



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 SDP Maximum Pressure Rating 20,000 psi, Carrier Material Steel

Manufacturer Charge Part No. OT60297 Date of Manufacture 23 March 2009 Shot Density Tested 6 Shots/ft

Gun Type TCP, Wireline, Retrievable Tubular Carrier with Scallop Recommended Minimum ID for Running 3.38 in.

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

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

Remarks/Exceptions per Section 1.11 N/A

Casing Data 4-1/2" OD, Weight 11.6 lb/ft, API Grade, L-80 Date of Section 1 Test 22 August 2009

Target Data 68" OD, Amount of Cement 6,767 lb, Amount of Sand 13,702 lb, Amount of Water 3,520 lb.

Date of Compressive Strength Test 21 August 2009 Briquette Compressive Strength 5,495 psi, Age of Target 29 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	0.24	0.27	0.26	0.23	0.24	0.26	0.27	0.28	0.26	0.26	0.25
Casing Hole Diameter, Long Axis, in	0.25	0.28	0.27	0.24	0.26	0.27	0.27	0.28	0.28	0.28	0.27
Average Casing Hole Diameter, in.	0.25	0.28	0.27	0.24	0.25	0.27	0.27	0.28	0.27	0.27	0.26
Total Depth, in.	22.25	20.75	21.75	20.75	25.25	19.25	22.25	19.25	22.75	19.75	25.75
Burr Height, in.	0.02	0.05	0.07	0.03	0.07	0.06	0.06	0.02	0.01	0.01	0.01

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	0.27	0.27	0.28	0.27	0.26	0.27	0.26	0.26	0.28	0.26		0.26
Casing Hole Diameter, Long Axis, in	0.28	0.28	0.28	0.27	0.27	0.29	0.28	0.28	0.29	0.26		0.27
Average Casing Hole Diameter, in.	0.28	0.28	0.28	0.27	0.27	0.28	0.27	0.27	0.29	0.26		0.27
Total Depth, in.	19.25	20.75	22.25	23.25	24.25	25.25	21.25	24.25	*16.25	23.25		22.15
Burr Height, in.	0.06	0.01	0.03	0.05	0.06	0.07	0.04	0.01	0.04	0.04		0.04

Remarks 100% Penetration of shot no. 20 could not be determined, because parts of the target were missing. This is not included in the average. The above charges were manufactured by Dahana Oiltech Joint Operation (DOJO), Indonesia

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 Frankie Teo AGM 31 Aug 2012 Oiltech Services Pte Ltd Loyang Offshore Supply Base 25 Loyang Crescent, Blk 302 TOPS Ave 3, #02-06, Singapore 508988

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

Name of test as it should appear on website: 2-7/8", HSD 16g HMX SDP, 0° Phasing, 6 SPF

Name of test as it appears on application and application date: Charge: HSD 16g HMX SDP, Gun: 2-7/8", 6 SPF, 0° Phase Carrier