

KP KAUFFMAN COMPANY

# SURVEY REPORT

CARL A MILLER A#2

1/10/2015



The **Ultimate Partner** In Wellbore Placement

CUSTOMER KP Kauffman Company  
PROJECT Carl A Miller A#2  
FIELD Spindle

SDI JOB NO. 243410  
SDI DISTRICT Casper  
SDI KIT/UNIT

### SITE INFORMATION

Site Name Carl A Miller A#2  
Lat/Long 40.0893° N, 104.90311° W  
Northing  
Easting

Section 33  
Township 2n  
Range 67w

### MAP INFORMATION

North Reference True North  
Grid Correction  
System US State Plane 1927  
Datum North American Datum 1927 (Clarke 1866)  
Map Zone Colorado North: 0501



### WELL INFORMATION

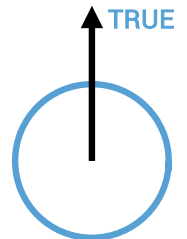
Lat/Long 40.0893° N, 104.90311° W  
Northing  
Easting  
UWI 05-123-07682

### DEPTH AND ELEVATION REFERENCE

Ground Level 5046 ft above Mean Sea Level  
Reference Datum ground  
Reference Height 0 ft above G.L.  
Reference Elevation 5046 ft

### VERTICAL SECTION REFERENCE

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



### LOCAL GRAVITY REFERENCE INFORMATION

Local Gravity 999.033 mG [computed]

### WELL NOTES

Keeper Gyro Survey ran in 4 1/2 inch casing. Tool zeroed on ground.

### OPERATORS

J. Jackson

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
25.00	0.22	298.74	25.00	0.05	0.02	-0.04	0.87	0.05	298.74
50.00	0.44	298.74	50.00	0.19	0.09	-0.17	0.87	0.19	298.74
75.00	0.66	298.74	75.00	0.43	0.21	-0.38	0.87	0.43	298.74
100.00	0.92	284.85	100.00	0.77	0.33	-0.69	1.29	0.77	295.15
125.00	0.55	291.33	124.99	1.09	0.42	-1.00	1.51	1.09	292.84
150.00	0.60	289.01	149.99	1.33	0.51	-1.23	0.21	1.34	292.33
175.00	0.60	287.38	174.99	1.60	0.59	-1.48	0.07	1.60	291.65
200.00	0.61	286.85	199.99	1.86	0.67	-1.74	0.04	1.86	291.01
225.00	0.75	299.12	224.99	2.16	0.79	-2.01	0.80	2.16	291.36
250.00	0.80	293.65	249.99	2.49	0.93	-2.31	0.35	2.49	292.03
275.00	0.76	294.16	274.98	2.83	1.07	-2.62	0.14	2.83	292.25
300.00	0.77	296.09	299.98	3.16	1.21	-2.92	0.10	3.16	292.56
325.00	0.77	296.11	324.98	3.50	1.36	-3.22	0.01	3.50	292.90
350.00	0.75	299.70	349.98	3.83	1.52	-3.52	0.20	3.83	293.33
375.00	0.82	292.19	374.97	4.17	1.66	-3.82	0.49	4.17	293.53
400.00	0.77	291.90	399.97	4.52	1.79	-4.14	0.21	4.52	293.41
425.00	0.79	295.51	424.97	4.85	1.93	-4.45	0.21	4.85	293.44
450.00	0.82	293.83	449.97	5.21	2.08	-4.77	0.15	5.21	293.52
475.00	0.76	292.53	474.97	5.55	2.21	-5.09	0.23	5.55	293.50
500.00	0.83	293.99	499.96	5.90	2.35	-5.41	0.29	5.90	293.49
525.00	0.80	293.18	524.96	6.26	2.49	-5.74	0.14	6.26	293.49
550.00	0.83	294.09	549.96	6.61	2.64	-6.06	0.14	6.61	293.50
575.00	0.78	292.23	574.96	6.96	2.78	-6.39	0.24	6.96	293.48
600.00	0.73	290.12	599.95	7.29	2.89	-6.70	0.21	7.29	293.38
625.00	0.72	287.93	624.95	7.61	3.00	-7.00	0.13	7.61	293.20
650.00	0.64	289.39	649.95	7.91	3.09	-7.28	0.33	7.91	293.03
675.00	0.65	287.32	674.95	8.19	3.18	-7.54	0.11	8.19	292.87
700.00	0.63	295.76	699.95	8.46	3.28	-7.80	0.38	8.46	292.82
725.00	0.69	295.12	724.94	8.75	3.41	-8.06	0.21	8.75	292.91
750.00	0.77	291.98	749.94	9.07	3.53	-8.35	0.36	9.07	292.93
775.00	0.66	287.75	774.94	9.38	3.64	-8.64	0.48	9.38	292.83

