

Successful Thru Tubing Gravel Pack (TTGP) Installations Utilizing a Standalone Slickline Intervention - Offshore Sabah West Malaysia

WELL BACKGROUND & PROBLEM

SMG field is a mature field of > 40 years production, where majority of its wells were completed at sand-prone reservoirs, with either gravel pack/ stand-alone screen hangs off during initial completion or with normal through-tubing sand screen for behind casing opportunities developed through-tubing.

Depleting reservoir and increased water cut in most of the wells, SMG-field has started experiencing deteriorating or ineffective sand control mechanism that causes excessive sand production which resulted in choking down the bean size & in some cases shutting down the well, hence search for an effective through-tubing remedial sand control solution is needed , which led to the pilot application of slickline-deployed through-tubing gravel pack (SL-TTGP) in three (3) of S-Field wells

SOLUTION

3 wells were going through a series of well candidate screening process by a team of TTS Specialist to evaluate client goals in both technical and commercial , to proposed unique thru tubing gravel pack designed system to fit the 3 TTGP well candidate in 3 ½” Dual completion with cement packer in the annular between Tubing and Casing and finally gravel displacement planning utilizing TTS unique pump and place method system where proppant is transported into the well via specialized smart bailer system at a very minimum cost.

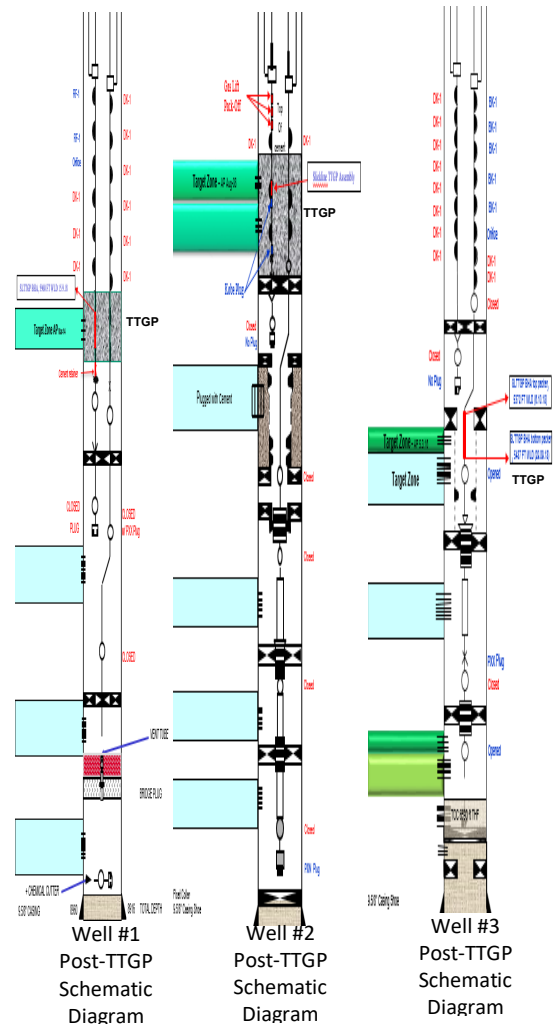
Well is prepared including sand cleanout and tubing clearance check prior to the TTGP installation. Sump packer was installed and followed by the installation of screen / Blank pipe and vent screen assembly. A series of TTS smart bailer run to transport proppant as part of TTS unique pump & place method for proppant displacement utilizing pumping equipment at surface to assist proppant displacement with an average pumping rate at 0.3 to 0.4 bbl/m while dumping the proppant until screen out is achieved. Finally , top isolation packer is installed to contain proppant in the annular between screen and 3 ½” tubing before pressure up the well to shear down Sand Height Control Valve and resume production.

RESULT

SL-TTGP was successfully deployed in all three wells, despite some challenges during the execution phase, more complicated execution in Well #3, where casing-tubing annulus needed to be filled up with gravel. SL-TTGP has been effective in reducing the sand production in all three wells, and sand production has remained within allowable limit for the past 4 months.

	Well # 01		Well # 01		Well # 03	
Sand Rate (lbs./d)	Before	After	Before	After	Before	After
	75	2	78	1	100	1

WELL SCHEMATIC



TTGP INSTALLATION METHOD

