



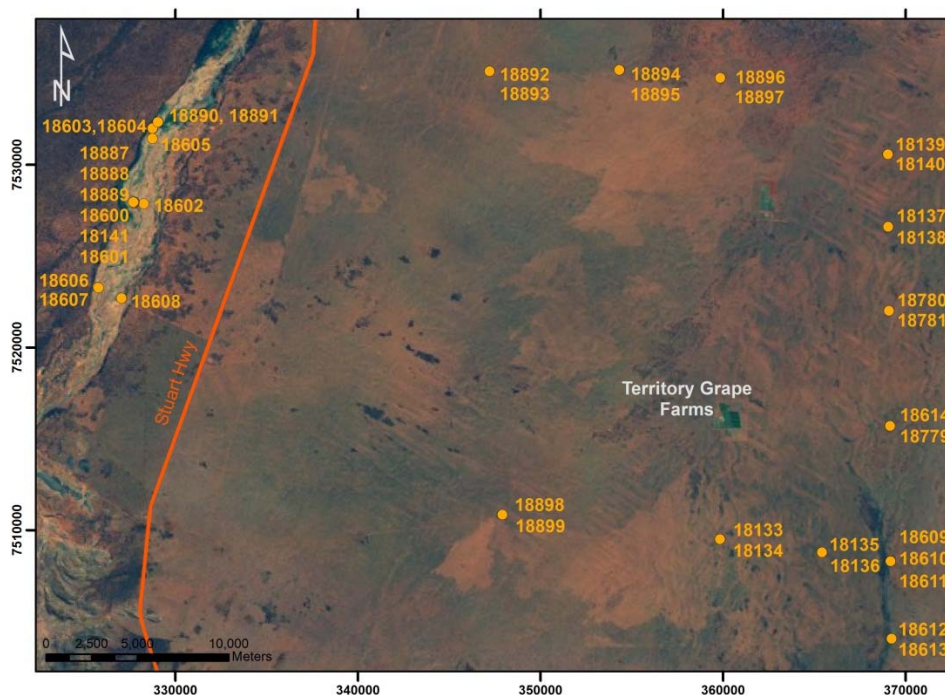
An Australian Government Initiative

# Groundwater Education Investment Fund Project

## Borehole Infrastructure Report

Borehole Type	Multi-Level Piezometer	GPS Easting	(MGA-94 Zone 53)	369230
Unique Well ID	18613	GPS Northing		7504046
Completion Date	9 June 2011	Location		Pine Hill Station, NT
Drilled By	NRETAS	Installed By		NRETAS
Monument Type	Round-White-Swing Top	Depth Drilled		51.0m
Monument Diameter/Width	216 mm	Drilled Diameter/Method		200 mm (min), Rotary Air
Development Details	Airlift 0.6 L/s.			
<b>Project Comments:</b> 18613 is a dual completion multi-level piezometer. It is located adjacent to 18612. Together, these bores provide a nest of five 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		-0.83	5.7	NA	0	5.7	NA	NA	NA
18613-2	50/PVC9	583.589	-0.683	37.5	50/1/PVC	0	1.03	35.5	36.5	34.15
18613-1	50/PVC9	583.521	-0.617	50	50/1/PVC	0	1.03	47	49	34.08

