



Job Number: SVGJ-131372

Company: PDC

Lease/Well: Guttersen 43-8

Location: Weld County, CO

Rig Name: MS Wireline

RKB: 0'

G.L. or M.S.L.: GL

State/Country: Colorado/USA

Declination: 8.34°

Grid: East To True North

File name: S:\2013SU~1\PDC\GJ\GUTTER~1\43-8.SVY

Date/Time: 23-Dec-13 / 12:22

Curve Name: Surface - 6800' M.D. (Rate Gyro)

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	1.34	230.66	99.99	-.74	-.90	-.74	1.17	230.66	1.34
200.00	.58	176.97	199.98	-1.99	-1.78	-1.99	2.67	221.87	1.10
300.00	.26	85.29	299.98	-2.47	-1.53	-2.47	2.91	211.71	.64
400.00	.18	292.02	399.98	-2.40	-1.45	-2.40	2.80	211.14	.43
500.00	.32	262.91	499.97	-2.37	-1.87	-2.37	3.02	218.26	.18
600.00	.32	251.84	599.97	-2.49	-2.41	-2.49	3.47	224.06	.06
700.00	.27	287.43	699.97	-2.51	-2.90	-2.51	3.84	229.15	.19
800.00	.51	319.80	799.97	-2.10	-3.42	-2.10	4.01	238.42	.32
900.00	.52	328.34	899.97	-1.37	-3.94	-1.37	4.17	250.78	.08

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	.52	308.49	999.96	-.71	-4.53	-.71	4.59	261.16	.18
1100.00	.44	291.66	1099.96	-.28	-5.25	-.28	5.25	266.93	.16
1200.00	.39	288.67	1199.96	-.03	-5.93	-.03	5.93	269.70	.05
1300.00	.49	212.31	1299.95	-.28	-6.48	-.28	6.48	267.50	.55
1400.00	.60	200.74	1399.95	-1.13	-6.89	-1.13	6.98	260.65	.16
1500.00	.58	207.41	1499.94	-2.07	-7.31	-2.07	7.60	254.17	.07
1600.00	.62	200.20	1599.94	-3.03	-7.73	-3.03	8.30	248.59	.09
1700.00	.51	210.75	1699.93	-3.92	-8.14	-3.92	9.04	244.29	.15
1800.00	.62	201.36	1799.93	-4.81	-8.57	-4.81	9.82	240.71	.14
1900.00	.70	194.36	1899.92	-5.90	-8.92	-5.90	10.69	236.50	.11
2000.00	.90	194.20	1999.91	-7.26	-9.26	-7.26	11.76	231.92	.20
2100.00	.99	200.78	2099.90	-8.82	-9.76	-8.82	13.16	227.88	.14
2200.00	1.11	226.57	2199.88	-10.30	-10.77	-10.30	14.90	226.28	.48
2300.00	.65	232.24	2299.87	-11.31	-11.92	-11.31	16.43	226.51	.47
2400.00	.71	291.30	2399.86	-11.43	-12.95	-11.43	17.27	228.55	.67
2500.00	1.15	290.83	2499.85	-10.85	-14.46	-10.85	18.08	233.12	.44
2600.00	1.49	290.60	2599.82	-10.04	-16.62	-10.04	19.41	238.87	.34
2700.00	1.67	276.77	2699.79	-9.41	-19.28	-9.41	21.45	243.99	.42
2800.00	1.81	278.63	2799.74	-9.00	-22.29	-9.00	24.04	248.01	.15
2900.00	1.66	289.48	2899.69	-8.28	-25.22	-8.28	26.54	251.82	.36
3000.00	1.83	285.82	2999.65	-7.36	-28.12	-7.36	29.07	255.33	.20
3100.00	1.78	281.05	3099.60	-6.63	-31.18	-6.63	31.88	258.00	.16
3200.00	1.29	267.67	3199.56	-6.38	-33.83	-6.38	34.42	259.33	.60
3300.00	1.00	257.69	3299.54	-6.61	-35.81	-6.61	36.41	259.54	.35
3400.00	.27	226.61	3399.54	-6.96	-36.83	-6.96	37.48	259.30	.78
3500.00	.67	132.72	3499.53	-7.51	-36.57	-7.51	37.34	258.39	.74
3600.00	1.50	131.63	3599.51	-8.78	-35.16	-8.78	36.24	255.98	.83
3700.00	1.29	132.96	3699.48	-10.42	-33.36	-10.42	34.95	252.66	.21
3800.00	1.03	168.74	3799.47	-12.07	-32.36	-12.07	34.54	249.55	.75

