.7						
					brown	M			-0.90 0.90
1.0			BH039_1.0-1.2						
	HA				clayey SAND Some Silt,grey	W			-1.30 1.30
			BH039_1.5-1.7						
2.0			BH039_2.0-2.2		clayey SILT Trace Sand,dark brown	W			-2.20 2.20
			BH039_2.2-2.4		clayey SAND Some Silt,grey	W			-2.40 2.40
									-2.80 2.80
3.0									
4.0									

**NOTES:**

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

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

ENVIRONMENTAL - SOIL BORE

Bore No.: BH040
Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land	Drill Co: GHD	Easting: 500918
Project: Urunga Antimony RAP	Driller: MK	Northing: 6625272
Project No.: 2216251	Rig Type: HA	Grid Ref: GDA94_MGA_zone_56
Location:	Total Depth (m): 0.5	Elevation: 0
Date Drilled: 15/08/2012	to: 15/08/2012	Diameter (mm): 50
	Logged by: JS	Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA		BH040_0.0-0.2			D/M			0.00	
			BH040_0.3-0.5						-0.50	
1.0									0.50	
2.0										
3.0										
4.0										

NOTES:

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

<b>Drilling Abbreviations:</b> RW(x) Rotary Wash RT(x) Rotary Triple Tube PC(x) Percussion Cable Tool PD(x) Percussion Down Hole Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.	<b>Moisture Abbreviations:</b> D Dry M Moist W Wet	<b>Consistency:</b> <b>Granular Soils</b> (VL) Very Loose (D) Dense (L) Loose (VD) Very Dense (MD) Medium Dense	<b>Cohesive Soils</b> (VS) Very Soft (ST) Stiff (S) Soft (VST) Very Stiff (F) Firm (H) Hard
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# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

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 to: 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 Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA		BH041_0.0-0.2			M			0.00	
			BH041_0.5-0.7							
			BH041_1.0-1.2							
1.0							W			-1.00 1.00
									-1.20 1.20	
2.0										
3.0										
4.0										

**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  
 RT(x) Rotary Triple Tube  
 PC(x) Percussion Cable Tool  
 PD(x) Percussion Down Hole  
 Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.

PSC(x) Percussion Simultaneous Casing  
 AS Augering - Solid Flight  
 AH Augering - Hollow Flight  
 H Hand Augering

**Moisture Abbreviations:**

D Dry  
 M Moist  
 W Wet

**Consistency:**

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

**Cohesive Soils**

(VS) Very Soft (ST) Stiff  
 (S) Soft (VST) Very Stiff  
 (F) Firm (H) Hard



# BOREHOLE LOG

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	Checked by: BC
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DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA					Ground Surface:				0.00
			BH042_0.0-0.2			silty SAND grey	M			0.00
			BH042_0.3-0.5			sandy SILT Trace Wood, grey	W			-0.30 0.30
1.0			BH042_1.0-1.2			SILT Trace Sand, dark brown	M			-1.00 1.00
			BH042_1.5-1.7							-1.70 1.70
2.0										
3.0										
4.0										

NOTES:

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

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



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

Bore No.: BH043
Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land	Drill Co: GHD	Easting: 500950
Project: Urunga Antimony RAP	Driller: MK	Northing: 6625159
Project No.: 2216251	Rig Type: HA	Grid Ref: GDA94_MGA_zone_56
Location:	Total Depth (m): 1.7	Elevation: 0
Date Drilled: 14/08/2012	to: 14/08/2012	Diameter (mm): 50
		Logged by: JS
		Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA					Ground Surface:				0.00
			BH043_0.0-0.2			silty SAND brown	W			0.00
			BH043_0.3-0.5							
						sandy SILT grey	W			-0.80
1.0			BH043_1.0-1.2			SILT Trace Sand, dark brown	W			-1.00
			BH043_1.5-1.7							-1.70
2.0										1.70
3.0										
4.0										

NOTES:

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

<b>Drilling Abbreviations:</b>		<b>Moisture Abbreviations:</b>		<b>Consistency:</b>		<b>Cohesive Soils</b>	
RW(x) Rotary Wash	PSC(x) Percussion Simultaneous Casing	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff	
RT(x) Rotary Triple Tube	AS Augering - Solid Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff	
PC(x) Percussion Cable Tool	AH Augering - Hollow Flight	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard	
PD(x) Percussion Down Hole	H Hand Augering						

Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.



# BOREHOLE LOG

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: 16/08/2012

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 Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	AS		BH046_0.0-0.2			sandy SILT Trace Clay, brown	D			0.00 0.00
			BH046_0.5-0.7				silty CLAY Trace Sand, orange/ brown	D/M		
1.0										
2.0										
3.0										
4.0										

**NOTES:**

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

<b>Drilling Abbreviations:</b>		<b>Moisture Abbreviations:</b>		<b>Consistency:</b>		<b>Cohesive Soils</b>	
RW(x) Rotary Wash	PSC(x) Percussion Simultaneous Casing	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff	
RT(x) Rotary Triple Tube	AS Augering - Solid Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff	
PC(x) Percussion Cable Tool	AH Augering - Hollow Flight	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard	
PD(x) Percussion Down Hole	H Hand Augering						

Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

Bore No.: BH047
Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land	Drill Co: GHD	Easting: 500862
Project: Urunga Antimony RAP	Driller: MK	Northing: 6625276
Project No.: 2216251	Rig Type: AS	Grid Ref: GDA94_MGA_zone_56
Location:	Total Depth (m): 0.7	Elevation: 0
Date Drilled: 16/08/2012	to: 16/08/2012	Diameter (mm): 150
		Logged by: JS
		Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	AS		BH047_0.0-0.2			D			0.00	
										-0.50
			BH047_0.5-0.7				D/M			0.50
1.0									-0.70	
2.0									0.70	
3.0										
4.0										

NOTES:

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

<b>Drilling Abbreviations:</b>		<b>Moisture Abbreviations:</b>		<b>Consistency:</b>		<b>Cohesive Soils</b>	
RW(x) Rotary Wash	PSC(x) Percussion Simultaneous Casing	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff	
RT(x) Rotary Triple Tube	AS Augering - Solid Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff	
PC(x) Percussion Cable Tool	AH Augering - Hollow Flight	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard	
PD(x) Percussion Down Hole	H Hand Augering						

Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

Bore No.: BH050
Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land	Drill Co: GHD	Easting: 500936
Project: Urunga Antimony RAP	Driller: MK	Northing: 6625239
Project No.: 2216251	Rig Type: HA	Grid Ref: GDA94_MGA_zone_56
Location:	Total Depth (m): 1.2	Elevation: 0
Date Drilled: 16/08/2012	to: 16/08/2012	Diameter (mm): 50
		Logged by: JS
		Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA								0.00	
			BH050_0.0-0.2			sandy SILT grey	W			0.00
			BH050_0.2-0.4							-0.40
			BH050_0.5-0.7			sandy SILT Some Clay, dark brown	W			0.40
									-0.90	
1.0			BH050_1.0-1.2		silty CLAY dark brown	W			0.90	
									-1.20	
									1.20	
2.0										
3.0										
4.0										

**NOTES:**

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

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







# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

Bore No.: BH053
Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land	Drill Co: GHD	Easting: 500967
Project: Urunga Antimony RAP	Driller: MK	Northing: 6625173
Project No.: 2216251	Rig Type: HA	Grid Ref: GDA94_MGA_zone_56
Location:	Total Depth (m): 3.5	Elevation: 0
Date Drilled: 14/08/2012	to: 14/08/2012	Diameter (mm): 50
		Logged by: JS
		Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA		BH053_0.0-0.2		[Pattern: Horizontal dashes]	Ground Surface: sandy SILT grey	M			0.00
			BH053_0.3-0.5							-1.00
1.0			BH053_1.0-1.2		[Pattern: Horizontal dashes]	SILT Trace Sand, dark brown	W			1.00
			BH053_1.5-1.7							-2.00
2.0			BH053_2.0-2.2							[Pattern: Horizontal dashes]
			BH053_3.2-3.5		-3.50					
3.0										3.50
4.0										

**NOTES:**

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

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



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

Bore No.: BH054
Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land	Drill Co: GHD	Easting: 500957
Project: Urunga Antimony RAP	Driller: MK	Northing: 6625166
Project No.: 2216251	Rig Type: HA	Grid Ref: GDA94_MGA_zone_56
Location:	Total Depth (m): 1.7	Elevation: 0
Date Drilled: 14/08/2012	to: 14/08/2012	Diameter (mm): 50
		Logged by: JS
		Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA								0.00	
			BH054_0.0-0.2			W			0.00	
			BH054_0.3-0.5							
			BH054_0.7-0.9			W			-0.80	
			BH054_1.0-1.2			W			-1.00	
			BH054_1.5-1.7						-1.70	
2.0									1.70	
3.0										
4.0										

