



# UL Spruce 1621-21E 332H



## WELL DETAILS: UL Spruce 1621-21E 332H Surveys

GL Elev (ft).: 2834.93						
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
0.00	0.00	10610221.31	1395920.96	31.7452219	-103.2309875	

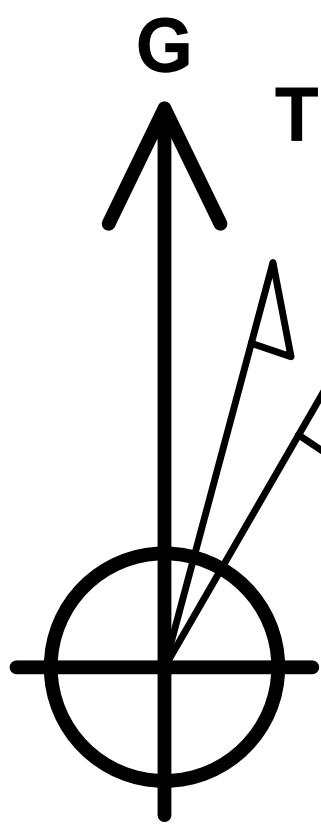
### ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Vsect	Departure	Annotation
11454.00	64.60	169.28	11174.75	848.05	596.48	-577.87	1783.69	X SEC @ 11454.00' MD, 0' FNL, 442' FEL
11563.00	68.88	166.79	11217.76	750.08	617.13	-479.01	1883.83	X FTP @ 11563.00' MD, 100' FNL, 450' FEL
16769.00	89.60	163.81	11516.76	-4239.43	2031.51	4685.92	7072.09	X SEC @ 16769.00' MD, 0' FNL, 490' FEL
21966.00	97.32	162.29	11376.82	-9204.21	3534.84	9859.64	12261.81	X LTP @ 21966.00' MD, 100' FSL, 439' FEL
21974.00	97.32	162.29	11375.80	-9211.77	3537.25	9867.57	12269.74	BHL @ 21974.00' MD, 92' FSL, 439' FEL

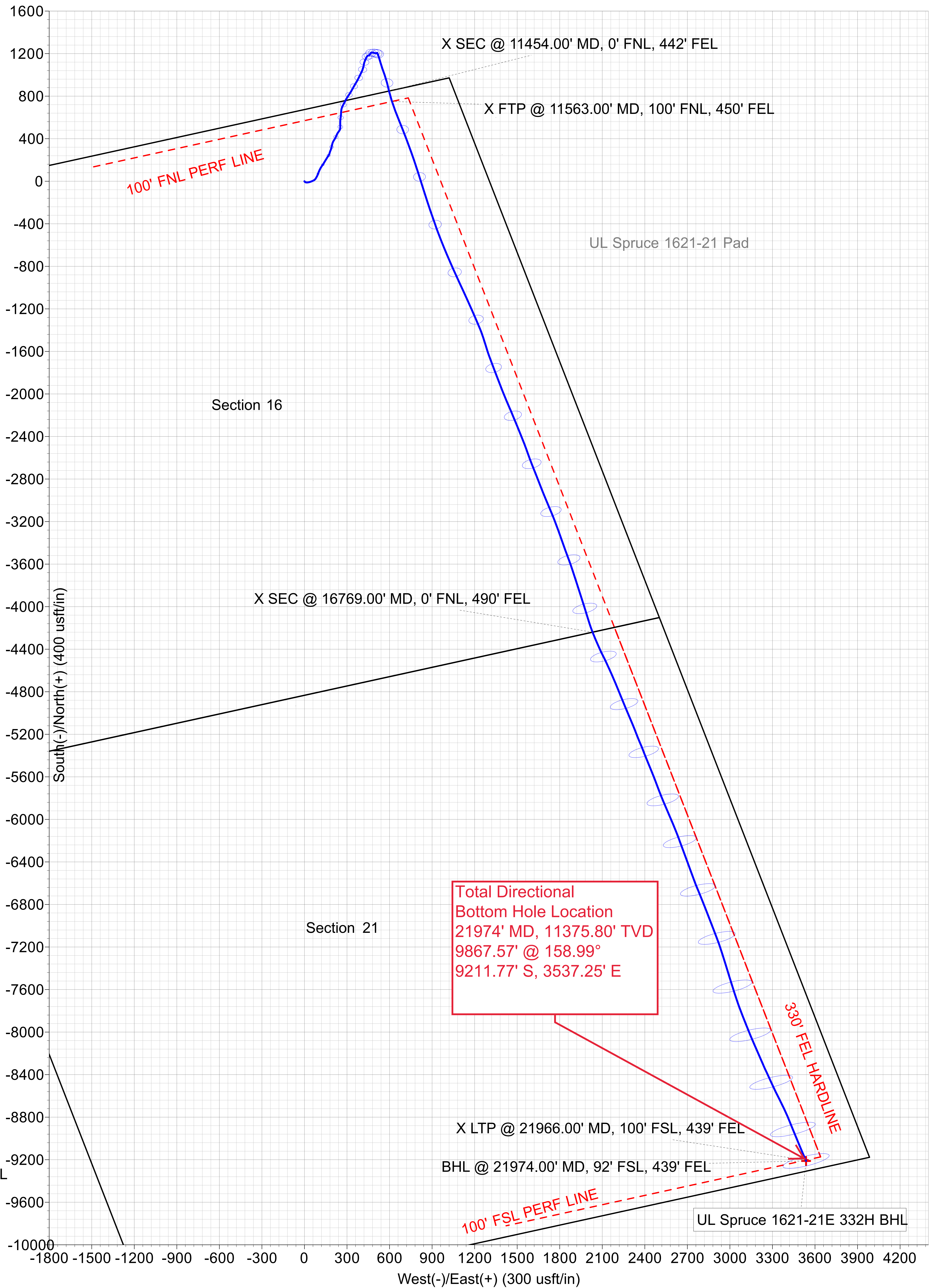
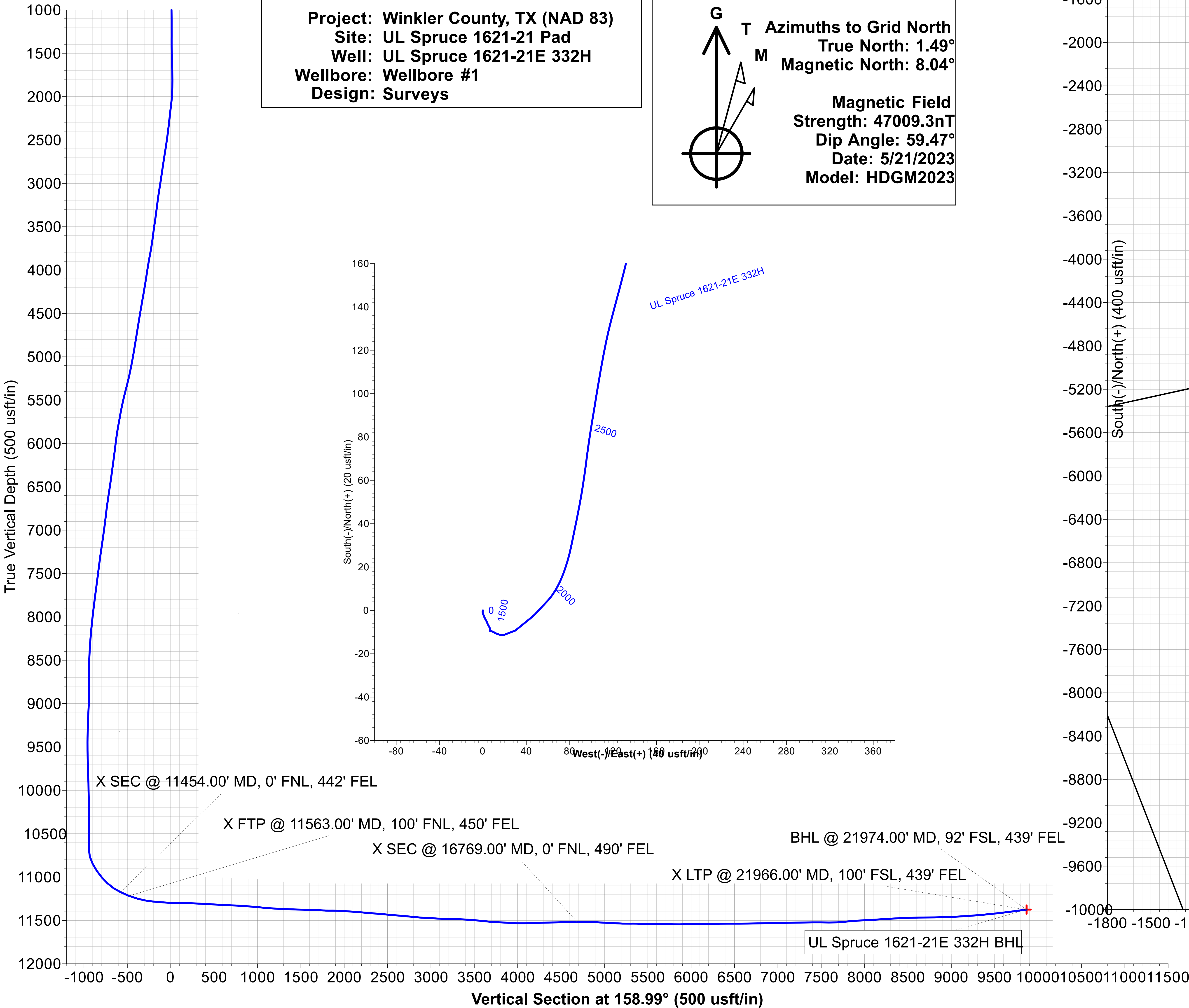
### DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
UL Spruce 1621-21E 332H BHL	11375.80	-9211.77	3537.25	10601009.54	1399458.21	31.7201603	-103.2188438

