

BTA Oil Producers, LLC

Lea County, NM
Sec 11, T26S, R32E
8105 JV-P Mesa #4H

Wellbore #1

Survey: MWD

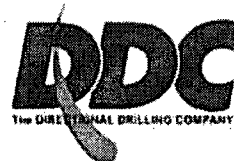
DDC Survey Report

04 January, 2016

HOBBS OCD

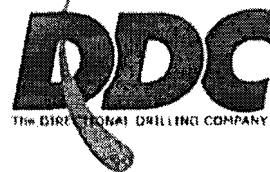
MAY 17 2018

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The Directional Drilling Company

11390 FM 830
Willis, TX 77318
Phone: (936) 856-4332
Fax: (936) 856-8678



Survey Certification Sheet

Company	Job Number	Date
BTA Oil Producers, LLC	WT-150696	1/4/2016

Lease	Well Name	County & State
Sec11,T26S,R32E	8105 JV-P Mesa #4H	Lea, NM

API No.	Survey Depth Range	Survey Type
30-025-42842	8800 feet to 14355 feet MD	MWD

Sidetrack Information	Directional Supervisor/Surveyor
N/A	Anthony Carrasco

Certification Statement

The data and calculations for this survey have been checked by me and conform to the standards and procedures set forth by The Directional Drilling Company (DDC). This report represents a true and correct directional survey of this well based on the original data obtained at the well site.

Wellbore coordinates are calculated using minimum curvature.

Christopher Hughes

Digitally signed by Christopher Hughes
DN: cn=Christopher Hughes, o=DDC, ou,
email=Chrish@directionaldrillers.com, c=US
Date: 2016.01.04 11:05:15 -06'00'

A large, stylized handwritten signature of Christopher Hughes in black ink, written over a white background.

Christopher Hughes
MWD Compliance Manager
The Directional Drilling Company



DDC Survey Report



Company: BTA Oil Producers, LLC
Project: Lea County, NM
Site: Sec 11, T26S, R32E
Well: 8105 JV-P Mesa #4H
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well 8105 JV-P Mesa #4H
TVD Reference: WELL @ 3264.0usft (Nomac #133)
MD Reference: WELL @ 3264.0usft (Nomac #133)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Project	Lea County, NM		
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 11, T26S, R32E

Site Position:
From: Map
Position Uncertainty: 0.0 usft
Northing: 387,664.40 usft
Easting: 710,948.70 usft
Slot Radius: 13-3/16 "
Latitude: 32° 3' 50.311 N
Longitude: 103° 39' 8.553 W
Grid Convergence: 0.36 °

Well 8105 JV-P Mesa #4H

Well Position
+N-S 0.0 usft
+E-W 0.0 usft
Position Uncertainty 0.0 usft
Northing: 387,671.00 usft
Easting: 711,917.40 usft
Wellhead Elevation: 0.0 usft
Latitude: 32° 3' 50.316 N
Longitude: 103° 38' 57.296 W
Ground Level: 3,244.0 usft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	11/17/2015	7.15	59.92	47,998

Design Wellbore #1

Audit Notes:
Version: 1.0
Phase: ACTUAL
Tile On Depth: 0.0

Vertical Section:	Depth From (TVD) (usft)	+N-S (usft)	+E-W (usft)	Direction (°)
	0.0	0.0	0.0	180.32

Survey Program Date 12/14/2015

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
200.0	8,800.0	GYRO (Wellbore #1)	Good_gyro	Good Gyro
8,879.0	14,355.0	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 into Gyro @ 8800' MD / 8780' TVD									
8,800.0	4.57	331.72	8,779.6	250.1	9.5	-250.2	0.00	0.00	0.00
8,879.0	1.90	291.90	8,858.5	253.4	6.8	-253.4	4.23	-3.38	-50.41
8,942.0	1.40	258.20	8,921.5	253.6	5.1	-253.6	1.70	-0.79	-53.49
9,005.0	3.90	208.60	8,984.4	251.6	3.3	-251.6	5.04	3.97	-78.73
9,036.0	8.30	195.90	9,015.2	248.5	2.2	-248.5	14.76	14.19	-40.97
9,068.0	13.70	192.40	9,046.6	242.6	0.7	-242.6	17.00	16.88	-10.94
9,100.0	17.40	192.10	9,077.5	234.2	-1.1	-234.2	11.57	11.56	-0.94
9,131.0	20.90	189.30	9,106.7	224.2	-3.0	-224.2	11.67	11.29	-9.03
9,163.0	24.30	186.40	9,136.3	212.0	-4.6	-212.0	11.18	10.63	-9.06



