



SUMMIT
SLICKLINE INC.

Company: PDC ENERGY
Lease / Well: WILLIAMS 28-1 05123-12055
County/Parish: WELD 123
State: COLORADO
Date: 1/19/2017
Rig: NA
Surveyor: JOHNNY RIDDLE
Job Number: 3472-05-123-12055
Instrument Number: 3123 **Type:** MEMORY
Proposed Direction: 0 **GL Elev:** 4901
Magnetic Declination 9.79 EAST TO TRUE NORTH
Calulation Method: MINIMUM OF CURVATURE
Log Measured From: GL

TIE-IN Coordinates

Measured Depth (ft.)	Inclination	Azimuth Bearing	Vertical Depth	Coordinates	
				(+N/-S)	(+E/-W)
0	0.00	0.00	0.00	0.00	0.00

Directional Survey Report

Measured Depth (ft.)	Inclination	Azimuth Bearing	Vertical Depth	Vertical Section	Coordinates (+N/-S)	Coordinates (+E/-W)	Dog-Leg / 100 ft.	Closure Distance	Closure Direction
100	0.35	338.31	100.00	0.28	0.28	-0.11	0.35	0.31	338.31°
200	0.40	277.04	200.00	0.61	0.61	-0.57	0.38	0.84	316.85°
300	0.13	177.55	300.00	0.54	0.54	-0.91	0.44	1.06	300.57°
400	0.18	199.72	400.00	0.28	0.28	-0.96	0.08	1.00	286.15°
500	0.45	236.46	499.99	-0.09	-0.09	-1.34	0.32	1.35	266.32°
600	0.58	206.45	599.99	-0.76	-0.76	-1.90	0.29	2.04	248.24°
700	0.60	193.00	699.99	-1.72	-1.72	-2.24	0.14	2.82	232.46°
800	0.48	185.83	799.98	-2.65	-2.65	-2.40	0.14	3.57	222.19°
900	0.37	199.41	899.98	-3.37	-3.37	-2.55	0.15	4.22	217.11°
1000	0.51	237.27	999.98	-3.91	-3.91	-3.03	0.31	4.95	217.75°
1100	0.72	239.80	1099.97	-4.47	-4.47	-3.95	0.21	5.96	221.45°
1200	0.74	216.43	1199.96	-5.31	-5.31	-4.87	0.30	7.20	222.57°
1300	0.50	214.15	1299.96	-6.19	-6.19	-5.50	0.24	8.28	221.65°
1400	0.45	218.92	1399.95	-6.85	-6.85	-5.99	0.06	9.10	221.18°
1500	0.41	243.08	1499.95	-7.32	-7.32	-6.56	0.18	9.83	221.86°
1600	0.55	261.35	1599.95	-7.55	-7.55	-7.35	0.21	10.54	224.23°
1700	0.75	254.67	1699.94	-7.80	-7.80	-8.46	0.21	11.51	227.32°
1800	0.82	255.49	1799.93	-8.15	-8.15	-9.78	0.07	12.73	230.20°
1900	0.86	236.59	1899.92	-8.74	-8.74	-11.10	0.28	14.13	231.78°
2000	0.72	232.18	1999.91	-9.54	-9.54	-12.22	0.15	15.51	232.02°
2100	0.73	236.30	2099.90	-10.28	-10.28	-13.25	0.05	16.77	232.19°
2200	0.56	247.89	2199.90	-10.82	-10.82	-14.23	0.21	17.88	232.76°
2300	0.56	250.31	2299.89	-11.17	-11.17	-15.15	0.02	18.82	233.60°
2400	0.51	266.66	2399.89	-11.36	-11.36	-16.05	0.16	19.66	234.72°
2500	0.42	274.95	2499.88	-11.35	-11.35	-16.86	0.11	20.33	236.05°
2600	0.41	269.99	2599.88	-11.32	-11.32	-17.58	0.04	20.91	237.23°
2700	0.35	274.04	2699.88	-11.30	-11.30	-18.25	0.07	21.46	238.23°
2800	0.29	292.58	2799.88	-11.18	-11.18	-18.78	0.12	21.86	239.24°
2900	0.37	293.15	2899.88	-10.96	-10.96	-19.31	0.08	22.21	240.44°
3000	0.27	249.63	2999.87	-10.91	-10.91	-19.83	0.25	22.64	241.18°
3100	0.32	286.36	3099.87	-10.91	-10.91	-20.32	0.19	23.07	241.76°
3200	0.48	329.44	3199.87	-10.48	-10.48	-20.80	0.33	23.29	243.27°
3300	0.81	323.62	3299.86	-9.55	-9.55	-21.43	0.34	23.46	245.99°
3400	0.76	311.75	3399.86	-8.54	-8.54	-22.35	0.17	23.92	249.10°
3500	0.81	303.84	3499.85	-7.70	-7.70	-23.43	0.12	24.66	251.81°
3600	0.55	294.12	3599.84	-7.11	-7.11	-24.46	0.28	25.47	253.79°
3700	0.97	302.83	3699.83	-6.46	-6.46	-25.61	0.43	26.41	255.85°
3800	0.68	312.27	3799.82	-5.60	-5.60	-26.76	0.32	27.33	258.18°
3900	0.78	328.07	3899.81	-4.62	-4.62	-27.55	0.22	27.94	260.48°
4000	0.44	341.13	3999.81	-3.68	-3.68	-28.04	0.37	28.28	262.52°
4100	0.32	317.12	4099.80	-3.11	-3.11	-28.35	0.20	28.52	263.74°
4200	0.25	355.59	4199.80	-2.69	-2.69	-28.56	0.20	28.69	264.62°
4300	0.47	341.29	4299.80	-2.08	-2.08	-28.71	0.24	28.78	265.85°
4400	0.57	261.96	4399.80	-1.76	-1.76	-29.33	0.67	29.39	266.56°
4500	0.40	275.77	4499.79	-1.80	-1.80	-30.17	0.21	30.23	266.59°
4600	0.36	255.64	4599.79	-1.84	-1.84	-30.82	0.14	30.88	266.58°
4700	0.65	278.94	4699.79	-1.83	-1.83	-31.69	0.35	31.74	266.69°
4800	0.86	202.25	4799.78	-2.44	-2.44	-32.53	0.95	32.62	265.71°

