



HOBBS OCD

OCT 06 2016

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Chevron

Lea County, NM (NAD27 NME)

SD WE 14 Fed

P7 3H

OH / Job 60046

Survey: Phoenix MWD Surveys

Standard Survey Report

02 June, 2016





Phoenix Technology Services

Survey Report



Company:	Chevron	Local Co-ordinate Reference:	Well P7 3H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	RKB @ 3198.00usft (Pace X30)
Site:	SD WE 14 Fed	MD Reference:	RKB @ 3198.00usft (Pace X30)
Well:	P7 3H	North Reference:	Grid
Wellbore:	OH / Job 60046	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Pace X30)	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		SD WE 14 Fed			
Site Position:		Northing:	377,311.00 usft	Latitude:	32° 2' 7.83756 N
From:	Map	Easting:	711,217.00 usft	Longitude:	103° 39' 6.19467 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.36 °

Well	P7 3H					
Well Position	+N/-S	0.00 usft	Northing:	377,548.00 usft	Latitude:	32° 2' 9.93036 N
	+E/-W	0.00 usft	Easting:	715,223.00 usft	Longitude:	103° 38' 19.64032 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	3,165.00 usft

Wellbore	OH / Job 60046				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	4/18/2016	6.97	59.75	48,036

Design	Surveys (Pace X30)				
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	356.27	

Survey Program	Date	6/2/2016			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
135.97	813.00	Teledrift MWD Surveys (OH / Job 60046)	MWD	MWD - Standard	
948.00	8,556.00	Phoenix MWD Surveys (OH / Job 60046)	PHX+MWD+HDGM	PHX+OWSG 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)	
813.00	0.90	300.00	812.96	5.10	-4.04	5.35	0.00	0.00	0.00	
813.01	0.90	300.00	812.97	5.10	-4.04	5.35	0.00	0.00	0.00	
Tie-in to Teledrift Surveys										
948.00	1.10	315.40	947.94	6.55	-5.87	6.92	0.25	0.15	11.41	
First Phoenix MWD Survey										
1,126.00	1.90	273.70	1,125.88	7.96	-10.02	8.59	0.73	0.45	-23.43	
1,303.00	4.80	264.00	1,302.56	7.37	-20.31	8.68	1.66	1.64	-5.48	
1,480.00	6.50	265.40	1,478.70	5.79	-37.67	8.23	0.96	0.96	0.79	
1,658.00	6.60	266.00	1,655.54	4.27	-57.91	8.03	0.07	0.06	0.34	



