

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

					MX DP	Grams H	TC41H ExTrA! - 21 Grams HMX DP		and application date	ors on application	Name of test as it appears on application and application date:
				A! DP	21grams HMX ExTrA! DP	21grams	7000	High Shot Density Gun,	3 1/8"	d appear on website:	Name of test as it should
	(Address)		(Company)		(Date)		(Title)		0	worken !	RECERTIFIED
del Oro, México	Carretera Zacatecas/Saltillo; Concepción del Oro, México	ZAC PERFORATING S.A. de C.V.	ORATING :	ZAC PERF	11/27/2013	11	Presidente		tovo Tories Ramires	Carlos Guetavo	X CERTIFIED BY
))	perpenancy system described	use of the perior	nor recommends the use of the
these tests	to perforate a well for any operator. API neither endorses these tests	perforate a well fo	furnished to	nt that would be	the equipme	the same as	Substantially	erefore will be	trons stock and the	osen at random	the equipment was chosen at random took stock and therefore will be substantially the same as the equipment that would be furnished
uipment used Furthermore,	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,	forators, Second I ested and was not	on of Well Peri	ice for Evaluation for the use in the	mended Praci	19B: Recomi	tlined in API	bedures as ou	ccording to the pro-	s were made ac	I certify that these test in these tests, such as
						V	hirdbarry	Jorge Smimoff APIW Third Party	Self Jorg		Type of Certification:
							1	THE STATE OF THE S	W	Certification	Manufacturer's Cer
									,		Remarks
0.016			0.017	0.012	0.012	0.021	0.015	0.013	0.017		Burr Height, in
41.097			41.750	40.250	39.750	40.000	42.000	42.250	43.000		Total Depth, in
0.407			0.400	0.390	0.380	0.405	0.420	0.420	0.430	Diameter, in.	Average Casing Hole Diameter, in.
0.416			0.410	0.400	0.390	0.410	0.430	0.420	0.440	Long Axis, in	Casing Hole Diameter, Long Axis, in
0.397			0.390	0.380	0.370	0.400	0.410	0.420	0.420	Short Axis, in	Casing Hole Diameter, Short Axis, in
XXXXXX			0.183	0.620	0.875	0.620	0.183	0.000	0.183		Clearance, in
Average	No 20 No 21 No 22	No 19	No 18	No 17	No 16	No 15	No 14	No 13	No 12		Shot No
					*			4			
	0.018	0.015 0.021	0.014	0.017	0.014	0.022	0.018	0.019	0.011		Burr Height, in
	38.750 40.500 43.500	40.000 38.	41.500	43.000	42.750	37.000	40.500	39.750	43.500		Total Depth, in
	0.395 0.415	0.420 0.405	0.405	0.415	0.415	0.375	0.400	0.425	0,405	liameter, in.	Average Casing Hole Diameter, in.
	20 0.400 0.440	0.440 0.420	0.410	0.420	0.420	0.390	0.400	0.430	0.420	Long Axis, in	Casing Hole Diameter, Long Axis, in
	0.390	0.400 0.390	0.400	0.410	0.410	0.360	0.400	0.420	0.390	Short Axis, in	Casing Hole Diameter, Short Axis, in
	0.875 0.620	0.183 0.620	0.000	0.183	0.620	0.875	0.620	0.183	0.000	***************************************	Clearance, in
	No 9 No 10 No 11	No 8	No 7	No 6	No 5	No 4	No 3	No 2	No 1		Shot No.
days	jet32	Age of Target	psi,	6158	e Strength	Briquette Compressive Strength	Briquett	013	11/27/2013	trength Test	Date of Compressive Strength Test
lb.	Amount of Water 6310	lb, Am		5ånd 24280	Amount of Sand	lb,	12140	Amount of Cement 1	OD, Amour		Target Data 110"
	2013	ection 1 Test 11/26/2013	Date of Sect	L-80	API Grade, L-80	lb/ft,		11,6	OD, Weight 11,6		Casing Data 4 1/2"
										er Section 1.11	Remarks/Exceptions per Section 1.11
in ⁷ /charge	is N/A	gm/charge, Debris	9		Debris Weight N/A	Debris			Steel pieces remains inside the gun.	eel pieces rema	Debris Description St
Simultaneous				e: X	Available Firing Mode: X		Bottom up	Top down	Firing Order: X	degrees,	Phasing Tested 60°
i j			ing	num ID for Running	Recommended Minimum			usable	TCP and Wireline Hollow Carrier, Non Reusable	Vireline Hollow	Gun Type TCP and
	Shots/ft			6	Shot Density Tested	Shot D	09/20/2013	Date of Manufacture 09/20/2013	•	art No. TC41H E	Manufacturer Charge Part No. TC41H Extra
	Carrier Material STEEL	psi, Carrier Ma		ating 20000	Maximum Pressure Rating	Maxim			OP P	21grams HMX ExTrA! DP	Charge Name 21gra
200 hr	24 hr 100 hr	3 hr	1 hr			Max Temp,		Extra DP	3 1/8" HIGH SHOT DENSITY GUN Extra DP	3 1/8" HIGH SH	
	Case Material STEEL	powder,	gm, HMX		Explosive weight 21	Explos	forating	ed by ZAC Per	Available to all companies. Manufactured by ZAC Perforating	ailable to all com	Service Company Av
		W	xceptions below	Special Test - See Remarks/Exceptions b	pecial Test -		ection 1	irements of S	Conforms to All Requirements of Section	Z	API Form 19B-Section 1
Committee of the Commit			THE RESIDENCE OF THE PARTY OF T			THE PERSON NAMED IN COLUMN NAM	The state of the s		schoolscanning commission and the second	SURFICION SURFIC	The second secon