WELL SCAVENGER (WS)

Specialized Tools: Debris Recovery Tools

The WELL SCAVENGER* vacuum debris removal tool is designed specifically to capture and remove debris from the wellbore. The tool can be combined with magnets or junk baskets to enhance removal of ferrous or larger debris, respectively. The tool engine module generates a high velocity reverse circulation path at the end of the workstring to pick up heavier debris and capture it in-situ. The modular designed WELL SCAVENGER tool comprises a single nozzle jet pump; a screen filter with an internal magnet assembly; debris chambers with a suction tube and flow deflector.

Applications

The WELL SCAVENGER tool is used during intervention applications requiring in-place debris removal. It can be run to remove debris from top of isolation valves, blanking plug removal, and cleaning out after perforating.

The tool also can be run during milling operations to capture debris as it is generated, or during fishing operations to remove unknown debris. The tool can be used effectively in clear brine completion fluids with no carrying capacity or suspension characteristics. The WELL SCAVENGER tool can also be used where low circulation rates are desired, such as near sensitive downhole hardware or where perforations are open.

How it works

The WELL SCAVENGER tool pumps the "driving" fluid through the fluid jet pump, thus generating a reverse circulation flow from the bottom of the tool through the suction tube. Once the debris is picked up, it settles in the debris basket as the fluid velocity decreases after passing through the flow diverter. The fluid then passes through the filter screen to capture suspended material.

Features

- Circulation rate of the driving fluid is 200-350 gpm (750-1,325 L/min)
- Suction fluid is usually 25-30% of the driving fluid flow
- The WELL SCAVENGER tool incorporates an internal magnet assembly
- Debris chamber capacity is 0.5 bbls
- Designed for small amounts of debris recovery on or near sensitive equipment such as plugs and Formation Isolation Valves (FIVs)

Advantages

- Generates a reversing flow path that promotes in-situ debris collection
- Operates with 125 ft (38 m) of tail pipe to allow removing debris on top of packers and formation isolation assemblies
- Creates various "reverse" flow rates
- Removes heavy/difficult debris from wellbore with minimal circulation
- Efficiently collects magnetic debris
- Safe and well-organized debris collection that is 100% contained and allows all fluid to be drained in a safe controlled manner
- Minimize risk of debris plugging filter screen with internal magnet assembly