



Weatherford®

Plan Data for HOWARD 30C-28HZ

Field: WATTENBERG_ANADARKO_NAD 83

Map Unit: USft

Vertical Reference Datum (VRD): Mean Sea Level

Projected Coordinate System: NAD83 / Colorado North (ftUS)

Slot: HOWARD 30C-28HZ

Position:

Offset is from Site centre

+N/-S: 0.00USft Northing: 1249106.49USft Latitude: 40.015625°

+E/-W: 0.00USft Easting: 3167952.66USft Longitude: -104.900356°

Elevation Above VRD: 5008.00USft

Survey Point Information:

DogLeg Severity Unit: °/100.00ft

Position offsets from Slot centre

MD	Inc	Az	TVD	+N/-S	+E/-W	VSec	DLS	Toolface	Build	Turn	Annotations
(USft)	(°)	(°)	(USft)	(USft)	(USft)	(USft)	(DLSU)	(°)	(DLSU)	(DLSU)	
931.00	0.08	167.35	930.99	-0.76	-2.86	-0.74	1.16	203.7	-0.27	-794.73	TIE ON
1054.00	0.16	46.37	1053.99	-0.73	-2.72	-0.71	0.17	220.2	0.07	-98.36	FIRST WFT MWD SVY
12801.00	89.57	358.92	7720.05	4902.78	-1213.26	4910.10	0.78	164.9	-0.75	0.20	LAST WFT MWD SVY
12858.00	89.57	358.92	7720.48	4959.77	-1214.33	4967.10	0.00	0.0	0.00	0.00	PROJECTION TO TD

Survey Data for HOWARD 30C-28HZ

Formation Point Information:

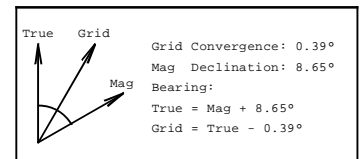
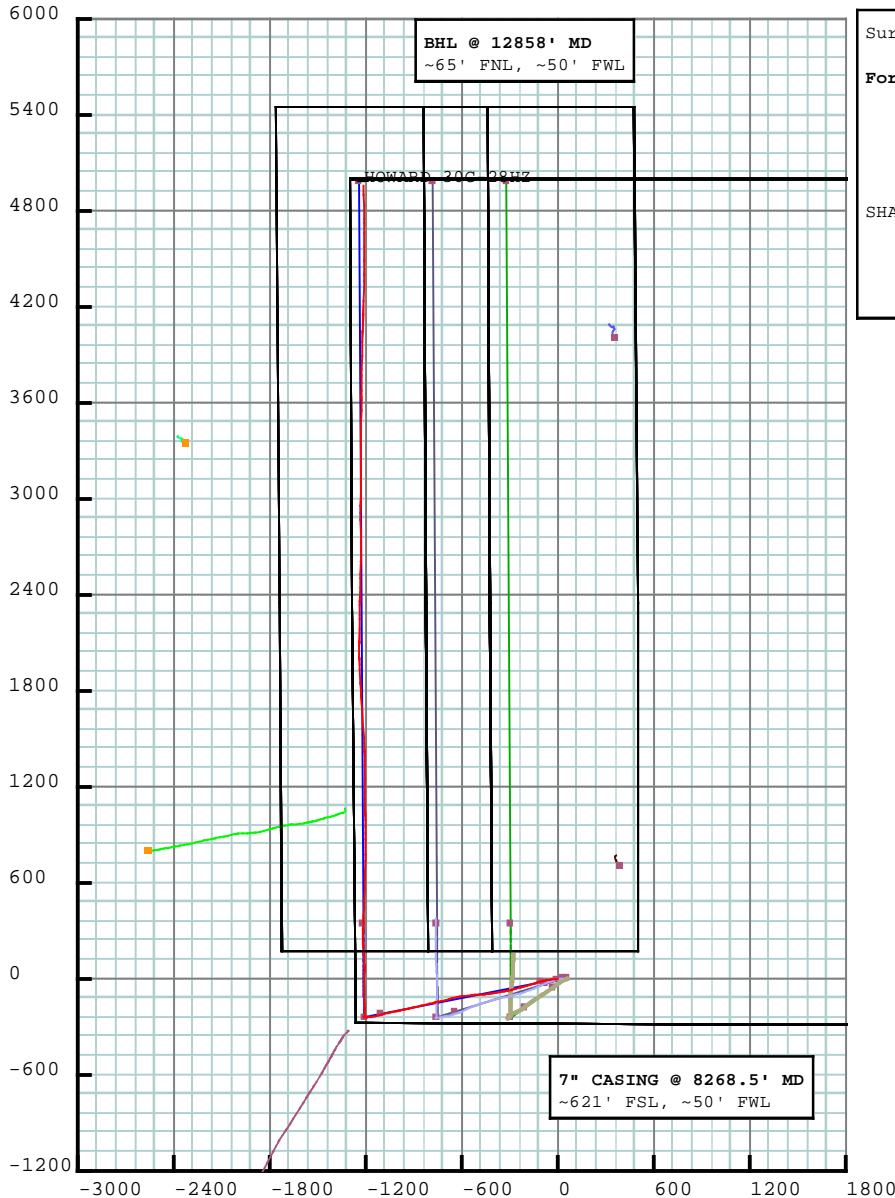
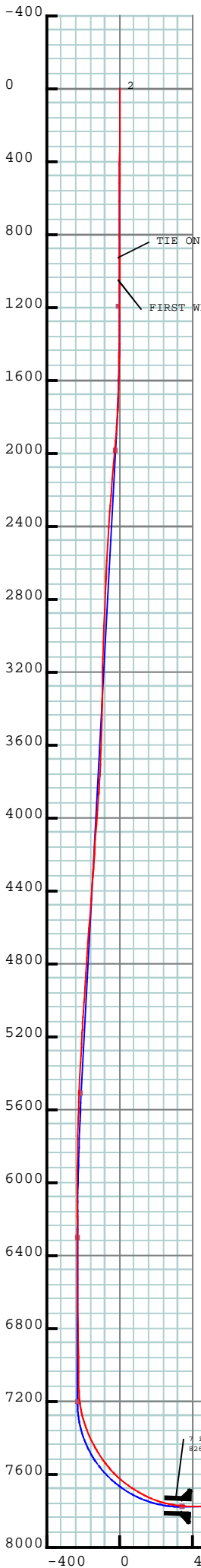
Name	TVD	Elevation	MD
	(USft)	(USft)	(USft)
CODELL	N/A	N/A	N/A
FOX HILLS	1116.00	3908.00	1116.01
SUSSEX	4804.00	220.00	4934.66
SHARON SPRINGS	7328.00	-2304.00	7494.61
NIOBRARA A	7349.00	-2325.00	7516.91
NIOBRARA B	7529.00	-2505.00	7722.45
NIOBRARA C	7627.00	-2603.00	7855.13
FORT HAYS	7757.00	-2733.00	8133.95

Target Set Information:

Name: 1			
Name	TVD	Lat	Long
	(USft)	(°)	(°)
PBHL 7708.00	40.029315	-104.904799	

Casing Point Information:

Name	MD	TVD
	(USft)	(USft)
7 in	8268.50	7775.18



LAST MWD SVY @ 12801' MD

LAST WFT MWD SVY

PROJECTION TO TD

HOWARD 30C-28HZ



5D Survey Report

Anadarko Petroleum

Field Name: WATTENBERG_ANADARKO_NAD 83
Site Name: HOWARD 14W-28HZ
Well Name: HOWARD 30C-28HZ
Survey: Definitive Survey