Project: Winkler County, TX (NAD 83)  
Site: UL Spruce 1621-21 Pad  
Well: UL Spruce 1621-21E 332H  
Wellbore: Wellbore #1  
Design: Surveys



Azimuths to Grid North  
True North: 1.49°  
Magnetic North: 8.04°  
  
Magnetic Field  
Strength: 47009.3nT  
Dip Angle: 59.47°  
Date: 5/21/2023  
Model: HDGM2023



# Devon Energy

Winkler County, TX (NAD 83)

UL Spruce 1621-21 Pad

UL Spruce 1621-21E 332H

Wellbore #1

Surveys



## Standard Survey Report

19 July, 2023

*Total Report Version 1.50*

*COMPASS 5000.16 Build 97*

# Survey Report

<b>Company:</b>	Devon Energy	<b>Local Co-ordinate Reference:</b>	Well UL Spruce 1621-21E 332H
<b>Project:</b>	Winkler County, TX (NAD 83)	<b>TVD Reference:</b>	2834.93' GL + KB 28' @ 2862.93usft
<b>Site:</b>	UL Spruce 1621-21 Pad	<b>MD Reference:</b>	2834.93' GL + KB 28' @ 2862.93usft
<b>Well:</b>	UL Spruce 1621-21E 332H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys	<b>Database:</b>	EDM 5000.1 Single User Db

<b>Project</b>	Winkler County, TX (NAD 83)	<b>System Datum:</b>	Mean Sea Level
<b>Map System:</b>	US State Plane 1983		
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Texas Central Zone		

<b>Site</b>	UL Spruce 1621-21 Pad				
<b>Site Position:</b>		<b>Northing:</b>	10,610,245.29 usft	<b>Latitude:</b>	31.7452874
<b>From:</b>	Map	<b>Easting:</b>	1,395,913.94 usft	<b>Longitude:</b>	-103.2310121
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13-3/16 "		

Well	UL Spruce 1621-21E 332H					
Well Position	+N/-S	0.00 usft	Northing:	10,610,221.31 usft	Latitude:	31.7452220
	+E/-W	0.00 usft	Easting:	1,395,920.96 usft	Longitude:	-103.2309875
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	2,834.93 usft
Grid Convergence:	-1.49 °					

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination</b>	<b>Dip Angle</b>	<b>Field Strength</b>
	HDGM2023	5/21/2023	(°) 6.55	(°) 59.47	(nT) 47,009.30000000

<b>Design</b>	Surveys				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD)</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Direction</b>	
	(usft) 0.00	(usft) 0.00	(usft) 0.00	(°) 158.99	

<b>Survey Program</b>	<b>Date</b>	7/19/2023			
<b>From</b>	<b>To</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
(usft) 199.00	(usft) 21,974.00	Survey #1 (Wellbore #1)	MWD+HRGM	OWSG MWD + HRGM	

Survey													
Measured	INC	AZI	Vertical	Local Coordinates		Map Coordinates		Geo Coordinates		Vertical	Dogleg	Build	Turn
Depth	(°)	(°)	Depth	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Section	Rate	Rate	Rate
(usft)			(usft)	(usft)	(usft)	(usft)	(usft)	(°)	(°)	(usft)	(°/100usft)	(°/100usft)	(°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	10,610,221.31	1,395,920.96	31.7452220	-103.2309875	0.00	0.00	0.00	0.00
199.00	0.26	209.40	199.00	-0.39	-0.22	10,610,220.92	1,395,920.74	31.7452209	-103.2309882	0.29	0.13	0.13	0.00
231.00	0.18	221.35	231.00	-0.49	-0.29	10,610,220.82	1,395,920.67	31.7452206	-103.2309884	0.36	0.29	-0.25	37.34
320.00	0.53	160.35	320.00	-0.99	-0.24	10,610,220.32	1,395,920.72	31.7452192	-103.2309882	0.83	0.53	0.39	-68.54
409.00	0.62	138.29	408.99	-1.73	0.21	10,610,219.58	1,395,921.17	31.7452172	-103.2309867	1.70	0.27	0.10	-24.79
498.00	0.66	145.50	497.99	-2.52	0.83	10,610,218.79	1,395,921.79	31.7452151	-103.2309846	2.64	0.10	0.04	8.10



# Survey Report

<b>Company:</b>	Devon Energy	<b>Local Co-ordinate Reference:</b>	Well UL Spruce 1621-21E 332H
<b>Project:</b>	Winkler County, TX (NAD 83)	<b>TVD Reference:</b>	2834.93' GL + KB 28' @ 2862.93usft
<b>Site:</b>	UL Spruce 1621-21 Pad	<b>MD Reference:</b>	2834.93' GL + KB 28' @ 2862.93usft
<b>Well:</b>	UL Spruce 1621-21E 332H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys	<b>Database:</b>	EDM 5000.1 Single User Db

