



Job Number: SVGJ-141182
 Company: PDC
 Lease/Well: Cannon Farms 1-35C
 Location: Weld County, CO
 Rig Name: MS Energy Wireline
 RKB: 0'
 G.L. or M.S.L.: GL

State/Country: Colorado/USA
 Declination: 8.33°
 Grid: East To True North
 File name: S:\2014SU~1\PDC\GJ\CANNON~1\135C.SVY
 Date/Time: 23-Sep-14 / 14:22
 Curve Name: Surface - 7000' M.D. (Rate Gyro)

MS SURVEY

WINSERVE SURVEY CALCULATIONS

Minimum Curvature Method

Vertical Section Plane .00

Vertical Section Referenced to Wellhead

Rectangular Coordinates Referenced to Wellhead

<i>Measured Depth FT</i>	<i>Incl Angle Deg</i>	<i>Drift Direction Deg</i>	<i>True Vertical Depth</i>	<i>N-S FT</i>	<i>E-W FT</i>	<i>Vertical Section FT</i>	<i>C L O S U R E</i>		<i>Dogleg Severity Deg/100</i>
							<i>Distance FT</i>	<i>Direction Deg</i>	
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
100.00	.34	266.17	100.00	-.02	-.30	-.02	.30	266.17	.34
200.00	.09	345.50	200.00	.04	-.61	.04	.61	273.41	.34
300.00	.27	243.97	300.00	.01	-.84	.01	.84	270.61	.30
400.00	.34	254.46	400.00	-.17	-1.34	-.17	1.35	262.61	.09
500.00	.12	133.41	500.00	-.33	-1.55	-.33	1.58	258.15	.41
600.00	.53	242.22	600.00	-.61	-1.88	-.61	1.98	251.98	.58
700.00	.28	163.57	699.99	-1.06	-2.22	-1.06	2.46	244.46	.55
800.00	.46	198.23	799.99	-1.68	-2.28	-1.68	2.83	233.64	.28
900.00	.28	167.58	899.99	-2.30	-2.35	-2.30	3.29	225.68	.26

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
1000.00	.05	65.32	999.99	-2.52	-2.26	-2.52	3.38	221.91	.29
1100.00	.32	296.27	1099.99	-2.38	-2.47	-2.38	3.43	226.12	.35
1200.00	.14	144.83	1199.99	-2.35	-2.65	-2.35	3.55	228.41	.45
1300.00	.31	194.96	1299.99	-2.71	-2.65	-2.71	3.79	224.33	.25
1400.00	.20	178.55	1399.99	-3.15	-2.72	-3.15	4.16	220.77	.13
1500.00	.33	226.69	1499.98	-3.52	-2.92	-3.52	4.58	219.68	.25
1600.00	.47	338.73	1599.98	-3.34	-3.28	-3.34	4.68	224.50	.67
1700.00	.04	19.10	1699.98	-2.92	-3.42	-2.92	4.50	229.47	.44
1800.00	.16	10.53	1799.98	-2.75	-3.38	-2.75	4.36	230.85	.12
1900.00	.11	357.74	1899.98	-2.52	-3.36	-2.52	4.20	233.13	.06
2000.00	.56	332.05	1999.98	-1.99	-3.59	-1.99	4.11	240.99	.46
2100.00	.29	271.40	2099.98	-1.55	-4.07	-1.55	4.36	249.13	.49
2200.00	.43	295.58	2199.98	-1.39	-4.67	-1.39	4.87	253.46	.20
2300.00	.38	287.30	2299.97	-1.12	-5.32	-1.12	5.44	258.06	.08
2400.00	.53	295.14	2399.97	-.83	-6.06	-.83	6.11	262.20	.16
2500.00	.36	349.10	2499.97	-.32	-6.53	-.32	6.54	267.16	.43
2600.00	.68	329.64	2599.96	.50	-6.89	.50	6.91	274.12	.36
2700.00	.61	21.69	2699.96	1.50	-7.00	1.50	7.16	282.12	.57
2800.00	.90	337.10	2799.95	2.72	-7.11	2.72	7.61	290.95	.63
2900.00	.59	339.80	2899.94	3.93	-7.59	3.93	8.54	297.36	.31
3000.00	.77	332.63	2999.93	5.01	-8.08	5.01	9.50	301.80	.20
3100.00	.25	345.85	3099.93	5.82	-8.44	5.82	10.25	304.58	.53
3200.00	.78	6.12	3199.93	6.70	-8.42	6.70	10.76	308.53	.55
3300.00	.29	34.93	3299.92	7.59	-8.20	7.59	11.17	312.78	.54
3400.00	.63	268.37	3399.92	7.78	-8.61	7.78	11.60	312.12	.84
3500.00	.54	314.31	3499.91	8.09	-9.49	8.09	12.47	310.45	.46
3600.00	.67	301.58	3599.91	8.73	-10.33	8.73	13.52	310.21	.19
3700.00	.88	288.48	3699.90	9.28	-11.55	9.28	14.82	308.77	.27
3800.00	1.55	304.50	3799.88	10.29	-13.40	10.29	16.89	307.52	.74

