



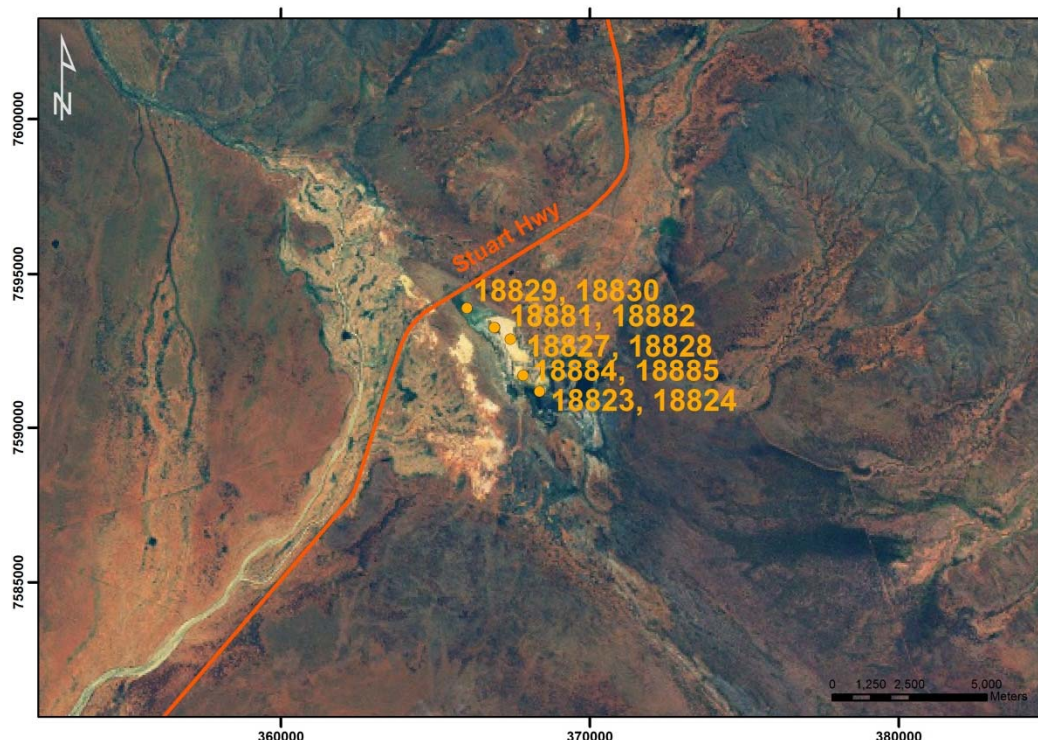
An Australian Government Initiative

Groundwater Education Investment Fund Project

Borehole Infrastructure Report


Borehole Type	Multi-Level Piezometer	GPS Easting	(MGA-94 Zone 53)	368372
Unique Well ID	18824	GPS Northing		7591168
Completion Date	22 May 2012	Location		Stirling Swamp, NT
Drilled By	NRETAS	Installed By		NRETAS
Monument Type	Round-Swing Top	Depth Drilled		7.0 m
Monument Diameter/Width	216 mm	Drilled Diameter/Method		200 mm (min), Rotary Air
Development Details	No airlift.			
Project Comments: 18824 is a dual completion multi-level piezometer. It is located adjacent to 18823. 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
18824-1	50/PVC12	475.756	-1.04	3.5	50/0.5/UPVC18	0	1.8	2.0	3.0	1.86
18824-2	50/PVC12	475.739	-1.02	7.0	50/0.5/UPVC18	5.12	5.4	5.5	6.5	1.9

