



PHOENIX
TECHNOLOGY SERVICES

August 17, 2016

BC Operating
Attention: Regulatory Department
303 Veterans Airpark Lane #6101
PO Box 50820, Midland, TX 70710
Midland, TX 79705-4550

Re: BC Operating
Mammoth Federal 1H
Lea County, NM
API #30-025-43095
Job No. 60209

HOBBS OCD
DEC 12 2016
RECEIVED

Dear Regulatory Department,

Phoenix Technology Services, Inc. has filed the survey certification, surveys, and lease plat for the above referenced well with the State of New Mexico Oil Conservation Division – District 2 via certified mail. A copy of the filing is attached for your records.

Name of Surveyor	Drain Hole Number	Surveyed Depths		Dates Performed		Type of Survey
		From	To	Start	End	
Larry Seebeck	1H	164	13,684	07/25/16	08/10/16	MWD

Thank you for the opportunity to be of service. Please contact me if you have any questions or require additional information.

Best Regards,

Claudia Carreon

Claudia Carreon
Operations Administrator

Phoenix Technology Services SURVEY DATA CERTIFICATION



PHOENIX JOB NUMBER

60209

ENERGY COMPANY BC Operating

WELL NAME Mammoth Federal 1H

COUNTY & STATE

Lea, New Mexico

API WELL NUMBER

30-025-43095

PROPOSED DIRECTION

359.50

TIE-IN DATA						
MEASURED	VERTICAL			N-S	E-W	DATA
DEPTH	DEPTH	INCLIN	AZIMUTH	COORD	COORD	SOURCE
.00 ft	.00 ft	0.00	0.00	.00 ft	.00 ft	Surface

FIRST	FIRST		
SURVEY	SURVEY		
DATE	DEPTH	INCLIN	AZIMUTH
25-Jul-16	164.00 ft	0.31°	221.96

SURVEY INSTRUMENT

TYPE

Phoenix MWD

LAST	LAST		
SURVEY	SURVEY		
DATE	DEPTH	INCLIN	AZIMUTH
10-Aug-16	13,684.00 ft	86.90	359.40

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

PROJECTED	PROJECTED		
TD SURVEY	TD SURVEY		
DATE	DEPTH	INCLIN	AZIMUTH
10-Aug-16	13,743.00 ft	86.90	359.40

Larry Seebeck

PRINT YOUR NAME ABOVE

SIGN YOUR NAME ABOVE

MAGNETIC DECLINATION OR TOTAL GRID

TOTAL CORRECTION USED	6.87
DECLINATION OR GRID	GRID

12-Aug

TODAY'S DATE

MWD SUPERVISOR 1

Larry Seebeck

DIRECTIONAL DRILLER 1

Vinn Adams

MWD SUPERVISOR 2

Jeff Arenas

DIRECTIONAL DRILLER 2

Ruben Cano

12329 Cutten Rd., Houston, Texas 777066

(713)337-0600 (Voice), (713)337-0599 (Fax)



BC Operating, Inc.

Lea County, NM (NAD27 NME)

Mammoth Federal

1H

OH / Job 60209

Survey: Phoenix MWD Surveys

Standard Survey Report

11 August, 2016



Company:	BC Operating, Inc.	Local Co-ordinate Reference:	Well 1H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	RKB @ 3308.90usft (Patterson 244)
Site:	Mammoth Federal	MD Reference:	RKB @ 3308.90usft (Patterson 244)
Well:	1H	North Reference:	Grid
Wellbore:	OH / Job 60209	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Patterson 244)	Database:	Compass 5000 GCR

Project	Lea County, NM (NAD27 NME)		
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		

Site	Mammoth Federal		
Site Position:		Northing:	388,802.04 usft
From:	Map	Easting:	784,204.93 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 3' 56.20040 N
		Longitude:	103° 24' 57.20704 W
		Grid Convergence:	0.49 °

Well	1H		
Well Position	+N/-S	0.00 usft	Northing: 388,802.04 usft
	+E/-W	0.00 usft	Easting: 784,204.93 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft
		Latitude:	32° 3' 56.20040 N
		Longitude:	103° 24' 57.20704 W
		Ground Level:	3,280.40 usft

