

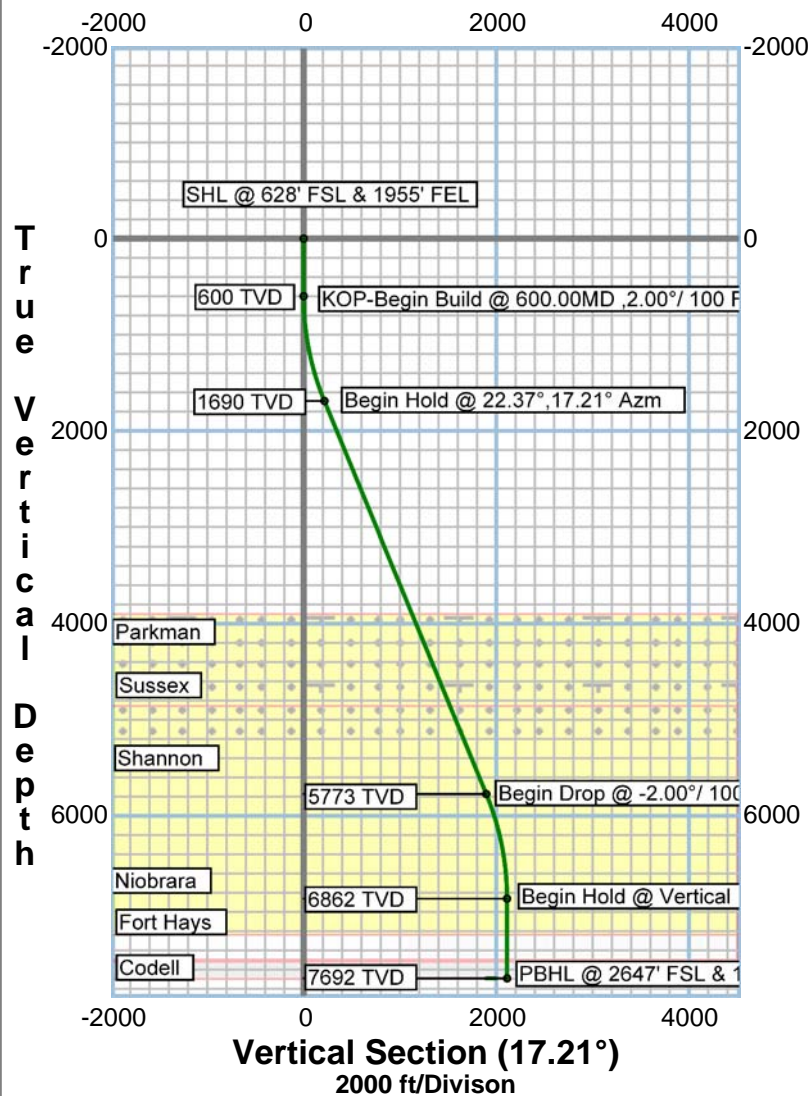


Job ID : Grant Brothers Pad  
Company : Sundance Energy, Inc.  
Lease/Well : Grant Bros 23-2 Ae  
Location : Sec 23 T2N R68W  
API JOB # : 05-123-xxxxx  
Rig Name : Cade 25  
State/Province : CO  
County/Parish : Weld  
Country : USA

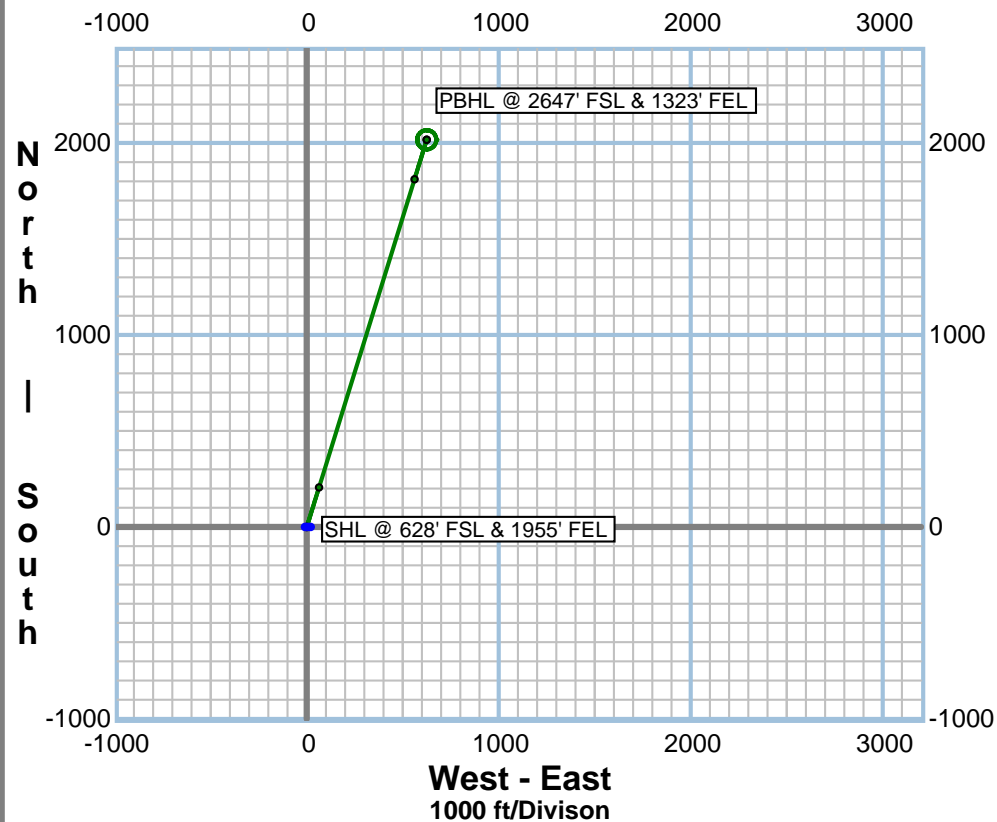
Latitude : 40°7'7.0824" N  
Longitude : -104°58'4.5228" W  
Northing : 1286508.81  
Easting : 3148800.36  
System Zone : US State Plane 1983  
Projection Type : LAMBERT  
Elevation (To MSL) : 4919 ft  
RKB : 14 ft  
Comment : Plan 2



