



K.P. KAUFFMAN

SURVEY REPORT

STIEBER, EDWARD #1

4/6/2015



The **Ultimate Partner** In Wellbore Placement

CUSTOMER K.P. Kauffman
PROJECT Stieber, Edward #1
FIELD Spindle

SDI JOB NO. 270173
SDI DISTRICT Casper
SDI KIT/UNIT

SITE INFORMATION

Site Name Weld County, Colorado
Lat/Long 40.04198° N, 104.85955° W
Northing
Easting

Section NENW 23
Township 1N
Range 67W 6PM

MAP INFORMATION

North Reference True North
Grid Correction
System
Datum
Map Zone



WELL INFORMATION

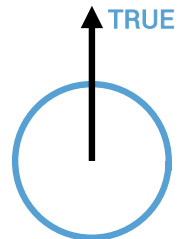
Lat/Long 40.04198° N, 104.85955° W
Northing
Easting
UWI 05-123-10115 UWBI 05-123-10115

DEPTH AND ELEVATION REFERENCE

Ground Level 4953 ft above Mean Sea Level
Reference Datum Ground Level
Reference Height 0 ft above G.L.
Reference Elevation 4953 ft

VERTICAL SECTION REFERENCE

+N/-S 0 ft
+E/-W 0 ft
Proposal Direction
Calculation Method Minimum Curvature



LOCAL GRAVITY REFERENCE INFORMATION

Local Gravity 999.038 mG [computed]

WELL NOTES

Keeper gyro survey in 4.5" casing from surface to 4739' MD
All depths reference ground level

OPERATORS

J Valenzuela

SDI Operator Name (Printed)

SIGNATURE

DATE

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DISTANCE	CLOSURE DIRECTION
ft	deg	deg	ft	ft	ft	ft	°/100ft	ft	deg
0.00	0.00	0.00	0.00	0.00	0.00	0.00	Invalid	0.00	0.00
74.02	0.68	339.13	74.01	0.43	0.41	-0.16	0.92	0.44	339.13
97.83	0.52	331.71	97.82	0.68	0.64	-0.26	0.76	0.69	337.97
123.43	0.48	335.12	123.42	0.90	0.84	-0.36	0.19	0.91	336.84
146.74	0.36	320.90	146.74	1.07	0.99	-0.45	0.67	1.08	335.61
174.21	0.36	329.93	174.21	1.24	1.13	-0.54	0.21	1.25	334.21
197.84	0.42	320.19	197.83	1.40	1.26	-0.64	0.37	1.41	333.14
224.55	0.48	281.76	224.55	1.57	1.35	-0.81	1.12	1.58	329.19
248.06	0.42	304.17	248.05	1.72	1.42	-0.97	0.78	1.72	325.59
271.38	0.31	294.54	271.37	1.86	1.50	-1.10	0.52	1.86	323.63
299.72	0.54	282.84	299.71	2.02	1.56	-1.30	0.88	2.03	320.09
322.80	0.50	298.36	322.79	2.19	1.63	-1.50	0.64	2.21	317.41
346.39	0.53	293.02	346.38	2.37	1.72	-1.69	0.25	2.41	315.53
373.38	0.38	305.43	373.36	2.56	1.82	-1.88	0.66	2.62	314.13
398.47	0.53	307.98	398.46	2.75	1.94	-2.04	0.58	2.81	313.62
424.83	0.65	279.43	424.81	2.97	2.04	-2.28	1.19	3.06	311.83
448.90	0.59	279.75	448.88	3.15	2.08	-2.54	0.24	3.29	309.39
473.90	0.58	267.43	473.88	3.31	2.10	-2.79	0.51	3.49	306.96
500.00	0.67	282.15	499.98	3.49	2.13	-3.07	0.71	3.74	304.69
522.34	0.58	277.03	522.32	3.66	2.17	-3.31	0.47	3.96	303.20
548.53	0.58	285.09	548.51	3.84	2.22	-3.58	0.31	4.21	301.84
571.03	0.60	280.65	571.01	4.01	2.27	-3.80	0.21	4.43	300.86
597.23	0.58	290.75	597.21	4.22	2.34	-4.06	0.40	4.69	300.00
624.14	0.58	272.86	624.11	4.41	2.40	-4.32	0.67	4.94	299.03
646.57	0.52	279.09	646.54	4.55	2.42	-4.54	0.37	5.14	298.09
673.34	0.52	283.42	673.31	4.72	2.47	-4.77	0.15	5.37	297.34
699.50	0.41	266.11	699.48	4.86	2.49	-4.98	0.67	5.57	296.55
721.24	0.56	278.70	721.21	4.97	2.50	-5.17	0.84	5.74	295.83
748.83	0.52	261.63	748.80	5.11	2.50	-5.42	0.60	5.97	294.77
774.87	0.43	269.11	774.84	5.22	2.48	-5.64	0.43	6.16	293.78
796.60	0.43	279.34	796.57	5.32	2.50	-5.80	0.35	6.31	293.29
823.44	0.49	264.22	823.41	5.44	2.50	-6.01	0.50	6.51	292.59