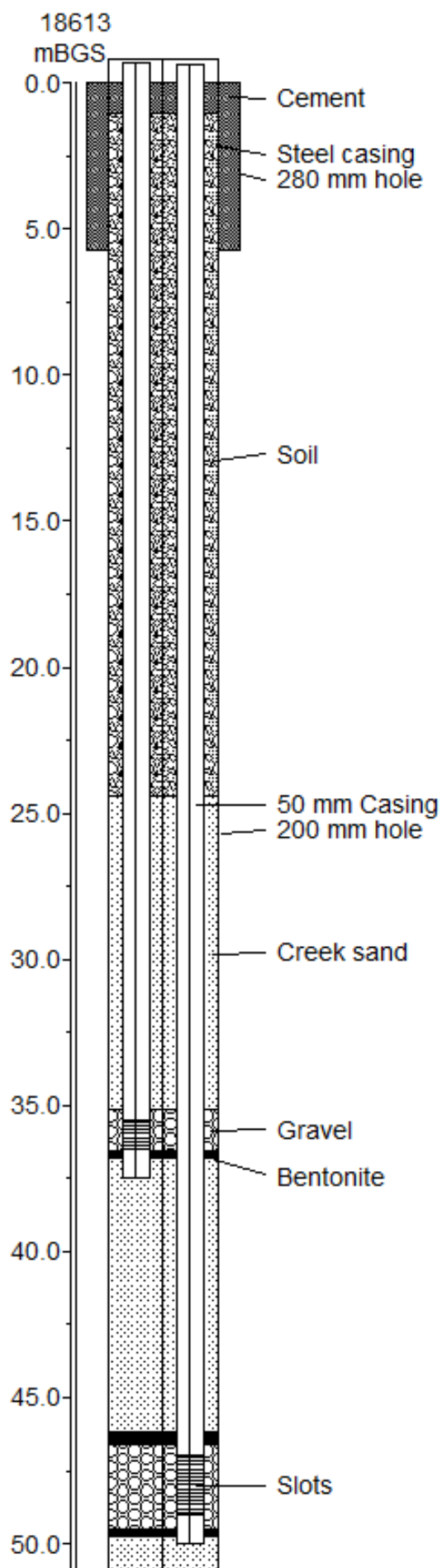


Map of Ti Tree Super Science Piezometer Locations, Pine Hill Station, NT.

