



PHOENIX
TECHNOLOGY SERVICES

November 20, 2014

Oil Conservation Division
State of New Mexico
811 S. First St.
Artesia, New Mexico 88210

Dear District 2 - Artesia

Attention: Regulatory Department

Re: Apache Corporation
Lee Federal #64
Eddy County, NM
API #30-015-41988
Job No. 1411890

NM OIL CONSERVATION
ARTESIA DISTRICT
NOV 24 2014
RECEIVED

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. (P-5 No. 664171). 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	
Michael Branson	64	644	6,321	10/30/14	11/07/14	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,

Dana Robinson

Dana Robinson
Operations Administrator
Certified mail receipt number:

7011 1570 0001 4365 2605

**Phoenix Technology Services
SURVEY DATA CERTIFICATION**



**PHOENIX
TECHNOLOGY SERVICES**

PHOENIX JOB NUMBER **1411890**

ENERGY COMPANY **Apache Corp**

WELL NAME **Lee Federal #64**

COUNTY & STATE **Eddy County, New Mexico**

API WELL NUMBER **30-015-41988**

PROPOSED DIRECTION **115.92°**

TIE-IN DATA						
MEASURED DEPTH	VERTICAL DEPTH	INCLIN	AZIMUTH	N-S COORD	E-W COORD	DATA SOURCE
500.0 ft	499.79 ft	2.56°	157.86	11.13 ft	6.77 ft	Gyro

FIRST SURVEY DATE	FIRST SURVEY DEPTH	INCLIN	AZIMUTH
30-Oct-14	644.00 ft	2.9°	159.3°

SURVEY INSTRUMENT TYPE
Phoenix MWD

LAST SURVEY DATE	LAST SURVEY DEPTH	INCLIN	AZIMUTH
7-Nov-14	6,321.00 ft	5.8°	108.5°

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
7-Nov-14	6,373.00 ft	5.8°	108.5°

Michael Branson

PRINT YOUR NAME ABOVE

SIGN YOUR NAME ABOVE

MAGNETIC DECLINATION OR TOTAL GRID

TOTAL CORRECTION USED	7.30
DECLINATION OR GRID	GRID

11/7/2014

TODAY'S DATE

MWD SUPERVISOR 1 **Michael Branson**

DIRECTIONAL DRILLER 1 **Brad Jones**

MWD SUPERVISOR 2 **Kevin Petkus**

DIRECTIONAL DRILLER 2 **Jon Michael Woodgate**

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

DISTRICT II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720

DISTRICT III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

NM OIL CONSERVATION Form C-102
ARTESIA DISTRICT
Revised August 1, 2011
Submitting copy to appropriate District Office
NOV 24 2011

RECEIVED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
Property Code	Property Name LEE FEDERAL	Well Number 64
OGRID No.	Operator Name APACHE CORPORATION	Elevation 3668'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	20	17-S	31-E		95	NORTH	1835	WEST	EDDY

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	20	17-S	31-E		330	NORTH	2310	WEST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

	<p>OPERATOR CERTIFICATION</p> <p>I hereby certify that the information herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</p> <p>Signature _____ Date _____</p> <p>Printed Name _____</p> <p>E-mail Address _____</p>
	<p>SURVEYOR CERTIFICATION</p> <p>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.</p> <p>MAY 25, 2012</p> <p>Date of Survey _____ Signature & Seal of Professional Surveyor: _____</p> <p><i>Ronald J. Eidson 11/27/2012</i></p> <p>Certificate Number: Gary C. Eidson 12641 Ronald J. Eidson 3239</p> <p>DSR Rev. Date: 11/27/2012 JWSC W.O.: 12.11.0600</p>

CORNER COORDINATES
A- Y=664902.7 N; X=634451.6 E
B- Y=664912.7 N; X=635771.3 E
C- Y=663592.4 N; X=635778.6 E
D- Y=663582.1 N; X=634459.0 E

GEODETIC COORDINATES
NAD 27 NME

SURFACE LOCATION
Y=664811.6 N
X=634967.0 E

LAT.=32°8'26.883" N
LONG.=103°89'39.62" W

LAT.=32°49'37" N
LONG.=103°53'38" W

BOTTOM HOLE LOCATION
Y=664580.3 N
X=635443.0 E



Apache Corporation

Eddy County, NM (NAD27 NME)

