

Results of Directional Survey

API number:	30-025-40431		
OGRID:		Operator:	CONOCOPHILLIPS COMPANY
		Property:	BUCK 20 FEDERAL # 1H

surface	ULSTR:	P	17	T 26S	R 32E
				105 FSL	397 FEL

BH Loc	ULSTR:	P	20	T 26S	R 32E
13905	MD	9219.7	TVD	357 FSL	329 FEL
				4923 FNL	

Top Perf/OH	ULSTR:	P	17	T 26S	R 32E
9649	MD	9260.4	TVD	671 FNL	383 FEL

Bot Perf/OH	ULSTR:	P	20	T 26S	R 32E
13797	MD	9227.2	TVD	465 FSL	335 FEL
				4815 FNL	

	MD	N/S	E/W	VD
	9617	-744.00	14.70	9260.2
TOP PERFS/OH	9649	-776.00	14.20	9260.40
	9649	-776.00	14.20	9260.40
	13795	-4918.40	62.20	9227.30
BOT PERFS/OH	13797	-4920.39	62.30	9227.16
	13855	-4978.20	65.20	9223.10

NEXT TO LAST	13855	-4978.20	65.20	9223.10
LAST READING	13905	-5028.00	67.80	9219.70
TD	13905	-5028.00	67.80	9219.70

Surface Location	105	FS	397	FE
Projected BHL	4923	FN	329	FE
Location of				
Top Perfs/OH	671	FN	383	FE
Bottom Perfs/OH	4815	FN	335	FE

SUMMARY of Subsurface Locations

Surface Location	P-17-26S-32E	105	FS	397	FE	Vert. Depth
Top Perfs/OH	P-17-26S-32E	671	FN	383	FE	9260.40
Bottom Perfs/OH	P-20-26S-32E	4815	FN	335	FE	9227.16
Projected TD	P-20-26S-32E	4923	FN	329	FE	9219.70



Conoco Phillips

Lea County, New Mexico
Sec 17, T26S, R32E
Buck Federal 20 #1H

30-025-40431

Wellbore #1

Survey: MWD

HOBBS OCD

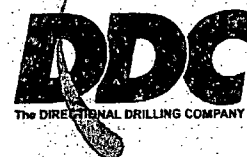
NOV 27 2012

RECEIVED

SUR: P-17-26s-32e, 105/S & 397/E
BHL: P-20-26s-32e, 4923/N & 329/E
API # 30-025-40431

DDC Survey Report

27 March, 2012



Company:	Conoco Phillips	Local Co-ordinate Reference:	Well Buck Federal 20 #1H
Project:	Lea County, New Mexico	TVD Reference:	WELL @ 3179.0usft (Nabors M-09)
Site:	Sec 17, T26S,R32E	MD Reference:	WELL @ 3179.0usft (Nabors M-09)
Well:	Buck Federal 20 #1H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Project:	Lea County, New Mexico		
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		Sec 17, T26S,R32E			
Site Position:		Northing:	377,537.90 usft	Latitude:	32° 2' 10.792 N
From:	Map	Easting:	699,538.80 usft	Longitude:	103° 41' 21.842 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.34 °

Well:	Buck Federal 20 #1H
Well Position	+N/-S 0.0 usft Northing: 377,313.00 usft Latitude: 32° 2' 8.566 N
	+E/-W 0.0 usft Easting: 699,543.20 usft Longitude: 103° 41' 21.807 W
Position Uncertainty	0.0 usft Wellhead Elevation: usft Ground Level: 3,157.0 usft

Wellbore:	Wellbore #1
Magnetics	Model Name Sample Date Declination Dip Angle Field Strength
	IGRF2010 2/9/2012 7.55 59.98 48,426

Design:	Wellbore #1
Audit Notes:	
Version: 1.0	Phase: ACTUAL Tie On Depth: 0.0

Vertical Section:	Depth From (TVD) +N/-S +E/-W Direction
	(usft) (usft) (usft) (%)
	0.0 0.0 0.0 179.76

