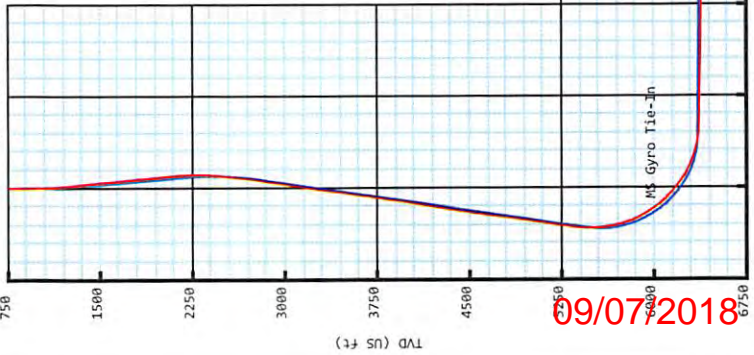




Mason Cottrell OHI 10H
Ohio Co, WV
SDC 41

Plan vs Actual

KB: 1322'
GL: 1296'



Plan Data for Mason Cottrell OHI 10H

Dogleg Severity Unit:		Plan Point Information:		Position offsets from Slot centre		DLS Toolface Comments	
MD (USft)	Az (°)	Inc (°)	TVD (USft)	+N/-S (USft)	+E/-W (USft)	Vsec (USft)	(°)
0.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.0
26.00	0.00	0.00	26.00	-0.00	0.00	0.00	0.0 KB Offset
1060.00	0.00	0.00	1060.00	-0.00	0.00	0.00	0.0 Nudge KOP
1350.00	7.00	0.00	1349.13	-5.53	20.63	16.05	2.00
2100.00	7.00	0.00	2093.54	-29.18	108.91	84.75	0.00
2854.13	14.00	19.84	2837.96	45.16	184.70	65.00	2.00
5547.85	14.00	19.84	5451.67	658.14	405.90	-321.96	0.00
6522.31	60.00	142.80	6266.65	481.91	741.64	77.57	7.00
6867.83	89.42	153.38	6357.60	121.37	913.75	406.45	9.00
15484.33	89.42	153.38	6443.70	-7581.33	4774.43	8956.26	0.00
16025.36	89.42	142.56	6449.17	-8039.29	5060.94	9496.22	2.00
19965.48	89.42	142.56	6489.00	-11167.48	7456.23	13427.88	0.00

Target Set Information:

Name: Mason Cottrell OHI 10H

Position offsets from Slot centre		Northing		Easting		Lat		Long	
Name	TVD (USft)	+N/-S (USft)	+E/-W (USft)	(USft)	(USft)	(°)	(°)	(°)	(°)
LP MC10H	6357.00	259.20	845.12	14554847.23	1748231.68	40.075830°	-80.614586°	-80.614586°	-80.614586°
TPL1 MC10H	6443.70	-7581.33	4774.43	14547066.70	1752160.99	40.054986°	-80.600666°	-80.600666°	-80.600666°
PBHL MC10H	6489.00	-11167.48	7456.23	14543420.55	1754842.79	40.045104°	-80.591141°	-80.591141°	-80.591141°

Plan Data for Mason Cottrell OHI 10H

Field: SOUTHWESTERN_OHIO CO, WV UTM MAD 83 (17N)
Map Unit: USFT
Vertical Reference Datum (VRD): Mean Sea Level
Projected Coordinate System: NAD83 / UTM zone 17N

Site: Mason Cottrell Pad
Unit: USFeet
Company Name: SOUTHWESTERN ENERGY
Northing: 14554588.03USft
Easting: 1747378.82USft
North Reference: Grid
Elevation Above VRD: 1295.80USft

Slot: Mason Cottrell OHI 10H
Position:
Offset is from Site centre
+N/-S: 11.83USft
+E/-W: 7.74USft
Northing: 14554588.03USft
Easting: 1747386.56USft
Latitude: 40.075862°
Longitude: -80.617611°
Elevation Above VRD: 1296.00USft

Well: Mason Cottrell OHI 10H
Type: Main-well
File Number:

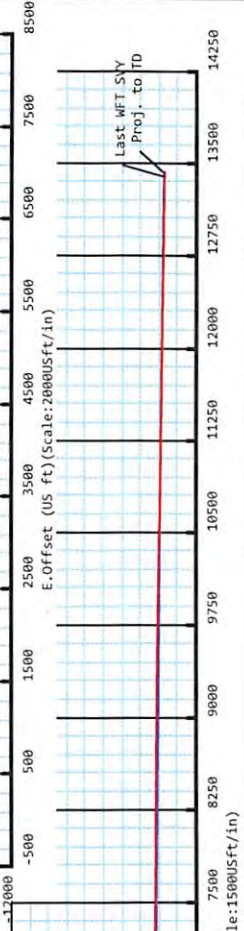
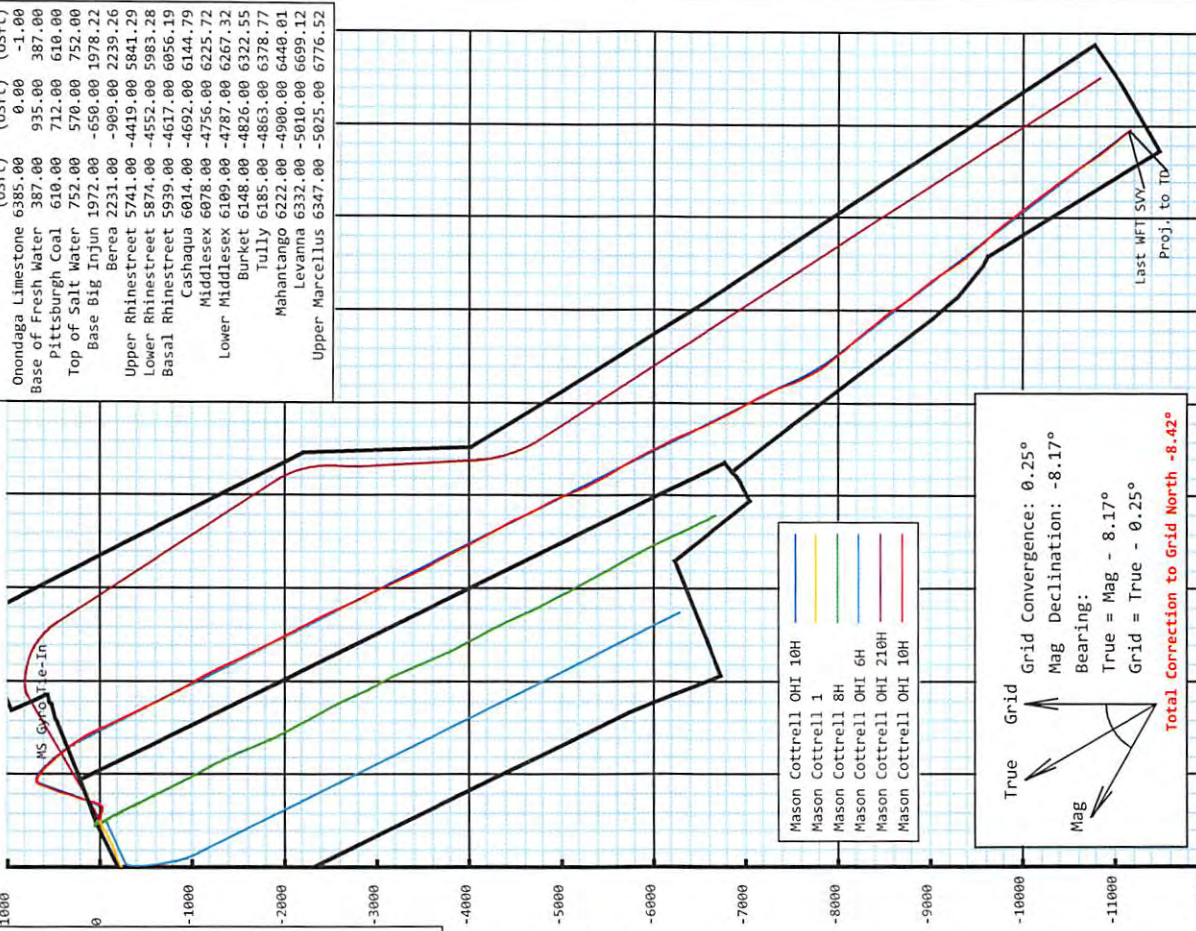
Plan Folder: P1
Plan: P1-V3
Vertical Section: Position offset of origin from Slot centre:
+N/-S: -0.00USft
+E/-W: 0.00USft
Azimuth: 146.27°
Magnetic Parameters:
Magnetic Strength: Declination: Dip: Date:
HDEM: 5270 (NT) -8.17° 67.45° 2017-10-16

Office: Environmental and Gas
Date: 16 October 2017
Drawing By: Gary Rhodes
Office Name: MidCon DS
Address: 7725 W. Reno Ave, Ste. #220
Oklahoma City, OK 73127
Phone: +1.405.720.4257

Plan Data for Mason Cottrell OHI 10H

Formation Point Information:

Name	(USft)	TVD	SS	MD
Onondaga Limestone	6385.00	0.00	0.00	-1.00
Base of Fresh Water	387.00	935.00	387.00	387.00
Pittsburgh Coal	610.00	712.00	610.00	610.00
Top of Salt Water	752.00	570.00	752.00	752.00
Base Big Injun	1972.00	-650.00	1972.00	-650.00
Berea	2231.00	-909.00	2231.00	-909.00
Upper Rhinestreet	5741.00	-4419.00	5741.00	-4419.00
Lower Rhinestreet	5874.00	-4552.00	5874.00	-4552.00
Basal Rhinestreet	5939.00	-4617.00	5939.00	-4617.00
Cashaqua	6014.00	-4692.00	6014.00	-4692.00
Middlesex	6078.00	-4756.00	6078.00	-4756.00
Lower Middlesex	6109.00	-4787.00	6109.00	-4787.00
Burket	6148.00	-4826.00	6148.00	-4826.00
Tully	6185.00	-4863.00	6185.00	-4863.00
Mahantango	6222.00	-4900.00	6222.00	-4900.00
Levanua	6332.00	-5010.00	6332.00	-5010.00
Upper Marcellus	6347.00	-5025.00	6347.00	-5025.00