MD ft	INC deg	AZIM deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft	CLOSURE DISTANCE ft	CLOSURE DIRECTION deg
800.00	0.67	295.93	799.94	9.67	3.75	-8.91	0.38	9.67	292.80
825.00	0.64	289.74	824.94	9.95	3.86	-9.17	0.30	9.95	292.81
850.00	0.73	292.19	849.94	10.25	3.96	-9.45	0.35	10.25	292.75
875.00	0.57	287.39	874.93	10.53	4.06	-9.72	0.65	10.53	292.68
900.00	0.59	272.13	899.93	10.78	4.10	-9.97	0.62	10.78	292.38
925.00	0.67	286.64	924.93	11.04	4.15	-10.24	0.70	11.05	292.07
950.00	0.49	268.98	949.93	11.29	4.19	-10.48	0.99	11.29	291.79
975.00	0.57	270.63	974.93	11.50	4.19	-10.71	0.32	11.50	291.36
1000.00	0.57	281.37	999.93	11.73	4.22	-10.96	0.43	11.74	291.04
1025.00	0.56	260.78	1024.93	11.96	4.22	-11.20	0.81	11.97	290.64
1050.00	0.58	266.84	1049.92	12.18	4.19	-11.45	0.25	12.19	290.12
1075.00	0.51	264.24	1074.92	12.39	4.18	-11.68	0.28	12.41	289.66
1100.00	0.55	267.74	1099.92	12.59	4.16	-11.92	0.21	12.62	289.24
1125.00	0.63	271.48	1124.92	12.83	4.16	-12.17	0.33	12.86	288.86
1150.00	0.53	262.14	1149.92	13.05	4.15	-12.42	0.54	13.10	288.45
1175.00	0.54	257.92	1174.92	13.25	4.11	-12.65	0.16	13.30	287.97
1200.00	0.60	263.71	1199.92	13.46	4.07	-12.90	0.35	13.53	287.50
1225.00	0.51	252.72	1224.92	13.66	4.02	-13.14	0.58	13.74	287.01
1250.00	0.60	254.08	1249.92	13.85	3.95	-13.37	0.38	13.94	286.46
1275.00	0.40	253.85	1274.91	14.01	3.89	-13.58	0.82	14.12	285.99
1300.00	0.38	248.51	1299.91	14.14	3.84	-13.74	0.15	14.26	285.60
1325.00	0.39	250.77	1324.91	14.26	3.78	-13.90	0.06	14.40	285.21
1350.00	0.30	263.77	1349.91	14.38	3.74	-14.04	0.47	14.53	284.93
1375.00	0.33	246.07	1374.91	14.49	3.71	-14.17	0.41	14.65	284.66
1400.00	0.38	251.57	1399.91	14.60	3.65	-14.31	0.22	14.77	284.31
1425.00	0.36	259.54	1424.91	14.73	3.61	-14.47	0.21	14.91	284.01
1450.00	0.31	249.95	1449.91	14.84	3.57	-14.61	0.32	15.04	283.74
1475.00	0.43	249.14	1474.91	14.96	3.52	-14.76	0.50	15.17	283.40
1500.00	0.35	259.88	1499.91	15.09	3.47	-14.92	0.44	15.32	283.09
1525.00	0.34	247.01	1524.91	15.20	3.43	-15.07	0.31	15.45	282.82
1550.00	0.34	253.40	1549.91	15.31	3.38	-15.20	0.15	15.58	282.53
1575.00	0.37	265.20	1574.91	15.44	3.35	-15.36	0.32	15.72	282.30

