



Kaiser-Francis Oil Company

**Lea County, NM (NAD 83)
Bell Lake Unit South
330H**

OH / Job 62801

**HOBBS OCD
NOV 30 2018
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Survey: Phoenix MWD Surveys

Standard Survey Report

29 June, 2018



Survey Report



Company: Kaiser-Francis Oil Company
Project: Lea County, NM (NAD 83)
Site: Bell Lake Unit South
Well: 330H
Wellbore: OH / Job 62801
Design: Surveys (Cactus 171)

Local Co-ordinate Reference: Well 330H
TVD Reference: RKB @ 3624.80usft (Cactus 171)
MD Reference: RKB @ 3624.80usft (Cactus 171)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: USA Compass

Project	Lea County, NM (NAD 83)
Map System:	US State Plane 1983
Geo Datum:	North American Datum 1983
Map Zone:	New Mexico Eastern Zone
System Datum:	Mean Sea Level

Site Bell Lake Unit South

Site Position: **From:** Map **Northings:** 453,977.40 usft **Latitude:** 32° 14' 43.88291 N
Position Uncertainty: 0.00 usft **Easting:** 788,854.22 usft **Longitude:** 103° 31' 57.83548 W
Slot Radius: 13-3/16 " **Grid Convergence:** 0.43 °

Well 330H

Well Position **+N/-S** 0.00 usft **Northings:** 453,929.63 usft **Latitude:** 32° 14' 42.70868 N
+E/-W 0.00 usft **Easting:** 798,187.50 usft **Longitude:** 103° 30' 9.16969 W
Position Uncertainty 0.00 usft **Wellhead Elevation:** usft **Ground Level:** 3,601.80 usft

Wellbore OH / Job 62801

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	MVHD	5/31/2018	6.71	59.93	47,980.07708548

Design Surveys (Cactus 171)

Audit Notes:

Version: 1.0 **Phase:** ACTUAL **Tie On Depth:** 0.00
Vertical Section: **Depth From (TVD) (usft)** **+N/-S (usft)** **+E/-W (usft)** **Direction (°)**
 0.00 0.00 0.00 358.63

Survey Program Date 6/8/2018

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.00	1,220.00	VES Gyro Surveys (OH / Job 62801)	NS-GYRO-MS	North sensing gyrocompassing m/s
1,220.00	12,250.00	Phoenix MWD Surveys (OH / Job 62801)	MWD+HDGM	OWSG Rev.2 MWD + HDGM

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)
1,220.00	0.20	241.42	1,219.99	1.27	-4.75	1.38	0.00	0.00	0.00
Tie In - OH									
1,358.00	0.49	267.64	1,357.99	1.13	-5.55	1.26	0.23	0.21	19.00
First Phoenix MWD Survey - OH									
1,452.00	0.54	293.82	1,451.98	1.29	-6.36	1.44	0.25	0.05	27.85
1,546.00	0.55	293.70	1,545.98	1.65	-7.18	1.82	0.01	0.01	-0.13
1,639.00	0.55	293.00	1,638.98	2.01	-8.00	2.20	0.01	0.00	-0.75
1,733.00	0.59	294.30	1,732.97	2.38	-8.85	2.59	0.04	0.04	1.38
1,828.00	0.54	295.59	1,827.97	2.78	-9.70	3.01	0.05	-0.05	1.36

