Appendix D – Borehole photographs

0m to 1.5m

1.5m to 3m

3m to 4.5m

4.5m to 6m

6m to 9m

GHD Pty Ltd

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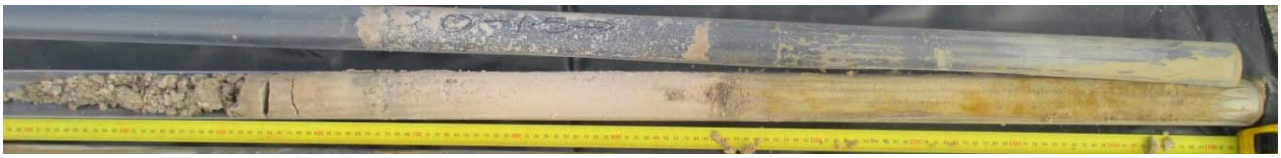
999 Hay Street Perth WA 6000
PO Box 3106 Perth WA 6832
T 61 8 6222 8222 F61 8 6222 8555
E permail@ghd.com.au www.ghd.com.au

Drawn: TW	Date: 30/08/2015	Job Number: 61/32259	A4	Title: Borehole Photographs A01	Client: Water Corporation
Checked	Date				Project: Balannup - Keane Road Pressure Main Investigation
Revision: 0	Date: 7/10/2015	Cad Reference			Figure No
This drawing should be read in conjunction with report number 61/32259/151422					

0m to 1.5m



1.5m to 3m

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Drawn: TW	Date: 30/08/2015	Job Number: 61/32259	A4	Title: Borehole Photographs A02	Client: Water Corporation
Checked	Date				Project: Balannup - Keane Road Pressure Main Investigation
Revision: 0	Date: 7/10/2015	Cad Reference			Figure No

This drawing should be read in conjunction with report number 61/32259/151422

0m to 1.5m

1.5m to 3m

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Drawn: TW	Date: 30/08/2015	Job Number: 61/32259	A4	Title: Borehole Photographs A03	Client: Water Corporation
Checked	Date				Project: Balannup - Keane Road Pressure Main Investigation
Revision: 0	Date: 7/10/2015	Cad Reference			Figure No

This drawing should be read in conjunction with report number 61/32259/151422

0m to 1.5m

1.5m to 3m

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Drawn: TW	Date: 30/08/2015	Job Number: 61/32259	A4	Title: Borehole Photographs A04	Client: Water Corporation
Checked	Date				Project: Balannup - Keane Road Pressure Main Investigation
Revision: 0	Date: 7/10/2015	Cad Reference			Figure No
This drawing should be read in conjunction with report number 61/32259/151422					

0m to 1.5m

1.5m to 3m

3.m to 4.5m

4.5m to 6m

6m to 7.5m

7.5m to 9m

9m to 10.5m

10.5m to 12m

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Drawn: TW	Date: 30/08/2015	Job Number: 61/32259	A4	Title: Borehole Photographs A05	Client: Water Corporation
Checked	Date				Project: Balannup - Keane Road Pressure Main Investigation
Revision: 0	Date: 7/10/2015	Cad Reference			Figure No
This drawing should be read in conjunction with report number 61/32259/151422					

0m to 1.5m

1.5m to 3m

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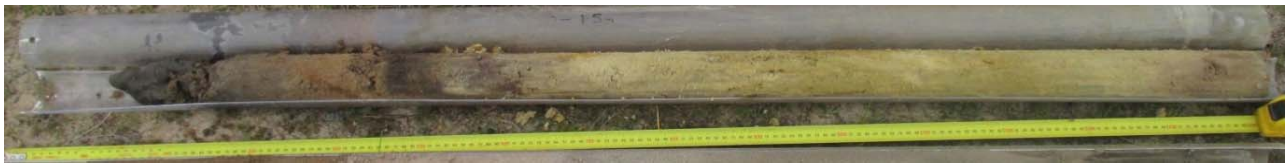
Drawn: TW	Date: 30/08/2015	Job Number: 61/32259	A4	Title: Borehole Photographs A06	Client: Water Corporation
Checked	Date				Project: Balannup - Keane Road Pressure Main Investigation
Revision: 0	Date: 7/10/2015	Cad Reference			Figure No
This drawing should be read in conjunction with report number 61/32259/151422					

0m to 1.5m



1.5m to 3m

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Drawn: TW	Date: 30/08/2015	Job Number: 61/32259	A4	Title: Borehole Photographs A07	Client: Water Corporation
Checked	Date				Project: Balannup - Keane Road Pressure Main Investigation
Revision: 0	Date: 7/10/2015	Cad Reference			Figure No
This drawing should be read in conjunction with report number 61/32259/151422					

0m to 1.5m

1.5m to 3m

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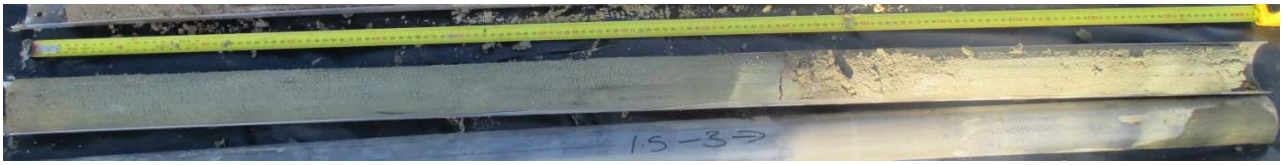
Drawn: TW	Date: 30/08/2015	Job Number: 61/32259	A4	Title: Borehole Photographs A08	Client: Water Corporation
Checked	Date				Project: Balannup - Keane Road Pressure Main Investigation
Revision: 0	Date: 7/10/2015	Cad Reference			Figure No

This drawing should be read in conjunction with report number 61/32259/151422

0m to 1.5m

1.5m to 3m



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Drawn: TW	Date: 30/08/2015	Job Number: 61/32259	A4	Title: Borehole Photographs A09	Client: Water Corporation
Checked	Date				Project: Balannup - Keane Road Pressure Main Investigation
Revision: 0	Date: 7/10/2015	Cad Reference			Figure No

This drawing should be read in conjunction with report number 61/32259/151422

0m to 1.5m

1.5m to 3m

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Drawn: TW	Date: 30/08/2015	Job Number: 61/32259	A4	Title: Borehole Photographs A11	Client: Water Corporation
Checked	Date				Project: Balannup - Keane Road Pressure Main Investigation
Revision: 0	Date: 7/10/2015	Cad Reference			Figure No
This drawing should be read in conjunction with report number 61/32259/151422					

0m to 1.5m

1.5m to 3m

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Drawn: TW	Date: 30/08/2015	Job Number: 61/32259	A4	Title: Borehole Photographs A12	Client: Water Corporation
Checked	Date				Project: Balannup - Keane Road Pressure Main Investigation
Revision: 0	Date: 7/10/2015	Cad Reference			Figure No
This drawing should be read in conjunction with report number 61/32259/151422					

0m to 1.5m

1.5m to 3m

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Drawn: TW	Date: 30/08/2015	Job Number: 61/32259	A4	Title: Borehole Photographs A13	Client: Water Corporation
Checked	Date				Project: Balannup - Keane Road Pressure Main Investigation
Revision: 0	Date: 7/10/2015	Cad Reference			Figure No

This drawing should be read in conjunction with report number 61/32259/151422

0m to 1.5m

1.5m to 3m

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Drawn: TW	Date: 30/08/2015	Job Number: 61/32259	A4	Title: Borehole Photographs A14	Client: Water Corporation
Checked	Date				Project: Balannup - Keane Road Pressure Main Investigation
Revision: 0	Date: 7/10/2015	Cad Reference			Figure No
This drawing should be read in conjunction with report number 61/32259/151422					

0m to 1.5m

1.5m to 3m

3m to 4.5m

GHD Pty Ltd

GHD Pty Ltd
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Drawn: TW	Date: 30/08/2015	Job Number: 61/32259	A4	Title: Borehole Photographs A15	Client: Water Corporation
Checked	Date				Project: Balannup - Keane Road Pressure Main Investigation
Revision: 0	Date: 7/10/2015	Cad Reference			Figure No

This drawing should be read in conjunction with report number 61/32259/151422

0m to 1.5m

1.5m to 3m

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E permail@ghd.com.au www.ghd.com.au

Drawn: TW	Date: 30/08/2015	Job Number: 61/32259	A4	Title: Borehole Photographs A16	Client: Water Corporation
Checked	Date				Project: Balannup - Keane Road Pressure Main Investigation
Revision: 0	Date: 7/10/2015	Cad Reference			Figure No
This drawing should be read in conjunction with report number 61/32259/151422					

0m to 1.5m

1.5m to 3m

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E permail@ghd.com.au www.ghd.com.au

Drawn: TW	Date: 30/08/2015	Job Number: 61/32259	A4	Title: Borehole Photographs A17	Client: Water Corporation
Checked	Date				Project: Balannup - Keane Road Pressure Main Investigation
Revision: 0	Date: 7/10/2015	Cad Reference			Figure No
This drawing should be read in conjunction with report number 61/32259/151422					

Appendix E – Logs from previous studies

Boreholes DP-BH10 to DP-BH10 (Douglas Partners, 2009)

Test Pits Galt-TP01 to Galt-TP11 and Galt-TP14 (Galt Geotechnics, 2013)

Hand Auger Boreholes Galt-HA01 to Galt-HA02 (Galt Geotechnics, 2013)

Cone Penetrometer Tests Galt-CPT01 to Galt-CPT07 (Galt Geotechnics, 2013)

Boreholes GHD13-BH06N, GHD13-BH06S and GHD13-BH22 to GHD13-BH27 (GHD, 2013)

Boreholes Hyd2o-AR5 and Hyd2o-AR6 (Hyd2O, 2013)

BOREHOLE LOG

CLIENT: City of Armadale
PROJECT: Keane Road Strategic Link
LOCATION: Forrestdale

SURFACE LEVEL: 23.2 m AHD*
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: BH10
PROJECT No: 46859
DATE: 13 Nov 2008
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
	0	SAND - grey, fine to medium grained, humid sand with a trace of silt.							
		Becoming light grey from 0.2m.		D	0.25				
				D	0.5				
				D	0.75				
	1			D	1.0				1
				D	1.25				
				D	1.5				
				D	1.75				
		Becoming grey-brown with some silt from 1.8m.							
	2			D	2.0				2
				D	2.25				
				D	2.5				
				D	2.75				
	3			D	3.0				3
	3.1	CEMENTED SILTY SAND - dark brown, fine to medium grained, wet, cemented silty sand (coffee rock).		D	3.25				
	3.5	Bore discontinued at 3.5m[Target Depth]		D	3.5				
	4								4

RIG: Geoprobe 6620DT **DRILLER:** Direct Push Probing **LOGGED:** R Shapland **CASING:**

TYPE OF BORING: Push Tube

WATER OBSERVATIONS: Drilling method prevented accurate measurement of depth to water.

REMARKS: * Surface level interpolated from a contour plan provided by Enviro Works Pty Ltd

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U$_x$	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED	
Initials:	
Date:	

Douglas Partners
Geotechnics · Environment · Groundwater

BOREHOLE LOG

CLIENT: City of Armadale
PROJECT: Keane Road Strategic Link
LOCATION: Forrestdale

SURFACE LEVEL: 23.0 m AHD*
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: BH11
PROJECT No: 46859
DATE: 13 Nov 2008
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
		SAND - light brown, fine to medium grained, humid, moist sand.		D	0.25				
				D	0.5				
				D	0.75				
	0.8	CEMENTED SILTY SAND - dark brown, fine to medium grained, cemented silty sand (coffee rock).		D	1.0				
	1								1
	1.2	CLAYEY SAND/SANDY CLAY - light grey-brown, fine to medium grained, moist clayey sand/sandy clay.		D	1.25				
				D	1.5				
				D	1.75				
		Becoming grey from 1.8m.							
	2			D	2.0				2
				D	2.25				
				D	2.5				
				D	2.75				
	3			D	3.0				3
				D	3.25				
	3.5	Bore discontinued at 3.5m[Target Depth]		D	3.5				
	4								4

RIG: Geoprobe 6620DT **DRILLER:** Direct Push Probing **LOGGED:** R Shapland **CASING:**

TYPE OF BORING: Push Tube

WATER OBSERVATIONS: Drilling method prevented accurate measurement of depth to water.

REMARKS: * Surface level interpolated from a contour plan provided by Enviro Works Pty Ltd

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U$_x$	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

Douglas Partners
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BOREHOLE LOG

CLIENT: City of Armadale
PROJECT: Keane Road Strategic Link
LOCATION: Forrestdale

SURFACE LEVEL: 23.0 m AHD*
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: BH12
PROJECT No: 46859
DATE: 13 Nov 2008
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
		SAND - light grey, fine to medium grained, humid sand.		D	0.25				
				D	0.5				
	0.7	CLAYEY SAND/SANDY CLAY - light grey-brown, fine to medium grained, moist, clayey sand/sandy clay.		D	0.75				
	1			D	1.0				1
				D	1.25				
				D	1.5				
				D	1.75				
		Becoming grey from 1.8m.							
	2			D	2.0				2
				D	2.25				
				D	2.5				
	2.8			D	2.75				
		SAND - grey, fine to medium, wet sand with some clay.							
	3			D	3.0				3
				D	3.25				
	3.5			D	3.5				
		Bore discontinued at 3.5m [Target Depth]							
	4								4

RIG: Geoprobe 6620DT **DRILLER:** Direct Push Probing **LOGGED:** R Shapland **CASING:**

TYPE OF BORING: Push Tube

WATER OBSERVATIONS: Drilling method prevented accurate measurement of depth to water.

REMARKS: * Surface level interpolated from a contour plan provided by Enviro Works Pty Ltd

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U$_x$	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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BOREHOLE LOG

CLIENT: City of Armadale
PROJECT: Keane Road Strategic Link
LOCATION: Forrestdale

SURFACE LEVEL: 23.0 m AHD*
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: BH13
PROJECT No: 46859
DATE: 13 Nov 2008
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
		SAND - light grey, fine to medium grained, humid sand.		D	0.25				Top Cap
				D	0.5				50 mm Class 18 PVC
		Becoming brown with some fine to coarse sized gravel from 0.6 m. Gravel is cemented silty sand.		D	0.75				
	0.9	CLAYEY SAND - light grey-brown fine to medium grained moist clayey sand.		D	1.0			20-11-08	
1				D	1.25				1
				D	1.5				
				D	1.75				
2				D	2.0				2
		Becoming grey from 2.2m.		D	2.25				Gravel Pack
				D	2.5				50 mm Class 18 Slotted PVC
	2.6	SAND - grey, fine to medium grained sand with some clay.		D	2.75				
3				D	3.0				3
		Becoming grey-brown from 3.1m.		D	3.25				
				D	3.5				
4	4.0	Bore discontinued at 4.0m [Target Depth]							End Cap 4

RIG: Geoprobe 6620DT **DRILLER:** Direct Push Probing **LOGGED:** R Shapland **CASING:**

TYPE OF BORING: Push Tube

WATER OBSERVATIONS: Groundwater encountered at 0.95 m.

REMARKS: * Surface level interpolated from a contour plan provided by Enviro Works Pty Ltd

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U$_x$	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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BOREHOLE LOG

CLIENT: City of Armadale
PROJECT: Keane Road Strategic Link
LOCATION: Forrestdale

SURFACE LEVEL: 22.8 m AHD*
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: BH14
PROJECT No: 46859
DATE: 13 Nov 2008
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
		SAND - grey, fine to medium grained humid sand.		D	0.25				
				D	0.5				
	0.6	CLAYEY SAND - light grey-brown, fine to medium grained, moist clayey sand.		D	0.75				
	1			D	1.0				1
				D	1.25				
				D	1.5				
				D	1.75				
	2			D	2.0				2
	2.1	SAND - grey, fine to medium grained wet sand with a trace of clay.		D	2.25				
				D	2.5				
				D	2.75				
	3			D	3.0				3
		with increasing clay content from 3.1 m.		D	3.25				
	3.5	Bore discontinued at 3.5m [Target Depth]		D	3.5				
	4								4

RIG: Geoprobe 6620DT **DRILLER:** Direct Push Probing **LOGGED:** R Shapland **CASING:**

TYPE OF BORING: Push Tube

WATER OBSERVATIONS: Drilling method prevented accurate measurement of depth to water.

REMARKS: * Surface level interpolated from a contour plan provided by Enviro Works Pty Ltd

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U$_x$	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

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Initials:
Date:

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BOREHOLE LOG

CLIENT: City of Armadale
PROJECT: Keane Road Strategic Link
LOCATION: Forrestdale

SURFACE LEVEL: 22.2 m AHD*
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: BH15
PROJECT No: 46859
DATE: 13 Nov 2008
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
	0	SAND - grey, fine to medium grained, humid sand.		D	0.25				
				D	0.5				
		With some clay from 0.6m.		D	0.75				
	1			D	1.0				1
	1.2	CLAYEY SAND - light grey-brown, fine to medium grained, moist clayey sand.		D	1.25				
				D	1.5				
		Becoming grey-blue from 1.8m.		D	1.75				
	2			D	2.0				2
	2.3	SAND - grey-brown, fine to medium grained, with a trace of clay.		D	2.25				
				D	2.5				
				D	2.75				
	3			D	3.0				3
				D	3.25				
	3.5	Bore discontinued at 3.5m [Target Depth]		D	3.5				
	4								4

RIG: Geoprobe 6620DT **DRILLER:** Direct Push Probing **LOGGED:** R Shapland **CASING:**
TYPE OF BORING: Push Tube
WATER OBSERVATIONS: Drilling method prevented accurate measurement of depth to water.
REMARKS: * Surface level interpolated from a contour plan provided by Enviro Works Pty Ltd

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U$_x$	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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TEST PIT: TP01

Job Number:	J1301201	**Easting:**	400262.0 m	**Contractor:**	Erskine EM	**Date:**	23/10/2013
Client:	JDSi & Cedar Woods	**Northing:**	6443387.0 m	**Machine:**	Komatsu WB97R	**Logged:**	EY
Project:	Residental Development	**Datum:**	MGA94 Zone 50	**Operator:**	James	**Checked Date:**	18/11/2013
Location:	67 & 89 Anstey Road, Forrestdale			**Bucket:**		**Checked By:**	ORW

Excavation					Sampling			Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	*DEPTH* RL	SAMPLE OR FIELD TEST	ACID SULPHATE SAMPLE	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
E	E		0.0			TP01 0.00 - 0.25			SP	SAND: fine to coarse grained, sub-rounded, pale grey	M	MD	
			0.5			TP01 0.25 - 0.50							
						TP01 0.50 - 0.75							
	F		1.0			TP01 0.75 - 1.00			SC	Clayey SAND: fine to coarse grained, sub-rounded, red-brown mottled grey-green, clay is medium plasticity		VSt	
						TP01 1.00 - 1.25							
			1.5			TP01 1.25 - 1.50							
						TP01 1.50 - 1.75							
			2.0			TP01 1.75 - 2.00							
						TP01 2.00 - 2.50							
			2.5			TP01 2.50 - 3.00							
		▼	3.0							Hole Terminated at 3.00 m Target depth Groundwater encountered at 3m			
			3.5										
			4.0										

Sketch & Other Observations

Comments:

See Explanatory Notes and Method of Soil Description sheets for details of abbreviations and basis of descriptions

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TEST PIT: TP02

Job Number:	J1301201	**Easting:**	400355.0 m	**Contractor:**	Erskine EM	**Date:**	23/10/2013
Client:	JDSi & Cedar Woods	**Northing:**	6443408.0 m	**Machine:**	Komatsu WB97R	**Logged:**	EY
Project:	Residental Development	**Datum:**	MGA94 Zone 50	**Operator:**	James	**Checked Date:**	18/11/2013
Location:	67 & 89 Anstey Road, Forrestdale			**Bucket:**		**Checked By:**	ORW

Excavation					Sampling			Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	*DEPTH* RL	SAMPLE OR FIELD TEST	ACID SULPHATE SAMPLE	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
E	E	▼	0.0			TP02 0.00 - 0.25			SP	SAND: fine to coarse grained, sub-rounded, pale grey	M	L - MD	
			0.5			TP02 0.25 - 0.50							
						TP02 0.50 - 0.75			SP	SAND: fine to coarse grained, sub-rounded, pale brown with some clay	W		
			1.0			TP02 0.75 - 1.00							
						TP02 1.00 - 1.25				Clayey SAND: fine to coarse grained, sub-rounded, black-green mottled red-brown, clay is medium to high plasticity			
			1.5			TP02 1.25 - 1.50							
						TP02 1.50 - 1.75							
			2.0			TP02 1.75 - 2.00							
						TP02 2.00 - 2.50			SC		M	VSt	
			2.5			TP02 2.50 - 3.00							
			3.0										
			3.5							Hole Terminated at 3.30 m Target depth Perched Groundwater Groundwater encountered at 0.5m			
			4.0										

Sketch & Other Observations

Comments:
Perched Groundwater

See Explanatory Notes and Method of Soil Description sheets for details of abbreviations and basis of descriptions

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TEST PIT: TP03

Job Number:	J1301201	**Easting:**	400316.0 m	**Contractor:**	Erskine EM	**Date:**	23/10/2013
Client:	JDSi & Cedar Woods	**Northing:**	6443542.0 m	**Machine:**	Komatsu WB97R	**Logged:**	EY
Project:	Residental Development	**Datum:**	MGA94 Zone 50	**Operator:**	James	**Checked Date:**	18/11/2013
Location:	67 & 89 Anstey Road, Forrestdale			**Bucket:**		**Checked By:**	ORW

