



Job Number: SVGJ-141397
 Company: PDC
 Lease/Well: Leclerg 31-22
 Location: Weld County, CO
 Rig Name: MS Energy Wireline
 RKB: 0'
 G.L. or M.S.L.: GL

State/Country: Colorado/USA
 Declination: 8.50°
 Grid: East To True North
 File name: Y:\WINSER~1\2014SU~1\PDC\GJ\LECLERG\3122.SVY
 Date/Time: 15-Dec-14 / 11:08
 Curve Name: Surface - 7200' 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	.27	29.46	100.00	.21	.12	.21	.24	29.46	.27
200.00	.32	26.51	200.00	.66	.36	.66	.75	28.36	.05
300.00	.25	354.03	300.00	1.13	.46	1.13	1.22	22.13	.17
400.00	.89	295.72	399.99	1.68	-.26	1.68	1.70	351.07	.79
500.00	1.14	284.25	499.98	2.26	-1.93	2.26	2.97	319.57	.32
600.00	1.09	282.49	599.96	2.71	-3.82	2.71	4.69	305.38	.06
700.00	1.11	276.82	699.94	3.03	-5.71	3.03	6.47	297.98	.11
800.00	1.07	277.47	799.92	3.27	-7.60	3.27	8.27	293.29	.04
900.00	1.07	275.31	899.90	3.48	-9.45	3.48	10.07	290.20	.04

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	1.07	271.81	999.89	3.59	-11.32	3.59	11.87	287.62	.07
1100.00	1.04	269.10	1099.87	3.61	-13.16	3.61	13.64	285.34	.06
1200.00	1.01	263.05	1199.85	3.49	-14.94	3.49	15.34	283.14	.11
1300.00	.99	255.80	1299.84	3.17	-16.65	3.17	16.95	280.78	.13
1400.00	.96	256.00	1399.82	2.76	-18.30	2.76	18.51	278.56	.03
1500.00	.98	257.29	1499.81	2.36	-19.95	2.36	20.09	276.76	.03
1600.00	1.04	260.27	1599.79	2.02	-21.68	2.02	21.77	275.33	.08
1700.00	1.10	256.95	1699.78	1.65	-23.51	1.65	23.57	274.02	.09
1800.00	1.05	256.36	1799.76	1.22	-25.33	1.22	25.36	272.76	.05
1900.00	.98	258.07	1899.74	.83	-27.06	.83	27.07	271.75	.08
2000.00	.96	259.72	1999.73	.50	-28.72	.50	28.73	271.00	.03
2100.00	.92	259.22	2099.72	.20	-30.33	.20	30.34	270.38	.04
2200.00	.84	261.73	2199.70	-.05	-31.85	-.05	31.85	269.90	.09
2300.00	.73	264.63	2299.69	-.22	-33.21	-.22	33.21	269.62	.12
2400.00	.79	270.24	2399.69	-.28	-34.53	-.28	34.53	269.54	.10
2500.00	.84	266.38	2499.68	-.32	-35.95	-.32	35.95	269.49	.07
2600.00	.71	261.51	2599.67	-.46	-37.30	-.46	37.30	269.30	.15
2700.00	.66	264.45	2699.66	-.60	-38.48	-.60	38.49	269.10	.06
2800.00	.74	270.09	2799.65	-.66	-39.70	-.66	39.71	269.05	.11
2900.00	.80	268.03	2899.64	-.68	-41.05	-.68	41.05	269.05	.07
3000.00	.82	263.89	2999.63	-.78	-42.45	-.78	42.46	268.94	.06
3100.00	.77	265.10	3099.62	-.92	-43.84	-.92	43.85	268.80	.05
3200.00	.81	266.88	3199.61	-1.01	-45.21	-1.01	45.22	268.72	.05
3300.00	.90	264.15	3299.60	-1.13	-46.70	-1.13	46.71	268.61	.10
3400.00	.77	269.21	3399.59	-1.22	-48.15	-1.22	48.17	268.55	.15
3500.00	.73	270.23	3499.58	-1.23	-49.46	-1.23	49.48	268.58	.04
3600.00	.74	269.49	3599.57	-1.23	-50.74	-1.23	50.76	268.61	.01
3700.00	.75	271.70	3699.57	-1.22	-52.04	-1.22	52.06	268.66	.03
3800.00	.80	275.29	3799.56	-1.13	-53.39	-1.13	53.40	268.79	.07

