

Alive & Well Procedural Drilling Guide

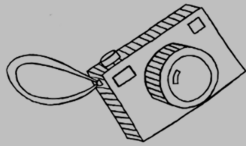


Stage	Activity
1	<p>PREPARATION</p> <p>SAFETY CLOTHING</p> <p>Hard hat, boots & gloves</p> <p>SAFETY FENCE</p> <p>Around work area</p>



2*

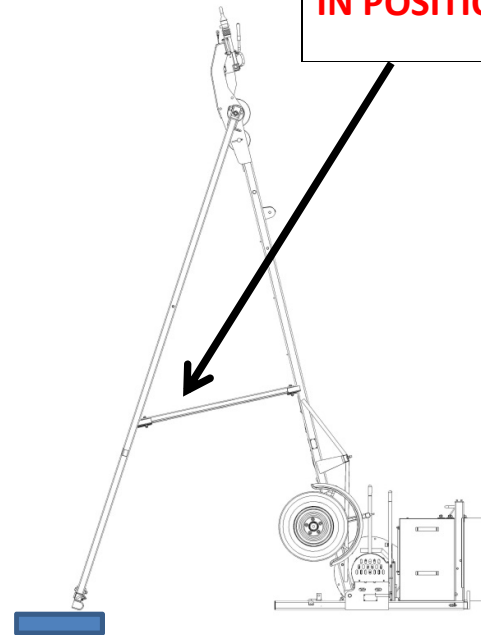
Setting up the Drilling rig

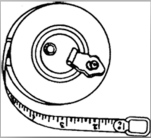


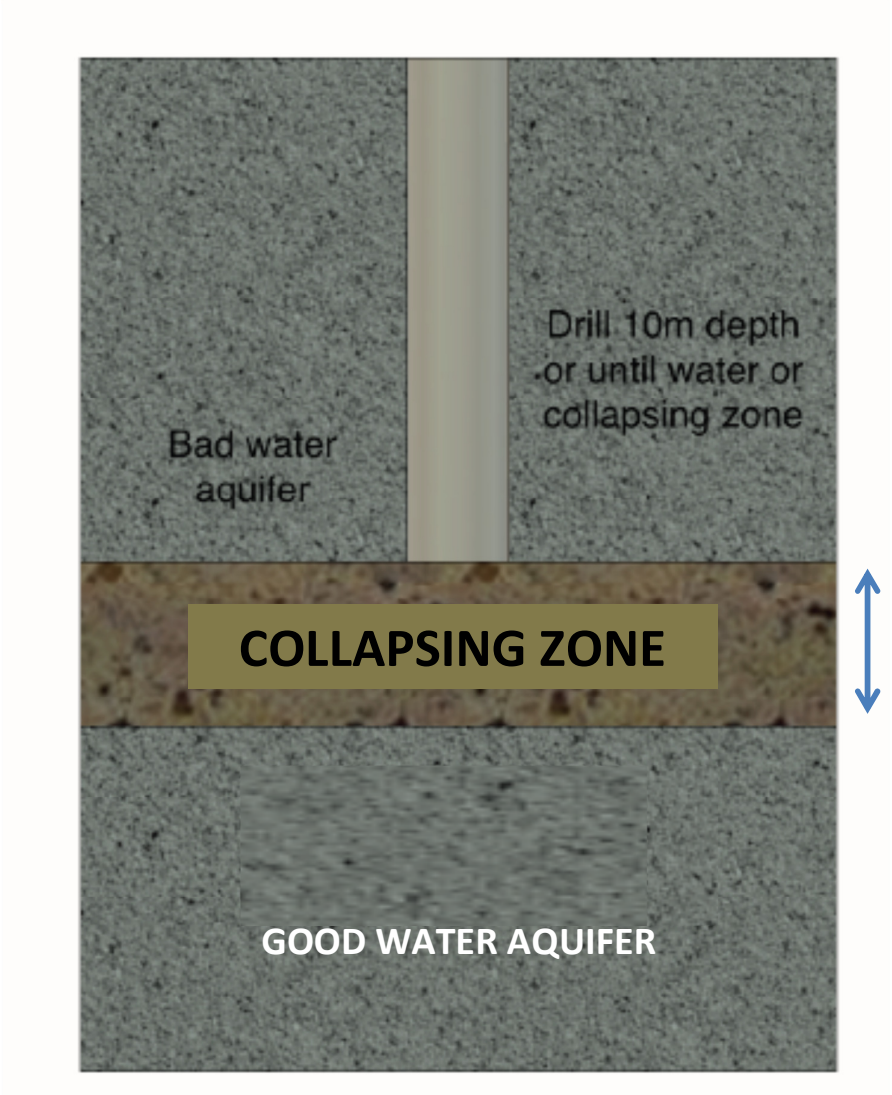
TAKE PHOTO

BOARDS UNDER LEGS

ENSURE CROSS
BRACES ARE FIXED
IN POSITION



