

TCC & RIH LIB TO TAG HUD (BRGA-08)

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WHAT IS TCC ?

TCC (Tubing Clearance Check) or Wireline drift runs are mandatory prior to carrying out any wireline well intervention work. Although they are considered a little time consuming on the day-to-day routine, drift runs actually helps to optimise wireline work as a whole. A drift run in a corresponding tubing size can be compared to a reconnaissance mission in that it provides invaluable information with respect to the downhole conditions in the well.

OBJECTIVE OF TCC?

Wireline drift runs enables the wireline operator to:

- Check whether the tubing is clear and accessible.
- Establish hold-up depth (HUD) inside/outside the tubing.
- Establish liquid level in the tubing.
- Establish tight spots and resistance in the tubing.
- Correlates the wireline depth of tubing accessories against Well Status Diagram depths.
- Form a basis of pulling weights at varies depths.
- Check condition of the wireline in use.
- Check condition and functioning of the measuring head assembly.
- Check proper working of the odometer (depth counter).
- Check efficiency of the wireline unit.
- Check for presence of wax/scale/sand in the tubing.

Note:

This procedure is intended for performing a drift run operation in different sizes of tubing string and taking all the essential observations encountered along the way before carrying out any wireline well intervention work.

TCC & RIH LIB TO TAG HUD

What tool we use to perform TCC?

1. WIRELINE DRIFT:

By running a wireline drift prior to running other tools the operator can be assured that the tubing is clear allowing for subsequent services.

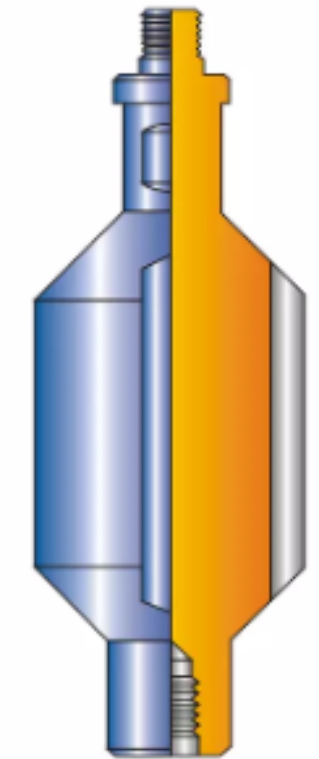
| COMMON TUBING / NIPPLE SIZE | | | | |
|-----------------------------|--------|--------|-----------|--------|
| OD (WT) | I.D | DRIFT | SEAL BORE | NO GO |
| 2-2/3" | 1.995" | 1.901" | 1.875" | 1.791" |
| 2-7/8" | 2.441" | 2.347" | 2.313" | 2.313" |
| 3-1/2" | 2.922" | 2.797" | 2.750" | 2.750" |
| 3-1/2" | 2.992" | 2.867" | 2.813" | 2.813" |



What optional tool we use to perform TCC?

1. FLUTED CENTRALISER:

Fluted centralizer/drift is run to centralise the toolstring where well deviation causes the running and pulling tools to lay off center. In addition to being a centraliser, it can also be used as a tubing drift.



**FLUTED
CENTRALIZER**

| Engineering Data for Fluted Centralizer | | | | |
|---|-----------------|----------------|------------------------------------|----------|
| SIZE (IN.) | MAX. O.D. (IN.) | F/N.O.D. (IN.) | THREAD CONN. PIN X BOX (IN. - PI.) | PART NO. |
| 1.1/2 | 1.50 | 1.187 | 15/16 - 10 UN | 641511 |
| 2.1/2 | 2.50 | 1.750 | 1.1/16 - 10 UN | 642532 |
| 3.1/2 | 3.50 | 2.312 | 1.9/16 - 10 UN | 643546 |
| 6 | 6.00 | 2.312 | 1.9/16 - 10 UN | 646046 |

TCC & RIH LIB TO TAG HUD

What optional tool we use to perform TCC?



