

DEVON ENERGY

30-015-38237

Hackberry
Eddy County, NM
Arcturus 18 Federal #1H
VH - Job #32K0111046

Survey: Actual

SDI Standard Survey Report

23 January, 2011



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

Richardson

Notarized this date 23rd of January, 2011.

Carrie Reed

Notary Signature
County of Midland
State of Texas



Scientific Drilling International, Inc.
SDI Standard Survey Report

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well Arcturus 18 Federal #1H.
Project:	Hackberry	TVD Reference:	WELL @ 0.0usft (Original Well Elev)
Site:	Eddy County, NM	MD Reference:	WELL @ 0.0usft (Original Well Elev)
Well:	Arcturus 18 Federal #1H	North Reference:	Grd
Wellbore:	VH - Job #32K0111046	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #32K0111046	Database:	EDM-Regulatory

Project	Hackberry		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico Central 3002		

Site						Eddy County, NM					
Site Position:				Northing:		615,089.64 usft		Latitude:		32° 40' 8.400 N	
From:		Lat/Long		Easting:		1,222,919.56 usft		Longitude:		103° 54' 3.600 W	
Position Uncertainty:		0.0 usft		Slot Radius:		13-3/16"		Grid Convergence:		1.27 °	

Well	Arcturus 18 Federal #1H, Directional (Weatherford)					
Well Position	+N/-S	0.0 usft	Northing:	614,208.20 usft	Latitude:	32° 39' 59.660 N
	+E/-W	0.0 usft	Easting:	1,223,032.59 usft	Longitude:	103° 54' 2.507 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	0.0 usft

Wellbore	VH - Job #32K0111046				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2010	1/16/2011	7.88	60.56	48,949

Design	VH - Job #32K0111046				
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	269.54	

Survey Program	Date 1/23/2011			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.0	2,254.0	Actual (VH - Job #32K0111046)	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	0.34	338.00	100.0	0.3	-0.1	338.00	0.3	
200.0	0.35	346.39	200.0	0.8	-0.3	340.85	0.9	
300.0	0.35	345.73	300.0	1.4	-0.4	342.96	1.5	
400.0	0.44	333.44	400.0	2.1	-0.7	341.68	2.2	
500.0	0.38	13.79	500.0	2.7	-0.8	344.12	2.9	
600.0	0.39	31.37	600.0	3.4	-0.5	351.12	3.4	
700.0	0.48	52.48	700.0	3.9	0.0	359.77	3.9	
800.0	0.54	66.93	800.0	4.3	0.8	9.80	4.4	
900.0	0.58	66.52	900.0	4.7	1.6	19.21	5.0	
1,000.0	0.66	72.41	1,000.0	5.1	2.7	27.53	5.8	
1,100.0	0.79	75.28	1,100.0	5.5	3.9	35.41	6.7	

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Site:	Eddy County, NM	MD Reference:	WELL @ 0.0usft (Original Well Elev)
Well:	Arcturus 18 Federal #1H	North Reference:	Grid
Wellbore:	VH - Job #32K0111046	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #32K0111046	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	0.84	70.00	1,200.0	5.9	5.2	41.67	7.9
1,300.0	1.06	74.40	1,299.9	6.4	6.8	46.88	9.3
1,400.0	1.62	71.78	1,399.9	7.1	9.0	51.99	11.5
1,500.0	1.82	71.95	1,499.9	8.0	11.9	56.07	14.3
1,600.0	2.07	72.22	1,599.8	9.0	15.1	59.12	17.6
1,700.0	2.21	70.80	1,699.7	10.2	18.7	61.27	21.3
1,800.0	2.49	71.60	1,799.7	11.6	22.6	62.87	25.3
1,900.0	2.80	72.18	1,899.5	13.0	26.9	64.26	29.9
2,000.0	2.40	68.76	1,999.4	14.5	31.2	65.10	34.4
2,100.0	2.20	68.14	2,099.4	16.0	34.9	65.45	38.4
2,200.0	1.82	64.92	2,199.3	17.4	38.2	65.55	41.9
2,254.0	1.84	61.76	2,253.3	18.1	39.7	65.46	43.6



