

30-015-37215

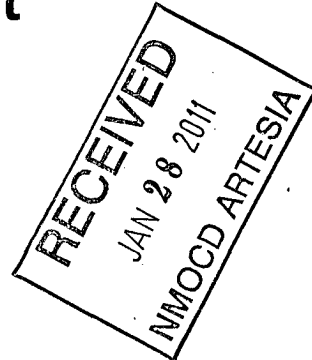
EOG

Sand Tank Bone Springs
Eddy County, NM
Sand Tank 1 Federal Com #3H
VH - Job #32K1010835

Survey: Actual

SDI Standard Survey Report

14 November, 2010



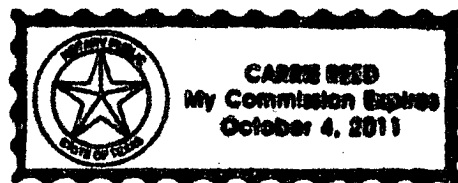
This survey is correct to the best of my knowledge and is supported by actual field data.

[Signature]

Notorized this date 16th of November, 2010.

[Signature]

Notary Signature
County of Midland
State of Texas



[Handwritten initials]

Scientific Drilling International, Inc.
SDI Standard Survey Report

Company:	EOG	Local Co-ordinate Reference:	Well Sand Tank 1 Federal Com #3H
Project:	Sand Tank Bone Springs	TVD Reference:	WELL @ 0.0usft (Original Well Elev)
Site:	Eddy County, NM	MD Reference:	WELL @ 0.0usft (Original Well Elev)
Well:	Sand Tank 1 Federal Com #3H	North Reference:	Grid
Wellbore:	VH - Job #32K1010835	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #32K1010835	Database:	EDM-Regulatory

Project	Sand Tank Bone Springs		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	Eddy County, NM		
Site Position:		Northing:	644,234.28 usft
From:	Lat/Long	Easting:	596,328.98 usft
Position Uncertainty:	0.0 usft	Slot Radius:	0"
		Latitude:	32° 46' 14.521 N
		Longitude:	104° 1' 11.785 W
		Grid Convergence:	0.17 °

Well	Sand Tank 1 Federal Com #3H, Directional (Pathfinder)		
Well Position	+N/-S	0.0 usft	Northing: 644,234.28 usft
	+E/-W	0.0 usft	Easting: 596,328.98 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft
		Latitude:	32° 46' 14.521 N
		Longitude:	104° 1' 11.785 W
		Ground Level:	0.0 usft

Wellbore	VH - Job #32K1010835		
Magnetics	Model Name	Sample Date	Declination
	BGGM2010	10/27/2010	(°) 7.98
			Dip Angle (°) 60.64
			Field Strength (nT) 49,021

Design	VH - Job #32K1010835		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction (°) 270.99

Survey Program	Date 11/14/2010		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
100.0	3,289.7	Actual (VH - Job #32K1010835)	Keeper
			Description: Keeper Surface Readout Gyro

Survey							
Measured Depth	Inclination	Azimuth	True Vertical	North/South	East/West	Closure Azimuth	Closure Distance
(usft)	(°)	(°)	Depth	(usft)	(usft)	(°)	(usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.0
100.0	1.15	280.85	100.0	0.2	-1.0	280.85	1.0
200.0	0.93	317.54	200.0	1.0	-2.5	291.19	2.7
300.0	0.52	293.44	300.0	1.8	-3.5	296.75	3.9
400.0	0.44	282.00	400.0	2.0	-4.3	295.25	4.7
500.0	0.45	293.22	500.0	2.3	-5.0	294.19	5.5
600.0	0.45	303.17	600.0	2.6	-5.7	294.68	6.3
700.0	0.44	305.03	700.0	3.1	-6.3	295.72	7.0
800.0	0.45	325.56	800.0	3.6	-6.9	297.62	7.8
900.0	0.45	2.09	900.0	4.3	-7.1	301.34	8.3
1,000.0	0.67	37.04	999.9	5.2	-6.7	307.59	8.5
1,100.0	0.89	40.54	1,099.9	6.2	-5.9	316.74	8.6

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SDI Standard Survey Report

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Site:	Eddy County, NM	MD Reference:	WELL @ 0.0usft (Original Well Elev)
Well:	Sand Tank 1 Federal Com.#3H	North Reference:	Grid
Wellbore:	VH - Job #32K1010835	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #32K1010835	Database:	EDM-Regulatory

Survey							
Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)
1,200.0	1.00	51.81	1,199.9	7.4	-4.7	327.59	8.7
1,300.0	0.99	42.66	1,299.9	8.5	-3.4	338.27	9.2
1,400.0	0.76	43.78	1,399.9	9.7	-2.4	346.27	9.9
1,500.0	0.76	40.95	1,499.9	10.6	-1.5	352.15	10.7
1,600.0	0.56	52.92	1,599.9	11.4	-0.6	356.79	11.4
1,700.0	0.76	48.24	1,699.9	12.2	0.2	1.15	12.2
1,800.0	0.57	51.18	1,799.9	12.9	1.1	4.98	13.0
1,900.0	0.68	43.28	1,899.9	13.7	1.9	8.00	13.8
2,000.0	0.65	23.98	1,999.9	14.6	2.6	9.93	14.8
2,100.0	0.58	34.25	2,099.9	15.5	3.1	11.18	15.8
2,200.0	0.46	49.34	2,199.8	16.2	3.7	12.72	16.6
2,300.0	0.28	35.82	2,299.8	16.7	4.1	13.84	17.2
2,400.0	0.29	50.63	2,399.8	17.0	4.4	14.63	17.6
2,500.0	0.21	49.50	2,499.8	17.3	4.8	15.44	18.0
2,600.0	0.10	134.58	2,599.8	17.4	5.0	16.00	18.1
2,700.0	0.02	184.42	2,699.8	17.3	5.0	16.26	18.0
2,800.0	0.08	117.42	2,799.8	17.3	5.1	16.49	18.0
2,900.0	0.12	105.23	2,899.8	17.2	5.3	17.04	18.0
3,000.0	0.17	150.82	2,999.8	17.0	5.4	17.72	17.9
3,100.0	0.26	134.29	3,099.8	16.7	5.7	18.73	17.7
3,200.0	0.49	180.13	3,199.8	16.2	5.8	19.86	17.2
3,289.7	0.64	179.99	3,289.6	15.3	5.8	20.91	16.4