09/07/2018

WV Department of Environmental Protection

**5D Survey Report**

SOUTHWESTERN ENERGY

Field Name: *SOUTHWESTERN_OHIO CO, WV UTM NAD 83 (17N)*
Site Name: *Mason Cottrell Pad*
Well Name: *Mason Cottrell OHI 10H*
Survey: *Definitive survey*

15 December 2017

**Weatherford**[®]

Office of Oil and Gas

AUG 3 2018

WV Department of
Environmental Protection

Mason Cottrell OHI 10H

Field Name:	Map Units: US ft	Company Name: SOUTHWESTERN ENERGY
SOUTHWESTER N_OHIO CO, WV UTM NAD 83 (17N)	Vertical Reference Datum (VRD): Mean Sea Level	
	Projected Coordinate System: NAD83 / UTM zone 17N	
	Comment:	

Site: Mason Cottrell Pad	Units: US ft	North Reference: Grid	Convergence Angle: 0.25
	Position:	Northing: 14554576.20 US ft	Latitude: 40.075830
		Easting: 1747378.82 US ft	Longitude: -80.617639
	Elevation above MSL: 1295.80 US ft		
	Comment:		

Slot: Mason Cottrell OHI 10H	Position (Relative to Site Centre)		
	+N/-S: 11.83 US ft	Northing: 14554588.03 US ft	Latitude: 40.075862
	+E/-W: 7.74 US ft	Easting: 1747386.56 US ft	Longitude: -80.617611
	Slot TVD Reference: Ground Elevation		
	Elevation above MSL: 1296.00 US ft		
	Comment:		

Well: Mason Cottrell OHI 10H	Type: Main well	UWI:
	File Number:	Comment:
	Closure Distance: 13427.6 US ft	Closure Azimuth: 146.29°
	Vertical Section: Position of Origin (Relative to Slot centre)	
	+N/-S: -0.00 US ft	+E/-W: 0.00 US ft Az: 146.27°

Drill floor: Survey Name: Definitive Survey			
Rig Height (Drill Floor): 26.00 US ft	Elevation above MSL: 1322.00 US ft	Inclination: 0.00°	Azimuth: 0.00°

Survey Name: Definitive Survey			
Date: 03/Oct/2017	Survey Tool: See Survey Tool Ranges below.	Comment:	Company:

Magnetic Model:				
Model Name: HDGM	Date: 16/Oct/2017	Field Strength: 52710.0 nT	Declination: -8.17°	Dip: 67.45°

Tie Point:						
MD: 0.00 US ft	Inclination: 0.00°	Azimuth: 0.00°	TVD: 0.00 US ft	North Offset: -0.00 US ft	East Offset: 0.00 US ft	

Survey Tool Ranges:			
Name	Start MD(USFT)	End MD(USFT)	Source Survey
GYRO_GC_WIR+DPIPE_GYD	0.00	6150.00	Gyro_02
MWD	6150.00	6283.00	WFT MWD_03-2
MWD	6283.00	19950.00	WFT MWD_04

Wellpath created using minimum curvature.

