



PHOENIX
TECHNOLOGY SERVICES

30-025-46404

February 18, 2020

Oil Conservation Division
State of New Mexico
1625 N. French Drive
Hobbs, New Mexico 88240

HOBBS OCD

MAR 02 2020

RECEIVED

Dear District 1 - Hobbs

Re: Centennial Resources
Winnebago 30 State Com 504H
Lea County, NM
API #30-025-46404
Job No. 65921

Enclosed please find the Survey Data Certification, and the original Plat and one copy of the Survey Report performed on the above referenced well by Phoenix Technology Services, Inc. Other information required by your office is as follows:

Name & Title of Surveyor	Drain Hole Number	Surveyed Depths		Dates Performed		Type of Survey
		From	To	Start	End	
Blake Turner	504H	1,900	15,211	1/28/20	2/5/20	MWD

A certified plat on which the bottom hole location is oriented both to the surface location and to the lease lines (or unit lines in case of pooling) is attached to the survey report. If any other information is required, please contact the undersigned at the letterhead address and phone number.

Best Regards,

Brittany Carley

Brittany Carley
Operations Administrator

**Phoenix Technology Services
SURVEY DATA CERTIFICATION**



PHOENIX JOB NUMBER

65921

ENERGY COMPANY

Centennial Resources

WELL NAME

Winnebago 30 State Com 504H

COUNTY & STATE

Lea County, NM

API WELL NUMBER

30-025-46404

PROPOSED DIRECTION

0.15

TIE-IN DATA						
MEASURED DEPTH	VERTICAL DEPTH	INCLIN	AZIMUTH	N-S COORD	E-W COORD	DATA SOURCE
1,831. ft	1,830.90 ft	0.70	254.66	-11.94 ft	-10.27 ft	MWD/Invictus

FIRST SURVEY DATE	FIRST SURVEY DEPTH	INCLIN	AZIMUTH
28-Jan-20	1,900.00 ft	0.38	284.17

SURVEY INSTRUMENT
TYPE

Phoenix MWD Velocity

LAST SURVEY DATE	LAST SURVEY DEPTH	INCLIN	AZIMUTH
5-Feb-20	15,211.00 ft	90.47	0.06

TO THE BEST OF MY KNOWLEDGE I
CERTIFY THIS SURVEY DATA TO BE
TRUE AND CORRECT.

PROJECTED TD SURVEY DATE	PROJECTED TD SURVEY DEPTH	INCLIN	AZIMUTH
5-Feb-20	15,271.00 ft	90.47	0.06

Blake Turner

PRINT YOUR NAME ABOVE

Blake Turner

SIGN YOUR NAME ABOVE

MAGNETIC DECLINATION OR TOTAL GRID

TOTAL CORRECTION USED	6.63
DECLINATION OR GRID	TRUENORTH

MWD SUPERVISOR 1

Peter Mavrelis

DIRECTIONAL DRILLER 1

Joe Doucette

MWD SUPERVISOR 2

Blake Turner

DIRECTIONAL DRILLER 2

Dwight Dautreuil

12329 Cutten Rd., Houston, Texas 777066 (713)337-0600 (Voice), (713)337-0599 (Fax)



PHOENIX
TECHNOLOGY SERVICES

Centennial Resources Development, Inc.

**Lea County, NM (NAD83 - UTM Zone 13)
Winnebago 30 State Com
504H**

OH / 65921

Survey: Phoenix MWD Surveys

Standard Survey Report

06 February, 2020



CENTENNIAL
RESOURCE DEVELOPMENT, INC



Survey Report



Company: Centennial Resources Development, Inc.
Project: Lea County, NM (NAD83 - UTM Zone 13)
Site: Winnebago 30 State Com
Well: 504H
Wellbore: OH / 65921
Design: Surveys (H&P 618)

Local Co-ordinate Reference: Well 504H
TVD Reference: RKB @ 3493.50usft (H&P 618)
MD Reference: RKB @ 3493.50usft (H&P 618)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: USA Compass

Project	Lea County, NM (NAD83 - UTM Zone 13)		
Map System:	Universal Transverse Mercator (US Survey Fee	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Zone 13N (108 W to 102 W)		Using geodetic scale factor

Site Winnebago 30 State Com

Site Position:		Northing:	11,748,785.38 usft	Latitude:	32.356247
From:	Map	Easting:	2,131,624.41 usft	Longitude:	-103.408813
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.85 °

