



Job Number: SVMO-140468
 Company: BOPCO, LP
 Lease/Well: PLU Ross Ranch 32 25.30 2H
 Location: Eddy County, NM
 Rig Name: Latshaw #14
 RKB: 22'
 G.L. or M.S.L.: GL

State/Country: New Mexico/USA
 Declination: 7.16°
 Grid: East To Grid North
 File name: Y:\WINSER~1\2014SU~1\BOPCO\MO\PLUROS~1\3225\302H.SVY
 Date/Time: 16-Apr-14 / 16:44
 Curve Name: Surface - 1076' M.D. (Rate Gyro)

MS Survey

WINSERVE SURVEY CALCULATIONS
 Minimum Curvature Method
 Vertical Section Plane 359.98
 Vertical Section Referenced to Wellhead
 Rectangular Coordinates Referenced to Wellhead

We hereby certify that our survey data from
Surface MD to 1076 MD is, to the best of
 our knowledge a true and accurate account of
 the well bore.
Daniel West 4/16/14
 MS Energy Services Date

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	CLOSURE		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
50.00	.39	325.68	50.00	.14	-.10	.14	.17	325.68	.78
144.00	.37	21.45	144.00	.69	-.17	.69	.71	346.47	.38
239.00	.16	300.56	239.00	1.04	-.17	1.04	1.05	350.86	.40
303.00	.12	344.35	303.00	1.15	-.26	1.15	1.18	347.15	.17
428.00	.61	244.76	427.99	.99	-.90	.99	1.34	317.81	.51
522.00	.53	247.85	521.99	.62	-1.75	.62	1.86	289.32	.09
617.00	.38	252.89	616.99	.36	-2.46	.36	2.49	278.24	.16
711.00	.27	265.51	710.99	.25	-2.98	.25	2.99	274.75	.14
806.00	.19	250.01	805.98	.18	-3.35	.18	3.36	273.01	.11

15-42054

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	CLOSURE		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
900.00	.36	286.35	899.98	.21	-3.78	.21	3.79	273.12	.25
995.00	.50	39.74	994.98	.61	-3.80	.61	3.85	279.10	.76
Last Survey Depth Recorded									
1076.00	1.10	44.57	1075.97	1.43	-3.03	1.44	3.35	295.32	.74



PHOENIX
TECHNOLOGY SERVICES

May 19, 2014

Bopco, LP
Attention: Regulatory Department
PO Box 2760
Midland, TX 79702

Re: Bopco, LP
PLU CVX JV RR #009H
Eddy County, NM
API #30-015-42054
Job No. 1311624

Dear Regulatory Department,

Phoenix Technology Services, Inc. has filed the survey certification, surveys, and lease plat for the above referenced well with the State of New Mexico Oil Conservation Division – District 2 via certified mail. A copy of the filing is attached for your records.

Name of Surveyor	Drain Hole Number	Surveyed Depths		Dates Performed		Type of Survey
		From	To	Start	End	
Mike Layfield	009H	1,144	17,251	04/17/14	05/08/14	MWD

Thank you for the opportunity to be of service. Please contact me if you have any questions or require additional information.

Best Regards,

Dana Robinson

Dana Robinson
Operations Administrator

PHOENIX TECHNOLOGY SERVICES INC. SURVEY DATA CERTIFICATION



PHOENIX-JOB NUMBER 1311624

OPERATOR Bopco-LP

WELL NAME PLU CVX JV RR #009H

COUNTY & STATE

Eddy Co. NM

API WELL NUMBER	30-015-42054
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PROPOSED DIRECTION	359.98
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TIE-IN DATA						
MEASURED	VERTICAL			N-S	E-W	DATA
DEPTH	DEPTH	INCLIN	AZIMUTH	COORD	COORD	SOURCE
1,076 ft	1,075.97 ft	1.1	44.57	1.43	-3.03	MS Survey

FIRST	FIRST		
SURVEY	SURVEY		
DATE	DEPTH	INCLIN	AZIMUTH
17-Apr-14	1,144 ft	1.9	52.1

SURVEY INSTRUMENT
TYPE
PHOENIX MWD

LAST	LAST		
SURVEY	SURVEY		
DATE	DEPTH	INCLIN	AZIMUTH
8-May-14	17,251 ft	90.5	357.7

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
8-May-14	17,306 ft	90.5	357.7

