

# MINERAL RESOURCES, INC.

Location Weld County, CO, USA(Imported)

Slot Slot #23

Field Wattenberg

Well CS-Kinkade #1-1-12

Installation C Street Pad

Wellbore CS-Kinkade #1-1-12 (PWB)

<- West (feet) : East (feet) ->

Scale 1 cm = 400 ft -800 0 800

## WELL PROFILE DATA

Point	MD	Inc	Azi	TVD	North	East	deg/100ft	V. Sect
Tie on	16.00	0.00	0.00	16.00	0.00	0.00	0.00	-0.00
KOP	1166.00	0.00	0.00	1166.00	0.00	0.00	0.00	-0.00
End of Build	1812.04	12.92	356.65	1806.57	72.41	-4.24	2.00	-72.40
End of Hold	6369.85	12.92	356.65	6248.99	1089.81	-63.78	0.00	-1089.60
Target CS19	7398.85	90.00	179.86	6949.80	531.29	-71.47	10.00	-531.06
Target CS44	8269.58	90.00	179.86	6949.80	-339.43	-69.40	0.00	339.65
End of Turn	8274.33	90.00	179.77	6949.80	-344.18	-69.39	2.00	344.40
Target CS21	13559.48	90.00	179.77	6949.80	-5629.29	-48.11	0.00	5629.41
End of Turn	13573.08	90.00	179.50	6949.80	-5642.89	-48.02	2.00	5643.01
T.D. & Target CS20	16084.17	90.00	179.50	6949.80	-8153.88	-25.99	0.00	8153.92

Surface 0.00 N 0.00 E

<- North(feet)

Scale 1 cm = 400 ft

<- True Vertical Depth (feet)

Scale 1 cm = 400 ft

Tie on - 0.00 Inc, 16.00 MD, 16.00 TVD, -0.00 VS

3DS Kick off Point - 0.00 Inc, 1166.00 MD, 1166.00 TVD, -0.00 VS

End of Build - 12.92 Inc, 1812.04 MD, 1806.57 TVD, -72.40 VS

End of Hold - 12.92 Inc, 6369.85 MD, 6248.99 TVD, -1089.60 VS

3DJ Kick off Point - 90.00 Inc, 8269.58 MD, 6949.80 TVD, 339.65 VS

S/C Kick off Point - 90.00 Inc, 7398.85 MD, 6949.80 TVD, -531.06 VS

3DJ Kick off Point - 90.00 Inc, 13559.48 MD, 6949.80 TVD, 5629.41 VS

Created by admin  
Date plotted 11-Apr-2013  
Plot reference is CS-Kinkade #1-1-12 (PWB).  
Ref wellpath is CS23 (PWP#1).  
Coordinates are in feet reference Slot #23.  
True Vertical Depths are reference Rig Datum.  
Measured Depths are reference Rig Datum.  
Rig Datum: Planned Datum #1  
Rig Datum to Mean Sea Level: 4681.80 ft.  
Plot North is aligned to GRID North.

Azimuth 180.18 with reference 0.00 N, 0.00 E from Slot #23



INTEGRATED PETROLEUM TECHNOLOGIES, INC  
SYSDRILL  
Well Design Combined Report  
Wellbore: CS-Kinkade #1-1-12 (PWB)

Wellhead Details							
Name	Northing	Easting	Latitude	Longitude	North	East	Elevation Above Inst.
Slot #23	1403486.6374	3216341.3166	N40 26 18.1320	W104 43 21.9720	17.02S	136.55E	-0.20

Declination			
Date	Source	Time	
17-Jan-2013	IGRF Model [1900.0-2015.0]		11:43

Site Details				
Name	Northing	Easting	Coord System Name	North Alignment
C Street Pad	1403503.6566	3216204.7695	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
16.00	0.00	0.000	16.00	0.00N	0.00E		0.00	1403486.64	3216341.32
1166.00	0.00	0.000	1166.00	0.00N	0.00E	==>	0.00	1403486.64	3216341.32
1812.04	12.92	356.650	1806.57	72.41N	4.24W	2.00	-72.40	1403559.05	3216337.08
6369.85	12.92	356.650	6248.99	1089.81N	63.78W	==>	-1089.60	1404576.40	3216277.54
7398.85	90.00	179.860	6949.80	531.29N	71.47W	10.00	-531.06	1404017.91	3216269.85
8269.58	90.00	179.860	6949.80	339.43S	69.40W	==>	339.65	1403147.22	3216271.92
8274.33	90.00	179.770	6949.80	344.18S	69.39W	2.00	344.40	1403142.47	3216271.93
13559.48	90.00	179.770	6949.80	5629.29S	48.11W	==>	5629.41	1397857.57	3216293.21
13573.08	90.00	179.500	6949.80	5642.89S	48.02W	2.00	5643.01	1397843.97	3216293.29
16084.17	90.00	179.500	6949.80	8153.88S	25.99W	==>	8153.92	1395333.08	3216315.32