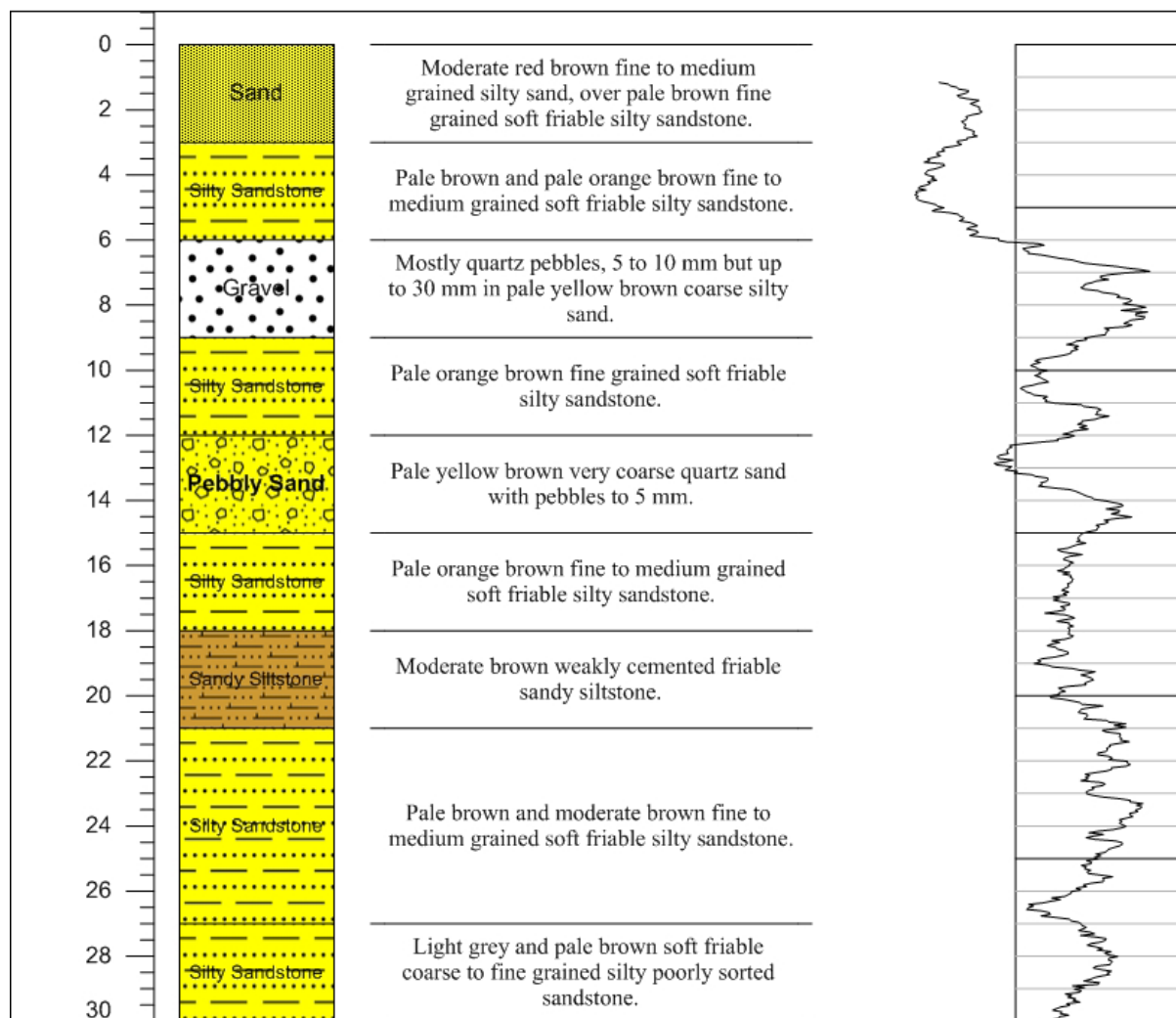
Note\* Appendix includes Well Completion, Lithology and Geophysical Logs, Hydraulic Test and Chemical Analysis.

