

Rusty Clark Survey Co.
SURVEY DATA

MEASURED DEPTH	DRIFT ANGLE	QUADRANT	AZIMUTH DIRECTION	VERTICAL DEPTH	SUB SEA TVD	VERTICAL SECTION	RECTANGULAR COORDINATES	CLOSURES DISTANCE	AZIMUTH	DIRECTION	DOG LEG DEG/100FT.
0.00	0.00	N 0.00 E	0.00	0.00	18.00	0.00	0.00 N 0.00 E	0.00	0.00	N 0.00 E	0.00
100.00	0.74	N 60.50 W	299.50	100.00	118.00	0.32	0.32 N 0.56 W	0.65	299.50	N 60.50 W	0.74
200.00	0.69	N 27.70 W	332.30	199.99	217.99	1.17	1.17 N 1.40 W	1.83	309.87	N 50.13 W	0.41
300.00	0.34	N 72.70 E	72.70	299.99	317.99	1.79	1.79 N 1.40 W	2.27	322.06	N 37.94 W	0.82
400.00	0.77	N 44.40 W	315.60	399.98	417.98	2.36	2.36 N 1.59 W	2.84	326.07	N 33.94 W	0.97
500.00	0.21	S 16.90 E	163.10	499.98	517.98	2.67	2.66 N 2.01 W	3.34	323.02	N 36.98 W	0.96
600.00	0.46	N 0.70 W	359.30	599.98	617.98	2.89	2.89 N 1.96 W	3.49	325.80	N 34.20 W	0.66
700.00	0.78	N 78.80 W	281.20	699.98	717.98	3.42	3.42 N 2.63 W	4.32	322.44	N 37.56 W	0.82
800.00	1.20	S 44.70 W	224.70	799.96	817.96	2.81	2.81 N 4.03 W	4.92	304.84	N 55.16 W	1.01
900.00	0.32	S 37.10 E	142.90	899.96	917.96	1.84	1.84 N 4.60 W	4.95	291.84	N 68.16 W	1.20
1000.00	0.21	S 19.00 E	161.00	999.95	1017.95	1.44	1.44 N 4.37 W	4.60	288.28	N 71.72 W	0.14
1100.00	0.98	S 72.50 W	252.50	1099.95	1117.95	1.01	1.01 N 5.13 W	5.22	281.14	N 78.86 W	1.01
1200.00	0.94	S 68.90 W	248.90	1199.93	1217.93	0.46	0.46 N 6.71 W	6.73	273.90	N 86.10 W	0.07
1300.00	1.25	S 23.30 W	203.30	1299.92	1317.92	-0.84	0.84 S 7.91 W	7.95	263.96	S 83.96 W	0.90
1400.00	0.62	S 69.90 W	249.90	1399.91	1417.91	-2.03	2.03 S 8.85 W	9.08	257.09	S 77.09 W	0.94
1500.00	1.47	S 37.70 W	217.70	1499.89	1517.89	-3.23	3.23 S 10.14 W	10.64	252.33	S 72.33 W	1.00
1600.00	0.96	S 31.00 W	211.00	1599.87	1617.87	-4.96	4.96 S 11.36 W	12.39	246.39	S 66.39 W	0.53
1700.00	2.20	S 60.10 W	240.10	1699.83	1717.83	-6.64	6.63 S 13.46 W	15.00	243.75	S 63.75 W	1.44
1800.00	2.44	S 41.70 W	221.70	1799.75	1817.75	-9.18	9.18 S 16.54 W	18.91	240.98	S 60.98 W	0.78
1900.00	1.73	S 62.50 W	242.50	1899.68	1917.68	-11.47	11.47 S 19.30 W	22.44	239.28	S 59.28 W	1.03
2000.00	1.63	S 68.20 W	248.20	1999.64	2017.64	-12.70	12.70 S 21.96 W	25.37	239.97	S 59.97 W	0.19
2100.00	1.72	S 40.80 W	220.80	2099.60	2117.60	-14.36	14.36 S 24.26 W	28.19	239.37	S 59.37 W	0.80
2200.00	0.86	S 66.20 W	246.20	2199.57	2217.57	-15.80	15.80 S 25.93 W	30.36	238.64	S 58.64 W	1.01
2300.00	0.48	S 88.00 W	268.00	2299.56	2317.56	-16.12	16.12 S 27.04 W	31.48	239.20	S 59.20 W	0.45
2400.00	1.16	S 64.40 W	244.40	2399.55	2417.55	-16.57	16.57 S 28.37 W	32.86	239.71	S 59.71 W	0.75
2500.00	0.82	S 21.60 W	201.60	2499.54	2517.54	-17.67	17.67 S 29.55 W	34.43	239.12	S 59.12 W	0.79
2600.00	0.52	N 74.40 W	285.60	2599.54	2617.54	-18.21	18.21 S 30.25 W	35.31	238.95	S 58.95 W	0.92
2700.00	0.78	S 76.50 W	256.50	2699.53	2717.53	-18.25	18.25 S 31.35 W	36.27	239.80	S 59.80 W	0.41
2800.00	0.81	S 20.80 W	200.80	2799.52	2817.52	-19.07	19.07 S 32.26 W	37.48	239.41	S 59.41 W	0.74
2900.00	0.64	N 58.00 W	302.00	2899.52	2917.52	-19.43	19.43 S 32.98 W	38.28	239.49	S 59.49 W	1.13
3000.00	0.75	S 37.90 W	217.90	2999.51	3017.51	-19.65	19.65 S 33.86 W	39.15	239.87	S 59.87 W	0.93
3100.00	0.20	S 34.40 E	145.60	3099.51	3117.51	-20.31	20.31 S 34.16 W	39.74	239.27	S 59.27 W	0.72
3200.00	0.78	S 68.80 W	248.80	3199.50	3217.50	-20.70	20.70 S 34.70 W	40.40	239.18	S 59.18 W	0.85
3300.00	0.59	S 6.40 W	186.40	3299.50	3317.50	-21.46	21.46 S 35.39 W	41.39	238.77	S 58.77 W	0.73

