



Departure
Energy Services (US) LP

Departure Energy Services (US) LP

Denver, Colorado
Phone: 303.542.2000

Casper, Wyoming
Phone: 307.265.2231
Fax: 307.472.5064
www.departureus.com



Laramie Energy II, LLC

Mesa County, Colorado

NESE Sec. 24-T9S-R95W

HAWXHURST 24-15A

S- Well

Final Surveys

Job Number: 311010

Final Surveys Report

April 5, 2011



Site: Sec 24-T9S-R95W (Hawxhurst 24-9 Pad)
Well: Hawxhurst 24-15A
Wellbore: DD
Design: Final Surveys

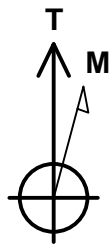
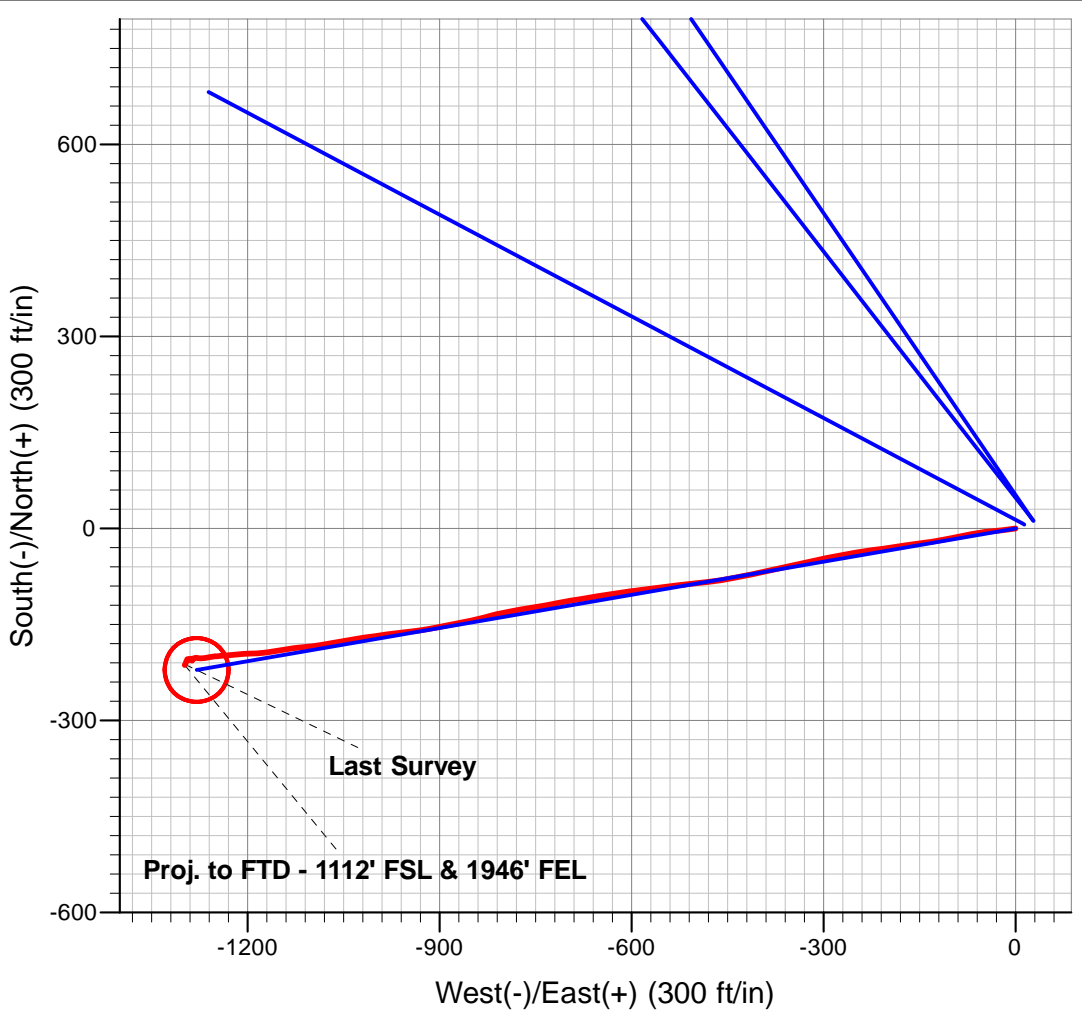
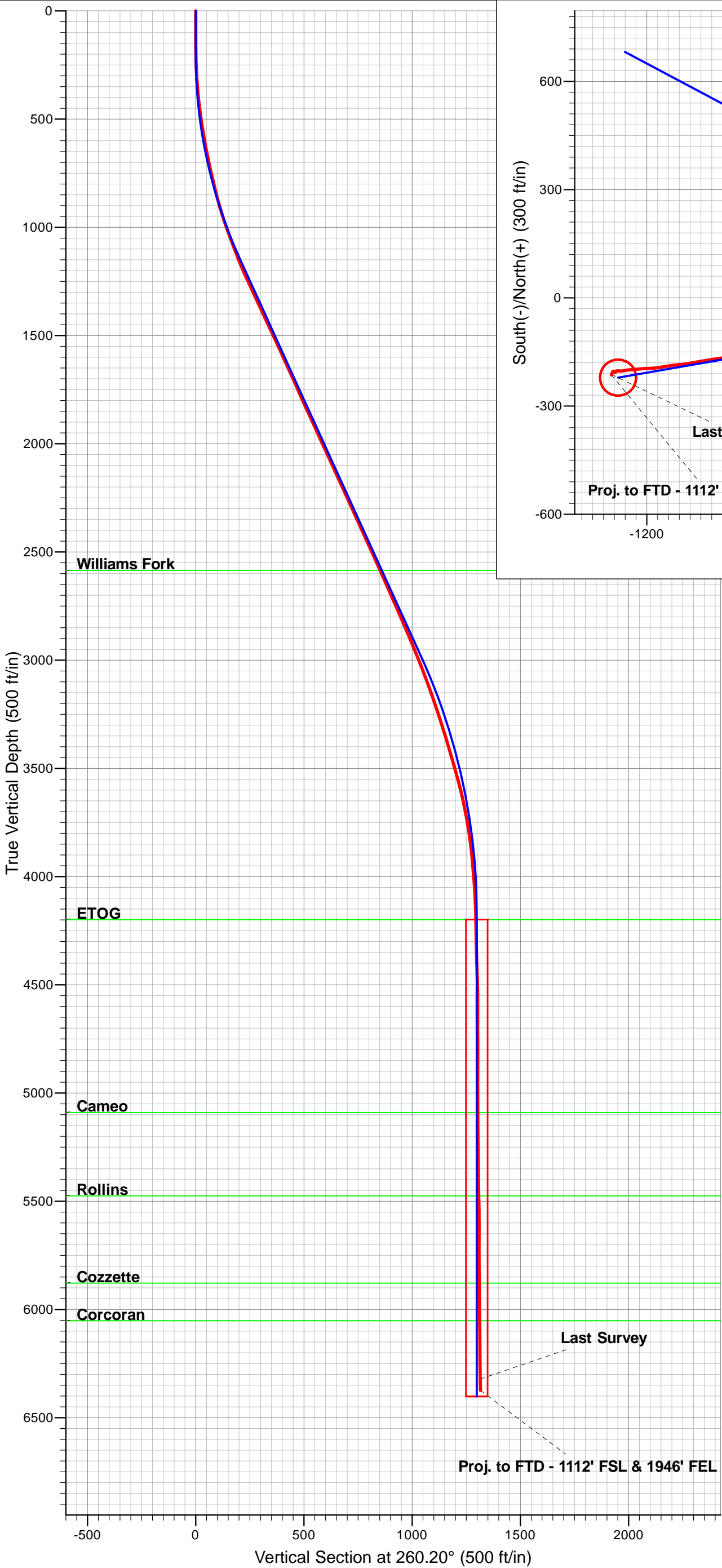
Reference Details - WELL CENTRE
Geodetic System: Universal Transverse Mercator
Ellipsoid: GRS 1980
Zone: Zone 13N (108 W to 102 W)
Northing: 14270572.52
Easting: 809395.49
Latitude: 39° 15' 33.8040 N
Longitude: 107° 56' 8.4084 W
Grid Convergence: 1.86° East
Ground Elevation: 6355.40
KB Elevation: Est. KB @ 6375.00ft



