



WARD PETROLEUM

# WARD PETROLEUM

Location ADAMS COUNTY, CO  
Field West Brighton  
Installation Anderson

Slot Slot #6  
Well Anderson 19-1-12HC  
Wellbore Anderson 19-1-12HC



Scale 1 cm = 200 ft

<- True Vertical Depth (feet)

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, 1250.00 MD, 1250.00 TVD, -0.00 VS

End of Build - 8.99 Inc, 1699.58 MD, 1697.74 TVD, 30.14 VS

Scale 1 cm = 200 ft

East (feet) ->

-1200 -800 -400 0 400

Surface 0.00 N 0.00 E

## 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	1250.00	0.00	0.00	1250.00	0.00	0.00	0.00	-0.00
End of Build	1699.58	8.99	216.70	1697.74	-28.23	-21.04	2.00	30.14
End of Hold	7142.77	8.99	216.70	7074.03	-710.35	-529.40	0.00	758.39
Target Anderson 19-1-1	8174.84	89.74	179.73	7698.00	-1417.95	-585.14	8.00	1468.06
T.D. & Target Anderson	12542.64	89.74	179.73	7718.00	-5785.65	-564.35	0.00	5813.11

Created by admin  
Date plotted 3-Sep-2014

Plot reference is Anderson 19-1-12HC.  
Ref wellpath is Anderson 19-1-12HC.  
Coordinates are in feet reference Slot #6.  
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 - 8.99 Inc, 7142.77 MD, 7074.03 TVD, 758.39 VS

7.0in Intermediate Casing

Anderson 19-1-12HC LP T.D. & End of Hold - 7718.00 TVD, 5785.65 S 564.35 W

S/C Kick off Point - 89.74 Inc, 8174.84 MD, 7698.00 TVD, 1468.06 VS

Anderson 19-1-12HC BH

4 1/2in Production Liner

<- North(feet)

Scale 1 cm = 200 ft

Scale 1 cm = 200 ft

Vertical Section (feet) ->

Azimuth 185.57 with reference 0.00 N, 0.00 E from Slot #6



**WARD PETROLEUM**

INTEGRATED PETROLEUM TECHNOLOGIES, INC  
SYSDRILL  
Well Design Combined Report  
Wellbore: Anderson 19-1-12HC



**Wellhead Details**

Name	Northing	Easting	Latitude	Longitude	North	East	Elevation Above Inst.
Slot #6	1229158.5742	3189505.8650	39.96044000	-104.82395000	0.58S	75.69W	-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	1229158.57	3189505.86
1250.00	0.00	0.000	1250.00	0.00N	0.00E	==>	0.00	1229158.57	3189505.86
1699.58	8.99	216.700	1697.74	28.23S	21.04W	2.00	30.14	1229130.35	3189484.83
7142.77	8.99	216.700	7074.03	710.35S	529.40W	==>	758.39	1228448.25	3188976.48
8174.84	89.74	179.730	7698.00	1417.95S	585.14W	8.00	1468.06	1227740.67	3188920.75
12542.64	89.74	179.730	7718.00	5785.65S	564.35W	==>	5813.11	1223373.11	3188941.53