Excavation					Sampling			Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	*DEPTH* RL	SAMPLE OR FIELD TEST	ACID SULPHATE SAMPLE	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
E	E		0.0			TP03 0.00 - 0.25			SP	SAND: fine to coarse grained, sub-rounded, pale grey		L - MD	
						TP03 0.25 - 0.50							
	F		0.5			TP03 0.50 - 0.75			SC	Clayey SAND: fine to coarse grained, sub-rounded, grey-green, clay is low to medium plasticity			
						TP03 0.75 - 1.00							
			1.0		B (TP03-1)	TP03 1.00 - 1.25							
						TP03 1.25 - 1.50				Clayey SAND: fine to coarse grained, sub-rounded, grey-green, clay is high plasticity	M		
			1.5			TP03 1.50 - 1.75							
					B (TP03-2)	TP03 1.75 - 2.00						VSt	
			2.0			TP03 2.00 - 2.50			SC				
		▼	2.5			TP03 2.50 - 3.00					W		
			3.0							Hole Terminated at 3.00 m Target depth Groundwater encountered at 2.7m			
			3.5										
			4.0										

Sketch & Other Observations

Comments:

See Explanatory Notes and Method of Soil Description sheets for details of abbreviations and basis of descriptions

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TEST PIT: TP04

Job Number:	J1301201	**Easting:**	400409.0 m	**Contractor:**	Erskine EM	**Date:**	23/10/2013
Client:	JDSi & Cedar Woods	**Northing:**	6443579.0 m	**Machine:**	Komatsu WB97R	**Logged:**	EY
Project:	Residental Development	**Datum:**	MGA94 Zone 50	**Operator:**	James	**Checked Date:**	18/11/2013
Location:	67 & 89 Anstey Road, Forrestdale			**Bucket:**		**Checked By:**	ORW

Excavation					Sampling			Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	*DEPTH* RL	SAMPLE OR FIELD TEST	ACID SULPHATE SAMPLE	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
E	E		0.0			TP04 0.00 - 0.25			SP	SAND: fine to coarse grained, sub-rounded, pale grey		L - MD	
			0.5			TP04 0.25 - 0.50				At 0.50 m, with some well cemented horizons			
	H					TP04 0.50 - 0.75			SP	SAND: fine to coarse grained, sub-rounded, pale brown, with some clay			
			1.0			TP04 0.75 - 1.00				Clayey SAND: fine to coarse grained, sub-rounded, pale brown-green mottled brown, clay is medium plasticity, with some sandy horizons			
	F					TP04 1.00 - 1.25					M		
			1.5			TP04 1.25 - 1.50						VSt	
						TP04 1.50 - 1.75							
			2.0			TP04 1.75 - 2.00			SC				
					B (TP04-1)	TP04 2.00 - 2.50							
			2.5			TP04 2.50 - 3.00							
		▼	3.0							Hole Terminated at 3.10 m Target depth Groundwater encountered at 3.1m			
			3.5										
			4.0										

Sketch & Other Observations

Comments:

See Explanatory Notes and Method of Soil Description sheets for details of abbreviations and basis of descriptions

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TEST PIT: TP05

Job Number:	J1301201	**Easting:**	400319.0 m	**Contractor:**	Erskine EM	**Date:**	23/10/2013
Client:	JDSi & Cedar Woods	**Northing:**	6443662.0 m	**Machine:**	Komatsu WB97R	**Logged:**	EY
Project:	Residental Development	**Datum:**	MGA94 Zone 50	**Operator:**	James	**Checked Date:**	18/11/2013
Location:	67 & 89 Anstey Road, Forrestdale			**Bucket:**		**Checked By:**	ORW

Excavation					Sampling			Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	*DEPTH* RL	SAMPLE OR FIELD TEST	ACID SULPHATE SAMPLE	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
E	F	▼	0.0			TP05 0.00 - 0.25			SC	Clayey SAND: fine to coarse grained, sub-rounded, pale grey-green, clay is medium plasticity	M	MD - D	
			0.5			TP05 0.25 - 0.50							
						TP05 0.50 - 0.75							
						TP05 0.75 - 1.00				Below 0.80 m, clay is high plasticity			
			1.0			TP05 1.00 - 1.25							
						TP05 1.25 - 1.50						VSt	
			1.5			TP05 1.50 - 1.75							
						TP05 1.75 - 2.00							
			2.0			TP05 2.00 - 2.50							
			2.5			TP05 2.50 - 3.00			SP	SAND: fine to coarse grained, sub-rounded, black, with some clay		MD	
			3.0							Hole Terminated at 3.00 m Target depth Groundwater encountered at 3m			
			3.5										
			4.0										

Sketch & Other Observations

Comments:

See Explanatory Notes and Method of Soil Description sheets for details of abbreviations and basis of descriptions

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TEST PIT: TP06

Job Number:	J1301201	**Easting:**	400241.0 m	**Contractor:**	Erskine EM	**Date:**	23/10/2013
Client:	JDSi & Cedar Woods	**Northing:**	6443711.0 m	**Machine:**	Komatsu WB97R	**Logged:**	EY
Project:	Residental Development	**Datum:**	MGA94 Zone 50	**Operator:**	James	**Checked Date:**	18/11/2013
Location:	67 & 89 Anstey Road, Forrestdale			**Bucket:**		**Checked By:**	ORW

Excavation					Sampling			Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	*DEPTH* RL	SAMPLE OR FIELD TEST	ACID SULPHATE SAMPLE	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
E	E		0.0		ES (TP06-)	TP06 0.00 - 0.25			SP	SAND: fine to coarse grained, sub-rounded, orange, with some clay, clayey horizons in part, with some very weakly cemented horizons	M	L - MD	
			0.5			TP06 0.25 - 0.50							
						TP06 0.50 - 0.75				Below 0.60 m, pale yellow-brown			
			1.0			TP06 0.75 - 1.00							
						TP06 1.00 - 1.25							
						TP06 1.25 - 1.50							
			1.5		B (TP06-1)	TP06 1.50 - 1.75						MD	
						TP06 1.75 - 2.00				Below 1.80 m, pale red-brown mottled red-orange			
			2.0			TP06 2.00 - 2.50							
			2.5			TP06 2.50 - 3.00							
			3.0							Hole Terminated at 3.00 m Target depth Groundwater Not Encountered			
			3.5										
			4.0										

Sketch & Other Observations

Comments:

See Explanatory Notes and Method of Soil Description sheets for details of abbreviations and basis of descriptions

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TEST PIT: TP07

Job Number:	J1301201	**Easting:**	400165.0 m	**Contractor:**	Erskine EM	**Date:**	23/10/2013
Client:	JDSi & Cedar Woods	**Northing:**	6443699.0 m	**Machine:**	Komatsu WB97R	**Logged:**	EY
Project:	Residental Development	**Datum:**	MGA94 Zone 50	**Operator:**	James	**Checked Date:**	18/11/2013
Location:	67 & 89 Anstey Road, Forrestdale			**Bucket:**		**Checked By:**	ORW

Excavation					Sampling			Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	*DEPTH* RL	SAMPLE OR FIELD TEST	ACID SULPHATE SAMPLE	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
E	E		0.0			TP07 0.00 - 0.25			SP	SAND: fine to coarse grained, sub-rounded, grey		MD	
			0.5			TP07 0.25 - 0.50							
	H	▼				TP07 0.50 - 0.75			GP	Iron-Cemented SAND ("Coffee Rock"), excavated as COBBLES and GRAVEL		VD	
			1.0			TP07 0.75 - 1.00							
	F					TP07 1.00 - 1.25			SC	Clayey SAND: fine to coarse grained, sub-rounded, brown mottled green-brown, clay is medium plasticity, weakly cemented in parts	M		
			1.5			TP07 1.25 - 1.50							
						TP07 1.50 - 1.75							
			2.0			TP07 1.75 - 2.00						VSt	
	H					TP07 2.00 - 2.50							
			2.5			TP07 2.50 - 3.00				Below 2.4 m, green			
			3.0							Hole Terminated at 3.00 m Target depth Perched Groundwater Groundwater encountered at 0.7m			
			3.5										
			4.0										

Sketch & Other Observations

Comments:
Perched Groundwater

See Explanatory Notes and Method of Soil Description sheets for details of abbreviations and basis of descriptions

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TEST PIT: TP08

Job Number:	J1301201	**Easting:**	400158.0 m	**Contractor:**	Erskine EM	**Date:**	23/10/2013
Client:	JDSi & Cedar Woods	**Northing:**	6443608.0 m	**Machine:**	Komatsu WB97R	**Logged:**	EY
Project:	Residental Development	**Datum:**	MGA94 Zone 50	**Operator:**	James	**Checked Date:**	18/11/2013
Location:	67 & 89 Anstey Road, Forrestdale			**Bucket:**		**Checked By:**	ORW

Excavation					Sampling			Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	*DEPTH* RL	SAMPLE OR FIELD TEST	ACID SULPHATE SAMPLE	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
E	E	▼	0.0			TP08 0.00 - 0.25			SP	SAND: fine to coarse grained, sub-rounded, grey-black, trace silt	M	MD	
			0.5			TP08 0.25 - 0.50							
	H					TP08 0.50 - 0.75			GP	Iron-Cemented SAND ("Coffee Rock"), excavated as COBBLES and GRAVEL		VD	
			1.0			TP08 0.75 - 1.00				Clayey SAND: fine to coarse grained, sub-rounded, pale yellow mottled orange, clay is medium plasticity, weakly cemented in parts			
						TP08 1.00 - 1.25							
	F		1.5			TP08 1.25 - 1.50				Below 1.20 m, brown			
						TP08 1.50 - 1.75							
			2.0			TP08 1.75 - 2.00			SC			VSt	
						TP08 2.00 - 2.50							
			2.5			TP08 2.50 - 3.00							
			3.0							Hole Terminated at 3.00 m Target depth Perched Groundwater Groundwater encountered at 0.6m			
			3.5										
			4.0										

Sketch & Other Observations

Comments:
Perched Groundwater

See Explanatory Notes and Method of Soil Description sheets for details of abbreviations and basis of descriptions

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TEST PIT: TP09

Job Number:	J1301201	**Easting:**	400172.0 m	**Contractor:**	Erskine EM	**Date:**	23/10/2013
Client:	JDSi & Cedar Woods	**Northing:**	6443543.0 m	**Machine:**	Komatsu WB97R	**Logged:**	EY
Project:	Residental Development	**Datum:**	MGA94 Zone 50	**Operator:**	James	**Checked Date:**	18/11/2013
Location:	67 & 89 Anstey Road, Forrestdale			**Bucket:**		**Checked By:**	ORW

Excavation					Sampling			Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	*DEPTH* RL	SAMPLE OR FIELD TEST	ACID SULPHATE SAMPLE	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
E	E		0.0		B (TP09-1)	TP09 0.00 - 0.25			SP	SAND: fine to coarse grained, sub-rounded, pale grey	M	L	
						TP09 0.25 - 0.50				Clayey SAND: fine to coarse grained, sub-rounded, grey, clay is low plasticity		St - VSt	
			0.5			TP09 0.50 - 0.75				Below 0.60 m, Yellow mottled orange, clay is medium to high plasticity			
						TP09 0.75 - 1.00							
			1.0			TP09 1.00 - 1.25							
						TP09 1.25 - 1.50				Below 1.40 m, grey-green			
	F		1.5			TP09 1.50 - 1.75			SC			VSt	
						TP09 1.75 - 2.00							
			2.0			TP09 2.00 - 2.50							
			2.5			TP09 2.50 - 3.00							
			3.0							Hole Terminated at 3.00 m Target depth Groundwater Not Encountered			
			3.5										
			4.0										

Sketch & Other Observations

Comments:

See Explanatory Notes and Method of Soil Description sheets for details of abbreviations and basis of descriptions

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TEST PIT: TP10

Job Number:	J1301201	**Easting:**	400259.0 m	**Contractor:**	Erskine EM	**Date:**	23/10/2013
Client:	JDSi & Cedar Woods	**Northing:**	6443554.0 m	**Machine:**	Komatsu WB97R	**Logged:**	EY
Project:	Residental Development	**Datum:**	MGA94 Zone 50	**Operator:**	James	**Checked Date:**	18/11/2013
Location:	67 & 89 Anstey Road, Forrestdale			**Bucket:**		**Checked By:**	ORW

Excavation					Sampling			Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	*DEPTH* RL	SAMPLE OR FIELD TEST	ACID SULPHATE SAMPLE	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
E	E		0.0		B (TP10-1)	TP10 0.00 - 0.25			SP	SAND: fine to coarse grained, sub-rounded, pale grey	M	VL - L	
			0.5			TP10 0.25 - 0.50				Below 0.50 m, brown			
						TP10 0.50 - 0.75							
						TP10 0.75 - 1.00							
	F		1.0			TP10 1.00 - 1.25			SC	Clayey SAND: fine to coarse grained, sub-rounded, yellow mottled orange, clay is medium plasticity		St - VSt	
						TP10 1.25 - 1.50				Below 1.20 m, grey-green			
			1.5			TP10 1.50 - 1.75							
						TP10 1.75 - 2.00						VSt	
			2.0			TP10 2.00 - 2.50							
			2.5			TP10 2.50 - 3.00							
			3.0							Hole Terminated at 3.00 m Target depth Perched Groundwater Groundwater encountered at 0.2m			
			3.5										
			4.0										

Sketch & Other Observations

Comments:
Perched Groundwater

See Explanatory Notes and Method of Soil Description sheets for details of abbreviations and basis of descriptions

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TEST PIT: TP11

Job Number:	J1301201	**Easting:**	400295.0 m	**Contractor:**	Erskine EM	**Date:**	23/10/2013
Client:	JDSi & Cedar Woods	**Northing:**	6443617.0 m	**Machine:**	Komatsu WB97R	**Logged:**	EY
Project:	Residental Development	**Datum:**	MGA94 Zone 50	**Operator:**	James	**Checked Date:**	18/11/2013
Location:	67 & 89 Anstey Road, Forrestdale			**Bucket:**		**Checked By:**	ORW

Excavation					Sampling			Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	*DEPTH* RL	SAMPLE OR FIELD TEST	ACID SULPHATE SAMPLE	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
E	F	▼	0.0			TP11 0.00 - 0.25				Clayey SAND: fine to coarse grained, sub-rounded, grey mottled green, clay is medium plasticity		St	
			0.5			TP11 0.25 - 0.50							
						TP11 0.50 - 0.75							
						TP11 0.75 - 1.00							
			1.0		B (TP11-1)	TP11 1.00 - 1.25				Below 1.0 m, brown mottled orange brown, medium to high plasticity clay			
						TP11 1.25 - 1.50							
			1.5			TP11 1.50 - 1.75			SC	Below 1.5 m, dark brown-black	M	VSt	
						TP11 1.75 - 2.00							
			2.0			TP11 2.00 - 2.50							
			2.5			TP11 2.50 - 3.00							
		▼	3.0							Hole Terminated at 3.00 m Target depth Groundwater encountered at 3m			
			3.5										
			4.0										

Sketch & Other Observations

Comments:

See Explanatory Notes and Method of Soil Description sheets for details of abbreviations and basis of descriptions

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TEST PIT: TP14

Job Number:	J1301201	**Easting:**	400120.0 m	**Contractor:**	Erskine EM	**Date:**	23/10/2013
Client:	JDSi & Cedar Woods	**Northing:**	6443473.0 m	**Machine:**	Komatsu WB97R	**Logged:**	EY
Project:	Residental Development	**Datum:**	MGA94 Zone 50	**Operator:**	James	**Checked Date:**	18/11/2013
Location:	67 & 89 Anstey Road, Forrestdale			**Bucket:**		**Checked By:**	ORW

Excavation					Sampling			Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	*DEPTH* RL	SAMPLE OR FIELD TEST	ACID SULPHATE SAMPLE	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
E	E	▼	0.0			TP14 0.00 - 0.25			SP	SAND: fine to coarse grained, sub-rounded, grey	M	VL - L	
			0.5			TP14 0.25 - 0.50				Below 0.20 m, pale grey			
						TP14 0.50 - 0.75							
					B (TP14-1)	TP14 0.75 - 1.00						L	
			1.0			TP14 1.00 - 1.25							
						TP14 1.25 - 1.50			SC	Clayey SAND: fine to coarse grained, sub-rounded, pale yellow mottled orange, clay is medium plasticity		St - VSt	
			1.5			TP14 1.50 - 1.75							
						TP14 1.75 - 2.00				Brown colour			
			2.0							Hole Terminated at 2.00 m Target depth Groundwater encountered at 0.7m			
			2.5										
			3.0										
			3.5										
			4.0										

Sketch & Other Observations

Comments:

See Explanatory Notes and Method of Soil Description sheets for details of abbreviations and basis of descriptions

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HAND AUGER BOREHOLE: HA01

Job Number: J1301201
Client: JDSi & Cedar Woods
Project: Residental Development
Location: 67 & 89 Anstey Road, Forrestdale

Easting: 400251.0 m
Northing: 6443662.0 m
Datum: MGA94 Zone 50

Operator: EY
Inclination: -90°

Date: 25/10/2013
Logged: EY
Checked Date: 18/11/2013
Checked By: ORW

Drilling					Sampling			Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	ACID SULPHATE SAMPLE	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
HA		▼	0.0						SP	SAND: fine to coarse grained, sub-rounded, grey	M	VL - L	
			0.5							Below 0.10 m, pale grey	W		
										Below 0.75 m, brown			
			1.0							Hole Terminated at 0.80 m Target depth Groundwater encountered at 0.45m			
			1.5										
			2.0										
			2.5										
			3.0										
			3.5										
			4.0										

Sketch & Other Observations

Comments:

See Explanatory Notes and Method of Soil Description sheets for details of abbreviations and basis of descriptions

GALT LIB 1.01-TEMP.GLB Log G_EXCAVATION J1301201.GPJ <<DrawingFile>> 18/11/2013 15:49 8.30.003 Datgel DGD_CPT_Photo_Monitoring Tools | Lib: GALT 1.01 2013-02-21 Prj: GALT 1.01 2013-02-21

HAND AUGER BOREHOLE: HA02

Job Number: J1301201
Client: JDSi & Cedar Woods
Project: Residental Development
Location: 67 & 89 Anstey Road, Forrestdale

Easting: 400211.0 m
Northing: 6443494.0 m
Datum: MGA94 Zone 50

Operator: EY
Inclination: -90°

Date: 25/10/2013
Logged: EY
Checked Date: 18/11/2013
Checked By: ORW

Drilling					Sampling			Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	*DEPTH* RL	SAMPLE OR FIELD TEST	ACID SULPHATE SAMPLE	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
HA	E	▼	0.0						SP	SAND: fine to coarse grained, sub-rounded, grey to pale grey	M	VL - L	
			0.5							Below 0.30 m, pale grey-brown	W		
			1.0							Below 0.7 m, trace clay			
										Hole Terminated at 1.00 m Target depth Groundwater encountered at 0.5m			
			1.5										
			2.0										
			2.5										
			3.0										
			3.5										
			4.0										

Sketch & Other Observations

Comments:

See Explanatory Notes and Method of Soil Description sheets for details of abbreviations and basis of descriptions

GALT LIB 1.01-TEMP.GLB Log G_EXCAVATION J1301201.GPJ <<DrawingFile>> 18/11/2013 15:49 8.30.003 Datgel DGD_CPT_Photo_Monitoring Tools | Lib: GALT 1.01 2013-02-21 Prj: GALT 1.01 2013-02-21

ELECTRIC FRICTION-CONE PENETROMETER

CLIENT: Cedarwoods

PROJECT: Geotechnical Study

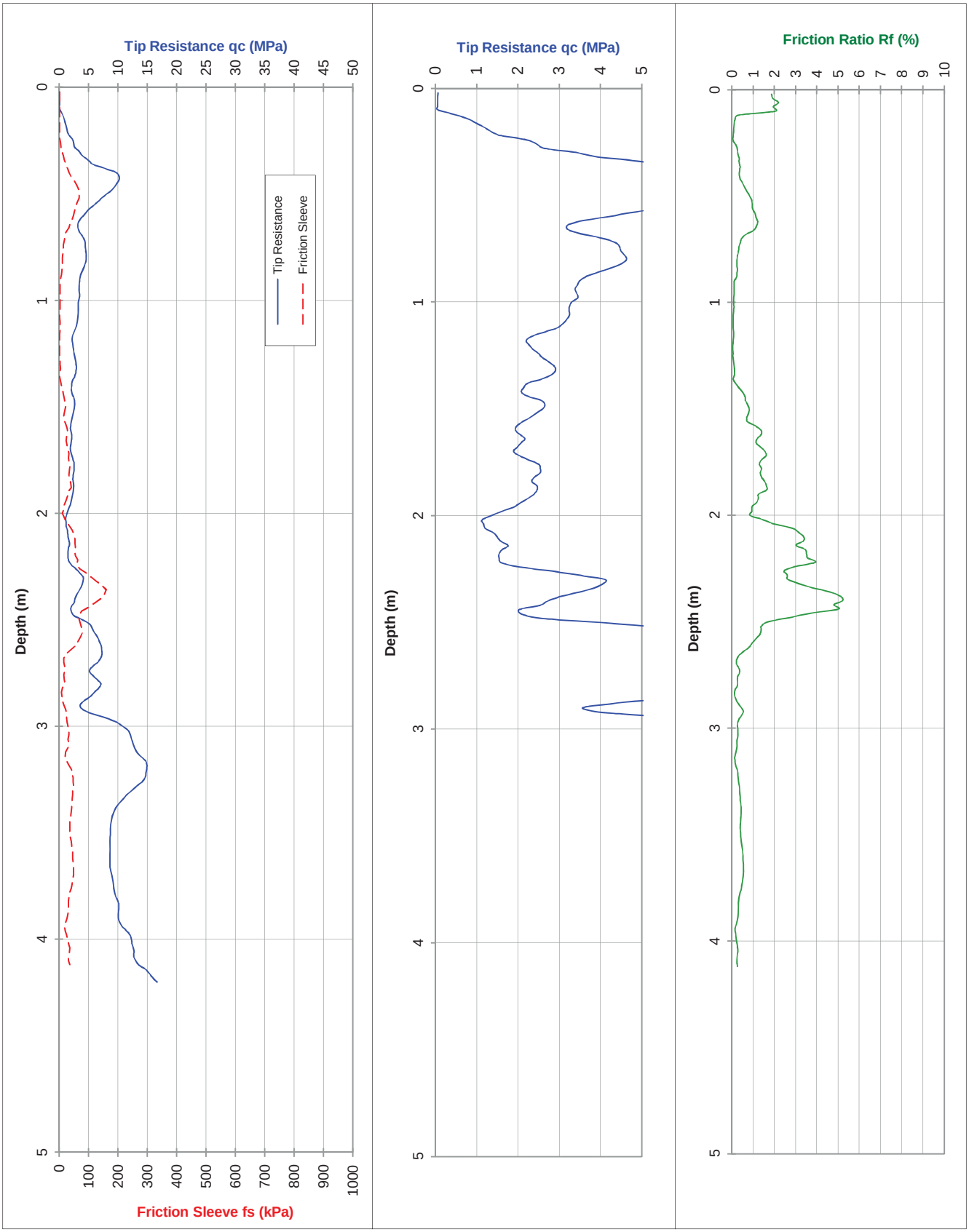
LOCATION: 67 & 89 Anstey Road, Forrestdale

