

30-005-28000

HOBBS OCD

JUN 03 2011

RECEIVED

COG OPERATING

Wildcat
Chaves County, NM
Taurus10 Federal Com #1
VH - Job #32K0710558

Survey: Actual

SDI Standard Survey Report

03 September, 2010

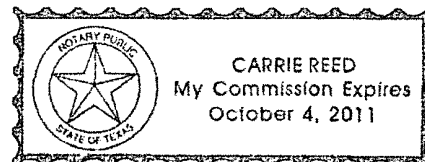
This survey is correct to the best of my knowledge and is supported by actual field data.

DePorto

Notorized this date 11th of September, 2010.

Carrie Reed

Notary Signature
County of Midland
State of Texas



JUN 07 2011

Scientific Drilling International, Inc.

SDI Standard Survey Report

Company:	COG OPERATING	Local Co-ordinate Reference:	Well Taurus10 Federal Com #1
Project:	Wildcat	TVD Reference:	WELL @ 0.0usft (Original Well Elev)
Site:	Chaves County, NM	MD Reference:	WELL @ 0.0usft (Original Well Elev)
Well:	Taurus10 Federal Com #1	North Reference:	Grid
Wellbore:	VH - Job #32K0710558	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #32K0710558	Database:	EDM-Regulatory

Project	Wildcat		
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		

Well	Taurus10 Federal Com #1, Directional (Pathfinder)				
Well Position	+N/-S	0.0 usft	Northing:	736,649.99 usft	Latitude: 33° 1' 26.570 N
	+E/-W	0.0 usft	Easting:	658,220.47 usft	Longitude: 103° 49' 1.630 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level: 0.0 usft

Wellbore	VH - Job #32K0710558				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2000	12/31/2004	8.74	61.14	49,907

Design	VH - Job #32K0710558				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	81.39	

Survey Program	Date	9/3/2010			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100.0	7,992.0	Actual (VH - Job #32K0710558)	Keeper	Keeper Gyro	

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)			
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.0			
100.0	0.22	8.96	100.0	0.2	0.0	8.96	0.2			
200.0	0.26	30.66	200.0	0.6	0.2	16.99	0.6			
300.0	0.21	3.87	300.0	1.0	0.3	17.68	1.0			
400.0	0.05	174.36	400.0	1.1	0.3	16.35	1.1			
500.0	0.06	184.86	500.0	1.0	0.3	17.81	1.0			
600.0	0.09	103.52	600.0	0.9	0.4	22.95	1.0			
700.0	0.12	189.52	700.0	0.8	0.5	29.29	0.9			
800.0	0.15	204.43	800.0	0.6	0.4	33.13	0.7			
900.0	0.16	200.62	900.0	0.3	0.3	39.78	0.4			
1,000.0	0.27	186.40	1,000.0	0.0	0.2	99.34	0.2			
1,100.0	0.21	146.22	1,100.0	-0.4	0.3	146.61	0.5			
1,200.0	0.18	184.57	1,200.0	-0.7	0.4	153.33	0.8			
1,300.0	0.21	208.93	1,300.0	-1.0	0.3	165.79	1.1			
1,400.0	0.15	184.56	1,400.0	-1.3	0.2	172.93	1.3			
1,500.0	0.23	205.69	1,500.0	-1.6	0.1	177.63	1.6			
1,600.0	0.31	208.76	1,600.0	-2.1	-0.1	184.12	2.1			

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Company: COG OPERATING
Project: Wildcat
Site: Chaves County, NM
Well: Taurus10 Federal Com #1
Wellbore: VH - Job #32K0710558
Design: VH - Job #32K0710558

Local Co-ordinate Reference: Well Taurus10 Federal Com #1
TVD Reference: WELL @ 0.0usft (Original Well Elev)
MD Reference: WELL @ 0.0usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM-Regulatory

