

Fasken Oil and Ranch, Ltd.-WT

Lea County

Sec. 16 T20W R34E

Quail State 3H

Wellbore #1

Survey: MWD

DDC Survey Report

04 June, 2012



DDC Survey Report



Company:	Fasken Oil and Ranch, Ltd.-WT	Local Co-ordinate Reference:	Well Quail State 3H
Project:	Lea County	TVD Reference:	GL 3640' + 21' KB @ 3661.0usft (Precision Rig #75)
Site:	Sec. 16 T20W R34E	MD Reference:	GL 3640' + 21' KB @ 3661.0usft (Precision Rig #75)
Well:	Quail State 3H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Project	Lea County		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Sec. 16 T20W R34E				
Site Position:		Northing:	571,104.73 usft	Latitude:	32° 34' 3.796 N
From:	Map	Easting:	775,634.23 usft	Longitude:	103° 34' 22.059 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.41 °

Well	Quail State 3H					
Well Position	+N/-S	0.0 usft	Northing:	571,104.73 usft	Latitude:	32° 34' 3.796 N
	+E/-W	0.0 usft	Easting:	775,634.23 usft	Longitude:	103° 34' 22.059 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,640.0 usft

Wellbore		Wellbore #1			
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/30/2012	7.51	60.49	48,743

Design	Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	0.24	

Survey Program		Date	6/4/2012	
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.0	10,382.9	GYRO (Wellbore #1)	Good_gyro	Good Gyro
10,454.0	14,987.0	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 @ 10383' MD / 10381' TVD									
10,382.9	0.60	251.47	10,381.0	3.6	-8.1	3.6	0.00	0.00	0.00
10,454.0	0.50	272.20	10,452.1	3.5	-8.8	3.5	0.31	-0.14	29.16
10,486.0	0.30	311.70	10,484.1	3.5	-9.0	3.5	1.03	-0.63	123.44
10,516.0	3.50	14.30	10,514.0	4.5	-8.8	4.5	11.24	10.67	208.67
10,548.0	8.20	19.60	10,545.9	7.6	-7.8	7.6	14.77	14.69	16.56
10,580.0	12.40	20.60	10,577.3	13.0	-5.8	12.9	13.14	13.13	3.13
10,612.0	16.40	20.50	10,608.3	20.4	-3.0	20.4	12.50	12.50	-0.31