**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	1229158.57	3189505.86
22.00	0.00	0.000	22.00	0.00N	0.00E	==>	0.00	1229158.57	3189505.86
100.00	0.00	0.000	100.00	0.00N	0.00E	==>	0.00	1229158.57	3189505.86
200.00	0.00	0.000	200.00	0.00N	0.00E	==>	0.00	1229158.57	3189505.86
300.00	0.00	0.000	300.00	0.00N	0.00E	==>	0.00	1229158.57	3189505.86
400.00	0.00	0.000	400.00	0.00N	0.00E	==>	0.00	1229158.57	3189505.86
500.00	0.00	0.000	500.00	0.00N	0.00E	==>	0.00	1229158.57	3189505.86
600.00	0.00	0.000	600.00	0.00N	0.00E	==>	0.00	1229158.57	3189505.86
700.00	0.00	0.000	700.00	0.00N	0.00E	==>	0.00	1229158.57	3189505.86
800.00	0.00	0.000	800.00	0.00N	0.00E	==>	0.00	1229158.57	3189505.86
900.00	0.00	0.000	900.00	0.00N	0.00E	==>	0.00	1229158.57	3189505.86
1000.00	0.00	0.000	1000.00	0.00N	0.00E	==>	0.00	1229158.57	3189505.86
1100.00	0.00	0.000	1100.00	0.00N	0.00E	==>	0.00	1229158.57	3189505.86
1200.00	0.00	0.000	1200.00	0.00N	0.00E	==>	0.00	1229158.57	3189505.86
1228.00	0.00	0.000	1228.00	0.00N	0.00E	==>	0.00	1229158.57	3189505.86
1250.00	0.00	0.000	1250.00	0.00N	0.00E	==>	0.00	1229158.57	3189505.86
1328.00	1.56	216.700	1327.99	0.85S	0.63W	2.00	0.91	1229157.72	3189505.23
1428.00	3.56	216.700	1427.89	4.43S	3.30W	2.00	4.73	1229154.14	3189502.56
1528.00	5.56	216.700	1527.56	10.81S	8.05W	2.00	11.54	1229147.77	3189497.81
1628.00	7.56	216.700	1626.90	19.97S	14.88W	2.00	21.32	1229138.61	3189490.98
1699.58	8.99	216.700	1697.74	28.23S	21.04W	2.00	30.14	1229130.35	3189484.83
1700.00	8.99	216.700	1698.15	28.28S	21.08W	==>	30.19	1229130.29	3189484.79
1800.00	8.99	216.700	1796.92	40.81S	30.42W	==>	43.57	1229117.76	3189475.45
1900.00	8.99	216.700	1895.69	53.34S	39.76W	==>	56.95	1229105.23	3189466.11
2000.00	8.99	216.700	1994.47	65.88S	49.09W	==>	70.33	1229092.70	3189456.77
2100.00	8.99	216.700	2093.24	78.41S	58.43W	==>	83.71	1229080.17	3189447.43
2200.00	8.99	216.700	2192.01	90.94S	67.77W	==>	97.09	1229067.64	3189438.09
2300.00	8.99	216.700	2290.78	103.47S	77.11W	==>	110.47	1229055.11	3189428.75
2400.00	8.99	216.700	2389.55	116.00S	86.45W	==>	123.85	1229042.58	3189419.42
2500.00	8.99	216.700	2488.32	128.53S	95.79W	==>	137.23	1229030.04	3189410.08
2600.00	8.99	216.700	2587.09	141.07S	105.13W	==>	150.61	1229017.51	3189400.74
2700.00	8.99	216.700	2685.86	153.60S	114.47W	==>	163.98	1229004.98	3189391.40
2800.00	8.99	216.700	2784.63	166.13S	123.81W	==>	177.36	1228992.45	3189382.06
2900.00	8.99	216.700	2883.41	178.66S	133.15W	==>	190.74	1228979.92	3189372.72
3000.00	8.99	216.700	2982.18	191.19S	142.49W	==>	204.12	1228967.39	3189363.38
3100.00	8.99	216.700	3080.95	203.72S	151.83W	==>	217.50	1228954.86	3189354.04

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 185.570 degrees  
Bottom hole distance is 5813.11 Feet on azimuth 185.57 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 19-1-12HC



