American Petroleum Institute

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

Service Company Available to all Design Number

Gun OD & Trade Name 4" Port Plug Gun, RDX

Charge Name 4" ETA JET EL (DSC 03-02-16)

Manufacturer Charge Part No. PG15RP Date of Manufacture Feb 05th 2003

Gun Type Port Plug Gun 4 SPF 90°

Phasing Tested 90 degrees, Firing Order X Top Down, ____ Bottom Up

Debris Description N/A

Remarks

Explosive Weight 22 gm, RDX powder, Case Material Steel

Max. Temp, °F 330 1 hr 305 3 hr 260 24 hr 230 100 hr ____ 200 hr

Maximum Pressure Rating 20.000 psi, Carrier Material Steel

Shot Density Tested 4 Shots/ft

Recommended Minimum ID for Running 5.00 in.

Available Firing Mode ____ Selective, ____ Simultaneous

Debris Weight N/A gm/charge, Debris N/A in^3/charge

SECTION 1 - CONCRETE TARGET

Casing Data 5 ½" OD, Weight 17 lb/ft, L-80 API Grade, Date of Section 1 Test March 10th 2003

Target Data 70" OD, Amount of Cement 5780 lb., Amount of Sand 11560 lb., Amount of Water 3006 lb.

Date of Compressive Strength Test March 10th 2003, Briquette Compressive Strength 5762 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.	0.00	0.405	0.892	0.405	0.00	0.405	0.892	0.405	0.00	0.405	0.892
Casing Hole Diameter, Short Axis, in.	0.385	0.382	0.381	0.390	0.410	0.370	0.362	0.385	0.362	0.378	0.370
Casing Hole Diameter, Long Axis, in.	0.402	0.390	0.383	0.395	0.418	0.401	0.390	0.392	0.382	0.394	0.372
Average Casing Hole Diameter, in.	0.394	0.386	0.382	0.393	0.414	0.386	0.376	0.389	0.372	0.386	0.371
Total Depth, in.	29.572	26.822	31.822	29.572	25.822	27.322	31.572	31.822	26.322	30.510	27.322
Burr Height, in.	0.060	0.092	0.066	0.055	0.028	0.041	0.085	0.050	0.047	0.049	0.030

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.	0.405	0.00	0.405									0.394
Casing Hole Diameter, Short Axis, in.	0.380	0.383	0.372									0.379
Casing Hole Diameter, Long Axis, in.	0.382	0.385	0.377									0.390
Average Casing Hole Diameter, in.	0.381	0.384	0.375									**0.385**
Total Depth, in.	30.697	25.072	28.572									28.773
Burr Height, in.	0.038	0.034	0.052									0.052

WITNESSING INFORMATION

Date of Notice of Intent to Test: Jan 03rd 2003 Witnessed by: J. Smirnoff (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 ____ RECERTIFIED	DARIO E. LATTANZIO GERENTE DE PROYECTOS PERFORATING PROJECTS MANAGER	Perforating Projects Manager (Title)	03/12/2003 (Date)	Explosivos Tecnológicos Argentinos S.A. (Company)	Ruta 25Km.13 Pilar- Bs.As. Argentina (Address)

E.T.A. S.A.