



## Installation Anderson

Wellbore Anderson 19-1-9HN



**East (feet) ->**

Scale 1 cm = 200 ft

-400      0      400      800      1200

Tie on - 0.00 Inc, 22.00 MD, 22.00 TVD, 0.00 VS

9 5/8in Surface Casing

3DS Kick off Point - 0.00 Inc, 1400.00 MD, 1400.00 TVD, 0.00 VS

End of Build - 9.94 Inc, 1897.18 MD, 1894.69 TVD, 36.22 VS

Anderson 19-1-9HN LP

## WELL PROFILE DATA

Point	MD	Inc	Azi	TVD	North	East	deg/100ft	V. Sect
Tie on	22.00	0.00	0.00	22.00	0.00	0.00	0.00	0.00
KOP	1400.00	0.00	0.00	1400.00	0.00	0.00	0.00	0.00
End of Build	1897.18	9.94	140.71	1894.69	-33.31	27.25	2.00	36.22
End of Hold	6946.94	9.94	140.71	6868.59	-708.20	579.42	0.00	770.15
Target Anderson 19-1-9	7973.80	89.86	179.75	7485.00	-1415.83	650.39	8.00	1481.25
T.D. & Target Anderson	12337.91	89.86	179.75	7496.00	-5779.89	669.37	0.00	5818.52

Created by	admin
Date plotted	3-Sep-2014

Plot reference is Anderson 19-1-9HN.  
Ref wellpath is Anderson 19-1-9HN.  
Coordinates are in feet reference Slot #3.  
True Vertical Depths are reference Rig Datum.  
Measured Depths are reference Rig Datum.  
Rig Datum: Planned Datum #1  
Rig Datum to Mean Sea Level: 5027.00 ft.  
Plot North is aligned to GRID North.

End of Hold - 9.94 Inc, 6946.94 MD, 6868.59 TVD, 770.15 VS

Anderson 19-1-9HN BH

### 7.0in Intermediate Casing

Anderson 19-1-9HN LP

T.D. & End of Hold - 7496.00 TVD, 5779.89 S 669.37 E

S/C Kick off Point - 89.86 Inc, 7973.80 MD, 7485.00 TVD, 1481.25 VS

Anderson 19-1-9HN BH

**< - North(feet)**

Scale 1 cm = 200 ft

### <- True Vertical Depth (feet)

Scale 1 cm = 200 ft

Scale 1 cm = 200 ft

**Vertical Section (feet) ->**

**Azimuth 173.39 with reference 0.00 N, 0.00 E from Slot #3**



**WARD PETROLEUM**

INTEGRATED PETROLEUM TECHNOLOGIES, INC  
SYSDRILL

Well Design Combined Report  
Wellbore: Anderson 19-1-9HN



Wellhead Details							
Name	Northing	Easting	Latitude	Longitude	North	East	Elevation Above Inst.
Slot #3	1229158.9161	3189550.7142	39.96044000	-104.82379000	0.24S	30.83W	-0.00

Declination			
Date	Source	Time	
28-Aug-2014	IGRF Model [1900.0-2015.0]	10:16	

Site Details				
Name	Northing	Easting	Coord System Name	North Alignment
Anderson	1229159.1513	3189581.5481	CO83-NF on NORTH AMERICAN DATUM 1983 datum	Grid

Summary Wellpath									
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	Northing	Easting
22.00	0.00	0.000	22.00	0.00N	0.00E		0.00	1229158.92	3189550.71
1400.00	0.00	0.000	1400.00	0.00N	0.00E	==>	0.00	1229158.92	3189550.71
1897.18	9.94	140.710	1894.69	33.31S	27.25E	2.00	36.22	1229125.61	3189577.96
6946.94	9.94	140.710	6868.59	708.20S	579.42E	==>	770.15	1228450.74	3190130.11
7973.80	89.86	179.750	7485.00	1415.83S	650.39E	8.00	1481.25	1227743.13	3190201.08
12337.91	89.86	179.750	7496.00	5779.89S	669.37E	==>	5818.52	1223379.22	3190220.06

