

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

Service Company Available to ALL Design Number \_\_\_\_\_  
 Explosive Weight 9 gm, HMX powder, Case Material Steel  
 Gun OD & Trade Name 1 11/6" Piranha Strip Gun  
 Max. Temp, °F 365 1 hr 3 hr 24 hr 100 hr 200 hr  
 Charge Name 1 11/16" Piranha Next Generation, HMX (DSC 02-09-03)  
 Maximum Pressure Rating 20.000 psi, Carrier Material Steel  
 Manufacturer Charge Part No. TG33HNG Date of Manufacture Sept 3rd 2002  
 Shot Density Tested \_\_\_\_\_ 6 \_\_\_\_\_ Shots/ft  
 Gun Type Trough Tubing Retrievable Strip Gun  
 Recommended Minimum ID for Running \_\_\_\_\_ 1.78 \_\_\_\_\_ in.  
 Phasing Tested 0 degrees, Firing Order X Top Down, \_\_\_\_\_ Bottom Up  
 Available Firing Mode \_\_\_\_\_ Selective, \_\_\_\_\_ X \_\_\_\_\_ Simultaneous  
 Debris Description Steel chips, Caps Retrieved With Strip  
 Debris Weight 66 gm/charge, Debris \_\_\_\_\_ \* \_\_\_\_\_ in<sup>3</sup>/charge  
 Remarks \* Debris fill in 4 1/2" 11.6#, 5 1/2" 17# casing is 0.075, 0.050 respectively per charge

**SECTION 1 - CONCRETE TARGET**

Casing Data 4 1/2" OD, Weight 11.6 lb/ft, L-80 API Grade, Date of Section 1 Test Nov 13<sup>th</sup> 2002  
 Target Data 35.375" OD, Amount of Cement 1530 lb., Amount of Sand 3060 lb., Amount of Water 795 lb.  
 Date of Compressive Strength Test Nov 12<sup>th</sup> 2002, Briquette Compressive Strength 8796 psi, Age of Target 36 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	0	0	0	0	0	0	0	0	0	0
Casing Hole Diameter, Short Axis, in..	0.210	0.225	0.220	0.224	0.220	0.220	0.212	0.219	0.230	0.230	0.230
Casing Hole Diameter, Long Axis, in. .	0.220	0.225	0.240	0.240	0.235	0.228	0.220	0.220	0.250	0.243	0.240
Average Casing Hole Diameter, in. ....	0.215	0.225	0.230	0.232	0.228	0.224	0.216	0.220	0.240	0.237	0.235
Total Depth, in. ....	20.143	16.268	16.518	16.768	19.268	17.018	17.768	18.018	17.768	18.768	19.268
Burr Height, in.....	0.012	0.005	0.020	0.018	0.010	0.018	0.012	0.008	0.030	0.030	0.050

  

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	0	0	0	0	0	0	0	0			0
Casing Hole Diameter, Short Axis, in..	0.220	0.217	0.220	0.215	0.230	0.223	0.215	0.220	0.234			0.222
Casing Hole Diameter, Long Axis, in. .	0.225	0.221	0.225	0.230	0.240	0.223	0.230	0.225	0.237			0.231
Average Casing Hole Diameter, in. ....	0.223	0.219	0.223	0.223	0.235	0.223	0.223	0.223	0.236			0.227
Total Depth, in. ....	20.268	19.768	17.268	18.268	19.768	18.768	18.018	17.518	16.768			18.199
Burr Height, in.....	0.015	0.019	0.020	0.030	0.012	0.014	0.008	0.010	0.000			0.017

**WITNESSING INFORMATION**

Date of Notice of Intent to Test: April 22th 2002 Witnessed by: Juan C. Valladares  
 Other Activities Witnessed: Target Pouring \_\_\_\_\_ Briquette: Preparation \_\_\_\_\_ Testing X Burr Height Measurements 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 \_\_\_\_\_ Perforating Projects Manager NOV 15<sup>th</sup> 2002 E.T.A. S.A. Ruta 25 Km 13 Pilar Bs. As. Argentina  
 \_\_\_\_\_ RECERTIFIED \_\_\_\_\_ (Company Official) (Title) (Date) (Company) (Address)