

Environmental Assessment Works

South Australian Environment Protection Authority

37 - 41 Cliff Street, Glenelg East

Appendix I: Groundwater and Soil Vapour Point Installation Logs



MONITORING WELL LOG GW16

Bore No.: GW16

Page: 1 of 1

Client: SA Environmental Protection Agency
Project: Groundwater Monitoring
Driller: Brett Durand
Drilling Method: Hand Auger/Solid Flight Auger

Total Denth (m): 6.0

Easting: 0
Northing: 0
Northing: 0
Northing: 0

Location: 37-41 Cliff Street, Glenelg East Total Depth (m): 6.0 **Date Drilled:** 30 Sep 2014 **To:** 30 Sep 2014 Diameter (mm): 100 Logged by: GN Checked by: SW Casing Material: Class 18 PVC Screen Material: 0.5mm Slotted Class 18 PVC Piezometer Details Depth/ Elevation (m) Nater Strikes Graphic Log SOIL DESCRIPTION (mdd) Depth (m) Moisture \Box Field B Ground Surface 0.0 0.00 Concrete Flush Mounted Gatic FILL Pale brown Sandy Clay. 0.20 Slight gas/organic odour Crushed rock and concrete fragments noted noted at 0.2 - 0.5m throughout. Dark brown Silty/Sandy Clay. Bentonite 1.0 Some concrete and crushed rock fragments noted. 1.20 NATURAL - SILTY CLAY (CH) Dark brown to brown. Medium to high plasticity. **PVC Blank Casing** 2.0 @ approx 4.0m 3.0 М - Sand (2-3mm) Water Strike 4.0 4.00 W NATURAL - SILTY CLAY (CH) Brown to orange brown. Medium to high plasticity. - 3m PVC Slotted Screen -5.0 HH. 6.0 6.00 GW16 DISCONTINUED AT 6.0mbgl 7.0 8.0 9.0 10.0 NOTES:



MONITORING WELL LOG GW17

Bore No.: GW17

Page: 30oSep 2014

Drilling Co: Soil Surveys Driller: Brett Durand Client: SA Environmental Protection Agency Easting: 0 **Project:** Groundwater Monitoring Northing: 0 Project No: J125792 Drilling Method: Hand Auger/Solid Flight Auger Location: 37-41 Cliff Street, Glenelg East Total Depth (m): 6.0 Date Drilled: 30 Sep 2014 Diameter (mm): 100 Logged by: GN Checked by: SW Casing Material: Class 18 PVC Screen Material: 0.5mm Slotted Class 18 PVC Piezometer Details Depth/ Elevation (m) Nater Strikes Graphic Log SOIL DESCRIPTION (mdd) Depth (m) Moisture \Box Field Ground Surface 0.0 Concrete 0.00 Flush Mounted Gatic Grey and orange sands with occasional crushed rock fragments noted. 0.50 Brown Sandy Clay. Occasional crushed rock fragments noted Bentonite 1.0 throughout. FILL Brown sandy clay. Fine grained. Medium to high plasticity. NATURAL - SILTY CLAY (CH) Brown. PVC Blank Casing 2.0 2.00 Medium to high plasticity. NATURAL - SILTY CLAY (CH) @ approx 4.0m Red to brown. Medium to high plasticity. 3.0 М - Sand (2-3mm) 4.0 W - 3m PVC Slotted Screen -5.0 6.0 6.00 GW17 DISCONTINUED AT 6.0mbgl 7.0 8.0 9.0 10.0 NOTES:



MONITORING WELL LOG GW18

Bore No.: GW18

Page: 1 of 1

Drilling Co: Soil Surveys Driller: Brett Durand Client: SA Environmental Protection Agency Easting: 0 **Project:** Groundwater Monitoring Northing: 0 Project No: J125792 Drilling Method: Hand Auger/Solid Flight Auger Location: 37-41 Cliff Street, Glenelg East Total Depth (m): 6.0 Date Drilled: 30 Sep 2014 To: Logged by: GN Diameter (mm): 100 Checked by: SW Casing Material: Class 18 PVC Screen Material: 0.5mm Slotted Class 18 PVC Piezometer Details Depth/ Elevation (m) Water Strikes Graphic Log SOIL DESCRIPTION (mdd) Depth (m) Moisture \Box Field Ground Surface Concrete 0.0 0.00 Flush Mounted Gatic Fine yellow to grey sand with crushed rock fragments noted throughout. 0.20 NATURAL - SILTY CLAY (CH) Medium to high plasticity. Bentonite 1.0 PVC Blank Casing 2.0 2.00 NATURAL - SILTY CLAY (CH) Red to brown. @ approx 4.0m Medium to high plasticity. 3.0 - Sand (2-3mm) М 4.0 W - 3m PVC Slotted Screen -5.0 6.0 6.00 GW18 DISCONTINUED AT 6.0mbgl 7.0 8.0 9.0 10.0 NOTES:



Bore No.: SGP10

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Client: South Australian EPA Project: GW/Vapour Monitoring Project No: J125792

Location: Glenelg East - Cliff Street **Date Drilled:** 30 Sep 2014 **To:** 30 Sep 2014 Drilling Co: Soil Surveys Driller: Brett Durand

Easting: 274245.64 Northing: 6125655.08

Drilling Method: Hand Auger/Solid Flight Auger

Total Depth (m): 1.5

Diameter (mm): 100 Logged by: GN Checked by: SKW

Casing Material: 0.25in Teflon Tubing Screen Material: Stainless Steel Shroud Piezometer Details Depth/ Elevation (m) Water Strikes Graphic Log SOIL DESCRIPTION (mdd) Depth (m) Comment Moisture \Box Field Ground Surface 0.0 0.00 D Gatic Cover FILL Silty sand. Concrete Brown. Crushed rock fragments noted throughout. 0.15 NATURAL - SANDY CLAY (CL) Low to medium plasticity. Teflon Tubing - Bentonite -1.0 Change to Solid Flight Auger at 1m Sand Shroud 1.50 BOREHOLE SGP10 DISCONTINUED AT 1.5m bgl -20 -3.0 4.0 NOTES:



Bore No.: SGP11

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Client: South Australian EPA Project: GW/Vapour Monitoring

Project No: J125792

NOTES:

Drilling Co: Soil Surveys Driller: Brett Durand

Easting: 274264.41 Northing: 6125669.46 Drilling Method: Hand Auger/Solid Flight Auger

Location: Glenelg East - Cliff Street Total Depth (m): 2.5 **Date Drilled:** 29 Sep 2014 **To:** 29 Sep 2014 Diameter (mm): 100 Logged by: GN Checked by: SKW Casing Material: 0.25in Teflon Tubing Screen Material: Stainless Steel Shroud Piezometer Details Depth/ Elevation (m) Nater Strikes Graphic Log SOIL DESCRIPTION (mdd) Depth (m) Moisture \Box Field Ground Surface 0.0 0.00 D Gatic Cover FILL Clayey sand. 0.10 Brown with some crushed rock fragments noted Teflon Tubing throughout. Sand. Grey, medium to coarse grained. Teflon Tubing 0.50 NATURAL - SANDY CLAY (CL) Brown to red brown. Occasional natural gravels noted. Low to medium plastcity. Bentonite -1.0 Change to Solid Flight Auger at 1m Sand Shroud Bentonite -20 Sand - Shroud 2.50 BOREHOLE SGP11 DISCONTINUED AT 2.5m bgl -3.0 4.0



Bore No.: SGP12

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Client: South Australian EPA Project: GW/Vapour Monitoring Project No: J125792

NOTES:

Location: Glenelg East - Cliff Street

Drilling Co: Soil Surveys Driller: Brett Durand

Easting: 274300.87 Northing: 6125673.19

Drilling Method: Hand Auger/Solid Flight Auger Total Depth (m): 1.5

Diameter (mm): 100 Logged by: GN Checked by: SKW

Date Drilled: 29 Sep 2014 **To:** 29 Sep 2014 Casing Material: 0.25in Teflon Tubing Screen Material: Stainless Steel Shroud Piezometer Details Depth/ Elevation (m) Water Strikes Graphic Log SOIL DESCRIPTION (mdd) Depth (m) Comment Moisture \Box Field Ground Surface 0.0 0.00 D Gatic Cover FILL Grey sands. Fine to medium grained. Concrete 0.10 Clay and sand mix. Fine to medium grained. Brown to yellow brown. NATURAL - SANDY CLAY (CL) Teflon Tubing Red brown. Low to medium plasticity. - Bentonite -1.0 Change to Solid Flight Auger at 1m Sand Shroud 1.50 BOREHOLE SGP12 DISCONTINUED AT 1.5m bgl -20 -3.0 4.0