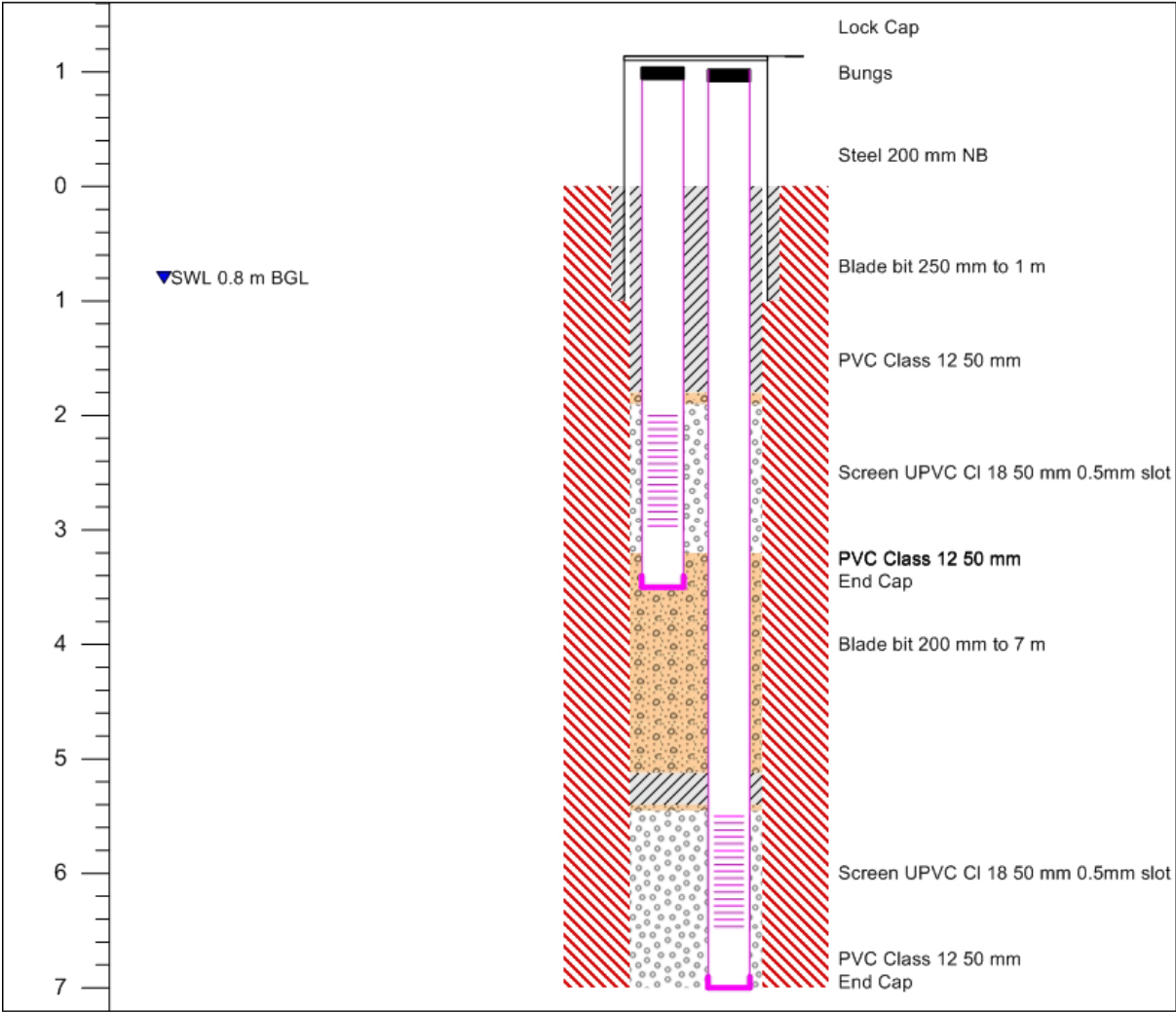


Map of Ti Tree Super Science Piezometer Locations, Stirling Swamp, NT.