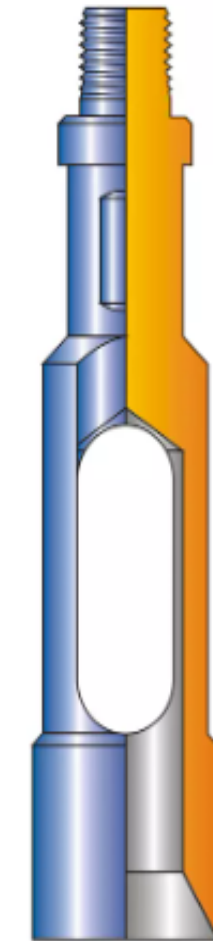
What optional tool we use to perform TCC?

2. TUBING GAUGE / PARAFFIN CUTTER :

By running a gauge cutter prior to running or pulling any subsurface control, the operator can be assured that the tubing is clear allowing for subsequent services or to eliminate materials restricting flow.

The Cutter has an upset gauge ring bottom, sized to the application with a sharp bevel providing a scraping edge. Elongated windows allow for fluid and debris bypass.

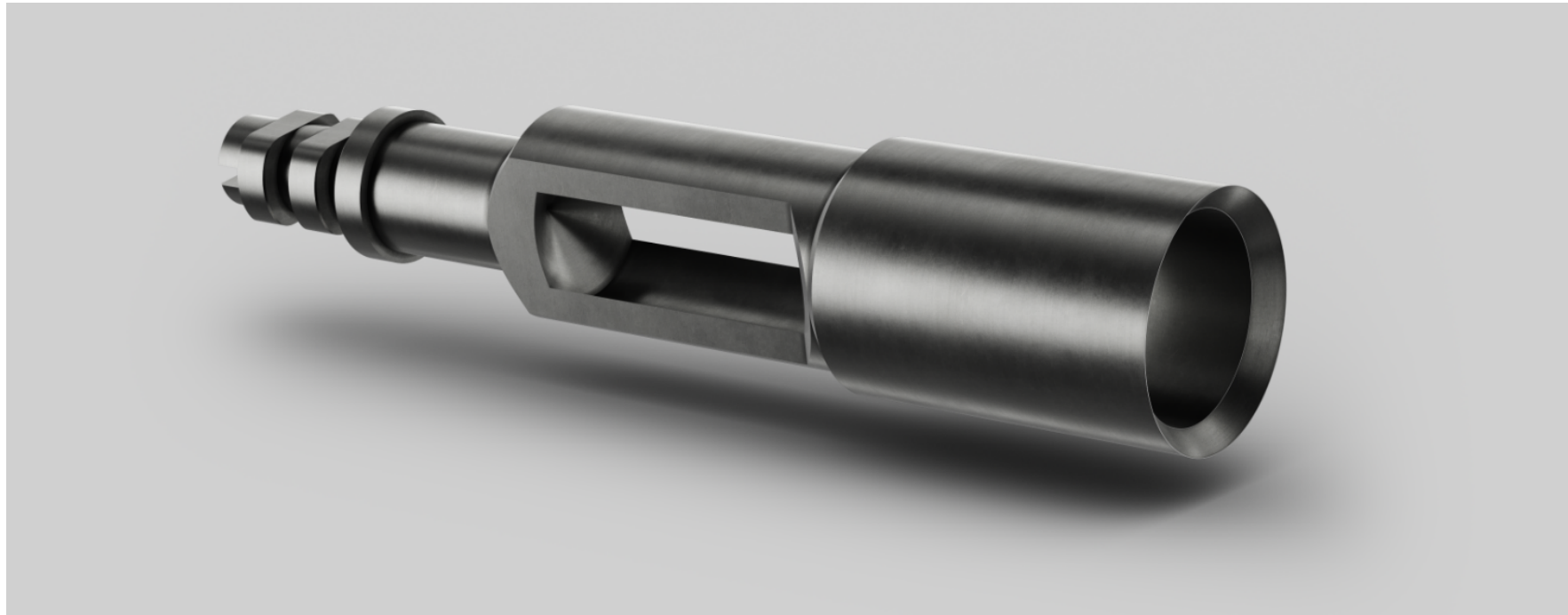
| Engineering Data for Tubing Gauge / Paraffin Cutters | | | |
|--|--------------|----------------------------|---------|
| O.D. RANGE (IN) * | F/N O.D.(IN) | THREAD CONN. PIN (IN.-TPI) | PART NO |
| 0.905 - 1.575 | 0.875 | 5/8 - 11 UNC | 831600 |
| 1.655 - 2.265 | 1.375 | 15/16 - 10 UN | 832231 |
| 2.323 - 2.520 | 1.375 | 15/16 - 10 UN | 832521 |
| 2.598 - 2.953 | 1.750 | 1.1/16 - 10 UN | 832932 |
| 2.992 - 3.900 | 2.312 | 1.1/16 - 10 UN | 833942 |
| 5.750 - 6.151 | 2.312 | 1.9/16 - 10 UN | 836146 |



**TUBING
GAUGE / PARAFFIN
CUTTER**

TCC & RIH LIB TO TAG HUD

What optional tool we use to perform TCC?



