



K.P. KAUFFMAN

SURVEY REPORT

UPRR 42 PAN AM F#3

KPK 8

2/24/2015



The **Ultimate Partner** In Wellbore Placement

CUSTOMER K.P. Kauffman
PROJECT UPRR 42 Pan AM F #3
FIELD Spindle

SDI JOB NO. 258475
SDI DISTRICT Casper
SDI KIT/UNIT

SITE INFORMATION

Site Name Weld County, Colorado
Lat/Long 40.06008° N, 104.86499° W
Northing
Easting

Section SWSW 11
Township 1N
Range 67W 6PM

MAP INFORMATION

North Reference True North
Grid Correction
System
Datum
Map Zone



WELL INFORMATION

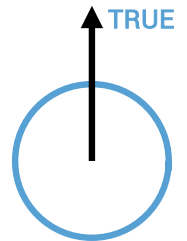
Lat/Long 40.06008° N, 104.86499° W
Northing
Easting
UWI 05-123-07572 UWBI 05-123-07572

DEPTH AND ELEVATION REFERENCE

Ground Level 5016 ft above Mean Sea Level
Reference Datum Ground Level
Reference Height 0 ft above G.L.
Reference Elevation 5016 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 run in 4.5" casing from surface to 4819'. All depths reference ground level.

OPERATORS

J Valenzuela

SDI Operator Name (Printed)

SIGNATURE

DATE

MD ft	INC deg	AZIM deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft	CLOSURE DISTANCE ft	CLOSURE DIRECTION deg
0.00	0.00	0.00	0.00	0.00	0.00	0.00	Invalid	0.00	0.00
30.46	0.79	203.97	30.46	0.07	-0.19	-0.09	2.59	0.21	203.97
48.79	0.73	196.67	48.79	0.13	-0.42	-0.17	0.62	0.45	202.09
73.99	0.86	203.96	73.99	0.22	-0.74	-0.29	0.64	0.80	201.44
98.76	0.72	189.27	98.76	0.29	-1.07	-0.39	0.99	1.14	200.21
123.54	0.67	187.12	123.53	0.30	-1.36	-0.44	0.22	1.43	197.72
148.88	0.66	190.06	148.87	0.32	-1.65	-0.48	0.14	1.72	196.17
174.25	0.64	194.48	174.24	0.35	-1.93	-0.54	0.21	2.01	195.61
199.08	0.68	200.27	199.06	0.41	-2.20	-0.63	0.32	2.29	195.84
220.33	0.65	201.37	220.32	0.47	-2.44	-0.71	0.16	2.54	196.32
249.79	0.74	193.86	249.78	0.55	-2.77	-0.82	0.43	2.89	196.45
274.03	0.82	195.98	274.01	0.60	-3.09	-0.90	0.38	3.22	196.30
299.46	0.73	193.57	299.44	0.66	-3.43	-0.99	0.38	3.57	196.16
324.09	0.62	183.92	324.07	0.67	-3.71	-1.04	0.64	3.86	195.63
349.49	0.50	198.90	349.46	0.70	-3.96	-1.08	0.75	4.10	195.33
374.89	0.39	213.38	374.86	0.76	-4.13	-1.17	0.62	4.30	195.78
399.51	0.43	215.91	399.49	0.85	-4.28	-1.27	0.18	4.46	196.52
424.80	0.48	210.56	424.77	0.94	-4.45	-1.38	0.24	4.66	197.22
446.11	0.46	200.09	446.08	1.00	-4.60	-1.45	0.41	4.83	197.51
474.96	0.44	195.01	474.93	1.05	-4.82	-1.52	0.15	5.05	197.52
495.96	0.39	200.45	495.93	1.08	-4.96	-1.57	0.28	5.20	197.52
521.38	0.31	220.30	521.35	1.14	-5.10	-1.64	0.58	5.35	197.85
546.21	0.42	220.64	546.18	1.23	-5.22	-1.74	0.46	5.50	198.49
571.61	0.39	211.69	571.58	1.32	-5.36	-1.85	0.28	5.67	199.04
596.96	0.46	212.90	596.93	1.41	-5.52	-1.95	0.27	5.86	199.47
622.59	0.35	193.00	622.55	1.46	-5.68	-2.02	0.69	6.03	199.61
649.25	0.34	196.33	649.22	1.49	-5.83	-2.06	0.08	6.19	199.48
671.08	0.26	201.46	671.05	1.51	-5.94	-2.10	0.38	6.30	199.46
697.99	0.29	215.93	697.96	1.56	-6.05	-2.16	0.28	6.43	199.65
724.76	0.33	209.97	724.73	1.63	-6.17	-2.24	0.21	6.57	199.94
746.60	0.43	207.36	746.57	1.69	-6.30	-2.31	0.47	6.71	200.12
773.35	0.35	198.02	773.32	1.74	-6.47	-2.38	0.37	6.89	200.20

