

Amtex Energy, Inc

Lea County, New Mexico

Sec 31, T21S, R33E

Dagger State Unit #2H

Wellbore #1

Design: Wellbore #1

DDC Survey Report

27 February, 2014



AUG 20 2015

DDC
Survey Report



Company:	Amtex Energy, Inc	Local Co-ordinate Reference:	Well Dagger State Unit #2H
Project:	Lea County, New Mexico	TVD Reference:	WELL @ 3706.1usft (Latshaw #6)
Site:	Sec 31, T21S, R33E	MD Reference:	WELL @ 3706.1usft (Latshaw #6)
Well:	Dagger State Unit #2H	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 31, T21S, R33E				
Site Position:		Northing:	520,851.90 usft	Latitude:	32° 25' 47.341 N
From:	Map	Easting:	725,388.40 usft	Longitude:	103° 38' 10.231 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.39 °

Well	Dagger State Unit #2H					
Well Position	+N/-S	0.0 usft	Northing:	520,851.90 usft	Latitude:	32° 25' 47.341
	+E/-W	0.0 usft	Easting:	725,388.40 usft	Longitude:	103° 38' 10.231 W
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,693.1 usft	

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	1/15/2014	7.30	60.31	48,478

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	269.70	

Survey Program		Date	2/27/2014	
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
10,426.0	11,359.0	DDC MWD (Wellbore #1)	MWD default	MWD - Standard
11,489.0	13,065.0	HALLIBURTON MWD (Wellbore #1)	MWD default	MWD - Standard
13,158.0	15,585.0	DDC MWD II (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)
10,347.0	1.01	230.00	10,348.7	9.8	-28.9	28.8	0.00	0.00	0.00
FIRST MWD SURVEY @ 10426' MD / 10425.5' TVD									
10,428.0	6.20	252.50	10,425.5	8.0	-33.5	33.4	6.68	6.57	28.48
10,457.0	10.90	249.10	10,456.1	6.5	-37.8	37.8	15.24	15.16	-10.97
10,489.0	14.80	249.10	10,487.3	4.0	-44.4	44.4	12.19	12.19	0.00
10,520.0	18.20	244.70	10,517.0	0.5	-52.5	52.5	11.68	10.97	-14.19
10,552.0	21.00	246.30	10,547.2	-4.0	-62.3	62.3	8.91	8.75	5.00
10,583.0	24.10	249.10	10,575.8	-8.5	-73.3	73.3	10.58	10.00	9.03
10,615.0	28.40	253.00	10,604.5	-13.0	-86.7	86.8	14.47	13.44	12.19