WHAT IS LIB?

LIB is Lead Impression Block. By a single, downward jar against the obstruction, the soft lead face is imprinted after impact. After removing the Lead Impression Block at surface the indentation can be interpreted to provide an indication as to the cause and type of obstruction within the well. The interpreted results allow for subsequent fishing operations to be performed to enable fish recovery.

| Engineering Data for Impression Block | | | |
|---------------------------------------|----------------|------------------------|----------|
| O.D. RANGE (IN.)* | F/N O.D. (IN.) | THREAD CONN. PIN (IN.) | PART NO. |
| 1.000 - 1.230 | 0.875 | 5/8 - 11 UNC | 921200 |
| 1.375 - 1.410 | 1.187 | 15/16 - 10 UN | 921411 |
| 1.750 - 2.250 | 1.375 | 15/16 - 10 UN | 922221 |
| 2.625 - 2.812 | 1.750 | 1.1/16 - 10 UN | 922832 |
| 3.500 - 4.625 | 2.312 | 1.9/16 - 10 UN | 924646 |
| 5.500 - 5.750 | 2.312 | 1.9/16 - 10 UN | 925746 |

- Impression Blocks are available in MM. increments within the specified I.D. Ranges, when ordering , specify required O.D. in MM (Inches x 25.4 = MM)



IMPRESSION BLOCK

TCC & RIH LIB TO TAG HUD



WHAT IS PURPOSE OF LIB RUN?

Tool Clearance:

By taking an impression of the wellbore, operators can determine if slickline tools and other equipment have adequate clearance to move freely through the well.

Diagnostic Information:

The impressions can reveal issues such as scale build-up, corrosion, or wear within the wellbore, which are important for planning maintenance or remedial operations.

TO PERFORM TCC WITH 3.65" WIRELINE DRIFT

1. JOB PREPARATION :

- Perform Job Safety Analysis (JSA) prior to start of operation and prior to start of critical operations.
- Ensure relevant PTW's are prepared and approved ahead of time. (Cold Work Permit required for wireline operations, rigging up, pressure testing and rigging down. Hot Work Permit required for Power Pack.)
- Prepare Mercury monitoring device and suitable PPE. Have a portable Gas Detector available at the well site that can detect H₂S and also minimal H₂S equipment.
- Safety meeting to be held before each wireline run and at each shift change session. Document all meetings.
- Establish bleed-off line from riser. Be aware of wind direction and potential fire source during bleed-off.
- Ensure all equipment complies with client safety standards. Ensure o-rings in PCE equipment are in good condition.

TO PERFORM TCC WITH 3.65" WIRELINE DRIFT

1. JOB PREPARATION :

- Main deck to be cleared to maximize deck space for handling of lubricator.
- Guide wires of mast to be securely fastened in anticipation of heavy loads and strong winds.
- Clear grating around wellhead and Xmas tree area for deployment of tool string.
- Ensure the reference logs and completion schematics are available at the well site.
- Operation is to be suspended in the event of electrical storms and high wind speed in excess of 25 knots. Ensure to work within the design limit of the mast. Marine crew on the bridge shall communicate the weather conditions to client as and when required.

TO PERFORM TCC WITH 3.65" WIRELINE DRIFT

2. RIG UP SLICKLINE :

- Conduct a "Toolbox meeting" prior to commencement.
- Ensure the Surface Equipment and Wireline Tools as per inventory and if some tools are missing, inform Wireline Supervisor and report to base for replenishment.
- Verify the well status.
- Open wellhead hatch cover. Ensure to barricade the open hatch cover area to prevent personnel, equipment or tools from falling thru the open hatch.
- Record THP, PCP, and SCP
- Ensure to count the number of turns to fully open or close any manual gate valve on the Xmas tree. Report the number of turns to open/close in the Daily Report.
- Ensure SSV is locked open with fusible cap. At this stage, both SSV and TR-SCSSV are opened and TR-SCSSV is controlled from wellhead control panel.
- Close needle valve at the TR-SCSSV control line exit port at wellhead. With platform wellhead control panel, bleed-off the pressure from the SSV and TR-SCSSV control lines to zero.

