



Verdad Resources

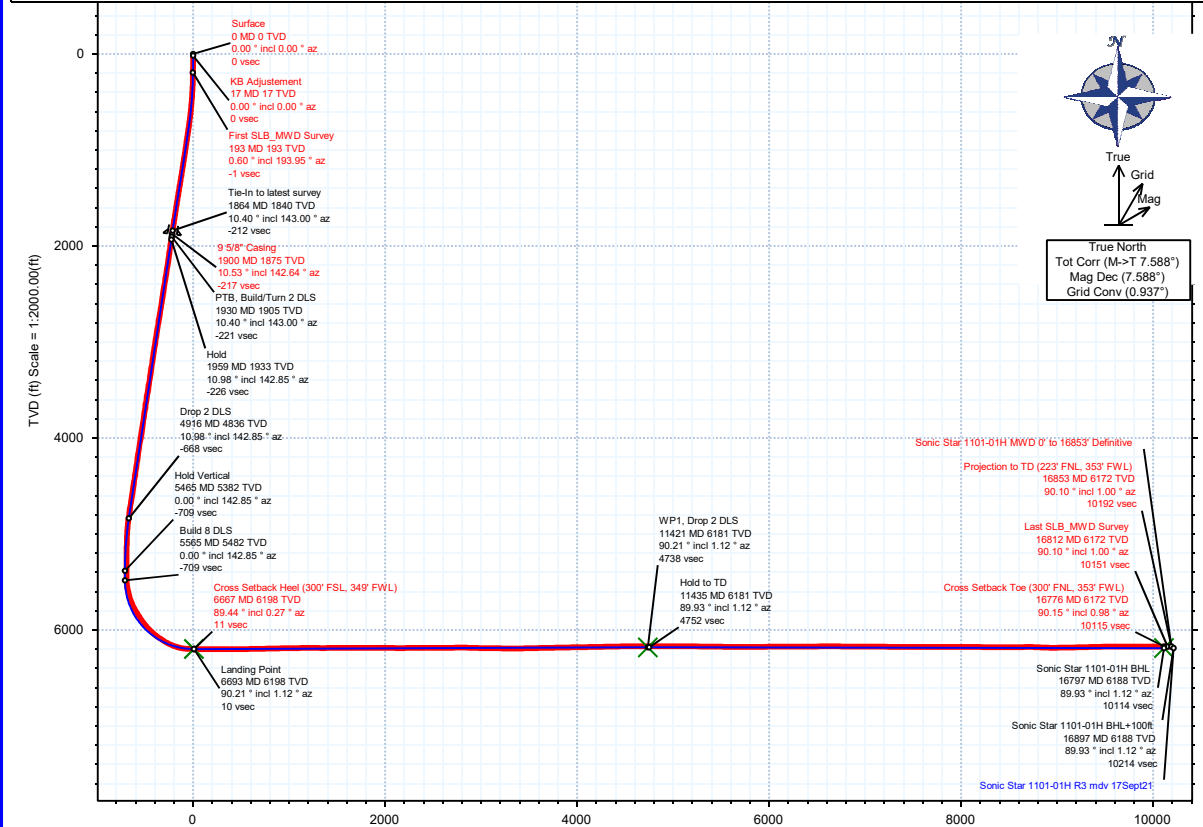


Borehole:	Well:	Field:	Structure:
Original Hole	Sonic Star 1101-01H	CO, Weld County (NAD 83 NZ) - 2019	Verdad 11-08N-60W (Sonic Star 1101 Pad)

