



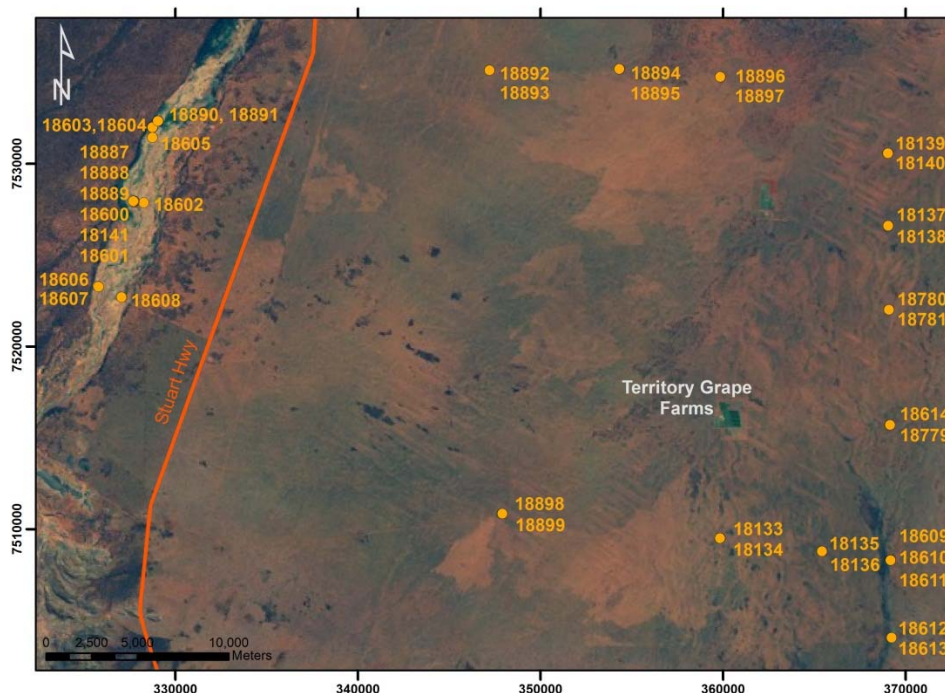
An Australian Government Initiative

# Groundwater Education Investment Fund Project

## Borehole Infrastructure Report

Borehole Type	Piezometer	GPS Easting	(MGA-94 Zone 53)	369180
Unique Well ID	18609	GPS Northing		7508298
Completion Date	27 May 2011	Location		Pine Hill Station, NT
Drilled By	NRETAS	Installed By		NRETAS
Monument Type	Round-White-Swing Top	Depth Drilled		72.5 m
Monument Diameter/Width	216 mm	Drilled Diameter/Method		200 mm (min), Rotary Air
Development Details	Airlift 6.0 L/s.			
Project Comments: 18609 is a single completion piezometer. It is located adjacent to 18610 and 18611, which are dual completions. 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		-0.3	5.7	NA	0.0	5.7	NA	NA	NA
18609	100/PVC12	578.601	0.0	72.5	100/1/PVC	-0.5	1.0	66.5	67.2	31.895

