

# RODSTAR 3.6.31

Company: Sandia Data

Well: Well 3

Disk file: Sandia Data Well 3 (ROTO).rsdx

Comment: Test Number: 03. Test Date Feb. 1996

Theta Oilfield Services, Inc.

(gotheta.com)

Norris/AOT DAL

432-561-8101

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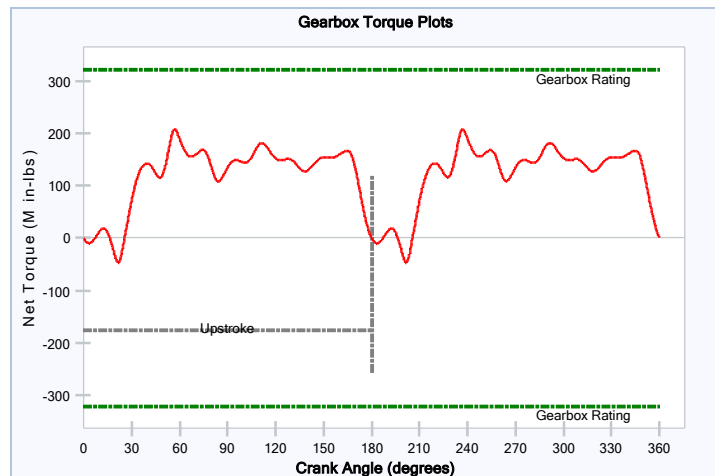
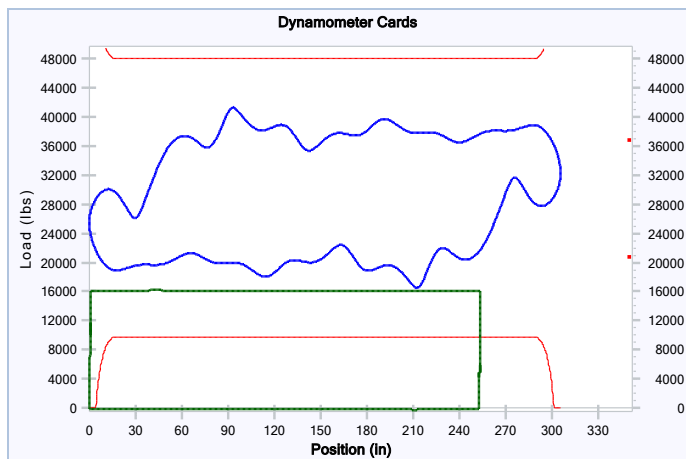
User: Scott Malone 432-559-2005