3.	<p>Drilling</p> <p>Drill to 10 metres, or to collapsing zone, using 8 inch diameter tools without casing.</p>
	<p>ROCK</p> <p>If rock is found fit 8 inch California chisel.</p> <p>Follow the rock drilling strategy - drill 2 inch depth in 2 hours drilling.</p> <p>If there is no progress move to a new location.</p>
	<p>Once through rock replace California chisel with original soft earth percussion drill.</p> <p>Continue to 10 metres or collapsing zone</p> <p>MEASURE DEPTH OF COLLAPSING ZONE AND NOTE DOWN</p> 

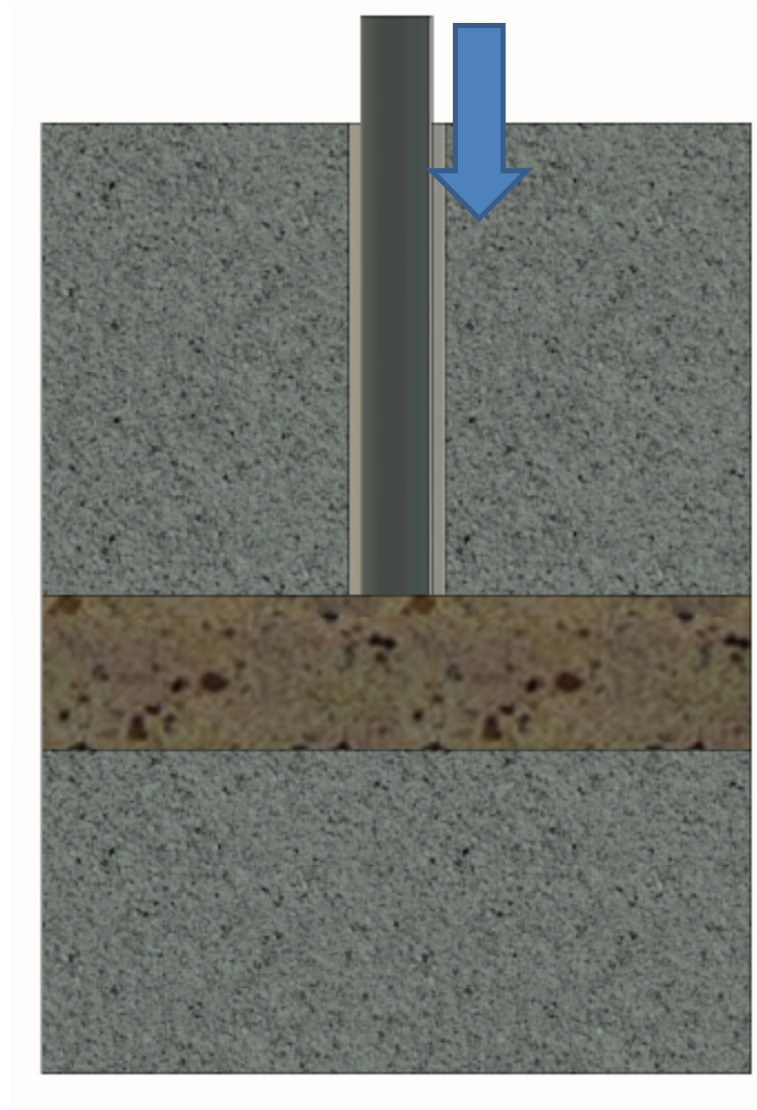


4.