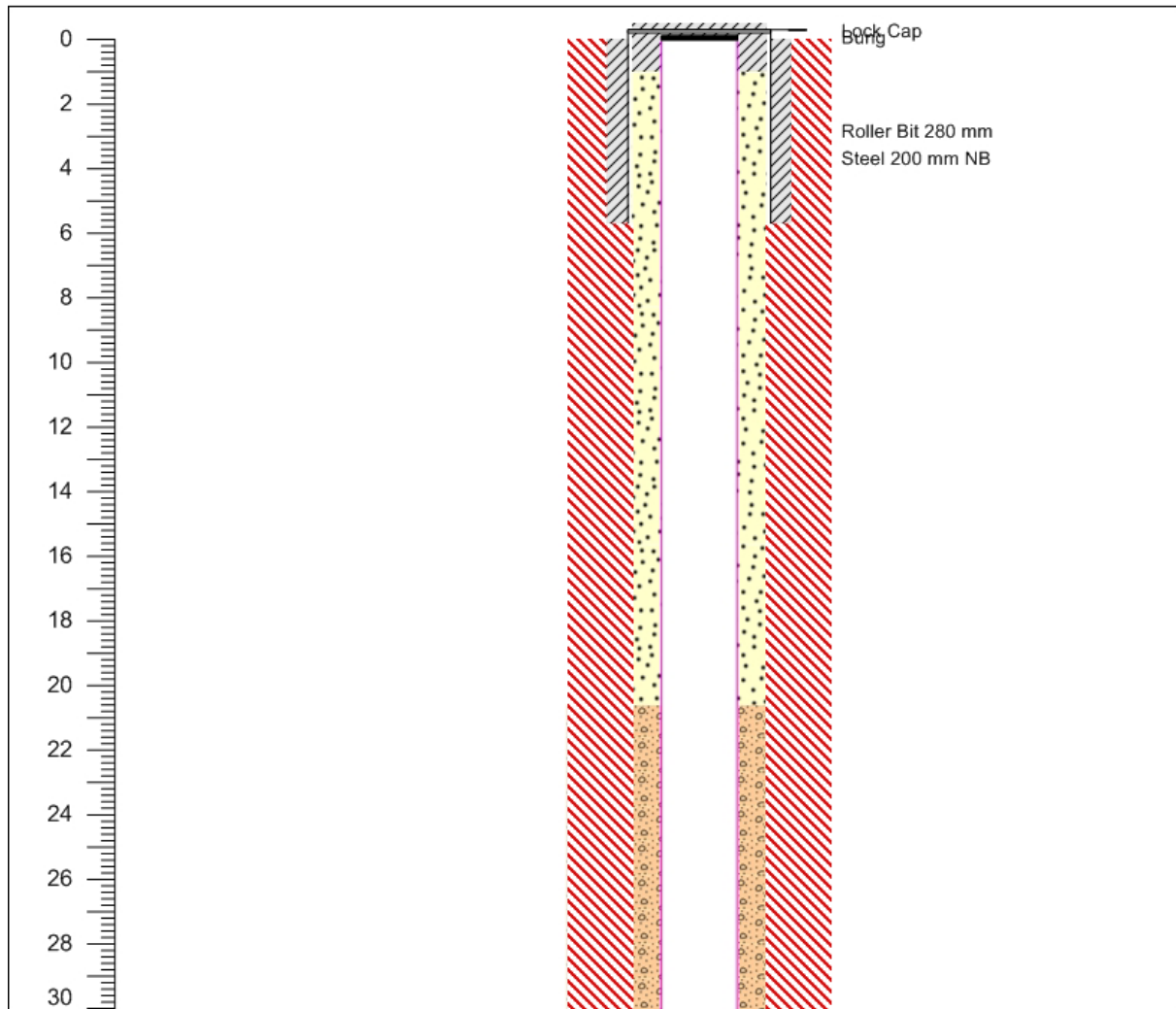


Map of Ti Tree Super Science Piezometer Locations, Pine Hill Station, NT.