Wellbore	OH / Job 60209		
Magnetics	Model Name	Sample Date	Declination (°)
	HDGM	7/18/2016	6.87
		Dip Angle (°)	59.82
		Field Strength (nT)	48,029

Design	Surveys (Patterson 244)		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)
	0.00	0.00	0.00
		Direction (°)	189.86

Survey Program	Date 8/11/2016		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name
164.00	13,743.00	Phoenix MWD Surveys (OH / Job 60209)	PHX+MWD+HDGM
			Description
			PHX+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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
164.00	0.31	221.96	164.00	-0.33	-0.30	0.38	0.19	0.19	0.00
First Phoenix MWD Survey									
282.00	0.40	173.75	282.00	-0.98	-0.47	1.04	0.26	0.08	-40.86
398.00	0.51	156.65	397.99	-1.85	-0.22	1.86	0.15	0.09	-14.74
513.00	0.40	173.57	512.99	-2.72	0.03	2.68	0.15	-0.10	14.71
603.00	0.20	185.09	602.99	-3.19	0.05	3.13	0.23	-0.22	12.80
663.00	0.31	204.96	662.99	-3.44	-0.03	3.40	0.23	0.18	33.12
757.00	0.40	213.17	756.99	-3.95	-0.31	3.94	0.11	0.10	8.73
851.00	0.20	206.27	850.98	-4.37	-0.56	4.40	0.22	-0.21	-7.34
945.00	0.31	217.09	944.98	-4.72	-0.79	4.78	0.13	0.12	11.51

Company:	BC Operating, Inc.	Local Co-ordinate Reference:	Well 1H
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Site:	Mammoth Federal	MD Reference:	RKB @ 3308.90usft (Patterson 244)
Well:	1H	North Reference:	Grid
Wellbore:	OH / Job 60209	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Patterson 244)	Database:	Compass 5000 GCR

