



Apache Corporation (873)

Eddy County, NM (NAD27 NME)

Lee Federal 30-015-43197

#53

L-20-17S-31E

OH / Job #1412338

1550' FSL + 1180' FWL

Design: Surveys (Capstar 114)

Standard Survey Report

24 July, 2015

gyro + mwp survey



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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
144.00	1.05	346.80	143.99	1.28	-0.30	-0.02	0.73	0.73	0.00
206.00	1.05	307.50	205.98	2.18	-0.88	-0.39	1.14	0.00	-63.39
294.00	0.71	16.24	293.97	3.20	-1.37	-0.65	1.17	-0.39	78.11
385.00	0.81	72.58	384.97	3.93	-0.60	0.26	0.79	0.11	61.91
473.00	0.85	105.72	472.96	3.94	0.62	1.46	0.54	0.05	37.66
564.00	0.73	105.42	563.95	3.60	1.83	2.57	0.13	-0.13	-0.33
652.00	0.60	132.07	651.94	3.15	2.72	3.33	0.38	-0.15	30.28
738.00	0.58	99.38	737.94	2.77	3.48	3.99	0.39	-0.02	-38.01
823.00	0.45	96.58	822.94	2.67	4.24	4.71	0.16	-0.15	-3.29

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

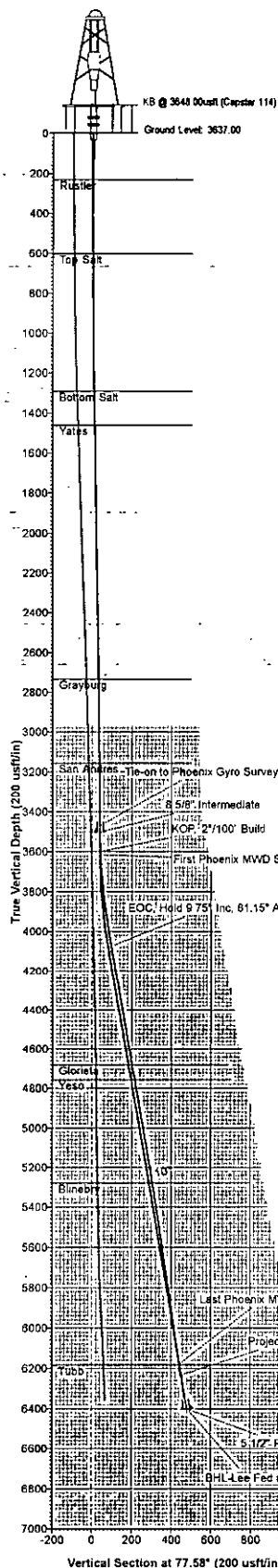
Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
908.00	0.32	96.96	907.93	2.60	4.80	5.25	0.15	-0.15	0.45	
994.00	0.56	84.17	993.93	2.61	5.46	5.89	0.30	0.28	-14.87	
1,079.00	-0.51	67.25	1,078.93	2.80	6.22	6.68	0.19	-0.06	-19.91	
1,164.00	0.96	58.12	1,163.92	3.32	7.17	7.72	0.55	0.53	-10.74	
1,249.00	1.28	52.16	1,248.90	4.28	8.53	9.25	0.40	0.38	-7.01	
1,334.00	1.39	60.56	1,333.88	5.37	10.18	11.09	0.26	0.13	9.88	
1,420.00	1.27	56.55	1,419.86	6.41	11.88	12.98	0.18	-0.14	-4.66	
1,505.00	0.97	63.30	1,504.84	7.25	13.31	14.56	0.38	-0.35	7.94	
1,590.00	0.92	69.93	1,589.83	7.81	14.59	15.93	0.14	-0.06	7.80	
1,676.00	0.73	65.94	1,675.82	8.27	15.74	17.15	0.23	-0.22	-4.64	
1,761.00	-0.73	67.62	1,760.81	8.70	16.74	18.21	0.03	0.00	1.98	
1,846.00	1.00	80.46	1,845.81	9.02	17.97	19.49	0.39	0.32	15.11	
1,931.00	1.02	71.17	1,930.79	9.39	19.42	20.98	0.19	0.02	-10.93	
2,016.00	1.05	60.83	2,015.78	10.02	20.81	22.48	0.22	0.04	-12.16	
2,102.00	1.01	52.78	2,101.76	10.86	22.10	23.92	0.17	-0.05	-9.36	
2,187.00	1.00	44.22	2,186.75	11.84	23.22	25.22	0.18	-0.01	-10.07	
2,273.00	1.12	37.13	2,272.74	13.05	24.25	26.49	0.21	0.14	-8.24	
2,358.00	1.23	28.15	2,357.72	14.52	25.18	27.71	0.25	0.13	-10.56	
2,443.00	1.21	27.13	2,442.70	16.12	26.02	28.88	0.03	-0.02	-1.20	
2,529.00	1.29	28.15	2,528.68	17.78	26.89	30.09	0.10	0.09	1.19	
2,614.00	1.31	30.59	2,613.66	19.46	27.84	31.37	0.07	0.02	2.87	
2,699.00	1.23	28.36	2,698.64	21.10	28.76	32.63	0.11	-0.09	-2.62	
2,785.00	1.19	26.10	2,784.62	22.72	29.60	33.79	0.07	-0.05	-2.63	
2,870.00	1.06	31.06	2,869.60	24.18	30.39	34.88	0.19	-0.15	5.84	
2,956.00	0.91	29.72	2,955.59	25.46	31.14	35.88	0.18	-0.17	-1.56	
3,041.00	0.85	24.76	3,040.58	26.61	31.74	36.72	0.11	-0.07	-5.84	
3,126.00	0.67	17.47	3,125.57	27.66	32.15	37.35	0.24	-0.21	-8.58	
3,212.00	0.71	26.15	3,211.56	28.62	32.54	37.93	0.13	0.05	10.09	
3,297.00	0.65	33.75	3,296.56	29.49	33.04	38.61	0.13	-0.07	8.94	
3,382.00	0.57	6.25	3,381.55	30.31	33.35	39.09	0.35	-0.09	-32.35	
3,468.00	0.65	1.39	3,467.55	31.23	33.41	39.34	0.11	0.09	-5.65	
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	
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	