Lee Federal

#64

WB1 / Job #1411890

Survey: Phoenix MWD Survey

Standard Survey Report

09 November, 2014

NM OIL CONSERVATION
ARTESIA DISTRICT
NOV 24 2014
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Phoenix Technology Services

Survey Report



Company:	Apache Corporation	Local Co-ordinate Reference:	Well #64
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	KB @ 3679.00usft (Capstar 114)
Site:	Lee Federal	MD Reference:	KB @ 3679.00usft (Capstar 114)
Well:	#64	North Reference:	Grid
Wellbore:	WB1 / Job #1411890	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Capstar 114)	Database:	Compass 5000 GCR epdm

Project Eddy 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 Lee Federal			
Site Position:	Northing:	664,811.60 usft	Latitude: 32° 49' 36.77792 N
From: Map	Easting:	634,967.00 usft	Longitude: 103° 53' 38.26184 W
Position Uncertainty:	0.00 usft	Slot Radius: 13-3/16 "	Grid Convergence: 0.24 °

Well #64			
Well Position	+N-S	0.00 usft	Northing: 664,811.60 usft
	+E-W	0.00 usft	Easting: 634,967.00 usft
			Latitude: 32° 49' 36.77792 N
			Longitude: 103° 53' 38.26184 W
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft
			Ground Level: 3,668.00 usft

Wellbore WB1 / Job #1411890					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2014	10/27/14	7.54	60.60	48,560

Design Surveys (Capstar 114)				
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	115.92

Survey Program		Date 11/09/14		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.00	500.00	Gyrodatta Gyro Survey (WB1 / Job #14118)	NS-GYRO-MS	North sensing gyrocompassing m/s
500.00	6,373.00	Phoenix MWD Survey (WB1 / Job #14118)	PHX+MWD+BGGM	PHX+MWD+BGGM v3:standard declination

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)	
500.00	2.56	157.86	499.79	-11.13	6.77	10.96	0.00	0.00	0.00	
Tie-on to Gyrodatta Gyro Survey										
644.00	2.90	159.30	643.62	-17.52	9.27	16.00	0.24	0.24	1.00	
First Phoenix MWD Survey										
772.00	1.80	141.20	771.52	-22.12	11.68	20.17	1.03	-0.86	-14.14	
901.00	1.30	102.70	900.47	-24.02	14.37	23.43	0.87	-0.39	-29.84	
1,029.00	0.90	69.40	1,028.45	-23.98	16.73	25.53	0.58	-0.31	-26.02	
1,160.00	1.30	53.40	1,159.43	-22.73	18.89	26.93	0.38	0.31	-12.21	
1,292.00	1.30	65.80	1,291.39	-21.23	21.46	28.58	0.21	0.00	9.39	



Phoenix Technology Services

Survey Report



Company:	Apache Corporation	Local Co-ordinate Reference:	Well #64
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Site:	Lee Federal	MD Reference:	KB @ 3679.00usft (Capstar 114)
Well:	#64	North Reference:	Grid
Wellbore:	WB1 / Job #1411890	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Capstar 114)	Database:	Compass 5000 GCR epdm