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Project: Lea County, New Mexico
Site: Sec 31, T21S, R33E
Well: Dagger State Unit #2H
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference:
TVD Reference: WELL @ 3706.1usft (Latshaw #8)
MD Reference: WELL @ 3706.1usft (Latshaw #8)
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)
10,646.0	32.40	257.90	10,631.2	-16.9	-101.9	102.0	15.17	12.90	15.81
10,678.0	36.00	263.20	10,657.7	-19.8	-119.6	119.7	14.59	11.25	16.56
10,709.0	36.80	265.00	10,682.7	-21.7	-137.9	138.0	4.30	2.58	5.81
10,740.0	38.30	266.50	10,707.2	-23.1	-156.7	156.9	5.67	4.84	4.84
10,772.0	40.40	265.00	10,732.0	-24.6	-177.0	177.1	7.20	6.56	-4.69
10,804.0	43.40	264.60	10,755.8	-26.6	-198.2	198.4	9.41	9.38	-1.25
10,835.0	47.40	265.30	10,777.6	-28.5	-220.2	220.4	13.00	12.90	2.26
10,867.0	49.80	267.20	10,798.7	-30.1	-244.2	244.4	8.99	7.81	5.94
CROSSED HARDLINE @ 10887.1' MD / 10811.4' TVD									
10,887.1	51.40	268.22	10,811.4	-30.7	-259.7	259.9	8.45	7.49	5.06
10,899.0	52.30	268.80	10,818.8	-30.9	-269.1	269.2	8.45	7.52	4.89
10,930.0	54.30	270.00	10,837.3	-31.2	-293.9	294.1	7.16	6.45	3.87
10,962.0	57.30	270.80	10,855.3	-31.0	-320.4	320.6	9.60	9.38	2.50
10,994.0	60.50	270.60	10,871.8	-30.7	-347.8	347.9	10.01	10.00	-0.63
11,026.0	63.40	269.70	10,886.9	-30.6	-376.0	376.2	9.40	9.06	-2.81
11,056.0	67.10	268.50	10,899.4	-31.0	-403.3	403.4	12.88	12.33	-4.00
11,087.0	70.80	269.00	10,910.6	-31.6	-432.2	432.3	12.03	11.94	1.61
11,117.0	73.20	269.00	10,919.8	-32.1	-460.7	460.9	8.00	8.00	0.00
11,148.0	75.90	269.30	10,928.1	-32.6	-490.6	490.7	8.76	8.71	0.97
11,179.0	78.40	270.20	10,935.0	-32.7	-520.8	521.0	8.55	8.06	2.90
11,211.0	79.40	270.40	10,941.2	-32.6	-552.2	552.4	3.18	3.13	0.63
11,231.0	79.40	270.80	10,944.8	-32.3	-571.9	572.0	1.97	0.00	2.00
11,242.0	79.20	270.20	10,946.9	-32.3	-582.7	582.8	5.66	-1.82	-5.45
11,273.0	81.40	269.90	10,952.1	-32.2	-613.2	613.4	7.16	7.10	-0.97
11,305.0	84.10	270.00	10,956.1	-32.3	-645.0	645.1	8.44	8.44	0.31
11,337.0	86.10	270.00	10,958.9	-32.3	-676.8	677.0	6.25	6.25	0.00
LAST MWD SURVEY @ 11359' MD / 10980.3' TVD - TIE IN @ 11359' MD / 10980.3' TVD									
11,359.0	86.30	270.60	10,960.3	-32.1	-698.8	699.0	2.87	0.91	2.73
HALLIBURTON FIRST SURVEY @ 11489' MD / 10862.4' TVD									
11,489.0	91.90	272.90	10,962.4	-28.2	-828.7	828.8	4.66	4.31	1.77
11,583.0	92.84	272.00	10,958.5	-24.2	-922.5	922.6	1.38	1.00	-0.96
11,678.0	92.47	271.50	10,954.1	-21.3	-1,017.3	1,017.4	0.65	-0.39	-0.53
11,774.0	90.43	270.42	10,951.8	-19.6	-1,113.3	1,113.4	2.40	-2.13	-1.13
11,868.0	88.80	269.46	10,952.3	-19.7	-1,207.3	1,207.4	2.01	-1.73	-1.02
11,962.0	89.88	269.10	10,953.4	-20.9	-1,301.3	1,301.4	1.21	1.15	-0.38
12,057.0	89.38	269.07	10,954.0	-22.4	-1,396.3	1,396.4	0.53	-0.53	-0.03
12,150.0	87.34	269.49	10,956.6	-23.6	-1,489.2	1,489.3	2.24	-2.19	0.45
12,244.0	87.84	269.20	10,960.6	-24.7	-1,583.1	1,583.2	0.61	0.53	-0.31
12,339.0	89.44	269.51	10,962.8	-25.8	-1,678.1	1,678.2	1.72	1.68	0.33
12,433.0	91.05	269.82	10,962.4	-26.3	-1,772.1	1,772.2	1.74	1.71	0.33
12,527.0	92.28	269.26	10,959.7	-27.1	-1,866.0	1,866.1	1.44	1.31	-0.60
12,619.0	93.40	269.03	10,955.2	-28.4	-1,957.9	1,958.0	1.24	1.22	-0.25
12,712.0	91.60	268.75	10,951.1	-30.2	-2,050.8	2,050.9	1.96	-1.94	-0.30
12,807.0	88.89	267.88	10,950.7	-33.0	-2,145.7	2,145.9	3.00	-2.85	-0.92

DDC
Survey Report



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Site: Sec 31, T21S, R33E
Well: Dagger State Unit #2H
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Dagger State Unit #2H
TVD Reference: WELL @ 3706.1usft (Latshaw #8)
MD Reference: WELL @ 3706.1usft (Latshaw #8)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