Michael Layfield

PRINT YOUR NAME ABOVE

M = Layfield

SIGN YOUR NAME ABOVE

5-8-14

TODAY'S DATE

MAGNETIC DECLINATION OR TOTAL GRID

TOTAL CORRECTION USED	7.15
DECLINATION OR GRID	GRID

MWD SUPERVISOR 1

Mike Layfield

DIRECTIONAL DRILLER 1

Jim Tobola

MWD SUPERVISOR 2

Edward LaGarce

DIRECTIONAL DRILLER 2

Casey Hendrix

1805 Brittmore Road

Houston, Texas 77043

(713)3370609 (Voice), (713)337-0599 (Fax)

DISTRICT I1625 N. French Dr., NM 80240
Phone:(575)393-0161 Fax:(575)393-0720**DISTRICT II**811 S. First St., Artesia, NM 80210
Phone:(575)748-1283 Fax:(575)748-0720**DISTRICT III**1000 Rio Brazos, Aztec, NM 87410
Phone:(505)334-6178 Fax:(505)334-6170**DISTRICT IV**1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone:(505)470-3460 Fax:(505)470-3462State of New Mexico
Energy, Minerals and 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**WELL LOCATION AND ACREAGE DEDICATION PLAT**☐ AMENDED REPORT

API Number	Pool Code	Pool Name
Property Code	Property Name ROSS RANCH 32 25 30	Well Number 2H
OGRID No.	Operator Name BOPCO, L.P.	Elevation 3172'

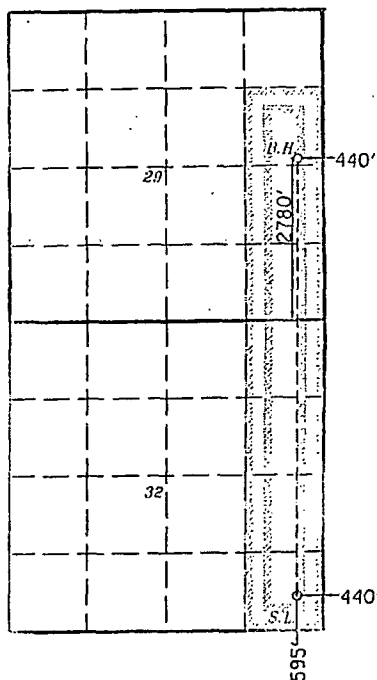
Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	32	25 S	30 E		595'	SOUTH	440'	EAST	EDDY

Bottom Hole 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
H	29	25 S	30 E		2780'	SOUTH	440'	EAST	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

**PROPOSED
SURFACE LOCATION**
 Lat - N 32°04'50.16"
 Long - W 103°53'44.93"
 NMSPC- N 393321.2
 E 635510.8
 (NAD-27)

SCALE 1"=3000'

**PROPOSED BOTTOM
HOLE LOCATION**
 Lat - N 32°06'04.44"
 Long - W 103°53'44.61"
 NMSPC- N 400827.3
 E 635507.8
 (NAD-27)

OPERATOR CERTIFICATION

I hereby certify that the information contained 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 pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature _____ Date _____

Printed Name _____

Email 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.

NOVEMBER 22, 2013

Date Surveyed _____

Signature & seal of
Professional SurveyorCHAD. A. GULICK
Certificate No. 21052

HALFF ASSOC., INC/COBB FENDLEY 29714-W012



BOPCO, L P

Eddy County, NM (NAD27 NME)

Poker Lake Unit CVX JV RR

#009H

WB1/Job #1311624

Survey: Phoenix MWD Survey

Standard Survey Report

12 May, 2014



PHOENIX
TECHNOLOGY SERVICES



Phoenix Technology Services
Survey Report



Company: BOPCO, L P
Project: Eddy County, NM (NAD27 NME)
Site: Poker Lake Unit CVX JV RR
Well: #009H
Wellbore: WB1/Job #1311624
Design: Surveys (Latshaw 14)

Local Co-ordinate Reference: Well #009H
TVD Reference: KB @ 3194.00usft (Latshaw 14)
MD Reference: KB @ 3194.00usft (Latshaw 14)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: GCR DB

Project: Eddy County, NM (NAD27 NME)

Map System: US State Plane 1927 (Exact solution)
Geo Datum: NAD 1927 (NADCON CONUS)
Map Zone: New Mexico East 3001

