



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 service companies. Manufactured by ETASA (Argentina) S.A. Explosive weight 39 gm, HMX Powder, Case Material STEEL

Gun OD & Trade Name 4 5/8" HSD Gun 5 SPF 60"- 39grams HMX EXTRA! II Max Temp, °F 400°F 1 hr 3 hr 24 hr 100 hr 200 hr

Charge Name 39grams HMX EXTRA! II Maximum Pressure Rating 20000 psi, Carrier Material STEEL

Manufacturer Charge Part No. TC47H Extra! II Date of Manufacture 05-29-2018 Shot Density Tested 5 Shots/ft

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

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

Debris Description Steel pieces remains inside the gun.

Remarks/Exceptions per Section 1.12 RDX VERSION AVAILABLE AS TC47R Extra! II

Casing Data 7" OD, Weight 32 lb/ft, API Grade, L-80 Date of Section 1 Test 12-03-2018

Target Data 168" OD, Amount of Cement 34685 lb, Amount of Sand 69370 lb, Amount of Water 18040 lb.

Date of Compressive Strength Test 12-04-2018 Briquette Compressive Strength 6034 psi, Age of Target 32 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.	0.000	0.281	1.010	1.469	1.010	0.281	0.000	0.281	1.010	1.469	1.010
Casing Hole Diameter, Short Axis, in	0.480	0.410	0.440	0.420	0.420	0.440	0.450	0.390	0.460	0.400	0.380
Casing Hole Diameter, Long Axis, in	0.490	0.430	0.450	0.470	0.430	0.460	0.480	0.440	0.490	0.430	0.410
Average Casing Hole Diameter, in.	0.485	0.420	0.445	0.445	0.425	0.450	0.465	0.415	0.475	0.415	0.395
Total Depth, in.	68.953	73.953	70.953	68.953	75.453	71.453	71.953	76.953	74.953	77.953	69.953
Burr Height, in.	0.070	0.085	0.044	0.093	0.065	0.056	0.090	0.074	0.059	0.063	0.079

  

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.	0.281	0.000	0.281	1.010								XXXX
Casing Hole Diameter, Short Axis, in	0.390	0.430	0.450	0.370								0.422
Casing Hole Diameter, Long Axis, in	0.430	0.460	0.470	0.420								0.451
Average Casing Hole Diameter, in.	0.410	0.445	0.460	0.395								0.436
Total Depth, in.	66.953	72.953	76.453	71.953								72.653
Burr Height, in.	0.092	0.037	0.084	0.045								0.069

Remarks:

Witnessed by: Carlos J. Caste

Optionally Witnessed Activities: Target Pouring Briquette Preparation Briquette Testing X Burr Height Measurements X

I certify that these tests were made according to the procedures as outlined in API RP 19B: Recommended Practices for Evaluation of Well Perforators, Third Edition, October 2014. All of the equipment used in these tests, such as the guns, shaped charges, detonating 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, which would be furnished to perforate a well for any operator. API neither endorses these test results nor recommends the use of the perforator system described.

Penetration data recorded in API RP19B Section 1 may not directly correlate to penetration downhole.

CERTIFIED BY Gabriel O. Scipioni Explosive Plant Manager Dic-5-2018 ETASA (Argentina) S.A. Ruta 25 km 13-Villa Rosa- Buenos Aires-Argentina

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

Name of test as it should appear on website: 4 5/8" High Shot Density Gun, 39grams HMX ExTra! II

Name of test as it appears on application and application date: 4 5/8", 39grams HMX, ExTra! II, 5 SPF 60°

Figure 2-Data Sheet- Perforating System Evaluation, API RP 19B Section 1