

Job Number: SVGJ-110647 State/Country: Colorado/USA (N40 11 40.6986) (W 104 46 48.286)
 Company: Anadarko Petroleum Corporation Declination: 8.82° East To True - NAD 27
 Lease/Well: Sarchet 10-28 Grid: Referenced To True North
 Location: Weld County, CO File name: F:\SURVEY\2011SU~1\ANADARKO\LORENZ\SAR1028.SVY
 Rig Name: Cable Wireline Date/Time: 15-Aug-11 / 10:26
 RKB: 0' Curve Name: Surface - 7300' M.D. (Rate Gyro) (API 05-123-23813)
 G.L. or M.S.L.: GL

WINSERVE SURVEY CALCULATIONS

Minimum Curvature Method

Vertical Section Plane .00

Vertical Section Referenced to offset from Wellhead: EW =.00 Ft , NS=.00 Ft

Rectangular Coordinates Referenced to Wellhead

Measured	Incl	Drift	TRUE	N-S	E-W	Vertical	CLOSURE	CLOSURE	Dogleg
Depth	Angle	Direction	Vertical	FT	FT	Section	Distance	Direction	Severity
FT	Deg	Deg	Depth			FT	FT	Deg	Deg/100
0	0	0	0	0	0	0	0	0	0
100	0.43	186.31	100	-0.37	-0.04	-0.37	0.38	186.31	0.43
200	0.25	270.28	200	-0.74	-0.3	-0.74	0.8	201.98	0.47
300	0.36	169.13	300	-1.05	-0.46	-1.05	1.15	203.59	0.48
400	0.2	272.17	400	-1.35	-0.57	-1.35	1.47	203	0.45
500	0.54	160.53	499.99	-1.79	-0.59	-1.79	1.89	198.28	0.64
600	0.75	183.54	599.99	-2.89	-0.48	-2.89	2.93	189.34	0.33
700	1.47	192.34	699.97	-4.8	-0.79	-4.8	4.86	189.35	0.74
800	2.13	186.27	799.92	-7.9	-1.27	-7.9	8	189.12	0.69
900	2.27	184.02	899.85	-11.72	-1.61	-11.72	11.83	187.82	0.16
1000	2.18	195.96	999.77	-15.52	-2.27	-15.52	15.69	188.32	0.47
1100	2.01	185.41	1099.7	-19.1	-2.96	-19.1	19.33	188.81	0.42
1200	2.09	185.77	1199.64	-22.66	-3.31	-22.66	22.9	188.31	0.08
1300	1.9	197.31	1299.58	-26.05	-3.98	-26.05	26.36	188.69	0.44
1400	1.83	183.1	1399.53	-29.23	-4.56	-29.23	29.59	188.87	0.47
1500	1.98	181.84	1499.47	-32.55	-4.71	-32.55	32.89	188.23	0.16
1600	1.84	198.07	1599.42	-35.81	-5.26	-35.81	36.19	188.36	0.56
1700	1.5	204.73	1699.37	-38.52	-6.3	-38.52	39.03	189.3	0.39
1800	1.2	183.76	1799.35	-40.75	-6.92	-40.75	41.34	189.64	0.57
1900	1.19	201.26	1899.33	-42.77	-7.37	-42.77	43.4	189.77	0.36
2000	0.55	220.19	1999.31	-44.1	-8.05	-44.1	44.83	190.35	0.69
2100	0.21	85.77	2099.31	-44.45	-8.18	-44.45	45.2	190.43	0.71
2200	0.21	112.66	2199.31	-44.51	-7.83	-44.51	45.19	189.97	0.1
2300	0.25	133.56	2299.31	-44.73	-7.5	-44.73	45.36	189.52	0.09
2400	0.44	138.42	2399.31	-45.17	-7.09	-45.17	45.72	188.92	0.19
2500	0.9	138.09	2499.3	-46.04	-6.31	-46.04	46.47	187.8	0.46
2600	1.3	133.95	2599.28	-47.41	-4.97	-47.41	47.67	185.98	0.41
2700	1.41	141.45	2699.26	-49.16	-3.38	-49.16	49.28	183.94	0.21