System Datum: Mean Sea Level

Site: Poker Lake Unit CVX JV RR

Site Position: Northing: 393,321.20 usft Latitude: 32° 4' 50.16089 N
From: Map Easting: 635,510.80 usft Longitude: 103° 53' 44.92656 W
Position Uncertainty: 0.00 usft Slot Radius: 13-3/16 " Grid Convergence: 0.23 °

Well: #009H

Well Position: +N/-S 0.00 usft Northing: 393,321.20 usft Latitude: 32° 4' 50.16089 N
+E/-W 0.00 usft Easting: 635,510.80 usft Longitude: 103° 53' 44.92656 W
Position Uncertainty: 0.00 usft Wellhead Elevation: usft Ground Level: 3,172.00 usft

Wellbore: WB1/Job #1311624

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010_14	04/07/14	7.38	59.93	48,216

Design: Surveys (Latshaw 14)

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	359.98

Survey Program: Date 05/12/14

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
50.00	1,076.00	MS Gyro Survey (WB1/Job #1311624)	CB-GYRO-MS	Camera based gyro multishot
1,144.00	17,306.00	Phoenix MWD Survey (WB1/Job #131162)	MWD	MWD - Standard

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)
1,076.00	1.10	44.57	1,075.97	1.43	-3.03	1.44	0.00	0.00	0.00
Tie-on to MS Gyro Survey									
1,144.00	1.90	52.10	1,143.95	2.59	-1.68	2.59	1.21	1.18	11.07
First Phoenix MWD Survey									
1,333.00	0.20	98.10	1,332.91	4.47	1.11	4.47	0.93	-0.90	24.34
1,523.00	0.60	95.10	1,522.91	4.34	2.43	4.33	0.21	0.21	-1.58
1,712.00	0.30	54.40	1,711.90	4.54	3.82	4.53	0.22	-0.16	-21.53
1,902.00	1.00	77.00	1,901.89	5.20	5.84	5.20	0.39	0.37	11.89
2,092.00	0.80	61.00	2,091.87	6.21	8.62	6.21	0.17	-0.11	-8.42



Phoenix Technology Services Survey Report



Company: BORCO, L P
Project: Eddy County, NM (NAD27 NME)
Site: Poker Lake Unit CVX JV RR
Well: #009H
Wellbore: WB1/Job #1311624
Design: Surveys (Latshaw 14)

Local Co-ordinate Reference: Well #009H
TVD Reference: KB @ 3194.00usft (Latshaw 14)
MD Reference: KB @ 3194.00usft (Latshaw 14)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: GCR DB