Date: 8/1/2014

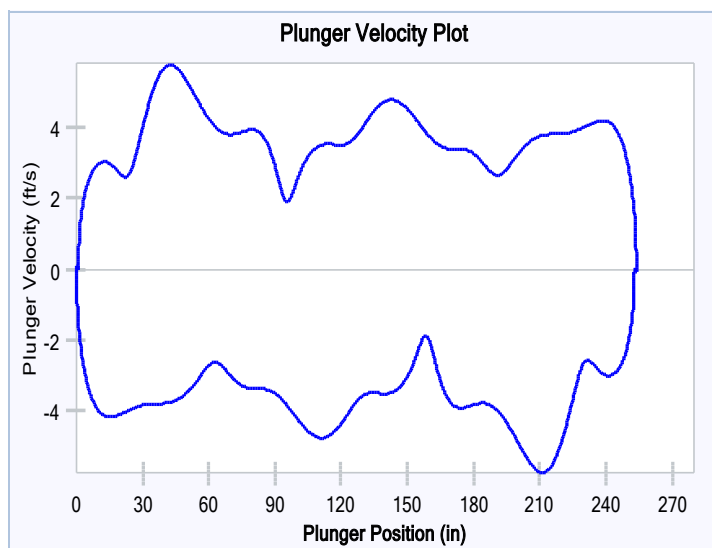
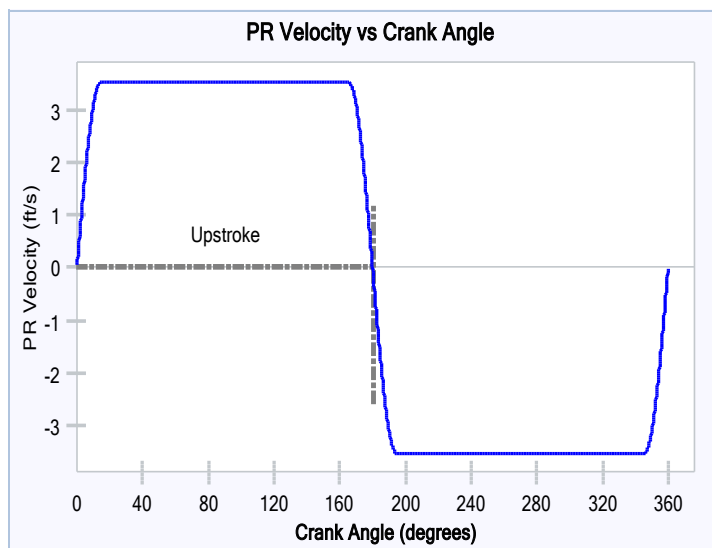
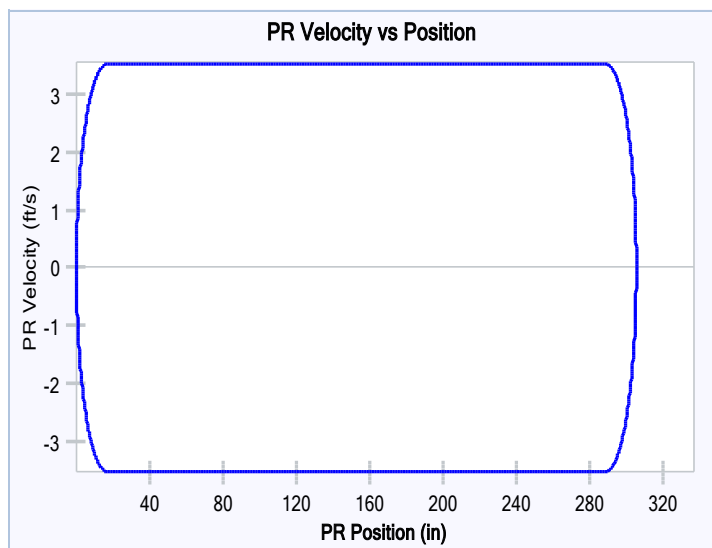
INPUT DATA					CALCULATED RESULTS				
Strokes per minute:	3.9	Fluid level			Production rate (bfpd):	495	Peak pol. pod load (lbs):	41229	
Run time (hrs/day):	24.0	(ft from surface):	9140		Oil production (BOPD):	49	Min. pol. rod load (lbs):	16493	
Tubing pres. (psi):	40	(ft over pump):	80		Strokes per minute:	3.9	MPRL/PPRL:	0.4	
Casing pres. (psi):	40	Stuf.box fr. (lbs):	100		System eff. (Motor->Pump):	62%	Unit struct. loading:	82%	
		Pol. rod. diam.	1.25"		Permissible load HP:	116.8	PRHP / PLHP:	0.38	
Fluid Properties		Motor & Power Meter			Fluid load on pump (lbs):	15954	Buoyant rod weight (lbs):	20804	
Water cut:	90%	Power meter	Detent		Fluid level tvd (ft from surface):	9140	N/No: .145 , Fo/SKr: .275		
Water sp. gravity:	1.03	Elect. cost:	\$ .06/KWH		Polished rod HP:	44.8			
Oil API gravity:	34.0	Type:	NEMA D		Required prime mover size		BALANCED		
Fluid sp. gravity:	1.0125				(speed var. not included)		(Min Torq)		
Pumping Unit: Rotaflex (1100)					NEMA D motor:	75 HP			
API Size: R-320-500-306 (Unit ID: R14)					Single/double cyl. engine:	60 HP			
Crank hole number:	# 1 (out of 1)				Multicylinder Engine:	75 HP			
Calculated stroke length (in):	305.7				Torque analysis and electricity consumption		BALANCED		
Crank rotation with well to right:	CCW						(Min Torq)		
Max. cb weight (M lbs):	Unknown				Peak g'box torq. (M in-lbs):	207			
					Gearbox loading:	64.8%			
					Cyclic load factor:	1.128			
					Counterbalance weight (M lbs):	28.86			
					Daily electr. use (Kwh/Day):	968			
					Monthly electric bill:	\$1771			
					Electr. cost per bbl fluid:	\$0.117			
					Electr. cost per bbl oil:	\$1.174			
Tubing And Pump Information					Tubing, Pump And Plunger Calculations				
Tubing O.D. (in):	2.875	Upstr. rod-fl. damp. coeff.:	0.100		Tubing stretch (in):	.9			
Tubing I.D. (in):	2.441	Dnstr. rod-fl. damp. coeff.:	0.100		Prod. loss due to tubing stretch (bfpd):	1.7			
Pump depth (ft):	9220	Tub. anch. depth (ft):	8968		Gross pump stroke (in):	253.8			
Pump conditions:	Full				Pump spacing (in. from bottom):	46.2			
Pump type:	Insert	Pump vol. efficiency:	85%		Minimum pump length (ft):	39.0			
Plunger size (in):	2.25	Pump friction (lbs):	200.0		Recommended plunger length (ft):	6.0			
Rod string design					Rod string stress analysis (service factor: 1)				
Diameter (inches)	Rod Grade	Length (ft)	Min. Ten. Str. (psi)	Fric. Coeff	Stress Load %	Top Maximum Stress (psi)	Top Minimum Stress (psi)	Bot. Minimum Stress (psi)	# Guides/Rod
+ 1	D (API)	3370	115000	0.3	160.1%	52367	21127	12123	0
0.875	D (API)	4300	115000	0.3	154.6%	49341	15143	1803	0
+ 1	D (API)	1550	115000	0.3	85.4%	24461	-138	-255	0

