



Job Number: SVGJ-140429
 Company: PDC
 Lease/Well: Lucille 20-1
 Location: Weld County, CO
 Rig Name: MS Energy Wireline
 RKB: 0'
 G.L. or M.S.L.: GL

State/Country: Colorado/USA
 Declination: 8.39°
 Grid: East To True North
 File name: S:\2014SU~1\PDC\GJ\LUCILLE\201.SVY
 Date/Time: 11-Apr-14 / 15:36
 Curve Name: Surface - 6854' 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	.19	6.95	100.00	.16	.02	.16	.17	6.95	.19
200.00	.38	239.46	200.00	.16	-.25	.16	.29	303.21	.52
300.00	.29	150.66	300.00	-.23	-.41	-.23	.47	240.70	.47
400.00	.82	202.75	399.99	-1.11	-.56	-1.11	1.24	206.78	.68
500.00	.34	178.12	499.99	-2.07	-.83	-2.07	2.22	201.82	.53
600.00	.79	227.55	599.98	-2.83	-1.33	-2.83	3.12	205.12	.62
700.00	.08	206.18	699.98	-3.36	-1.87	-3.36	3.84	209.07	.72
800.00	.54	174.56	799.98	-3.89	-1.85	-3.89	4.31	205.47	.47
900.00	.33	131.03	899.98	-4.55	-1.59	-4.55	4.82	199.27	.38

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	.20	237.08	999.97	-4.83	-1.52	-4.83	5.06	197.46	.43
1100.00	.05	86.08	1099.97	-4.92	-1.62	-4.92	5.18	198.24	.24
1200.00	.60	134.84	1199.97	-5.29	-1.21	-5.29	5.42	192.86	.57
1300.00	.24	81.11	1299.97	-5.62	-.63	-5.62	5.66	186.38	.50
1400.00	.67	145.54	1399.97	-6.07	-.09	-6.07	6.07	180.86	.61
1500.00	.20	196.94	1499.96	-6.72	.19	-6.72	6.73	178.39	.57
1600.00	.58	146.05	1599.96	-7.31	.42	-7.31	7.32	176.70	.48
1700.00	.03	228.78	1699.96	-7.75	.68	-7.75	7.78	174.96	.58
1800.00	.58	115.00	1799.96	-7.98	1.12	-7.98	8.06	171.99	.59
1900.00	.08	76.99	1899.96	-8.18	1.65	-8.18	8.34	168.59	.52
2000.00	.69	129.95	1999.95	-8.55	2.18	-8.55	8.82	165.70	.64
2100.00	.10	219.11	2099.95	-9.00	2.59	-9.00	9.37	163.97	.70
2200.00	.45	171.97	2199.95	-9.46	2.59	-9.46	9.80	164.71	.39
2300.00	.62	243.93	2299.95	-10.08	2.15	-10.08	10.31	167.94	.64
2400.00	.52	191.12	2399.94	-10.77	1.58	-10.77	10.88	171.65	.51
2500.00	.45	267.20	2499.94	-11.23	1.10	-11.23	11.29	174.40	.60
2600.00	.22	206.92	2599.94	-11.42	.62	-11.42	11.44	176.88	.39
2700.00	.45	256.24	2699.94	-11.69	.15	-11.69	11.69	179.25	.35
2800.00	.17	304.27	2799.94	-11.70	-.35	-11.70	11.70	181.72	.36
2900.00	.68	134.56	2899.93	-12.03	-.05	-12.03	12.03	180.24	.85
3000.00	.33	103.93	2999.93	-12.52	.65	-12.52	12.53	177.02	.43
3100.00	.18	212.71	3099.93	-12.72	.85	-12.72	12.74	176.19	.42
3200.00	1.07	315.44	3199.92	-12.18	.11	-12.18	12.18	179.50	1.12
3300.00	1.55	301.74	3299.90	-10.81	-1.70	-10.81	10.94	188.93	.57
3400.00	2.76	321.51	3399.83	-8.21	-4.35	-8.21	9.29	207.90	1.40
3500.00	3.54	319.96	3499.67	-3.96	-7.83	-3.96	8.78	243.16	.78
3600.00	3.22	323.21	3599.50	.65	-11.50	.65	11.52	273.24	.37
3700.00	3.11	330.83	3699.35	5.27	-14.50	5.27	15.43	289.96	.43
3800.00	3.52	328.01	3799.18	10.24	-17.45	10.24	20.24	300.40	.44

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	2.86	331.16	3899.02	15.03	-20.28	15.03	25.24	306.54	.68
4000.00	2.48	341.82	3998.92	19.27	-22.16	19.27	29.37	311.01	.62
4100.00	1.89	350.79	4098.84	22.95	-23.10	22.95	32.56	314.82	.68
4200.00	1.60	.57	4198.80	25.98	-23.35	25.98	34.93	318.05	.41
4300.00	1.93	3.03	4298.75	29.06	-23.25	29.06	37.21	321.34	.34
4400.00	1.84	353.11	4398.70	32.33	-23.35	32.33	39.88	324.16	.34
4500.00	1.56	348.67	4498.65	35.26	-23.81	35.26	42.55	325.97	.31
4600.00	.75	346.20	4598.63	37.23	-24.23	37.23	44.42	326.94	.81
4700.00	.70	315.22	4698.62	38.30	-24.82	38.30	45.64	327.05	.39
4800.00	.08	52.42	4798.62	38.77	-25.20	38.77	46.24	326.98	.71
4900.00	.16	44.37	4898.62	38.92	-25.04	38.92	46.28	327.24	.08
5000.00	.44	179.30	4998.62	38.63	-24.94	38.63	45.98	327.15	.56
5100.00	.43	187.39	5098.62	37.88	-24.98	37.88	45.37	326.59	.06
5200.00	.32	105.86	5198.62	37.43	-24.76	37.43	44.88	326.51	.50
5300.00	.26	5.37	5298.61	37.58	-24.47	37.58	44.84	326.92	.45
5400.00	.13	322.69	5398.61	37.89	-24.52	37.89	45.14	327.09	.19
5500.00	.39	114.82	5498.61	37.84	-24.28	37.84	44.96	327.31	.51
5600.00	.18	12.25	5598.61	37.85	-23.94	37.85	44.79	327.69	.46
5700.00	.35	50.10	5698.61	38.20	-23.67	38.20	44.94	328.22	.24
5800.00	.73	88.07	5798.61	38.42	-22.80	38.42	44.67	329.31	.50
5900.00	.56	99.66	5898.60	38.36	-21.68	38.36	44.06	330.52	.21
6000.00	.98	127.94	5998.59	37.75	-20.53	37.75	42.97	331.47	.55
6100.00	.72	104.22	6098.58	37.07	-19.24	37.07	41.77	332.57	.43
6200.00	.98	143.95	6198.57	36.22	-18.13	36.22	40.51	333.41	.63
6300.00	1.32	131.79	6298.55	34.77	-16.77	34.77	38.60	334.25	.42
6400.00	1.23	127.33	6398.53	33.35	-15.06	33.35	36.59	335.70	.13
6500.00	1.04	137.28	6498.51	32.03	-13.59	32.03	34.79	337.01	.27
6600.00	1.54	149.60	6598.48	30.20	-12.29	30.20	32.61	337.86	.57
6700.00	1.90	154.92	6698.44	27.54	-10.91	27.54	29.62	338.40	.39

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	1.96	136.42	6798.38	24.80	-9.03	24.80	26.39	340.00	.62
Last Survey Depth Recorded									
6854.00	1.44	146.96	6852.36	23.57	-8.02	23.57	24.89	341.21	1.12