MD ft	INC deg	AZIM deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft	CLOSURE DISTANCE ft	CLOSURE DIRECTION deg
795.11	0.28	204.36	795.07	1.77	-6.58	-2.42	0.38	7.01	200.21
821.78	0.21	199.27	821.74	1.81	-6.69	-2.47	0.26	7.13	200.24
848.61	0.34	213.96	848.57	1.86	-6.80	-2.53	0.53	7.25	200.38
874.55	0.38	205.72	874.51	1.92	-6.94	-2.61	0.25	7.41	200.58
896.98	0.41	200.02	896.94	1.97	-7.08	-2.67	0.25	7.57	200.63
923.52	0.32	198.08	923.48	2.01	-7.24	-2.72	0.35	7.74	200.59
949.05	0.23	208.22	949.01	2.04	-7.36	-2.77	0.41	7.86	200.62
971.18	0.31	227.52	971.14	2.10	-7.43	-2.83	0.54	7.96	200.86
997.41	0.59	233.86	997.37	2.25	-7.56	-2.99	1.08	8.13	201.59
1023.05	0.54	227.72	1023.01	2.42	-7.72	-3.19	0.31	8.35	202.44
1049.37	0.39	228.09	1049.33	2.57	-7.86	-3.35	0.57	8.54	203.05
1071.35	0.41	241.61	1071.31	2.68	-7.95	-3.47	0.44	8.67	203.58
1096.71	0.52	242.40	1096.67	2.86	-8.05	-3.65	0.42	8.84	204.42
1123.00	0.53	236.60	1122.95	3.05	-8.17	-3.86	0.20	9.03	205.29
1149.28	0.55	229.07	1149.23	3.23	-8.32	-4.06	0.29	9.25	205.99
1174.80	0.49	233.34	1174.75	3.40	-8.46	-4.24	0.28	9.46	206.59
1196.64	0.46	240.60	1196.59	3.54	-8.56	-4.39	0.30	9.62	207.14
1222.16	0.59	244.79	1222.11	3.73	-8.67	-4.60	0.51	9.81	207.94
1247.64	0.52	237.04	1247.59	3.94	-8.79	-4.81	0.39	10.02	208.71
1274.67	0.45	220.96	1274.62	4.10	-8.93	-4.99	0.57	10.23	209.16
1298.93	0.51	226.54	1298.88	4.22	-9.08	-5.13	0.32	10.43	209.45
1323.70	0.40	250.65	1323.64	4.37	-9.19	-5.29	0.89	10.60	209.94
1348.85	0.51	221.43	1348.80	4.52	-9.30	-5.45	1.00	10.78	210.36
1373.18	0.98	245.89	1373.13	4.76	-9.47	-5.71	2.29	11.05	211.09
1398.48	0.61	238.60	1398.42	5.06	-9.62	-6.02	1.50	11.35	212.03
1424.45	0.47	240.45	1424.39	5.26	-9.75	-6.23	0.53	11.57	212.59
1446.37	0.38	251.34	1446.31	5.40	-9.82	-6.38	0.56	11.71	213.02
1473.03	0.57	262.59	1472.97	5.61	-9.86	-6.59	0.77	11.86	213.77
1498.17	0.62	259.12	1498.11	5.86	-9.90	-6.85	0.26	12.04	214.67
1521.09	0.51	252.26	1521.03	6.07	-9.96	-7.07	0.55	12.21	215.37
1546.11	0.43	254.98	1546.04	6.26	-10.02	-7.27	0.34	12.38	215.96
1572.66	0.48	258.62	1572.59	6.46	-10.07	-7.47	0.22	12.54	216.60