Well	504H					
Well Position	+N/-S	0.00 usft	Northing:	11,748,785.75 usft	Latitude:	32.356247
	+E/-W	0.00 usft	Easting:	2,131,654.40 usft	Longitude:	-103.408716
Position Uncertainty	1.00 usft	Wellhead Elevation:	usft	Ground Level:	3,466.50 usft	

Wellbore OH / 65921

Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
	User Defined	1/28/2020	(°)	(°)	(nT)
			6.63	60.02	47,846.00000000

Design Surveys (H&P 618)

Audit Notes:

Version:	1.0	Phase:	ACTUAL	Tie On Depth:	1,831.00
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Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.00	0.00	0.00	3.84

Survey Program Date 2/6/2020

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
132.00	1,831.00	Invictus MWD Surveys (OH / Surface)	MWD	OWSG MWD - Standard
1,900.00	15,271.00	Phoenix MWD Surveys (OH / 65921)	MWD+IFR1+MS	OWSG MWD + IFR1 + Multi-Station Correction

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,831.00	0.70	254.66	1,830.90	-11.94	-10.27	-12.60	0.00	0.00	0.00
1,900.00	0.38	284.17	1,899.90	-12.00	-10.89	-12.70	0.60	-0.46	42.77
First Phoenix MWD Survey									
1,978.00	0.53	89.86	1,977.89	-11.94	-10.78	-12.63	1.16	0.19	212.42
2,073.00	2.41	103.18	2,072.86	-12.39	-8.40	-12.92	2.00	1.98	14.02
2,167.00	2.99	106.54	2,166.75	-13.54	-4.13	-13.78	0.64	0.62	3.57
2,261.00	2.53	108.02	2,260.65	-14.88	0.20	-14.83	0.50	-0.49	1.57
2,356.00	2.79	108.94	2,355.54	-16.28	4.38	-15.95	0.28	0.27	0.97
2,450.00	4.17	116.58	2,449.37	-18.55	9.60	-17.86	1.55	1.47	8.13
2,545.00	5.75	118.31	2,544.01	-22.35	16.88	-21.17	1.67	1.66	1.82



Survey Report



Company:	Centennial Resources Development, Inc.	Local Co-ordinate Reference:	Well 504H
Project:	Lea County, NM (NAD83 - UTM Zone 13)	TVD Reference:	RKB @ 3493.50usft (H&P 618)
Site:	Winebago 30 State Com	MD Reference:	RKB @ 3493.50usft (H&P 618)
Well:	504H	North Reference:	True
Wellbore:	OH / 65921	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (H&P 618)	Database:	USA Compass