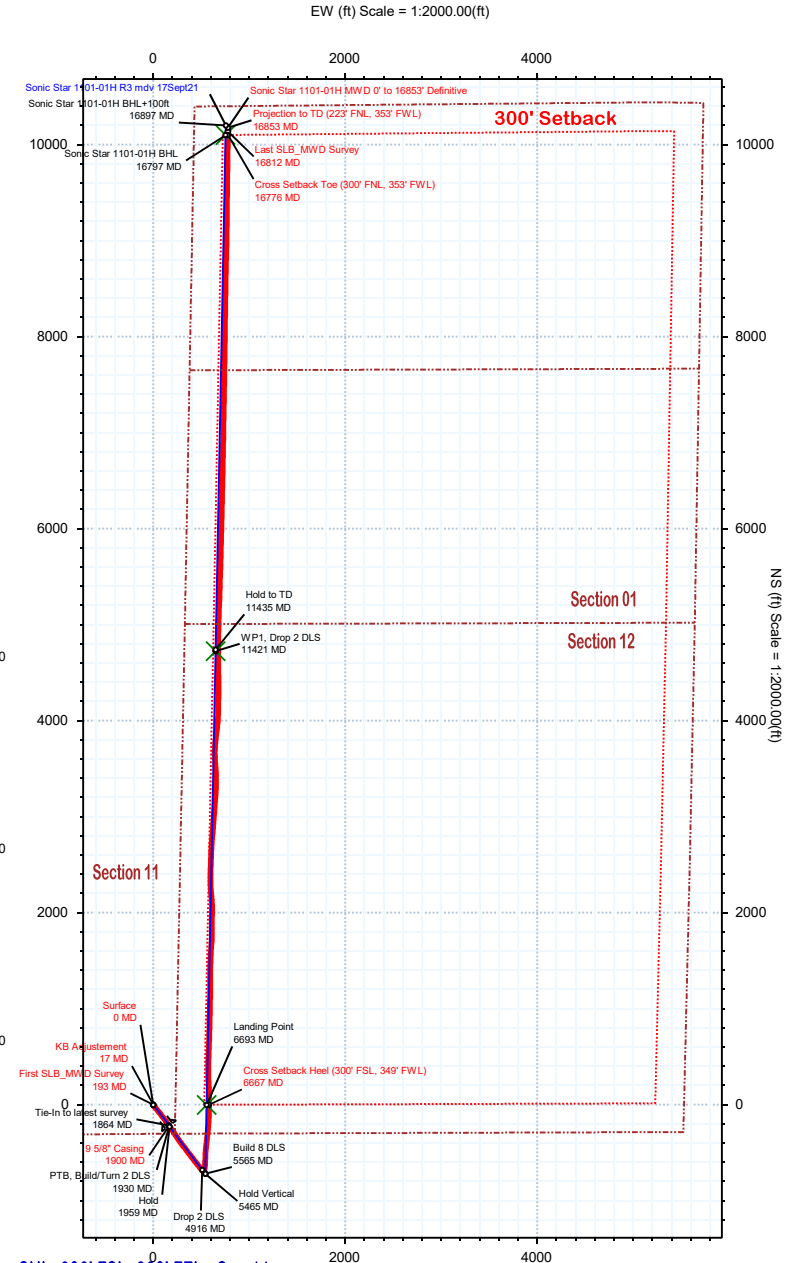
Gravity & Magnetic Parameters	Surface Location	NAD83 Colorado State Plane, Northern Zone, US Feet	Miscellaneous
Model: HDGM 2021 Dip: 66.853° Date: 17-Sep-2021	Lat: N 40 40 14.42 Northing: 1490460.83ftUS Grid Conv: 0.9375°		Slot: Sonic Star 1101-01H TVD Ref: KB 21ft(4900ft above MSL)
MagDec: 7.588° FS: 52141.908nT Gravity FS: 999.077mgn (9.80665 Based)	Lon: W 104 2 56.80 Easting: 3402456.52ftUS Scale Fact: 0.99998366		Plan: Sonic Star 1101-01H MWD 0' to 16853' Definitive

Surface Location								
Northing: 1490460.83360762		Easting: 3402456.51884823		Latitude: N 40 40 14.42		Longitude: W 104 2 56.80		VSec Azimuth: 1.12
Target Description		Grid Coord						
Target Name	Latitude	Longitude	Northing	Easting	TVD	VSec	N(+)/S(-)	E(+)/W(-)
Sonic Star 1101 Pad Sec 12-01 - 300' SB	N 40 40 14.42	W 104 2 56.80	1490460.83	3402456.52	4900.00	0.00	0.00	0.00
Sonic Star 1101 Pad Sec 01 - Mid	N 40 40 14.42	W 104 2 56.80	1490460.83	3402456.52	4900.00	0.00	0.00	0.00
Sonic Star 1101 Pad Sec 12-01 - CL	N 40 40 14.42	W 104 2 56.80	1490460.83	3402456.52	4900.00	0.00	0.00	0.00
Sonic Star 1101 Pad Sec 12-01	N 40 40 14.42	W 104 2 56.80	1490460.83	3402456.52	4900.00	0.00	0.00	0.00
Sonic Star 1101-01H WP1	N 40 41 1.11	W 104 2 48.39	1495196.71	3403026.93	6181.00	4737.76	4726.00	647.83
Sonic Star 1101-01H BHL	N 40 41 54.22	W 104 2 47.02	1500572.63	3403044.46	6188.00	10113.80	10101.01	753.31
Sonic Star 1101-01H LP	N 40 40 14.41	W 104 2 49.59	1490469.01	3403011.64	6198.00	9.95	-0.90	555.20

Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
Surface	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
KB Adjustment	17.00	0.00	0.00	17.00	0.00	0.00	0.00	0.00
First SLB_MWD Survey	193.00	0.60	193.95	193.00	-0.90	-0.89	-0.22	0.34
9 5/8" Casing	1900.00	10.53	142.64	1875.25	-217.10	-220.32	162.63	0.40
Cross Setback Heel (300' FSL, 349' FWL)	6666.53	89.44	0.27	6198.12	11.22	-0.10	579.06	2.28
Cross Setback Toe (300' FNL, 353' FWL)	16775.94	90.15	0.98	6171.73	10114.85	10101.60	776.63	0.16
Last SLB_MWD Survey	16812.00	90.10	1.00	6171.65	10150.91	10137.66	777.25	0.16
Projection to TD (223' FNL, 353' FWL)	16853.00	90.10	1.00	6171.58	10191.91	10178.65	777.96	0.01



Vertical Section (ft) Azim = 1.12° Scale = 1:2000.00(ft) Origin = 0N/-S, 0E/-W



SHL: 303' FSL, 230' FEL - Sec 11

Sonic Star 1101-01H MWD 0' to 16853' Definitive Survey Geodetic Report

(Def Survey)