TO PERFORM TCC WITH 3.65" WIRELINE DRIFT

2. RIG UP SLICKLINE :

- Isolate the TR-SCSSV control line from the platform wellhead control panel. Transfer the control of TR-SCSSV to wireline control panel by connecting the hydraulic hose to the tree manifold.
- Check that the needle valve on TR-SCSSV manifold is still closed. Pressure tests the hose and connections from the Wireline control panel to this manifold to 6000 psi for 15 minutes (acceptance criteria: ≤ 150 psi loss)
- After the pressure test on the hydraulic hose is completed, open needle valve connected to the exit block.
- Cycle TR-SCSSV and verify the volume of hydraulic fluid returns. Record results in the Daily Report
- Set the TR-SCSSV control line pressure at 5000 psi. Maintain this pressure on Wireline control panel at all times during operation.

TO PERFORM TCC WITH 3.65" WIRELINE DRIFT

2. RIG UP SLICKLINE :

- Hook up Wireline control panel lines to LV (*Close Line* and *Open Line*) and perform line test to 5000 psi for 15 minutes (acceptance criteria: ≤ 125 psi loss). With the Wireline control panel connected to the *Open Line*, apply 3000 psi and observe for fluid return on the *Close Line*. Leave LV in opened position.
- Pressure up SSV/UMV to open position from wellhead control panel. Lock-open the valve using a fusible lock open cap. Maintain pressure at the wellhead control panel.
- Confirm that the Xmas Tree has been de-pressurized and that the Swab Valve is closed. Carefully open the needle valve on the Swab cap to confirm that the Swab cap is de-pressurized.
- Ensure that the pick-up line used to support the lubricator is centered as accurately as possible over the wellhead to ensure the lubricator will be easily "stabbed" over the well.
- Once it has been confirmed that there is no pressure build up above the Swab Valve, remove the Tree Cap.

TO PERFORM TCC WITH 3.65" WIRELINE DRIFT

2. RIG UP SLICKLINE :

- Pick up and install the appropriate X-Over followed by the Wireline riser sections
- Make up the riser from wellhead to above the main deck.
- Install the BOP and connect the hydraulic hoses from the BOP control panel.
- Flush all lines with hydraulic oil before connecting to make sure that there is no air trapped in the system. Using the control panel, activate the BOP rams to the closed position. (This should be done with minimum hydraulic pressure). Check that both rams close, meet centrally and that the rams are the correct ones for the wire being used. Activate the rams to the open position, check that they open fully and that there are no oil leaks.
- Lay out the quick test sub (QTS), lubricator sections as required and GIS onto stands or gluts and make them up. The lubricator should be made-up as close as is practicable to the mast to enable it to be picked up easily without being dragged across the deck. Insert a standard tool-string into the lubricator.
- Lower the lubricator onto the BOP and make up the quick union of the QTS.
- Install a pressure gauge and needle valve onto the lubricator for venting.