+requires slimhole couplings.

NOTE: Displayed bottom minimum stress calculations do not include buoyancy effects (top minimum and maximum stresses always include buoyancy).



## VELOCITY PLOTS



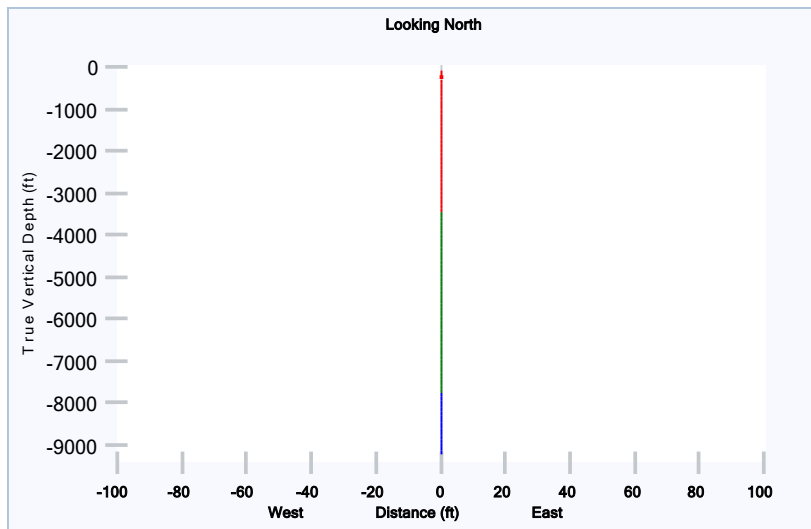