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

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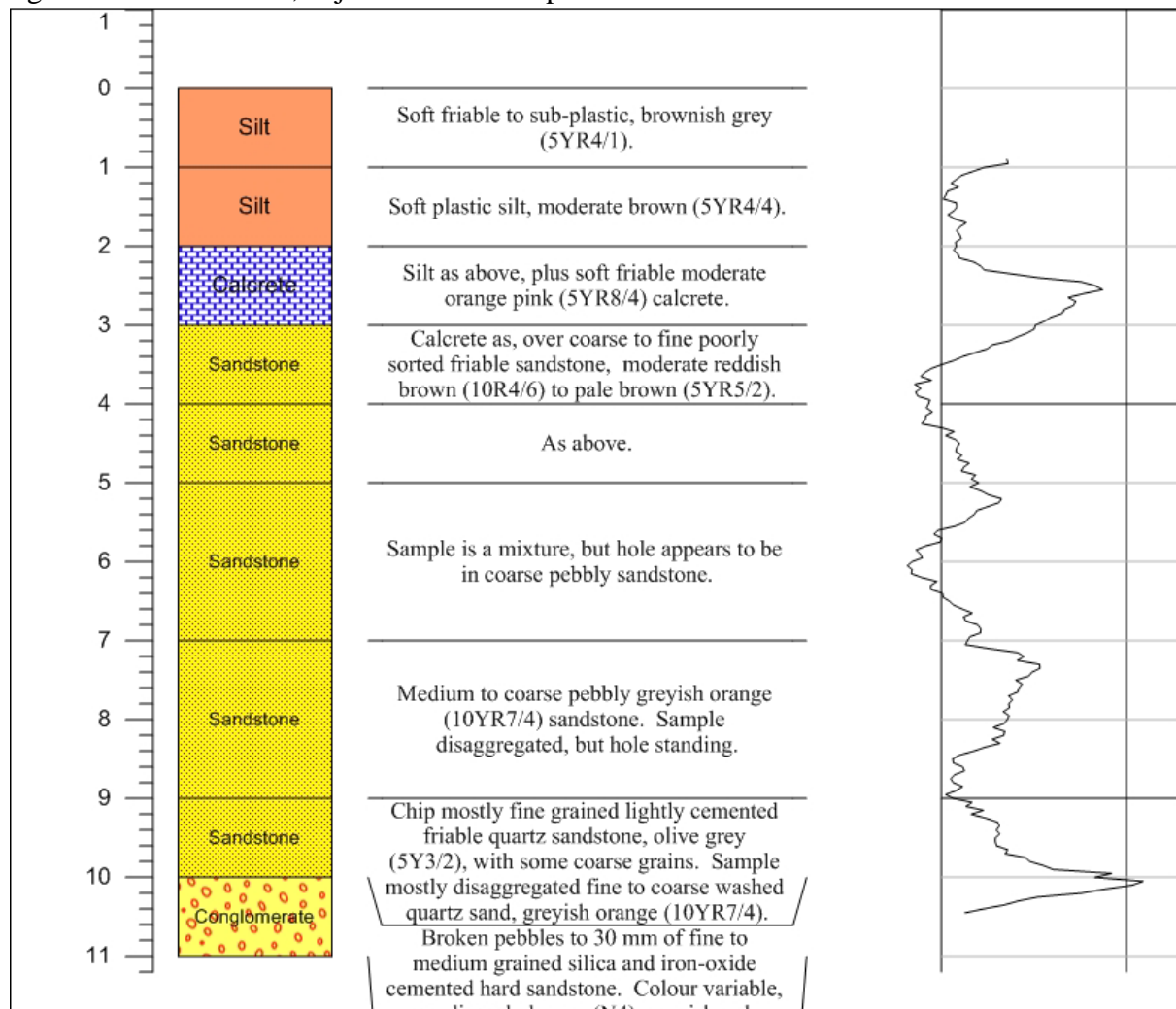
Well Completion Log



Page 1 of 1		Construction Legend		
Date Start 19/05/2012	Steel	Gravel Pack	Creek Sand	
Completed 22/05/2012	PVC	Lock Cap	Fall Back	
Contractor NRETAS	Slots	Bung	Soil	
	Hole	End Cap	Cuttings	
	Cement	Bentonite	Screen	

Lithology Log

Note: Logs are for well 18823, adjacent to and deeper than 18824.



