

Devon Energy Corporation

Thistle Unit 155H

Lea County, NM

Nabors X20

API# 30-025-43658

HOBBS OCD
OCT 10 2019
RECEIVED

February 16, 2019 - March 18, 2019

MO-XX-0905554820

Sperry Drilling

MWD Survey Report

Submitted by:

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Sperry Drilling



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State of Texas, Lea County, NM

I, Ralph Clarke, certify that I am employed by Halliburton Energy Services, Inc. (aka Sperry Drilling) and that on the dates of February 16, 2019 through March 18, 2019, I did conduct or supervise the taking of MWD directional surveys for the Thistle Unit 155H well from a depth of 234' MD to a depth of 22,932' MD. This data is true, correct, complete and within the limitations of the tools as set forth by Halliburton Energy Services, Inc. (aka Sperry Drilling). I am authorized and qualified to make this report and these surveys were conducted at the request of Devon Energy Corporation, for the Thistle Unit 155H well, API # 30-025-43658 in Lea County, NM. I have reviewed this report and find that it confirms to the principles and procedures as set forth by Halliburton Energy Services, Inc. (aka Sperry Drilling).



Ralph Clarke
Service Coordinator

Devon Energy Corporation

Lea County, NM (NAD 83)

Sec 33 - 23S - 33E (Thistle Unit)

Thistle Unit 155H

Wellbore #1

Design: Actual Drilled

Survey Report - Geographic

08 April, 2019

Halliburton

Survey Report - Geographic

Company:	Devon Energy Corporation	Local Co-ordinate Reference:	Well Thistle Unit 155H
Project:	Lea County, NM (NAD 83)	TVD Reference:	RKB (Nabors X05) 33' + GL @ 3686.0usft
Site:	Sec 33 - 23S - 33E (Thistle Unit)	MD Reference:	RKB (Nabors X05) 33' + GL @ 3686.0usft
Well:	Thistle Unit 155H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Actual Drilled	Database:	SOUTH US

Project	Lea County, NM (NAD 83)		
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 33 - 23S - 33E (Thistle Unit)				
Site Position:		Northing:	457,083.16 usft	Latitude:	32° 15' 15.548 N
From:	Map	Easting:	775,859.81 usft	Longitude:	103° 34' 28.879 W
Position Uncertainty:	5.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.40 °

Well	Thistle Unit 155H				
Well Position	+N/-S	0.0 usft	Northing:	457,082.63 usft	Latitude: 32° 15' 15.547 N
	+E/-W	0.0 usft	Easting:	775,809.96 usft	Longitude: 103° 34' 29.460 W
Position Uncertainty		0.5 usft	Wellhead Elevation:	usft	Ground Level: 3,653.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2018	1/25/2019	6.85	60.02	47,827.33125633

Design	Actual Drilled				
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	0.00	

Survey Program	Date	4/8/2019			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
234.0	22,869.0	Actual Drilled (Wellbore #1)	2_MWD	A001Mb/SC4: BGGM declination correction only	
22,932.0	22,932.0	Projection to TD (Wellbore #1)	2_Blind	A026Ua: Blind drilling - no survey data	

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
0.0	0.00	0.00	0.0	0.0	0.0	457,082.63	775,809.96	32° 15' 15.547 N	103° 34' 29.460 W	
51.3	0.31	58.82	51.3	0.1	0.1	457,082.70	775,810.07	32° 15' 15.547 N	103° 34' 29.459 W	
PBHL of Thistle Unit 155H (20' FNL - 2085' FWL)										
234.0	1.40	58.82	234.0	1.5	2.4	457,084.11	775,812.40	32° 15' 15.561 N	103° 34' 29.431 W	
First MWD Survey										
326.0	1.22	66.38	326.0	2.5	4.3	457,085.08	775,814.26	32° 15' 15.571 N	103° 34' 29.410 W	
427.0	1.23	78.33	426.9	3.1	6.4	457,085.73	775,816.31	32° 15' 15.577 N	103° 34' 29.386 W	
522.0	1.28	74.31	521.9	3.6	8.4	457,086.23	775,818.33	32° 15' 15.582 N	103° 34' 29.362 W	
617.0	1.13	69.02	616.9	4.2	10.3	457,086.85	775,820.23	32° 15' 15.588 N	103° 34' 29.340 W	
712.0	1.25	75.92	711.9	4.8	12.1	457,087.44	775,822.10	32° 15' 15.593 N	103° 34' 29.318 W	
807.0	1.19	74.78	806.8	5.3	14.1	457,087.95	775,824.06	32° 15' 15.598 N	103° 34' 29.295 W	

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Survey Report - Geographic

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Project:	Lea County, NM (NAD 83)	TVD Reference:	RKB (Nabors X05) 33' + GL @ 3686.0usft
Site:	Sec 33 - 23S - 33E (Thistle Unit)	MD Reference:	RKB (Nabors X05) 33' + GL @ 3686.0usft
Well:	Thistle Unit 155H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Actual Drilled	Database:	SOUTH US

