



Gyroscopic Survey Report  
for  
KPK

Well Location	WELD
Well Name	SIDNEY STREAR #1
Rig Number	KPK
Survey Date	9/9/2014
Latitude	40.1182240°N
Longitude	104.8651140°W
North Reference	True North
Grid Correction	None
Depth Reference	GL (4966.00 ft)
Calculation Method	Minimum Curvature
Section (VS) Ref	0.00N (ft), 0.00E (ft), 229.54Azim (deg)
Definitive Survey	SIDNEY STREAR #1
Operator(s)	C KIRBY

**Well Notes**

05-123-07883

# Survey Report

**Well Name:** SIDNEY STREAR #1  
**Survey:** SIDNEY STREAR #1  
**Survey Date:** 9/9/2014

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
86.11	0.53	89.93	86.11	-0.30	0.00	0.40	0.62	0.40	89.93
109.72	0.50	222.43	109.72	-0.29	-0.08	0.44	4.01	0.45	99.75
136.35	0.53	234.30	136.35	-0.05	-0.23	0.26	0.41	0.35	131.74
159.15	0.52	250.62	159.14	0.15	-0.33	0.08	0.65	0.34	166.47
185.60	0.48	253.77	185.60	0.37	-0.40	-0.14	0.18	0.42	199.19
208.39	0.50	253.92	208.38	0.54	-0.45	-0.33	0.09	0.56	215.65
235.65	0.48	254.08	235.64	0.75	-0.52	-0.55	0.06	0.75	226.69
257.69	0.43	253.05	257.68	0.91	-0.57	-0.72	0.23	0.91	231.67
284.81	0.43	248.93	284.80	1.10	-0.63	-0.91	0.11	1.11	235.16
311.35	0.51	245.70	311.34	1.31	-0.72	-1.11	0.31	1.32	237.13
334.13	0.42	238.91	334.12	1.49	-0.80	-1.28	0.46	1.51	237.81
361.41	0.44	230.71	361.40	1.69	-0.92	-1.44	0.23	1.71	237.44
383.48	0.50	229.51	383.47	1.87	-1.04	-1.58	0.31	1.89	236.74
410.75	0.47	233.13	410.74	2.11	-1.18	-1.76	0.16	2.12	236.14
433.51	0.49	226.05	433.50	2.30	-1.31	-1.91	0.27	2.31	235.60
459.92	0.49	227.79	459.91	2.52	-1.46	-2.07	0.06	2.53	234.83
482.65	0.53	221.35	482.64	2.72	-1.60	-2.21	0.30	2.73	234.07
508.99	0.48	225.62	508.97	2.95	-1.77	-2.37	0.23	2.96	233.24
536.25	0.51	220.88	536.23	3.19	-1.94	-2.53	0.19	3.19	232.50
559.24	0.49	226.04	559.22	3.38	-2.09	-2.67	0.22	3.39	231.97
584.58	0.34	231.51	584.56	3.57	-2.21	-2.80	0.59	3.57	231.78
611.36	0.17	227.30	611.34	3.69	-2.29	-2.90	0.65	3.69	231.73
633.09	0.29	236.27	633.07	3.77	-2.34	-2.97	0.55	3.78	231.75
659.74	0.24	240.18	659.72	3.89	-2.40	-3.07	0.19	3.90	231.95
686.51	0.23	250.14	686.49	4.00	-2.45	-3.17	0.15	4.00	232.31
708.14	0.30	210.47	708.12	4.10	-2.51	-3.24	0.90	4.10	232.20
734.97	0.25	227.24	734.95	4.22	-2.61	-3.32	0.36	4.22	231.77
761.51	0.16	230.20	761.49	4.32	-2.68	-3.39	0.33	4.32	231.70
783.07	0.23	234.04	783.05	4.39	-2.72	-3.45	0.32	4.39	231.71
809.76	0.40	257.96	809.74	4.53	-2.77	-3.58	0.80	4.53	232.27
836.39	0.36	248.72	836.37	4.69	-2.82	-3.75	0.28	4.70	233.05
861.98	0.26	242.46	861.96	4.82	-2.88	-3.88	0.42	4.83	233.42
884.45	0.29	225.34	884.42	4.93	-2.94	-3.97	0.39	4.94	233.42
911.06	0.52	261.47	911.04	5.10	-3.01	-4.14	1.26	5.11	233.96
936.85	0.49	259.01	936.82	5.29	-3.05	-4.36	0.17	5.32	235.04