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)
2,282.00	0.50	129.10	2,281.86	6.33	10.42	6.33	0.40	-0.16	35.84
2,472.00	0.40	60.80	2,471.85	6.13	11.64	6.13	0.27	-0.05	-35.95
2,662.00	0.80	74.40	2,661.84	6.82	13.50	6.81	0.22	0.21	7.16
2,853.00	1.00	164.40	2,852.82	5.57	15.23	5.56	0.67	0.10	47.12
3,043.00	2.60	124.40	3,042.73	1.54	19.23	1.53	1.02	0.84	-21.05
3,233.00	2.50	128.90	3,232.54	-3.50	26.01	-3.51	0.12	-0.05	2.37
3,423.00	3.40	124.40	3,422.29	-9.29	33.89	-9.30	0.49	0.47	-2.37
3,593.00	2.60	126.40	3,592.05	-14.42	41.15	-14.44	0.47	-0.47	1.18
3,684.00	2.60	123.30	3,682.96	-16.78	44.54	-16.80	0.15	0.00	-3.41
3,811.00	0.70	188.10	3,809.91	-19.13	46.84	-19.15	1.88	-1.50	51.02
4,001.00	0.50	178.50	3,999.90	-21.11	46.69	-21.12	0.12	-0.11	-5.05
4,191.00	0.60	205.50	4,189.89	-22.83	46.29	-22.85	0.14	0.05	14.21
4,381.00	0.30	247.30	4,379.88	-23.92	45.40	-23.94	0.22	-0.16	22.00
4,572.00	0.40	229.70	4,570.88	-24.55	44.43	-24.56	0.08	0.05	-9.21
4,761.00	0.60	239.60	4,759.87	-25.48	43.07	-25.49	0.11	0.11	5.24
4,952.00	0.50	224.90	4,950.86	-26.57	41.62	-26.59	0.09	-0.05	-7.70
5,142.00	0.70	247.70	5,140.85	-27.60	39.98	-27.61	0.16	0.11	12.00
5,331.00	0.90	242.10	5,329.84	-28.73	37.58	-28.75	0.11	0.11	-2.96
5,521.00	1.00	273.00	5,519.81	-29.34	34.61	-29.36	0.27	0.05	16.26
5,711.00	1.10	260.70	5,709.78	-29.55	31.15	-29.56	0.13	0.05	-6.47
5,901.00	1.50	304.60	5,899.73	-28.43	27.31	-28.44	0.55	0.21	23.11
6,091.00	1.50	283.80	6,089.67	-26.43	22.85	-26.44	0.28	0.00	-10.95
6,281.00	1.40	263.60	6,279.61	-26.09	18.12	-26.10	0.27	-0.05	-10.63
6,472.00	0.80	297.80	6,470.58	-25.73	14.63	-25.74	0.45	-0.31	17.91
6,661.00	0.70	274.00	6,659.56	-25.04	12.31	-25.04	0.17	-0.05	-12.59
6,851.00	0.50	293.80	6,849.55	-24.62	10.39	-24.63	0.15	-0.11	10.42
7,042.00	0.30	246.60	7,040.55	-24.48	9.17	-24.49	0.19	-0.10	-24.71
7,232.00	0.80	176.60	7,230.54	-26.01	8.79	-26.01	0.40	0.26	-36.84
7,422.00	0.60	258.80	7,420.53	-27.52	7.89	-27.53	0.49	-0.11	43.26
7,612.00	2.30	177.20	7,610.47	-31.52	7.10	-31.53	1.21	0.89	-42.95
7,802.00	1.50	300.40	7,800.42	-34.07	5.15	-34.08	1.77	-0.42	64.84
7,992.00	1.20	305.40	7,990.36	-31.66	1.38	-31.66	0.17	-0.16	2.63
8,182.00	0.40	281.90	8,180.35	-30.37	-0.89	-30.37	0.45	-0.42	-12.37
8,372.00	0.50	338.10	8,370.34	-29.47	-1.85	-29.47	0.23	0.05	29.58
8,569.00	0.90	355.20	8,567.32	-26.89	-2.35	-26.89	0.21	0.18	7.88
8,779.00	0.80	325.30	8,777.30	-24.31	-3.23	-24.31	0.24	-0.05	-15.74
8,969.00	0.80	302.50	8,967.29	-22.51	-5.10	-22.51	0.17	0.00	-12.00
9,158.00	1.00	249.40	9,156.27	-22.38	-7.76	-22.38	0.44	0.11	-28.10
9,348.00	1.00	216.80	9,346.24	-24.29	-10.30	-24.29	0.30	0.00	-17.16
9,538.00	7.60	358.90	9,535.73	-13.04	-11.54	-13.04	4.43	3.47	74.79
9,589.00	11.90	352.90	9,586.28	-7.82	-11.97	-7.81	14.23	13.87	-19.35
9,601.00	16.00	352.50	9,597.32	-0.17	-12.96	-0.16	12.82	12.81	-1.25
9,633.00	19.90	353.50	9,627.76	9.62	-14.15	9.63	12.23	12.19	3.13



Phoenix Technology Services Survey Report



Company: BORCO, LP
Project: Eddy County, NM (NAD27 NME)
Site: Poker Lake Unit CVX JV RR
Well: #009H
Wellbore: WB1/Job #1311624
Design: Surveys (Latshaw 14)