MD ft	INC deg	AZIM deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft	CLOSURE DISTANCE ft	CLOSURE DIRECTION deg
1599.20	0.49	271.07	1599.13	6.68	-10.09	-7.70	0.40	12.69	217.36
1624.80	0.59	267.92	1624.74	6.92	-10.09	-7.94	0.40	12.84	218.20
1647.08	0.60	261.22	1647.01	7.15	-10.11	-8.17	0.31	13.00	218.94
1673.61	0.47	260.13	1673.54	7.39	-10.15	-8.41	0.47	13.18	219.65
1699.30	0.43	266.82	1699.23	7.59	-10.17	-8.61	0.27	13.33	220.25
1721.46	0.55	274.02	1721.40	7.77	-10.17	-8.80	0.61	13.45	220.87
1747.29	0.60	272.90	1747.22	8.03	-10.15	-9.06	0.21	13.61	221.74
1773.79	0.61	262.32	1773.72	8.31	-10.17	-9.34	0.42	13.81	222.57
1795.90	0.55	262.79	1795.82	8.53	-10.20	-9.56	0.26	13.98	223.16
1821.54	0.49	271.12	1821.47	8.76	-10.21	-9.79	0.40	14.15	223.81
1847.91	0.50	275.99	1847.84	8.99	-10.19	-10.02	0.17	14.29	224.51
1872.43	0.72	278.09	1872.35	9.25	-10.16	-10.28	0.91	14.45	225.33
1898.49	0.68	267.76	1898.41	9.56	-10.14	-10.59	0.51	14.67	226.24
1924.55	0.64	265.39	1924.47	9.86	-10.16	-10.89	0.19	14.90	226.99
1949.79	0.61	273.25	1949.71	10.13	-10.17	-11.17	0.35	15.10	227.69
1971.59	0.66	281.45	1971.50	10.37	-10.13	-11.41	0.47	15.26	228.38
1997.62	0.84	280.14	1997.54	10.71	-10.07	-11.74	0.70	15.47	229.38
2022.84	0.86	279.95	2022.75	11.08	-10.01	-12.11	0.05	15.71	230.44
2049.55	0.79	279.19	2049.46	11.47	-9.94	-12.49	0.25	15.96	231.48
2074.76	0.82	272.68	2074.66	11.82	-9.91	-12.84	0.38	16.22	232.35
2095.93	0.71	280.08	2095.83	12.10	-9.88	-13.12	0.69	16.42	233.03
2121.79	0.75	288.91	2121.70	12.43	-9.79	-13.44	0.45	16.63	233.92
2147.00	0.95	287.74	2146.90	12.79	-9.68	-13.79	0.81	16.85	234.95
2172.90	0.96	282.64	2172.80	13.21	-9.56	-14.21	0.33	17.13	236.06
2198.78	0.91	278.37	2198.67	13.63	-9.49	-14.62	0.32	17.43	237.03
2224.17	0.82	284.86	2224.06	14.02	-9.41	-15.00	0.53	17.71	237.90
2245.88	0.79	285.84	2245.77	14.32	-9.33	-15.29	0.14	17.91	238.62
2271.85	0.93	287.03	2271.73	14.70	-9.22	-15.67	0.53	18.18	239.53
2297.12	0.95	289.10	2297.00	15.11	-9.09	-16.06	0.15	18.46	240.50
2322.98	1.05	284.42	2322.86	15.55	-8.96	-16.50	0.50	18.77	241.49
2348.92	0.96	278.48	2348.80	16.00	-8.87	-16.94	0.55	19.12	242.37
2374.07	0.93	288.37	2373.94	16.41	-8.77	-17.34	0.65	19.44	243.17