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<b>Survey Date:</b>		9/9/2014							
MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft	Closure Distance ft	Closure Direction deg
959.04	0.42	258.03	959.02	5.45	-3.08	-4.53	0.29	5.48	235.77
984.84	0.53	251.84	984.82	5.64	-3.14	-4.74	0.48	5.68	236.47
1011.34	0.57	254.80	1011.32	5.87	-3.21	-4.98	0.17	5.93	237.18
1033.51	0.56	253.37	1033.48	6.07	-3.27	-5.19	0.06	6.14	237.78
1059.22	0.59	256.35	1059.19	6.31	-3.34	-5.44	0.15	6.38	238.46
1085.66	0.64	251.64	1085.63	6.57	-3.42	-5.71	0.27	6.66	239.11
1111.99	0.59	257.58	1111.96	6.82	-3.49	-5.99	0.31	6.93	239.73
1133.51	0.71	259.50	1133.47	7.03	-3.54	-6.22	0.56	7.16	240.36
1159.85	0.66	259.99	1159.82	7.31	-3.60	-6.53	0.17	7.46	241.16
1185.32	0.65	267.19	1185.29	7.55	-3.63	-6.82	0.33	7.73	241.99
1211.63	0.69	278.33	1211.59	7.77	-3.61	-7.13	0.52	7.99	243.12
1234.01	0.75	279.31	1233.97	7.95	-3.57	-7.41	0.26	8.22	244.27
1259.56	0.75	278.07	1259.52	8.17	-3.52	-7.74	0.06	8.50	245.54
1285.78	0.76	279.15	1285.73	8.40	-3.47	-8.08	0.06	8.79	246.77
1307.91	0.72	283.86	1307.86	8.58	-3.41	-8.36	0.33	9.03	247.79
1333.44	0.76	285.48	1333.39	8.76	-3.33	-8.68	0.20	9.30	249.01
1359.78	0.63	287.19	1359.73	8.94	-3.24	-8.99	0.49	9.55	250.18
1386.03	0.63	291.03	1385.98	9.09	-3.14	-9.26	0.16	9.78	251.24
1411.68	0.62	289.86	1411.63	9.22	-3.05	-9.52	0.07	10.00	252.26
1433.76	0.70	290.06	1433.70	9.35	-2.96	-9.76	0.40	10.20	253.13
1460.27	0.70	289.83	1460.22	9.51	-2.85	-10.07	0.01	10.46	254.20
1485.46	0.70	290.35	1485.40	9.66	-2.74	-10.36	0.04	10.71	255.17
1510.84	0.62	298.10	1510.78	9.79	-2.62	-10.62	0.47	10.94	256.12
1536.02	0.68	295.61	1535.96	9.90	-2.50	-10.88	0.26	11.16	257.08
1557.91	0.70	292.02	1557.85	10.01	-2.39	-11.12	0.23	11.37	257.87
1583.90	0.66	295.27	1583.83	10.15	-2.27	-11.40	0.23	11.62	258.76
1609.49	0.74	289.07	1609.43	10.29	-2.15	-11.69	0.43	11.89	259.58
1635.96	0.85	285.10	1635.89	10.49	-2.04	-12.04	0.47	12.21	260.37
1657.26	0.69	294.03	1657.19	10.63	-1.95	-12.31	0.92	12.46	261.00
1683.45	0.77	290.73	1683.37	10.78	-1.82	-12.62	0.32	12.75	261.78
1709.77	0.76	289.92	1709.69	10.96	-1.70	-12.95	0.04	13.06	262.52
1735.38	0.79	289.52	1735.30	11.13	-1.58	-13.28	0.11	13.37	263.20
1761.58	0.82	289.12	1761.49	11.31	-1.46	-13.62	0.13	13.70	263.88
1783.52	0.85	293.15	1783.44	11.47	-1.35	-13.92	0.29	13.99	264.48
1809.09	0.86	300.25	1809.00	11.61	-1.18	-14.26	0.42	14.31	265.29
1835.22	0.89	302.63	1835.14	11.74	-0.97	-14.60	0.19	14.63	266.21