DEFINITIVE SURVEYS FOR THE HOWARD 30C-28HZ

Site Name HOWARD 14W-28HZ	Units : US ft		North Reference : True		Convergence Angle : 0.39	
	Position		Northing : 1249106.49 US ft		Latitude : 40.015625	
			Easting : 3167952.66 US ft		Longitude : -104.900356	
	Elevation above:5008.00 US ft					
Comment :						
Slot Name HOWARD 30C-28HZ	+ N / - S : 0.00 US ft		Position (Offsets relative to Site Centre)			
	+ E / - W : 0.00 US ft		Northing :1249106.49 US ft		Latitude : 40.015625	
			Easting :3167952.66 US ft		Longitude : -104.900356	
	Slot TVD Reference : Ground Elevation					
Elevation above : 5008.00 US ft						
Comment :						
Well Name HOWARD 30C-28HZ	Type : Main well		UWI :			
	Rig Height <i>Drill Floor</i> : 16.00 US ft		Comment :			
	Relative to : 5024.00 US ft					
	Closure Distance : 5106.26 US ft		Closure Azimuth : 346.243°			
	Vertical Section (Position of Origin Relative to Slot)					
	+ N / - S : -0.00 US ft		+ E / - W : -0.00 US ft		Az :359.65°	
Target Set						
Name : 1		Number of Targets : 1				
Comment :						
TargetName:		Position (Relative to centre)				
PBHL		Northing : 1254084.91 US ft		Latitude : 40°1'45.534000"		
Shape:		Easting : 3166674.77US ft		Longitude : -104°54'17.276400"		
Cuboid		TVD (Drill Floor) : 7708.00 US ft				
Orientation		Azimuth : 0.00°		Inclination : 0.00°		
Dimensions		Length : 1.00 US ft		Breadth : 1.00 US ft		
				Height : 1.00 US ft		