**NOTES:**

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

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



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

Bore No.: BH056
Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land	Drill Co: GHD	Easting: 500968
Project: Urunga Antimony RAP	Driller: MK	Northing: 6625286
Project No.: 2216251	Rig Type: HA	Grid Ref: GDA94_MGA_zone_56
Location:	Total Depth (m): 0.5	Elevation: 0
Date Drilled: 15/08/2012	to: 15/08/2012	Diameter (mm): 50
		Logged by: JS
		Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA									0.00
			BH056_0.0-0.2			silty SAND brown	D			0.00
			BH056_0.3-0.5			sandy SILT Some Clay, orange/ brown	M			-0.30 0.30
1.0										-0.50 0.50
2.0										
3.0										
4.0										

**NOTES:**

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

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



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

Bore No.: BH057
Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land	Drill Co: GHD	Easting: 500967
Project: Urunga Antimony RAP	Driller: MK	Northing: 6625255
Project No.: 2216251	Rig Type: HA	Grid Ref: GDA94_MGA_zone_56
Location:	Total Depth (m): 0.5	Elevation: 0
Date Drilled: 15/08/2012	to: 15/08/2012	Diameter (mm): 50
	Logged by: JS	Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA		BH057_0.0-0.2			Ground Surface: sandy SILT Trace Clay, dark brown	M			0.00
			BH057_0.3-0.5							-0.50
1.0										0.50
2.0										
3.0										
4.0										

NOTES:

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

<b>Drilling Abbreviations:</b>		<b>Moisture Abbreviations:</b>		<b>Consistency:</b>		<b>Cohesive Soils</b>	
RW(x) Rotary Wash	PSC(x) Percussion Simultaneous Casing	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff	
RT(x) Rotary Triple Tube	AS Augering - Solid Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff	
PC(x) Percussion Cable Tool	AH Augering - Hollow Flight	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard	
PD(x) Percussion Down Hole	H Hand Augering						

Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

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 to: 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 Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA		BH060_0.0-0.2			M		Possible fill material	0.00	
			BH060_0.3-0.5						0.00	
1.0									-0.70	
2.0									0.70	
3.0										
4.0										

**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  
 RT(x) Rotary Triple Tube  
 PC(x) Percussion Cable Tool  
 PD(x) Percussion Down Hole  
 Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.

PSC(x) Percussion Simultaneous Casing  
 AS Augering - Solid Flight  
 AH Augering - Hollow Flight  
 H Hand Augering

**Moisture Abbreviations:**

D Dry  
 M Moist  
 W Wet

**Consistency:**

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

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

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



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

Bore No.: BH061

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: 500947  
 Northing: 6625280  
 Grid Ref: GDA94\_MGA\_zone\_56  
 Elevation: 0  
 Logged by: JS Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA		BH061_0.0-0.2			M			0.00	
			BH061_0.3-0.5						-0.50	
1.0									0.50	
2.0										
3.0										
4.0										

**NOTES:**

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

<b>Drilling Abbreviations:</b>		<b>Moisture Abbreviations:</b>		<b>Consistency:</b>		<b>Cohesive Soils</b>	
RW(x) Rotary Wash	PSC(x) Percussion Simultaneous Casing	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff	
RT(x) Rotary Triple Tube	AS Augering - Solid Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff	
PC(x) Percussion Cable Tool	AH Augering - Hollow Flight	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard	
PD(x) Percussion Down Hole	H Hand Augering						

Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

Bore No.: BH062
Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land	Drill Co: GHD	Easting: 500942
Project: Urunga Antimony RAP	Driller: MK	Northing: 6625313
Project No.: 2216251	Rig Type: HA	Grid Ref: GDA94_MGA_zone_56
Location:	Total Depth (m): 0.5	Elevation: 0
Date Drilled: 15/08/2012	to: 15/08/2012	Diameter (mm): 50
		Logged by: JS
		Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA		BH062_0.0-0.2			Ground Surface: clayey SILT Some Sand, brown/ grey	M			0.00
			BH062_0.3-0.5							-0.50
1.0										0.50
2.0										
3.0										
4.0										

NOTES:

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

<b>Drilling Abbreviations:</b> RW(x) Rotary Wash RT(x) Rotary Triple Tube PC(x) Percussion Cable Tool PD(x) Percussion Down Hole Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.	<b>Moisture Abbreviations:</b> D Dry M Moist W Wet	<b>Consistency:</b> <b>Granular Soils</b> (VL) Very Loose (D) Dense (L) Loose (VD) Very Dense (MD) Medium Dense	<b>Cohesive Soils</b> (VS) Very Soft (ST) Stiff (S) Soft (VST) Very Stiff (F) Firm (H) Hard
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# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

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	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 Checked by: BC
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DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA		BH063_0.0-0.2			M			0.00	
			BH063_0.3-0.5						-0.50	
1.0									0.50	
2.0										
3.0										
4.0										

**NOTES:**

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

<b>Drilling Abbreviations:</b> RW(x) Rotary Wash RT(x) Rotary Triple Tube PC(x) Percussion Cable Tool PD(x) Percussion Down Hole Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.	<b>Moisture Abbreviations:</b> D Dry M Moist W Wet	<b>Consistency:</b> <b>Granular Soils</b> (VL) Very Loose (D) Dense (L) Loose (VD) Very Dense (MD) Medium Dense <b>Cohesive Soils</b> (VS) Very Soft (ST) Stiff (S) Soft (VST) Very Stiff (F) Firm (H) Hard
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# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

Bore No.: BH064
Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land	Drill Co: GHD	Easting: 500980
Project: Urunga Antimony RAP	Driller: MK	Northing: 6625343
Project No.: 2216251	Rig Type: HA	Grid Ref: GDA94_MGA_zone_56
Location:	Total Depth (m): 0.5	Elevation: 0
Date Drilled: 15/08/2012	to: 15/08/2012	Diameter (mm): 50
		Logged by: JS
		Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA					Ground Surface:				0.00
			BH064_0.0-0.2			silty CLAY Trace Sand,brown	M			0.00
			BH064_0.3-0.5			silty CLAY Trace Sand,orange/ brown	M			-0.30 0.30
1.0										
2.0										
3.0										
4.0										

NOTES:

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

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

ENVIRONMENTAL - SOIL BORE

Bore No.: BH065
Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land	Drill Co: GHD	Easting: 501003
Project: Urunga Antimony RAP	Driller: MK	Northing: 6625341
Project No.: 2216251	Rig Type: HA	Grid Ref: GDA94_MGA_zone_56
Location:	Total Depth (m): 0.5	Elevation: 0
Date Drilled: 15/08/2012	to: 15/08/2012	Diameter (mm): 50
		Logged by: JS
		Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA		BH065_0.0-0.2			M			0.00	
			BH065_0.3-0.5						-0.50	
1.0									0.50	
2.0										
3.0										
4.0										

NOTES:

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

<b>Drilling Abbreviations:</b>		<b>Moisture Abbreviations:</b>		<b>Consistency:</b>		<b>Cohesive Soils</b>	
RW(x) Rotary Wash	PSC(x) Percussion Simultaneous Casing	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff	
RT(x) Rotary Triple Tube	AS Augering - Solid Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff	
PC(x) Percussion Cable Tool	AH Augering - Hollow Flight	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard	
PD(x) Percussion Down Hole	H Hand Augering						

Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

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 to: 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 Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA		BH066_0.0-0.2			M			0.00	
			BH066_0.5-0.7						-0.70	
1.0									0.70	
2.0										
3.0										
4.0										

**NOTES:**

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

<b>Drilling Abbreviations:</b>		<b>Moisture Abbreviations:</b>		<b>Consistency:</b>		<b>Cohesive Soils</b>	
RW(x) Rotary Wash	PSC(x) Percussion Simultaneous Casing	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff	
RT(x) Rotary Triple Tube	AS Augering - Solid Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff	
PC(x) Percussion Cable Tool	AH Augering - Hollow Flight	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard	
PD(x) Percussion Down Hole	H Hand Augering						

Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

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 to: 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 Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA		BH067_0.0-0.2		 Ground Surface: clayey SILT brown	M			0.00 0.00	
			BH067_0.5-0.7			 CLAY Some Silt, grey	M			-0.50 0.50
1.0										-0.70 0.70
2.0										
3.0										
4.0										

**NOTES:**

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

<b>Drilling Abbreviations:</b>		<b>Moisture Abbreviations:</b>		<b>Consistency:</b>		<b>Cohesive Soils</b>	
RW(x) Rotary Wash	PSC(x) Percussion Simultaneous Casing	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff	
RT(x) Rotary Triple Tube	AS Augering - Solid Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff	
PC(x) Percussion Cable Tool	AH Augering - Hollow Flight	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard	
PD(x) Percussion Down Hole	H Hand Augering						

Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

Bore No.: BH069
Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land	Drill Co: GHD	Easting: 500988
Project: Urunga Antimony RAP	Driller: MK	Northing: 6625271
Project No.: 2216251	Rig Type: HA	Grid Ref: GDA94_MGA_zone_56
Location:	Total Depth (m): 0.5	Elevation: 0
Date Drilled: 15/08/2012	to: 15/08/2012	Diameter (mm): 50
	Logged by: JS	Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA		BH069_0.0-0.2			M			0.00	
			BH069_0.3-0.5						-0.50	
1.0									0.50	
2.0										
3.0										
4.0										

NOTES:

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

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



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

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 to: 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 Checked by: BC

DRILLING					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)		
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water								
0.0	HA		BH070_0.0-0.2			M			0.00			
			BH070_0.5-0.7									
1.0									0.70			
2.0												
3.0												
4.0												

**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  
 RT(x) Rotary Triple Tube  
 PC(x) Percussion Cable Tool  
 PD(x) Percussion Down Hole  
 Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.