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DISTANCE	CLOSURE DIRECTION
ft	deg	deg	ft	ft	ft	ft	°/100ft	ft	deg
845.89	0.22	286.92	845.86	5.52	2.50	-6.15	1.32	6.64	292.16
871.92	0.49	258.82	871.89	5.60	2.50	-6.30	1.19	6.78	291.61
898.79	0.24	265.94	898.75	5.68	2.47	-6.47	0.94	6.93	290.89
921.23	0.37	255.13	921.20	5.72	2.45	-6.59	0.64	7.03	290.38
947.35	0.44	269.88	947.32	5.81	2.43	-6.77	0.47	7.19	289.71
974.13	0.35	253.99	974.09	5.89	2.40	-6.95	0.51	7.36	289.06
995.82	0.32	250.18	995.79	5.93	2.36	-7.07	0.20	7.46	288.48
1022.63	0.56	253.90	1022.59	5.99	2.30	-7.27	0.91	7.63	287.57
1049.55	0.45	276.07	1049.52	6.09	2.28	-7.50	0.83	7.84	286.88
1071.33	0.26	270.29	1071.29	6.18	2.29	-7.64	0.86	7.97	286.67
1098.14	0.35	263.78	1098.10	6.25	2.28	-7.78	0.34	8.11	286.32
1120.06	0.31	271.71	1120.03	6.32	2.27	-7.90	0.29	8.22	286.04
1146.50	0.46	260.28	1146.46	6.40	2.26	-8.08	0.66	8.39	285.60
1172.60	0.37	268.33	1172.56	6.49	2.24	-8.27	0.42	8.56	285.13
1196.79	0.37	266.42	1196.76	6.57	2.23	-8.42	0.05	8.71	284.82
1224.39	0.38	253.79	1224.35	6.65	2.20	-8.60	0.30	8.88	284.33
1247.99	0.38	264.79	1247.94	6.71	2.17	-8.75	0.31	9.02	283.91
1271.34	0.32	255.56	1271.30	6.77	2.15	-8.90	0.36	9.15	283.56
1297.70	0.25	267.32	1297.66	6.82	2.12	-9.02	0.35	9.27	283.25
1324.61	0.45	263.49	1324.56	6.90	2.11	-9.19	0.74	9.43	282.93
1346.90	0.33	260.98	1346.86	6.97	2.09	-9.34	0.54	9.57	282.62
1373.40	0.30	287.74	1373.36	7.06	2.10	-9.48	0.56	9.71	282.49
1398.25	0.37	266.54	1398.21	7.15	2.11	-9.62	0.55	9.85	282.40
1423.55	0.33	294.47	1423.51	7.25	2.14	-9.77	0.68	10.00	282.36
1449.16	0.33	252.66	1449.12	7.34	2.15	-9.90	0.92	10.14	282.24
1470.17	0.41	310.59	1470.13	7.43	2.18	-10.02	1.74	10.25	282.28
1497.91	0.42	253.21	1497.86	7.56	2.22	-10.19	1.45	10.43	282.27
1523.96	0.36	250.51	1523.92	7.60	2.16	-10.36	0.23	10.59	281.78
1549.81	0.42	261.04	1549.76	7.67	2.12	-10.53	0.35	10.74	281.37
1571.73	0.25	258.87	1571.69	7.72	2.10	-10.66	0.80	10.86	281.13
1597.29	0.36	264.03	1597.24	7.78	2.08	-10.79	0.47	10.99	280.90
1623.47	0.33	275.64	1623.42	7.87	2.08	-10.95	0.29	11.15	280.74