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
3900.00	1.16	314.06	3899.85	11.76	-15.24	11.76	19.25	307.65	.45
4000.00	1.64	321.45	3999.82	13.58	-16.86	13.58	21.65	308.86	.51
4100.00	1.89	305.56	4099.77	15.66	-19.09	15.66	24.69	309.36	.55
4200.00	2.17	326.84	4199.71	18.20	-21.47	18.20	28.15	310.29	.80
4300.00	1.90	321.43	4299.65	21.08	-23.54	21.08	31.60	311.85	.33
4400.00	2.46	329.82	4399.57	24.24	-25.65	24.24	35.29	313.38	.64
4500.00	2.50	317.93	4499.48	27.71	-28.19	27.71	39.53	314.51	.52
4600.00	1.90	327.23	4599.41	30.72	-30.55	30.72	43.33	315.16	.70
4700.00	1.82	323.38	4699.36	33.39	-32.39	33.39	46.52	315.87	.15
4800.00	1.87	321.19	4799.30	35.94	-34.36	35.94	49.72	316.28	.09
4900.00	2.58	321.21	4899.23	38.96	-36.80	38.96	53.59	316.64	.71
5000.00	2.94	342.69	4999.11	43.17	-38.97	43.17	58.15	317.92	1.09
5100.00	2.84	343.84	5098.99	47.99	-40.42	47.99	62.75	319.89	.12
5200.00	2.44	342.80	5198.88	52.41	-41.74	52.41	67.00	321.46	.40
5300.00	2.23	337.72	5298.80	56.24	-43.11	56.24	70.86	322.53	.29
5400.00	1.76	352.00	5398.74	59.56	-44.06	59.56	74.09	323.51	.68
5500.00	1.49	353.11	5498.70	62.37	-44.43	62.37	76.58	324.54	.27
5600.00	1.64	334.56	5598.66	64.96	-45.20	64.96	79.13	325.17	.53
5700.00	1.71	343.34	5698.62	67.68	-46.24	67.68	81.97	325.66	.27
5800.00	1.63	340.76	5798.58	70.45	-47.14	70.45	84.77	326.21	.11
5900.00	1.64	346.97	5898.53	73.19	-47.93	73.19	87.48	326.78	.18
6000.00	1.70	344.35	5998.49	76.01	-48.65	76.01	90.25	327.38	.10
6100.00	1.73	342.63	6098.45	78.88	-49.50	78.88	93.12	327.89	.06
6200.00	1.32	327.58	6198.41	81.29	-50.57	81.29	95.74	328.11	.57
6300.00	.61	324.02	6298.40	82.69	-51.50	82.69	97.42	328.09	.71
6400.00	.72	313.45	6398.39	83.56	-52.27	83.56	98.56	327.97	.16
6500.00	.74	350.25	6498.38	84.63	-52.84	84.63	99.76	328.02	.46
6600.00	.67	24.79	6598.38	85.79	-52.70	85.79	100.69	328.44	.42
6700.00	.56	348.04	6698.37	86.80	-52.56	86.80	101.47	328.81	.40

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
6800.00	.66	7.40	6798.36	87.85	-52.58	87.85	102.39	329.10	.23
6900.00	1.18	30.88	6898.35	89.31	-51.98	89.31	103.33	329.80	.63
Last Survey Depth Recorded									
7000.00	1.42	352.79	6998.33	91.42	-51.61	91.42	104.98	330.55	.88