Interpolated Wellpath									
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	Northing	Easting
0.00	0.00	0.000	0.00	0.00N	0.00E		0.00	1229158.92	3189550.71
22.00	0.00	0.000	22.00	0.00N	0.00E	==>	0.00	1229158.92	3189550.71
100.00	0.00	0.000	100.00	0.00N	0.00E	==>	0.00	1229158.92	3189550.71
200.00	0.00	0.000	200.00	0.00N	0.00E	==>	0.00	1229158.92	3189550.71
300.00	0.00	0.000	300.00	0.00N	0.00E	==>	0.00	1229158.92	3189550.71
400.00	0.00	0.000	400.00	0.00N	0.00E	==>	0.00	1229158.92	3189550.71
500.00	0.00	0.000	500.00	0.00N	0.00E	==>	0.00	1229158.92	3189550.71
600.00	0.00	0.000	600.00	0.00N	0.00E	==>	0.00	1229158.92	3189550.71
700.00	0.00	0.000	700.00	0.00N	0.00E	==>	0.00	1229158.92	3189550.71
800.00	0.00	0.000	800.00	0.00N	0.00E	==>	0.00	1229158.92	3189550.71
900.00	0.00	0.000	900.00	0.00N	0.00E	==>	0.00	1229158.92	3189550.71
1000.00	0.00	0.000	1000.00	0.00N	0.00E	==>	0.00	1229158.92	3189550.71
1100.00	0.00	0.000	1100.00	0.00N	0.00E	==>	0.00	1229158.92	3189550.71
1200.00	0.00	0.000	1200.00	0.00N	0.00E	==>	0.00	1229158.92	3189550.71
1300.00	0.00	0.000	1300.00	0.00N	0.00E	==>	0.00	1229158.92	3189550.71
1378.00	0.00	0.000	1378.00	0.00N	0.00E	==>	0.00	1229158.92	3189550.71
1400.00	0.00	0.000	1400.00	0.00N	0.00E	==>	0.00	1229158.92	3189550.71
1478.00	1.56	140.710	1477.99	0.82S	0.67E	2.00	0.89	1229158.09	3189551.39
1578.00	3.56	140.710	1577.89	4.28S	3.50E	2.00	4.65	1229154.64	3189554.21
1678.00	5.56	140.710	1677.56	10.43S	8.53E	2.00	11.34	1229148.48	3189559.25
1778.00	7.56	140.710	1776.90	19.27S	15.77E	2.00	20.96	1229139.64	3189566.48
1878.00	9.56	140.710	1875.79	30.79S	25.19E	2.00	33.49	1229128.12	3189575.91
1897.18	9.94	140.710	1894.69	33.31S	27.25E	2.00	36.22	1229125.61	3189577.96
1900.00	9.94	140.710	1897.47	33.68S	27.56E	==>	36.63	1229125.23	3189578.27
2000.00	9.94	140.710	1995.96	47.05S	38.49E	==>	51.16	1229111.87	3189589.21
2100.00	9.94	140.710	2094.46	60.41S	49.43E	==>	65.70	1229098.50	3189600.14
2200.00	9.94	140.710	2192.96	73.78S	60.36E	==>	80.23	1229085.14	3189611.07
2300.00	9.94	140.710	2291.46	87.14S	71.30E	==>	94.77	1229071.78	3189622.01
2400.00	9.94	140.710	2389.95	100.51S	82.23E	==>	109.30	1229058.41	3189632.94
2500.00	9.94	140.710	2488.45	113.87S	93.17E	==>	123.83	1229045.05	3189643.88
2600.00	9.94	140.710	2586.95	127.24S	104.10E	==>	138.37	1229031.68	3189654.81
2700.00	9.94	140.710	2685.45	140.60S	115.03E	==>	152.90	1229018.32	3189665.75
2800.00	9.94	140.710	2783.95	153.97S	125.97E	==>	167.44	1229004.95	3189676.68
2900.00	9.94	140.710	2882.44	167.33S	136.90E	==>	181.97	1228991.59	3189687.61
3000.00	9.94	140.710	2980.94	180.70S	147.84E	==>	196.50	1228978.23	3189698.55
3100.00	9.94	140.710	3079.44	194.06S	158.77E	==>	211.04	1228964.86	3189709.48