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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)
10,644.0	20.70	19.60	10,638.7	30.0	0.5	30.0	13.47	13.44	-2.81
10,676.0	25.00	18.00	10,668.1	41.7	4.5	41.8	13.58	13.44	-5.00
10,708.0	29.30	18.20	10,696.6	55.6	9.0	55.6	13.44	13.44	0.63
10,740.0	33.70	17.60	10,723.9	71.5	14.1	71.6	13.78	13.75	-1.88
10,771.0	37.90	16.60	10,749.0	88.8	19.4	88.9	13.68	13.55	-3.23
10,803.0	42.40	14.80	10,773.5	108.7	25.0	108.8	14.52	14.06	-5.63
10,835.0	47.10	13.60	10,796.2	130.5	30.5	130.7	14.92	14.69	-3.75
10,867.0	51.80	12.70	10,817.0	154.2	36.0	154.4	14.84	14.69	-2.81
10,899.0	55.30	11.30	10,836.0	179.4	41.4	179.6	11.49	10.94	-4.38
10,931.0	58.10	10.40	10,853.6	205.7	46.4	205.8	9.06	8.75	-2.81
10,963.0	61.20	9.90	10,869.7	232.8	51.3	233.0	9.78	9.69	-1.56
10,995.0	64.10	9.60	10,884.4	260.8	56.1	261.1	9.10	9.06	-0.94
11,027.0	66.80	8.50	10,897.7	289.6	60.7	289.8	9.00	8.44	-3.44
11,058.0	69.30	7.30	10,909.3	318.1	64.6	318.3	8.83	8.06	-3.87
11,090.0	72.00	5.70	10,919.9	348.1	68.0	348.3	9.67	8.44	-5.00
11,121.0	74.40	3.80	10,928.9	377.6	70.5	377.9	9.71	7.74	-6.13
11,153.0	76.60	2.20	10,936.9	408.6	72.1	408.9	8.41	6.88	-5.00
11,185.0	79.10	0.20	10,943.6	439.8	72.8	440.1	9.92	7.81	-6.25
11,217.0	81.70	358.80	10,949.0	471.4	72.5	471.7	9.20	8.13	-4.38
11,248.0	84.20	358.60	10,952.8	502.1	71.8	502.4	8.09	8.06	-0.65
11,280.0	86.30	359.00	10,955.4	534.0	71.1	534.3	6.68	6.56	1.25
11,311.0	87.80	359.20	10,957.0	565.0	70.6	565.3	4.88	4.84	0.65
11,343.0	89.20	359.90	10,957.9	597.0	70.4	597.3	4.89	4.38	2.19
11,375.0	89.40	359.90	10,958.2	629.0	70.3	629.2	0.63	0.63	0.00
11,406.0	89.90	0.60	10,958.4	660.0	70.5	660.2	2.77	1.61	2.26
11,469.0	90.50	359.90	10,958.2	723.0	70.7	723.2	1.46	0.95	-1.11
11,533.0	89.90	357.80	10,958.0	786.9	69.5	787.2	3.41	-0.94	-3.28
11,596.0	89.60	356.50	10,958.3	849.9	66.3	850.1	2.12	-0.48	-2.06
11,658.0	89.80	356.40	10,958.6	911.7	62.5	912.0	0.36	0.32	-0.16
11,722.0	90.10	357.60	10,958.6	975.7	59.1	975.9	1.93	0.47	1.88
11,786.0	90.70	357.60	10,958.2	1,039.6	56.5	1,039.8	0.94	0.94	0.00
11,849.0	89.00	356.70	10,958.4	1,102.5	53.3	1,102.7	3.05	-2.70	-1.43
11,913.0	89.90	357.80	10,959.0	1,166.4	50.2	1,166.6	2.22	1.41	1.72
11,976.0	90.20	359.40	10,958.9	1,229.4	48.7	1,229.6	2.58	0.48	2.54
12,039.0	89.60	359.50	10,959.0	1,292.4	48.1	1,292.6	0.97	-0.95	0.16
12,103.0	90.00	359.20	10,959.3	1,356.4	47.4	1,356.6	0.78	0.63	-0.47
12,166.0	90.40	359.00	10,959.0	1,419.4	46.4	1,419.6	0.71	0.63	-0.32
12,229.0	90.60	359.20	10,958.5	1,482.4	45.4	1,482.6	0.45	0.32	0.32
12,292.0	90.90	358.80	10,957.7	1,545.4	44.3	1,545.5	0.79	0.48	-0.63
12,355.0	90.70	359.20	10,956.8	1,608.4	43.2	1,608.5	0.71	-0.32	0.63
12,418.0	89.20	359.70	10,956.8	1,671.4	42.6	1,671.5	2.51	-2.38	0.79
12,482.0	88.60	0.20	10,958.1	1,735.3	42.5	1,735.5	1.22	-0.94	0.78

