



Job Number: SVGJ-140958
 Company: PDC
 Lease/Well: Degenhart 4
 Location: Adams County, CO
 Rig Name: MS Slickline #6000
 RKB: 0'
 G.L. or M.S.L.: GL

State/Country: Colorado/USA
 Declination: 8.48°
 Grid: East To True North
 File name: Y:\WINSER~1\2014SU~1\PDC\GJ\DEGENH~1\4.SVY
 Date/Time: 07-Aug-14 / 11:28
 Curve Name: Surface - 8400' 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	.21	302.86	100.00	.10	-.15	.10	.18	302.86	.21
200.00	.40	287.21	200.00	.30	-.64	.30	.71	295.23	.21
300.00	.44	266.56	300.00	.38	-1.36	.38	1.41	285.73	.16
400.00	.29	256.76	399.99	.30	-1.99	.30	2.01	278.62	.16
500.00	.24	287.38	499.99	.31	-2.43	.31	2.45	277.17	.15
600.00	.37	331.01	599.99	.65	-2.79	.65	2.87	283.13	.26
700.00	.48	299.42	699.99	1.14	-3.31	1.14	3.50	288.98	.25
800.00	.38	291.35	799.99	1.47	-3.99	1.47	4.25	290.19	.12
900.00	.29	315.39	899.98	1.77	-4.47	1.77	4.81	291.56	.16

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	.38	310.78	999.98	2.16	-4.90	2.16	5.36	293.82	.09
1100.00	.56	301.09	1099.98	2.63	-5.57	2.63	6.16	295.29	.20
1200.00	.56	271.97	1199.97	2.90	-6.48	2.90	7.10	294.13	.28
1300.00	.36	284.10	1299.97	2.99	-7.27	2.99	7.86	292.39	.22
1400.00	.55	300.63	1399.97	3.32	-7.99	3.32	8.65	292.54	.23
1500.00	.62	277.86	1499.96	3.63	-8.94	3.63	9.65	292.13	.24
1600.00	.40	257.95	1599.96	3.64	-9.81	3.64	10.47	290.33	.28
1700.00	.39	288.00	1699.96	3.67	-10.48	3.67	11.10	289.29	.21
1800.00	.63	277.02	1799.95	3.84	-11.35	3.84	11.98	288.69	.26
1900.00	.50	255.63	1899.95	3.80	-12.32	3.80	12.89	287.14	.25
2000.00	.39	283.70	1999.95	3.77	-13.07	3.77	13.60	286.10	.24
2100.00	.64	281.14	2099.94	3.96	-13.95	3.96	14.50	285.85	.25
2200.00	.43	264.69	2199.94	4.03	-14.87	4.03	15.41	285.17	.26
2300.00	.48	315.52	2299.93	4.30	-15.54	4.30	16.12	285.46	.39
2400.00	.64	320.97	2399.93	5.03	-16.18	5.03	16.95	287.27	.17
2500.00	.58	352.25	2499.92	5.97	-16.60	5.97	17.64	289.76	.33
2600.00	.86	353.23	2599.92	7.21	-16.76	7.21	18.25	293.28	.28
2700.00	.78	338.02	2699.91	8.59	-17.10	8.59	19.14	296.66	.23
2800.00	.65	341.23	2799.90	9.76	-17.54	9.76	20.07	299.09	.14
2900.00	.85	349.12	2899.89	11.02	-17.86	11.02	20.99	301.68	.22
3000.00	.91	331.07	2999.88	12.45	-18.39	12.45	22.20	304.09	.28
3100.00	.56	342.69	3099.87	13.61	-18.92	13.61	23.30	305.73	.38
3200.00	.57	15.72	3199.86	14.55	-18.93	14.55	23.87	307.56	.32
3300.00	.62	.40	3299.86	15.57	-18.79	15.57	24.40	309.65	.17
3400.00	.45	10.43	3399.85	16.50	-18.71	16.50	24.95	311.40	.19
3500.00	.60	31.74	3499.85	17.33	-18.37	17.33	25.25	313.34	.24
3600.00	.86	1.60	3599.84	18.53	-18.07	18.53	25.88	315.71	.46
3700.00	.78	347.71	3699.83	19.94	-18.19	19.94	26.99	317.62	.21
3800.00	.65	355.02	3799.82	21.17	-18.39	21.17	28.04	319.02	.16