Bore No.: SGP13

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Client: South Australian EPA Project: GW/Vapour Monitoring Project No: J125792 Location: Glenelg East - Cliff Street

Easting: 274277.11 Northing: 6125557.91 Drilling Co: Soil Surveys Driller: Brett Durand

Drilling Method: Hand Auger/Solid Flight Auger **Total Depth (m):** 2.5

Date Drilled: 29 Sep 2014 To: 29 Sep 2014 Diameter (mm): 100 Logged by: GN Cher Casing Material: 0.25in Teflon Tubing Screen Material: Stainless Steel Shroud							Checked by: SK	W	
Depth/ Elevation (m)	Water Strikes	Graphic Log	SOIL DESCRIPTION	Moisture	Piezometer Details	Field ID	PID (ppm)	Comment	Depth (m)
			Ground Surface						0.0
0.00			Grass FILL Brown sandy silt. NATURAL - SILTY CLAY (CL) Red to brown. Medium to high plasticity.	D		─ Gatic Cover ─ Teflon Tubing ─ Teflon Tubing			
						— Bentonite — Sand — Shroud — Bentonite		Change to Solid Flight Auger at 1m	-1.0 - - - - -
2.50			BOREHOLE SGP13 DISCONTINUED AT 2.5m bgl		V	— Sand			- - - -3.0
NOTES	:								-4.0



Bore No.: SGP5

Page: 1 of 1

Client: South Australian EPA Project: GW/Vapour Monitoring Project No: J125792 Location: Glenelg East - Cliff Street

Drilling Co: Soil Surveys
Driller: Brett Durand
Drilling Method: Hand Auger/Solid Flight Auger
Total Depth (m): 2.5

Easting: 274268.86 Northing: 6125632.56

Date Drilled: 30 Sep 2014 To: 30 Sep 2014 Diameter (mm): 100 Logged by: GN Checked by: SKW Casing Material: 0.25in Teflon Tubing Screen Material: Stainless Steel Shroud										
Depth/ Elevation (m)	Water Strikes	Graphic Log	SOIL DESCRIPTION	Moisture	Piezometer Details	Field ID	Mdd) Old	Comment	Depth (m)	
			Ground Surface							
0.00			ORGANIC MATTER (Leaf Litter) FILL Dark brown sandy silt. Occasional rootlets noted throughout.	D		Gatic Cover Teflon Tubing			0.0	
			NATURAL - SILTY CLAY (CL) Brown. Low to medium plasticity.			— Teflon Tubing			_	
0.50			NATURAL - SANDY CLAY (CL) Brown. Low to medium plasticity.		*	Bentonite			-	
								Change to Solid Flight Auger at 1m	-1.0	
1.50			NATURAL CULTVOLAVOLA			— Shroud				
1.50			NATURAL - SILTY CLAY (CL) Orange brown. Low to medium plasticity.		*	— Bentonite				
						— Sand — Shroud			_	
2.50			BOREHOLE SGP5 DISCONTINUED AT 2.5m below ground level (bgl)							
									-3.0	
									_	
									-4.0	
OTES	:			1	1			ı	,	



Bore No.: SGP6

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Easting: 274272.38 Northing: 6125611.11

Client: South Australian EPA Project: GW/Vapour Monitoring

Project No: J125792 Location: Glenelg East - Cliff Street

Drilling Co: Soil Surveys Driller: Brett Durand

Drilling Method: Hand Auger/Solid Flight Auger

Total Depth (m): 1.5

Date Drilled: 30 Sep 2014 **To:** 30 Sep 2014 Diameter (mm): 100 Logged by: GN Checked by: SKW

Casing Material: 0.25in Teflon Tubing Screen Material: Stainless Steel Shroud Piezometer Details Depth/ Elevation (m) Water Strikes Graphic Log SOIL DESCRIPTION (mdd) Depth (m) Comment Moisture \Box Field Ground Surface 0.0 0.00 D Gatic Cover FILL Sandy silt. Concrete Dark brown. 0.20 ## NATURAL - SILTY CLAY (CL) Brown to red brown. Low to medium plasticity. Teflon Tubing Bentonite -1.0 Change to Solid Flight Auger at 1m Sand Shroud 1.50 BOREHOLE SGP6 DISCONTINUED AT 1.5m -20 -3.0 4.0 NOTES:



Bore No.: SGP7

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Easting: 274307.03

Client: South Australian EPA Project: GW/Vapour Monitoring Project No: J125792

Location: Glenelg East - Cliff Street

Drilling Co: Soil Surveys Driller: Brett Durand

Northing: 6125603.19 Drilling Method: Hand Auger/Solid Flight Auger

Total Depth (m): 1.5

Date Drilled: 30 Sep 2014 **To:** 30 Sep 2014 Diameter (mm): 100 Logged by: GN Checked by: SKW

Casing Material: 0.25in Teflon Tubing Screen Material: Stainless Steel Shroud Piezometer Details Depth/ Elevation (m) Water Strikes Graphic Log SOIL DESCRIPTION (mdd) Depth (m) Moisture \Box Field Ground Surface 0.0 0.00 D Gatic Cover CONCRETE Concrete 0.15 NATURAL - SILTY CLAY (CL) ## Brown to dark brown. Low to medium plasticity.

Occasional roots noted near top of layer. Teflon Tubing Bentonite -1.0 Change to Solid Flight Auger at 1m Sand Shroud 1.50 BOREHOLE SGP7 DISCONTINUED AT 1.5m bgl -20 3.0 4.0 NOTES:



Bore No.: SGP8

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Client: South Australian EPA Project: GW/Vapour Monitoring Project No: J125792 Location: Glenelg East - Cliff Street

Easting: 274330.6 Northing: 6125618.14 Drilling Co: Soil Surveys Driller: Brett Durand

Drilling Method: Hand Auger/Solid Flight Auger **Total Depth (m):** 1.5

ate Drilled: 30 Sep 2014 To: 30 Sep 2014 Diameter (mm): 100 Logged by: GN Checked by: SKW asing Material: 0.25in Teflon Tubing Screen Material: Stainless Steel Shroud									
Depun Elevation (m) Water Strikes	Water Strikes	Graphic Log	SOIL DESCRIPTION	Moisture	Piezometer Details	Field ID	PID (ppm)	Comment	(50)
Hded 0.00 0.20 1.50		Graph Graph	Ground Surface FILL Crushed rock and grey gravels. Medium to coarse grained. FILL Sandy silty clay. Brown. Small to medium crushed rock fragments noted throughout. NATURAL - SILTY CLAY (CH) Brown. Medium to high plasticity. BOREHOLE SGP8 DISCONTINUED AT 1.5m bgl	D Moistr	Herzon Harris Ha	Gatic Cover — Concrete Teflon Tubing Bentonite Sand — Shroud	3) QIA	Change to Solid Flight Auger at 1m	- 1.0



Bore No.: SGP9

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Easting: 274211.86

Client: South Australian EPA Project: GW/Vapour Monitoring Project No: J125792

NOTES:

Location: Glenelg East - Cliff Street

Drilling Co: Soil Surveys Driller: Brett Durand

Northing: 6125719.81 Drilling Method: Hand Auger/Solid Flight Auger

Total Depth (m): 1.5

Date Drilled: 30 Sep 2014 **To:** 30 Sep 2014 Diameter (mm): 100 Logged by: GN Checked by: SKW

Casing Material: 0.25in Teflon Tubing Screen Material: Stainless Steel Shroud Piezometer Details Depth/ Elevation (m) Water Strikes Graphic Log SOIL DESCRIPTION (mdd) Depth (m) Moisture \Box Field Ground Surface 0.0 0.00 D Gatic Cover FILL Sandy clay. Concrete Brown with grey sands, medium to coarse grained crushed rock and concrete pieces noted 0.20 NATURAL - SILTY SANDY CLAY (CL) Dark brown. Medium to high plasticity.
Occasional concrete fragments noted between Teflon Tubing Gas like organic odour. 1.0m and 1.5m bgl. Bentonite -1.0 Change to Solid Flight Auger at 1m Sand Shroud 1.50 BOREHOLE SGP9 DISCONTINUED AT 1.5m bgl -20 -3.0 4.0

