

BTA Oil Producers, LLC

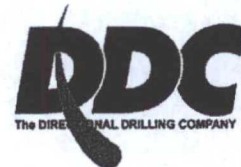
Lea County, NM
Sec 36, T20-S, R34E
9012 JV-P Aline #2

Wellbore #1

Survey: MWD

DDC Survey Report

19 February, 2016



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-160038	2/19/2016

Lease	Well Name	County & State
Sec36,T20-S,R34E	9012 JV-P Aline #2	Lea, NM

API No.	Survey Depth Range	Survey Type
30-025-42771	1809 feet to 11555 feet MD	MWD

Sidetrack Information	Directional Supervisor/Surveyor
N/A	David Ray

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

Christopher Hughes

MWD Compliance Manager

The Directional Drilling Company

Digitally signed by Christopher Hughes
DN: cn=Christopher Hughes, o=DDC, ou,
email=Chris@directionaldrillers.com, c=US
Date: 2016.02.22 07:29:51 -06'00'



Survey Report



Company: BTA Oil Producers, LLC
 Project: Lea County, NM
 Site: Sec 36, T20-S, R34E
 Well: 9012 JV-P Aline #2
 Wellbore: Wellbore #1
 Design: Wellbore #1

Local Co-ordinate Reference: Well 9012 JV-P Aline #2
 TVD Reference: WELL @ 3766.0usft (Nomac #133)
 MD Reference: WELL @ 3766.0usft (Nomac #133)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: EDM5002

Project: Lea County, NM
 Map System: US State Plane 1927 (Exact solution)
 Geo Datum: NAD 1927 (NADCON CONUS)
 Map Zone: New Mexico East 3001
 System Datum: Mean Sea Level

Site: Sec 36, T20-S, R34E
 Site Position: Northing: 558,908.30 usft Latitude: 32° 32' 1.758 N
 From: Map Easting: 755,179.60 usft Longitude: 103° 30' 19.219 W
 Position Uncertainty: 0.0 usft Slot Radius: 13-3/16 " Grid Convergence: 0.45 °

Well: 9012 JV-P Aline #2
 Well Position: +N/-S 0.0 usft Northing: 558,908.30 usft Latitude: 32° 32' 1.758 N
 +E/-W 0.0 usft Easting: 755,179.60 usft Longitude: 103° 30' 19.219 W
 Position Uncertainty: 0.0 usft Wellhead Elevation: 0.0 usft Ground Level: 3,744.0 usft

Wellbore: Wellbore #1
 Magnetics: Model Name Sample Date Declination (°) Dip Angle (°) Field Strength (nT)
 IGRF2015 1/28/2016 7.09 60.38 48,270

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 0.0 347.26

Survey Program Date: 2/19/2016
 From (usft) To (usft) Survey (Wellbore) Tool Name Description
 100.0 1,809.0 Gyro (Wellbore #1) Good_gyro Good Gyro
 1,939.0 11,555.0 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)	Buidl Rate (°/100usft)	Turn Rate (°/100usft)
Tie Into Gyro @ 1809' MD / 1809' TVD									
1,809.0	0.32	250.70	1,809.0	-5.3	-6.6	-3.8	0.00	0.00	0.00
1,939.0	0.20	183.10	1,939.0	-5.7	-6.9	-4.0	0.24	-0.09	-52.00
2,128.0	0.70	93.10	2,128.0	-6.1	-5.8	-4.6	0.39	0.26	-47.62
2,317.0	0.70	93.10	2,316.9	-6.2	-3.5	-5.3	0.00	0.00	0.00
2,507.0	1.10	76.30	2,506.9	-5.8	-0.5	-5.6	0.25	0.21	-8.84
2,697.0	1.20	78.00	2,696.9	-5.0	3.2	-5.6	0.06	0.05	0.89
2,886.0	1.60	68.90	2,885.8	-3.6	7.6	-5.2	0.24	0.21	-4.81
3,076.0	2.50	66.10	3,075.7	-1.0	13.8	-4.0	0.48	0.47	-1.47
3,266.0	1.80	25.60	3,265.6	3.4	18.9	-0.9	0.86	-0.37	-21.32