Local Co-ordinate Reference: Well #009H
TVD Reference: KB @ 3194.00usft (Latshaw 14)
MD Reference: KB @ 3194.00usft (Latshaw 14)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
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)	
9,664.00	24.30	355.50	9,656.48	21.23	-15.25	21.23	14.40	14.19	6.45	
9,696.00	28.10	355.90	9,685.18	35.31	-16.30	35.32	11.89	11.88	1.25	
9,728.00	31.60	358.10	9,712.94	51.22	-17.12	51.22	11.46	10.94	6.88	
9,759.00	33.90	1.90	9,739.01	67.93	-17.10	67.98	9.95	7.42	12.26	
9,791.00	37.60	2.40	9,764.97	86.66	-16.40	86.66	11.60	11.56	1.56	
9,823.00	40.90	0.40	9,789.75	106.89	-15.92	106.90	11.04	10.31	-6.25	
9,854.00	42.60	357.80	9,812.88	127.53	-16.25	127.53	7.83	5.48	-8.39	
9,886.00	44.90	356.30	9,836.00	149.62	-17.39	149.63	7.88	7.19	-4.69	
9,918.00	47.50	356.50	9,858.14	172.67	-18.84	172.68	8.14	8.13	0.63	
9,949.00	50.10	357.30	9,878.56	195.96	-20.10	195.97	8.61	8.39	2.58	
9,981.00	52.30	358.20	9,898.61	220.88	-21.08	220.89	7.22	6.88	2.81	
10,013.00	53.80	359.20	9,917.85	246.44	-21.65	246.45	5.31	4.69	3.13	
10,044.00	55.50	359.20	9,935.78	271.73	-22.01	271.73	5.48	5.48	0.00	
10,076.00	57.90	359.70	9,953.35	298.47	-22.26	298.48	7.61	7.50	1.56	
10,108.00	60.00	0.00	9,969.85	325.88	-22.33	325.89	6.61	6.56	0.94	
10,139.00	62.40	0.70	9,984.79	353.04	-22.17	353.05	7.99	7.74	2.26	
10,171.00	65.90	0.70	9,998.74	381.84	-21.81	381.84	10.94	10.94	0.00	
10,203.00	69.80	0.30	10,010.80	411.47	-21.56	411.47	12.24	12.19	-1.25	
10,235.00	71.50	359.90	10,021.40	441.66	-21.50	441.67	5.44	5.31	-1.25	
10,266.00	74.60	359.70	10,030.44	471.31	-21.61	471.32	10.02	10.00	-0.65	
10,298.00	77.40	1.00	10,038.18	502.35	-21.42	502.36	9.60	8.75	4.06	
10,330.00	81.70	1.40	10,043.98	533.81	-20.76	533.81	13.49	13.44	1.25	
10,392.00	90.00	0.60	10,048.47	595.58	-19.68	595.59	13.45	13.39	-1.29	
10,487.00	89.70	0.90	10,048.71	690.57	-18.44	690.58	0.45	-0.32	0.32	
10,582.00	88.80	0.40	10,049.96	785.56	-17.36	785.56	1.08	-0.95	-0.53	
10,677.00	88.30	0.30	10,052.36	880.52	-16.78	880.53	0.54	-0.53	-0.11	
10,772.00	87.10	359.60	10,056.17	975.45	-16.86	975.45	1.46	-1.26	-0.74	
10,867.00	88.60	0.30	10,059.74	1,070.38	-16.94	1,070.38	1.74	1.58	0.74	
10,962.00	90.60	0.30	10,060.40	1,165.37	-16.45	1,165.37	2.11	2.11	0.00	
11,057.00	90.20	359.30	10,059.74	1,260.36	-16.78	1,260.37	1.13	-0.42	-1.05	
11,151.00	92.00	359.70	10,057.93	1,354.34	-17.60	1,354.34	1.96	1.91	0.43	
11,246.00	92.30	359.20	10,054.37	1,449.27	-19.51	1,449.27	0.61	0.32	-0.53	
11,341.00	90.80	1.40	10,051.80	1,544.22	-18.01	1,544.23	2.80	-1.58	2.32	
11,366.00	90.80	1.50	10,051.45	1,569.21	-17.38	1,569.22	0.40	0.00	0.40	
11,461.00	90.60	1.30	10,050.29	1,664.18	-15.06	1,664.18	0.30	-0.21	-0.21	
11,556.00	91.00	1.40	10,048.96	1,759.14	-12.82	1,759.14	0.43	0.42	0.11	
11,652.00	89.30	1.20	10,048.71	1,855.11	-10.64	1,855.11	1.78	-1.77	-0.21	
11,747.00	89.50	3.40	10,049.71	1,950.02	-6.83	1,950.03	2.33	0.21	2.32	
11,842.00	89.50	4.00	10,050.54	2,044.82	-0.70	2,044.82	0.63	0.00	0.63	
11,937.00	89.40	4.60	10,051.45	2,139.55	6.42	2,139.55	0.64	-0.11	0.63	
12,031.00	89.00	3.50	10,052.76	2,233.30	13.06	2,233.30	1.25	-0.43	-1.17	
12,126.00	89.80	2.20	10,053.76	2,328.18	17.78	2,328.17	1.61	0.84	-1.37	
12,221.00	90.80	1.00	10,053.26	2,423.14	20.44	2,423.13	1.64	1.05	-1.26	
12,316.00	90.00	0.70	10,052.59	2,518.12	21.85	2,518.12	0.90	-0.84	-0.32	



