



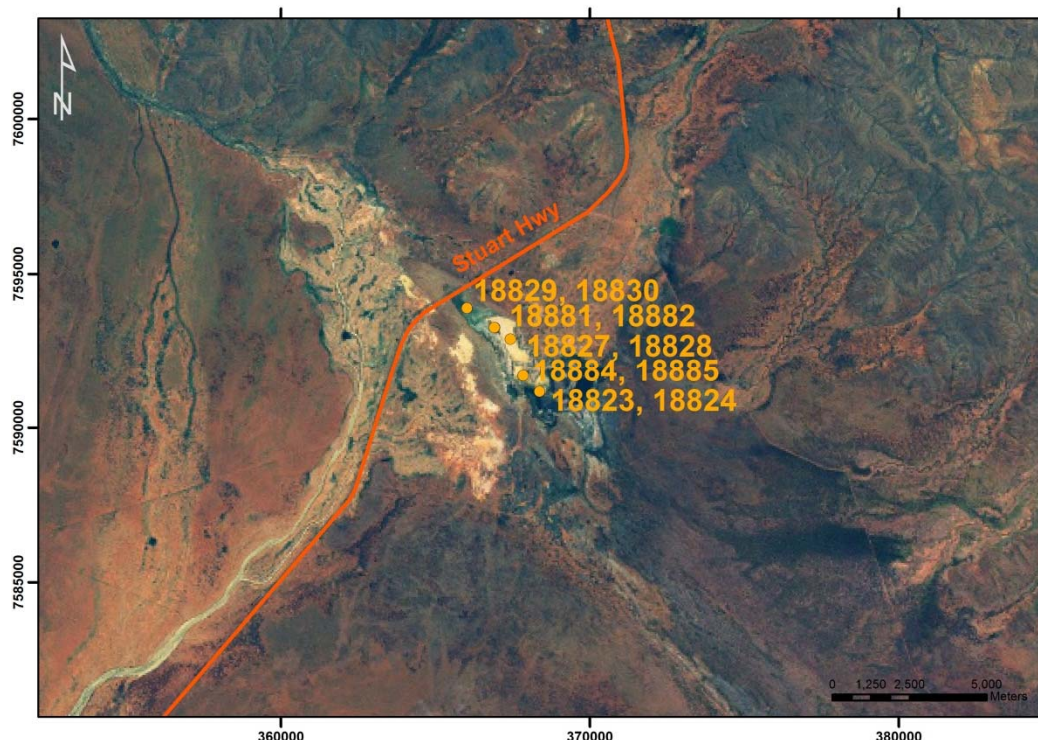
An Australian Government Initiative

Groundwater Education Investment Fund Project

Borehole Infrastructure Report

Borehole Type	Multi-Level Piezometer	GPS Easting	(MGA-94 Zone 53)	368372
Unique Well ID	18823	GPS Northing		7591165
Completion Date	21 May 2012	Location		Stirling Swamp, NT
Drilled By	NRETAS	Installed By		NRETAS
Monument Type	Round-Swing Top	Depth Drilled		11.2 m
Monument Diameter/Width	216 mm	Drilled Diameter/Method		200 mm (min), Rotary Air
Development Details	Airlift 10 L/s.			
Project Comments: 18823 is a dual completion multi-level piezometer. It is located adjacent to 18824. Together, these bores provide a nest of four piezometers sampling different depths in the unconfined aquifer.				

Bore ID	Casing Size (mm)/ Type	TOC (mAHD)	Casing Depth (mBGL)		Screen Size (mm)/ Aperture (mm)/ Type	Cement (mBGL)		Screen Depth (mBGL)		SWL (mTOC)
	200/Steel		-1.14	1.0	NA	0.0	1.0	NA	NA	NA
18823-1	50/PVC12	475.701	-0.95	9.5	50/0.5/UPVC18	7.85	7.95	8.5	9.0	1.9
18823-2	50/PVC12	475.739	-0.98	10.8	50/0.5/UPVC18	9.3	9.6	10.3	10.8	1.88

