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 companies. Manufactured by ETASA(Argetina) SA

Gun OD & Trade Name: 4 5/8" HIGH SHOT DENSITY GUN 18SPF 140°/20° BH HMX

Charge Name: 4 5/8" Big Hole HMX (DSC 17-06-24)

Manufacturer Charge Part No.: TC54HBH Date of Manufacture: 06/21/2017

Gun Type: TCP and Wireline Hollow Carrier, Non Reusable

Phasing Tested: 140°/20° degrees, Firing Order: X Top down ___ Bottom up

Debris Description: Steel pieces remains inside the gun.

Explosive weight: 18 gm, HMX powder, Case Material: STEEL

Max Temp, °F: 400°F 1 hr ___ 3 hr ___ 24 hr ___ 100 hr ___ 200 hr ___

Maximum Pressure Rating: 20000 psi, Carrier Material: STEEL

Shot Density Tested: 18 Shots/ft ___

Recommended Minimum ID for Running ___ in.

Available Firing Mode: ___ Selective X Simultaneous

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

Remarks/Exceptions per Section 1.11 ___

Casing Data: 7" OD, Weight: 32 lb/ft, API Grade: L-80 Date of Section 1 Test: 10/02/2017

Target Data: 40" OD, Amount of Cement: 1390 lb, Amount of Sand: 2780 lb, Amount of Water: 725 lb.

Date of Compressive Strength Test: 10/03/2017 Briquette Compressive Strength: 7281 psi, Age of Target: 31 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	1.260	0.520	0.300	1.414	0.034	1.035	0.775	0.135	1.469	0.135
Casing Hole Diameter, Short Axis, in	0.763	0.817	0.743	0.720	0.780	0.700	0.780	0.750	0.810	0.780	0.750
Casing Hole Diameter, Long Axis, in	0.764	0.826	0.770	0.788	0.815	0.730	0.823	0.793	0.830	0.810	0.820
Average Casing Hole Diameter, in.	0.774	0.822	0.757	0.754	0.798	0.715	0.802	0.772	0.820	0.795	0.785
Total Depth, in.	8.916	7.916	6.916	9.416	8.416	7.916	7.416	7.416	8.166	8.666	7.166
Burr Height, in.	0.066	0.090	0.093	0.055	0.049	0.055	0.092	0.083	0.091	0.083	0.107

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.	0.775	1.035	0.034	1.414	0.300	0.520	1.260	0.000	1.260	0.520		XXXXXX
Casing Hole Diameter, Short Axis, in	0.800	0.790	0.750	0.790	0.740	0.740	0.730	0.740	0.800	0.820		0.767
Casing Hole Diameter, Long Axis, in	0.840	0.820	0.800	0.810	0.780	0.770	0.760	0.780	0.880	0.830		0.802
Average Casing Hole Diameter, in.	0.820	0.805	0.775	0.800	0.760	0.755	0.745	0.760	0.840	0.825		0.784
Total Depth, in.	6.916	8.416	7.416	8.416	8.916	7.916	7.416	7.416	8.666	7.916		7.987
Burr Height, in.	0.084	0.065	0.083	0.067	0.093	0.096	0.030	0.050	0.046	0.069		0.074

Remarks ___

Manufacturer's Certification

Type of Certification: ___ Self Carlos J. Caste API W 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 / ___ RECERTIFIED	Gabriel Scipioni (Company Official)	Manager Explosive Plant (Title)	10-04-2017 (Date)	ETASA (Argentina)SA (Company)	Ruta 25 Klm 13- Villa Rosa-Bs.As.-Argentina (Address)

Name of test as it should appear on website: TC54HBH - 4 5/8" 18 SPF 140°/20° - Big Hole - HMX

Name of test as it appears on application and application date: TC54HBH - 4 5/8" 18 SPF 140°/20° - Big Hole - HMX