

## Case Study

# WavForce™ XRV

WavForce XRV and Abrasive Perforator Combine for a One-Trip Solution

Case Study No. 4308

### DETAILS:

Location:	Alberta, Canada
Formation:	Charlie Lake Light Oil
Casing Size:	139.7mm (5.5") x 34.23 kg/m (23#) x 114.3mm (4.5") x 20.09 kg/m (13.5#)
Conveyance:	2-3/8" Coiled Tubing
Total Measured Depth:	7052m   23,136'
Total Vertical Depth:	2335m   7,660'
Lateral Length	4653m   15,266'
Well Orientation:	Horizontal
Fluid:	Water
Operation Type:	Cement Drill-Out
Tools Used:	3-1/8" Abrasive Perforating Assembly 3-1/8" WavForce XRV

### RESULTS:

A client in Canada inadvertently cemented off several frac sleeves during an annular frac sleeve installation. Hardened cement encompassed 2252m (7,388') of lateral ranging from the toe of the well to the 32nd frac sleeve, closing off almost half of the frac treatment entry points. With the need to mill-out cement and perforate for injection, the client decided to utilize Thru Tubing Solutions' patented 3-1/8" OD one-trip Abrasive Perforating System, in conjunction with the WavForce XRV extended reach tool, due to the aggressive 4653m (15,266') lateral.

By using the Abrasive Perforating System, TTS was able to successfully clean out the 2252m (7,388') of cement to reach PBTD at 7022m (23,038'). The inclusion of the WavForce XRV proved to be instrumental in reaching the desired depth with post-job friction matching confirming a 0.145 friction factor achieved. Once cement was removed, a ball was launched from surface to redirect flow from the motor to the perforator where 6 perforations were made at 7003m (22,976') and 7002m (22,972') for a total of 12 perforations. With new entry points made, the customer was able to attain proper injection rates at the toe of the well and continue with the annular frac operation.

### HIGHLIGHTS



- One-trip solution
- Achieved 0.145 friction factor
- Saved customer time and money