



Job Number: DMLCO-06-09056
 Company: WINDSOR ENERGY
 Lease/Well: CSF #14-08-41-91
 Location: MAMM CREEK
 Rig Name: NABORS 457
 RKB: 15'
 G.L. or M.S.L.: 6922' (MSL)

State/Country: GARFIELD COUNTY, CO
 Declination: +10.75 E Mag to TRUE
 Grid: []
 File name: C:\WINSERVE\B_EXCEL\CSF\CSF14-8.SVY
 Date/Time: 20-Oct-06 / 09:25
 Curve Name: CSF 14-08-07-91 FINAL Surveys (10-19-06)

EXCEL Directional Technologies LLC

WINSERVE SURVEY CALCULATIONS
 Minimum Curvature Method
 Vertical Section Plane 289.29
 Vertical Section Referenced to Wellhead
 Rectangular Coordinates Referenced to Wellhead

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Grid Y FT	Grid X FT	Vertical Section FT	CLOSURE Distance FT	Direction Deg	Dogleg Severity Deg/100
.00	.00	.00	.00	.00	.00	1597300.67	2413021.06	.00	.00	.00	.00
109.00	.30	54.60	109.00	.17	.23	1597300.84	2413021.29	-.16	.29	54.60	.28
202.00	2.60	267.60	201.97	.22	-1.68	1597300.89	2413019.38	1.65	1.69	277.41	3.07
294.00	7.10	287.90	293.62	1.88	-9.18	1597302.55	2413011.88	9.28	9.37	281.57	5.16
386.00	11.30	291.60	384.42	6.95	-22.97	1597307.62	2412998.09	23.98	24.00	286.82	4.61
478.00	14.00	288.10	474.18	13.72	-41.94	1597314.39	2412979.12	44.12	44.12	288.12	3.05
570.00	17.60	282.90	562.69	20.29	-66.08	1597320.96	2412954.98	69.07	69.13	287.07	4.20
661.00	19.50	284.90	648.96	27.27	-94.17	1597327.94	2412926.89	97.89	98.04	286.15	2.20
753.00	21.60	288.60	735.11	36.62	-125.06	1597337.29	2412896.00	130.14	130.31	286.32	2.68
845.00	24.50	292.80	819.76	49.41	-158.71	1597350.08	2412862.35	166.12	166.22	287.29	3.62
937.00	27.80	292.60	902.33	65.06	-196.11	1597365.73	2412824.95	206.59	206.62	288.35	3.59
1027.00	29.80	291.80	981.19	81.43	-236.26	1597382.10	2412784.80	249.89	249.89	289.02	2.26
1119.00	32.80	290.80	1059.80	98.77	-280.79	1597399.44	2412740.27	297.65	297.65	289.38	3.31

