

NOV 12 2014

RECEIVED


PHOENIX
TECHNOLOGY SERVICES

October 29, 2014

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

Dear District 1 - Hobbs

Re: Fasken Oil & Ranch Ltd
 Paloma 21 Federal 1H
 Lea County, NM
API #30-025-41993
 Job No. 1411774

JUL 31 2015

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	
Greg Hurst	1H	5,515	10,338	09/22/14	09/27/14	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,
Claudia Carreon

Claudia Carreon
 Operations Administrator

Certified mail receipt number: 7011 1570 0001 4365 2551

JUL 31 2015

Phoenix Technology Services SURVEY DATA CERTIFICATION



PHOENIX JOB NUMBER 1411774

OPERATOR Fasken

NOV 12 2014

WELL NAME Paloma 21 Federal 1H

COUNTY & STATE

Lea County, NM RECEIVED

API WELL NUMBER 30-025-41993

PROPOSED DIRECTION 181.7°

TIE-IN DATA						
MEASURED	VERTICAL			N-S	E-W	DATA
DEPTH	DEPTH	INCLIN	AZIMUTH	COORD	COORD	SOURCE
5,436. ft	5,435.75 ft	0.90	19.64	12.04 ft	-22.23 ft	Gyro

FIRST SURVEY DATE	FIRST SURVEY DEPTH	INCLIN	AZIMUTH
22-Sep-14	5,515.00 ft	1.00	6.40

SURVEY INSTRUMENT TYPE
Phoenix MWD

LAST SURVEY DATE	LAST SURVEY DEPTH	INCLIN	AZIMUTH
27-Sep-14	10,338.00 ft	1.1°	230.5°

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
27-Sep-14	10,390.00 ft	1.10	230.50

Greg Hurst

PRINT YOUR NAME ABOVE

Greg Hurst
SIGN YOUR NAME ABOVE

MAGNETIC DECLINATION OR TOTAL GRID

TOTAL CORRECTION USED	6.8
DECLINATION OR GRID	GRID

9/27/2014

TODAY'S DATE

MWD SUPERVISOR 1

Greg Hurst

DIRECTIONAL DRILLER 1

Glen McVay

MWD SUPERVISOR 2

Andrew Cagnolatti

DIRECTIONAL DRILLER 2

Byron Deel

HOBBS OCD

NOV 12 2014

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Fasken Oil & Ranch

Lea County, NM (NAD27 NME)

Paloma 21 Federal

#1H

WB1 / Job #1411774

Survey: Phoenix MWD Survey

Standard Survey Report

30 September, 2014



Phoenix Technology Services

Survey Report



Company:	Fasken Oil & Ranch	Local Co-ordinate Reference:	Well #1H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	KB @ 3658.90usft (Nomac 54)
Site:	Paloma 21 Federal	MD Reference:	KB @ 3658.90usft (Nomac 54)
Well:	#1H	North Reference:	Grid
Wellbore:	WB1 / Job #1411774	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Nomac 54)	Database:	GCR DB

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	Paloma 21 Federal		
Site Position:		Northing:	570,184.10 usft
From:	Map	Easting:	734,806.70 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 33' 54.83645 N
		Longitude:	103° 34' 16.23516 W
		Grid Convergence:	0.41 °

Well	#1H		
Well Position	+N/-S	0.00 usft	Northing: 570,184.10 usft
	+E/-W	0.00 usft	Easting: 734,806.70 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft
		Ground Level:	3,637.40 usft

Wellbore	WB1 / Job #1411774				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010_14	09/15/14	7.21	60.42	48,494

Design	Surveys (Nomac 54)				
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	181.70	

Survey Program	Date 09/30/14				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100.00	5,436.00	VES Gyro Survey (WB1 / Job #1411774)	ISCWSA-GYRO-3	Biaxial Semi-Cont. Gyro	
5,436.00	10,390.00	Phoenix MWD Survey (WB1 / Job #141177)	PHX+MWD+IGRF	PHX+MWD+IGRF v3:standard declination	

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)	
5,436.00	0.90	19.64	5,435.75	12.04	-22.23	-11.38	0.00	0.00	0.00	
Tie-on to VES Gyro Survey										
5,515.00	1.00	6.40	5,514.73	13.31	-21.94	-12.65	0.30	0.13	-16.76	
First Phoenix MWD Survey										
5,610.00	1.10	8.90	5,609.72	15.03	-21.71	-14.38	0.12	0.11	2.63	
5,705.00	1.80	278.60	5,704.70	16.16	-23.05	-15.47	2.23	0.74	-95.05	
5,800.00	4.00	264.10	5,799.57	16.04	-27.82	-15.21	2.42	2.32	-15.26	
5,895.00	4.20	265.90	5,894.33	15.45	-34.58	-14.42	0.25	0.21	1.89	
5,991.00	4.30	263.80	5,990.06	14.81	-41.67	-13.57	0.19	0.10	-2.19	

Phoenix Technology Services

Survey Report



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Site:	Paloma 21 Federal	MD Reference:	KB @ 3658.90usft (Nomac 54)
Well:	#1H	North Reference:	Grid
Wellbore:	WB1 / Job #1411774	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Nomac 54)	Database:	GCR DB