5D Survey Report

Survey Points (Relative to centre, TVD relative to Drill Floor)																	
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N. Offset (US ft)	E. Offset (US ft)	Latitude (°)	Longitude (°)	DLS (°/100 US ft)	T. Face (°)	CL (US ft)	VS (US ft)	High to Plan (US ft)	Right to Plan (US ft)				
2533.00	14.84	257.25	2497.55	-68.44	-289.13	40.015437	-104.901388	0.93	135.71	93.00	-66.68	-36.19	9.15				
2625.00	14.95	259.31	2586.46	-73.25	-312.28	40.015424	-104.901471	0.59	79.26	92.00	-71.34	-34.07	10.61				
2718.00	15.02	260.46	2676.30	-77.47	-335.96	40.015412	-104.901555	0.33	77.31	93.00	-75.41	-32.22	10.79				
2811.00	14.65	261.57	2766.20	-81.19	-359.47	40.015402	-104.901639	0.50	143.01	93.00	-78.99	-30.15	10.41				
2904.00	14.63	260.08	2856.18	-84.94	-382.68	40.015392	-104.901722	0.41	266.24	93.00	-82.60	-28.19	8.79				
2997.00	14.41	259.57	2946.21	-89.06	-405.63	40.015381	-104.901804	0.27	209.92	93.00	-86.58	-25.87	8.13				
3089.00	13.93	262.64	3035.41	-92.55	-427.87	40.015371	-104.901884	0.97	124.05	92.00	-89.93	-22.51	8.39				
3182.00	13.63	260.41	3125.73	-95.81	-449.77	40.015362	-104.901962	0.66	239.46	93.00	-93.06	-19.21	6.41				
3274.00	14.79	266.68	3214.92	-98.25	-472.19	40.015355	-104.902042	2.14	57.02	92.00	-95.36	-15.71	6.13				
3359.00	15.71	269.06	3296.93	-99.03	-494.53	40.015353	-104.902122	1.28	32.99	85.00	-96.01	-14.72	2.96				
3445.00	16.33	267.10	3379.59	-99.83	-518.25	40.015351	-104.902206	0.96	317.95	86.00	-96.67	-15.07	-1.32				
3530.00	17.22	263.54	3460.97	-101.85	-542.68	40.015345	-104.902294	1.60	309.19	85.00	-98.54	-16.16	-4.87				
3616.00	17.08	262.84	3543.15	-104.86	-567.86	40.015337	-104.902383	0.29	235.52	86.00	-101.39	-17.89	-6.87				
3701.00	16.49	263.46	3624.53	-107.79	-592.23	40.015329	-104.902470	0.73	163.42	85.00	-104.17	-19.20	-8.42				
3786.00	15.04	262.49	3706.33	-110.61	-615.16	40.015321	-104.902552	1.73	189.83	85.00	-106.85	-18.76	-10.43				
3872.00	14.76	257.31	3789.44	-114.47	-636.91	40.015311	-104.902630	1.58	255.63	86.00	-110.58	-16.09	-12.39				
3957.00	15.71	255.52	3871.45	-119.73	-658.61	40.015296	-104.902707	1.25	332.79	85.00	-115.70	-14.62	-11.84				
4042.00	16.33	253.04	3953.15	-126.09	-681.18	40.015279	-104.902788	1.09	310.98	85.00	-121.93	-14.25	-10.56				
4128.00	16.56	254.43	4035.64	-132.91	-704.56	40.015260	-104.902871	0.53	60.36	86.00	-128.60	-15.23	-8.11				