All data is in Feet unless otherwise stated  
Coordinates are from Slot MD's are from Rig and TVD's are from Rig ( Planned Datum #1 5027.0ft above Mean Sea Level )  
Vertical Section is from 0.00N 0.00E on azimuth 173.390 degrees  
Bottom hole distance is 5818.52 Feet on azimuth 173.39 degrees from Wellhead  
Calculation method uses Minimum Curvature method  
Prepared by Integrated Petroleum Technologies, Inc.  
Date Printed: 3-Sep-2014



# WARD PETROLEUM

## INTEGRATED PETROLEUM TECHNOLOGIES, INC SYSDRILL

Well Design Combined Report  
Wellbore: Anderson 19-1-9HN



Interpolated Wellpath									
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	Northing	Easting
3200.00	9.94	140.710	3177.94	207.43S	169.71E	==>	225.57	1228951.50	3189720.42
3300.00	9.94	140.710	3276.43	220.79S	180.64E	==>	240.11	1228938.13	3189731.35
3400.00	9.94	140.710	3374.93	234.16S	191.58E	==>	254.64	1228924.77	3189742.28
3500.00	9.94	140.710	3473.43	247.52S	202.51E	==>	269.17	1228911.40	3189753.22
3600.00	9.94	140.710	3571.93	260.89S	213.45E	==>	283.71	1228898.04	3189764.15
3700.00	9.94	140.710	3670.43	274.25S	224.38E	==>	298.24	1228884.67	3189775.09
3800.00	9.94	140.710	3768.92	287.62S	235.31E	==>	312.78	1228871.31	3189786.02
3900.00	9.94	140.710	3867.42	300.98S	246.25E	==>	327.31	1228857.95	3189796.96
4000.00	9.94	140.710	3965.92	314.35S	257.18E	==>	341.84	1228844.58	3189807.89
4100.00	9.94	140.710	4064.42	327.71S	268.12E	==>	356.38	1228831.22	3189818.82
4200.00	9.94	140.710	4162.92	341.07S	279.05E	==>	370.91	1228817.85	3189829.76
4300.00	9.94	140.710	4261.41	354.44S	289.99E	==>	385.45	1228804.49	3189840.69
4400.00	9.94	140.710	4359.91	367.80S	300.92E	==>	399.98	1228791.12	3189851.63
4500.00	9.94	140.710	4458.41	381.17S	311.86E	==>	414.51	1228777.76	3189862.56
4600.00	9.94	140.710	4556.91	394.53S	322.79E	==>	429.05	1228764.39	3189873.49
4700.00	9.94	140.710	4655.40	407.90S	333.73E	==>	443.58	1228751.03	3189884.43
4800.00	9.94	140.710	4753.90	421.26S	344.66E	==>	458.12	1228737.67	3189895.36
4900.00	9.94	140.710	4852.40	434.63S	355.59E	==>	472.65	1228724.30	3189906.30
5000.00	9.94	140.710	4950.90	447.99S	366.53E	==>	487.18	1228710.94	3189917.23
5100.00	9.94	140.710	5049.40	461.36S	377.46E	==>	501.72	1228697.57	3189928.17
5200.00	9.94	140.710	5147.89	474.72S	388.40E	==>	516.25	1228684.21	3189939.10
5300.00	9.94	140.710	5246.39	488.09S	399.33E	==>	530.79	1228670.84	3189950.03
5400.00	9.94	140.710	5344.89	501.45S	410.27E	==>	545.32	1228657.48	3189960.97
5500.00	9.94	140.710	5443.39	514.82S	421.20E	==>	559.85	1228644.12	3189971.90
5600.00	9.94	140.710	5541.88	528.18S	432.14E	==>	574.39	1228630.75	3189982.84
5700.00	9.94	140.710	5640.38	541.55S	443.07E	==>	588.92	1228617.39	3189993.77