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)
12,901.0	89.88	267.88	10,951.7	-36.5	-2,239.7	2,239.8	1.05	1.05	0.00
12,995.0	90.06	268.91	10,951.8	-39.1	-2,333.8	2,333.8	1.11	0.19	1.10
LAST MWD SURVEY @ 10365' MD / 10951.7' TVD - TIE IN @ 13065' MD / 10951.7' TVD									
13,085.0	90.00	267.90	10,951.7	-41.1	-2,403.8	2,403.8	1.45	-0.09	-1.44
FIRST MWD SURVEY @ 13168' MD / 10951.7' TVD									
13,158.0	90.00	269.70	10,951.7	-43.0	-2,486.8	2,486.8	1.94	0.00	1.94
13,253.0	90.70	269.50	10,951.1	-43.7	-2,591.6	2,591.8	0.77	0.74	-0.21
13,347.0	89.70	270.00	10,950.8	-44.1	-2,685.6	2,685.8	1.19	-1.08	0.53
13,440.0	89.70	269.70	10,951.3	-44.3	-2,778.6	2,778.8	0.32	0.00	-0.32
13,534.0	90.00	269.50	10,951.5	-45.0	-2,872.6	2,872.8	0.38	0.32	-0.21
13,628.0	90.50	269.50	10,951.1	-45.8	-2,966.6	2,966.8	0.53	0.53	0.00
13,719.0	90.00	269.50	10,950.7	-46.6	-3,057.6	3,057.8	0.55	-0.55	0.00
13,813.0	90.00	270.80	10,950.7	-48.5	-3,151.6	3,151.8	1.17	0.00	1.17
13,907.0	90.20	270.80	10,950.6	-45.6	-3,245.6	3,245.8	0.21	0.21	0.00
14,001.0	90.80	270.40	10,949.7	-44.7	-3,339.5	3,339.7	0.67	0.64	-0.21
14,095.0	90.90	269.70	10,948.4	-44.6	-3,433.5	3,433.7	0.75	0.11	-0.74
14,189.0	91.30	269.00	10,946.5	-45.7	-3,527.5	3,527.7	0.88	0.43	-0.74
14,283.0	90.60	267.70	10,945.0	-48.4	-3,621.5	3,621.7	1.57	-0.74	-1.38
14,378.0	90.10	270.20	10,944.4	-50.2	-3,716.4	3,716.6	2.68	-0.53	2.63
14,471.0	90.80	269.70	10,943.7	-50.2	-3,809.4	3,809.6	0.92	0.75	-0.54
14,564.0	89.50	270.00	10,943.4	-50.5	-3,902.4	3,902.6	1.43	-1.40	0.32
14,659.0	89.30	269.90	10,944.4	-50.6	-3,997.4	3,997.6	0.24	-0.21	-0.11
14,754.0	89.60	269.50	10,945.3	-51.1	-4,092.4	4,092.6	0.53	0.32	-0.42
14,848.0	89.30	270.00	10,946.2	-51.5	-4,186.4	4,186.6	0.62	-0.32	0.53
14,942.0	89.60	269.30	10,947.1	-52.1	-4,280.4	4,280.6	0.81	0.32	-0.74
15,036.0	89.40	270.60	10,948.0	-52.1	-4,374.4	4,374.6	1.40	-0.21	1.38
15,130.0	90.00	269.90	10,948.5	-51.7	-4,468.4	4,468.6	0.98	0.64	-0.74
15,224.0	90.20	269.20	10,948.3	-52.5	-4,562.4	4,562.6	0.77	0.21	-0.74
15,274.0	90.20	269.00	10,948.1	-53.2	-4,612.4	4,612.6	0.40	0.00	-0.40
15,319.0	90.40	269.90	10,947.9	-53.7	-4,657.4	4,657.6	2.05	0.44	2.00
15,413.0	90.70	269.30	10,947.0	-54.3	-4,751.4	4,751.6	0.71	0.32	-0.64
CROSSED HARDLINE @ 15425.9' MD / 10946.8' TVD									
15,425.9	90.79	269.23	10,946.8	-54.5	-4,764.3	4,764.5	0.88	0.70	-0.53
15,470.0	91.10	269.00	10,946.1	-55.2	-4,808.4	4,808.6	0.88	0.70	-0.53
15,515.0	91.30	269.00	10,945.1	-56.0	-4,853.3	4,853.6	0.44	0.44	0.00
TD @ 15565' MD / 10944' TVD									
15,565.0	91.30	269.00	10,944.0	-56.8	-4,903.3	4,903.6	0.00	0.00	0.00

DDC
Survey Report



Company:	Amtex Energy, Inc	Local Co-ordinate Reference:	Well Dagger State Unit #2H
Project:	Lea County, New Mexico	TVD Reference:	WELL @ 3706.1usft (Latshaw #6)
Site:	Sec 31, T21S, R33E	MD Reference:	WELL @ 3706.1usft (Latshaw #6)
Well:	Dagger State Unit #2H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
10,426.0	10,425.5	8.0	-33.5	FIRST MWD SURVEY @ 10426' MD / 10425.5' TVD	
10,887.1	10,811.4	-30.7	-259.7	CROSSED HARDLINE @ 10887.1' MD / 10811.4' TVD	
11,359.0	10,960.3	-32.1	-698.8	LAST MWD SURVEY @ 11359' MD / 10960.3' TVD	
11,359.0	10,960.3	-32.1	-698.8	TIE IN @ 11359' MD / 10960.3' TVD	
11,489.0	10,962.4	-28.2	-828.7	HALLIBURTON FIRST SURVEY @ 11489' MD / 10962.4' TVD	
13,065.0	10,951.7	-41.1	-2,403.6	LAST MWD SURVEY @ 13065' MD / 10951.7' TVD	
13,065.0	10,951.7	-41.1	-2,403.6	TIE IN @ 13065' MD / 10951.7' TVD	
13,158.0	10,951.7	-43.0	-2,496.6	FIRST MWD SURVEY @ 13158' MD / 10951.7' TVD	
15,425.9	10,946.8	-54.5	-4,764.3	CROSSED HARDLINE @ 15425.9' MD / 10946.8' TVD	
15,565.0	10,944.0	-56.8	-4,903.3	TD @ 15565' MD / 10944' TVD	

Checked By: _____	Approved By: _____	Date: _____
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