

Results of Directional Survey

API number:	30-025-41400	DD
OGRID:		Operator: CONOCOPHILLIPS COMPANY
	Property:	MCA UNIT # 514

surface	ULSTR:	P	27	T 17S	R 32E
				810 FSL	1300 FEL

BH Loc	ULSTR:	P	27	T 17S	R 32E
4550	MD	4549.3	TVD	869 FSL	1320 FEL

Top Perf/OH	ULSTR:	P	27	T 17S	R 32E
4103	MD	4102.5	TVD	863 FSL	1313 FEL

Bot Perf/OH	ULSTR:	P	27	T 17S	R 32E
4312	MD	4311.4	TVD	867 FSL	1315 FEL

	MD	N/S	E/W	VD
	4044	51.79	-11.88	4043.46
TOP PERFS/OH	4103	52.97	-12.51	4102.45
	4223	55.37	-13.78	4222.42
	4223	55.37	-13.78	4222.42
BOT PERFS/OH	4312	56.74	-15.18	4311.40
	4402	58.13	-16.59	4401.37

NEXT TO LAST	4500	58.99	-18.91	4499.34
LAST READING	4550	59.37	-20.17	4549.32
TD	4550	59.37	-20.17	4549.32

Surface Location	810	FS	1300	FE
Projected BHL	869	FS	1320	FE
Location of				
Top Perfs/OH	863	FS	1313	FE
Bottom Perfs/OH	867	FS	1315	FE

SUMMARY of Subsurface Locations

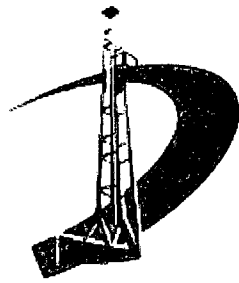
Surface Location	P-27-17S-32E	810	FS	1300	FE	Vert. Depth
Top Perfs/OH	P-27-17S-32E	863	FS	1313	FE	4102.45
Bottom Perfs/OH	P-27-17S-32E	867	FS	1315	FE	4311.40
Projected TD	P-27-17S-32E	869	FS	1320	FE	4549.32

MAR 06 2014

HOBBS OCD

JAN 06 2014

RECEIVED



PRODIRECTIONAL

P.O. Box 750, Conroe, TX 77305 Phone: 936-441-7266

ConocoPhillips

MCA Unit Well No. 514

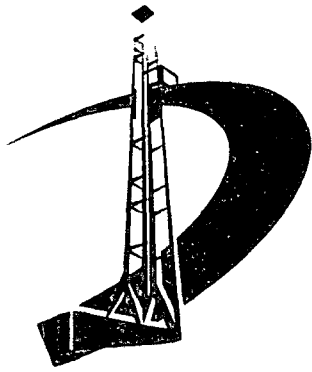
Lea County, NM

October 22, 2013

Job Number LNM 5107013

Survey Completion Report

COPY



PRODIRECTIONAL

P.O. Box 750, Conroe, TX 77305 Phone: 936-441-7266 Fax: 936-441-7268

October 22, 2013

ConocoPhillips

MCA Unit Well No. 514

Lea County, NM

This is to certify surveys from **1,087'** MD to a depth of **5,550'** MD are true and correct MWD surveys. These surveys were taken from **10/20/2013** through **10/22/2013**.

Sincerely,

John Jordan

Well Planning



ConocoPhillips

Lea County, NM

MCA Unit Well

No. 514

OH

Survey: ProDirectional

Survey Report

22 October, 2013





Professional Directional
Survey Report (NM)



Company:	Conoco Phillips	Local Co-ordinate Reference:	Well No. 514
Project:	Lea County, N.M.	TVD Reference:	WELL @ 3974.00usft (RKB: 13' + GL: 3961')
Site:	MCA Unit	MD Reference:	WELL @ 3974.00usft (RKB: 13' + GL: 3961')
Well:	No. 514	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Original Hole	Database:	Well_Planner1

Project	Lea County, N.M.		
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	MCA Unit		
Site Position:		Northing:	656,769.90 usft
From:	Map	Easting:	677,918.00 usft
Position Uncertainty:	3.30 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 48' 15.158 N
		Longitude:	103° 45' 15.436 W
		Grid Convergence:	0.31 °

Well	No. 514					
Well Position	+N/-S	0.00 usft	Northing:	655,401.40 usft	Latitude:	32° 48' 1.534 N
	+E/-W	0.00 usft	Easting:	679,431.40 usft	Longitude:	103° 44' 57.793 W
Position Uncertainty	3.30 usft		Wellhead Elevation:	usft	Ground Level:	3,961.00 usft