MD ft	INC deg	AZIM deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft	CLOSURE DISTANCE ft	CLOSURE DIRECTION deg
2395.87	0.89	285.14	2395.73	16.75	-8.67	-17.67	0.30	19.69	243.86
2421.70	0.95	290.60	2421.56	17.16	-8.55	-18.07	0.42	19.99	244.69
2446.84	0.99	287.14	2446.70	17.57	-8.41	-18.47	0.28	20.30	245.53
2472.77	1.20	283.33	2472.63	18.06	-8.28	-18.95	0.85	20.68	246.41
2498.71	1.02	284.83	2498.56	18.56	-8.16	-19.44	0.73	21.08	247.24
2523.81	1.01	281.70	2523.66	19.00	-8.05	-19.87	0.22	21.44	247.93
2549.76	1.03	281.29	2549.60	19.46	-7.96	-20.32	0.10	21.83	248.60
2571.41	1.00	284.68	2571.25	19.84	-7.88	-20.70	0.31	22.15	249.17
2596.52	0.99	289.03	2596.35	20.27	-7.75	-21.12	0.30	22.49	249.85
2622.43	1.14	289.29	2622.26	20.73	-7.59	-21.57	0.56	22.87	250.61
2648.20	1.27	280.10	2648.02	21.27	-7.46	-22.09	0.92	23.32	251.35
2673.26	0.86	294.12	2673.08	21.72	-7.33	-22.54	1.96	23.70	251.98
2699.02	0.78	295.08	2698.84	22.07	-7.18	-22.87	0.30	23.97	252.58
2724.79	0.64	306.53	2724.61	22.36	-7.02	-23.15	0.77	24.19	253.13
2745.71	0.77	306.43	2745.53	22.58	-6.87	-23.36	0.60	24.34	253.62
2771.71	0.77	319.36	2771.52	22.86	-6.63	-23.61	0.67	24.52	254.31
2796.37	0.74	321.78	2796.18	23.09	-6.38	-23.82	0.18	24.66	255.00
2821.84	0.85	315.57	2821.64	23.34	-6.12	-24.05	0.56	24.82	255.73
2847.23	0.83	309.88	2847.03	23.64	-5.86	-24.32	0.34	25.02	256.45
2872.02	0.81	311.37	2871.82	23.93	-5.63	-24.59	0.12	25.23	257.10
2897.47	0.70	311.86	2897.27	24.20	-5.41	-24.84	0.43	25.42	257.71
2922.81	0.73	318.07	2922.61	24.44	-5.19	-25.06	0.33	25.59	258.30
2947.53	0.73	322.85	2947.33	24.67	-4.95	-25.26	0.25	25.74	258.92
2972.82	0.77	323.99	2972.62	24.89	-4.68	-25.46	0.16	25.89	259.59
2998.19	0.79	324.32	2997.99	25.12	-4.40	-25.66	0.07	26.04	260.27
3022.71	0.75	315.91	3022.50	25.35	-4.15	-25.87	0.49	26.20	260.89
3047.91	0.67	322.55	3047.70	25.57	-3.91	-26.08	0.45	26.37	261.46
3072.99	0.64	310.62	3072.77	25.79	-3.71	-26.27	0.55	26.53	261.97
3097.50	0.54	307.91	3097.29	26.00	-3.55	-26.46	0.42	26.70	262.36
3122.54	0.47	310.24	3122.32	26.18	-3.41	-26.64	0.27	26.85	262.71
3147.70	0.42	302.43	3147.48	26.35	-3.29	-26.79	0.33	26.99	262.99
3172.12	0.33	300.74	3171.90	26.49	-3.21	-26.93	0.37	27.12	263.20

