



K.P. KAUFFMAN

SURVEY REPORT

CHALLENGER 1-32

9/19/2018



The **Ultimate Partner** In Wellbore Placement

CUSTOMER
PROJECT
FIELD

K.P. Kauffman
Challener 1-32
Wattenberg

SDI JOB NO.
SDI DISTRICT
SDI KIT/UNIT

OP.013185
Casper

SITE INFORMATION

Site Name **Challener 1-32**
Lat/Long **40.37589° N, 104.92373° W**
Northing
Easting

Section **NWNW 29**
Township **5N**
Range **67W**

MAP INFORMATION

North Reference **True North**
Grid Correction
System **US State Plane 1983**
Datum **North American Datum 1983 (GRS 1980)**
Map Zone **Colorado North: 0501**



WELL INFORMATION

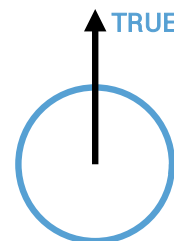
Lat/Long **40.37589° N, 104.92373° W**
Northing
Easting
UWI **05-123-11703 UWBI 05-123-11703**

DEPTH AND ELEVATION REFERENCE

Ground Level **4793 ft above Mean Sea Level**
Reference Datum **GL**
Reference Height **0 ft above G.L.**
Reference Elevation **4793 ft**

VERTICAL SECTION REFERENCE

+N/-S **0 ft**
+E/-W **0 ft**
Proposal Direction **290.64°**
Calculation Method **Minimum Curvature**



LOCAL GRAVITY REFERENCE INFORMATION

Local Gravity **999.083 mG [computed]**

WELL NOTES

Keeper gyro wireline survey in 2 3/8" tubing. All depths reference ground level

OPERATORS

P Holbrook

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 DIST ft	CLOSURE DIR deg	COURSE LENGTH ft
0.00	0.00	0.00	0.00	0.00	0.00	0.00	Invalid	0.00	0.00	Invalid
25.00	0.12	180.66	25.00	-0.01	-0.03	0.00	0.46	0.03	180.66	25.00
50.00	0.23	180.66	50.00	-0.03	-0.10	0.00	0.46	0.10	180.66	25.00
75.00	0.35	180.66	75.00	-0.08	-0.23	0.00	0.46	0.23	180.66	25.00
100.00	0.46	180.66	100.00	-0.14	-0.40	0.00	0.46	0.40	180.66	25.00
125.00	0.45	188.18	125.00	-0.19	-0.60	-0.02	0.25	0.60	181.88	25.00
150.00	0.44	196.06	150.00	-0.22	-0.79	-0.06	0.25	0.79	184.36	25.00
175.00	0.44	204.01	175.00	-0.22	-0.97	-0.13	0.25	0.98	187.41	25.00
200.00	0.45	211.74	200.00	-0.20	-1.15	-0.22	0.25	1.17	190.78	25.00
225.00	0.45	205.98	225.00	-0.17	-1.32	-0.31	0.18	1.36	193.38	25.00
250.00	0.46	200.28	249.99	-0.16	-1.50	-0.39	0.18	1.55	194.62	25.00
275.00	0.47	194.75	274.99	-0.17	-1.70	-0.45	0.18	1.75	194.95	25.00
300.00	0.48	189.48	299.99	-0.20	-1.90	-0.50	0.18	1.96	194.65	25.00
325.00	0.44	196.83	324.99	-0.23	-2.09	-0.54	0.29	2.16	194.50	25.00
350.00	0.41	205.49	349.99	-0.23	-2.27	-0.61	0.29	2.35	195.01	25.00
375.00	0.39	215.33	374.99	-0.20	-2.42	-0.70	0.29	2.51	196.05	25.00
400.00	0.38	225.95	399.99	-0.14	-2.54	-0.80	0.29	2.67	197.54	25.00
425.00	0.43	224.57	424.99	-0.07	-2.67	-0.93	0.20	2.83	199.21	25.00
450.00	0.48	223.47	449.99	0.01	-2.81	-1.07	0.20	3.01	200.79	25.00
475.00	0.53	222.58	474.99	0.09	-2.97	-1.22	0.20	3.21	202.28	25.00
500.00	0.58	221.84	499.99	0.18	-3.15	-1.38	0.20	3.44	203.65	25.00
525.00	0.55	223.26	524.99	0.27	-3.33	-1.55	0.13	3.67	204.90	25.00
550.00	0.52	224.84	549.98	0.37	-3.50	-1.71	0.13	3.90	206.03	25.00
575.00	0.49	226.60	574.98	0.46	-3.66	-1.87	0.13	4.11	207.07	25.00
600.00	0.47	228.56	599.98	0.55	-3.80	-2.02	0.13	4.30	208.04	25.00
625.00	0.48	229.16	624.98	0.65	-3.93	-2.18	0.06	4.50	208.98	25.00
650.00	0.49	229.74	649.98	0.76	-4.07	-2.34	0.06	4.70	209.89	25.00
675.00	0.51	230.27	674.98	0.86	-4.21	-2.51	0.06	4.90	210.77	25.00
700.00	0.52	230.78	699.98	0.97	-4.36	-2.68	0.06	5.12	211.62	25.00
725.00	0.50	229.32	724.98	1.08	-4.50	-2.85	0.09	5.33	212.38	25.00
750.00	0.48	227.74	749.98	1.19	-4.64	-3.02	0.09	5.54	213.00	25.00
775.00	0.47	226.04	774.98	1.28	-4.78	-3.17	0.09	5.74	213.50	25.00