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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)
1,922.00	0.49	299.95	1,921.96	3.17	-10.45	3.42	0.07	-0.05	4.64
2,016.00	0.46	291.11	2,015.96	3.51	-11.15	3.77	0.08	-0.03	-9.40
2,111.00	0.80	91.06	2,110.96	3.63	-10.84	3.89	1.31	0.36	168.37
2,205.00	1.00	88.31	2,204.94	3.64	-9.37	3.87	0.22	0.21	-2.93
2,299.00	0.84	77.66	2,298.93	3.81	-7.87	4.00	0.25	-0.17	-11.33
2,393.00	0.76	71.20	2,392.92	4.16	-6.61	4.32	0.13	-0.09	-6.87
2,486.00	0.70	66.44	2,485.92	4.59	-5.51	4.72	0.09	-0.06	-5.12
2,581.00	0.69	63.06	2,580.91	5.08	-4.46	5.18	0.04	-0.01	-3.56
2,676.00	0.64	56.31	2,675.90	5.63	-3.51	5.72	0.10	-0.05	-7.11
2,770.00	0.62	47.74	2,769.90	6.27	-2.70	6.33	0.10	-0.02	-9.12
2,864.00	0.65	39.90	2,863.89	7.02	-1.98	7.06	0.10	0.03	-8.34
2,959.00	0.72	36.65	2,958.88	7.91	-1.28	7.94	0.08	0.07	-3.42
3,053.00	0.72	27.90	3,052.88	8.91	-0.65	8.92	0.12	0.00	-9.31
3,147.00	0.76	28.26	3,146.87	9.98	-0.08	9.98	0.04	0.04	0.38
3,242.00	0.76	27.65	3,241.86	11.09	0.51	11.07	0.01	0.00	-0.64
3,336.00	0.78	30.03	3,335.85	12.20	1.12	12.16	0.04	0.02	2.53
3,431.00	0.81	36.37	3,430.84	13.30	1.84	13.25	0.10	0.03	6.67
3,525.00	0.78	38.02	3,524.83	14.33	2.63	14.27	0.04	-0.03	1.76
3,619.00	0.48	118.61	3,618.83	14.65	3.37	14.57	0.90	-0.32	85.73
3,713.00	0.64	141.06	3,712.83	14.05	4.05	13.95	0.29	0.17	23.88
3,807.00	0.53	136.21	3,806.82	13.33	4.68	13.22	0.13	-0.12	-5.16
3,902.00	0.47	134.95	3,901.82	12.74	5.26	12.61	0.06	-0.06	-1.33
3,997.00	0.45	120.77	3,996.81	12.27	5.85	12.13	0.12	-0.02	-14.93
4,092.00	0.44	130.75	4,091.81	11.84	6.45	11.69	0.08	-0.01	10.51
4,186.00	0.36	124.83	4,185.81	11.44	6.97	11.27	0.10	-0.09	-6.30
4,281.00	0.58	112.78	4,280.81	11.08	7.66	10.90	0.25	0.23	-12.68
4,375.00	1.00	118.98	4,374.80	10.50	8.81	10.29	0.46	0.45	6.60
4,470.00	1.26	112.68	4,469.78	9.70	10.50	9.44	0.30	0.27	-6.63
4,565.00	0.72	137.52	4,564.76	8.85	11.87	8.57	0.71	-0.57	26.15
4,660.00	1.15	131.65	4,659.75	7.78	12.98	7.47	0.46	0.45	-6.18
4,754.00	0.99	138.20	4,753.73	6.55	14.23	6.21	0.21	-0.17	6.97
4,848.00	0.79	134.15	4,847.72	5.49	15.23	5.13	0.22	-0.21	-4.31
4,942.00	0.63	220.85	4,941.72	4.65	15.36	4.28	1.04	-0.17	92.23
5,036.00	1.06	250.99	5,035.71	3.97	14.20	3.63	0.64	0.46	32.06
5,131.00	1.07	255.13	5,130.69	3.46	12.51	3.16	0.08	0.01	4.36
5,225.00	1.04	261.04	5,224.68	3.10	10.82	2.84	0.12	-0.03	6.29
5,319.00	0.95	258.70	5,318.66	2.82	9.22	2.60	0.11	-0.10	-2.49
5,413.00	0.84	258.84	5,412.65	2.53	7.78	2.34	0.12	-0.12	0.15
5,507.00	0.87	258.54	5,506.64	2.26	6.40	2.10	0.03	0.03	-0.32
5,602.00	0.79	255.60	5,601.63	1.95	5.06	1.83	0.10	-0.08	-3.09
5,697.00	0.61	254.58	5,696.62	1.65	3.94	1.56	0.19	-0.19	-1.07
5,791.00	0.48	252.52	5,790.62	1.40	3.08	1.33	0.14	-0.14	-2.19
5,885.00	0.54	260.02	5,884.61	1.21	2.27	1.15	0.10	0.06	7.98