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5D Survey Report

Survey Points: (Relative to Slot centre)(TVD relative to Drill Floor)										
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	VS (US ft)	N.Offset (US ft)	E.Offset (US ft)	Latitude (° '' ''')	Longitude (° '' ''')	DLS (°/100US ft)	Comment
0.00	0.00	0.00	0.00	-0.00	-0.00	0.00	40.075862	-80.617611	0.00	
100.00	0.12	185.46	100.00	0.08	-0.10	-0.01	40.075862	-80.617611	0.12	
200.00	0.24	224.33	200.00	0.21	-0.36	-0.17	40.075861	-80.617612	0.16	
300.00	0.08	248.23	300.00	0.23	-0.53	-0.38	40.075861	-80.617613	0.17	
400.00	0.13	346.67	400.00	0.11	-0.45	-0.47	40.075861	-80.617613	0.16	
500.00	0.13	358.85	500.00	-0.09	-0.23	-0.50	40.075862	-80.617613	0.03	
600.00	0.16	2.89	600.00	-0.30	0.03	-0.49	40.075862	-80.617613	0.03	
700.00	0.20	329.84	700.00	-0.58	0.32	-0.57	40.075863	-80.617613	0.11	
800.00	0.25	309.47	800.00	-0.97	0.61	-0.83	40.075864	-80.617614	0.09	
900.00	0.20	305.47	900.00	-1.34	0.85	-1.14	40.075865	-80.617615	0.05	
1000.00	1.71	106.57	999.98	-0.35	0.52	0.15	40.075864	-80.617611	1.90	
1100.00	4.52	106.67	1099.83	3.83	-1.03	5.35	40.075859	-80.617592	2.81	
1200.00	7.03	106.00	1199.31	11.54	-3.85	15.01	40.075852	-80.617558	2.51	
1300.00	8.04	104.53	1298.45	21.43	-7.29	27.67	40.075842	-80.617512	1.03	
1400.00	8.53	102.15	1397.40	31.97	-10.61	41.69	40.075833	-80.617462	0.60	
1500.00	7.11	103.11	1496.47	41.81	-13.57	54.96	40.075824	-80.617415	1.43	
1600.00	7.00	103.50	1595.71	50.80	-16.40	66.92	40.075816	-80.617372	0.12	
1700.00	7.55	102.47	1694.91	60.01	-19.24	79.26	40.075809	-80.617328	0.57	
1800.00	7.21	104.17	1794.08	69.41	-22.19	91.76	40.075800	-80.617284	0.40	
1900.00	7.54	103.23	1893.25	78.86	-25.23	104.23	40.075792	-80.617239	0.35	
2000.00	8.19	99.38	1992.31	88.52	-27.89	117.64	40.075784	-80.617191	0.84	
2100.00	8.19	95.85	2091.29	97.93	-29.78	131.75	40.075779	-80.617141	0.50	
2200.00	7.82	77.42	2190.33	104.92	-29.03	145.48	40.075781	-80.617092	2.58	
2300.00	7.67	50.90	2289.45	106.75	-23.33	157.30	40.075796	-80.617049	3.55	
2400.00	8.41	31.28	2388.49	103.04	-12.87	166.28	40.075825	-80.617017	2.83	
2500.00	9.49	25.64	2487.27	95.75	0.81	173.65	40.075862	-80.616990	1.39	
2600.00	10.49	25.46	2585.75	86.89	16.46	181.13	40.075905	-80.616963	1.00	
2700.00	12.15	23.38	2683.80	76.51	34.34	189.22	40.075954	-80.616934	1.71	
2800.00	14.11	18.42	2781.19	63.31	55.57	197.25	40.076013	-80.616905	2.26	
2900.00	13.93	16.47	2878.21	48.13	78.68	204.51	40.076076	-80.616879	0.51	
3000.00	13.39	15.22	2975.38	32.82	101.39	210.96	40.076138	-80.616855	0.62	
3100.00	12.79	12.51	3072.78	17.56	123.37	216.40	40.076199	-80.616836	0.86	
3200.00	12.39	10.52	3170.38	2.22	144.73	220.76	40.076257	-80.616820	0.59	
3300.00	13.06	18.57	3267.93	-12.38	165.99	226.31	40.076315	-80.616800	1.89	
3400.00	12.77	18.15	3365.40	-26.11	187.20	233.35	40.076374	-80.616774	0.30	
3500.00	13.29	19.24	3462.83	-39.85	208.55	240.59	40.076432	-80.616748	0.58	
3600.00	13.26	19.14	3560.15	-53.70	230.24	248.13	40.076492	-80.616721	0.04	
3700.00	14.33	20.00	3657.27	-67.94	252.70	256.13	40.076553	-80.616692	1.09	
3800.00	14.05	18.55	3754.22	-82.69	275.84	264.22	40.076617	-80.616662	0.45	
3900.00	13.64	16.86	3851.31	-97.60	298.63	271.50	40.076679	-80.616636	0.58	
4000.00	14.43	18.05	3948.33	-112.80	321.76	278.78	40.076743	-80.616610	0.84	
4100.00	14.59	17.06	4045.14	-128.47	345.65	286.34	40.076808	-80.616582	0.30	
4200.00	14.04	16.72	4142.03	-144.15	369.31	293.52	40.076873	-80.616556	0.56	
4300.00	13.29	15.09	4239.20	-159.45	392.02	300.01	40.076935	-80.616533	0.84	
4400.00	12.71	12.19	4336.64	-174.67	413.87	305.32	40.076995	-80.616513	0.87	
4500.00	13.29	16.19	4434.08	-189.72	435.67	310.85	40.077055	-80.616493	1.07	
4600.00	13.15	18.53	4531.43	-204.08	457.49	317.67	40.077115	-80.616469	0.55	
4700.00	12.54	20.38	4628.92	-217.41	478.45	325.06	40.077172	-80.616442	0.74	
4800.00	13.24	22.70	4726.40	-230.11	499.19	333.26	40.077229	-80.616412	0.87	
4900.00	13.42	22.45	4823.71	-242.90	520.48	342.11	40.077288	-80.616380	0.19	
5000.00	14.44	23.11	4920.77	-256.18	542.68	351.44	40.077348	-80.616347	1.03	
5100.00	14.43	23.25	5017.61	-269.79	565.59	361.25	40.077411	-80.616311	0.04	
5200.00	14.65	20.44	5114.41	-283.98	588.89	370.59	40.077475	-80.616277	0.74	
5300.00	14.61	20.31	5211.17	-298.79	612.57	379.38	40.077540	-80.616246	0.05	
5400.00	14.23	22.10	5308.02	-313.10	635.78	388.38	40.077604	-80.616213	0.59	
5500.00	13.27	33.79	5405.17	-324.39	656.71	399.39	40.077661	-80.616173	2.93	
5600.00	13.63	61.59	5502.53	-327.69	671.87	416.16	40.077702	-80.616113	6.42	
5700.00	13.03	91.14	5599.95	-320.14	677.26	437.82	40.077717	-80.616036	6.77	
5800.00	14.81	114.40	5697.08	-302.83	671.75	460.75	40.077702	-80.615954	5.83	