MD ft	INC deg	AZIM deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft	CLOSURE DIST ft	CLOSURE DIR deg	COURSE LENGTH ft
800.00	0.45	224.19	799.97	1.36	-4.93	-3.31	0.09	5.93	213.89	25.00
825.00	0.46	223.24	824.97	1.44	-5.07	-3.45	0.07	6.13	214.21	25.00
850.00	0.48	222.35	849.97	1.52	-5.22	-3.59	0.07	6.33	214.49	25.00
875.00	0.50	221.52	874.97	1.59	-5.38	-3.73	0.07	6.54	214.73	25.00
900.00	0.51	220.74	899.97	1.67	-5.54	-3.87	0.07	6.76	214.93	25.00
925.00	0.51	224.47	924.97	1.75	-5.71	-4.02	0.13	6.98	215.18	25.00
950.00	0.51	228.18	949.97	1.85	-5.86	-4.19	0.13	7.20	215.52	25.00
975.00	0.52	231.85	974.97	1.96	-6.01	-4.36	0.13	7.42	215.96	25.00
1000.00	0.53	235.44	999.97	2.09	-6.14	-4.54	0.13	7.64	216.48	25.00
1025.00	0.49	233.28	1024.97	2.21	-6.27	-4.72	0.15	7.85	216.98	25.00
1050.00	0.46	230.82	1049.97	2.32	-6.40	-4.89	0.15	8.05	217.36	25.00
1075.00	0.43	228.03	1074.96	2.41	-6.53	-5.04	0.15	8.24	217.65	25.00
1100.00	0.40	224.83	1099.96	2.49	-6.65	-5.17	0.15	8.42	217.84	25.00
1125.00	0.40	224.76	1124.96	2.56	-6.78	-5.29	0.03	8.60	217.98	25.00
1150.00	0.39	224.68	1149.96	2.63	-6.90	-5.41	0.03	8.77	218.11	25.00
1175.00	0.38	224.61	1174.96	2.70	-7.02	-5.53	0.03	8.93	218.23	25.00
1200.00	0.37	224.53	1199.96	2.77	-7.13	-5.64	0.03	9.10	218.35	25.00
1225.00	0.38	229.09	1224.96	2.84	-7.25	-5.76	0.13	9.26	218.50	25.00
1250.00	0.40	233.30	1249.96	2.93	-7.35	-5.90	0.13	9.43	218.73	25.00
1275.00	0.42	237.16	1274.96	3.03	-7.46	-6.04	0.13	9.60	219.03	25.00
1300.00	0.44	240.69	1299.96	3.14	-7.55	-6.20	0.13	9.77	219.41	25.00
1325.00	0.44	238.98	1324.96	3.27	-7.65	-6.37	0.05	9.96	219.79	25.00
1350.00	0.45	237.30	1349.96	3.38	-7.75	-6.54	0.05	10.14	220.14	25.00
1375.00	0.45	235.65	1374.96	3.50	-7.86	-6.70	0.05	10.33	220.44	25.00
1400.00	0.46	234.03	1399.96	3.61	-7.97	-6.86	0.05	10.52	220.71	25.00
1425.00	0.43	234.24	1424.96	3.72	-8.09	-7.02	0.11	10.71	220.95	25.00
1450.00	0.40	234.48	1449.95	3.82	-8.19	-7.16	0.11	10.88	221.17	25.00
1475.00	0.37	234.76	1474.95	3.91	-8.29	-7.30	0.11	11.05	221.37	25.00
1500.00	0.34	235.08	1499.95	4.00	-8.38	-7.43	0.11	11.20	221.56	25.00
1525.00	0.35	237.92	1524.95	4.09	-8.46	-7.56	0.08	11.34	221.76	25.00
1550.00	0.36	240.60	1549.95	4.19	-8.54	-7.69	0.08	11.49	221.99	25.00
1575.00	0.38	243.12	1574.95	4.29	-8.62	-7.83	0.08	11.65	222.26	25.00