MD ft	INC deg	AZIM deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft	CLOSURE DISTANCE ft	CLOSURE DIRECTION deg
1649.71	0.37	274.33	1649.66	7.97	2.09	-11.11	0.17	11.31	280.66
1671.03	0.32	272.63	1670.99	8.05	2.10	-11.24	0.26	11.44	280.58
1697.29	0.43	251.66	1697.24	8.12	2.07	-11.41	0.67	11.60	280.29
1723.02	0.36	268.47	1722.97	8.19	2.04	-11.58	0.53	11.76	279.98
1749.36	0.42	268.47	1749.31	8.28	2.03	-11.76	0.20	11.94	279.81
1771.41	0.33	275.01	1771.36	8.37	2.04	-11.91	0.43	12.08	279.71
1796.94	0.45	271.34	1796.88	8.47	2.05	-12.08	0.47	12.25	279.61
1823.25	0.34	266.65	1823.19	8.57	2.04	-12.26	0.44	12.43	279.46
1849.11	0.39	273.22	1849.05	8.66	2.04	-12.42	0.28	12.59	279.34
1873.35	0.47	285.81	1873.30	8.79	2.08	-12.60	0.49	12.77	279.35
1897.48	0.35	267.56	1897.43	8.90	2.10	-12.77	0.73	12.94	279.34
1924.66	0.49	267.05	1924.61	9.01	2.09	-12.97	0.54	13.14	279.15
1947.37	0.41	277.77	1947.31	9.11	2.10	-13.15	0.53	13.31	279.06
1974.47	0.41	288.35	1974.41	9.25	2.14	-13.33	0.28	13.50	279.12
1997.18	0.51	275.25	1997.12	9.38	2.17	-13.51	0.63	13.68	279.14
2024.87	0.46	284.47	2024.81	9.54	2.21	-13.74	0.33	13.92	279.15
2049.96	0.59	291.38	2049.90	9.72	2.29	-13.96	0.59	14.14	279.30
2078.98	0.56	297.34	2078.92	9.97	2.40	-14.22	0.24	14.42	279.60
2097.68	0.47	296.75	2097.61	10.12	2.48	-14.37	0.48	14.58	279.80
2124.68	0.35	296.81	2124.62	10.29	2.57	-14.54	0.46	14.77	280.01
2146.51	0.74	284.67	2146.45	10.45	2.63	-14.74	1.88	14.97	280.13
2173.50	0.73	305.46	2173.44	10.74	2.78	-15.05	0.98	15.30	280.46
2195.32	0.78	310.13	2195.25	11.02	2.95	-15.27	0.37	15.56	280.95
2222.21	0.66	310.22	2222.14	11.34	3.17	-15.53	0.44	15.85	281.54
2249.21	1.00	314.58	2249.14	11.72	3.44	-15.82	1.25	16.19	282.26
2270.62	0.98	321.73	2270.54	12.09	3.71	-16.07	0.58	16.49	283.01
2297.99	1.01	325.13	2297.91	12.56	4.09	-16.35	0.25	16.85	284.06
2324.61	1.18	329.82	2324.52	13.07	4.52	-16.62	0.73	17.23	285.23
2349.74	1.28	331.25	2349.65	13.61	5.00	-16.89	0.42	17.61	286.48
2374.96	0.94	327.69	2374.87	14.10	5.42	-17.13	1.41	17.97	287.55
2399.22	1.45	340.68	2399.12	14.59	5.88	-17.34	2.39	18.31	288.72
2421.81	1.39	341.91	2421.70	15.13	6.41	-17.52	0.31	18.65	290.08

