**Registered Data Sheet Perforating System Evaluation, API RP 19B Section 1**

**API Form 19B-Section 1**
- **Service Company**: Halliburton Energy Services
- **Gun OD & Trade Name**: 4 5/8" 5 SPF 72 Deg Ph MaxForce Gun System
- **Charge Name**: 4 5/8" 5 SPF Millennium II
- **Manufacturer Charge Part No.**: 101702911
- **Date of Manufacture**: 12Aug08
- **Gun Type**: Scalloped Hollow Steel Carrier
- **Phasing Tested**: 72 degrees
- **Firing Order**: Top down Bottom up
- **Debris Description**: Small Steel Fragments

**Remarks/Exceptions per Section 1.11**
- Explosive weight: 39 gm, HMX powder
- Max Temp, °F: 400
- Maximum Pressure Rating: 20,000 psi
- Shot Density Tested: 5 shots/ft
- Recommended Minimum ID for Running: in.

**Casing Data**

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**Average**

- Clearance, in.: 0.69
- Casing Hole Diameter, Short Axis, in: 0.40
- Casing Hole Diameter, Long Axis, in: 0.44
- Average Casing Hole Diameter, in.: 0.42
- Total Depth, in.: 53.19
- Burr Height, in.: 0.07

**Remarks**
- every

**Manufacturer's Certification**

- Type of Certification: Self
- **Truda Stevens - QSD**

**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.**

**CERTIFIED BY**

- Technology Team Lead
- Jet Research Center
- 8432 S 35 West, Alvarado, Texas 76099

**RECERTIFIED**

- Company Official
- Title
- Date
- Company
- Address

**Name of test as it should appear on website:** 4 5/8" 5 SPF w Millennium II, HMX, 39 gm

**Name of test as it appears on application and application date:** 4 5/8" 5 SPF 72 Deg Ph Gun System w/MaxForce, 39 gm, HMX August 13, 2008