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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

60

110

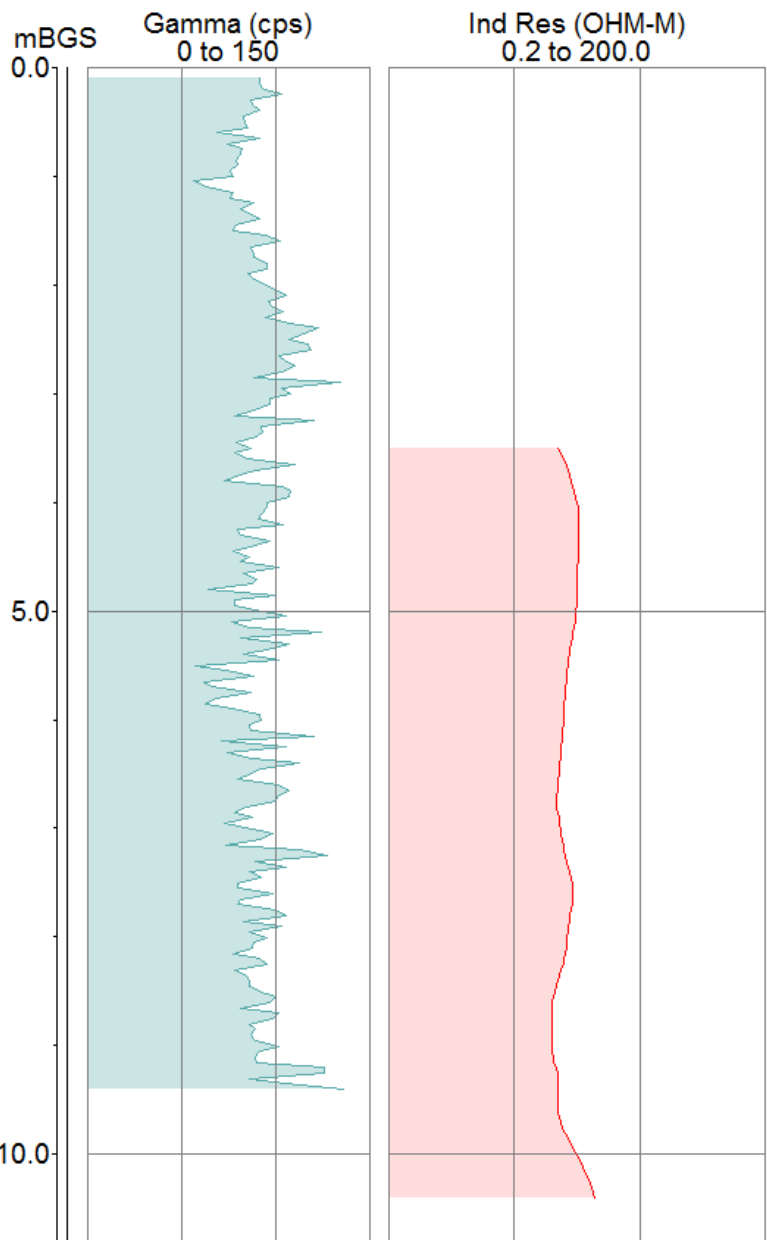
Gamma cps

Depth of casing at logging 0.5m

Geophysical Logs

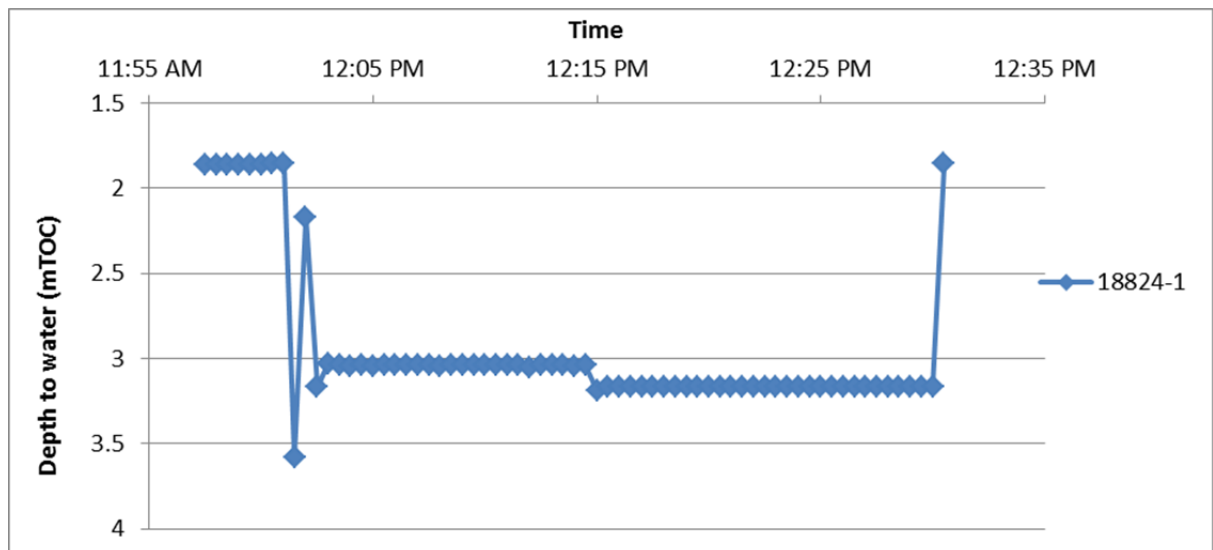
The portable Mount Sopris logging system was used to collect geophysical data from bore 18823-2, the deepest peizometer in the adjacent bore. The 2PGS probe was used to collect natural gamma measurements, and the 2PIA probe was used to measure conductivity/induced resistivity.