Insert Casing

At 10 metres or when water or the collapsing zone is found, insert 6 inch casing.

This is easy as the hole is 8 inch diameter and the casing is 6 inch diameter.



5.

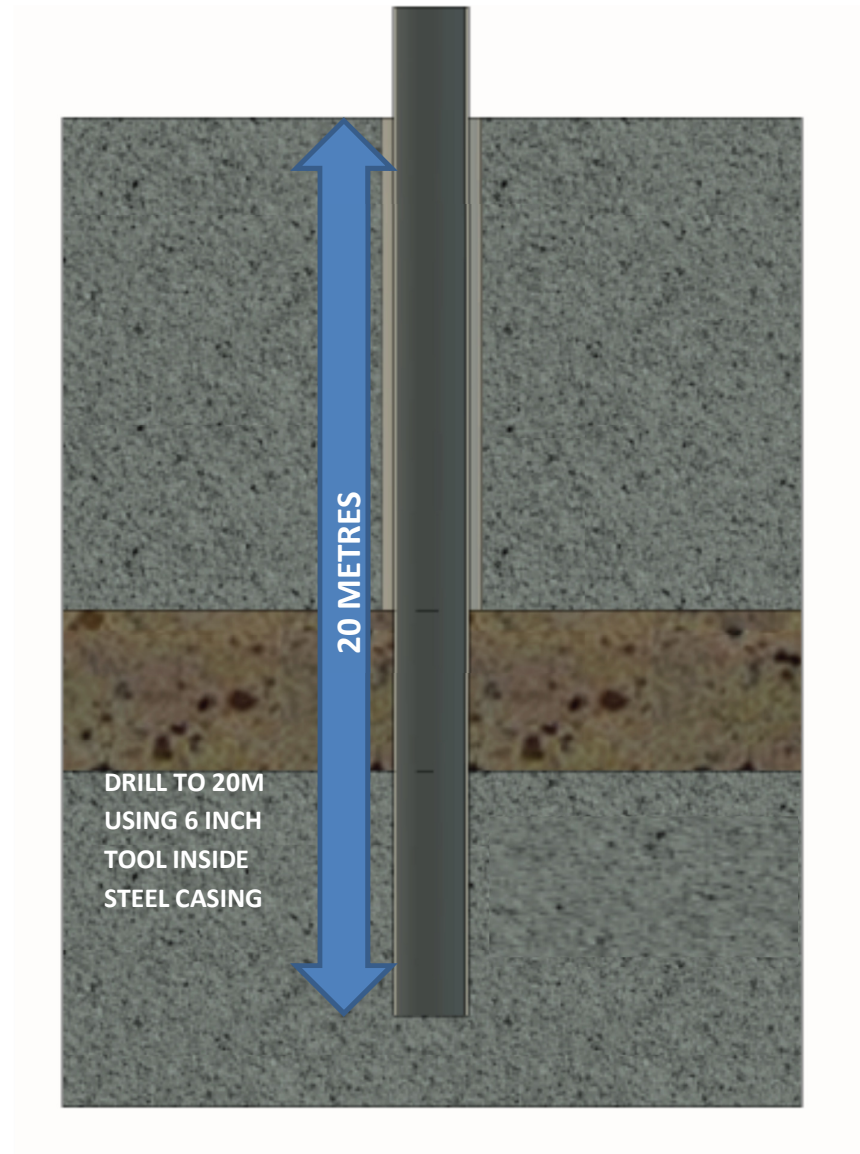
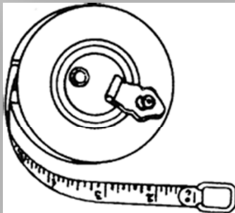
Drill to 20m depth

Continue drilling 6 inch hole using drills inside the 6 inch casing.