Report Date: September 27, 2021 - 12:06 PM
Client: Verdad Resources
Field: CO, Weld County (NAD 83 NZ) - 2019
Structure / Slot: Verdad 11-08N-60W (Sonic Star 1101 Pad) / Sonic Star 1101-01H
Well: Sonic Star 1101-01H
Borehole: Original Hole
UWI / API#: Unknown / 05-123-41858
Survey Name: Sonic Star 1101-01H MWD 0' to 16853' Definitive
Survey Date: September 17, 2021
Tort / AHD / DDI / ERD Ratio: 274.841 ° / 11770.452 ft / 6.944 / 1.898
Coordinate Reference System: NAD83 Colorado State Plane, Northern Zone, US Feet
Location Lat / Long: N 40° 40' 14.41560", W 104° 2' 56.79600"
Location Grid N/E Y/X: N 1490460.834 ftUS, E 3402456.519 ftUS
CRS Grid Convergence Angle: 0.9375 °
Grid Scale Factor: 0.99998366
Version / Patch: 2.10.824.0

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 1.120 ° (True North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: KB 21ft
TVD Reference Elevation: 4900.000 ft above MSL
Seabed / Ground Elevation: 4879.000 ft above MSL
Magnetic Declination: 7.588 °
Total Gravity Field Strength: 999.0770mgn (9.80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 52141.908 nT
Magnetic Dip Angle: 66.853 °
Declination Date: September 17, 2021
Magnetic Declination Model: HDGM 2021
North Reference: True North
Grid Convergence Used: 0.0000 °
Total Corr Mag North→True North: 7.5882 °
Local Coord Referenced To: Well Head