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5D Survey Report

Survey Points: (Relative to Slot centre)(TVD relative to Drill Floor)										
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	VS (US ft)	N.Offset (US ft)	E.Offset (US ft)	Latitude (° ' ")	Longitude (° ' ")	DLS (°/100US ft)	Comment
5900.00	20.43	122.12	5792.36	-276.03	657.18	487.19	40.077661	-80.615859	6.07	
6000.00	27.15	129.07	5883.83	-238.25	633.49	519.73	40.077596	-80.615744	7.27	
6100.00	34.06	132.73	5969.86	-189.17	600.06	558.06	40.077504	-80.615607	7.15	
6150.00	36.90	134.06	6010.57	-160.88	580.12	579.14	40.077449	-80.615532	5.89	MS Gyro Tie-In
6203.00	39.39	136.82	6052.25	-128.73	556.79	602.09	40.077384	-80.615450	5.69	
6251.00	42.81	137.20	6088.42	-97.59	533.71	623.60	40.077321	-80.615374	7.14	
6283.00	44.97	136.59	6111.48	-75.71	517.51	638.76	40.077276	-80.615320	6.88	
6342.00	49.13	138.04	6151.67	-33.06	485.76	668.01	40.077188	-80.615216	7.28	
6389.00	51.56	140.05	6181.66	2.84	458.43	691.72	40.077113	-80.615131	6.13	
6436.00	52.95	141.80	6210.43	39.84	429.58	715.14	40.077034	-80.615048	4.17	
6483.00	56.49	142.51	6237.58	78.10	399.28	738.67	40.076950	-80.614964	7.63	
6531.00	60.68	142.36	6262.59	118.96	366.82	763.64	40.076861	-80.614876	8.73	
6578.00	64.43	142.60	6284.25	160.57	333.74	789.04	40.076769	-80.614785	7.99	
6626.00	67.61	143.28	6303.75	204.35	298.75	815.46	40.076673	-80.614692	6.75	
6673.00	70.77	144.80	6320.45	248.24	263.19	841.25	40.076575	-80.614600	7.37	
6720.00	74.33	146.30	6334.54	293.07	226.22	866.61	40.076473	-80.614510	8.16	
6767.00	76.17	147.70	6346.51	338.51	188.10	891.36	40.076368	-80.614422	4.86	
6816.00	79.46	149.87	6356.85	386.35	147.15	916.17	40.076256	-80.614334	7.99	
6863.00	84.44	152.21	6363.43	432.71	106.44	938.69	40.076143	-80.614254	11.69	
6911.00	86.86	153.63	6367.07	480.25	63.83	960.47	40.076026	-80.614177	5.84	
7005.00	89.57	156.73	6370.00	573.05	-21.43	999.90	40.075792	-80.614037	4.38	
7100.00	88.89	155.82	6371.28	666.59	-108.39	1038.12	40.075552	-80.613902	1.20	
7195.00	88.89	154.70	6373.12	760.41	-194.65	1077.87	40.075315	-80.613761	1.18	
7289.00	89.01	152.94	6374.84	853.57	-278.99	1119.33	40.075083	-80.613614	1.88	
7385.00	87.97	154.01	6377.37	948.78	-364.86	1162.19	40.074847	-80.613462	1.55	
7480.00	88.58	154.20	6380.23	1042.85	-450.28	1203.66	40.074612	-80.613315	0.67	
7574.00	89.82	155.59	6381.54	1135.77	-535.39	1243.54	40.074377	-80.613174	1.98	
7669.00	89.14	154.45	6382.41	1229.66	-621.49	1283.65	40.074140	-80.613032	1.40	
7764.00	89.32	154.65	6383.68	1323.66	-707.27	1324.47	40.073904	-80.612888	0.28	
7858.00	89.14	153.04	6384.95	1416.83	-791.63	1365.90	40.073672	-80.612741	1.72	
7953.00	89.82	150.87	6385.81	1511.35	-875.47	1410.56	40.073441	-80.612582	2.39	
8048.00	89.51	149.14	6386.36	1606.14	-957.74	1458.05	40.073215	-80.612414	1.85	
8142.00	89.57	148.99	6387.12	1700.03	-1038.37	1506.37	40.072993	-80.612243	0.17	
8237.00	89.14	150.56	6388.19	1794.84	-1120.44	1554.19	40.072767	-80.612073	1.71	
8332.00	89.32	153.50	6389.46	1889.34	-1204.33	1598.74	40.072536	-80.611915	3.10	
8427.00	90.06	156.69	6389.98	1983.21	-1290.48	1638.74	40.072299	-80.611773	3.45	
8521.00	90.06	156.53	6389.88	2075.68	-1376.76	1676.06	40.072062	-80.611641	0.17	
8616.00	89.88	154.74	6389.93	2169.41	-1463.29	1715.25	40.071824	-80.611503	1.89	
8711.00	89.88	152.90	6390.13	2263.58	-1548.54	1757.16	40.071589	-80.611354	1.94	
8805.00	89.63	153.52	6390.53	2356.89	-1632.45	1799.53	40.071358	-80.611204	0.71	
8900.00	89.88	154.20	6390.94	2451.06	-1717.73	1841.38	40.071123	-80.611056	0.76	
8994.00	89.75	154.08	6391.24	2544.17	-1802.32	1882.38	40.070891	-80.610910	0.19	
9089.00	89.94	153.13	6391.50	2638.39	-1887.42	1924.61	40.070656	-80.610761	1.02	
9184.00	89.82	152.62	6391.70	2732.76	-1971.97	1967.92	40.070424	-80.610607	0.55	
9279.00	89.75	152.16	6392.05	2827.22	-2056.15	2011.95	40.070192	-80.610451	0.49	
9373.00	89.82	152.96	6392.41	2920.65	-2139.57	2055.27	40.069962	-80.610298	0.85	
9468.00	89.63	152.77	6392.86	3015.02	-2224.11	2098.60	40.069730	-80.610144	0.28	
9563.00	89.63	152.84	6393.47	3109.40	-2308.61	2142.01	40.069497	-80.609990	0.07	
9657.00	89.69	152.74	6394.03	3202.79	-2392.21	2184.99	40.069267	-80.609838	0.12	
9756.00	89.38	155.00	6394.84	3300.91	-2481.08	2228.59	40.069022	-80.609684	2.30	
9851.00	89.82	156.78	6395.50	3394.57	-2567.79	2267.39	40.068784	-80.609546	1.93	
9946.00	89.69	156.06	6395.91	3488.08	-2654.85	2305.40	40.068544	-80.609412	0.77	
10040.00	89.82	155.55	6396.31	3580.78	-2740.59	2343.92	40.068308	-80.609275	0.56	
10135.00	89.94	152.49	6396.51	3674.90	-2825.98	2385.53	40.068073	-80.609128	3.22	
10230.00	89.82	151.62	6396.71	3769.42	-2909.90	2430.05	40.067842	-80.608970	0.92	
10324.00	89.88	154.86	6396.95	3862.71	-2993.83	2472.37	40.067611	-80.608820	3.45	
10419.00	89.88	156.55	6397.15	3956.42	-3080.41	2511.45	40.067373	-80.608682	1.78	
10513.00	89.81	155.45	6397.41	4049.07	-3166.28	2549.68	40.067137	-80.608547	1.17	