Date: Thu, Oct 24, 2013

Probe No.: CPT 01

Job Number: J1301201

Co-ordinates:



PROBEDRILL PTY LTD
GEOTECHNICAL SURVEY
Ph: 9314 6611 Fax: 9314 6699

Water (m): 1.0

Refusal:

Tested in accordance with AS 1289.6.5.1 - 1999 and IRTP 2001 for friction reducer

File: GL0426M

32mm s'pipe installed to (m): 4.0

Cone I.D. : EC145

12 tonne track mounted CPT Rig (M1)

ELECTRIC FRICTION-CONE PENETROMETER

CLIENT: Cedarwoods

PROJECT: Geotechnical Study

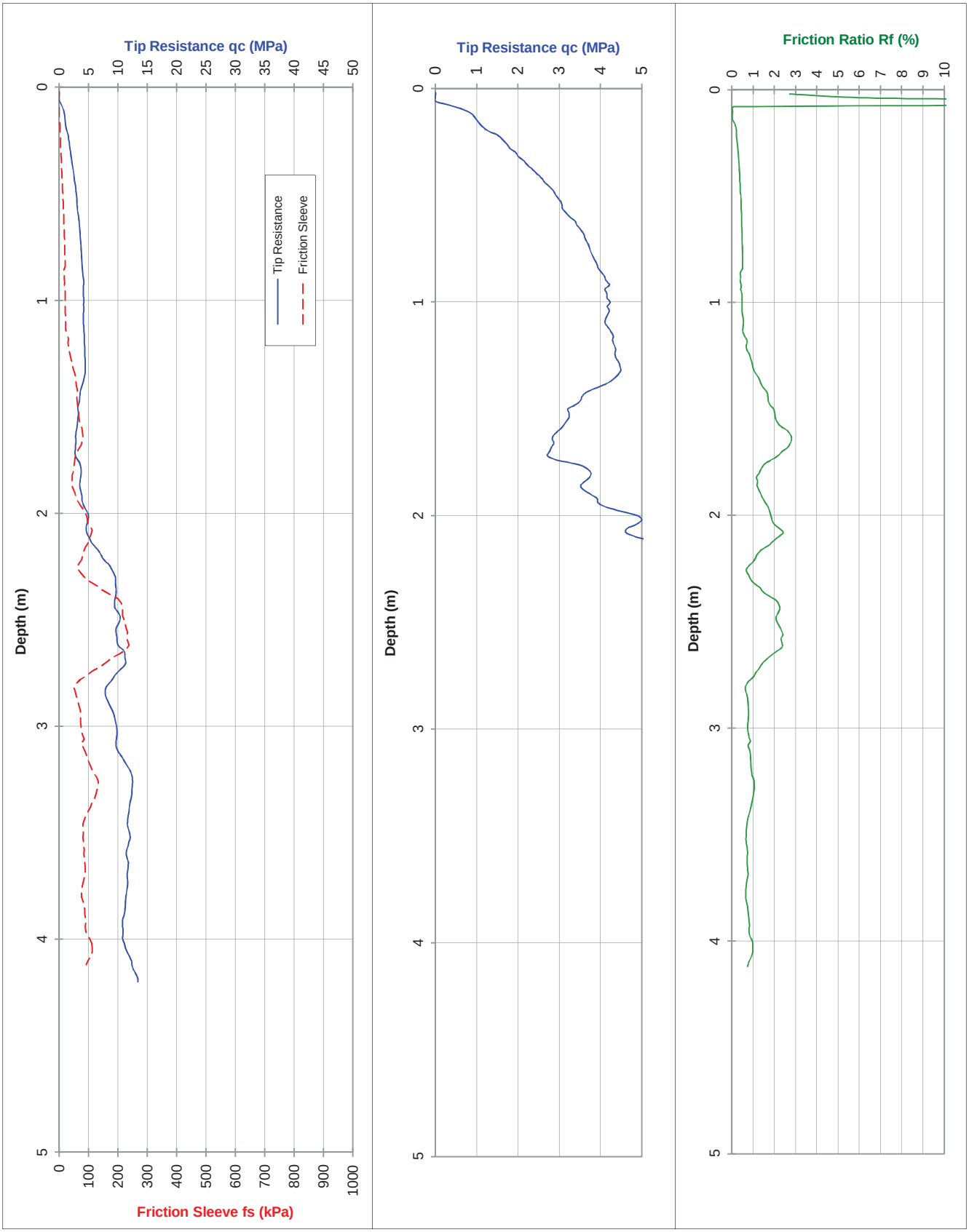
LOCATION: 67 & 89 Anstey Road, Forrestdale

Date: Thu, Oct 24, 2013

Probe No.: CPT 02

Job Number: J1301201

Co-ordinates:



PROBEDRILL PTY LTD
GEOTECHNICAL SURVEY
Ph: 9314 6611 Fax: 9314 6699

Water (m): 0.5

Refusal:

Tested in accordance with AS 1289.6.5.1 - 1999 and IRTP 2001 for friction reducer

File: GL0425M

Dummy probe to (m):

Cone I.D. : EC145

12 tonne track mounted CPT Rig (M1)

ELECTRIC FRICTION-CONE PENETROMETER

CLIENT: Cedarwoods

PROJECT: Geotechnical Study

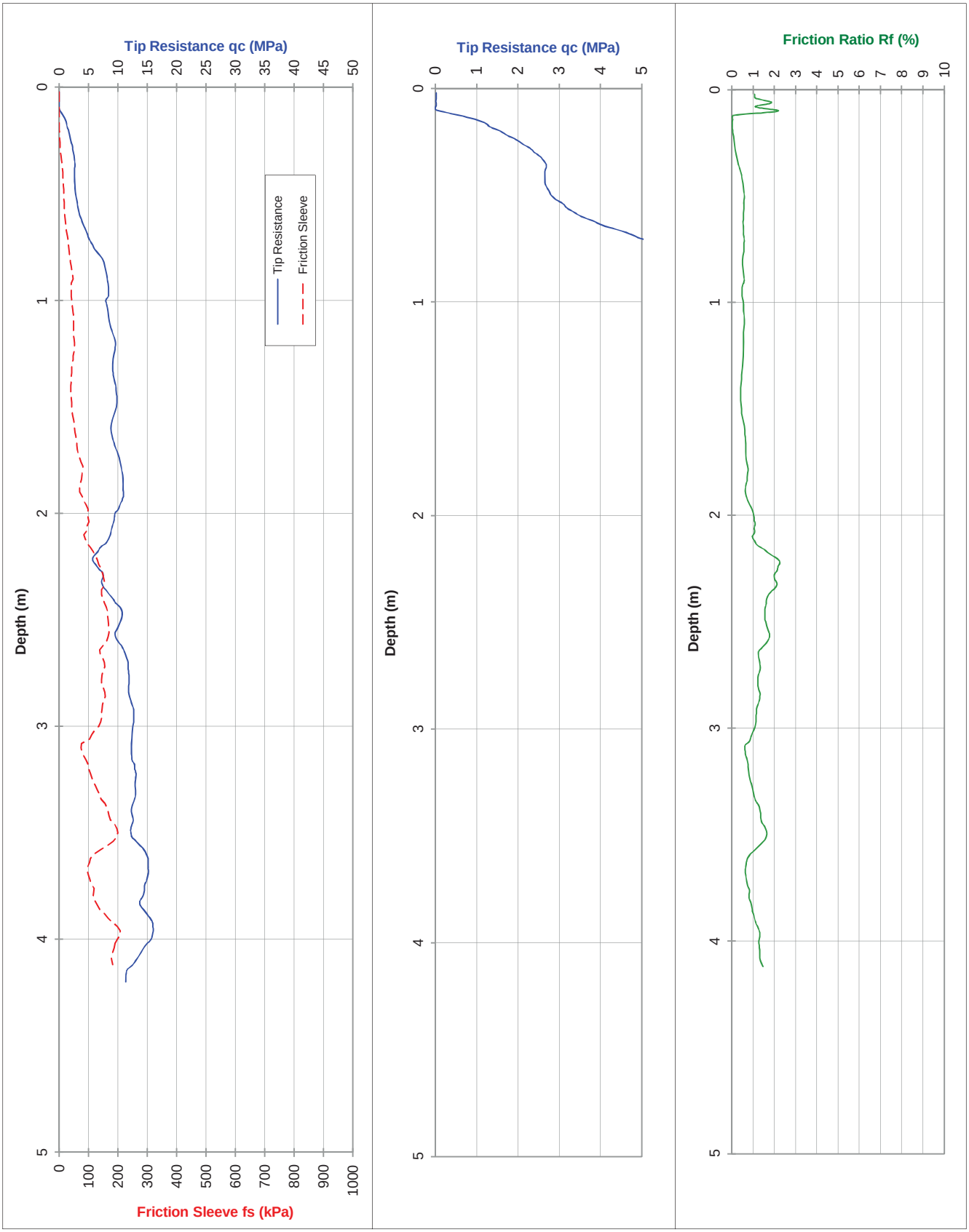
LOCATION: 67 & 89 Anstey Road, Forrestdale

Date: Thu, Oct 24, 2013

Probe No.: CPT 03

Job Number: J1301201

Co-ordinates:



PROBEDRILL PTY LTD
GEOTECHNICAL SURVEY
Ph: 9314 6611 Fax: 9314 6699

Water (m): 0.5

Refusal:

Tested in accordance with AS 1289.6.5.1 - 1999 and IRTP 2001 for friction reducer

File: GL0424M

Dummy probe to (m):

Cone I.D. : EC145

12 tonne track mounted CPT Rig (M1)

ELECTRIC FRICTION-CONE PENETROMETER

CLIENT: Cedarwoods

PROJECT: Geotechnical Study

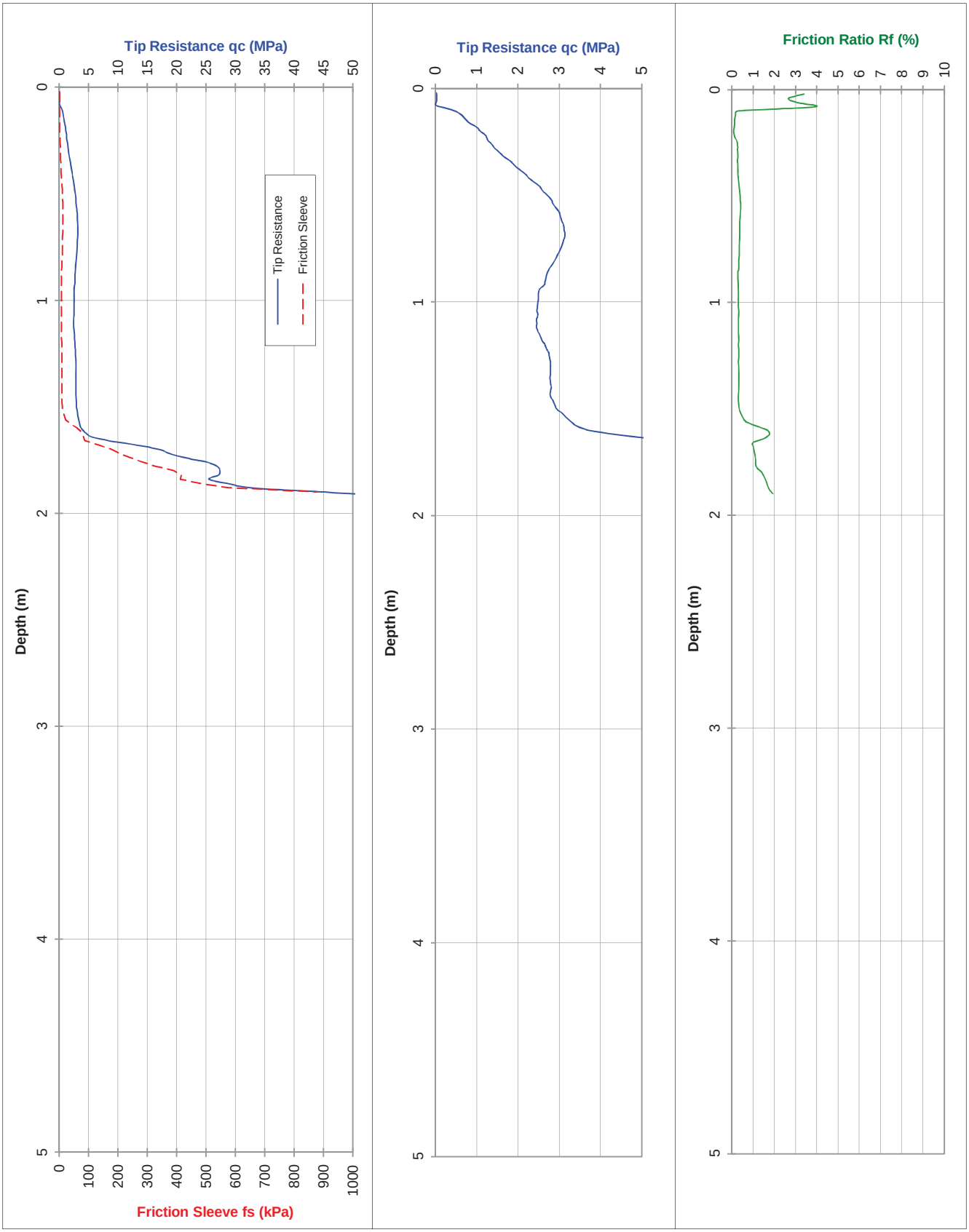
LOCATION: 67 & 89 Anstey Road, Forrestdale

Date: Thu, Oct 24, 2013

Probe No.: CPT 04

Job Number: J1301201

Co-ordinates:



PROBEDRILL PTY LTD
GEOTECHNICAL SURVEY
Ph: 9314 6611 Fax: 9314 6699

Water (m): Dry to 1.3

Refusal: 75MPa

Tested in accordance with AS 1289.6.5.1 - 1999 and IRTP 2001 for friction reducer

File: GL0423M

Dummy probe to (m):

Cone I.D. : EC145

12 tonne track mounted CPT Rig (M1)

ELECTRIC FRICTION-CONE PENETROMETER

CLIENT: Cedarwoods

PROJECT: Geotechnical Study

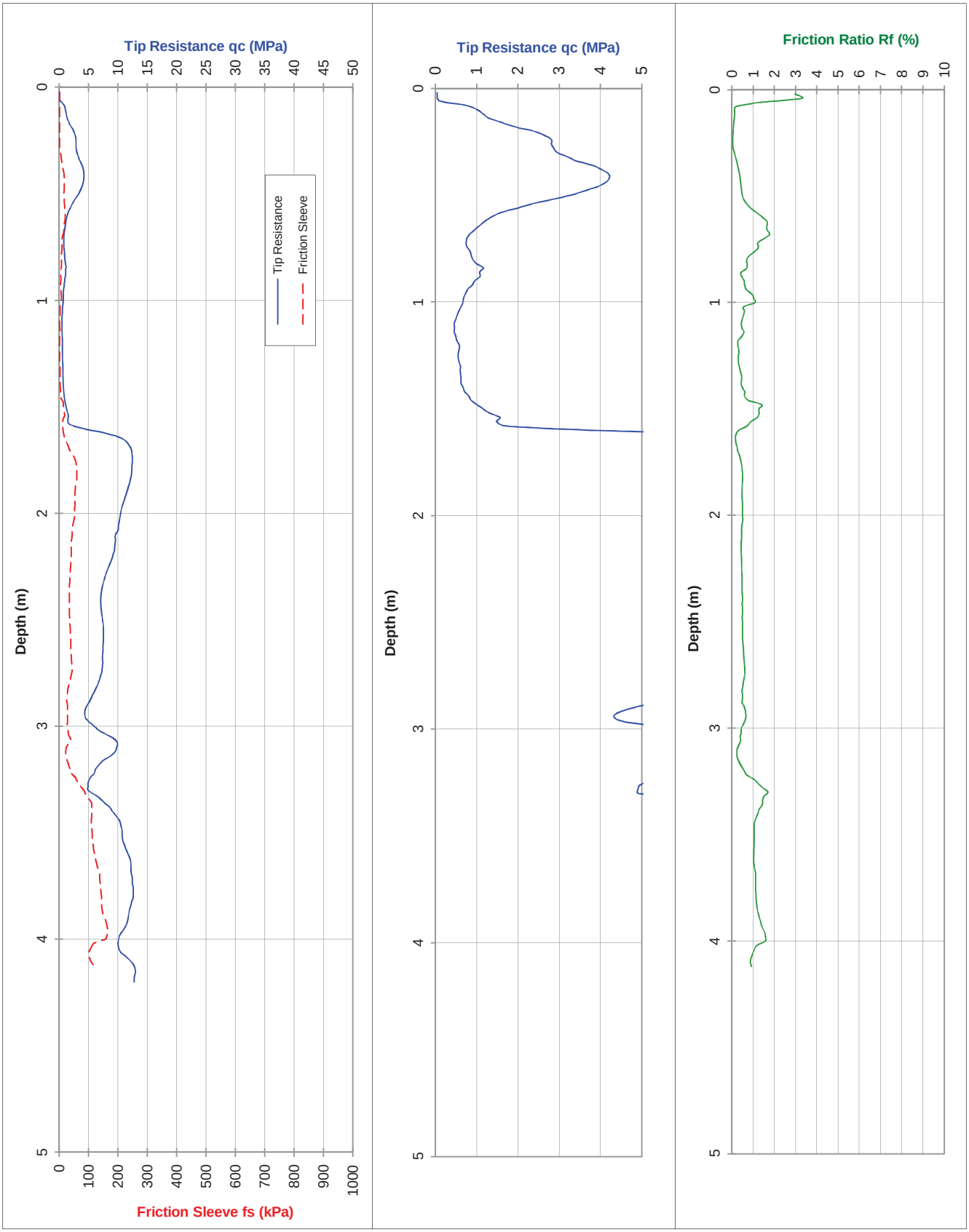
LOCATION: 67 & 89 Anstey Road, Forrestdale

Date: Thu, Oct 24, 2013

Probe No.: CPT 05

Job Number: J1301201

Co-ordinates:



PROBEDRILL PTY LTD
GEOTECHNICAL SURVEY
Ph: 9314 6611 Fax: 9314 6699

Water (m):

Refusal:

Tested in accordance with AS 1289.6.5.1 - 1999 and IRTP 2001 for friction reducer

File: GL0427M

32mm s'pipe installed to (m): 4.0

Cone I.D. : EC145

12 tonne track mounted CPT Rig (M1)