Comments	MD (ft)	Incl (°)	Azim True (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (°)	Longitude (°)
Surface	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	1490460.83	3402456.52	40.670671	-104.049110
KB Adjustment	17.00	0.00	0.00	17.00	0.00	0.00	0.00	0.00	1490460.83	3402456.52	40.670671	-104.049110
First SLB_MWD Survey	193.00	0.60	193.95	193.00	-0.90	-0.89	-0.22	0.34	1490459.94	3402456.31	40.670669	-104.049111
249.00	1.05	168.24	248.99	-1.68	-1.68	-0.19	1.02	1490459.15	3402456.36	40.670666	-104.049111	
280.00	1.51	145.93	279.98	-2.30	-2.30	0.10	2.16	1490458.54	3402456.65	40.670665	-104.049110	
310.00	2.16	147.67	309.97	-3.09	-3.10	0.62	2.17	1490457.74	3402457.19	40.670662	-104.049108	
340.00	2.89	143.61	339.94	-4.16	-4.19	1.37	2.50	1490456.67	3402457.96	40.670660	-104.049105	
370.00	3.74	144.66	369.89	-5.55	-5.60	2.39	2.84	1490455.28	3402459.00	40.670656	-104.049101	
400.00	4.25	146.31	399.82	-7.25	-7.32	3.57	1.74	1490453.57	3402460.21	40.670651	-104.049097	
430.00	4.76	145.94	429.72	-9.18	-9.28	4.88	1.70	1490451.64	3402461.55	40.670646	-104.049092	
460.00	5.32	145.64	459.61	-11.33	-11.45	6.37	1.87	1490449.48	3402463.07	40.670640	-104.049087	
490.00	5.95	144.49	489.46	-13.71	-13.87	8.05	2.13	1490447.10	3402464.80	40.670633	-104.049081	
520.00	6.59	142.36	519.28	-16.30	-16.50	10.01	2.27	1490444.50	3402466.80	40.670626	-104.049074	
550.00	7.12	141.10	549.07	-19.06	-19.31	12.23	1.84	1490441.73	3402469.06	40.670618	-104.049066	
580.00	7.58	140.90	578.82	-22.00	-22.29	14.64	1.54	1490438.79	3402471.52	40.670610	-104.049057	
610.00	8.14	139.47	608.54	-25.10	-25.44	17.27	1.98	1490435.68	3402474.20	40.670601	-104.049048	
640.00	8.57	140.15	638.22	-28.37	-28.77	20.08	1.47	1490432.40	3402477.07	40.670592	-104.049038	
670.00	9.04	140.76	667.87	-31.86	-32.31	23.01	1.60	1490428.90	3402480.05	40.670582	-104.049027	
700.00	9.51	140.54	697.47	-35.53	-36.05	26.07	1.57	1490425.21	3402483.18	40.670572	-104.049016	
730.00	9.88	140.72	727.05	-39.38	-39.96	29.28	1.24	1490421.36	3402486.45	40.670561	-104.049004	
760.00	10.33	141.55	756.58	-43.41	-44.06	32.58	1.58	1490417.32	3402489.81	40.670550	-104.048993	
790.00	10.97	141.97	786.06	-47.70	-48.41	36.01	2.15	1490413.02	3402493.32	40.670538	-104.048980	
820.00	10.85	142.38	815.52	-52.11	-52.89	39.49	0.48	1490408.59	3402496.87	40.670526	-104.048968	
850.00	10.80	142.53	844.99	-56.51	-57.36	42.93	0.19	1490404.18	3402500.38	40.670514	-104.048955	
880.00	10.81	142.06	874.46	-60.89	-61.81	46.37	0.30	1490399.79	3402503.89	40.670501	-104.048943	
910.00	10.92	141.67	903.92	-65.27	-66.26	49.86	0.44	1490395.40	3402507.45	40.670489	-104.048930	
940.00	10.86	141.66	933.38	-69.65	-70.71	53.37	0.20	1490391.01	3402511.04	40.670477	-104.048918	
970.00	10.94	142.44	962.84	-74.05	-75.18	56.86	0.56	1490386.60	3402514.60	40.670465	-104.048905	
1000.00	10.97	141.64	992.29	-78.48	-79.67	60.37	0.52	1490382.16	3402518.18	40.670452	-104.048892	
1030.00	11.11	141.46	1021.73	-82.91	-84.17	63.94	0.48	1490377.72	3402521.83	40.670440	-104.048880	
1060.00	11.28	142.10	1051.16	-87.41	-88.75	67.54	0.70	1490373.20	3402525.50	40.670427	-104.048867	
1090.00	11.26	141.65	1080.58	-91.95	-93.36	71.16	0.30	1490368.65	3402529.20	40.670415	-104.048853	
1120.00	11.30	141.55	1110.01	-96.48	-97.96	74.81	0.15	1490364.11	3402532.92	40.670402	-104.048840	
1150.00	11.29	142.54	1139.42	-101.04	-102.59	78.42	0.65	1490359.54	3402536.61	40.670389	-104.048827	
1180.00	11.42	142.38	1168.84	-105.65	-107.28	82.02	0.45	1490354.92	3402540.28	40.670377	-104.048814	
1210.00	11.56	141.58	1198.24	-110.29	-111.98	85.70	0.71	1490350.27	3402544.04	40.670364	-104.048801	
1240.00	11.77	141.73	1227.62	-114.97	-116.74	89.47	0.71	1490345.57	3402547.88	40.670351	-104.048787	
1270.00	11.83	141.56	1256.98	-119.71	-121.55	93.27	0.23	1490340.83	3402551.77	40.670337	-104.048774	