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
2,639.00	6.31	118.44	2,637.49	-27.04	25.57	-25.27	0.60	0.60	0.14
2,733.00	6.21	119.07	2,730.93	-31.98	34.55	-29.59	0.13	-0.11	0.67
2,828.00	5.98	119.84	2,825.39	-36.93	43.34	-33.95	0.26	-0.24	0.81
2,922.00	5.79	119.51	2,918.90	-41.71	51.71	-38.15	0.21	-0.20	-0.35
3,017.00	5.48	119.19	3,013.44	-46.28	59.84	-42.17	0.33	-0.33	-0.34
3,111.00	5.15	118.82	3,107.03	-50.50	67.45	-45.87	0.35	-0.35	-0.39
3,205.00	5.36	118.37	3,200.64	-54.62	75.01	-49.48	0.23	0.22	-0.48
3,299.00	6.52	117.78	3,294.13	-59.20	83.60	-53.46	1.24	1.23	-0.63
3,394.00	6.37	116.22	3,388.53	-64.04	93.10	-57.66	0.24	-0.16	-1.64
3,488.00	6.28	113.39	3,481.96	-68.38	102.50	-61.36	0.35	-0.10	-3.01
3,582.00	6.54	111.38	3,575.37	-72.37	112.20	-64.70	0.37	0.28	-2.14
3,676.00	6.53	111.09	3,668.76	-76.25	122.17	-67.90	0.04	-0.01	-0.31
3,771.00	6.34	108.43	3,763.16	-79.85	132.19	-70.82	0.37	-0.20	-2.80
3,865.00	6.44	113.03	3,856.58	-83.56	141.96	-73.86	0.55	0.11	4.89
3,959.00	6.76	116.64	3,949.96	-88.10	151.76	-77.74	0.56	0.34	3.84
4,054.00	6.91	116.69	4,044.28	-93.17	161.86	-82.12	0.16	0.16	0.05
4,148.00	6.59	116.93	4,137.63	-98.15	171.72	-86.43	0.34	-0.34	0.26
4,242.00	5.69	116.26	4,231.09	-102.66	180.71	-90.33	0.96	-0.96	-0.71
4,336.00	5.78	117.19	4,324.62	-106.88	189.10	-93.98	0.14	0.10	0.99
4,431.00	6.31	116.24	4,419.09	-111.38	198.04	-97.87	0.57	0.56	-1.00
4,525.00	5.81	115.72	4,512.56	-115.73	206.96	-101.61	0.54	-0.53	-0.55
4,620.00	5.59	119.12	4,607.09	-120.07	215.33	-105.37	0.42	-0.23	3.58
4,714.00	5.63	123.08	4,700.64	-124.81	223.20	-109.58	0.41	0.04	4.21
4,808.00	5.28	124.61	4,794.22	-129.78	230.62	-114.05	0.40	-0.37	1.63
4,902.00	4.80	124.22	4,887.86	-134.45	237.43	-118.25	0.51	-0.51	-0.41
4,996.00	4.19	127.24	4,981.57	-138.74	243.42	-122.13	0.70	-0.65	3.21
5,091.00	3.86	125.73	5,076.33	-142.71	248.78	-125.73	0.36	-0.35	-1.59
5,185.00	3.97	124.29	5,170.11	-146.39	254.03	-129.05	0.16	0.12	-1.53
5,280.00	3.77	122.57	5,264.90	-149.92	259.38	-132.22	0.24	-0.21	-1.81
5,374.00	3.71	123.28	5,358.70	-153.26	264.53	-135.20	0.08	-0.06	0.76
5,468.00	3.31	126.09	5,452.52	-156.52	269.26	-138.14	0.46	-0.43	2.99
5,537.00	2.98	124.52	5,521.41	-158.71	272.35	-140.12	0.49	-0.48	-2.28
5,658.00	2.67	126.61	5,642.27	-162.18	277.21	-143.25	0.27	-0.26	1.73
5,751.00	2.49	130.69	5,735.17	-164.79	280.48	-145.63	0.28	-0.19	4.39
5,846.00	2.67	129.35	5,830.08	-167.53	283.75	-148.15	0.20	0.19	-1.41
5,940.00	2.56	129.73	5,923.98	-170.26	287.06	-150.66	0.12	-0.12	0.40
6,034.00	2.49	135.96	6,017.89	-173.07	290.09	-153.26	0.30	-0.07	6.63
6,128.00	2.19	129.57	6,111.81	-175.69	292.90	-155.68	0.42	-0.32	-6.80
6,223.00	2.07	128.73	6,206.74	-177.92	295.63	-157.72	0.13	-0.13	-0.88
6,317.00	1.62	125.15	6,300.70	-179.74	298.05	-159.38	0.49	-0.48	-3.81
6,411.00	1.69	112.43	6,394.66	-181.04	300.41	-160.51	0.40	0.07	-13.53
6,506.00	1.74	122.50	6,489.61	-182.35	302.92	-161.65	0.32	0.05	10.60
6,600.00	1.81	116.20	6,583.57	-183.77	305.46	-162.90	0.22	0.07	-6.70



Survey Report



Company:	Centennial Resources Development, Inc.	Local Co-ordinate Reference:	Well 504H
Project:	Lea County, NM (NAD83 - UTM Zone 13)	TVD Reference:	RKB @ 3493.50usft (H&P 618)
Site:	Winnabago 30 State Com	MD Reference:	RKB @ 3493.50usft (H&P 618)
Well:	504H	North Reference:	True
Wellbore:	OH / 65921	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (H&P 618)	Database:	USA Compass