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	1403486.64	3216341.32
16.00	0.00	0.000	16.00	0.00N	0.00E	==>	0.00	1403486.64	3216341.32
100.00	0.00	0.000	100.00	0.00N	0.00E	==>	0.00	1403486.64	3216341.32
200.00	0.00	0.000	200.00	0.00N	0.00E	==>	0.00	1403486.64	3216341.32
300.00	0.00	0.000	300.00	0.00N	0.00E	==>	0.00	1403486.64	3216341.32
400.00	0.00	0.000	400.00	0.00N	0.00E	==>	0.00	1403486.64	3216341.32
500.00	0.00	0.000	500.00	0.00N	0.00E	==>	0.00	1403486.64	3216341.32
600.00	0.00	0.000	600.00	0.00N	0.00E	==>	0.00	1403486.64	3216341.32
700.00	0.00	0.000	700.00	0.00N	0.00E	==>	0.00	1403486.64	3216341.32
800.00	0.00	0.000	800.00	0.00N	0.00E	==>	0.00	1403486.64	3216341.32
900.00	0.00	0.000	900.00	0.00N	0.00E	==>	0.00	1403486.64	3216341.32
1000.00	0.00	0.000	1000.00	0.00N	0.00E	==>	0.00	1403486.64	3216341.32
1100.00	0.00	0.000	1100.00	0.00N	0.00E	==>	0.00	1403486.64	3216341.32
1150.00	0.00	0.000	1150.00	0.00N	0.00E	==>	0.00	1403486.64	3216341.32
1166.00	0.00	0.000	1166.00	0.00N	0.00E	==>	0.00	1403486.64	3216341.32
1250.00	1.68	356.650	1249.99	1.23N	0.07W	2.00	-1.23	1403487.87	3216341.24
1350.00	3.68	356.650	1349.87	5.90N	0.35W	2.00	-5.90	1403492.53	3216340.97
1450.00	5.68	356.650	1449.54	14.04N	0.82W	2.00	-14.04	1403500.68	3216340.49
1550.00	7.68	356.650	1548.85	25.65N	1.50W	2.00	-25.65	1403512.29	3216339.82
1650.00	9.68	356.650	1647.70	40.72N	2.38W	2.00	-40.71	1403527.35	3216338.93
1750.00	11.68	356.650	1745.96	59.22N	3.47W	2.00	-59.21	1403545.85	3216337.85
1800.00	12.68	356.650	1794.84	69.75N	4.08W	2.00	-69.74	1403556.38	3216337.24
1812.04	12.92	356.650	1806.57	72.41N	4.24W	2.00	-72.40	1403559.05	3216337.08
1900.00	12.92	356.650	1892.31	92.05N	5.39W	==>	-92.03	1403578.68	3216335.93
2000.00	12.92	356.650	1989.78	114.37N	6.69W	==>	-114.35	1403601.00	3216334.62
2100.00	12.92	356.650	2087.25	136.69N	8.00W	==>	-136.66	1403623.32	3216333.32
2200.00	12.92	356.650	2184.72	159.01N	9.31W	==>	-158.98	1403645.64	3216332.01
2300.00	12.92	356.650	2282.18	181.34N	10.61W	==>	-181.30	1403667.97	3216330.71
2400.00	12.92	356.650	2379.65	203.66N	11.92W	==>	-203.62	1403690.29	3216329.40
2500.00	12.92	356.650	2477.12	225.98N	13.22W	==>	-225.94	1403712.61	3216328.09
2600.00	12.92	356.650	2574.59	248.30N	14.53W	==>	-248.25	1403734.93	3216326.79
2700.00	12.92	356.650	2672.06	270.62N	15.84W	==>	-270.57	1403757.25	3216325.48
2800.00	12.92	356.650	2769.52	292.95N	17.14W	==>	-292.89	1403779.57	3216324.17
2900.00	12.92	356.650	2866.99	315.27N	18.45W	==>	-315.21	1403801.89	3216322.87

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 4681.8ft above Mean Sea Level )  
Vertical Section is from 0.00N 0.00E on azimuth 180.180 degrees  
Bottom hole distance is 8153.92 Feet on azimuth 180.18 degrees from Wellhead  
Calculation method uses Minimum Curvature method  
Prepared by Peterson Energy  
Date Printed: 20-May-2013



INTEGRATED PETROLEUM TECHNOLOGIES, INC  
SYSDRILL  
Well Design Combined Report  
Wellbore: CS-Kinkade #1-1-12 (PWB)