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MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft	Closure Distance ft	Closure Direction deg
1861.43	0.86	306.61	1861.34	11.84	-0.74	-14.93	0.27	14.95	267.16
1886.93	0.93	308.22	1886.83	11.92	-0.50	-15.25	0.32	15.25	268.13
1908.85	0.90	308.52	1908.75	11.99	-0.28	-15.52	0.14	15.52	268.97
1934.08	0.88	313.14	1933.98	12.05	-0.02	-15.82	0.30	15.82	269.91
1960.12	0.86	317.70	1960.02	12.08	0.26	-16.10	0.27	16.10	270.92
1986.13	0.76	323.63	1986.02	12.07	0.54	-16.33	0.50	16.34	271.90
2011.77	0.69	327.34	2011.67	12.04	0.81	-16.52	0.35	16.54	272.81
2033.54	0.74	330.95	2033.42	12.00	1.04	-16.65	0.33	16.69	273.58
2059.55	0.59	349.85	2059.44	11.89	1.32	-16.76	1.01	16.81	274.51
2084.68	0.59	341.71	2084.56	11.78	1.57	-16.82	0.33	16.90	275.34
2110.55	0.59	341.39	2110.43	11.68	1.83	-16.91	0.03	17.01	276.17
2133.19	0.56	328.67	2133.07	11.62	2.03	-17.00	0.59	17.12	276.81
2161.29	0.62	343.85	2161.17	11.53	2.29	-17.12	0.60	17.27	277.64
2185.93	0.62	338.98	2185.81	11.43	2.55	-17.20	0.21	17.39	278.42
2211.22	0.42	329.04	2211.10	11.37	2.76	-17.30	0.85	17.52	279.05
2236.25	0.34	343.19	2236.12	11.33	2.91	-17.37	0.50	17.61	279.50
2258.11	0.33	27.18	2257.99	11.24	3.03	-17.36	1.16	17.62	279.89
2285.51	0.31	354.72	2285.39	11.13	3.17	-17.33	0.67	17.62	280.37
2307.59	0.18	336.71	2307.46	11.08	3.26	-17.35	0.67	17.65	280.66
2334.99	0.05	328.13	2334.87	11.07	3.31	-17.37	0.50	17.68	280.80
2357.16	0.22	99.38	2357.03	11.04	3.32	-17.33	1.13	17.65	280.83
2384.50	0.29	107.41	2384.37	10.97	3.29	-17.22	0.32	17.53	280.80
2411.37	0.49	110.05	2411.25	10.87	3.23	-17.04	0.73	17.35	280.72
2433.19	0.48	115.06	2433.07	10.79	3.15	-16.87	0.20	17.16	280.59
2460.21	0.50	99.47	2460.09	10.67	3.09	-16.65	0.50	16.94	280.50
2482.07	0.51	113.62	2481.95	10.56	3.03	-16.47	0.57	16.74	280.43
2509.16	0.42	97.87	2509.04	10.44	2.97	-16.26	0.58	16.53	280.35
2536.11	0.66	114.19	2535.98	10.31	2.89	-16.02	1.05	16.28	280.24
2557.86	0.49	110.53	2557.73	10.21	2.81	-15.81	0.80	16.06	280.07
2584.66	0.63	98.07	2584.53	10.06	2.75	-15.56	0.68	15.80	280.01
2611.68	0.52	107.17	2611.55	9.89	2.69	-15.30	0.53	15.53	279.97
2633.89	0.65	110.37	2633.75	9.78	2.62	-15.08	0.62	15.31	279.84
2661.29	0.76	101.64	2661.15	9.59	2.53	-14.76	0.56	14.98	279.71
2684.51	0.80	87.59	2684.37	9.37	2.50	-14.45	0.83	14.66	279.82
2711.29	0.65	98.13	2711.15	9.12	2.49	-14.11	0.75	14.33	280.00
2734.26	0.68	130.84	2734.12	9.02	2.38	-13.88	1.63	14.08	279.73