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
903.0	0.88	70.87	902.8	5.8	15.8	457,088.45	775,825.72	32° 15' 15.603 N	103° 34' 29.276 W
998.0	0.46	63.55	997.8	6.2	16.8	457,088.86	775,826.75	32° 15' 15.607 N	103° 34' 29.264 W
1,093.0	0.28	41.02	1,092.8	6.6	17.3	457,089.21	775,827.24	32° 15' 15.610 N	103° 34' 29.258 W
1,188.0	0.16	325.44	1,187.8	6.9	17.4	457,089.49	775,827.32	32° 15' 15.613 N	103° 34' 29.257 W
1,283.0	0.10	344.14	1,282.8	7.0	17.3	457,089.68	775,827.22	32° 15' 15.615 N	103° 34' 29.258 W
1,378.0	0.20	279.81	1,377.8	7.2	17.1	457,089.79	775,827.04	32° 15' 15.616 N	103° 34' 29.260 W
1,473.0	0.50	300.42	1,472.8	7.4	16.6	457,090.03	775,826.52	32° 15' 15.619 N	103° 34' 29.266 W
1,568.0	0.94	323.88	1,567.8	8.2	15.7	457,090.86	775,825.70	32° 15' 15.627 N	103° 34' 29.276 W
1,663.0	1.19	330.65	1,662.8	9.7	14.8	457,092.35	775,824.76	32° 15' 15.642 N	103° 34' 29.287 W
1,759.0	0.56	304.76	1,758.8	10.9	13.9	457,093.49	775,823.88	32° 15' 15.653 N	103° 34' 29.297 W
1,854.0	0.55	326.15	1,853.8	11.5	13.3	457,094.13	775,823.25	32° 15' 15.660 N	103° 34' 29.304 W
1,949.0	0.57	342.84	1,948.8	12.3	12.9	457,094.96	775,822.85	32° 15' 15.668 N	103° 34' 29.309 W
2,044.0	0.57	347.27	2,043.8	13.2	12.7	457,095.88	775,822.61	32° 15' 15.677 N	103° 34' 29.311 W
2,139.0	0.87	282.32	2,138.8	13.9	11.8	457,096.49	775,821.80	32° 15' 15.683 N	103° 34' 29.321 W
2,234.0	1.55	258.02	2,233.7	13.7	9.9	457,096.38	775,819.84	32° 15' 15.682 N	103° 34' 29.344 W
2,330.0	2.53	258.33	2,329.7	13.1	6.5	457,095.68	775,816.50	32° 15' 15.675 N	103° 34' 29.383 W
2,425.0	3.19	259.99	2,424.6	12.2	1.9	457,094.80	775,811.84	32° 15' 15.667 N	103° 34' 29.437 W
2,520.0	3.99	260.39	2,519.4	11.2	-4.0	457,093.79	775,805.98	32° 15' 15.657 N	103° 34' 29.505 W
2,615.0	4.77	260.88	2,614.1	10.0	-11.1	457,092.61	775,798.82	32° 15' 15.646 N	103° 34' 29.589 W
2,710.0	5.83	259.43	2,708.7	8.5	-19.8	457,091.10	775,790.17	32° 15' 15.632 N	103° 34' 29.690 W
2,805.0	6.84	260.72	2,803.1	6.7	-30.1	457,089.30	775,779.85	32° 15' 15.615 N	103° 34' 29.810 W
2,901.0	7.97	262.94	2,898.3	4.9	-42.4	457,087.56	775,767.60	32° 15' 15.598 N	103° 34' 29.953 W
2,996.0	8.87	261.90	2,992.3	3.1	-56.1	457,085.72	775,753.81	32° 15' 15.581 N	103° 34' 30.113 W
3,091.0	8.93	266.35	3,086.1	1.6	-70.8	457,084.22	775,739.20	32° 15' 15.567 N	103° 34' 30.284 W
3,186.0	9.19	268.89	3,180.0	1.0	-85.7	457,083.60	775,724.26	32° 15' 15.562 N	103° 34' 30.458 W
3,281.0	9.85	265.92	3,273.6	0.2	-101.4	457,082.87	775,708.57	32° 15' 15.556 N	103° 34' 30.640 W
3,377.0	10.52	264.56	3,368.1	-1.2	-118.3	457,081.46	775,691.66	32° 15' 15.543 N	103° 34' 30.838 W
3,472.0	11.15	263.86	3,461.4	-3.0	-136.1	457,079.66	775,673.89	32° 15' 15.527 N	103° 34' 31.045 W
3,567.0	11.70	263.04	3,554.6	-5.1	-154.8	457,077.51	775,655.19	32° 15' 15.507 N	103° 34' 31.262 W
3,662.0	11.44	267.78	3,647.6	-6.7	-173.7	457,075.97	775,636.22	32° 15' 15.493 N	103° 34' 31.484 W
3,757.0	11.00	272.65	3,740.8	-6.6	-192.2	457,076.03	775,617.75	32° 15' 15.495 N	103° 34' 31.699 W
3,853.0	9.46	266.39	3,835.3	-6.7	-209.2	457,075.95	775,600.73	32° 15' 15.495 N	103° 34' 31.897 W
3,948.0	9.45	256.98	3,929.0	-8.9	-224.6	457,073.71	775,585.34	32° 15' 15.474 N	103° 34' 32.076 W
4,043.0	10.85	255.72	4,022.5	-12.9	-240.9	457,069.74	775,569.07	32° 15' 15.436 N	103° 34' 32.266 W
4,138.0	11.68	258.96	4,115.7	-16.9	-259.0	457,065.70	775,550.97	32° 15' 15.397 N	103° 34' 32.477 W
4,233.0	11.93	261.25	4,208.7	-20.3	-278.1	457,062.36	775,531.82	32° 15' 15.365 N	103° 34' 32.700 W
4,328.0	11.56	266.63	4,301.7	-22.3	-297.3	457,060.31	775,512.62	32° 15' 15.347 N	103° 34' 32.924 W
4,424.0	10.63	265.15	4,395.9	-23.6	-315.8	457,058.99	775,494.19	32° 15' 15.335 N	103° 34' 33.139 W
4,519.0	10.44	259.95	4,489.3	-25.9	-333.0	457,056.75	775,476.98	32° 15' 15.314 N	103° 34' 33.339 W
4,614.0	10.49	259.91	4,582.7	-28.9	-350.0	457,053.73	775,460.00	32° 15' 15.285 N	103° 34' 33.537 W
4,709.0	10.76	260.85	4,676.1	-31.8	-367.2	457,050.81	775,442.73	32° 15' 15.257 N	103° 34' 33.739 W
4,804.0	11.56	259.99	4,769.3	-34.9	-385.4	457,047.74	775,424.60	32° 15' 15.228 N	103° 34' 33.950 W
4,900.0	12.25	264.47	4,863.2	-37.5	-405.0	457,045.09	775,404.99	32° 15' 15.203 N	103° 34' 34.179 W
4,995.0	12.04	268.89	4,956.1	-38.7	-424.9	457,043.93	775,385.05	32° 15' 15.193 N	103° 34' 34.411 W
5,090.0	10.83	268.01	5,049.2	-39.2	-443.7	457,043.42	775,366.22	32° 15' 15.190 N	103° 34' 34.630 W
5,185.0	12.40	270.76	5,142.3	-39.4	-462.9	457,043.25	775,347.10	32° 15' 15.189 N	103° 34' 34.853 W
5,280.0	12.20	267.94	5,235.1	-39.6	-483.1	457,043.02	775,326.87	32° 15' 15.188 N	103° 34' 35.088 W
5,375.0	12.88	267.51	5,327.8	-40.4	-503.7	457,042.20	775,306.26	32° 15' 15.182 N	103° 34' 35.329 W
5,471.0	13.56	266.56	5,421.3	-41.6	-525.6	457,041.06	775,284.34	32° 15' 15.172 N	103° 34' 35.584 W
5,566.0	14.03	265.62	5,513.5	-43.1	-548.2	457,039.52	775,261.74	32° 15' 15.158 N	103° 34' 35.847 W
5,661.0	14.56	265.92	5,605.6	-44.8	-571.6	457,037.79	775,238.34	32° 15' 15.143 N	103° 34' 36.120 W
5,756.0	13.99	263.13	5,697.7	-47.1	-594.9	457,035.56	775,215.03	32° 15' 15.122 N	103° 34' 36.391 W
5,851.0	13.06	264.05	5,790.0	-49.6	-617.0	457,033.08	775,192.96	32° 15' 15.099 N	103° 34' 36.649 W
5,946.0	12.73	268.19	5,882.6	-51.0	-638.1	457,031.63	775,171.82	32° 15' 15.087 N	103° 34' 36.895 W
6,042.0	12.44	267.44	5,976.3	-51.8	-659.0	457,030.84	775,150.92	32° 15' 15.080 N	103° 34' 37.138 W