Keep adding casing as the hole gets deeper.

Use the "suction technique" of rapidly lifting and releasing the casing a short way to move the spoil from the hole and to create space for the casing to fall.

MEASURE DEPTH OF FINISHED BOREHOLE AND NOTE DOWN

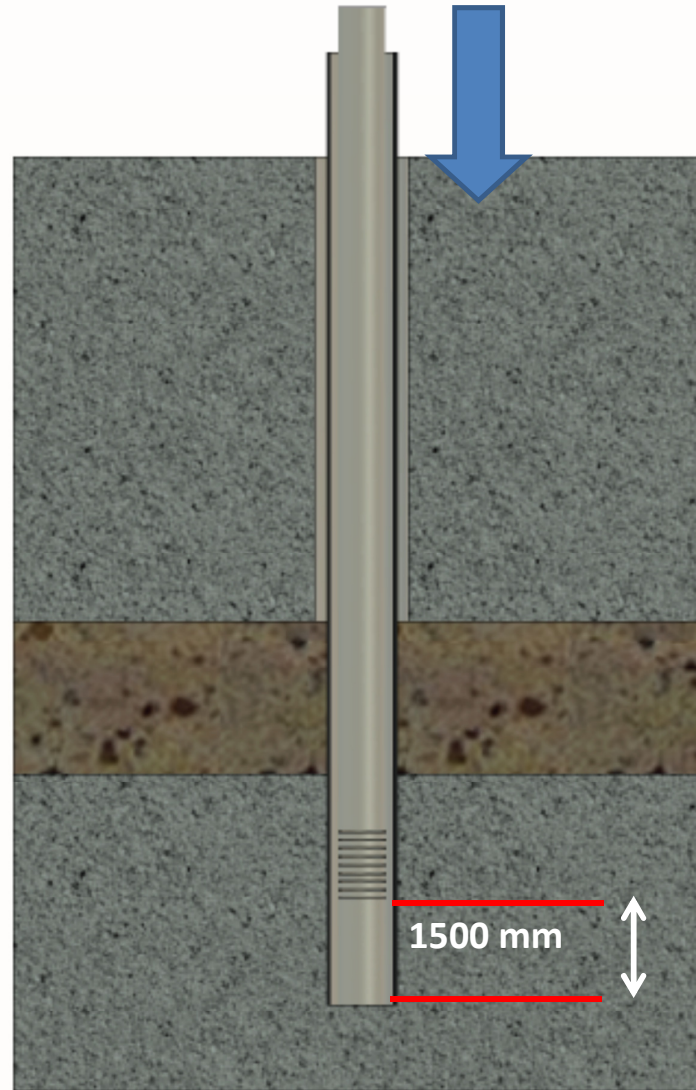


6.

Insert 4 inch plastic casing pipe

Ensure slots in plastic pipe are 1500 mm minimum from the bottom of the pipe.

Drop 4 inch plastic pipe down inside casing to rest on the bottom of the borehole.