Interpolated Wellpath									
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	Northing	Easting
3200.00	8.99	216.700	3179.72	216.25S	161.17W	==>	230.88	1228942.33	3189344.70
3300.00	8.99	216.700	3278.49	228.79S	170.51W	==>	244.26	1228929.80	3189335.36
3400.00	8.99	216.700	3377.26	241.32S	179.85W	==>	257.64	1228917.26	3189326.02
3500.00	8.99	216.700	3476.03	253.85S	189.19W	==>	271.02	1228904.73	3189316.68
3600.00	8.99	216.700	3574.80	266.38S	198.53W	==>	284.40	1228892.20	3189307.35
3700.00	8.99	216.700	3673.57	278.91S	207.87W	==>	297.78	1228879.67	3189298.01
3800.00	8.99	216.700	3772.35	291.44S	217.20W	==>	311.15	1228867.14	3189288.67
3900.00	8.99	216.700	3871.12	303.98S	226.54W	==>	324.53	1228854.61	3189279.33
4000.00	8.99	216.700	3969.89	316.51S	235.88W	==>	337.91	1228842.08	3189269.99
4100.00	8.99	216.700	4068.66	329.04S	245.22W	==>	351.29	1228829.55	3189260.65
4200.00	8.99	216.700	4167.43	341.57S	254.56W	==>	364.67	1228817.01	3189251.31
4300.00	8.99	216.700	4266.20	354.10S	263.90W	==>	378.05	1228804.48	3189241.97
4400.00	8.99	216.700	4364.97	366.63S	273.24W	==>	391.43	1228791.95	3189232.63
4500.00	8.99	216.700	4463.74	379.17S	282.58W	==>	404.81	1228779.42	3189223.29
4600.00	8.99	216.700	4562.51	391.70S	291.92W	==>	418.19	1228766.89	3189213.95
4700.00	8.99	216.700	4661.29	404.23S	301.26W	==>	431.57	1228754.36	3189204.61
4800.00	8.99	216.700	4760.06	416.76S	310.60W	==>	444.95	1228741.83	3189195.28
4900.00	8.99	216.700	4858.83	429.29S	319.94W	==>	458.33	1228729.30	3189185.94
5000.00	8.99	216.700	4957.60	441.82S	329.28W	==>	471.70	1228716.76	3189176.60
5100.00	8.99	216.700	5056.37	454.36S	338.62W	==>	485.08	1228704.23	3189167.26
5200.00	8.99	216.700	5155.14	466.89S	347.96W	==>	498.46	1228691.70	3189157.92
5300.00	8.99	216.700	5253.91	479.42S	357.30W	==>	511.84	1228679.17	3189148.58
5400.00	8.99	216.700	5352.68	491.95S	366.64W	==>	525.22	1228666.64	3189139.24
5500.00	8.99	216.700	5451.45	504.48S	375.98W	==>	538.60	1228654.11	3189129.90
5600.00	8.99	216.700	5550.23	517.01S	385.32W	==>	551.98	1228641.58	3189120.56
5700.00	8.99	216.700	5649.00	529.55S	394.65W	==>	565.36	1228629.05	3189111.22
5800.00	8.99	216.700	5747.77	542.08S	403.99W	==>	578.74	1228616.51	3189101.88
5900.00	8.99	216.700	5846.54	554.61S	413.33W	==>	592.12	1228603.98	3189092.54
6000.00	8.99	216.700	5945.31	567.14S	422.67W	==>	605.50	1228591.45	3189083.21
6100.00	8.99	216.700	6044.08	579.67S	432.01W	==>	618.88	1228578.92	3189073.87