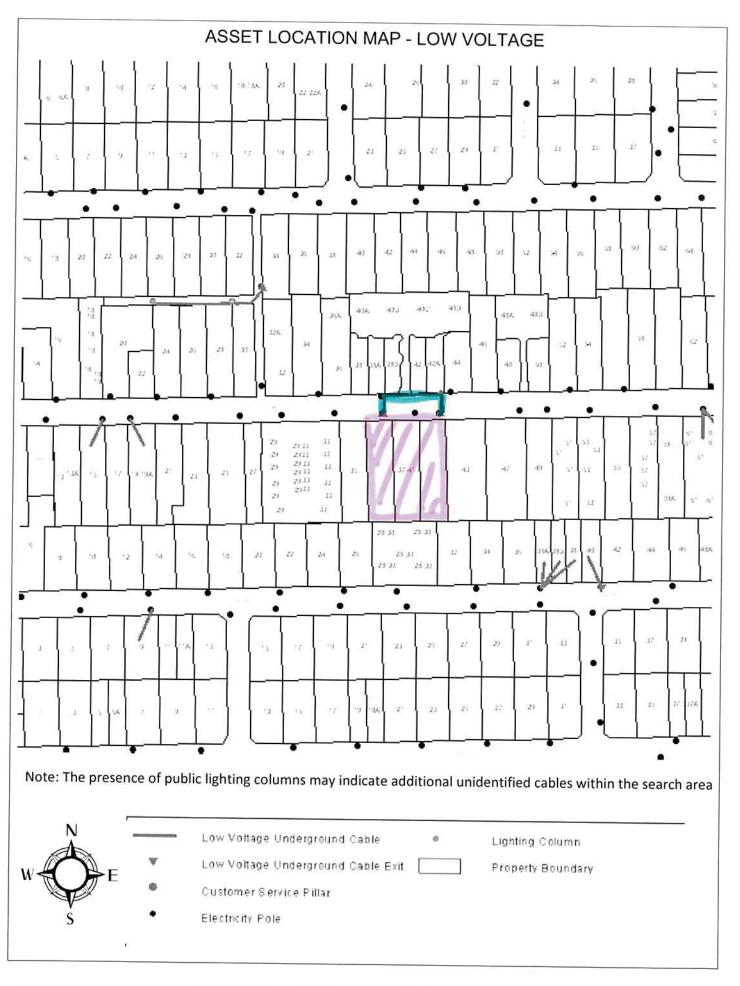


Environmental Assessment Works

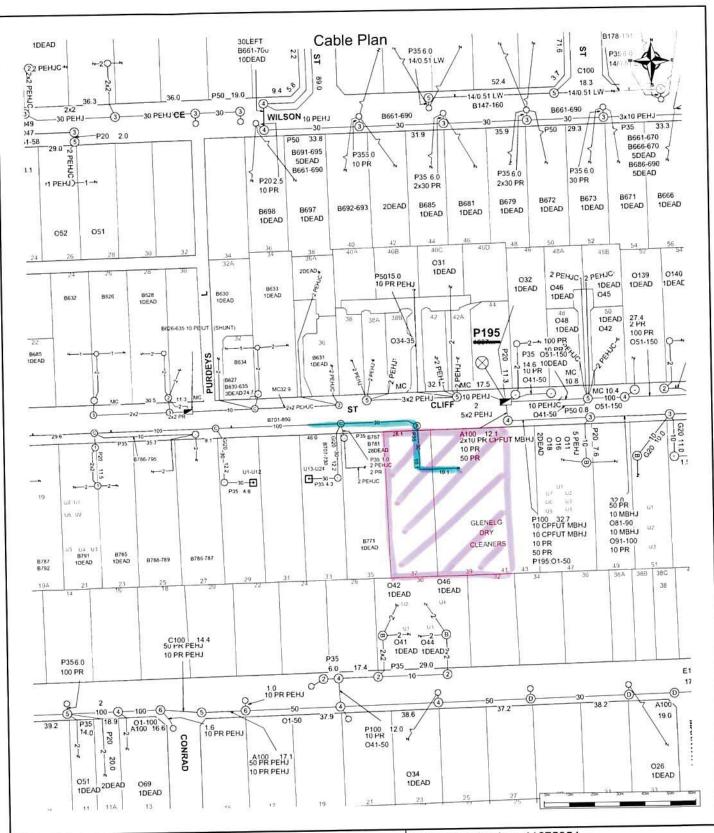
South Australian Environment Protection Authority

37 - 41 Cliff Street, Glenelg East

Appendix J: 'Dial Before You Dig' Service Plans, Summary Plan of Underground Services and PID Calibration Certificate







Celstra

For all Telstra DBYD plan enquiries email - Telstra.Plans@team.telstra.com For urgent onsite contact only - ph 1800 653 935 (bus hrs)

TELSTRA CORPORATION LIMITED A.C.N. 051 775 556

Generated On 22/09/2014 16:12:53

Sequence Number: 41675354

CAUTION: Fibre optic and/ or major network present in plot area. Please read the Duty of Care and contact Telstra Plan Services should you require any assistance.

