

	HydraShock™ Coiled Tubing		Treatment Date
			January 30, 2017
Rescue CT Case History		Pages	
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Document Number	Approver Position	HydraShock CT Product Line Manager	
ResCT-000003	Approver Name	Lauren Mendenhall	

Date: 1/30/17 point the operator made contact with the  
Location: Weld / CO HydraShock Hotline and began the process of  
Location: DJ Basin getting the pipe unstuck.

### Scope of Work:

Assist in removing a coiled tubing string stuck during a plug milling job.

### Background:

Workstring: 2.375" CT / 0.134"- 0.224" Global

HydraShock: 500 Series HydraShock CT Rescue

Immediate Concerns: Stuck for 42 hours | no circulation

SICP: 0psi

Completion Specifics:

- 5.5" 20lb
- 90° - 8,039'
- PBSD - 17,395'
- Stuck Depth Counter Reading - 10,191'
- BHT - 240°F

The operating company rigged up a 2.375" CTU to mill out composite plugs after a fracturing operation. The treating fluid was 8.34ppg fresh water. At the time of becoming stuck, the CT crew was pulling out of hole from short tripping off of plug #15 of 48 total. After becoming stuck, the coiled tubing was pulled to 12,000lbs over string weight twice as per the load cell display. Over the next 20 hours circulation was lost while the zone(s) above the fill were still producing. This was only identified once the inability to recirculate gel sweeps while maintaining returns became an issue. Eventually, all flow at the wellhead was lost. At this

### Treatment:

During the initial discourse with the Tenax HydraShock personnel, the HydraShock representative advised the client to drop the ball and disconnect. After the disconnect sheared, the CT was manipulated, as was the fluid rate in an attempt to get the tubing free. Upon being unable to free the coiled tubing, the HydraShock hotline technician instructed the CT crew to pump a coil volume of clean fluid, then 600,000scf of N<sub>2</sub>, and wait for the HydraShock onsite technicians to arrive with the Rescue tool. The HydraShock onsite technicians arrived at 4:30am on 1/30/17, and proceeded to hold both a safety meeting and a demo briefing on the Rescue tool. The tool was then pumped through the coiled tubing at 2.0bbls/min, with 2,184psi circulating pressure and seated in the coil connector at 1.0bbl/min. At 91bbls away, with the weight indicator reading -20,000lbs, the control ball extruded at 3,400psi(Blue). Next, a "Black" ball was pumped at 3bbls/min and 2,700psi circulating pressure. With the weight indicator showing the surface weight of -20,000lbs, the "Black" ball extruded at 7,000psi. The coiled tubing started moving in hole almost immediately following the HydraShock event. Then the coiled tubing was tripped down 200', the well was thoroughly flushed out, and then the tubing was pulled out of the well. The CT was freed within 4 hours and returned to surface, less the BHA from the disconnect down.