4213.00	16.29	257.30	4117.17	-138.78	-727.85	40.015244	-104.902955	1.01	109.78	85.00	-134.33	-16.22	-6.13				
4299.00	17.08	257.88	4199.55	-144.08	-751.97	40.015229	-104.903041	0.94	12.18	86.00	-139.49	-17.31	-5.45				
4384.00	18.33	257.68	4280.52	-149.56	-777.23	40.015214	-104.903131	1.47	357.12	85.00	-144.80	-19.82	-5.07				
4469.00	18.06	257.21	4361.27	-155.32	-803.14	40.015199	-104.903223	0.36	208.30	85.00	-150.41	-23.04	-4.66				
4555.00	17.53	256.96	4443.15	-161.20	-828.76	40.015182	-104.903315	0.62	188.08	86.00	-156.13	-25.74	-4.04				
4640.00	18.47	255.75	4523.99	-167.40	-854.28	40.015165	-104.903406	1.19	337.73	85.00	-162.18	-28.63	-3.56				
4726.00	18.61	256.02	4605.53	-174.07	-880.80	40.015147	-104.903501	0.19	31.65	86.00	-168.68	-32.48	-2.20				
4811.00	17.78	258.05	4686.28	-180.03	-906.66	40.015131	-104.903593	1.23	143.59	85.00	-174.49	-35.80	-0.28				
4896.00	17.82	258.06	4767.21	-185.41	-932.08	40.015116	-104.903684	0.05	4.38	85.00	-179.71	-38.47	0.05				
4982.00	18.23	258.29	4848.99	-190.86	-958.12	40.015101	-104.903777	0.48	9.96	86.00	-185.01	-41.50	0.48				
5067.00	19.92	258.13	4929.32	-196.54	-985.32	40.015085	-104.903874	1.99	358.15	85.00	-190.52	-45.99	0.63				
5153.00	18.65	257.43	5010.49	-202.55	-1013.07	40.015069	-104.903973	1.50	189.99	86.00	-196.35	-50.98	0.50				
5238.00	17.01	257.88	5091.41	-208.12	-1038.50	40.015054	-104.904064	1.94	175.41	85.00	-201.77	-53.74	1.38				
5324.00	14.62	258.41	5174.15	-212.94	-1061.43	40.015040	-104.904146	2.78	176.80	86.00	-206.45	-53.45	2.16				
5409.00	13.43	256.33	5256.61	-217.43	-1081.53	40.015028	-104.904217	1.52	201.95	85.00	-210.81	-50.54	0.94				
5495.00	11.76	252.58	5340.54	-222.41	-1099.60	40.015014	-104.904282	2.16	204.27	86.00	-215.69	-45.44	-0.32				
5580.00	12.23	256.02	5423.68	-227.18	-1116.60	40.015001	-104.904343	1.01	58.37	85.00	-220.35	-39.50	3.99				
5666.00	11.12	258.03	5507.90	-231.10	-1133.55	40.014991	-104.904403	1.37	160.86	86.00	-224.17	-32.82	5.98				
5751.00	9.41	258.66	5591.54	-234.17	-1148.39	40.014982	-104.904456	2.02	176.55	85.00	-227.15	-25.60	6.49				
5836.00	7.94	260.55	5675.57	-236.50	-1160.99	40.014976	-104.904501	1.76	169.96	85.00	-229.40	-18.36	6.96				
5922.00	6.67	261.60	5760.87	-238.20	-1171.79	40.014971	-104.904540	1.48	174.52	86.00	-231.04	-11.63	6.56				
6007.00	6.13	263.34	5845.34	-239.45	-1181.18	40.014968	-104.904573	0.67	161.11	85.00	-232.23	-6.10	5.90				

