



PHOENIX
TECHNOLOGY SERVICES

September 19, 2015

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

NM OIL CONSERVATION
ARTESIA DISTRICT

OCT 13 2015

Dear District 2 - Artesia

Attention: Regulatory Department

RECEIVED

Re: Apache Corporation
LEE Federal #53
Eddy County, NM
API #30-015-43197
Job No. 1412338

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	
Joe Owens	53H	3,615	6,210	07/22/15	07/24/15	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,

Alva J. Dunigan

Alva J. Dunigan
Operations Administrator

Certified mail receipt number: 7015 0640 0000 9907 5111

Phoenix Technology Services SURVEY DATA CERTIFICATION



PHOENIX JOB NUMBER 1412338

OPERATOR Apache

WELL NAME Lee Federal #53

COUNTY & STATE Eddy County, NM

API WELL NUMBER 30-015-43197

PROPOSED DIRECTION 77.58

TIE-IN DATA						
MEASURED	VERTICAL			N-S	E-W	DATA
DEPTH	DEPTH	INCLIN	AZIMUTH	COORD	COORD	SOURCE
3,468.00 ft	3,467.55 ft	0.65	1.39	31.23 N	33.41 E	Gyro Data

FIRST	FIRST		
SURVEY	SURVEY		
DATE	DEPTH	INCLIN	AZIMUTH
22-Jul-15	3,615 ft	2.8	62.1

SURVEY INSTRUMENT
TYPE
Phoenix MWD

LAST	LAST		
SURVEY	SURVEY		
DATE	DEPTH	INCLIN	AZIMUTH
24-Jul-15	6,210 ft	8.4	82.5

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
24-Jul-15	6,266 ft	8.4	82.5

Joe Owens

PRINT YOUR NAME ABOVE

Joe Owens

SIGN YOUR NAME ABOVE

MAGNETIC DECLINATION OR TOTAL GRID

TOTAL CORRECTION USED	7.43
DECLINATION OR GRID	GRID

7/10/2015

TODAY'S DATE

MWD SUPERVISOR 1

Joe Owens

DIRECTIONAL DRILLER 1

Ian Hobbs

MWD SUPERVISOR 2

Clint Gortmaker

DIRECTIONAL DRILLER 2

Hicham Chaara

12329 Cutten Rd. Houston, Texas 77066 (713)337-0600 (Voice), (713)337-0599 (Fax)



Apache Corporation

Eddy County, NM (NAD27 NME)

Lee Federal

#53

OH / Job #1412338

Survey: Phoenix MWD Survey

Standard Survey Report

24 July, 2015



Company:	Apache Corporation	Local Co-ordinate Reference:	Well #53
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	KB @ 3648.00usft (Capstar 114)
Site:	Lee Federal	MD Reference:	KB @ 3648.00usft (Capstar 114)
Well:	#53	North Reference:	Grid
Wellbore:	OH / Job #1412338	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Capstar 114)	Database:	Compass 5000 GCR

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

Well	#53		
Well Position	+N/-S	0.00 usft	Northing:
	+E/-W	0.00 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft
		Latitude:	32° 49' 0.79753 N
		Longitude:	103° 53' 45.87755 W
		Ground Level:	3,637.00 usft

Wellbore	OH / Job #1412338		
Magnetics	Model Name	Sample Date	Declination
			(°)
	HDGM	7/20/2015	7.67
			Dip Angle
			(°)
			60.77
			Field Strength
			(nT)
			48,581

Design	Surveys (Capstar 114)		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.00	0.00	0.00
			Direction
			(°)
			77.58

Survey Program	Date 7/24/2015		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
144.00	3,468.00	Phoenix Gyro Survey (OH / Job #1412338)	PHX_SPT_GTD
3,468.00	6,266.00	Phoenix MWD Survey (OH / Job #1412338)	PHX+MWD+HDGM
			Description
			PHX Continuous north-seeking gyro
			PHX+MWD+HDGM

Survey									
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Vertical	Dogleg	Build	Turn
Depth	(°)	(°)	Depth	(usft)	(usft)	Section	Rate	Rate	Rate
(usft)			(usft)			(usft)	(°/100usft)	(°/100usft)	(°/100usft)
3,468.00	0.65	1.39	3,467.55	31.23	33.41	39.34	0.00	0.00	0.00
Tie-on to Phoenix Gyro Survey									
3,615.00	2.80	62.10	3,614.48	33.74	36.60	43.00	1.73	1.46	41.30
First Phoenix MWD Survey									
3,700.00	5.30	77.00	3,699.26	35.60	42.26	48.93	3.17	2.94	17.53
3,786.00	5.80	85.40	3,784.86	36.84	50.47	57.21	1.11	0.58	9.77
3,871.00	7.20	86.50	3,869.31	37.51	60.06	66.72	1.65	1.65	1.29
3,957.00	8.40	82.40	3,954.52	38.67	71.67	78.31	1.54	1.40	-4.77
4,042.00	10.10	84.70	4,038.41	40.18	85.25	91.89	2.05	2.00	2.71