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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)
12,545.0	89.30	0.20	10,959.2	1,798.3	42.8	1,798.5	1.11	1.11	0.00
12,608.0	89.80	359.90	10,959.7	1,861.3	42.8	1,861.5	0.93	0.79	-0.48
12,671.0	90.40	0.20	10,959.6	1,924.3	42.9	1,924.5	1.06	0.95	0.48
12,735.0	90.80	0.40	10,958.9	1,988.3	43.2	1,988.5	0.70	0.63	0.31
12,797.0	91.00	0.60	10,958.0	2,050.3	43.7	2,050.5	0.46	0.32	0.32
12,861.0	90.70	0.10	10,957.0	2,114.3	44.1	2,114.5	0.91	-0.47	-0.78
12,925.0	90.60	0.10	10,956.3	2,178.3	44.2	2,178.5	0.16	-0.16	0.00
12,989.0	90.80	359.70	10,955.5	2,242.3	44.1	2,242.5	0.70	0.31	-0.63
13,053.0	89.30	358.50	10,955.4	2,306.3	43.1	2,306.4	3.00	-2.34	-1.88
13,116.0	88.80	358.30	10,956.5	2,369.2	41.4	2,369.4	0.85	-0.79	-0.32
13,179.0	88.60	358.80	10,957.9	2,432.2	39.8	2,432.4	0.85	-0.32	0.79
13,242.0	88.70	358.00	10,959.4	2,495.2	38.0	2,495.3	1.28	0.16	-1.27
13,306.0	88.90	358.00	10,960.7	2,559.1	35.8	2,559.2	0.31	0.31	0.00
13,370.0	89.10	357.80	10,961.9	2,623.1	33.4	2,623.2	0.44	0.31	-0.31
13,434.0	89.20	358.50	10,962.8	2,687.0	31.4	2,687.1	1.10	0.16	1.09
13,498.0	89.30	358.00	10,963.6	2,751.0	29.4	2,751.1	0.80	0.16	-0.78
13,562.0	89.20	359.00	10,964.5	2,815.0	27.7	2,815.0	1.57	-0.16	1.56
13,625.0	89.20	359.70	10,965.4	2,877.9	27.0	2,878.0	1.11	0.00	1.11
13,688.0	89.30	359.20	10,966.2	2,940.9	26.4	2,941.0	0.81	0.16	-0.79
13,751.0	89.30	359.00	10,967.0	3,003.9	25.4	3,004.0	0.32	0.00	-0.32
13,814.0	89.70	359.90	10,967.5	3,066.9	24.8	3,067.0	1.56	0.63	1.43
13,879.0	89.50	359.70	10,968.0	3,131.9	24.6	3,132.0	0.44	-0.31	-0.31
13,942.0	89.80	359.70	10,968.3	3,194.9	24.3	3,195.0	0.48	0.48	0.00
14,004.0	89.90	359.50	10,968.5	3,256.9	23.8	3,257.0	0.36	0.16	-0.32
14,068.0	90.00	359.00	10,968.6	3,320.9	23.0	3,321.0	0.80	0.16	-0.78
14,131.0	90.30	358.80	10,968.4	3,383.9	21.8	3,384.0	0.57	0.48	-0.32
14,195.0	90.10	359.20	10,968.2	3,447.9	20.7	3,447.9	0.70	-0.31	0.63
14,258.0	90.30	358.60	10,968.0	3,510.9	19.5	3,510.9	1.00	0.32	-0.95
14,354.0	90.50	358.80	10,967.3	3,606.8	17.3	3,606.9	0.29	0.21	0.21
14,449.0	90.30	358.80	10,966.6	3,701.8	15.3	3,701.9	0.21	-0.21	0.00
14,545.0	90.50	358.50	10,966.0	3,797.8	13.0	3,797.8	0.38	0.21	-0.31
14,640.0	90.80	358.60	10,964.9	3,892.8	10.6	3,892.8	0.33	0.32	0.11
14,735.0	91.20	358.10	10,963.2	3,987.7	7.9	3,987.7	0.67	0.42	-0.53
14,930.0	91.50	357.80	10,958.6	4,182.5	0.9	4,182.5	0.22	0.15	-0.15
TD @ 14987' MD / 10957' TVD									
14,987.0	91.50	357.80	10,957.1	4,239.5	-1.3	4,239.4	0.00	0.00	0.00

DDC
Survey Report



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Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
10,382.9	10,381.0	3.6	-8.1	TIE IN @ 10383' MD / 10381' TVD
14,987.0	10,957.1	4,239.5	-1.3	TD @ 14987' MD / 10957' TVD

Checked By: _____ Approved By: _____ Date: _____