The above plan must be viewed in conjunction with the Mains Cable Plan on the following page

WARNING - Due to the nature of Telstra underground plant and the age of some cables and records, it is impossible to ascertain the precise location of all Telstra plant from Telstra's plans. The accuracy and/or completeness of the information supplied can not be guaranteed as property boundaries, depths and other natural landscape features may change over time, and accordingly the plans are indicative only. Telstra does not warrant or hold out that its plans are accurate and accepts no responsibility for any inaccuracy shown on the plans.

It is your responsibility to locate Telstra's underground plant by careful hand pot-holing prior to any excavation in the vicinity and to exercise due care during that excavation.

Please read and understand the information supplied in the duty of care statement attached with the Telstra plans. TELSTRA WILL SEEK COMPENSATION FOR LOSS CAUSED BY DAMAGE TO ITS PLANT.

Telstra plans and information supplied are valid for 60 days from the date of issue. If this timeframe has elapsed, please reapply for plans,



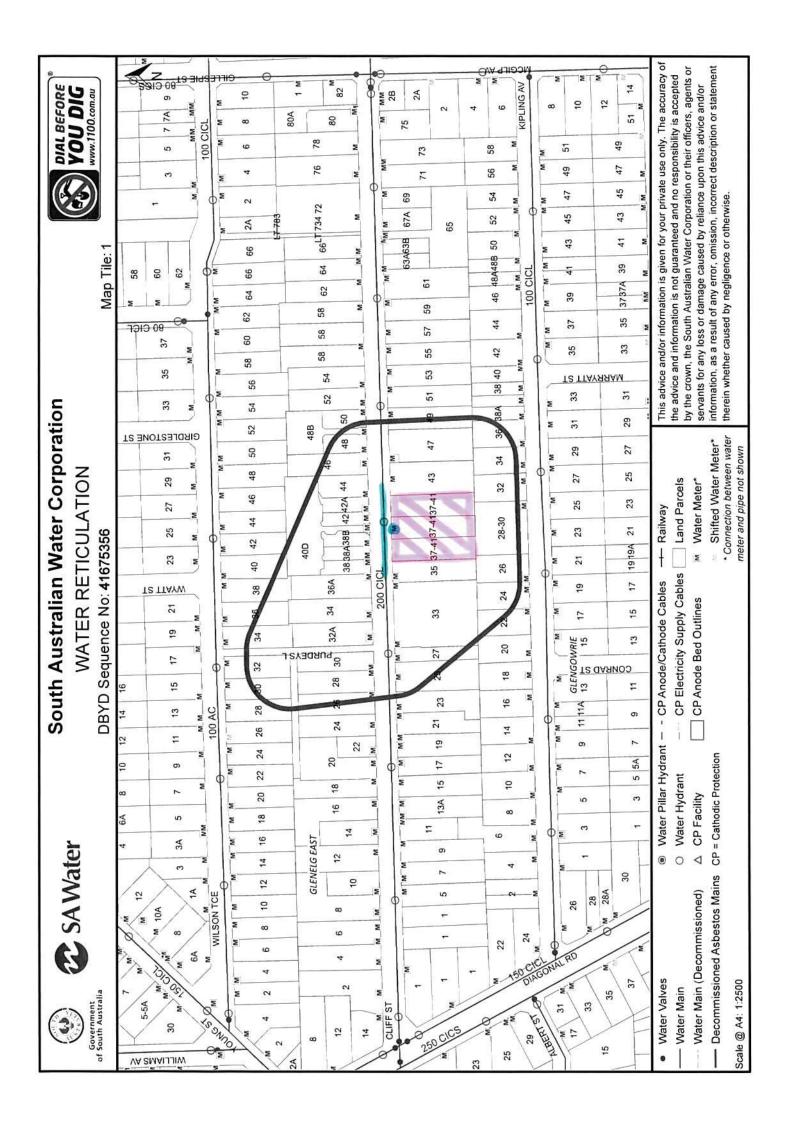
Site Address	Cliff Street Glenelg East	Sequence No		41675355	
Intersecting Street		Map Reference		140K6,140K7	
Distance From Intersection		Email greg.nie		eld@aecaust.com.au	
Message	installation of Groundwater w	vells and Vapo	our points		