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Grid Y FT	Grid X FT	Vertical Section FT	C L O S U R E Distance FT	Direction Deg	Dogleg Severity Deg/100
1213.00	35.80	290.40	1137.44	117.40	-330.37	1597418.07	2412690.69	350.60	350.61	289.56	3.20
1309.00	38.30	289.90	1214.05	137.32	-384.67	1597437.99	2412636.39	408.43	408.44	289.65	2.62
1405.00	39.20	289.10	1288.92	157.37	-441.31	1597458.04	2412579.75	468.52	468.53	289.63	1.07
1475.00	40.00	289.90	1342.86	172.27	-483.37	1597472.94	2412537.69	513.14	513.15	289.62	1.36
1562.00	39.40	288.90	1409.80	190.73	-535.78	1597491.40	2412485.28	568.71	568.72	289.59	1.01
1657.00	38.00	289.10	1483.94	210.06	-591.94	1597510.73	2412429.12	628.10	628.11	289.54	1.48
1753.00	36.20	289.60	1560.50	229.24	-646.58	1597529.91	2412374.48	686.01	686.01	289.52	1.90
1848.00	35.80	288.80	1637.36	247.61	-699.31	1597548.28	2412321.75	741.85	741.85	289.50	.65
1942.00	35.40	287.40	1713.79	264.61	-751.32	1597565.28	2412269.74	796.55	796.55	289.40	.97
2037.00	34.40	288.20	1791.70	281.22	-803.07	1597581.89	2412217.99	850.89	850.89	289.30	1.16
2133.00	33.10	289.90	1871.52	298.62	-853.48	1597599.29	2412167.58	904.21	904.21	289.28	1.67
2228.00	32.50	287.90	1951.38	315.29	-902.16	1597615.96	2412118.90	955.67	955.67	289.26	1.30
2324.00	32.10	287.90	2032.53	331.06	-950.98	1597631.73	2412070.08	1006.95	1006.95	289.19	.42
2419.00	32.20	285.40	2112.96	345.54	-999.40	1597646.21	2412021.66	1057.44	1057.45	289.07	1.40
2514.00	31.00	288.90	2193.88	360.19	-1046.95	1597660.86	2411974.11	1107.16	1107.18	288.98	2.31
2609.00	28.90	287.40	2276.19	374.98	-1092.01	1597675.65	2411929.05	1154.58	1154.60	288.95	2.35
2705.00	28.30	291.10	2360.48	390.11	-1135.38	1597690.78	2411885.68	1200.51	1200.53	288.96	1.95
2799.00	26.70	289.90	2443.86	405.32	-1176.03	1597705.99	2411845.03	1243.90	1243.92	289.02	1.80
2895.00	23.80	291.80	2530.68	419.86	-1214.30	1597720.53	2411806.76	1284.83	1284.84	289.07	3.14
2991.00	21.40	291.60	2619.30	433.50	-1248.58	1597734.17	2411772.48	1321.69	1321.69	289.15	2.50
3087.00	19.50	292.60	2709.25	446.10	-1279.66	1597746.77	2411741.40	1355.18	1355.19	289.22	2.01
3183.00	17.70	293.40	2800.23	458.06	-1307.84	1597758.73	2411713.22	1385.74	1385.74	289.30	1.89
3279.00	16.70	292.20	2891.94	469.07	-1334.01	1597769.74	2411687.05	1414.07	1414.07	289.37	1.11
3374.00	13.60	290.60	2983.62	478.16	-1357.11	1597778.83	2411663.95	1438.88	1438.88	289.41	3.29
3470.00	12.10	285.20	3077.22	484.77	-1377.38	1597785.44	2411643.68	1460.20	1460.20	289.39	2.00
3565.00	11.70	283.80	3170.18	489.67	-1396.35	1597790.34	2411624.71	1479.72	1479.72	289.32	.52
3661.00	10.70	290.90	3264.35	495.18	-1414.13	1597795.85	2411606.93	1498.32	1498.32	289.30	1.77
3757.00	8.00	301.60	3359.08	501.86	-1428.15	1597802.53	2411592.91	1513.76	1513.76	289.36	3.33
3853.00	5.70	304.60	3454.39	508.06	-1437.76	1597808.73	2411583.30	1524.88	1524.89	289.46	2.42
3948.00	3.30	302.60	3549.09	512.22	-1443.95	1597812.89	2411577.11	1532.09	1532.11	289.53	2.53
4043.00	2.20	291.10	3643.98	514.35	-1447.95	1597815.02	2411573.11	1536.58	1536.59	289.56	1.29
4138.00	1.50	256.40	3738.93	514.71	-1450.86	1597815.38	2411570.20	1539.45	1539.46	289.53	1.36
4234.00	1.00	231.70	3834.91	513.90	-1452.74	1597814.57	2411568.32	1540.95	1540.96	289.48	.75
4330.00	1.70	186.10	3930.88	511.96	-1453.55	1597812.63	2411567.51	1541.07	1541.08	289.40	1.28