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)
6,086.00	4.20	268.30	6,084.80	14.32	-48.69	-12.87	0.37	-0.11	4.74
6,181.00	4.10	267.50	6,179.55	14.07	-55.56	-12.42	0.12	-0.11	-0.84
6,276.00	4.40	266.70	6,274.29	13.71	-62.59	-11.85	0.32	0.32	-0.84
6,371.00	3.30	255.50	6,369.08	12.82	-68.87	-10.77	1.40	-1.16	-11.79
6,466.00	3.10	259.80	6,463.93	11.68	-74.05	-9.48	0.33	-0.21	4.53
6,561.00	3.30	255.60	6,558.78	10.55	-79.22	-8.19	0.32	0.21	-4.42
6,656.00	2.90	254.30	6,653.64	9.22	-84.19	-6.71	0.43	-0.42	-1.37
6,751.00	2.00	256.40	6,748.55	8.18	-88.11	-5.56	0.95	-0.95	2.21
6,846.00	3.10	267.90	6,843.46	7.69	-92.29	-4.95	1.27	1.16	12.11
6,941.00	3.30	267.10	6,938.31	7.46	-97.59	-4.56	0.22	0.21	-0.84
7,036.00	3.00	262.60	7,033.17	7.00	-102.78	-3.95	0.41	-0.32	-4.74
7,131.00	3.10	264.90	7,128.03	6.45	-107.81	-3.25	0.17	0.11	2.42
7,225.00	3.10	258.90	7,221.90	5.74	-112.83	-2.39	0.35	0.00	-6.38
7,321.00	3.20	261.00	7,317.75	4.82	-118.03	-1.31	0.16	0.10	2.19
7,415.00	3.10	263.50	7,411.61	4.12	-123.14	-0.46	0.18	-0.11	2.66
7,510.00	3.00	264.60	7,506.47	3.59	-128.17	0.21	0.12	-0.11	1.16
7,604.00	2.80	265.10	7,600.35	3.17	-132.91	0.78	0.21	-0.21	0.53
7,700.00	2.80	259.70	7,696.24	2.55	-137.55	1.53	0.27	0.00	-5.63
7,795.00	2.80	256.60	7,791.13	1.59	-142.09	2.62	0.16	0.00	-3.26
7,889.00	2.90	258.90	7,885.01	0.60	-146.66	3.75	0.16	0.11	2.45
7,982.00	2.50	260.40	7,977.91	-0.19	-150.97	4.66	0.44	-0.43	1.61
8,077.00	3.60	257.70	8,072.77	-1.17	-155.92	5.79	1.17	1.16	-2.84
8,171.00	3.60	254.70	8,166.59	-2.57	-161.65	7.37	0.20	0.00	-3.19
8,266.00	3.30	259.00	8,261.41	-3.88	-167.21	8.84	0.42	-0.32	4.53
8,360.00	2.90	254.00	8,355.28	-5.06	-172.15	10.16	0.51	-0.43	-5.32
8,455.00	2.80	248.30	8,450.16	-6.58	-176.62	11.81	0.32	-0.11	-6.00
8,550.00	3.20	266.90	8,545.03	-7.58	-181.42	12.96	1.10	0.42	19.58
8,645.00	2.60	268.90	8,639.91	-7.76	-186.23	13.28	0.64	-0.63	2.11
8,739.00	3.20	265.60	8,733.79	-8.00	-190.97	13.67	0.66	0.64	-3.51
8,833.00	3.40	265.40	8,827.63	-8.43	-196.37	14.25	0.21	0.21	-0.21
8,929.00	3.50	266.80	8,923.46	-8.82	-202.13	14.81	0.14	0.10	1.46
9,023.00	2.90	257.70	9,017.31	-9.49	-207.32	15.63	0.83	-0.64	-9.68
9,118.00	2.20	251.00	9,112.22	-10.59	-211.39	16.86	0.80	-0.74	-7.05
9,213.00	2.80	261.90	9,207.13	-11.51	-215.41	17.90	0.80	0.63	11.47
9,308.00	2.30	245.20	9,302.03	-12.64	-219.44	19.14	0.94	-0.53	-17.58
9,395.00	3.60	259.30	9,388.92	-13.88	-223.71	20.51	1.70	1.49	16.21
9,490.00	3.50	259.60	9,483.74	-14.96	-229.49	21.76	0.11	-0.11	0.32
9,585.00	4.10	263.30	9,578.53	-15.88	-235.72	22.86	0.68	0.63	3.89
9,680.00	2.70	250.60	9,673.36	-17.02	-241.20	24.16	1.66	-1.47	-13.37
9,774.00	3.30	270.10	9,767.23	-17.75	-246.00	25.04	1.25	0.64	20.74
9,869.00	3.30	259.80	9,862.07	-18.23	-251.42	25.68	0.62	0.00	-10.84
9,965.00	2.60	262.60	9,957.95	-19.00	-256.30	26.59	0.74	-0.73	2.92
10,060.00	2.20	255.80	10,052.86	-19.72	-260.20	27.43	0.52	-0.42	-7.16

Phoenix Technology Services

Survey Report



Company:	Fasken Oil & Ranch	Local Co-ordinate Reference:	Well #1H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	KB @ 3658.90usft (Nomac 54)
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Design:	Surveys (Nomac 54)	Database:	GCR-DB

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)
10,154.00	1.90	257.20	10,146.80	-20.51	-263.47	28.32	0.32	-0.32	1.49
10,250.00	1.80	251.30	10,242.75	-21.34	-266.45	29.24	0.22	-0.10	-6.15
10,338.00	1.10	230.50	10,330.72	-22.32	-268.41	30.28	0.98	-0.80	-23.64
Last Phoenix MWD Survey									
10,390.00	1.10	230.50	10,382.72	-22.96	-269.18	30.94	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)	
5,436.00	5,435.75	12.04	-22.23	Tie-on to VES Gyro Survey
5,515.00	5,514.73	13.31	-21.94	First Phoenix MWD Survey
10,338.00	10,330.72	-22.32	-268.41	Last Phoenix MWD Survey
10,390.00	10,382.72	-22.96	-269.18	Projection to TD

Checked By: _____ Approved By: _____ Date: _____