1300.00	11.96	141.85	1286.34	-124.48	-126.40	97.10	0.48	1490336.04	3402555.68	40.670324	-104.048760	
1330.00	12.13	141.87	1315.68	-129.33	-131.33	100.97	0.57	1490331.18	3402559.62	40.670311	-104.048746	
1360.00	11.90	141.80	1345.02	-134.16	-136.24	104.83	0.77	1490326.33	3402563.56	40.670297	-104.048732	
1390.00	11.82	141.93	1374.38	-138.94	-141.09	108.64	0.28	1490321.54	3402567.45	40.670284	-104.048718	
1420.00	11.88	142.27	1403.74	-143.72	-145.95	112.42	0.31	1490316.75	3402571.31	40.670270	-104.048705	
1450.00	11.80	142.86	1433.10	-148.54	-150.84	116.16	0.48	1490311.92	3402575.13	40.670257	-104.048691	
1480.00	11.52	144.66	1462.48	-153.36	-155.73	119.75	1.53	1490307.09	3402578.80	40.670244	-104.048678	
1510.00	10.99	147.09	1491.91	-158.13	-160.57	123.03	2.37	1490302.30	3402582.16	40.670230	-104.048666	
1540.00	10.78	147.97	1521.37	-162.85	-165.35	126.08	0.89	1490297.57	3402585.28	40.670217	-104.048656	
1570.00	10.64	148.58	1550.84	-167.54	-170.09	129.01	0.60	1490292.88	3402588.29	40.670204	-104.048645	
1600.00	10.51	148.60	1580.33	-172.18	-174.79	131.88	0.43	1490288.23	3402591.24	40.670191	-104.048635	
1630.00	10.61	148.37	1609.83	-176.81	-179.48	134.75	0.36	1490283.59	3402594.19	40.670178	-104.048624	
1660.00	10.70	147.96	1639.31	-181.46	-184.19	137.68	0.39	1490278.92	3402597.19	40.670165	-104.048614	
1690.00	10.60	146.62	1668.79	-186.07	-188.85	140.67	0.89	1490274.31	3402600.26	40.670153	-104.048603	
1720.00	10.58	146.46	1698.28	-190.61	-193.45	143.71	0.12	1490269.76	3402603.37	40.670140	-104.048592	
1750.00	10.73	146.56	1727.76	-195.17	-198.08	146.77	0.50	1490265.19	3402606.51	40.670127	-104.048581	
1780.00	10.63	147.19	1757.24	-199.77	-202.74	149.81	0.51	1490260.58	3402609.62	40.670115	-104.048570	
1810.00	10.42	144.86	1786.74	-204.25	-207.28	152.87	1.58	1490256.09	3402612.76	40.670102	-104.048559	
1840.00	10.39	142.86	1816.25	-208.56	-211.66	156.07	1.21	1490251.76	3402616.02	40.670090	-104.048547	
1864.00	10.40	143.00	1839.85	-211.97	-215.11	158.68	0.11	1490248.35	3402618.69	40.670081	-104.048538	
1900.00	10.53	142.64	1875.25	-217.10	-220.32	162.63	0.40	1490243.21	3402622.73	40.670066	-104.048524	
1970.00	10.78	141.96	1944.05	-227.18	-230.55	170.54	0.40	1490233.10	3402630.81	40.670038	-104.048495	
2060.00	10.99	140.16	2032.43	-240.18	-243.77	181.22	0.44	1490220.07	3402641.70	40.670002	-104.048457	
2149.00	10.52	145.85	2119.87	-253.21	-257.00	191.21	1.30	1490207.00	3402651.91	40.669966	-104.048421	
2239.00	10.49	144.51	2208.36	-266.49	-270.46	200.58	0.27	1490193.69	3402661.49	40.669929	-104.048387	
2328.00	11.01	145.35	2295.80	-279.89	-284.05	210.11	0.62	1490180.26	3402671.25	40.669891	-104.048353	
2418.00	10.83	147.06	2384.17	-293.87	-298.22	219.60	0.41	1490166.25	3402680.97	40.669852	-104.048318	
2508.00	10.86	147.43	2472.56	-307.93	-312.46	228.77	0.09	1490152.16	3402690.36	40.669813	-104.048285	
2597.00	10.63	146.14	2560.00	-321.63	-326.35	237.85	0.38	1490138.43	3402699.67	40.669775	-104.048253	
2687.00	11.09	145.00	2648.39	-335.43	-340.33	247.44	0.57	1490124.60	3402709.49	40.669737	-104.048218	
2776.00	11.28	148.12	2735.70	-349.64	-354.73	256.95	0.71	1490110.36	3402719.23	40.669697	-104.048184	
2865.00	11.31	145.89	2822.98	-364.07	-369.35	266.44	0.49	1490095.90	3402728.96	40.669657	-104.048150	
2955.00	11.33	144.23	2911.23	-378.35	-383.83	276.56	0.36	1490081.58	3402739.31	40.669617	-104.048113	
3044.00	11.00	145.12	2998.54	-392.22	-397.89	286.52	0.42	1490067.69	3402749.51	40.669579	-104.048077	
3133.00	10.79	141.43	3085.94	-405.50	-411.37	296.57	0.82	1490054.38	3402759.78	40.669542	-104.048041	
3223.00	10.75	141.50	3174.35	-418.44	-424.52	307.05	0.05	1490041.40	3402770.47	40.669506	-104.048003	
3312.00	11.10	142.09	3261.74	-431.49	-437.77	317.48	0.42	1490028.32	3402781.11	40.669469	-104.047966	
3401.00	11.32	141.69	3349.04	-444.89	-451.39	328.16	0.27	1490014.88	3402792.01	40.669432	-104.047927	