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Grid Y FT	Grid X FT	Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
									Distance FT	Direction Deg	
4425.00	1.70	163.40	4025.84	509.21	-1453.30	1597809.88	2411567.76	1539.93	1539.93	289.31	.70
4522.00	.80	189.20	4122.82	507.16	-1453.00	1597807.83	2411568.06	1538.96	1538.96	289.24	1.07
4617.00	.30	226.80	4217.81	506.34	-1453.28	1597807.01	2411567.78	1538.96	1538.96	289.21	.62
4713.00	.70	81.70	4313.81	506.25	-1452.89	1597806.92	2411568.17	1538.56	1538.56	289.21	1.00
4809.00	.70	106.20	4409.80	506.17	-1451.74	1597806.84	2411569.32	1537.45	1537.45	289.22	.31
4905.00	1.30	174.70	4505.79	504.92	-1451.08	1597805.59	2411569.98	1536.41	1536.42	289.19	1.28
5001.00	2.10	210.90	4601.75	502.33	-1451.88	1597803.00	2411569.18	1536.32	1536.33	289.08	1.36
5096.00	2.10	192.90	4696.69	499.14	-1453.16	1597799.81	2411567.90	1536.47	1536.50	288.96	.69
5190.00	.60	207.40	4790.66	497.02	-1453.78	1597797.69	2411567.28	1536.35	1536.39	288.87	1.62
5285.00	2.40	193.10	4885.62	494.64	-1454.45	1597795.31	2411566.61	1536.21	1536.27	288.78	1.92
5381.00	3.40	183.70	4981.50	489.85	-1455.09	1597790.52	2411565.97	1535.22	1535.33	288.61	1.15
5477.00	3.90	157.10	5077.31	484.00	-1454.01	1597784.67	2411567.05	1532.27	1532.45	288.41	1.82
5571.00	3.90	133.20	5171.10	478.86	-1450.43	1597779.53	2411570.63	1527.20	1527.44	288.27	1.72
5666.00	1.50	113.00	5265.99	476.17	-1446.93	1597776.84	2411574.13	1523.00	1523.27	288.22	2.68
5762.00	1.30	161.40	5361.96	474.64	-1445.43	1597775.31	2411575.63	1521.08	1521.36	288.18	1.21
5858.00	1.30	136.20	5457.94	472.82	-1444.33	1597773.49	2411576.73	1519.44	1519.75	288.13	.59
5954.00	.40	189.20	5553.93	471.71	-1443.63	1597772.38	2411577.43	1518.41	1518.74	288.09	1.15
6049.00	1.80	170.90	5648.91	469.91	-1443.44	1597770.58	2411577.62	1517.64	1518.01	288.03	1.50
6144.00	2.70	168.90	5743.84	466.24	-1442.78	1597766.91	2411578.28	1515.80	1516.24	287.91	.95
6239.00	1.40	141.10	5838.77	463.14	-1441.62	1597763.81	2411579.44	1513.68	1514.19	287.81	1.68
6335.00	1.00	130.20	5934.75	461.69	-1440.24	1597762.36	2411580.82	1511.90	1512.43	287.77	.48
6431.00	1.50	206.20	6030.74	460.02	-1440.16	1597760.69	2411580.90	1511.27	1511.84	287.71	1.65
6527.00	4.60	196.80	6126.59	455.20	-1441.82	1597755.87	2411579.24	1511.25	1511.97	287.52	3.26
6587.00	5.80	194.30	6186.34	449.96	-1443.27	1597750.63	2411577.79	1510.89	1511.78	287.32	2.03
6686.00	5.40	195.60	6284.87	440.63	-1445.76	1597741.30	2411575.30	1510.15	1511.41	286.95	.42
6783.00	4.50	189.90	6381.51	432.48	-1447.64	1597733.15	2411573.42	1509.24	1510.86	286.63	1.06
6830.00	4.10	178.10	6428.37	428.99	-1447.90	1597729.66	2411573.16	1508.33	1510.11	286.50	2.06
Project to Bit											
6880.00	3.70	180.00	6478.26	425.59	-1447.84	1597726.26	2411573.22	1507.15	1509.10	286.38	.84