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	User Defined	10/7/2013	7.55	60.62	48,755

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

Survey Program		Date 10/22/2013		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
1,087.00	4,550.00	Survey #1 (Original Hole)	MWD	MWD - Standard



Professional Directional Survey Report (NM)



Company: Conoco Phillips
Project: Lea County, N.M.
Site: MCA Unit
Well: No. 514
Wellbore: Original Hole
Design: Original Hole

Local Co-ordinate Reference: Well No. 514
TVD Reference: WELL @ 3974.00usft (RKB: 13' + GL: 3961')
MD Reference: WELL @ 3974.00usft (RKB: 13' + GL: 3961')
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Well_Planner1

Survey												
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Closure Azimuth (°)	Closure Distance (usft)	Northing (usft)	Easting (usft)		
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	655,401.40	679,431.40		
1,087.00	0.90	332.90	1,086.96	7.60	-3.89	0.08	332.90	8.54	655,409.00	679,427.51		
ProDirectional MWD												
1,177.00	1.10	321.80	1,176.94	8.91	-4.75	0.31	331.96	10.09	655,410.31	679,426.66		
1,356.00	1.20	327.80	1,355.91	11.84	-6.81	0.09	330.12	13.66	655,413.24	679,424.60		
1,535.00	1.20	333.20	1,534.87	15.10	-8.65	0.06	330.20	17.41	655,416.50	679,422.75		
1,714.00	1.10	336.40	1,713.83	18.35	-10.18	0.07	330.97	20.99	655,419.75	679,421.22		
1,893.00	1.00	2.20	1,892.80	21.49	-10.81	0.27	333.29	24.05	655,422.89	679,420.59		
2,072.00	1.40	11.70	2,071.76	25.19	-10.31	0.25	337.74	27.22	655,426.59	679,421.10		
2,251.00	0.90	65.40	2,250.73	27.91	-8.59	0.63	342.90	29.21	655,429.31	679,422.82		
2,431.00	1.20	46.30	2,430.70	29.81	-5.94	0.25	348.73	30.39	655,431.21	679,425.46		
2,610.00	1.40	28.00	2,609.65	33.03	-3.56	0.26	353.85	33.22	655,434.43	679,427.85		
2,789.00	0.30	221.20	2,788.64	34.61	-2.84	0.95	355.31	34.73	655,436.01	679,428.56		
2,968.00	0.50	358.80	2,967.64	35.04	-3.16	0.42	354.84	35.18	655,436.44	679,428.24		
3,148.00	0.90	339.30	3,147.62	37.15	-3.68	0.26	354.34	37.33	655,438.55	679,427.72		
3,327.00	1.30	336.40	3,326.59	40.32	-4.99	0.23	352.95	40.63	655,441.72	679,426.41		
3,506.00	0.80	317.90	3,505.56	43.11	-6.64	0.33	351.24	43.62	655,444.51	679,424.76		
3,685.00	1.00	330.20	3,684.54	45.39	-8.25	0.15	349.69	46.14	655,446.79	679,423.15		
3,864.00	1.20	331.90	3,863.51	48.40	-9.91	0.11	348.42	49.41	655,449.80	679,421.49		
4,044.00	1.30	328.00	4,043.46	51.79	-11.88	0.07	347.08	53.14	655,453.19	679,419.52		
4,223.00	1.30	336.20	4,222.42	55.37	-13.78	0.10	346.03	57.06	655,456.77	679,417.62		
4,402.00	1.40	294.10	4,401.37	58.13	-16.59	0.54	344.07	60.45	655,459.53	679,414.81		
4,500.00	1.50	287.00	4,499.34	58.99	-18.91	0.21	342.22	61.95	655,460.39	679,412.49		
4,550.00	1.50	287.00	4,549.32	59.37	-20.17	0.00	341.24	62.70	655,460.77	679,411.24		
PTB @ 4,550' MD:4549.32												



Professional Directional
Survey Report (NM)



Company: Conoco Phillips
Project: Lea County, N.M.
Site: MCA Unit
Well: No. 514
Wellbore: Original Hole
Design: Original Hole

Local Co-ordinate Reference: Well No. 514
TVD Reference: WELL @ 3974.00usft (RKB: 13' + GL: 3961')
MD Reference: WELL @ 3974.00usft (RKB: 13' + GL: 3961')
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Well_Planner1

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,087.00	1,086.96	7.60	-3.89	ProDirectional MWD
4,550.00	4,549.32	59.37	-20.17	PTB @ 4,550' MD;4549.32