5D Survey Report

Survey Points (Relative to centre, TVD relative to Drill Floor)																	
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N. Offset (US ft)	E. Offset (US ft)	Latitude (°)	Longitude (°)	DLS (°/100 US ft)	T. Face (°)	CL (US ft)	VS (US ft)	High to Plan (US ft)	Right to Plan (US ft)				
6093.00	4.90	265.48	5930.94	-240.27	-1189.41	40.014965	-104.904602	1.45	171.57	86.00	-233.00	-1.72	4.86				
6178.00	4.10	268.69	6015.67	-240.63	-1196.06	40.014964	-104.904626	0.99	164.12	85.00	-233.31	1.57	3.48				
6263.00	3.39	271.23	6100.49	-240.64	-1201.61	40.014964	-104.904646	0.86	168.11	85.00	-233.30	3.31	1.97				
6349.00	3.31	281.24	6186.35	-240.10	-1206.59	40.014966	-104.904664	0.69	102.76	86.00	-232.73	3.08	-0.03				
6434.00	0.97	276.72	6271.28	-239.54	-1209.71	40.014967	-104.904675	2.76	181.87	85.00	-232.15	2.04	-0.67				
6519.00	0.88	286.49	6356.27	-239.27	-1211.05	40.014968	-104.904680	0.21	124.53	85.00	-231.87	0.70	-0.97				
6605.00	1.05	307.10	6442.26	-238.61	-1212.31	40.014970	-104.904684	0.45	74.45	86.00	-231.20	-1.09	-0.92				
6689.00	0.31	6.99	6526.25	-237.92	-1212.90	40.014972	-104.904686	1.11	163.31	84.00	-230.50	-1.96	1.15				
6775.00	1.75	95.50	6612.24	-237.81	-1211.57	40.014972	-104.904682	2.06	98.59	86.00	-230.41	-0.22	2.22				
6860.00	0.38	50.47	6697.22	-237.76	-1210.06	40.014972	-104.904676	1.77	190.29	85.00	-230.36	-0.23	0.49				
6946.00	0.78	19.45	6783.22	-237.02	-1209.64	40.014974	-104.904675	0.58	305.66	86.00	-229.63	-3.59	-1.23				
7031.00	0.70	11.30	6868.21	-235.97	-1209.35	40.014977	-104.904674	0.16	228.74	85.00	-228.58	-4.47	-1.81				
7116.00	0.87	10.92	6953.20	-234.83	-1209.12	40.014980	-104.904673	0.20	358.06	85.00	-227.44	-5.63	-1.84				
7201.00	0.84	17.30	7038.19	-233.60	-1208.82	40.014984	-104.904672	0.12	110.66	85.00	-226.21	-7.06	-1.14				
7259.00	0.72	17.90	7096.19	-232.85	-1208.58	40.014986	-104.904671	0.21	176.41	58.00	-225.46	-7.86	-1.06				
7376.00	0.74	7.25	7128.19	-232.45	-1208.49	40.014987	-104.904671	0.43	273.04	32.00	-225.06	-7.94	-2.53				
7462.00	16.11	358.51	7296.90	-208.01	-1206.64	40.015054	-104.904664	8.71	2.94	85.00	-218.59	-14.45	-2.14				
7547.00	23.07	357.43	7376.93	-179.55	-1207.70	40.015132	-104.904668	9.63	337.61	86.00	-200.64	-23.96	-6.03				
7632.00	29.49	356.59	7453.10	-141.99	-1209.69	40.015235	-104.904675	7.57	356.31	85.00	-134.60	-36.96	-4.67				
7718.00	35.97	357.54	7525.41	-95.58	-1212.04	40.015363	-104.904683	7.56	4.93	86.00	-88.17	-37.90	-1.97				
7803.00	43.06	1.47	7590.95	-41.55	-1212.36	40.015511	-104.904684	8.84	20.96	85.00	-34.14	-35.22	-0.08				
7888.00	53.39	3.11	7647.51	21.70	-1209.76	40.015684	-104.904675	12.24	7.31	85.00	29.09	-32.13	-2.73				
794.00	59.52	357.64	7695.03	93.29	-1209.41	40.015881	-104.904674	8.88	321.81	86.00	100.68	-27.38	-5.06				
8059.00	56.83	355.27	7733.37	168.94	-1214.15	40.016089	-104.904691	8.95	343.32	85.00	176.35	-19.70	-0.82				
8144.00	77.66	359.40	7759.26	249.67	-1217.82	40.016310	-104.904704	13.55	20.63	85.00	257.10	-12.56	2.80				
8221.00	83.76	2.73	7771.69	325.60	-1216.39	40.016519	-104.904695	9.00	28.60	77.00	333.02	-6.30	0.91				
8293.00	89.88	1.97	7775.68	397.39	-1213.44	40.016716	-104.904688	8.57	352.91	72.00	404.80	-1.48	-2.48				
8378.00	92.03	1.68	7774.26	482.33	-1210.74	40.016949	-104.904679	2.55	352.32	85.00	489.72	-1.61	-5.71				
8464.00	91.05	1.93	7771.95	566.25	-1208.03	40.017185	-104.904669	1.18	165.69	86.00	575.62	-2.63	-8.94				
8549.00	92.28	1.40	7769.48	653.18	-1205.56	40.017418	-104.904660	0.98	336.71	85.00	660.53	-3.81	-11.94				
8634.00	91.60	0.92	7766.60	738.11	-1203.84	40.017651	-104.904654	0.98	215.21	85.00	745.45	-5.41	-14.18				
8720.00	90.25	359.18	7765.22	824.10	-1203.77	40.017897	-104.904654	2.56	232.21	86.00	831.44	-5.52	-14.79				
8805.00	91.60	0.30	7763.84	909.08	-1204.15	40.018121	-104.904655	2.06	39.67	85.00	916.42	-5.60	-14.92				
8891.00	90.12	359.14	7762.55	995.07	-1204.57	40.018357	-104.904657	2.19	218.10	86.00	1002.41	-5.60	-15.03				
8976.00	92.35	358.37	7760.72	1080.02	-1206.42	40.018590	-104.904663	2.78	340.96	85.00	1087.37	-6.17	-13.71				
9062.00	93.64	359.83	7756.23	1165.89	-1207.77	40.018826	-104.904668	2.26	48.46	86.00	1173.25	-9.34	-12.89				
9147.00	93.52	359.93	7750.92	1250.72	-1207.95	40.019058	-104.904665	0.18	140.25	85.00	1258.08	-13.36	-13.24				
9232.00	93.09	0.36	7746.02	1335.58	-1207.73	40.019291	-104.904668	0.71	135.04	85.00	1342.94	-16.98	-13.97				
9318.00	91.29	358.22	7742.73	1421.50	-1208.80	40.019527	-104.904672	3.25	229.96	86.00	1428.86	-19.00	-13.42				
9403.00	90.56	356.79	7741.36	1506.41	-1212.50	40.019760	-104.904685	1.89	242.97	85.00	1513.79	-19.09	-10.23				