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
6,694.00	1.59	118.28	6,677.53	-185.04	307.94	-164.00	0.24	-0.23	2.21
6,789.00	1.51	112.91	6,772.49	-186.15	310.25	-164.96	0.17	-0.08	-5.65
6,883.00	1.61	111.38	6,866.46	-187.12	312.62	-165.76	0.12	0.11	-1.63
6,977.00	1.50	106.28	6,960.42	-187.94	315.04	-166.42	0.19	-0.12	-5.43
7,071.00	1.30	113.33	7,054.40	-188.71	317.20	-167.04	0.28	-0.21	7.50
7,166.00	1.43	116.16	7,149.37	-189.66	319.25	-167.85	0.15	0.14	2.98
7,260.00	1.45	103.05	7,243.34	-190.44	321.46	-168.49	0.35	0.02	-13.95
7,354.00	1.53	98.62	7,337.31	-190.90	323.86	-168.78	0.15	0.09	-4.71
7,448.00	1.10	95.81	7,431.28	-191.18	326.00	-168.92	0.46	-0.46	-2.99
7,543.00	1.11	105.85	7,526.26	-191.52	327.79	-169.14	0.20	0.01	10.57
7,637.00	1.05	93.99	7,620.25	-191.83	329.53	-169.33	0.25	-0.06	-12.62
7,731.00	1.11	78.72	7,714.23	-191.72	331.28	-169.10	0.31	0.06	-16.24
7,826.00	0.90	71.38	7,809.22	-191.30	332.89	-168.57	0.26	-0.22	-7.73
7,920.00	1.18	56.01	7,903.20	-190.52	334.39	-167.70	0.42	0.30	-16.35
8,014.00	0.88	35.78	7,997.19	-189.39	335.61	-166.49	0.50	-0.32	-21.52
8,109.00	1.03	32.70	8,092.17	-188.08	336.50	-165.13	0.17	0.16	-3.24
8,203.00	0.93	9.46	8,186.16	-186.62	337.08	-163.63	0.43	-0.11	-24.72
8,297.00	1.41	359.45	8,280.14	-184.71	337.20	-161.71	0.55	0.51	-10.65
8,392.00	1.47	0.87	8,375.11	-182.32	337.20	-159.33	0.07	0.06	1.49
8,486.00	1.53	0.32	8,469.08	-179.86	337.23	-156.87	0.07	0.06	-0.59
8,580.00	1.30	351.93	8,563.05	-177.55	337.09	-154.58	0.33	-0.24	-8.93
8,676.00	1.30	337.84	8,659.03	-175.47	336.52	-152.53	0.33	0.00	-14.68
8,769.00	1.30	303.41	8,752.00	-173.91	335.25	-151.07	0.83	0.00	-37.02
8,864.00	1.00	270.47	8,846.98	-173.31	333.52	-150.58	0.75	-0.32	-34.67
8,958.00	1.18	267.57	8,940.97	-173.34	331.73	-150.74	0.20	0.19	-3.09
9,052.00	0.75	268.55	9,034.95	-173.40	330.15	-150.90	0.46	-0.46	1.04
9,147.00	0.47	237.85	9,129.95	-173.62	329.20	-151.19	0.44	-0.29	-32.32
9,241.00	0.82	228.38	9,223.94	-174.27	328.37	-151.89	0.39	0.37	-10.07
9,335.00	1.17	224.03	9,317.93	-175.41	327.20	-153.10	0.38	0.37	-4.63
9,430.00	2.27	229.61	9,412.88	-177.33	325.09	-155.16	1.17	1.16	5.87
9,524.00	2.85	235.57	9,506.79	-179.85	321.74	-157.90	0.68	0.62	6.34
9,618.00	3.16	230.25	9,600.66	-182.83	317.82	-161.14	0.44	0.33	-5.66
9,712.00	2.66	227.82	9,694.54	-185.95	314.22	-164.49	0.55	-0.53	-2.59
9,800.00	2.72	234.56	9,782.44	-188.54	311.00	-167.28	0.37	0.07	7.66
9,847.00	3.55	22.64	9,829.41	-187.84	310.65	-166.61	12.83	1.77	315.06
9,894.00	9.12	11.32	9,876.11	-182.84	311.95	-161.54	12.09	11.85	-24.09
9,941.00	15.11	4.01	9,922.05	-173.07	313.11	-151.71	13.13	12.74	-15.55
9,988.00	19.09	0.13	9,966.96	-159.26	313.55	-137.91	8.80	8.47	-8.26
10,035.00	22.74	356.36	10,010.86	-142.51	312.99	-121.22	8.27	7.77	-8.02
10,083.00	26.48	354.83	10,054.49	-122.58	311.44	-101.45	7.90	7.79	-3.19
10,130.00	31.99	352.86	10,095.49	-99.78	308.95	-78.86	11.90	11.72	-4.19
10,177.00	35.79	353.27	10,134.50	-73.76	305.79	-53.12	8.10	8.09	0.87
10,224.00	39.44	353.94	10,171.72	-45.26	302.60	-24.89	7.81	7.77	1.43