Interpolated Wellpath									
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	Northing	Easting
3000.00	12.92	356.650	2964.46	337.59N	19.76W	==>	-337.52	1403824.21	3216321.56
3100.00	12.92	356.650	3061.93	359.91N	21.06W	==>	-359.84	1403846.53	3216320.26
3200.00	12.92	356.650	3159.40	382.23N	22.37W	==>	-382.16	1403868.86	3216318.95
3300.00	12.92	356.650	3256.86	404.56N	23.67W	==>	-404.48	1403891.18	3216317.64
3400.00	12.92	356.650	3354.33	426.88N	24.98W	==>	-426.80	1403913.50	3216316.34
3500.00	12.92	356.650	3451.80	449.20N	26.29W	==>	-449.11	1403935.82	3216315.03
3600.00	12.92	356.650	3549.27	471.52N	27.59W	==>	-471.43	1403958.14	3216313.72
3700.00	12.92	356.650	3646.74	493.84N	28.90W	==>	-493.75	1403980.46	3216312.42
3800.00	12.92	356.650	3744.20	516.17N	30.21W	==>	-516.07	1404002.78	3216311.11
3900.00	12.92	356.650	3841.67	538.49N	31.51W	==>	-538.39	1404025.10	3216309.81
4000.00	12.92	356.650	3939.14	560.81N	32.82W	==>	-560.70	1404047.43	3216308.50
4100.00	12.92	356.650	4036.61	583.13N	34.12W	==>	-583.02	1404069.75	3216307.19
4200.00	12.92	356.650	4134.08	605.45N	35.43W	==>	-605.34	1404092.07	3216305.89
4300.00	12.92	356.650	4231.54	627.78N	36.74W	==>	-627.66	1404114.39	3216304.58
4400.00	12.92	356.650	4329.01	650.10N	38.04W	==>	-649.97	1404136.71	3216303.27
4500.00	12.92	356.650	4426.48	672.42N	39.35W	==>	-672.29	1404159.03	3216301.97
4600.00	12.92	356.650	4523.95	694.74N	40.66W	==>	-694.61	1404181.35	3216300.66
4700.00	12.92	356.650	4621.42	717.06N	41.96W	==>	-716.93	1404203.67	3216299.36
4800.00	12.92	356.650	4718.88	739.39N	43.27W	==>	-739.25	1404225.99	3216298.05
4900.00	12.92	356.650	4816.35	761.71N	44.58W	==>	-761.56	1404248.32	3216296.74
5000.00	12.92	356.650	4913.82	784.03N	45.88W	==>	-783.88	1404270.64	3216295.44
5100.00	12.92	356.650	5011.29	806.35N	47.19W	==>	-806.20	1404292.96	3216294.13
5200.00	12.92	356.650	5108.76	828.68N	48.49W	==>	-828.52	1404315.28	3216292.82
5300.00	12.92	356.650	5206.22	851.00N	49.80W	==>	-850.83	1404337.60	3216291.52
5400.00	12.92	356.650	5303.69	873.32N	51.11W	==>	-873.15	1404359.92	3216290.21
5500.00	12.92	356.650	5401.16	895.64N	52.41W	==>	-895.47	1404382.24	3216288.91
5600.00	12.92	356.650	5498.63	917.96N	53.72W	==>	-917.79	1404404.56	3216287.60
5700.00	12.92	356.650	5596.10	940.29N	55.03W	==>	-940.11	1404426.89	3216286.29
5800.00	12.92	356.650	5693.56	962.61N	56.33W	==>	-962.42	1404449.21	3216284.99
5900.00	12.92	356.650	5791.03	984.93N	57.64W	==>	-984.74	1404471.53	3216283.68
6000.00	12.92	356.650	5888.50	1007.25N	58.94W	==>	-1007.06	1404493.85	3216282.37
6100.00	12.92	356.650	5985.97	1029.57N	60.25W	==>	-1029.38	1404516.17	3216281.07
6200.00	12.92	356.650	6083.44	1051.90N	61.56W	==>	-1051.69	1404538.49	3216279.76
6300.00	12.92	356.650	6180.90	1074.22N	62.86W	==>	-1074.01	1404560.81	3216278.46
6369.85	12.92	356.650	6248.99	1089.81N	63.78W	==>	-1089.60	1404576.40	3216277.54
6400.00	9.91	355.640	6278.54	1095.76N	64.17W	10.00	-1095.55	1404582.36	3216277.15
6500.00	0.75	261.000	6378.04	1104.27N	65.47W	10.00	-1104.05	1404590.86	3216275.85
6600.00	10.14	183.990	6477.51	1095.36N	66.73W	10.00	-1095.14	1404581.95	3216274.59
6700.00	20.13	181.880	6573.92	1069.31N	67.91W	10.00	-1069.09	1404555.91	3216273.41
6800.00	30.12	181.130	6664.34	1026.92N	68.97W	10.00	-1026.70	1404513.52	3216272.35
6900.00	40.12	180.740	6746.03	969.47N	69.88W	10.00	-969.24	1404456.07	3216271.44
7000.00	50.12	180.480	6816.50	898.71N	70.62W	10.00	-898.48	1404385.31	3216270.70
7100.00	60.12	180.290	6873.62	816.78N	71.16W	10.00	-816.55	1404303.38	3216270.16
7200.00	70.12	180.130	6915.64	726.18N	71.49W	10.00	-725.95	1404212.79	3216269.83
7300.00	80.12	179.990	6941.29	629.65N	71.59W	10.00	-629.42	1404116.27	3216269.73
7398.85	90.00	179.860	6949.80	531.29N	71.47W	10.00	-531.06	1404017.91	3216269.85
7400.00	90.00	179.860	6949.80	530.14N	71.46W	==>	-529.91	1404016.76	3216269.86
7500.00	90.00	179.860	6949.80	430.14N	71.23W	==>	-429.92	1403916.76	3216270.09
7600.00	90.00	179.860	6949.80	330.14N	70.99W	==>	-329.92	1403816.77	3216270.33
7700.00	90.00	179.860	6949.80	230.15N	70.75W	==>	-229.92	1403716.77	3216270.57
7800.00	90.00	179.860	6949.80	130.15N	70.52W	==>	-129.92	1403616.78	3216270.80
7900.00	90.00	179.860	6949.80	30.15N	70.28W	==>	-29.92	1403516.78	3216271.04
8000.00	90.00	179.860	6949.80	69.85S	70.04W	==>	70.08	1403416.79	3216271.28
8100.00	90.00	179.860	6949.80	169.85S	69.80W	==>	170.08	1403316.79	3216271.51
8200.00	90.00	179.860	6949.80	269.85S	69.57W	==>	270.07	1403216.79	3216271.75
8269.58	90.00	179.860	6949.80	339.43S	69.40W	==>	339.65	1403147.22	3216271.92
8274.33	90.00	179.770	6949.80	344.18S	69.39W	2.00	344.40	1403142.47	3216271.93
8300.00	90.00	179.770	6949.80	369.85S	69.28W	==>	370.07	1403116.80	3216272.03
8400.00	90.00	179.770	6949.80	469.85S	68.88W	==>	470.07	1403016.80	3216272.44
8500.00	90.00	179.770	6949.80	569.85S	68.48W	==>	570.07	1402916.81	3216272.84
8600.00	90.00	179.770	6949.80	669.85S	68.08W	==>	670.06	1402816.81	3216273.24

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Vertical Section is from 0.00N 0.00E on azimuth 180.180 degrees  
Bottom hole distance is 8153.92 Feet on azimuth 180.18 degrees from Wellhead  
Calculation method uses Minimum Curvature method  
Prepared by Peterson Energy  
Date Printed: 20-May-2013



INTEGRATED PETROLEUM TECHNOLOGIES, INC  
SYSDRILL  
Well Design Combined Report  
Wellbore: CS-Kinkade #1-1-12 (PWB)

