



Job Number: 12-161
 Company: Unit Petroleum
 Lease/Well: Overall #1
 Location: Reno County
 Rig Name: Unit # 32
 RKB:
 G.L. or M.S.L.:

State/Country: Kansas
 Declination: 4.87
 Grid: -0.04
 File name: P:\SURVEYS\UNIT\12161R7.SVY
 Date/Time: 03-Apr-12 / 16:03
 Curve Name: as drilled corrected

Inwell Inc

WINSERVE SURVEY CALCULATIONS
 Minimum Curvature Method
 Vertical Section Plane 3.32
 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	Vertical Section FT	Dogleg Severity Deg/100
200.00	.00	.00	200.00	.00	.00	.00	.00
400.00	.10	23.00	200.00	.16	.07	.16	.05
600.00	.25	265.60	400.00	.29	-.30	.27	.15
800.00	.10	73.40	600.00	.30	-.57	.27	.17
	.30	12.00	800.00	.87	-.29	.85	.13
1000.00	.30	23.60	999.99	1.86	.03	1.86	.03
1200.00	.70	27.50	1199.99	3.42	.80	3.46	.20
1400.00	.80	47.80	1399.97	5.44	2.40	5.57	.14
1500.00	.80	55.20	1499.96	6.31	3.49	6.50	.10
1606.00	.90	65.80	1605.95	7.07	4.86	7.34	.18
1796.00	.70	69.00	1795.93	8.10	7.30	8.51	.11
1985.00	.70	80.20	1984.92	8.71	9.52	9.25	.07
2174.00	.90	83.20	2173.90	9.08	12.13	9.77	.11

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	Dogleg Severity Deg/100
2364.00	.90	86.90	2363.87	9.34	15.10	10.20	.03
2522.00	1.10	93.10	2521.85	9.33	17.85	10.35	.14
2711.00	.90	93.20	2710.82	9.15	21.15	10.36	.11
2900.00	1.10	90.10	2899.79	9.06	24.44	10.46	.11
begin MWD run 2							
3093.00	.90	88.03	3092.76	9.11	27.81	10.70	.11
3117.00	.70	89.43	3116.76	9.12	28.15	10.73	.84
3149.00	.90	53.33	3148.76	9.27	28.54	10.91	1.66
3181.00	2.80	18.03	3180.74	10.16	28.99	11.82	6.66
3212.00	5.60	12.53	3211.65	12.36	29.55	14.05	9.11
3244.00	8.30	8.73	3243.42	16.17	30.24	17.89	8.55
3276.00	10.90	7.33	3274.97	21.45	30.98	23.21	8.16
3307.00	13.90	8.73	3305.24	28.04	31.92	29.84	9.73
3339.00	16.40	10.13	3336.12	36.29	33.29	38.16	7.90
3370.00	18.70	10.43	3365.68	45.48	34.96	47.43	7.43
3402.00	20.90	10.13	3395.79	56.15	36.90	58.19	6.88
3433.00	23.60	9.53	3424.47	67.71	38.90	69.85	8.74
3463.00	26.40	9.23	3451.66	80.22	40.96	82.46	9.34
3494.00	29.60	9.03	3479.03	94.59	43.27	96.94	10.33
3526.00	32.90	9.03	3506.38	110.98	45.87	113.45	10.31
3557.00	36.40	9.23	3531.88	128.38	48.67	130.99	11.30
3589.00	39.40	9.53	3557.13	147.77	51.88	150.53	9.39
3621.00	41.90	9.93	3581.40	168.32	55.40	171.24	7.85
3652.00	43.30	9.93	3604.22	188.99	59.02	192.09	4.52
3684.00	44.50	8.13	3627.28	210.90	62.50	214.16	5.41
3715.00	46.50	7.43	3649.01	232.80	65.49	236.21	6.65
3747.00	48.70	7.13	3670.59	256.24	68.48	259.78	6.91
3779.00	50.50	7.13	3691.32	280.42	71.51	284.09	5.62
3810.00	51.20	7.13	3710.90	304.28	74.49	308.08	2.26
3842.00	53.00	6.63	3730.55	329.35	77.51	333.28	5.76
3873.00	54.90	6.23	3748.79	354.25	80.32	358.31	6.22
3905.00	57.20	6.23	3766.66	380.64	83.20	384.82	7.19
begin tangent at 3,909 MD							
3936.00	57.90	6.23	3783.30	406.64	86.04	410.94	2.26