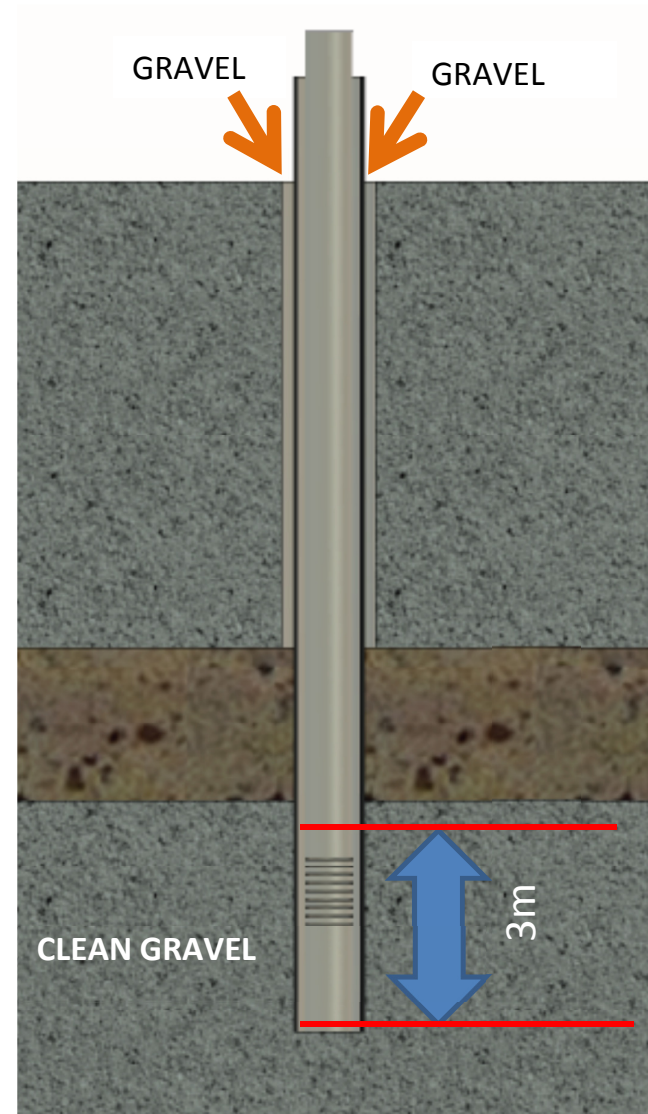


7.

Insert clean gravel

Pour sufficient clean gravel down side of plastic pipe to give a minimum depth of 3 metres from the bottom of the borehole.

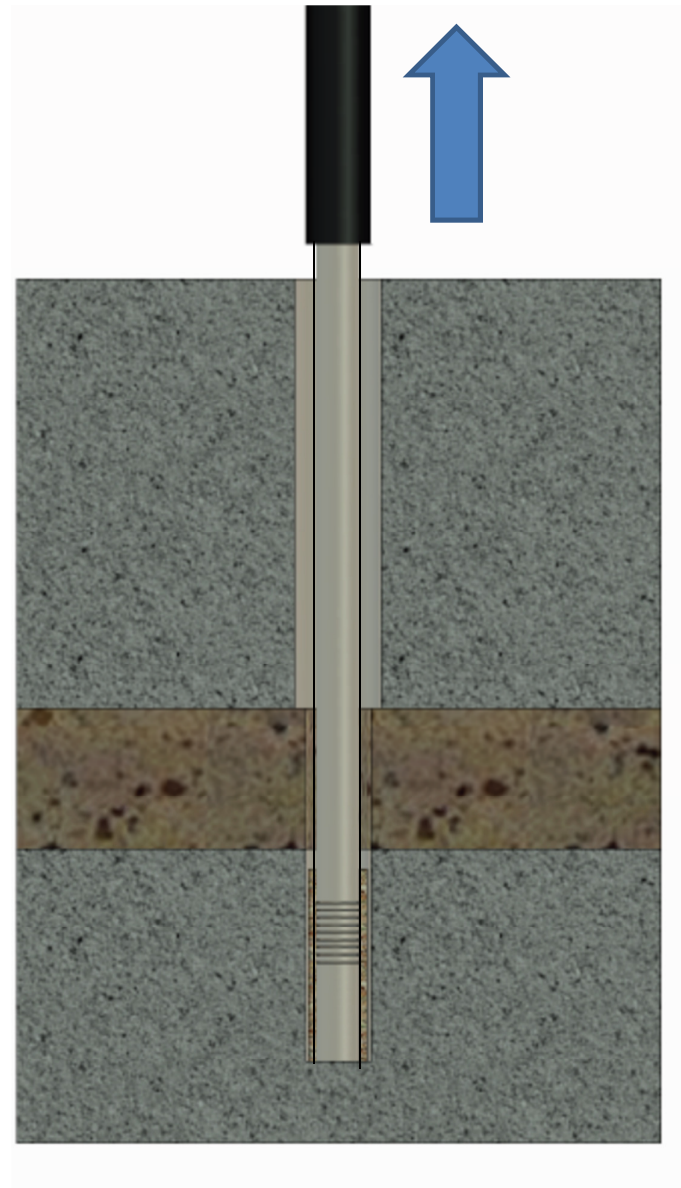
The gravel will act as a water filter for the pump and stops silt clogging the slots in the plastic pipe.