5800.00	9.94	140.710	5738.88	554.91S	454.00E	==>	603.46	1228604.02	3190004.70
5900.00	9.94	140.710	5837.38	568.28S	464.94E	==>	617.99	1228590.66	3190015.64
6000.00	9.94	140.710	5935.88	581.64S	475.87E	==>	632.52	1228577.29	3190026.57
6100.00	9.94	140.710	6034.37	595.01S	486.81E	==>	647.06	1228563.93	3190037.51
6200.00	9.94	140.710	6132.87	608.37S	497.74E	==>	661.59	1228550.56	3190048.44
6300.00	9.94	140.710	6231.37	621.74S	508.68E	==>	676.13	1228537.20	3190059.38
6400.00	9.94	140.710	6329.87	635.10S	519.61E	==>	690.66	1228523.84	3190070.31
6500.00	9.94	140.710	6428.36	648.47S	530.55E	==>	705.19	1228510.47	3190081.24
6600.00	9.94	140.710	6526.86	661.83S	541.48E	==>	719.73	1228497.11	3190092.18
6700.00	9.94	140.710	6625.36	675.20S	552.42E	==>	734.26	1228483.74	3190103.11
6800.00	9.94	140.710	6723.86	688.56S	563.35E	==>	748.80	1228470.38	3190114.05
6900.00	9.94	140.710	6822.36	701.92S	574.28E	==>	763.33	1228457.01	3190124.98
6946.94	9.94	140.710	6868.59	708.20S	579.42E	==>	770.15	1228450.74	3190130.11
7000.00	13.49	152.350	6920.54	717.23S	585.19E	8.00	779.79	1228441.71	3190135.89
7100.00	20.88	162.940	7016.04	744.65S	595.85E	8.00	808.25	1228414.29	3190146.55
7200.00	28.60	168.080	7106.80	785.17S	606.04E	8.00	849.67	1228373.77	3190156.74
7300.00	36.43	171.160	7191.07	838.01S	615.57E	8.00	903.26	1228320.94	3190166.26
7400.00	44.31	173.270	7267.20	902.13S	624.24E	8.00	967.95	1228256.81	3190174.93
7500.00	52.22	174.860	7333.72	976.30S	631.89E	8.00	1042.51	1228182.65	3190182.58
7600.00	60.15	176.130	7389.33	1059.06S	638.37E	8.00	1125.47	1228099.89	3190189.06
7700.00	68.09	177.220	7432.94	1148.81S	643.55E	8.00	1215.22	1228010.14	3190194.24
7800.00	76.04	178.190	7463.71	1243.80S	647.33E	8.00	1310.01	1227915.16	3190198.03
7900.00	83.99	179.100	7481.04	1342.17S	649.65E	8.00	1408.00	1227816.79	3190200.34
7973.80	89.86	179.750	7485.00	1415.83S	650.39E	8.00	1481.25	1227743.13	3190201.08
8000.00	89.86	179.750	7485.07	1442.03S	650.50E	==>	1507.29	1227716.93	3190201.19
8100.00	89.86	179.750	7485.32	1542.03S	650.94E	==>	1606.68	1227616.94	3190201.63
8200.00	89.86	179.750	7485.57	1642.03S	651.37E	==>	1706.06	1227516.94	3190202.06
8300.00	89.86	179.750	7485.82	1742.03S	651.81E	==>	1805.45	1227416.95	3190202.50
8400.00	89.86	179.750	7486.07	1842.03S	652.24E	==>	1904.83	1227316.95	3190202.93
8500.00	89.86	179.750	7486.33	1942.02S	652.67E	==>	2004.22	1227216.95	3190203.37
8600.00	89.86	179.750	7486.58	2042.02S	653.11E	==>	2103.60	1227116.96	3190203.80
8700.00	89.86	179.750	7486.83	2142.02S	653.54E	==>	2202.98	1227016.96	3190204.24
8800.00	89.86	179.750	7487.08	2242.02S	653.98E	==>	2302.37	1226916.97	3190204.67
8900.00	89.86	179.750	7487.33	2342.02S	654.41E	==>	2401.75	1226816.97	3190205.11

