

REGISTERED DATA SHEET PERFORATING SYSTEM EVALUATION, API RP 19B SECTION 1

Service Company Available to all Design Number _____ Explosive Weight 16.5 gm, RDX powder, Case Material Steel
 Gun OD & Trade Name 2 7/8" High Shot Density Gun BH - RDX Max. Temp, °F 330 1 hr 305 3 hr 260 24 hr 230 100 hr _____ 200 hr
 Charge Name 16.5 gms. Barracuda BH - RDX (DSC 03-08-48) Maximum Pressure Rating 20,000 psi, Carrier Material Steel
 Manufacturer Charge Part No. TC46RBH Date of Manufacture Aug 19th 2003 Shot Density Tested _____ 6 _____ Shots/ft
 Gun Type High Shot Density Gun for WL or TCP Recommended Minimum ID for Running _____ * _____ in.
 Phasing Tested 60 degrees, Firing Order X Top Down, _____ Bottom Up Available Firing Mode _____ Selective, _____ Simultaneous
 Debris Description N/A Debris Weight N/A gm/charge, Debris N/A in³/charge
 Remarks * Gun OD After firing in liquid 3.06"

SECTION 1 - CONCRETE TARGET

Casing Data 4 1/2" OD, Weight 11.6 lb/ft, L-80 API Grade, Date of Section 1 Test Sept 22nd 2003
 Target Data _____ OD, Amount of Cement 1730 lb., Amount of Sand 3455 lb., Amount of Water 900 lb.
 Date of Compressive Strength Test Sept 23rd 2003 Briquette Compressive Strength 7042 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.	0.000	0.221	0.784	1.126	0.784	0.221	0.000	0.221	0.784	1.126	0.784
Casing Hole Diameter, Short Axis, in.	0.700	0.680	0.690	0.650	0.700	0.660	0.710	0.670	0.660	0.670	0.700
Casing Hole Diameter, Long Axis, in.	0.770	0.730	0.760	0.710	0.780	0.690	0.760	0.700	0.690	0.700	0.760
Average Casing Hole Diameter, in.	0.735	0.705	0.725	0.680	0.740	0.675	0.735	0.685	0.675	0.685	0.730
Total Depth, in.	5.563	6.500	6.375	6.438	7.000	6.000	6.000	5.750	6.000	7.250	7.000
Burr Height, in.	0.040	0.054	0.074	0.082	0.088	0.063	0.052	0.063	0.047	0.072	0.064

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.	0.221	0.000										1.106
Casing Hole Diameter, Short Axis, in.	0.740	0.620										0.681
Casing Hole Diameter, Long Axis, in.	0.780	0.670										0.731
Average Casing Hole Diameter, in.	0.760	0.645										0.706
Total Depth, in.	6.750	5.375										6.308
Burr Height, in.	0.054	0.043										0.061

WITNESSING INFORMATION

Date of Notice of Intent to Test: July 25th 2003 Witnessed by: J. Smirnov J. Smirnov (API Certified)
 Other Activities Witnessed: Target Pouring _____ Briquette Preparation _____ Testing X Burr Height Measurement X Samples Taken: Concrete X Casing X

CERTIFICATION

I certify that these tests were made according to the procedures as outlined in API RP 19B: Recommended Practices for Evaluation of Well Perforators, First Edition, November 2000. 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, which would be furnished to perforate a well for any operator. The American Petroleum Institute neither endorses these test results nor recommends the use of the perforator system described.

X CERTIFIED BY DARIO BATTANZI Perforating Projects Manager Sept 24th 2003 Explosivos Tecnologicos Argentinos S.A. Ruta 25Km.13 Pilar- Bs.As. Argentina
 _____ RECERTIFIED _____ (Title) _____ (Date) _____ (Company) _____ (Address)