DDC Survey Report



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Site: Sec 11, T26S, R32E
Well: 8105 JV-P Mesa #4H
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well 8105 JV-P Mesa #4H
TYD Reference: WELL @ 3264.0usft (Nomac #133)
MD Reference: WELL @ 3264.0usft (Nomac #133)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
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)
9,194.0	26.60	184.30	9,164.3	198.8	-5.9	-198.7	7.97	7.42	-6.77
9,226.0	27.80	182.20	9,192.7	184.2	-6.7	-184.1	4.80	3.75	-6.56
9,258.0	29.00	180.50	9,220.9	168.9	-7.0	-168.9	4.52	3.75	-5.31
9,289.0	32.70	179.80	9,247.5	153.0	-7.1	-153.0	11.99	11.94	-2.26
9,321.0	36.10	179.40	9,273.9	135.0	-6.9	-134.9	10.65	10.63	-1.25
9,352.0	39.40	179.10	9,298.4	116.0	-6.7	-116.0	10.66	10.65	-0.97
9,384.0	42.00	178.70	9,322.7	95.1	-6.3	-95.1	8.17	8.13	-1.25
9,415.0	44.90	178.70	9,345.2	73.8	-5.8	-73.8	9.35	9.35	0.00
9,447.0	48.20	179.80	9,367.2	50.6	-5.5	-50.6	10.61	10.31	3.44
9,479.0	51.20	182.20	9,387.9	26.2	-5.9	-26.2	10.98	9.38	7.50
9,511.0	52.60	182.20	9,407.6	1.0	-6.9	-1.0	4.38	4.38	0.00
9,542.0	54.00	181.50	9,426.1	-23.8	-7.7	23.8	4.87	4.52	-2.26
9,573.0	55.30	181.20	9,444.1	-49.1	-8.3	49.1	4.27	4.19	-0.97
9,605.0	55.40	178.70	9,462.3	-75.4	-8.3	75.4	6.43	0.31	-7.81
9,636.0	56.50	176.60	9,479.6	-101.1	-7.2	101.1	6.64	3.55	-6.77
9,668.0	57.70	177.30	9,497.0	-127.9	-5.8	127.9	4.18	3.75	2.19
9,699.0	59.50	179.10	9,513.2	-154.3	-5.0	154.4	7.63	5.81	5.81
9,731.0	63.00	180.50	9,528.5	-182.4	-4.9	182.4	11.59	10.94	4.38
9,762.0	67.00	180.80	9,541.6	-210.5	-5.2	210.5	12.93	12.90	0.97
9,794.0	69.50	181.50	9,553.5	-240.2	-5.8	240.2	8.07	7.81	2.19
9,826.0	71.60	180.80	9,564.2	-270.4	-6.4	270.4	6.88	6.56	-2.19
9,857.0	71.60	180.10	9,573.9	-299.8	-6.6	299.8	2.14	0.00	-2.26
9,888.0	72.70	180.50	9,583.4	-329.3	-6.8	329.3	3.75	3.55	1.29
9,920.0	76.00	180.10	9,592.1	-360.1	-7.0	360.1	10.38	10.31	-1.25
9,952.0	80.80	180.50	9,598.5	-391.4	-7.1	391.5	15.05	15.00	1.25
9,986.0	84.10	182.60	9,603.0	-425.1	-8.0	425.1	11.48	9.71	6.18
10,018.0	84.60	180.80	9,606.1	-456.9	-9.0	457.0	5.81	1.56	-5.63
10,050.0	84.80	179.40	9,609.1	-488.8	-9.0	488.8	4.40	0.63	-4.38
10,081.0	85.20	179.10	9,611.8	-519.7	-8.6	519.7	1.61	1.29	-0.97
10,113.0	86.20	178.70	9,614.2	-551.6	-8.0	551.6	3.36	3.13	-1.25
10,176.0	87.60	176.90	9,617.6	-614.4	-5.6	614.5	3.62	2.22	-2.86
10,271.0	88.20	176.60	9,621.1	-709.2	-0.2	709.2	0.71	0.63	-0.32
10,365.0	91.10	175.50	9,621.6	-803.0	6.3	802.9	3.30	3.09	-1.17
10,460.0	92.00	175.50	9,619.1	-897.7	13.7	897.6	0.95	0.95	0.00
10,555.0	92.40	176.60	9,615.4	-992.4	20.2	992.2	1.23	0.42	1.16
10,649.0	92.00	177.30	9,611.8	-1,086.2	25.2	1,086.0	0.86	-0.43	0.74
10,744.0	90.40	181.50	9,609.8	-1,181.1	26.2	1,180.9	4.73	-1.68	4.42
10,839.0	92.70	183.30	9,607.3	-1,276.0	22.3	1,275.8	3.07	2.42	1.89
10,934.0	88.70	184.30	9,606.1	-1,370.7	16.0	1,370.6	4.34	-4.21	1.05
11,028.0	86.70	183.30	9,609.9	-1,464.5	9.7	1,464.4	2.38	-2.13	-1.06
11,123.0	87.30	182.20	9,614.8	-1,559.2	5.2	1,559.2	1.32	0.63	-1.16
11,218.0	89.00	180.80	9,617.9	-1,654.1	2.7	1,654.1	2.32	1.79	-1.47
11,313.0	89.70	181.20	9,619.0	-1,749.1	1.1	1,749.1	0.85	0.74	0.42