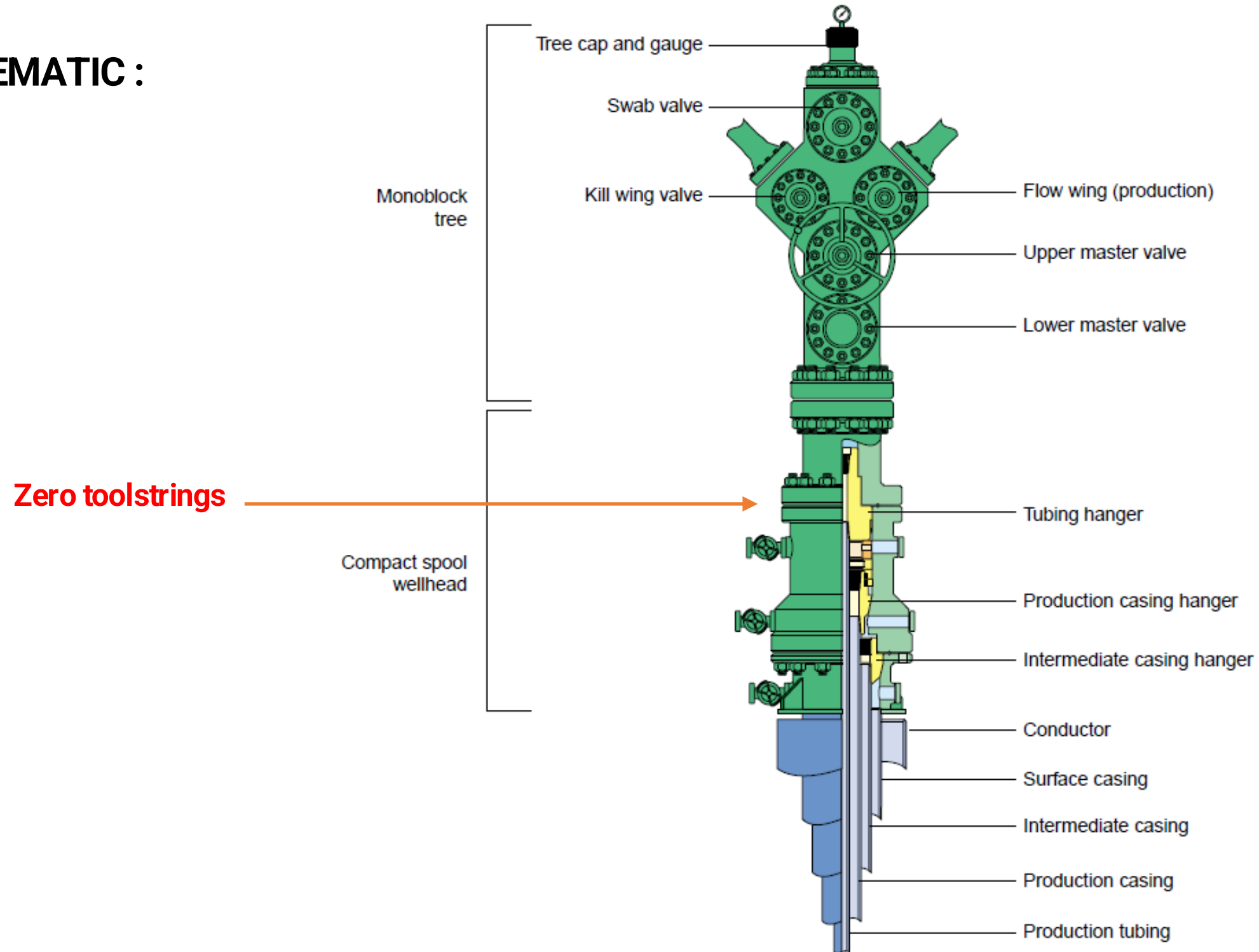
TCC & RUN LIB TO TAG HUD

PCE STACK UP :

| Diagram | Description | Pin | Box | ID (inches) | Working Pressure (psi) | Services | Length (ft) |
|---|---|-------------|-------------|-------------|------------------------|----------|--------------|
| | 3' Stuffing Box | 5.75"-4 | N/A | 3.00 | 10,000 | H2S | 2.00 |
| | 3' Hydraulic Tool Catcher | 5.75"-4 | 5.75"-4 | 3.00 | 10,000 | H2S | 2.00 |
| | X-Over | 7-7/8"-4 x2 | 5.75"-4 | 3.00 | 10,000 | H2S | 2.00 |
| | 5" x8 ft Lubricator | 7-7/8"-4 x2 | 7-7/8"-4 x2 | 5.13 | 10,000 | H2S | 8.00 |
| | 5" x8 ft Lubricator | 7-7/8"-4 x2 | 7-7/8"-4 x2 | 5.13 | 10,000 | H2S | 8.00 |
| | 5" x8 ft Ported Lubricator | 7-7/8"-4 x2 | 7-7/8"-4 x2 | 5.13 | 10,000 | H2S | 8.00 |
| | 5" Quick Test Sub | 7-7/8"-4 x2 | 7-7/8"-4 x2 | 5.13 | 10,000 | H2S | 2.00 |
| | 5" Dual Ram Blow Out Preventor | 7-7/8"-4 x2 | 7-7/8"-4 x2 | 5.13 | 10,000 | H2S | 5.00 |
| | 5" Hydraulic Ball Valve | 7-7/8"-4 x2 | 7-7/8"-4 x2 | 5.13 | 10,000 | H2S | 2.00 |
| | 5" Pump-In Tee + 2" Low Torque Valve (Double) | 7-7/8"-4 x2 | 7-7/8"-4 x2 | 5.13 | 10,000 | H2S | 2.00 |
| | 5" Manual Ball Valve (Optional) | 7-7/8"-4 x2 | 7-7/8"-4 x2 | 5.13 | 10,000 | H2S | 2.00 |
| | X-Over | 9.00"-4 | 7-7/8"-4 x2 | 4.00 | 10,000 | H2S | 2.60 |
| Total PCE Stack Up Length (ft) = | | | | | | | 45.60 |