MD ft	INC deg	AZIM deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft	CLOSURE DISTANCE ft	CLOSURE DIRECTION deg
1600.00	0.40	254.71	1599.91	15.58	3.32	-15.52	0.30	15.87	282.07
1625.00	0.48	265.39	1624.91	15.74	3.29	-15.71	0.47	16.05	281.82
1650.00	0.50	278.29	1649.91	15.94	3.30	-15.93	0.45	16.26	281.69
1675.00	0.55	283.21	1674.91	16.17	3.34	-16.15	0.25	16.49	281.68
1700.00	0.73	291.79	1699.90	16.44	3.42	-16.42	0.83	16.77	281.79
1725.00	0.76	300.54	1724.90	16.77	3.57	-16.71	0.47	17.08	282.06
1750.00	0.81	301.89	1749.90	17.10	3.75	-17.00	0.20	17.41	282.43
1775.00	0.91	309.16	1774.90	17.47	3.96	-17.30	0.61	17.75	282.90
1800.00	0.93	318.56	1799.89	17.84	4.24	-17.59	0.61	18.09	283.56
1825.00	0.91	320.73	1824.89	18.20	4.55	-17.85	0.16	18.42	284.29
1850.00	0.99	323.61	1849.89	18.56	4.87	-18.10	0.38	18.75	285.06
1875.00	0.96	334.83	1874.88	18.90	5.24	-18.32	0.77	19.05	285.95
1900.00	0.91	337.83	1899.88	19.20	5.61	-18.48	0.29	19.31	286.88
1925.00	0.97	344.57	1924.88	19.47	6.00	-18.61	0.51	19.56	287.86
1950.00	0.96	353.30	1949.87	19.71	6.41	-18.69	0.59	19.76	288.92
1975.00	0.87	354.85	1974.87	19.90	6.81	-18.74	0.35	19.93	289.97
2000.00	0.91	2.88	1999.87	20.06	7.20	-18.74	0.52	20.08	291.00
2025.00	0.84	13.84	2024.86	20.16	7.57	-18.69	0.73	20.17	292.06
2050.00	0.77	12.73	2049.86	20.22	7.91	-18.61	0.28	20.22	293.04
2075.00	0.83	14.21	2074.86	20.28	8.25	-18.53	0.23	20.28	294.01
2100.00	0.78	23.51	2099.86	20.31	8.58	-18.41	0.56	20.32	294.99
2125.00	0.66	22.81	2124.85	20.31	8.87	-18.29	0.48	20.33	295.87
2150.00	0.51	30.17	2149.85	20.29	9.10	-18.18	0.64	20.33	296.59
2175.00	0.41	25.05	2174.85	20.28	9.28	-18.09	0.43	20.33	297.16
2200.00	0.41	18.37	2199.85	20.28	9.45	-18.02	0.19	20.34	297.66
2225.00	0.42	11.40	2224.85	20.31	9.62	-17.97	0.21	20.39	298.16
2250.00	0.35	17.57	2249.85	20.33	9.78	-17.93	0.33	20.43	298.61
2275.00	0.43	351.38	2274.85	20.39	9.95	-17.92	0.77	20.50	299.03
2300.00	0.65	359.17	2299.85	20.50	10.18	-17.94	0.94	20.63	299.58
2325.00	0.65	335.37	2324.85	20.66	10.45	-18.00	1.08	20.82	300.15
2350.00	0.81	4.07	2349.85	20.82	10.76	-18.05	1.58	21.01	300.81
2375.00	0.71	356.70	2374.84	20.95	11.09	-18.04	0.56	21.18	301.58