ELECTRIC FRICTION-CONE PENETROMETER

CLIENT: Cedarwoods

PROJECT: Geotechnical Study

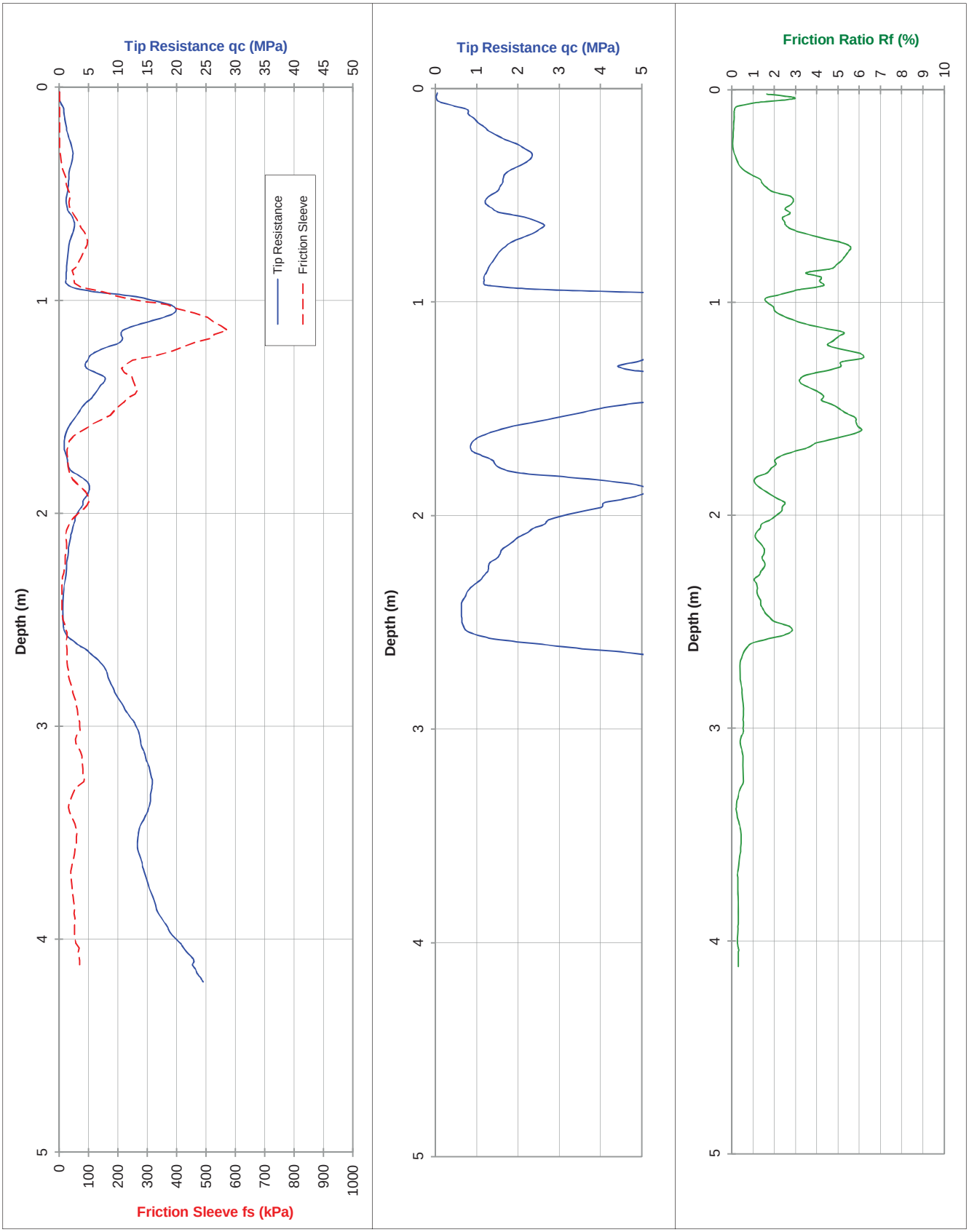
LOCATION: 67 & 89 Anstey Road, Forrestdale

Date: Thu, Oct 24, 2013

Probe No.: CPT 06

Job Number: J1301201

Co-ordinates:



PROBEDRILL PTY LTD
GEOTECHNICAL SURVEY
Ph: 9314 6611 Fax: 9314 6699

Water (m): Dry to 0.5

Refusal:

Tested in accordance with AS 1289.6.5.1 - 1999 and IRTP 2001 for friction reducer

File: GL0422M

Dummy probe to (m):

Cone I.D. : EC145

12 tonne track mounted CPT Rig (M1)

ELECTRIC FRICTION-CONE PENETROMETER

CLIENT: Cedarwoods

PROJECT: Geotechnical Study

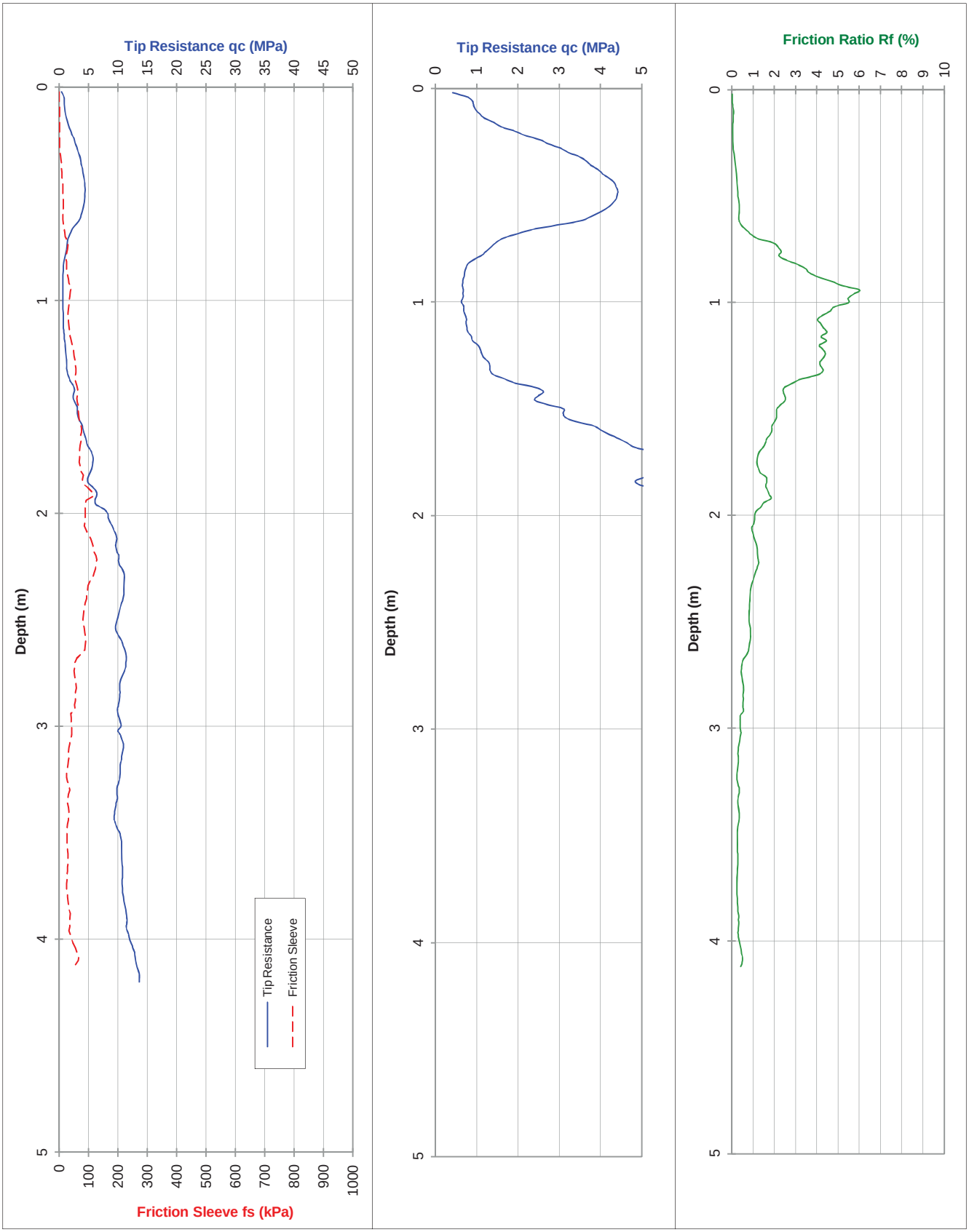
LOCATION: 67 & 89 Anstey Road, Forrestdale

Date: Thu, Oct 24, 2013

Probe No.: CPT 07

Job Number: J1301201

Co-ordinates:



PROBEDRILL PTY LTD
GEOTECHNICAL SURVEY
Ph: 9314 6611 Fax: 9314 6699

Water (m): 0.6

Refusal:

Tested in accordance with AS 1289.6.5.1 - 1999 and IRTP 2001 for friction reducer

File: GL0416M

Dummy probe to (m):

Cone I.D. : EC145

12 tonne track mounted CPT Rig (M1)

GHD MANAGEMENT ENGINEERING ENVIRONMENT

WATER CORPORATION

BOREHOLE LOG

Borehole No.: **BH06 North**

Sheet 1 of 2

Client: Water Corporation
Project: Balannup A WWPS and Keane Road Pressure Main
Job No.: 61/29471/02

Coordinates: E 400 565, N 6443 495
Ground Surface Elevation: +22.0m **Total Depth:** 6.0m
Commenced: 17-Jul-13 **Completed:** 17-Jul-13
Contractor: Hagstrom Drilling **Driller:** Peter Lowenstein

Rig Type & Mounting: DPP mounted Geoprobe 7822DT **Inclination:** Vertical
Flushing Fluid: None
Hole Diameter (mm): 120 **Casing Size:** NA

Logged:	CM	17-Jul-13
Processed:	CM	19-Nov-13
Checked:	AW	19/11/13

Depth Scale (m)	Daily Progress/ Observations: Date	Casing Depth (m)	Fluid Depth (m)	Drilling Method	Water	Depth (m)/ [Elev.]	Geological Unit	Graphic Log	Classification	Strata Description (type; colour; fines plasticity or particle characteristics; minor components; structure and/or origin)	Moisture Condition	Consistency/ Relative Density	Sample Type & Depth	Sample No.	Sample/ Test Records & Comments
0	17/07			DPP		0.4 [+21.6]			GW-GM	BASECOURSE Black/brown gravel, fine to medium grained, with fine to medium grained sand, trace silt FILL	M	L	0.30	D	
									GW	SUBBASE			0.37	D	
									SM	Yellow/brown gravel, fine to medium grained limestone, with fine to medium grained sand FILL			0.45	D	
						0.8 [+21.3]			SP-SM	SILTY SAND Grey/brown, fine to medium grained, low plasticity, with trace medium to coarse gravel BASSENDEAN SAND			0.75	D	
						0.9 [+21.1]			SC	SAND Pale grey/brown, fine grained, with silt BASSENDEAN SAND			0.90	D	
1						1.5 [+20.5]				CLAYEY SAND Red/brown, fine to medium grained, low plasticity, with roots GUILDFORD FORMATION					
						1.8 [+20.3]				CORELOSS from 1.5 to 1.8m Inferred to be CLAYEY SAND					
					▼				SC	CLAYEY SAND Pale grey, medium grained, medium to high plasticity GUILDFORD FORMATION	W		1.75	D	
2										2.25m: Becoming grey, medium to coarse grained			2.25	D	
										2.55m: Organic odour			2.55	D	
3										3.0m: Becoming fine to medium grained, medium plasticity			3.00	D	
4													4.50	D	
5															

GENERAL LOG KEANE ROAD PRESSURE MAIN.GPJ GHDPER.GDT 19/11/13

GHD MANAGEMENT ENGINEERING ENVIRONMENT

WATER CORPORATION

BOREHOLE LOG

Borehole No.: **BH06 North**

Sheet 2 of 2

Client: Water Corporation
Project: Balannup A WWPS and Keane Road Pressure Main
Job No.: 61/29471/02

Coordinates: E 400 565, N 6443 495
Ground Surface Elevation: +22.0m **Total Depth:** 6.0m
Commenced: 17-Jul-13 **Completed:** 17-Jul-13
Contractor: Hagstrom Drilling **Driller:** Peter Lowenstein

Rig Type & Mounting: DPP mounted Geoprobe 7822DT **Inclination:** Vertical
Flushing Fluid: None
Hole Diameter (mm): 120 **Casing Size:** NA

Logged:	CM	17-Jul-13
Processed:	CM	19-Nov-13
Checked:	AW	19/11/13

Depth Scale (m)	Daily Progress/ Observations: Date	Casing Depth (m)	Fluid Depth (m)	Drilling Method	Water	Depth (m)/ [Elev.]	Geological Unit	Graphic Log	Classification	Strata Description (type; colour; fines plasticity or particle characteristics; minor components; structure and/or origin)	Moisture Condition	Consistency/ Relative Density	Sample Type & Depth	Sample No.	Sample/ Test Records & Comments	Depth Scale (m)
6	17/07			DPP		6.0 [+16.0]			SC	CLAYEY SAND Pale grey, medium grained, medium to high plasticity GUILDFORD FORMATION 5.2m: Becoming fine grained	W		4.50 5.20	D D		6
										Termination Depth = 6.00m (Target Depth)						
7																7
8																8
9																9
10																10

GHD MANAGEMENT ENGINEERING ENVIRONMENT

WATER CORPORATION

BOREHOLE LOG

Borehole No.: **BH06 South**

Sheet 1 of 2

Client: Water Corporation
Project: Balannup A WWPS and Keane Road Pressure Main
Job No.: 61/29471/02

Coordinates: E 400 563, N 6443 483
Ground Surface Elevation: +22.5m AHD **Total Depth:** 6.5m
Commenced: 27-Jun-13 **Completed:** 27-Jun-13
Contractor: Hagstrom Drilling **Driller:** Peter Lowenstein

Rig Type & Mounting: DPP mounted Geoprobe 7822DT **Inclination:** Vertical
Flushing Fluid: None
Hole Diameter (mm): 120 **Casing Size:** NA

Logged:	CM	27-Jun-13
Processed:	CM	19-Nov-13
Checked:	AW	19/11/13

Depth Scale (m)	Daily Progress/ Observations: Date	Casing Depth (m)	Fluid Depth (m)	Drilling Method	Water	Depth (m)/ [Elev.]	Geological Unit	Graphic Log	Classification	Strata Description (type; colour; fines plasticity or particle characteristics; minor components; structure and/or origin)	Moisture Condition	Consistency/ Relative Density	Sample Type & Depth	Sample No.	Sample/ Test Records & Comments
0	27/06			DPP		0.5 [+22.1]			SP	FILL Brown/grey sand, medium grained, with fine laterite gravel	M	L	0.00	D	
										FILL 0.15m: Becoming pale brown/grey, with organics			0.15	D	
													0.25	D	
									SC	0.25m: Becoming grey, with fine laterite gravel			0.45	D	
						0.6 [+21.9]			SP	CLAYEY SAND Pale brown, medium grained, medium to high plasticity, with trace organics GUILDFORD FORMATION			0.60	D	
						0.8 [+21.7]			SC	SAND Grey, medium grained , trace clay, trace organics GUILDFORD FORMATION			0.80	D	
1															1
						1.2 [+21.3]				CLAYEY SAND Grey/pale brown, medium grained, medium plasticity, trace organics GUILDFORD FORMATION			1.20	NR	
						1.5 [+21.0]			SC	CORELOSS from 1.2 to 1.5m Inferred to be CLAYEY SAND		MD	1.50	S	SPT: 3, 6, 15 [N=21]
										CLAYEY SAND Grey/pale brown, medium grained, medium to high plasticity, trace organics GUILDFORD FORMATION	W		1.95	D	
2					▼	2.3 [+20.2]			SC	CLAYEY SAND Grey, medium grained, low plasticity, organic smell GUILDFORD FORMATION			2.30	D	2
										3.0m: Becoming grey/grey brown, low to medium plasticity			3.00	S	SPT: 6, 6, 9 [N=15]
3													3.45	D	3
						4.5 [+18.0]			SC	CLAYEY SAND / SAND Grey/grey brown, medium grained, medium to high plasticity GUILDFORD FORMATION			4.50	S	SPT: 10, 12, 12 [N=24]
4															4
5													4.95	D	5

GENERAL LOG KEANE ROAD PRESSURE MAIN.GPJ GHDPER.GDT 19/11/13

BOREHOLE LOG

GHD MANAGEMENT ENGINEERING ENVIRONMENT | WATER CORPORATION

Borehole No.: **BH06 South**

Client: Water Corporation
Project: Balannup A WWPS and Keane Road Pressure Main
Job No.: 61/29471/02

Coordinates: E 400 563, N 6443 483
Ground Surface Elevation: +22.5m AHD **Total Depth:** 6.5m
Commenced: 27-Jun-13 **Completed:** 27-Jun-13
Contractor: Hagstrom Drilling **Driller:** Peter Lowenstein

Rig Type & Mounting: DPP mounted Geoprobe 7822DT **Inclination:** Vertical
Flushing Fluid: None
Hole Diameter (mm): 120 **Casing Size:** NA

Logged:	CM	27-Jun-13
Processed:	CM	19-Nov-13
Checked:	AW	19/11/13

Depth Scale (m)	Daily Progress/ Observations: Date	Casing Depth (m)	Fluid Depth (m)	Drilling Method	Water	Depth (m)/ [Elev.]	Geological Unit	Graphic Log	Classification	Strata Description (type; colour; fines plasticity or particle characteristics; minor components; structure and/or origin)	Moisture Condition	Consistency/ Relative Density	Sample Type & Depth	Sample No.	Sample/ Test Records & Comments	Depth Scale (m)
6	27/06								SC	CLAYEY SAND / SAND Grey/grey brown, medium grained, medium to high plasticity GUILDFORD FORMATION			4.95	D		6
										6.0m: Becoming fine grained			6.00	S	SPT: 10, 13, 14 [N=27]	
						6.5 [+16.1]				Termination Depth = 6.45m (Target Depth)						
7																7
8																8
9																9
10																10

GHD MANAGEMENT ENGINEERING ENVIRONMENT

WATER CORPORATION

BOREHOLE LOG

Borehole No.: **BH22**

Sheet 1 of 2

Client: Water Corporation
Project: Balannup A WWPS and Keane Road Pressure Main
Job No.: 61/29471/02

Coordinates: E 400 097, N 6443 966
Ground Surface Elevation: +23.8m AHD **Total Depth:** 6.0m
Commenced: 26-Jul-13 **Completed:** 26-Jul-13
Contractor: Hagstrom Drilling **Driller:** Peter Lowenstein

Rig Type & Mounting: DPP mounted Geoprobe 7822DT **Inclination:** Vertical
Flushing Fluid: None
Hole Diameter (mm): 120 **Casing Size:** NA

Logged:	CM	26-Jul-13
Processed:	CM	30-Oct-13
Checked:	AW	19/11/13

Depth Scale (m)	Daily Progress/ Observations: Date	Casing Depth (m)	Fluid Depth (m)	Drilling Method	Water	Depth (m)/ [Elev.]	Geological Unit	Graphic Log	Classification	Strata Description (type; colour; fines plasticity or particle characteristics; minor components; structure and/or origin)	Moisture Condition	Consistency/ Relative Density	Sample Type & Depth	Sample No.	Sample/ Test Records & Comments
0	26/07					0.3 [+23.6]			SM	SILTY SAND Grey/black, medium grained, trace organics BASSENDEAN SAND	M	L	0.00	D	
									SP	SAND Grey, medium grained, trace organics BASSENDEAN SAND			0.25	D	
													0.50	D	
1						1.1 [+22.7]				CORELOSS from 1.1 to 1.5m Inferred to be SAND					
						1.5 [+22.3]			SP	SAND Pale brown, medium grained, trace organics BASSENDEAN SAND			1.50	D	
						2.0			SM	SILTY SAND			2.00	D	
2						[+21.7]			CH	Black, medium grained, weakly cemented GUILDFORD FORMATION	W	V. St	2.10	D	
										SANDY CLAY Brown/grey, high plasticity, medium grained sand GUILDFORD FORMATION 2.5m: Medium plasticity			2.50	D	
						2.7 [+21.1]				CORELOSS from 2.7 to 3.0m Inferred to be SANDY CLAY			2.70	D	
3				DPP		3.0 [+20.8]			CI	SANDY CLAY Brown/grey, medium plasticity, medium grained sand, trace organic, organic odour GUILDFORD FORMATION			3.00	D	
					▼					3.8m: Becoming black/brown			3.50	D	
4						4.1 [+19.7]				4.0m: Becoming brown/grey, with black weakly cemented SAND			3.80 3.85	D D	
									SM	SILTY SAND Black/brown, medium grained, cemented sand, strong odour GUILDFORD FORMATION		D	4.10	D	
						4.3 [+19.5] 4.4			SC				4.30	D	
						[+19.3]			SC	CLAYEY SAND Grey/brown, medium grained, low plasticity, odour GUILDFORD FORMATION			4.50	D	
5										CORELOSS from 4.4 to 4.5m Inferred to be CLAYEY SAND					

GENERAL LOG KEANE ROAD PRESSURE MAIN.GPJ GHDPER.GDT 30/10/13

BOREHOLE LOG

GHD MANAGEMENT ENGINEERING ENVIRONMENT | WATER CORPORATION

Borehole No.: **BH22**

Sheet 2 of 2

Client: Water Corporation
Project: Balannup A WWPS and Keane Road Pressure Main
Job No.: 61/29471/02

Coordinates: E 400 097, N 6443 966
Ground Surface Elevation: +23.8m AHD **Total Depth:** 6.0m
Commenced: 26-Jul-13 **Completed:** 26-Jul-13
Contractor: Hagstrom Drilling **Driller:** Peter Lowenstein

Rig Type & Mounting: DPP mounted Geoprobe 7822DT **Inclination:** Vertical
Flushing Fluid: None
Hole Diameter (mm): 120 **Casing Size:** NA

Logged:	CM	26-Jul-13
Processed:	CM	30-Oct-13
Checked:	AW	19/11/13

Depth Scale (m)	Daily Progress/ Observations: Date	Casing Depth (m)	Fluid Depth (m)	Drilling Method	Water	Depth (m)/ [Elev.]	Geological Unit	Graphic Log	Classification	Strata Description (type; colour; fines plasticity or particle characteristics; minor components; structure and/or origin)	Moisture Condition	Consistency/ Relative Density	Sample Type & Depth	Sample No.	Sample/ Test Records & Comments	Depth Scale (m)
6	26/07					5.5 [+18.3]			SC	CLAYEY SAND Grey/brown, medium grained, low plasticity, organic odour GUILDFORD FORMATION 5.0m: Banded with black, medium grained, low plasticity SILTY SAND			5.00	D		6
									SM	SILTY SAND Brown, medium grained, organic odour GUILDFORD FORMATION			5.50	D		
						6.0 [+17.8]				Termination Depth = 6.00m (Target Depth)						
7																7
8																8
9																9
10																10