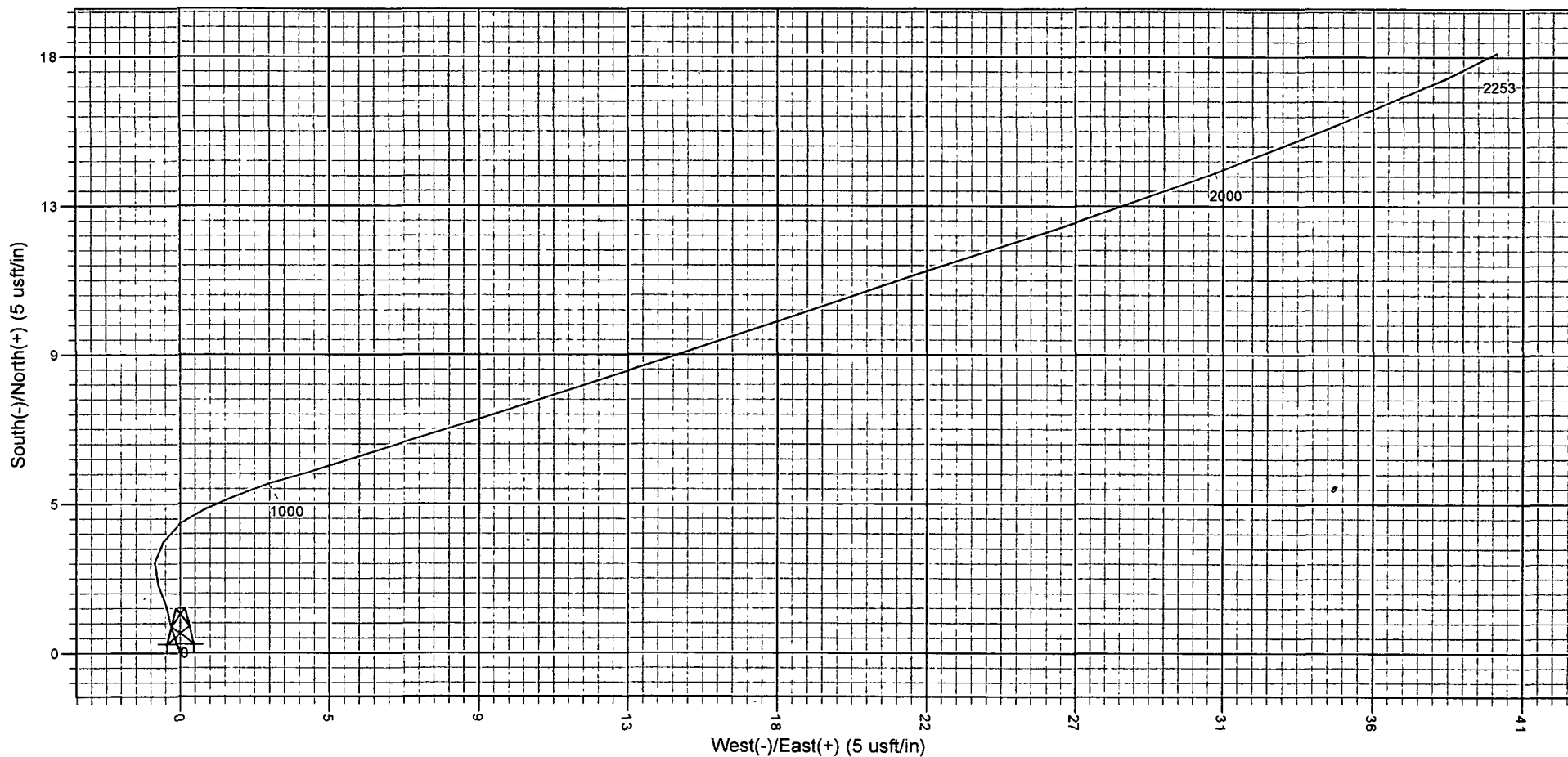
Project: Hackberry
 Eddy County, NM
 Well: Arcturus 18 Federal #1H
 Wellbore: VH - Job #32K0111046
 Design: VH - Job #32K0111046



Azimuths to Gnd North
 True North: -1.27°
 Magnetic North: 6.61°
 Magnetic Field
 Strength: 48948.8snT
 Dip Angle: 60.56°
 Date: 1/16/2011
 Model: BGGM2010

WELL DETAILS: Arcturus 18 Federal #1H
 WELL @ 0.0usft (Original Well Elev)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	614208.20	1223032.59	32° 39' 59.660 N	103° 54' 2.507 W	



PROJECT DETAILS: Hackberry
 Geodetic System: US State Plane 1927 (Exact solution)
 Datum: NAD 1927 (NADCON CONUS)
 Ellipsoid: Clarke 1866
 Zone: New Mexico Central 3002
 System Datum: Mean Sea Level

SITE DETAILS: Eddy County, NM
 Site Centre Latitude: 32° 40' 8.400 N
 Longitude: 103° 54' 3.600 W
 Positional Uncertainty: 0.0
 Convergence: 1.27
 Local North: Grid