MD ft	INC deg	AZIM deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft	CLOSURE DIST ft	CLOSURE DIR deg	COURSE LENGTH ft
1600.00	0.39	245.48	1599.95	4.41	-8.69	-7.98	0.08	11.80	222.57	25.00
1625.00	0.41	242.27	1624.95	4.53	-8.77	-8.14	0.13	11.96	222.87	25.00
1650.00	0.44	239.42	1649.95	4.65	-8.86	-8.30	0.13	12.14	223.14	25.00
1675.00	0.47	236.90	1674.95	4.77	-8.96	-8.47	0.13	12.33	223.38	25.00
1700.00	0.49	234.66	1699.95	4.89	-9.08	-8.64	0.13	12.54	223.58	25.00
1725.00	0.58	232.80	1724.95	5.02	-9.22	-8.83	0.37	12.77	223.77	25.00
1750.00	0.68	231.45	1749.95	5.16	-9.39	-9.05	0.37	13.04	223.94	25.00
1775.00	0.77	230.41	1774.94	5.32	-9.59	-9.29	0.37	13.35	224.10	25.00
1800.00	0.86	229.60	1799.94	5.49	-9.82	-9.56	0.37	13.70	224.26	25.00
1825.00	0.83	230.39	1824.94	5.67	-10.05	-9.85	0.14	14.07	224.41	25.00
1850.00	0.79	231.25	1849.94	5.85	-10.28	-10.12	0.14	14.42	224.56	25.00
1875.00	0.76	232.18	1874.93	6.02	-10.49	-10.39	0.14	14.76	224.73	25.00
1900.00	0.73	233.19	1899.93	6.20	-10.68	-10.64	0.14	15.08	224.90	25.00
1925.00	0.76	231.42	1924.93	6.37	-10.88	-10.90	0.16	15.40	225.05	25.00
1950.00	0.80	229.80	1949.93	6.54	-11.10	-11.16	0.16	15.74	225.17	25.00
1975.00	0.83	228.31	1974.93	6.70	-11.33	-11.43	0.16	16.09	225.26	25.00
2000.00	0.87	226.94	1999.92	6.87	-11.58	-11.70	0.16	16.46	225.31	25.00
2025.00	0.86	227.15	2024.92	7.04	-11.84	-11.98	0.02	16.84	225.35	25.00
2050.00	0.86	227.35	2049.92	7.21	-12.09	-12.26	0.02	17.22	225.39	25.00
2075.00	0.86	227.55	2074.91	7.38	-12.34	-12.53	0.02	17.59	225.43	25.00
2100.00	0.85	227.76	2099.91	7.55	-12.59	-12.81	0.02	17.96	225.48	25.00
2125.00	0.84	229.20	2124.91	7.72	-12.84	-13.08	0.10	18.33	225.54	25.00
2150.00	0.82	230.69	2149.91	7.90	-13.07	-13.36	0.10	18.69	225.63	25.00
2175.00	0.81	232.24	2174.90	8.08	-13.29	-13.64	0.10	19.05	225.73	25.00
2200.00	0.80	233.84	2199.90	8.27	-13.50	-13.92	0.10	19.39	225.87	25.00
2225.00	0.83	233.43	2224.90	8.46	-13.71	-14.20	0.13	19.74	226.00	25.00
2250.00	0.86	233.05	2249.90	8.66	-13.94	-14.50	0.13	20.11	226.14	25.00
2275.00	0.89	232.70	2274.89	8.86	-14.17	-14.80	0.13	20.49	226.26	25.00
2300.00	0.93	232.37	2299.89	9.07	-14.41	-15.12	0.13	20.89	226.38	25.00
2325.00	1.04	234.55	2324.89	9.30	-14.66	-15.46	0.46	21.31	226.52	25.00
2350.00	1.15	236.31	2349.88	9.58	-14.93	-15.86	0.46	21.78	226.72	25.00
2375.00	1.26	237.76	2374.88	9.89	-15.22	-16.30	0.46	22.30	226.96	25.00

