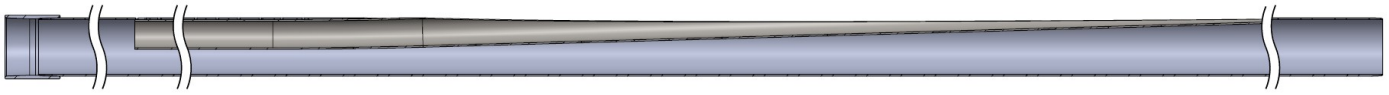


Multilateral Window Level 6



A Multilateral Window Level 6 (MW6) sidetrack well is drilled in similar fashion as other side track wells. Since each multilateral well down hole must have independent sealing, some of the drilling tools used will differ from other lateral drilled wells, not requiring independent sealing. A level 6 junction must allow independent sealing, production, or injection from the other well residing at the junction. The junction must also allow both wells to seal, produce or inject together. The junction must have the capability to shut in one or both wells if required.

One of the main problems associated with level 6 junctions in multilaterally drilled wells is the ability to properly isolate one well from the other. Elastomeric types seals are often used and tend to fail at the junction, especially those junctions found in thermal wells.

The new MW6 junction is designed and manufactured with no elastomeric seals used. The complete junction is manufactured using weld and is pressure tested for integrity before it is run into the well. This junction has a welded in place, lateral casing that is angled (15° dogleg) to the outside of the main casing. This junction requires no drilling of steel to exit the main casing. A rubber plug that resides within this lateral casing (which seals off the junction during cementing) is drilled out instead. The MW6 junction is designed to be run in a directionally drilled main well. Typically, the main casing is landed around 75°. Exit of the lateral well from the junction is at 90° (horizontal). The main well is drilled on the lower portion of the junction, while the lateral well is drilled through the upper section of the lateral. When the main casing is run (lateral junction located above floats), it is orientated with the lateral casing of the junction at the top of the well. After the main well casing is cemented in place, the lower (main well) is drilled. Since this MW6 junction is positioned with the lateral casing at the top, any tools or pipe run into the well will ride down the casing (bottom side) and pass underneath the top lateral casing. After this main horizontal well is completed, a removable ramp is placed in the junction to divert all tooling to travel inside the lateral well and not in the main well. Each well will have its own hangers, seals, casings, and independence.

APPLICATION

- For use in horizontal wells with lateral applications requiring level 6 sealing and independence.
- For wells requiring a large angle exit of the lateral well.
- Fluid and gas separation down hole capabilities.

FEATURES

- Level 6 junction capabilities. Each well consists of its own seals, casings, and hangers.
- Each well can be independently operated or both wells together. Use of a retrievable ramp allows access into either well bore.
- High pressure ratings using steel fabricated junctions, pressure tested at surface prior to installation.
- Built in angle on lateral casing exit from junction, to assist in directional drilling.

BENEFITS

- No milling of steel or casing required.
- Save on drilling and tripping times.
- Pressure integrity of lateral junction is determined above ground.



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