PSC(x) Percussion Simultaneous Casing  
 AS Augering - Solid Flight  
 AH Augering - Hollow Flight  
 H Hand Augering

**Moisture Abbreviations:**

D Dry  
 M Moist  
 W Wet

**Consistency:**

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

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

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



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

Bore No.: BH071

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): 0.7  
 Diameter (mm): 50

Easting: 501071  
 Northing: 6625320  
 Grid Ref: GDA94\_MGA\_zone\_56  
 Elevation: 0  
 Logged by: JS Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA		BH071_0.0-0.2			M			0.00	
			BH071_0.5-0.7						-0.70	
1.0									0.70	
2.0										
3.0										
4.0										

**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  
 RT(x) Rotary Triple Tube  
 PC(x) Percussion Cable Tool  
 PD(x) Percussion Down Hole  
 Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.

PSC(x) Percussion Simultaneous Casing  
 AS Augering - Solid Flight  
 AH Augering - Hollow Flight  
 H Hand Augering

**Moisture Abbreviations:**

D Dry  
 M Moist  
 W Wet

**Consistency:**

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

**Cohesive Soils**

(VS) Very Soft (ST) Stiff  
 (S) Soft (VST) Very Stiff  
 (F) Firm (H) Hard





# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

Bore No.: BH072

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): 0.7  
 Diameter (mm): 50

Easting: 501094  
 Northing: 6625331  
 Grid Ref: GDA94\_MGA\_zone\_56  
 Elevation: 0  
 Logged by: JS Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA		BH072_0.0-0.2			W			0.00	
									-0.40	
			BH072_0.5-0.7						0.40	
1.0									-0.70	
2.0									0.70	
3.0										
4.0										

**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  
 RT(x) Rotary Triple Tube  
 PC(x) Percussion Cable Tool  
 PD(x) Percussion Down Hole  
 Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.

PSC(x) Percussion Simultaneous Casing  
 AS Augering - Solid Flight  
 AH Augering - Hollow Flight  
 H Hand Augering

**Moisture Abbreviations:**

D Dry  
 M Moist  
 W Wet

**Consistency:**

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

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

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



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

Bore No.: BH073
Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land	Drill Co: GHD	Easting: 501032
Project: Urunga Antimony RAP	Driller: MK	Northing: 6625306
Project No.: 2216251	Rig Type: HA	Grid Ref: GDA94_MGA_zone_56
Location:	Total Depth (m): 1.2	Elevation: 0
Date Drilled: 15/08/2012	to: 15/08/2012	Diameter (mm): 50
		Logged by: JS
		Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA					Ground Surface:				0.00
			BH073_0.0-0.2			clayey SAND brown/ grey	M			0.00
										-0.50
			BH073_0.5-0.7				W			0.50
										-1.00
1.0			BH073_1.0-1.2			sandy CLAY brown/ grey	W			1.00
										-1.20
										1.20
2.0										
3.0										
4.0										

NOTES:

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

<b>Drilling Abbreviations:</b>		<b>Moisture Abbreviations:</b>		<b>Consistency:</b>		<b>Cohesive Soils</b>	
RW(x) Rotary Wash	PSC(x) Percussion Simultaneous Casing	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff	
RT(x) Rotary Triple Tube	AS Augering - Solid Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff	
PC(x) Percussion Cable Tool	AH Augering - Hollow Flight	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard	
PD(x) Percussion Down Hole	H Hand Augering						

Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

Bore No.: BH074
Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land	Drill Co: GHD	Easting: 501025
Project: Urunga Antimony RAP	Driller: MK	Northing: 6625286
Project No.: 2216251	Rig Type: HA	Grid Ref: GDA94_MGA_zone_56
Location:	Total Depth (m): 1	Elevation: 0
Date Drilled: 15/08/2012	to: 15/08/2012	Diameter (mm): 50
		Logged by: JS
		Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA		BH074_0.0-0.2			Ground Surface: clayey SILT Some Sand, dark brown	M		0.00	
			BH074_0.8-1.0			sandy CLAY Trace Silt, brown/ grey	M		-0.80	
1.0									-1.00	
									0.80	
									1.00	
2.0										
3.0										
4.0										

**NOTES:**

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

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





# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

Bore No.: BH076
Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land	Drill Co: GHD	Easting: 500991
Project: Urunga Antimony RAP	Driller: MK	Northing: 6625251
Project No.: 2216251	Rig Type: HA	Grid Ref: GDA94_MGA_zone_56
Location:	Total Depth (m): 0.7	Elevation: 0
Date Drilled: 15/08/2012	to: 15/08/2012	Diameter (mm): 50
		Logged by: JS
		Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water					
0.0	HA		BH076_0.0-0.2		Ground Surface: clayey SILT Some Sand, Organic matter, dark brown	W			0.00 0.00
			BH076_0.3-0.5		SAND Trace Silt, grey	W			-0.40 0.40
1.0									-0.70 0.70
2.0									
3.0									
4.0									

NOTES:

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

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



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

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: 14/08/2012

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 Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA				Ground Surface:				0.00	
			BH077_0.0-0.2		sandy SILT grey mottled brown	D/M			0.00 -0.10	
			BH077_0.3-0.5			D			0.10	
					clayey SILT Some Sand, Roots @ 0.8m, dark brown	M			-0.50 0.50	
1.0			BH077_1.0-1.2		CLAY Stiff, grey	M			-1.00 1.00	
					SILT Trace Sand, dark brown	W			-1.40 1.40	
			BH077_1.5-1.7							
2.0					black				-2.00 2.00	
			BH077_2.0-2.2						-2.20 2.20	
3.0										
4.0										

NOTES:

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

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



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

Bore No.: BH078
Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land	Drill Co: GHD	Easting: 501019
Project: Urunga Antimony RAP	Driller: MK	Northing: 6625227
Project No.: 2216251	Rig Type: HA	Grid Ref: GDA94_MGA_zone_56
Location:	Total Depth (m): 1.7	Elevation: 0
Date Drilled: 14/08/2012	to: 14/08/2012	Diameter (mm): 50
		Logged by: JS
		Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA									0.00
			BH078_0.0-0.2			SAND Trace Silt, pale grey	D/M			0.00
			BH078_0.3-0.5			silty SAND Organic matter, dark brown	M			-0.30 0.30
1.0			BH078_1.0-1.2			sandy CLAY Trace Silt, dark brown	W			-1.00 1.00
			BH078_1.5-1.7			clayey SILT Trace Sand, dark brown	W			-1.40 1.40
2.0										-1.70 1.70
3.0										
4.0										

**NOTES:**

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

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



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

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: 15/08/2012

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 Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA		BH079_0.0-0.2			M			0.00 0.00	
			BH079_0.8-1.0				M			-0.80 0.80
1.0									-1.00 1.00	
2.0										
3.0										
4.0										

**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  
 RT(x) Rotary Triple Tube  
 PC(x) Percussion Cable Tool  
 PD(x) Percussion Down Hole  
 Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.

PSC(x) Percussion Simultaneous Casing  
 AS Augering - Solid Flight  
 AH Augering - Hollow Flight  
 H Hand Augering

**Moisture Abbreviations:**

D Dry  
 M Moist  
 W Wet

**Consistency:**

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

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

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





# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

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 Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA		BH080_0.0-0.2			M			0.00	
									Ground Surface:	
1.0			BH080_1.0-1.2			M		BHDUP02	-1.00	
									silty SAND Some Clay, dark brown	
2.0									-1.20	
									1.20	
3.0										
4.0										

**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  
 RT(x) Rotary Triple Tube  
 PC(x) Percussion Cable Tool  
 PD(x) Percussion Down Hole  
 Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.