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Site:	Winnebago 30 State Com	MD Reference:	RKB @ 3493.50usft (H&P 618)
Well:	504H	North Reference:	True
Wellbore:	OH / 65921	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (H&P 618)	Database:	USA Compass

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,272.00	42.04	357.92	10,208.09	-14.03	300.40	6.12	7.65	5.42	8.29
10,319.00	45.05	358.62	10,242.16	18.33	299.43	38.34	6.49	6.40	1.49
10,366.00	47.82	359.63	10,274.54	52.38	298.92	72.28	6.10	5.89	2.15
10,413.00	51.12	1.26	10,305.08	88.10	299.21	107.94	7.50	7.02	3.47
10,460.00	53.29	2.96	10,333.89	125.21	300.58	145.05	5.43	4.62	3.62
10,507.00	54.39	2.67	10,361.62	163.11	302.45	182.99	2.39	2.34	-0.62
10,555.00	55.10	2.04	10,389.33	202.27	304.06	222.18	1.83	1.48	-1.31
10,602.00	57.27	0.76	10,415.48	241.30	305.01	261.19	5.14	4.62	-2.72
10,649.00	60.50	359.90	10,439.77	281.53	305.23	301.34	7.05	6.87	-1.83
10,696.00	65.82	0.79	10,460.98	323.45	305.49	343.19	11.44	11.32	1.89
10,744.00	69.52	1.65	10,479.21	367.84	306.44	387.53	7.88	7.71	1.79
10,791.00	73.26	1.94	10,494.21	412.35	307.84	432.04	7.98	7.96	0.62
10,838.00	77.34	2.63	10,506.13	457.76	309.65	477.47	8.80	8.68	1.47
10,933.00	89.02	359.90	10,517.40	551.90	311.70	571.53	12.62	12.29	-2.87
11,027.00	90.85	0.58	10,517.50	645.89	312.10	665.34	2.08	1.95	0.72
11,121.00	91.24	0.76	10,515.79	739.87	313.20	759.18	0.46	0.41	0.19
11,216.00	90.93	0.51	10,513.99	834.85	314.25	854.02	0.42	-0.33	-0.26
11,310.00	90.59	0.44	10,512.74	928.84	315.03	947.85	0.37	-0.36	-0.07
11,405.00	92.74	0.31	10,509.98	1,023.79	315.65	1,042.63	2.27	2.26	-0.14
11,499.00	94.36	0.72	10,504.16	1,117.60	316.49	1,136.29	1.78	1.72	0.44
11,593.00	91.47	0.36	10,499.38	1,211.46	317.38	1,230.00	3.10	-3.07	-0.38
11,687.00	92.26	0.27	10,496.32	1,305.41	317.89	1,323.77	0.85	0.84	-0.10
11,782.00	92.89	0.28	10,492.06	1,400.31	318.35	1,418.49	0.66	0.66	0.01
11,876.00	92.61	0.13	10,487.55	1,494.21	318.69	1,512.19	0.34	-0.30	-0.16
11,970.00	93.17	359.96	10,482.81	1,588.09	318.76	1,605.87	0.62	0.60	-0.18
12,065.00	92.63	359.37	10,478.00	1,682.96	318.20	1,700.49	0.84	-0.57	-0.62
12,159.00	89.93	0.40	10,475.90	1,776.93	318.02	1,794.24	3.07	-2.87	1.10
12,253.00	90.19	0.35	10,475.80	1,870.93	318.63	1,888.06	0.28	0.28	-0.05
12,348.00	90.86	359.98	10,474.93	1,965.92	318.91	1,982.86	0.81	0.71	-0.39
12,442.00	91.55	359.66	10,472.96	2,059.90	318.61	2,076.61	0.81	0.73	-0.34
12,536.00	89.24	0.92	10,472.31	2,153.89	319.09	2,170.42	2.80	-2.46	1.34
12,631.00	89.98	0.96	10,472.95	2,248.87	320.64	2,265.30	0.78	0.78	0.04
12,724.00	92.04	1.69	10,471.31	2,341.83	322.79	2,358.19	2.35	2.22	0.78
12,818.00	92.29	1.39	10,467.73	2,436.72	325.35	2,453.04	0.41	0.26	-0.32
12,913.00	92.63	0.97	10,463.69	2,530.62	327.28	2,546.85	0.57	0.36	-0.45
13,007.00	93.20	0.34	10,458.91	2,624.49	328.35	2,640.59	0.90	0.61	-0.67
13,101.00	93.55	0.74	10,453.38	2,718.32	329.24	2,734.27	0.56	0.37	0.43
13,196.00	91.12	359.95	10,449.51	2,813.23	329.81	2,829.00	2.69	-2.56	-0.83
13,290.00	91.50	359.62	10,447.36	2,907.21	329.46	2,922.74	0.54	0.40	-0.35
13,384.00	92.13	359.09	10,444.38	3,001.15	328.40	3,016.41	0.88	0.67	-0.56
13,479.00	92.27	358.54	10,440.73	3,096.06	326.43	3,110.97	0.60	0.15	-0.58
13,573.00	92.40	357.97	10,436.90	3,189.94	323.57	3,204.45	0.62	0.14	-0.61
13,667.00	92.89	357.48	10,432.57	3,283.77	319.85	3,297.81	0.74	0.52	-0.52
13,761.00	91.52	359.12	10,428.95	3,377.65	317.06	3,391.30	2.27	-1.46	1.74