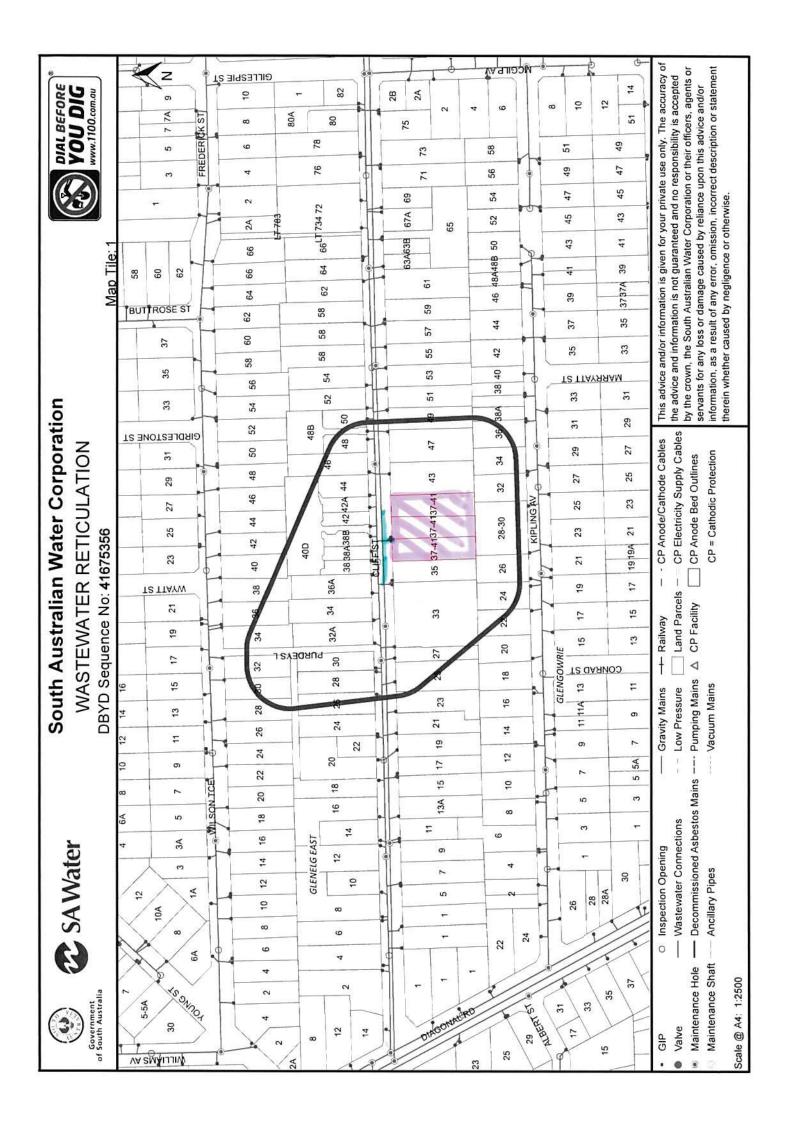
Please verify the area indicated is in the vicinity of your requested excavation