SANDIA TECHNOLOGIES, LLC CFU 31F, WELL #1

MINIMUM CURVATURE METHOD ** RESULTS IN FEET **

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Rusty Clark Survey Co.
SURVEY DATA

MEASURED DEPTH	DRIFT ANGLE	QUADRANT	AZIMUTH DIRECTION	VERTICAL DEPTH	SUB SEA TVD	VERTICAL SECTION	RECTANGULAR COORDINATES	CLOSURES			DOG LEG DEG/100FT.	
								DISTANCE	AZIMUTH	DIRECTION		
3400.00	0.25	N 48.00 E	48.00	3399.50	3417.50	-21.83	21.83 S	35.29 W	41.49	238.26	S 58.26 W	0.79
3500.00	0.48	N 41.60 W	318.40	3499.50	3517.50	-21.37	21.37 S	35.41 W	41.36	238.89	S 58.89 W	0.54
3600.00	0.75	S 84.80 W	264.80	3599.49	3617.49	-21.12	21.12 S	36.34 W	42.03	239.84	S 59.84 W	0.60
3700.00	0.62	S 30.80 W	210.80	3699.48	3717.48	-21.64	21.64 S	37.27 W	43.10	239.85	S 59.85 W	0.63
3800.00	0.33	N 20.50 W	339.50	3799.48	3817.48	-21.84	21.83 S	37.65 W	43.52	239.89	S 59.89 W	0.87
3900.00	0.64	S 76.20 W	256.20	3899.48	3917.48	-21.69	21.69 S	38.29 W	44.01	240.47	S 60.47 W	0.68
4000.00	0.35	S 81.20 E	98.80	3999.48	4017.48	-21.87	21.87 S	38.53 W	44.30	240.42	S 60.42 W	0.97
4100.00	0.52	N 27.00 E	27.00	4099.48	4117.48	-21.51	21.51 S	38.02 W	43.69	240.50	S 60.50 W	0.53
4200.00	0.39	S 52.50 E	127.50	4199.47	4217.47	-21.31	21.31 S	37.54 W	43.17	240.42	S 60.42 W	0.70
4300.00	0.77	N 49.80 E	49.80	4299.47	4317.47	-21.08	21.08 S	36.76 W	42.37	240.16	S 60.16 W	0.79
4400.00	0.22	S 32.70 E	147.30	4399.47	4417.47	-20.81	20.81 S	36.14 W	41.70	240.07	S 60.07 W	0.83
4500.00	0.59	S 61.30 E	118.70	4499.46	4517.46	-21.22	21.22 S	35.58 W	41.43	239.19	S 59.19 W	0.41
4600.00	0.39	N 6.80 E	6.80	4599.46	4617.46	-21.13	21.13 S	35.09 W	40.96	238.95	S 58.95 W	0.82
4700.00	0.60	S 52.20 E	127.80	4699.46	4717.46	-21.11	21.11 S	34.64 W	40.56	238.64	S 58.64 W	0.87
4800.00	0.50	N 7.20 E	7.20	4799.46	4817.46	-21.00	21.00 S	34.17 W	40.11	238.43	S 58.43 W	0.96