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)
1,423.00	1.30	71.70	1,422.36	-20.15	24.22	30.59	0.10	0.00	4.50
1,551.00	2.70	88.20	1,550.28	-19.60	28.61	34.30	1.17	1.09	12.89
1,679.00	3.70	96.60	1,678.08	-19.98	35.73	40.87	0.86	0.78	6.56
1,808.00	4.90	109.00	1,806.71	-22.25	45.08	50.27	1.17	0.93	9.61
1,936.00	5.60	118.20	1,934.18	-26.98	55.75	61.94	0.85	0.55	7.19
2,065.00	6.00	121.00	2,062.52	-33.43	67.07	74.94	0.38	0.31	2.17
2,193.00	6.00	121.60	2,189.82	-40.38	78.51	88.26	0.05	0.00	0.47
2,320.00	6.20	122.60	2,316.10	-47.55	89.94	101.68	0.18	0.16	0.79
2,448.00	6.20	124.40	2,443.35	-55.18	101.46	115.38	0.15	0.00	1.41
2,577.00	6.40	125.90	2,571.57	-63.33	113.04	129.35	0.20	0.16	1.16
2,705.00	5.60	116.80	2,698.87	-70.33	124.39	142.62	0.97	-0.63	-7.11
2,833.00	6.10	117.70	2,826.20	-76.31	135.99	155.66	0.40	0.39	0.70
2,964.00	6.80	119.70	2,956.37	-83.39	148.88	170.36	0.56	0.53	1.53
3,096.00	7.70	121.60	3,087.32	-91.90	163.20	186.96	0.71	0.68	1.44
3,227.00	8.00	122.20	3,217.09	-101.35	178.39	204.75	0.24	0.23	0.46
3,354.00	8.80	122.80	3,342.73	-111.32	194.04	223.18	0.63	0.63	0.47
3,460.00	9.50	124.40	3,447.38	-120.66	208.07	239.88	0.70	0.66	1.51
3,564.00	9.50	125.70	3,549.95	-130.51	222.12	256.83	0.21	0.00	1.25
3,693.00	8.40	121.30	3,677.38	-141.62	238.82	276.70	1.00	-0.85	-3.41
3,821.00	7.60	113.80	3,804.14	-149.90	254.55	294.47	1.03	-0.63	-5.86
3,950.00	6.00	112.60	3,932.23	-155.93	268.58	309.72	1.25	-1.24	-0.93
4,084.00	4.70	106.00	4,065.64	-160.13	280.33	322.12	1.07	-0.97	-4.93
4,212.00	3.60	92.40	4,193.31	-161.75	289.38	330.98	1.15	-0.86	-10.63
4,340.00	3.60	95.00	4,321.05	-162.27	297.40	338.41	0.13	0.00	2.03
4,468.00	3.60	96.90	4,448.80	-163.10	305.39	345.97	0.09	0.00	1.48
4,597.00	3.60	96.50	4,577.55	-164.04	313.44	353.62	0.02	0.00	-0.31
4,725.00	3.40	103.50	4,705.31	-165.39	321.12	361.11	0.37	-0.16	5.47
4,853.00	3.30	104.50	4,833.09	-167.19	328.38	368.43	0.09	-0.08	0.78
4,981.00	4.70	115.80	4,960.78	-170.40	336.67	377.29	1.25	1.09	8.83
5,109.00	5.90	115.10	5,088.23	-175.47	347.35	389.11	0.94	0.94	-0.55
5,238.00	5.70	115.40	5,216.57	-181.03	359.14	402.14	0.16	-0.16	0.23
5,366.00	5.50	115.10	5,343.96	-186.36	370.44	414.63	0.16	-0.16	-0.23
5,494.00	6.10	112.90	5,471.30	-191.61	382.26	427.56	0.50	0.47	-1.72
5,623.00	6.00	110.70	5,599.58	-196.66	394.88	441.12	0.20	-0.08	-1.71
5,751.00	5.70	111.40	5,726.91	-201.34	407.05	454.12	0.24	-0.23	0.55
5,879.00	5.80	111.10	5,854.27	-205.99	419.00	466.90	0.08	0.08	-0.23
6,010.00	5.90	110.80	5,984.59	-210.77	431.47	480.20	0.08	0.08	-0.23
6,139.00	5.80	110.80	6,112.92	-215.43	443.77	493.30	0.08	-0.08	0.00
6,267.00	5.90	108.00	6,240.25	-219.76	456.07	506.25	0.24	0.08	-2.19
6,321.00	5.80	108.50	6,293.97	-221.49	461.30	511.71	0.21	-0.19	0.93
Final Phoenix MWD Survey									
6,373.00	5.80	108.50	6,345.70	-223.16	466.28	516.92	0.00	0.00	0.00
Projection to TD									



Phoenix Technology Services
Survey Report



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Site:	Lee Federal	MD Reference:	KB @ 3679.00usft (Capstar 114)
Well:	#64	North Reference:	Grid
Wellbore:	WB1 / Job #1411890	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Capstar 114)	Database:	Compass 5000 GCR epdm

Survey Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
500.00	499.79	-11.13	6.77	Tie-on to Gyrodata Gyro Survey
644.00	643.62	-17.52	9.27	First Phoenix MWD Survey
6,321.00	6,293.97	-221.49	461.30	Final Phoenix MWD Survey
6,373.00	6,345.70	-223.16	466.28	Projection to TD

Checked By: _____ Approved By: _____ Date: _____