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5D Survey Report

Survey Points: (Relative to Slot centre)(TVD relative to Drill Floor)										
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	VS (US ft)	N.Offset (US ft)	E.Offset (US ft)	Latitude (° ' ")	Longitude (° ' ")	DLS (°/100US ft)	Comment
10608.00	89.57	155.25	6397.92	4142.88	-3252.62	2589.31	40.066899	-80.608406	0.33	
10702.00	89.63	155.52	6398.58	4235.69	-3338.08	2628.46	40.066664	-80.608268	0.29	
10796.00	89.57	154.14	6399.23	4328.64	-3423.15	2668.43	40.066430	-80.608126	1.47	
10891.00	89.57	154.48	6399.94	4422.70	-3508.76	2709.62	40.066195	-80.607980	0.36	
10986.00	89.75	151.84	6400.51	4517.00	-3593.51	2752.50	40.065961	-80.607829	2.79	
11080.00	89.69	151.15	6400.97	4610.61	-3676.12	2797.36	40.065734	-80.607669	0.74	
11175.00	89.51	151.68	6401.63	4705.23	-3759.53	2842.82	40.065504	-80.607508	0.59	
11269.00	89.51	153.01	6402.44	4798.69	-3842.79	2886.44	40.065275	-80.607354	1.41	
11363.00	89.75	153.13	6403.04	4892.03	-3926.60	2929.02	40.065044	-80.607203	0.29	
11457.00	89.63	152.15	6403.55	4985.45	-4010.08	2972.21	40.064815	-80.607050	1.05	
11552.00	89.51	151.02	6404.26	5080.03	-4093.63	3017.42	40.064585	-80.606890	1.20	
11647.00	89.69	152.09	6404.93	5174.63	-4177.16	3062.67	40.064355	-80.606729	1.14	
11742.00	89.81	152.45	6405.34	5269.10	-4261.24	3106.87	40.064123	-80.606572	0.40	
11837.00	89.69	149.50	6405.76	5363.77	-4344.30	3152.96	40.063895	-80.606409	3.11	
11931.00	88.64	151.20	6407.13	5457.52	-4425.98	3199.45	40.063670	-80.606244	2.13	
12026.00	89.32	155.19	6408.82	5551.79	-4510.74	3242.28	40.063437	-80.606092	4.26	
12120.00	89.26	154.93	6409.98	5644.68	-4595.97	3281.91	40.063202	-80.605952	0.28	
12215.00	89.01	152.88	6411.42	5738.82	-4681.27	3323.69	40.062967	-80.605804	2.17	
12310.00	89.14	151.28	6412.95	5833.32	-4765.20	3368.17	40.062736	-80.605647	1.69	
12405.00	89.88	152.06	6413.76	5927.89	-4848.82	3413.25	40.062506	-80.605487	1.13	
12500.00	89.75	155.58	6414.07	6022.05	-4934.06	3455.15	40.062271	-80.605338	3.71	
12596.00	89.63	158.35	6414.59	6116.38	-5022.40	3492.71	40.062028	-80.605206	2.89	
12689.00	89.88	158.64	6414.99	6207.27	-5108.92	3526.80	40.061790	-80.605085	0.41	
12784.00	89.57	158.09	6415.44	6300.16	-5197.23	3561.83	40.061548	-80.604961	0.66	
12878.00	89.63	153.37	6416.10	6392.85	-5282.89	3600.46	40.061312	-80.604825	5.02	
12973.00	89.88	153.22	6416.51	6487.14	-5367.76	3643.15	40.061078	-80.604673	0.31	
13067.00	90.71	152.01	6416.02	6580.56	-5451.22	3686.38	40.060849	-80.604520	1.56	
13162.00	90.37	148.34	6415.13	6675.31	-5533.62	3733.62	40.060622	-80.604353	3.88	