6200.00	8.99	216.700	6142.85	592.20S	441.35W	==>	632.25	1228566.39	3189064.53
6300.00	8.99	216.700	6241.62	604.74S	450.69W	==>	645.63	1228553.86	3189055.19
6400.00	8.99	216.700	6340.39	617.27S	460.03W	==>	659.01	1228541.33	3189045.85
6500.00	8.99	216.700	6439.17	629.80S	469.37W	==>	672.39	1228528.80	3189036.51
6600.00	8.99	216.700	6537.94	642.33S	478.71W	==>	685.77	1228516.26	3189027.17
6700.00	8.99	216.700	6636.71	654.86S	488.05W	==>	699.15	1228503.73	3189017.83
6800.00	8.99	216.700	6735.48	667.39S	497.39W	==>	712.53	1228491.20	3189008.49
6900.00	8.99	216.700	6834.25	679.93S	506.73W	==>	725.91	1228478.67	3188999.15
7000.00	8.99	216.700	6933.02	692.46S	516.07W	==>	739.29	1228466.14	3188989.81
7100.00	8.99	216.700	7031.79	704.99S	525.41W	==>	752.67	1228453.61	3188980.48
7142.77	8.99	216.700	7074.03	710.35S	529.40W	==>	758.39	1228448.25	3188976.48
7200.00	12.93	204.200	7130.22	719.78S	534.70W	8.00	768.29	1228438.82	3188971.18
7300.00	20.46	194.490	7225.95	746.95S	543.68W	8.00	796.20	1228411.65	3188962.21
7400.00	28.24	189.920	7317.00	787.23S	552.14W	8.00	837.12	1228371.37	3188953.75
7500.00	36.11	187.200	7401.58	839.85S	559.92W	8.00	890.24	1228318.75	3188945.97
7600.00	44.02	185.360	7478.06	903.78S	566.87W	8.00	954.54	1228254.82	3188939.02
7700.00	51.95	183.980	7544.94	977.77S	572.85W	8.00	1028.77	1228180.83	3188933.03
7800.00	59.90	182.870	7600.92	1060.39S	577.75W	8.00	1111.47	1228098.22	3188928.13
7900.00	67.85	181.920	7644.92	1150.03S	581.47W	8.00	1201.05	1228008.59	3188924.41
8000.00	75.81	181.080	7676.07	1244.93S	583.95W	8.00	1295.74	1227913.68	3188921.94
8100.00	83.78	180.300	7693.77	1343.26S	585.12W	8.00	1393.72	1227815.35	3188920.76
8174.84	89.74	179.730	7698.00	1417.95S	585.14W	8.00	1468.06	1227740.67	3188920.75
8200.00	89.74	179.730	7698.12	1443.11S	585.02W	==>	1493.09	1227715.51	3188920.87
8300.00	89.74	179.730	7698.57	1543.11S	584.54W	==>	1592.57	1227615.52	3188921.34
8400.00	89.74	179.730	7699.03	1643.11S	584.07W	==>	1692.05	1227515.52	3188921.82
8500.00	89.74	179.730	7699.49	1743.10S	583.59W	==>	1791.53	1227415.53	3188922.29
8600.00	89.74	179.730	7699.95	1843.10S	583.11W	==>	1891.01	1227315.53	3188922.77
8700.00	89.74	179.730	7700.40	1943.10S	582.64W	==>	1990.48	1227215.54	3188923.25
8800.00	89.74	179.730	7700.86	2043.10S	582.16W	==>	2089.96	1227115.54	3188923.72
8900.00	89.74	179.730	7701.32	2143.09S	581.69W	==>	2189.44	1227015.55	3188924.20