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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)
5,979.00	0.55	268.68	5,978.61	1.12	1.38	1.09	0.09	0.01	9.21
6,074.00	0.45	269.50	6,073.61	1.11	0.55	1.09	0.11	-0.11	0.86
6,168.00	0.44	274.41	6,167.60	1.13	-0.18	1.13	0.04	-0.01	5.22
6,262.00	0.43	262.71	6,261.60	1.11	-0.89	1.13	0.09	-0.01	-12.45
6,356.00	0.42	267.21	6,355.60	1.05	-1.58	1.09	0.04	-0.01	4.79
6,451.00	0.25	272.96	6,450.60	1.04	-2.14	1.10	0.18	-0.18	6.05
6,545.00	0.30	265.65	6,544.60	1.04	-2.59	1.10	0.06	0.05	-7.78
6,639.00	0.32	285.19	6,638.59	1.09	-3.08	1.16	0.11	0.02	20.79
6,734.00	0.31	275.36	6,733.59	1.18	-3.60	1.27	0.06	-0.01	-10.35
6,828.00	0.31	259.86	6,827.59	1.16	-4.10	1.26	0.09	0.00	-16.49
6,923.00	0.39	264.89	6,922.59	1.09	-4.68	1.20	0.09	0.08	5.29
7,016.00	0.34	266.25	7,015.59	1.04	-5.27	1.16	0.05	-0.05	1.46
7,111.00	0.35	268.37	7,110.59	1.01	-5.84	1.15	0.02	0.01	2.23
7,206.00	0.33	259.93	7,205.58	0.96	-6.40	1.11	0.06	-0.02	-8.88
7,300.00	0.36	252.87	7,299.58	0.82	-6.95	0.99	0.06	0.03	-7.51
7,395.00	0.40	245.18	7,394.58	0.59	-7.53	0.77	0.07	0.04	-8.09
7,489.00	0.43	242.37	7,488.58	0.29	-8.14	0.49	0.04	0.03	-2.99
7,584.00	0.53	251.38	7,583.58	-0.01	-8.87	0.20	0.13	0.11	9.48
7,679.00	0.44	238.90	7,678.57	-0.34	-9.60	-0.11	0.15	-0.09	-13.14
7,773.00	0.41	231.94	7,772.57	-0.73	-10.18	-0.49	0.06	-0.03	-7.40
7,868.00	0.42	233.66	7,867.57	-1.15	-10.72	-0.89	0.02	0.01	1.81
7,962.00	0.33	246.36	7,961.56	-1.46	-11.25	-1.19	0.13	-0.10	13.51
8,057.00	0.35	249.08	8,056.56	-1.68	-11.77	-1.39	0.03	0.02	2.86
8,151.00	0.42	247.39	8,150.56	-1.91	-12.36	-1.62	0.08	0.07	-1.80
8,246.00	0.37	250.69	8,245.56	-2.15	-12.97	-1.84	0.06	-0.05	3.47
8,336.00	0.43	249.46	8,335.56	-2.36	-13.56	-2.04	0.07	0.07	-1.37
8,434.00	0.43	258.50	8,433.55	-2.56	-14.26	-2.22	0.07	0.00	9.22
8,528.00	0.46	256.10	8,527.55	-2.72	-14.98	-2.37	0.04	0.03	-2.55
8,623.00	0.54	259.04	8,622.55	-2.90	-15.79	-2.52	0.09	0.08	3.09
8,717.00	0.56	264.79	8,716.54	-3.03	-16.68	-2.63	0.06	0.02	6.12
8,812.00	0.83	257.10	8,811.54	-3.22	-17.81	-2.80	0.30	0.28	-8.09
8,906.00	1.01	256.73	8,905.52	-3.57	-19.28	-3.10	0.19	0.19	-0.39
9,001.00	1.04	261.77	9,000.51	-3.88	-20.95	-3.38	0.10	0.03	5.31
9,095.00	1.08	269.96	9,094.49	-4.00	-22.68	-3.46	0.17	0.04	8.71
9,189.00	1.06	276.36	9,188.48	-3.91	-24.43	-3.32	0.13	-0.02	6.81
9,284.00	1.15	290.42	9,283.46	-3.48	-26.20	-2.85	0.30	0.09	14.80
9,378.00	1.06	307.24	9,377.44	-2.62	-27.77	-1.96	0.36	-0.10	17.89
9,472.00	0.92	316.76	9,471.43	-1.55	-28.98	-0.85	0.23	-0.15	10.13
9,566.00	1.05	329.88	9,565.41	-0.25	-29.93	0.46	0.28	0.14	13.96
9,661.00	0.95	333.20	9,660.40	1.20	-30.72	1.94	0.12	-0.11	3.49
9,755.00	0.66	337.23	9,754.39	2.40	-31.28	3.15	0.31	-0.31	4.29
9,849.00	0.76	322.19	9,848.38	3.39	-31.88	4.15	0.22	0.11	-16.00
9,943.00	0.80	304.57	9,942.37	4.26	-32.80	5.04	0.26	0.04	-18.74
10,038.00	0.88	309.39	10,037.36	5.09	-33.91	5.90	0.11	0.08	5.07