13257.00	90.00	148.66	6414.82	6770.24	-5614.62	3783.26	40.060399	-80.604177	0.51	
13352.00	90.18	150.07	6414.67	6865.10	-5696.36	3831.67	40.060174	-80.604005	1.50	
13446.00	90.12	151.12	6414.42	6958.83	-5778.25	3877.82	40.059948	-80.603841	1.12	
13540.00	89.47	151.66	6414.76	7052.45	-5860.77	3922.83	40.059721	-80.603682	0.90	
13635.00	89.12	153.07	6415.93	7146.91	-5944.92	3966.89	40.059489	-80.603526	1.53	
13730.00	89.12	153.95	6417.39	7241.14	-6029.94	4009.26	40.059255	-80.603376	0.93	
13825.00	88.95	153.36	6418.99	7335.34	-6115.06	4051.41	40.059021	-80.603226	0.65	
13920.00	89.08	152.52	6420.62	7429.68	-6199.65	4094.62	40.058788	-80.603073	0.89	
14015.00	89.38	155.62	6421.90	7523.78	-6285.06	4136.15	40.058553	-80.602926	3.28	
14109.00	89.57	156.27	6422.76	7616.44	-6370.90	4174.47	40.058317	-80.602791	0.72	
14204.00	89.69	157.04	6423.37	7709.88	-6458.12	4212.11	40.058077	-80.602657	0.82	
14298.00	89.63	155.75	6423.93	7802.41	-6544.25	4249.75	40.057840	-80.602524	1.37	
14392.00	89.75	153.92	6424.44	7895.36	-6629.32	4289.72	40.057606	-80.602383	1.95	
14487.00	89.51	153.12	6425.05	7989.60	-6714.35	4332.08	40.057372	-80.602233	0.88	
14581.00	89.57	152.53	6425.81	8082.98	-6797.97	4375.00	40.057142	-80.602081	0.63	
14675.00	89.75	152.43	6426.37	8176.42	-6881.34	4418.44	40.056912	-80.601927	0.22	
14769.00	89.32	151.96	6427.13	8269.92	-6964.48	4462.28	40.056683	-80.601771	0.68	
14863.00	89.38	150.36	6428.20	8363.57	-7046.81	4507.62	40.056457	-80.601611	1.70	
14957.00	89.57	152.15	6429.06	8457.20	-7129.22	4552.82	40.056230	-80.601450	1.91	
15052.00	89.82	153.28	6429.56	8551.60	-7213.65	4596.37	40.055998	-80.601296	1.22	
15148.00	89.51	156.52	6430.12	8646.50	-7300.57	4637.09	40.055758	-80.601152	3.39	
15242.00	89.57	158.73	6430.88	8738.65	-7387.48	4672.87	40.055519	-80.601026	2.35	
15337.00	89.29	160.47	6431.82	8831.08	-7476.52	4705.98	40.055274	-80.600909	1.86	
15431.00	88.71	156.04	6433.46	8923.00	-7563.79	4740.79	40.055034	-80.600786	4.75	
15526.00	89.57	152.82	6434.89	9017.01	-7649.47	4781.78	40.054798	-80.600641	3.51	
15621.00	89.57	151.45	6435.60	9111.51	-7733.45	4826.18	40.054567	-80.600483	1.44	
15715.00	89.75	145.33	6436.16	9205.40	-7813.46	4875.43	40.054347	-80.600309	6.51	
15810.00	89.88	141.63	6436.47	9300.27	-7889.80	4931.95	40.054137	-80.600108	3.90	
15905.00	89.51	141.18	6436.98	9394.93	-7964.04	4991.21	40.053932	-80.599897	0.61	
15999.00	89.07	141.99	6438.14	9488.60	-8037.69	5049.61	40.053729	-80.599690	0.98	
16095.00	89.20	138.52	6439.59	9584.05	-8111.48	5110.98	40.053526	-80.599472	3.62	