8.

Remove the steel casing

Carefully lift out 6 inch casing clear of the borehole



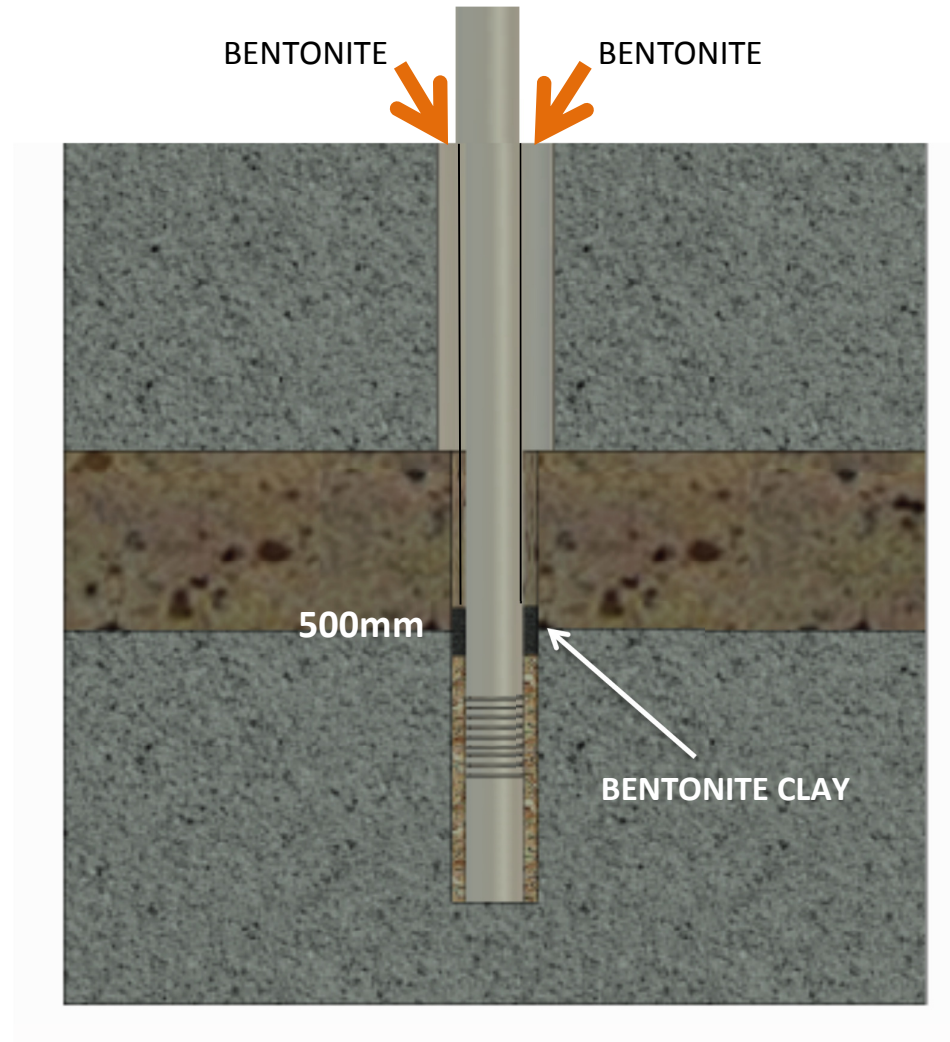
9.