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## Well Completion Log



# Lithology Log



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Air Lift Yield L/s 0.55

Date Start 8/06/2011 Electrical Conductivity  $\mu$ Siemens/cm 2430

Completed 9/06/2011 Standing Water Level m BGL 33.36

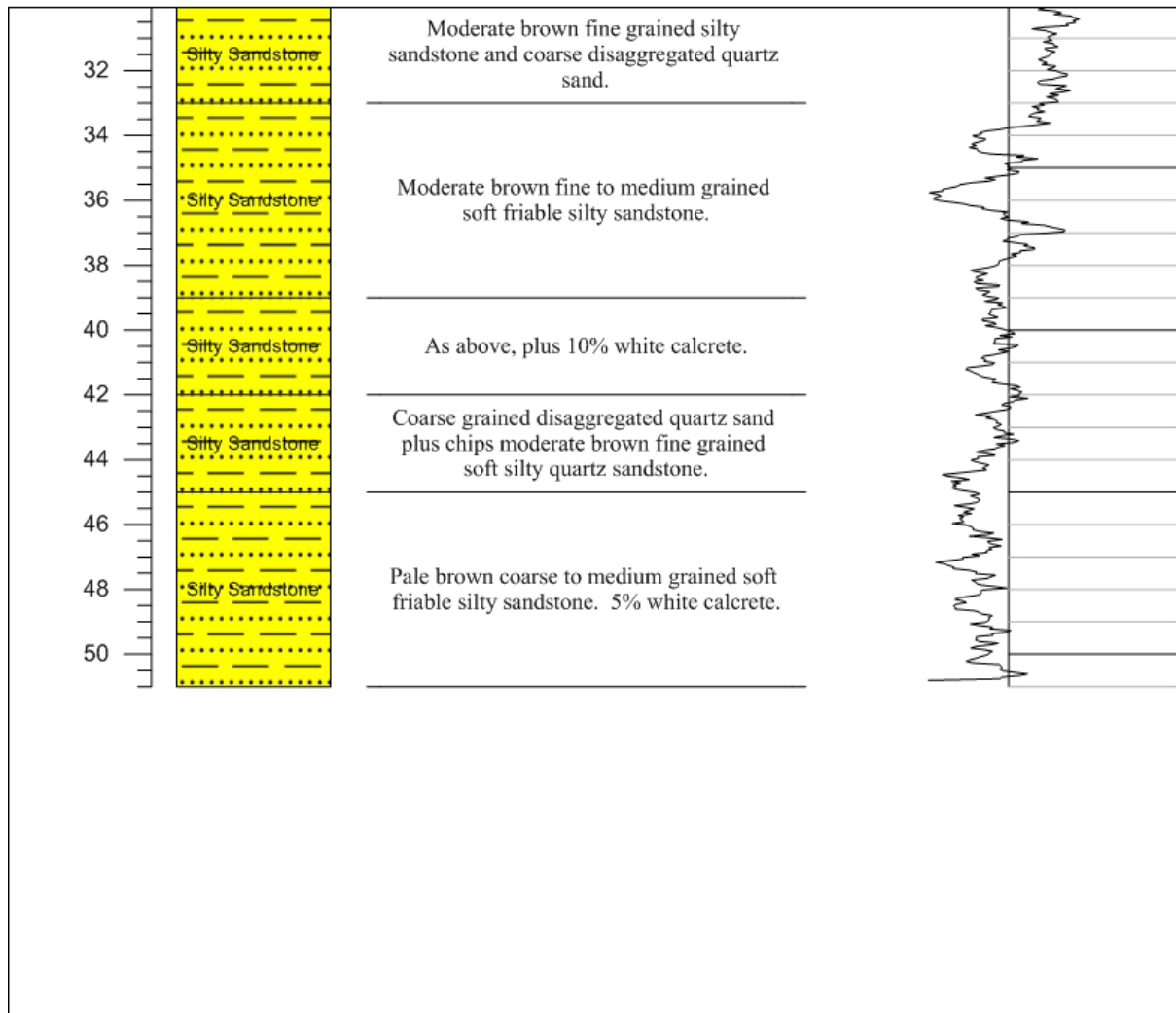
Contractor NRETAS

Status Piezometer

Depth of casing at logging 5.7m

60

Gamma cps



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Air Lift Yield L/s 0.55

Date Start 8/06/2011 Electrical Conductivity  $\mu$ Siemens/cm 2430

