



**Job Number:** 13150  
**Company:** Unit Petroleum  
**Lease/Well:** Shultz Trust 10 # 1H  
**Location:** Reno County  
**Rig Name:** Unit # 331  
**RKB:**  
**G.L. or M.S.L.:**

**State/Country:** Kansas  
**Declination:**  
**Grid:**  
**File name:** P:\SURVEYS\UNIT\13150R2.SVY  
**Date/Time:** 28-May-13 / 13:24  
**Curve Name:** As Drilled

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>Dogleg Severity Deg/100</i>
.00	.00	.00	.00	.00	.00	.00	.00
100.00	.24	343.60	100.00	.20	-.06	.20	.24
200.00	.38	296.32	200.00	.55	-.42	.55	.28
300.00	.28	282.99	300.00	.75	-.95	.75	.13
400.00	.45	311.29	399.99	1.06	-1.48	1.06	.24
500.00	.17	23.20	499.99	1.46	-1.72	1.46	.43
600.00	.21	356.34	599.99	1.78	-1.67	1.78	.10
700.00	.17	344.67	699.99	2.11	-1.72	2.11	.06
800.00	.15	328.66	799.99	2.36	-1.83	2.36	.05
900.00	.07	260.96	899.99	2.46	-1.96	2.46	.14
1000.00	.24	232.51	999.99	2.33	-2.19	2.33	.18
1100.00	.32	175.74	1099.99	1.92	-2.33	1.92	.28
1200.00	.21	223.84	1199.99	1.51	-2.44	1.51	.24
1300.00	.46	199.98	1299.99	1.00	-2.70	1.00	.28

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
1400.00	.26	237.56	1399.99	.50	-3.03	.50	.30
1500.00	.45	192.67	1499.98	.00	-3.31	.00	.32
1600.00	.38	267.88	1599.98	-.40	-3.73	-.40	.51
1700.00	.24	216.06	1699.98	-.58	-4.18	-.58	.30
1800.00	.31	190.30	1799.98	-1.02	-4.35	-1.02	.14
1900.00	.04	176.14	1899.98	-1.32	-4.40	-1.32	.27
2000.00	.04	108.94	1999.98	-1.36	-4.36	-1.36	.04
2100.00	.12	165.03	2099.98	-1.48	-4.30	-1.48	.10
2200.00	.17	193.84	2199.98	-1.72	-4.31	-1.72	.09
2300.00	.18	153.24	2299.98	-2.01	-4.28	-2.01	.12
2400.00	.22	136.63	2399.98	-2.29	-4.07	-2.29	.07
2500.00	.19	93.11	2499.98	-2.43	-3.78	-2.43	.15
2600.00	.26	76.97	2599.98	-2.39	-3.39	-2.39	.09
2700.00	.31	78.02	2699.97	-2.28	-2.90	-2.28	.05
2800.00	.25	136.36	2799.97	-2.39	-2.49	-2.39	.28
2900.00	.24	227.48	2899.97	-2.69	-2.49	-2.69	.35
3000.00	.42	230.96	2999.97	-3.06	-2.93	-3.06	.18
3063.00	.24	203.97	3062.97	-3.32	-3.16	-3.32	.37
3128.00	.70	238.40	3127.97	-3.66	-3.56	-3.66	.80
3159.00	.70	244.50	3158.97	-3.84	-3.89	-3.84	.24
3191.00	.20	330.70	3190.97	-3.87	-4.09	-3.87	2.23
3222.00	2.00	29.80	3221.96	-3.36	-3.85	-3.36	6.15
3254.00	5.10	27.90	3253.89	-1.61	-2.91	-1.61	9.69
3285.00	8.00	24.30	3284.69	1.57	-1.38	1.57	9.44
3317.00	10.70	26.40	3316.26	6.26	.86	6.26	8.50
3348.00	13.60	28.60	3346.56	12.04	3.89	12.04	9.47
3379.00	16.70	32.10	3376.48	19.02	8.00	19.02	10.42
3411.00	20.00	30.60	3406.85	27.62	13.23	27.62	10.42
3442.00	23.20	30.70	3435.67	37.44	19.05	37.44	10.32
3474.00	27.00	30.90	3464.64	49.10	26.00	49.10	11.88
3505.00	30.60	30.30	3491.80	61.95	33.60	61.95	11.65
3537.00	33.60	27.40	3518.91	76.85	41.78	76.85	10.54
3568.00	36.60	24.10	3544.27	92.90	49.50	92.90	11.45
3600.00	39.90	21.50	3569.40	111.17	57.16	111.17	11.47