Interpolated Wellpath									
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	Northing	Easting
8700.00	90.00	179.770	6949.80	769.85S	67.67W	==>	770.06	1402716.82	3216273.64
8800.00	90.00	179.770	6949.80	869.85S	67.27W	==>	870.06	1402616.82	3216274.05
8900.00	90.00	179.770	6949.80	969.85S	66.87W	==>	970.06	1402516.83	3216274.45
9000.00	90.00	179.770	6949.80	1069.85S	66.47W	==>	1070.05	1402416.83	3216274.85
9100.00	90.00	179.770	6949.80	1169.85S	66.06W	==>	1170.05	1402316.84	3216275.26
9200.00	90.00	179.770	6949.80	1269.85S	65.66W	==>	1270.05	1402216.84	3216275.66
9300.00	90.00	179.770	6949.80	1369.84S	65.26W	==>	1370.05	1402116.85	3216276.06
9400.00	90.00	179.770	6949.80	1469.84S	64.86W	==>	1470.04	1402016.85	3216276.46
9500.00	90.00	179.770	6949.80	1569.84S	64.45W	==>	1570.04	1401916.86	3216276.87
9600.00	90.00	179.770	6949.80	1669.84S	64.05W	==>	1670.04	1401816.86	3216277.27
9700.00	90.00	179.770	6949.80	1769.84S	63.65W	==>	1770.04	1401716.87	3216277.67
9800.00	90.00	179.770	6949.80	1869.84S	63.25W	==>	1870.03	1401616.87	3216278.07
9900.00	90.00	179.770	6949.80	1969.84S	62.84W	==>	1970.03	1401516.88	3216278.48
10000.00	90.00	179.770	6949.80	2069.84S	62.44W	==>	2070.03	1401416.88	3216278.88
10100.00	90.00	179.770	6949.80	2169.84S	62.04W	==>	2170.03	1401316.89	3216279.28
10200.00	90.00	179.770	6949.80	2269.84S	61.64W	==>	2270.02	1401216.89	3216279.68
10300.00	90.00	179.770	6949.80	2369.84S	61.23W	==>	2370.02	1401116.90	3216280.09
10400.00	90.00	179.770	6949.80	2469.84S	60.83W	==>	2470.02	1401016.90	3216280.49
10500.00	90.00	179.770	6949.80	2569.84S	60.43W	==>	2570.01	1400916.90	3216280.89
10600.00	90.00	179.770	6949.80	2669.83S	60.03W	==>	2670.01	1400816.91	3216281.29
10700.00	90.00	179.770	6949.80	2769.83S	59.62W	==>	2770.01	1400716.91	3216281.70
10800.00	90.00	179.770	6949.80	2869.83S	59.22W	==>	2870.01	1400616.92	3216282.10
10900.00	90.00	179.770	6949.80	2969.83S	58.82W	==>	2970.00	1400516.92	3216282.50
11000.00	90.00	179.770	6949.80	3069.83S	58.42W	==>	3070.00	1400416.93	3216282.90
11100.00	90.00	179.770	6949.80	3169.83S	58.01W	==>	3170.00	1400316.93	3216283.31
11200.00	90.00	179.770	6949.80	3269.83S	57.61W	==>	3270.00	1400216.94	3216283.71
11300.00	90.00	179.770	6949.80	3369.83S	57.21W	==>	3369.99	1400116.94	3216284.11
11400.00	90.00	179.770	6949.80	3469.83S	56.81W	==>	3469.99	1400016.95	3216284.51
11500.00	90.00	179.770	6949.80	3569.83S	56.40W	==>	3569.99	1399916.95	3216284.92
11600.00	90.00	179.770	6949.80	3669.83S	56.00W	==>	3669.99	1399816.96	3216285.32
11700.00	90.00	179.770	6949.80	3769.83S	55.60W	==>	3769.98	1399716.96	3216285.72
11800.00	90.00	179.770	6949.80	3869.82S	55.19W	==>	3869.98	1399616.97	3216286.12
11900.00	90.00	179.770	6949.80	3969.82S	54.79W	==>	3969.98	1399516.97	3216286.53
12000.00	90.00	179.770	6949.80	4069.82S	54.39W	==>	4069.98	1399416.98	3216286.93
12100.00	90.00	179.770	6949.80	4169.82S	53.99W	==>	4169.97	1399316.98	3216287.33
12200.00	90.00	179.770	6949.80	4269.82S	53.58W	==>	4269.97	1399216.99	3216287.73
12300.00	90.00	179.770	6949.80	4369.82S	53.18W	==>	4369.97	1399116.99	3216288.14
12400.00	90.00	179.770	6949.80	4469.82S	52.78W	==>	4469.97	1399017.00	3216288.54
12500.00	90.00	179.770	6949.80	4569.82S	52.38W	==>	4569.96	1398917.00	3216288.94
12600.00	90.00	179.770	6949.80	4669.82S	51.97W	==>	4669.96	1398817.01	3216289.34
12700.00	90.00	179.770	6949.80	4769.82S	51.57W	==>	4769.96	1398717.01	3216289.75
12800.00	90.00	179.770	6949.80	4869.82S	51.17W	==>	4869.95	1398617.01	3216290.15
12900.00	90.00	179.770	6949.80	4969.82S	50.77W	==>	4969.95	1398517.02	3216290.55
13000.00	90.00	179.770	6949.80	5069.81S	50.36W	==>	5069.95	1398417.02	3216290.95
13100.00	90.00	179.770	6949.80	5169.81S	49.96W	==>	5169.95	1398317.03	3216291.36
13200.00	90.00	179.770	6949.80	5269.81S	49.56W	==>	5269.94	1398217.03	3216291.76
13300.00	90.00	179.770	6949.80	5369.81S	49.16W	==>	5369.94	1398117.04	3216292.16
13400.00	90.00	179.770	6949.80	5469.81S	48.75W	==>	5469.94	1398017.04	3216292.56
13500.00	90.00	179.770	6949.80	5569.81S	48.35W	==>	5569.94	1397917.05	3216292.97
13559.48	90.00	179.770	6949.80	5629.29S	48.11W	==>	5629.41	1397857.57	3216293.21
13573.08	90.00	179.500	6949.80	5642.89S	48.02W	2.00	5643.01	1397843.97	3216293.29
13600.00	90.00	179.500	6949.80	5669.81S	47.79W	==>	5669.93	1397817.05	3216293.53
13700.00	90.00	179.500	6949.80	5769.81S	46.91W	==>	5769.93	1397717.06	3216294.41
13800.00	90.00	179.500	6949.80	5869.80S	46.03W	==>	5869.92	1397617.07	3216295.28
13900.00	90.00	179.500	6949.80	5969.80S	45.16W	==>	5969.91	1397517.08	3216296.16
14000.00	90.00	179.500	6949.80	6069.79S	44.28W	==>	6069.90	1397417.09	3216297.04
14100.00	90.00	179.500	6949.80	6169.79S	43.40W	==>	6169.90	1397317.09	3216297.92
14200.00	90.00	179.500	6949.80	6269.79S	42.52W	==>	6269.89	1397217.10	3216298.79
14300.00	90.00	179.500	6949.80	6369.78S	41.65W	==>	6369.88	1397117.11	3216299.67
14400.00	90.00	179.500	6949.80	6469.78S	40.77W	==>	6469.88	1397017.12	3216300.55
14500.00	90.00	179.500	6949.80	6569.77S	39.89W	==>	6569.87	1396917.12	3216301.43

