



**Caza Operating LLC
Lea County, New Mexico (NAD 83)
30-025-46561
Sioux 25-36 State Fed Com 10H
Wellbore 2**

**MS MWD
Certified Survey Report
29 July 2020**

Field	Lea County, New Mexico (NAD 83) - Caza Operating LLC		
CRS	US-SPC83 / New Mexico Eastern Zone		
Apply Scale Factor	NO	Scale Factor	0.9999090909
System Datum	Mean Sea Level	Depth Datum->MSL	3110.00 UsFt

Well	Sioux 25-36 State Fed Com 10H		
Local North	80.03 UsFt	Local East	-1.25 UsFt
Map Northing	404659.84 US survey foot	Map Easting	855900.40 US survey foot
Latitude	32° 6' 30.290" N	Longitude	103° 19' 2.645" W
Depth Datum	WELL	Datum Elevation	3110.00 UsFt
GL Elevation	3086.00 UsFt		
Grid Convergence	0.540		

Well bore	Sioux 25-36 State Fed Com 10H - Wellbore 2		
Magnetic Model	User defined	Date	13/07/2020
Total Field (nT)	47655.10	Dip Angle (°)	59.683
Declination (°)	6.433		
VS Origin	User Defined	VS Azimuth	180.73
VS Origin NS	0.00 UsFt	VS Origin EW	0.00 UsFt

Survey Program	MS MWD		
Depth From (UsFt)	Depth To (UsFt)	Survey	Survey Tool
0.00	8834.00	Phoenix MWD	MWD+HRGM
8957.00	12348.00	MS MWD	MWD+HRGM
12423.00	22209.00	MS MWD	MWD+HRGM

Survey Report										
MD UsFt	Inc °	Azi °	TVD UsFt	NS UsFt	EW UsFt	VS UsFt	DLS (*100 UsFt)	BR (*100 UsFt)	TR (*100 UsFt)	
12348.00	76.31	184.66	12105.58	-557.96	-224.68	560.77	0.00	0.00	0.00 Tie In	
12423.00	77.98	183.25	12122.27	-630.90	-229.72	633.77	2.88	2.23	-1.88	
12440.00	77.49	184.22	12125.88	-647.47	-230.80	650.36	6.28	-2.88	5.71	
12471.00	78.11	188.26	12132.43	-677.59	-234.10	680.52	12.89	2.00	13.03	
12502.00	79.69	190.81	12138.40	-707.58	-239.14	710.57	9.55	5.10	8.23	
12534.00	82.81	191.78	12143.27	-738.59	-245.33	741.66	10.20	9.75	3.03	
12565.00	84.88	191.25	12146.59	-768.79	-251.48	771.94	6.89	6.68	-1.71	
12596.00	86.99	189.93	12148.79	-799.19	-257.17	802.40	8.02	6.81	-4.26	
12627.00	89.98	187.65	12149.61	-829.81	-261.90	833.08	12.13	9.65	-7.35	
12720.00	91.91	185.71	12148.08	-922.15	-272.72	925.55	2.94	2.08	-2.09	
12814.00	92.40	185.36	12144.54	-1015.65	-281.78	1019.16	0.64	0.52	-0.37	
12845.00	91.91	185.36	12143.38	-1046.49	-284.67	1050.03	1.58	-1.58	0.00	
12937.00	91.78	186.15	12140.41	-1137.98	-293.89	1141.63	0.87	-0.14	0.86	
13029.00	90.99	185.71	12138.19	-1229.46	-303.39	1233.22	0.98	-0.86	-0.48	
13121.00	90.99	183.96	12136.60	-1321.11	-311.14	1324.97	1.90	0.00	-1.90	
13214.00	91.30	181.85	12134.74	-1413.97	-315.86	1417.88	2.29	0.33	-2.27	