MD ft	INC deg	AZIM deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS %/100ft	CLOSURE DIST ft	CLOSURE DIR deg	COURSE LENGTH ft
2400.00	1.37	238.97	2399.87	10.24	-15.52	-16.79	0.46	22.86	227.25	25.00
2425.00	1.46	241.10	2424.86	10.63	-15.83	-17.32	0.41	23.46	227.58	25.00
2450.00	1.55	242.98	2449.85	11.06	-16.13	-17.90	0.41	24.10	227.97	25.00
2475.00	1.64	244.66	2474.84	11.54	-16.44	-18.52	0.41	24.77	228.41	25.00
2500.00	1.73	246.16	2499.83	12.06	-16.74	-19.19	0.41	25.47	228.89	25.00
2525.00	1.73	248.65	2524.82	12.61	-17.03	-19.89	0.30	26.19	229.42	25.00
2550.00	1.73	251.12	2549.81	13.18	-17.29	-20.60	0.30	26.89	229.98	25.00
2575.00	1.74	253.58	2574.80	13.77	-17.52	-21.32	0.30	27.60	230.58	25.00
2600.00	1.75	256.01	2599.79	14.39	-17.72	-22.05	0.30	28.29	231.21	25.00
2625.00	1.79	256.70	2624.77	15.03	-17.91	-22.80	0.18	28.99	231.86	25.00
2650.00	1.83	257.37	2649.76	15.69	-18.08	-23.57	0.18	29.71	232.51	25.00
2675.00	1.87	258.00	2674.75	16.37	-18.26	-24.36	0.18	30.44	233.16	25.00
2700.00	1.91	258.60	2699.74	17.06	-18.42	-25.17	0.18	31.19	233.80	25.00
2725.00	1.86	258.49	2724.72	17.76	-18.59	-25.98	0.21	31.94	234.42	25.00
2750.00	1.81	258.37	2749.71	18.44	-18.75	-26.76	0.21	32.68	234.99	25.00
2775.00	1.76	258.24	2774.70	19.10	-18.90	-27.53	0.21	33.39	235.52	25.00
2800.00	1.71	258.10	2799.69	19.73	-19.06	-28.27	0.21	34.09	236.01	25.00
2825.00	1.67	258.42	2824.67	20.36	-19.21	-28.99	0.15	34.77	236.47	25.00
2850.00	1.64	258.76	2849.66	20.97	-19.35	-29.69	0.15	35.44	236.91	25.00
2875.00	1.60	259.11	2874.65	21.57	-19.49	-30.39	0.15	36.10	237.33	25.00
2900.00	1.57	259.48	2899.64	22.16	-19.62	-31.07	0.15	36.74	237.73	25.00
2925.00	1.54	264.94	2924.64	22.75	-19.71	-31.74	0.60	37.36	238.16	25.00
2950.00	1.54	270.50	2949.63	23.37	-19.73	-32.41	0.60	37.94	238.66	25.00
2975.00	1.54	276.07	2974.62	24.01	-19.70	-33.08	0.60	38.50	239.23	25.00
3000.00	1.56	281.54	2999.61	24.68	-19.59	-33.75	0.60	39.02	239.86	25.00
3025.00	1.60	286.16	3024.60	25.36	-19.43	-34.41	0.53	39.52	240.55	25.00
3050.00	1.64	290.56	3049.59	26.06	-19.20	-35.08	0.53	40.00	241.30	25.00
3075.00	1.69	294.71	3074.58	26.79	-18.92	-35.75	0.53	40.45	242.11	25.00
3100.00	1.75	298.60	3099.57	27.54	-18.59	-36.43	0.53	40.89	242.96	25.00
3125.00	1.71	303.01	3124.56	28.28	-18.20	-37.07	0.56	41.30	243.85	25.00
3150.00	1.67	307.63	3149.54	28.99	-17.78	-37.67	0.56	41.66	244.74	25.00
3175.00	1.65	312.41	3174.53	29.68	-17.31	-38.23	0.56	41.97	245.64	25.00