MD ft	INC deg	AZIM deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft	CLOSURE DISTANCE ft	CLOSURE DIRECTION deg
2446.85	1.34	337.28	2446.73	15.71	6.96	-17.73	0.49	19.05	291.45
2473.21	1.43	342.63	2473.08	16.33	7.56	-17.94	0.61	19.47	292.85
2495.77	1.48	330.89	2495.64	16.89	8.09	-18.17	1.34	19.89	293.99
2522.55	1.62	344.85	2522.41	17.59	8.75	-18.44	1.50	20.41	295.40
2530.13	1.58	347.33	2529.99	17.79	8.96	-18.49	1.03	20.55	295.86
2549.62	1.46	338.59	2549.47	18.29	9.45	-18.64	1.36	20.90	296.90
2571.38	1.77	337.80	2571.22	18.88	10.02	-18.87	1.42	21.36	297.98
2598.17	1.52	334.69	2598.01	19.64	10.73	-19.17	0.96	21.97	299.22
2624.82	1.47	339.59	2624.64	20.32	11.37	-19.45	0.52	22.52	300.31
2646.61	1.50	334.96	2646.43	20.87	11.89	-19.66	0.56	22.98	301.15
2673.42	1.65	338.61	2673.22	21.59	12.56	-19.95	0.67	23.58	302.19
2696.09	1.58	338.46	2695.89	22.22	13.15	-20.18	0.30	24.09	303.09
2722.32	1.34	348.07	2722.11	22.85	13.79	-20.38	1.31	24.61	304.08
2749.53	1.60	344.82	2749.31	23.50	14.47	-20.55	1.01	25.13	305.15
2772.23	1.21	347.13	2772.01	24.03	15.00	-20.68	1.73	25.55	305.96
2798.64	1.54	336.19	2798.40	24.63	15.60	-20.89	1.59	26.07	306.76
2821.89	1.61	345.17	2821.65	25.25	16.20	-21.10	1.10	26.60	307.52
2848.99	1.63	355.12	2848.73	25.94	16.95	-21.23	1.04	27.16	308.61
2870.99	1.09	343.58	2870.73	26.41	17.46	-21.31	2.72	27.55	309.33
2897.92	1.61	348.97	2897.66	27.01	18.08	-21.46	1.96	28.06	310.12
2924.13	1.62	343.20	2923.85	27.70	18.80	-21.63	0.62	28.66	310.99
2946.75	1.37	350.84	2946.46	28.25	19.37	-21.77	1.38	29.14	311.66
2973.81	1.18	352.92	2973.52	28.79	19.97	-21.85	0.75	29.60	312.41
2995.65	1.43	345.20	2995.35	29.25	20.45	-21.95	1.42	30.00	312.97
3022.61	1.35	337.72	3022.30	29.88	21.07	-22.16	0.74	30.58	313.56
3049.50	1.39	341.11	3049.19	30.50	21.67	-22.38	0.33	31.16	314.08
3071.06	1.68	348.89	3070.74	31.04	22.23	-22.53	1.67	31.65	314.62
3097.67	0.98	350.31	3097.34	31.61	22.84	-22.64	2.64	32.16	315.25
3124.15	1.40	340.84	3123.81	32.13	23.37	-22.79	1.76	32.64	315.72
3149.96	1.73	328.22	3149.62	32.82	24.00	-23.10	1.82	33.31	316.10
3172.60	1.29	325.02	3172.24	33.42	24.49	-23.42	1.97	33.89	316.28
3198.69	1.12	354.09	3198.34	33.94	24.99	-23.62	2.40	34.38	316.62