Phoenix Technology Services Survey Report



Company: BOPCO, L P
Project: Eddy County, NM (NAD27 NME)
Site: Poker Lake Unit CVX JV RR
Well: #009H
Wellbore: WB1/Job #1311624
Design: Surveys (Latshaw 14)

Local Co-ordinate Reference: Well #009H
TVD Reference: KB @ 3194.00usft (Latshaw 14)
MD Reference: KB @ 3194.00usft (Latshaw 14)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
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)
12,411.00	88.80	359.00	10,053.59	2,613.11	21.60	2,613.10	2.19	-1.26	-1.79
12,506.00	88.80	359.10	10,055.58	2,708.08	20.02	2,708.07	0.11	0.00	0.11
12,601.00	88.80	359.30	10,057.57	2,803.05	18.70	2,803.04	0.21	0.00	0.21
12,696.00	88.80	359.30	10,059.56	2,898.02	17.54	2,898.01	0.00	0.00	0.00
12,791.00	89.10	359.70	10,061.30	2,993.00	16.71	2,992.99	0.53	0.32	0.42
12,886.00	89.20	359.90	10,062.71	3,087.99	16.37	3,087.98	0.24	0.11	0.21
12,981.00	89.10	357.80	10,064.12	3,182.95	14.47	3,182.95	2.21	-0.11	-2.21
13,076.00	90.20	358.00	10,064.70	3,277.89	10.99	3,277.88	1.18	1.16	0.21
13,171.00	89.50	358.00	10,064.95	3,372.83	7.67	3,372.83	0.74	-0.74	0.00
13,267.00	89.20	357.90	10,066.04	3,468.76	4.24	3,468.76	0.33	-0.31	-0.10
13,361.00	92.00	357.60	10,065.05	3,562.67	0.55	3,562.67	3.00	2.98	-0.32
13,456.00	92.50	357.10	10,061.32	3,657.50	-3.84	3,657.50	0.74	0.53	-0.53
13,551.00	93.40	359.70	10,056.43	3,752.33	-6.49	3,752.33	2.89	0.95	2.74
13,646.00	91.70	0.60	10,052.21	3,847.23	-6.24	3,847.23	2.02	-1.79	0.95
13,741.00	91.70	1.00	10,049.39	3,942.18	-4.92	3,942.18	0.42	0.00	0.42
13,836.00	90.10	1.20	10,047.90	4,037.14	-3.09	4,037.14	1.70	-1.68	0.21
13,931.00	90.10	1.40	10,047.73	4,132.12	-0.94	4,132.12	0.21	0.00	0.21
14,026.00	88.50	0.50	10,048.89	4,227.10	0.64	4,227.09	1.93	-1.68	-0.95
14,121.00	88.00	0.50	10,051.79	4,322.05	1.47	4,322.05	0.53	-0.53	0.00
14,216.00	89.10	1.10	10,054.20	4,417.01	2.79	4,417.00	1.32	1.16	0.63
14,311.00	88.80	1.30	10,055.94	4,511.97	4.78	4,511.97	0.38	-0.32	0.21
14,406.00	89.50	1.90	10,057.35	4,606.92	7.43	4,606.92	0.97	0.74	0.63
14,501.00	90.40	0.10	10,057.43	4,701.90	9.09	4,701.90	2.12	0.95	-1.89
14,596.00	90.30	359.70	10,056.85	4,796.90	8.93	4,796.89	0.43	-0.11	-0.42
14,690.00	89.80	358.80	10,056.77	4,890.89	7.70	4,890.89	1.10	-0.53	-0.96
14,785.00	89.80	358.50	10,057.10	4,985.86	5.46	4,985.86	0.32	0.00	-0.32
14,880.00	90.00	359.10	10,057.26	5,080.84	3.47	5,080.84	0.67	0.21	0.63
14,975.00	90.00	0.90	10,057.26	5,175.84	3.47	5,175.84	1.89	0.00	1.89
15,070.00	89.00	1.90	10,058.09	5,270.80	5.79	5,270.80	1.49	-1.05	1.05
15,165.00	89.50	2.80	10,059.34	5,365.71	9.68	5,365.71	1.08	0.53	0.95
15,260.00	88.40	1.40	10,061.08	5,460.63	13.17	5,460.62	1.87	-1.16	-1.47
15,354.00	88.00	1.00	10,064.03	5,554.56	15.13	5,554.56	0.60	-0.43	-0.43
15,449.00	88.30	0.40	10,067.10	5,649.50	16.29	5,649.50	0.71	0.32	-0.63
15,544.00	88.20	359.50	10,070.00	5,744.46	16.21	5,744.45	0.95	-0.11	-0.95
15,639.00	88.50	359.50	10,072.73	5,839.42	15.38	5,839.41	0.32	0.32	0.00
15,734.00	88.10	359.10	10,075.55	5,934.37	14.22	5,934.36	0.60	-0.42	-0.42
15,829.00	90.20	358.40	10,076.96	6,029.33	12.15	6,029.32	2.33	2.21	-0.74
15,924.00	89.90	357.80	10,076.88	6,124.28	9.00	6,124.27	0.71	-0.32	-0.63
16,019.00	90.00	357.90	10,076.96	6,219.21	5.44	6,219.21	0.15	0.11	0.11
16,114.00	90.10	357.70	10,076.88	6,314.14	-1.79	6,314.14	0.24	0.11	-0.21
16,208.00	89.80	357.40	10,076.96	6,408.05	-2.23	6,408.05	0.45	-0.32	-0.32
16,304.00	90.40	357.30	10,076.79	6,503.95	-6.67	6,503.95	0.63	0.63	-0.10
16,399.00	90.10	356.60	10,076.38	6,598.81	-11.72	6,598.82	0.80	-0.32	-0.74