## Survey

Measured Depth (usft)	INC (°)	AZI (°)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	+E/-W (usft)	Map Coordinates Northing (usft)	Easting (usft)	Geo Coordinates Latitude (°)	Longituge (°)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
588.00	1.05	134.69	587.98	-3.52	1.70	10,610,217.79	1,395,922.66	31.7452124	-103.2309817	3.90	0.47	0.43	-12.01
677.00	1.19	132.41	676.96	-4.72	2.97	10,610,216.59	1,395,923.93	31.7452092	-103.2309776	5.47	0.17	0.16	-2.56
767.00	0.97	142.60	766.94	-5.96	4.12	10,610,215.35	1,395,925.08	31.7452059	-103.2309737	7.04	0.32	-0.24	11.32
857.00	0.70	129.86	856.93	-6.91	5.00	10,610,214.40	1,395,925.96	31.7452033	-103.2309708	8.25	0.36	-0.30	-14.16
1,035.00	0.53	140.40	1,034.92	-8.24	6.36	10,610,213.07	1,395,927.32	31.7451998	-103.2309663	9.98	0.11	-0.10	5.92
1,125.00	0.35	189.53	1,124.92	-8.84	6.58	10,610,212.47	1,395,927.54	31.7451982	-103.2309656	10.61	0.45	-0.20	54.59
1,214.00	0.26	211.68	1,213.92	-9.28	6.43	10,610,212.03	1,395,927.39	31.7451969	-103.2309660	10.97	0.16	-0.10	24.89
1,302.00	0.09	83.71	1,301.92	-9.44	6.40	10,610,211.87	1,395,927.36	31.7451965	-103.2309661	11.10	0.37	-0.19	-145.42
1,392.00	0.13	75.54	1,391.92	-9.40	6.57	10,610,211.91	1,395,927.53	31.7451966	-103.2309656	11.13	0.05	0.04	-9.08
1,495.00	2.11	100.50	1,494.90	-9.72	8.54	10,610,211.59	1,395,929.50	31.7451959	-103.2309592	12.14	1.93	1.92	24.23
1,562.00	3.34	106.39	1,561.82	-10.50	11.63	10,610,210.81	1,395,932.59	31.7451940	-103.2309492	13.97	1.88	1.84	8.79
1,657.00	5.58	91.54	1,656.53	-11.40	18.90	10,610,209.91	1,395,939.86	31.7451920	-103.2309257	17.42	2.63	2.36	-15.63
1,751.00	8.31	70.62	1,749.84	-9.27	29.88	10,610,212.04	1,395,950.84	31.7451986	-103.2308906	19.37	3.91	2.90	-22.26
1,846.00	11.25	66.05	1,843.45	-3.23	44.83	10,610,218.08	1,395,965.79	31.7452163	-103.2308431	19.08	3.20	3.09	-4.81
1,940.00	10.64	59.02	1,935.75	4.96	60.65	10,610,226.27	1,395,981.61	31.7452399	-103.2307929	17.11	1.56	-0.65	-7.48
2,034.00	9.89	38.71	2,028.27	15.73	73.14	10,610,237.04	1,395,994.10	31.7452704	-103.2307536	11.54	3.91	-0.80	-21.61
2,129.00	10.02	22.81	2,121.86	29.72	81.45	10,610,251.03	1,396,002.41	31.7453095	-103.2307280	1.46	2.89	0.14	-16.74
2,224.00	8.70	21.66	2,215.59	44.01	87.31	10,610,265.32	1,396,008.27	31.7453492	-103.2307104	-9.79	1.40	-1.39	-1.21
2,318.00	7.82	17.80	2,308.62	56.71	91.89	10,610,278.02	1,396,012.85	31.7453844	-103.2306967	-20.00	1.11	-0.94	-4.11
2,413.00	9.32	14.10	2,402.56	70.33	95.74	10,610,291.64	1,396,016.70	31.7454221	-103.2306855	-31.33	1.68	1.58	-3.89
2,508.00	9.67	18.32	2,496.26	85.36	100.12	10,610,306.67	1,396,021.08	31.7454637	-103.2306727	-43.80	0.82	0.37	4.44
2,600.00	11.60	18.06	2,586.67	101.49	105.42	10,610,322.80	1,396,026.38	31.7455084	-103.2306570	-56.96	2.10	2.10	-0.28
2,694.00	12.13	21.22	2,678.66	119.68	111.92	10,610,340.99	1,396,032.88	31.7455589	-103.2306376	-71.61	0.89	0.56	3.36
2,788.00	12.62	28.52	2,770.49	137.91	120.40	10,610,359.22	1,396,041.36	31.7456096	-103.2306119	-85.59	1.74	0.52	7.77
2,882.00	12.35	27.02	2,862.26	155.89	129.87	10,610,377.20	1,396,050.83	31.7456597	-103.2305829	-98.98	0.45	-0.29	-1.60
2,977.00	12.09	22.01	2,955.11	174.17	138.21	10,610,395.48	1,396,059.17	31.7457105	-103.2305576	-113.05	1.15	-0.27	-5.27
3,071.00	12.79	26.15	3,046.91	192.63	146.49	10,610,413.94	1,396,067.45	31.7457618	-103.2305326	-127.32	1.21	0.74	4.40
3,165.00	11.34	22.72	3,138.83	210.50	154.64	10,610,431.81	1,396,075.60	31.7458115	-103.2305078	-141.07	1.72	-1.54	-3.65
3,259.00	11.16	26.94	3,231.02	227.13	162.33	10,610,448.44	1,396,083.29	31.7458578	-103.2304845	-153.85	0.90	-0.19	4.49
3,352.00	10.55	26.94	3,322.36	242.75	170.27	10,610,464.06	1,396,091.23	31.7459012	-103.2304603	-165.58	0.66	-0.66	0.00
3,447.00	10.20	13.05	3,415.82	258.70	176.11	10,610,480.01	1,396,097.07	31.7459455	-103.2304428	-178.37	2.65	-0.37	-14.62
3,541.00	9.71	11.82	3,508.41	274.56	179.61	10,610,495.87	1,396,100.57	31.7459893	-103.2304329	-191.93	0.57	-0.52	-1.31
3,636.00	9.05	19.91	3,602.14	289.43	183.80	10,610,510.74	1,396,104.76	31.7460305	-103.2304207	-204.31	1.55	-0.69	8.52
3,730.00	10.11	13.49	3,694.83	304.41	188.24	10,610,525.72	1,396,109.20	31.7460720	-103.2304076	-216.70	1.60	1.13	-6.83
3,825.00	12.22	7.34	3,788.03	322.49	191.47	10,610,543.80	1,396,112.43	31.7461219	-103.2303988	-232.42	2.55	2.22	-6.47
3,919.00	11.87	10.24	3,879.96	341.87	194.46	10,610,563.18	1,396,115.42	31.7461754	-103.2303908	-249.44	0.74	-0.37	3.09
4,013.00	10.81	14.90	3,972.13	359.90	198.45	10,610,581.21	1,396,119.41	31.7462252	-103.2303795	-264.85	1.49	-1.13	4.96
4,108.00	11.91	22.19	4,065.27	377.59	204.44	10,610,598.90	1,396,125.40	31.7462742	-103.2303617	-279.21	1.90	1.16	7.67

# Survey Report

<b>Company:</b>	Devon Energy	<b>Local Co-ordinate Reference:</b>	Well UL Spruce 1621-21E 332H
<b>Project:</b>	Winkler County, TX (NAD 83)	<b>TVD Reference:</b>	2834.93' GL + KB 28' @ 2862.93usft
<b>Site:</b>	UL Spruce 1621-21 Pad	<b>MD Reference:</b>	2834.93' GL + KB 28' @ 2862.93usft
<b>Well:</b>	UL Spruce 1621-21E 332H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys	<b>Database:</b>	EDM 5000.1 Single User Db