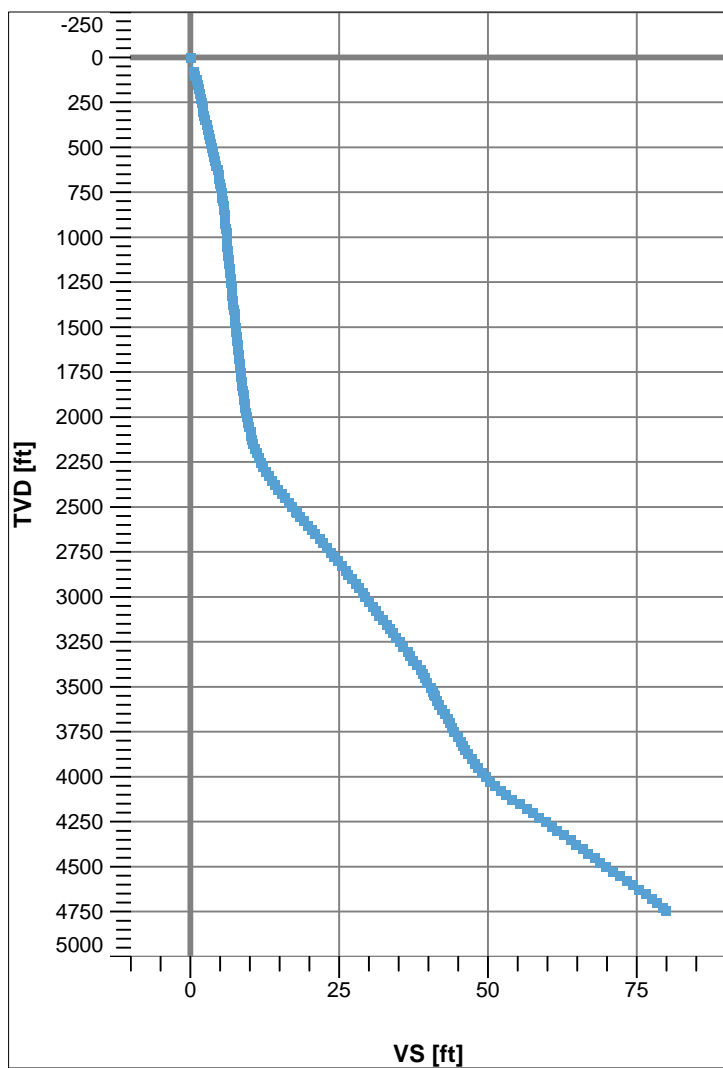
MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DISTANCE	CLOSURE DIRECTION
ft	deg	deg	ft	ft	ft	ft	°/100ft	ft	deg
3224.79	1.48	346.30	3224.43	34.48	25.57	-23.72	1.52	34.88	317.15
3247.51	1.24	329.79	3247.14	35.00	26.07	-23.92	2.01	35.38	317.47
3273.17	1.64	334.99	3272.79	35.64	26.64	-24.21	1.62	36.00	317.74
3299.60	1.48	340.71	3299.21	36.34	27.30	-24.48	0.84	36.67	318.12
3320.58	0.95	351.48	3320.19	36.76	27.73	-24.60	2.74	37.07	318.43
3349.89	1.46	351.35	3349.49	37.31	28.34	-24.69	1.76	37.59	318.94
3373.87	1.74	329.47	3373.46	37.95	28.96	-24.92	2.78	38.20	319.28
3399.65	1.02	321.17	3399.23	38.57	29.47	-25.26	2.91	38.82	319.40
3423.34	0.76	346.36	3422.92	38.93	29.79	-25.43	1.95	39.17	319.51
3447.84	1.02	359.81	3447.42	39.26	30.16	-25.47	1.36	39.48	319.82
3472.14	1.30	347.42	3471.71	39.69	30.65	-25.53	1.54	39.89	320.20
3499.40	1.10	345.88	3498.96	40.23	31.20	-25.66	0.74	40.40	320.56
3523.89	0.57	337.56	3523.45	40.57	31.54	-25.77	2.19	40.73	320.76
3540.40	0.91	332.92	3539.96	40.78	31.74	-25.86	2.04	40.94	320.83
3548.80	0.91	325.92	3548.36	40.91	31.85	-25.92	1.32	41.07	320.86
3575.00	0.93	337.04	3574.55	41.33	32.22	-26.12	0.68	41.48	320.96
3596.20	0.95	3.77	3595.75	41.63	32.55	-26.18	2.05	41.77	321.19
3622.83	1.38	346.36	3622.38	42.11	33.08	-26.24	2.06	42.23	321.58
3649.00	1.09	325.62	3648.54	42.65	33.59	-26.46	2.01	42.76	321.78
3671.50	1.06	355.24	3671.04	43.05	33.98	-26.59	2.45	43.15	321.95
3698.24	1.04	12.86	3697.77	43.43	34.46	-26.56	1.20	43.51	322.38
3724.39	1.01	357.28	3723.92	43.79	34.92	-26.52	1.07	43.85	322.79
3746.82	1.54	2.33	3746.35	44.20	35.42	-26.52	2.39	44.25	323.18
3772.93	1.31	342.15	3772.44	44.77	36.06	-26.59	2.10	44.80	323.59
3799.77	0.90	346.44	3799.28	45.26	36.56	-26.74	1.54	45.29	323.82
3822.18	1.03	4.90	3821.69	45.58	36.93	-26.76	1.48	45.60	324.07
3848.27	1.37	356.57	3847.77	46.03	37.47	-26.76	1.48	46.05	324.47
3870.70	1.81	357.02	3870.20	46.57	38.10	-26.79	1.98	46.57	324.88
3897.56	1.28	19.67	3897.05	47.11	38.80	-26.71	2.98	47.11	325.45
3923.31	1.41	348.36	3922.79	47.57	39.38	-26.68	2.86	47.57	325.88
3946.08	1.59	333.46	3945.55	48.14	39.94	-26.88	1.88	48.14	326.06
3973.12	1.43	351.13	3972.58	48.82	40.61	-27.10	1.81	48.82	326.29