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)
1,700.0	0.25	188.86	1,700.0	-2.5	-0.3	187.08	2.5
1,800.0	0.25	180.54	1,800.0	-3.0	-0.3	186.73	3.0
1,900.0	0.44	109.16	1,900.0	-3.3	0.0	179.79	3.3
2,000.0	1.20	84.35	2,000.0	-3.3	1.4	156.88	3.6
2,100.0	1.45	80.82	2,100.0	-3.0	3.7	129.11	4.8
2,200.0	1.46	79.87	2,199.9	-2.6	6.2	112.62	6.7
2,300.0	1.54	78.82	2,299.9	-2.1	8.8	103.47	9.0
2,400.0	1.42	75.82	2,399.9	-1.5	11.3	97.76	11.4
2,500.0	1.16	77.95	2,499.8	-1.0	13.5	94.34	13.5
2,600.0	1.05	74.47	2,599.8	-0.6	15.4	92.12	15.4
2,700.0	0.94	77.41	2,699.8	-0.1	17.1	90.48	17.1
2,800.0	0.82	79.81	2,799.8	0.2	18.6	89.50	18.6
2,900.0	0.73	80.59	2,899.8	0.4	19.9	88.87	19.9
3,000.0	0.61	84.73	2,999.8	0.5	21.0	88.52	21.1
3,100.0	0.51	83.40	3,099.8	0.6	22.0	88.32	22.0
3,200.0	0.64	83.52	3,199.8	0.8	23.0	88.11	23.0
3,300.0	0.44	83.18	3,299.7	0.9	24.0	87.92	24.0
3,400.0	0.59	112.21	3,399.7	0.7	24.8	88.34	24.8
3,500.0	0.64	102.84	3,499.7	0.4	25.8	89.11	25.8
3,600.0	0.42	90.08	3,599.7	0.3	26.7	89.41	26.7
3,700.0	0.34	83.27	3,699.7	0.3	27.4	89.35	27.4
3,800.0	0.08	48.85	3,799.7	0.4	27.8	89.19	27.8
3,900.0	0.17	152.78	3,899.7	0.3	27.9	89.37	27.9
4,000.0	0.15	163.22	3,999.7	0.0	28.0	89.90	28.0
4,100.0	0.12	194.15	4,099.7	-0.2	28.0	90.37	28.0
4,200.0	0.18	228.11	4,199.7	-0.4	27.8	90.79	27.8
4,300.0	0.10	204.89	4,299.7	-0.6	27.7	91.18	27.7
4,400.0	0.20	208.01	4,399.7	-0.8	27.6	91.67	27.6
4,500.0	0.16	185.06	4,499.7	-1.1	27.5	92.28	27.5
4,600.0	0.15	187.43	4,599.7	-1.4	27.5	92.85	27.5
4,700.0	0.13	197.94	4,699.7	-1.6	27.4	93.35	27.4
4,800.0	0.06	47.58	4,799.7	-1.7	27.4	93.50	27.5
4,900.0	0.11	282.49	4,899.7	-1.6	27.3	93.39	27.4
5,000.0	0.37	19.63	4,999.7	-1.3	27.4	92.71	27.4
5,100.0	0.41	5.70	5,099.7	-0.6	27.5	91.32	27.5
5,200.0	0.40	354.52	5,199.7	0.1	27.5	89.86	27.5
5,300.0	0.40	13.68	5,299.7	0.8	27.6	88.43	27.6
5,400.0	0.39	340.83	5,399.7	1.4	27.5	87.05	27.6
5,500.0	0.39	322.06	5,499.7	2.0	27.2	85.78	27.3
5,600.0	0.43	320.97	5,599.7	2.6	26.8	84.52	26.9
5,700.0	0.30	298.32	5,699.7	3.0	26.3	83.53	26.5
5,800.0	0.34	309.98	5,799.7	3.3	25.8	82.73	26.0
5,900.0	0.57	285.98	5,899.7	3.6	25.1	81.79	25.4
6,000.0	0.38	304.72	5,999.7	3.9	24.4	80.80	24.7

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Project: Wildcat
Site: Chaves County, NM
Well: Taurus10 Federal Com #1
Wellbore: VH - Job #32K0710558
Design: VH - Job #32K0710558

Local Co-ordinate Reference: Well Taurus10 Federal Com #1
TVD Reference: WELL @ 0.0usft (Original Well Elev)
MD Reference: WELL @ 0.0usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM-Regulatory

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)
6,100.0	0.45	282.76	6,099.7	4.2	23.7	79.90	24.1
6,200.0	0.43	287.66	6,199.7	4.4	23.0	79.10	23.4
6,300.0	0.29	280.98	6,299.7	4.6	22.4	78.41	22.8
6,400.0	0.31	287.97	6,399.7	4.7	21.9	77.82	22.4
6,500.0	0.42	275.91	6,499.7	4.8	21.3	77.17	21.8
6,600.0	0.31	285.22	6,599.7	4.9	20.6	76.51	21.2
6,700.0	0.31	298.44	6,699.7	5.1	20.1	75.65	20.8
6,800.0	0.53	279.10	6,799.7	5.4	19.4	74.60	20.2
6,900.0	0.48	299.11	6,899.7	5.6	18.6	73.17	19.4
7,000.0	0.48	306.83	6,999.7	6.1	17.9	71.24	18.9
7,100.0	0.50	309.30	7,099.7	6.6	17.2	69.01	18.5
7,200.0	0.48	298.79	7,199.7	7.1	16.5	66.79	18.0
7,300.0	0.39	304.02	7,299.7	7.5	15.9	64.78	17.6
7,400.0	0.23	316.35	7,399.7	7.8	15.5	63.18	17.3
7,500.0	0.24	89.95	7,499.7	8.0	15.5	62.86	17.5
7,600.0	0.44	82.30	7,599.7	8.0	16.1	63.57	18.0
7,700.0	0.40	83.48	7,699.7	8.1	16.8	64.31	18.7
7,800.0	0.53	67.29	7,799.7	8.3	17.6	64.72	19.5
7,900.0	0.36	41.25	7,899.7	8.7	18.3	64.42	20.2
7,992.0	0.38	52.22	7,991.7	9.1	18.7	63.93	20.8