PSC(x) Percussion Simultaneous Casing  
 AS Augering - Solid Flight  
 AH Augering - Hollow Flight  
 H Hand Augering

**Moisture Abbreviations:**

D Dry  
 M Moist  
 W Wet

**Consistency:**

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

**Cohesive Soils**

(VS) Very Soft (ST) Stiff  
 (S) Soft (VST) Very Stiff  
 (F) Firm (H) Hard





# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

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 Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water					
0.0	HA				Ground Surface:				0.00
			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
					SILT Trace Sand, dark brown	M/W			-1.20
			BH082_1.5-1.7						1.20
2.0									-1.70
3.0									1.70
4.0									

**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  
 RT(x) Rotary Triple Tube  
 PC(x) Percussion Cable Tool  
 PD(x) Percussion Down Hole  
 Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.

PSC(x) Percussion Simultaneous Casing  
 AS Augering - Solid Flight  
 AH Augering - Hollow Flight  
 H Hand Augering

**Moisture Abbreviations:**

D Dry  
 M Moist  
 W Wet

**Consistency:**

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

**Cohesive Soils**

(VS) Very Soft (ST) Stiff  
 (S) Soft (VST) Very Stiff  
 (F) Firm (H) Hard



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

Bore No.: BH083
Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land	Drill Co: GHD	Easting: 501076
Project: Urunga Antimony RAP	Driller: MK	Northing: 6625232
Project No.: 2216251	Rig Type: HA	Grid Ref: GDA94_MGA_zone_56
Location:	Total Depth (m): 1.7	Elevation: 0
Date Drilled: 14/08/2012	to: 14/08/2012	Diameter (mm): 50
		Logged by: JS
		Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA					Ground Surface:				0.00
			BH083_0.0-0.2			silty SAND mottled brown	M			0.00
			BH083_0.3-0.5			clayey SILT Some Sand, dark brown	M			-0.30 0.30
						SILT Trace Sand, dark brown	M			-0.90 0.90 -1.00
1.0			BH083_1.0-1.2			silty CLAY Some Sand, brown	W			1.00
			BH083_1.5-1.7							-1.70 1.70
2.0										
3.0										
4.0										

**NOTES:**

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

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



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

Bore No.: BH084
Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land	Drill Co: GHD	Easting: 501077
Project: Urunga Antimony RAP	Driller: MK	Northing: 6625256
Project No.: 2216251	Rig Type: HA	Grid Ref: GDA94_MGA_zone_56
Location:	Total Depth (m): 1.7	Elevation: 0
Date Drilled: 15/08/2012	to: 15/08/2012	Diameter (mm): 50
		Logged by: JS
		Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA		BH084_0.0-0.2			D			0.00 0.00	
			BH084_0.5-0.7			M				-0.50 0.50
1.0			BH084_1.0-1.2			W				-1.00 1.00
			BH084_1.5-1.7			W				-1.40 1.40
										-1.70 1.70
2.0										
3.0										
4.0										

**NOTES:**

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

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



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

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 to: 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 Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA		BH091_0.0-0.1			M			0.00	
			BH091_0.1-0.3						0.00	
			BH091_0.3-0.5						-0.50	
1.0									0.50	
2.0										
3.0										
4.0										

**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  
 RT(x) Rotary Triple Tube  
 PC(x) Percussion Cable Tool  
 PD(x) Percussion Down Hole  
 Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.

PSC(x) Percussion Simultaneous Casing  
 AS Augering - Solid Flight  
 AH Augering - Hollow Flight  
 H Hand Augering

**Moisture Abbreviations:**

D Dry  
 M Moist  
 W Wet

**Consistency:**

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

**Cohesive Soils**

(VS) Very Soft (ST) Stiff  
 (S) Soft (VST) Very Stiff  
 (F) Firm (H) Hard



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

Bore No.: BH093
Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land	Drill Co: GHD	Easting: 501133
Project: Urunga Antimony RAP	Driller: BL/BJ	Northing: 6625139
Project No.: 2216251	Rig Type: HA	Grid Ref: GDA94_MGA_zone_56
Location:	Total Depth (m): 1	Elevation: 0
Date Drilled: 15/08/2012	to: 15/08/2012	Diameter (mm): 50
	Logged by: BL/BJ	Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA					Ground Surface:				0.00
			BH093_0.0-0.1			SILT Organic matter, dark brown	M			0.00
			BH093_0.2-0.4			silty CLAY dark grey	M			-0.20 0.20
			BH093_0.4-0.6							
			BH093_0.8-1.0			silty CLAY grey	W			-0.80 0.80
1.0										-1.00 1.00
2.0										
3.0										
4.0										

NOTES:

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

<b>Drilling Abbreviations:</b>		<b>Moisture Abbreviations:</b>		<b>Consistency:</b>		<b>Cohesive Soils</b>	
RW(x) Rotary Wash	PSC(x) Percussion Simultaneous Casing	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff	
RT(x) Rotary Triple Tube	AS Augering - Solid Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff	
PC(x) Percussion Cable Tool	AH Augering - Hollow Flight	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard	
PD(x) Percussion Down Hole	H Hand Augering						

Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

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 to: 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 Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA		BH100_0.0-0.2			Ground Surface: SILT Some Gravel, grey/ brown  silty CLAY Trace Gravel, orange/ brown	D  M		0.00	
			BH100_0.3-0.5						-0.20	
1.0									-0.50	
2.0									0.50	
3.0										
4.0										

**NOTES:**

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

<b>Drilling Abbreviations:</b>		<b>Moisture Abbreviations:</b>		<b>Consistency:</b>		<b>Cohesive Soils</b>	
RW(x) Rotary Wash	PSC(x) Percussion Simultaneous Casing	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff	
RT(x) Rotary Triple Tube	AS Augering - Solid Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff	
PC(x) Percussion Cable Tool	AH Augering - Hollow Flight	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard	
PD(x) Percussion Down Hole	H Hand Augering						

Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.





# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

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: 16/08/2012	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      Checked by: BC
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DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA		BH101_0.0-0.2			Ground Surface: clayey SILT orange/ brown	W		0.00 0.00	
			BH101_0.5-0.7				silty CLAY mottled orange/ grey/ brown	M		-0.50 0.50
			BH101_1.0-1.2				orange			-0.90 0.90
1.0										-1.20 1.20
2.0										
3.0										
4.0										

**NOTES:**

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

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

ENVIRONMENTAL - SOIL BORE

Bore No.: SE001
Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land	Drill Co: GHD	Easting: 500894
Project: Urunga Antimony RAP	Driller: BL/BJ	Northing: 6625123
Project No.: 2216251	Rig Type: HA	Grid Ref: GDA94_MGA_zone_56
Location:	Total Depth (m): 0.7	Elevation: 0
Date Drilled: 14/08/2012	to: 14/08/2012	Diameter (mm): 50
		Logged by: BL/BJ
		Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA					Ground Surface:				0.00
			SE001_0.0-0.1			silty SAND brown	W			0.00
			SE001_0.1-0.2			CLAY	W			0.10
						Trace Sand, grey	W			-0.20
			SE001_0.4-0.6			silty CLAY Trace sand, Organic matter, black				0.20
1.0										
2.0										
3.0										
4.0										-0.70

NOTES:

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

<b>Drilling Abbreviations:</b>		<b>Moisture Abbreviations:</b>		<b>Consistency:</b>		<b>Cohesive Soils</b>	
RW(x) Rotary Wash	PSC(x) Percussion Simultaneous Casing	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff	
RT(x) Rotary Triple Tube	AS Augering - Solid Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff	
PC(x) Percussion Cable Tool	AH Augering - Hollow Flight	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard	
PD(x) Percussion Down Hole	H Hand Augering						

Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

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 to: 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 Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA					Ground Surface:				0.00
			SE002_0.0-0.1			sandy SILT Organic matter, grey	W			0.00
						CLAY Tr. Sand, Organic matter, black	W			-0.10
			SE002_0.3-0.5							-0.50
			SE002_0.5-0.7			sandy CLAY Organic matter, dark grey	W			0.50
										-0.70
										0.70
1.0										
2.0										
3.0										
4.0										

**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  
 RT(x) Rotary Triple Tube  
 PC(x) Percussion Cable Tool  
 PD(x) Percussion Down Hole  
 Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.