13306.00	91.91	177.01	12132.16	-1505.90	-314.94	1509.79	5.30	0.66	-5.26	
13398.00	87.30	172.00	12132.80	-1597.42	-306.14	1601.19	7.40	-5.01	-5.45	
13493.00	87.30	172.18	12137.27	-1691.42	-293.08	1695.01	0.19	0.00	0.19	
13586.00	87.91	172.97	12141.16	-1783.55	-281.07	1786.99	1.07	0.66	0.85	
13681.00	87.69	173.32	12144.81	-1877.81	-269.74	1881.09	0.43	-0.23	0.37	
13775.00	89.19	173.23	12147.37	-1971.12	-258.74	1974.26	1.60	1.60	-0.10	
13870.00	88.79	172.79	12149.04	-2065.40	-247.18	2068.38	0.63	-0.42	-0.46	
13965.00	88.48	172.79	12151.30	-2159.62	-235.26	2162.44	0.33	-0.33	0.00	
14058.00	88.70	173.41	12153.59	-2251.92	-224.09	2254.59	0.71	0.24	0.67	
14152.00	89.01	175.43	12155.47	-2345.45	-214.95	2348.00	2.17	0.33	2.15	
14247.00	88.88	177.10	12157.22	-2440.23	-208.77	2442.69	1.76	-0.14	1.76	
14342.00	88.00	179.12	12159.81	-2535.14	-205.63	2537.55	2.32	-0.93	2.13	
14435.00	89.10	180.53	12162.16	-2628.10	-205.35	2630.51	1.92	1.18	1.52	
14529.00	88.79	180.88	12163.89	-2722.08	-206.51	2724.49	0.50	-0.33	0.37	
14624.00	88.70	180.35	12165.97	-2817.05	-207.53	2819.47	0.57	-0.09	-0.56	
14717.00	88.79	179.12	12168.01	-2910.03	-207.10	2912.43	1.33	0.10	-1.32	
14811.00	89.49	178.42	12169.42	-3003.99	-205.08	3006.36	1.05	0.74	-0.74	
14905.00	89.41	178.86	12170.32	-3097.96	-202.85	3100.29	0.48	-0.09	0.47	
15000.00	89.19	178.51	12171.48	-3192.93	-200.67	3195.23	0.44	-0.23	-0.37	
15094.00	89.01	178.16	12172.96	-3286.88	-197.94	3289.13	0.42	-0.19	-0.37	
15188.00	87.91	177.63	12175.48	-3380.78	-194.49	3382.98	1.30	-1.17	-0.56	
15282.00	87.78	176.40	12179.02	-3474.58	-189.59	3476.72	1.31	-0.14	-1.31	
15375.00	87.38	175.26	12182.95	-3567.25	-182.84	3569.29	1.30	-0.43	-1.23	
15470.00	88.31	177.10	12186.52	-3661.97	-176.51	3663.92	2.17	0.98	1.94	
15564.00	87.69	175.69	12189.80	-3755.72	-170.61	3757.59	1.64	-0.66	-1.50	
15753.00	87.21	181.76	12198.22	-3944.40	-166.41	3946.20	3.22	-0.25	3.21	
15846.00	87.91	186.15	12202.18	-4037.07	-172.81	4038.95	4.78	0.75	4.72	
15940.00	91.21	187.12	12202.90	-4130.42	-183.67	4132.43	3.66	3.51	1.03	
16034.00	91.52	185.27	12200.66	-4223.84	-193.81	4225.97	1.99	0.33	-1.97	
16129.00	91.60	182.46	12198.07	-4318.58	-200.21	4320.78	2.96	0.08	-2.96	
16223.00	91.21	182.55	12195.77	-4412.47	-204.32	4414.71	0.43	-0.41	0.10	
16318.00	91.52	183.17	12193.51	-4507.32	-209.06	4509.62	0.73	0.33	0.65	
16413.00	91.30	179.65	12191.17	-4602.25	-211.40	4604.57	3.71	-0.23	-3.71	