Departure
Energy Services (US) LP

Denver, Colorado
Phone: 303.542.2000

Casper, Wyoming
Phone: 307.265.2231
Fax: 307.472.5064
www.departureus.com



Azimuths to True North
Magnetic North: 10.41°

Magnetic Field
Strength: 52216.1snT
Dip Angle: 65.58°
Date: 07/23/2010
Model: IGRF2010

Company:	Laramie Energy II, LLC	Local Co-ordinate Reference:	Well Hawxhurst 24-15A
Project:	MESA CO	TVD Reference:	Est. KB @ 6375.00ft
Site:	Sec 24-T9S-R95W (Hawxhurst 24-9 Pad)	MD Reference:	Est. KB @ 6375.00ft
Well:	Hawxhurst 24-15A	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	EDM Depart

Project	MESA CO		
Map System:	Universal Transverse Mercator	System Datum:	Mean Sea Level
Geo Datum:	NAD83 Colorado - HARN		
Map Zone:	Zone 13N (108 W to 102 W)		

Site	Sec 24-T9S-R95W (Hawxhurst 24-9 Pad)				
Site Position:		Northing:	14,270,583.65 ft	Latitude:	39° 15' 33.9228 N
From:	Lat/Long	Easting:	809,423.35 ft	Longitude:	107° 56' 8.0592 W
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.86 °

Well	Hawxhurst 24-15A					
Well Position	+N/-S	0.00 ft	Northing:	14,270,572.52 ft	Latitude:	39° 15' 33.8040 N
	+E/-W	0.00 ft	Easting:	809,395.49 ft	Longitude:	107° 56' 8.4084 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	6,355.40 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	07/23/10	10.41	65.58	52,216

Design		Surveys			
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	260.20	

Survey Program		Date	04/05/11		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
125.00	6,615.00	Survey #1 (DD)	MWD	MWD - Standard	

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
125.00	0.10	293.20	125.00	0.04	-0.10	0.09	0.08	0.08	0.00
186.00	1.00	255.60	186.00	-0.07	-0.66	0.67	1.51	1.48	-61.64
279.00	2.80	265.50	278.94	-0.45	-3.72	3.74	1.96	1.94	10.65
371.00	4.90	259.10	370.73	-1.37	-9.81	9.90	2.33	2.28	-6.96
461.00	7.70	264.80	460.18	-2.64	-19.60	19.76	3.18	3.11	6.33
553.00	8.70	264.20	551.24	-3.90	-32.66	32.84	1.09	1.09	-0.65
644.00	11.30	263.00	640.85	-5.69	-48.36	48.62	2.87	2.86	-1.32
735.00	12.50	259.70	729.89	-8.53	-66.89	67.37	1.52	1.32	-3.63
826.00	14.00	258.50	818.46	-12.49	-87.37	88.22	1.68	1.65	-1.32

Company:	Laramie Energy II, LLC	Local Co-ordinate Reference:	Well Hawxhurst 24-15A
Project:	MESA CO	TVD Reference:	Est. KB @ 6375.00ft
Site:	Sec 24-T9S-R95W (Hawxhurst 24-9 Pad)	MD Reference:	Est. KB @ 6375.00ft
Well:	Hawxhurst 24-15A	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	EDM Depart