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)	
4,469.00	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	68.10	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										

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
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: _____



WELL DETAILS											
				Ground Level	3637.00						
+N-S	+E-W	Northing	Easting	Latitude	Longitude						
0.00	0.00	661172.80	634332.20	32° 49' 0.79753 N	103° 53' 45.87755 W						

SECTION DETAILS											
Sec	MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	TFace	VSect	Target	Annotation
1	3458.00	0.65	1.39	3457.55	31.23	33.41	0.00	0.00	39.34		Tie-on to Phoenix Gyro Survey
2	3800.00	0.65	1.39	3599.54	32.77	33.44	0.00	0.00	39.70		KOP, 2 1/100' Build
3	4084.33	9.78	81.15	4081.48	41.82	74.28	2.00	83.51	81.52		EOC, Hold 9 75' Inc, 81.15° Azm
4	6437.05	9.78	81.15	6430.00	103.30	469.20	0.00	0.00	480.44	BHL-Lee Fed #53	TD at 6443.02 MD

DESIGN TARGET DETAILS											
Name	TVD	+N-S	+E-W	Northing	Easting	Latitude	Longitude	Shape			
BHL-Lee Fed #53	6400.00	103.30	469.20	661276.16	634801.40	32° 49' 1.80046 N	103° 53' 40.37452 W	Circle (Radius: 20.00)			
											plan hits target center