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16190.00	89.08	139.96	6441.02	9678.32	-8183.43	5172.99	40.053327	-80.599251	1.52	
16284.00	89.01	140.93	6442.58	9771.82	-8255.90	5232.85	40.053128	-80.599038	1.03	
16378.00	88.89	141.57	6444.30	9865.45	-8329.19	5291.67	40.052926	-80.598829	0.69	
16473.00	89.12	140.73	6445.95	9960.05	-8403.17	5351.25	40.052722	-80.598618	0.92	
16567.00	88.83	140.14	6447.64	10053.55	-8475.62	5411.12	40.052522	-80.598405	0.70	
16662.00	89.14	144.73	6449.32	10148.30	-8550.89	5469.01	40.052315	-80.598199	4.84	
16755.00	89.01	147.39	6450.82	10241.27	-8628.03	5520.92	40.052102	-80.598015	2.86	
16850.00	88.89	144.50	6452.56	10336.25	-8706.71	5574.11	40.051885	-80.597826	3.04	
16944.00	88.71	140.45	6454.53	10430.00	-8781.23	5631.34	40.051680	-80.597623	4.31	
17038.00	88.46	140.76	6456.85	10523.51	-8853.85	5690.98	40.051480	-80.597411	0.42	
17132.00	88.21	140.94	6459.58	10617.05	-8926.72	5750.30	40.051279	-80.597200	0.33	
17227.00	89.26	143.00	6461.68	10711.76	-9001.52	5808.81	40.051073	-80.596992	2.43	
17321.00	88.46	146.68	6463.55	10805.69	-9078.35	5862.92	40.050861	-80.596800	4.01	
17416.00	89.94	146.10	6464.88	10900.68	-9157.45	5915.50	40.050643	-80.596614	1.67	
17510.00	89.63	147.05	6465.23	10994.68	-9235.90	5967.28	40.050427	-80.596430	1.06	
17604.00	89.82	144.86	6465.68	11088.67	-9313.79	6019.90	40.050213	-80.596243	2.34	
17699.00	89.38	141.33	6466.35	11183.50	-9389.74	6076.94	40.050003	-80.596041	3.74	
17794.00	89.38	140.03	6467.37	11278.04	-9463.23	6137.13	40.049801	-80.595827	1.37	
17888.00	88.64	140.64	6469.00	11371.53	-9535.57	6197.12	40.049601	-80.595613	1.02	
17984.00	89.08	139.04	6470.91	11466.90	-9608.93	6259.02	40.049399	-80.595393	1.73	
18079.00	88.71	137.88	6472.74	11561.00	-9680.02	6322.00	40.049203	-80.595170	1.28	
18173.00	89.45	140.28	6474.25	11654.24	-9751.03	6383.56	40.049007	-80.594951	2.67	
18267.00	89.75	142.32	6474.91	11747.88	-9824.39	6442.33	40.048805	-80.594742	2.19	
18362.00	89.38	141.84	6475.63	11842.62	-9899.33	6500.71	40.048599	-80.594535	0.64	
18457.00	89.51	142.24	6476.55	11937.36	-9974.22	6559.14	40.048392	-80.594327	0.44	
18551.00	89.20	142.83	6477.61	12031.15	-10048.83	6616.32	40.048187	-80.594124	0.71	
18645.00	89.57	142.23	6478.62	12124.95	-10123.43	6673.50	40.047981	-80.593921	0.75	
18740.00	89.32	142.97	6479.54	12219.75	-10198.90	6731.20	40.047773	-80.593716	0.82	
18834.00	89.32	142.42	6480.65	12313.56	-10273.66	6788.16	40.047567	-80.593514	0.59	
18930.00	89.20	144.29	6481.89	12409.42	-10350.67	6845.45	40.047355	-80.593310	1.95	
19025.00	88.89	144.12	6483.47	12504.35	-10427.72	6901.01	40.047143	-80.593113	0.37	
19121.00	88.89	143.73	6485.33	12600.25	-10505.30	6957.53	40.046929	-80.592912	0.41	
19215.00	89.08	143.74	6487.00	12694.14	-10581.08	7013.12	40.046720	-80.592715	0.20	
19310.00	89.45	146.74	6488.22	12789.11	-10659.11	7067.27	40.046505	-80.592523	3.18	
19404.00	89.38	146.27	6489.18	12883.10	-10737.49	7119.14	40.046289	-80.592338	0.51	
19499.00	89.32	144.42	6490.26	12978.08	-10815.63	7173.16	40.046074	-80.592147	1.95	
19594.00	89.38	140.52	6491.33	13072.84	-10890.95	7231.02	40.045867	-80.591941	4.11	
19688.00	89.32	140.60	6492.40	13166.37	-10963.54	7290.73	40.045666	-80.591729	0.11	
19784.00	89.57	141.21	6493.33	13261.95	-11038.04	7351.26	40.045461	-80.591514	0.69	
19878.00	89.57	143.03	6494.04	13355.69	-11112.23	7408.98	40.045257	-80.591309	1.94	
19927.00	89.20	142.65	6494.56	13404.60	-11151.28	7438.57	40.045149	-80.591204	1.08	Last WFT SVY
19950.00	89.20	142.65	6494.88	13427.55	-11169.56	7452.52	40.045099	-80.591154	0.00	Proj. to TD

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