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

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# Well Completion Log



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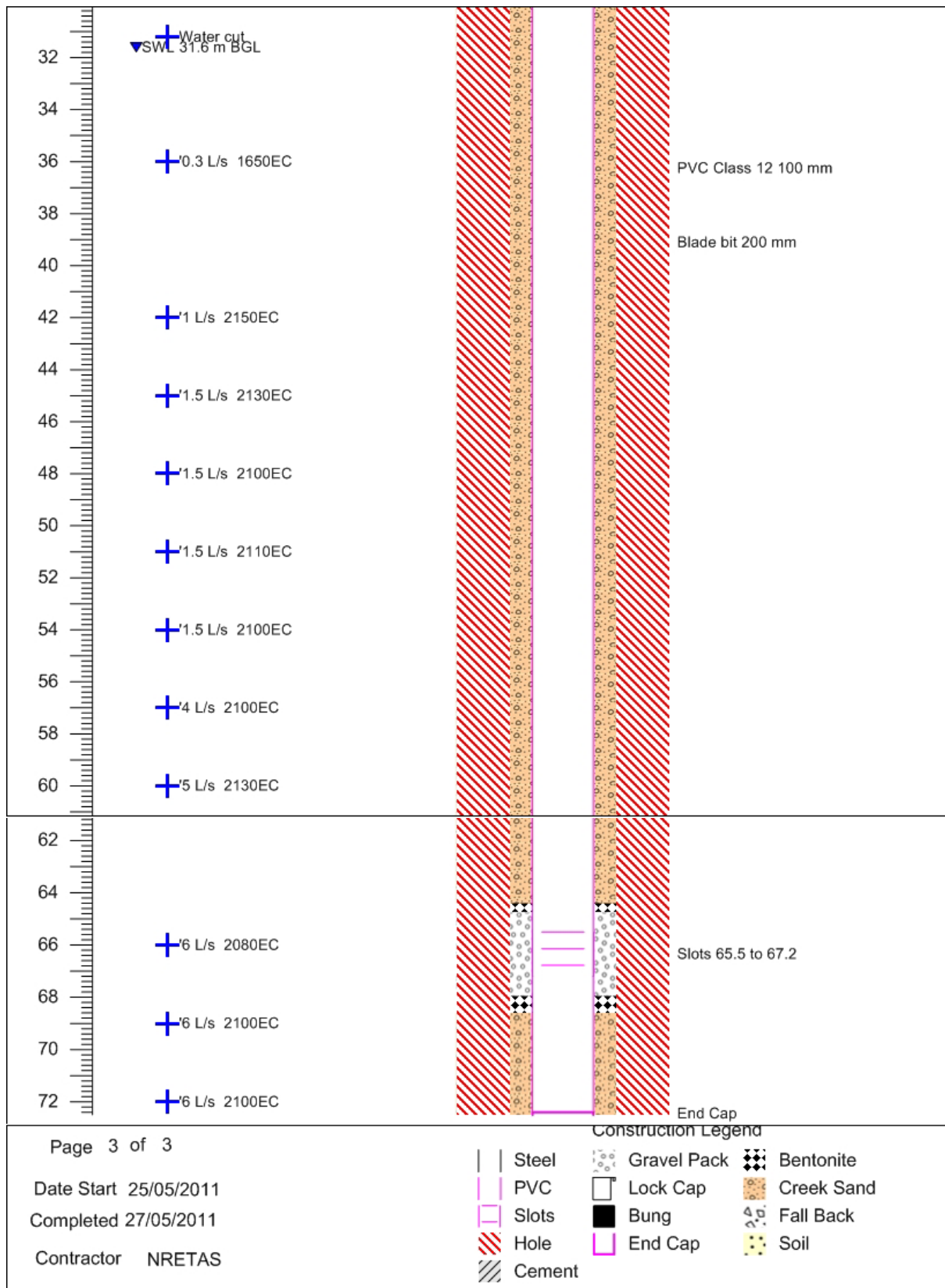
Date Start 25/05/2011