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DISTANCE	CLOSURE DIRECTION
ft	deg	deg	ft	ft	ft	ft	°/100ft	ft	deg
3197.11	0.31	299.05	3196.89	26.62	-3.14	-27.05	0.09	27.23	263.38
3222.13	0.22	296.83	3221.92	26.72	-3.09	-27.15	0.34	27.33	263.52
3246.36	0.21	310.46	3246.15	26.80	-3.04	-27.23	0.22	27.40	263.64
3271.93	0.38	280.02	3271.71	26.93	-2.99	-27.35	0.89	27.51	263.76
3297.51	0.22	305.88	3297.29	27.06	-2.95	-27.47	0.80	27.63	263.88
3322.50	0.44	265.35	3322.28	27.19	-2.93	-27.61	1.24	27.76	263.95
3348.07	0.22	272.82	3347.85	27.34	-2.93	-27.75	0.87	27.91	263.97
3373.73	0.30	289.63	3373.51	27.45	-2.91	-27.87	0.42	28.02	264.05
3398.72	0.32	281.19	3398.50	27.59	-2.87	-28.00	0.20	28.15	264.15
3424.23	0.18	267.43	3424.01	27.70	-2.86	-28.11	0.59	28.26	264.19
3449.76	0.19	279.89	3449.54	27.78	-2.85	-28.19	0.16	28.34	264.22
3474.63	0.13	273.44	3474.41	27.85	-2.84	-28.26	0.24	28.41	264.25
3495.95	0.18	280.86	3495.73	27.91	-2.84	-28.32	0.21	28.46	264.28
3521.44	0.22	305.27	3521.22	27.99	-2.80	-28.40	0.38	28.54	264.37
3546.43	0.21	303.44	3546.20	28.08	-2.75	-28.48	0.06	28.61	264.49
3573.00	0.21	307.03	3572.78	28.16	-2.69	-28.56	0.05	28.68	264.62
3599.66	0.22	294.21	3599.44	28.25	-2.64	-28.64	0.19	28.76	264.73
3621.46	0.27	303.22	3621.24	28.34	-2.59	-28.72	0.28	28.84	264.84
3648.13	0.18	297.03	3647.91	28.43	-2.54	-28.81	0.36	28.93	264.96
3674.07	0.37	299.82	3673.85	28.55	-2.48	-28.92	0.76	29.03	265.10
3695.99	0.34	308.52	3695.76	28.67	-2.40	-29.04	0.28	29.14	265.27
3722.15	0.31	308.56	3721.93	28.79	-2.31	-29.15	0.14	29.24	265.47
3747.69	0.33	309.55	3747.46	28.91	-2.22	-29.26	0.11	29.35	265.66
3773.80	0.24	275.05	3773.58	29.03	-2.17	-29.37	0.73	29.45	265.78
3795.73	0.30	319.33	3795.51	29.11	-2.12	-29.46	0.95	29.53	265.88
3821.24	0.26	307.01	3821.01	29.21	-2.04	-29.55	0.28	29.62	266.05
3847.34	0.21	280.76	3847.12	29.31	-1.99	-29.64	0.45	29.71	266.15
3873.44	0.22	306.84	3873.21	29.40	-1.95	-29.73	0.37	29.79	266.24
3899.06	0.05	233.86	3898.83	29.44	-1.93	-29.77	0.81	29.83	266.29
3920.72	0.26	269.02	3920.49	29.50	-1.94	-29.83	1.03	29.89	266.28
3947.04	0.33	281.56	3946.81	29.64	-1.92	-29.96	0.37	30.02	266.33
3972.52	0.24	281.30	3972.29	29.76	-1.90	-30.09	0.37	30.15	266.39