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Vertical Section is from 0.00N 0.00E on azimuth 180.180 degrees  
Bottom hole distance is 8153.92 Feet on azimuth 180.18 degrees from Wellhead  
Calculation method uses Minimum Curvature method  
Prepared by Peterson Energy  
Date Printed: 20-May-2013



INTEGRATED PETROLEUM TECHNOLOGIES, INC  
SYSDRILL  
Well Design Combined Report  
Wellbore: CS-Kinkade #1-1-12 (PWB)

Interpolated Wellpath									
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	Northing	Easting
14600.00	90.00	179.500	6949.80	6669.77S	39.01W	==>	6669.86	1396817.13	3216302.30
14700.00	90.00	179.500	6949.80	6769.77S	38.14W	==>	6769.85	1396717.14	3216303.18
14800.00	90.00	179.500	6949.80	6869.76S	37.26W	==>	6869.85	1396617.15	3216304.06
14900.00	90.00	179.500	6949.80	6969.76S	36.38W	==>	6969.84	1396517.16	3216304.94
15000.00	90.00	179.500	6949.80	7069.76S	35.51W	==>	7069.83	1396417.16	3216305.81
15100.00	90.00	179.500	6949.80	7169.75S	34.63W	==>	7169.83	1396317.17	3216306.69
15200.00	90.00	179.500	6949.80	7269.75S	33.75W	==>	7269.82	1396217.18	3216307.57
15300.00	90.00	179.500	6949.80	7369.74S	32.87W	==>	7369.81	1396117.19	3216308.44
15400.00	90.00	179.500	6949.80	7469.74S	32.00W	==>	7469.80	1396017.20	3216309.32
15500.00	90.00	179.500	6949.80	7569.74S	31.12W	==>	7569.80	1395917.20	3216310.20
15600.00	90.00	179.500	6949.80	7669.73S	30.24W	==>	7669.79	1395817.21	3216311.08
15700.00	90.00	179.500	6949.80	7769.73S	29.36W	==>	7769.78	1395717.22	3216311.95
15800.00	90.00	179.500	6949.80	7869.72S	28.49W	==>	7869.78	1395617.23	3216312.83
15900.00	90.00	179.500	6949.80	7969.72S	27.61W	==>	7969.77	1395517.23	3216313.71
16000.00	90.00	179.500	6949.80	8069.72S	26.73W	==>	8069.76	1395417.24	3216314.59
16084.17	90.00	179.500	6949.80	8153.88S	25.99W	==>	8153.92	1395333.08	3216315.32

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INTEGRATED PETROLEUM TECHNOLOGIES, INC  
SYSDRILL  
Well Design Combined Report  
Wellbore: CS-Kinkade #1-1-12 (PWB)

Hole Sections								
Diameter	Start	Start	Start	Start	End	End	End	End
[in]	MD[ft]	TVD[ft]	North[ft]	East[ft]	MD[ft]	TVD[ft]	North[ft]	East[ft]
12 1/4	16.00	16.00	0.00N	0.00E	500.00	500.00	0.00N	0.00E
8 3/4	500.00	500.00	0.00N	0.00E	7399.00	6949.80	531.14N	71.46W
6 1/8	7399.00	6949.80	531.14N	71.46W	16084.17	6949.80	8153.88S	25.99W

Casings								
Name	Top	Top	Top	Top	Shoe	Shoe	Shoe	Shoe
	MD[ft]	TVD[ft]	North[ft]	East[ft]	MD[ft]	TVD[ft]	North[ft]	East[ft]
9 5/8in Surface Casing	0.00				500.00	500.00	0.00N	0.00E
7.0in Intermediate Casing	0.00				7399.00	6949.80	531.14N	71.46W
4 1/2in Production Liner	6500.00	6378.04	1104.27N	65.47W	16084.17	6949.80	8153.88S	25.99W

Targets								
Name	North[ft]	East[ft]	TVD[ft]	Latitude	Longitude	Northing	Easting	Last Revised
CS19	531.29N	71.47W	6949.80	N40 26 23.3880	W104 43 22.8360	1404017.91	3216269.85	15-Mar-2013
CS20	8153.88S	25.99W	6949.80	N40 24 57.5640	W104 43 23.2320	1395333.08	3216315.32	15-Mar-2013
CS21	5629.29S	48.11W	6949.80	N40 25 22.5120	W104 43 23.2320	1397857.57	3216293.21	15-Mar-2013
CS44	339.43S	69.40W	6949.80	N40 26 14.7840	W104 43 22.9080	1403147.22	3216271.92	15-Mar-2013

Survey Tool Program						
Reference	Survey Name	MD[ft]	TVD[ft]	Survey Tool	Error Model	
33075	Planned	16084.17	6949.80	WdW Rate Gyro	Standard	