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
3631.00	42.90	17.80	3592.66	130.47	64.04	130.47	12.48
3663.00	45.30	14.00	3615.64	151.88	70.12	151.88	11.16
3695.00	47.70	10.00	3637.67	174.58	74.93	174.58	11.76
3726.00	50.20	6.20	3658.03	197.72	78.21	197.72	12.27
<b>Start Tan 3752'</b>							
3758.00	51.60	4.30	3678.21	222.45	80.47	222.45	6.35
3790.00	52.00	4.30	3698.00	247.52	82.36	247.52	1.25
3822.00	52.10	3.80	3717.68	272.69	84.14	272.69	1.27
3854.00	52.00	3.80	3737.36	297.87	85.81	297.87	.31
3886.00	52.20	3.80	3757.02	323.07	87.49	323.07	.62
<b>End Tan 3922'</b>							
3917.00	53.00	3.10	3775.84	347.65	88.97	347.65	3.14
3949.00	56.00	1.70	3794.43	373.67	90.05	373.67	10.03
3981.00	59.60	.40	3811.47	400.74	90.54	400.74	11.76
4013.00	63.70	359.50	3826.67	428.90	90.51	428.90	13.05
4044.00	67.60	359.20	3839.45	457.13	90.19	457.13	12.61
4075.00	71.00	359.10	3850.40	486.12	89.76	486.12	10.97
4106.00	74.40	358.60	3859.62	515.71	89.17	515.71	11.08
4138.00	78.50	358.00	3867.12	546.80	88.24	546.80	12.94
4170.00	82.80	358.00	3872.31	578.35	87.14	578.35	13.44
4202.00	86.30	358.60	3875.35	610.18	86.20	610.18	11.10
4277.00	90.40	359.10	3877.51	685.12	84.69	685.12	5.51
4307.00	90.60	359.10	3877.25	715.12	84.22	715.12	.67
4338.00	90.60	359.10	3876.92	746.11	83.73	746.11	.00
4369.00	91.00	359.10	3876.49	777.10	83.25	777.10	1.29
4399.00	91.50	359.10	3875.84	807.09	82.78	807.09	1.67
4430.00	91.00	358.70	3875.16	838.08	82.18	838.08	2.07
4461.00	90.50	358.50	3874.76	869.07	81.42	869.07	1.74
4492.00	90.50	358.30	3874.49	900.05	80.56	900.05	.65
4523.00	90.80	358.40	3874.13	931.04	79.67	931.04	1.02
4553.00	91.10	358.40	3873.64	961.02	78.83	961.02	1.00
4584.00	90.60	358.80	3873.18	992.01	78.07	992.01	2.07
4615.00	90.80	358.90	3872.80	1023.00	77.45	1023.00	.72

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
4677.00	90.10	358.50	3872.31	1084.98	76.04	1084.98	1.30
4738.00	89.60	358.10	3872.47	1145.96	74.23	1145.96	1.05
4800.00	90.50	358.20	3872.42	1207.92	72.23	1207.92	1.46
4862.00	91.40	358.00	3871.39	1269.88	70.18	1269.88	1.49
4924.00	90.80	358.00	3870.20	1331.83	68.01	1331.83	.97
4986.00	90.40	358.20	3869.55	1393.79	65.96	1393.79	.72
5049.00	90.20	357.70	3869.22	1456.75	63.70	1456.75	.85
5111.00	89.30	357.50	3869.49	1518.70	61.11	1518.70	1.49
5173.00	89.10	357.90	3870.36	1580.64	58.62	1580.64	.72
5235.00	89.70	357.90	3871.00	1642.59	56.35	1642.59	.97
5296.00	89.80	357.80	3871.27	1703.55	54.06	1703.55	.23
5358.00	90.40	358.00	3871.16	1765.51	51.79	1765.51	1.02
5421.00	90.90	358.20	3870.45	1828.47	49.70	1828.47	.85
5483.00	89.90	358.30	3870.01	1890.44	47.81	1890.44	1.62
5545.00	90.10	358.00	3870.01	1952.41	45.80	1952.41	.58
5607.00	90.00	357.60	3869.96	2014.36	43.42	2014.36	.67
5670.00	91.20	357.30	3869.30	2077.29	40.62	2077.29	1.96
5732.00	90.50	357.20	3868.38	2139.21	37.65	2139.21	1.14
5794.00	89.90	357.20	3868.16	2201.14	34.62	2201.14	.97
5856.00	89.30	356.40	3868.60	2263.04	31.16	2263.04	1.61
5918.00	89.40	356.00	3869.30	2324.90	27.05	2324.90	.66
5981.00	89.90	355.90	3869.69	2387.74	22.60	2387.74	.81
6041.00	90.40	356.70	3869.53	2447.62	18.73	2447.62	1.57
6103.00	91.10	355.30	3868.72	2509.46	14.40	2509.46	2.52
6166.00	90.50	355.70	3867.84	2572.26	9.46	2572.26	1.14
6228.00	90.50	356.30	3867.30	2634.10	5.14	2634.10	.97
6292.00	89.90	357.10	3867.07	2698.00	1.45	2698.00	1.56
6355.00	90.20	357.20	3867.02	2760.92	-1.68	2760.92	.50
6418.00	90.30	356.80	3866.74	2823.83	-4.98	2823.83	.65
6482.00	90.60	356.40	3866.24	2887.72	-8.77	2887.72	.78
6545.00	88.50	356.70	3866.74	2950.60	-12.56	2950.60	3.37
6608.00	89.00	356.40	3868.11	3013.47	-16.35	3013.47	.93
6671.00	89.10	355.70	3869.15	3076.31	-20.69	3076.31	1.12
6734.00	90.00	355.70	3869.65	3139.13	-25.42	3139.13	1.43

