



## 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.  
 Gun OD & Trade Name 4-1/2" 6 SPF 60° Phase Carrier  
 Charge Name HSD 39g HMX XDP  
 Manufacturer Charge Part No. OT40511/OT60519 Date of Manufacture 14 Sep 2011  
 Gun Type TCP, Wireline, Retrievable Tubular Carrier with scallop  
 Phasing Tested 60 degrees, Firing Order:  Top down  Bottom up  
 Debris Description N/A

Explosive weight 39 gm, HMX powder, Case Material Steel  
 Max Temp, °F 400 1 hr 3 hr 24 hr 100 hr 200 hr  
 Maximum Pressure Rating 20,000 psi, Carrier Material Steel  
 Shot Density Tested 6 Shots/ft \_\_\_\_\_  
 Recommended Minimum ID for Running \_\_\_\_\_ in.  
 Available Firing Mode:  X  Selective  X  Simultaneous  
 Debris Weight N/A gm/charge, Debris N/A in<sup>3</sup>/charge

Remarks/Exceptions per Section 1.11 \_\_\_\_\_

Casing Data 7" OD, Weight 32 lb/ft, API Grade, L-80 Date of Section 1 Test 16 Nov 2011  
 Target Data 106" OD, Amount of Cement 13,819 lb, Amount of Sand 27,635 lb, Amount of Water 7,200 lb.  
 Date of Compressive Strength Test 15 Nov 2011 Briquette Compressive Strength 6,981 psi, Age of Target 30 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	0.32	1.12	1.59	1.12	0.32	0.00	0.32	1.12	1.59	1.12
Casing Hole Diameter, Short Axis, in	0.41	0.40	0.41	0.44	0.43	0.43	0.44	0.41	0.43	0.43	0.43
Casing Hole Diameter, Long Axis, in	0.39	0.38	0.39	0.42	0.41	0.40	0.41	0.38	0.41	0.41	0.40
Average Casing Hole Diameter, in.	0.40	0.39	0.40	0.43	0.42	0.42	0.43	0.40	0.42	0.42	0.42
Total Depth, in.	40.95	36.45	27.45*	27.45*	41.95	42.45	32.45	25.45*	25.45*	42.45	40.95
Burr Height, in.	0.06	0.08	0.05	0.05	0.06	0.08	0.05	0.06	0.08	0.06	0.06

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.	0.32	0.00	0.32	1.12	1.59							XXXXXX
Casing Hole Diameter, Short Axis, in	0.42	0.43	0.42	0.40	0.43							0.42
Casing Hole Diameter, Long Axis, in	0.39	0.39	0.39	0.38	0.41							0.40
Average Casing Hole Diameter, in.	0.41	0.41	0.41	0.39	0.42							0.41
Total Depth, in.	39.45	42.95	35.45	43.45	40.45							40.12
Burr Height, in.	0.09	0.04	0.09	0.08	0.08							0.07

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 44.09". The above charges were manufactured by Dahana Oiltech Joint Operation, 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: 4-1/2", HSD 39g HMX XDP, 60° Phasing, 6 SPF

Name of test as it appears on application and application date: Charge: HSD 39g HMX XDP, Gun: 4-1/2", 6 SPF, 60° Phase Carrier