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
918.00	16.30	258.50	907.26	-17.28	-110.93	112.25	2.50	2.50	0.00
1,014.00	19.70	263.00	998.55	-21.94	-140.20	141.89	3.82	3.54	4.69
1,109.00	20.40	261.10	1,087.80	-26.45	-172.45	174.44	1.01	0.74	-2.00
1,204.00	22.70	261.90	1,176.15	-31.60	-206.96	209.32	2.44	2.42	0.84
1,300.00	25.40	261.90	1,263.81	-37.11	-245.69	248.42	2.81	2.81	0.00
1,395.00	24.40	257.80	1,349.98	-44.13	-285.05	288.40	2.10	-1.05	-4.32
1,475.00	25.50	257.70	1,422.52	-51.29	-318.03	322.11	1.38	1.38	-0.13
1,587.00	24.80	257.80	1,523.90	-61.39	-364.54	369.67	0.63	-0.63	0.09
1,683.00	24.70	258.00	1,611.08	-69.82	-403.84	409.83	0.14	-0.10	0.21
1,778.00	23.60	258.80	1,697.76	-77.64	-441.91	448.67	1.21	-1.16	0.84
1,873.00	24.20	263.20	1,784.62	-83.64	-479.90	487.13	1.98	0.63	4.63
1,969.00	25.40	264.20	1,871.77	-88.05	-519.92	527.32	1.32	1.25	1.04
2,064.00	23.90	262.80	1,958.11	-92.52	-559.29	566.88	1.69	-1.58	-1.47
2,159.00	25.10	262.60	2,044.56	-97.52	-598.36	606.23	1.27	1.26	-0.21
2,255.00	24.50	259.80	2,131.71	-103.67	-638.15	646.48	1.37	-0.63	-2.92
2,350.00	24.40	261.70	2,218.19	-109.99	-676.95	685.80	0.83	-0.11	2.00
2,445.00	24.00	258.70	2,304.84	-116.61	-715.32	724.73	1.36	-0.42	-3.16
2,540.00	24.90	261.40	2,391.32	-123.39	-754.04	764.04	1.51	0.95	2.84
2,636.00	24.70	258.50	2,478.47	-130.41	-793.68	804.29	1.28	-0.21	-3.02
2,731.00	23.90	255.40	2,565.06	-139.22	-831.75	843.31	1.58	-0.84	-3.26
2,827.00	24.10	259.30	2,652.77	-147.76	-869.83	882.29	1.67	0.21	4.06
2,922.00	23.30	258.40	2,739.75	-155.14	-907.30	920.46	0.92	-0.84	-0.95
3,017.00	23.50	263.50	2,826.95	-161.06	-944.53	958.16	2.14	0.21	5.37
3,113.00	23.10	262.80	2,915.12	-165.59	-982.23	996.08	0.51	-0.42	-0.73
3,208.00	21.50	260.90	3,003.01	-170.68	-1,017.91	1,032.10	1.85	-1.68	-2.00
3,303.00	20.70	260.60	3,091.64	-176.17	-1,051.66	1,066.30	0.85	-0.84	-0.32
3,399.00	18.40	259.80	3,182.10	-181.63	-1,083.32	1,098.42	2.41	-2.40	-0.83
3,494.00	18.40	264.90	3,272.25	-185.62	-1,113.01	1,128.36	1.69	0.00	5.37
3,589.00	16.90	261.40	3,362.78	-189.01	-1,141.60	1,157.11	1.93	-1.58	-3.68
3,685.00	16.10	260.70	3,454.83	-193.25	-1,168.53	1,184.37	0.86	-0.83	-0.73
3,780.00	15.50	269.30	3,546.25	-195.54	-1,194.23	1,210.08	2.54	-0.63	9.05
3,875.00	12.70	263.40	3,638.38	-196.89	-1,217.30	1,233.05	3.31	-2.95	-6.21
3,971.00	10.50	266.00	3,732.42	-198.72	-1,236.51	1,252.29	2.35	-2.29	2.71
4,066.00	7.70	264.20	3,826.21	-199.96	-1,251.48	1,267.25	2.96	-2.95	-1.89
4,161.00	5.20	258.50	3,920.60	-201.46	-1,262.03	1,277.91	2.71	-2.63	-6.00
4,256.00	4.50	263.20	4,015.26	-202.76	-1,269.95	1,285.93	0.85	-0.74	4.95
4,352.00	2.60	276.20	4,111.08	-202.98	-1,275.86	1,291.79	2.14	-1.98	13.54
4,447.00	1.00	294.10	4,206.03	-202.40	-1,278.76	1,294.55	1.77	-1.68	18.84
4,542.00	1.30	268.40	4,301.01	-202.10	-1,280.59	1,296.30	0.62	0.32	-27.05
4,637.00	1.60	254.20	4,395.98	-202.49	-1,282.94	1,298.69	0.49	0.32	-14.95
4,733.00	1.90	239.70	4,491.93	-203.65	-1,285.61	1,301.51	0.55	0.31	-15.10
4,828.00	0.50	150.30	4,586.92	-204.81	-1,286.76	1,302.85	2.06	-1.47	-94.11
4,922.00	0.20	167.10	4,680.91	-205.33	-1,286.52	1,302.70	0.33	-0.32	17.87
5,017.00	1.30	199.90	4,775.90	-206.50	-1,286.85	1,303.22	1.20	1.16	34.53