Survey Report

MD UsFt	Inc °	Azi °	TVD UsFt	NS UsFt	EW UsFt	VS UsFt	DLS (°/100 UsFt)	BR (°/100 UsFt)	TR (°/100 UsFt)
16507.00	91.69	178.07	12188.71	-4696.19	-209.53	4698.48	1.73	0.41	-1.68
16600.00	90.51	176.93	12186.93	-4789.09	-205.47	4791.31	1.76	-1.27	-1.23
16695.00	90.68	177.10	12185.94	-4883.95	-200.52	4886.11	0.25	0.18	0.18
16799.00	91.12	179.56	12184.47	-4977.89	-197.79	4980.01	2.66	0.47	2.62
16883.00	90.29	178.42	12183.31	-5071.87	-196.13	5073.96	1.50	-0.88	-1.21
16976.00	91.78	180.79	12181.63	-5164.84	-195.49	5166.91	3.01	1.60	2.55
17069.00	91.69	181.50	12178.81	-5257.78	-197.34	5259.87	0.77	-0.10	0.76
17163.00	91.78	181.41	12175.97	-5351.71	-199.73	5353.82	0.14	0.10	-0.10
17257.00	91.38	181.23	12173.38	-5445.65	-201.90	5447.78	0.47	-0.43	-0.19
17350.00	91.21	180.26	12171.27	-5538.61	-203.10	5540.75	1.06	-0.18	-1.04
17445.00	90.81	179.83	12169.60	-5633.60	-203.18	5635.73	0.62	-0.42	-0.45
17539.00	90.42	178.86	12168.59	-5727.58	-202.10	5729.69	1.11	-0.41	-1.03
17633.00	89.58	177.63	12168.59	-5821.54	-199.23	5823.60	1.58	-0.89	-1.31
17727.00	90.90	179.30	12168.20	-5915.50	-196.71	5917.52	2.26	1.40	1.78
17823.00	91.69	180.00	12166.03	-6011.47	-196.12	6013.48	1.10	0.82	0.73
17917.00	92.00	179.30	12163.00	-6105.42	-195.55	6107.41	0.81	0.33	-0.74
18010.00	90.99	179.39	12160.57	-6198.38	-194.48	6200.35	1.09	-1.09	0.10
18105.00	91.38	180.09	12158.61	-6293.36	-194.05	6295.32	0.84	0.41	0.74
18199.00	90.81	179.56	12156.81	-6387.34	-193.77	6389.29	0.83	-0.61	-0.56
18294.00	90.68	179.47	12155.58	-6482.33	-192.96	6484.26	0.17	-0.14	-0.09
18389.00	90.42	179.56	12154.67	-6577.32	-192.16	6579.23	0.29	-0.27	0.09
18485.00	90.20	180.62	12154.15	-6673.32	-192.31	6675.23	1.13	-0.23	1.10
18579.00	90.51	180.97	12153.56	-6767.31	-193.61	6769.22	0.50	0.33	0.37
18674.00	91.69	180.97	12151.74	-6862.27	-195.22	6864.20	1.24	1.24	0.00
18769.00	92.48	180.62	12148.28	-6957.20	-196.54	6959.14	0.91	0.83	-0.37
18864.00	92.31	179.83	12144.31	-7052.12	-196.91	7054.05	0.85	-0.18	-0.83
18958.00	91.91	177.28	12140.85	-7146.01	-194.54	7147.91	2.74	-0.43	-2.71
19053.00	90.90	176.66	12138.52	-7240.85	-189.52	7242.68	1.25	-1.06	-0.65
19148.00	91.12	177.36	12136.85	-7335.71	-184.57	7337.46	0.77	0.23	0.74
19244.00	89.10	176.75	12136.66	-7431.57	-179.64	7433.26	2.20	-2.10	-0.64
19337.00	89.01	179.65	12138.20	-7524.51	-176.72	7526.15	3.12	-0.10	3.12
19431.00	88.79	181.06	12140.00	-7618.48	-177.30	7620.12	1.52	-0.23	1.50
19526.00	89.49	180.26	12141.43	-7713.47	-178.39	7715.11	1.12	0.74	-0.84
19621.00	92.22	180.79	12140.01	-7808.44	-179.26	7810.09	2.93	2.87	0.56
19715.00	90.42	180.53	12137.85	-7902.41	-180.34	7904.06	1.93	-1.91	-0.28
19810.00	90.90	179.91	12136.75	-7997.40	-180.71	7999.05	0.83	0.51	-0.65
19905.00	90.51	179.83	12135.58	-8092.39	-180.49	8094.03	0.42	-0.41	-0.08
20000.00	92.79	181.41	12132.85	-8187.34	-181.52	8188.99	2.92	2.40	1.66
20095.00	92.40	179.39	12128.55	-8282.23	-182.18	8283.88	2.16	-0.41	-2.13
20190.00	89.98	175.87	12126.57	-8377.11	-178.25	8378.70	4.50	-2.55	-3.71
20285.00	89.98	176.05	12126.61	-8471.87	-171.56	8473.37	0.19	0.00	0.19
20380.00	89.32	175.96	12127.19	-8566.64	-164.94	8568.05	0.70	-0.69	-0.09
20474.00	87.52	176.93	12129.78	-8660.42	-159.12	8661.74	2.18	-1.91	1.03
20569.00	89.58	178.86	12132.18	-8755.31	-155.63	8756.59	2.97	2.17	2.03
20664.00	90.42	179.56	12132.18	-8850.30	-154.32	8851.55	1.15	0.88	0.74
20759.00	90.42	179.91	12131.49	-8945.30	-153.88	8946.53	0.37	0.00	0.37
20853.00	92.09	180.88	12129.43	-9039.27	-154.53	9040.51	2.05	1.78	1.03
20949.00	91.69	180.09	12126.26	-9135.21	-155.34	9136.45	0.92	-0.42	-0.82
21043.00	91.12	180.70	12123.96	-9229.18	-155.99	9230.42	0.89	-0.61	0.65
21138.00	93.49	180.88	12120.13	-9324.09	-157.30	9325.34	2.50	2.49	0.19
21232.00	93.10	181.23	12114.73	-9417.92	-159.02	9419.18	0.56	-0.41	0.37
21327.00	92.00	181.06	12110.51	-9512.80	-160.92	9514.08	1.17	-1.16	-0.18
21422.00	90.68	181.41	12108.28	-9607.75	-162.97	9609.05	1.44	-1.39	0.37
21517.00	91.21	181.85	12106.72	-9702.70	-165.67	9704.02	0.73	0.56	0.46
21612.00	90.68	179.83	12105.15	-9797.67	-167.06	9799.01	2.20	-0.56	-2.13
21707.00	90.59	178.51	12104.10	-9892.65	-165.69	9893.96	1.39	-0.09	-1.39
21801.00	88.40	177.28	12104.93	-9986.58	-162.23	9987.84	2.67	-2.33	-1.31
21896.00	88.40	177.28	12107.58	-10081.44	-157.73	10082.63	0.00	0.00	0.00
21990.00	89.10	177.80	12109.63	-10175.33	-153.69	10176.46	0.93	0.74	0.55
22085.00	90.90	179.21	12109.63	-10270.29	-151.21	10271.38	2.41	1.89	1.48
22173.00	91.52	179.47	12107.77	-10358.26	-150.20	10359.33	0.76	0.70	0.30
22209.00	91.52	179.47	12106.82	-10394.25	-149.87	10395.31	0.00	0.00	0.00 PTB