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DIST	CLOSURE DIR	COURSE LENGTH
ft	deg	deg	ft	ft	ft	ft	°/100ft	ft	deg	ft
3200.00	1.64	317.28	3199.52	30.33	-16.80	-38.74	0.56	42.23	246.55	25.00
3225.00	1.60	319.78	3224.51	30.96	-16.27	-39.21	0.32	42.45	247.46	25.00
3250.00	1.57	322.40	3249.50	31.55	-15.73	-39.64	0.32	42.65	248.35	25.00
3275.00	1.54	325.12	3274.50	32.12	-15.19	-40.04	0.32	42.83	249.23	25.00
3300.00	1.52	327.93	3299.49	32.66	-14.63	-40.41	0.32	42.98	250.10	25.00
3325.00	1.52	326.50	3324.48	33.19	-14.07	-40.77	0.15	43.13	250.96	25.00
3350.00	1.52	325.08	3349.47	33.74	-13.52	-41.14	0.15	43.31	251.80	25.00
3375.00	1.53	323.66	3374.46	34.29	-12.98	-41.53	0.15	43.51	252.64	25.00
3400.00	1.54	322.26	3399.45	34.86	-12.45	-41.94	0.15	43.74	253.47	25.00
3425.00	1.55	324.28	3424.44	35.42	-11.91	-42.34	0.22	43.98	254.29	25.00
3450.00	1.56	326.26	3449.43	35.98	-11.35	-42.73	0.22	44.21	255.12	25.00
3475.00	1.58	328.21	3474.42	36.53	-10.77	-43.10	0.22	44.42	255.96	25.00
3500.00	1.60	330.11	3499.41	37.08	-10.18	-43.45	0.22	44.63	256.82	25.00
3525.00	1.60	330.11	3524.40	37.62	-9.57	-43.80	0.00	44.83	257.67	25.00
3550.00	1.60	330.12	3549.39	38.15	-8.97	-44.15	0.00	45.05	258.52	25.00
3575.00	1.60	330.12	3574.38	38.69	-8.36	-44.50	0.00	45.28	259.36	25.00
3600.00	1.60	330.12	3599.37	39.23	-7.76	-44.84	0.00	45.51	260.19	25.00
3625.00	1.61	327.93	3624.36	39.78	-7.16	-45.21	0.25	45.77	261.01	25.00
3650.00	1.62	325.76	3649.35	40.35	-6.57	-45.59	0.25	46.06	261.80	25.00
3675.00	1.63	323.61	3674.34	40.94	-5.99	-46.00	0.25	46.39	262.58	25.00
3700.00	1.64	321.49	3699.33	41.54	-5.42	-46.43	0.25	46.75	263.34	25.00
3725.00	1.63	320.72	3724.32	42.16	-4.87	-46.88	0.09	47.13	264.07	25.00
3750.00	1.62	319.93	3749.31	42.77	-4.32	-47.33	0.09	47.53	264.78	25.00
3775.00	1.62	319.15	3774.30	43.39	-3.78	-47.79	0.09	47.94	265.47	25.00
3800.00	1.61	318.35	3799.29	44.01	-3.26	-48.25	0.09	48.36	266.14	25.00
3825.00	1.58	317.63	3824.28	44.63	-2.74	-48.72	0.13	48.80	266.78	25.00
3850.00	1.56	316.89	3849.28	45.24	-2.24	-49.19	0.13	49.24	267.40	25.00
3875.00	1.54	316.13	3874.27	45.85	-1.75	-49.65	0.13	49.68	267.99	25.00
3900.00	1.51	315.34	3899.26	46.45	-1.27	-50.11	0.13	50.13	268.55	25.00
3925.00	1.51	315.79	3924.25	47.05	-0.80	-50.58	0.05	50.58	269.10	25.00
3950.00	1.51	316.24	3949.24	47.65	-0.32	-51.03	0.05	51.04	269.64	25.00
3975.00	1.51	316.70	3974.23	48.24	0.15	-51.49	0.05	51.49	270.17	25.00