PSC(x) Percussion Simultaneous Casing  
 AS Augering - Solid Flight  
 AH Augering - Hollow Flight  
 H Hand Augering

**Moisture Abbreviations:**

D Dry  
 M Moist  
 W Wet

**Consistency:**

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

**Cohesive Soils**

(VS) Very Soft (ST) Stiff  
 (S) Soft (VST) Very Stiff  
 (F) Firm (H) Hard



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

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 Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA					Ground Surface:				0.00
			SE003_0.0-0.1			SILT Organic matter, grey	W			0.00
			SE003_0.2-0.4			SILT Organic matter, dark brown	W			-0.20 0.20
			SE003_0.4-0.6			silty CLAY dark brown	W			-0.40 0.40
1.0										0.60
2.0										
3.0										
4.0										

**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  
 RT(x) Rotary Triple Tube  
 PC(x) Percussion Cable Tool  
 PD(x) Percussion Down Hole  
 Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.

PSC(x) Percussion Simultaneous Casing  
 AS Augering - Solid Flight  
 AH Augering - Hollow Flight  
 H Hand Augering

**Moisture Abbreviations:**

D Dry  
 M Moist  
 W Wet

**Consistency:**

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

**Cohesive Soils**

(VS) Very Soft (ST) Stiff  
 (S) Soft (VST) Very Stiff  
 (F) Firm (H) Hard



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

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      to: 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      Checked by: BC
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DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA					Ground Surface:				0.00
			SEDUP05			SILT Organic matter, dark brown	W			0.00
			SE004_0.2-0.3			silty CLAY Organic matter, dark brown	W		SEDUP05	-0.20
						SILT Organic matter, dark brown	W			-0.30
			SE004_0.4-0.6							0.30
1.0										-0.60
2.0										0.60
3.0										
4.0										

**NOTES:**

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

<b>Drilling Abbreviations:</b> RW(x) Rotary Wash RT(x) Rotary Triple Tube PC(x) Percussion Cable Tool PD(x) Percussion Down Hole Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.	<b>Moisture Abbreviations:</b> D Dry M Moist W Wet	<b>Consistency:</b> <b>Granular Soils</b> (VL) Very Loose      (D) Dense (L) Loose              (VD) Very Dense (MD) Medium Dense	<b>Cohesive Soils</b> (VS) Very Soft      (ST) Stiff (S) Soft              (VST) Very Stiff (F) Firm              (H) Hard
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# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

Bore No.: SE005
Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land	Drill Co: GHD	Easting: 500918
Project: Urunga Antimony RAP	Driller: BL/BJ	Northing: 6625101
Project No.: 2216251	Rig Type: HA	Grid Ref: GDA94_MGA_zone_56
Location:	Total Depth (m): 0.1	Elevation: 0
Date Drilled: 16/08/2012	to: 16/08/2012	Diameter (mm): 50
		Logged by: BL/BJ
		Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA		SE005_0.0-0.1			Ground Surface:			0.00	
						clayey SILT	W			0.00
						Organic matter, dark brown				0.10
1.0										
2.0										
3.0										
4.0										

**NOTES:**

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

<b>Drilling Abbreviations:</b>		<b>Moisture Abbreviations:</b>		<b>Consistency:</b>		<b>Cohesive Soils</b>	
RW(x) Rotary Wash	PSC(x) Percussion Simultaneous Casing	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff	
RT(x) Rotary Triple Tube	AS Augering - Solid Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff	
PC(x) Percussion Cable Tool	AH Augering - Hollow Flight	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard	
PD(x) Percussion Down Hole	H Hand Augering						

Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

Bore No.: SE010
Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land	Drill Co: GHD	Easting: 500930
Project: Urunga Antimony RAP	Driller: BL/BJ	Northing: 6625143
Project No.: 2216251	Rig Type: HA	Grid Ref: GDA94_MGA_zone_56
Location:	Total Depth (m): 1.4	Elevation: 0
Date Drilled: 14/08/2012	to: 14/08/2012	Diameter (mm): 50
		Logged by: BL/BJ
		Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water					
0.0	HA				Ground Surface:				0.00
			SE010_0.1-0.3		CLAY Some Silt, trace Sand, grey	W			0.00
			SE010_0.6-0.8		SILT Some Clay and Sand, Organic matter, black	W			-0.60 0.60
1.0									
									-1.40 1.40
2.0									
3.0									
4.0									

NOTES:

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

<b>Drilling Abbreviations:</b>		<b>Moisture Abbreviations:</b>		<b>Consistency:</b>		<b>Cohesive Soils</b>	
RW(x) Rotary Wash	PSC(x) Percussion Simultaneous Casing	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff	
RT(x) Rotary Triple Tube	AS Augering - Solid Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff	
PC(x) Percussion Cable Tool	AH Augering - Hollow Flight	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard	
PD(x) Percussion Down Hole	H Hand Augering						

Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

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 to: 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 Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA					Ground Surface:				0.00
			SE011_0.0-0.1			CLAY Some Silt, trace Sand, grey	W			0.00
						Organic matter, black				-0.20
			SE011_0.3-0.5							0.20
			SE011_0.7-0.9							
1.0										-1.10
										1.10
2.0										
3.0										
4.0										

**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  
 RT(x) Rotary Triple Tube  
 PC(x) Percussion Cable Tool  
 PD(x) Percussion Down Hole  
 Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.

PSC(x) Percussion Simultaneous Casing  
 AS Augering - Solid Flight  
 AH Augering - Hollow Flight  
 H Hand Augering

**Moisture Abbreviations:**

D Dry  
 M Moist  
 W Wet

**Consistency:**

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

**Cohesive Soils**

(VS) Very Soft (ST) Stiff  
 (S) Soft (VST) Very Stiff  
 (F) Firm (H) Hard





# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

Bore No.: SE012
Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land	Drill Co: GHD	Easting: 500942
Project: Urunga Antimony RAP	Driller: BL/BJ	Northing: 6625127
Project No.: 2216251	Rig Type: HA	Grid Ref: GDA94_MGA_zone_56
Location:	Total Depth (m): 1.2	Elevation: 0
Date Drilled: 14/08/2012	to: 14/08/2012	Diameter (mm): 50
		Logged by: BL/BJ
		Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA		SE012_0.0-0.1			W			0.00	
						W			-0.10	
			SE012_0.3-0.5						0.10	
1.0			SE012_1.0-1.2						-1.20	
									1.20	
2.0										
3.0										
4.0										

**NOTES:**

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

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



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

Bore No.: SE013
Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land	Drill Co: GHD	Easting: 500949
Project: Urunga Antimony RAP	Driller: BL/BJ	Northing: 6625120
Project No.: 2216251	Rig Type: HA	Grid Ref: GDA94_MGA_zone_56
Location:	Total Depth (m): 0.7	Elevation: 0
Date Drilled: 16/08/2012	to: 16/08/2012	Diameter (mm): 50
		Logged by: BL/BJ
		Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water					
0.0	HA		SEDUP04		Ground Surface:				0.00
					SILT Some grey clay, Organic matter, black	W		SEDUP04	0.00
			SE013_0.3-0.5		silty CLAY Organic matter, dark brown	W			-0.20 0.20
			SE013_0.5-0.7		SILT Organic matter, black	W			-0.50 0.50
1.0									
2.0									
3.0									
4.0									

**NOTES:**

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

<b>Drilling Abbreviations:</b> RW(x) Rotary Wash RT(x) Rotary Triple Tube PC(x) Percussion Cable Tool PD(x) Percussion Down Hole Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.	<b>Moisture Abbreviations:</b> D Dry M Moist W Wet	<b>Consistency:</b> <b>Granular Soils</b> (VL) Very Loose (D) Dense (L) Loose (VD) Very Dense (MD) Medium Dense <b>Cohesive Soils</b> (VS) Very Soft (ST) Stiff (S) Soft (VST) Very Stiff (F) Firm (H) Hard
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# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

Bore No.: SE014
Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land	Drill Co: GHD	Easting: 500972
Project: Urunga Antimony RAP	Driller: BL/BJ	Northing: 6625090
Project No.: 2216251	Rig Type: HA	Grid Ref: GDA94_MGA_zone_56
Location:	Total Depth (m): 0.6	Elevation: 0
Date Drilled: 15/08/2012	to: 15/08/2012	Diameter (mm): 50
		Logged by: BL/BJ
		Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA		SE014_0.0-0.05		Ground Surface:				0.00	
					silty CLAY grey	W W			0.00	
			SE014_0.2-0.4		SILT Organic matter, dark brown	W			-0.20 0.20	
			SE014_0.4-0.6		silty CLAY brown/ grey	W			-0.40 0.40	
					SILT Organic matter, dark brown				-0.60 0.60	
1.0										
2.0										
3.0										
4.0										

NOTES:

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

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



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

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 Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA					Ground Surface:				0.00
			SE020_0.0-0.1			CLAY	W			0.00
						Trace Sand, grey	W			-0.10
			SE020_0.2-0.4			silty CLAY				0.10
						Trace Sand, Organic matter, black				-0.70
										0.70
1.0										
2.0										
3.0										
4.0										

**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  
 RT(x) Rotary Triple Tube  
 PC(x) Percussion Cable Tool  
 PD(x) Percussion Down Hole  
 Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.