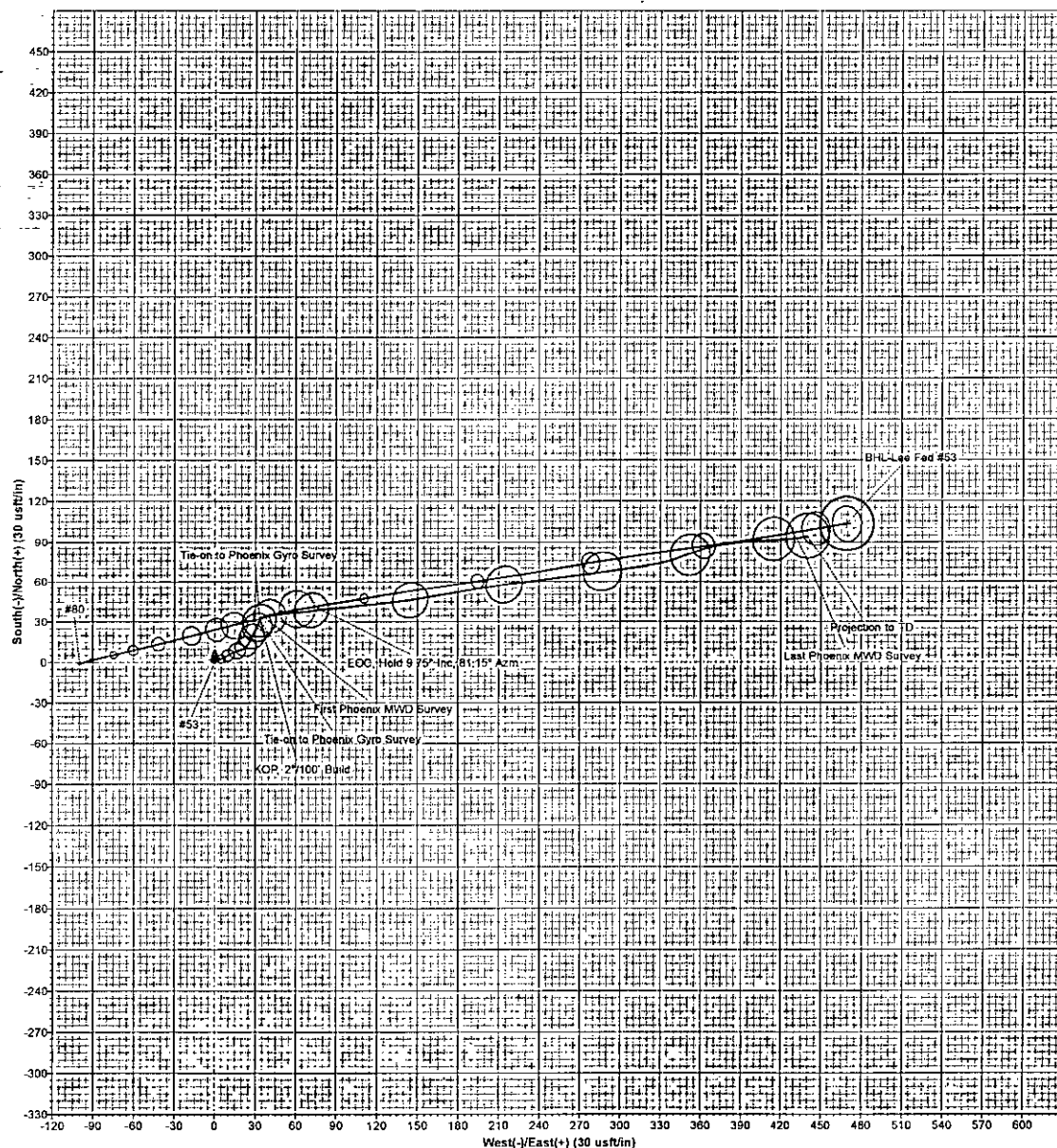
CASING DETAILS											
TVD	MD	Name	Size								
400.00		13 3/8" Surface	13-3/8								
3500.00	3500.45	8 5/8" Intermediate	8-5/8								
6400.00	6437.05	5 1/2" Production	5-1/2								

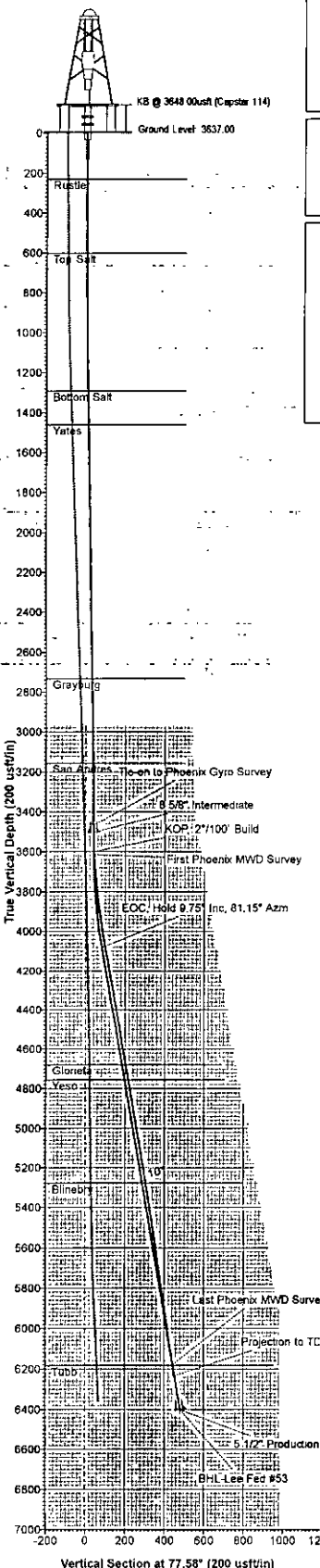
FORMATION TOP DETAILS											
TVDPath	MDPath	Formation	DipAngle	DpDr							
4678.00	4689.55	Glorieta	0.00								
4758.00	4768.90	Yeso	0.00								
5286.00	5300.53	Blinberry	0.00								
6184.00	6217.86	Tubb	0.00								