MD ft	INC deg	AZIM deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft	CLOSURE DIST ft	CLOSURE DIR deg	COURSE LENGTH ft
4000.00	1.51	317.15	3999.22	48.83	0.64	-51.94	0.05	51.94	270.70	25.00
4025.00	1.51	318.63	4024.21	49.42	1.12	-52.38	0.16	52.39	271.23	25.00
4050.00	1.51	320.11	4049.21	49.99	1.62	-52.81	0.16	52.83	271.76	25.00
4075.00	1.51	321.58	4074.20	50.56	2.14	-53.23	0.16	53.27	272.30	25.00
4100.00	1.52	323.05	4099.19	51.13	2.66	-53.63	0.16	53.70	272.84	25.00
4125.00	1.51	325.21	4124.18	51.68	3.19	-54.02	0.23	54.11	273.38	25.00
4150.00	1.51	327.38	4149.17	52.21	3.74	-54.38	0.23	54.51	273.93	25.00
4175.00	1.50	329.55	4174.16	52.73	4.30	-54.72	0.23	54.89	274.49	25.00
4200.00	1.50	331.73	4199.15	53.23	4.87	-55.05	0.23	55.26	275.06	25.00
4225.00	1.60	334.63	4224.14	53.73	5.47	-55.35	0.48	55.62	275.65	25.00
4250.00	1.69	337.21	4249.13	54.23	6.13	-55.64	0.48	55.98	276.29	25.00
4275.00	1.79	339.52	4274.12	54.74	6.83	-55.92	0.48	56.34	276.97	25.00
4300.00	1.89	341.57	4299.11	55.26	7.59	-56.19	0.48	56.70	277.69	25.00
4325.00	1.97	340.60	4324.10	55.79	8.39	-56.46	0.34	57.08	278.45	25.00
4350.00	2.05	339.71	4349.08	56.36	9.21	-56.76	0.34	57.50	279.22	25.00
4375.00	2.13	338.88	4374.06	56.97	10.06	-57.08	0.34	57.96	280.00	25.00
4400.00	2.21	338.11	4399.05	57.60	10.95	-57.43	0.34	58.46	280.79	25.00
4425.00	2.16	338.66	4424.03	58.24	11.83	-57.78	0.21	58.98	281.57	25.00
4450.00	2.12	339.22	4449.01	58.86	12.70	-58.12	0.21	59.49	282.33	25.00
4475.00	2.07	339.81	4473.99	59.47	13.56	-58.44	0.21	59.99	283.06	25.00
4500.00	2.02	340.43	4498.98	60.05	14.40	-58.74	0.21	60.48	283.77	25.00
4525.00	1.86	341.87	4523.96	60.58	15.20	-59.01	0.67	60.94	284.44	25.00
4550.00	1.70	343.57	4548.95	61.06	15.94	-59.25	0.67	61.35	285.06	25.00
4575.00	1.55	345.62	4573.94	61.48	16.63	-59.43	0.67	61.72	285.63	25.00
4600.00	1.39	348.14	4598.93	61.84	17.25	-59.58	0.67	62.03	286.15	25.00
4625.00	1.33	345.76	4623.92	62.17	17.83	-59.71	0.35	62.32	286.62	25.00
4650.00	1.26	343.14	4648.92	62.50	18.37	-59.87	0.35	62.62	287.06	25.00
4675.00	1.20	340.25	4673.91	62.84	18.88	-60.03	0.35	62.93	287.46	25.00
4700.00	1.15	337.06	4698.91	63.18	19.36	-60.22	0.35	63.26	287.82	25.00
4725.00	1.07	335.10	4723.90	63.52	19.80	-60.42	0.34	63.58	288.15	25.00
4750.00	0.99	332.85	4748.90	63.85	20.21	-60.61	0.34	63.89	288.44	25.00
4775.00	0.92	330.24	4773.90	64.16	20.58	-60.81	0.34	64.20	288.69	25.00

