



SUMMIT
SLICKLINE INC.

Company: PDC ENERGY
Lease / Well: OLSON 29-12
County/Parish: WELD 123
State: COLORADO
Date: 10/30/2019
Rig: NA
Surveyor: SHON LANE
Job Number: 8612-512320140
Instrument Number: 3087 **Type:** MEMORY
Proposed Direction: 0 **GL Elev:** 4972
Magnetic Declination: 9.66 EAST TO TRUE NORTH
Calculation 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) (+E/-W)	Dog-Leg / 100 ft.	Closure Distance	Closure Direction
100	0.45	245.05	100.00	-0.17	-0.17 -0.36	0.45	0.39	245.05°
200	0.26	264.32	200.00	-0.35	-0.35 -0.94	0.22	1.00	249.33°
300	0.05	331.64	300.00	-0.34	-0.34 -1.18	0.25	1.23	254.08°
400	0.21	309.56	400.00	-0.18	-0.18 -1.35	0.16	1.36	262.27°
500	0.46	339.81	499.99	0.31	0.31 -1.63	0.30	1.66	280.82°
600	0.46	351.43	599.99	1.08	1.08 -1.82	0.09	2.12	300.73°
700	0.48	343.02	699.99	1.88	1.88 -2.01	0.07	2.75	313.16°
800	0.54	351.17	799.98	2.75	2.75 -2.20	0.09	3.52	321.30°
900	0.59	342.54	899.98	3.71	3.71 -2.43	0.10	4.43	326.76°
1000	0.56	351.88	999.97	4.68	4.68 -2.65	0.10	5.38	330.46°
1100	0.67	349.46	1099.97	5.74	5.74 -2.83	0.11	6.40	333.77°
1200	0.62	351.21	1199.96	6.85	6.85 -3.02	0.05	7.48	336.22°
1300	0.69	357.76	1299.96	7.98	7.98 -3.12	0.10	8.57	338.63°
1400	0.76	355.17	1399.95	9.25	9.25 -3.20	0.08	9.79	340.90°
1500	0.71	350.78	1499.94	10.52	10.52 -3.36	0.08	11.04	342.30°
1600	0.59	2.39	1599.93	11.65	11.65 -3.44	0.18	12.14	343.56°
1700	0.64	33.35	1699.93	12.63	12.63 -3.11	0.33	13.00	346.17°
1800	0.65	25.84	1799.92	13.60	13.60 -2.55	0.09	13.84	349.37°
1900	0.55	44.34	1899.92	14.46	14.46 -1.97	0.22	14.59	352.24°
2000	0.69	54.63	1999.91	15.15	15.15 -1.14	0.18	15.19	355.68°
2100	0.80	53.16	2099.90	15.92	15.92 -0.09	0.11	15.92	359.66°
2200	0.79	53.62	2199.89	16.74	16.74 1.02	0.01	16.77	3.48°
2300	0.87	49.59	2299.88	17.64	17.64 2.15	0.10	17.78	6.96°
2400	0.85	49.35	2399.87	18.62	18.62 3.29	0.02	18.91	10.03°
2500	0.81	43.64	2499.86	19.61	19.61 4.34	0.09	20.09	12.49°
2600	0.94	42.42	2599.85	20.73	20.73 5.39	0.13	21.42	14.56°
2700	0.87	53.94	2699.84	21.78	21.78 6.55	0.19	22.75	16.74°
2800	1.01	53.29	2799.82	22.76	22.76 7.87	0.14	24.08	19.08°
2900	0.95	58.40	2899.81	23.72	23.72 9.29	0.11	25.47	21.38°
3000	1.00	44.60	2999.79	24.77	24.77 10.60	0.24	26.95	23.17°
3100	0.90	36.36	3099.78	26.03	26.03 11.68	0.17	28.53	24.17°
3200	1.01	37.01	3199.77	27.36	27.36 12.68	0.11	30.16	24.86°
3300	0.95	29.10	3299.75	28.79	28.79 13.61	0.15	31.85	25.30°
3400	1.06	26.15	3399.74	30.35	30.35 14.42	0.12	33.60	25.42°
3500	1.10	21.76	3499.72	32.07	32.07 15.19	0.09	35.48	25.34°
3600	0.82	12.24	3599.70	33.66	33.66 15.69	0.32	37.14	25.00°
3700	0.63	11.77	3699.70	34.90	34.90 15.96	0.19	38.37	24.57°
3800	0.70	14.40	3799.69	36.03	36.03 16.22	0.08	39.51	24.24°
3900	0.78	5.36	3899.68	37.30	37.30 16.44	0.14	40.76	23.78°
4000	0.97	17.37	3999.67	38.78	38.78 16.75	0.26	42.25	23.36°
4100	1.06	36.50	4099.65	40.33	40.33 17.56	0.35	43.99	23.52°
4200	1.22	43.54	4199.63	41.85	41.85 18.84	0.21	45.89	24.24°
4300	1.48	50.64	4299.61	43.44	43.44 20.57	0.31	48.06	25.34°
4400	1.55	48.27	4399.57	45.16	45.16 22.58	0.09	50.49	26.57°
4500	1.76	44.43	4499.53	47.16	47.16 24.66	0.24	53.22	27.61°