Survey Program	Date: 3/27/2012
From To	Survey (Wellbore) Tool Name Description
(usft) (usft)	
207.0 6,623.0	Single Shot (Wellbore #1) MWD default MWD - Standard
8,329.0 13,905.0	MWD (Wellbore #1) MWD default 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)
Tie In @ 8221' MD / 8220' TVD									
8,221.0	0.60	183.24	8,220.4	-3.6	32.8	3.8	0.00	0.00	0.00
8,329.0	0.50	182.60	8,328.4	-4.7	32.7	4.8	0.09	-0.09	-0.59
8,361.0	2.50	165.40	8,360.4	-5.5	32.9	5.6	6.34	6.25	-53.75
8,392.0	4.80	163.70	8,391.4	-7.4	33.4	7.5	7.43	7.42	-5.48
8,423.0	7.30	165.80	8,422.2	-10.5	34.3	10.7	8.09	8.06	6.77
8,454.0	10.60	170.30	8,452.8	-15.3	35.3	15.4	10.87	10.65	14.52
8,486.0	12.70	177.20	8,484.1	-21.7	35.9	21.8	7.86	6.56	21.56
8,518.0	14.30	183.50	8,515.3	-29.1	35.8	29.3	6.78	5.00	19.69
8,549.0	16.10	186.70	8,545.2	-37.2	35.1	37.4	6.40	5.81	10.32

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Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User 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)
8,580.0	17.80	186.00	8,574.8	-46.2	34.1	46.4	5.52	5.48	-2.26
8,612.0	19.10	185.40	8,605.2	-56.3	33.1	56.4	4.11	4.06	-1.88
8,643.0	21.20	185.10	8,634.3	-66.9	32.1	67.1	6.78	6.77	-0.97
8,675.0	23.40	184.60	8,663.9	-79.0	31.1	79.2	6.90	6.88	-1.56
8,706.0	24.90	184.40	8,692.2	-91.7	30.1	91.8	4.85	4.84	-0.65
8,738.0	26.30	183.90	8,721.0	-105.5	29.1	105.6	4.43	4.38	-1.56
8,769.0	27.40	181.80	8,748.7	-119.4	28.4	119.6	4.68	3.55	-6.77
8,800.0	28.80	181.10	8,776.0	-134.0	28.1	134.2	4.64	4.52	-2.26
8,832.0	30.20	180.20	8,803.9	-149.8	27.9	149.9	4.59	4.38	-2.81
8,864.0	30.30	179.60	8,831.5	-165.9	27.9	166.0	0.99	0.31	-1.88
Crossed Section Line @ 8877' MD / 8843' TVD									
8,877.0	29.80	179.39	8,842.8	-172.4	28.0	172.5	3.95	-3.87	-1.58
8,895.0	29.10	179.10	8,858.5	-181.3	28.1	181.4	3.95	-3.87	-1.64
8,926.0	29.60	180.70	8,885.5	-196.5	28.1	196.6	3.00	1.61	5.16