## Survey

Measured Depth (usft)	INC (°)	AZI (°)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	+E/-W (usft)	Map Coordinates Northing (usft)	Easting (usft)	Geo Coordinates Latitude (°)	Longituge (°)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,202.00	13.54	26.94	4,156.96	396.38	213.09	10,610,617.69	1,396,134.05	31.7463265	-103.2303354	-293.65	2.06	1.73	5.05
4,296.00	12.62	18.24	4,248.53	415.95	221.29	10,610,637.26	1,396,142.25	31.7463808	-103.2303107	-308.98	2.31	-0.98	-9.26
4,389.00	12.88	16.83	4,339.24	435.52	227.47	10,610,656.83	1,396,148.43	31.7464351	-103.2302925	-325.03	0.44	0.28	-1.52
4,483.00	14.02	26.32	4,430.67	455.75	235.55	10,610,677.06	1,396,156.51	31.7464913	-103.2302682	-341.03	2.64	1.21	10.10
4,577.00	14.15	28.34	4,521.84	476.07	246.06	10,610,697.38	1,396,167.02	31.7465478	-103.2302361	-356.23	0.54	0.14	2.15
4,671.00	10.59	5.75	4,613.70	494.80	252.38	10,610,716.11	1,396,173.34	31.7465998	-103.2302173	-371.44	6.32	-3.79	-24.03
4,765.00	9.45	357.41	4,706.27	511.10	252.90	10,610,732.41	1,396,173.86	31.7466446	-103.2302170	-386.48	1.96	-1.21	-8.87
4,860.00	9.85	359.51	4,799.92	527.02	252.48	10,610,748.33	1,396,173.44	31.7466883	-103.2302197	-401.49	0.56	0.42	2.21
4,954.00	10.37	0.13	4,892.46	543.52	252.43	10,610,764.83	1,396,173.39	31.7467336	-103.2302213	-416.91	0.57	0.55	0.66
5,048.00	10.46	359.87	4,984.91	560.51	252.43	10,610,781.82	1,396,173.39	31.7467803	-103.2302227	-432.77	0.11	0.10	-0.28
5,142.00	11.87	5.32	5,077.14	578.67	253.30	10,610,799.98	1,396,174.26	31.7468303	-103.2302214	-449.41	1.87	1.50	5.80
5,236.00	13.10	5.75	5,168.91	598.90	255.27	10,610,820.21	1,396,176.23	31.7468860	-103.2302168	-467.59	1.31	1.31	0.46
5,330.00	14.33	4.61	5,260.23	621.09	257.27	10,610,842.40	1,396,178.23	31.7469472	-103.2302122	-487.59	1.34	1.31	-1.21
5,425.00	15.74	1.45	5,351.98	645.69	258.54	10,610,867.00	1,396,179.50	31.7470149	-103.2302102	-510.10	1.72	1.48	-3.33
5,518.00	15.91	6.72	5,441.46	670.96	260.35	10,610,892.27	1,396,181.31	31.7470844	-103.2302065	-533.04	1.56	0.18	5.67
5,612.00	15.21	16.39	5,532.03	695.59	265.34	10,610,916.90	1,396,186.30	31.7471525	-103.2301925	-554.25	2.85	-0.74	10.29
5,707.00	14.86	21.84	5,623.78	718.86	273.39	10,610,940.17	1,396,194.35	31.7472170	-103.2301685	-573.08	1.53	-0.37	5.74
5,802.00	13.27	22.28	5,715.93	740.26	282.05	10,610,961.57	1,396,203.01	31.7472764	-103.2301425	-589.95	1.68	-1.67	0.46
5,895.00	13.89	19.11	5,806.33	760.68	289.76	10,610,981.99	1,396,210.72	31.7473331	-103.2301194	-606.26	1.04	0.67	-3.41
5,990.00	11.47	25.97	5,899.01	779.95	297.63	10,611,001.26	1,396,218.59	31.7473866	-103.2300957	-621.42	3.00	-2.55	7.22
6,084.00	10.64	26.85	5,991.26	796.10	305.64	10,611,017.41	1,396,226.60	31.7474315	-103.2300713	-633.62	0.90	-0.88	0.94
6,178.00	10.64	26.23	6,083.65	811.62	313.39	10,611,032.93	1,396,234.35	31.7474748	-103.2300477	-645.34	0.12	0.00	-0.66
6,273.00	10.64	25.35	6,177.02	827.42	321.02	10,611,048.73	1,396,241.98	31.7475187	-103.2300244	-657.35	0.17	0.00	-0.93
6,367.00	10.95	23.51	6,269.35	843.45	328.30	10,611,064.76	1,396,249.26	31.7475633	-103.2300024	-669.70	0.49	0.33	-1.96
6,462.00	10.68	23.25	6,362.66	859.81	335.38	10,611,081.12	1,396,256.34	31.7476088	-103.2299810	-682.44	0.29	-0.28	-0.27
6,556.00	11.03	21.93	6,454.98	876.15	342.17	10,611,097.46	1,396,263.13	31.7476542	-103.2299605	-695.26	0.46	0.37	-1.40
6,650.00	11.65	23.33	6,547.15	893.21	349.29	10,611,114.52	1,396,270.25	31.7477015	-103.2299391	-708.63	0.72	0.66	1.49
6,744.00	12.18	22.72	6,639.12	911.07	356.88	10,611,132.38	1,396,277.84	31.7477512	-103.2299161	-722.59	0.58	0.56	-0.65
6,838.00	10.64	25.53	6,731.26	928.05	364.45	10,611,149.36	1,396,285.41	31.7477984	-103.2298932	-735.73	1.74	-1.64	2.99
6,931.00	8.88	23.77	6,822.91	942.37	371.04	10,611,163.68	1,396,292.00	31.7478382	-103.2298732	-746.73	1.92	-1.89	-1.89
7,025.00	9.63	19.82	6,915.69	956.40	376.63	10,611,177.71	1,396,297.59	31.7478772	-103.2298564	-757.83	1.05	0.80	-4.20
7,120.00	10.59	19.99	7,009.21	972.08	382.31	10,611,193.39	1,396,303.27	31.7479206	-103.2298395	-770.43	1.01	1.01	0.18
7,214.00	10.37	20.52	7,101.65	988.12	388.23	10,611,209.43	1,396,309.19	31.7479651	-103.2298218	-783.28	0.26	-0.23	0.56
7,309.00	10.86	20.70	7,195.02	1,004.50	394.39	10,611,225.81	1,396,315.35	31.7480106	-103.2298033	-796.36	0.52	0.52	0.19
7,403.00	11.12	20.08	7,287.30	1,021.30	400.63	10,611,242.61	1,396,321.59	31.7480572	-103.2297847	-809.81	0.30	0.28	-0.66
7,497.00	9.10	18.24	7,379.83	1,036.87	406.07	10,611,258.18	1,396,327.03	31.7481004	-103.2297685	-822.40	2.18	-2.15	-1.96
7,592.00	8.40	12.35	7,473.73	1,050.79	409.91	10,611,272.10	1,396,330.87	31.7481389	-103.2297573	-834.01	1.20	-0.74	-6.20

# Survey Report

<b>Company:</b>	Devon Energy	<b>Local Co-ordinate Reference:</b>	Well UL Spruce 1621-21E 332H
<b>Project:</b>	Winkler County, TX (NAD 83)	<b>TVD Reference:</b>	2834.93' GL + KB 28' @ 2862.93usft
<b>Site:</b>	UL Spruce 1621-21 Pad	<b>MD Reference:</b>	2834.93' GL + KB 28' @ 2862.93usft
<b>Well:</b>	UL Spruce 1621-21E 332H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys	<b>Database:</b>	EDM 5000.1 Single User Db