TCC & RUN LIB TO TAG HUD

WELL SCHEMATIC :



TO PERFORM TCC WITH 3.65" WIRELINE DRIFT

3. PRESSURE TESTED :

- The BOP should have been function and pressure tested prior to rig up.
- Carry out a final check on all Xmas Tree valves and needle valves to ensure that they are in the correct position.
- Fill up lubricator with water. Pressure up the lubricator in stages of 500 psi (hold for 5 minutes at each stage) to 5000 psi for 15 minutes – observe for leaks.
- All pressure tests shall be recorded on a Pressure Test Chart and verified by Hess WIS.
- On conclusion of the test, disconnect the pressure test source from the lubricator.

| Rig-up Pressure Test | Test Pressure | Duration |
|--|----------------|------------|
| Pressure test the pressure control equipment | 500/ 5,000 psi | 5/ 15 mins |

NOTE :

Do not stand at line of fire while pressure test in progress.

TO PERFORM TCC WITH 3.65" WIRELINE DRIFT

4. RIH 3.65" WIRELINE DRIFT:

- Ensure LMV, Swab Valve, and WV are closed.
- Confirm UMV/SSV is locked-open with fusible lock-open cap
- Make-up drift toolstring per Attachment
- Zero toolstring at the THF.
- Pick up toolstring into lubricator and make-up QTS. Pressure test to 500/5000 psi for 5/10 minutes.
- Open Swab Valve. Count the number of turns to open the gate valve.
- Open LMV. Count the number of turns to open the gate valve.
- Record the SITHP.

TCC & RUN LIB TO TAG HUD



Drift Run Toolstring

| Diagram | Description | Connection | | OD (Inch) | Fishneck (Inch) | Length (Inch) | Weight (Lbs) |
|---------------------------|--|------------|------------|-----------|-----------------|---------------|--------------|
| | | Pin | Box | | | | |
| | 2-1/2" x 0.125" Rope Socket | N/A | 2-1/2" QLS | 2.500" | 2.313" | 8 | 14 |
| | 2-1/2" Swivel Joint | 2-1/2" QLS | 2-1/2" QLS | 2.500" | 2.313" | 10 | 19 |
| | 2-1/2" X 5' Roller Stem | 2-1/2" QLS | 2-1/2" QLS | 2.500" | 2.313" | 60 | 80 |
| | 2-1/2" X 3' Roller Stem | 2-1/2" QLS | 2-1/2" QLS | 2.500" | 2.313" | 36 | 47 |
| | 2-1/2" Knuckle Joint | 2-1/2" QLS | 2-1/2" QLS | 2.500" | 2.313" | 10 | 21 |
| | 2-1/2" Spring Jar | 2-1/2" QLS | 2-1/2" QLS | 2.500" | 2.313" | 60 | 55 |
| | 2-1/2" X 20" Mechanical Spang Jar | 2-1/2" QLS | 2-1/2" QLS | 2.500" | 2.313" | 60 | 55 |
| | 2-1/2" QLS Pin x 1-1/16" SR Box X-Over | 2-1/2" QLS | 1-1/16" SR | 2.500" | 2.313" | 10 | 19 |
| | 3.65" Drift | 1-1/16" SR | N/A | 3.650" | 2.313" | 12 | 55 |
| Total length (ft) | | | | | | 22.2 | |
| Total weight (lbs) | | | | | | | 365 |