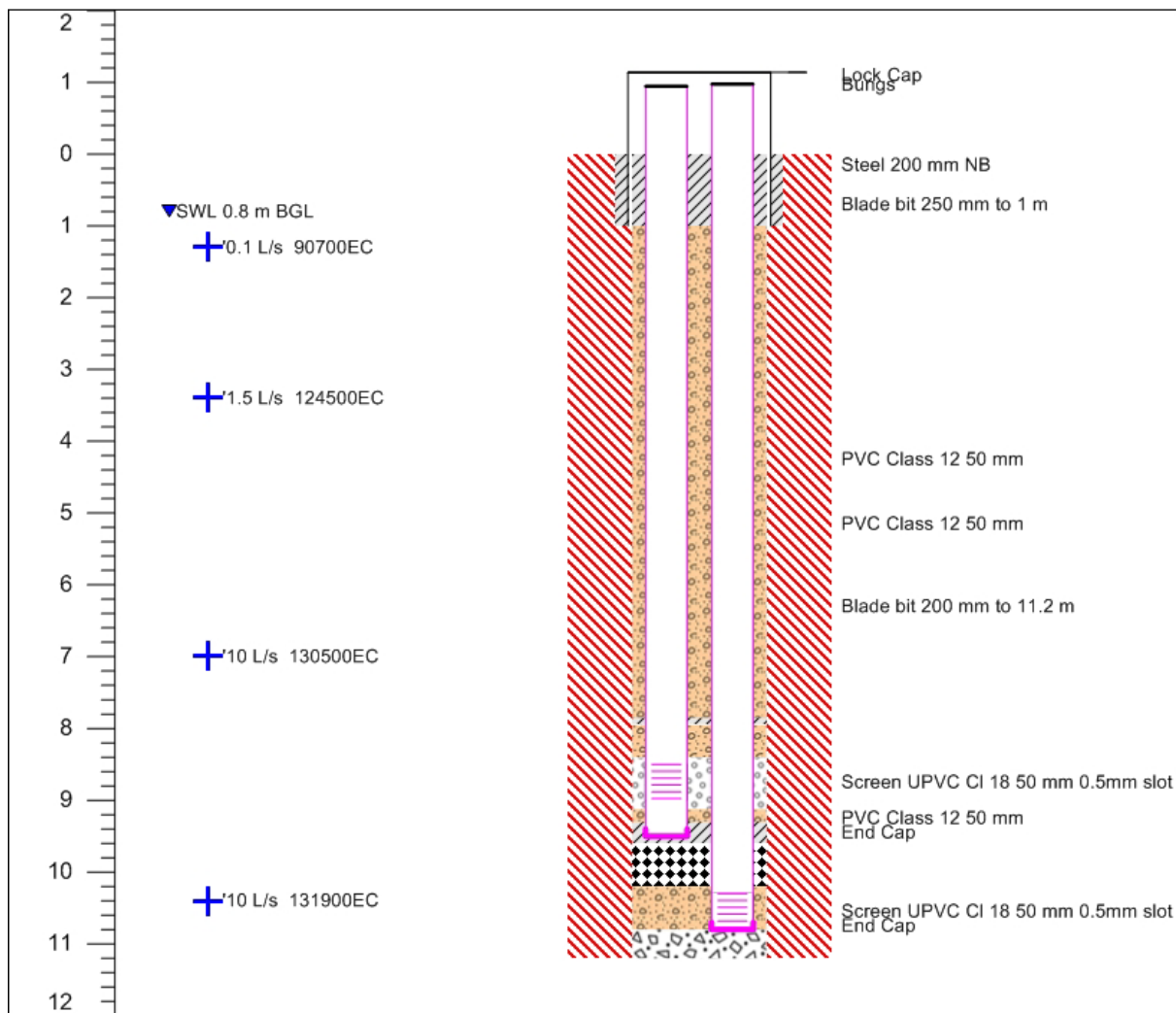


Map of Ti Tree Super Science Piezometer Locations, Stirling Swamp, NT.

Note* Appendix includes Well Completion, Lithology and Geophysical Logs, Hydraulic Test and Chemical Analysis.

Infrastructure Report prepared by:	Contact Details:	Checked by:
	stephanie.villeneuve@flinders.edu.au Office: 08 8201 2724	Prof Peter Cook 