## Survey

Measured Depth (usft)	INC (°)	AZI (°)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	+E/-W (usft)	Map Coordinates Northing (usft)	Easting (usft)	Geo Coordinates Latitude (°)	Longitude (°)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
7,686.00	9.41	14.02	7,566.59	1,064.95	413.24	10,611,286.26	1,396,334.20	31.7481781	-103.2297478	-846.04	1.11	1.07	1.78
7,780.00	8.70	10.94	7,659.42	1,079.39	416.45	10,611,300.70	1,396,337.41	31.7482180	-103.2297387	-858.37	0.91	-0.76	-3.28
7,875.00	7.69	4.61	7,753.45	1,092.78	418.32	10,611,314.09	1,396,339.28	31.7482549	-103.2297338	-870.19	1.42	-1.06	-6.66
7,969.00	8.53	9.27	7,846.51	1,105.93	419.95	10,611,327.24	1,396,340.91	31.7482911	-103.2297296	-881.89	1.13	0.89	4.96
8,063.00	9.01	14.72	7,939.41	1,119.93	422.95	10,611,341.24	1,396,343.91	31.7483298	-103.2297212	-893.88	1.02	0.51	5.80
8,156.00	7.30	17.09	8,031.47	1,132.62	426.53	10,611,353.93	1,396,347.49	31.7483650	-103.2297107	-904.44	1.87	-1.84	2.55
8,251.00	6.51	17.36	8,125.78	1,143.53	429.91	10,611,364.84	1,396,350.87	31.7483952	-103.2297007	-913.42	0.83	-0.83	0.28
8,345.00	6.37	17.44	8,219.19	1,153.59	433.07	10,611,374.90	1,396,354.03	31.7484231	-103.2296914	-921.68	0.15	-0.15	0.09
8,440.00	5.93	22.19	8,313.64	1,163.16	436.50	10,611,384.47	1,396,357.46	31.7484496	-103.2296812	-929.38	0.71	-0.46	5.00
8,535.00	4.53	28.69	8,408.24	1,171.00	440.15	10,611,392.31	1,396,361.11	31.7484714	-103.2296701	-935.39	1.60	-1.47	6.84
8,629.00	2.64	33.62	8,502.06	1,176.06	443.13	10,611,397.37	1,396,364.09	31.7484855	-103.2296609	-939.04	2.04	-2.01	5.24
8,722.00	2.15	38.19	8,594.97	1,179.21	445.40	10,611,400.52	1,396,366.36	31.7484944	-103.2296539	-941.18	0.57	-0.53	4.91
8,817.00	2.29	56.82	8,689.90	1,181.65	448.09	10,611,402.96	1,396,369.05	31.7485012	-103.2296455	-942.49	0.77	0.15	19.61
8,911.00	2.24	85.91	8,783.83	1,182.81	451.49	10,611,404.12	1,396,372.45	31.7485047	-103.2296346	-942.35	1.21	-0.05	30.95
9,006.00	2.46	74.49	8,878.75	1,183.49	455.31	10,611,404.80	1,396,376.27	31.7485068	-103.2296224	-941.62	0.54	0.23	-12.02
9,100.00	3.08	22.72	8,972.66	1,186.36	458.23	10,611,407.67	1,396,379.19	31.7485149	-103.2296133	-943.25	2.64	0.66	-55.07
9,195.00	3.65	22.45	9,067.49	1,191.50	460.37	10,611,412.81	1,396,381.33	31.7485292	-103.2296068	-947.29	0.60	0.60	-0.28
9,289.00	3.38	22.81	9,161.32	1,196.82	462.59	10,611,418.13	1,396,383.55	31.7485440	-103.2296001	-951.46	0.29	-0.29	0.38
9,384.00	3.60	34.85	9,256.14	1,201.85	465.38	10,611,423.16	1,396,386.34	31.7485580	-103.2295916	-955.15	0.80	0.23	12.67
9,479.00	2.99	44.43	9,350.99	1,206.07	468.82	10,611,427.38	1,396,389.78	31.7485698	-103.2295809	-957.86	0.86	-0.64	10.08
9,573.00	2.51	63.32	9,444.88	1,208.75	472.37	10,611,430.06	1,396,393.33	31.7485774	-103.2295697	-959.08	1.08	-0.51	20.10
9,667.00	2.90	81.34	9,538.78	1,210.03	476.56	10,611,431.34	1,396,397.52	31.7485813	-103.2295563	-958.78	0.99	0.41	19.17
9,762.00	3.38	86.61	9,633.63	1,210.55	481.73	10,611,431.86	1,396,402.69	31.7485831	-103.2295397	-957.41	0.59	0.51	5.55
9,857.00	2.81	112.19	9,728.50	1,209.84	486.68	10,611,431.15	1,396,407.64	31.7485815	-103.2295237	-954.97	1.56	-0.60	26.93
9,951.00	2.55	133.64	9,822.40	1,207.53	490.33	10,611,428.84	1,396,411.29	31.7485754	-103.2295118	-951.50	1.10	-0.28	22.82
10,045.00	2.02	113.07	9,916.32	1,205.44	493.37	10,611,426.75	1,396,414.33	31.7485699	-103.2295019	-948.46	1.03	-0.56	-21.88
10,140.00	2.59	90.13	10,011.25	1,204.77	497.06	10,611,426.08	1,396,418.02	31.7485683	-103.2294899	-946.52	1.13	0.60	-24.15
10,235.00	2.11	103.67	10,106.17	1,204.36	500.90	10,611,425.67	1,396,421.86	31.7485674	-103.2294775	-944.76	0.77	-0.51	14.25
10,329.00	2.33	97.34	10,200.10	1,203.70	504.48	10,611,425.01	1,396,425.44	31.7485659	-103.2294660	-942.86	0.35	0.23	-6.73
10,423.00	1.58	107.53	10,294.04	1,203.07	507.61	10,611,424.38	1,396,428.57	31.7485644	-103.2294559	-941.15	0.88	-0.80	10.84
10,518.00	0.66	67.54	10,389.03	1,202.88	509.36	10,611,424.19	1,396,430.32	31.7485640	-103.2294502	-940.35	1.22	-0.97	-42.09
10,610.00	1.14	39.94	10,481.02	1,203.79	510.44	10,611,425.10	1,396,431.40	31.7485665	-103.2294468	-940.80	0.69	0.52	-30.00
10,705.00	1.45	31.86	10,575.99	1,205.53	511.68	10,611,426.84	1,396,432.64	31.7485714	-103.2294430	-941.99	0.38	0.33	-8.51
10,799.00	1.85	14.46	10,669.95	1,208.01	512.69	10,611,429.32	1,396,433.65	31.7485783	-103.2294399	-943.94	0.68	0.43	-18.51
10,894.00	15.21	162.73	10,763.94	1,197.52	516.80	10,611,418.83	1,396,437.76	31.7485498	-103.2294258	-932.68	17.70	14.06	156.07
10,988.00	27.91	166.77	10,851.19	1,164.19	525.53	10,611,385.50	1,396,446.49	31.7484588	-103.2293950	-898.43	13.59	13.51	4.30
11,081.00	34.59	168.18	10,930.65	1,117.11	535.93	10,611,338.42	1,396,456.89	31.7483302	-103.2293576	-850.75	7.23	7.18	1.52
11,176.00	40.70	165.89	11,005.84	1,060.62	549.02	10,611,281.93	1,396,469.98	31.7481759	-103.2293108	-793.32	6.60	6.43	-2.41

# Survey Report

<b>Company:</b>	Devon Energy	<b>Local Co-ordinate Reference:</b>	Well UL Spruce 1621-21E 332H
<b>Project:</b>	Winkler County, TX (NAD 83)	<b>TVD Reference:</b>	2834.93' GL + KB 28' @ 2862.93usft
<b>Site:</b>	UL Spruce 1621-21 Pad	<b>MD Reference:</b>	2834.93' GL + KB 28' @ 2862.93usft
<b>Well:</b>	UL Spruce 1621-21E 332H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys	<b>Database:</b>	EDM 5000.1 Single User Db