TO PERFORM TCC WITH 3.65" WIRELINE DRIFT

4. RIH 3.65" WIRELINE DRIFT:

- RIH Drift toolstring to target depth @ 10876ft MDDF.
- Once the intended depth or new HUD is encountered, flag the wire.
- RIH 3.65" Wireline Drift until HUD @ 6810ft MDDF. WOL several times. Unable to pass thru. Inform to WIS and POOH.
 - Perform pick-up weight checks and record the running weight, pulling weight, and hanging weight at every 1,000ft interval.
 - Attempt to tag the liquid level inside the well, if any.
 - Slow down prior to reaching completion accessories and verify their depths during RIH.
 - Observe for any potential hold-up while RIH.

TO PERFORM TCC WITH 3.65" WIRELINE DRIFT

4. RIH 3.65" WIRELINE DRIFT:

- POOH until toolstring is inside the lubricator, slowing down when passing through restrictions. Record the initial pick-up weight in the Daily Report when commencing POOH.
- Close LMV. Count the number of turns to close the gate valve.
- Close Swab Valve. Count the number of turns to close the gate valve.
- Bleed-off the lubricator pressure to 0 psi. Monitor for 10 minutes.
- Once there is no pressure build-up inside the lubricator, break QTS.
- Recover toolstring. Report any anomaly found on the toolstring. Collect any samples stuck to the toolstring.

TO PERFORM RIH 3.60" LIB TO TAG HUD

1. RIH 3.60" LIB (LEAD IMPRESSION BLOCK) :

- Ensure LMV, Swab Valve, and WV are closed.
- Confirm UMV/SSV is locked-open with fusible lock-open cap
- Make-up 3.60" LIB toolstring per Attachment
- Zero toolstring at the THF.
- Pick up toolstring into lubricator and make-up QTS. Pressure test to 500/5000 psi for 5/10 minutes.
- Open Swab Valve. Count the number of turns to open the gate valve.
- Open LMV. Count the number of turns to open the gate valve.
- Record the SITHP.

NOTE :

Make sure to cover LIB surface while zero the toolstring at the THF.

TO PERFORM RIH 3.60" LIB TO TAG HUD

1. RIH 3.60" LIB (LEAD IMPRESSION BLOCK) :

- RIH 3.60" LIB toolstring to the last recorded HUD @ 6,810ft MDDF. Run in hole the LIB at moderate speed. Slow down when passing through tubing accessories in the hole. Note the depths where the LIB passes through the accessories.
- Once arrived the intended depth HUD @ 6,810ft MDDF slowly sit above. Slowly open the spang jar fully retract to check indication on weight indicator. Slowly close back spang jar. Open half stroke jar and jar down lightly. POOH.

NOTE :

Do not jar down / Beat down LIB more than 1 times.

TO PERFORM RIH 3.60" LIB TO TAG HUD

4. RIH 3.60" LIB (LEAD IMPRESSION BLOCK) :

- POOH until toolstring is inside the lubricator, slowing down when passing through restrictions. Record the initial pick-up weight in the Daily Report when commencing POOH.
- Close LMV. Count the number of turns to close the gate valve.
- Close Swab Valve. Count the number of turns to close the gate valve.
- Bleed-off the lubricator pressure to 0 psi. Monitor for 10 minutes.
- Once there is no pressure build-up inside the lubricator, break QTS.
- Recover toolstring. Report any anomaly found on the toolstring. Collect any samples stuck to the toolstring.

TCC & RUN LIB TO TAG HUD

TO PERFORM RIH 3.60" LIB TO TAG HUD

4. RIH 3.60" LIB (LEAD IMPRESSION BLOCK) :



RESULT :

Found mark on LIB. Suspected tubing collapse.
Discuss with WIS for next run.

* Next RUN ARCHER EV camera

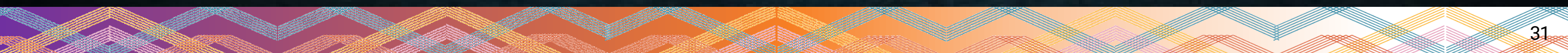
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TO PERFORM RIH 3.60" LIB TO TAG HUD





GOT QUESTIONS?



- End of slide-