Survey Report



Company: BTA Oil Producers, LLC
 Project: Lea County, NM
 Site: Sec 36, T20-S, R34E
 Well: 9012 JV-P Aline #2
 Wellbore: Wellbore #1
 Design: Wellbore #1

Local Co-ordinate Reference: Well 9012 JV-P Aline #2
 TVD Reference: WELL @ 3766.0usft (Nomac #133)
 MD Reference: WELL @ 3766.0usft (Nomac #133)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: EDM5002

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)
3,456.0	2.50	17.20	3,455.4	10.0	21.4	5.1	0.40	0.37	-4.42
3,646.0	2.60	19.00	3,645.3	18.1	24.1	12.3	0.07	0.05	0.95
3,835.0	2.60	7.00	3,834.1	26.4	26.0	20.0	0.29	0.00	-6.35
4,025.0	2.80	3.10	4,023.9	35.3	26.8	28.5	0.14	0.11	-2.05
4,214.0	2.50	4.90	4,212.7	44.0	27.4	36.9	0.16	-0.16	0.95
4,404.0	1.20	354.40	4,402.6	50.1	27.5	42.8	0.70	-0.68	-5.53
4,593.0	1.60	334.30	4,591.5	54.5	26.2	47.3	0.33	0.21	-10.63
4,783.0	1.40	336.80	4,781.4	59.0	24.1	52.2	0.11	-0.11	1.32
4,973.0	1.80	352.90	4,971.4	64.1	22.8	57.5	0.31	0.21	8.47
5,162.0	2.50	0.30	5,160.2	71.1	22.5	64.4	0.40	0.37	3.92
5,351.0	0.90	263.60	5,349.2	75.1	21.0	68.6	1.46	-0.85	-51.16
5,541.0	0.70	259.10	5,539.1	74.7	18.4	68.8	0.11	-0.11	-2.37
5,730.0	0.90	239.70	5,728.1	73.8	16.0	68.4	0.18	0.11	-10.26
5,772.0	0.50	234.80	5,770.1	73.5	15.6	68.2	0.96	-0.95	-11.67
5,854.0	0.90	248.20	5,852.1	73.0	14.7	68.0	0.52	0.49	16.34
5,917.0	2.60	307.60	5,915.1	73.7	13.1	69.0	3.62	2.70	94.29
6,012.0	6.00	322.00	6,009.8	79.0	8.3	75.2	3.73	3.58	15.16
6,106.0	6.50	323.10	6,103.2	87.1	2.1	84.5	0.55	0.53	1.17
6,201.0	6.50	323.10	6,197.6	95.7	-4.4	94.3	0.00	0.00	0.00
6,296.0	8.40	329.40	6,291.8	106.0	-11.1	105.8	2.17	2.00	6.63
6,391.0	8.80	330.40	6,385.8	118.2	-18.2	119.4	0.45	0.42	1.05
6,485.0	8.80	331.10	6,478.7	130.8	-25.3	133.1	0.11	0.00	0.74
6,580.0	8.80	330.80	6,572.5	143.5	-32.3	147.1	0.05	0.00	-0.32
6,674.0	9.30	343.80	6,665.4	157.1	-38.0	161.6	2.23	0.53	13.83
6,769.0	9.10	344.10	6,759.2	171.7	-42.2	176.7	0.22	-0.21	0.32
6,864.0	8.40	341.30	6,853.0	185.5	-46.4	191.1	0.86	-0.74	-2.95
6,959.0	10.00	344.90	6,946.8	200.0	-50.8	206.3	1.79	1.68	3.79
7,053.0	11.40	346.60	7,039.2	216.9	-55.1	223.7	1.53	1.49	1.81
7,148.0	11.60	345.20	7,132.3	235.3	-59.7	242.7	0.36	0.21	-1.47
7,243.0	12.00	349.80	7,225.3	254.2	-63.9	262.1	1.08	0.42	4.84
7,338.0	11.60	351.50	7,318.3	273.4	-67.1	281.5	0.56	-0.42	1.79
7,432.0	11.10	350.80	7,410.4	291.7	-69.9	299.9	0.55	-0.53	-0.74
7,527.0	11.60	349.10	7,503.6	310.1	-73.2	318.6	0.63	0.53	-1.79
7,621.0	13.20	350.80	7,595.4	330.0	-76.7	338.7	1.75	1.70	1.81
7,715.0	13.00	351.20	7,686.9	351.0	-80.0	360.0	0.23	-0.21	0.43
7,811.0	12.30	351.20	7,780.6	371.8	-83.2	381.0	0.73	-0.73	0.00
7,906.0	11.80	350.50	7,873.5	391.4	-86.4	400.8	0.55	-0.53	-0.74
8,000.0	11.80	350.80	7,965.5	410.3	-89.5	420.0	0.07	0.00	0.32
8,095.0	10.70	350.10	8,058.7	428.6	-92.6	438.5	1.17	-1.16	-0.74
8,190.0	12.10	342.70	8,151.8	446.8	-97.0	457.2	2.13	1.47	-7.79
8,285.0	12.00	341.00	8,244.7	465.6	-103.2	476.9	0.39	-0.11	-1.79
8,379.0	11.60	341.00	8,336.7	483.8	-109.5	496.1	0.43	-0.43	0.00
8,474.0	11.30	339.90	8,429.8	501.6	-115.8	514.8	0.39	-0.32	-1.16