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Survey Report - Geographic

Company:	Devon Energy Corporation	Local Co-ordinate Reference:	Well Thistle Unit 155H
Project:	Lea County, NM (NAD 83)	TVD Reference:	RKB (Nabors X05) 33' + GL @ 3686.0usft
Site:	Sec 33 - 23S - 33E (Thistle Unit)	MD Reference:	RKB (Nabors X05) 33' + GL @ 3686.0usft
Well:	Thistle Unit 155H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Actual Drilled	Database:	SOUTH US

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
6,137.0	11.36	266.86	6,069.3	-52.8	-678.6	457,029.87	775,131.35	32° 15' 15.072 N	103° 34' 37.366 W
6,173.0	11.08	266.37	6,104.6	-53.2	-685.6	457,029.45	775,124.36	32° 15' 15.068 N	103° 34' 37.448 W
Cross 100' FSL 6173' MD 99.9962' FSL, 2574.7475' FEL of Sec 33									
6,232.0	10.62	265.50	6,162.5	-54.0	-696.7	457,028.67	775,113.28	32° 15' 15.061 N	103° 34' 37.577 W
6,327.0	11.39	265.13	6,255.8	-55.4	-714.7	457,027.19	775,095.21	32° 15' 15.048 N	103° 34' 37.787 W
6,423.0	11.32	265.16	6,349.9	-57.0	-733.6	457,025.59	775,076.37	32° 15' 15.033 N	103° 34' 38.007 W
6,518.0	11.59	264.63	6,443.0	-58.7	-752.4	457,023.91	775,057.58	32° 15' 15.018 N	103° 34' 38.226 W
6,613.0	11.86	264.12	6,536.0	-60.6	-771.6	457,022.01	775,038.37	32° 15' 15.001 N	103° 34' 38.450 W
6,708.0	11.94	263.28	6,629.0	-62.8	-791.1	457,019.86	775,018.90	32° 15' 14.981 N	103° 34' 38.677 W
6,803.0	11.81	263.12	6,722.0	-65.1	-810.5	457,017.55	774,999.49	32° 15' 14.959 N	103° 34' 38.903 W
6,899.0	10.99	263.32	6,816.1	-67.3	-829.3	457,015.31	774,980.65	32° 15' 14.938 N	103° 34' 39.122 W
6,994.0	10.34	264.06	6,909.4	-69.3	-846.8	457,013.37	774,963.17	32° 15' 14.920 N	103° 34' 39.326 W
7,089.0	9.97	264.56	7,002.9	-70.9	-863.5	457,011.71	774,946.51	32° 15' 14.905 N	103° 34' 39.520 W
7,184.0	10.13	263.96	7,096.5	-72.6	-879.9	457,010.05	774,930.01	32° 15' 14.890 N	103° 34' 39.712 W
7,279.0	10.46	264.72	7,189.9	-74.3	-896.8	457,008.38	774,913.12	32° 15' 14.874 N	103° 34' 39.909 W
7,374.0	10.58	264.57	7,283.3	-75.9	-914.1	457,006.76	774,895.85	32° 15' 14.860 N	103° 34' 40.111 W
7,469.0	10.68	265.05	7,376.7	-77.5	-931.6	457,005.17	774,878.39	32° 15' 14.845 N	103° 34' 40.314 W
7,565.0	10.94	264.61	7,471.0	-79.1	-949.5	457,003.55	774,860.46	32° 15' 14.830 N	103° 34' 40.523 W
7,660.0	11.21	262.35	7,564.2	-81.2	-967.6	457,001.47	774,842.34	32° 15' 14.811 N	103° 34' 40.734 W
7,755.0	10.00	258.34	7,657.6	-84.1	-984.9	456,998.58	774,825.10	32° 15' 14.784 N	103° 34' 40.935 W
7,850.0	10.37	259.63	7,751.1	-87.3	-1,001.3	456,995.37	774,808.62	32° 15' 14.753 N	103° 34' 41.127 W
7,945.0	11.54	259.76	7,844.4	-90.5	-1,019.1	456,992.14	774,790.85	32° 15' 14.722 N	103° 34' 41.334 W
8,040.0	10.92	257.76	7,937.6	-94.1	-1,037.2	456,988.55	774,772.71	32° 15' 14.688 N	103° 34' 41.546 W
8,135.0	11.12	260.60	8,030.8	-97.5	-1,055.1	456,985.14	774,754.88	32° 15' 14.656 N	103° 34' 41.754 W
8,231.0	11.50	264.64	8,125.0	-99.9	-1,073.7	456,982.74	774,736.22	32° 15' 14.633 N	103° 34' 41.971 W
