



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

Service Company AVAILABLE TO ALL FROM OWEN OIL TOOLS Explosive Weight 13.9 gm, HMX powder, Case Material STEEL  
 Gun OD & Trade Name 2 1/8" 0 DEGREE SHOGUN RAPTOR Max. Temp, °F 400 1 hr 3 hr 24 hr 100 hr 200 hr  
 Charge Name 2 1/8" SHOGUN RAPTOR HMX Maximum Pressure Rating 20,000 psi, Carrier Material STEEL  
 Manufacturer Charge Part No. STP-2125-401NTX Date of Manufacture 15-SEP-2003 Shot Density Tested 6 Shots/ft  
 Gun Type WIRELINE THROUGH TUBING STRIP, SEMI-EXPENDABLE Recommended Minimum ID for Running 2.18 in.  
 Phasing Tested 0 degrees, Firing Order X Top Down,      Bottom Up Available Firing Mode      Selective, X Simultaneous  
 Debris Description N/A Debris Weight N/A gm/charge, Debris N/A in<sup>3</sup>/charge  
 Remarks THE 2 1/8" SHOGUN SYSTEM INCLUDES 4 OR 6 SPF, 0 PHASE STRIP, +/- 45 DEGREE STRIP, PHASEABLE LINK, AND SPIRAL PHASED (60° & 40°) RETRIEVABLE STRIP.

**SECTION 1 - CONCRETE TARGET**

Casing Data 5.5 OD, Weight 17.0 lb/ft, L-80 API Grade, Date of Section 1 Test 6-NOV-2003  
 Target Data 96 OD, Amount of Cement 8435 lb., Amount of Sand 16970 lb., Amount of Water 4379 lb.  
 Date of Compressive Strength Test 6-NOV-2003, Briquette Compressive Strength 9105 psi, Age of Target 267 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Casing Hole Diameter, Short Axis, in.....	0.26	0.26	0.25	0.26	0.26	0.25	0.25	0.26	0.26	0.25	0.27
Casing Hole Diameter, Long Axis, in.....	0.26	0.26	0.27	0.26	0.27	0.27	0.27	0.26	0.26	0.25	0.27
Average Casing Hole Diameter, in.....	0.26	0.26	0.26	0.26	0.27	0.26	0.26	0.26	0.26	0.25	0.27
Total Depth, in.....	24.80	23.80	23.80	21.30	22.30	25.30	26.30	25.80	23.80	22.30	22.30
Burr Height, in.....	0.02	0.02	0.03	0.02	0.02	0.01	0.02	0.02	0.01	0.01	0.02

  

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.....	0.00											0.00
Casing Hole Diameter, Short Axis, in.....	0.24											0.26
Casing Hole Diameter, Long Axis, in.....	0.25											0.26
Average Casing Hole Diameter, in.....	0.25											0.26
Total Depth, in.....	22.80											23.72
Burr Height, in.....	0.03											0.02

**WITNESSING INFORMATION**

Date of Notice of Intent to Test: October 27, 2003 Witnessed by: Ed Langford  
 Other Activities Witnessed: Target Pouring      Briquette: Preparation      Testing      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 Donnell Pratt VICE PRESIDENT - ENGINEERING 11-07-03 OWEN OIL TOOLS 12001 County Road 1000 Godlev, TX, USA 76044  
 RECERTIFIED (Company Official) (Title) (Date) (Company) (Address)