Completed 9/06/2011 Standing Water Level m BGL 33.36

Contractor NRETAS

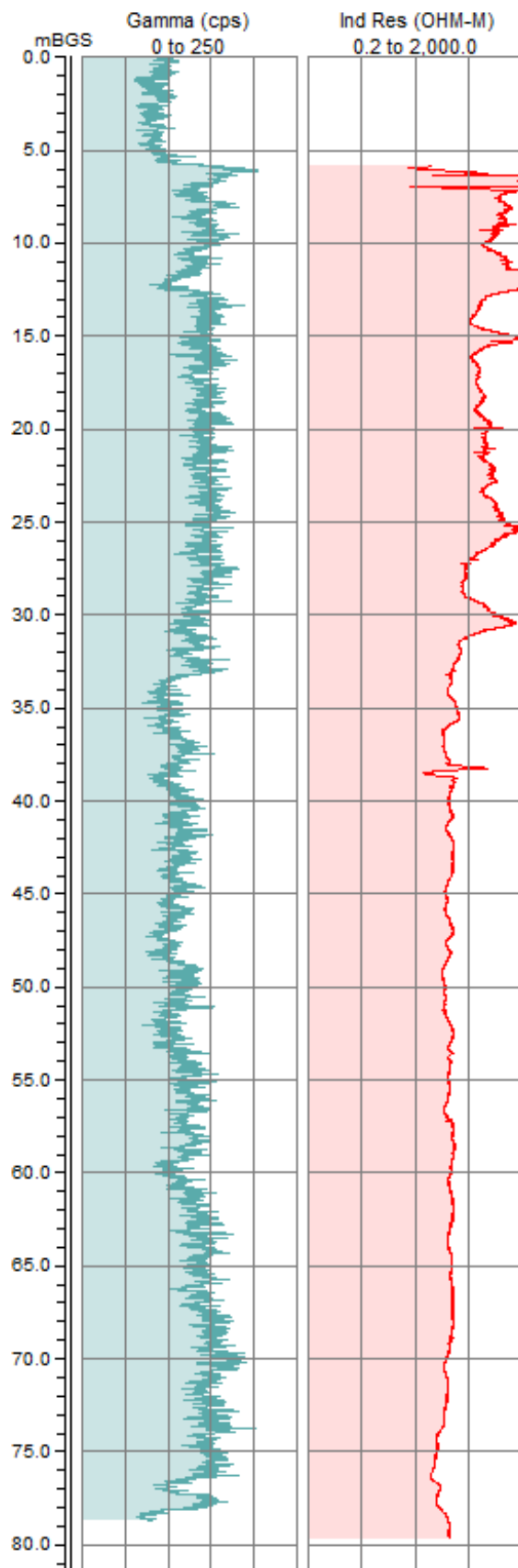
Status Piezometer

Gamma cps  
Depth of casing at logging 5.7 m

## Geophysical Logs

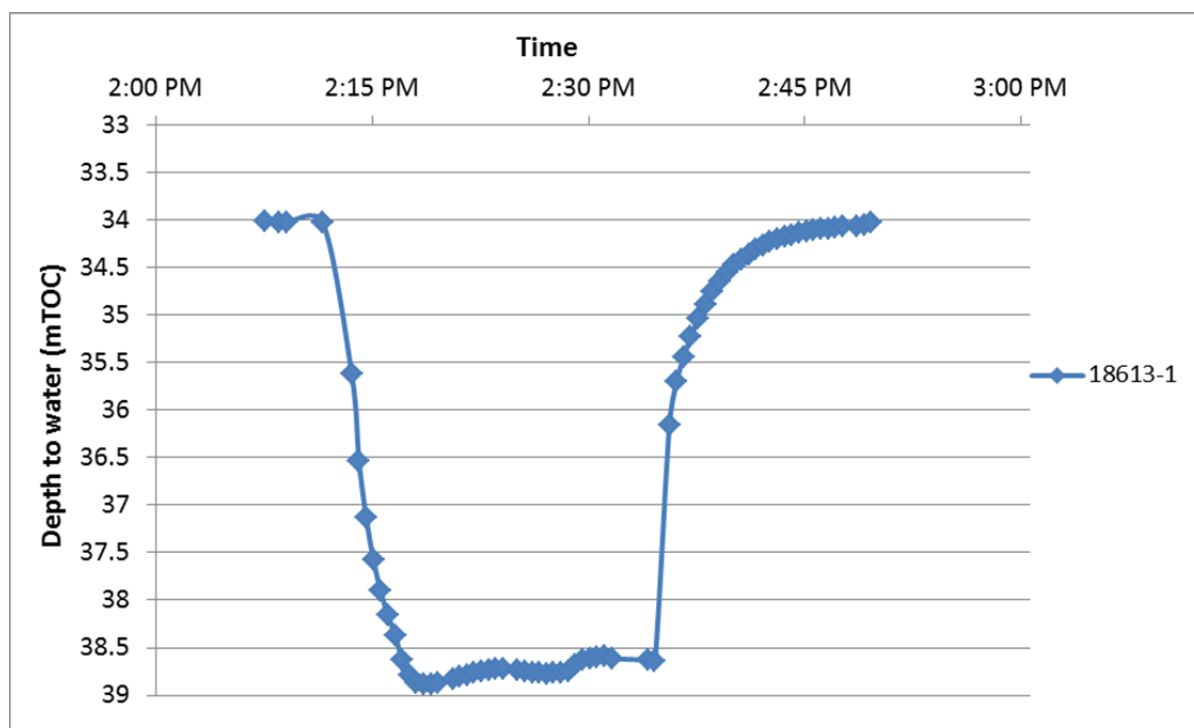
The portable Mount Sopris logging system was used to collect geophysical data from 18612-1, the deepest piezometer in the adjacent bore. The 2PGS probe was used to collect natural gamma measurements, and the 2PIA probe was used to measure conductivity/induced resistivity.

