



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 Hunting Explosive weight 21.0 gm, HMX powder, Case Material Steel

Gun OD & Trade Name 4-1/2" EXP Gun, 12 SPF 135/45 Degree Max Temp, °F 400 1 hr 3 hr 24 hr 100 hr 200 hr

Charge Name 4-1/2" 21G HMX SDP Maximum Pressure Rating 19,500 psi, Carrier Material H.T. Steel

Manufacturer Charge Part No. EXP-4521-423T Date of Manufacture 13 Nov 2009 Shot Density Tested 12 Shots/ft 12

Gun Type Hollow Steel Carrier, Expendable (HC, E) Recommended Minimum ID for Running 4.92 in.

Phasing Tested 135/45 degrees, Firing Order:  Top down  Bottom up Available Firing Mode:  X  Selective  X  Simultaneous

Debris Description Small steel chips, usually retained in carrier 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 17 December 2009

Target Data 108" OD, Amount of Cement 7,962 lb, Amount of Sand 15,924 lb, Amount of Water 4,174 lb.

Date of Compressive Strength Test 17 December 2009 Briquette Compressive Strength 8,470 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	1.31	0.69	0.18	1.59	0.18	0.69	1.31	0.00	1.31	0.69
Casing Hole Diameter, Short Axis, in	0.30	0.42	0.39	0.32	0.28	0.40	0.44	0.29	0.33	0.41	0.38
Casing Hole Diameter, Long Axis, in	0.34	0.42	0.39	0.33	0.28	0.40	0.45	0.30	0.33	0.41	0.40
Average Casing Hole Diameter, in.	0.32	0.42	0.39	0.33	0.28	0.40	0.45	0.30	0.33	0.41	0.39
Total Depth, in.	38.95	42.45	43.58	38.45	43.58	28.20	37.20	40.70	29.95	42.70	30.95
Burr Height, in.	0.04	0.06	0.05	0.05	0.07	0.05	0.06	0.07	0.06	0.06	0.05

  

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.	0.18	1.59	0.18	0.69	1.31	0.00	1.31	0.69	0.18	1.59	0.18	XXXXXX
Casing Hole Diameter, Short Axis, in	0.31	0.29	0.43	0.46	0.29	0.33	0.40	0.45	0.32	0.28	0.43	0.36
Casing Hole Diameter, Long Axis, in	0.33	0.31	0.46	0.46	0.30	0.33	0.41	0.47	0.34	0.29	0.45	0.37
Average Casing Hole Diameter, in.	0.32	0.30	0.45	0.46	0.30	0.33	0.41	0.46	0.33	0.29	0.44	0.37
Total Depth, in.	32.45	35.45	33.45	29.45	40.45	32.95	31.33	46.20	33.58	35.45	27.95	35.97
Burr Height, in.	0.05	0.06	0.05	0.05	0.06	0.06	0.06	0.05	0.05	0.06	0.04	0.05

Remarks \_\_\_\_\_

Manufacturer's Certification

Type of Certification: \_\_\_\_\_ Self  Third Party  API Witness: Jim Stout & Mona Elkhatib

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 [Signature] President, Hunting Titan 4/8/2014 143 HCR 4361, Milford, TX 76670, USA

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

Name of test as it should appear on website: 4.50-in. EXP 12SPF w/ DP EXP-4521-423T

Name of test as it appears on application and application date: EXP-4521-423T, Charge, 4-1/2" 21G HMX SDP (Appl: 20 Nov 2009)



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Shot No.	No 23	No 24	No 25	No 26	No 27	No 28	No 29	No 30	No 31	No 32	No 33	
Clearance, in.	0.69											
Casing Hole Diameter, Short Axis, in	0.40											
Casing Hole Diameter, Long Axis, in	0.40											
Average Casing Hole Diameter, in.	0.40											
Total Depth, in.	31.95											
Burr Height, in.	0.06											
Shot No.	No 34	No 35	No 36	No 37	No 38	No 39	No 40	No 41	No 42	No 43	No 44	Average
Clearance, in.												
Casing Hole Diameter, Short Axis, in												XXXXXXXX
Casing Hole Diameter, Long Axis, in												0.37
Average Casing Hole Diameter, in.												0.37
Total Depth, in.												35.97
Burr Height, in.												0.05

Remarks \_\_\_\_\_

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 Name of test as it appears on application and application date: EXP-4521-423T, Charge, 4-1/2" 21G HMX SDP (Appl: 20 Nov 2009)