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	Dogleg Severity Deg/100
3968.00	58.40	6.43	3800.18	433.66	89.04	438.09	1.65
3999.00	58.90	6.43	3816.31	459.97	92.00	464.52	1.61
4031.00	59.30	6.63	3832.75	487.25	95.12	491.94	1.36
4063.00	59.50	6.63	3849.03	514.60	98.30	519.43	.62
4095.00	59.80	6.73	3865.20	542.03	101.52	547.00	.98
4127.00	61.60	6.93	3880.86	569.74	104.83	574.85	5.65
end tangent at 4,108MD							
4158.00	63.30	6.93	3895.20	597.02	108.15	602.28	5.48
4190.00	65.50	6.93	3909.03	625.67	111.63	631.08	6.87
4222.00	67.70	6.93	3921.74	654.82	115.18	660.39	6.87
4254.00	70.00	7.13	3933.28	684.44	118.83	690.17	7.21
4285.00	72.10	7.33	3943.35	713.52	122.52	719.42	6.80
4317.00	74.60	7.13	3952.51	743.93	126.38	750.00	7.84
4348.00	76.50	6.93	3960.25	773.73	130.05	779.96	6.16
4380.00	78.70	6.73	3967.12	804.76	133.77	811.15	6.90
4411.00	81.30	6.63	3972.50	835.08	137.32	841.63	8.39
4443.00	83.60	6.23	3976.71	866.60	140.87	873.30	7.29
4474.00	84.60	6.43	3979.89	897.24	144.27	904.09	3.29
4506.00	86.90	6.73	3982.27	928.94	147.93	935.95	7.25
4544.00	89.00	6.63	3983.63	966.66	152.34	973.86	5.53
4607.00	90.10	6.60	3984.12	1029.24	159.60	1036.75	1.75
4638.00	90.60	6.40	3983.93	1060.04	163.11	1067.70	1.74
4669.00	90.60	6.60	3983.61	1090.84	166.62	1098.65	.65
4700.00	91.00	6.80	3983.17	1121.62	170.23	1129.60	1.44
4731.00	91.30	6.90	3982.55	1152.39	173.93	1160.53	1.02
4762.00	92.20	7.30	3981.60	1183.14	177.76	1191.45	3.18
4793.00	91.50	6.60	3980.60	1213.90	181.51	1222.37	3.19
4824.00	92.00	6.80	3979.66	1244.67	185.12	1253.30	1.74
4855.00	92.40	6.90	3978.47	1275.43	188.82	1284.22	1.33
4886.00	91.30	6.20	3977.47	1306.21	192.35	1315.16	4.21
4918.00	91.70	6.10	3976.63	1338.01	195.78	1347.11	1.29
4949.00	91.70	5.50	3975.71	1368.84	198.91	1378.06	1.93