4900.00	0.22	S 23.40 W	203.40	4899.46	4917.46	-20.74	20.74 S	34.19 W	39.99	238.76	S 58.76 W	0.71
5000.00	0.72	S 50.70 E	129.30	4999.45	5017.45	-21.31	21.31 S	33.78 W	39.94	237.75	S 57.75 W	0.69
5100.00	0.50	N 70.20 E	70.20	5099.45	5117.45	-21.56	21.56 S	32.88 W	39.32	236.75	S 56.75 W	0.63
5200.00	0.74	S 1.70 W	181.70	5199.45	5217.45	-22.06	22.06 S	32.49 W	39.27	235.83	S 55.83 W	1.03
5300.00	0.30	N 50.70 E	50.70	5299.44	5317.44	-22.54	22.54 S	32.31 W	39.39	235.10	S 55.10 W	0.96
5400.00	0.67	S 44.50 W	224.50	5399.44	5417.44	-22.79	22.79 S	32.52 W	39.71	234.97	S 54.97 W	0.97
5500.00	0.14	N 16.10 E	16.10	5499.44	5517.44	-23.09	23.09 S	32.90 W	40.19	234.94	S 54.94 W	0.80
5600.00	0.68	S 66.00 W	246.00	5599.44	5617.44	-23.21	23.21 S	33.41 W	40.68	235.21	S 55.21 W	0.78
5700.00	0.58	S 2.60 E	177.40	5699.43	5717.43	-23.96	23.96 S	33.93 W	41.53	234.78	S 54.78 W	0.71
5800.00	0.16	S 79.10 E	100.90	5799.43	5817.43	-24.49	24.49 S	33.77 W	41.72	234.05	S 54.05 W	0.56
5900.00	0.51	S 85.70 W	265.70	5899.43	5917.43	-24.55	24.55 S	34.08 W	42.00	234.23	S 54.23 W	0.67
6000.00	0.37	N 26.90 E	26.90	5999.43	6017.43	-24.30	24.30 S	34.38 W	42.10	234.75	S 54.75 W	0.77
6100.00	0.21	N 17.60 E	17.60	6099.43	6117.43	-23.84	23.84 S	34.18 W	41.67	235.11	S 55.11 W	0.17
6200.00	0.62	S 80.90 W	260.90	6199.42	6217.42	-23.75	23.75 S	34.66 W	42.02	235.58	S 55.58 W	0.74
6300.00	0.54	S 5.70 W	185.70	6299.42	6317.42	-24.31	24.30 S	35.24 W	42.81	235.41	S 55.41 W	0.71
6400.00	0.20	N 18.40 E	18.40	6399.42	6417.42	-24.60	24.60 S	35.23 W	42.97	235.07	S 55.07 W	0.74
6500.00	0.64	S 63.70 W	243.70	6499.42	6517.42	-24.68	24.68 S	35.68 W	43.38	235.32	S 55.32 W	0.79
6600.00	0.39	N 32.80 E	32.80	6599.42	6617.42	-24.64	24.64 S	36.00 W	43.62	235.61	S 55.61 W	1.00