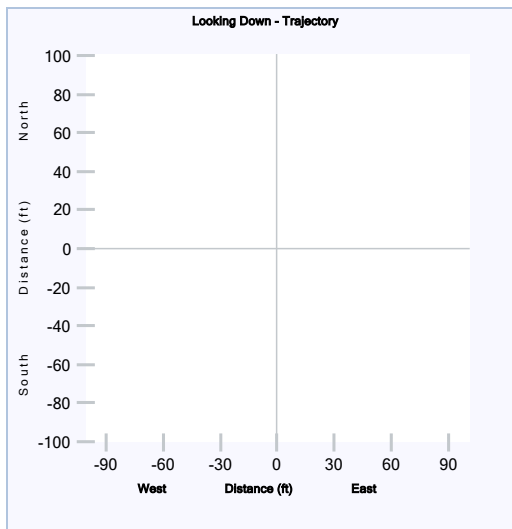
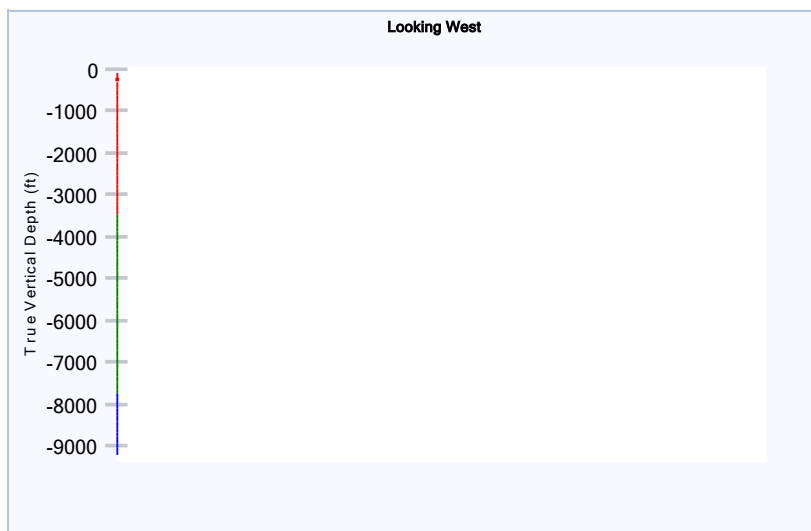
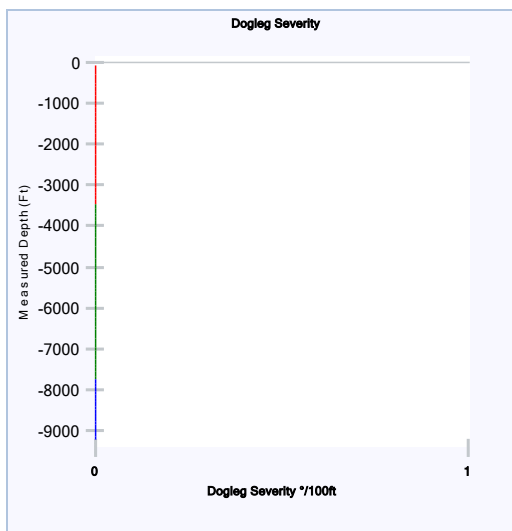
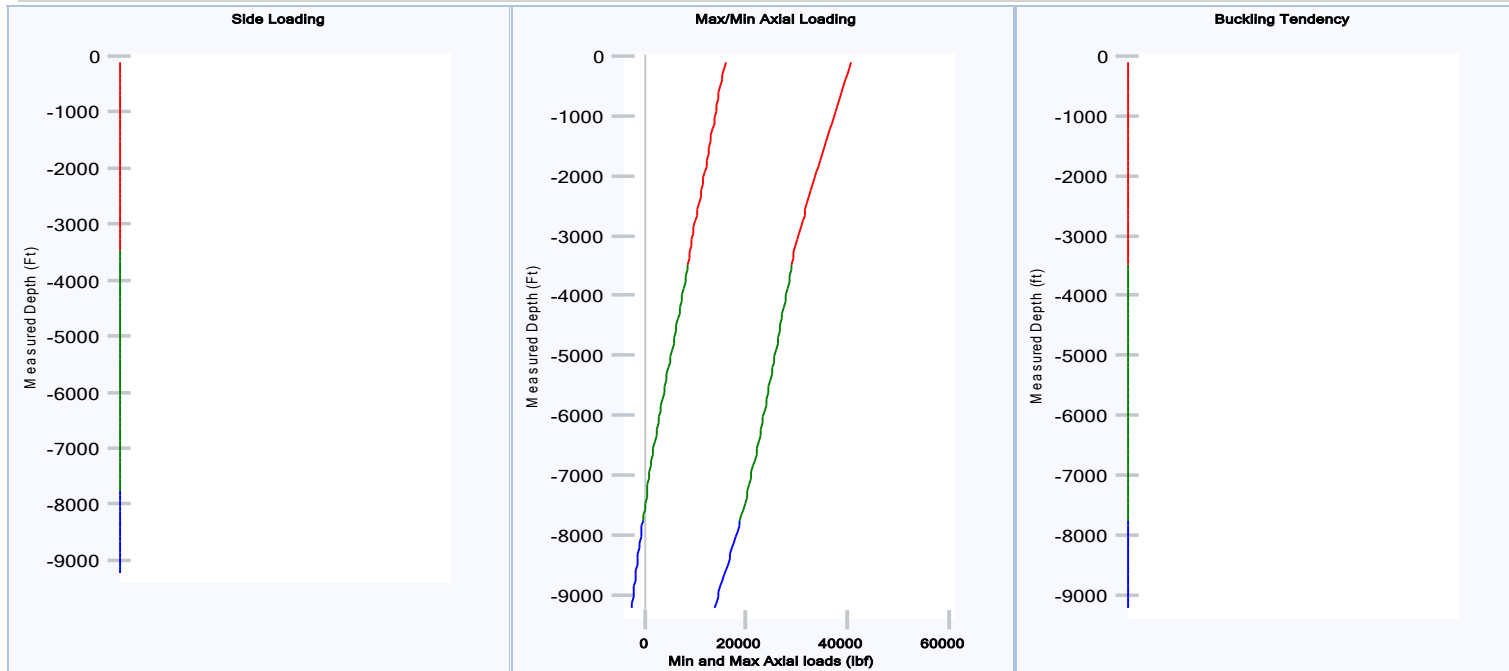
Maximum Upstroke Polished Rod Velocity (ft/s) : 3.519