MD ft	INC deg	AZIM deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft	CLOSURE DIST ft	CLOSURE DIR deg	COURSE LENGTH ft
4800.00	0.85	327.18	4798.89	64.47	20.91	-61.01	0.34	64.49	288.91	25.00
4825.00	0.79	329.22	4823.89	64.75	21.21	-61.20	0.26	64.77	289.11	25.00
4850.00	0.73	331.59	4848.89	65.00	21.50	-61.37	0.26	65.02	289.31	25.00
4875.00	0.68	334.35	4873.89	65.23	21.77	-61.51	0.26	65.25	289.49	25.00
4900.00	0.62	337.62	4898.88	65.43	22.03	-61.62	0.26	65.44	289.67	25.00
4925.00	0.55	333.54	4923.88	65.61	22.26	-61.73	0.34	65.62	289.83	25.00
4950.00	0.47	328.18	4948.88	65.78	22.46	-61.83	0.34	65.79	289.96	25.00
4975.00	0.41	321.00	4973.88	65.94	22.61	-61.94	0.34	65.94	290.06	25.00
5000.00	0.35	311.26	4998.88	66.09	22.73	-62.06	0.34	66.09	290.12	25.00
5025.00	0.31	313.58	5023.88	66.22	22.83	-62.16	0.19	66.22	290.17	25.00
5050.00	0.26	316.69	5048.88	66.33	22.92	-62.25	0.19	66.33	290.21	25.00
5075.00	0.22	321.03	5073.88	66.43	23.00	-62.32	0.19	66.43	290.25	25.00
5100.00	0.18	327.41	5098.88	66.50	23.07	-62.37	0.19	66.50	290.30	25.00
5125.00	0.13	336.19	5123.88	66.55	23.13	-62.40	0.21	66.55	290.33	25.00
5150.00	0.09	353.28	5148.88	66.58	23.17	-62.42	0.21	66.58	290.37	25.00
5175.00	0.07	26.81	5173.88	66.59	23.21	-62.41	0.21	66.59	290.40	25.00
5200.00	0.08	65.62	5198.88	66.57	23.23	-62.39	0.21	66.57	290.42	25.00
5225.00	0.12	55.24	5223.88	66.54	23.25	-62.35	0.17	66.55	290.45	25.00
5250.00	0.16	50.04	5248.88	66.51	23.29	-62.30	0.17	66.51	290.49	25.00
5275.00	0.20	46.97	5273.88	66.48	23.34	-62.24	0.17	66.48	290.56	25.00
5300.00	0.25	44.96	5298.88	66.43	23.41	-62.17	0.17	66.43	290.63	25.00
5325.00	0.24	38.47	5323.88	66.40	23.49	-62.10	0.11	66.40	290.72	25.00
5350.00	0.23	31.60	5348.88	66.37	23.57	-62.04	0.11	66.37	290.80	25.00
5375.00	0.23	24.52	5373.88	66.36	23.66	-61.99	0.11	66.36	290.89	25.00
5400.00	0.23	17.45	5398.88	66.36	23.76	-61.96	0.11	66.36	290.98	25.00
5425.00	0.22	9.61	5423.88	66.37	23.85	-61.94	0.14	66.37	291.06	25.00
5450.00	0.21	0.89	5448.88	66.39	23.95	-61.93	0.14	66.39	291.14	25.00
5475.00	0.21	351.58	5473.88	66.43	24.04	-61.93	0.14	66.43	291.21	25.00
5500.00	0.21	342.15	5498.88	66.48	24.12	-61.95	0.14	66.48	291.27	25.00
5525.00	0.21	341.73	5523.88	66.54	24.21	-61.98	0.01	66.54	291.33	25.00
5550.00	0.21	341.32	5548.88	66.59	24.30	-62.01	0.01	66.60	291.40	25.00
5575.00	0.21	340.90	5573.88	66.65	24.38	-62.04	0.01	66.66	291.46	25.00

MD ft	INC deg	AZIM deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft	CLOSURE DIST ft	CLOSURE DIR deg	COURSE LENGTH ft
5600.00	0.21	340.49	5598.88	66.71	24.47	-62.07	0.01	66.72	291.51	25.00
5625.00	0.21	340.09	5623.88	66.77	24.56	-62.10	0.01	66.78	291.57	25.00
5650.00	0.21	339.68	5648.88	66.83	24.64	-62.13	0.01	66.84	291.63	25.00
5675.00	0.21	339.29	5673.88	66.89	24.73	-62.17	0.01	66.90	291.69	25.00
5700.00	0.21	338.89	5698.88	66.95	24.82	-62.20	0.01	66.97	291.75	25.00
5725.00	0.20	332.36	5723.88	67.02	24.90	-62.24	0.11	67.03	291.81	25.00
5750.00	0.19	324.93	5748.88	67.09	24.97	-62.28	0.11	67.10	291.85	25.00
5775.00	0.18	316.71	5773.88	67.15	25.03	-62.33	0.11	67.17	291.88	25.00
5800.00	0.18	307.95	5798.88	67.23	25.09	-62.39	0.11	67.24	291.91	25.00
5825.00	0.16	300.54	5823.88	67.30	25.13	-62.45	0.12	67.32	291.92	25.00
5850.00	0.14	291.21	5848.88	67.36	25.16	-62.51	0.12	67.38	291.92	25.00
5875.00	0.13	279.80	5873.88	67.42	25.17	-62.56	0.12	67.44	291.92	25.00
5900.00	0.12	266.70	5898.87	67.47	25.18	-62.62	0.12	67.49	291.90	25.00
5925.00	0.17	268.07	5923.87	67.53	25.17	-62.68	0.18	67.55	291.88	25.00
5950.00	0.21	268.86	5948.87	67.61	25.17	-62.76	0.18	67.62	291.85	25.00
5975.00	0.26	269.39	5973.87	67.70	25.17	-62.87	0.18	67.72	291.82	25.00
6000.00	0.30	269.75	5998.87	67.82	25.17	-62.99	0.18	67.83	291.78	25.00
6025.00	0.28	274.73	6023.87	67.94	25.17	-63.11	0.13	67.95	291.75	25.00
6050.00	0.26	280.40	6048.87	68.05	25.19	-63.23	0.13	68.06	291.72	25.00
6075.00	0.25	286.80	6073.87	68.16	25.22	-63.34	0.13	68.17	291.71	25.00
6100.00	0.24	293.87	6098.87	68.27	25.25	-63.44	0.13	68.28	291.70	25.00
6125.00	0.24	291.10	6123.87	68.37	25.29	-63.54	0.05	68.39	291.71	25.00
6150.00	0.25	288.47	6148.87	68.48	25.33	-63.64	0.05	68.49	291.70	25.00
6175.00	0.26	285.99	6173.87	68.59	25.36	-63.75	0.05	68.61	291.70	25.00
6200.00	0.27	283.64	6198.87	68.71	25.39	-63.86	0.05	68.72	291.68	25.00
6225.00	0.29	283.18	6223.87	68.83	25.42	-63.97	0.08	68.84	291.67	25.00
6250.00	0.30	282.78	6248.87	68.95	25.45	-64.10	0.08	68.97	291.65	25.00
6275.00	0.32	282.42	6273.87	69.09	25.48	-64.23	0.08	69.10	291.64	25.00
6300.00	0.34	282.10	6298.87	69.23	25.51	-64.37	0.08	69.24	291.62	25.00
6325.00	0.36	276.10	6323.87	69.38	25.53	-64.53	0.16	69.39	291.59	25.00
6350.00	0.38	270.66	6348.87	69.54	25.54	-64.69	0.16	69.55	291.55	25.00
6375.00	0.40	265.78	6373.87	69.69	25.54	-64.85	0.16	69.70	291.49	25.00

