



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 16 gm, HMX powder, Case Material Steel

Gun OD & Trade Name 2-7/8" 6 SPF 60° Phase Carrier Max Temp, °F 400 1 hr 3 hr 24 hr 300 100 hr 200 hr

Charge Name HSD 16g HMX XDP Maximum Pressure Rating 25,000 psi, Carrier Material Steel

Manufacturer Charge Part No. OT60366 Date of Manufacture 15 Oct 2010 Shot Density Tested 6 Shots/ft _____

Gun Type TCP, Wireline, Retrievable Tubular Carrier with scallop Recommended Minimum ID for Running See remarks in.

Phasing Tested 60 degrees, Firing Order: Top down Bottom up Available Firing Mode: Selective Simultaneous

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

Remarks/Exceptions per Section 1.11 Maximum gun diameter after shooting in water is 3.10"

Casing Data 4-1/2" OD, Weight 11.6 lb/ft, API Grade, _____ Date of Section 1 Test _____

Target Data 75" OD, Amount of Cement 6,766 lb, Amount of Sand 13,700 lb, Amount of Water 3,519 lb.

Date of Compressive Strength Test 15 Nov 2010 Briquette Compressive Strength 5,402 psi, Age of Target 143 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	0.22	0.78	1.12	0.78	0.22	0.00	0.22	0.78	1.12	0.78
Casing Hole Diameter, Short Axis, in	0.28	0.28	0.28	0.30	0.29	0.29	0.30	0.28	0.29	0.28	0.27
Casing Hole Diameter, Long Axis, in	0.31	0.30	0.30	0.32	0.31	0.32	0.31	0.31	0.31	0.30	0.29
Average Casing Hole Diameter, in.	0.30	0.29	0.29	0.31	0.30	0.30	0.31	0.30	0.30	0.29	0.28
Total Depth, in.	24.25	15.25*	loss	28.25	29.25	29.25	26.25	17.25*	29.75	29.25	32.75
Burr Height, in.	0.04	0.02	0.06	0.07	0.03	0.03	0.06	0.03	0.05	0.06	0.03

Shot No.	No 12	No 13	No 14	No 15	No 16	No 17	No 18	No 19	No 20	No 21	No 22	Average
Clearance, in.	0.22	0.00	0.22	0.78	1.12	0.78	0.22	0.00	0.22	0.78		XXXXXX
Casing Hole Diameter, Short Axis, in	0.34	0.28	0.29	0.29	0.32	0.29	0.30	0.27	0.28	0.29		0.29
Casing Hole Diameter, Long Axis, in	0.37	0.30	0.31	0.32	0.34	0.30	0.31	0.29	0.30	0.30		0.31
Average Casing Hole Diameter, in.	0.36	0.29	0.30	0.31	0.33	0.30	0.31	0.28	0.29	0.30		0.30
Total Depth, in.	17.25	24.25	14.75*	24.25	loss	23.25	27.75	loss	19.75*	29.75		26.81
Burr Height, in.	0.03	0.03	0.04	0.04	0.05	0.03	0.02	0.04	0.03	0.05		0.04

Remarks 100% penetration marked with "*" could not be determined, and are not included in the average,

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 Hubert Menard 23 Nov 2010 Oiltech Services Pte Ltd 25 Pandan Crescent, TIC Tech Centre #06-12, Singapore 128477

RECERTIFIED (Company Official) (Title) (Date) (Company) (Address)

Name of test as it should appear on website: 2-7/8", HSD 16g HMX XDP, 60° Phasing, 6 SPF

Name of test as it appears on application and application date: Charge: HSD 16g HMX XDP, Gun: 2-7/8", 6 SPF, 60° Phase Carrier