Notes

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SYSDRILL  
Closest Approach + Clearance Factor Summary Report  
Wellbore: CS-Kinkade #1-1-12 (PWB)

Ellipse separations are reported ONLY if BOTH wells have uncertainty data  
Only Depth and Magnetic Reference Field error terms are correlated across tie points  
Cutoff 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
CS-Kinkade #1-1-12 (PWB)	8-Apr-2013	11-Apr-2013

Well		
Name	Government ID	Last Revised
CS-Kinkade #1-1-12		8-Apr-2013

Slot						
Name	Grid Northing	Grid Easting	Latitude	Longitude	North	East
Slot #23	1403486.6374	3216341.3166	N40 26 18.1320	W104 43 21.9720	17.02S	136.55E

Installation					
Name	Easting	Northing	Coord System Name	North Alignment	
C Street Pad	3216204.7695	1403503.6566	CO83-NF on NORTH AMERICAN DATUM 1983 datum	Grid	

Field					
Name	Easting	Northing	Coord System Name	North Alignment	
Wattenberg	3211772.6087	1400656.3763	CO83-NF on NORTH AMERICAN DATUM 1983 datum	Grid	

Clearance Summary										
Offset WellName	Offset Wellbore	Offset Slot	Offset Structure	Separation [ft]	MD[ft]	Diverging From[ft]	Ellipse Separation [ft]	Ellipse MD[ft]	Clearance Factor	Clearance MD[ft]
CS-Sherwood #3-1-12	CS-Sherwood #3-1-12 (PWB)	Slot #24	C Street Pad	16.68	1246.31	8284.86	14.04	1266.00	2.81	16084.17
CS-Kinkade #2-1-12	CS-Kinkade #2-1-12 (PWB)	Slot #22	C Street Pad	16.70	1065.87	1065.87	14.34	1098.68	2.78	16084.17
CS-Bestway #1-1-2	CS-Bestway #1-1-2 (PWB)	Slot #8	C Street Pad	24.12	1499.81	8250.91	21.06	1499.81	7.83	1525.19
CS-Sherwood #2-1-12	CS-Sherwood #2-1-12 (PWB)	Slot #25	C Street Pad	30.58	1266.00	16084.17	27.90	1295.53	4.54	16084.17
CS-Kinkade #3-1-12	CS-Kinkade #3-1-12 (PWB)	Slot #21	C Street Pad	33.41	967.44	967.44	31.22	967.44	4.59	16084.17
CS-Sherwood #1-1-12	CS-Sherwood #1-1-12 (PWB)	Slot #26	C Street Pad	47.26	1281.89	16084.17	44.54	1311.93	7.02	16084.17
CS-Kinkade #4-1-12	CS-Kinkade #4-1-12 (PWB)	Slot #20	C Street Pad	47.32	852.61	852.61	45.30	869.02	7.06	16084.17
CS-Scott #5-1-12	CS-Scott #5-1-12 (PWB)	Slot #27	C Street Pad	63.96	1266.00	16084.17	61.29	1266.00	9.11	16084.17
CS-Kinkade #5-1-12	CS-Kinkade #5-1-12 (PWB)	Slot #19	C Street Pad	64.02	754.19	754.19	62.17	770.59	9.18	16084.17
CS-Longmeadow	CS-Longmeadow #1-1-12	Slot #18	C Street Pad	80.73	655.76	7721.16	79.04	655.76	11.60	16084.17

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SYSDRILL  
Closest Approach + Clearance Factor Summary Report  
Wellbore: CS-Kinkade #1-1-12 (PWB)

Clearance Summary										
Offset WellName	Offset Wellbore	Offset Slot	Offset Structure	Separation [ft]	MD[ft]	Diverging From[ft]	Ellipse Separation [ft]	Ellipse MD[ft]	Clearance Factor	Clearance MD[ft]
#1-1-12	(PWB)									
CS-Scott #4-1-12	CS-Scott #4-1-12 (PWB)	Slot #28	C Street Pad	80.73	1166.00	16084.17	78.22	1166.00	11.54	16084.17
CS-Scott #3-1-12	CS-Scott #3-1-12 (PWB)	Slot #29	C Street Pad	94.64	1065.87	13565.87	92.28	1082.27	13.73	16084.17
CS-Longmeadow #2-1-12	CS-Longmeadow #2-1-12 (PWB)	Slot #17	C Street Pad	97.43	557.34	7702.19	95.75	491.72	13.79	16084.17
CS-Scott #2-1-12	CS-Scott #2-1-12 (PWB)	Slot #30	C Street Pad	111.35	967.44	16084.17	109.13	983.85	16.09	16084.17
CS-Scott #1-1-12	CS-Scott #1-1-12 (PWB)	Slot #31	C Street Pad	128.05	852.61	16084.17	126.03	869.02	18.31	16084.17
CS-Bittersweet #3-1-12	CS-Bittersweet #3-1-12 (PWB)	Slot #32	C Street Pad	142.01	754.19	16084.17	140.16	770.59	20.67	16084.17
GG-Cottonwood 5-13-12	GG-Cottonwood #5-13-12 (PWB)	Slot #46	Gallery Green	400.13	16084.17	16084.17	360.77	16084.17	10.16	16084.17
GG-Mariner #1-13-12	GG-Mariner #1-13-12 (PWB)	Slot #47	Gallery Green	471.78	16084.17	16084.17	356.28	16084.17	4.08	16084.17
GG-Cottonwood #4-13-12	GG-Cottonwood #4-13-12 (PWB)	Slot #45	Gallery Green	479.01	16084.17	16084.17	360.45	16084.17	4.04	16084.17
GG-Mariner #2-13-12	GG-Mariner #2-13-12 (PWB)	Slot #48	Gallery Green	774.15	16084.17	16084.17	632.92	16084.17	5.48	16084.17
GG-Cottonwood #3-13-12	GG-Cottonwood #3-13-12 (PWB)	Slot #44	Gallery Green	782.95	16084.17	16084.17	640.31	16084.17	5.49	16084.17
GG-Cottonwood #2-13-12	GG-Cottonwood #2-13-12 (PWB)	Slot #43	Gallery Green	1062.25	16084.17	16084.17	906.35	16084.17	6.81	16084.17
GG-Mariner #3-13-12	GG-Mariner #3-13-12 (PWB)	Slot #49	Gallery Green	1087.36	16084.17	16084.17	931.71	16084.17	6.99	16084.17
GG-Cottonwood #1-13-12	GG-Cottonwood #1-13-12 (PWB)	Slot #25	Gallery Green	1399.27	16084.17	16084.17	1241.78	16084.17	8.88	16084.17
GG-Centennial #1-13-12	GG-Centennial #1-13-12 (PWB)	Slot #50	Gallery Green	1420.81	16084.17	16084.17	1263.51	16084.17	9.03	16084.17
GG-Toddys #2-13-12	GG-Toddys #2-13-12 (PWB)	Slot #27	Gallery Green	1708.61	16084.17	16084.17	1547.82	16084.17	10.63	16084.17
GG-Centennial #2-13-12	GG-Centennial #2-13-12 (PWB)	Slot #51	Gallery Green	1726.71	16084.17	16084.17	1566.11	16084.17	10.75	16084.17
GG-Toddys #1-13-12	GG-Toddys #1-13-12 (PWB)	Slot #28	Gallery Green	2054.37	16084.17	16084.17	1893.44	16084.17	12.77	16084.17

