# 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**
- **Halliburton Energy Services**

**Gun OD & Trade Name**
- 4.625 SFP 72 Deg Phase MaxForce Gun

**Charge Name**
- 390 MaxForce

**Manufacturer Charge Part No.**
- 102654947

**Date of Manufacture**
- 5Jul11-6Jul11

**Gun Type**
- **Hollow Steel Carrier**

**Phasing Tested**
- 72 degrees, Firing Order: Top down, Bottom up

**Debris Description**
- Small steel fragments

**Remarks/Exceptions per Section 1.11**

<table>
<thead>
<tr>
<th>Casing Data</th>
<th>Target Data</th>
<th>Date of Compressive Strength Test</th>
<th>Briquette Compressive Strength</th>
<th>Amount of Sand</th>
<th>Date of Section 1 Test</th>
<th>September 9, 2011</th>
<th>Amount of Water</th>
<th>Age of Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.0 OD</td>
<td>144 OD</td>
<td>September 9, 2011</td>
<td>5513 psi</td>
<td>49702</td>
<td>13013 lb</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Weight**
- 32 lb/ft

**API Grade**
- L-80

**Debris Weight**
- n/a gm/charge, n/a in³/charge

**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.**
- No 1, No 2

**Casing Hole Diameter, Short Axis, in.**
- 33

**Casing Hole Diameter, Long Axis, in.**
- 34

**Average Casing Hole Diameter, in.**
- 34

**Total Depth, in.**
- 55.0

**Burr Height, in.**
- 0.1

**Shot No.**
- No 12, No 13, No 14, No 15, No 16, No 17, No 18, No 19, No 20, No 21, No 22

**Clearance, in.**
- No 12

**Casing Hole Diameter, Short Axis, in.**
- 34

**Casing Hole Diameter, Long Axis, in.**
- 35

**Average Casing Hole Diameter, in.**
- 35

**Total Depth, in.**
- 57.4

**Burr Height, in.**
- 0.05

**Remarks**

**Manufacturer's Certification**

- **Type of Certification:**
  - Self Allan Pettigrew- QSD, 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**
- Tony L. Wilson (Company Official)

**Technology Team Load**
- 9/26/2011

**Jet Research Center**
- 8432 South I-35 West, Alvarado, Texas 76009

**Name of test as it should appear on website:**
- 4.58" 5 SFP 72 Deg Ph w 390 MaxForce, 39 gm, HMX

**Name of test as it appears on application and application date:**
- 4.625" 5 SFP 72 Deg Vann Gun System w 390 MaxForce, HMX, 39.0 gram August 22,2011