Scientific Drilling
Directional Drilling Operations

Project: Wildcat
Chaves County, NM
Well: Taurus10 Federal Com #1
Wellbore: VH - Job #32K0710558
Design: VH - Job #32K0710558



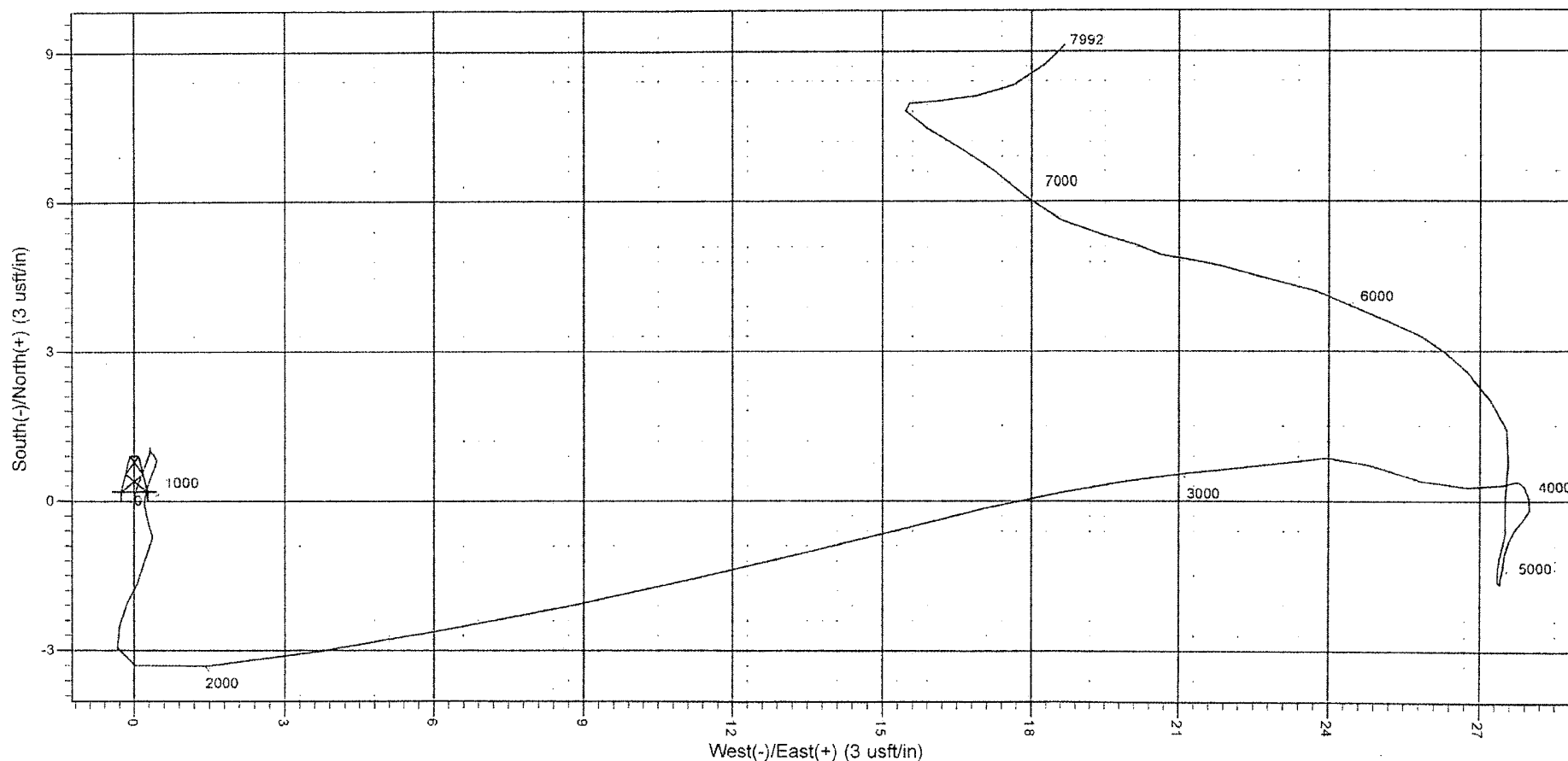
Azimuths to Grid North
True North: -0.28°
Magnetic North: 8.46°

Magnetic Field
Strength: 49907.1snT
Dip Angle: 61.14°
Date: 12/31/2004
Model: IGRF2000

WELL DETAILS: Taurus10 Federal Com #1
WELL @ 0.0usft (Original Well Elev)

Ground Level: 0.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	736649.99	658220.47	33° 1' 26.570 N	103° 49' 1.630 W	



PROJECT DETAILS: Wildcat
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: Chaves County, NM
Site Centre Latitude: 33° 0' 7.200 N
Longitude: 103° 52' 8.400 W
Positional Uncertainty: 0.0
Convergence: 0.25
Local North: Grid