

Malaysia: Heavy Duty RAZOR BACK tool cuts scraper trip, saves \$200,000

“In planning the tandem system, the greatest challenge we had was the robustness of the scraper. Besides saving about \$ 0.6 million USD for the three wells, it also gave us early oil delivery. I want to use this medium to express our appreciation for your support in delivery this service, as it really a huge success.”

Godwin Akujodi, Senior Well Completion Engineer, PCPP

Well Information

Location Malaysia
 Date April 2010
 Tool type Heavy Duty RAZOR BACK
 Casing size 7 in. 29 lb/ft
 Perforation intervals 2,345 - 2,360 m (7,692 – 7,741 ft) and 2,425 - 2,492 m (7,954 – 8,174 ft)
 Bottom hole temperature 114° C (238° F)

The Situation

An operator offshore Malaysia recognized the benefit of combining a tubing conveyed perforating run with a well preparation run. The aim was to eliminate a dedicated trip to scrape the casing across the perforated interval, thus saving rig time and costs. In addition, this operation would allow the well to be completed and brought on line sooner.

The Solution

M-I SWACO was chosen to provide its extremely rugged Heavy Duty RAZOR BACK* scraper. The tool was selected for this dynamic underbalanced perforating job on the basis of its outstanding ability to withstand harsh conditions and its robust design credentials. A 7 in. Heavy Duty RAZOR BACK would be placed in the workstring and run behind the tailored perforating equipment that would be used to perforate two sand intervals. This set-up would permit casing preparation both pre and post-perforating, while at the same time reducing the time the well would be exposed to a solids laden fluid loss control system, thus minimizing any potential formation damage in the reservoir.

The Results

The operation went as planned, the intervals were perforated as required and the casing walls prepared and readied for the completion string as programmed. This operation saved the 16 hours tripping time that had been required on previous wells. The operator achieved an estimated net saving of \$200,000 by eliminating the trip.

The Details

Prior to this well, the client conducted the following operations on offset wells:

- Displaced the well with completion fluid after un-stinging drill pipe from 9 5/8 in. x 7 in. liner hanger
- Made up and tripped in the tubing conveyed perforating (RTCP) gun to sand depth
- Once the RTCP was on bottom, the operator rigged up and ran the Gamma Ray – Casing Collar Locator (GR-CCL) on electric line and correlated to position gun depth utilizing radioactive marker in the string; tripped out with GR-CCL and rigged down electric line unit
- Adjusted perforating gun depth as needed; perforated sands by pressuring up string before tripping out
- Made up and tripped in 7 in. conventional scraper and scrape tubulars covering the sand intervals and then trip out

With this new approach, the client revised the completion program for perforating and scraping the zones of interest in preparation for the actual completion system. The revised procedures entailed:

- Displaced the well with completion fluid after un-stinging drill pipe from 9 5/8 in. x 7 in. liner hanger
- Ran in hole (RIH) with tubing conveyed perforating (RTCP) guns and a 7 in. Heavy Duty RAZOR BACK scraper to perforation depth
- When the RTCP assembly was on bottom, the Gamma Ray – Casing Collar Locator (GR-CCL) was run on electric line and correlated to position gun depth utilizing the radioactive marker in the string; tripped out with GR-CCL and rigged down the electric line unit
- Adjusted perforating gun depth as needed and perforated sands by pressuring up string
- Scraped across perforated interval and tripped out

The removal of a separate scraper assembly run just to scrape the perforation zone delivered the estimated savings by:

- Making up and running in hole with 7 in. scraper to perforation zone, saving seven hours
- Scraping across perforation zone, saving two hours
- POOH with 7 in. scraper assembly saving seven hours

A total of 16 hours rig was saved.

Questions? We'll be glad to answer them.

If you'd like to know more about our Heavy Duty RAZOR BACK tools and how they are performing for our other customers, please call the M-I SWACO office nearest you.



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