Company:	Laramie Energy II, LLC	Local Co-ordinate Reference:	Well Hawxhurst 24-15A
Project:	MESA CO	TVD Reference:	Est. KB @ 6375.00ft
Site:	Sec 24-T9S-R95W (Hawxhurst 24-9 Pad)	MD Reference:	Est. KB @ 6375.00ft
Well:	Hawxhurst 24-15A	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	EDM Depart

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
5,112.00	1.10	12.90	4,870.90	-206.62	-1,287.02	1,303.40	2.52	-0.21	182.11	
5,207.00	0.60	358.90	4,965.89	-205.24	-1,286.82	1,302.98	0.57	-0.53	-14.74	
5,302.00	0.80	332.50	5,060.88	-204.15	-1,287.14	1,303.10	0.39	0.21	-27.79	
5,398.00	0.80	272.90	5,156.87	-203.52	-1,288.12	1,303.96	0.83	0.00	-62.08	
5,493.00	0.30	186.60	5,251.87	-203.74	-1,288.81	1,304.68	0.88	-0.53	-90.84	
5,588.00	1.00	264.20	5,346.86	-204.07	-1,289.66	1,305.58	1.03	0.74	81.68	
5,684.00	0.90	233.90	5,442.85	-204.60	-1,291.10	1,307.09	0.53	-0.10	-31.56	
5,779.00	1.60	245.90	5,537.83	-205.58	-1,292.92	1,309.04	0.78	0.74	12.63	
5,874.00	1.10	26.50	5,632.82	-205.30	-1,293.72	1,309.79	2.68	-0.53	148.00	
5,970.00	0.40	343.90	5,728.81	-204.16	-1,293.40	1,309.28	0.89	-0.73	-44.38	
6,065.00	0.80	248.60	5,823.80	-204.08	-1,294.11	1,309.96	0.98	0.42	-100.32	
6,160.00	1.00	172.00	5,918.79	-205.14	-1,294.61	1,310.64	1.19	0.21	-80.63	
6,256.00	1.20	230.80	6,014.78	-206.61	-1,295.28	1,311.54	1.14	0.21	61.25	
6,351.00	1.00	181.90	6,109.76	-208.07	-1,296.08	1,312.58	0.98	-0.21	-51.47	
6,444.00	1.60	198.50	6,202.74	-210.11	-1,296.51	1,313.36	0.76	0.65	17.85	
6,563.00	1.10	216.30	6,321.71	-212.60	-1,297.72	1,314.97	0.54	-0.42	14.96	
Last Survey										
6,615.00	1.10	216.30	6,373.70	-213.41	-1,298.31	1,315.69	0.00	0.00	0.00	
Proj. to FTD - 1112' FSL & 1946' FEL										

Survey Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
6,563.00	6,321.71	-212.60	-1,297.72	Last Survey
6,615.00	6,373.70	-213.41	-1,298.31	Proj. to FTD - 1112' FSL & 1946' FEL

Checked By: _____ Approved By: _____ Date: _____