Map System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone Name: New Mexico East 3001
Local Origin: Well #53, Grid North
Latitude: 32° 49' 0.79753 N
Longitude: 103° 53' 45.87755 W
Grid East: 634332.20
Grid North: 661172.80
Scale Factor: 1.000
Geomagnetic Model: HDGM
Sample Date: 20-Jul-15
Magnetic Declination: 7.67°
Dip Angle from Horizontal: 60.77°
Magnetic Field Strength: 48581
To convert a Magnetic Direction to a Grid Direction, Add 7.43°
To convert a Magnetic Direction to a True Direction, Add 7.67° East
To convert a True Direction to a Grid Direction, Subtract 0.24°

LEGEND

- #80, OH, Surveys V0
- #53, OH / Job #1412338, Surveys (Capstar 114) V0
- Plan #3 07-19-15



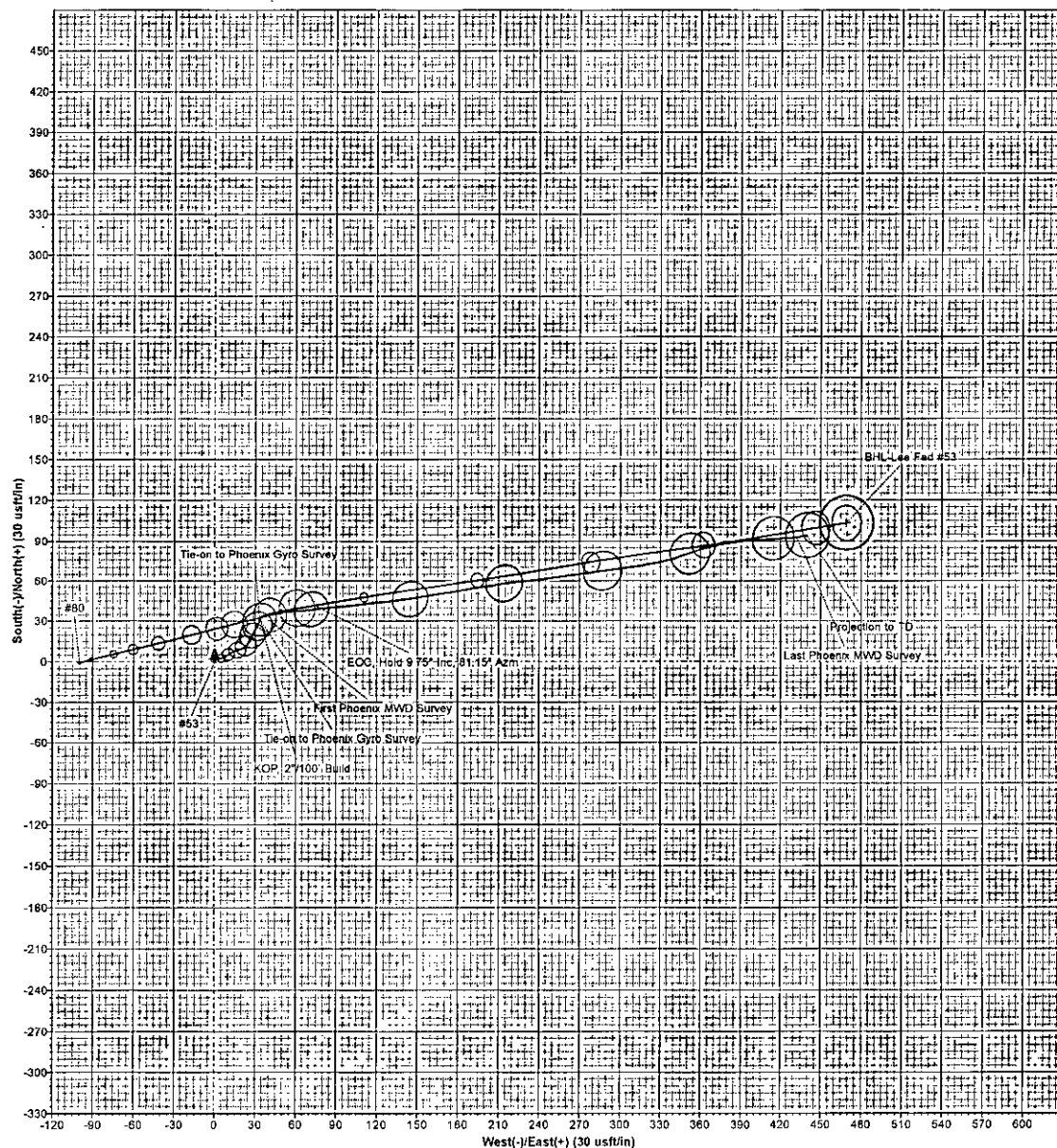


WELL DETAILS											
+N-S		+E-W		Northing		Easting		Latitude		Longitude	
0.00		0.00		681172.80		634332.20		32° 49' 0.79753 N		103° 53' 45.87755 W	
SECTION DETAILS											
Sec	MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	TFace	VSec	Target	Annotation
1	3468.00	0.65	1.39	3467.55	31.23	33.41	0.00	0.00	39.34		Tie-on to Phoenix Gyro Survey
2	3600.00	0.65	1.39	3599.54	32.72	33.44	0.00	0.00	39.70		KOP, 2°/100' Build
3	4084.33	9.78	81.15	4081.49	41.82	74.26	2.00	83.51	81.52		EOC, Hold 9.75° Inc, 81.15° Azm
4	6437.05	9.78	81.15	6400.00	103.30	469.20	0.00	0.00	480.44	BHL-Lee Fed #53	TD at 6443.62 MD
DESIGN TARGET DETAILS											
Name	TVD	+N-S	+E-W	Northing	Easting	Latitude		Longitude		Shape	
BHL-Lee Fed #53	6400.00	103.30	469.20	681276.10	634801.40	32° 49' 1.80046 N		103° 53' 40.37452 W		Circle (Radius 20.00)	
plan hits target center											
CASING DETAILS											
TVD	MD	Name	Size								
400.00		13 3/8" Surface	13-3/8"								