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)
1,039.00	0.40	197.79	1,038.98	-5.23	-1.04	5.34	0.16	0.10	-20.53
1,076.00	0.51	196.56	1,075.98	-5.52	-1.13	5.63	0.30	0.30	-3.32
1,219.00	0.68	200.31	1,218.97	-6.92	-1.61	7.09	0.12	0.12	2.62
1,313.00	0.64	204.43	1,312.97	-7.92	-2.02	8.15	0.07	-0.04	4.38
1,407.00	0.62	208.27	1,406.96	-8.85	-2.47	9.14	0.05	-0.02	4.09
1,500.00	0.65	219.01	1,499.96	-9.70	-3.05	10.08	0.13	0.03	11.55
1,594.00	0.69	218.98	1,593.95	-10.56	-3.74	11.04	0.04	0.04	-0.03
1,688.00	0.69	225.60	1,687.94	-11.39	-4.50	11.99	0.08	0.00	7.04
1,783.00	0.60	219.42	1,782.94	-12.18	-5.22	12.89	0.12	-0.09	-6.51
1,877.00	0.57	211.24	1,876.93	-12.96	-5.78	13.75	0.09	-0.03	-8.70
1,971.00	0.65	200.94	1,970.93	-13.85	-6.21	14.71	0.14	0.09	-10.96
2,066.00	0.15	57.68	2,065.92	-14.29	-6.30	15.16	0.82	-0.53	-150.80
2,159.00	0.24	35.36	2,158.92	-14.07	-6.08	14.90	0.12	0.10	-24.00
2,253.00	0.41	54.63	2,252.92	-13.71	-5.69	14.48	0.21	0.18	20.50
2,346.00	0.53	58.61	2,345.92	-13.29	-5.06	13.96	0.13	0.13	4.28
2,441.00	0.50	54.72	2,440.92	-12.83	-4.34	13.38	0.05	-0.03	-4.09
2,535.00	0.59	57.24	2,534.91	-12.33	-3.60	12.76	0.10	0.10	2.68
2,629.00	0.89	62.51	2,628.90	-11.73	-2.55	11.99	0.33	0.32	5.61
2,723.00	1.13	58.89	2,722.89	-10.91	-1.10	10.94	0.26	0.26	-3.85
2,817.00	1.34	66.76	2,816.87	-10.00	0.70	9.73	0.29	0.22	8.37
2,911.00	1.64	70.43	2,910.83	-9.12	2.98	8.47	0.33	0.32	3.90
3,005.00	1.81	72.25	3,004.79	-8.21	5.66	7.12	0.19	0.18	1.94
3,099.00	1.13	39.60	3,098.76	-7.05	7.66	5.63	1.12	-0.72	-34.73
3,193.00	1.32	39.64	3,192.74	-5.50	8.94	3.89	0.20	0.20	0.04
3,287.00	1.56	37.79	3,286.71	-3.65	10.42	1.82	0.26	0.26	-1.97
3,381.00	2.02	43.32	3,380.67	-1.44	12.34	-0.70	0.52	0.49	5.88
3,475.00	1.42	38.19	3,474.62	0.68	14.20	-3.10	0.66	-0.64	-5.46
3,569.00	1.13	25.89	3,568.60	2.43	15.32	-5.02	0.42	-0.31	-13.09
3,663.00	1.53	19.78	3,662.57	4.45	16.15	-7.15	0.45	0.43	-6.50
3,757.00	1.74	13.20	3,756.54	7.02	16.90	-9.81	0.30	0.22	-7.00
3,851.00	0.70	334.09	3,850.51	8.92	16.98	-11.70	1.36	-1.11	-41.61
3,944.00	1.48	255.42	3,943.50	9.13	15.57	-11.66	1.62	0.84	-84.59
4,039.00	1.68	259.45	4,038.46	8.57	13.01	-10.67	0.24	0.21	4.24
4,133.00	1.20	279.34	4,132.44	8.48	10.68	-10.18	0.73	-0.51	21.16
4,227.00	1.30	279.79	4,226.41	8.82	8.66	-10.17	0.11	0.11	0.48
4,321.00	1.51	278.65	4,320.38	9.19	6.39	-10.14	0.23	0.22	-1.21
4,415.00	1.72	279.31	4,414.35	9.60	3.77	-10.10	0.22	0.22	0.70
4,509.00	1.75	254.18	4,508.31	9.44	1.00	-9.47	0.80	0.03	-26.73
4,603.00	1.62	239.42	4,602.27	8.37	-1.53	-7.98	0.48	-0.14	-15.70
4,698.00	1.20	221.81	4,697.24	6.94	-3.35	-6.27	0.63	-0.44	-18.54
4,791.00	1.10	211.63	4,790.22	5.46	-4.47	-4.61	0.24	-0.11	-10.95
4,885.00	1.17	188.08	4,884.20	3.74	-5.07	-2.82	0.50	0.07	-25.05
4,979.00	1.80	154.93	4,978.17	1.45	-4.58	-0.65	1.11	0.67	-35.27

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Site: Mammoth Federal
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Wellbore: OH / Job 60209
Design: Surveys (Patterson 244)