GENERAL LOG KEANE ROAD PRESSURE MAIN.GPJ GHDPER.GDT 30/10/13

GHD MANAGEMENT ENGINEERING ENVIRONMENT

WATER CORPORATION

BOREHOLE LOG

Borehole No.: **BH23**

Sheet 1 of 2

Client: Water Corporation
Project: Balannup A WWPS and Keane Road Pressure Main
Job No.: 61/29471/02

Coordinates: E 400 159, N 6443 905
Ground Surface Elevation: +23.4m AHD **Total Depth:** 6.5m
Commenced: 26-Jul-13 **Completed:** 26-Jul-13
Contractor: Hagstrom Drilling **Driller:** Peter Lowenstein

Rig Type & Mounting: DPP mounted Geoprobe 7822DT **Inclination:** Vertical
Flushing Fluid: None
Hole Diameter (mm): 120 **Casing Size:** NA

Logged:	CM	26-Jul-13
Processed:	CM	30-Oct-13
Checked:	AW	19/11/13

Depth Scale (m)	Daily Progress/ Observations: Date	Casing Depth (m)	Fluid Depth (m)	Drilling Method	Water	Depth (m)/ [Elev.]	Geological Unit	Graphic Log	Classification	Strata Description (type; colour; fines plasticity or particle characteristics; minor components; structure and/or origin)	Moisture Condition	Consistency/ Relative Density	Sample Type & Depth	Sample No.	Sample/ Test Records & Comments
	26/07			DPP		0.2 [+23.3]			SM	SILTY SAND Black/grey, medium grained, trace organics	M	L	0.00	D	
									SP	BASSENDEAN SAND			0.15	D	
										SAND Grey/pale brown, medium grained, trace organics BASSENDEAN SAND			0.50	D	
1						1.0 [+22.3]			SM	SILTY SAND Black/brown, medium grained, trace organics GUILDFORD FORMATION			1.00	D	
										CORELOSS from 1.1 to 1.5m Inferred to be SILTY SAND					
						1.5 [+21.9]			SC	CLAYEY SAND Black/brown, medium grained, trace organics, high plasticity fines GUILDFORD FORMATION 1.6m: Becoming pale brown		MD	1.50	S	SPT: 5, 7, 9 [N=16]
2										2.0m: Pockets of black, medium grained, medium plasticity CLAYEY SAND			2.00	D	
						2.3 [+21.1]			SM	SILTY SAND/SANDY SILT Black, fine to medium grained, non plastic GUILDFORD FORMATION			2.30	D	
						2.5 [+20.9]			SM	SILTY SAND Brown, medium grained, trace clay GUILDFORD FORMATION	W		2.50	D	
3						3.0 [+20.4]			SM	SILTY SAND Dark brown, medium grained GUILDFORD FORMATION			3.00	S	SPT: 7, 13, 13 [N=26]
						3.5 [+19.9]			SC	CLAYEY SAND Dark brown/grey, medium grained, low to medium plasticity, organic odour GUILDFORD FORMATION 3.8m: Becoming brown/black			3.50	D	
4					▼					4.0m: Trace black cemented SAND			3.80	D	
													4.00	D	
						4.5 [+18.9]			SC	CLAYEY SAND Brown, medium grained, low plasticity, organic odour GUILDFORD FORMATION			4.50	S	SPT: 7, 10, 12 [N=22]
5															

GENERAL LOG KEANE ROAD PRESSURE MAIN.GPJ GHDPER.GDT 30/10/13

GHD MANAGEMENT ENGINEERING ENVIRONMENT

WATER CORPORATION

BOREHOLE LOG

Borehole No.: **BH23**

Sheet 2 of 2

Client: Water Corporation
Project: Balannup A WWPS and Keane Road Pressure Main
Job No.: 61/29471/02

Coordinates: E 400 159, N 6443 905
Ground Surface Elevation: +23.4m AHD **Total Depth:** 6.5m
Commenced: 26-Jul-13 **Completed:** 26-Jul-13
Contractor: Hagstrom Drilling **Driller:** Peter Lowenstein

Rig Type & Mounting: DPP mounted Geoprobe 7822DT **Inclination:** Vertical
Flushing Fluid: None
Hole Diameter (mm): 120 **Casing Size:** NA

Logged:	CM	26-Jul-13
Processed:	CM	30-Oct-13
Checked:	AW	19/11/13

Depth Scale (m)	Daily Progress/ Observations: Date	Casing Depth (m)	Fluid Depth (m)	Drilling Method	Water	Depth (m)/ [Elev.]	Geological Unit	Graphic Log	Classification	Strata Description (type; colour; fines plasticity or particle characteristics; minor components; structure and/or origin)	Moisture Condition	Consistency/ Relative Density	Sample Type & Depth	Sample No.	Sample/ Test Records & Comments	Depth Scale (m)
6	26/07					6.5 [+17.0]			SC	CLAYEY SAND Brown, medium grained, low plasticity, organic odour GUILDFORD FORMATION			5.00 5.50 6.00	D D S	SPT: 6, 11, 15 [N=26]	6
										Termination Depth = 6.45m (Target Depth)						
7																7
8																8
9																9
10																10

GHD MANAGEMENT ENGINEERING ENVIRONMENT

WATER CORPORATION

BOREHOLE LOG

Borehole No.: **BH24**

Sheet 1 of 2

Client: Water Corporation
Project: Balannup A WWPS and Keane Road Pressure Main
Job No.: 61/29471/02

Coordinates: E 400 226, N 6443 844
Ground Surface Elevation: +22.9m AHD **Total Depth:** 6.5m
Commenced: 26-Jul-13 **Completed:** 26-Jul-13
Contractor: Hagstrom Drilling **Driller:** Peter Lowenstein

Rig Type & Mounting: DPP mounted Geoprobe 7822DT **Inclination:** Vertical
Flushing Fluid: None
Hole Diameter (mm): 120 **Casing Size:** NA

Logged:	CM	26-Jul-13
Processed:	CM	30-Oct-13
Checked:	AW	19/11/13

Depth Scale (m)	Daily Progress/ Observations: Date	Casing Depth (m)	Fluid Depth (m)	Drilling Method	Water	Depth (m)/ [Elev.]	Geological Unit	Graphic Log	Classification	Strata Description (type; colour; fines plasticity or particle characteristics; minor components; structure and/or origin)	Moisture Condition	Consistency/ Relative Density	Sample Type & Depth	Sample No.	Sample/ Test Records & Comments
0	26/07								SM	SILTY SAND Dark grey, medium grained, trace organics BASSENDEAN SAND	M	L	0.00	D	
						0.3 [+22.5]			Cl	SANDY CLAY Red/brown, medium plasticity, fine grained sand, trace fine grained gravel GUILDFORD FORMATION	D	F	0.30	D	
									Cl	SANDY CLAY Yellow, medium plasticity, medium grained sand GUILDFORD FORMATION 0.8m: Becoming grey with depth	W		0.40	D	
1					▼	0.9 [+22.0]				CORELOSS from 0.9 to 1.5m Inferred to be SANDY CLAY					
						1.5 [+21.4]			SC	CLAYEY SAND Grey/green, medium grained, low plasticity fines GUILDFORD FORMATION 1.7m: Medium plasticity fines		L	1.50	S	SPT: 3, 4, 4 [N=8]
2										2.0m: Becoming brown/grey, low plasticity, odour			2.00	D	
										2.5m: Trace organics			2.50	D	
3				DPP									3.00	S	SPT: 5, 5, 7 [N=12]
													3.50	D	
4													4.00	D	
												MD	4.50	S	SPT: 5, 9, 11 [N=20]
5															

GENERAL LOG KEANE ROAD PRESSURE MAIN.GPJ GHDPER.GDT 30/10/13

GHD MANAGEMENT ENGINEERING ENVIRONMENT

WATER CORPORATION

BOREHOLE LOG

Borehole No.: **BH24**

Sheet 2 of 2

Client: Water Corporation
Project: Balannup A WWPS and Keane Road Pressure Main
Job No.: 61/29471/02

Coordinates: E 400 226, N 6443 844
Ground Surface Elevation: +22.9m AHD **Total Depth:** 6.5m
Commenced: 26-Jul-13 **Completed:** 26-Jul-13
Contractor: Hagstrom Drilling **Driller:** Peter Lowenstein

Rig Type & Mounting: DPP mounted Geoprobe 7822DT **Inclination:** Vertical
Flushing Fluid: None
Hole Diameter (mm): 120 **Casing Size:** NA

Logged:	CM	26-Jul-13
Processed:	CM	30-Oct-13
Checked:	AW	14/11/13

Depth Scale (m)	Daily Progress/ Observations: Date	Casing Depth (m)	Fluid Depth (m)	Drilling Method	Water	Depth (m)/ [Elev.]	Geological Unit	Graphic Log	Classification	Strata Description (type; colour; fines plasticity or particle characteristics; minor components; structure and/or origin)	Moisture Condition	Consistency/ Relative Density	Sample Type & Depth	Sample No.	Sample/ Test Records & Comments	Depth Scale (m)
6	26/07					6.5 [+16.5]			SC	CLAYEY SAND Grey/green, medium grained, low plasticity fines GUILDFORD FORMATION		L	5.00 5.50 6.00	D D S	SPT: 3, 8, 12 [N=20]	6
										Termination Depth = 6.45m (Target Depth)						
7																7
8																8
9																9
10																10

GENERAL LOG KEANE ROAD PRESSURE MAIN.GPJ GHDPER.GDT 30/10/13

GHD MANAGEMENT ENGINEERING ENVIRONMENT

WATER CORPORATION

BOREHOLE LOG

Borehole No.: **BH25**

Sheet 1 of 2

Client: Water Corporation
Project: Balannup A WWPS and Keane Road Pressure Main
Job No.: 61/29471/02

Coordinates: E 400 303, N 6443 757
Ground Surface Elevation: +22.8m AHD **Total Depth:** 6.0m
Commenced: 26-Jul-13 **Completed:** 26-Jul-13
Contractor: Hagstrom Drilling **Driller:** Peter Lowenstein

Rig Type & Mounting: DPP mounted Geoprobe 7822DT **Inclination:** Vertical
Flushing Fluid: None
Hole Diameter (mm): 120 **Casing Size:** NA

Logged:	CM	26-Jul-13
Processed:	CM	19-Nov-13
Checked:	AW	19/11/13

Depth Scale (m)	Daily Progress/ Observations: Date	Casing Depth (m)	Fluid Depth (m)	Drilling Method	Water	Depth (m)/ [Elev.]	Geological Unit	Graphic Log	Classification	Strata Description (type; colour; fines plasticity or particle characteristics; minor components; structure and/or origin)	Moisture Condition	Consistency/ Relative Density	Sample Type & Depth	Sample No.	Sample/ Test Records & Comments
0	26/07					0.00			SP	SAND Grey, medium grained, trace organics BASSENDEAN SAND	M	L	0.00	D	
						0.3 [+22.5]			SC	CLAYEY SAND Grey/brown, medium grained, medium plasticity, trace organics GUILDFORD FORMATION			0.25	D	
						0.5 [+22.3]			SC	CLAYEY SAND Grey/yellow, fine to medium grained, medium plasticity GUILDFORD FORMATION			0.50	D	
1										1.0m: Becoming pale brown and medium grained			1.00	D	
						1.2 [+21.6]				CORELOSS from 1.2 to 1.5m Inferred to be CLAYEY SAND					
						1.5 [+21.3]			SC	CLAYEY SAND Grey/brown with yellow streaks, medium grained, high plasticity GUILDFORD FORMATION			1.50	D	
										1.75m: Becoming dark grey			1.75	D	
2					▼					2.0m: Slight odour	W		2.00	D	
										2.5m: Becoming dark grey/black			2.50	D	
						2.6 [+20.2]			SC	CLAYEY SAND Brown/grey, medium grained, low plasticity GUILDFORD FORMATION			2.60	D	
3				DPP						3.0m: Becoming brown, with low to medium plasticity			3.00	D	
										3.5m: Strong organic odour			3.50	D	
4										4.0m: Medium to high plasticity			4.00	D	
						4.4 [+18.4]				CORELOSS from 4.35 to 4.5m Inferred to be CLAYEY SAND					
						4.5 [+18.3]			SC	CLAYEY SAND Brown/grey, medium grained, low plasticity GUILDFORD FORMATION			4.50	D	
5															

GENERAL LOG KEANE ROAD PRESSURE MAIN.GPJ GHDPER.GDT 19/11/13

GHD MANAGEMENT ENGINEERING ENVIRONMENT

WATER CORPORATION

BOREHOLE LOG

Borehole No.: **BH25**

Sheet 2 of 2

Client: Water Corporation
Project: Balannup A WWPS and Keane Road Pressure Main
Job No.: 61/29471/02

Coordinates: E 400 303, N 6443 757
Ground Surface Elevation: +22.8m AHD **Total Depth:** 6.0m
Commenced: 26-Jul-13 **Completed:** 26-Jul-13
Contractor: Hagstrom Drilling **Driller:** Peter Lowenstein

Rig Type & Mounting: DPP mounted Geoprobe 7822DT **Inclination:** Vertical
Flushing Fluid: None
Hole Diameter (mm): 120 **Casing Size:** NA

Logged:	CM	26-Jul-13
Processed:	CM	19-Nov-13
Checked:	AW	19/11/13

Depth Scale (m)	Daily Progress/ Observations: Date	Casing Depth (m)	Fluid Depth (m)	Drilling Method	Water	Depth (m)/ [Elev.]	Geological Unit	Graphic Log	Classification	Strata Description (type; colour; fines plasticity or particle characteristics; minor components; structure and/or origin)	Moisture Condition	Consistency/ Relative Density	Sample Type & Depth	Sample No.	Sample/ Test Records & Comments	Depth Scale (m)
6	26/07					6.0 [+16.8]			SC	CLAYEY SAND Brown/grey, medium grained, low plasticity GUILDFORD FORMATION			5.00 5.50	D D		6
										Termination Depth = 6.00m (Target Depth)						
7																7
8																8
9																9
10																10

GENERAL LOG KEANE ROAD PRESSURE MAIN.GPJ GHDPER.GDT 19/11/13

GHD MANAGEMENT ENGINEERING ENVIRONMENT | WATER CORPORATION

BOREHOLE LOG

Borehole No.: **BH26**

Sheet 1 of 2

Client: Water Corporation
Project: Balannup A WWPS and Keane Road Pressure Main
Job No.: 61/29471/02

Coordinates: E 400 386, N 6443 680
Ground Surface Elevation: +22.3m AHD **Total Depth:** 6.5m
Commenced: 26-Jul-13 **Completed:** 26-Jul-13
Contractor: Hagstrom Drilling **Driller:** Peter Lowenstein

Rig Type & Mounting: DPP mounted Geoprobe 7822DT **Inclination:** Vertical
Flushing Fluid: None
Hole Diameter (mm): 120 **Casing Size:** NA

Logged:	CM	26-Jul-13
Processed:	CM	30-Oct-13
Checked:	AW	19/11/13

Depth Scale (m)	Daily Progress/ Observations: Date	Casing Depth (m)	Fluid Depth (m)	Drilling Method	Water	Depth (m)/ [Elev.]	Geological Unit	Graphic Log	Classification	Strata Description (type; colour; fines plasticity or particle characteristics; minor components; structure and/or origin)	Moisture Condition	Consistency/ Relative Density	Sample Type & Depth	Sample No.	Sample/ Test Records & Comments	Depth Scale (m)
0	26/07					0.2 [+22.2]			SP	SAND Grey, medium grained, trace organics	W	L	0.00	D		0
									SC	BASSENDEAN SAND	M		0.15	D		
										CLAYEY SAND Brown/yellow, medium grained, high plasticity, trace organics, trace white fine grained gravel GUILDFORD FORMATION 0.5m: Becoming pale brown			0.50	D		
1													1.00	D		1
						1.3 [+21.0]				CORELOSS from 1.3 to 1.5m Inferred to be CLAYEY SAND						
				DPP		1.5 [+20.8]			SC	1.5m: As above with dark yellow staining			1.50	S	SPT: 3, 4, 5 [N=9]	
2											W		2.00	D		2
										2.3m: Becoming more SANDY			2.30	D		
													2.50	D		
3					▼	3.0 [+19.3]			SM	SILTY SAND Grey/brown, medium grained GUILDFORD FORMATION		MD	3.00	S	SPT: 2, 12, 14 [N=26]	3
													3.50	D		
4						4.1 [+18.2]			SC	CLAYEY SAND Grey/brown, medium grained, low plasticity GUILDFORD FORMATION			4.10	D		4
													4.50	S	SPT: 7, 10, 11 [N=21]	
5																5

GENERAL LOG KEANE ROAD PRESSURE MAIN.GPJ GHDPER.GDT 30/10/13

GHD MANAGEMENT ENGINEERING ENVIRONMENT

WATER CORPORATION

BOREHOLE LOG

Borehole No.: **BH26**

Sheet 2 of 2

Client: Water Corporation
Project: Balannup A WWPS and Keane Road Pressure Main
Job No.: 61/29471/02

Coordinates: E 400 386, N 6443 680
Ground Surface Elevation: +22.3m AHD **Total Depth:** 6.5m
Commenced: 26-Jul-13 **Completed:** 26-Jul-13
Contractor: Hagstrom Drilling **Driller:** Peter Lowenstein

Rig Type & Mounting: DPP mounted Geoprobe 7822DT **Inclination:** Vertical
Flushing Fluid: None
Hole Diameter (mm): 120 **Casing Size:** NA

Logged:	CM	26-Jul-13
Processed:	CM	30-Oct-13
Checked:	AW	19/11/13

Depth Scale (m)	Daily Progress/ Observations: Date	Casing Depth (m)	Fluid Depth (m)	Drilling Method	Water	Depth (m)/ [Elev.]	Geological Unit	Graphic Log	Classification	Strata Description (type; colour; fines plasticity or particle characteristics; minor components; structure and/or origin)	Moisture Condition	Consistency/ Relative Density	Sample Type & Depth	Sample No.	Sample/ Test Records & Comments	Depth Scale (m)
6	26/07					6.5 [+15.9]			SC	CLAYEY SAND Grey/brown, medium grained, low plasticity GUILDFORD FORMATION 5.0m: Strong organic odour			5.00 5.50 6.00	D D S	SPT: 5, 8, 8 [N=16]	6
										Termination Depth = 6.45m (Target Depth)						
7																7
8																8
9																9
10																10

GENERAL LOG KEANE ROAD PRESSURE MAIN.GPJ GHDPER.GDT 30/10/13

GHD MANAGEMENT ENGINEERING ENVIRONMENT | WATER CORPORATION

BOREHOLE LOG

Borehole No.: **BH27**

Sheet 1 of 2

Client: Water Corporation
Project: Balannup A WWPS and Keane Road Pressure Main
Job No.: 61/29471/02

Coordinates: E 400 430, N 6443 644
Ground Surface Elevation: +22.3m AHD **Total Depth:** 6.0m
Commenced: 27-Jul-13 **Completed:** 27-Jul-13
Contractor: Hagstrom Drilling **Driller:** Peter Lowenstein

Rig Type & Mounting: DPP mounted Geoprobe 7822DT **Inclination:** Vertical
Flushing Fluid: None
Hole Diameter (mm): 120 **Casing Size:** NA

Logged:	CM	27-Jul-13
Processed:	CM	30-Oct-13
Checked:	AW	19/11/13

Depth Scale (m)	Daily Progress/ Observations: Date	Casing Depth (m)	Fluid Depth (m)	Drilling Method	Water	Depth (m)/ [Elev.]	Geological Unit	Graphic Log	Classification	Strata Description (type; colour; fines plasticity or particle characteristics; minor components; structure and/or origin)	Moisture Condition	Consistency/ Relative Density	Sample Type & Depth	Sample No.	Sample/ Test Records & Comments
0	27/07			DPP	▼	0.00			SM	SILTY SAND Brown/black, medium grained, trace organics BASSENDEAN SAND	W	L	0.00	D	
						0.4 [+22.0]			SC	CLAYEY SAND Pale brown/grey, medium grained, medium to high plasticity, trace organics GUILDFORD FORMATION	M	MD	0.35 0.50	D D	
1						1.3 [+21.1]				CORELOSS from 1.25 to 1.5m Inferred to be CLAYEY SAND			1.00	D	
						1.5 [+20.8]			SW-SC	SAND / CLAYEY SAND Pale brown/grey with yellow and dark grey staining, medium grained, medium to high plasticity, trace organics GUILDFORD FORMATION			1.50	D	
2										1.95m: Becoming more SANDY	W		1.95	D	
										2.5m: Becoming dark grey, develops organic odour			2.50	D	
3										3.0m: Becoming brown/grey			3.00	D	
										3.7m: Becoming blue/grey			3.50 3.70	D D	
4										4.0m: Becoming more CLAYEY			4.00	D	
						4.5 [+17.8]			SC	CLAYEY SAND Blue/grey, medium grained, low to medium plasticity, organic odour GUILDFORD FORMATION			4.50	D	
5															

GENERAL LOG KEANE ROAD PRESSURE MAIN.GPJ GHDPER.GDT 30/10/13

BOREHOLE LOG

GHD MANAGEMENT ENGINEERING ENVIRONMENT | WATER CORPORATION

Borehole No.: **BH27**

Sheet 2 of 2

Client: Water Corporation
Project: Balannup A WWPS and Keane Road Pressure Main
Job No.: 61/29471/02