Directional Survey Report									
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					(+N/-S)	(+E/-W)			
4900	0.35	304.18	4899.78	-2.96	-2.96	-33.07	0.99	33.20	264.88°
5000	0.33	359.90	4999.78	-2.50	-2.50	-33.32	0.32	33.42	265.71°
5100	0.72	319.91	5099.77	-1.73	-1.73	-33.73	0.51	33.77	267.06°
5200	0.69	13.42	5199.76	-0.67	-0.67	-33.99	0.64	34.00	268.88°
5300	0.72	39.25	5299.76	0.41	0.41	-33.46	0.32	33.46	270.70°
5400	1.34	351.09	5399.74	2.05	2.05	-33.24	1.01	33.30	273.53°
5500	1.49	282.31	5499.72	3.48	3.48	-34.69	1.60	34.86	275.73°
5600	1.28	284.93	5599.69	4.05	4.05	-37.04	0.22	37.26	276.23°
5700	0.18	243.74	5699.68	4.26	4.26	-38.26	1.15	38.50	276.36°
5800	1.87	1.55	5799.66	5.83	5.83	-38.36	1.96	38.80	278.64°
5900	1.67	20.31	5899.62	8.82	8.82	-37.81	0.61	38.82	283.14°
6000	1.15	44.08	5999.59	10.91	10.91	-36.60	0.77	38.19	286.60°
6100	0.17	24.11	6099.58	11.77	11.77	-35.84	0.99	37.73	288.17°
6200	1.26	43.87	6199.57	12.69	12.69	-35.02	1.10	37.25	289.92°
6300	1.40	19.34	6299.54	14.64	14.64	-33.86	0.58	36.88	293.38°
6400	0.38	356.23	6399.53	16.12	16.12	-33.47	1.06	37.15	295.72°
6500	1.25	2.38	6499.52	17.54	17.54	-33.45	0.87	37.77	297.68°
6600	2.11	327.07	6599.48	20.18	20.18	-34.40	1.31	39.89	300.39°
6700	1.72	349.35	6699.42	23.20	23.20	-35.68	0.83	42.56	303.03°
6750	1.93	354.86	6749.40	24.78	24.78	-35.90	0.55	43.62	304.61°

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