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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)
10,132.00	0.74	298.83	10,131.35	5.85	-35.00	6.68	0.22	-0.15	-11.23
10,226.00	0.37	267.73	10,225.35	6.13	-35.83	6.98	0.49	-0.39	-33.09
10,322.00	0.24	267.34	10,321.35	6.10	-36.34	6.97	0.14	-0.14	-0.41
10,416.00	0.16	235.08	10,415.35	6.02	-36.65	6.89	0.14	-0.09	-34.32
10,511.00	0.24	276.75	10,510.35	5.97	-36.95	6.85	0.17	0.08	43.86
10,605.00	0.33	268.71	10,604.35	5.98	-37.42	6.88	0.10	0.10	-8.55
10,699.00	0.19	298.39	10,698.35	6.05	-37.83	6.96	0.20	-0.15	31.57
10,794.00	0.18	202.72	10,793.35	5.99	-38.02	6.90	0.29	-0.01	-100.71
10,888.00	0.30	187.87	10,887.34	5.61	-38.11	6.52	0.14	0.13	-15.80
10,983.00	0.24	195.63	10,982.34	5.17	-38.20	6.08	0.07	-0.06	8.17
11,078.00	0.01	87.79	11,077.34	4.98	-38.25	5.89	0.26	-0.24	-113.52
11,144.00	0.13	209.98	11,143.34	4.92	-38.28	5.83	0.21	0.18	185.14
11,268.00	0.09	141.15	11,267.34	4.72	-38.29	5.63	0.10	-0.03	-55.51
11,362.00	0.18	32.08	11,361.34	4.79	-38.16	5.70	0.24	0.10	-116.03
11,456.00	0.07	5.42	11,455.34	4.97	-38.08	5.88	0.13	-0.12	-28.36
11,550.00	0.54	236.75	11,549.34	4.78	-38.44	5.70	0.62	0.50	-136.88
11,645.00	1.70	227.93	11,644.32	3.59	-39.87	4.55	1.23	1.22	-9.28
11,740.00	1.83	235.50	11,739.28	1.79	-42.16	2.80	0.28	0.14	7.97
11,835.00	1.79	247.53	11,834.23	0.36	-44.78	1.43	0.40	-0.04	12.66
11,928.00	1.82	259.86	11,927.18	-0.45	-47.58	0.69	0.42	0.03	13.26
12,024.00	2.20	257.71	12,023.12	-1.11	-50.88	0.10	0.40	0.40	-2.24
12,118.00	2.07	257.71	12,117.06	-1.86	-54.30	-0.56	0.14	-0.14	0.00
12,184.00	1.94	255.87	12,183.02	-2.38	-56.55	-1.03	0.22	-0.20	-2.79
Final Phoenix MWD Survey - OH									
12,250.00	1.94	255.87	12,248.98	-2.93	-58.72	-1.53	0.00	0.00	0.00
Projection to TD - OH									

Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,220.00	1,219.99	1.27	-4.75	Tie In - OH
1,358.00	1,357.99	1.13	-5.55	First Phoenix MWD Survey - OH
12,184.00	12,183.02	-2.38	-56.55	Final Phoenix MWD Survey - OH
12,250.00	12,248.98	-2.93	-58.72	Projection to TD - OH

Phoenix Technology Services
Survey Report 29-Jun-2018 07:47:54

Kaiser-Francis Oil Company

Bell Lake Unit South 330H
Lea County, NM (NAD 83)
ST01 / Job 62801
Phoenix MWD Surveys

Surface Loc.:

Northing: (Y) 453929.63

Easting: (X) 798187.50

RKB Elev: 3624.80'

GL Elev: 3601.80'

Survey Type Information:

H 100.00 - 1220.00 VES GYRO SURVEYS : NS-GYRO-MS

H 1220.00 - 10794.00 PHOENIX MWD SURVEYS : MWD+HDGM

H 11019.00 - 19372.00 PHOENIX MWD SURVEYS : MWD+HDGM

Measured Depth (ft)	Incl.	Azim.	Sub-Sea Depth (ft)	Vertical Depth (ft)	Local Coord (+N/-S) (ft)	(+E/-W) (ft)	UTM Coord Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Annotation
10794	0.18	202.72	7168.55	10793.35	5.99	-38.02	453935.6	798149.5	6.9		0 Tie In - ST01
11019	7.21	27	7392.97	11017.77	18.26	-31.74	453947.9	798155.8	19.02	3.28	First Phoenix MWD Survey - ST01
11066	12.5	4.86	7439.27	11064.07	25.97	-29.97	453955.6	798157.5	26.67	13.65	
11113	17.01	359.5	7484.71	11109.51	37.91	-29.6	453967.5	798157.9	38.61	10.02	
11160	18.75	8.26	7529.45	11154.25	52.27	-28.57	453981.9	798158.9	52.94	6.81	
11207	22.39	12.91	7573.45	11198.25	68.48	-25.49	453998.1	798162	69.07	8.48	
11254	28.76	15.25	7615.82	11240.62	88.13	-20.51	454017.8	798167	88.6	13.72	
11301	35.36	15.28	7655.63	11280.43	112.18	-13.94	454041.8	798173.6	112.49	14.04	
11348	43.48	13.1	7691.91	11316.71	141.1	-6.68	454070.7	798180.8	141.22	17.52	
11379	47.22	11.55	7713.69	11338.49	162.65	-1.98	454092.3	798185.5	162.65	12.58	
11426	51.31	9.82	7744.36	11369.16	197.63	4.6	454127.3	798192.1	197.47	9.14	
11474	55.36	11.39	7773.02	11397.82	235.47	11.7	454165.1	798199.2	235.12	8.84	
11521	61.36	13.96	7797.66	11422.46	274.48	20.5	454204.1	798208	273.91	13.59	
11569	67.35	14.77	7818.43	11443.23	316.37	31.24	454246	798218.7	315.54	12.57	
11616	72.01	11.49	7834.75	11459.55	359.28	41.23	454288.9	798228.7	358.19	11.88	
11663	75.93	9.84	7847.73	11472.53	403.66	49.58	454333.3	798237.1	402.36	9	
11710	81.98	10.09	7856.73	11481.53	449.08	57.56	454378.7	798245.1	447.57	12.88	
11758	88.43	11.01	7860.74	11485.54	496.07	66.32	454425.7	798253.8	494.35	13.57	
11853	92.98	10.35	7859.57	11484.37	589.4	83.92	4544519	798271.4	587.22	4.84	
11948	95.5	9.9	7852.55	11477.35	682.65	100.57	454612.3	798288.1	680.05	2.69	
12043	93.7	8	7844.93	11469.73	776.19	115.3	454705.8	798302.8	773.21	2.75	
12138	93	7.9	7839.37	11464.17	870.11	128.42	454799.7	798315.9	866.79	0.74	
12232	90.02	6.18	7836.9	11461.7	963.36	139.93	454893	798327.4	959.74	3.66	
12327	90.9	6.97	7836.14	11460.94	1057.73	150.81	454987.4	798338.3	1053.82	1.24	
12422	92.86	9.16	7833.02	11457.82	1151.73	164.12	455081.4	798351.6	1147.47	3.09	
12515	90.64	6.26	7830.18	11454.98	1243.83	176.59	455173.5	798364.1	1239.25	3.93	
12609	88.41	3.4	7830.96	11455.76	1337.48	184.51	455267.1	798372	1332.68	3.86	
12704	87.82	0.47	7834.08	11458.88	1432.36	187.71	455362	798375.2	1427.46	3.14	
12799	86.61	358.37	7838.7	11463.5	1527.24	186.75	455456.9	798374.3	1522.33	2.55	