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Vertical Section is from 0.00N 0.00E on azimuth 173.390 degrees  
Bottom hole distance is 5818.52 Feet on azimuth 173.39 degrees from Wellhead  
Calculation method uses Minimum Curvature method  
Prepared by Integrated Petroleum Technologies, Inc.  
Date Printed: 3-Sep-2014



## WARD PETROLEUM

### INTEGRATED PETROLEUM TECHNOLOGIES, INC SYSDRILL

Well Design Combined Report  
Wellbore: Anderson 19-1-9HN



Interpolated Wellpath									
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	Northing	Easting
9000.00	89.86	179.750	7487.59	2442.02S	654.85E	==>	2501.14	1226716.98	3190205.54
9100.00	89.86	179.750	7487.84	2542.02S	655.28E	==>	2600.52	1226616.98	3190205.98
9200.00	89.86	179.750	7488.09	2642.02S	655.72E	==>	2699.91	1226516.99	3190206.41
9300.00	89.86	179.750	7488.34	2742.01S	656.15E	==>	2799.29	1226416.99	3190206.85
9400.00	89.86	179.750	7488.59	2842.01S	656.59E	==>	2898.68	1226317.00	3190207.28
9500.00	89.86	179.750	7488.85	2942.01S	657.02E	==>	2998.06	1226217.00	3190207.72
9600.00	89.86	179.750	7489.10	3042.01S	657.46E	==>	3097.45	1226117.00	3190208.15
9700.00	89.86	179.750	7489.35	3142.01S	657.89E	==>	3196.83	1226017.01	3190208.59
9800.00	89.86	179.750	7489.60	3242.01S	658.33E	==>	3296.22	1225917.01	3190209.02
9900.00	89.86	179.750	7489.86	3342.01S	658.76E	==>	3395.60	1225817.02	3190209.46
10000.00	89.86	179.750	7490.11	3442.01S	659.20E	==>	3494.99	1225717.02	3190209.89
10100.00	89.86	179.750	7490.36	3542.00S	659.63E	==>	3594.37	1225617.03	3190210.33
10200.00	89.86	179.750	7490.61	3642.00S	660.07E	==>	3693.76	1225517.03	3190210.76
10300.00	89.86	179.750	7490.86	3742.00S	660.50E	==>	3793.14	1225417.04	3190211.20
10400.00	89.86	179.750	7491.12	3842.00S	660.94E	==>	3892.53	1225317.04	3190211.63
10500.00	89.86	179.750	7491.37	3942.00S	661.37E	==>	3991.91	1225217.04	3190212.07
10600.00	89.86	179.750	7491.62	4042.00S	661.81E	==>	4091.30	1225117.05	3190212.50
10700.00	89.86	179.750	7491.87	4142.00S	662.24E	==>	4190.68	1225017.05	3190212.94
10800.00	89.86	179.750	7492.12	4242.00S	662.68E	==>	4290.07	1224917.06	3190213.37
10900.00	89.86	179.750	7492.38	4341.99S	663.11E	==>	4389.45	1224817.06	3190213.80
11000.00	89.86	179.750	7492.63	4441.99S	663.55E	==>	4488.84	1224717.07	3190214.24
11100.00	89.86	179.750	7492.88	4541.99S	663.98E	==>	4588.22	1224617.07	3190214.67
11200.00	89.86	179.750	7493.13	4641.99S	664.42E	==>	4687.61	1224517.08	3190215.11
11300.00	89.86	179.750	7493.38	4741.99S	664.85E	==>	4786.99	1224417.08	3190215.54
11400.00	89.86	179.750	7493.64	4841.99S	665.29E	==>	4886.38	1224317.09	3190215.98
11500.00	89.86	179.750	7493.89	4941.99S	665.72E	==>	4985.76	1224217.09	3190216.41
11600.00	89.86	179.750	7494.14	5041.99S	666.16E	==>	5085.15	1224117.09	3190216.85
11700.00	89.86	179.750	7494.39	5141.98S	666.59E	==>	5184.53	1224017.10	3190217.28
11800.00	89.86	179.750	7494.64	5241.98S	667.03E	==>	5283.92	1223917.10	3190217.72
11900.00	89.86	179.750	7494.90	5341.98S	667.46E	==>	5383.30	1223817.11	3190218.15
12000.00	89.86	179.750	7495.15	5441.98S	667.90E	==>	5482.68	1223717.11	3190218.59
12100.00	89.86	179.750	7495.40	5541.98S	668.33E	==>	5582.07	1223617.12	3190219.02
12200.00	89.86	179.750	7495.65	5641.98S	668.77E	==>	5681.45	1223517.12	3190219.46
12300.00	89.86	179.750	7495.90	5741.98S	669.20E	==>	5780.84	1223417.13	3190219.89
12337.91	89.86	179.750	7496.00	5779.89S	669.37E	==>	5818.52	1223379.22	3190220.06