Company:	Apache Corporation	Local Co-ordinate Reference:	Well #53
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	KB @ 3648.00usft (Capstar 114)
Site:	Lee Federal	MD Reference:	KB @ 3648.00usft (Capstar 114)
Well:	#53	North Reference:	Grid
Wellbore:	OH / Job #1412338	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Capstar 114)	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)
4,127.00	10.20	84.20	4,122.08	41.63	100.15	106.76	0.16	0.12	-0.59
4,213.00	10.20	84.20	4,206.72	43.17	115.31	121.89	0.00	0.00	0.00
4,298.00	10.00	83.50	4,290.40	44.76	130.13	136.71	0.28	-0.24	-0.82
4,384.00	9.80	82.50	4,375.12	46.56	144.80	151.43	0.31	-0.23	-1.16
4,469.00	9.50	81.30	4,458.92	48.57	158.91	165.63	0.42	-0.35	-1.41
4,554.00	9.50	80.60	4,542.75	50.77	172.76	179.64	0.14	0.00	-0.82
4,640.00	9.40	79.90	4,627.59	53.16	186.68	193.74	0.18	-0.12	-0.81
4,725.00	9.30	79.10	4,711.46	55.68	200.26	207.54	0.19	-0.12	-0.94
4,810.00	10.00	82.40	4,795.25	57.96	214.32	221.76	1.05	0.82	3.88
4,896.00	10.00	82.60	4,879.95	59.90	229.12	236.64	0.04	0.00	0.23
4,981.00	9.90	82.50	4,963.67	61.81	243.68	251.27	0.12	-0.12	-0.12
5,066.00	9.80	83.10	5,047.42	63.63	258.11	265.76	0.17	-0.12	0.71
5,152.00	9.90	82.60	5,132.15	65.46	272.71	280.40	0.15	0.12	-0.58
5,237.00	9.80	83.00	5,215.90	67.29	287.13	294.89	0.14	-0.12	0.47
5,322.00	9.20	82.50	5,299.73	69.05	301.05	308.86	0.71	-0.71	-0.59
5,407.00	9.00	82.40	5,383.66	70.82	314.38	322.25	0.24	-0.24	-0.12
5,492.00	8.70	80.30	5,467.65	72.78	327.30	335.30	0.52	-0.35	-2.47
5,578.00	8.90	71.50	5,552.64	75.99	340.02	348.41	1.58	0.23	-10.23
5,664.00	8.40	88.10	5,637.66	80.44	352.16	361.22	0.83	-0.58	-3.95
5,749.00	8.50	71.50	5,721.74	84.75	363.88	373.59	0.60	0.12	4.00
5,834.00	9.00	81.80	5,805.75	87.69	376.42	386.47	1.93	0.59	12.12
5,920.00	8.70	81.00	5,890.73	89.67	389.50	399.67	0.38	-0.35	-0.93
6,006.00	8.40	87.10	5,975.78	91.01	402.20	412.36	1.11	-0.35	7.09
6,091.00	8.40	87.90	6,059.86	91.55	414.60	424.59	0.14	0.00	0.94
6,176.00	8.40	84.90	6,143.95	92.33	426.99	436.86	0.52	0.00	-3.53
6,210.00	8.40	82.50	6,177.59	92.87	431.93	441.79	1.03	0.00	-7.06
Last Phoenix MWD Survey									
6,266.00	8.40	82.50	6,232.99	93.94	440.04	449.94	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)	
3,468.00	3,467.55	31.23	33.41	Tie-on to Phoenix Gyro Survey
3,615.00	3,614.48	33.74	36.60	First Phoenix MWD Survey
6,210.00	6,177.59	92.87	431.93	Last Phoenix MWD Survey
6,266.00	6,232.99	93.94	440.04	Projection to TD

Checked By: _____ Approved By: _____ Date: _____

DISTRICT I
1625 N. FRENCH DR., HOBBS, NM 88240
DISTRICT II
1301 W. GRAND AVENUE, ARTESIA, NM 88210
DISTRICT III
1000 RIO BRAZOS RD., AZTEC, NM 87410
DISTRICT IV
11885 S. ST. FRANCIS DR., SANTA FE, NM 87505

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

Form C-102
Revised July 16, 2010
Submit to Appropriate
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
Property Code	Property Name LEE FEDERAL	Well Number 53
OGRID No.	Operator Name APACHE CORPORATION	Elevation 3637'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
L	20	17-S	31-E		1550	SOUTH	1180	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
K	20	17-S	31-E		1650	SOUTH	1650	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

GEODETIC COORDINATES NAD 27 NME SURFACE LOCATION Y=661172.8 N X=634332.2 E LAT.=32.816888° N LONG.=103.896077° W LAT.=32° 49' 01" N LONG.=103° 53' 46" W BOTTOM HOLE LOCATION Y=661276.1 N X=634801.4 E	DETAIL SECTION TABLE QUARTER & SIXTEENTH CORNER COORDINATES Ⓐ - Y=662251.2 N, X=633145.7 E Ⓑ - Y=662272.0 N, X=635786.0 E Ⓒ - Y=660933.0 N, X=633153.9 E Ⓓ - Y=660952.8 N, X=635793.3 E	OPERATOR CERTIFICATION 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. Signature _____ Date _____ Printed Name _____ E-mail Address _____ SURVEYOR CERTIFICATION 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. JULY 27, 2011 Date of Survey _____ Signature & Seal of Professional Surveyor: _____ Certificate Number Gary O. Eidson 12641 Ronald J. Eidson 3239 DSS PROFESSIONAL SWSC W.O.: 11.11.1570
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