MD ft	INC deg	AZIM deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft	CLOSURE DISTANCE ft	CLOSURE DIRECTION deg
2400.00	0.68	351.97	2399.84	21.10	11.39	-18.07	0.27	21.37	302.23
2425.00	0.68	357.59	2424.84	21.24	11.69	-18.10	0.27	21.55	302.86
2450.00	0.62	5.18	2449.84	21.34	11.97	-18.09	0.42	21.70	303.49
2475.00	0.49	2.62	2474.84	21.42	12.22	-18.08	0.54	21.82	304.05
2500.00	0.45	347.78	2499.84	21.52	12.42	-18.09	0.51	21.94	304.46
2525.00	0.41	351.98	2524.84	21.62	12.60	-18.13	0.20	22.08	304.81
2550.00	0.43	4.65	2549.83	21.69	12.78	-18.13	0.37	22.18	305.19
2575.00	0.56	344.65	2574.83	21.80	12.99	-18.16	0.85	22.33	305.59
2600.00	0.49	357.47	2599.83	21.92	13.22	-18.19	0.53	22.49	306.00
2625.00	0.26	21.10	2624.83	21.97	13.38	-18.18	1.10	22.57	306.35
2650.00	0.36	23.08	2649.83	21.97	13.50	-18.13	0.39	22.60	306.68
2675.00	0.37	34.67	2674.83	21.96	13.64	-18.05	0.30	22.62	307.08
2700.00	0.31	32.20	2699.83	21.93	13.76	-17.97	0.25	22.63	307.45
2725.00	0.39	46.93	2724.83	21.88	13.88	-17.87	0.49	22.63	307.83
2750.00	0.40	61.10	2749.83	21.79	13.98	-17.73	0.39	22.58	308.25
2775.00	0.41	64.61	2774.83	21.68	14.06	-17.57	0.11	22.50	308.66
2800.00	0.59	51.15	2799.83	21.56	14.18	-17.39	0.83	22.44	309.19
2825.00	0.83	46.76	2824.83	21.43	14.38	-17.16	1.01	22.39	309.97
2850.00	0.88	39.91	2849.82	21.30	14.66	-16.90	0.46	22.37	310.93
2875.00	1.02	37.25	2874.82	21.19	14.98	-16.64	0.55	22.39	311.99
2900.00	1.01	32.60	2899.82	21.10	15.34	-16.39	0.33	22.45	313.10
2925.00	0.97	36.16	2924.81	21.01	15.70	-16.15	0.29	22.52	314.18
2950.00	1.06	35.46	2949.81	20.92	16.06	-15.89	0.40	22.59	315.29
2975.00	1.13	40.91	2974.80	20.79	16.43	-15.60	0.49	22.65	316.49
3000.00	1.04	32.48	2999.80	20.68	16.81	-15.31	0.72	22.74	317.67
3025.00	1.25	34.55	3024.79	20.59	17.22	-15.04	0.85	22.86	318.88
3050.00	1.38	41.47	3049.79	20.44	17.67	-14.68	0.82	22.98	320.28
3075.00	1.22	41.88	3074.78	20.26	18.10	-14.31	0.66	23.07	321.67
3100.00	1.23	35.87	3099.78	20.12	18.51	-13.97	0.52	23.19	322.96
3125.00	1.19	35.10	3124.77	20.00	18.94	-13.66	0.19	23.36	324.19
3150.00	0.92	42.39	3149.77	19.88	19.30	-13.38	1.20	23.49	325.27
3175.00	0.70	37.20	3174.76	19.78	19.57	-13.15	0.91	23.58	326.09