8,326.0	11.23	268.91	8,218.1	-101.0	-1,092.4	456,981.68	774,717.54	32° 15' 14.624 N	103° 34' 42.189 W
8,421.0	10.17	268.05	8,311.4	-101.4	-1,110.1	456,981.21	774,699.91	32° 15' 14.621 N	103° 34' 42.394 W
8,516.0	10.70	269.01	8,404.9	-101.9	-1,127.3	456,980.78	774,682.71	32° 15' 14.617 N	103° 34' 42.595 W
8,612.0	11.88	270.86	8,499.0	-101.9	-1,146.0	456,980.77	774,663.91	32° 15' 14.619 N	103° 34' 42.813 W
8,707.0	11.67	269.30	8,592.0	-101.8	-1,165.4	456,980.80	774,644.53	32° 15' 14.620 N	103° 34' 43.039 W
8,802.0	10.31	268.29	8,685.3	-102.2	-1,183.5	456,980.43	774,626.42	32° 15' 14.618 N	103° 34' 43.250 W
8,897.0	11.00	266.97	8,778.6	-102.9	-1,201.1	456,979.70	774,608.88	32° 15' 14.612 N	103° 34' 43.454 W
8,992.0	11.40	268.45	8,871.8	-103.7	-1,219.5	456,978.96	774,590.44	32° 15' 14.606 N	103° 34' 43.669 W
9,087.0	11.95	268.54	8,964.9	-104.2	-1,238.7	456,978.46	774,571.22	32° 15' 14.602 N	103° 34' 43.893 W
9,183.0	11.03	267.79	9,058.9	-104.8	-1,257.8	456,977.85	774,552.11	32° 15' 14.598 N	103° 34' 44.116 W
9,278.0	10.69	268.28	9,152.2	-105.4	-1,275.7	456,977.24	774,534.22	32° 15' 14.593 N	103° 34' 44.324 W
9,373.0	9.97	270.37	9,245.7	-105.6	-1,292.8	456,977.03	774,517.19	32° 15' 14.592 N	103° 34' 44.522 W
9,468.0	8.08	270.03	9,339.5	-105.5	-1,307.7	456,977.08	774,502.29	32° 15' 14.593 N	103° 34' 44.696 W
9,564.0	7.02	265.36	9,434.7	-106.0	-1,320.3	456,976.61	774,489.69	32° 15' 14.590 N	103° 34' 44.842 W
9,659.0	6.21	270.51	9,529.0	-106.4	-1,331.2	456,976.19	774,478.77	32° 15' 14.586 N	103° 34' 44.970 W
9,754.0	4.97	267.74	9,623.6	-106.6	-1,340.4	456,976.07	774,469.52	32° 15' 14.586 N	103° 34' 45.077 W
9,849.0	4.51	269.92	9,718.3	-106.7	-1,348.3	456,975.90	774,461.67	32° 15' 14.585 N	103° 34' 45.169 W
9,944.0	4.67	267.45	9,813.0	-106.9	-1,355.9	456,975.73	774,454.07	32° 15' 14.583 N	103° 34' 45.257 W
9,982.0	4.83	269.24	9,850.8	-107.0	-1,359.0	456,975.64	774,450.93	32° 15' 14.583 N	103° 34' 45.294 W
10,077.0	5.46	263.65	9,945.5	-107.5	-1,367.5	456,975.08	774,442.44	32° 15' 14.578 N	103° 34' 45.393 W
10,172.0	4.08	255.02	10,040.1	-108.9	-1,375.3	456,973.71	774,434.68	32° 15' 14.565 N	103° 34' 45.483 W
10,268.0	2.81	238.55	10,135.9	-111.0	-1,380.6	456,971.60	774,429.37	32° 15' 14.544 N	103° 34' 45.545 W
10,363.0	2.51	216.55	10,230.8	-113.9	-1,383.8	456,968.71	774,426.15	32° 15' 14.516 N	103° 34' 45.583 W
10,458.0	1.94	218.12	10,325.8	-116.9	-1,386.0	456,965.78	774,423.92	32° 15' 14.487 N	103° 34' 45.609 W
10,554.0	1.12	234.74	10,421.7	-118.7	-1,387.8	456,963.96	774,422.15	32° 15' 14.469 N	103° 34' 45.630 W
10,649.0	1.31	245.52	10,516.7	-119.7	-1,389.6	456,962.97	774,420.40	32° 15' 14.549 N	103° 34' 45.650 W
10,744.0	1.24	261.36	10,611.7	-120.3	-1,391.6	456,962.37	774,418.40	32° 15' 14.454 N	103° 34' 45.674 W
10,839.0	1.71	296.18	10,706.7	-119.8	-1,393.8	456,962.84	774,416.11	32° 15' 14.458 N	103° 34' 45.700 W
10,935.0	1.86	315.10	10,802.6	-118.1	-1,396.2	456,964.57	774,413.72	32° 15' 14.476 N	103° 34' 45.728 W
11,030.0	1.51	321.39	10,897.6	-116.0	-1,398.1	456,966.64	774,411.85	32° 15' 14.496 N	103° 34' 45.750 W