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	Dogleg Severity Deg/100
4981.00	91.80	5.70	3974.73	1400.67	202.03	1410.02	.70
5012.00	91.80	4.30	3973.76	1431.54	204.73	1440.99	4.51
5043.00	91.50	3.60	3972.86	1462.45	206.87	1471.98	2.46
5074.00	91.70	4.00	3972.00	1493.37	208.92	1502.97	1.44
5105.00	91.30	4.00	3971.19	1524.29	211.08	1533.95	1.29
5136.00	90.80	2.40	3970.62	1555.23	212.81	1564.95	5.41
5167.00	91.10	2.50	3970.11	1586.20	214.14	1595.94	1.02
5198.00	91.30	2.00	3969.46	1617.17	215.36	1626.93	1.74
5229.00	90.80	1.50	3968.89	1648.15	216.30	1657.91	2.28
5260.00	90.40	1.50	3968.56	1679.14	217.11	1688.89	1.29
5291.00	90.40	1.80	3968.35	1710.12	218.01	1719.88	.97
5322.00	90.30	1.80	3968.16	1741.11	218.98	1750.87	.32
5354.00	90.10	1.50	3968.05	1773.09	219.90	1782.85	1.13
5385.00	90.40	1.00	3967.91	1804.08	220.58	1813.83	1.88
5416.00	89.90	1.30	3967.83	1835.08	221.20	1844.81	1.88
5447.00	90.40	.60	3967.75	1866.07	221.71	1875.78	2.77
5478.00	89.90	359.60	3967.67	1897.07	221.77	1906.73	3.61
5509.00	89.60	359.20	3967.80	1928.07	221.44	1937.66	1.61
5540.00	89.60	359.20	3968.02	1959.07	221.01	1968.58	.00
5572.00	89.40	358.30	3968.30	1991.06	220.31	2000.48	2.88
Moved survey sensor back. offset is 42'.							
5596.00	89.00	358.50	3968.63	2015.05	219.64	2024.38	1.86
5627.00	89.20	358.70	3969.12	2046.03	218.88	2055.28	.91
5658.00	89.00	357.30	3969.61	2077.01	217.80	2086.14	4.56
5689.00	89.40	357.80	3970.04	2107.98	216.48	2116.98	2.07
5720.00	91.30	356.60	3969.85	2138.94	214.96	2147.80	7.25
5752.00	92.40	358.20	3968.82	2170.89	213.51	2179.61	6.07
5782.00	92.90	356.70	3967.43	2200.82	212.18	2209.42	5.27
5813.00	92.40	356.60	3966.00	2231.74	210.37	2240.18	1.64
5844.00	92.60	356.90	3964.65	2262.66	208.61	2270.94	1.16
5875.00	90.80	357.30	3963.73	2293.60	207.05	2301.75	5.95
5906.00	91.00	357.80	3963.24	2324.57	205.72	2332.58	1.74

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	Dogleg Severity Deg/100
5938.00	91.50	358.20	3962.54	2356.54	204.61	2364.44	2.00
5969.00	90.80	358.20	3961.92	2387.52	203.63	2395.31	2.26
6000.00	88.70	358.70	3962.05	2418.51	202.79	2426.19	6.96
6031.00	88.70	358.30	3962.76	2449.49	201.98	2457.08	1.29
6062.00	88.90	357.10	3963.41	2480.46	200.74	2487.92	3.92
6094.00	89.40	356.70	3963.88	2512.41	199.01	2519.72	2.00
6126.00	89.60	356.60	3964.16	2544.35	197.14	2551.50	.70
6158.00	89.40	356.60	3964.44	2576.29	195.24	2583.28	.62
6190.00	89.20	356.40	3964.83	2608.23	193.29	2615.05	.88
6221.00	89.00	356.90	3965.32	2639.18	191.48	2645.84	1.74
6253.00	89.20	356.90	3965.82	2671.12	189.75	2677.63	.62
6284.00	89.60	357.80	3966.14	2702.09	188.31	2708.46	3.18
6316.00	89.90	356.40	3966.28	2734.05	186.69	2740.27	4.47
6347.00	90.40	357.60	3966.20	2765.00	185.07	2771.08	4.19
6379.00	90.40	357.80	3965.98	2796.98	183.79	2802.93	.62
6411.00	91.00	356.20	3965.59	2828.93	182.11	2834.73	5.34
6442.00	91.10	357.10	3965.02	2859.87	180.30	2865.51	2.92
6474.00	91.00	357.60	3964.43	2891.83	178.82	2897.33	1.59
6506.00	90.80	356.60	3963.93	2923.79	177.20	2929.14	3.19
6537.00	91.10	356.70	3963.42	2954.73	175.39	2959.93	1.02
6569.00	91.30	357.10	3962.75	2986.68	173.66	2991.72	1.40
6601.00	91.50	357.60	3961.97	3018.63	172.18	3023.54	1.68
6632.00	90.40	356.20	3961.45	3049.58	170.51	3054.34	5.74
6664.00	88.90	356.00	3961.65	3081.51	168.33	3086.08	4.73
6696.00	88.50	356.60	3962.37	3113.43	166.27	3117.83	2.25
6728.00	88.50	355.90	3963.21	3145.35	164.17	3149.58	2.19
6759.00	88.70	356.60	3963.97	3176.27	162.15	3180.33	2.35
6791.00	88.50	355.70	3964.75	3208.19	160.00	3212.07	2.88
6822.00	88.20	355.20	3965.64	3239.08	157.54	3242.77	1.88
6854.00	88.30	354.80	3966.62	3270.95	154.75	3274.42	1.29
6886.00	88.30	356.40	3967.57	3302.84	152.30	3306.11	5.00
6917.00	88.50	356.00	3968.43	3333.76	150.25	3336.86	1.44
6949.00	88.50	356.20	3969.27	3365.67	148.07	3368.60	.62
6981.00	89.40	357.60	3969.86	3397.62	146.34	3400.39	5.20

