



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 Available to All from GEODynamics, Inc. Explosive weight 39.0 gm, HMX powder, Case Material Steel

Gun OD & Trade Name 4.00-in. Expendable Hollow Carrier Max Temp, °F 400 1 hr 3 hr 24 hr 100 hr 200 hr

Charge Name 4039 RaZor HMX Maximum Pressure Rating 19,700 psi, Carrier Material Steel

Manufacturer Charge Part No. EC2-40A3922 Date of Manufacture 06/21/2007 Shot Density Tested 4 Shots/ft

Gun Type TCP and Wireline Hollow Carrier, Non Reusable Recommended Minimum ID for Running See Remarks _____ in.

Phasing Tested 90 degrees, Firing Order: X Top down _____ Bottom up Available Firing Mode: X Selective _____ X Simultaneous

Debris Description Small steel chips Debris Weight n/a gm/charge, Debris n/a in³/charge

Remarks/Exceptions per Section 1.11 Maximum gun diameter after shooting in liquid is 4.16 in.

Casing Data 5-1/2" OD, Weight 17.0 lb/ft, API Grade, L-80 Date of Section 1 Test 02/08/2008

Target Data 144" OD, Amount of Cement 21,840 lb, Amount of Sand 43,680 lb, Amount of Water 11,457.9 lb.

Date of Compressive Strength Test 02/08/2008 Briquette Compressive Strength 5,077 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	0.41	0.89	0.41	0.00	0.41	0.89	0.41	0.00	0.41	0.89	
Casing Hole Diameter, Short Axis, in	0.39	0.35	0.37	0.38	0.38	0.37	0.37	0.39	0.41	0.40	0.37	
Casing Hole Diameter, Long Axis, in	0.42	0.37	0.38	0.40	0.39	0.39	0.38	0.39	0.42	0.41	0.38	
Average Casing Hole Diameter, in.	0.41	0.36	0.38	0.39	0.39	0.38	0.38	0.39	0.42	0.41	0.38	
Total Depth, in.	55.7	52.6	55.4	50.2	52.6	52.4	53.8	48.9	57.7	56.6	53.8	
Burr Height, in.	0.02	0.02	0.03	0.02	0.02	0.03	0.03	0.02	0.02	0.02	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.	0.41	0.00	0.41	0.89	0.41							XXXXXX
Casing Hole Diameter, Short Axis, in	0.40	0.39	0.36	0.38	0.37							0.38
Casing Hole Diameter, Long Axis, in	0.41	0.39	0.37	0.39	0.39							0.39
Average Casing Hole Diameter, in.	0.41	0.39	0.37	0.39	0.38							0.39
Total Depth, in.	48.5	57.2	52.8	45.2	55.1							53.0
Burr Height, in.	0.03	0.01	0.03	0.04	0.03							0.03

Manufacturer's Certification

Type of Certification: Self Truda Stevens - QSD 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.

X CERTIFIED BY [Signature] Vice President - Engineering 02/14/2008 GEODynamics, Inc. 10500 West Interstate 20, Millsap, Texas 76066

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

Name of test as it should appear on website: 4.00-in. EHC w/ 4039 RaZor HMX

Name of test as it appears on application and application date: 4" 4 SPF 90 Deg Ph w/ RaZor, 39 gm, HMX - 10/16/2007