Halliburton

Survey Report - Geographic

Company:	Devon Energy Corporation	Local Co-ordinate Reference:	Well Thistle Unit 155H
Project:	Lea County, NM (NAD 83)	TVD Reference:	RKB (Nabors X05) 33' + GL @ 3686.0usft
Site:	Sec 33 - 23S - 33E (Thistle Unit)	MD Reference:	RKB (Nabors X05) 33' + GL @ 3686.0usft
Well:	Thistle Unit 155H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Actual Drilled	Database:	SOUTH US

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
11,125.0	1.14	318.13	10,992.6	-114.3	-1,399.5	456,968.32	774,410.44	32° 15' 14.513 N	103° 34' 45.766 W
11,220.0	1.35	294.53	11,087.5	-113.1	-1,401.2	456,969.49	774,408.79	32° 15' 14.525 N	103° 34' 45.785 W
11,316.0	1.83	266.75	11,183.5	-112.8	-1,403.7	456,969.88	774,406.23	32° 15' 14.529 N	103° 34' 45.815 W
11,411.0	0.71	256.37	11,278.5	-113.0	-1,405.8	456,969.65	774,404.15	32° 15' 14.527 N	103° 34' 45.839 W
11,506.0	0.43	214.76	11,373.5	-113.4	-1,406.6	456,969.22	774,403.37	32° 15' 14.522 N	103° 34' 45.848 W
11,601.0	0.68	262.95	11,468.5	-113.8	-1,407.3	456,968.86	774,402.61	32° 15' 14.519 N	103° 34' 45.857 W
11,696.0	0.36	275.96	11,563.5	-113.8	-1,408.2	456,968.82	774,401.75	32° 15' 14.519 N	103° 34' 45.867 W
11,791.0	0.83	252.00	11,658.5	-114.0	-1,409.2	456,968.64	774,400.80	32° 15' 14.517 N	103° 34' 45.878 W
11,886.0	2.10	288.50	11,753.4	-113.7	-1,411.5	456,968.98	774,398.50	32° 15' 14.520 N	103° 34' 45.905 W
11,981.0	1.84	287.47	11,848.4	-112.6	-1,414.6	456,969.99	774,395.39	32° 15' 14.531 N	103° 34' 45.941 W
12,045.0	0.39	350.86	11,912.4	-112.1	-1,415.6	456,970.51	774,394.38	32° 15' 14.536 N	103° 34' 45.953 W
KOP 12045' MD 45.4980' FSL, 1969.4998' FWL of Sec 33									
12,140.0	2.19	354.31	12,007.3	-110.0	-1,415.8	456,972.64	774,394.14	32° 15' 14.557 N	103° 34' 45.955 W
12,172.0	6.33	351.50	12,039.2	-107.6	-1,416.1	456,974.99	774,393.82	32° 15' 14.580 N	103° 34' 45.959 W
12,203.0	10.72	350.27	12,069.9	-103.1	-1,416.9	456,979.52	774,393.08	32° 15' 14.625 N	103° 34' 45.967 W
12,235.0	15.79	349.72	12,101.0	-95.9	-1,418.2	456,986.75	774,391.80	32° 15' 14.697 N	103° 34' 45.982 W
12,267.0	20.39	350.97	12,131.4	-86.1	-1,419.8	456,996.54	774,390.15	32° 15' 14.794 N	103° 34' 46.000 W
12,298.0	24.35	356.60	12,160.1	-74.4	-1,421.0	457,008.26	774,388.92	32° 15' 14.910 N	103° 34' 46.013 W
12,330.0	29.34	3.17	12,188.6	-59.9	-1,421.0	457,022.69	774,388.96	32° 15' 15.053 N	103° 34' 46.012 W
12,335.0	29.76	3.54	12,193.0	-57.5	-1,420.8	457,025.15	774,389.11	32° 15' 15.077 N	103° 34' 46.010 W
Cross 100' FSL 12335' MD 100.1636' FSL, 1964.6366' FWL of Sec 33									
12,377.0	33.31	6.27	12,228.8	-35.6	-1,418.9	457,047.02	774,391.01	32° 15' 15.293 N	103° 34' 45.986 W
12,425.0	33.98	7.14	12,268.7	-9.2	-1,415.8	457,073.43	774,394.12	32° 15' 15.554 N	103° 34' 45.948 W
12,472.0	36.65	8.02	12,307.1	17.7	-1,412.2	457,100.36	774,397.71	32° 15' 15.821 N	103° 34' 45.903 W
12,520.0	41.71	5.07	12,344.3	47.8	-1,408.8	457,130.48	774,401.12	32° 15' 16.118 N	103° 34' 45.861 W
12,568.0	45.88	0.64	12,378.9	81.0	-1,407.2	457,163.63	774,402.73	32° 15' 16.446 N	103° 34' 45.840 W
12,616.0	48.60	1.51	12,411.5	116.2	-1,406.6	457,198.86	774,403.39	32° 15' 16.795 N	103° 34' 45.829 W
12,662.0	53.88	0.64	12,440.3	152.1	-1,405.9	457,234.71	774,404.06	32° 15' 17.150 N	103° 34' 45.819 W
12,711.0	58.10	359.75	12,467.7	192.7	-1,405.8	457,275.32	774,404.19	32° 15' 17.551 N	103° 34' 45.814 W
12,757.0	61.96	0.11	12,490.7	232.5	-1,405.8	457,315.16	774,404.14	32° 15' 17.946 N	103° 34' 45.811 W
12,806.0	65.70	0.32	12,512.3	276.5	-1,405.7	457,359.13	774,404.31	32° 15' 18.381 N	103° 34' 45.806 W
12,853.0	68.99	0.47	12,530.4	319.9	-1,405.4	457,402.50	774,404.61	32° 15' 18.810 N	103° 34' 45.798 W
12,901.0	77.25	0.79	12,544.3	365.8	-1,404.8	457,448.39	774,405.11	32° 15' 19.264 N	103° 34' 45.789 W
12,933.0	82.49	1.90	12,550.0	397.2	-1,404.1	457,479.87	774,405.85	32° 15' 19.575 N	103° 34' 45.778 W
12,964.0	84.88	2.79	12,553.4	428.0	-1,402.8	457,510.65	774,407.12	32° 15' 19.880 N	103° 34' 45.760 W
12,996.0	85.00	2.90	12,556.2	459.9	-1,401.3	457,542.49	774,408.70	32° 15' 20.195 N	103° 34' 45.739 W
13,059.0	89.26	2.46	12,559.3	522.7	-1,398.3	457,605.33	774,411.64	32° 15' 20.816 N	103° 34' 45.700 W
13,091.0	88.92	2.35	12,559.8	554.7	-1,397.0	457,637.29	774,412.98	32° 15' 21.133 N	103° 34' 45.682 W
13,186.0	91.26	2.11	12,559.7	649.6	-1,393.3	457,732.22	774,416.68	32° 15' 22.072 N	103° 34' 45.631 W
13,281.0	90.12	2.44	12,558.6	744.5	-1,389.5	457,827.13	774,420.45	32° 15' 23.010 N	103° 34' 45.579 W
13,377.0	89.66	3.65	12,558.7	840.4	-1,384.4	457,922.99	774,425.55	32° 15' 23.959 N	103° 34' 45.512 W
13,472.0	91.23	3.51	12,558.0	935.2	-1,378.5	458,017.80	774,431.48	32° 15' 24.896 N	103° 34' 45.435 W
13,567.0	92.07	3.01	12,555.3	1,030.0	-1,373.1	458,112.61	774,436.88	32° 15' 25.834 N	103° 34' 45.365 W
13,662.0	92.00	357.67	12,551.9	1,124.9	-1,372.5	458,207.51	774,437.44	32° 15' 26.773 N	103° 34' 45.350 W
13,757.0	91.48	356.95	12,549.0	1,219.7	-1,377.0	458,302.36	774,432.99	32° 15' 27.712 N	103° 34' 45.394 W
13,852.0	89.75	355.81	12,548.0	1,314.5	-1,383.0	458,397.16	774,426.99	32° 15' 28.651 N	103° 34' 45.456 W
13,947.0	90.06	357.00	12,548.1	1,409.3	-1,388.9	458,491.97	774,421.03	32° 15' 29.589 N	103° 34' 45.518 W
14,042.0	90.83	355.87	12,547.4	1,504.2	-1,394.8	458,586.79	774,415.13	32° 15' 30.528 N	103° 34' 45.579 W
14,138.0	91.60	355.61	12,545.4	1,599.9	-1,402.0	458,682.50	774,408.00	32° 15' 31.475 N	103° 34' 45.654 W
14,233.0	93.61	359.91	12,541.0	1,694.7	-1,405.7	458,777.30	774,404.28	32° 15' 32.414 N	103° 34' 45.690 W
14,328.0	91.39	1.12	12,536.9	1,789.6	-1,404.8	458,872.20	774,405.14	32° 15' 33.353 N	103° 34' 45.672 W
14,424.0	91.11	0.79	12,534.8	1,885.5	-1,403.2	458,968.16	774,406.74	32° 15' 34.302 N	103° 34' 45.646 W
14,519.0	91.51	0.07	12,532.6	1,980.5	-1,402.5	459,063.13	774,407.45	32° 15' 35.242 N	103° 34' 45.630 W
14,614.0	91.14	0.38	12,530.4	2,075.5	-1,402.1	459,158.11	774,407.82	32° 15' 36.182 N	103° 34' 45.617 W