Comments	MD (ft)	Incl (°)	Azim True (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (°)	Longitude (°)
	3491.00	11.46	144.10	3437.27	-458.85	-465.57	338.88	0.55	1490000.88	3402802.96	40.669393	-104.047888
	3580.00	11.26	144.23	3524.53	-472.86	-479.78	349.14	0.22	1489986.84	3402813.46	40.669354	-104.047851
	3670.00	11.05	141.23	3612.83	-486.51	-493.64	359.68	0.69	1489973.16	3402824.22	40.669316	-104.047813
	3759.00	11.28	142.75	3700.14	-499.88	-507.22	370.29	0.42	1489959.75	3402835.05	40.669279	-104.047775
	3849.00	10.68	140.51	3788.49	-513.11	-520.66	380.92	0.82	1489946.49	3402845.90	40.669242	-104.047737
	3939.00	11.12	143.92	3876.87	-526.36	-534.11	391.34	0.87	1489933.21	3402856.54	40.669205	-104.047699
	4028.00	11.08	143.00	3964.21	-539.93	-547.88	401.54	0.20	1489919.61	3402866.96	40.669167	-104.047663
	4118.00	11.08	143.51	4052.53	-553.58	-561.74	411.89	0.11	1489905.92	3402877.54	40.669129	-104.047625
	4207.00	10.96	142.49	4139.89	-566.97	-575.33	422.13	0.26	1489892.50	3402888.00	40.669092	-104.047588
	4296.00	10.88	138.03	4227.28	-579.71	-588.29	432.90	0.95	1489879.72	3402898.98	40.669056	-104.047550
	4386.00	10.73	143.95	4315.68	-592.59	-601.38	443.51	1.24	1489866.80	3402909.80	40.669020	-104.047511
	4476.00	11.06	141.42	4404.06	-605.91	-614.90	453.83	0.64	1489853.45	3402920.34	40.668983	-104.047474
	4565.00	10.97	143.14	4491.42	-619.16	-628.35	464.23	0.38	1489840.17	3402930.96	40.668946	-104.047437
	4654.00	10.94	142.05	4578.80	-632.39	-641.79	474.50	0.24	1489826.91	3402941.45	40.668909	-104.047400
	4744.00	11.03	143.05	4667.15	-645.80	-655.40	484.93	0.23	1489813.47	3402952.10	40.668872	-104.047362
	4833.00	10.64	140.58	4754.56	-658.75	-668.55	495.27	0.68	1489800.48	3402962.65	40.668836	-104.047325
	4923.00	10.80	142.20	4842.99	-671.62	-681.63	505.71	0.38	1489787.58	3402973.31	40.668800	-104.047287
	5012.00	7.04	135.96	4930.90	-681.96	-692.15	514.62	4.35	1489777.21	3402982.38	40.668771	-104.047255
	5102.00	3.40	125.99	5020.52	-687.38	-697.68	520.61	4.15	1489771.77	3402988.47	40.668756	-104.047233
	5191.00	1.92	145.05	5109.42	-690.09	-700.46	523.60	1.92	1489769.05	3402991.50	40.668748	-104.047223
	5281.00	0.59	112.30	5199.40	-691.47	-701.87	524.90	1.61	1489767.66	3402992.82	40.668745	-104.047218
	5370.00	0.56	161.33	5288.39	-692.05	-702.46	525.46	0.54	1489767.08	3402993.39	40.668743	-104.047216
	5460.00	0.42	64.53	5378.39	-692.32	-702.73	525.90	0.82	1489766.81	3402993.84	40.668742	-104.047214
	5549.00	0.14	341.19	5467.39	-692.08	-702.49	526.16	0.48	1489767.05	3402994.09	40.668743	-104.047213
	5638.00	9.51	14.56	5555.98	-684.81	-695.26	527.98	10.55	1489774.31	3402995.79	40.668763	-104.047207
	5728.00	16.59	11.18	5643.80	-664.90	-675.44	532.34	7.92	1489794.21	3402999.83	40.668817	-104.047191
	5818.00	23.55	6.09	5728.08	-634.30	-644.91	536.75	7.96	1489824.80	3403003.74	40.668901	-104.047175
	5907.00	31.50	2.35	5806.95	-593.27	-603.93	539.60	9.14	1489865.83	3403005.91	40.669013	-104.047165
	5996.00	32.82	1.01	5882.29	-545.90	-556.58	540.98	1.68	1489913.19	3403006.52	40.669143	-104.047160
	6086.00	40.02	4.53	5954.68	-492.54	-503.27	543.70	8.33	1489966.54	3403008.37	40.669290	-104.047150
	6175.00	47.06	5.81	6019.15	-431.43	-442.25	549.26	7.97	1490027.63	3403012.93	40.669457	-104.047130
	6265.00	54.60	5.94	6075.96	-361.95	-372.90	556.40	8.39	1490097.10	3403018.93	40.669647	-104.047104
	6354.00	59.54	6.03	6124.33	-287.54	-298.63	564.18	5.55	1490171.48	3403025.50	40.669851	-104.047076
	6444.00	68.72	5.21	6163.56	-206.90	-218.12	572.08	10.23	1490252.10	3403032.08	40.670072	-104.047048
	6533.00	78.73	2.60	6188.47	-121.68	-133.00	577.84	11.60	1490337.31	3403036.45	40.670306	-104.047027
	6622.00	89.40	359.25	6197.67	-33.30	-44.63	579.24	12.55	1490425.69	3403036.41	40.670548	-104.047022
Cross Setback Heel (300' FSL, 349' FWL)	6666.53	89.44	0.27	6198.12	11.22	-0.10	579.06	2.28	1490470.20	3403035.49	40.670671	-104.047023
	6712.00	89.47	1.30	6198.55	56.68	45.36	579.68	2.28	1490515.67	3403035.37	40.670795	-104.047020
	6801.00	88.32	358.28	6200.27	145.63	134.33	579.35	3.64	1490604.62	3403033.59	40.671040	-104.047022