Insert Bentonite Clay Seal

Pour sufficient Bentonite clay pellets down side of plastic pipe to form a 500 mm deep seal.

When water is absorbed by the Bentonite it will expand and form a seal.

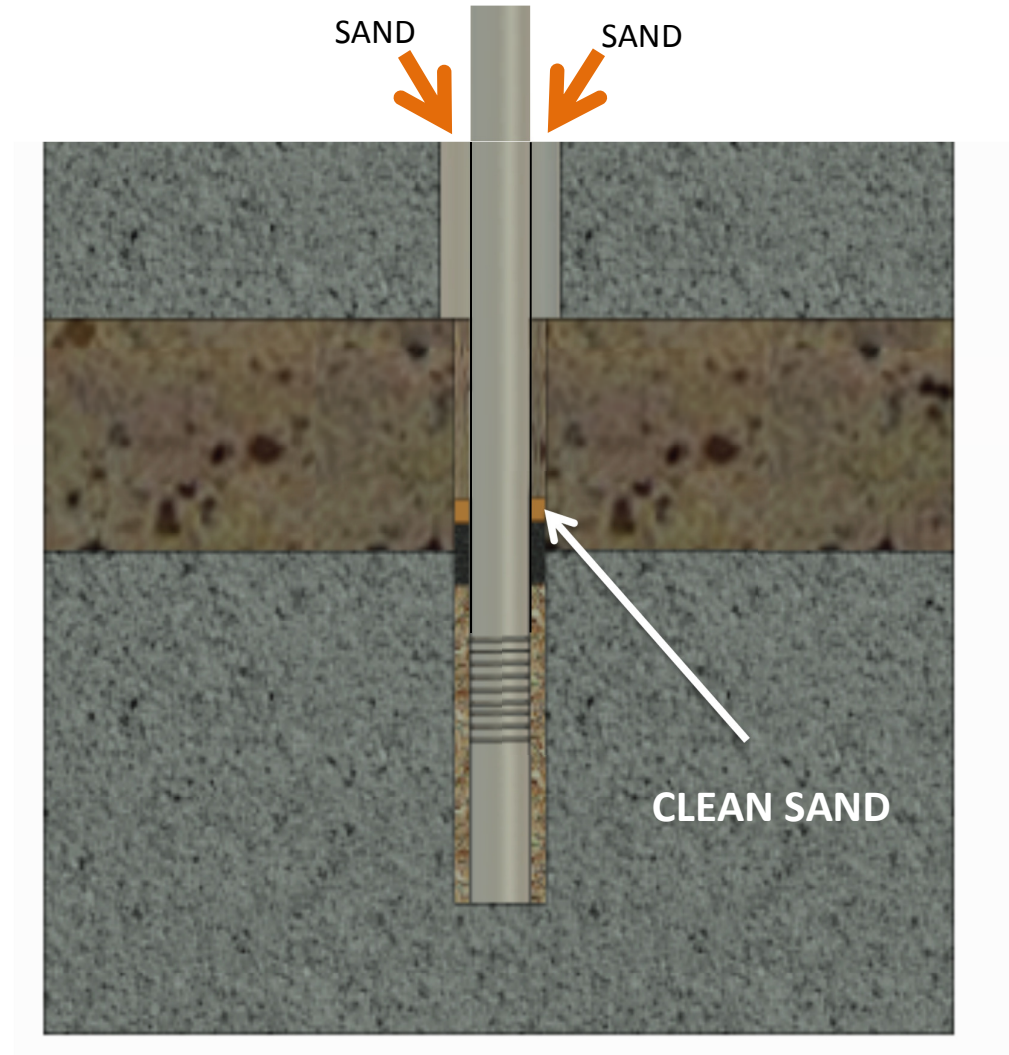
The clay seal prevents dirty water from contaminating the well