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Wellbore:	OH / Job 60046	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Pace X30)	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)	
1,836.00	6.00	264.40	1,832.46	2.65	-77.38	7.68	0.35	-0.34	-0.90	
2,013.00	6.20	265.40	2,008.46	0.98	-96.11	7.23	0.13	0.11	0.56	
2,190.00	6.70	263.40	2,184.34	-0.97	-115.89	6.56	0.31	0.28	-1.13	
2,368.00	4.80	261.60	2,361.43	-3.25	-133.58	5.44	1.07	-1.07	-1.01	
2,546.00	4.90	260.60	2,538.80	-5.58	-148.45	4.08	0.07	0.06	-0.56	
2,723.00	5.20	263.00	2,715.11	-7.79	-163.86	2.87	0.21	0.17	1.36	
2,900.00	5.20	265.40	2,891.38	-9.42	-179.82	2.29	0.12	0.00	1.36	
3,078.00	5.30	264.50	3,068.63	-10.85	-196.04	1.92	0.07	0.06	-0.51	
3,254.00	4.50	272.70	3,243.99	-11.30	-211.03	2.44	0.60	-0.45	4.66	
3,431.00	4.30	280.90	3,420.47	-9.72	-224.48	4.89	0.37	-0.11	4.63	
3,609.00	3.80	283.50	3,598.03	-7.08	-236.77	8.32	0.30	-0.28	1.46	
3,786.00	3.90	280.10	3,774.63	-4.66	-248.40	11.50	0.14	0.06	-1.92	
3,964.00	2.90	277.60	3,952.31	-3.00	-258.82	13.83	0.57	-0.56	-1.40	
4,141.00	2.20	274.70	4,129.14	-2.13	-266.65	15.21	0.40	-0.40	-1.64	
4,319.00	1.50	242.20	4,307.05	-2.94	-272.12	14.76	0.69	-0.39	-18.26	
4,496.00	1.40	208.50	4,483.99	-5.92	-275.20	11.98	0.48	-0.06	-19.04	
4,522.00	1.40	207.50	4,509.99	-6.48	-275.49	11.44	0.09	0.00	-3.85	
4,685.00	1.70	202.30	4,672.93	-10.48	-277.33	7.57	0.20	0.18	-3.19	
4,862.00	1.20	310.10	4,849.89	-11.72	-279.75	6.49	1.33	-0.28	60.90	
5,040.00	1.60	313.70	5,027.84	-8.80	-282.97	9.61	0.23	0.22	2.02	
5,217.00	1.90	316.60	5,204.76	-4.96	-286.77	13.69	0.18	0.17	1.64	
5,395.00	0.90	308.00	5,382.70	-1.96	-289.90	16.89	0.57	-0.56	-4.83	
5,573.00	0.80	305.80	5,560.68	-0.37	-292.01	18.61	0.06	-0.06	-1.24	
5,751.00	1.10	297.20	5,738.66	1.14	-294.54	20.28	0.19	0.17	-4.83	
5,929.00	1.10	295.10	5,916.62	2.64	-297.60	21.98	0.02	0.00	-1.18	
6,106.00	1.50	297.60	6,093.58	4.44	-301.20	24.01	0.23	0.23	1.41	
6,283.00	1.10	320.30	6,270.53	6.82	-304.33	26.59	0.36	-0.23	12.82	
6,461.00	0.80	319.30	6,448.51	9.08	-306.24	28.96	0.17	-0.17	-0.56	
6,638.00	0.60	294.90	6,625.50	10.40	-307.88	30.39	0.20	-0.11	-13.79	
6,816.00	1.00	261.80	6,803.48	10.57	-310.26	30.72	0.33	0.22	-18.60	
6,993.00	1.10	249.50	6,980.45	9.76	-313.38	30.11	0.14	0.06	-6.95	
7,170.00	0.40	146.00	7,157.44	8.65	-314.63	29.09	0.71	-0.40	-58.47	
7,347.00	0.10	97.80	7,334.44	8.12	-314.13	28.52	0.19	-0.17	-27.23	
7,525.00	0.20	333.50	7,512.44	8.37	-314.12	28.78	0.15	0.06	-69.83	
7,702.00	0.90	114.50	7,689.43	8.07	-312.99	28.40	0.60	0.40	79.66	
7,879.00	0.80	133.80	7,866.41	6.64	-310.83	26.83	0.17	-0.06	10.90	
8,056.00	1.00	156.50	8,043.39	4.37	-309.32	24.47	0.23	0.11	12.82	
8,234.00	0.70	111.00	8,221.37	2.56	-307.69	22.55	0.40	-0.17	-25.56	
8,411.00	0.60	137.30	8,398.36	1.49	-306.05	21.38	0.18	-0.06	14.86	
8,499.00	0.50	160.10	8,486.36	0.79	-305.61	20.65	0.27	-0.11	25.91	
Final Phoenix MWD Survey										
8,556.00	0.50	160.10	8,543.35	0.32	-305.44	20.18	0.00	0.00	0.00	
Projection to TD										



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Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
813.01	812.97	5.10	-4.04	Tie-in to Teledrift Surveys
948.00	947.94	6.55	-5.87	First Phoenix MWD Survey
8,499.00	8,486.36	0.79	-305.61	Final Phoenix MWD Survey
8,556.00	8,543.35	0.32	-305.44	Projection to TD

Checked By: _____ Approved By: _____ Date: _____

Phoenix Technology Services
SURVEY DATA CERTIFICATION

HOBBS OCD

OCT 06 2016

RECEIVED



PHOENIX JOB NUMBER

60046

OPERATOR

Chevron

WELL NAME SD WE 14 Fed P7 3H

COUNTY & STATE

Lea County, New Mexico

API WELL NUMBER

30-025-43086

PROPOSED DIRECTION

356.27

TIE-IN DATA						
MEASURED	VERTICAL			N-S	E-W	DATA
DEPTH	DEPTH	INCLIN	AZIMUTH	COORD	COORD	SOURCE
813.00 ft	812.96 ft	0.9°	300.0°	5.10 N	4.04 W	Teledrift

FIRST	FIRST		
SURVEY	SURVEY		
DATE	DEPTH	INCLIN	AZIMUTH
28-May-16	948 ft	1.1°	315.4°

SURVEY INSTRUMENT
TYPE
Phoenix MWD

LAST	LAST		
SURVEY	SURVEY		
DATE	DEPTH	INCLIN	AZIMUTH
1-Jun-16	8,499 ft	.5	160.1

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
1-Jun-16	8,556 ft	.5	160.1

Lance Mosby

PRINT YOUR NAME ABOVE

Lance Mosby

SIGN YOUR NAME ABOVE

MAGNETIC DECLINATION OR TOTAL GRID

TOTAL CORRECTION USED	6.60
DECLINATION OR GRID	GRID

06/01/16

TODAY'S DATE

MWD SUPERVISOR 1

Robert Brewer

DIRECTIONAL DRILLER 1

Casey Tubbe

MWD SUPERVISOR 2

Lance Mosby

DIRECTIONAL DRILLER 2

Monte Gordon