	6891.00	90.69	356.75	6201.05	235.44	224.23	575.45	3.14	1490694.45	3403028.21	40.671286	-104.047036
	6980.00	89.71	359.99	6200.74	324.32	313.18	572.91	3.81	1490783.34	3403024.22	40.671531	-104.047045
	7070.00	90.63	0.41	6200.48	414.31	403.18	573.23	1.12	1490873.33	3403023.06	40.671778	-104.047044
	7159.00	91.18	0.92	6199.08	503.30	492.16	574.26	0.84	1490962.32	3403022.64	40.672022	-104.047040
	7250.00	90.33	3.31	6197.89	594.27	583.09	577.61	2.79	1491053.28	3403024.50	40.672271	-104.047028
	7338.00	91.53	1.10	6196.46	682.23	671.00	581.00	2.85	1491141.24	3403026.45	40.672513	-104.047016
	7428.00	91.39	1.86	6194.17	772.20	760.94	583.32	0.86	1491231.21	3403027.30	40.672760	-104.047007
	7518.00	91.35	1.35	6192.02	862.17	850.88	585.85	0.57	1491321.17	3403028.35	40.673006	-104.046998
	7607.00	90.60	1.17	6190.50	951.16	939.85	587.81	0.87	1491410.16	3403028.86	40.673251	-104.046991
	7696.00	91.10	0.78	6189.19	1040.15	1028.82	589.33	0.71	1491499.14	3403028.92	40.673495	-104.046985
	7785.00	90.89	1.84	6187.65	1129.13	1117.79	591.37	1.21	1491588.13	3403029.51	40.673739	-104.046978
	7875.00	89.59	359.97	6187.27	1219.12	1207.77	592.79	2.54	1491678.12	3403029.46	40.673986	-104.046973
	7964.00	89.62	358.84	6187.88	1308.08	1296.76	591.86	1.27	1491767.08	3403027.07	40.674230	-104.046976
	8054.00	90.36	0.99	6187.90	1398.05	1386.75	591.72	2.53	1491857.06	3403025.46	40.674477	-104.046977
	8143.00	90.45	2.34	6187.27	1487.05	1475.71	594.30	1.52	1491946.04	3403026.58	40.674721	-104.046968
	8233.00	90.11	2.63	6186.82	1577.02	1565.63	598.20	0.50	1492036.01	3403029.01	40.674968	-104.046953
	8322.00	90.04	4.75	6186.70	1665.92	1654.44	603.93	2.39	1492124.90	3403033.29	40.675212	-104.046933
	8411.00	90.21	1.69	6186.50	1754.85	1743.28	608.93	3.45	1492213.82	3403036.84	40.675456	-104.046915
	8501.00	90.03	358.87	6186.31	1844.84	1833.27	609.37	3.14	1492303.80	3403035.80	40.675703	-104.046913
	8590.00	90.19	1.63	6186.13	1933.82	1922.26	609.76	3.11	1492392.78	3403034.73	40.675947	-104.046912
	8680.00	88.94	1.48	6186.82	2023.81	2012.23	612.20	1.41	1492482.77	3403035.70	40.676194	-104.046903
	8769.00	89.50	356.55	6188.04	2112.71	2101.18	610.67	5.57	1492571.68	3403032.72	40.676438	-104.046908
	8859.00	90.49	353.86	6188.04	2202.22	2190.85	603.15	3.20	1492661.22	3403023.73	40.676684	-104.046936
	8948.00	90.64	357.54	6187.16	2290.81	2279.58	596.47	4.14	1492749.83	3403015.60	40.676928	-104.046960
	9038.00	90.24	1.11	6186.48	2380.74	2369.56	595.41	4.00	1492839.77	3403013.07	40.677175	-104.046963
	9127.00	89.83	1.29	6186.42	2469.74	2458.54	597.28	0.49	1492928.77	3403013.48	40.677419	-104.046957
	9217.00	90.60	1.78	6186.08	2559.74	2548.51	599.69	1.02	1493018.76	3403014.42	40.677666	-104.046948
	9306.00	90.65	2.77	6185.11	2648.72	2637.43	603.23	1.11	1493107.73	3403016.50	40.677910	-104.046935
	9396.00	90.00	3.80	6184.60	2738.65	2727.28	608.39	1.35	1493197.65	3403020.19	40.678157	-104.046917
	9485.00	90.30	5.30	6184.37	2827.49	2815.99	615.45	1.72	1493286.47	3403025.80	40.678400	-104.046891
	9575.00	87.42	4.84	6186.16	2917.24	2905.61	623.40	3.25	1493376.21	3403032.28	40.678646	-104.046862
	9665.00	89.41	3.94	6188.65	3007.06	2995.31	630.28	2.43	1493466.00	3403037.69	40.678892	-104.046838
	9754.00	90.27	4.42	6188.89	3095.93	3084.07	636.76	1.10	1493554.86	3403042.72	40.679136	-104.046814
	9844.00	87.69	4.74	6190.49	3185.75	3173.76	643.94	2.89	1493644.65	3403048.43	40.679382	-104.046788
	9933.00	90.38	2.73	6191.99	3274.63	3262.55	649.73	3.77	1493733.52	3403052.77	40.679626	-104.046768
	10023.00	89.70	0.80	6191.93	3364.62	3352.50	652.49	2.28	1493823.50	3403054.06	40.679873	-104.046758
	10112.00	91.36	358.18	6191.11	3453.57	3441.49	651.70	3.49	1493912.46	3403051.81	40.680117	-104.046760
	10202.00	91.12	355.79	6189.16	3543.30	3531.33	646.96	2.66	1494002.21	3403045.61	40.680364	-104.046777
	10291.00	91.32	357.43	6187.27	3632.01	3620.15	641.70	1.85	1494090.94	3403038.89	40.680607	-104.046796
	10381.00	90.93	2.06	6185.50	3721.94	3710.11	641.30	5.16	1494180.87	3403037.02	40.	