5D Survey Report

Survey Points (Relative to centre, TVD relative to Drill Floor)													Comment
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N. Offset (US ft)	Latitude (°)	Longitude (°)	DLS (°/100 US ft)	T. Face (°)	CL (US ft)	VS (US ft)	High to Plan (US ft)	Right to Plan (US ft)	
9489.00	91.29	356.03	7739.97	1592.23	40.019996	-104.904704	1.23	313.86	86.00	1599.64	-19.19	-5.37	
9574.00	90.68	355.68	7738.51	1676.99	40.020229	-104.904726	0.83	209.85	85.00	1684.44	-19.37	0.24	
9660.00	90.66	356.56	7737.35	1762.79	40.020464	-104.904747	1.04	78.43	86.00	1770.27	-19.22	5.52	
9745.00	88.89	356.88	7737.54	1847.64	40.020697	-104.904765	2.35	170.77	85.00	1855.15	-17.76	9.85	
9830.00	89.57	357.32	7738.68	1932.53	40.020930	-104.904780	0.95	32.91	85.00	1940.06	-15.34	13.62	
9916.00	90.55	359.64	7738.59	2018.49	40.021166	-104.904788	2.93	67.10	86.00	2026.03	-14.14	15.38	
10001.00	89.57	0.56	7738.50	2103.49	40.021399	-104.904788	1.58	136.81	85.00	2111.03	-12.94	14.70	
10087.00	88.83	0.18	7739.70	2189.48	40.021635	-104.904786	0.97	207.18	86.00	2197.01	-10.44	13.62	
10172.00	89.01	1.55	7741.31	2274.45	40.021869	-104.904781	1.63	82.53	85.00	2281.98	-7.56	11.80	
10257.00	90.31	1.25	7741.81	2359.42	40.022102	-104.904774	1.57	347.00	85.00	2366.93	-5.78	9.21	
10343.00	89.75	1.05	7741.77	2445.40	40.022338	-104.904768	0.69	199.65	86.00	2452.90	-4.53	6.95	
10428.00	91.17	0.76	7741.08	2530.39	40.022571	-104.904763	1.71	348.46	85.00	2537.88	-3.94	5.09	
10513.00	90.93	1.16	7739.53	2615.36	40.022805	-104.904758	0.55	120.96	85.00	2622.84	-4.21	3.14	
10598.00	90.92	0.35	7738.15	2700.34	40.023038	-104.904754	0.95	269.30	85.00	2707.81	-4.30	1.50	
10683.00	91.05	356.88	7736.69	2785.32	40.023271	-104.904756	1.74	275.07	85.00	2792.80	-4.48	1.55	
10769.00	91.54	359.31	7734.75	2871.29	40.023507	-104.904761	0.76	41.26	86.00	2878.77	-5.13	2.38	
10854.00	91.67	1.29	7732.37	2956.25	40.023740	-104.904759	2.33	86.21	85.00	2963.73	-6.23	1.41	
10939.00	91.17	0.82	7730.26	3041.21	40.023974	-104.904753	0.81	223.23	85.00	3048.68	-7.06	-0.68	
11025.00	89.82	359.93	7729.52	3127.20	40.024210	-104.904751	1.88	213.40	86.00	3134.67	-6.51	-1.77	
11110.00	90.12	0.80	7729.56	3212.20	40.024443	-104.904750	1.08	70.97	85.00	3219.66	-5.18	-2.84	
11195.00	91.79	0.27	7728.15	3297.18	40.024676	-104.904747	2.06	342.40	85.00	3304.63	-5.32	-4.15	
11281.00	90.99	359.57	7726.06	3383.16	40.024912	-104.904747	1.24	221.19	86.00	3390.61	-6.11	-4.56	
11366.00	89.69	0.83	7725.56	3468.15	40.025146	-104.904746	2.13	135.89	85.00	3475.60	-5.33	-5.38	