12893	87.42	358.39	7843.59	11468.39	1621.07	184.1	455550.7	798371.6	1616.2	0.86	
12988	87.2	358.33	7848.05	11472.85	1715.93	181.38	455645.6	798368.9	1711.1	0.24	
13083	87.98	358.52	7852.05	11476.85	1810.81	178.77	455740.4	798366.3	1806.01	0.85	
13178	88.77	358.75	7854.74	11479.54	1905.74	176.51	455835.4	798364	1900.97	0.87	
13273	89.64	358.42	7856.06	11480.86	2000.7	174.17	455930.3	798361.7	1995.96	0.98	
13368	90.79	358.69	7855.7	11480.5	2095.67	171.77	456025.3	798359.3	2090.96	1.24	
13462	90.92	357.86	7854.3	11479.1	2189.61	168.94	456119.2	798356.4	2184.95	0.89	
13557	88.44	357.1	7854.83	11479.63	2284.51	164.76	456214.1	798352.3	2279.92	2.73	
13652	88.38	356.49	7857.47	11482.27	2379.33	159.46	456309	798347	2374.83	0.64	
13746	87.59	355.67	7860.77	11485.57	2473.05	153.03	456402.7	798340.5	2468.68	1.21	
13842	88.26	357.25	7864.25	11489.05	2563.08	147.11	456498.4	798334.6	2564.55	1.79	
13936	88.74	357.33	7866.71	11491.51	2662.66	142.67	456592.3	798330.2	2658.49	0.52	
14031	89.33	356.87	7868.31	11493.11	2757.52	137.86	456687.2	798325.4	2753.44	0.79	
14125	88.49	357.12	7870.1	11494.9	2851.38	132.94	456781	798320.4	2847.38	0.93	
14220	88.13	359.75	7872.9	11497.7	2946.29	130.34	456875.9	798317.8	2942.33	2.79	
14314	89.27	0.76	7875.03	11499.83	3040.26	130.76	456969.9	798318.3	3036.27	1.62	
14338	89.39	0.37	7875.31	11500.11	3064.26	131	456993.9	798318.5	3060.25	1.7	
14433	88.26	359.64	7877.26	11502.06	3159.24	131.01	457088.9	798318.5	3155.2	1.42	
14527	89.08	359.43	7879.44	11504.24	3253.21	130.24	457182.8	798317.7	3249.17	0.9	
14622	89.91	359.9	7880.28	11505.08	3348.2	129.69	457277.8	798317.2	3344.15	1	
14716	89.36	359.42	7880.88	11505.68	3442.2	129.13	457371.8	798316.6	3438.13	0.78	
14811	88.35	359.27	7882.78	11507.58	3537.17	128.04	457466.8	798315.5	3533.1	1.07	
14905	90.5	359.89	7883.72	11508.52	3631.16	127.35	457560.8	798314.9	3627.08	2.38	
14999	90.17	359.74	7883.17	11507.97	3725.16	127.05	457654.8	798314.6	3721.05	0.39	
15094	88.52	358.76	7884.26	11509.06	3820.14	125.81	457749.8	798313.3	3816.04	2.02	
15188	91.9	359.9	7883.91	11508.71	3914.12	124.71	457843.8	798312.2	3910.02	3.79	
15283	91.9	359.6	7880.76	11505.56	4009.06	124.29	457938.7	798311.8	4004.94	0.32	
15377	86.4	356.6	7882.16	11506.96	4102.95	121.18	458032.6	798308.7	4098.88	6.66	
15471	86.7	356	7887.81	11512.61	4196.59	115.13	458126.2	798302.6	4192.64	0.71	
15565	87.7	355.8	7892.4	11517.2	4290.23	108.41	458219.9	798295.9	4286.42	1.08	
15659	88.3	357.4	7895.69	11520.49	4384.01	102.84	458313.6	798290.3	4380.3	1.82	
15754	89.6	357.9	7897.43	11522.23	4478.91	98.95	458408.5	798286.5	4475.26	1.47	
15848	84.8	356.9	7902.02	11526.82	4572.67	94.69	458502.3	798282.2	4569.1	5.22	