Completed 27/05/2011

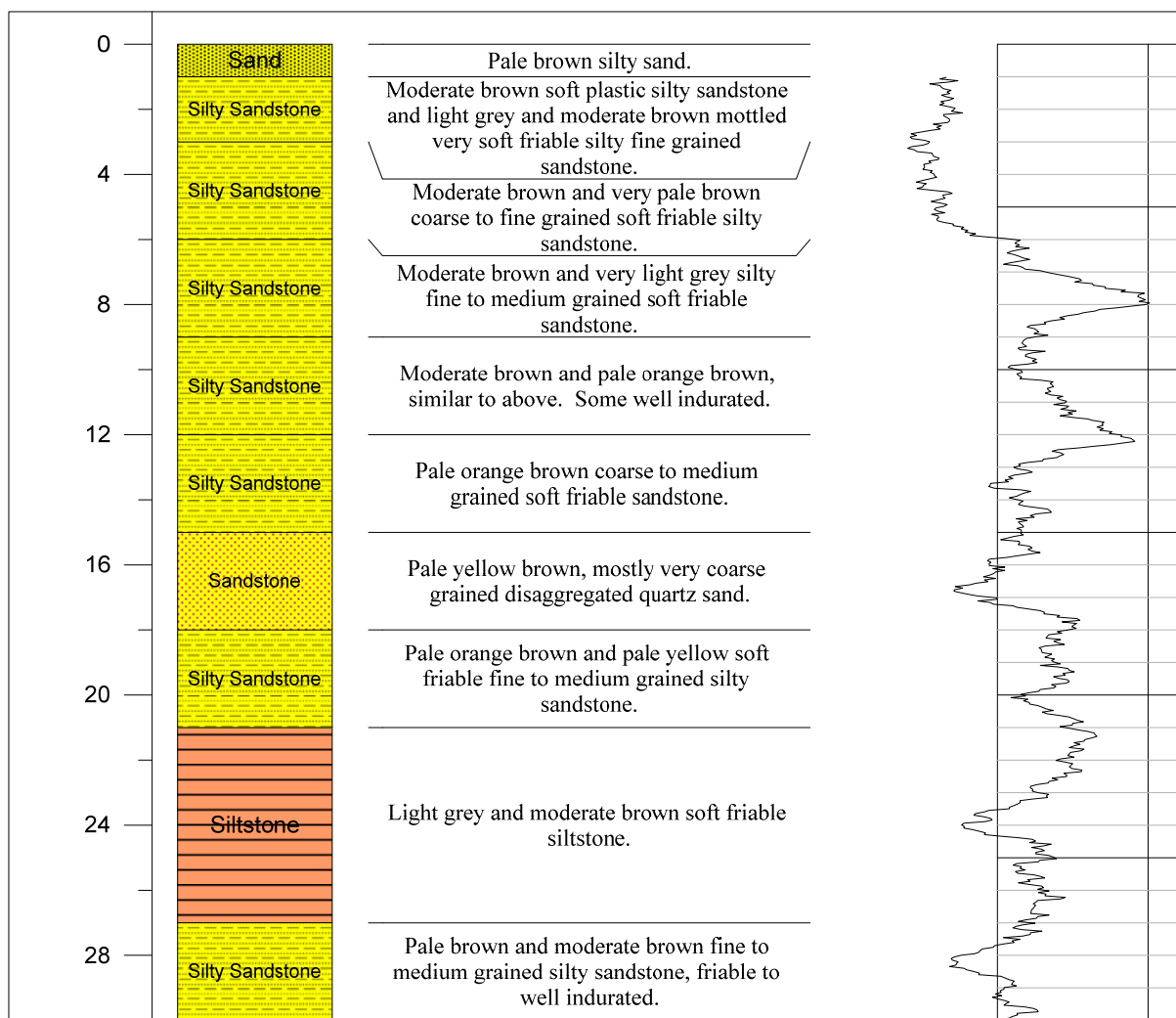
Contractor NRETAS

## Construction Legend

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



# Lithology Log



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Air