Coordinates: E 400 430, N 6443 644
Ground Surface Elevation: +22.3m AHD **Total Depth:** 6.0m
Commenced: 27-Jul-13 **Completed:** 27-Jul-13
Contractor: Hagstrom Drilling **Driller:** Peter Lowenstein

Rig Type & Mounting: DPP mounted Geoprobe 7822DT **Inclination:** Vertical
Flushing Fluid: None
Hole Diameter (mm): 120 **Casing Size:** NA

Logged:	CM	27-Jul-13
Processed:	CM	30-Oct-13
Checked:	AW	19/11/13

Depth Scale (m)	Daily Progress/ Observations: Date	Casing Depth (m)	Fluid Depth (m)	Drilling Method	Water	Depth (m)/ [Elev.]	Geological Unit	Graphic Log	Classification	Strata Description (type; colour; fines plasticity or particle characteristics; minor components; structure and/or origin)	Moisture Condition	Consistency/ Relative Density	Sample Type & Depth	Sample No.	Sample/ Test Records & Comments	Depth Scale (m)
6	27/07					5.7 [+16.6]			SC	CLAYEY SAND Blue/grey, medium grained, low to medium plasticity, organic odour GUILDFORD FORMATION			5.00 5.50	D D		6
						6.0 [+16.3]				CORELOSS from 5.7 to 6.0m Inferred to be CLAYEY SAND						
										Termination Depth = 6.00m (Target Depth)						
7																7
8																8
9																9
10																10

GENERAL LOG KEANE ROAD PRESSURE MAIN.GPJ GHDPER.GDT 30/10/13

Lithological Log

Hyd2o
Suite 6B 103 Rokeby Rd
Subiaco, WA 6008

PO Box 1055
Subiaco WA 6904

Client :	**Cedar Woods**	Job Number :	H13008	Bore Name	
Project:	**Anstey Road**	Start Hole :			
Easting	**400425**	End Hole :			**AR5**
Northing	**6443568**	Logged by :	Renee Blandin		
Datum:	MGA Zone 50, GDA 94	Total Depth :	5.89		
Drill type:	Drill Rig Hollow Auger	RL Top of Casing :	**22.67**		
Hole diameter:	75 mm	RL Nat Surface :	**22.17**		

support	backfill	water	Slot / Screen Depth	Depth (metres)	Soil Characteristics					
					Colour	Particle Size	Texture	Organic Content	Moisture	Comment
PVC (Class 9)			Bentonite Seal	1.0 m		Fine	Sand	Low		
			Gravel						Slightly Moist	
							Clayey Sand			
						Medium				
				2.0 m	Solid Light Brown		Sandy clay			
		▽								
							Clayey Sand			
				3.0 m						
									Moist	
				4.0 m					Saturated	
					Solid Light Grey	Fine	Sand			
				5.0 m						
				6.0 m						End of hole
				7.0 m						
				8.0 m						
				9.0 m						
				10.0 m						

COLOUR :	Black, White, Biege Dark/Medium/Light : Brown, Red, Orange, Yellow, Grey, Blue Composition : Solid , Blemish, Mottle
PARTICLE SIZE :	Fine, Medium, Course
TEXTURE :	Sand, Loamy Sand, Clayey Sand Silt, Loam, Sandy Loam, Clayey Loam Clay, Sandy Clay
ORGANICS :	High, Medium, Low
MOISTURE :	Dry, Slightly Moist, Moist, Saturated

Static Water Level

Date	16/05/2013
Stickup above NS (m)	0.50
Water Level bTOC (m)	2.62
Water Level bNS (m)	2.12

Lithological Log

Hyd2o
Suite 6B 103 Rokeby Rd
Subiaco, WA 6008

PO Box 1055
Subiaco WA 6904

Client :	**Cedar Woods**	Job Number :	H13008
Project:	**Anstey Road**	Start Hole :	
Easting	**400198**	End Hole :	
Northing	**6443792**	Logged by :	Renee Blandin
Datum:	MGA Zone 50, GDA 94	Total Depth :	5.78
Drill type:	Drill Rig Hollow Auger	RL Top of Casing :	**23.73**
Hole diameter:	75 mm	RL Nat Surface :	**23.23**

Bore Name

AR6

support	backfill	water	Slot / Screen Depth	Depth (metres)	Soil Characteristics					
					Colour	Particle Size	Texture	Organic Content	Moisture	Comment
PVC (Class 9)					Solid Black					
			Bentonite Seal		Solid Grey	Fine	Sand	Low		
				1.0 m						
			Gravel						Slightly Moist	
					Solid Light Grey					
					Solid Light Brown	Medium				
				2.0 m						Coffey Rock
					Mottled Medium Brown/Grey	Coarse	Sandy clay			
		▽			Solid Medium Brown	Medium	Clayey Sand			
				3.0 m	Solid Dark Grey					
									Moist	
					Solid Light Grey					
				4.0 m					Saturated	
						Fine	Sand			
				5.0 m						
										End of hole
				6.0 m						
				7.0 m						
				8.0 m						
				9.0 m						
				10.0 m						

COLOUR : Black, White, Biege
Dark/Medium/Light : Brown, Red, Orange, Yellow, Grey, Blue
Composition : Solid , Blemish, Mottle

PARTICLE SIZE : Fine, Medium, Course

TEXTURE : Sand, Loamy Sand, Clayey Sand
Silt, Loam, Sandy Loam, Clayey Loam
Clay, Sandy Clay

ORGANICS : High, Medium, Low

MOISTURE : Dry, Slightly Moist, Moist, Saturated

Static Water Level

Date	16/05/2013
Stickup above NS (m)	0.50
Water Level bTOC (m)	3.79
Water Level bNS (m)	3.29

Appendix F – Summary of laboratory test results

F1: Summary Test Report

F2: Summary of Test Results

REPORTED TEST SUMMARY

Report Code	Report Type	Samples on Report	Lot Number	Sample Date	Report Date
5029/P/256	**Keane Road Pressure Main**				
5029/R/1472-1	AS Soil Particle Size Distribution	5029/S/6394	A01 Sample 1 Depth 0.0m	11/08/2015	25/08/2015
5029/R/1473-1	AS Soil Particle Size Distribution	5029/S/6395	A01 Sample 2 Depth 0.4m	11/08/2015	25/08/2015
5029/R/1474-1	Atterberg Limits (with A-Line graph)	5029/S/6396	A01 Sample 3 Depth 0.6m	11/08/2015	25/08/2015
5029/R/1475-1	AS Soil Particle Size Distribution	5029/S/6397	A01 Sample 4 Depth 0.8m	11/08/2015	25/08/2015
5029/R/1476-1	AS Soil Particle Size Distribution	5029/S/6399	A01 Sample 6 Depth 1.2m	11/08/2015	25/08/2015
5029/R/1477-1	AS Soil Particle Size Distribution	5029/S/6400	A01 Sample 7 Depth 1.5m	11/08/2015	25/08/2015
5029/R/1478-1	AS Soil Particle Size Distribution	5029/S/6402	A01 Sample 9 Depth 2.0m	11/08/2015	25/08/2015
5029/R/1479-1	AS Soil Particle Size Distribution	5029/S/6403	A01 Sample 10 Depth 2.3m	11/08/2015	25/08/2015
5029/R/1480-1	AS Soil Particle Size Distribution	5029/S/6404	A01 Sample 11 Depth 2.8m	11/08/2015	25/08/2015
5029/R/1481-1	AS Soil Particle Size Distribution	5029/S/6405	A01 Sample 13 Depth 3.8m	11/08/2015	25/08/2015
5029/R/1482-1	AS Soil Particle Size Distribution	5029/S/6406	A01 Sample 15 Depth 6.5m	11/08/2015	25/08/2015
5029/R/1493-1	AS Soil Particle Size Distribution	5029/S/6398	A01 Sample 5 Depth 1.0m	11/08/2015	26/08/2015
5029/R/1494-1	AS Soil Particle Size Distribution	5029/S/6407	A01 Sample 16 Depth 7.5m	11/08/2015	26/08/2015
5029/R/1495-1	AS Soil Particle Size Distribution	5029/S/6408	A01 Sample 17 Depth 8.5m	11/08/2015	26/08/2015
5029/R/1496-1	AS Soil Particle Size Distribution	5029/S/6409	A02 Sample 1 Depth 0.0m	11/08/2015	26/08/2015
5029/R/1497-1	AS Soil Particle Size Distribution	5029/S/6410	A02 Sample 2 Depth 0.3m	11/08/2015	26/08/2015
5029/R/1498-1	AS Soil Particle Size Distribution	5029/S/6411	A02 Sample 3 Depth 0.5m	11/08/2015	26/08/2015
5029/R/1499-1	AS Soil Particle Size Distribution	5029/S/6412	A02 Sample 4 Depth 0.8m	11/08/2015	26/08/2015
5029/R/1500-1	AS Soil Particle Size Distribution	5029/S/6413	A02 Sample 5 Depth 1.0m	11/08/2015	26/08/2015
5029/R/1501-1	Atterberg Limits (with A-Line graph)	5029/S/6414	A02 Sample 6 Depth 1.3m	11/08/2015	26/08/2015
5029/R/1502-1	AS Soil Particle Size Distribution	5029/S/6415	A02 Sample 7 Depth 1.5m	11/08/2015	26/08/2015
5029/R/1503-1	AS Soil Particle Size Distribution	5029/S/6416	A02 Sample 8 Depth 1.8m	11/08/2015	26/08/2015
5029/R/1504-1	AS Soil Particle Size Distribution	5029/S/6417	A02 Sample 9 Depth 2.0m	11/08/2015	26/08/2015
5029/R/1505-1	AS Soil Particle Size Distribution	5029/S/6418	A02 Sample 10 Depth 2.3m	11/08/2015	26/08/2015
5029/R/1506-1	Atterberg Limits (with A-Line graph)	5029/S/6419	A02 Sample 11 Depth 2.5m	11/08/2015	26/08/2015
5029/R/1507-1	AS Soil Particle Size Distribution	5029/S/6420	A02 Sample 12 Depth 2.8m	11/08/2015	26/08/2015
5029/R/1508-1	AS Soil Particle Size Distribution	5029/S/6421	A03 Sample 1 Depth 0.0m	11/08/2015	26/08/2015
5029/R/1509-1	AS Soil Particle Size Distribution	5029/S/6422	A03 Sample 2 Depth 0.2m	11/08/2015	26/08/2015
5029/R/1510-1	Atterberg Limits (with A-Line graph)	5029/S/6423	A03 Sample 3 Depth 0.5m	11/08/2015	26/08/2015
5029/R/1511-1	AS Soil Particle Size Distribution	5029/S/6424	A03 Sample 4 Depth 0.7m	11/08/2015	26/08/2015
5029/R/1512-1	AS Soil Particle Size Distribution	5029/S/6425	A03 Sample 5 Depth 1.0m	11/08/2015	26/08/2015
5029/R/1513-1	AS Soil Particle Size Distribution	5029/S/6427	A03 Sample 7 Depth 1.5m	11/08/2015	26/08/2015
5029/R/1514-1	AS Soil Particle Size Distribution	5029/S/6428	A03 Sample 8 Depth 1.8m	11/08/2015	26/08/2015
5029/R/1515-1	AS Soil Particle Size Distribution	5029/S/6429	A03 Sample 9 Depth 2.1m	11/08/2015	26/08/2015
5029/R/1516-1	AS Soil Particle Size Distribution	5029/S/6430	A03 Sample 10 Depth 2.3m	11/08/2015	26/08/2015
5029/R/1517-1	AS Soil Particle Size Distribution	5029/S/6431	A03 Sample 11 Depth 2.6m	11/08/2015	26/08/2015
5029/R/1518-1	AS Soil Particle Size Distribution	5029/S/6432	A03 Sample 12 Depth 2.8m	11/08/2015	26/08/2015
5029/R/1519-1	AS Soil Particle Size Distribution	5029/S/6433	A04 Sample 1 Depth 0.0m	11/08/2015	26/08/2015
5029/R/1520-1	AS Soil Particle Size Distribution	5029/S/6434	A04 Sample 2 Depth 0.3m	11/08/2015	26/08/2015
5029/R/1521-1	AS Soil Particle Size Distribution	5029/S/6435	A04 Sample 3 Depth 0.5m	11/08/2015	26/08/2015
5029/R/1522-1	AS Soil Particle Size Distribution	5029/S/6436	A04 Sample 4 Depth 0.8m	11/08/2015	26/08/2015

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5029/P/256	**Keane Road Pressure Main**				
5029/R/1523-1	AS Soil Particle Size Distribution	5029/S/6438	A04 Sample 6 Depth 1.3m	11/08/2015	26/08/2015
5029/R/1524-1	AS Soil Particle Size Distribution	5029/S/6439	A04 Sample 7 Depth 1.5m	11/08/2015	26/08/2015
5029/R/1525-1	AS Soil Particle Size Distribution	5029/S/6440	A04 Sample 8 Depth 1.8m	11/08/2015	26/08/2015
5029/R/1526-1	AS Soil Particle Size Distribution	5029/S/6441	A04 Sample 9 Depth 2.0m	11/08/2015	26/08/2015
5029/R/1527-1	AS Soil Particle Size Distribution	5029/S/6442	A04 Sample 10 Depth 2.3m	11/08/2015	26/08/2015
5029/R/1528-1	AS Soil Particle Size Distribution	5029/S/6444	A04 Sample 12 Depth 2.8m	11/08/2015	26/08/2015
5029/R/1529-1	AS Soil Particle Size Distribution	5029/S/6445	A05 Sample 1 Depth 0.0m	11/08/2015	26/08/2015
5029/R/1530-1	AS Soil Particle Size Distribution	5029/S/6446	A05 Sample 2 Depth 0.2m	11/08/2015	26/08/2015
5029/R/1531-1	AS Soil Particle Size Distribution	5029/S/6447	A05 Sample 3 Depth 0.5m	11/08/2015	26/08/2015
5029/R/1532-1	AS Soil Particle Size Distribution	5029/S/6448	A05 Sample 4 Depth 0.8m	11/08/2015	26/08/2015
5029/R/1533-1	AS Soil Particle Size Distribution	5029/S/6449	A05 Sample 5 Depth 1.0m	11/08/2015	26/08/2015
5029/R/1534-1	AS Soil Particle Size Distribution	5029/S/6450	A05 Sample 6 Depth 1.3m	11/08/2015	26/08/2015
5029/R/1535-1	AS Soil Particle Size Distribution	5029/S/6451	A05 Sample 7 Depth 1.5m	11/08/2015	26/08/2015
5029/R/1536-1	AS Soil Particle Size Distribution	5029/S/6452	A05 Sample 8 Depth 1.8m	11/08/2015	26/08/2015
5029/R/1537-1	AS Soil Particle Size Distribution	5029/S/6455	A05 Sample 11 Depth 2.5m	11/08/2015	26/08/2015
5029/R/1538-1	AS Soil Particle Size Distribution	5029/S/6456	A05 Sample 12 Depth 2.8m	11/08/2015	26/08/2015
5029/R/1539-1	AS Soil Particle Size Distribution	5029/S/6457	A05 Sample 13 Depth 3.5m	11/08/2015	26/08/2015
5029/R/1754-1	Atterberg Limits (with A-Line graph)	5029/S/6437	A04 Sample 5 Depth 1.0m	11/08/2015	05/09/2015
5029/R/1755-1	Atterberg Limits (with A-Line graph)	5029/S/6453	A05 Sample 9 Depth 2.0m	11/08/2015	05/09/2015
5029/R/1756-1	Atterberg Limits (with A-Line graph)	5029/S/6454	A05 Sample 10 Depth 2.2m	11/08/2015	05/09/2015
5029/R/1757-1	AS Soil Particle Size Distribution	5029/S/6458	A05 Sample 15 Depth 4.8m	11/08/2015	05/09/2015
5029/R/1758-1	AS Soil Particle Size Distribution	5029/S/6459	A05 Sample 18 Depth 7.5m	11/08/2015	05/09/2015
5029/R/1759-1	AS Soil Particle Size Distribution	5029/S/6460	A06 Sample 1 Depth 0.0m	11/08/2015	05/09/2015
5029/R/1760-1	AS Soil Particle Size Distribution	5029/S/6461	A06 Sample 2 Depth 0.3m	11/08/2015	05/09/2015
5029/R/1761-1	AS Soil Particle Size Distribution	5029/S/6462	A06 Sample 3 Depth 0.5m	11/08/2015	05/09/2015
5029/R/1762-1	AS Soil Particle Size Distribution	5029/S/6463	A06 Sample 4 Depth 0.7m	11/08/2015	05/09/2015
5029/R/1763-1	AS Soil Particle Size Distribution	5029/S/6464	A06 Sample 5 Depth 1.1m	11/08/2015	05/09/2015
5029/R/1764-1	AS Soil Particle Size Distribution	5029/S/6465	A06 Sample 6 Depth 1.3m	11/08/2015	05/09/2015
5029/R/1765-1	AS Soil Particle Size Distribution	5029/S/6466	A06 Sample 7 Depth 1.4m	11/08/2015	05/09/2015
5029/R/1766-1	Atterberg Limits (with A-Line graph)	5029/S/6467	A06 Sample 8 Depth 1.7m	11/08/2015	05/09/2015
5029/R/1767-1	AS Soil Particle Size Distribution	5029/S/6468	A06 Sample 9 Depth 2.1m	11/08/2015	05/09/2015
5029/R/1768-1	AS Soil Particle Size Distribution	5029/S/6469	A06 Sample 10 Depth 2.3m	11/08/2015	05/09/2015
5029/R/1769-1	AS Soil Particle Size Distribution	5029/S/6470	A06 Sample 12 Depth 2.8m	11/08/2015	05/09/2015
5029/R/1770-1	AS Soil Particle Size Distribution	5029/S/6471	A07 Sample 1 Depth 0.0m	11/08/2015	05/09/2015
5029/R/1771-1	AS Soil Particle Size Distribution	5029/S/6472	A07 Sample 2 Depth 0.3m	11/08/2015	05/09/2015
5029/R/1772-1	Atterberg Limits (with A-Line graph)	5029/S/6473	A07 Sample 3 Depth 0.5m	11/08/2015	05/09/2015
5029/R/1773-1	AS Soil Particle Size Distribution	5029/S/6474	A07 Sample 4 Depth 0.8m	11/08/2015	05/09/2015
5029/R/1774-1	AS Soil Particle Size Distribution	5029/S/6475	A07 Sample 5 Depth 1.0m	11/08/2015	05/09/2015
5029/R/1775-1	AS Soil Particle Size Distribution	5029/S/6476	A07 Sample 6 Depth 1.3m	11/08/2015	05/09/2015
5029/R/1776-1	AS Soil Particle Size Distribution	5029/S/6477	A07 Sample 7 Depth 1.5m	11/08/2015	05/09/2015
5029/R/1777-1	AS Soil Particle Size Distribution	5029/S/6478	A07 Sample 8 Depth 1.8m	11/08/2015	05/09/2015

