



TRU-WATE MUD BALANCE

When a drilling mud contains entrapped air or it is experiencing a foaming problem the mud density may be accurately determined with a pressurized mud balance.

FLUID DENSITY

1. Fill the sample cup with drilling mud to a level, which is approximately 10 mm below the upper edge of the cup.
2. Place the lid on the cup with the attached check valve in the down (open) position. Push the lid downward into the mouth of the cup until surface contact is made between the outer skirt of the lid and the upper edge of the cup allowing any excess mud to be expelled through the open check valve.
3. Pull the check valve up into the closed position, rinse off the cup and threads, and then, screw the threaded cap onto the cup.
4. With the plunger in hand, push its handle in to place the inner piston to its lower most position. Fill the plunger by immersing its nose in the mud to be tested and pulling out the handle until the inner piston is in its upper most position. (The plunger's operation is similar to a syringe or bicycle pump).
5. Place the nose of the plunger onto the mating O-ring surface of the valve on the cap. The sample cup is pressurized by maintaining a downward force on the cylinder in order to hold the check valve down (open) and at the same time forcing the piston inward. Approximately 220 Newtons of force are required on the plunger handle in order to pressurize the sample cup.
6. The check valve in the lid is pressure actuated and will close (move up) under the influence of pressure within the sample cup. Therefore the valve is closed by gradually easing up on the plunger cylinder while maintaining pressure on the piston. When the check valve closes, disconnect the plunger from the lid, rinse the cup in water and wipe it dry.
7. Place the pressurized balance with the knife-edge on the fulcrum of the balance stand. Adjust the sliding weight on the balance beam until the bubble oscillates equally to the left and right of the centering mark above the bubble vial. Note the value of the specific gravity at this point.
8. The density is recorded in kg/m^3 as determined by multiplying the specific gravity by 1000.
9. The pressure in the mud balance is now released by reconnecting the empty plunger to the lid and pushing downward to the plunger cylinder while permitting the handle to move freely. To complete the procedure all components should be washed and rinsed thoroughly.

NOTE: For trouble free operation the valve, lid and cylinder should be greased frequently with waterproof grease such as "Lubri-Plate".