Directional Survey Report									
Measured Depth (ft.)	Inclination	Azimuth Bearing	Vertical Depth	Vertical Section	Coordinates (+N/-S) (+E/-W)		Dog-Leg / 100 ft.	Closure Distance	Closure Direction
4600	1.77	30.32	4599.48	49.59	49.59	26.52	0.43	56.23	28.14°
4700	1.98	28.07	4699.43	52.44	52.44	28.11	0.22	59.50	28.19°
4800	1.92	31.03	4799.37	55.40	55.40	29.79	0.12	62.90	28.26°
4900	1.59	32.26	4899.32	58.01	58.01	31.39	0.33	65.96	28.42°
5000	1.27	32.00	4999.29	60.12	60.12	32.72	0.32	68.45	28.55°
5100	0.95	24.38	5099.27	61.82	61.82	33.65	0.35	70.38	28.56°
5200	0.99	16.63	5199.26	63.40	63.40	34.24	0.14	72.06	28.37°
5300	0.79	11.95	5299.25	64.90	64.90	34.63	0.21	73.56	28.08°
5400	0.81	9.43	5399.24	66.28	66.28	34.89	0.04	74.90	27.76°
5500	0.85	6.72	5499.23	67.71	67.71	35.09	0.06	76.26	27.39°
5600	1.03	359.97	5599.21	69.35	69.35	35.18	0.21	77.76	26.90°
5700	1.13	352.82	5699.20	71.22	71.22	35.05	0.17	79.38	26.20°
5800	1.00	358.94	5799.18	73.07	73.07	34.91	0.17	80.99	25.54°
5900	0.99	1.14	5899.16	74.81	74.81	34.91	0.04	82.56	25.02°
6000	0.90	359.92	5999.15	76.46	76.46	34.93	0.09	84.06	24.55°
6100	0.84	358.11	6099.14	77.98	77.98	34.90	0.07	85.43	24.11°
6200	0.80	349.38	6199.13	79.40	79.40	34.75	0.13	86.67	23.64°
6300	0.80	349.21	6299.12	80.77	80.77	34.49	0.00	87.82	23.13°
6400	1.26	353.53	6399.10	82.55	82.55	34.24	0.47	89.36	22.53°
6500	1.47	340.73	6499.07	84.85	84.85	33.69	0.37	91.29	21.66°
6600	1.72	347.02	6599.04	87.52	87.52	32.93	0.30	93.51	20.62°
6700	2.05	340.79	6698.98	90.67	90.67	32.00	0.39	96.16	19.44°
6800	1.86	351.30	6798.92	93.97	93.97	31.17	0.40	99.00	18.35°
6900	1.92	28.66	6898.87	97.04	97.04	31.73	1.21	102.10	18.11°
7000	1.91	43.10	6998.82	99.73	99.73	33.67	0.48	105.26	18.66°
7100	1.61	43.07	7098.77	101.97	101.97	35.77	0.30	108.06	19.33°
7200	1.24	35.65	7198.74	103.88	103.88	37.36	0.41	110.39	19.78°
7250	1.00	32.09	7248.73	104.69	104.69	37.91	0.50	111.34	19.90°