Halliburton

Survey Report - Geographic

Company: Devon Energy Corporation	Local Co-ordinate Reference: Well Thistle Unit 155H	
Project: Lea County, NM (NAD 83)	TVD Reference: RKB (Nabors X05) 33' + GL @ 3686.0usft	
Site: Sec 33 - 23S - 33E (Thistle Unit)	MD Reference: RKB (Nabors X05) 33' + GL @ 3686.0usft	
Well: Thistle Unit 155H	North Reference: Grid	
Wellbore: Wellbore #1	Survey Calculation Method: Minimum Curvature	
Design: Actual Drilled	Database: SOUTH US	

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
14,709.0	91.29	0.50	12,528.4	2,170.5	-1,401.4	459,253.08	774,408.55	32° 15' 37.121 N	103° 34' 45.601 W
14,804.0	91.66	0.14	12,526.0	2,265.4	-1,400.9	459,348.05	774,409.08	32° 15' 38.061 N	103° 34' 45.587 W
14,900.0	90.40	0.57	12,524.3	2,361.4	-1,400.3	459,444.03	774,409.68	32° 15' 39.011 N	103° 34' 45.572 W
14,995.0	90.34	0.00	12,523.6	2,456.4	-1,399.8	459,539.03	774,410.15	32° 15' 39.951 N	103° 34' 45.559 W
15,089.0	90.83	359.63	12,522.7	2,550.4	-1,400.1	459,633.02	774,409.85	32° 15' 40.881 N	103° 34' 45.555 W
15,184.0	90.71	359.02	12,521.4	2,645.4	-1,401.2	459,728.01	774,408.73	32° 15' 41.821 N	103° 34' 45.560 W
15,280.0	91.79	359.23	12,519.3	2,741.3	-1,402.7	459,823.97	774,407.26	32° 15' 42.770 N	103° 34' 45.569 W
15,375.0	92.00	358.78	12,516.2	2,836.3	-1,404.3	459,918.90	774,405.61	32° 15' 43.710 N	103° 34' 45.581 W
15,470.0	90.62	359.45	12,514.0	2,931.2	-1,405.8	460,013.86	774,404.15	32° 15' 44.650 N	103° 34' 45.590 W
15,565.0	90.65	358.26	12,512.9	3,026.2	-1,407.7	460,108.84	774,402.25	32° 15' 45.590 N	103° 34' 45.605 W
15,660.0	90.37	359.69	12,512.1	3,121.2	-1,409.4	460,203.82	774,400.55	32° 15' 46.529 N	103° 34' 45.617 W
15,756.0	88.46	0.39	12,513.1	3,217.2	-1,409.3	460,299.81	774,400.62	32° 15' 47.479 N	103° 34' 45.608 W
15,851.0	89.08	0.99	12,515.1	3,312.1	-1,408.2	460,394.78	774,401.76	32° 15' 48.419 N	103° 34' 45.587 W
15,946.0	89.48	0.34	12,516.3	3,407.1	-1,407.1	460,489.76	774,402.86	32° 15' 49.359 N	103° 34' 45.566 W
16,041.0	89.32	359.77	12,517.3	3,502.1	-1,407.0	460,584.76	774,402.95	32° 15' 50.299 N	103° 34' 45.557 W
16,137.0	89.54	359.52	12,518.3	3,598.1	-1,407.6	460,680.75	774,402.36	32° 15' 51.249 N	103° 34' 45.556 W
16,232.0	89.35	358.68	12,519.2	3,693.1	-1,409.1	460,775.73	774,400.87	32° 15' 52.189 N	103° 34' 45.566 W
16,327.0	90.19	0.49	12,519.6	3,788.1	-1,409.8	460,870.72	774,400.18	32° 15' 53.129 N	103° 34' 45.566 W
16,422.0	90.40	0.64	12,519.1	3,883.1	-1,408.8	460,965.72	774,401.12	32° 15' 54.069 N	103° 34' 45.548 W
16,517.0	90.95	0.56	12,518.0	3,978.1	-1,407.8	461,060.71	774,402.11	32° 15' 55.008 N	103° 34' 45.528 W
16,612.0	90.98	0.47	12,516.4	4,073.1	-1,407.0	461,155.69	774,402.96	32° 15' 55.948 N	103° 34' 45.511 W
16,707.0	90.96	359.75	12,514.7	4,168.0	-1,406.8	461,250.67	774,403.15	32° 15' 56.888 N	103° 34' 45.501 W
16,802.0	90.83	1.12	12,513.3	4,263.0	-1,406.1	461,345.66	774,403.87	32° 15' 57.828 N	103° 34' 45.484 W
16,897.0	91.45	1.37	12,511.4	4,358.0	-1,404.0	461,440.62	774,405.93	32° 15' 58.767 N	103° 34' 45.453 W
16,992.0	89.72	0.80	12,510.4	4,453.0	-1,402.2	461,535.59	774,407.73	32° 15' 59.707 N	103° 34' 45.424 W