SANDIA TECHNOLOGIES, LLC CFU 31F, WELL #1

MINIMUM CURVATURE METHOD ** RESULTS IN FEET **

9/10/2009

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Rusty Clark Survey Co.
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MEASURED DEPTH	DRIFT ANGLE	QUADRANT	AZIMUTH DIRECTION	VERTICAL DEPTH	SUB SEA TVD	VERTICAL SECTION	RECTANGULAR COORDINATES	CLOSURES			DOG LEG DEG/100FT.	
								DISTANCE	AZIMUTH	DIRECTION		
6700.00	0.40	S 11.70 W	191.70	6699.41	6717.41	-24.70	24.70 S	35.89 W	43.56	235.47	S 55.47 W	0.78
6800.00	0.76	N 9.00 E	9.00	6799.41	6817.41	-24.39	24.39 S	35.86 W	43.36	235.78	S 55.78 W	1.16
6900.00	0.28	N 76.30 E	76.30	6899.41	6917.41	-23.68	23.68 S	35.52 W	42.69	236.31	S 56.31 W	0.70
7000.00	1.22	N 25.10 E	25.10	6999.40	7017.40	-22.66	22.66 S	34.83 W	41.55	236.96	S 56.96 W	1.07
7100.00	0.93	N 60.40 E	60.40	7099.38	7117.38	-21.30	21.30 S	33.67 W	39.84	237.69	S 57.69 W	0.71
7200.00	0.41	N 45.20 W	314.80	7199.38	7217.38	-20.65	20.65 S	33.22 W	39.11	238.14	S 58.14 W	1.11
7300.00	1.26	N 15.90 W	344.10	7299.37	7317.37	-19.34	19.34 S	33.78 W	38.92	240.20	S 60.20 W	0.92
7400.00	0.77	N 44.50 W	315.50	7399.35	7417.35	-17.80	17.80 S	34.55 W	38.87	242.74	S 62.74 W	0.69
7500.00	1.68	N 75.70 W	284.30	7499.33	7517.33	-16.96	16.96 S	36.44 W	40.19	245.04	S 65.04 W	1.10
7600.00	1.51	N 55.10 W	304.90	7599.29	7617.29	-15.84	15.84 S	38.94 W	42.04	247.86	S 67.86 W	0.59
7700.00	0.67	N 18.70 W	341.30	7699.27	7717.27	-14.53	14.53 S	40.21 W	42.75	250.13	S 70.13 W	1.05
7800.00	0.60	N 35.60 W	324.40	7799.27	7817.27	-13.55	13.55 S	40.70 W	42.90	251.59	S 71.59 W	0.20
7900.00	1.90	N 40.70 W	319.30	7899.24	7917.24	-11.87	11.87 S	42.09 W	43.73	254.25	S 74.25 W	1.30
8000.00	2.55	N 39.40 W	320.60	7999.16	8017.16	-8.89	8.89 S	44.58 W	45.46	258.72	S 78.72 W	0.65
8100.00	2.10	N 52.60 W	307.40	8099.08	8117.08	-6.06	6.06 S	47.45 W	47.83	262.72	S 82.72 W	0.70
8200.00	2.15	N 72.00 W	288.00	8199.02	8217.02	-4.37	4.37 S	50.69 W	50.88	265.08	S 85.08 W	0.72
8300.00	2.47	N 76.80 W	283.20	8298.93	8316.93	-3.30	3.30 S	54.57 W	54.67	266.54	S 86.54 W	0.37
8400.00	2.38	N 80.70 W	279.30	8398.84	8416.84	-2.47	2.47 S	58.72 W	58.77	267.59	S 87.59 W	0.19
8500.00	2.28	S 86.50 W	266.50	8498.76	8516.76	-2.26	2.26 S	62.75 W	62.80	267.94	S 87.94 W	0.53
8600.00	1.83	S 76.20 W	256.20	8598.70	8616.70	-2.76	2.76 S	66.29 W	66.34	267.61	S 87.61 W	0.58
8700.00	1.76	S 68.60 W	248.60	8698.65	8716.65	-3.70	3.70 S	69.27 W	69.37	266.94	S 86.94 W	0.25
8800.00	1.62	N 87.90 W	272.10	8798.61	8816.61	-4.21	4.21 S	72.11 W	72.24	266.66	S 86.66 W	0.70
8900.00	1.52	N 85.80 W	274.20	8898.57	8916.57	-4.06	4.06 S	74.85 W	74.96	266.89	S 86.89 W	0.12
9000.00	1.43	N 87.70 W	272.30	8998.54	9016.54	-3.91	3.91 S	77.42 W	77.52	267.11	S 87.11 W	0.10
9100.00	1.39	N 83.60 W	276.40	9098.51	9116.51	-3.73	3.72 S	79.87 W	79.96	267.33	S 87.33 W	0.11
9200.00	1.14	S 75.50 W	255.50	9198.48	9216.48	-3.83	3.83 S	82.04 W	82.13	267.32	S 87.32 W	0.52
9300.00	1.04	S 64.50 W	244.50	9298.46	9316.46	-4.47	4.47 S	83.82 W	83.94	266.95	S 86.95 W	0.23
9400.00	1.28	S 67.00 W	247.00	9398.44	9416.44	-5.30	5.30 S	85.67 W	85.83	266.46	S 86.46 W	0.25
9500.00	1.16	S 69.00 W	249.00	9498.42	9516.42	-6.10	6.10 S	87.64 W	87.86	266.02	S 86.02 W	0.13
9600.00	1.07	S 61.60 W	241.60	9598.40	9616.40	-6.91	6.91 S	89.41 W	89.67	265.58	S 85.58 W	0.17
9700.00	0.42	S 52.70 W	232.70	9698.39	9716.39	-7.58	7.58 S	90.52 W	90.84	265.22	S 85.22 W	0.66
9800.00	0.30	N 67.40 W	292.60	9798.39	9816.39	-7.70	7.70 S	91.05 W	91.38	265.17	S 85.17 W	0.37
9900.00	0.82	N 51.80 W	308.20	9898.39	9916.39	-7.16	7.16 S	91.85 W	92.13	265.55	S 85.55 W	0.54

