

Waterra 3-part well slugs

For permeability testing in boreholes

Waterra 3-part well slugs provide a convenient fixed volume cylindrical solid for performing instantaneous rising or falling head permeability tests in boreholes.



Waterra well slugs feature screw threaded ends allowing for quick assembly and easy storage and transportation.



SLG-100
(for 100mm diameter boreholes)

SLG-50
(for 50mm diameter boreholes)

Applications

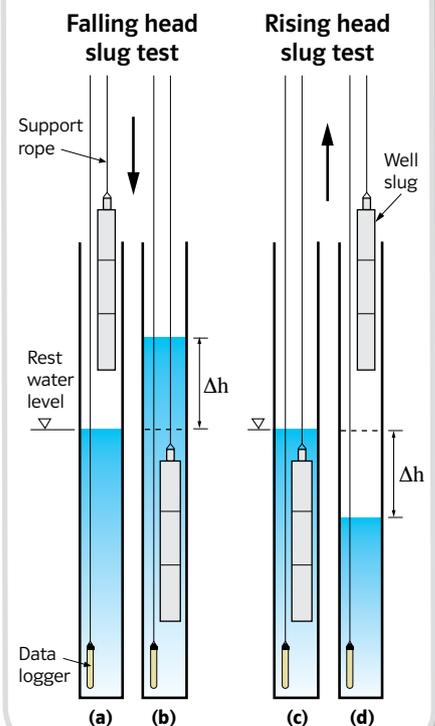
- Permeability testing in 50mm and 100mm boreholes
- Falling or rising head methods

Benefits

- Supplied in 3 screw-fit parts for easy handling and storage
- Reliable and inexpensive
- Practical and easy to use
- Made from tough Delrin® *

Slug test method

Water is displaced in a borehole when a well slug is rapidly submerged (falling head test) or removed (rising head test). For more detailed information on test methodology and interpretation see BS5930:1999 and BS ISO 14686:2003.



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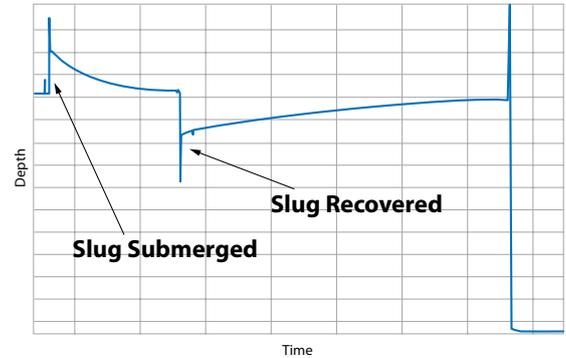
Waterra well slugs are supplied in 3 parts to simplify storage and transport. They are manufactured from 3 solid cylinders of Delrin® with threaded connections to allow 1, 2 or all 3 sections to be used. Two standard sizes are available specifically for use in 50mm and 100mm diameter wells. Each size will achieve an approximate 1m change in water level within the borehole lining.

Variable head permeability tests

Slug tests are a convenient and well established means of determining permeability (hydraulic conductivity) in narrow diameter boreholes. Tests are carried out by instantaneously lowering or retrieving a solid cylinder of known volume within the borehole water column and recording the rate of water level recovery.

Use in conjunction with Troll® Level Loggers for accurate recording of water level changes during slug test. Troll® Loggers can record water levels at intervals up to 0.25 seconds**, enabling detailed data collection not possible using a manual water level dipmeter.

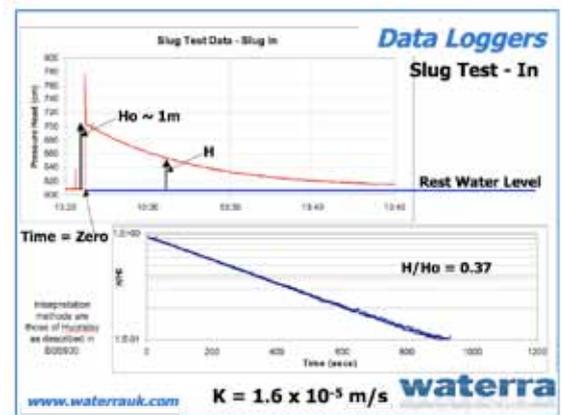
Typical permeability test results



Typical screenshot showing data collected during slug tests

Technical specification

	Well Slug SLG-100 for use in 100mm dia borehole	Well Slug SLG-50 for use in 50mm dia borehole
Material	Delrin® Acetal Thermoplastic	Delrin® Acetal Thermoplastic
Length	3 x 521mm (1.563m)	3 x 643mm (1.929m)
Weight	3.7 kg	0.9 kg
Diameter	80mm (3.15")	36.0mm (1.41")
Volume	7.86 litres	1.963 litres
Length of displaced water column	1.0m in a 100mm internal diameter well	1.0m in a 50mm internal diameter well



Interpretation of results from a falling head slug test

Ordering information

Code Description

Well slugs - 3 part Delrin®

SLG-50	3 part calibrated slug (36mm dia x 1929mm)
SLG-100	3 part calibrated slug (80mm dia x 1563mm)

Lifting cord and reel

ERL-110	Hand reel with removable spool (holds 100m of 3.5mm cord)
BC/K35	Lifting Cord - 3.5mm diam polyester cord (50m or 300m)
KC2-100	Kevlar cord (100m x 2mm - spooled)



Waterra supplies a range of equipment to complement 3-part well slugs, including loggers, lifting cord, cable and reels. Please see our website for further details.

* Delrin® is a DuPont registered trademark **Troll 700 Logger. Rugged Troll at 1 second. Level Troll 500 at 0.5 seconds. Call for details for purchase or rental.
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