17,087.0	89.63	0.24	12,510.9	4,548.0	-1,401.4	461,630.58	774,408.59	32° 16' 0.647 N	103° 34' 45.406 W
17,183.0	89.51	0.80	12,511.7	4,643.9	-1,400.5	461,726.58	774,409.46	32° 16' 1.597 N	103° 34' 45.388 W
17,278.0	91.94	1.14	12,510.5	4,738.9	-1,398.9	461,821.55	774,411.07	32° 16' 2.536 N	103° 34' 45.362 W
17,373.0	90.22	1.49	12,508.7	4,833.9	-1,396.7	461,916.50	774,413.25	32° 16' 3.476 N	103° 34' 45.328 W
17,468.0	90.92	1.55	12,507.7	4,928.8	-1,394.2	462,011.46	774,415.77	32° 16' 4.415 N	103° 34' 45.291 W
17,563.0	91.54	1.13	12,505.7	5,023.8	-1,392.0	462,106.42	774,417.99	32° 16' 5.355 N	103° 34' 45.258 W
17,658.0	90.71	1.83	12,503.8	5,118.7	-1,389.5	462,201.36	774,420.45	32° 16' 6.294 N	103° 34' 45.221 W
17,672.0	90.56	1.76	12,503.7	5,132.7	-1,389.1	462,215.36	774,420.88	32° 16' 6.433 N	103° 34' 45.215 W
Sec Crossing 12672' MD 0.2715' FSL, 2034.7818' FWL of Sec 28									
17,754.0	89.66	1.37	12,503.5	5,214.7	-1,386.8	462,297.32	774,423.13	32° 16' 7.243 N	103° 34' 45.182 W
17,849.0	89.32	1.80	12,504.4	5,309.7	-1,384.2	462,392.28	774,425.75	32° 16' 8.183 N	103° 34' 45.144 W
17,944.0	90.12	1.27	12,504.8	5,404.6	-1,381.7	462,487.25	774,428.30	32° 16' 9.122 N	103° 34' 45.107 W
18,039.0	89.14	1.19	12,505.4	5,499.6	-1,379.6	462,582.22	774,430.34	32° 16' 10.062 N	103° 34' 45.075 W
18,134.0	89.72	1.82	12,506.4	5,594.6	-1,377.1	462,677.18	774,432.83	32° 16' 11.002 N	103° 34' 45.038 W
18,229.0	90.34	1.52	12,506.3	5,689.5	-1,374.4	462,772.14	774,435.60	32° 16' 11.941 N	103° 34' 44.998 W
18,325.0	89.20	1.15	12,506.7	5,785.5	-1,372.1	462,868.12	774,437.84	32° 16' 12.890 N	103° 34' 44.964 W
18,420.0	89.35	0.29	12,507.9	5,880.5	-1,370.9	462,963.10	774,439.03	32° 16' 13.830 N	103° 34' 44.943 W
18,515.0	90.03	0.63	12,508.4	5,975.5	-1,370.2	463,058.09	774,439.79	32° 16' 14.770 N	103° 34' 44.926 W
18,610.0	89.48	359.92	12,508.8	6,070.5	-1,369.7	463,153.09	774,440.25	32° 16' 15.710 N	103° 34' 44.913 W
18,706.0	91.26	359.58	12,508.2	6,166.5	-1,370.1	463,249.08	774,439.83	32° 16' 16.660 N	103° 34' 44.910 W
18,801.0	92.22	358.95	12,505.3	6,261.4	-1,371.3	463,344.03	774,438.61	32° 16' 17.600 N	103° 34' 44.916 W
18,896.0	92.93	358.81	12,501.1	6,356.3	-1,373.2	463,438.92	774,436.76	32° 16' 18.539 N	103° 34' 44.930 W
18,991.0	93.70	357.15	12,495.6	6,451.1	-1,376.5	463,533.69	774,433.42	32° 16' 19.477 N	103° 34' 44.961 W
19,087.0	93.46	357.44	12,489.6	6,546.8	-1,381.1	463,629.40	774,428.89	32° 16' 20.424 N	103° 34' 45.006 W
19,182.0	92.71	356.67	12,484.5	6,641.5	-1,385.9	463,724.14	774,424.02	32° 16' 21.362 N	103° 34' 45.055 W
19,277.0	92.34	356.30	12,480.3	6,736.2	-1,391.8	463,818.86	774,418.20	32° 16' 22.300 N	103° 34' 45.115 W
19,371.0	93.45	356.39	12,475.5	6,829.9	-1,397.7	463,912.55	774,412.22	32° 16' 23.227 N	103° 34' 45.177 W
19,466.0	91.76	356.63	12,471.2	6,924.6	-1,403.5	464,007.27	774,406.44	32° 16' 24.165 N	103° 34' 45.237 W
19,561.0	90.92	357.86	12,469.0	7,019.5	-1,408.1	464,102.14	774,401.88	32° 16' 25.104 N	103° 34' 45.282 W
19,656.0	90.18	356.86	12,468.1	7,114.4	-1,412.5	464,197.03	774,397.50	32° 16' 26.043 N	103° 34' 45.325 W