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Survey Calculation Method: Minimum Curvature
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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)
5,073.00	2.59	141.94	5,072.10	-1.56	-2.65	1.99	0.99	0.84	-13.82
5,167.00	1.17	154.49	5,166.05	-4.09	-0.92	4.19	1.56	-1.51	13.35
5,261.00	0.53	171.98	5,260.04	-5.39	-0.45	5.39	0.73	-0.68	18.61
5,333.00	0.61	174.72	5,332.03	-6.10	-0.37	6.08	0.12	0.11	3.81
5,399.00	0.81	173.03	5,398.03	-6.92	-0.28	6.86	0.30	0.30	-2.56
5,493.00	0.81	173.42	5,492.02	-8.24	-0.12	8.14	0.01	0.00	0.41
5,587.00	0.81	170.35	5,586.01	-9.55	0.06	9.40	0.05	0.00	-3.27
5,681.00	0.79	166.70	5,680.00	-10.84	0.32	10.62	0.06	-0.02	-3.88
5,774.00	0.85	173.80	5,772.99	-12.15	0.55	11.87	0.13	0.06	7.63
5,866.00	0.97	170.10	5,864.98	-13.59	0.75	13.26	0.15	0.13	-4.02
5,959.00	0.99	167.73	5,957.97	-15.15	1.06	14.75	0.05	0.02	-2.55
6,052.00	0.99	173.75	6,050.95	-16.74	1.32	16.26	0.11	0.00	6.47
6,144.00	1.03	171.22	6,142.94	-18.34	1.53	17.81	0.07	0.04	-2.75
6,236.00	1.11	169.24	6,234.92	-20.04	1.82	19.43	0.10	0.09	-2.15
6,328.00	1.05	170.23	6,326.91	-21.74	2.13	21.06	0.07	-0.07	1.08
6,421.00	0.89	174.81	6,419.89	-23.30	2.34	22.56	0.19	-0.17	4.92
6,513.00	1.04	180.54	6,511.88	-24.85	2.40	24.07	0.19	0.16	6.23
6,605.00	0.14	267.76	6,603.87	-25.69	2.28	24.92	1.13	-0.98	94.80
6,698.00	0.10	2.45	6,696.87	-25.61	2.17	24.86	0.19	-0.04	101.82
6,790.00	0.16	342.24	6,788.87	-25.41	2.13	24.67	0.08	0.07	-21.97
6,883.00	0.22	355.00	6,881.87	-25.11	2.08	24.38	0.08	0.06	13.72
6,975.00	0.20	331.25	6,973.87	-24.79	1.99	24.08	0.10	-0.02	-25.82
7,067.00	0.27	336.73	7,065.87	-24.45	1.82	23.78	0.08	0.08	5.96
7,161.00	0.11	332.22	7,159.87	-24.17	1.69	23.52	0.17	-0.17	-4.80
7,255.00	0.17	293.13	7,253.87	-24.03	1.52	23.42	0.12	0.06	-41.59
7,349.00	0.19	271.31	7,347.87	-23.97	1.24	23.41	0.08	0.02	-23.21
7,443.00	0.15	236.51	7,441.87	-24.04	0.98	23.51	0.12	-0.04	-37.02
7,537.00	0.30	208.55	7,535.87	-24.32	0.76	23.83	0.19	0.16	-29.74
7,631.00	0.32	208.66	7,629.87	-24.77	0.52	24.31	0.02	0.02	0.12
7,726.00	0.54	228.80	7,724.86	-25.30	0.05	24.91	0.28	0.23	21.20
7,820.00	0.70	219.81	7,818.86	-26.03	-0.65	25.76	0.20	0.17	-9.56
7,914.00	0.82	220.48	7,912.85	-26.98	-1.45	26.83	0.13	0.13	0.71
8,008.00	1.06	207.26	8,006.84	-28.27	-2.29	28.24	0.34	0.26	-14.06
8,102.00	0.67	265.64	8,100.83	-29.08	-3.23	29.20	0.97	-0.41	62.11
8,196.00	0.97	271.15	8,194.82	-29.11	-4.58	29.46	0.33	0.32	5.86
8,290.00	0.21	353.71	8,288.81	-28.92	-5.39	29.42	1.03	-0.81	87.83
8,384.00	0.33	62.42	8,382.81	-28.62	-5.17	29.09	0.34	0.13	73.10
8,479.00	2.28	15.52	8,477.79	-26.67	-4.42	27.04	2.18	2.05	-49.37
8,526.00	3.52	11.56	8,524.72	-24.36	-3.88	24.67	2.67	2.64	-8.43
8,573.00	6.69	2.11	8,571.53	-20.21	-3.49	20.51	6.96	6.74	-20.11
8,620.00	11.31	358.54	8,617.94	-12.86	-3.51	13.27	9.90	9.83	-7.60
8,667.00	15.15	358.27	8,663.69	-2.11	-3.81	2.73	8.17	8.17	-0.57
8,714.00	19.53	358.39	8,708.54	11.89	-4.22	-10.99	9.32	9.32	0.26