## Survey

Measured Depth (usft)	INC (°)	AZI (°)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	+E/-W (usft)	Map Coordinates Northing (usft)	Easting (usft)	Geo Coordinates Latitude (°)	Longitude (°)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,270.00	47.21	163.87	11,073.48	997.69	566.09	10,611,219.00	1,396,487.05	31.7480042	-103.2292506	-728.46	7.08	6.93	-2.15
11,364.00	57.23	170.20	11,131.03	925.39	582.46	10,611,146.70	1,396,503.42	31.7478066	-103.2291919	-655.09	11.91	10.66	6.73
11,454.00	64.60	169.28	11,174.75	848.05	596.48	10,611,069.36	1,396,517.44	31.7475951	-103.2291403	-577.87	8.24	8.19	-1.02
X SEC @ 11454.00' MD, 0' FNL, 442' FEL													
11,459.00	65.01	169.23	11,176.88	843.61	597.32	10,611,064.92	1,396,518.28	31.7475830	-103.2291373	-573.42	8.24	8.19	-0.95
11,553.00	68.31	167.12	11,214.12	759.15	615.02	10,610,980.46	1,396,535.98	31.7473522	-103.2290733	-488.23	4.07	3.51	-2.24
11,563.00	68.88	166.79	11,217.77	750.08	617.13	10,610,971.39	1,396,538.09	31.7473274	-103.2290657	-479.01	6.44	5.67	-3.29
X FTP @ 11563.00' MD, 100' FNL, 450' FEL													
11,661.00	74.46	163.69	11,248.58	660.18	640.85	10,610,881.49	1,396,561.81	31.7470820	-103.2289819	-386.58	6.44	5.70	-3.16
11,753.00	79.21	163.08	11,269.53	574.37	666.46	10,610,795.68	1,396,587.42	31.7468481	-103.2288924	-297.29	5.20	5.16	-0.66
11,846.00	84.35	163.78	11,282.82	486.18	692.70	10,610,707.49	1,396,613.66	31.7466076	-103.2288006	-205.55	5.58	5.53	0.75
11,938.00	85.80	163.69	11,290.72	398.19	718.37	10,610,619.50	1,396,639.33	31.7463676	-103.2287107	-114.21	1.58	1.58	-0.10
12,030.00	86.51	165.19	11,296.89	309.76	742.99	10,610,531.07	1,396,663.95	31.7461264	-103.2286241	-22.83	1.80	0.77	1.63
12,123.00	88.48	165.36	11,300.95	219.91	766.61	10,610,441.22	1,396,687.57	31.7458811	-103.2285406	69.52	2.13	2.12	0.18
12,215.00	90.07	165.98	11,302.12	130.78	789.38	10,610,352.09	1,396,710.34	31.7456378	-103.2284600	160.88	1.85	1.73	0.67
12,307.00	87.87	166.51	11,303.77	41.44	811.25	10,610,262.75	1,396,732.21	31.7453939	-103.2283822	252.13	2.46	-2.39	0.58
12,400.00	87.38	167.03	11,307.63	-49.02	832.51	10,610,172.29	1,396,753.47	31.7451469	-103.2283062	344.19	0.77	-0.53	0.56
12,492.00	86.90	166.51	11,312.22	-138.46	853.54	10,610,082.85	1,396,774.50	31.7449026	-103.2282311	435.23	0.77	-0.52	-0.57
12,583.00	85.76	166.07	11,318.04	-226.69	875.06	10,609,994.62	1,396,796.02	31.7446617	-103.2281545	525.31	1.34	-1.25	-0.48
12,675.00	87.25	165.10	11,323.65	-315.62	897.92	10,609,905.69	1,396,818.88	31.7444189	-103.2280735	616.53	1.93	1.62	-1.05
12,770.00	88.22	165.54	11,327.40	-407.45	921.98	10,609,813.86	1,396,842.94	31.7441683	-103.2279885	710.87	1.12	1.02	0.46
12,864.00	86.46	163.69	11,331.77	-497.97	946.89	10,609,723.34	1,396,867.85	31.7439213	-103.2279008	804.31	2.71	-1.87	-1.97
12,958.00	85.23	163.52	11,338.58	-587.91	973.35	10,609,633.40	1,396,894.31	31.7436760	-103.2278082	897.76	1.32	-1.31	-0.18
13,053.00	84.84	162.55	11,346.80	-678.44	1,000.97	10,609,542.87	1,396,921.93	31.7434292	-103.2277118	992.17	1.10	-0.41	-1.02
13,146.00	84.53	161.76	11,355.41	-766.58	1,029.34	10,609,454.73	1,396,950.30	31.7431890	-103.2276132	1,084.62	0.91	-0.33	-0.85
13,241.00	86.73	161.06	11,362.65	-856.35	1,059.54	10,609,364.96	1,396,980.50	31.7429445	-103.2275086	1,179.26	2.43	2.32	-0.74
13,336.00	87.08	160.71	11,367.78	-945.99	1,090.60	10,609,275.32	1,397,011.56	31.7427004	-103.2274012	1,274.07	0.52	0.37	-0.37
13,429.00	88.31	161.15	11,371.52	-1,033.81	1,120.96	10,609,187.50	1,397,041.92	31.7424612	-103.2272962	1,366.94	1.40	1.32	0.47
13,523.00	87.91	161.15	11,374.62	-1,122.72	1,151.32	10,609,098.59	1,397,072.28	31.7422191	-103.2271911	1,460.82	0.43	-0.43	0.00
13,617.00	88.70	161.67	11,377.40	-1,211.77	1,181.27	10,609,009.54	1,397,102.23	31.7419765	-103.2270874	1,554.69	1.01	0.84	0.55
13,711.00	88.13	162.11	11,380.00	-1,301.08	1,210.48	10,608,920.23	1,397,131.44	31.7417332	-103.2269860	1,648.54	0.77	-0.61	0.47
13,805.00	86.11	162.82	11,384.73	-1,390.60	1,238.76	10,608,830.71	1,397,159.72	31.7414892	-103.2268875	1,742.24	2.28	-2.15	0.76
13,899.00	90.33	166.86	11,387.65	-1,481.24	1,263.32	10,608,740.07	1,397,184.28	31.7412419	-103.2268010	1,835.66	6.21	4.49	4.30
13,994.00	87.87	166.77	11,389.14	-1,573.72	1,284.98	10,608,647.59	1,397,205.94	31.7409893	-103.2267236	1,929.76	2.59	-2.59	-0.09
14,088.00	85.71	164.31	11,394.40	-1,664.59	1,308.41	10,608,556.72	1,397,229.37	31.7407412	-103.2266406	2,022.99	3.48	-2.30	-2.62
14,183.00	85.54	164.13	11,401.65	-1,755.74	1,334.17	10,608,465.57	1,397,255.13	31.7404926	-103.2265502	2,117.32	0.26	-0.18	-0.19
14,277.00	85.76	164.05	11,408.78	-1,845.88	1,359.86	10,608,375.43	1,397,280.82	31.7402467	-103.2264600	2,210.68	0.25	0.23	-0.09
14,371.00	85.32	163.78	11,416.09	-1,935.93	1,385.83	10,608,285.38	1,397,306.79	31.7400011	-103.2263690	2,304.05	0.55	-0.47	-0.29

# Survey Report

<b>Company:</b>	Devon Energy	<b>Local Co-ordinate Reference:</b>	Well UL Spruce 1621-21E 332H
<b>Project:</b>	Winkler County, TX (NAD 83)	<b>TVD Reference:</b>	2834.93' GL + KB 28' @ 2862.93usft
<b>Site:</b>	UL Spruce 1621-21 Pad	<b>MD Reference:</b>	2834.93' GL + KB 28' @ 2862.93usft
<b>Well:</b>	UL Spruce 1621-21E 332H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys	<b>Database:</b>	EDM 5000.1 Single User Db

## Survey

Measured Depth (usft)	INC (°)	AZI (°)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	+E/-W (usft)	Map Coordinates Northing (usft)	Easting (usft)	Geo Coordinates Latitude (°)	Longitude (°)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
14,466.00	84.40	162.82	11,424.60	-2,026.55	1,413.02	10,608,194.76	1,397,333.98	31.7397540	-103.2262740	2,398.40	1.40	-0.97	-1.01
14,560.00	85.05	161.76	11,433.24	-2,115.72	1,441.49	10,608,105.59	1,397,362.45	31.7395110	-103.2261750	2,491.84	1.32	0.69	-1.13
14,654.00	85.10	162.90	11,441.31	-2,204.95	1,469.92	10,608,016.36	1,397,390.88	31.7392679	-103.2260761	2,585.33	1.21	0.05	1.21
14,749.00	85.23	162.64	11,449.32	-2,295.36	1,497.96	10,607,925.95	1,397,418.92	31.7390214	-103.2259784	2,679.79	0.31	0.14	-0.27
14,844.00	84.57	163.25	11,457.77	-2,385.82	1,525.71	10,607,835.49	1,397,446.67	31.7387748	-103.2258816	2,774.19	0.94	-0.69	0.64
14,938.00	84.70	163.78	11,466.55	-2,475.56	1,552.27	10,607,745.75	1,397,473.23	31.7385301	-103.2257887	2,867.48	0.58	0.14	0.56
15,032.00	88.22	165.45	11,472.36	-2,566.01	1,577.15	10,607,655.30	1,397,498.11	31.7382833	-103.2257011	2,960.84	4.14	3.74	1.78
15,126.00	85.23	163.17	11,477.73	-2,656.34	1,602.52	10,607,564.97	1,397,523.48	31.7380369	-103.2256120	3,054.26	4.00	-3.18	-2.43
15,220.00	90.07	163.96	11,481.58	-2,746.40	1,629.09	10,607,474.91	1,397,550.05	31.7377913	-103.2255190	3,147.85	5.22	5.15	0.84
15,314.00	87.08	163.34	11,483.92	-2,836.56	1,655.54	10,607,384.75	1,397,576.50	31.7375454	-103.2254264	3,241.50	3.25	-3.18	-0.66
15,408.00	87.96	163.52	11,487.99	-2,926.57	1,682.32	10,607,294.74	1,397,603.28	31.7373000	-103.2253328	3,335.13	0.96	0.94	0.19
15,503.00	86.73	162.11	11,492.39	-3,017.23	1,710.35	10,607,204.08	1,397,631.31	31.7370529	-103.2252350	3,429.82	1.97	-1.29	-1.48
15,596.00	84.22	162.55	11,499.72	-3,105.55	1,738.49	10,607,115.76	1,397,659.45	31.7368122	-103.2251372	3,522.36	2.74	-2.70	0.47
15,690.00	84.00	163.96	11,509.37	-3,195.09	1,765.43	10,607,026.22	1,397,686.39	31.7365680	-103.2250431	3,615.61	1.51	-0.23	1.50
15,785.00	86.07	164.92	11,517.59	-3,286.26	1,790.82	10,606,935.05	1,397,711.78	31.7363193	-103.2249538	3,709.82	2.40	2.18	1.01
15,879.00	87.08	165.19	11,523.21	-3,376.92	1,815.02	10,606,844.39	1,397,735.98	31.7360719	-103.2248684	3,803.12	1.11	1.07	0.29
15,974.00	86.59	164.92	11,528.45	-3,468.56	1,839.48	10,606,752.75	1,397,760.44	31.7358218	-103.2247821	3,897.45	0.59	-0.52	-0.28
16,069.00	86.99	164.13	11,533.77	-3,559.97	1,864.79	10,606,661.34	1,397,785.75	31.7355724	-103.2246931	3,991.85	0.93	0.42	-0.83
16,163.00	92.75	166.42	11,533.99	-3,650.84	1,888.67	10,606,570.47	1,397,809.63	31.7353244	-103.2246087	4,085.24	6.59	6.13	2.44
16,257.00	92.00	166.24	11,530.09	-3,742.10	1,910.86	10,606,479.21	1,397,831.82	31.7350752	-103.2245297	4,178.39	0.82	-0.80	-0.19
16,351.00	91.60	166.33	11,527.14	-3,833.38	1,933.14	10,606,387.93	1,397,854.10	31.7348260	-103.2244505	4,271.59	0.44	-0.43	0.10
16,445.00	90.86	166.51	11,525.12	-3,924.73	1,955.20	10,606,296.58	1,397,876.16	31.7345765	-103.2243719	4,364.78	0.81	-0.79	0.19
16,539.00	91.52	166.95	11,523.17	-4,016.20	1,976.78	10,606,205.11	1,397,897.74	31.7343267	-103.2242949	4,457.90	0.84	0.70	0.47
16,634.00	92.75	167.12	11,519.63	-4,108.71	1,998.07	10,606,112.60	1,397,919.03	31.7340740	-103.2242186	4,551.90	1.31	1.29	0.18
16,728.00	90.64	165.19	11,516.85	-4,199.93	2,020.56	10,606,021.38	1,397,941.52	31.7338249	-103.2241387	4,645.12	3.04	-2.24	-2.05
16,769.00	89.60	163.81	11,516.76	-4,239.43	2,031.51	10,605,981.88	1,397,952.47	31.7337171	-103.2241002	4,685.92	4.22	-2.53	-3.37
<b>X SEC @ 16769.00' MD, 0' FNL, 490' FEL</b>													
16,822.00	88.26	162.02	11,517.75	-4,290.08	2,047.08	10,605,931.23	1,397,968.04	31.7335791	-103.2240459	4,738.79	4.22	-2.53	-3.37
16,917.00	89.85	161.85	11,519.32	-4,380.38	2,076.54	10,605,840.93	1,397,997.50	31.7333330	-103.2239436	4,833.65	1.68	1.67	-0.18
17,011.00	86.11	159.04	11,522.63	-4,468.88	2,107.97	10,605,752.43	1,398,028.93	31.7330921	-103.2238352	4,927.53	4.98	-3.98	-2.99
17,105.00	87.87	161.67	11,527.57	-4,557.28	2,139.52	10,605,664.03	1,398,060.48	31.7328514	-103.2237263	5,021.36	3.36	1.87	2.80
17,199.00	86.07	161.32	11,532.54	-4,646.29	2,169.31	10,605,575.02	1,398,090.27	31.7326089	-103.2236231	5,115.14	1.95	-1.91	-0.37
17,293.00	88.44	162.73	11,537.04	-4,735.59	2,198.28	10,605,485.72	1,398,119.24	31.7323656	-103.2235225	5,208.89	2.93	2.52	1.50
17,388.00	90.86	163.34	11,537.62	-4,826.45	2,226.00	10,605,394.86	1,398,146.96	31.7321179	-103.2234258	5,303.65	2.63	2.55	0.64
17,482.00	87.82	162.38	11,538.70	-4,916.26	2,253.70	10,605,305.05	1,398,174.66	31.7318731	-103.2233292	5,397.41	3.39	-3.23	-1.02
17,576.00	89.10	162.64	11,541.23	-5,005.88	2,281.94	10,605,215.43	1,398,202.90	31.7316288	-103.2232309	5,491.20	1.39	1.36	0.28
17,670.00	88.26	162.20	11,543.39	-5,095.46	2,310.32	10,605,125.85	1,398,231.28	31.7313846	-103.2231322	5,585.01	1.01	-0.89	-0.47