11451.00	89.38	0.14	7725.25	3553.14	40.025379	-104.904744	0.89	245.80	85.00	3560.58	-3.36	-6.62	
11537.00	90.62	359.75	7726.25	3639.14	40.025615	-104.904744	1.51	342.54	86.00	3646.58	-2.07	-7.07	
11622.00	89.12	1.25	7726.44	3724.13	40.025848	-104.904741	2.50	135.00	85.00	3731.57	-0.60	-8.33	
11707.00	90.93	1.33	7726.40	3809.11	40.026082	-104.904734	2.13	2.53	85.00	3816.53	0.66	-10.77	
11793.00	90.31	1.21	7725.47	3895.08	40.026318	-104.904728	0.73	190.95	86.00	3902.49	1.02	-13.20	
11878.00	90.62	0.92	7724.78	3980.06	40.026551	-104.904722	0.50	316.91	85.00	3987.46	1.61	-15.31	
11963.00	90.25	2.18	7724.14	4065.03	40.026784	-104.904714	1.54	106.36	85.00	4072.41	2.24	-18.11	
12049.00	89.57	2.08	7724.27	4150.97	40.027020	-104.904702	0.80	188.37	86.00	4158.33	3.66	-21.84	
12134.00	89.32	1.89	7725.09	4235.91	40.027253	-104.904692	0.37	217.23	85.00	4243.25	5.76	-25.30	
12219.00	89.51	1.33	7725.96	4320.87	40.027487	-104.904683	0.70	288.74	85.00	4328.20	7.91	-28.22	
12305.00	91.60	0.63	7725.13	4406.85	40.027723	-104.904678	2.56	341.49	86.00	4414.17	8.40	-30.23	
12390.00	91.17	359.63	7723.07	4491.83	40.027956	-104.904677	1.28	246.74	85.00	4499.14	7.61	-30.95	
12476.00	90.56	359.82	7721.78	4577.82	40.028192	-104.904676	0.74	162.70	86.00	4585.13	7.61	-31.07	
12561.00	89.82	359.84	7721.49	4662.81	40.028425	-104.904680	0.87	178.45	85.00	4670.12	8.60	-31.34	
12646.00	91.15	0.01	7720.77	4747.81	40.028659	-104.904680	1.58	7.28	85.00	4755.12	9.17	-31.75	
12732.00	90.09	356.78	7719.84	4833.80	40.028895	-104.904684	1.89	229.25	86.00	4841.11	9.53	-31.37	
12801.00	89.57	356.92	7720.05	4902.78	40.029084	-104.904689	0.78	164.93	69.00	4910.10	10.78	-30.42	LAST WFT MWD SVY

5D Survey Report

Survey Points (Relative to centre, TVD relative to Drill Floor)									
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N. Offset (US ft)	E. Offset (US ft)	Latitude (°)	Longitude (°)	DLS (°/100 US ft)	T.Face (°)
12858.00	89.57	356.92	7720.48	4959.77	-1214.33	40.029240	-104.904692	0.00	0.00
								CL (US ft)	VS (US ft)
								57.00	4967.10
								High to Plan (US ft)	Right to Plan (US ft)
								12.06	-29.69
									PROJECTION TO TD

Formation Points (Relative to centre, TVD relative to Drill Floor)	
Name	MD (US ft)
CODELL	N/A
FOX HILLS	1116.01
SUSSEX	4934.66
SHARON SPRINGS	7494.61
NIOBRARA A	7516.91
NIOBRARA B	7722.45
NIOBRARA C	7855.13
FORT HAYS	8133.95
	TVD (US ft)
	7776.00
	1116.00
	4804.00
	7328.00
	7349.00
	7529.00
	7627.00
	7757.00