PSC(x) Percussion Simultaneous Casing  
 AS Augering - Solid Flight  
 AH Augering - Hollow Flight  
 H Hand Augering

**Moisture Abbreviations:**

D Dry  
 M Moist  
 W Wet

**Consistency:**

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

**Cohesive Soils**

(VS) Very Soft (ST) Stiff  
 (S) Soft (VST) Very Stiff  
 (F) Firm (H) Hard



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

Bore No.: SE021

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 Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA		SE021_0.0-0.1		silty CLAY Some Sand, grey silty CLAY Organic matter, black	W			0.00	
			SE021_0.3-0.5				W			0.10
1.0										
2.0										
3.0										
4.0										

**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  
 RT(x) Rotary Triple Tube  
 PC(x) Percussion Cable Tool  
 PD(x) Percussion Down Hole  
 Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.

PSC(x) Percussion Simultaneous Casing  
 AS Augering - Solid Flight  
 AH Augering - Hollow Flight  
 H Hand Augering

**Moisture Abbreviations:**

D Dry  
 M Moist  
 W Wet

**Consistency:**

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

**Cohesive Soils**

(VS) Very Soft (ST) Stiff  
 (S) Soft (VST) Very Stiff  
 (F) Firm (H) Hard



# BOREHOLE LOG

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 Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA		SE022_0.0-0.05		Ground Surface:				0.00	
					silty CLAY grey	W W			0.00	
			SE022_0.2-0.4		SILT Organic matter, dark brown	W			-0.20 0.20	
			SE022_0.4-0.6		silty CLAY brown/ grey	W			-0.40 0.40	
					SILT Organic matter, dark brown				-0.60 0.60	
1.0										
2.0										
3.0										
4.0										

**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  
 RT(x) Rotary Triple Tube  
 PC(x) Percussion Cable Tool  
 PD(x) Percussion Down Hole  
 Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.

PSC(x) Percussion Simultaneous Casing  
 AS Augering - Solid Flight  
 AH Augering - Hollow Flight  
 H Hand Augering

**Moisture Abbreviations:**

D Dry  
 M Moist  
 W Wet

**Consistency:**

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

**Cohesive Soils**

(VS) Very Soft (ST) Stiff  
 (S) Soft (VST) Very Stiff  
 (F) Firm (H) Hard



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

Bore No.: SE030
Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land	Drill Co: GHD	Easting: 500980
Project: Urunga Antimony RAP	Driller: BL/BJ	Northing: 6625193
Project No.: 2216251	Rig Type: HA	Grid Ref: GDA94_MGA_zone_56
Location:	Total Depth (m): 0.5	Elevation: 0
Date Drilled: 14/08/2012	to: 14/08/2012	Diameter (mm): 50
	Logged by: BL/BJ	Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA					Ground Surface:				0.00
			SE030_0.0-0.1			clayey SILT brown	W			0.00
						silty CLAY grey	W			-0.20 0.20
			SE030_0.3-0.5							-0.50 0.50
1.0										
2.0										
3.0										
4.0										

NOTES:

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

<b>Drilling Abbreviations:</b>		<b>Moisture Abbreviations:</b>		<b>Consistency:</b>		<b>Cohesive Soils</b>	
RW(x) Rotary Wash	PSC(x) Percussion Simultaneous Casing	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff	
RT(x) Rotary Triple Tube	AS Augering - Solid Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff	
PC(x) Percussion Cable Tool	AH Augering - Hollow Flight	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard	
PD(x) Percussion Down Hole	H Hand Augering						

Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

Bore No.: SE031
Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land	Drill Co: GHD	Easting: 500989
Project: Urunga Antimony RAP	Driller: BL/BJ	Northing: 6625182
Project No.: 2216251	Rig Type: HA	Grid Ref: GDA94_MGA_zone_56
Location:	Total Depth (m): 0.7	Elevation: 0
Date Drilled: 14/08/2012	to: 14/08/2012	Diameter (mm): 50
		Logged by: BL/BJ
		Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA					Ground Surface:				0.00
			SE031_0.0-0.1			CLAY Trace Sand, grey	W			0.00
			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
1.0										
2.0										
3.0										
4.0										

NOTES:

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

<b>Drilling Abbreviations:</b>		<b>Moisture Abbreviations:</b>		<b>Consistency:</b>		<b>Cohesive Soils</b>	
RW(x) Rotary Wash	PSC(x) Percussion Simultaneous Casing	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff	
RT(x) Rotary Triple Tube	AS Augering - Solid Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff	
PC(x) Percussion Cable Tool	AH Augering - Hollow Flight	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard	
PD(x) Percussion Down Hole	H Hand Augering						

Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.





# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

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 to: 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 Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA		SE032_0.0-0.1			W			0.00	
			SE032_0.1-0.3			W		SEDUP01	0.10	
									-0.70	
4.0									0.70	

**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  
 RT(x) Rotary Triple Tube  
 PC(x) Percussion Cable Tool  
 PD(x) Percussion Down Hole  
 Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.

PSC(x) Percussion Simultaneous Casing  
 AS Augering - Solid Flight  
 AH Augering - Hollow Flight  
 H Hand Augering

**Moisture Abbreviations:**

D Dry  
 M Moist  
 W Wet

**Consistency:**

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

**Cohesive Soils**

(VS) Very Soft (ST) Stiff  
 (S) Soft (VST) Very Stiff  
 (F) Firm (H) Hard



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

Bore No.: SE033
Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land	Drill Co: GHD	Easting: 501021
Project: Urunga Antimony RAP	Driller: BL/BJ	Northing: 6625185
Project No.: 2216251	Rig Type: HA	Grid Ref: GDA94_MGA_zone_56
Location:	Total Depth (m): 0.6	Elevation: 0
Date Drilled: 15/08/2012	to: 15/08/2012	Diameter (mm): 50
		Logged by: BL/BJ
		Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA		SE033_0.0-0.05		Ground Surface:				0.00	
					silty CLAY grey	W W			0.00	
			SE033_0.2-0.4		SILT Organic matter, dark brown	W			-0.20 0.20	
			SE033_0.4-0.6		silty CLAY brown/ grey	W			-0.40 0.40	
					SILT Organic matter, dark brown				-0.60 0.60	
1.0										
2.0										
3.0										
4.0										

**NOTES:**

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

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



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

Bore No.: SE040
Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land	Drill Co: GHD	Easting: 501038
Project: Urunga Antimony RAP	Driller: BL/BJ	Northing: 6625212
Project No.: 2216251	Rig Type: HA	Grid Ref: GDA94_MGA_zone_56
Location:	Total Depth (m): 0.5	Elevation: 0
Date Drilled: 14/08/2012	to: 14/08/2012	Diameter (mm): 50
	Logged by: BL/BJ	Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA				Ground Surface:				0.00	
					SILT Organic matter, dark brown	W			0.00	
			SE040_0.3-0.5		CLAY Trace Sand, grey	W			-0.20 0.20	
1.0									-0.50 0.50	
2.0										
3.0										
4.0										

NOTES:

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

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



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

Bore No.: SE041
Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land	Drill Co: GHD	Easting: 501041
Project: Urunga Antimony RAP	Driller: BL/BJ	Northing: 6625205
Project No.: 2216251	Rig Type: HA	Grid Ref: GDA94_MGA_zone_56
Location:	Total Depth (m): 0.7	Elevation: 0
Date Drilled: 14/08/2012	to: 14/08/2012	Diameter (mm): 50
	Logged by: BL/BJ	Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA		SE041_0.0-0.05						0.00	
			SE041_0.1-0.3				W			0.00
							W			-0.40
			SE041_0.5-0.7				W			0.40
1.0										
2.0										
3.0										
4.0										

NOTES:

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

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



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

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 to: 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 Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA		SE042_0.0-0.1		 silty CLAY grey clayey SILT Organic matter, dark brown	W			0.00	
			SE042_0.2-0.4				W			0.10
1.0										
2.0										
3.0										
4.0										

**NOTES:**

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

<b>Drilling Abbreviations:</b>		<b>Moisture Abbreviations:</b>	<b>Consistency:</b>	<b>Cohesive Soils</b>
RW(x) Rotary Wash	PSC(x) Percussion Simultaneous Casing	D Dry	(VL) Very Loose (D) Dense	(VS) Very Soft (ST) Stiff
RT(x) Rotary Triple Tube	AS Augering - Solid Flight	M Moist	(L) Loose (VD) Very Dense	(S) Soft (VST) Very Stiff
PC(x) Percussion Cable Tool	AH Augering - Hollow Flight	W Wet	(MD) Medium Dense	(F) Firm (H) Hard
PD(x) Percussion Down Hole	H Hand Augering			

Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

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      to: 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      Checked by: BC
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DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA					Ground Surface:				0.00
			SE043_0.0-0.1			SILT Organic, dark brown	W			0.00
			SE043_0.1-0.3			sandy CLAY trace Silt, brown/ grey	W			-0.10
			SE043_0.3-0.5			SILT Organic, dark brown	W			-0.30
										0.30
										-0.50
										0.50
1.0										
2.0										
3.0										
4.0										

**NOTES:**

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

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



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

Bore No.: SE050
Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land	Drill Co: GHD	Easting: 500971
Project: Urunga Antimony RAP	Driller: BL/BJ	Northing: 6625229
Project No.: 2216251	Rig Type: HA	Grid Ref: GDA94_MGA_zone_56
Location:	Total Depth (m): 0.6	Elevation: 0
Date Drilled: 15/08/2012	to: 15/08/2012	Diameter (mm): 50
		Logged by: BL/BJ
		Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water					
0.0	HA		SE050_0.0-0.1		Ground Surface: GRAVEL Some Sand, light brown	W		SEDUP03/ SELABDUP01	0.00
			SE050_0.2-0.4		silty CLAY grey	W			-0.20 0.20
			SE050_0.4-0.6		SILT Organic matter, dark brown	W			-0.40 0.40
1.0									
2.0									
3.0									
4.0									

NOTES:

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

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



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

Bore No.: SE051
Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land	Drill Co: GHD	Easting: 500991
Project: Urunga Antimony RAP	Driller: BL/BJ	Northing: 6625234
Project No.: 2216251	Rig Type: HA	Grid Ref: GDA94_MGA_zone_56
Location:	Total Depth (m): 0.5	Elevation: 0
Date Drilled: 14/08/2012	to: 14/08/2012	Diameter (mm): 50
		Logged by: BL/BJ
		Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA					Ground Surface:				0.00
			SE051_0.0-0.1			silty CLAY Trace Sand, grey	W			0.00
						silty CLAY Some Sand, Organic matter, dark brown	W			-0.20 0.20
			SE051_0.3-0.5							-0.50 0.50
1.0										
2.0										
3.0										
4.0										

NOTES:

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

<b>Drilling Abbreviations:</b>		<b>Moisture Abbreviations:</b>		<b>Consistency:</b>		<b>Cohesive Soils</b>	
RW(x) Rotary Wash	PSC(x) Percussion Simultaneous Casing	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff	
RT(x) Rotary Triple Tube	AS Augering - Solid Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff	
PC(x) Percussion Cable Tool	AH Augering - Hollow Flight	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard	
PD(x) Percussion Down Hole	H Hand Augering						

Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.





# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

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 to: 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 Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA		SE052_0.0-0.1			W			0.00	
										-0.30
										0.30
1.0										
2.0										
3.0										
4.0										

**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  
 RT(x) Rotary Triple Tube  
 PC(x) Percussion Cable Tool  
 PD(x) Percussion Down Hole  
 Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.

PSC(x) Percussion Simultaneous Casing  
 AS Augering - Solid Flight  
 AH Augering - Hollow Flight  
 H Hand Augering

**Moisture Abbreviations:**

D Dry  
 M Moist  
 W Wet

**Consistency:**

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

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

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



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

Bore No.: SE053
Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land	Drill Co: GHD	Easting: 501017
Project: Urunga Antimony RAP	Driller: BL/BJ	Northing: 6625253
Project No.: 2216251	Rig Type: HA	Grid Ref: GDA94_MGA_zone_56
Location:	Total Depth (m): 0.1	Elevation: 0
Date Drilled: 15/08/2012	to: 15/08/2012	Diameter (mm): 50
		Logged by: BL/BJ
		Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA		SE053_0.0-0.1			W			0.00	
										0.00
										0.10
1.0										
2.0										
3.0										
4.0										

**NOTES:**

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

<b>Drilling Abbreviations:</b> RW(x) Rotary Wash RT(x) Rotary Triple Tube PC(x) Percussion Cable Tool PD(x) Percussion Down Hole Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.	<b>Moisture Abbreviations:</b> D Dry M Moist W Wet	<b>Consistency:</b> <b>Granular Soils</b> (VL) Very Loose (D) Dense (L) Loose (VD) Very Dense (MD) Medium Dense <b>Cohesive Soils</b> (VS) Very Soft (ST) Stiff (S) Soft (VST) Very Stiff (F) Firm (H) Hard
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# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

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

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA				Ground Surface:				0.00	
			SE054_0.0-0.1		silty CLAY grey	W		SEDUP02	0.00	
			SE054_0.1-0.3		sandy SILT brown	W			-0.10	
					Organic matter	W			-0.30	
			SE054_0.4-0.6						0.30	
1.0									-0.60	
2.0									0.60	
3.0										
4.0										

**NOTES:**

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

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



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

Bore No.: SE055
Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land	Drill Co: GHD	Easting: 501049
Project: Urunga Antimony RAP	Driller: BL/BJ	Northing: 6625272
Project No.: 2216251	Rig Type: HA	Grid Ref: GDA94_MGA_zone_56
Location:	Total Depth (m): 0.1	Elevation: 0
Date Drilled: 15/08/2012	Diameter (mm): 50	Logged by: BL/BJ
to: 15/08/2012		Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA		SE055_0.0-0.1		Ground Surface: silty SAND grey	W			0.00 0.00 -0.10 0.10	
1.0										
2.0										
3.0										
4.0										

**NOTES:**

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

<b>Drilling Abbreviations:</b> RW(x) Rotary Wash RT(x) Rotary Triple Tube PC(x) Percussion Cable Tool PD(x) Percussion Down Hole Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.	<b>Moisture Abbreviations:</b> D Dry M Moist W Wet	<b>Consistency:</b> <b>Granular Soils</b> (VL) Very Loose (D) Dense (L) Loose (VD) Very Dense (MD) Medium Dense	<b>Cohesive Soils</b> (VS) Very Soft (ST) Stiff (S) Soft (VST) Very Stiff (F) Firm (H) Hard
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# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

Bore No.: SE056
Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land	Drill Co: GHD	Easting: 501039
Project: Urunga Antimony RAP	Driller: BL/BJ	Northing: 6625294
Project No.: 2216251	Rig Type: HA	Grid Ref: GDA94_MGA_zone_56
Location:	Total Depth (m): 0.4	Elevation: 0
Date Drilled: 15/08/2012	to: 15/08/2012	Diameter (mm): 50
		Logged by: BL/BJ
		Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water					
0.0	HA		SE056_0.0-0.05		Ground Surface:				0.00
			SE056_0.05-0.15		SILT Organic matter	W			0.00
					silty SAND	W			-0.15
			SE056_0.2-0.4		grey silty CLAY Some Sand, grey	W			-0.15
									-0.40
									0.40

NOTES:

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

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

ENVIRONMENTAL - SOIL BORE

Bore No.: SE057
Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land	Drill Co: GHD	Easting: 501065
Project: Urunga Antimony RAP	Driller: BL/BJ	Northing: 6625302
Project No.: 2216251	Rig Type: HA	Grid Ref: GDA94_MGA_zone_56
Location:	Total Depth (m): 0.5	Elevation: 0
Date Drilled: 15/08/2012	to: 15/08/2012	Diameter (mm): 50
	Logged by: BL/BJ	Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA					Ground Surface:				0.00
			SE057_0.0-0.1			CLAY Organic matter, black	W			0.00
			SE057_0.2-0.4			CLAY Trace Sand, brown/ grey	W			-0.20 0.20
1.0										-0.50 0.50
2.0										
3.0										
4.0										

**NOTES:**

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

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



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

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      Checked by: BC
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DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA		SE060_0.0-0.1			W			0.00	
			SE060_0.2-0.4						silty CLAY Some Sand, brown/ grey	
			SE060_0.5-0.7			W			-0.40	
									GRAVEL Some Sand	
1.0									-0.70	
2.0									0.70	
3.0										
4.0										

**NOTES:**

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

<b>Drilling Abbreviations:</b> RW(x) Rotary Wash RT(x) Rotary Triple Tube PC(x) Percussion Cable Tool PD(x) Percussion Down Hole Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.	<b>Moisture Abbreviations:</b> D Dry M Moist W Wet	<b>Consistency:</b> <b>Granular Soils</b> (VL) Very Loose      (D) Dense (L) Loose              (VD) Very Dense (MD) Medium Dense	<b>Cohesive Soils</b> (VS) Very Soft      (ST) Stiff (S) Soft              (VST) Very Stiff (F) Firm              (H) Hard
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# BOREHOLE LOG

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 Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA					Ground Surface:				0.00
			SE061_0.0-0.1			silty CLAY Some Sand, brown/ grey	W			0.00
			SE061_0.2-0.4							-0.40
			SE061_0.5-0.7			GRAVEL Some Sand	W			0.40
1.0										
2.0										
3.0										
4.0										

**NOTES:**

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

<b>Drilling Abbreviations:</b>		<b>Moisture Abbreviations:</b>		<b>Consistency:</b>		<b>Cohesive Soils</b>	
RW(x) Rotary Wash	PSC(x) Percussion Simultaneous Casing	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff	
RT(x) Rotary Triple Tube	AS Augering - Solid Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff	
PC(x) Percussion Cable Tool	AH Augering - Hollow Flight	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard	
PD(x) Percussion Down Hole	H Hand Augering						

Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.





# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

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 Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA					Ground Surface:				0.00
			SE062_0.0-0.1			SILT Trace Sand, Organic matter,black	W			0.00
			SE062_0.2-0.3			sandy CLAY dark grey	W			-0.20
						SILT Organic matter,black	W			-0.30
			SE062_0.4-0.6							-0.60
1.0										0.60
2.0										
3.0										
4.0										

**NOTES:**

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

<b>Drilling Abbreviations:</b>		<b>Moisture Abbreviations:</b>		<b>Consistency:</b>		<b>Cohesive Soils</b>	
RW(x) Rotary Wash	PSC(x) Percussion Simultaneous Casing	D Dry	(VL) Very Loose	(D) Dense	(VS) Very Soft	(ST) Stiff	
RT(x) Rotary Triple Tube	AS Augering - Solid Flight	M Moist	(L) Loose	(VD) Very Dense	(S) Soft	(VST) Very Stiff	
PC(x) Percussion Cable Tool	AH Augering - Hollow Flight	W Wet	(MD) Medium Dense		(F) Firm	(H) Hard	
PD(x) Percussion Down Hole	H Hand Augering						

Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

Bore No.: SE063
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: 501117 Northing: 6625269 Grid Ref: GDA94_MGA_zone_56 Elevation: 0 Logged by: BL/BJ      Checked by: BC
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DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA					Ground Surface:				0.00
			SE063_0.0-0.1			SILT Trace Sand, Organic matter, black	W			0.00
			SE063_0.2-0.3			sandy CLAY dark grey	W			-0.20
						SILT Organic matter, black	W			-0.30
			SE063_0.4-0.6							-0.60
1.0										0.60
2.0										
3.0										
4.0										

**NOTES:**

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

<b>Drilling Abbreviations:</b> RW(x) Rotary Wash RT(x) Rotary Triple Tube PC(x) Percussion Cable Tool PD(x) Percussion Down Hole Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.	<b>Moisture Abbreviations:</b> D Dry M Moist W Wet	<b>Consistency:</b> <b>Granular Soils</b> (VL) Very Loose      (D) Dense (L) Loose              (VD) Very Dense (MD) Medium Dense	<b>Cohesive Soils</b> (VS) Very Soft      (ST) Stiff (S) Soft              (VST) Very Stiff (F) Firm              (H) Hard
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# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

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 Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA				Ground Surface:				0.00	
			SE064_0.0-0.1		SILT Trace Sand, Organic matter,black	W			0.00	
			SE064_0.2-0.3		sandy CLAY dark grey	W			-0.20	
					SILT Organic matter,black	W			-0.30	
			SE064_0.4-0.6						-0.60	
1.0									0.60	
2.0										
3.0										
4.0										

**NOTES:**

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

<b>Drilling Abbreviations:</b>		<b>Moisture Abbreviations:</b>	<b>Consistency:</b>	<b>Cohesive Soils</b>
RW(x) Rotary Wash	PSC(x) Percussion Simultaneous Casing	D Dry	(VL) Very Loose (D) Dense	(VS) Very Soft (ST) Stiff
RT(x) Rotary Triple Tube	AS Augering - Solid Flight	M Moist	(L) Loose (VD) Very Dense	(S) Soft (VST) Very Stiff
PC(x) Percussion Cable Tool	AH Augering - Hollow Flight	W Wet	(MD) Medium Dense	(F) Firm (H) Hard
PD(x) Percussion Down Hole	H Hand Augering			

Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

Bore No.: SE065
Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land	Drill Co: GHD	Easting: 501153
Project: Urunga Antimony RAP	Driller: BL/BJ	Northing: 6625264
Project No.: 2216251	Rig Type: HA	Grid Ref: GDA94_MGA_zone_56
Location:	Total Depth (m): 0.6	Elevation: 0
Date Drilled: 15/08/2012	to: 15/08/2012	Diameter (mm): 50
		Logged by: BL/BJ
		Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA				Ground Surface:				0.00	
			SE065_0.0-0.1		SILT Trace Sand, Organic matter,black	W			0.00	
			SE065_0.2-0.3		sandy CLAY dark grey	W			-0.20	
					SILT Organic matter,black	W			-0.30	
			SE065_0.4-0.6						-0.60	
1.0									0.60	
2.0										
3.0										
4.0										

NOTES:

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

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



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

Bore No.: SE066
Page: 1 of 1

Client: NSW Catchment and Lands - Crown Land	Drill Co: GHD	Easting: 501138
Project: Urunga Antimony RAP	Driller: BL/BJ	Northing: 6625278
Project No.: 2216251	Rig Type: HA	Grid Ref: GDA94_MGA_zone_56
Location:	Total Depth (m): 0.6	Elevation: 0
Date Drilled: 15/08/2012	to: 15/08/2012	Diameter (mm): 50
		Logged by: BL/BJ
		Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA				Ground Surface:				0.00	
			SE066_0.0-0.1		SILT Trace Sand, Organic matter,black	W			0.00	
			SE066_0.2-0.3		sandy CLAY dark grey	W			-0.20	
					SILT Organic matter,black	W			-0.30	
			SE066_0.4-0.6						-0.60	
1.0									0.60	
2.0										
3.0										
4.0										

NOTES:

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

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



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

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 to: 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 Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA				Ground Surface:				0.00	
			SE067_0.0-0.1		SILT Trace Sand, Organic matter,black	W			0.00	
			SE067_0.2-0.3		sandy CLAY dark grey	W			-0.20	
					SILT Organic matter,black	W			-0.30	
			SE067_0.4-0.6						-0.60	
1.0									0.60	
2.0										
3.0										
4.0										

**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  
 RT(x) Rotary Triple Tube  
 PC(x) Percussion Cable Tool  
 PD(x) Percussion Down Hole  
 Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.

PSC(x) Percussion Simultaneous Casing  
 AS Augering - Solid Flight  
 AH Augering - Hollow Flight  
 H Hand Augering

**Moisture Abbreviations:**

D Dry  
 M Moist  
 W Wet

**Consistency:**

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

**Cohesive Soils**

(VS) Very Soft (ST) Stiff  
 (S) Soft (VST) Very Stiff  
 (F) Firm (H) Hard



# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE

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      Checked by: BC
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DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0	HA					Ground Surface:				0.00
			SE068_0.0-0.1			SILT Trace Sand, Organic matter, black	W			0.00
			SE068_0.2-0.3			sandy CLAY dark grey	W			-0.20
						SILT Organic matter, black	W			-0.30
			SE068_0.4-0.6							-0.60
1.0										0.60
2.0										
3.0										
4.0										

**NOTES:**

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

<b>Drilling Abbreviations:</b> RW(x) Rotary Wash RT(x) Rotary Triple Tube PC(x) Percussion Cable Tool PD(x) Percussion Down Hole Where "x" is flushing medium: (W) Water, (M) Mud, (A) Air, (F) Foam.	<b>Moisture Abbreviations:</b> D Dry M Moist W Wet	<b>Consistency:</b> <b>Granular Soils</b> (VL) Very Loose      (D) Dense (L) Loose              (VD) Very Dense (MD) Medium Dense	<b>Cohesive Soils</b> (VS) Very Soft      (ST) Stiff (S) Soft              (VST) Very Stiff (F) Firm              (H) Hard
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# BOREHOLE LOG

ENVIRONMENTAL - SOIL BORE


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 to: 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 Checked by: BC

DRILLING					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)
Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water						
0.0						Ground Surface:				0.00
			SE102_0.0-0.2			SILT Trace Clay and Sand, dark brown	W			0.00
										-0.20 0.20
1.0										
2.0										
3.0										
4.0										

**NOTES:**

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

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



GHD

230 Harbour Drive

Coffs Harbour NSW 2450



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Document Status

Rev No.	Author	Reviewer		Approved for Issue		
		Name	Signature	Name	Signature	Date
0	B. Cork	I. Gregson	<i>I. Gregson</i>	I. Gregson	<i>I. Gregson</i>	9/11/12
1	B. Cork	I. Gregson		I. Gregson		10/12/12

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