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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)
8,761.00	24.10	358.05	8,752.16	29.34	-4.77	-28.09	9.73	9.72	-0.72
8,808.00	29.21	358.04	8,794.15	50.40	-5.49	-48.72	10.87	10.87	-0.02
8,855.00	34.57	359.21	8,834.04	75.22	-6.06	-73.07	11.48	11.40	2.49
8,902.00	39.83	0.35	8,871.47	103.62	-6.15	-101.04	11.29	11.19	2.43
8,949.00	43.91	0.92	8,906.46	134.98	-5.80	-132.00	8.72	8.68	1.21
8,996.00	47.34	0.42	8,939.33	168.57	-5.41	-165.15	7.34	7.30	-1.06
9,043.00	51.16	359.92	8,970.00	204.17	-5.31	-200.24	8.17	8.13	-1.06
9,090.00	55.62	359.75	8,998.02	241.89	-5.42	-237.39	9.49	9.49	-0.36
9,137.00	59.18	358.82	9,023.34	281.47	-5.92	-276.30	7.76	7.57	-1.98
9,184.00	61.61	357.84	9,046.56	322.31	-7.12	-316.34	5.48	5.17	-2.09
9,231.00	63.91	357.16	9,068.07	364.06	-8.94	-357.15	5.06	4.89	-1.45
9,278.00	67.49	358.04	9,087.41	406.85	-10.73	-399.01	7.81	7.62	1.87
9,325.00	74.17	358.87	9,102.83	451.20	-11.92	-442.50	14.31	14.21	1.77
9,372.00	81.18	0.00	9,112.86	497.09	-12.37	-487.63	15.10	14.91	2.40
9,419.00	83.92	0.28	9,118.95	543.69	-12.25	-533.56	5.86	5.83	0.60
9,466.00	87.33	1.96	9,122.54	590.53	-11.33	-579.87	8.08	7.26	3.57
9,513.00	89.94	2.17	9,123.66	637.48	-9.64	-626.42	5.57	5.55	0.45
9,607.00	91.93	1.09	9,122.12	731.43	-6.97	-719.43	2.41	2.12	-1.15
9,701.00	89.21	357.29	9,121.19	825.39	-8.30	-811.78	4.97	-2.89	-4.04
9,796.00	90.89	356.05	9,121.11	920.22	-13.82	-904.27	2.20	1.77	-1.31
9,890.00	90.52	357.00	9,119.95	1,014.04	-19.51	-995.73	1.08	-0.39	1.01
9,984.00	89.15	359.61	9,120.22	1,107.99	-22.29	-1,087.81	3.14	-1.46	2.78
10,078.00	90.53	2.24	9,120.48	1,201.96	-20.77	-1,180.66	3.16	1.47	2.80
10,172.00	88.67	1.48	9,121.14	1,295.91	-17.72	-1,273.74	2.14	-1.98	-0.81
10,266.00	89.66	2.74	9,122.51	1,389.83	-14.26	-1,366.87	1.70	1.05	1.34
10,360.00	89.49	0.19	9,123.21	1,483.79	-11.86	-1,459.85	2.72	-0.18	-2.71
10,454.00	90.57	0.59	9,123.16	1,577.79	-11.22	-1,552.57	1.23	1.15	0.43
10,548.00	90.81	0.29	9,122.02	1,671.78	-10.50	-1,645.29	0.41	0.26	-0.32
10,642.00	90.86	359.97	9,120.65	1,765.77	-10.29	-1,737.93	0.34	0.05	-0.34
10,736.00	91.43	0.49	9,118.78	1,859.75	-9.91	-1,830.59	0.82	0.61	0.55
10,830.00	91.17	359.88	9,116.64	1,953.72	-9.61	-1,923.23	0.71	-0.28	-0.65
10,924.00	91.03	359.61	9,114.84	2,047.70	-10.02	-2,015.75	0.32	-0.15	-0.29
11,018.00	92.21	359.66	9,112.18	2,141.66	-10.62	-2,108.22	1.26	1.26	0.05
11,112.00	89.57	359.45	9,110.72	2,235.64	-11.35	-2,200.68	2.82	-2.81	-0.22
11,206.00	88.76	358.78	9,112.09	2,329.62	-12.80	-2,293.02	1.12	-0.86	-0.71
11,297.00	88.20	359.00	9,114.51	2,420.57	-14.57	-2,382.33	0.66	-0.62	0.24
11,392.00	89.30	359.90	9,116.58	2,515.54	-15.48	-2,475.74	1.50	1.16	0.95
11,486.00	89.60	2.60	9,117.48	2,609.50	-13.43	-2,568.67	2.89	0.32	2.87
11,580.00	88.50	0.30	9,119.04	2,703.45	-11.05	-2,661.64	2.71	-1.17	-2.45
11,674.00	89.60	3.50	9,120.60	2,797.37	-7.93	-2,754.71	3.60	1.17	3.40
11,768.00	88.70	2.00	9,121.99	2,891.25	-3.42	-2,847.97	1.86	-0.96	-1.60
11,862.00	88.00	0.40	9,124.70	2,985.19	-1.46	-2,940.86	1.86	-0.74	-1.70
11,956.00	88.20	359.40	9,127.82	3,079.13	-1.62	-3,033.39	1.08	0.21	-1.06
12,050.00	88.40	359.10	9,130.60	3,173.09	-2.85	-3,125.74	0.38	0.21	-0.32