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Vertical Section is from 0.00N 0.00E on azimuth 185.570 degrees  
Bottom hole distance is 5813.11 Feet on azimuth 185.57 degrees from Wellhead  
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Wellbore: Anderson 19-1-12HC



Interpolated Wellpath									
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	Northing	Easting
9000.00	89.74	179.730	7701.78	2243.09S	581.21W	==>	2288.92	1226915.55	3188924.67
9100.00	89.74	179.730	7702.24	2343.09S	580.73W	==>	2388.40	1226815.56	3188925.15
9200.00	89.74	179.730	7702.69	2443.09S	580.26W	==>	2487.88	1226715.57	3188925.62
9300.00	89.74	179.730	7703.15	2543.09S	579.78W	==>	2587.36	1226615.57	3188926.10
9400.00	89.74	179.730	7703.61	2643.08S	579.31W	==>	2686.84	1226515.58	3188926.58
9500.00	89.74	179.730	7704.07	2743.08S	578.83W	==>	2786.32	1226415.58	3188927.05
9600.00	89.74	179.730	7704.53	2843.08S	578.36W	==>	2885.80	1226315.59	3188927.53
9700.00	89.74	179.730	7704.98	2943.08S	577.88W	==>	2985.28	1226215.59	3188928.00
9800.00	89.74	179.730	7705.44	3043.08S	577.40W	==>	3084.76	1226115.60	3188928.48
9900.00	89.74	179.730	7705.90	3143.07S	576.93W	==>	3184.24	1226015.60	3188928.96
10000.00	89.74	179.730	7706.36	3243.07S	576.45W	==>	3283.72	1225915.61	3188929.43
10100.00	89.74	179.730	7706.82	3343.07S	575.98W	==>	3383.19	1225815.61	3188929.91
10200.00	89.74	179.730	7707.27	3443.07S	575.50W	==>	3482.67	1225715.62	3188930.38
10300.00	89.74	179.730	7707.73	3543.06S	575.03W	==>	3582.15	1225615.62	3188930.86
10400.00	89.74	179.730	7708.19	3643.06S	574.55W	==>	3681.63	1225515.63	3188931.33
10500.00	89.74	179.730	7708.65	3743.06S	574.07W	==>	3781.11	1225415.64	3188931.81
10600.00	89.74	179.730	7709.10	3843.06S	573.60W	==>	3880.59	1225315.64	3188932.29
10700.00	89.74	179.730	7709.56	3943.06S	573.12W	==>	3980.07	1225215.65	3188932.76
10800.00	89.74	179.730	7710.02	4043.05S	572.65W	==>	4079.55	1225115.65	3188933.24
10900.00	89.74	179.730	7710.48	4143.05S	572.17W	==>	4179.03	1225015.66	3188933.71
11000.00	89.74	179.730	7710.94	4243.05S	571.69W	==>	4278.51	1224915.66	3188934.19
11100.00	89.74	179.730	7711.39	4343.05S	571.22W	==>	4377.99	1224815.67	3188934.66
11200.00	89.74	179.730	7711.85	4443.04S	570.74W	==>	4477.47	1224715.67	3188935.14
11300.00	89.74	179.730	7712.31	4543.04S	570.27W	==>	4576.95	1224615.68	3188935.62
11400.00	89.74	179.730	7712.77	4643.04S	569.79W	==>	4676.42	1224515.68	3188936.09
11500.00	89.74	179.730	7713.23	4743.04S	569.32W	==>	4775.90	1224415.69	3188936.57
11600.00	89.74	179.730	7713.68	4843.04S	568.84W	==>	4875.38	1224315.70	3188937.04
11700.00	89.74	179.730	7714.14	4943.03S	568.36W	==>	4974.86	1224215.70	3188937.52
11800.00	89.74	179.730	7714.60	5043.03S	567.89W	==>	5074.34	1224115.71	3188938.00
11900.00	89.74	179.730	7715.06	5143.03S	567.41W	==>	5173.82	1224015.71	3188938.47
12000.00	89.74	179.730	7715.52	5243.03S	566.94W	==>	5273.30	1223915.72	3188938.95
12100.00	89.74	179.730	7715.97	5343.02S	566.46W	==>	5372.78	1223815.72	3188939.42
12200.00	89.74	179.730	7716.43	5443.02S	565.98W	==>	5472.26	1223715.73	3188939.90
12300.00	89.74	179.730	7716.89	5543.02S	565.51W	==>	5571.74	1223615.73	3188940.37
12400.00	89.74	179.730	7717.35	5643.02S	565.03W	==>	5671.22	1223515.74	3188940.85
12500.00	89.74	179.730	7717.80	5743.02S	564.56W	==>	5770.70	1223415.74	3188941.33
12542.64	89.74	179.730	7718.00	5785.65S	564.35W	==>	5813.11	1223373.11	3188941.53

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 185.570 degrees  
Bottom hole distance is 5813.11 Feet on azimuth 185.57 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 19-1-12HC



### 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	8174.00	7698.00	1417.11S	585.14W
6 1/8	8174.00	7698.00	1417.11S	585.14W	12542.64	7718.00	5785.65S	564.35W

### 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	8174.00	7698.00	1417.11S	585.14W
4 1/2in Production Liner	7974.00	7669.24	1219.85S	583.43W	12542.64	7718.00	5785.65S	564.35W

### Targets

Name	North[ft]	East[ft]	TVD[ft]	Latitude	Longitude	Northing	Easting	Last Revised
Anderson 19-1-12HC BH	5785.65S	564.35W	7718.00	39.94457000	-104.82612000	1223373.11	3188941.53	28-Aug-2014
Anderson 19-1-12HC LP	1417.95S	589.14W	7698.00	39.95656000	-104.82609000	1227740.67	3188916.75	28-Aug-2014