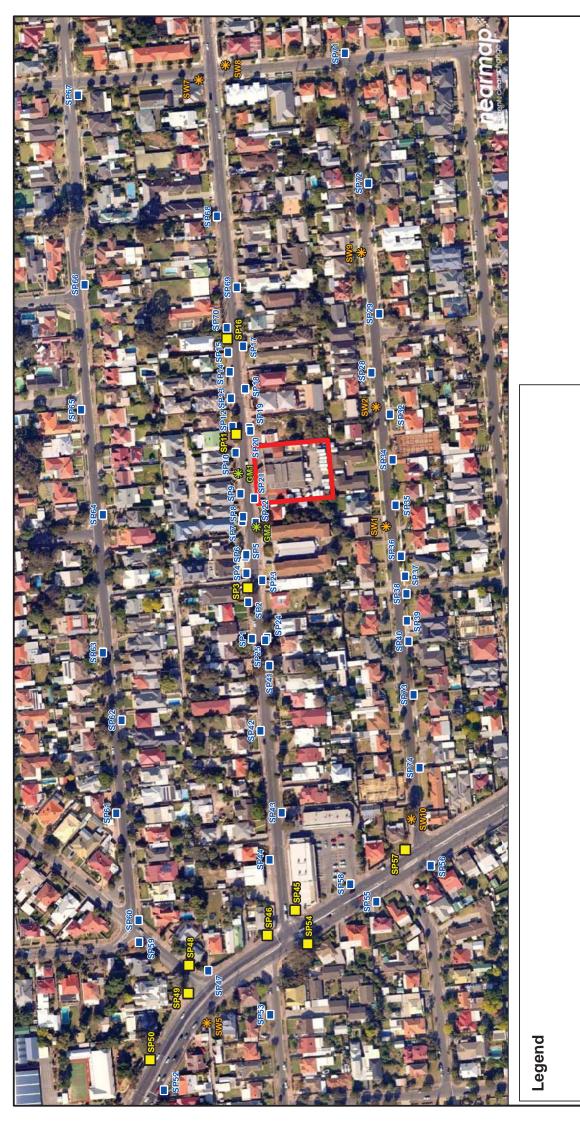


Immediately report any damage to gas pipelines - Telephone 1800 808 526

ITEM	SYMBOL	TERMS
LOW PRESSURE 1.2 - 1.7kPa	-	B - BOUNDARY
MEDIUM PRESSURE 35 - 100kPa		D - DEPTH
HIGH PRESSURE 70 - 350kPa	18 - 18 - 18 - 18 - 18 - 18 - 18 - 18 -	Bok - Back of Kerb
TRANSMISSION PRESSURE 900 - 15000kPa		
PROPOSED MAIN 1.2 - 15000kPa		_ Fok - Front of Kerb







- Gas Main Location
- Small Rectangular Concrete Telstra Pit

Site Boundary

Large Square Metal Telstra Pit

Storm Water Drain

SCALE (at A3) 1:2,125 22 20

25

SERVICE PIT, STORM WATER GAS MAIN LOCATIONS



12 Greenhill Road Wayville SA 5034 PO Box 582 Unley SA 5061 (08) 8299 9955 www.greencap.com.au

Location: 37-41 Cliff Street, Glenelg East, SA Drawn: ER

Job Ref: J125792

Project: Environmental Site Assessment

Checked: SW Date: December 2014 Note: All data is approx only & subject to survey

Coordinate System: GDA 1994 MGA Zone 54 Aerial image sourced from nearmap



RENTALS

Equipment Report - PPBRAE

This Gas Meter has been performance checked and calibrated as follows:

Lamp	Compound	Concentration	Zero	Span	Traceability Lot #	Pass?	
10-6 eV	Isobutylene	100 ppm	0.0 ppm	100 ppm	1625280	a	
larm Limits		Вι	ımp Test				
High	106 ppn	n	Date	Target Gas	Reading	Pass?	
Low	So ppn	7	7/10/2014	100 ppm	100.1 ppm	u	
Electrical Safet Tag No: _	tatus (Min 5.5 vo y Tag attached (A	lts)		☑ Performar ☐ Data clear ☑ Filters che		o, sensor	
Valid to: _	27/4/2015						
	6)						
gned:ease check that inimum \$30 clea		ns are received and the pair charge may be ap it.					

TFS Reference	AGC-Tonday	Return Date: / /
Customer Reference		Return Time:
Equipment ID	PPBRAR 3000	Condition on return:
Equipment Serial No.	594 - 900607	

"We do more than give you great equipment... We give you great solutions!"

Phone: (Fre	ee Call) 1300 735 295	Fax: (Free Call) 1800 675 1:	23	Email: RentalsAU@Thermofisher.com
Melbourne Branch 5 Caribbean Drive, Scoresby 3179	Sydney Branch Level 1, 4 Talavera Road, North Ryde 2113	Adelaide Branch 27 Beulah Road, Norwood, South Australia 5067	Brisbane Branch Unit 2/5 Ross St Newstead 4006	Perth Branch 121 Beringarra Ave Malaga WA 6090
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