Scientific Drilling
Directional Drilling Operations

Project: Sand Tank Bone Springs
Eddy County, NM
Well: Sand Tank 1 Federal Com #3H
Wellbore: VH - Job #32K1010835
Design: VH - Job #32K1010835

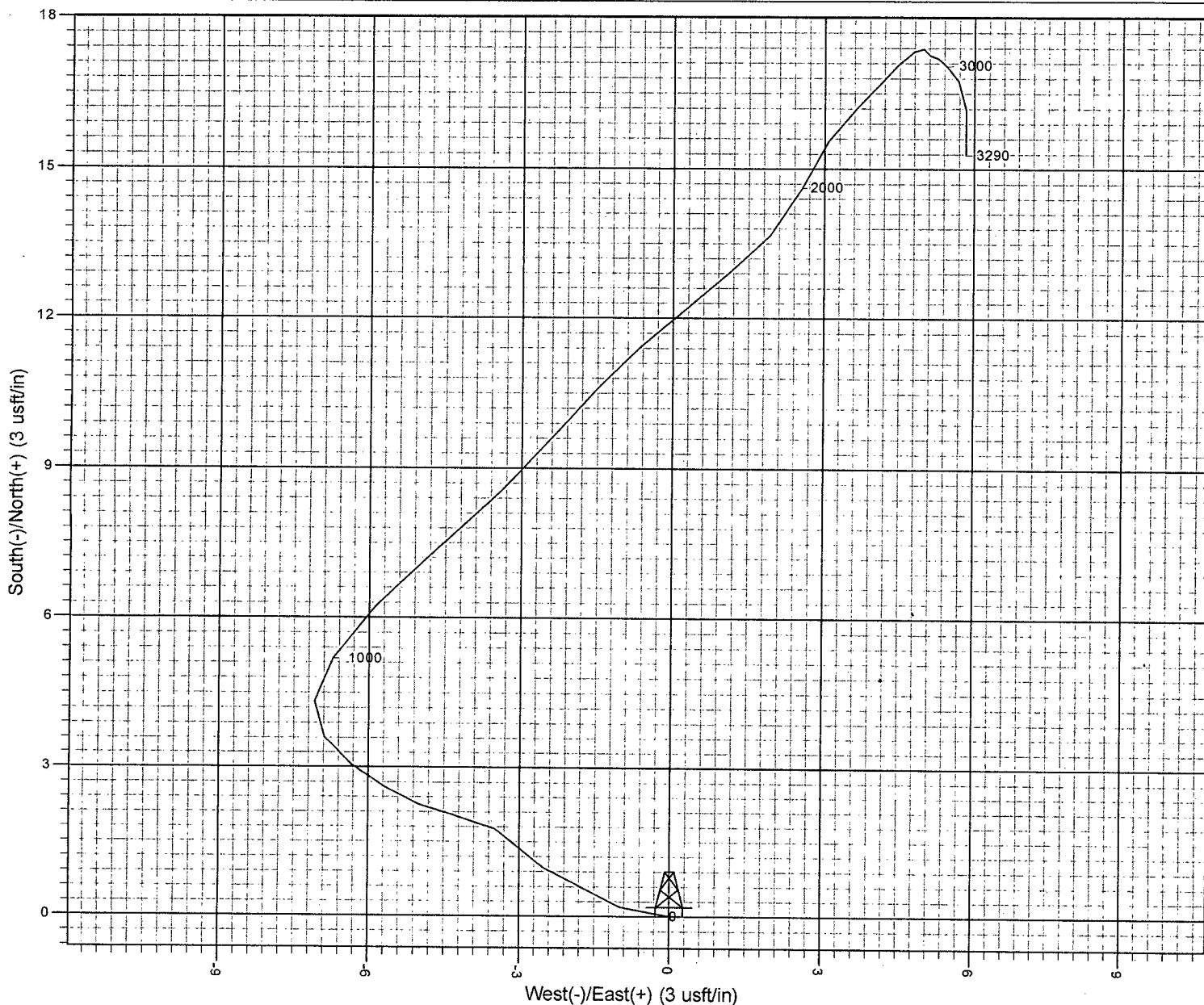


Azimuths to Grid North
True North: -0.17°
Magnetic North: 7.80°

Magnetic Field
Strength: 49020.7snT
Dip Angle: 60.64°
Date: 10/27/2010
Model: BGGM2010

WELL DETAILS: Sand Tank 1 Federal Com #3H
WELL @ 0.0usft (Original Well Elev)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	644234.28	596328.98	$32^\circ 46' 14.521\text{ N}$	$104^\circ 1' 11.785\text{ W}$	



PROJECT DETAILS: Sand Tank Bone Springs
Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level

SITE DETAILS: Eddy County, NM
Site Centre Latitude: $32^\circ 46' 14.521\text{ N}$
Longitude: $104^\circ 1' 11.785\text{ W}$
Positional Uncertainty: 0.0
Convergence: 0.17
Local North: Grid