Survey Report



Company: BTA Oil Producers, LLC
 Project: Lea County, NM
 Site: Sec 36, T20-S, R34E
 Well: 9012 JV-P Aline #2
 Wellbore: Wellbore #1
 Design: Wellbore #1

Local Co-ordinate Reference: Well 9012 JV-P Aline #2
 TVD Reference: WELL @ 3766.0usft (Nomac #133)
 MD Reference: WELL @ 3766.0usft (Nomac #133)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: EDM5002

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)
8,569.0	12.50	340.60	8,522.8	520.0	-122.4	534.2	1.27	1.26	0.74
8,664.0	12.10	339.90	8,615.6	539.1	-129.2	554.3	0.45	-0.42	-0.74
8,759.0	11.60	342.70	8,708.6	557.6	-135.5	573.7	0.80	-0.53	2.95
8,854.0	10.20	341.70	8,801.9	574.7	-141.0	591.6	1.49	-1.47	-1.05
8,949.0	10.70	346.30	8,895.3	591.2	-145.7	608.8	1.02	0.53	4.84
9,043.0	12.10	345.90	8,987.5	609.2	-150.2	627.4	1.49	1.49	-0.43
9,138.0	12.50	352.60	9,080.3	629.1	-153.9	647.6	1.56	0.42	7.05
9,233.0	11.60	350.10	9,173.2	648.7	-156.9	667.3	1.09	-0.95	-2.63
9,328.0	11.30	347.00	9,266.3	667.2	-160.6	686.2	0.72	-0.32	-3.26
9,422.0	9.90	351.50	9,358.7	684.1	-163.9	703.4	1.73	-1.49	4.79
9,517.0	8.80	346.60	9,452.4	699.3	-166.8	718.9	1.43	-1.16	-5.16
9,611.0	6.30	337.50	9,545.6	711.1	-170.4	731.1	2.94	-2.66	-9.68
9,676.0	4.10	325.90	9,610.3	716.3	-173.1	736.8	3.73	-3.38	-17.85
9,741.0	1.40	307.90	9,675.3	718.7	-175.0	739.6	4.31	-4.15	-27.69
9,801.0	1.20	220.80	9,735.2	718.7	-176.0	739.8	3.00	-0.33	-145.17
9,895.0	1.80	219.00	9,829.2	716.8	-177.6	738.3	0.64	0.64	-1.91
9,989.0	1.90	226.70	9,923.2	714.6	-179.6	736.6	0.28	0.11	8.19
10,084.0	2.10	229.20	10,018.1	712.3	-182.1	735.0	0.23	0.21	2.63
10,178.0	1.90	199.70	10,112.1	709.7	-183.9	732.8	1.10	-0.21	-31.38
10,273.0	1.60	164.50	10,207.0	707.0	-184.1	730.2	1.15	-0.32	-37.05
10,368.0	1.10	163.10	10,302.0	704.8	-183.5	727.9	0.53	-0.53	-1.47
10,462.0	0.90	183.80	10,396.0	703.2	-183.3	726.3	0.44	-0.21	22.02
10,557.0	0.90	244.70	10,491.0	702.2	-184.0	725.5	0.96	0.00	64.11
10,652.0	1.20	118.10	10,586.0	701.4	-183.8	724.7	1.98	0.32	-133.26
10,747.0	4.10	93.50	10,680.8	700.7	-179.5	723.1	3.21	3.05	-25.89
10,841.0	3.00	99.50	10,774.7	700.1	-173.8	721.2	1.23	-1.17	6.38
10,936.0	1.90	87.90	10,869.6	699.7	-169.7	719.9	1.26	-1.16	-12.21
11,031.0	1.60	60.10	10,964.5	700.5	-167.0	720.0	0.94	-0.32	-29.26
11,126.0	0.90	49.90	11,059.5	701.6	-165.3	720.8	0.77	-0.74	-10.74
11,220.0	0.30	60.80	11,153.5	702.2	-164.5	721.2	0.65	-0.64	11.60
11,315.0	0.50	166.60	11,248.5	701.9	-164.2	720.8	0.68	0.21	111.37
11,410.0	1.10	211.30	11,343.5	700.7	-164.6	719.8	0.87	0.63	47.05
11,503.0	1.60	221.10	11,436.5	699.0	-165.9	718.4	0.59	0.54	10.54
TD @ 11555' MD / 11488' TVD									
11,555.0	1.60	221.10	11,488.4	697.9	-166.8	717.5	0.00	0.00	0.00

Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,809.0	1,809.0	-5.3	-6.6	Tie into Gyro @ 1809' MD / 1809' TVD
11,555.0	11,488.4	697.9	-166.8	TD @ 11555' MD / 11488' TVD



Survey Report



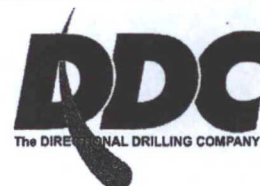
Company: BTA Oil Producers, LLC
Project: Lea County, NM
Site: Sec 36, T20-S, R34E
Well: 9012 JV-P Aline #2
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well 9012 JV-P Aline #2
TVD Reference: WELL @ 3766.0usft (Nomac #133)
MD Reference: WELL @ 3766.0usft (Nomac #133)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM5002

Checked By: _____ Approved By: _____ Date: _____

Company Name: BTA Oil Producers, LLC
 9012 JV-P Aline #2
 Lea County, NM
 Rig: Nomac #133
 Created By: Shane Robbins
 Date: 2/19/2016

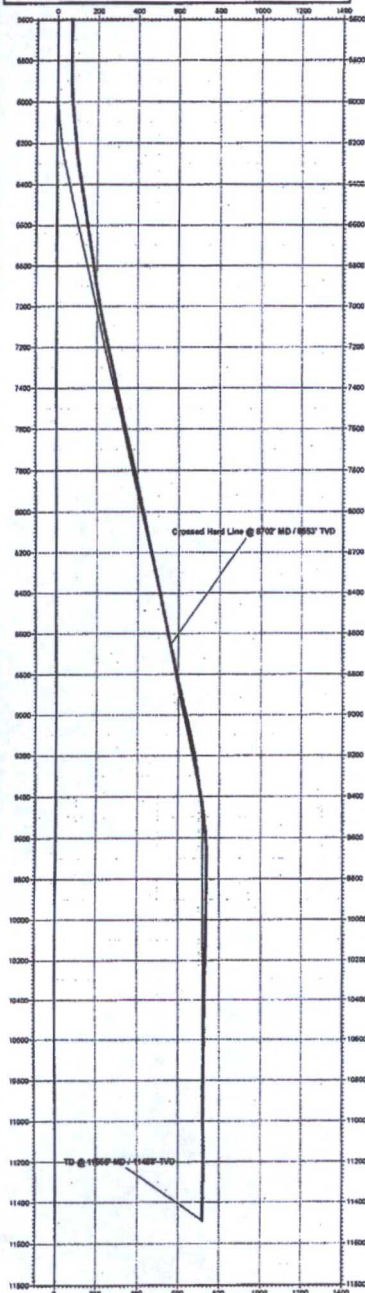
9012 JV-P Aline #2
 Lea County, NM
 Q160043 & WT-160038
 Design #1