Maximum Downstroke Polished Rod Velocity (ft/s) : 3.519

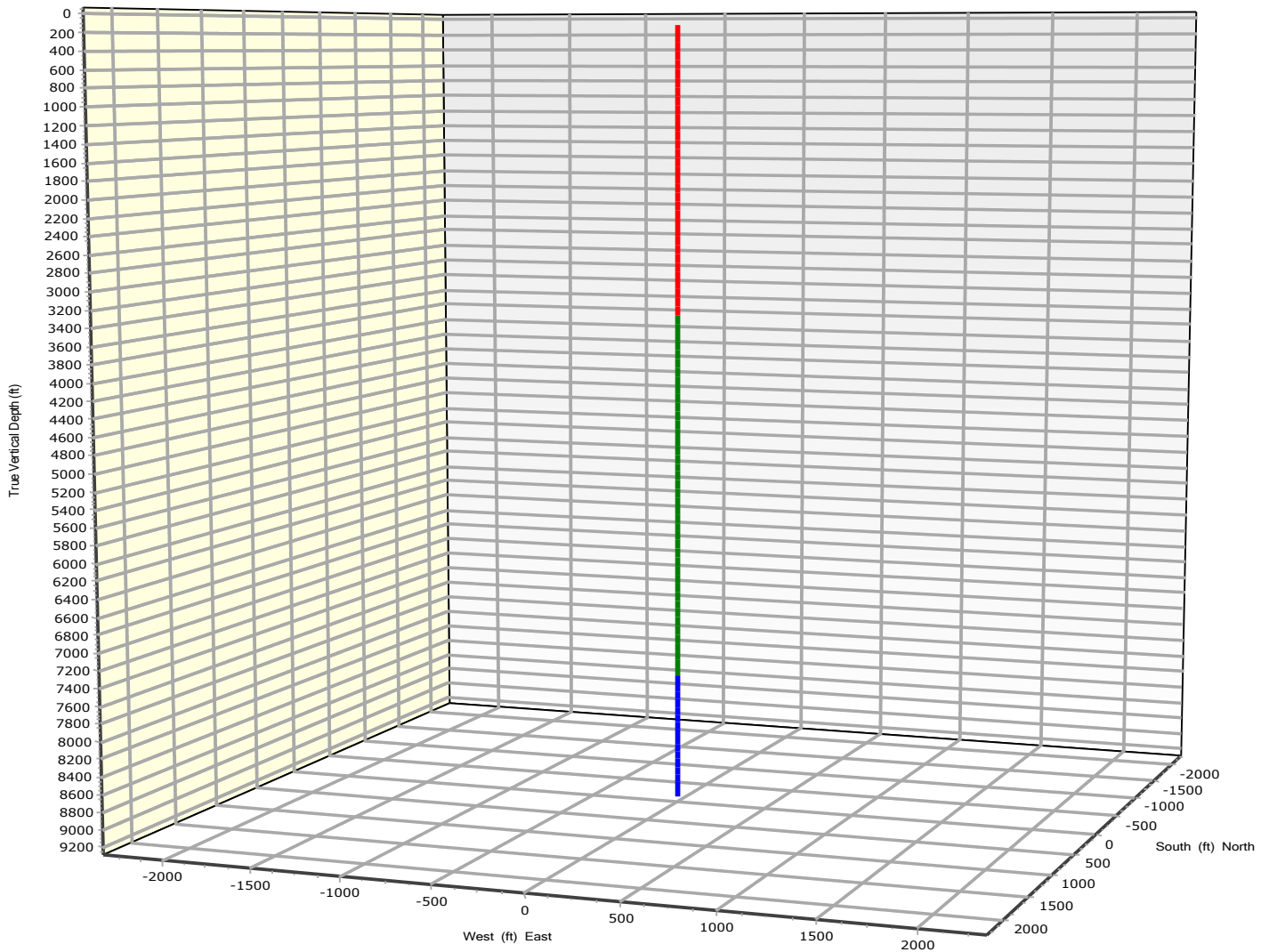
Maximum Upstroke Plunger Velocity (ft/s) : 5.721

Maximum Downstroke Plunger Velocity (ft/s) : 5.721

## DEVIATION SURVEY PLOT



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Rod Diameters 1" 7/8" 1"

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**MEASURED DEVIATION SURVEY**

MD (ft)	Inclination (°)	Azimuth (°)	Dogleg sev. °/100ft	TVD (ft)	N-S (ft)	E-W (ft)
0	0	0	0	0	0	0
2000	0	0	0	2000	0	0
4000	0	0	0	4000	0	0
9000	0	0	0	9000	0	0
11000	0	0	0	11000	0	0