18823-2

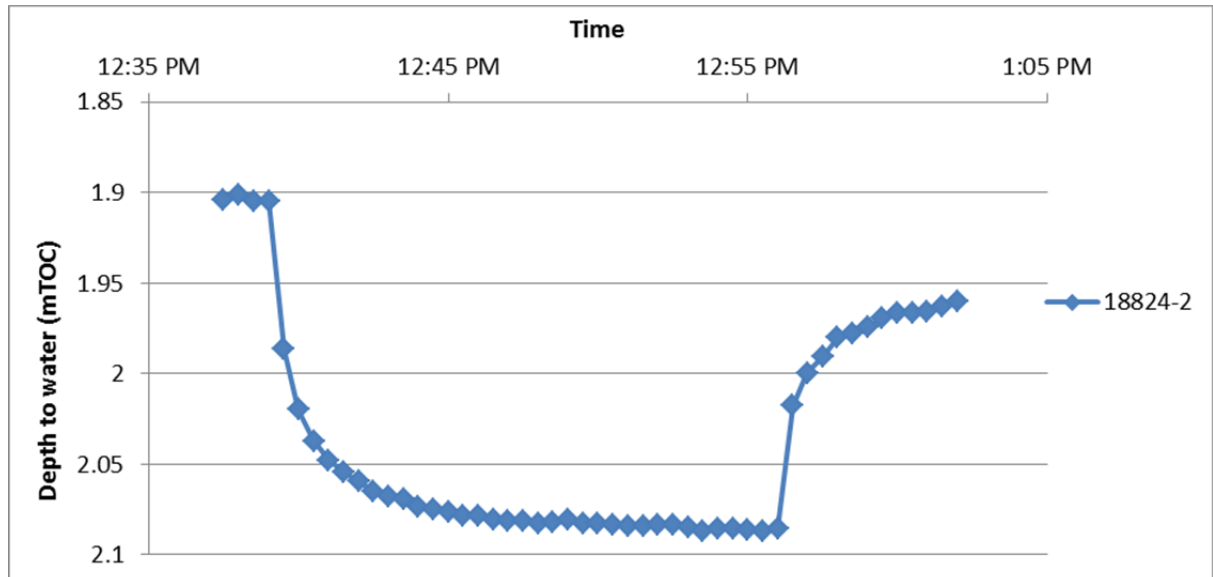


Pumping Test

A pumping test was performed on piezometer 18824-1 on 28/06/2012 by attaching a level logger to a submersible Whale pump, lowering the pump to a depth of 3.8 mTOC and using a flow rate of 7.7 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 18824-2 on 28/06/2012 by attaching a level logger to a submersible Whale pump, lowering the pump to a depth of 7.5 mTOC and using a flow rate of 7.7 L/min. The results of the test are presented below. The initial recovery from 2.08-1.98 m is likely from water in the tubing draining back into the well. 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 μS/cm	Temp °C	Alkalinity mg/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
18824-1	28/06/2012	1.86	7.22	117,600	24.2	2250	590	5580	3240	32100	<10	47391	5308	26774
18824-2	1/07/2012	1.9	7.19	121,700	24.5	2200	637	5710	3350	34100	<10	49647	5373	27172