MD ft	INC deg	AZIM deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft	CLOSURE DISTANCE ft	CLOSURE DIRECTION deg
3999.55	1.75	350.90	3999.00	49.49	41.34	-27.21	1.21	49.49	326.64
4021.84	1.71	338.81	4021.28	50.12	41.98	-27.39	1.65	50.13	326.88
4047.85	1.98	334.77	4047.28	50.94	42.75	-27.72	1.15	50.95	327.04
4073.85	2.57	332.41	4073.25	51.97	43.68	-28.18	2.30	51.98	327.17
4095.36	1.92	334.59	4094.75	52.80	44.43	-28.56	3.06	52.82	327.27
4122.17	2.71	338.75	4121.54	53.87	45.43	-28.98	3.02	53.89	327.46
4148.61	2.86	327.78	4147.95	55.14	46.57	-29.56	2.09	55.16	327.59
4174.41	3.04	337.32	4173.71	56.45	47.75	-30.17	2.03	56.48	327.71
4196.54	1.92	330.03	4195.83	57.40	48.61	-30.58	5.25	57.43	327.83
4223.33	2.51	330.38	4222.59	58.43	49.51	-31.10	2.19	58.47	327.87
4248.42	2.45	331.88	4247.65	59.51	50.46	-31.62	0.36	59.55	327.93
4274.83	2.41	317.13	4274.04	60.62	51.36	-32.26	2.36	60.66	327.87
4296.23	2.24	320.43	4295.43	61.48	52.02	-32.84	1.00	61.52	327.74
4321.61	2.67	323.66	4320.78	62.57	52.88	-33.50	1.77	62.60	327.64
4349.89	2.24	314.98	4349.04	63.77	53.80	-34.29	2.00	63.80	327.49
4373.61	2.26	323.91	4372.74	64.69	54.50	-34.89	1.48	64.72	327.38
4399.76	2.35	334.55	4398.87	65.74	55.40	-35.42	1.67	65.76	327.41
4422.45	2.36	322.49	4421.54	66.66	56.19	-35.91	2.18	66.69	327.42
4449.75	2.29	319.91	4448.81	67.77	57.06	-36.60	0.46	67.79	327.32
4472.51	2.33	324.04	4471.56	68.68	57.78	-37.17	0.76	68.70	327.25
4496.94	2.49	318.59	4495.97	69.70	58.58	-37.81	1.13	69.72	327.16
4524.14	2.47	321.36	4523.14	70.87	59.48	-38.56	0.44	70.89	327.04
4548.14	2.90	317.39	4547.12	71.99	60.33	-39.30	1.97	72.00	326.92
4574.39	2.62	316.04	4573.33	73.24	61.25	-40.17	1.10	73.25	326.75
4598.92	2.06	329.32	4597.84	74.23	62.04	-40.78	3.17	74.24	326.68
4624.04	2.72	318.60	4622.95	75.28	62.87	-41.41	3.16	75.28	326.63
4648.45	2.48	316.07	4647.32	76.37	63.69	-42.16	1.09	76.38	326.50
4674.04	2.29	301.08	4672.90	77.38	64.35	-42.98	2.54	77.38	326.26
4698.47	2.24	315.05	4697.30	78.30	64.94	-43.73	2.27	78.30	326.04
4723.97	1.93	319.11	4722.79	79.21	65.62	-44.37	1.36	79.21	325.94
4739.96	2.02	310.24	4738.77	79.75	66.00	-44.76	1.99	79.75	325.86



Name : Keeper Gyro Wireline Survey: Outrun
Generated : 4/7/2015 10:10:24 Mountain Daylight Time

VS View



Plan View