Well Completion Log



Page 1 of 1

Date Start 18/05/2012

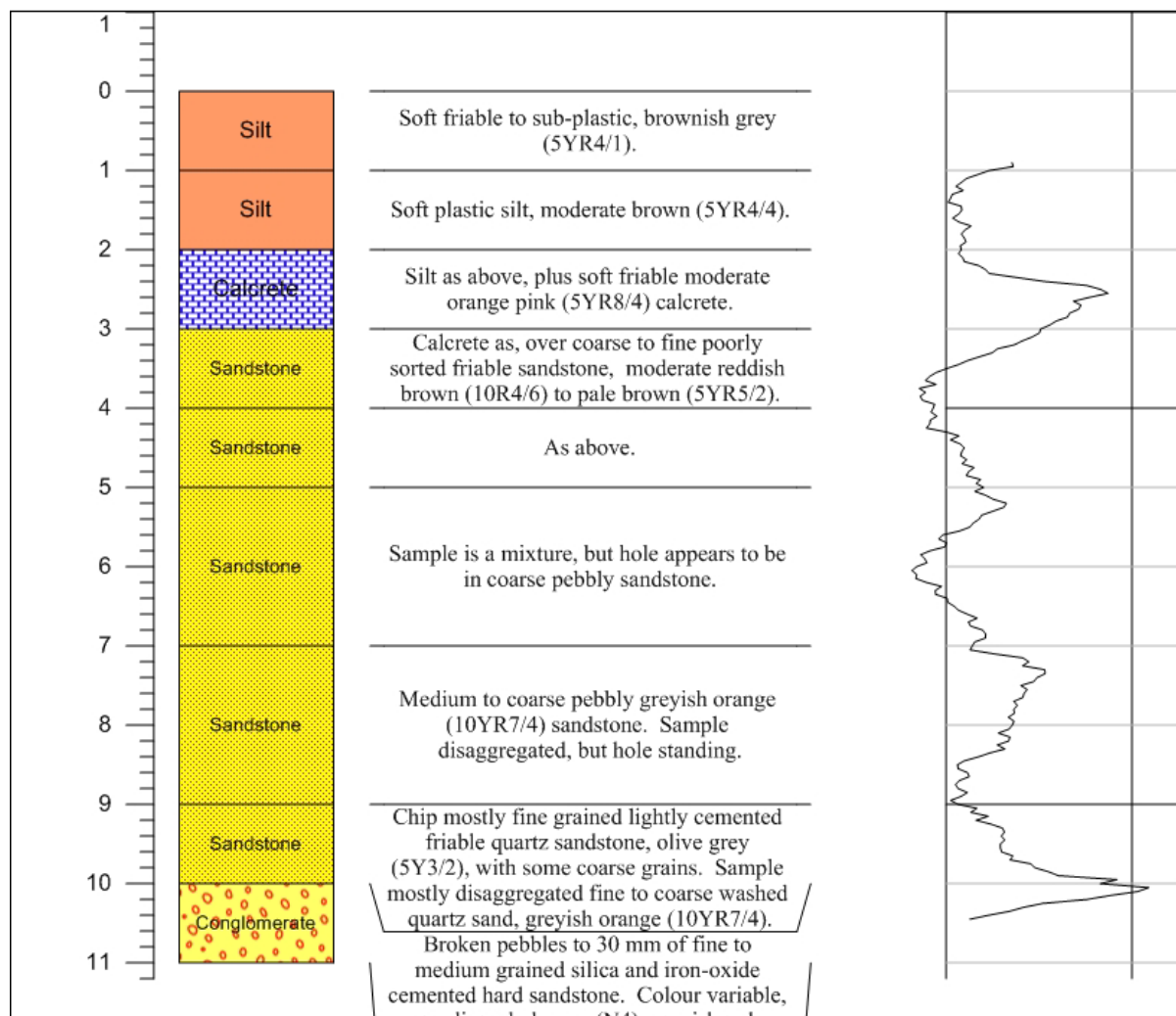
Completed 21/05/2012

Contractor NRETAS

Construction Legend

Steel	Gravel Pack	Creek Sand
PVC	Lock Cap	Fall Back
Slots	Bung	Soil
Hole	End Cap	Cuttings
Cement	Bentonite	Screen