MD ft	INC deg	AZIM deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft	CLOSURE DIST ft	CLOSURE DIR deg	COURSE LENGTH ft
6400.00	0.42	261.44	6398.87	69.85	25.52	-65.03	0.16	69.86	291.42	25.00
6425.00	0.43	263.75	6423.87	70.02	25.49	-65.22	0.07	70.02	291.35	25.00
6450.00	0.44	265.99	6448.87	70.19	25.48	-65.41	0.07	70.19	291.28	25.00
6475.00	0.44	268.16	6473.87	70.36	25.47	-65.60	0.07	70.37	291.22	25.00
6500.00	0.45	270.26	6498.87	70.55	25.46	-65.79	0.07	70.55	291.16	25.00
6525.00	0.42	270.85	6523.86	70.73	25.46	-65.99	0.13	70.73	291.10	25.00
6550.00	0.39	271.53	6548.86	70.89	25.47	-66.16	0.13	70.89	291.05	25.00
6575.00	0.36	272.33	6573.86	71.05	25.47	-66.33	0.13	71.05	291.01	25.00
6600.00	0.33	273.28	6598.86	71.19	25.48	-66.48	0.13	71.19	290.97	25.00
6625.00	0.30	274.42	6623.86	71.32	25.49	-66.61	0.13	71.32	290.94	25.00
6650.00	0.27	275.84	6648.86	71.44	25.50	-66.73	0.13	71.44	290.91	25.00
6675.00	0.24	277.62	6673.86	71.55	25.51	-66.84	0.13	71.55	290.89	25.00
6700.00	0.21	279.93	6698.86	71.64	25.53	-66.94	0.13	71.64	290.88	25.00
6725.00	0.21	280.44	6723.86	71.73	25.54	-67.03	0.03	71.73	290.86	25.00
6750.00	0.22	280.92	6748.86	71.82	25.56	-67.12	0.03	71.82	290.85	25.00
6775.00	0.23	281.36	6773.86	71.92	25.58	-67.22	0.03	71.92	290.84	25.00
6800.00	0.23	281.78	6798.86	72.02	25.60	-67.31	0.03	72.02	290.82	25.00
6825.00	0.17	273.88	6823.86	72.11	25.61	-67.40	0.27	72.11	290.81	25.00
6850.00	0.12	258.23	6848.86	72.16	25.61	-67.47	0.27	72.16	290.79	25.00
6875.00	0.09	225.08	6873.86	72.19	25.59	-67.50	0.27	72.19	290.76	25.00
6900.00	0.10	182.59	6898.86	72.19	25.56	-67.52	0.27	72.19	290.73	25.00
6925.00	0.09	190.66	6923.86	72.18	25.52	-67.52	0.06	72.18	290.70	25.00
6950.00	0.09	199.71	6948.86	72.18	25.48	-67.53	0.06	72.18	290.67	25.00
6975.00	0.08	209.40	6973.86	72.18	25.45	-67.55	0.06	72.18	290.64	25.00
6979.60	0.08	211.22	6978.46	72.18	25.44	-67.55	0.06	72.18	290.64	4.60