18612-1

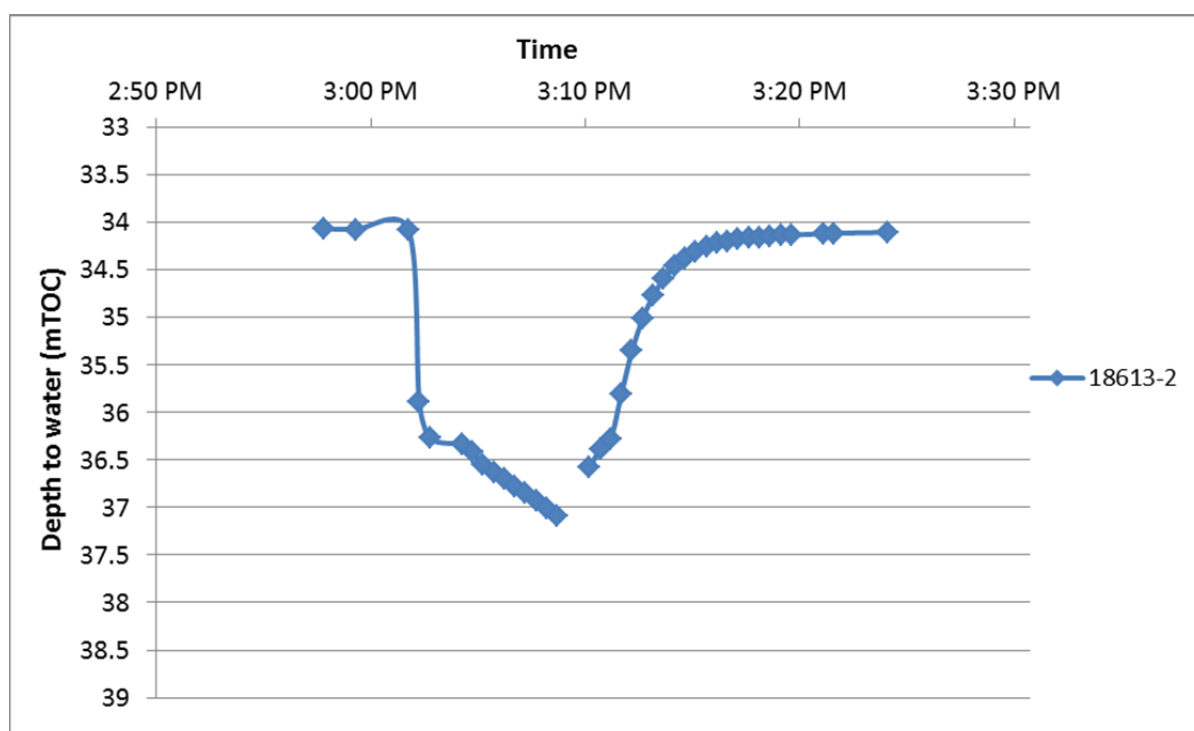


## Pumping Test

A pumping test was performed on piezometer 18613-1 on 8/08/2012 by attaching a level logger to a submersible Grundfos MP1 pump, lowering the pump to a depth of 44 mTOC and using a flow rate of 4.3 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 18613-2 on 8/08/2012 by attaching a level logger to a submersible Grundfos MP1 pump, lowering the pump to a depth of 38.5 mTOC and using a flow rate of 5.8 L/min. The results of the test are presented below. The water level fell below the logger. 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	pH	EC	Temp	Alkalinity	Ca <sup>2+</sup>	K <sup>+</sup>	Mg <sup>2+</sup>	Na <sup>+</sup>	Si	Cl <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	SO <sub>4</sub> <sup>2-</sup>
		TOC		μS/cm	°C	mg/L CaCo <sup>3</sup>	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
18613-2	6/09/2011	34.15	7.6	2468	29	258	72.6	24.6	42.4	310	31.6	450	63	280
18613-1	6/09/2011	34.08	7.4	2519	29	232	79.4	26	46.6	297	30.6	500	76	260