



Job Number: SVGJ-120086
 Company: PDC
 Lease/Well: Cornish 11-10
 Location: Weld County, CO
 Rig Name: Lightning Wireline
 RKB: 0'
 G.L. or M.S.L.: GL

State/Country: Colorado/USA
 Declination: 8.60°
 Grid: East To True
 File name: F:\SURVEY\2012SU-1\PDC\LORENZ\CORNISH\11-10.SVY
 Date/Time: 01-Feb-12 / 12:57
 Curve Name: Surface - 6700' 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	1.10	265.30	99.99	-.08	-.96	-.08	.96	265.30	1.10
200.00	.84	275.39	199.98	-.09	-2.64	-.09	2.64	268.08	.31
300.00	.51	309.29	299.97	.26	-3.72	.26	3.73	274.04	.50
400.00	.51	309.06	399.97	.82	-4.41	.82	4.48	280.60	.00
500.00	.32	301.11	499.97	1.25	-4.99	1.25	5.15	284.05	.20
600.00	.16	60.07	599.97	1.46	-5.11	1.46	5.32	285.98	.42
700.00	.21	45.81	699.97	1.66	-4.86	1.66	5.13	288.87	.07
800.00	.30	359.53	799.96	2.05	-4.73	2.05	5.15	293.44	.22
900.00	.31	301.08	899.96	2.45	-4.96	2.45	5.53	296.29	.30

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	.22	222.82	999.96	2.45	-5.32	2.45	5.86	294.71	.34
1100.00	.04	43.30	1099.96	2.33	-5.43	2.33	5.91	293.26	.26
1200.00	.18	347.15	1199.96	2.51	-5.44	2.51	5.99	294.79	.16
1300.00	.40	255.13	1299.96	2.58	-5.81	2.58	6.36	293.90	.44
1400.00	.23	77.08	1399.96	2.53	-5.96	2.53	6.47	293.03	.63
1500.00	.24	325.57	1499.96	2.75	-5.88	2.75	6.49	295.07	.39
1600.00	.38	200.82	1599.96	2.61	-6.12	2.61	6.65	293.14	.55
1700.00	.11	354.68	1699.96	2.40	-6.24	2.40	6.69	291.02	.48
1800.00	.16	220.03	1799.96	2.39	-6.34	2.39	6.78	290.63	.25
1900.00	.64	123.51	1899.96	1.97	-5.96	1.97	6.28	288.29	.68
2000.00	.61	183.71	1999.95	1.13	-5.53	1.13	5.65	281.56	.63
2100.00	.97	144.65	2099.94	-0.09	-5.08	-0.09	5.08	268.99	.63
2200.00	1.12	142.58	2199.93	-1.56	-3.99	-1.56	4.29	248.72	.15
2300.00	1.37	153.85	2299.90	-3.41	-2.87	-3.41	4.46	220.16	.35
2400.00	1.55	132.58	2399.87	-5.39	-1.35	-5.39	5.56	194.06	.57
2500.00	1.36	159.51	2499.84	-7.42	.06	-7.42	7.42	179.54	.70
2600.00	1.41	143.82	2599.81	-9.52	1.20	-9.52	9.60	172.81	.38
2700.00	1.32	131.35	2699.78	-11.28	2.79	-11.28	11.62	166.09	.31
2800.00	.96	169.20	2799.76	-12.86	3.81	-12.86	13.42	163.48	.81
2900.00	1.26	138.99	2899.75	-14.52	4.69	-14.52	15.26	162.08	.65
3000.00	1.14	144.50	2999.72	-16.15	5.99	-16.15	17.23	159.65	.17
3100.00	1.14	161.22	3099.70	-17.91	6.89	-17.91	19.19	158.95	.33
3200.00	1.37	133.93	3199.68	-19.68	8.07	-19.68	21.27	157.70	.63
3300.00	1.10	136.15	3299.66	-21.20	9.60	-21.20	23.27	155.64	.27
3400.00	.38	170.24	3399.65	-22.22	10.32	-22.22	24.50	155.09	.81
3500.00	.30	112.63	3499.65	-22.65	10.62	-22.65	25.01	154.88	.34
3600.00	.29	28.21	3599.65	-22.52	10.98	-22.52	25.06	154.02	.40
3700.00	.10	249.10	3699.65	-22.33	11.02	-22.33	24.90	153.74	.37
3800.00	.52	153.43	3799.64	-22.77	11.14	-22.77	25.35	153.94	.54

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	.40	236.50	3899.64	-23.37	11.05	-23.37	25.85	154.69	.62
4000.00	.47	211.57	3999.64	-23.91	10.54	-23.91	26.13	156.20	.20
4100.00	.60	149.03	4099.64	-24.71	10.60	-24.71	26.88	156.78	.57
4200.00	.37	237.16	4199.63	-25.33	10.60	-25.33	27.46	157.30	.69
4300.00	.42	192.60	4299.63	-25.86	10.24	-25.86	27.82	158.39	.30
4400.00	.37	110.34	4399.63	-26.33	10.47	-26.33	28.34	158.32	.52
4500.00	.30	261.11	4499.63	-26.49	10.51	-26.49	28.50	158.35	.65
4600.00	.60	220.53	4599.63	-26.93	9.91	-26.93	28.69	159.79	.42
4700.00	.52	303.23	4699.62	-27.07	9.19	-27.07	28.59	161.25	.74
4800.00	.89	270.72	4799.62	-26.82	8.04	-26.82	27.99	163.32	.53
4900.00	2.01	268.56	4899.58	-26.85	5.51	-26.85	27.41	168.41	1.12
5000.00	2.41	273.50	4999.51	-26.77	1.66	-26.77	26.82	176.46	.44
5100.00	1.50	281.90	5099.45	-26.37	-1.72	-26.37	26.42	183.74	.95
5200.00	.86	305.49	5199.43	-25.66	-3.62	-25.66	25.92	188.02	.79
5300.00	.63	35.45	5299.42	-24.78	-3.91	-24.78	25.09	188.96	1.07
5400.00	1.01	347.85	5399.41	-23.47	-3.77	-23.47	23.77	189.14	.75
5500.00	.84	40.51	5499.40	-22.05	-3.48	-22.05	22.32	188.98	.83
5600.00	1.25	.55	5599.38	-20.40	-3.00	-20.40	20.62	188.36	.81
5700.00	1.11	22.08	5699.36	-18.41	-2.62	-18.41	18.60	188.11	.46
5800.00	1.52	.49	5799.34	-16.19	-2.25	-16.19	16.35	187.90	.64
5900.00	1.43	28.98	5899.31	-13.77	-1.63	-13.77	13.87	186.76	.73
6000.00	1.21	10.92	5999.28	-11.64	-.83	-11.64	11.67	184.06	.47
6100.00	.50	70.10	6099.27	-10.46	-.22	-10.46	10.46	181.19	1.05
6200.00	.66	160.56	6199.27	-10.85	.39	-10.85	10.86	177.97	.83
6300.00	.97	127.24	6299.26	-11.91	1.25	-11.91	11.97	174.00	.55
6400.00	1.25	135.93	6399.24	-13.21	2.68	-13.21	13.47	168.51	.33
6500.00	1.09	142.76	6499.22	-14.75	4.02	-14.75	15.28	164.76	.21
6600.00	.75	138.33	6599.20	-15.99	5.03	-15.99	16.76	162.55	.35

Last Survey Depth Recorded									
6700.00	.87	72.77	6699.20	-16.26	Page 3 6.19	-16.26	17.39	159.16	.88