### Vertical Section Plot



### Horizontal Plot



### CRITICAL POINTS - GRANT BROTHERS 23-2 AE PROPOSAL

MD	Inc	Azm	TVD	EW	NS	VS	CI	Cldir	WR	BR	DLS
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1718.46	22.37	17.21	1690.26	63.78	205.92	215.58	215.58	17.21	0.00	2.00	2.00
6133.13	22.37	17.21	5772.71	560.90	1810.86	1895.74	1895.74	17.21	0.00	0.00	0.00
7250.86	0.02	12.53	6862.24	624.68	2016.80	2111.33	2111.33	17.21	-25.33	-2.00	2.00
8080.62	0.02	12.53	7692.00	624.72	2017.02	2111.55	2111.55	17.21	0.00	0.00	0.00



**METHODS OF CORRECTIONS:**

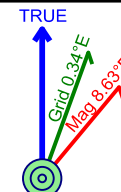
- \* To correct from Magnetic North to True North use:  
 $8.63^{\circ}\text{E} \rightarrow \text{TN} = \text{MN} + 8.63$
- \* To correct from True North to Grid North use:  
 $0.34^{\circ}\text{E} \rightarrow \text{GN} = \text{TN} - 0.34$  : True to Grid
- \* To Correct from Magnetic North to Grid North use:  
 $8.28^{\circ}\text{E} \rightarrow \text{GN} = \text{MN} + 8.28$  : Magnetic to Grid






**Job Number:** Grant Brothers Pad  
**Company:** Sundance Energy, Inc.  
**Lease/Well:** Grant Bros 23-2 Ae  
**Location:** Sec 23 T2N R68W  
**Rig Name:** Cade 25  
**State/County:** CO/ Weld  
**Country:** USA  
**API Number:** 05-123-xxxx

**Elevation :** 4919.00 ft  
**RKB:** 14.00 ft  
**Projection System:** US State Plane 1983  
**Projection Group:** Colorado Northern Zone  
**Projection Datum:** GRS80  
**Mag. Declination:** 8.63°  
**Grid Convergence:** 0.34379 E  
**Date:** Monday, June 24, 2013

Calculated by HawkEye Software  
Minimum Curvature Method  
Vertical Section Plane 17.21°  
Northing (US ft): 1286508.81 Easting (US ft): 3148800.36  
Latitude: 40°07'7.0824" N Longitude: -104°58'4.5228" W  
Well Location: 647.07 FSL, 1956.32 FEL, Section 23, T2N, R68W, Meridian 06, Weld County, CO  
Direction Reference: True North