# Survey Report

<b>Company:</b>	Devon Energy	<b>Local Co-ordinate Reference:</b>	Well UL Spruce 1621-21E 332H
<b>Project:</b>	Winkler County, TX (NAD 83)	<b>TVD Reference:</b>	2834.93' GL + KB 28' @ 2862.93usft
<b>Site:</b>	UL Spruce 1621-21 Pad	<b>MD Reference:</b>	2834.93' GL + KB 28' @ 2862.93usft
<b>Well:</b>	UL Spruce 1621-21E 332H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys	<b>Database:</b>	EDM 5000.1 Single User Db

## Survey

Measured Depth (usft)	INC (°)	AZI (°)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	+E/-W (usft)	Map Coordinates Northing (usft)	Easting (usft)	Geo Coordinates Latitude (°)	Longitude (°)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
17,764.00	91.34	164.13	11,543.72	-5,185.42	2,337.54	10,605,035.89	1,398,258.50	31.7311394	-103.2230372	5,678.74	3.87	3.28	2.05
17,858.00	87.12	162.11	11,544.98	-5,275.34	2,364.82	10,604,945.98	1,398,285.78	31.7308942	-103.2229419	5,772.46	4.98	-4.49	-2.15
17,952.00	91.56	163.78	11,546.07	-5,365.17	2,392.38	10,604,856.14	1,398,313.34	31.7306493	-103.2228458	5,866.21	5.05	4.72	1.78
18,046.00	90.90	163.25	11,544.05	-5,455.28	2,419.05	10,604,766.03	1,398,340.01	31.7304036	-103.2227525	5,959.89	0.90	-0.70	-0.56
18,140.00	88.44	162.46	11,544.59	-5,545.10	2,446.76	10,604,676.21	1,398,367.72	31.7301588	-103.2226559	6,053.67	2.75	-2.62	-0.84
18,235.00	92.79	164.31	11,543.57	-5,636.10	2,473.91	10,604,585.21	1,398,394.87	31.7299106	-103.2225610	6,148.36	4.98	4.58	1.95
18,329.00	90.90	164.05	11,540.54	-5,726.49	2,499.53	10,604,494.82	1,398,420.49	31.7296641	-103.2224711	6,241.92	2.03	-2.01	-0.28
18,423.00	91.60	162.82	11,538.49	-5,816.56	2,526.32	10,604,404.75	1,398,447.28	31.7294184	-103.2223775	6,335.61	1.51	0.74	-1.31
18,517.00	89.58	162.38	11,537.52	-5,906.25	2,554.42	10,604,315.06	1,398,475.38	31.7291740	-103.2222796	6,429.42	2.20	-2.15	-0.47
18,612.00	89.93	161.41	11,537.93	-5,996.55	2,583.95	10,604,224.76	1,398,504.91	31.7289280	-103.2221771	6,524.29	1.09	0.37	-1.02
18,645.00	90.07	162.55	11,537.93	-6,027.93	2,594.15	10,604,193.38	1,398,515.11	31.7288425	-103.2221417	6,557.25	3.48	0.42	3.45
18,740.00	91.16	163.87	11,536.91	-6,118.87	2,621.59	10,604,102.44	1,398,542.55	31.7285945	-103.2220459	6,651.98	1.80	1.15	1.39
18,833.00	91.12	164.31	11,535.06	-6,208.29	2,647.08	10,604,013.02	1,398,568.04	31.7283506	-103.2219565	6,744.59	0.47	-0.04	0.47
18,928.00	91.21	164.49	11,533.13	-6,299.77	2,672.62	10,603,921.54	1,398,593.58	31.7281010	-103.2218667	6,839.15	0.21	0.09	0.19
19,022.00	90.55	164.49	11,531.69	-6,390.34	2,697.76	10,603,830.97	1,398,618.72	31.7278539	-103.2217783	6,932.71	0.70	-0.70	0.00
19,116.00	92.40	164.93	11,529.27	-6,480.97	2,722.54	10,603,740.34	1,398,643.50	31.7276066	-103.2216911	7,026.21	2.02	1.97	0.47
19,211.00	90.24	164.22	11,527.08	-6,572.52	2,747.80	10,603,648.79	1,398,668.76	31.7273568	-103.2216022	7,120.72	2.39	-2.27	-0.75
19,305.00	90.86	162.64	11,526.18	-6,662.61	2,774.60	10,603,558.70	1,398,695.56	31.7271112	-103.2215085	7,214.43	1.81	0.66	-1.68
19,398.00	90.86	163.69	11,524.78	-6,751.61	2,801.53	10,603,469.70	1,398,722.49	31.7268685	-103.2214145	7,307.18	1.13	0.00	1.13
19,493.00	90.99	163.08	11,523.25	-6,842.64	2,828.69	10,603,378.67	1,398,749.65	31.7266203	-103.2213196	7,401.88	0.66	0.14	-0.64
19,587.00	89.10	164.22	11,523.17	-6,932.83	2,855.15	10,603,288.48	1,398,776.11	31.7263744	-103.2212270	7,495.57	2.35	-2.01	1.21
19,681.00	88.75	163.87	11,524.94	-7,023.19	2,880.99	10,603,198.12	1,398,801.95	31.7261279	-103.2211364	7,589.19	0.53	-0.37	-0.37
19,776.00	93.36	163.78	11,523.19	-7,114.39	2,907.44	10,603,106.92	1,398,828.40	31.7258792	-103.2210437	7,683.81	4.85	4.85	-0.09
19,870.00	96.48	166.07	11,515.13	-7,204.80	2,931.80	10,603,016.51	1,398,852.76	31.7256324	-103.2209578	7,776.94	4.11	3.32	2.44
19,964.00	93.63	166.59	11,506.84	-7,295.78	2,953.92	10,602,925.53	1,398,874.88	31.7253840	-103.2208791	7,869.80	3.08	-3.03	0.55
20,058.00	93.63	167.30	11,500.89	-7,387.16	2,975.11	10,602,834.15	1,398,896.07	31.7251344	-103.2208034	7,962.71	0.75	0.00	0.76
20,153.00	93.19	166.77	11,495.24	-7,479.58	2,996.39	10,602,741.73	1,398,917.35	31.7248820	-103.2207272	8,056.61	0.72	-0.46	-0.56
20,248.00	92.92	166.59	11,490.18	-7,571.89	3,018.25	10,602,649.42	1,398,939.21	31.7246298	-103.2206493	8,150.62	0.34	-0.28	-0.19
20,342.00	93.45	166.68	11,484.96	-7,663.20	3,039.94	10,602,558.11	1,398,960.90	31.7243805	-103.2205719	8,243.64	0.57	0.56	0.10
20,437.00	93.76	164.57	11,478.98	-7,755.04	3,063.48	10,602,466.27	1,398,984.44	31.7241298	-103.2204886	8,337.81	2.24	0.33	-2.22
20,531.00	92.75	163.61	11,473.64	-7,845.29	3,089.20	10,602,376.02	1,399,010.16	31.7238836	-103.2203983	8,431.29	1.48	-1.07	-1.02
20,625.00	91.65	163.25	11,470.04	-7,935.32	3,115.99	10,602,285.99	1,399,036.95	31.7236381	-103.2203047	8,524.94	1.23	-1.17	-0.38
20,719.00	91.21	162.90	11,467.69	-8,025.22	3,143.35	10,602,196.09	1,399,064.31	31.7233930	-103.2202092	8,618.67	0.60	-0.47	-0.37
20,813.00	89.76	161.76	11,466.89	-8,114.78	3,171.88	10,602,106.53	1,399,092.84	31.7231489	-103.2201100	8,712.50	1.96	-1.54	-1.21
20,908.00	90.86	162.02	11,466.38	-8,205.07	3,201.41	10,602,016.24	1,399,122.37	31.7229029	-103.2200075	8,807.38	1.19	1.16	0.27
21,002.00	92.22	162.02	11,463.85	-8,294.44	3,230.41	10,601,926.87	1,399,151.37	31.7226593	-103.2199068	8,901.21	1.45	1.45	0.00
21,096.00	91.91	160.35	11,460.47	-8,383.36	3,260.71	10,601,837.95	1,399,181.67	31.7224172	-103.2198020	8,995.08	1.81	-0.33	-1.78
21,190.00	93.85	161.32	11,455.74	-8,472.03	3,291.53	10,601,749.28	1,399,212.49	31.7221757	-103.2196955	9,088.90	2.31	2.06	1.03