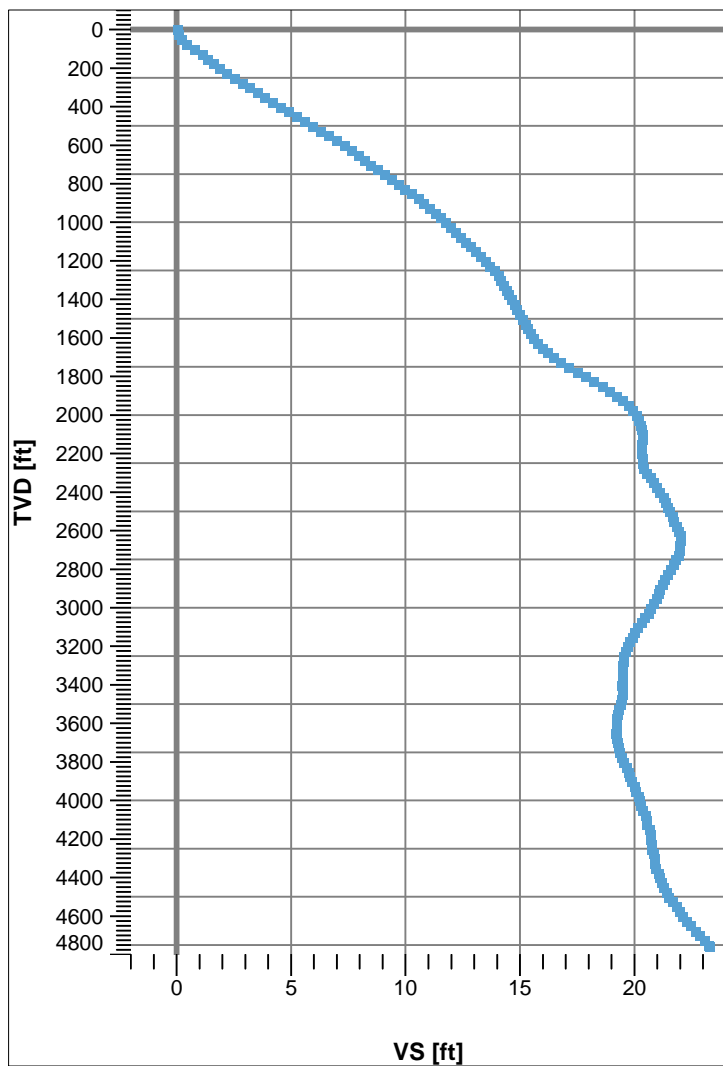
MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DISTANCE	CLOSURE DIRECTION
ft	deg	deg	ft	ft	ft	ft	°/100ft	ft	deg
3200.00	0.55	47.16	3199.76	19.69	19.77	-12.97	0.73	23.65	326.73
3225.00	0.41	75.85	3224.76	19.57	19.88	-12.80	1.11	23.64	327.22
3250.00	0.10	59.60	3249.76	19.49	19.91	-12.69	1.23	23.61	327.48
3275.00	0.09	16.22	3274.76	19.48	19.94	-12.67	0.29	23.62	327.58
3300.00	0.08	99.63	3299.76	19.46	19.96	-12.64	0.46	23.62	327.64
3325.00	0.12	251.21	3324.76	19.47	19.94	-12.65	0.81	23.62	327.61
3350.00	0.09	50.39	3349.76	19.48	19.95	-12.66	0.86	23.63	327.60
3375.00	0.09	131.25	3374.76	19.45	19.95	-12.63	0.47	23.61	327.66
3400.00	0.25	207.78	3399.76	19.44	19.89	-12.64	0.96	23.57	327.56
3425.00	0.16	228.76	3424.76	19.45	19.82	-12.69	0.45	23.54	327.36
3450.00	0.30	185.09	3449.76	19.45	19.73	-12.72	0.86	23.48	327.18
3475.00	0.40	189.93	3474.76	19.41	19.58	-12.75	0.43	23.36	326.94
3500.00	0.45	185.48	3499.76	19.36	19.40	-12.77	0.21	23.22	326.64
3525.00	0.57	183.57	3524.76	19.29	19.18	-12.79	0.50	23.05	326.30
3550.00	0.49	188.61	3549.76	19.22	18.95	-12.81	0.37	22.87	325.93
3575.00	0.48	206.47	3574.76	19.20	18.75	-12.87	0.60	22.74	325.52
3600.00	0.48	194.60	3599.76	19.19	18.55	-12.95	0.40	22.62	325.09
3625.00	0.58	202.02	3624.75	19.17	18.33	-13.02	0.47	22.49	324.62
3650.00	0.49	199.36	3649.75	19.16	18.12	-13.10	0.34	22.36	324.12
3675.00	0.50	216.01	3674.75	19.18	17.93	-13.20	0.57	22.26	323.63
3700.00	0.48	213.21	3699.75	19.22	17.75	-13.32	0.11	22.19	323.11
3725.00	0.46	214.95	3724.75	19.26	17.58	-13.44	0.11	22.13	322.60
3750.00	0.35	239.55	3749.75	19.33	17.46	-13.56	0.81	22.11	322.16
3775.00	0.31	227.78	3774.75	19.40	17.37	-13.68	0.31	22.11	321.78
3800.00	0.40	247.02	3799.75	19.49	17.29	-13.81	0.57	22.13	321.39
3825.00	0.45	254.38	3824.75	19.63	17.23	-13.98	0.31	22.19	320.94
3850.00	0.13	289.02	3849.75	19.73	17.22	-14.10	1.41	22.26	320.68
3875.00	0.11	246.77	3874.75	19.77	17.22	-14.15	0.35	22.29	320.58
3900.00	0.30	304.13	3899.75	19.86	17.24	-14.23	1.02	22.35	320.47
3925.00	0.18	282.68	3924.75	19.96	17.29	-14.32	0.59	22.45	320.36
3950.00	0.25	280.51	3949.75	20.05	17.31	-14.41	0.28	22.52	320.21
3975.00	0.22	282.48	3974.75	20.15	17.33	-14.51	0.12	22.60	320.05