3500.00	3500.45	8 5/8" Intermediate	8-5/8"								
6400.00	6437.05	5 1/2" Production	5-1/2"								
FORMATION TOP DETAILS											
TVDPath	MDPath	Formation	DipAngle	DipDir							
4678.00	4689.65	Glorieta	0.00								
4756.00	4768.80	Yeso	0.00								
5280.00	5306.53	Bimberry	0.00								
6184.00	6217.88	Tube	0.00								

Map System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone Name: New Mexico East 3001
Local Origin: Well #53, Grid North
Latitude: 32° 49' 0.79753 N
Longitude: 103° 53' 45.87755 W
Grid East: 634332.20
Grid North: 681172.80
Scale Factor: 1.000
Geomagnetic Model: HDGM
Sample Date: 20-Jul-15
Magnetic Declination: 7.67°
Dip Angle from Horizontal: 60.77°
Magnetic Field Strength: 48581
To convert a Magnetic Direction to a Grid Direction, Add 7.43°
To convert a Magnetic Direction to a True Direction, Add 7.67° East
To convert a True Direction to a Grid Direction, Subtract 0.24°

LEGEND

- #80, OH, Surveys V0
- #53, OH / Job #1412338, Surveys (Capstar 114) V0
- Plan #3 07-19-15



GENERAL OFFICES - FORT WORTH, TEXAS

BOPCO, L.P.

P.O. Box 2760
Midland, Tx 79702
(432) 683-2277
(432) 687-0329 (fax)

NM OIL CONSERVATION
ARTESIA DISTRICT

OCT 13 2015

RECEIVED

CONFIDENTIAL

October 12, 2015

Oil Conservation Division
811 S. First St.
Artesia NM 88210

Re: Poker Lake Unit CVX JV PC 019H
Pierce Crossing; Bone Spring, East
30-015-42669

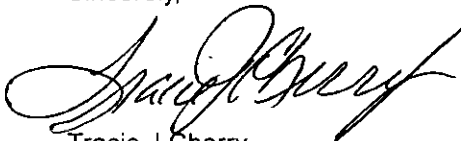
*Ready
12-13-15*

Gentlemen:

BOPCO, L.P. respectfully requests the electric logs and completion information submitted on the referenced well be held confidential for the maximum period of time in accordance with NMOCD's Rule 19.15.7.16(C).