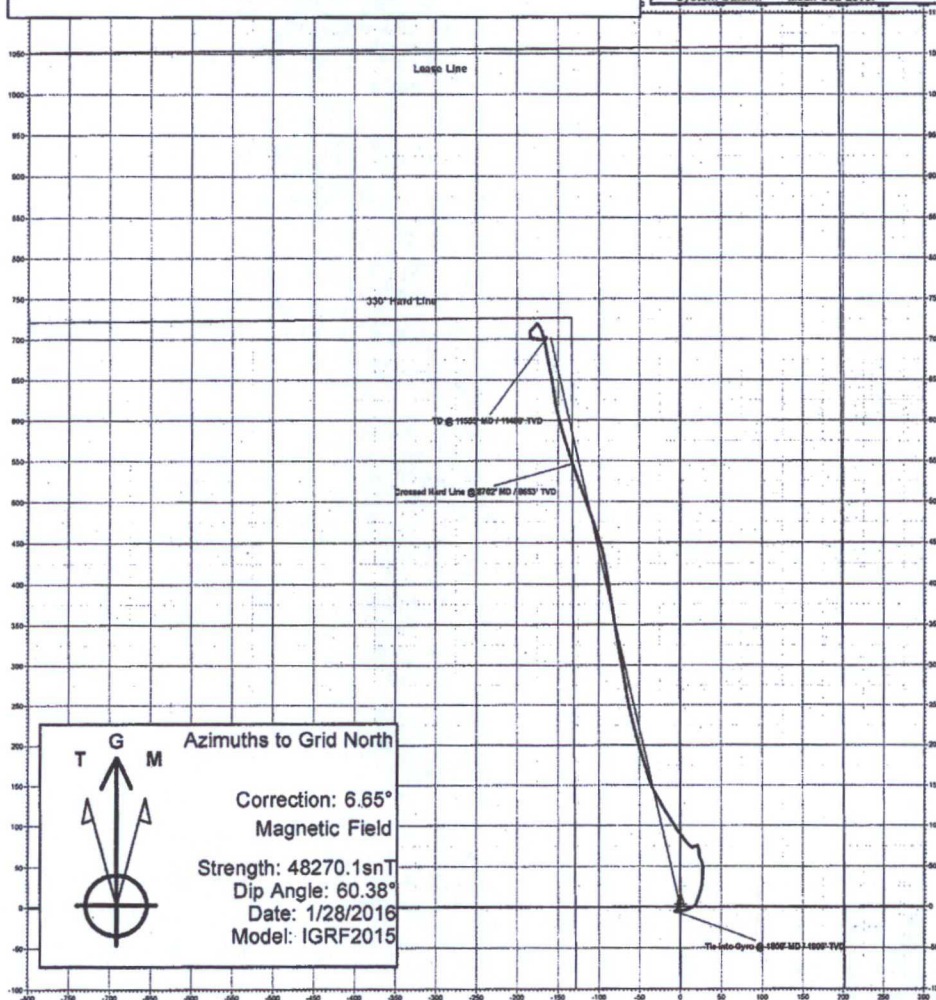
WELL DETAILS: 9012 JV-P Aline #2					
+E-S	+E-W	Northings	Eastings	Ground Level	Latitude
0.0	0.0	11850.35	755175.30	5744.0	32° 32' 1.708 N
					103° 37' 0.319 W

ANNOTATIONS									
MD	Inc	Azi	TVD	+N-S	+E-W	Vsect	Departure	Annotation	
1809.0	0.32	250.70	1809.0	-5.3	-6.6	-3.8	10.2	Tie into Gyro @ 1809' MD / 1809' TVD	
8702.3	11.90	341.00	8653.1	646.6	-131.9	582.2	624.3	Crossed Hard Line @ 8702' MD / 8653' TVD	
11555.0	1.60	221.10	11488.4	697.9	-166.8	717.5	552.1	TD @ 11555' MD / 11488' TVD	

PROJECT DETAILS: Lea County, NM	
Geodetic System:	US State Plane 1927 (Exact solution)
Datum:	NAD 1927 (NADCON CONUS)
Ellipsoid:	Clarke 1858
Zone:	New Mexico East 3001
System Datum:	Mean Sea Level



Vertical Section at 347.26° (200 uft/in)



Azimuths to Grid North

Correction: 6.65°
 Magnetic Field
 Strength: 48270.1nT
 Dip Angle: 60.38°
 Date: 1/28/2016
 Model: IGRF2015