All data is in Feet unless otherwise stated  
Coordinates are from Slot MD's are from Rig ( Planned Datum #1 5027.0ft above Mean Sea Level )  
Vertical Section is from 0.00N 0.00E on azimuth 173.390 degrees  
Bottom hole distance is 5818.52 Feet on azimuth 173.39 degrees from Wellhead  
Calculation method uses Minimum Curvature method  
Prepared by Integrated Petroleum Technologies, Inc.  
Date Printed: 3-Sep-2014



**WARD PETROLEUM**

INTEGRATED PETROLEUM TECHNOLOGIES, INC

SYSDRILL

Well Design Combined Report

Wellbore: Anderson 19-1-9HN



### Hole Sections

Diameter [in]	Start MD[ft]	Start TVD[ft]	Start North[ft]	Start East[ft]	End MD[ft]	End TVD[ft]	End North[ft]	End East[ft]
13 1/2	22.00	22.00	0.00N	0.00E	1200.00	1200.00	0.00N	0.00E
8 3/4	1200.00	1200.00	0.00N	0.00E	7973.00	7485.00	1415.03S	650.38E
6 1/8	7973.00	7485.00	1415.03S	650.38E	12338.03	7496.00	5780.01S	669.37E

### Casings

Name	Top MD[ft]	Top TVD[ft]	Top North[ft]	Top East[ft]	Shoe MD[ft]	Shoe TVD[ft]	Shoe North[ft]	Shoe East[ft]
9 5/8in Surface Casing	22.00	22.00	0.00N	0.00E	1200.00	1200.00	0.00N	0.00E
7.0in Intermediate Casing	22.00	22.00	0.00N	0.00E	7973.00	7485.00	1415.03S	650.38E
4 1/2in Production Liner	7773.00	7456.71	1217.74S	646.45E	12338.03		5780.01S	669.37E

### Targets

Name	North[ft]	East[ft]	TVD[ft]	Latitude	Longitude	Northing	Easting	Last Revised
Anderson 19-1-9HN BH	5779.89S	669.37E	7496.00	39.94456000	-104.82156000	1223379.22	3190220.06	28-Aug-2014
Anderson 19-1-9HN LP	1415.83S	644.39E	7485.00	39.95654000	-104.82153000	1227743.13	3190195.08	28-Aug-2014

### Survey Tool Program

Reference	Survey Name	MD[ft]	TVD[ft]	Survey Tool	Error Model
299479	Planned	12337.91	7496.00	WdW Rate Gyro	Standard

### Notes

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SYSDRILL  
Closest Approach + Clearance Factor Summary Report  
Wellbore: Anderson 19-1-9HN



Ellipse separations are reported ONLY if BOTH wells have uncertainty data  
Only Depth and Magnetic Reference Field error terms are correlated across tie points  
Proximities beyond 2000.00ft with expansion rate of 0.00ft/1000ft are not reported  
Scan limit is calculated on CENTRE to CENTRE distance

Summary data uses Closest Approach clearance calculation for all minima  
Hole size/Casings ARE included  
Hole size/Casings are NOT subtracted from Centre-Centre distance  
Confidence limit of 95.00% / 2.80 SD.