### Survey Tool Program

Reference	Survey Name	MD[ft]	TVD[ft]	Survey Tool	Error Model
299548	Planned	12542.64	7718.00	WdW Rate Gyro	Standard

### Notes

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SYSDRILL  
Closest Approach + Clearance Factor Summary Report  
Wellbore: Anderson 19-1-12HC



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 19-1-12HC	28-Aug-2014	3-Sep-2014

Well		
Name	Government ID	Last Revised
Anderson 19-1-12HC		29-Aug-2014

Slot						
Name	Grid Northing	Grid Easting	Latitude	Longitude	North	East
Slot #6	1229158.5742	3189505.8650	39.96044000	-104.82395000	0.58S	75.69W

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 18-3-11HC	Anderson	13.79	1250.00	7646.99	10.95	1186.70	4.85	1186.70
Anderson 18-3-12HN	Anderson	13.79	1200.00	7504.81	10.93	1200.00	1.56	7504.81
Anderson 19-1-11HN	Anderson	14.02	1252.31	1252.31	11.18	1186.70	4.85	12542.64
Anderson 18-3-10HN	Anderson	24.95	1252.31	7433.96	22.11	1186.70	8.78	1186.70
Anderson 19-1-10HC	Anderson	30.84	1252.31	1252.31	28.00	1186.70	8.12	12542.64
Anderson 18-3-9HC	Anderson	38.05	1252.31	7589.38	35.21	1186.70	13.39	1186.70
Anderson 19-1-9HN	Anderson	44.85	1252.31	12542.64	42.01	1186.70	12.63	12542.64
Anderson 18-3-8HN	Anderson	54.37	1252.31	1252.31	51.53	1186.70	19.14	1186.70
Anderson 19-1-8HC	Anderson	58.87	1252.31	1252.31	56.03	1186.70	16.50	12542.64
Anderson 18-3-7HC	Anderson	68.16	1250.00	1250.00	65.32	1186.70	24.00	1186.70
Anderson 19-1-7HN	Anderson	75.69	1252.31	1252.31	72.85	1186.70	26.65	1186.70
Schaefer 24-3-1HC (PWB)	Schaefer	482.57	12542.64	12542.64	422.26	12542.64	8.00	12542.64



**WARD PETROLEUM**

SYSDRILL  
Closest Approach + Clearance Factor Summary Report  
Wellbore: Anderson 19-1-12HC



Offset Wellbore	Offset Structure	Separation [ft]	MD[ft]	Diverging From[ft]	Ellipse Separation [ft]	Ellipse MD[ft]	Clearance Factor	Clearance MD[ft]
Schaefer 25-1-1HN (PWB)	Schaefer	816.70	12542.64	12542.64	769.23	12542.64	17.21	12542.64
Schaefer 24-3-2HN (PWB)	Schaefer	937.91	12542.64	12542.64	879.41	12542.64	16.03	12542.64
Schaefer 25-1-2HC (PWB)	Schaefer	1096.45	12542.64	12542.64	1040.66	12542.64	19.65	12542.64
Schaefer 24-3-3HC (PWB)	Schaefer	1360.15	12542.64	12542.64	1300.80	12542.64	22.92	12542.64
W RITCHEY #1-19 (AWB)	Offsets	1389.47	12006.79	12006.79	1316.63	12013.47	19.02	12095.49
W RITCHEY #1-19 (AWB)	Offsets	1389.47	12006.79	12006.79	1316.73	12013.47	19.05	12095.49
Schaefer 25-1-3HN (PWB)	Schaefer	1522.03	12542.64	12542.64	1466.03	12542.64	27.18	12542.64
W Letterly-Scott 1 (AWB)	Offsets	1642.13	9253.71	9253.71	1593.34	9273.97	32.14	9667.67
Schaefer 24-3-4HN (PWB)	Schaefer	1803.52	12542.64	12542.64	1744.89	12542.64	30.76	12542.64
Schaefer 25-1-4HC (PWB)	Schaefer	1889.48	12542.64	12542.64	1832.07	12542.64	32.91	12542.64