Comments	MD (ft)	Incl (°)	Azim True (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (°)	Longitude (°)
	12973.00	90.38	1.10	6172.56	6312.29	6299.52	715.13	0.51	1496771.09	3403068.47	40.687962	-104.046531
	13062.00	90.39	1.25	6171.96	6401.29	6388.50	716.95	0.17	1496860.09	3403068.84	40.688206	-104.046525
	13151.00	90.28	1.40	6171.44	6490.29	6477.47	719.01	0.21	1496949.08	3403069.45	40.688450	-104.046517
	13241.00	90.33	1.22	6170.96	6580.29	6567.45	721.07	0.21	1497039.08	3403070.03	40.688697	-104.046510
	13330.00	90.01	1.00	6170.69	6669.29	6656.43	722.79	0.44	1497128.08	3403070.30	40.688941	-104.046504
	13420.00	88.64	0.83	6171.75	6759.28	6746.41	724.23	1.53	1497218.07	3403070.26	40.689188	-104.046499
	13509.00	89.75	1.13	6173.01	6848.27	6835.39	725.75	1.29	1497307.05	3403070.32	40.689432	-104.046493
	13599.00	89.70	1.08	6173.45	6938.26	6925.37	727.49	0.08	1497397.05	3403070.59	40.689679	-104.046487
	13688.00	89.77	0.62	6173.85	7027.26	7014.36	728.81	0.53	1497486.05	3403070.45	40.689924	-104.046482
	13778.00	89.72	1.20	6174.26	7117.26	7104.34	730.23	0.65	1497576.04	3403070.41	40.690171	-104.046477
	13867.00	89.83	1.08	6174.61	7206.26	7193.33	732.00	0.19	1497665.04	3403070.71	40.690415	-104.046470
	13957.00	89.69	1.01	6174.98	7296.26	7283.31	733.63	0.18	1497755.04	3403070.88	40.690662	-104.046465
	14046.00	89.20	1.30	6175.85	7385.25	7372.29	735.42	0.64	1497844.03	3403071.21	40.690906	-104.046458
	14135.00	89.87	0.90	6176.57	7474.25	7461.27	737.13	0.87	1497933.03	3403071.47	40.691150	-104.046452
	14225.00	89.95	0.67	6176.71	7564.25	7551.26	738.37	0.27	1498023.02	3403071.23	40.691397	-104.046447
	14315.00	89.88	0.93	6176.84	7654.25	7641.25	739.63	0.30	1498113.02	3403071.02	40.691644	-104.046443
	14404.00	89.87	0.52	6177.04	7743.25	7730.24	740.76	0.46	1498202.02	3403070.70	40.691889	-104.046439
	14494.00	89.84	0.82	6177.27	7833.24	7820.24	741.82	0.33	1498292.02	3403070.28	40.692136	-104.046435
	14583.00	89.96	1.09	6177.43	7922.24	7909.22	743.30	0.33	1498381.01	3403070.30	40.692380	-104.046430
	14672.00	89.92	0.91	6177.52	8011.24	7998.21	744.85	0.20	1498470.01	3403070.40	40.692624	-104.046424
	14762.00	89.90	0.78	6177.67	8101.24	8088.20	746.18	0.15	1498560.01	3403070.25	40.692871	-104.046419
	14851.00	89.78	0.69	6177.92	8190.24	8177.19	747.32	0.17	1498649.01	3403069.94	40.693115	-104.046415
	14941.00	90.00	0.67	6178.09	8280.23	8267.19	748.39	0.24	1498739.01	3403069.54	40.693362	-104.046411
	15030.00	89.94	0.77	6178.14	8369.23	8356.18	749.51	0.13	1498828.00	3403069.20	40.693607	-104.046407
	15120.00	90.01	0.96	6178.17	8459.23	8446.17	750.87	0.22	1498918.00	3403069.09	40.693854	-104.046402
	15209.00	89.94	1.08	6178.21	8548.23	8535.15	752.45	0.16	1499007.00	3403069.21	40.694098	-104.046397
	15299.00	90.19	0.89	6178.10	8638.23	8625.14	754.00	0.35	1499097.00	3403069.29	40.694345	-104.046391
	15388.00	90.31	1.07	6177.71	8727.23	8714.13	755.52	0.24	1499186.00	3403069.35	40.694589	-104.046385
	15477.00	86.62	1.50	6180.10	8816.18	8803.06	757.51	4.18	1499274.94	3403069.89	40.694833	-104.046378
	15567.00	88.20	1.41	6184.17	8906.09	8892.93	759.80	1.76	1499364.84	3403070.70	40.695080	-104.046370
	15656.00	90.70	1.23	6185.02	8995.07	8981.90	761.85	2.82	1499453.83	3403071.30	40.695324	-104.046363
	15746.00	91.11	0.72	6183.59	9085.06	9071.87	763.38	0.73	1499543.82	3403071.36	40.695571	-104.046357
	15836.00	91.40	0.72	6181.62	9175.04	9161.84	764.51	0.31	1499633.79	3403071.01	40.695818	-104.046353
	15925.00	91.35	0.56	6179.49	9264.01	9250.81	765.49	0.19	1499722.76	3403070.54	40.696062	-104.046349
	16014.00	91.26	0.45	6177.46	9352.98	9339.79	766.28	0.16	1499811.74	3403069.87	40.696306	-104.046347
	16104.00	91.24	0.54	6175.50	9442.95	9429.76	767.06	0.10	1499901.71	3403069.18	40.696553	-104.046344
	16194.00	91.23	0.74	6173.56	9532.93	9519.74	768.06	0.23	1499991.69	3403068.71	40.696800	-104.046340
	16283.00	90.06	0.61	6172.56	9621.92	9608.72	769.11	1.32	1500080.68	3403068.31	40.697045	-104.046336
	16373.00	90.05	1.05	6172.47	9711.92	9698.71	770.42	0.49	1500170.67	3403068.14	40.697292	-104.046332
	16462.00	90.09	0.87	6172.36	9800.92	9787.70	771.91	0.21	1500259.67	3403068.17	40.697536	-104.046326
	16552.00	90.18	0.60	6172.16	9890.92	9877.69	773.06	0.32	1500349.67	3403067.85	40.697783	-104.046322
	16641.00	89.98	1.03	6172.03	9979.91	9966.68	774.32	0.53	1500438.67	3403067.66	40.698027	-104.046318
	16731.00	90.22	0.95	6171.88	10069.91	10056.67	775.87	0.28	1500528.67	3403067.74	40.698274	-104.046312
Cross Setback Toe (300' FNL, 353' FWL)	16775.94	90.15	0.98	6171.73	10114.85	10101.60	776.63	0.16	1500573.60	3403067.76	40.698397	-104.046309
Last SLB_MWD Survey	16812.00	90.10	1.00	6171.65	10150.91	10137.66	777.25	0.16	1500609.66	3403067.79	40.698496	-104.046307
Projection to TD (223' FNL, 353' FWL)	16853.00	90.10	1.00	6171.58	10191.91	10178.65	777.96	0.01	1500650.66	3403067.83	40.698609	-104.046304

Survey Type: Def Survey

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma
Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	1	0.000	17.000	1/98.425	13.500	9.625	NAL_MWD_PLUS_0.5_DEG- Depth Only	Original Hole / Sonic Star 1101- 01H MWD 0' to 16853' Definitive
	1	17.000	21.000	Act Stns	13.500	9.625	NAL_MWD_PLUS_0.5_DEG- Depth Only	Original Hole / Sonic Star 1101- 01H MWD 0' to 16853' Definitive
	1	21.000	1864.000	Act Stns	13.500	9.625	NAL_MWD_PLUS_0.5_DEG	Original Hole / Sonic Star 1101- 01H MWD 0' to 16853' Definitive
	1	1864.000	16853.000	Act Stns	8.500	5.500	NAL_MWD_PLUS_0.5_DEG	Original Hole / Sonic Star 1101- 01H MWD 0' to 16853' Definitive