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	.98	272.70	3899.54	-1.03	-54.94	-1.03	54.95	268.93	.18
4000.00	1.24	259.32	3999.53	-1.19	-56.86	-1.19	56.87	268.80	.37
4100.00	1.84	244.49	4099.49	-2.08	-59.37	-2.08	59.41	267.99	.72
4200.00	1.88	245.68	4199.44	-3.45	-62.31	-3.45	62.41	266.83	.06
4300.00	1.99	247.05	4299.38	-4.80	-65.41	-4.80	65.58	265.80	.12
4400.00	2.10	244.89	4399.32	-6.25	-68.67	-6.25	68.95	264.80	.13
4500.00	2.12	242.69	4499.25	-7.88	-71.97	-7.88	72.40	263.75	.08
4600.00	2.13	242.55	4599.18	-9.58	-75.26	-9.58	75.87	262.74	.01
4700.00	2.02	245.24	4699.11	-11.18	-78.51	-11.18	79.30	261.90	.15
4800.00	1.80	243.93	4799.06	-12.61	-81.52	-12.61	82.49	261.21	.22
4900.00	1.37	247.13	4899.02	-13.76	-84.03	-13.76	85.15	260.70	.44
5000.00	1.12	248.42	4999.00	-14.59	-86.04	-14.59	87.27	260.38	.25
5100.00	1.05	250.18	5098.98	-15.26	-87.82	-15.26	89.13	260.14	.08
5200.00	1.04	253.01	5198.96	-15.83	-89.55	-15.83	90.93	259.97	.05
5300.00	1.03	259.57	5298.95	-16.26	-91.30	-16.26	92.73	259.90	.12
5400.00	1.02	265.21	5398.93	-16.50	-93.07	-16.50	94.52	259.95	.10
5500.00	.78	298.17	5498.92	-16.25	-94.55	-16.25	95.94	260.25	.56
5600.00	.83	294.63	5598.91	-15.63	-95.81	-15.63	97.08	260.74	.07
5700.00	.92	286.96	5698.90	-15.09	-97.24	-15.09	98.40	261.18	.15
5800.00	.93	283.11	5798.88	-14.67	-98.80	-14.67	99.88	261.55	.06
5900.00	.86	273.25	5898.87	-14.45	-100.34	-14.45	101.37	261.81	.17
6000.00	.84	265.79	5998.86	-14.46	-101.82	-14.46	102.84	261.92	.11
6100.00	.76	260.97	6098.85	-14.62	-103.20	-14.62	104.23	261.94	.10
6200.00	.68	254.15	6198.84	-14.88	-104.43	-14.88	105.48	261.89	.12
6300.00	.57	261.57	6298.84	-15.12	-105.49	-15.12	106.57	261.85	.14
6400.00	.68	257.67	6398.83	-15.32	-106.56	-15.32	107.66	261.82	.12
6500.00	.79	250.28	6498.82	-15.68	-107.79	-15.68	108.93	261.73	.14
6600.00	.83	248.52	6598.81	-16.17	-109.12	-16.17	110.31	261.57	.05
6700.00	.79	241.01	6698.80	-16.77	-110.39	-16.77	111.66	261.36	.11

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	.77	233.36	6798.79	-17.51	-111.53	-17.51	112.90	261.08	.11
6900.00	.74	227.10	6898.78	-18.35	-112.55	-18.35	114.03	260.74	.09
7000.00	.92	222.70	6998.77	-19.38	-113.56	-19.38	115.21	260.32	.19
7100.00	.70	231.63	7098.76	-20.35	-114.59	-20.35	116.38	259.93	.25
Last Survey Depth Recorded									
7200.00	.37	217.48	7198.76	-20.98	-115.26	-20.98	117.16	259.68	.35