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	.43	338.68	3899.82	22.09	-18.57	22.09	28.86	319.94	.27
4000.00	.34	281.94	3999.82	22.50	-19.00	22.50	29.45	319.82	.37
4100.00	.39	286.50	4099.82	22.66	-19.62	22.66	29.97	319.11	.06
4200.00	.57	281.90	4199.81	22.85	-20.43	22.85	30.66	318.21	.18
4300.00	.62	272.99	4299.81	22.99	-21.46	22.99	31.44	316.97	.11
4400.00	.57	290.88	4399.80	23.19	-22.46	23.19	32.29	315.91	.19
4500.00	.78	302.77	4499.80	23.74	-23.50	23.74	33.40	315.29	.25
4600.00	.91	284.63	4599.78	24.31	-24.84	24.31	34.75	314.38	.30
4700.00	.73	283.30	4699.77	24.65	-26.23	24.65	36.00	313.23	.18
4800.00	.51	295.35	4799.77	24.99	-27.25	24.99	36.97	312.52	.25
4900.00	.46	285.24	4899.76	25.29	-28.04	25.29	37.76	312.04	.10
5000.00	.64	276.40	4999.76	25.45	-28.98	25.45	38.57	311.29	.20
5100.00	.61	254.64	5099.75	25.37	-30.05	25.37	39.33	310.18	.24
5200.00	.54	269.47	5199.75	25.23	-31.04	25.23	40.00	309.11	.16
5300.00	.84	272.38	5299.74	25.26	-32.24	25.26	40.95	308.07	.30
5400.00	.91	251.71	5399.73	25.04	-33.73	25.04	42.00	306.59	.32
5500.00	1.03	243.45	5499.72	24.39	-35.28	24.39	42.89	304.65	.18
5600.00	1.03	239.83	5599.70	23.53	-36.86	23.53	43.74	302.55	.07
5700.00	1.16	243.20	5699.68	22.62	-38.55	22.62	44.69	300.41	.15
5800.00	1.10	230.33	5799.66	21.56	-40.19	21.56	45.60	298.21	.26
5900.00	.90	236.47	5899.65	20.51	-41.58	20.51	46.36	296.25	.23
6000.00	.90	249.94	5999.64	19.81	-42.97	19.81	47.32	294.74	.21
6100.00	1.12	244.93	6099.62	19.12	-44.60	19.12	48.52	293.21	.24
6200.00	.92	245.56	6199.60	18.38	-46.21	18.38	49.73	291.68	.20
6300.00	.78	271.60	6299.59	18.06	-47.62	18.06	50.93	290.77	.41
6400.00	1.17	269.34	6399.58	18.07	-49.32	18.07	52.53	290.12	.39
6500.00	1.16	282.97	6499.56	18.29	-51.33	18.29	54.49	289.61	.28
6600.00	1.65	289.06	6599.53	18.98	-53.68	18.98	56.94	289.48	.51
6700.00	2.49	301.40	6699.46	20.58	-56.89	20.58	60.50	289.89	.95

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	2.89	307.86	6799.35	23.26	-60.74	23.26	65.04	290.96	.50
6900.00	3.58	307.56	6899.19	26.71	-65.20	26.71	70.46	292.28	.69
7000.00	2.12	342.64	6999.07	30.38	-68.23	30.38	74.69	294.00	2.21
7100.00	1.50	26.26	7099.03	33.32	-68.20	33.32	75.91	296.04	1.46
7200.00	1.30	60.37	7199.00	35.06	-66.64	35.06	75.30	297.75	.84
7300.00	.96	85.82	7298.98	35.68	-64.82	35.68	73.99	298.83	.60
7400.00	.96	103.15	7398.97	35.55	-63.17	35.55	72.48	299.37	.29
7500.00	1.19	101.67	7498.95	35.15	-61.33	35.15	70.69	299.82	.23
7600.00	1.26	94.82	7598.93	34.85	-59.22	34.85	68.71	300.47	.16
7700.00	1.11	94.29	7698.90	34.68	-57.16	34.68	66.86	301.25	.15
7800.00	.98	97.21	7798.89	34.50	-55.35	34.50	65.22	301.94	.14
7900.00	.95	99.07	7898.87	34.26	-53.68	34.26	63.68	302.55	.04
8000.00	.83	82.90	7998.86	34.22	-52.14	34.22	62.37	303.28	.28
8100.00	.70	74.27	8098.85	34.48	-50.83	34.48	61.42	304.15	.17
8200.00	1.33	115.45	8198.84	34.14	-49.20	34.14	59.89	304.76	.93
8300.00	1.36	92.38	8298.81	33.60	-46.96	33.60	57.74	305.58	.54
Last Survey Depth Recorded									
8400.00	1.23	81.86	8398.78	33.70	-44.72	33.70	55.99	307.00	.27