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	Dogleg Severity Deg/100
7012.00	89.40	357.30	3970.18	3428.58	144.96	3431.23	.97
7044.00	89.70	356.70	3970.43	3460.54	143.29	3463.03	2.10
7075.00	90.80	358.20	3970.30	3491.51	141.91	3493.87	6.00
7107.00	91.30	359.40	3969.71	3523.49	141.24	3525.76	4.06
7139.00	91.80	358.30	3968.85	3555.48	140.59	3557.65	3.77
7170.00	92.00	358.50	3967.82	3586.45	139.73	3588.52	.91
7202.00	92.20	359.40	3966.65	3618.42	139.14	3620.40	2.88
7234.00	92.40	358.50	3965.36	3650.39	138.56	3652.29	2.88
7265.00	92.60	357.80	3964.01	3681.34	137.56	3683.13	2.35
7297.00	92.00	358.70	3962.73	3713.30	136.58	3714.98	3.38
7328.00	92.00	357.80	3961.64	3744.27	135.63	3745.84	2.90
7360.00	92.00	358.70	3960.53	3776.23	134.66	3777.69	2.81
7392.00	91.30	359.00	3959.61	3808.21	134.02	3809.58	2.38
7423.00	91.50	357.40	3958.85	3839.19	133.04	3840.45	5.20
7455.00	90.80	358.90	3958.21	3871.16	132.01	3872.31	5.17
7487.00	91.10	359.20	3957.68	3903.15	131.48	3904.22	1.33
7518.00	90.40	358.70	3957.27	3934.15	130.91	3935.12	2.77
7550.00	89.90	356.90	3957.19	3966.12	129.68	3966.97	5.84
7582.00	89.40	358.50	3957.38	3998.09	128.40	3998.82	5.24
7614.00	89.00	356.70	3957.83	4030.06	127.06	4030.65	5.76
7646.00	89.20	358.00	3958.33	4062.02	125.58	4062.48	4.11
7677.00	89.00	358.00	3958.82	4093.00	124.50	4093.34	.65
7709.00	88.30	357.60	3959.57	4124.97	123.27	4125.18	2.52
7741.00	88.30	356.40	3960.52	4156.91	121.60	4156.97	3.75
7773.00	88.50	357.60	3961.42	4188.85	119.92	4188.77	3.80
7804.00	88.70	356.40	3962.17	4219.80	118.30	4219.57	3.92
7836.00	89.20	355.90	3962.76	4251.72	116.15	4251.31	2.21
7868.00	89.20	356.70	3963.21	4283.65	114.09	4283.07	2.50
7900.00	89.40	357.60	3963.60	4315.61	112.50	4314.88	2.88
7931.00	89.70	356.60	3963.84	4346.57	110.93	4345.70	3.37
7963.00	89.90	356.70	3963.95	4378.51	109.06	4377.48	.70
7995.00	90.10	356.90	3963.95	4410.46	107.27	4409.27	.88
8026.00	90.80	356.20	3963.71	4441.40	105.41	4440.05	3.19
8058.00	91.10	356.20	3963.18	4473.33	103.29	4471.80	.94

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	Dogleg Severity Deg/100
8115.00	91.10	356.20	3962.08	4530.19	99.51	4528.35	.00
Projected to TD							

Company: Unit Petroleum
 Lease/Well: Overall #1
 Location: Reno County
 State/Country: Kansas