Lithology Log



Page 1 of 1

Air Lift Yield L/s 10

Date Start 18/05/2012 Electrical Conductivity μ Siemens/cm 130000

Completed 21/05/2012 Standing Water Level m BGL 0.8

Contractor NRETAS

Status

Piezometer

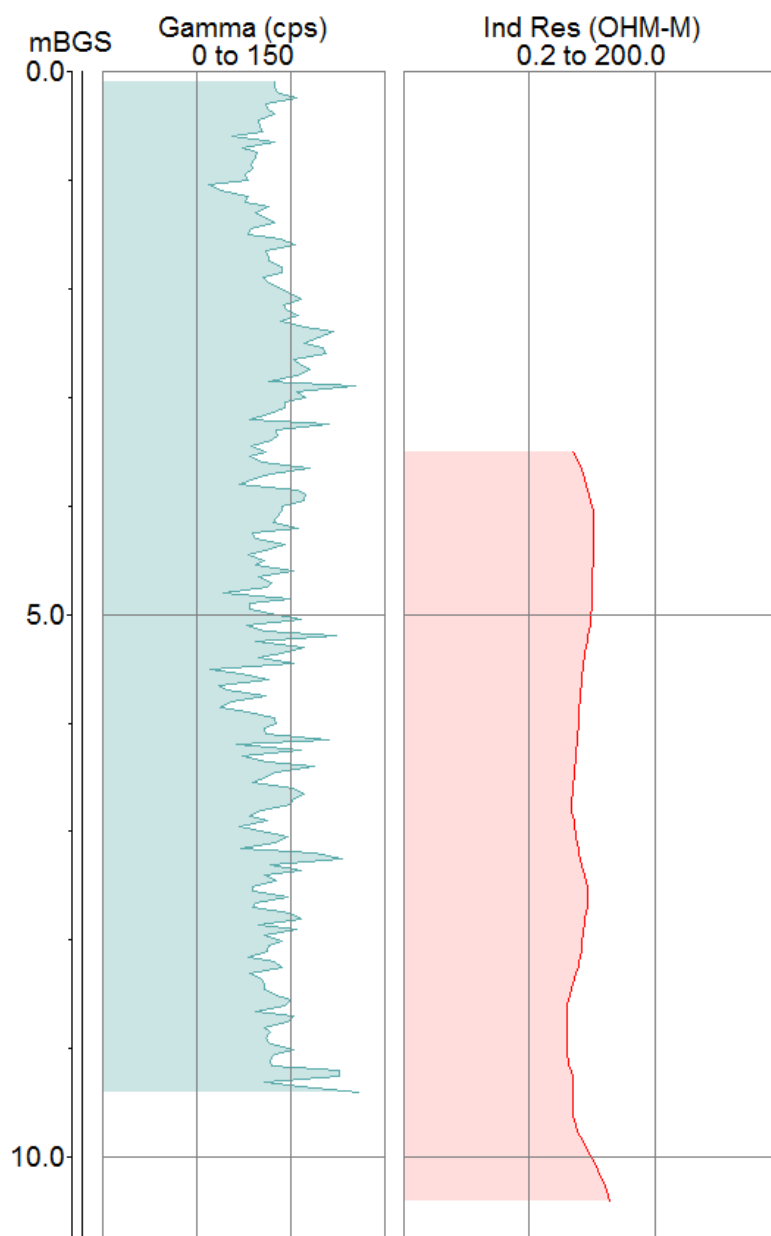
Gamma cps

Depth of casing at logging 0.5m

Geophysical Logs

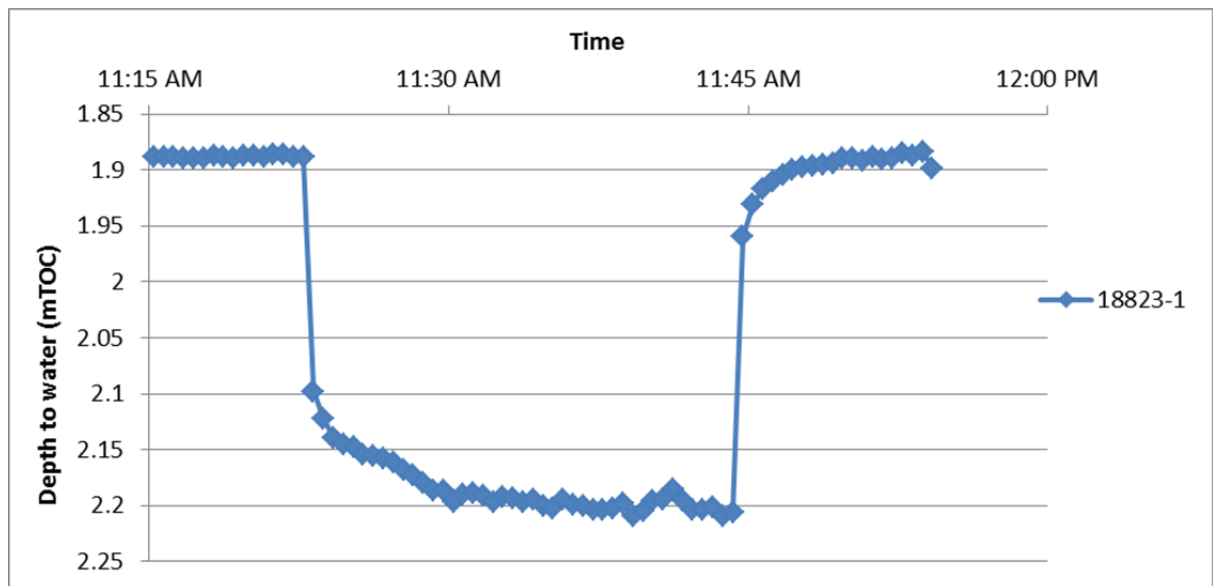
The portable Mount Sopris logging system was used to collect geophysical data from bore 18823-2, the deepest peizometer. The 2PGS probe was used to collect natural gamma measurements, and the 2PIA probe was used to measure conductivity/induced resistivity.