Company:	Centennial Resources Development, Inc.	Local Co-ordinate Reference:	Well 504H
Project:	Lea County, NM (NAD83 - UTM Zone 13)	TVD Reference:	RKB @ 3493.50usft (H&P 618)
Site:	Winnebago 30 State Com	MD Reference:	RKB @ 3493.50usft (H&P 618)
Well:	504H	North Reference:	True
Wellbore:	OH / 65921	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (H&P 618)	Database:	USA Compass

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
13,856.00	90.87	358.43	10,426.97	3,472.61	315.03	3,485.91	1.00	-0.68	-0.73
13,950.00	90.50	357.77	10,425.84	3,566.55	311.91	3,579.43	0.80	-0.39	-0.70
14,044.00	90.36	359.47	10,425.14	3,660.51	309.65	3,673.03	1.81	-0.15	1.81
14,138.00	90.41	359.27	10,424.51	3,754.51	308.62	3,766.74	0.22	0.05	-0.21
14,233.00	90.53	358.63	10,423.73	3,849.49	306.88	3,861.40	0.69	0.13	-0.67
14,327.00	90.84	358.16	10,422.60	3,943.44	304.24	3,954.96	0.60	0.33	-0.50
14,421.00	92.26	0.50	10,420.06	4,037.39	303.14	4,048.63	2.91	1.51	2.49
14,516.00	92.53	359.86	10,416.09	4,132.31	303.44	4,143.35	0.73	0.28	-0.67
14,610.00	92.95	359.54	10,411.60	4,226.20	302.95	4,237.00	0.56	0.45	-0.34
14,704.00	93.29	359.73	10,406.48	4,320.06	302.35	4,330.61	0.41	0.36	0.20
14,799.00	91.79	0.74	10,402.27	4,414.96	302.74	4,425.32	1.90	-1.58	1.06
14,893.00	92.12	0.48	10,399.06	4,508.90	303.74	4,519.12	0.45	0.35	-0.28
14,987.00	92.27	0.11	10,395.46	4,602.83	304.23	4,612.87	0.42	0.16	-0.39
15,081.00	92.84	359.85	10,391.27	4,696.73	304.19	4,706.56	0.67	0.61	-0.28
15,176.00	90.52	0.32	10,388.49	4,791.69	304.34	4,801.31	2.49	-2.44	0.49
15,211.00	90.47	0.06	10,388.19	4,826.69	304.45	4,836.24	0.76	-0.14	-0.74
Final Phoenix MWD Survey									
15,271.00	90.47	0.06	10,387.69	4,886.68	304.51	4,896.11	0.00	0.00	0.00
Projection to TD									

Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,831.00				Tie In
1,900.00	1,899.90	-12.00	-10.89	First Phoenix MWD Survey
15,211.00	10,388.19	4,826.69	304.45	Final Phoenix MWD Survey
15,271.00	10,387.69	4,886.68	304.51	Projection to TD