2800	1.36	152.06	2799.23	-51.17	-2.06	-51.17	51.22	182.31	0.26
2900	1.15	169.53	2899.2	-53.21	-1.32	-53.21	53.23	181.42	0.43
3000	0.99	182.85	2999.19	-55.06	-1.18	-55.06	55.07	181.23	0.29
3100	1	180.57	3099.17	-56.79	-1.23	-56.79	56.81	181.24	0.04
3200	0.94	179.64	3199.16	-58.49	-1.24	-58.49	58.5	181.21	0.06
3300	1.01	179.24	3299.14	-60.19	-1.22	-60.19	60.2	181.16	0.07
3400	0.8	182.42	3399.13	-61.77	-1.24	-61.77	61.78	181.15	0.22
3500	0.53	189.22	3499.12	-62.92	-1.34	-62.92	62.94	181.22	0.28
3600	0.33	226.01	3599.12	-63.58	-1.62	-63.58	63.6	181.46	0.33
3700	0.2	276.62	3699.12	-63.76	-2	-63.76	63.79	181.8	0.26
3800	0.21	315.31	3799.12	-63.61	-2.31	-63.61	63.65	182.08	0.14
3900	0.41	312.28	3899.12	-63.24	-2.7	-63.24	63.29	182.44	0.2
4000	0.37	297.88	3999.11	-62.84	-3.25	-62.84	62.93	182.96	0.11
4100	0.44	230.92	4099.11	-62.94	-3.83	-62.94	63.05	183.49	0.45
4200	0.49	221.93	4199.11	-63.5	-4.42	-63.5	63.65	183.98	0.09
4300	0.77	206.59	4299.1	-64.41	-5	-64.41	64.61	184.44	0.32
4400	0.87	177.15	4399.09	-65.77	-5.27	-65.77	65.98	184.58	0.43
4500	0.9	155.79	4499.08	-67.25	-4.91	-67.25	67.43	184.17	0.33
4600	0.86	171.73	4599.07	-68.71	-4.48	-68.71	68.85	183.73	0.25
4700	0.65	189.96	4699.06	-70.01	-4.47	-70.01	70.15	183.65	0.32
4800	0.23	162.29	4799.06	-70.76	-4.5	-70.76	70.9	183.64	0.46
4900	1.86	55.35	4899.04	-70.03	-3.11	-70.03	70.1	182.54	1.94
5000	1.95	56.02	4998.99	-68.15	-0.36	-68.15	68.15	180.3	0.09
5100	1.41	66.73	5098.94	-66.72	2.18	-66.72	66.75	178.13	0.62
5200	0.57	103.21	5198.93	-66.34	3.79	-66.34	66.45	176.73	1.01
5300	0.66	207.93	5298.92	-66.97	4.01	-66.97	67.09	176.57	0.98
5400	1.34	237.27	5398.91	-68.11	2.75	-68.11	68.16	177.68	0.83
5500	1.78	243.11	5498.87	-69.44	0.39	-69.44	69.44	179.68	0.47
5600	2.09	247.05	5598.81	-70.86	-2.68	-70.86	70.91	182.16	0.34
5700	2.3	243.45	5698.74	-72.46	-6.15	-72.46	72.72	184.85	0.25
5800	2.45	247.16	5798.66	-74.19	-9.92	-74.19	74.85	187.61	0.21
5900	2.43	251.13	5898.57	-75.71	-13.89	-75.71	76.97	190.4	0.17
6000	2.58	258.99	5998.47	-76.82	-18.11	-76.82	78.93	193.26	0.37
6100	2.68	266.95	6098.36	-77.37	-22.65	-77.37	80.62	196.32	0.38
6200	2.51	263.4	6198.26	-77.75	-27.16	-77.75	82.36	199.26	0.23
6300	2.33	257.13	6298.17	-78.46	-31.32	-78.46	84.48	201.76	0.32
6400	2.59	246.84	6398.08	-79.8	-35.38	-79.8	87.29	203.91	0.51
6500	2.78	248.66	6497.97	-81.57	-39.71	-81.57	90.72	205.96	0.21
6600	2.92	256.59	6597.85	-83.04	-44.45	-83.04	94.19	208.16	0.42
6700	3.01	262.7	6697.71	-83.97	-49.53	-83.97	97.49	210.54	0.33
6800	3.08	265.02	6797.57	-84.53	-54.81	-84.53	100.75	212.96	0.14
6900	3.11	263.77	6897.43	-85.06	-60.19	-85.06	104.2	215.28	0.07
7000	3.56	256.56	6997.26	-86.08	-65.9	-86.08	108.41	217.44	0.61
7100	4.75	254.03	7096.99	-87.94	-72.9	-87.94	114.23	219.66	1.2
7200	5.92	253.83	7196.56	-90.51	-81.84	-90.51	122.02	222.12	1.17
7300	6.05	254.77	7296.01	-93.33	-91.87	-93.33	130.97	224.55	0.16