Halliburton

Survey Report - Geographic

Company:	Devon Energy Corporation	Local Co-ordinate Reference:	Well Thistle Unit 155H
Project:	Lea County, NM (NAD 83)	TVD Reference:	RKB (Nabors X05) 33' + GL @ 3686.0usft
Site:	Sec 33 - 23S - 33E (Thistle Unit)	MD Reference:	RKB (Nabors X05) 33' + GL @ 3686.0usft
Well:	Thistle Unit 155H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Actual Drilled	Database:	SOUTH US

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
19,752.0	90.00	356.37	12,467.9	7,210.2	-1,418.1	464,292.86	774,391.83	32° 16' 26.992 N	103° 34' 45.383 W
19,847.0	89.48	357.31	12,468.4	7,305.1	-1,423.4	464,387.71	774,386.59	32° 16' 27.931 N	103° 34' 45.437 W
19,942.0	89.82	358.18	12,468.9	7,400.0	-1,427.1	464,482.64	774,382.86	32° 16' 28.870 N	103° 34' 45.472 W
20,037.0	89.91	358.11	12,469.2	7,495.0	-1,430.2	464,577.59	774,379.78	32° 16' 29.810 N	103° 34' 45.501 W
20,133.0	91.29	0.75	12,468.2	7,590.9	-1,431.1	464,673.57	774,378.83	32° 16' 30.760 N	103° 34' 45.504 W
20,228.0	91.54	2.72	12,465.8	7,685.9	-1,428.3	464,768.49	774,381.70	32° 16' 31.699 N	103° 34' 45.463 W
20,323.0	90.89	2.23	12,463.8	7,780.7	-1,424.2	464,863.38	774,385.80	32° 16' 32.638 N	103° 34' 45.407 W
20,418.0	90.28	1.50	12,462.8	7,875.7	-1,421.1	464,958.32	774,388.89	32° 16' 33.577 N	103° 34' 45.363 W
20,513.0	88.83	1.41	12,463.6	7,970.7	-1,418.7	465,053.29	774,391.31	32° 16' 34.516 N	103° 34' 45.327 W
20,609.0	90.71	1.26	12,464.0	8,066.6	-1,416.4	465,149.26	774,393.54	32° 16' 35.466 N	103° 34' 45.293 W
20,704.0	90.28	0.75	12,463.1	8,161.6	-1,414.7	465,244.24	774,395.21	32° 16' 36.405 N	103° 34' 45.266 W
20,799.0	91.82	1.21	12,461.4	8,256.6	-1,413.1	465,339.20	774,396.83	32° 16' 37.345 N	103° 34' 45.240 W
20,894.0	91.76	1.22	12,458.4	8,351.5	-1,411.1	465,434.14	774,398.85	32° 16' 38.284 N	103° 34' 45.208 W
20,989.0	93.05	2.30	12,454.4	8,446.4	-1,408.2	465,529.00	774,401.76	32° 16' 39.223 N	103° 34' 45.167 W
21,085.0	92.56	1.55	12,449.7	8,542.2	-1,405.0	465,624.83	774,404.98	32° 16' 40.171 N	103° 34' 45.121 W
21,180.0	92.59	1.39	12,445.5	8,637.1	-1,402.5	465,719.71	774,407.42	32° 16' 41.109 N	103° 34' 45.085 W
21,275.0	92.25	0.89	12,441.5	8,732.0	-1,400.7	465,814.60	774,409.31	32° 16' 42.048 N	103° 34' 45.055 W
21,370.0	92.06	2.09	12,437.9	8,826.9	-1,398.2	465,909.50	774,411.77	32° 16' 42.987 N	103° 34' 45.019 W
21,465.0	91.54	0.37	12,434.9	8,921.8	-1,396.1	466,004.43	774,413.81	32° 16' 43.926 N	103° 34' 44.987 W
21,561.0	91.48	359.71	12,432.4	9,017.8	-1,396.1	466,100.40	774,413.88	32° 16' 44.876 N	103° 34' 44.979 W
21,656.0	91.23	359.37	12,430.1	9,112.7	-1,396.8	466,195.37	774,413.12	32° 16' 45.816 N	103° 34' 44.980 W
21,751.0	92.07	358.91	12,427.4	9,207.7	-1,398.3	466,290.31	774,411.69	32° 16' 46.755 N	103° 34' 44.989 W
21,846.0	91.97	358.56	12,424.0	9,302.6	-1,400.4	466,385.23	774,409.60	32° 16' 47.695 N	103° 34' 45.005 W
21,941.0	93.39	358.11	12,419.6	9,397.5	-1,403.1	466,480.09	774,406.84	32° 16' 48.634 N	103° 34' 45.030 W
22,036.0	92.59	359.33	12,414.6	9,492.3	-1,405.2	466,574.93	774,404.72	32° 16' 49.572 N	103° 34' 45.047 W
22,132.0	92.65	358.27	12,410.3	9,588.2	-1,407.2	466,670.81	774,402.71	32° 16' 50.521 N	103° 34' 45.062 W
22,227.0	91.02	357.84	12,407.2	9,683.1	-1,410.5	466,765.70	774,399.49	32° 16' 51.460 N	103° 34' 45.092 W
22,322.0	90.65	357.49	12,405.8	9,778.0	-1,414.3	466,860.61	774,395.62	32° 16' 52.400 N	103° 34' 45.129 W
22,417.0	88.89	357.89	12,406.2	9,872.9	-1,418.2	466,955.53	774,391.79	32° 16' 53.339 N	103° 34' 45.166 W
22,512.0	88.86	357.89	12,408.1	9,967.8	-1,421.7	467,050.45	774,388.29	32° 16' 54.279 N	103° 34' 45.199 W
22,607.0	89.82	357.65	12,409.2	10,062.7	-1,425.4	467,145.37	774,384.60	32° 16' 55.218 N	103° 34' 45.234 W
22,702.0	90.59	357.03	12,408.8	10,157.6	-1,429.8	467,240.26	774,380.19	32° 16' 56.157 N	103° 34' 45.278 W
22,797.0	90.65	357.27	12,407.8	10,252.5	-1,434.5	467,335.14	774,375.46	32° 16' 57.097 N	103° 34' 45.325 W
22,852.0	89.85	354.36	12,407.6	10,307.4	-1,438.5	467,389.99	774,371.45	32° 16' 57.640 N	103° 34' 45.367 W
Cross 100' FNL 22852' MD 100.0100' FNL, 2022.1306' FWL of Sec 28									
22,869.0	89.60	353.46	12,407.6	10,324.3	-1,440.3	467,406.89	774,369.65	32° 16' 57.807 N	103° 34' 45.387 W
Final MWD Survey									
22,932.0	89.60	353.46	12,408.1	10,386.8	-1,447.5	467,469.48	774,362.47	32° 16' 58.427 N	103° 34' 45.465 W
Projection to TD 22932' MD 20.4521' FNL, 2013.8238' FWL of Sec 28									

Halliburton
Survey Report - Geographic

Company: Devon Energy Corporation Project: Lea County, NM (NAD 83) Site: Sec 33 - 23S - 33E (Thistle Unit) Well: Thistle Unit 155H Wellbore: Wellbore #1 Design: Actual Drilled	Local Co-ordinate Reference: Well Thistle Unit 155H TVD Reference: RKB (Nabors X05) 33' + GL @ 3686.0usft MD Reference: RKB (Nabors X05) 33' + GL @ 3686.0usft North Reference: Grid Survey Calculation Method: Minimum Curvature Database: SOUTH US	
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Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
234.0	234.0	1.5	2.4	First MWD Survey
6,173.0	6,104.6	-53.2	-685.6	Cross 100' FSL 6173' MD 99.9962' FSL, 2574.7475' FEL of Sec 33
12,045.0	11,912.4	-112.1	-1,415.6	KOP 12045' MD 45.4960' FSL, 1969.4998' FWL of Sec 33
12,335.0	12,193.0	-57.5	-1,420.8	Cross 100' FSL 12335' MD 100.1636' FSL, 1964.6366' FWL of Sec 33
17,672.0	12,503.7	5,132.7	-1,389.1	Sec Crossing 12672' MD 0.2715' FSL, 2034.7818' FWL of Sec 28
22,852.0	12,407.6	10,307.4	-1,438.5	Cross 100' FNL 22852' MD 100.0100' FNL, 2022.1306' FWL of Sec 28
22,869.0	12,407.6	10,324.3	-1,440.3	Final MWD Survey
22,932.0	12,408.1	10,386.8	-1,447.5	Projection to TD 22932' MD 20.4521' FNL, 2013.8238' FWL of Sec 28

Checked By: _____	Approved By: _____	Date: _____
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