

## Groundwater Bore Sampling

- Whether using a bailer or a bore pump groundwater bores should be purged before sampling to remove stagnant water from the bore casing, and allow it to recharge with freshwater from the groundwater table.
- It is recommended by QLD's DEHP that you purge a minimum of 3x your bore volume.
- Sampling should occur approximately 24 hours after purging the bore to allow the sediments that may have been disturbed during purging to settle out of the water column.
- This means that your sampling results will be a more accurate reflection of your groundwater and not a reflection of the contaminants and stagnant water that may have collected in your bore casing.
- It is important to disinfect your bailer and bucket with a chlorine solution, and rinse with DI water before collecting your sample.

### How to Work Out Your Purging Volume

A simple way to work out your purging volume is to measure the depth of the bore, the depth til you reach water (known as Standing Water Level [SWL]), use the guide (See back of page) to determine your bore casing diameter and associated volume of water, and then times by 3.

For example, if your bore has 50mm diameter, there is 2 L of water to every 1m depth:

Bore Depth – SWL = Water Depth

Water Depth x 2 = Volume of Water

Volume of Water x 3 = Volume of Water to Purge



### The Scientific Equation to Estimate Volume of Water to Purge

$$V_b = \pi r^2 \times L \times 1000$$

= on casing volume

$V_b$  = volume of water within the bore casing  
 $r$  = radius of the casing in meters  
 $L$  = length of the water column in meters  
 = the total depth - standing water level at the time of sampling  
 $\pi = 3.1417$





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Borehole Volumes (Approximate)	
Borehole Casing (inside diameter) (mm)	Volume Per Metre Depth (litres)
17	0.2
20	0.3
25	0.5
35	1
50	2
75	4
100	8
150	18
200	31
250	49
300	71
1000	785

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