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	1.58	158.06	3899.44	-14.23	-31.67	-14.23	34.72	245.81	.60
4000.00	1.58	149.33	3999.40	-16.69	-30.45	-16.69	34.73	241.27	.24
4100.00	1.51	150.05	4099.37	-19.02	-29.09	-19.02	34.76	236.83	.07
4200.00	.84	148.32	4199.34	-20.78	-28.05	-20.78	34.91	233.46	.67
4300.00	.54	172.65	4299.34	-21.87	-27.60	-21.87	35.22	231.60	.41
4400.00	.58	160.43	4399.33	-22.82	-27.37	-22.82	35.64	230.19	.13
4500.00	.24	110.85	4499.33	-23.37	-27.01	-23.37	35.72	229.13	.46
4600.00	.47	288.51	4599.33	-23.31	-27.20	-23.31	35.83	229.40	.71
4700.00	.58	215.39	4699.33	-23.60	-27.88	-23.60	36.53	229.76	.63
4800.00	.76	175.90	4799.32	-24.67	-28.13	-24.67	37.42	228.75	.48
4900.00	.88	131.28	4899.31	-25.84	-27.51	-25.84	37.74	226.79	.63
5000.00	1.18	95.08	4999.29	-26.44	-25.90	-26.44	37.01	224.41	.70
5100.00	1.14	80.65	5099.27	-26.37	-23.90	-26.37	35.58	222.18	.29
5200.00	.76	102.74	5199.26	-26.35	-22.27	-26.35	34.50	220.20	.52
5300.00	.69	107.69	5299.25	-26.68	-21.05	-26.68	33.98	218.27	.09
5400.00	.30	99.66	5399.25	-26.91	-20.21	-26.91	33.65	216.92	.40
5500.00	.29	66.07	5499.25	-26.85	-19.73	-26.85	33.32	216.30	.17
5600.00	.38	14.98	5599.25	-26.43	-19.41	-26.43	32.79	216.29	.30
5700.00	.21	260.88	5699.24	-26.13	-19.50	-26.13	32.61	216.73	.50
5800.00	.50	205.96	5799.24	-26.56	-19.88	-26.56	33.17	216.81	.42
5900.00	.43	175.72	5899.24	-27.32	-20.04	-27.32	33.88	216.26	.25
6000.00	.23	188.28	5999.24	-27.90	-20.04	-27.90	34.35	215.69	.21
6100.00	.21	189.18	6099.24	-28.27	-20.10	-28.27	34.69	215.40	.02
6200.00	.50	151.94	6199.24	-28.84	-19.92	-28.84	35.05	214.63	.36
6300.00	.41	130.49	6299.23	-29.46	-19.44	-29.46	35.30	213.43	.19
6400.00	.66	123.64	6399.23	-30.01	-18.69	-30.01	35.36	211.92	.26
6500.00	.86	128.97	6499.22	-30.80	-17.63	-30.80	35.49	209.79	.21
6600.00	1.03	115.79	6599.21	-31.66	-16.24	-31.66	35.58	207.15	.27
6700.00	.97	114.75	6699.19	-32.41	-14.66	-32.41	35.57	204.34	.06

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	
Last Survey Depth Recorded									
6800.00	1.53	109.39	6799.17	-33.21	-12.63	-33.21	35.53	200.82	.57