Lift Yield L/s 6

Date Start 25/05/2011 Electrical Conductivity  $\mu$ Siemens/cm 2100

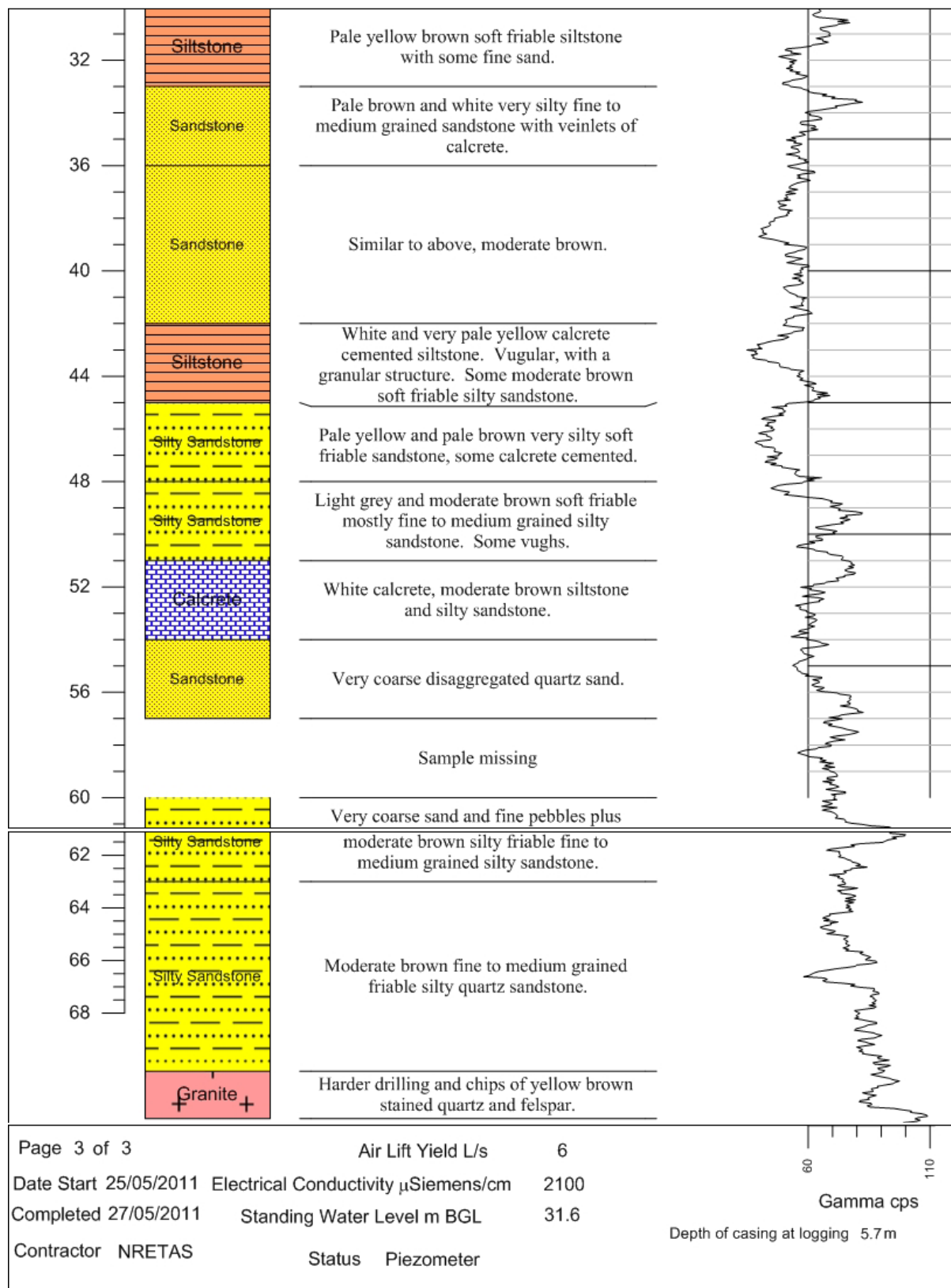
Completed 27/05/2011 Standing Water Level m BGL 31.6