Company:	BC Operating, Inc.	Local Co-ordinate Reference:	Well 1H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	RKB @ 3308.90usft (Patterson 244)
Site:	Mammoth Federal	MD Reference:	RKB @ 3308.90usft (Patterson 244)
Well:	1H	North Reference:	Grid
Wellbore:	OH / Job 60209	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Patterson 244)	Database:	Compass 5000 GCR

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)
12,144.00	90.80	359.50	9,131.26	3,267.07	-4.00	-3,218.14	2.59	2.55	0.43
12,238.00	91.40	358.90	9,129.46	3,361.04	-5.31	-3,310.50	0.90	0.64	-0.64
12,332.00	92.00	358.30	9,126.67	3,454.97	-7.60	-3,402.65	0.90	0.64	-0.64
12,426.00	92.00	356.90	9,123.39	3,548.83	-11.54	-3,494.45	1.49	0.00	-1.49
12,520.00	92.20	356.60	9,119.94	3,642.61	-16.86	-3,585.94	0.38	0.21	-0.32
12,614.00	92.00	356.80	9,116.50	3,736.40	-22.27	-3,677.41	0.30	-0.21	0.21
12,709.00	91.60	356.60	9,113.51	3,831.19	-27.74	-3,769.87	0.47	-0.42	-0.21
12,802.00	91.50	356.90	9,111.00	3,924.01	-33.01	-3,860.41	0.34	-0.11	0.32
12,897.00	89.30	358.20	9,110.33	4,018.91	-37.07	-3,953.22	2.69	-2.32	1.37
12,991.00	88.40	358.60	9,112.22	4,112.85	-39.69	-4,045.33	1.05	-0.96	0.43
13,085.00	87.30	357.80	9,115.75	4,206.74	-42.64	-4,137.32	1.45	-1.17	-0.85
13,179.00	91.50	359.00	9,116.73	4,300.67	-45.27	-4,229.42	4.65	4.47	1.28
13,273.00	90.60	358.90	9,115.01	4,394.64	-46.99	-4,321.70	0.96	-0.96	-0.11
13,367.00	88.30	358.60	9,115.91	4,488.61	-49.04	-4,413.93	2.47	-2.45	-0.32
13,461.00	88.70	359.10	9,118.37	4,582.56	-50.92	-4,506.17	0.68	0.43	0.53
13,556.00	88.30	359.20	9,120.86	4,677.51	-52.33	-4,599.48	0.43	-0.42	0.11
13,650.00	87.50	359.10	9,124.30	4,771.44	-53.73	-4,691.78	0.86	-0.85	-0.11
13,684.00	86.90	359.40	9,125.96	4,805.40	-54.17	-4,725.16	1.97	-1.76	0.88
Final Phoenix MWD Survey									
13,743.00	86.90	359.40	9,129.16	4,864.31	-54.79	-4,783.10	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)	
164.00	164.00	-0.33	-0.30	First Phoenix MWD Survey
13,684.00	9,125.96	4,805.40	-54.17	Final Phoenix MWD Survey
13,743.00	9,129.16	4,864.31	-54.79	Projection to TD