8,958.0	31.90	183.00	8,913.0	-212.8	27.6	212.9	8.07	7.19	7.19
8,989.0	34.60	184.40	8,938.9	-229.8	26.5	229.9	9.05	8.71	4.52
9,020.0	37.60	184.80	8,963.9	-248.0	25.0	248.1	9.71	9.68	1.29
9,051.0	39.90	183.50	8,988.1	-267.3	23.6	267.4	7.87	7.42	-4.19
9,083.0	42.00	183.30	9,012.3	-288.3	22.4	288.4	6.58	6.56	-0.63
9,114.0	44.30	181.80	9,034.9	-309.4	21.4	309.5	8.12	7.42	-4.84
9,146.0	46.20	181.20	9,057.4	-332.2	20.8	332.2	6.08	5.94	-1.88
9,177.0	47.40	179.60	9,078.7	-354.8	20.7	354.8	5.40	3.87	-5.16
9,209.0	48.50	178.90	9,100.1	-378.5	21.0	378.6	3.80	3.44	-2.19
9,240.0	50.00	178.90	9,120.3	-402.0	21.4	402.1	4.84	4.84	0.00
9,272.0	52.10	180.40	9,140.4	-426.9	21.6	427.0	7.51	6.56	4.69
9,303.0	54.70	181.60	9,158.9	-451.8	21.1	451.8	8.94	8.39	3.87
9,335.0	57.80	181.80	9,176.7	-478.3	20.4	478.4	9.70	9.69	0.63
9,366.0	60.80	181.80	9,192.5	-505.0	19.5	505.1	9.68	9.68	0.00
9,398.0	64.10	181.90	9,207.3	-533.3	18.6	533.4	10.32	10.31	0.31
9,429.0	67.20	181.90	9,220.1	-561.6	17.7	561.6	10.00	10.00	0.00
9,460.0	70.20	180.90	9,231.4	-590.4	17.0	590.5	10.13	9.68	-3.23
9,492.0	73.60	180.70	9,241.3	-620.8	16.5	620.9	10.64	10.63	-0.63
9,523.0	77.40	180.70	9,249.1	-650.8	16.2	650.9	12.26	12.26	0.00
9,555.0	81.30	181.20	9,255.0	-682.3	15.7	682.3	12.28	12.19	1.56
9,586.0	85.20	180.90	9,258.6	-713.1	15.1	713.1	12.62	12.58	-0.97
9,617.0	89.10	180.70	9,260.2	-744.0	14.7	744.1	12.60	12.58	-0.65
9,649.0	90.00	180.90	9,260.4	-776.0	14.2	776.1	2.88	2.81	0.63
9,743.0	91.60	180.70	9,259.1	-870.0	12.9	870.0	1.72	1.70	-0.21
9,837.0	94.10	181.20	9,254.4	-963.8	11.3	963.9	2.71	2.66	0.53
9,932.0	94.30	181.20	9,247.5	-1,058.6	9.4	1,058.6	0.21	0.21	0.00
10,023.0	93.20	181.40	9,241.5	-1,149.4	7.3	1,149.4	1.23	-1.21	0.22
10,123.0	92.30	182.30	9,236.7	-1,249.2	4.1	1,249.2	1.27	-0.90	0.90
10,217.0	90.50	182.10	9,234.4	-1,343.1	0.5	1,343.1	1.93	-1.91	-0.21

