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East Vacuum GBSA Unit #3202-W513

Lea County, NM

January 20, 2016

Job No. LNM5121315

Survey Completion Report



PRODIRECTIONAL

Survey Certification Letter

January 20, 2016

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Operator Name: ConocoPhillips
Well Name: East Vacuum GBSA Unit #3202-W513
County/Parish: Lea County,
State: New Mexico
Rig Name: Precision 194
Job Number: LNM5121315

This is to certify the surveys performed on the referenced well by Professional Directional Ent., Inc. are true and correct MWD Surveys, data provided as follows:

Surveyor	Surveyed Depths	Projection to Bit	Dates Performed	Type of Survey
ProDirectional	1,616'MD – 5,160'MD	5,211' MD	12/22/15 – 12/24/15	MWD

Sincerely,

Mike Coats
Well Planning
Professional Directional

850 Conroe Park West Drive | Conroe, TX 77303 | Phone: 936.441.7266

prodirectional.com



ConocoPhillips

Lea County, N.M.
East Vacuum GBSA Unit
Well # 3202-W513
OH

HOBBS OCD

NOV 30 2017

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Survey: ProDirectional

Survey Report

20 January, 2016





ProDirectional
Survey Report



Company:	ConocoPhillips	Local Co-ordinate Reference:	Well Well # 3202-W513
Project:	Lea County, N.M.	TVD Reference:	Well @ 3961.00usft
Site:	East Vacuum GBSA Unit	MD Reference:	Well @ 3961.00usft
Well:	Well # 3202-W513	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	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	East Vacuum GBSA Unit		
Site Position:		Northing:	652,841.86 usft
From:	Map	Easting:	764,633.16 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 47' 30.45 N
		Longitude:	103° 28' 19.90 W
		Grid Convergence:	0.47 °

Well	Well # 3202-W513					
Well Position	+N/-S	0.00 usft	Northing:	652,841.86 usft	Latitude:	32° 47' 30.45 N
	+E/-W	0.00 usft	Easting:	764,633.16 usft	Longitude:	103° 28' 19.90 W
Position Uncertainty	0.00 usft		Wellhead Elevation:	0.00 usft	Ground Level:	3,947.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	User Defined	12/21/2015	7.15	60.68	48,573

Design		OH		
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	281.34

Survey Program	Date 1/20/2016			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
1,616.00	5,211.00	Survey #1 (OH)	MWD	MWD - Standard

Company: ConocoPhillips
Project: Lea County, N.M.
Site: East Vacuum GBSA Unit
Well: Well # 3202-W513
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well Well # 3202-W513
TVD Reference: Well @ 3961.00usft
MD Reference: Well @ 3961.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Well_Planner1

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	652,841.86	764,633.16
1,616.00	0.20	317.00	1,616.00	2.29	2.06	-1.92	2.82	317.00	652,843.92	764,631.24
Pro MWD First Survey: 1616' MD										
1,795.00	0.20	186.30	1,795.00	2.52	1.98	-2.17	2.94	312.38	652,843.84	764,630.99
1,974.00	0.40	114.30	1,973.99	1.88	1.41	-1.64	2.16	310.82	652,843.27	764,631.52
2,153.00	0.50	96.80	2,152.99	0.49	1.06	-0.29	1.10	344.71	652,842.92	764,632.87
2,332.00	0.30	62.10	2,331.98	-0.65	1.19	0.90	1.49	37.06	652,843.05	764,634.06
2,512.00	0.80	36.60	2,511.98	-1.55	2.42	2.06	3.18	40.47	652,844.28	764,635.22
2,691.00	2.10	319.40	2,690.93	0.50	5.91	0.68	5.95	6.51	652,847.77	764,633.84
2,870.00	4.40	288.70	2,869.64	9.89	10.61	-7.96	13.26	323.09	652,852.47	764,625.20
3,048.00	7.60	281.90	3,046.64	28.44	15.22	-25.95	30.09	300.39	652,857.08	764,607.21
3,228.00	11.20	277.80	3,224.20	57.80	20.05	-54.93	58.48	290.05	652,861.91	764,578.23
3,407.00	15.30	280.90	3,398.40	98.79	26.88	-95.36	99.08	285.74	652,868.74	764,537.80
3,586.00	16.40	278.50	3,570.59	147.64	35.08	-143.55	147.77	283.73	652,876.94	764,489.61
3,765.00	16.90	279.50	3,742.09	198.89	43.11	-194.20	198.93	282.52	652,884.97	764,438.96
3,944.00	18.10	279.80	3,912.80	252.69	52.14	-247.26	252.70	281.91	652,894.00	764,385.90
4,123.00	16.50	281.20	4,083.70	305.91	61.81	-299.60	305.91	281.66	652,903.67	764,333.56
4,302.00	15.60	280.00	4,255.72	355.39	70.93	-348.24	355.39	281.51	652,912.79	764,284.92
4,481.00	18.80	279.20	4,426.69	408.29	79.72	-400.43	408.29	281.26	652,921.58	764,232.73
4,660.00	18.50	280.20	4,596.29	465.50	89.36	-456.85	465.51	281.07	652,931.22	764,176.31
4,839.00	18.70	280.90	4,765.94	522.59	99.81	-512.98	522.60	281.01	652,941.67	764,120.18
5,018.00	18.70	281.70	4,935.49	579.98	111.06	-569.25	579.99	281.04	652,952.92	764,063.91
5,160.00	18.70	280.60	5,070.00	625.50	119.86	-613.92	625.51	281.05	652,961.72	764,019.24
Last Survey: 5160' MD										
5,211.00	18.70	280.60	5,118.30	641.85	122.87	-629.99	641.86	281.04	652,964.73	764,003.17
PTB: 5211' MD										



ProDirectional
Survey Report



Company: ConocoPhillips
Project: Lea County, N.M.
Site: East Vacuum GBSA Unit
Well: Well # 3202-W513
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well Well # 3202-W513
TVD Reference: Well @ 3961.00usft
MD Reference: Well @ 3961.00usft
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)	
1,616.00	1,616.00	2.06	-1.92	Pro MWD First Survey: 1616' MD
5,160.00	5,070.00	119.86	-613.92	Last Survey: 5160' MD
5,211.00	5,118.30	122.87	-629.99	PTB: 5211' MD