



## 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 Available to all companies. Manufactured by ZAC Perforating    Explosive weight 21 gm, RDX powder,    Case Material STEEL

Gun OD & Trade Name 4 5/8" HIGH SHOT DENSITY GUN DP RDX    Max Temp, °F 330°F    1 hr    3 hr    24 hr    100 hr    200 hr

Charge Name 21 grams RDX DP    Maximum Pressure Rating 20000 psi,    Carrier Material STEEL

Manufacturer Charge Part No. TC41R P    Date of Manufacture 02/06/2015    Shot Density Tested 12    Shots/ft \_\_\_\_\_

Gun Type TCP and Wireline Hollow Carrier, Non Reusable    Recommended Minimum ID for Running \_\_\_\_\_ in.

Phasing Tested 135° degrees,    Firing Order: X Top down    Bottom up    Available Firing Mode: \_\_\_\_\_ Selective X    Simultaneous

Debris Description Steel pieces remains inside the gun.    Debris Weight N/A gm/charge,    Debris N/A in<sup>3</sup>/charge

Remarks/Exceptions per Section 1.11 \_\_\_\_\_

Casing Data 7" OD,    Weight 32 lb/ft,    API Grade, L-80    Date of Section 1 Test 05/18/2015

Target Data 82" OD,    Amount of Cement 4865 lb,    Amount of Sand 9730 lb,    Amount of Water 2530 lb.

Date of Compressive Strength Test 05/18/2015    Briquette Compressive Strength 6105 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.	0.000	1.209	0.645	0.171	1.469	0.171	0.645	1.209	0.000	1.209	0.645
Casing Hole Diameter, Short Axis, in	0.410	0.370	0.380	0.420	0.400	0.390	0.410	0.380	0.410	0.370	0.390
Casing Hole Diameter, Long Axis, in	0.420	0.410	0.400	0.420	0.420	0.410	0.420	0.400	0.410	0.400	0.400
Average Casing Hole Diameter, in.	0.415	0.390	0.390	0.420	0.410	0.400	0.415	0.390	0.410	0.385	0.395
Total Depth, in.	33.453	31.953	29.453	30.453	30.453	LOST	31.953	30.453	LOST	29.453	34.453
Burr Height, in.	0.083	0.038	0.065	0.078	0.094	0.043	0.103	0.102	0.079	0.054	0.059

  

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.	0.171	1.469	0.171	0.645	1.209	0.000	1.209	0.645				XXXXXX
Casing Hole Diameter, Short Axis, in	0.420	0.380	0.410	0.360	0.400	0.420	0.370	0.400				0.394
Casing Hole Diameter, Long Axis, in	0.430	0.390	0.420	0.410	0.410	0.420	0.380	0.420				0.410
Average Casing Hole Diameter, in.	0.425	0.385	0.415	0.385	0.405	0.420	0.375	0.410				0.402
Total Depth, in.	31.453	30.953	32.453	33.453	33.453	34.453	31.953	30.453				31.806
Burr Height, in.	0.042	0.090	0.063	0.088	0.110	0.091	0.081	0.074				0.076

### Manufacturer's Certification

Type of Certification: \_\_\_\_\_ Self    Carlos Caste API W 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 Carlos Gustavo Torre Ramirez Presidente    ZAC PERFORATING S.A. de C.V. Carretera Zacatecas/Salttillo; Concepción del Oro, México

\_\_\_\_ RECERTIFIED \_\_\_\_\_ (Company Official)    \_\_\_\_\_ (Title)    \_\_\_\_\_ (Date)    \_\_\_\_\_ (Company)    \_\_\_\_\_ (Address)

Name of test as it should appear on website: 4 5/8" High Shot Density Gun, 21grams RDX DP

Name of test as it appears on application and application date: TC41R P - 21 Grams RDX DP