Phoenix Technology Services Survey Report



Company: BOPCO, L.P.
Project: Eddy County, NM (NAD27 NME)
Site: Poker Lake Unit CVX JV RR
Well: #009H
Wellbore: WB1/Job #1311624
Design: Surveys (Latshaw 14)

Local Co-ordinate Reference: Well #009H
TVD Reference: KB @ 3194.00usft (Latshaw 14)
MD Reference: KB @ 3194.00usft (Latshaw 14)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
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)
16,493.00	89.30	356.80	10,076.87	6,692.65	-17.13	6,692.66	0.88	-0.85	0.21
16,589.00	90.20	357.80	10,077.29	6,788.54	-21.66	6,788.55	1.40	0.94	1.04
16,683.00	90.40	356.70	10,076.80	6,882.43	-26.17	6,882.44	1.19	0.21	-1.17
16,778.00	90.90	357.80	10,075.72	6,977.32	-30.72	6,977.33	1.27	0.53	1.16
16,873.00	91.30	357.80	10,073.89	7,072.23	-34.37	7,072.24	0.42	0.42	0.00
16,969.00	90.90	357.80	10,072.05	7,168.14	-38.05	7,168.15	0.42	-0.42	0.00
17,064.00	90.40	357.70	10,070.97	7,263.06	-41.78	7,263.07	0.54	-0.53	-0.11
17,159.00	90.60	358.10	10,070.15	7,357.99	-45.26	7,358.01	0.47	0.21	0.42
17,251.00	90.50	357.50	10,069.26	7,449.92	-48.80	7,449.94	0.66	-0.11	-0.65
Last Phoenix MWD Survey									
17,306.00	90.50	357.50	10,068.78	7,504.87	-51.19	7,504.88	0.00	0.00	0.00
Projection to Bit									

Survey Annotations:

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N-S (usft)	+E-W (usft)	
1,076.00	1,075.97	1.43	-3.03	Tie-on to MS Gyro Survey
1,144.00	1,143.95	2.59	-1.68	First Phoenix MWD Survey
17,251.00	10,069.26	7,449.92	-48.80	Last Phoenix MWD Survey
17,306.00	10,068.78	7,504.87	-51.19	Projection to Bit

Checked By: _____

Approved By: _____

Date: _____