## Survey Report

<b>Company:</b>	Devon Energy	<b>Local Co-ordinate Reference:</b>	Well UL Spruce 1621-21E 332H
<b>Project:</b>	Winkler County, TX (NAD 83)	<b>TVD Reference:</b>	2834.93' GL + KB 28' @ 2862.93usft
<b>Site:</b>	UL Spruce 1621-21 Pad	<b>MD Reference:</b>	2834.93' GL + KB 28' @ 2862.93usft
<b>Well:</b>	UL Spruce 1621-21E 332H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys	<b>Database:</b>	EDM 5000.1 Single User Db

### Survey

Measured Depth (usft)	INC (°)	AZI (°)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	+E/-W (usft)	Map Coordinates Northing (usft)	Easting (usft)	Geo Coordinates Latitude (°)	Longitude (°)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
21,284.00	94.33	160.18	11,449.04	-8,560.55	3,322.44	10,601,660.76	1,399,243.40	31.7219346	-103.2195888	9,182.62	1.31	0.51	-1.21
21,378.00	93.89	158.60	11,442.30	-8,648.30	3,355.44	10,601,573.01	1,399,276.40	31.7216958	-103.2194753	9,276.37	1.74	-0.47	-1.68
21,472.00	94.95	161.23	11,435.06	-8,736.31	3,387.62	10,601,485.00	1,399,308.58	31.7214563	-103.2193645	9,370.07	3.01	1.13	2.80
21,567.00	96.22	162.82	11,425.81	-8,826.24	3,416.80	10,601,395.07	1,399,337.76	31.7212112	-103.2192632	9,464.48	2.14	1.34	1.67
21,661.00	96.97	163.08	11,415.01	-8,915.52	3,444.18	10,601,305.79	1,399,365.14	31.7209678	-103.2191677	9,557.64	0.84	0.80	0.28
21,755.00	97.01	162.64	11,403.57	-9,004.67	3,471.68	10,601,216.64	1,399,392.64	31.7207248	-103.2190719	9,650.73	0.47	0.04	-0.47
21,850.00	97.41	162.46	11,391.65	-9,094.58	3,499.94	10,601,126.73	1,399,420.90	31.7204797	-103.2189735	9,744.79	0.46	0.42	-0.19
21,920.00	97.32	162.29	11,382.68	-9,160.75	3,520.96	10,601,060.56	1,399,441.92	31.7202994	-103.2189004	9,814.09	0.27	-0.13	-0.24
21,966.00	97.32	162.29	11,376.82	-9,204.21	3,534.84	10,601,017.10	1,399,455.80	31.7201810	-103.2188522	9,859.64	0.00	0.00	0.00
<b>X LTP @ 21966.00' MD, 100' FSL, 439' FEL</b>													
21,974.00	97.32	162.29	11,375.80	-9,211.77	3,537.25	10,601,009.54	1,399,458.21	31.7201604	-103.2188438	9,867.57	0.00	0.00	0.00
<b>BHL @ 21974.00' MD, 92' FSL, 439' FEL</b>													

### Design Targets

#### Target Name

- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- Shape									
UL Spruce 1621-21E :	0.00	0.00	11,375.80	-9,211.77	3,537.25	10,601,009.54	1,399,458.21	31.7201604	-103.2188438
- actual wellpath hits target center									
- Point									

### Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	+E/-W (usft)	Comment
11,454.00	11,174.75	848.05	596.48	X SEC @ 11454.00' MD, 0' FNL, 442' FEL
11,563.00	11,217.77	750.08	617.13	X FTP @ 11563.00' MD, 100' FNL, 450' FEL
16,769.00	11,516.76	-4,239.43	2,031.51	X SEC @ 16769.00' MD, 0' FNL, 490' FEL
21,966.00	11,376.82	-9,204.21	3,534.84	X LTP @ 21966.00' MD, 100' FSL, 439' FEL
21,974.00	11,375.80	-9,211.77	3,537.25	BHL @ 21974.00' MD, 92' FSL, 439' FEL

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_



**Total Directional**  
"Driven by **TOTAL** performance"

## **MWD Survey Certification**

Winkler, Texas

Client: Devon Energy

Well Name: UL Spruce 1621-  
21E 332H

Total Job No: S W - 2 3 0 7 8 7

API No: 4 2 - 4 9 5 - 3 4 8 4 0

Start Date: 05/23/2023

End Date: 07/08/2023

Measured Start Depth: 0 feet

Measured End Depth: 21974 feet

Survey Correction Company Used: N/A

I, Mike Dunne II, certify that; I am contracted by Total Directional Services, LLC and I conducted or supervised the taking of these open hole MWD surveys at the request of this client. This data is true, correct, complete and within the limitations of the tool as set forth by Total Directional Services, LLC. I am authorized and qualified to make this report and have reviewed this report and find that it conforms to the principals and procedures as set forth by Total Directional Services, LLC.

Date: 07/08/2023

Signed: *Mike Dunne II*