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SYSDRILL  
Closest Approach + Clearance Factor Summary Report  
Wellbore: CS-Kinkade #1-1-12 (PWB)

Clearance Summary										
Offset WellName	Offset Wellbore	Offset Slot	Offset Structure	Separation [ft]	MD[ft]	Diverging From[ft]	Ellipse Separation [ft]	Ellipse MD[ft]	Clearance Factor	Clearance MD[ft]
GG-Centennial #3-13-12	GG-Centennial #3-13-12 (PWB)	Slot #52	Gallery Green	2062.34	16084.17	16084.17	1901.61	16084.17	12.83	16084.17
Franklin Park 2-6-1	Franklin Park 2-6-1 (AWB)	Franklin Park 2-6-1	Bestway Pad Offsets	2109.50	12403.52	12403.52	2012.09	12368.36	21.10	12007.47
Poudre Trail 5 2-2-1	Poudre Trail 5 2-2-1 (AWB)	Poudre Trail 5 2-2-1	Bestway Pad Offsets	2276.59	9488.56	9488.56	2218.18	9546.84	31.27	10678.73
GG-Centennial #4-13-12	GG-Centennial #4-13-12 (PWB)	Slot #53	Gallery Green	2377.29	16084.17	16084.17	2215.11	16084.17	14.66	16084.17
DT-Habitat #5-5-6	DT-Habitat #5-5-6 (PWB)	Slot #10	Downtown	2457.83	10285.03	10285.03	2418.00	10252.22	44.98	12433.98
DT-Martinez #2-5-6	DT-Martinez #2-5-6 (PWB)	Slot #19	Downtown	2458.18	10931.92	10931.92	2409.26	10891.98	41.79	9792.90
DT-Habitat #1-5-6	DT-Habitat #1-5-6 (PWB)	Slot #6	Downtown	2459.94	8993.74	8993.74	2435.92	9005.50	45.45	11170.86
DT-Habitat #3-5-6	DT-Habitat #3-5-6 (PWB)	Slot #8	Downtown	2460.28	9638.58	9638.58	2429.45	9616.00	45.29	11810.62
DT-Forbes #1-5-6	DT-Forbes #1-5-6 (PWB)	Slot #21	Downtown	2461.31	11580.96	11580.96	2402.03	11531.75	36.25	10613.11
DT-Lopez #1-5-6	DT-Lopez #1-5-6 (PWB)	Slot #3	Downtown	2462.39	8349.33	8349.33	2441.61	8398.55	45.65	10547.50
DT-Martinez #1-5-6	DT-Martinez #1-5-6 (PWB)	Slot #11	Downtown	2465.88	10607.68	10607.68	2420.98	10563.90	44.56	9366.39
DT-Forbes #3-5-6	DT-Forbes #3-5-6 (PWB)	Slot #23	Downtown	2467.32	12247.06	12247.06	2397.11	12204.32	31.73	11416.92
DT-Habitat #2-5-6	DT-Habitat #2-5-6 (PWB)	Slot #7	Downtown	2467.98	9317.99	9317.99	2440.49	9317.99	45.46	11498.94
DT-Habitat #4-5-6	DT-Habitat #4-5-6 (PWB)	Slot #9	Downtown	2468.32	9962.83	9962.83	2432.83	9940.54	45.24	12138.70
DT-Martinez #3-5-6	DT-Martinez #3-5-6 (PWB)	Slot #20	Downtown	2468.97	11252.88	11252.88	2414.94	11203.66	39.13	10186.60
DT-Lopez #2-5-6	DT-Lopez #2-5-6 (PWB)	Slot #5	Downtown	2470.42	8673.13	8673.13	2448.07	8710.23	45.66	10859.18
DT-Forbes #5-5-6	DT-Forbes #5-5-6 (PWB)	Slot #25	Downtown	2470.54	12916.00	12916.00	2389.24	12860.49	28.08	12187.92
DT-Forbes #2-5-6	DT-Forbes #2-5-6 (PWB)	Slot #22	Downtown	2472.16	11911.91	11911.91	2407.47	11876.24	34.04	11023.22
MT-Luther #2-8-7	MT-Luther #2-8-7 (PWB)	Slot #37	Midtown	2475.74	13589.54	13589.54	2388.97	13680.70	23.32	14716.00
MT-Maplewood #1-8-7	MT-Maplewood #1-8-7 (PWB)	Slot #2	Midtown	2476.33	14316.30	14316.30	2389.12	14402.48	23.31	15435.95
MT-Maplewood #3-8-7	MT-Maplewood #3-8-7 (PWB)	Slot #4	Midtown	2476.95	15063.01	15063.01	2388.90	15140.67	23.27	16084.17
MT-Maplewood #5-8-7	MT-Maplewood #5-8-7 (PWB)	Slot #6	Midtown	2477.58	15813.24	15813.24	2388.28	15895.27	25.80	16084.17
DT-Forbes #4-5-6	DT-Forbes #4-5-6 (PWB)	Slot #24	Downtown	2478.14	12581.62	12581.62	2402.45	12532.40	29.98	11794.22