Rusty Clark Survey Co.
SURVEY DATA

MEASURED DEPTH	DRIFT ANGLE	QUADRANT	AZIMUTH DIRECTION	VERTICAL DEPTH	SUB SEA TVD	VERTICAL SECTION	RECTANGULAR COORDINATES	CLOSURES DISTANCE	AZIMUTH	DIRECTION	DOG LEG DEG/100FT.
10000.00	1.03	S 80.80 W	260.80	9998.37	10016.37	-6.86	6.86 S 93.30 W	93.55	265.79	S 85.79 W	0.77
10100.00	1.02	S 58.50 W	238.50	10098.36	10116.36	-7.47	7.47 S 94.95 W	95.24	265.50	S 85.50 W	0.40
10200.00	0.55	S 59.10 W	239.10	10198.35	10216.35	-8.18	8.18 S 96.12 W	96.47	265.14	S 85.14 W	0.47
10300.00	0.71	N 83.80 W	276.20	10298.34	10316.34	-8.36	8.36 S 97.15 W	97.51	265.08	S 85.08 W	0.43
10400.00	1.70	N 86.90 W	273.10	10398.32	10416.32	-8.21	8.21 S 99.25 W	99.59	265.27	S 85.27 W	0.99
10500.00	1.78	S 64.70 W	244.70	10498.28	10516.28	-8.79	8.79 S 102.14 W	102.51	265.08	S 85.08 W	0.86
10600.00	1.20	S 62.10 W	242.10	10598.24	10616.24	-9.94	9.94 S 104.47 W	104.94	264.56	S 84.56 W	0.58
10677.00	1.14	S 70.10 W	250.10	10675.23	10693.23	-10.58	10.58 S 105.90 W	106.43	264.30	S 84.30 W	0.23

BOTTOM HOLE CLOSURE: 106.43 FEET AT S 84.30 W

Rusty Clark Survey Co.
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SANDIA TECHNOLOGIES, LLC
CFU 31F, WELL #1
CRANFIELD FIELD UNIT
RIG: SCHLUMBERGER WIRELINE

Surface Readout Gyroscopic Survey - MSL-09090160-GS - 9/10/2009

KELLY BUSHING ELEVATION = -18 FEET
MAGNETIC DECLINATION = ORIENTED TO GRID NORTH
PLANE OF PROPOSAL DIRECTION IS .00

MINIMUM CURVATURE METHOD - RESULTS IN FEET