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5029/P/256	**Keane Road Pressure Main**				
5029/R/1778-1	Atterberg Limits (with A-Line graph)	5029/S/6479	A07 Sample 9 Depth 2.0m	11/08/2015	05/09/2015
5029/R/1779-1	AS Soil Particle Size Distribution	5029/S/6480	A07 Sample 10 Depth 2.3m	11/08/2015	05/09/2015
5029/R/1780-1	AS Soil Particle Size Distribution	5029/S/6481	A07 Sample 11 Depth 2.5m	11/08/2015	05/09/2015
5029/R/1781-1	AS Soil Particle Size Distribution	5029/S/6482	A07 Sample 12 Depth 2.8m	11/08/2015	05/09/2015
5029/R/1782-1	AS Soil Particle Size Distribution	5029/S/6483	A08 Sample 1 Depth 0.0m	11/08/2015	05/09/2015
5029/R/1783-1	AS Soil Particle Size Distribution	5029/S/6484	A08 Sample 2 Depth 0.2m	11/08/2015	05/09/2015
5029/R/1784-1	AS Soil Particle Size Distribution	5029/S/6485	A08 Sample 3 Depth 0.5m	11/08/2015	05/09/2015
5029/R/1785-1	AS Soil Particle Size Distribution	5029/S/6486	A08 Sample 4 Depth 0.8m	11/08/2015	05/09/2015
5029/R/1786-1	AS Soil Particle Size Distribution	5029/S/6488	A08 Sample 6 Depth 1.2m	11/08/2015	05/09/2015
5029/R/1787-1	AS Soil Particle Size Distribution	5029/S/6490	A08 Sample 8 Depth 1.8m	11/08/2015	05/09/2015
5029/R/1788-1	Atterberg Limits (with A-Line graph)	5029/S/6491	A08 Sample 9 Depth 2.0m	11/08/2015	05/09/2015
5029/R/1789-1	AS Soil Particle Size Distribution	5029/S/6492	A08 Sample 10 Depth 2.3m	11/08/2015	05/09/2015
5029/R/1790-1	AS Soil Particle Size Distribution	5029/S/6494	A08 Sample 12 Depth 2.8m	11/08/2015	05/09/2015
5029/R/1791-1	AS Soil Particle Size Distribution	5029/S/6497	A09 Sample 3 Depth 0.5m	11/08/2015	05/09/2015
5029/R/1792-1	AS Soil Particle Size Distribution	5029/S/6499	A09 Sample 5 Depth 1.0m	11/08/2015	05/09/2015
5029/R/1793-1	AS Soil Particle Size Distribution	5029/S/6500	A09 Sample 6 Depth 1.4m	11/08/2015	05/09/2015
5029/R/1794-1	AS Soil Particle Size Distribution	5029/S/6501	A09 Sample 7 Depth 1.6m	11/08/2015	05/09/2015
5029/R/1795-1	AS Soil Particle Size Distribution	5029/S/6502	A09 Sample 8 Depth 1.8m	11/08/2015	05/09/2015
5029/R/1796-1	AS Soil Particle Size Distribution	5029/S/6503	A09 Sample 9 Depth 2.0m	11/08/2015	05/09/2015
5029/R/1797-1	AS Soil Particle Size Distribution	5029/S/6505	A09 Sample 11 Depth 2.4m	11/08/2015	05/09/2015
5029/R/1798-1	AS Soil Particle Size Distribution	5029/S/6508	A10 Sample 2 Depth 0.3m	11/08/2015	05/09/2015
5029/R/1799-1	AS Soil Particle Size Distribution	5029/S/6509	A10 Sample 3 Depth 0.5m	11/08/2015	05/09/2015
5029/R/1800-1	AS Soil Particle Size Distribution	5029/S/6510	A10 Sample 4 Depth 0.8m	11/08/2015	05/09/2015
5029/R/1801-1	AS Soil Particle Size Distribution	5029/S/6511	A10 Sample 5 Depth 1.0m	11/08/2015	05/09/2015
5029/R/1802-1	AS Soil Particle Size Distribution	5029/S/6512	A10 Sample 6 Depth 1.3m	11/08/2015	05/09/2015
5029/R/1803-1	AS Soil Particle Size Distribution	5029/S/6513	A11 Sample 1 Depth 0.0m	11/08/2015	05/09/2015
5029/R/1804-1	AS Soil Particle Size Distribution	5029/S/6514	A11 Sample 2 Depth 0.2m	11/08/2015	05/09/2015
5029/R/1805-1	AS Soil Particle Size Distribution	5029/S/6517	A11 Sample 5 Depth 1.0m	11/08/2015	05/09/2015
5029/R/1806-1	AS Soil Particle Size Distribution	5029/S/6518	A11 Sample 6 Depth1.3m	11/08/2015	05/09/2015
5029/R/1807-1	Atterberg Limits (with A-Line graph)	5029/S/6520	A11 Sample 8 Depth 1.8m	11/08/2015	05/09/2015
5029/R/1808-1	AS Soil Particle Size Distribution	5029/S/6523	A11 Sample 11 Depth 2.4m	11/08/2015	05/09/2015
5029/R/1809-1	AS Soil Particle Size Distribution	5029/S/6526	A12 Sample 2 Depth 0.3m	11/08/2015	05/09/2015
5029/R/1810-1	AS Soil Particle Size Distribution	5029/S/6527	A12 Sample 3 Depth 0.4m	11/08/2015	05/09/2015
5029/R/1811-1	AS Soil Particle Size Distribution	5029/S/6528	A12 Sample 4 Depth 0.8m	11/08/2015	05/09/2015
5029/R/1812-1	Atterberg Limits (with A-Line graph)	5029/S/6529	A12 Sample 5 Depth 1.0m	11/08/2015	05/09/2015
5029/R/1813-1	AS Soil Particle Size Distribution	5029/S/6531	A12 Sample 7 Depth 1.5m	11/08/2015	05/09/2015
5029/R/1814-1	AS Soil Particle Size Distribution	5029/S/6532	A12 Sample 8 Depth 1.8m	11/08/2015	05/09/2015
5029/R/1815-1	AS Soil Particle Size Distribution	5029/S/6534	A12 Sample 10 Depth 2.3m	11/08/2015	05/09/2015
5029/R/1816-1	AS Soil Particle Size Distribution	5029/S/6535	A12 Sample 11 Depth 2.5m	11/08/2015	05/09/2015
5029/R/1817-1	AS Soil Particle Size Distribution	5029/S/6536	A12 Sample 12 Depth 2.8m	11/08/2015	05/09/2015
5029/R/1818-1	AS Soil Particle Size Distribution	5029/S/6538	A13 Sample 2 Depth 0.3m	11/08/2015	05/09/2015

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5029/P/256	**Keane Road Pressure Main**				
5029/R/1819-1	AS Soil Particle Size Distribution	5029/S/6539	A13 Sample 3 Depth 0.5m	11/08/2015	05/09/2015
5029/R/1820-1	AS Soil Particle Size Distribution	5029/S/6541	A13 Sample 5 Depth 1.0m	11/08/2015	05/09/2015
5029/R/1821-1	AS Soil Particle Size Distribution	5029/S/6543	A13 Sample 7 Depth 1.5m	11/08/2015	05/09/2015
5029/R/1822-1	AS Soil Particle Size Distribution	5029/S/6544	A13 Sample 8 Depth 1.8m	11/08/2015	05/09/2015
5029/R/1823-1	AS Soil Particle Size Distribution	5029/S/6545	A13 Sample 9 Depth 2.0m	11/08/2015	05/09/2015
5029/R/1824-1	AS Soil Particle Size Distribution	5029/S/6549	A14 Sample 1 Depth 0.0m	11/08/2015	05/09/2015
5029/R/1825-1	AS Soil Particle Size Distribution	5029/S/6551	A14 Sample 3 Depth 0.4m	11/08/2015	05/09/2015
5029/R/1826-1	Atterberg Limits (with A-Line graph)	5029/S/6552	A14 Sample 4 Depth 0.8m	11/08/2015	05/09/2015
5029/R/1831-1	AS Soil Particle Size Distribution	5029/S/6487	A08 Sample 5 Depth 1.0m	11/08/2015	07/09/2015
5029/R/1832-1	AS Soil Particle Size Distribution	5029/S/6493	A08 Sample 11 Depth 2.5m	11/08/2015	07/09/2015
5029/R/1833-1	AS Soil Particle Size Distribution	5029/S/6495	A09 Sample 1 Depth 0.0m	11/08/2015	07/09/2015
5029/R/1834-1	AS Soil Particle Size Distribution	5029/S/6504	A09 Sample 10 Depth 2.3m	11/08/2015	07/09/2015
5029/R/1836-1	AS Soil Particle Size Distribution	5029/S/6506	A09 Sample 12 Depth 2.6m	11/08/2015	07/09/2015
5029/R/1837-1	AS Soil Particle Size Distribution	5029/S/6507	A10 Sample 1 Depth 0.0m	11/08/2015	07/09/2015
5029/R/1839-1	AS Soil Particle Size Distribution	5029/S/6515	A11 Sample 3 Depth 0.5m	11/08/2015	07/09/2015
5029/R/1840-1	AS Soil Particle Size Distribution	5029/S/6516	A11 Sample 4 Depth 0.8m	11/08/2015	07/09/2015
5029/R/1841-1	AS Soil Particle Size Distribution	5029/S/6519	A11 Sample 7 Depth 1.5m	11/08/2015	07/09/2015
5029/R/1842-1	AS Soil Particle Size Distribution	5029/S/6521	A11 Sample 9 Depth 2.0m	11/08/2015	07/09/2015
5029/R/1843-1	AS Soil Particle Size Distribution	5029/S/6522	A11 Sample 10 Depth 2.3m	11/08/2015	07/09/2015
5029/R/1844-1	AS Soil Particle Size Distribution	5029/S/6525	A12 Sample 1 Depth 0.0m	11/08/2015	07/09/2015
5029/R/1845-1	AS Soil Particle Size Distribution	5029/S/6530	A12 Sample 6 Depth 1.3m	11/08/2015	07/09/2015
5029/R/1846-1	Atterberg Limits (with A-Line graph)	5029/S/6533	A12 Sample 9 Depth 2.0m	11/08/2015	07/09/2015
5029/R/1847-1	AS Soil Particle Size Distribution	5029/S/6537	A13 Sample 1 Depth 0.0m	11/08/2015	07/09/2015
5029/R/1849-1	AS Soil Particle Size Distribution	5029/S/6540	A13 Sample 4 Depth 0.8m	11/08/2015	07/09/2015
5029/R/1851-1	AS Soil Particle Size Distribution	5029/S/6546	A13 Sample 10 Depth 2.3m	11/08/2015	07/09/2015
5029/R/1852-1	Atterberg Limits (with A-Line graph)	5029/S/6547	A13 Sample 11 Depth 2.5m	11/08/2015	07/09/2015
5029/R/1855-1	AS Soil Particle Size Distribution	5029/S/6548	A13 Sample 12 Depth 2.8m	11/08/2015	07/09/2015
5029/R/1856-1	AS Soil Particle Size Distribution	5029/S/6550	A14 Sample 2 Depth 0.3m	11/08/2015	07/09/2015
5029/R/1858-1	AS Soil Particle Size Distribution	5029/S/6553	A14 Sample 5 Depth 1.0m	11/08/2015	07/09/2015
5029/R/1860-1	Atterberg Limits (with A-Line graph)	5029/S/6555	A14 Sample 7 Depth 1.5m	11/08/2015	07/09/2015
5029/R/1862-1	AS Soil Particle Size Distribution	5029/S/6556	A14 Sample 8 Depth 1.8m	11/08/2015	07/09/2015
5029/R/1863-1	AS Soil Particle Size Distribution	5029/S/6557	A14 Sample 9 Depth 2.1m	11/08/2015	07/09/2015
5029/R/1865-1	AS Soil Particle Size Distribution	5029/S/6558	A14 Sample 10 Depth 2.3m	11/08/2015	07/09/2015
5029/R/1866-1	AS Soil Particle Size Distribution	5029/S/6561	A15 Sample 1 Depth 0.0m	11/08/2015	07/09/2015
5029/R/1868-1	AS Soil Particle Size Distribution	5029/S/6564	A15 Sample 4 Depth 0.9m	11/08/2015	07/09/2015
5029/R/1869-1	Atterberg Limits (with A-Line graph)	5029/S/6565	A15 Sample 5 Depth 1.0m	11/08/2015	07/09/2015
5029/R/1870-1	Atterberg Limits (with A-Line graph)	5029/S/6569	A15 Sample 9 Depth 2.0m	11/08/2015	07/09/2015
5029/R/1871-1	Atterberg Limits (with A-Line graph)	5029/S/6577	A16 Sample 3 Depth 0.6m	11/08/2015	07/09/2015
5029/R/1878-1	Atterberg Limits (with A-Line graph)	5029/S/6582	A16 Sample 8 Depth 1.8m	11/08/2015	07/09/2015
5029/R/1879-1	Atterberg Limits (with A-Line graph)	5029/S/6589	A17 Sample 3 Depth 0.6m	11/08/2015	07/09/2015
5029/R/1890-1	Atterberg Limits (with A-Line graph)	5029/S/6401	A01 Sample 8 Depth 1.8m	11/08/2015	08/09/2015

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Report Code	Report Type	Samples on Report	Lot Number	Sample Date	Report Date
5029/P/256	**Keane Road Pressure Main**				
5029/R/1891-1	Atterberg Limits (with A-Line graph)	5029/S/6426	A03 Sample 6 Depth 1.3m	11/08/2015	08/09/2015
5029/R/1892-1	Atterberg Limits (with A-Line graph)	5029/S/6443	A04 Sample 11 Depth 2.5m	11/08/2015	08/09/2015
5029/R/1893-1	Atterberg Limits (with A-Line graph)	5029/S/6489	A08 Sample 7 Depth 1.5m	11/08/2015	08/09/2015
5029/R/1894-1	Atterberg Limits (with A-Line graph)	5029/S/6496	A09 Sample 2 Depth 0.2m	11/08/2015	08/09/2015
5029/R/1895-1	Atterberg Limits (with A-Line graph)	5029/S/6498	A09 Sample 4 Depth 0.8m	11/08/2015	08/09/2015
5029/R/1896-1	Atterberg Limits (with A-Line graph)	5029/S/6524	A11 Sample 12 Depth 2.8m	11/08/2015	08/09/2015
5029/R/1897-1	Atterberg Limits (with A-Line graph)	5029/S/6542	A13 Sample 6 Depth 1.4m	11/08/2015	08/09/2015
5029/R/1949-1	AS Soil Particle Size Distribution	5029/S/6554	A14 Sample 6 Depth 1.3m	11/08/2015	09/09/2015
5029/R/1950-1	AS Soil Particle Size Distribution	5029/S/6559	A14 Sample 11 Depth 2.5m	11/08/2015	09/09/2015
5029/R/1951-1	AS Soil Particle Size Distribution	5029/S/6560	A14 Sample 12 Depth 2.8m	11/08/2015	09/09/2015
5029/R/1952-1	AS Soil Particle Size Distribution	5029/S/6562	A15 Sample 2 Depth 0.2m	11/08/2015	09/09/2015
5029/R/1954-1	AS Soil Particle Size Distribution	5029/S/6563	A15 Sample 3 Depth 0.5m	11/08/2015	09/09/2015
5029/R/1955-1	AS Soil Particle Size Distribution	5029/S/6566	A15 Sample 6 Depth 1.3m	11/08/2015	09/09/2015
5029/R/1956-1	AS Soil Particle Size Distribution	5029/S/6567	A15 Sample 7 Depth 1.5m	11/08/2015	09/09/2015
5029/R/1957-1	AS Soil Particle Size Distribution	5029/S/6568	A15 Sample 8 Depth 1.8m	11/08/2015	09/09/2015
5029/R/1958-1	AS Soil Particle Size Distribution	5029/S/6570	A15 Sample 10 Depth 2.3m	11/08/2015	09/09/2015
5029/R/1959-1	AS Soil Particle Size Distribution	5029/S/6571	A15 Sample 11 Depth 2.5m	11/08/2015	09/09/2015
5029/R/1960-1	AS Soil Particle Size Distribution	5029/S/6572	A15 Sample 12 Depth 2.8m	11/08/2015	09/09/2015
5029/R/1961-1	AS Soil Particle Size Distribution	5029/S/6573	A15 Sample 13 Depth 3.2m	11/08/2015	09/09/2015
5029/R/1962-1	AS Soil Particle Size Distribution	5029/S/6574	A15 Sample 14 Depth 4.2m	11/08/2015	09/09/2015
5029/R/1963-1	AS Soil Particle Size Distribution	5029/S/6575	A16 Sample 1 Depth 0.0m	11/08/2015	09/09/2015
5029/R/1964-1	AS Soil Particle Size Distribution	5029/S/6576	A16 Sample 2 Depth 0.3m	11/08/2015	09/09/2015
5029/R/1965-1	AS Soil Particle Size Distribution	5029/S/6578	A16 Sample 4 Depth 0.8m	11/08/2015	09/09/2015
5029/R/1966-1	AS Soil Particle Size Distribution	5029/S/6579	A16 Sample 5 Depth 1.0m	11/08/2015	09/09/2015
5029/R/1967-1	AS Soil Particle Size Distribution	5029/S/6580	A16 Sample 6 Depth 1.3m	11/08/2015	09/09/2015
5029/R/1968-1	AS Soil Particle Size Distribution	5029/S/6581	A16 Sample 7 Depth 1.5m	11/08/2015	09/09/2015
5029/R/1969-1	AS Soil Particle Size Distribution	5029/S/6583	A16 Sample 9 Depth 2.0m	11/08/2015	09/09/2015
5029/R/1970-1	AS Soil Particle Size Distribution	5029/S/6584	A16 Sample 10 Depth 2.3m	11/08/2015	09/09/2015
5029/R/1971-1	AS Soil Particle Size Distribution	5029/S/6585	A16 Sample 11 Depth 2.5m	11/08/2015	09/09/2015
5029/R/1972-1	AS Soil Particle Size Distribution	5029/S/6586	A16 Sample 12 Depth 2.9m	11/08/2015	09/09/2015
5029/R/1973-1	AS Soil Particle Size Distribution	5029/S/6587	A17 Sample 1 Depth 0.0m	11/08/2015	09/09/2015
5029/R/1974-1	AS Soil Particle Size Distribution	5029/S/6588	A17 Sample 2 Depth 0.3m	11/08/2015	09/09/2015
5029/R/1975-1	AS Soil Particle Size Distribution	5029/S/6590	A17 Sample 4 Depth 0.8m	11/08/2015	09/09/2015
5029/R/1976-1	AS Soil Particle Size Distribution	5029/S/6591	A17 Sample 5 Depth 1.1m	11/08/2015	09/09/2015
5029/R/1977-1	AS Soil Particle Size Distribution	5029/S/6592	A17 Sample 6 Depth 1.3m	11/08/2015	09/09/2015
5029/R/1978-1	Atterberg Limits (with A-Line graph)	5029/S/6593	A17 Sample 7 Depth 1.5m	11/08/2015	09/09/2015
5029/R/1979-1	AS Soil Particle Size Distribution	5029/S/6594	A17 Sample 8 Depth 1.8m	11/08/2015	09/09/2015
5029/R/1980-1	AS Soil Particle Size Distribution	5029/S/6595	A17 Sample 9 Depth 2.0m	11/08/2015	09/09/2015
5029/R/1981-1	AS Soil Particle Size Distribution	5029/S/6596	A17 Sample 10 Depth 2.3m	11/08/2015	09/09/2015
5029/R/1982-1	AS Soil Particle Size Distribution	5029/S/6597	A17 Sample 11 Depth 2.5m	11/08/2015	09/09/2015
5029/R/1983-1	AS Soil Particle Size Distribution	5029/S/6598	A17 Sample 12 Depth 2.9m	11/08/2015	09/09/2015

REPORTED TEST SUMMARY

Report Code	Report Type	Samples on Report	Lot Number	Sample Date	Report Date
5029/P/256	**Keane Road Pressure Main**				
5029/R/1984-1	Moisture Content Report	5029/S/6396, 5029/S/6399, 5029/S/6401, 5029/S/6402, 5029/S/6404, 5029/S/6405, 5029/S/6407, 5029/S/6412, 5029/S/6414, 5029/S/6416, 5029/S/6418, 5029/S/6419, 5029/S/6420, 5029/S/6422, 5029/S/6423, 5029/S/6424, 5029/S/6426, 5029/S/6428, 5029/S/6429, 5029/S/6430, 5029/S/6439, 5029/S/6440, 5029/S/6442, 5029/S/6443, 5029/S/6444, 5029/S/6450, 5029/S/6452, 5029/S/6453, 5029/S/6454, 5029/S/6458, 5029/S/6459, 5029/S/6467, 5029/S/6468, 5029/S/6473, 5029/S/6474, 5029/S/6475, 5029/S/6482, 5029/S/6484, 5029/S/6486, 5029/S/6487, 5029/S/6488, 5029/S/6489, 5029/S/6490, 5029/S/6491, 5029/S/6496, 5029/S/6497, 5029/S/6498, 5029/S/6499, 5029/S/6500, 5029/S/6501, 5029/S/6503, 5029/S/6506, 5029/S/6514, 5029/S/6515, 5029/S/6516, 5029/S/6517, 5029/S/6518, 5029/S/6520, 5029/S/6521, 5029/S/6522, 5029/S/6524, 5029/S/6529, 5029/S/6530, 5029/S/6532, 5029/S/6533, 5029/S/6534, 5029/S/6536, 5029/S/6542, 5029/S/6545, 5029/S/6546, 5029/S/6547, 5029/S/6551, 5029/S/6552, 5029/S/6553, 5029/S/6554, 5029/S/6555, 5029/S/6556, 5029/S/6564, 5029/S/6565, 5029/S/6566, 5029/S/6567, 5029/S/6569, 5029/S/6571, 5029/S/6574, 5029/S/6577, 5029/S/6579, 5029/S/6580, 5029/S/6581, 5029/S/6582, 5029/S/6583, 5029/S/6589, 5029/S/6590, 5029/S/6591, 5029/S/6593, 5029/S/6595, 5029/S/6597	A01 Sample 3 Depth 0.6m	11/08/2015	09/09/2015

Table 1: Summary of laboratory testing (soil samples)