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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)	
10,311.0	89.20	181.80	9,234.7	-1,437.0	-2.7	1,437.0	1.42	-1.38	-0.32	
10,405.0	89.30	181.40	9,235.9	-1,531.0	-5.4	1,530.9	0.44	0.11	-0.43	
10,499.0	88.60	180.00	9,237.6	-1,625.0	-6.5	1,624.9	1.66	-0.74	-1.49	
10,593.0	88.50	179.60	9,240.0	-1,718.9	-6.2	1,718.9	0.44	-0.11	-0.43	
10,688.0	88.60	179.50	9,242.4	-1,813.9	-5.4	1,813.9	0.15	0.11	-0.11	
10,782.0	89.00	179.10	9,244.4	-1,907.9	-4.3	1,907.8	0.60	0.43	-0.43	
10,876.0	88.50	178.90	9,246.4	-2,001.8	-2.6	2,001.8	0.57	-0.53	-0.21	
10,970.0	87.70	178.40	9,249.5	-2,095.7	-0.4	2,095.7	1.00	-0.85	-0.53	
11,064.0	89.20	178.30	9,252.1	-2,189.7	2.3	2,189.7	1.60	1.60	-0.11	
11,158.0	89.70	178.60	9,253.0	-2,283.6	4.8	2,283.6	0.62	0.53	0.32	
11,252.0	89.70	178.40	9,253.5	-2,377.6	7.3	2,377.6	0.21	0.00	-0.21	
11,346.0	89.50	178.10	9,254.1	-2,471.6	10.1	2,471.6	0.38	-0.21	-0.32	
11,440.0	91.20	178.60	9,253.6	-2,565.5	12.9	2,565.5	1.89	1.81	0.53	
11,534.0	91.50	179.50	9,251.3	-2,659.5	14.4	2,659.5	1.01	0.32	0.96	
11,628.0	92.20	179.10	9,248.3	-2,753.4	15.6	2,753.5	0.86	0.74	-0.43	
11,723.0	91.60	181.10	9,245.2	-2,848.4	15.4	2,848.4	2.20	-0.63	2.11	
11,816.0	91.90	180.90	9,242.3	-2,941.3	13.8	2,941.3	0.39	0.32	-0.22	
11,910.0	92.20	180.70	9,239.0	-3,035.2	12.5	3,035.3	0.38	0.32	-0.21	
12,004.0	90.90	180.90	9,236.4	-3,129.2	11.1	3,129.2	1.40	-1.38	0.21	
12,098.0	91.40	181.20	9,234.5	-3,223.1	9.4	3,223.2	0.62	0.53	0.32	
12,193.0	92.00	180.90	9,231.7	-3,318.1	7.7	3,318.1	0.71	0.63	-0.32	
12,287.0	92.70	181.10	9,227.9	-3,412.0	6.0	3,412.0	0.77	0.74	0.21	
12,382.0	91.50	179.80	9,224.4	-3,506.9	5.3	3,506.9	1.86	-1.26	-1.37	
12,476.0	89.10	178.30	9,223.9	-3,600.9	6.9	3,600.9	3.01	-2.55	-1.60	
12,570.0	88.50	178.30	9,225.8	-3,694.8	9.6	3,694.8	0.64	-0.64	0.00	
12,664.0	89.20	178.10	9,227.7	-3,788.8	12.6	3,788.8	0.77	0.74	-0.21	
12,758.0	90.00	177.90	9,228.4	-3,882.7	15.9	3,882.7	0.88	0.85	-0.21	
12,852.0	90.00	177.50	9,228.4	-3,976.6	19.7	3,976.7	0.43	0.00	-0.43	
12,946.0	90.50	178.60	9,228.0	-4,070.6	22.9	4,070.6	1.29	0.53	1.17	
13,040.0	89.10	178.60	9,228.3	-4,164.5	25.1	4,164.6	1.49	-1.49	0.00	
13,135.0	88.70	177.90	9,230.1	-4,259.5	28.0	4,259.6	0.85	-0.42	-0.74	
13,229.0	88.70	177.40	9,232.3	-4,353.4	31.9	4,353.5	0.53	0.00	-0.53	
13,323.0	90.20	177.50	9,233.2	-4,447.3	36.1	4,447.4	1.60	1.60	0.11	
13,418.0	89.80	176.50	9,233.2	-4,542.1	41.1	4,542.3	1.13	-0.42	-1.05	
13,513.0	90.00	176.30	9,233.3	-4,637.0	47.0	4,637.1	0.30	0.21	-0.21	
13,607.0	90.80	177.00	9,232.7	-4,730.8	52.5	4,731.0	1.13	0.85	0.74	
13,701.0	90.90	177.00	9,231.3	-4,824.7	57.4	4,824.9	0.11	0.11	0.00	
13,795.0	94.00	177.20	9,227.3	-4,918.4	62.2	4,918.7	3.30	3.30	0.21	
13,855.0	93.90	177.00	9,223.1	-4,978.2	65.2	4,978.5	0.37	-0.17	-0.33	
TD @ 13905' MD / 9220' TVD										
13,905.0	93.90	177.00	9,219.7	-5,028.0	67.8	5,028.3	0.00	0.00	0.00	

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Survey Annotations				
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13,905.0	9,219.7	-5,028.0	67.8	TD @ 13905' MD / 9220' TVD

Checked By: _____ Approved By: _____ Date: _____