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MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft	Closure Distance ft	Closure Direction deg
2760.96	0.66	115.54	2760.82	8.93	2.21	-13.62	0.67	13.80	279.22
2783.91	0.47	122.75	2783.77	8.85	2.10	-13.42	0.88	13.59	278.90
2809.73	0.61	124.97	2809.58	8.78	1.97	-13.22	0.54	13.36	278.46
2832.60	0.78	133.82	2832.46	8.74	1.79	-13.01	0.86	13.13	277.83
2859.97	0.56	126.39	2859.82	8.69	1.58	-12.77	0.84	12.86	277.05
2885.77	0.61	121.10	2885.62	8.61	1.43	-12.54	0.29	12.63	276.52
2908.65	0.78	130.68	2908.50	8.55	1.27	-12.32	0.89	12.39	275.88
2935.28	0.66	120.70	2935.13	8.47	1.07	-12.05	0.65	12.10	275.08
2958.11	0.27	102.99	2957.96	8.40	0.99	-11.89	1.81	11.93	274.77
2984.72	0.47	152.93	2984.57	8.39	0.88	-11.78	1.35	11.81	274.28
3011.93	0.55	143.92	3011.77	8.42	0.68	-11.65	0.43	11.67	273.33
3035.55	0.16	157.50	3035.39	8.44	0.56	-11.57	1.68	11.58	272.75
3061.24	0.30	236.52	3061.09	8.52	0.49	-11.61	1.21	11.62	272.40
3083.76	0.46	206.20	3083.60	8.66	0.37	-11.70	1.13	11.71	271.82
3111.23	0.29	216.14	3111.07	8.83	0.22	-11.79	0.67	11.79	271.05
3133.29	0.25	219.24	3133.13	8.93	0.13	-11.86	0.22	11.86	270.65
3160.38	0.74	205.98	3160.22	9.15	-0.07	-11.97	1.87	11.97	269.67
3186.16	0.99	249.54	3185.99	9.51	-0.30	-12.25	2.64	12.25	268.62
3208.21	0.56	270.88	3208.04	9.77	-0.36	-12.54	2.31	12.54	268.35
3234.59	0.57	207.28	3234.43	9.99	-0.47	-12.72	2.25	12.73	267.86
3261.69	0.95	218.24	3261.52	10.34	-0.77	-12.93	1.51	12.95	266.59
3284.52	0.51	224.73	3284.36	10.62	-0.99	-13.11	1.97	13.15	265.67
3310.43	0.44	265.80	3310.26	10.82	-1.08	-13.30	1.31	13.34	265.35
3336.66	0.90	254.38	3336.49	11.09	-1.14	-13.59	1.82	13.64	265.19
3358.33	1.03	238.05	3358.16	11.43	-1.29	-13.92	1.39	13.98	264.69
3385.10	0.92	212.89	3384.92	11.87	-1.60	-14.24	1.63	14.33	263.59
3411.75	0.47	215.05	3411.57	12.18	-1.87	-14.42	1.69	14.54	262.62
3433.52	0.69	250.41	3433.34	12.39	-1.98	-14.59	1.88	14.73	262.26
3460.18	0.73	270.17	3460.00	12.67	-2.04	-14.91	0.92	15.05	262.22
3486.21	0.82	248.41	3486.03	12.97	-2.10	-15.25	1.17	15.40	262.14
3508.59	0.75	223.35	3508.40	13.27	-2.27	-15.50	1.55	15.67	261.67
3535.22	1.07	234.39	3535.03	13.69	-2.54	-15.82	1.37	16.03	260.87
3561.23	0.86	265.52	3561.04	14.09	-2.70	-16.22	2.14	16.44	260.55
3583.60	0.33	321.02	3583.40	14.23	-2.66	-16.43	3.26	16.64	260.79
3609.59	0.44	215.41	3609.39	14.32	-2.69	-16.53	2.36	16.75	260.77
3636.17	0.90	231.67	3635.98	14.63	-2.90	-16.75	1.87	17.00	260.18