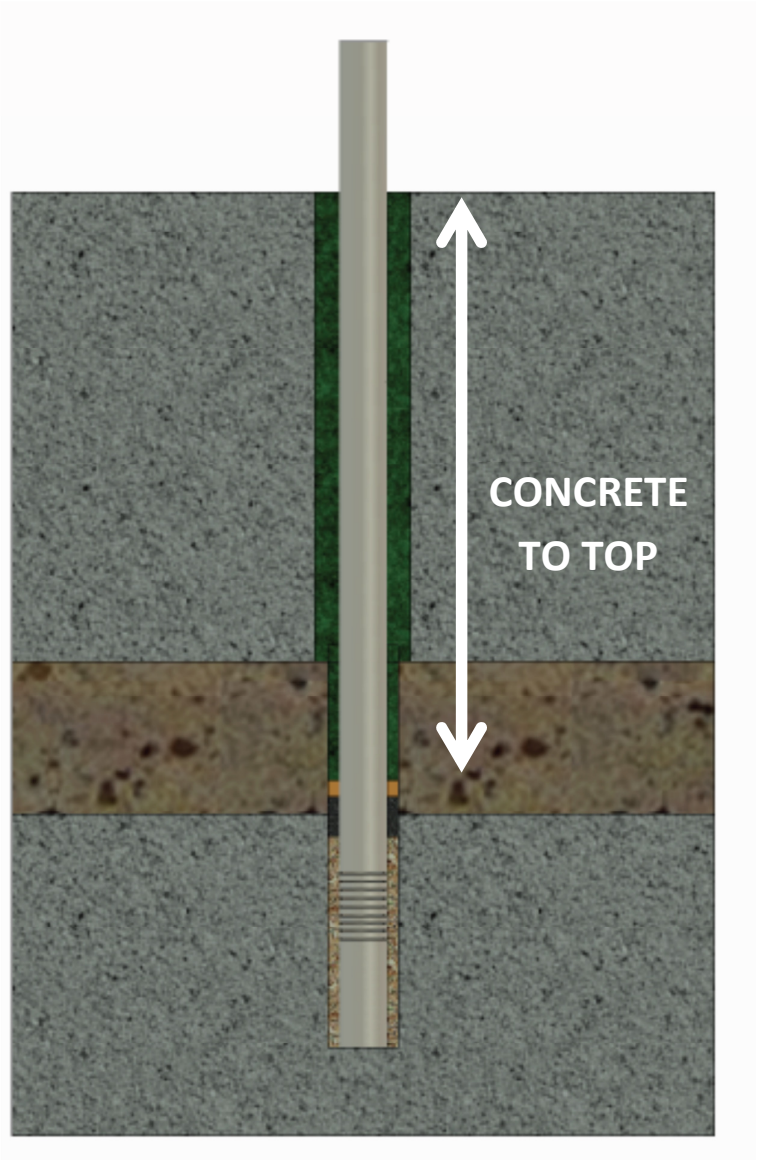
10.

Insert Sand

Pour sufficient clean sand down side of plastic pipe to form a 300 mm deep seal on top of Bentonite.



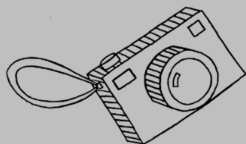
11.	<p>Fill with concrete.</p> <p>Pour sufficient concrete down side of plastic pipe to fill space to ground level.</p> <p>This seals the well to prevent contaminated surface water from getting into the well.</p>
12	Testing water flow and quality



13*

Construct the concrete capping around the top of the well.

Fix and test the pump



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