



Registered Data Sheet Perforating System Evaluation, API RP 19B Section 1

API Form 19B-Section 1 Conforms to All Requirements of Section 1 Special Test - See Remarks/Exceptions below

Service Company Oiltech Services Pte. Ltd. Explosive weight 39 gm, HMX powder, Case Material Steel

Gun OD & Trade Name 4-1/2" 5 SPF 72° Phase Carrier Max Temp, °F 400 1 hr 3 hr 300 24 hr 300 100 hr 200 hr

Charge Name HSD 51BX 39g HMX XDP Maximum Pressure Rating 17,000 psi, Carrier Material Steel

Manufacturer Charge Part No. OT60291 Date of Manufacture 24 June 2011 Shot Density Tested 5 Shots/ft _____

Gun Type ICP, Wireline, Retrievable Tubular Carrier with scallop Recommended Minimum ID for Running _____ in.

Phasing Tested 72 degrees, Firing Order: Top down Bottom up Available Firing Mode: Selective X _____

Debris Description N/A Debris Weight N/A gm/charge, Debris N/A _____ in³/charge

Remarks/Exceptions per Section 1.11 _____

| Casing Data | 7" OD, Weight | lb/ft, | API Grade, L-80 | Date of Section 1 Test | 27 July 2011 | | | | | | |
|---------------------------------------|---|--------------------------------|-----------------|------------------------|--------------|-----------------|-----------|-------|-------|-------|---------|
| Target Data | 124" OD, | Amount of Cement | 18,625 lb, | Amount of Sand | 37,247 lb, | Amount of Water | 9,685 lb. | | | | |
| Date of Compressive Strength Test | 26 July 2011 | Briquette Compressive Strength | 6,678 psi, | Age of Target | 28 | days | | | | | |
| Shot No. | No 1 | No 2 | No 3 | No 4 | No 5 | No 6 | No 7 | No 8 | No 9 | No 10 | No 11 |
| Clearance, in. | 0.00 | 0.46 | 1.44 | 1.44 | 0.46 | 0.00 | 0.46 | 1.44 | 1.44 | 0.46 | 0.00 |
| Casing Hole Diameter, Short Axis, in. | 0.44 | 0.44 | 0.42 | 0.43 | 0.44 | 0.43 | 0.43 | 0.44 | 0.44 | 0.43 | 0.45 |
| Casing Hole Diameter, Long Axis, in. | 0.47 | 0.47 | 0.45 | 0.46 | 0.47 | 0.45 | 0.47 | 0.46 | 0.47 | 0.46 | 0.48 |
| Average Casing Hole Diameter, in. | 0.46 | 0.46 | 0.44 | 0.45 | 0.46 | 0.44 | 0.45 | 0.45 | 0.46 | 0.29 | 0.47 |
| Total Depth, in. | 31.95* | 47.45 | 53.45 | 54.45 | 50.45 | 40.45* | 52.95 | 51.95 | 49.45 | 47.45 | 34.45* |
| Burr Height, in. | 0.06 | 0.06 | 0.04 | 0.08 | 0.06 | 0.07 | 0.07 | 0.02 | 0.07 | 0.05 | 0.08 |
| Shot No. | No 12 | No 13 | No 14 | No 15 | No 16 | No 17 | No 18 | No 19 | No 20 | No 21 | No 22 |
| Clearance, in. | 0.46 | 1.44 | 1.44 | 0.46 | 0.00 | | | | | | Average |
| Casing Hole Diameter, Short Axis, in. | 0.44 | 0.46 | 0.43 | 0.46 | 0.44 | | | | | | XXXXXX |
| Casing Hole Diameter, Long Axis, in. | 0.48 | 0.49 | 0.46 | 0.49 | 0.46 | | | | | | 0.44 |
| Average Casing Hole Diameter, in. | 0.46 | 0.48 | 0.45 | 0.48 | 0.48 | | | | | | 0.47 |
| Total Depth, in. | 48.45 | 49.45 | 50.45 | 42.95 | 51.45 | | | | | | 0.46 |
| Burr Height, in. | 0.03 | 0.02 | 0.06 | 0.09 | 0.06 | | | | | | 50.03 |
| Remarks | 100% penetration marked with "*" could not be determined, and are not included in the average. The average penetration with compressive strength of 5,000 psi is 54.23" | | | | | | | | | | |

Manufacturer's Certification

Type of Certification: _____ Self Third Party

I certify that these tests were made according to the procedures as outlined in API 19B; Recommended Practice for Evaluation of Well Perforators, Second Edition, September 2006. All of the equipment used in these tests, such as the guns, jet charges detonator cord, etc., was standard equipment with our company for the use in the gun being tested and was not changed in any manner for the test. Furthermore, the equipment was chosen at random from stock and therefore will be substantially the same as the equipment that would be furnished to perforate a well for any operator. API neither endorses these tests nor recommends the use of the perforator system described.

CERTIFIED BY Raymond Joe Senior Engineer 2 Aug 2011 Oiltech Services Pte Ltd 25 Pandan Crescent, TIC Tech Centre #06-12, Singapore 128477
 (Company Official) (Title) (Date) (Company) (Address)

RECERTIFIED

Name of test as it should appear on website: 4-1/2" HSD 51BX 39g HMX XDP, 72° Phasing, 5 SPF

Name of test as it appears on application and application date: Charge: HSD 51BX 39g HMX XDP, Gun: 4-1/2", 5 SPF, 72° Phase Carrier