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MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft	Closure Distance ft	Closure Direction deg
3658.38	0.38	296.76	3658.19	14.83	-2.97	-16.95	3.68	17.21	260.05
3684.49	0.71	259.90	3684.29	15.00	-2.96	-17.19	1.80	17.44	260.22
3711.02	0.54	248.55	3710.82	15.26	-3.04	-17.47	0.79	17.73	260.13
3734.14	0.45	248.92	3733.94	15.45	-3.11	-17.66	0.40	17.93	260.01
3759.23	0.77	262.90	3759.03	15.69	-3.17	-17.92	1.41	18.19	259.97
3785.87	0.37	227.61	3785.66	15.92	-3.25	-18.16	1.94	18.45	259.86
3808.13	0.47	232.38	3807.92	16.09	-3.35	-18.28	0.49	18.59	259.61
3833.93	0.57	240.83	3833.72	16.32	-3.48	-18.48	0.49	18.80	259.34
3860.55	0.46	248.32	3860.34	16.55	-3.58	-18.70	0.50	19.04	259.15
3882.05	0.71	238.40	3881.84	16.76	-3.69	-18.89	1.25	19.24	258.96
3908.58	0.50	210.87	3908.37	17.03	-3.87	-19.09	1.33	19.47	258.54
3934.96	0.53	218.97	3934.75	17.26	-4.06	-19.22	0.31	19.65	258.07
3960.79	0.60	213.65	3960.58	17.51	-4.27	-19.37	0.33	19.84	257.57
3982.79	0.62	213.28	3982.57	17.74	-4.46	-19.50	0.09	20.01	257.11
4007.80	0.63	202.88	4007.59	17.99	-4.70	-19.63	0.46	20.19	256.52
4033.86	0.62	200.81	4033.64	18.24	-4.97	-19.74	0.10	20.35	255.87
4060.21	0.72	192.61	4059.99	18.50	-5.27	-19.82	0.51	20.51	255.12
4086.53	0.57	198.74	4086.31	18.74	-5.55	-19.90	0.62	20.66	254.42
4109.03	0.49	194.69	4108.81	18.92	-5.75	-19.96	0.40	20.77	253.93
4136.20	0.62	191.97	4135.97	19.13	-6.01	-20.02	0.47	20.90	253.30
4158.37	0.65	193.19	4158.15	19.33	-6.24	-20.08	0.17	21.02	252.72
4185.49	0.64	197.32	4185.27	19.58	-6.54	-20.16	0.18	21.19	252.03
4211.65	0.58	210.12	4211.43	19.83	-6.79	-20.27	0.56	21.37	251.47
4234.29	0.72	203.46	4234.06	20.06	-7.02	-20.38	0.71	21.56	250.98
4261.22	0.82	189.54	4260.99	20.36	-7.37	-20.48	0.77	21.77	250.21
4283.01	0.82	183.12	4282.78	20.59	-7.68	-20.51	0.42	21.90	249.48
4309.96	0.97	180.34	4309.72	20.87	-8.10	-20.53	0.58	22.07	248.47
4336.75	0.97	168.17	4336.51	21.13	-8.55	-20.48	0.77	22.19	247.35
4358.53	1.07	167.13	4358.28	21.31	-8.92	-20.40	0.48	22.26	246.37
4385.42	1.21	170.39	4385.17	21.57	-9.45	-20.29	0.57	22.39	245.04
4407.15	1.17	163.74	4406.90	21.78	-9.89	-20.19	0.66	22.48	243.92
4433.88	1.25	153.04	4433.62	21.96	-10.41	-19.99	0.90	22.53	242.49
4460.76	1.18	155.20	4460.49	22.10	-10.92	-19.74	0.33	22.56	241.05
4486.88	1.15	152.75	4486.61	22.23	-11.39	-19.51	0.22	22.59	239.71
4509.29	1.20	152.45	4509.01	22.34	-11.80	-19.29	0.24	22.62	238.55
4535.92	1.25	151.37	4535.63	22.46	-12.31	-19.03	0.22	22.66	237.11



Well Name: SIDNEY STREAR #1

Survey: SIDNEY STREAR #1

Survey Date: 9/9/2014

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft	Closure Distance ft	Closure Direction deg
4561.91	1.21	152.67	4561.62	22.58	-12.80	-18.76	0.21	22.71	235.70
4583.50	1.21	155.45	4583.21	22.69	-13.21	-18.56	0.27	22.78	234.57
4610.06	1.17	153.44	4609.76	22.84	-13.70	-18.33	0.21	22.88	233.22
4636.99	0.85	153.02	4636.69	22.95	-14.13	-18.11	1.18	22.97	232.05
4658.14	0.83	158.12	4657.83	23.03	-14.41	-17.99	0.37	23.05	231.30
4686.56	0.87	173.97	4686.25	23.22	-14.81	-17.89	0.84	23.22	230.37
4711.65	0.99	184.96	4711.34	23.48	-15.22	-17.89	0.84	23.48	229.61
4713.95	0.86	175.09	4713.64	23.51	-15.25	-17.89	8.84	23.51	229.54