Wellbore		
Name	Created	Last Revised
Anderson 19-1-9HN	28-Aug-2014	3-Sep-2014

Well		
Name	Government ID	Last Revised
Anderson 19-1-9HN		29-Aug-2014

Slot						
Name	Grid Northing	Grid Easting	Latitude	Longitude	North	East
Slot #3	1229158.9161	3189550.7142	39.96044000	-104.82379000	0.24S	30.83W

Installation				
Name	Easting	Northing	Coord System Name	North Alignment
Anderson	3189581.5481	1229159.1513	CO83-NF on NORTH AMERICAN DATUM 1983 datum	Grid

Field				
Name	Easting	Northing	Coord System Name	North Alignment
West Brighton	3178196.4983	1231661.3262	CO83-NF on NORTH AMERICAN DATUM 1983 datum	Grid

Clearance Summary								
Offset Wellbore	Offset Structure	Separation [ft]	MD[ft]	Diverging From[ft]	Ellipse Separation [ft]	Ellipse MD[ft]	Clearance Factor	Clearance MD[ft]
Anderson 18-3-8HN	Anderson	13.79	1285.12	7514.85	10.95	1186.70	4.85	1186.70
Anderson 18-3-9HC	Anderson	13.79	1350.74	7617.18	10.95	1186.70	1.51	7617.14
Anderson 19-1-10HC	Anderson	13.88	1432.76	12336.28	10.95	1432.76	4.70	1465.57
Anderson 19-1-8HC	Anderson	14.02	1350.00	1350.00	11.18	1186.70	4.93	1186.70
Anderson 18-3-7HC	Anderson	24.95	1250.00	7677.72	22.11	1186.70	8.78	1186.70
Anderson 18-3-10HN	Anderson	24.95	1301.53	7443.28	22.11	1186.70	8.78	1186.70
Anderson 19-1-7HN	Anderson	30.84	1285.12	1285.12	28.00	1186.70	8.45	12337.91
Anderson 19-1-11HN	Anderson	30.84	1301.53	12337.91	28.00	1186.70	8.46	12337.91
Anderson 18-3-11HC	Anderson	38.05	1250.00	7571.24	35.21	1186.70	13.39	1186.70
Anderson 19-1-12HC	Anderson	44.85	1250.00	12337.91	42.01	1186.70	12.63	12337.91
Anderson 18-3-12HN	Anderson	54.37	1200.00	7373.82	51.51	1200.00	19.01	1200.00
W RITCHEY #1-19 (AWB)	Offsets	110.67	11802.04	11802.04	38.33	11802.04	1.53	11802.04



**WARD PETROLEUM**

SYS DRILL  
Closest Approach + Clearance Factor Summary Report  
Wellbore: Anderson 19-1-9HN



Offset Wellbore	Offset Structure	Separation [ft]	MD[ft]	Diverging From[ft]	Ellipse Separation [ft]	Ellipse MD[ft]	Clearance Factor	Clearance MD[ft]
W RITCHEY #1-19 (AWB)	Offsets	110.67	11802.04	11802.04	38.23	11802.04	1.53	11802.04
Schaefer 24-3-1HC (PWB)	Schaefer	1777.00	12337.91	12337.91	1716.91	12337.91	29.57	12337.91
W WAGNER #1 (AWB)	Offsets	1780.38	5305.20	5305.20	1757.23	5305.20	76.77	5386.17
W Wagner #1 (AWB)	Offsets	1780.38	5305.20	5305.20	1757.48	5305.20	77.33	5468.19
Schaefer 25-1-1HN (PWB)	Schaefer	1885.08	12337.91	12337.91	1821.67	12337.91	29.73	12337.91