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DISTANCE	CLOSURE DIRECTION
ft	deg	deg	ft	ft	ft	ft	°/100ft	ft	deg
4000.00	0.10	70.30	3999.75	20.18	17.34	-14.54	1.23	22.63	320.02
4025.00	0.43	257.28	4024.75	20.24	17.33	-14.61	2.10	22.67	319.86
4050.00	0.33	236.36	4049.75	20.36	17.27	-14.76	0.67	22.72	319.47
4075.00	0.63	234.22	4074.75	20.47	17.15	-14.94	1.19	22.74	318.95
4100.00	0.36	173.65	4099.74	20.50	16.99	-15.04	2.21	22.69	318.49
4125.00	0.64	226.30	4124.74	20.52	16.81	-15.13	2.05	22.62	318.01
4150.00	0.70	219.52	4149.74	20.61	16.60	-15.33	0.38	22.59	317.28
4175.00	0.64	208.86	4174.74	20.67	16.36	-15.49	0.55	22.53	316.55
4200.00	0.58	199.77	4199.74	20.68	16.12	-15.60	0.45	22.43	315.93
4225.00	0.80	217.13	4224.74	20.71	15.86	-15.75	1.21	22.35	315.19
4250.00	0.78	200.04	4249.73	20.75	15.56	-15.92	0.94	22.26	314.35
4275.00	0.85	221.45	4274.73	20.80	15.26	-16.10	1.23	22.18	313.47
4300.00	0.62	194.89	4299.73	20.83	14.99	-16.25	1.61	22.11	312.69
4325.00	0.83	212.32	4324.73	20.84	14.71	-16.38	1.21	22.02	311.91
4350.00	0.65	215.99	4349.73	20.90	14.44	-16.57	0.74	21.98	311.08
4375.00	0.85	226.39	4374.72	21.01	14.20	-16.78	0.95	21.98	310.23
4400.00	0.73	207.83	4399.72	21.10	13.93	-16.99	1.11	21.97	309.35
4425.00	0.99	221.18	4424.72	21.18	13.63	-17.21	1.32	21.95	308.37
4450.00	0.56	214.26	4449.72	21.27	13.36	-17.42	1.75	21.95	307.49
4475.00	0.85	223.95	4474.71	21.36	13.13	-17.62	1.24	21.97	306.69
4500.00	1.11	217.05	4499.71	21.48	12.80	-17.89	1.12	22.00	305.58
4525.00	1.04	229.46	4524.71	21.64	12.46	-18.21	0.97	22.06	304.38
4550.00	1.30	216.61	4549.70	21.81	12.08	-18.55	1.47	22.14	303.08
4575.00	1.09	216.31	4574.70	21.93	11.66	-18.86	0.82	22.18	301.73
4600.00	1.09	228.06	4599.69	22.08	11.31	-19.18	0.89	22.27	300.54
4625.00	1.26	219.19	4624.69	22.26	10.94	-19.53	0.99	22.39	299.26
4650.00	1.16	225.01	4649.68	22.43	10.55	-19.88	0.64	22.51	297.96
4675.00	1.20	228.50	4674.68	22.63	10.20	-20.25	0.33	22.68	296.73
4700.00	1.14	223.21	4699.67	22.83	9.85	-20.62	0.48	22.85	295.52
4725.00	1.12	229.56	4724.67	23.03	9.51	-20.98	0.51	23.03	294.38
4750.00	1.03	226.21	4749.66	23.22	9.19	-21.33	0.43	23.22	293.31
4754.78	1.06	226.66	4754.44	23.26	9.13	-21.39	0.49	23.26	293.11



**Name :** Keeper Gyro Survey Carl A Miller A#2 Inrun  
**Generated :** 1/12/2015 10:04:38 Mountain Standard Time

VS View



Plan View