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
6798.00	90.80	355.70	3869.20	3202.95	-30.22	3202.95	1.25
6861.00	89.70	356.50	3868.93	3265.80	-34.50	3265.80	2.16
6924.00	90.30	356.00	3868.93	3328.66	-38.62	3328.66	1.24
6987.00	89.80	355.90	3868.87	3391.50	-43.07	3391.50	.81
7050.00	89.80	355.80	3869.09	3454.34	-47.63	3454.34	.16
7113.00	90.70	355.80	3868.82	3517.17	-52.24	3517.17	1.43
7176.00	90.60	356.30	3868.10	3580.01	-56.58	3580.01	.81
7239.00	90.60	356.30	3867.44	3642.88	-60.65	3642.88	.00
7302.00	90.50	355.80	3866.84	3705.73	-64.99	3705.73	.81
7366.00	90.80	356.00	3866.11	3769.56	-69.56	3769.56	.56
7429.00	91.20	356.40	3865.01	3832.41	-73.74	3832.41	.90
7492.00	91.60	355.80	3863.47	3895.25	-78.02	3895.25	1.14
7554.00	90.80	355.70	3862.17	3957.06	-82.62	3957.06	1.30
7617.00	90.10	355.70	3861.68	4019.88	-87.34	4019.88	1.11
7680.00	90.20	355.80	3861.52	4082.71	-92.01	4082.71	.22
7743.00	90.60	355.00	3861.08	4145.50	-97.06	4145.50	1.42
7806.00	89.90	356.00	3860.80	4208.31	-102.00	4208.31	1.94
7869.00	90.80	356.30	3860.42	4271.16	-106.23	4271.16	1.51
7932.00	91.30	357.30	3859.26	4334.05	-109.75	4334.05	1.77
7995.00	89.40	357.40	3858.88	4396.98	-112.66	4396.98	3.02
8058.00	89.70	357.60	3859.37	4459.92	-115.41	4459.92	.57
8122.00	89.80	357.70	3859.65	4523.87	-118.03	4523.87	.22
8184.00	88.90	359.00	3860.35	4585.83	-119.82	4585.83	2.55
8247.00	89.20	358.20	3861.40	4648.81	-121.36	4648.81	1.36
8309.00	90.00	358.00	3861.83	4710.77	-123.41	4710.77	1.33
8372.00	90.00	358.70	3861.83	4773.74	-125.23	4773.74	1.11
8436.00	90.20	358.30	3861.72	4837.72	-126.90	4837.72	.70
8499.00	91.00	357.70	3861.06	4900.68	-129.10	4900.68	1.59
8562.00	91.70	357.50	3859.58	4963.61	-131.74	4963.61	1.16
8625.00	92.80	357.10	3857.10	5026.49	-134.70	5026.49	1.86
8688.00	93.40	356.60	3853.70	5089.30	-138.16	5089.30	1.24
8729.00	94.10	356.00	3851.01	5130.12	-140.80	5130.12	2.25
<b>Projected to TD @ 8788' MD</b>							
8788.00	94.10	356.00	3846.80	5188.83	-144.91	5188.83	.00