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Prepared by Peterson Energy  
Date Printed: 20-May-2013



SYSDRILL  
Closest Approach + Clearance Factor Summary Report  
Wellbore: CS-Kinkade #1-1-12 (PWB)

Clearance Summary										
Offset WellName	Offset Wellbore	Offset Slot	Offset Structure	Separation [ft]	MD[ft]	Diverging From[ft]	Ellipse Separation [ft]	Ellipse MD[ft]	Clearance Factor	Clearance MD[ft]
DT-Luther #1-5-6	DT-Luther #1-5-6 (PWB)	Slot #26	Downtown	2481.35	13245.27	13245.27	2394.58	13204.98	26.69	12548.81
MT-Luther #3-8-7	MT-Luther #3-8-7 (PWB)	Slot #1	Midtown	2485.21	13943.17	13943.17	2398.43	14025.19	23.47	15075.06
MT-Maplewood #2-8-7	MT-Maplewood #2-8-7 (PWB)	Slot #3	Midtown	2485.83	14689.66	14689.66	2398.31	14779.78	23.40	15813.24
MT-Maplewood #4-8-7	MT-Maplewood #4-8-7 (PWB)	Slot #5	Midtown	2486.45	15436.36	15436.36	2397.84	15517.97	24.07	16084.17
MT-Heath #1-8-7	MT-Heath #1-8-7 (PWB)	Slot #7	Midtown	2489.04	16084.17	16084.17	2402.17	16084.17	28.65	16084.17
MT-Heath #2-8-7	MT-Heath #2-8-7 (PWB)	Slot #8	Midtown	2522.79	16084.17	16084.17	2436.36	16084.17	29.19	16084.17
MT-Heath #3-8-7	MT-Heath #3-8-7 (PWB)	Slot #9	Midtown	2623.63	16084.17	16084.17	2529.81	16084.17	27.96	16084.17
GG-Centennial #5-13-12	GG-Centennial #5-13-12 (PWB)	Slot #54	Gallery Green	2712.68	16084.17	16084.17	2550.59	16084.17	16.74	16084.17
MT-Glenfair #1-8-7	MT-Glenfair #1-8-7 (PWB)	Slot #10	Midtown	2756.74	16084.17	16084.17	2655.38	16084.17	27.20	16084.17
MT-Glenfair #2-8-7	MT-Glenfair #2-8-7 (PWB)	Slot #11	Midtown	2946.85	16084.17	16084.17	2839.76	16084.17	27.52	16084.17
GG-Rangeview #1-13-12	GG-Rangeview #1-13-12 (PWB)	Slot #55	Gallery Green	3031.88	16084.17	16084.17	2868.96	16084.17	18.61	16084.17
MT-Glenfair #3-8-7	MT-Glenfair #3-8-7 (PWB)	Slot #12	Midtown	3154.98	16084.17	16084.17	3043.57	16084.17	28.32	16084.17
Bestway 12-2	Bestway 12-2 (AWB)	Bestway 12-2	Bestway Pad Offsets	3299.57	9628.86	9628.86	3250.39	9678.07	53.74	11269.28
MT-Glenfair #4-8-7	MT-Glenfair #4-8-7 (PWB)	Slot #13	Midtown	3404.67	16084.17	16084.17	3290.46	16084.17	29.81	16084.17
MT-Glenfair #5-8-7	MT-Glenfair #5-8-7 (PWB)	Slot #14	Midtown	3662.67	16084.17	16084.17	3546.48	16084.17	31.52	16084.17
MT-Glenmere #1-8-7	MT-Glenmere #1-8-7 (PWB)	Slot #15	Midtown	3950.47	16084.17	16084.17	3833.18	16084.17	33.68	16084.17
LUNDVALL #5	LUNDVALL #5 (AWB)	LUNDVALL #5	Bestway Pad Offsets	3975.81	8973.01	8973.01	3941.21	9005.50	91.54	11138.05
Stoney 7-1-2	Stoney 7-1-2 (AWB)	Stoney 7-1-2	Bestway Pad Offsets	3996.39	8825.06	8825.06	3943.58	8857.86	65.28	10481.88
Ruyle 7-3-2	Ruyle 7-3-2 (AWB)	Ruyle 7-3-2	Bestway Pad Offsets	4015.49	10161.57	10161.57	3972.38	10203.01	77.35	12073.09
MT-Glenmere #2-8-7	MT-Glenmere #2-8-7 (PWB)	Slot #16	Midtown	4240.59	16084.17	16084.17	4122.53	16084.17	35.92	16084.17
MT-Glenmere #3-17-18	MT-Glenmere #3-17-18 (PWB)	Slot #17	Midtown	4517.68	16084.17	16084.17	4399.30	16084.17	38.16	16084.17
Bestway 6-11	Bestway 6-11 (AWB)	Bestway 6-11	Bestway Pad Offsets	4782.69	11386.71	11386.71	4662.94	16084.17	23.65	16084.17
MT-LDS #1-17-18	MT-LDS #1-17-18 (PWB)	Slot #18	Midtown	4791.95	16084.17	16084.17	4673.41	16084.17	40.43	16084.17

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