If you have any questions or need additional information, please call me at 432/683-2277.

Sincerely,



Tracie J Cherry
Sr. Regulatory Analyst

Enclosures

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

Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office

AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-015-43197	Pool Code 96831	Pool Name CEDAR LAKE; GLORIETA-YESO
Property Code 308720	Property Name LEE FEDERAL	Well Number 53D
OGRID No. 873	Operator Name APACHE CORPORATION	Elevation 3637'

Surface Location

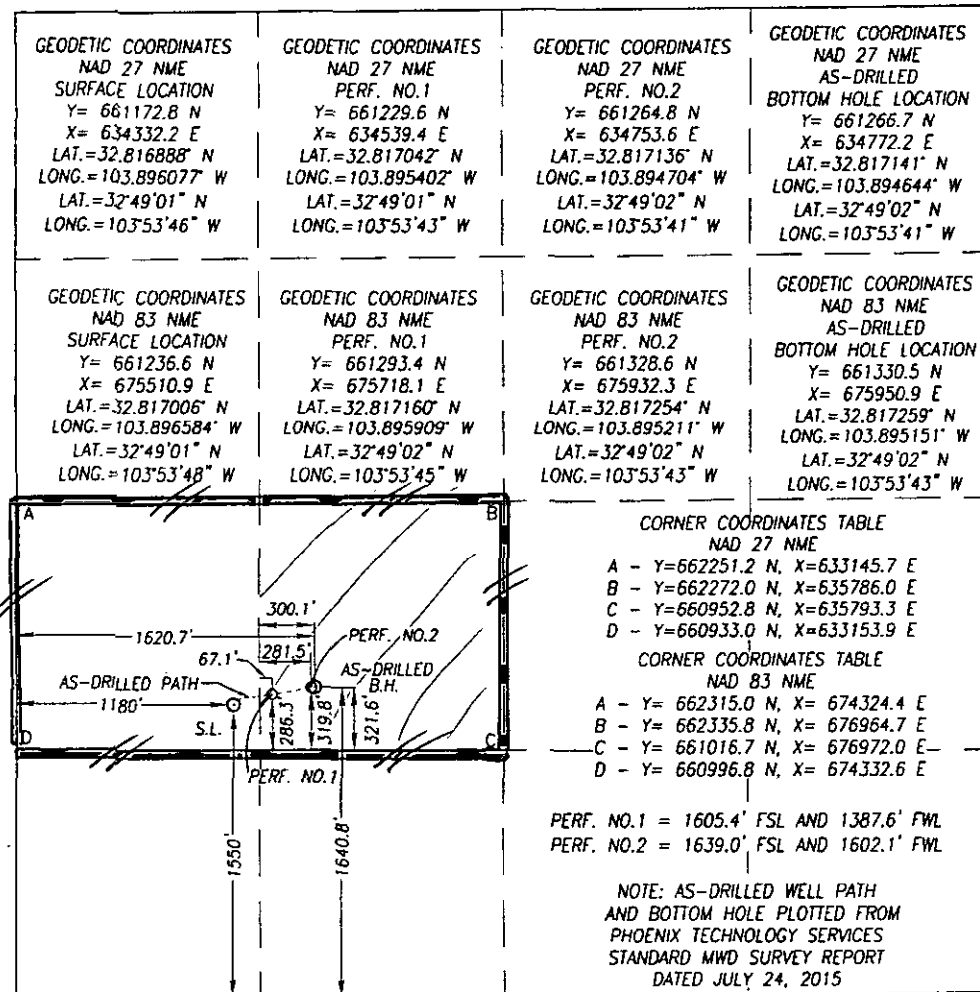
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
L	20	17-S	31-E		1550	SOUTH	1180	WEST	EDDY

As-Drilled 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		1640.8	SOUTH	1620.7	WEST	EDDY

Dedicated Acres 80.40	Joint or Infill	Consolidation Code	Order No. NSL-7345
---------------------------------	-----------------	--------------------	------------------------------

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



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.

Reesa Fisher 8/27/15
Signature Date
REESA FISHER
Printed Name
Reesa.Fisher@apachecorp.com
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:

Ronald J. Eidson
NEW MEXICO
3239
REGISTRAR
Certificate Number: **Ronald J. Eidson 12641**
Ronald J. Eidson 3239
LSL REV. 8/11/15 JWSC W.O.: 15.13 0784