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Design: Wellbore #1

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North Reference: Grid
Survey Calculation Method: Minimum Curvature
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)
11,408.0	90.10	180.80	9,619.2	-1,844.1	-0.6	1,844.1	0.60	0.42	-0.42
11,503.0	90.80	180.50	9,618.4	-1,939.1	-1.7	1,939.1	0.80	0.74	-0.32
11,598.0	91.70	180.50	9,616.3	-2,034.1	-2.5	2,034.0	0.95	0.95	0.00
11,693.0	88.90	180.50	9,615.8	-2,129.0	-3.3	2,129.0	2.95	-2.95	0.00
11,787.0	88.90	181.20	9,617.6	-2,223.0	-4.7	2,223.0	0.74	0.00	0.74
11,881.0	89.40	181.20	9,619.0	-2,317.0	-6.7	2,317.0	0.53	0.53	0.00
11,976.0	89.40	180.10	9,620.0	-2,412.0	-7.8	2,412.0	1.16	0.00	-1.16
12,071.0	89.90	180.10	9,620.6	-2,507.0	-7.9	2,507.0	0.53	0.53	0.00
12,166.0	90.30	180.10	9,620.4	-2,602.0	-8.1	2,602.0	0.42	0.42	0.00
12,260.0	90.80	179.80	9,619.5	-2,696.0	-8.0	2,696.0	0.62	0.53	-0.32
12,355.0	89.70	180.10	9,619.1	-2,791.0	-8.0	2,791.0	1.20	-1.16	0.32
12,450.0	90.60	180.10	9,618.9	-2,886.0	-8.1	2,886.0	0.95	0.95	0.00
12,545.0	89.90	180.50	9,618.5	-2,980.8	-8.6	2,981.0	0.85	-0.74	0.42
12,640.0	89.00	181.20	9,619.4	-3,075.9	-10.0	3,075.9	1.20	-0.95	0.74
12,734.0	88.50	181.50	9,621.4	-3,169.9	-12.2	3,169.9	0.62	-0.53	0.32
12,829.0	89.00	181.50	9,623.5	-3,264.8	-14.7	3,264.9	0.53	0.53	0.00
12,924.0	89.60	181.50	9,624.7	-3,359.8	-17.2	3,359.8	0.63	0.63	0.00
13,019.0	89.90	181.20	9,625.1	-3,454.8	-19.4	3,454.8	0.45	0.32	-0.32
13,113.0	90.60	180.80	9,624.7	-3,548.7	-21.1	3,548.8	0.86	0.74	-0.43
13,208.0	90.40	180.10	9,623.8	-3,643.7	-21.8	3,643.8	0.77	-0.21	-0.74
13,302.0	91.50	179.40	9,622.3	-3,737.7	-21.4	3,737.8	1.39	1.17	-0.74
13,397.0	91.50	179.40	9,619.8	-3,832.7	-20.4	3,832.7	0.00	0.00	0.00
13,491.0	91.70	178.70	9,617.2	-3,926.6	-18.9	3,926.7	0.77	0.21	-0.74
13,586.0	90.10	177.60	9,615.7	-4,021.6	-15.8	4,021.6	2.04	-1.68	-1.16
13,681.0	89.70	177.60	9,615.8	-4,116.5	-11.8	4,116.5	0.42	-0.42	0.00
13,776.0	89.70	176.60	9,616.3	-4,211.4	-7.0	4,211.3	1.05	0.00	-1.05
13,871.0	89.90	178.40	9,616.7	-4,306.3	-2.9	4,306.2	1.91	0.21	1.89
13,965.0	89.90	179.40	9,616.8	-4,400.2	-1.1	4,400.2	1.06	0.00	1.06
14,060.0	88.90	180.50	9,617.8	-4,495.2	-1.0	4,495.2	1.56	-1.05	1.16
14,155.0	89.40	180.50	9,619.2	-4,590.2	-1.8	4,590.2	0.53	0.53	0.00
14,250.0	89.60	180.80	9,620.1	-4,685.2	-2.9	4,685.2	0.38	0.21	0.32
14,305.0	89.70	180.80	9,620.4	-4,740.2	-3.7	4,740.2	0.18	0.18	0.00
TD @ 14355' MD / 9621' TVD									
14,355.0	89.70	180.80	9,620.7	-4,790.2	-4.4	4,790.2	0.00	0.00	0.00

Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	+E/-W (usft)	Comment
8,800.0	8,779.6	250.1	9.5	Tie into Gyro @ 8800' MD / 8780' TVD
14,355.0	9,620.7	-4,790.2	-4.4	TD @ 14355' MD / 9621' TVD

Checked By: _____ Approved By: _____ Date: _____