15942	86.2	357.5	7909.39	11534.19	4666.27	90.12	458595.9	798277.6	4662.78	1.62
16037	86.7	357.6	7915.27	11540.07	4761	86.06	458690.6	798273.6	4757.58	0.54
16131	90.2	358.2	7917.82	11542.62	4854.89	82.62	458784.5	798270.1	4851.52	3.78
16226	91.1	358.1	7916.74	11541.54	4949.83	79.55	458879.5	798267.1	4946.51	0.95
16320	91.5	358.5	7914.61	11539.41	5043.76	76.77	458973.4	798264.3	5040.49	0.6
16414	91.6	359.1	7912.06	11536.86	5137.71	74.8	459067.3	798262.3	5134.45	0.65
16509	91.6	0	7909.41	11534.21	5232.67	74.05	459162.3	798261.6	5229.4	0.95
16603	90.5	0.3	7907.69	11532.49	5326.65	74.3	459256.3	798261.8	5323.35	1.21
16697	88.8	0.2	7908.26	11533.06	5420.64	74.71	459350.3	798262.2	5417.31	1.81
16792	92.4	1.2	7907.27	11532.07	5515.61	75.87	459445.2	798263.4	5512.22	3.93
16856	93.13	1.39	7904.18	11528.98	5579.52	77.31	459509.2	798264.8	5576.08	1.18
16950	90.58	358.72	7901.14	11525.94	5673.46	77.4	459603.1	798264.9	5669.98	3.93
17045	88.81	358.43	7901.64	11526.44	5768.42	75.04	459698.1	798262.5	5764.98	1.89
17139	89.08	358.54	7903.37	11528.17	5862.37	72.55	459792	798260.1	5858.96	0.31
17234	87.51	356.48	7906.2	11531	5957.23	68.43	459886.9	798255.9	5953.89	2.73
17328	88.16	355.95	7909.75	11534.55	6050.96	62.23	459980.6	798249.7	6047.74	0.89
17422	90.47	356.34	7910.88	11535.68	6144.74	55.91	460074.4	798243.4	6141.64	2.49
17517	90.24	357.05	7910.29	11535.09	6239.57	50.43	460169.2	798237.9	6236.59	0.79
17611	87.64	358.34	7912.03	11536.83	6333.47	46.65	460263.1	798234.2	6330.55	3.09
17706	85.98	358.75	7917.31	11542.11	6428.29	44.24	460357.9	798231.7	6425.4	1.8
17800	87.09	358.37	7922.99	11547.79	6522.09	41.89	460451.7	798229.4	6519.22	1.25
17895	87.17	358.85	7927.75	11552.55	6616.94	39.59	460546.6	798227.1	6614.1	0.51
17989	85.18	357.89	7934.02	11558.82	6710.69	36.92	460640.3	798224.4	6707.89	2.35
18083	87.01	356.84	7940.42	11565.22	6804.36	32.61	460734	798220.1	6801.64	2.24
18177	90.3	358.12	7942.63	11567.43	6898.23	28.48	460827.9	798216	6895.58	3.76
18272	89.75	357.15	7942.59	11567.39	6993.15	24.56	460922.8	798212.1	6990.56	1.17
18366	90.61	358.1	7942.29	11567.09	7087.07	20.66	461016.7	798208.2	7084.55	1.36
18460	86.08	357.65	7945.01	11569.81	7180.94	17.18	461110.6	798204.7	7178.48	4.84
18555	88.79	359.5	7949.26	11574.06	7275.8	14.82	461205.4	798202.3	7273.37	3.45
18649	90.38	0.04	7949.94	11574.74	7369.8	14.44	461299.4	798201.9	7367.34	1.79
18743	89.15	359.82	7950.32	11575.12	7463.79	14.33	461393.4	798201.8	7461.32	1.33
18838	89.92	359.44	7951.09	11575.89	7558.79	13.71	461488.4	798201.2	7556.3	0.9
18932	91.83	359.43	7949.66	11574.46	7652.77	12.79	461582.4	798200.3	7650.27	2.03
19026	92.32	359.5	7946.26	11571.06	7746.7	11.91	461676.3	798199.4	7744.2	0.53
19121	90.22	358.47	7944.15	11568.95	7841.66	10.23	461771.3	798197.7	7839.17	2.46
19215	91.15	358.15	7943.03	11567.83	7935.61	7.46	461865.2	798195	7933.16	1.05
19307	90.12	359.01	7942.01	11566.81	8027.57	5.18	461957.2	798192.7	8025.15	1.46
19372	90.12	359.01	7941.87	11566.67	8092.56	4.05	462022.2	798191.6	8090.15	0

Final Phoenix MWD Survey
 Projection to TD

All data are in feet unless otherwise stated. Directions and coordinates are relative to Grid North.
 Vertical depths are relative to RKB. Northings and Eastings are relative to Well.

The Dogleg Severity is in Degrees per 100 feet.
 Vertical Section is from Slot and calculated along an Azimuth of 358.630° (Grid).

Coordinate System is North American Datum 1983 US State Plane 1983, New Mexico Eastern Zone.
 Grid Convergence at Surface is 0.443°.

Based upon Minimum Curvature type calculations, at a Measured Depth of 19372.00ft.,
 the Bottom Hole Displacement is 8092.56ft., in the Direction of 358.630° (Grid).