18823-2

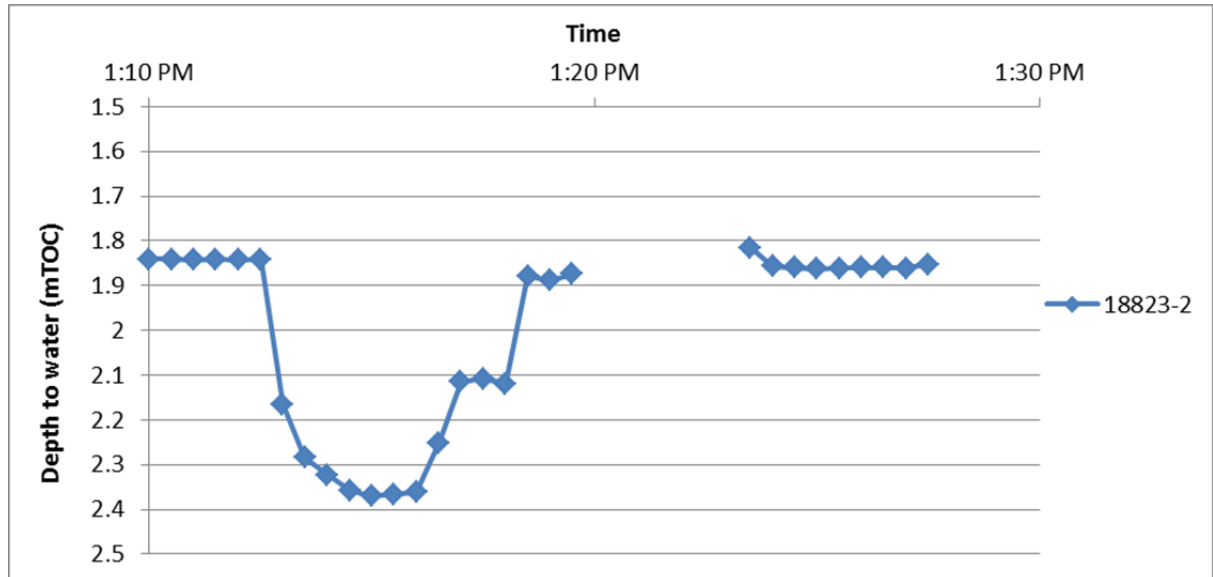


Pumping Test

A pumping test was performed on piezometer 18823-1 on 29/06/2012 by attaching a level logger to a submersible Whale pump, lowering the pump to a depth of 5 mTOC and using a flow rate of 3.8 L/min. The results of the test are presented below. The report author may be contacted for the full data set.



A pumping test was performed on piezometer 18823-2 on 29/06/2012 by attaching a level logger to a submersible Whale pump, lowering the pump to a depth of 8 mTOC and using a flow rate of 6.75 L/min. The results of the test are presented below. The report author may be contacted for the full data set.



Chemical Analysis

Basic chemical analysis of the dissolved solutes and concentration of ions in the borehole was performed. The testing also included hydrogen ion activity (pH) and fluid electrical conductivity (EC). Data from the chemical analysis is shown below.

Well ID	Date Sampled	SWL	Field Parameters				Laboratory Analyses							
		m TOC	pH	EC $\mu\text{S}/\text{cm}$	Temp $^{\circ}\text{C}$	Alkalinity $\text{mg}/\text{L CaCO}_3$	Ca^{2+} mg/L	K^{+} mg/L	Mg^{2+} mg/L	Na^{+} mg/L	Si mg/L	Cl^{-} mg/L	NO_3^{-} mg/L	SO_4^{2-} mg/L
18823-1	30/06/2012	1.9	7.84	122,989	24.1	1870	663	5700	3270	34400	<10	50755	5243	26961
18823-2	1/07/2012	1.88	7.3	122,900	24.7	2310	661	5710	3320	33900	<10	51033	5278	27394