Contractor NRETAS

Status Piezometer

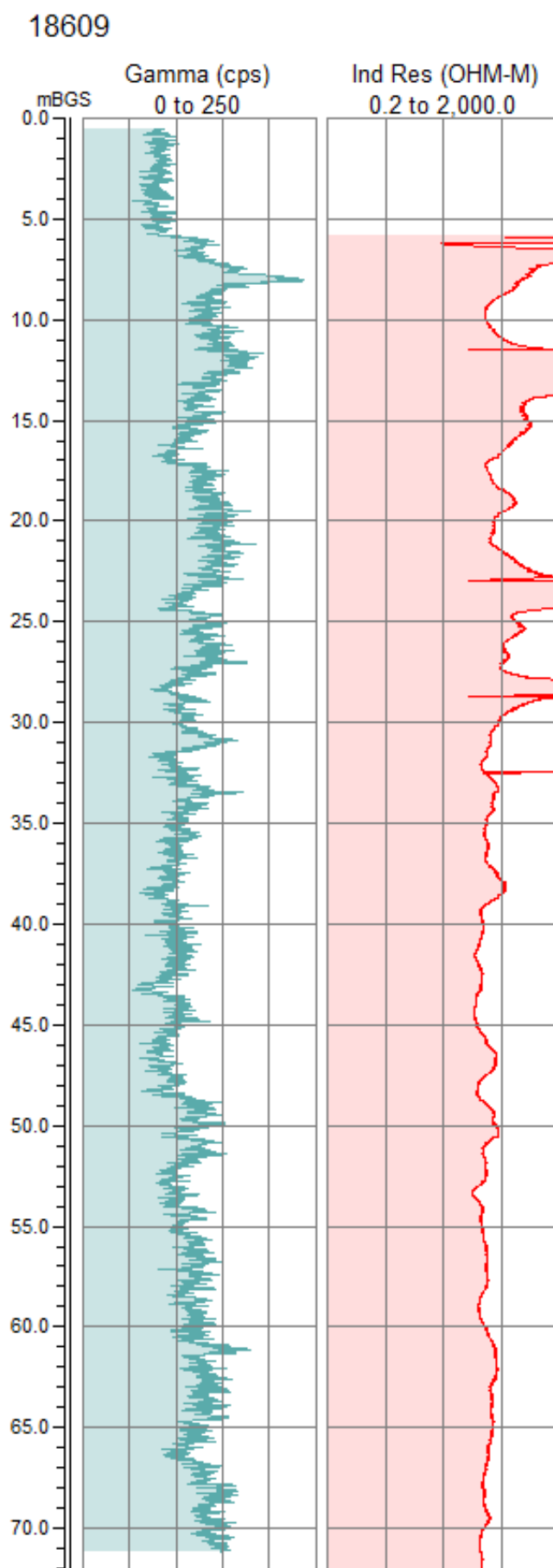
Gamma cps

Depth of casing at logging 5.7m



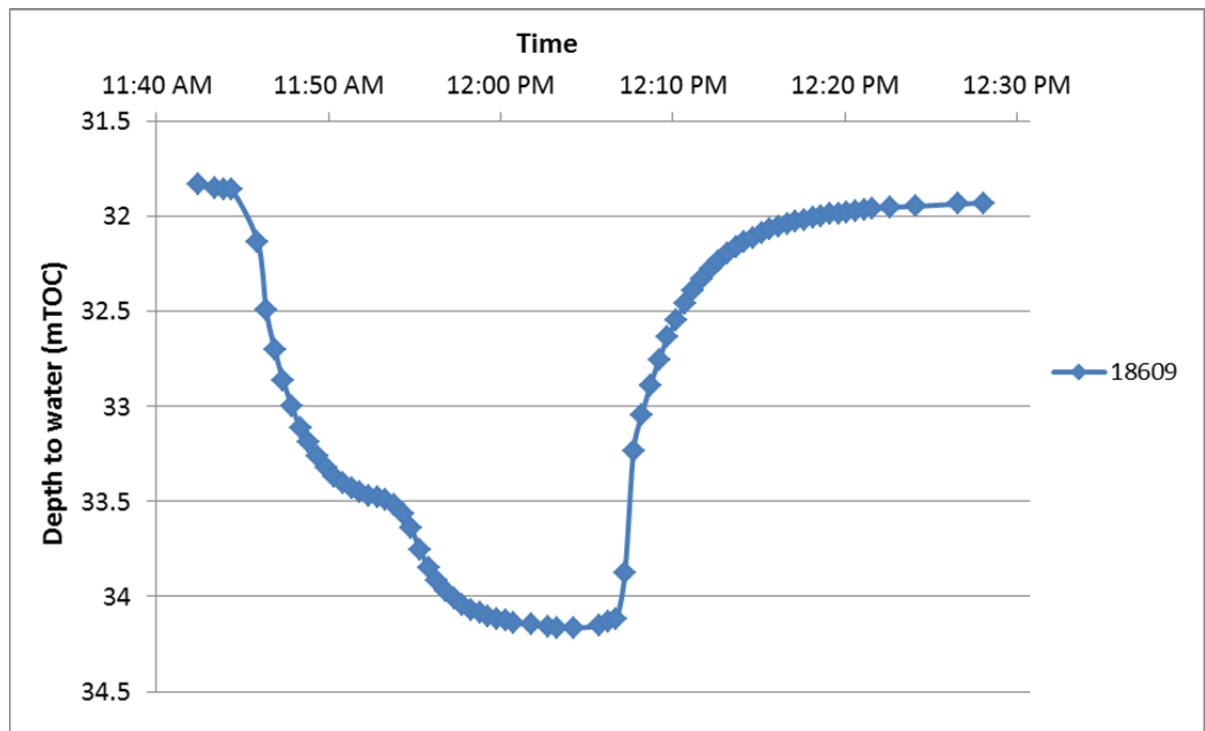
## Geophysical Logs

The portable Mount Sopris logging system was used to collect geophysical data from bore 18609. The 2PGS probe was used to collect natural gamma measurements, and the 2PIA probe was used to measure conductivity/induced resistivity.



## Pumping Test

A pumping test was performed on piezometer 18609 on 8/08/2012 by attaching a level logger to a submersible Grundfos MP1 pump, lowering the pump to a depth of 45 mTOC and using a flow rate of 6 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 μS/cm	Temp °C	Alkalinity mg/L CaCo <sup>3</sup>	Ca <sup>2+</sup> mg/L	K <sup>+</sup> mg/L	Mg <sup>2+</sup> mg/L	Na <sup>+</sup> mg/L	Si mg/L	Cl <sup>-</sup> mg/L	NO <sub>3</sub> <sup>-</sup> mg/L	SO <sub>4</sub> <sup>2-</sup> mg/L
18609	5/09/2011	31.90	7.3	2000	30	198	59.4	18.3	29.6	228	29.4	340	71	180