Test Pit ID	Sample Depth	Group Symbol	Soil Unit	Moisture Content (%)	Particle Size Distribution			Atterberg Limits				Organic Content %
					% Fines	% Sand	% Gravel	LL%	PL %	PI %	LL %	
A01	0.0	Sand (SP)	Bassendean Sand (BS)		2	98	0					
A01	0.3	Sand (SP)	Bassendean Sand (BS)		3	97	0					
A01	0.5	Sand (SP) / Clayey Sand (SC)	Bassendean Sand (BS) / Guildford Formation (GC)	15.4	12	88	0					<0.5
A01	0.8	Clayey Sand (SC)	Guildford Formation (GC)		20	80	0					
A01	1.0	Clayey Sand (SC)	Guildford Formation (GC)		20	80	0					
A01	1.1	Clayey Sand (SC)	Guildford Formation (GC)	15.2	29	70	1					
A01	1.5	Clayey Sand (SC)	Guildford Formation (GC)		31	69	0					
A01	1.8	Clayey Sand (SC)	Guildford Formation (GC)	14.7	20	80	0	40	12	28	8	<0.5
A01	2.0	Clayey Sand (SC)	Guildford Formation (GC)	14.5	18	82	0					
A01	2.3	Sand (SP) / Clayey Sand (SC)	Guildford Formation (GC)		11	89	0					
A01	2.8	Clayey Sand (SC)	Guildford Formation (GC)	14.0	18	82	0					
A01	3.8	Clayey Sand (SC)	Guildford Formation (GC)	16.6	14	86	0					
A01	6.5	Sand (SP)	Guildford Formation (GS)		10	90	0					
A01	7.5	Sand (SP) / Clayey Sand (SC)	Guildford Formation (GC)	20.6	13	87	0					
A01	8.5	Sand (SP)	Guildford Formation (GS)		10	90	0					
A02	0.0	Sand (SP)	Bassendean Sand (BS)		2	98	0					
A02	0.3	Sand (SP)	Bassendean Sand (BS)		1	99	0					
A02	0.5	Sand (SP)	Bassendean Sand (BS)		4	96	0					
A02	0.8	Clayey Sand (SC)	Guildford Formation (GC)	18.4	23	77	0					
A02	1.0	Clayey Sand (SC)	Guildford Formation (GC)		22	78	0					
A02	1.3	Clayey Sand (SC)	Guildford Formation (GC)	16.5	18	82	0	37	11	26	8	<0.5
A02	1.5	Clayey Sand (SC)	Guildford Formation (GC)		22	78	0					
A02	1.8	Clayey Sand (SC)	Guildford Formation (GC)	17.1	20	80	0					
A02	2.0	Clayey Sand (SC)	Guildford Formation (GC)		19	81	0					
A02	2.3	Clayey Sand (SC)	Guildford Formation (GC)		21	79	0					
A02	2.5	Clayey Sand (SC)	Guildford Formation (GC)	16.4	23	77	0	42	10	32	8.5	<0.5
A02	2.8	Clayey Sand (SC)	Guildford Formation (GC)	15.2	22	78	0					
A03	0.0	Sand (SP)	Bassendean Sand (BS)		2	98	0					
A03	0.2	Clayey Sand (SC)	Guildford Formation (GC)	13.5	15	85	0					
A03	0.5	Clayey Sand (SC)	Guildford Formation (GC)	12.4	18	82	0	29	11	18	3	<0.5
A03	0.7	Clayey Sand (SC)	Guildford Formation (GC)	14.1	15	85	0					
A03	1.0	Clayey Sand (SC)	Guildford Formation (GC)		16	84	0					
A03	1.3	Clayey Sand (SC)	Guildford Formation (GC)	11.9	15	85	0	29	14	15	2	<0.5
A03	1.5	Clayey Sand (SC)	Guildford Formation (GC)		18	82	0					
A03	1.8	Clayey Sand (SC)	Guildford Formation (GC)	14.5	16	84	0					
A03	2.05	Sand (SP) / Clayey Sand (SC)	Guildford Formation (GS)	15.3	11	88	1					
A03	2.3	Sand (SP)	Guildford Formation (GS)	17.3	10	90	0					
A03	2.6	Sand (SP) / Clayey Sand (SC)	Guildford Formation (GS)		12	88	0					
A03	2.8	Clayey Sand (SC)	Guildford Formation (GS)		14	86	0					
A04	0.0	Sand (SP)	Bassendean Sand (BS)		1	99	0					
A04	0.3	Sand (SP)	Bassendean Sand (BS)		1	99	0					
A04	0.5	Sand (SP)	Bassendean Sand (BS)		1	99	0					
A04	0.8	Sand (SP)	Bassendean Sand (BS)		7	93	0					
A04	1.0	Sand (SP) / Clayey Sand (SC)	Bassendean Sand (BS)		11	89	0	28	13	15	2	<0.5
A04	1.3	Clayey Sand (SC)	Guildford Formation (GC)		14	86	0					
A04	1.5	Clayey Sand (SC)	Guildford Formation (GC)	20.3	13	87	0					
A04	1.8	Clayey Sand (SC)	Guildford Formation (GC)	16.9	15	85	0					

Test Pit ID	Sample Depth	Group Symbol	Soil Unit	Moisture Content (%)	Particle Size Distribution			Atterberg Limits				Organic Content %
					% Fines	% Sand	% Gravel	LL%	PL %	PI %	LL %	
A04	2.0	Clayey Sand (SC)	Guildford Formation (GC)		13	87	0					
A04	2.3	Clayey Sand (SC)	Guildford Formation (GC)	15.3	15	85	0					
A04	2.5	Clayey Sand (SC)	Guildford Formation (GC)	14.3	19	81	0	32	11	21	5	<0.5
A04	2.8	Clayey Sand (SC)	Guildford Formation (GC)	14.2	18	82	0					
A05	0.0	Sand (SP)	Bassendean Sand (BS)		2	98	0					
A05	0.2	Sand (SP)	Bassendean Sand (BS)		3	97	0					
A05	0.5	Sand (SP)	Bassendean Sand (BS)		2	98	0					
A05	0.8	Sand (SP)	Bassendean Sand (BS)		2	98	0					
A05	1.0	Sand (SP)	Bassendean Sand (BS)		6	94	0					
A05	1.3	Sand (SP) / Clayey Sand (SC)	Guildford Formation (GC)	16.2	12	88	0					
A05	1.5	Sand (SP) / Clayey Sand (SC)	Guildford Formation (GC)		11	89	0					
A05	1.8	Clayey Sand (SC)	Guildford Formation (GC)	15.5	17	83	0					
A05	2.0	Clayey Sand (SC)	Guildford Formation (GC)	13.6	18	82	0	23	13	10	2.5	<0.5
A05	2.2	Clayey Sand (SC)	Guildford Formation (GC)	16.0	13	87	0	27	15	12	3	<0.5
A05	2.5	Sand (SP)	Guildford Formation (GS)		8	92	0					
A05	2.8	Sand (SP)	Guildford Formation (GS)		10	90	0					
A05	3.5	Sand (SP)	Guildford Formation (GS)		6	94	0					
A05	4.8	Sand (SP)	Guildford Formation (GS)	13.6	9	90	1					
A05	7.5	Sand (SP) / Clayey Sand (SC)	Guildford Formation (GS)	21.6	12	88	0					
A06	0.0	Sand (SP)	Bassendean Sand (BS)		2	98	0					
A06	0.3	Sand (SP)	Bassendean Sand (BS)		2	98	0					
A06	0.5	Sand (SP)	Bassendean Sand (BS)		1	99	0					
A06	0.7	Sand (SP)	Bassendean Sand (BS)		4	96	0					
A06	1.0	Sand (SP)	Bassendean Sand (BS)		6	94	0					
A06	1.3	Sand (SP)	Bassendean Sand (BS)		9	91	0					
A06	1.4	Sand (SP)	Bassendean Sand (BS)		8	92	0					
A06	1.7	Clayey Sand (SC)	Guildford Formation (GC)	13.7	16	84	0	22	12	10	3	<0.5
A06	2.0	Sand (SP)	Guildford Formation (GS)	13.0	10	90	0					
A06	2.3	Sand (SP)	Guildford Formation (GS)		10	90	0					
A06	2.8	Clayey Sand (SC)	Guildford Formation (GS)		13	87	0					
A07	0.0	Sand (SP)	Bassendean Sand (BS)		10	90	0					
A07	0.3	Sand (SP)	Bassendean Sand (BS)		7	93	0					
A07	0.5	Clayey Sand (SC)	Guildford Formation (GC)	18.8	25	69	6	35	25	10	7.5	<0.5
A07	0.8	Clayey Sand (SC)	Guildford Formation (GC)	16.6	28	63	9					
A07	1.0	Clayey Sand (SC)	Guildford Formation (GC)	17.4	29	71	0					
A07	1.3	Clayey Sand (SC)	Guildford Formation (GC)		25	75	0					
A07	1.5	Clayey Sand (SC)	Guildford Formation (GC)		16	84	0					
A07	1.8	Sand (SP) / Clayey Sand (SC)	Guildford Formation (GS)		11	89	0					
A07	2.0	Sand (SP)	Guildford Formation (GS)		7	93	0					
A07	2.3	Sand (SP)	Guildford Formation (GS)		7	93	0					
A07	2.5	Sand (SP)	Guildford Formation (GS)		7	93	0					
A07	2.8	Clayey Sand (SC)	Guildford Formation (GC)	12.5	16	84	0					
A08	0.0	Sand (SP)	Bassendean Sand (BS)		4	96	0					
A08	0.2	Clayey Sand (SC)	Guildford Formation (GC)	10.5	14	86	0					
A08	0.5	Clayey Sand (SC)	Guildford Formation (GC)		16	84	0					
A08	0.8	Sand (SP) / Clayey Sand (SC)	Guildford Formation (GC)	9.7	12	88	0					
A08	1.0	Sand (SP) / Clayey Sand (SC)	Guildford Formation (GC)	12.5	12	88	0					
A08	1.2	Clayey Sand (SC)	Guildford Formation (GC)	12.7	15	85	0					

Test Pit ID	Sample Depth	Group Symbol	Soil Unit	Moisture Content (%)	Particle Size Distribution			Atterberg Limits				Organic Content %
					% Fines	% Sand	% Gravel	LL%	PL %	PI %	LL %	
A08	1.5	Clayey Sand (SC)	Guildford Formation (GC)	11.8	17	83	0					<0.5
A08	1.8	Clayey Sand (SC)	Guildford Formation (GC)	12.0	14	86	0					
A08	2.0	Clayey Sand (SC)	Guildford Formation (GC)	13.7	17	83	0	22	12	10	2	<0.5
A08	2.3	Sand (SP) / Clayey Sand (SC)	Bassendean Sand (BS)		11	89	0					
A08	2.5	Sand (SP)	Bassendean Sand (BS)		9	91	0					
A08	2.8	Sand (SP)	Bassendean Sand (BS)		10	90	0					
A09	0.0	Sand (SP)	Bassendean Sand (BS)		6	94	0					
A09	0.2	Clayey Sand (SC)	Guildford Formation (GC)	11.3	21	79	0	28	12	16	6	<0.5
A09	0.5	Clayey Sand (SC)	Guildford Formation (GC)	14.5	16	84	0					
A09	0.8	Clayey Sand (SC)	Guildford Formation (GC)	11.4	21	78	1	30	12	18	5.5	<0.5
A09	1.0	Sand (SP)	Guildford Formation (GS)	11.5	3	97	0					
A09	1.3	Clayey Sand (SC)	Guildford Formation (GC)	15.2	23	77	0					
A09	1.5	Clayey Sand (SC)	Guildford Formation (GC)	13.4	21	79	0					
A09	1.8	Sand (SP)	Guildford Formation (GS)		6	94	0					
A09	2.0	Clayey Sand (SC)	Guildford Formation (GC)	14.0	19	81	0					
A09	2.3	Clayey Sand (SC)	Guildford Formation (GC)		18	82	0					
A09	2.4	Clayey Sand (SC)	Guildford Formation (GC)		15	85	0					
A09	2.5	Clayey Sand (SC)	Guildford Formation (GC)	16.3	14	86	0					
A10	0.0	Sand (SP)	Bassendean Sand (BS)		2	98	0					
A10	0.3	Sand (SP)	Bassendean Sand (BS)		2	98	0					
A10	0.5	Sand (SP)	Bassendean Sand (BS)		1	99	0					
A10	0.8	Sand (SP)	Bassendean Sand (BS)		3	97	0					
A10	1	Sand (SP)	Bassendean Sand (BS)		2	98	0					
A10	1.3	Sand (SP)	Bassendean Sand (BS)		2	98	0					
A11	0.0	Sand (SP)	Bassendean Sand (BS)		2	98	0					
A11	0.1	Clayey Sand (SC)	Guildford Formation (GC)	16.0	20	80	0					
A11	0.5	Clayey Sand (SC)	Guildford Formation (GC)	16.7	30	70	0					
A11	0.8	Clayey Sand (SC)	Guildford Formation (GC)	13.3	24	76	0					
A11	1.0	Clayey Sand (SC)	Guildford Formation (GC)	14.9	23	77	0					
A11	1.3	Clayey Sand (SC)	Guildford Formation (GC)	18.5	30	70	0					
A11	1.5	Clayey Sand (SC)	Guildford Formation (GC)		26	74	0					
A11	1.8	Clayey Sand (SC)	Guildford Formation (GC)	18.8	26	73	1	47	14	33	14	<0.5
A11	2	Clayey Sand (SC)	Guildford Formation (GC)	18.9	21	79	0					
A11	2.3	Clayey Sand (SC)	Guildford Formation (GC)	16.4	18	82	0					
A11	2.4	Sand (SP)	Guildford Formation (GS)		6	94	0					
A11	2.8	Sand (SP) / Clayey Sand (SC)	Guildford Formation (GS)	17.0	12	88	0	28	11	17	4	0.6
A12	0.0	Sand (SP)	Bassendean Sand (BS)		2	98	0					
A12	0.3	Sand (SP)	Bassendean Sand (BS)		2	98	0					
A12	0.4	Sand (SP)	Bassendean Sand (BS)		3	97	0					
A12	0.8	Sand (SP)	Bassendean Sand (BS)		8	92	0					
A12	1.0	Clayey Sand (SC)	Guildford Formation (GC)	13.6	13	77	10					0.9
A12	1.3	Clayey Sand (SC)	Guildford Formation (GC)	12.4	16	60	24					
A12	1.5	Clayey Sand (SC)	Guildford Formation (GC)		19	81	0					
A12	1.8	Clayey Sand (SC)	Guildford Formation (GC)	14.0	20	80	0					
A12	2.0	Clayey Sand (SC)	Guildford Formation (GC)	13.7	21	79	0	25	10	15	4.5	<0.5
A12	2.3	Clayey Sand (SC)	Guildford Formation (GC)	13.4	18	82	0					
A12	2.5	Clayey Sand (SC)	Guildford Formation (GC)		14	86	0					
A12	2.8	Clayey Sand (SC)	Guildford Formation (GC)	15.1	14	86	0					
A13	0.0	Sand (SP)	Bassendean Sand (BS)		4	96	0					
A13	0.3	Sand (SP)	Bassendean Sand (BS)		6	94	0					
A13	0.5	Sand (SP)	Bassendean Sand (BS)		3	97	0					

Test Pit ID	Sample Depth	Group Symbol	Soil Unit	Moisture Content (%)	Particle Size Distribution			Atterberg Limits				Organic Content %
					% Fines	% Sand	% Gravel	LL%	PL %	PI %	LL %	
A13	0.8	Sand (SP)	Bassendean Sand (BS)		4	96	0					
A13	1.0	Sand (SP)	Bassendean Sand (BS)		11	89	0					
A13	1.3	Clayey Sand (SC)	Guildford Formation (GC)	16.0	20	80	0	32	11	21	3	<0.5
A13	1.5	Clayey Sand (SC)	Guildford Formation (GC)		21	79	0					
A13	1.8	Clayey Sand (SC)	Guildford Formation (GC)		22	78	0					
A13	2.0	Clayey Sand (SC)	Guildford Formation (GC)	20.0	25	75	0					
A13	2.3	Clayey Sand (SC)	Guildford Formation (GC)	18.1	19	81	0					
A13	2.5	Clayey Sand (SC)	Guildford Formation (GC)	18.5	20	80	0	70	12	58	9	<0.5
A13	2.8	Sand (SP) / Clayey Sand (SC)	Guildford Formation (GC)		12	88	0					
A14	0.0	Sand (SP)	Bassendean Sand (BS)		1	99	0					
A14	0.3	Sand (SP)	Bassendean Sand (BS)		7	93	0					
A14	0.4	Clayey Sand (SC)	Guildford Formation (GC)	20.3	13	87	0					
A14	0.8	Clayey Sand (SC)	Guildford Formation (GC)	18.9	15	85	0	40	13	27	9	<0.5
A14	1.0	Clayey Sand (SC)	Guildford Formation (GC)	13.5	16	84	0					
A14	1.3	Sand (SP)	Guildford Formation (GS)	10.6	11	89	0					
A14	1.5	Sand (SP)	Guildford Formation (GS)	12.1	11	89	0	26	11	15	4.5	<0.5
A14	1.8	Clayey Sand (SC)	Guildford Formation (GC)	14.5	15	85	0					
A14	2.0	Clayey Sand (SC)	Guildford Formation (GS)		13	87	0					
A14	2.3	Sand (SP)	Guildford Formation (GS)		8	92	0					
A14	2.5	Sand (SP)	Guildford Formation (GS)		5	95	0					
A14	2.8	Sand (SP)	Guildford Formation (GS)		8	92	0					
A15	0.0	Clayey Sand (SC)	Guildford Formation (GC)		34	66	0					
A15	0.2	Clayey Sand (SC)	Guildford Formation (GC)		13	87	0					
A15	0.5	Clayey Sand (SC)	Guildford Formation (GC)		13	87	0					
A15	0.9	Clayey Sand (SC)	Guildford Formation (GC)	19.1	17	83	0					
A15	1.0	Clayey Sand (SC)	Guildford Formation (GC)	21.2	20	73	7	36	12	24	8.5	<0.5
A15	1.3	Clayey Sand (SC)	Guildford Formation (GC)	21.6	27	73	0					
A15	1.5	Clayey Sand (SC)	Guildford Formation (GC)	26.3	24	76	0					
A15	1.8	Clayey Sand (SC)	Guildford Formation (GC)		20	80	0					
A15	2.0	Clayey Sand (SC)	Guildford Formation (GC)	14.5	18	82	0	37	12	25	7.5	<0.5
A15	2.3	Clayey Sand (SC)	Guildford Formation (GC)		13	87	0					
A15	2.5	Sand (SP) / Clayey Sand (SC)	Guildford Formation (GC)	15.9	12	88	0					
A15	2.8	Sand (SP)	Guildford Formation (GS)		5	95	0					
A15	3.2	Sand (SP)	Guildford Formation (GS)		5	95	0					
A15	4.2	Sand (SP)	Guildford Formation (GS)	17.1	10	90	0					
A16	0.0	Sand (SP)	Bassendean Sand (BS)		3	97	0					
A16	0.3	Sand (SP)	Bassendean Sand (BS)		1	99	0					
A16	0.6	Clayey Sand (SC)	Guildford Formation (GC)	28.2	29	71	0	78	16	62	17	<0.5
A16	0.8	Clayey Sand (SC)	Guildford Formation (GC)		26	74	0					
A16	1.0	Clayey Sand (SC)	Guildford Formation (GC)	21.1	35	65	0					
A16	1.3	Clayey Sand (SC)	Guildford Formation (GC)	26.1	37	63	0					
A16	1.5	Clayey Sand (SC)	Guildford Formation (GC)	25.2	42	58	0					
A16	1.8	Clayey Sand (SC)	Guildford Formation (GC)	24.7	35	65	0	37	13	24	11	<0.5
A16	2.0	Clayey Sand (SC)	Guildford Formation (GC)	22.9	33	67	0					
A16	2.3	Clayey Sand (SC)	Guildford Formation (GC)		24	76	0					
A16	2.5	Sand (SP) / Clayey Sand (SC)	Guildford Formation (GC)		12	88	0					
A16	2.9	Sand (SP)	Guildford Formation (GS)		6	94	0					
A17	0.0	Sand (SP)	Bassendean Sand (BS)		7	93	0					
A17	0.3	Sand (SP)	Bassendean Sand (BS)		6	94	0					
A17	0.6	Clayey Sand (SC)	Guildford Formation (GC)	21.9	27	69	4	43	21	22	8.5	<0.5

Test Pit ID	Sample Depth	Group Symbol	Soil Unit	Moisture Content (%)	Particle Size Distribution			Atterberg Limits				Organic Content %
					% Fines	% Sand	% Gravel	LL%	PL %	PI %	LL %	
A17	0.8	Clayey Sand (SC)	Guildford Formation (GC)	22.5	26	74	0					
A17	1.0	Clayey Sand (SC)	Guildford Formation (GC)	21.3	37	63	0					
A17	1.3	Clayey Sand (SC)	Guildford Formation (GC)		45	55	0					
A17	1.5	Clayey Sand (SC)	Guildford Formation (GC)	25.2	50	50	0	67	15	52	15	<0.5
A17	1.8	Clayey Sand (SC)	Guildford Formation (GC)		52	48	0					
A17	2.0	Clayey Sand (SC)	Guildford Formation (GC)	30.7	47	53	0					
A17	2.3	Clayey Sand (SC)	Guildford Formation (GC)		36	64	0					
A17	2.5	Clayey Sand (SC)	Guildford Formation (GC)	19.0	20	80	0					
A17	2.9	Clayey Sand (SC)	Guildford Formation (GC)		16	84	0					

Notes: Fines < 0.075mm; 0.075 mm < Sand < 2.36mm; 2.36 mm < gravel < 63 mm
LL = liquid limit; PL = plastic limit; PI = plasticity index; LS = linear shrinkage
Testing standards used:
AS 1289.2.1.1 (moisture content), 3.6.1 (PSD) & 3.6.3 (PSD and hydrometer); AS 1289.3.1.2, 3.3.1 and 3.4.1 (Atterberg Limits)
ASTM: D2974-07a Test Method C (organic content)

Table 2: Summary of laboratory testing (water samples)

Sample Depth	Electrical Conductivity (µS/cm)	Total Dissolved Solids (mg/L)	Total Alkalinity (mg/L)	Sulfate (mg/L)	Chloride (mg/L)	Major Cations				Ionic Balance		
						Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Anions (meq/L)	Total Cations (meq/L)	Ionic Balance (%)
A01 Shallow	286	654	100	<10	32	23	5	42	7	2.90	3.56	10.3
A01 Deep	2430	2940	145	112	690	10	35	429	5	24.7	22.2	5.41
A05 Shallow	166	2360	57	<1	17	7	4	29	<1	1.62	1.94	-
A05 Deep	5450	4820	104	64	1820	36	126	891	9	54.8	51.2	3.41
A07	3410	1880	202	30	1020	15	32	622	8	33.4	30.6	4.38
A15	3710	2490	419	541	668	16	26	738	8	38.5	35.2	4.42
AR5	33600	2000	531	147	724	11	37	624	6	34.1	30.9	4.96
AR6	2860	2790	<1	643	556	16	79	432	4	29.1	26.2	5.23
BH06 North	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
BH06 South	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
BH13	12300	6900	65	143	4270	52	224	2220	13	125	118	2.82

Notes: Fines < 0.075mm; 0.075 mm < Sand < 2.
Testing standards used:
APHA 2510 B & APHA 2540 B