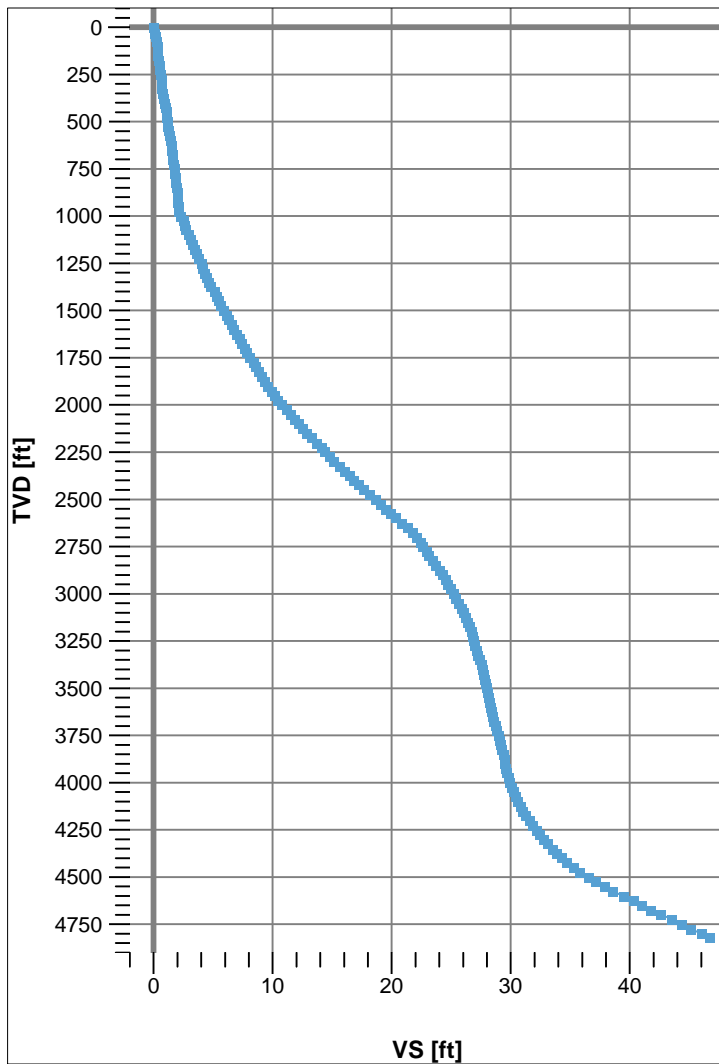
MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DISTANCE	CLOSURE DIRECTION
ft	deg	deg	ft	ft	ft	ft	°/100ft	ft	deg
3998.58	0.28	266.70	3998.35	29.88	-1.89	-30.20	0.30	30.26	266.42
4024.76	0.32	260.96	4024.54	30.01	-1.91	-30.34	0.18	30.40	266.40
4045.95	0.43	267.38	4045.72	30.15	-1.92	-30.48	0.57	30.54	266.40
4072.25	0.39	293.80	4072.02	30.33	-1.89	-30.66	0.73	30.72	266.48
4097.72	0.49	282.60	4097.49	30.52	-1.83	-30.85	0.51	30.90	266.61
4123.93	0.50	290.77	4123.70	30.74	-1.76	-31.06	0.27	31.11	266.75
4149.99	0.60	288.13	4149.76	30.99	-1.68	-31.30	0.41	31.34	266.93
4171.22	0.70	296.18	4170.99	31.22	-1.59	-31.52	0.61	31.56	267.11
4197.51	0.56	300.30	4197.28	31.48	-1.45	-31.77	0.53	31.81	267.38
4223.64	0.73	294.80	4223.40	31.76	-1.32	-32.04	0.68	32.06	267.64
4249.19	0.77	292.91	4248.95	32.07	-1.18	-32.34	0.18	32.36	267.90
4271.11	0.77	289.82	4270.87	32.36	-1.08	-32.62	0.19	32.63	268.11
4296.64	0.90	299.00	4296.40	32.71	-0.92	-32.95	0.71	32.96	268.40
4322.73	0.83	300.98	4322.49	33.07	-0.73	-33.29	0.28	33.30	268.75
4348.94	0.89	302.09	4348.69	33.42	-0.52	-33.63	0.25	33.63	269.11
4374.30	1.10	295.18	4374.05	33.83	-0.31	-34.02	0.96	34.02	269.48
4396.18	1.05	295.10	4395.93	34.21	-0.14	-34.39	0.25	34.39	269.77
4421.47	1.20	298.90	4421.21	34.67	0.09	-34.83	0.68	34.83	270.15
4448.96	1.32	291.36	4448.70	35.25	0.35	-35.38	0.74	35.38	270.56
4470.97	1.41	292.38	4470.70	35.75	0.54	-35.87	0.42	35.87	270.86
4499.44	1.62	293.65	4499.16	36.47	0.84	-36.56	0.72	36.57	271.31
4521.53	1.62	298.08	4521.24	37.05	1.11	-37.12	0.57	37.14	271.71
4549.66	1.80	290.68	4549.36	37.84	1.45	-37.88	1.01	37.91	272.19
4571.73	1.80	293.79	4571.42	38.51	1.71	-38.52	0.44	38.56	272.55
4599.66	2.13	295.82	4599.33	39.41	2.12	-39.39	1.20	39.45	273.07
4624.15	1.88	291.22	4623.80	40.22	2.46	-40.17	1.21	40.25	273.50
4646.76	1.81	296.77	4646.40	40.91	2.75	-40.84	0.84	40.93	273.86
4673.27	1.98	292.78	4672.90	41.74	3.12	-41.64	0.81	41.75	274.29
4697.10	2.21	290.55	4696.71	42.58	3.44	-42.45	1.00	42.59	274.63
4722.99	1.93	285.81	4722.58	43.49	3.74	-43.33	1.26	43.50	274.93
4749.08	1.66	283.17	4748.66	44.30	3.94	-44.13	1.10	44.30	275.10
4773.96	2.07	279.41	4773.53	45.10	4.10	-44.92	1.71	45.10	275.21

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DISTANCE	CLOSURE DIRECTION
ft	deg	deg	ft	ft	ft	ft	°/100ft	ft	deg
4798.77	1.98	289.11	4798.32	45.97	4.31	-45.76	1.42	45.97	275.38
4819.84	1.79	286.12	4819.38	46.64	4.52	-46.42	0.99	46.64	275.56



Name : Keeper Gyro Wireline Survey: Outrun
Generated : 3/9/2015 16:51:02 Mountain Daylight Time

VS View



Plan View