Measured Depth (Ft)	INC Deg	AZM Deg	TVD (Ft)	NS (Ft)	EW (Ft)	VS (Ft)	DLS °/100Ft	Build Rate °/100Ft	Walk Rate °/100Ft	Latitude Dec. Deg	Longitude Dec. Deg
<b>SHL @ 628' FSL &amp; 1955' FEL</b>											
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	40.1186340	-104.9679230
<b>KOP-Begin Build @ 600.00MD ,2.00°/ 100 Ft</b>											
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00	40.1186340	-104.9679230
620.00	0.40	17.21	620.00	0.07	0.02	0.07	2.00	2.00	86.03	40.1186342	-104.9679229
640.00	0.80	17.21	640.00	0.27	0.08	0.28	2.00	2.00	0.01	40.1186347	-104.9679227
660.00	1.20	17.21	660.00	0.60	0.19	0.63	2.00	2.00	0.00	40.1186356	-104.9679223
680.00	1.60	17.21	679.99	1.07	0.33	1.12	2.00	2.00	0.00	40.1186369	-104.9679218
700.00	2.00	17.21	699.98	1.67	0.52	1.75	2.00	2.00	0.00	40.1186386	-104.9679212
720.00	2.40	17.21	719.96	2.40	0.74	2.51	2.00	2.00	0.00	40.1186406	-104.9679204
740.00	2.80	17.21	739.94	3.27	1.01	3.42	2.00	2.00	0.00	40.1186430	-104.9679194
760.00	3.20	17.21	759.92	4.27	1.32	4.47	2.00	2.00	0.00	40.1186457	-104.9679183
780.00	3.60	17.21	779.88	5.40	1.67	5.65	2.00	2.00	0.00	40.1186488	-104.9679170
800.00	4.00	17.21	799.84	6.67	2.06	6.98	2.00	2.00	0.00	40.1186523	-104.9679156
820.00	4.40	17.21	819.78	8.07	2.50	8.44	2.00	2.00	0.00	40.1186561	-104.9679141
840.00	4.80	17.21	839.72	9.60	2.97	10.05	2.00	2.00	0.00	40.1186603	-104.9679124
860.00	5.20	17.21	859.64	11.26	3.49	11.79	2.00	2.00	0.00	40.1186649	-104.9679105
880.00	5.60	17.21	879.55	13.06	4.05	13.67	2.00	2.00	0.00	40.1186699	-104.9679085
900.00	6.00	17.21	899.45	14.99	4.64	15.69	2.00	2.00	0.00	40.1186752	-104.9679064
920.00	6.40	17.21	919.33	17.06	5.28	17.85	2.00	2.00	0.00	40.1186808	-104.9679041
940.00	6.80	17.21	939.20	19.25	5.96	20.15	2.00	2.00	0.00	40.1186868	-104.9679017
960.00	7.20	17.21	959.05	21.58	6.68	22.59	2.00	2.00	0.00	40.1186932	-104.9678991
980.00	7.60	17.21	978.89	24.04	7.45	25.17	2.00	2.00	0.00	40.1187000	-104.9678964
1000.00	8.00	17.21	998.70	26.63	8.25	27.88	2.00	2.00	0.00	40.1187071	-104.9678935
1020.00	8.40	17.21	1018.50	29.36	9.09	30.73	2.00	2.00	0.00	40.1187146	-104.9678905
1040.00	8.80	17.21	1038.27	32.21	9.98	33.72	2.00	2.00	0.00	40.1187224	-104.9678873
1060.00	9.20	17.21	1058.03	35.20	10.90	36.85	2.00	2.00	0.00	40.1187306	-104.9678840
1080.00	9.60	17.21	1077.76	38.32	11.87	40.12	2.00	2.00	0.00	40.1187392	-104.9678806

Measured Depth (Ft)	INC Deg	AZM Deg	TVD (Ft)	NS (Ft)	EW (Ft)	VS (Ft)	DLS °/100Ft	Build Rate °/100Ft	Walk Rate °/100Ft	Latitude Dec. Deg	Longitude Dec. Deg
1100.00	10.00	17.21	1097.47	41.58	12.88	43.52	2.00	2.00	0.00	40.1187481	-104.9678770
1120.00	10.40	17.21	1117.15	44.96	13.93	47.07	2.00	2.00	0.00	40.1187574	-104.9678732
1140.00	10.80	17.21	1136.81	48.47	15.01	50.74	2.00	2.00	0.00	40.1187671	-104.9678693
1160.00	11.20	17.21	1156.44	52.12	16.14	54.56	2.00	2.00	0.00	40.1187771	-104.9678653
1180.00	11.60	17.21	1176.05	55.89	17.31	58.51	2.00	2.00	0.00	40.1187874	-104.9678611
1200.00	12.00	17.21	1195.62	59.80	18.52	62.60	2.00	2.00	0.00	40.1187982	-104.9678568
1220.00	12.40	17.21	1215.17	63.84	19.77	66.83	2.00	2.00	0.00	40.1188092	-104.9678523
1240.00	12.80	17.21	1234.69	68.01	21.06	71.19	2.00	2.00	0.00	40.1188207	-104.9678477
1260.00	13.20	17.21	1254.18	72.30	22.40	75.69	2.00	2.00	0.00	40.1188325	-104.9678429
1280.00	13.60	17.21	1273.63	76.73	23.77	80.33	2.00	2.00	0.00	40.1188446	-104.9678380
1300.00	14.00	17.21	1293.06	81.29	25.18	85.10	2.00	2.00	0.00	40.1188571	-104.9678330
1320.00	14.40	17.21	1312.44	85.97	26.63	90.00	2.00	2.00	0.00	40.1188700	-104.9678278
1340.00	14.80	17.21	1331.80	90.79	28.12	95.05	2.00	2.00	0.00	40.1188832	-104.9678225
1360.00	15.20	17.21	1351.12	95.74	29.65	100.22	2.00	2.00	0.00	40.1188968	-104.9678170
1380.00	15.60	17.21	1370.40	100.81	31.22	105.53	2.00	2.00	0.00	40.1189107	-104.9678114
1400.00	16.00	17.21	1389.64	106.01	32.84	110.98	2.00	2.00	0.00	40.1189250	-104.9678056
1420.00	16.40	17.21	1408.85	111.34	34.49	116.56	2.00	2.00	0.00	40.1189396	-104.9677997
1440.00	16.80	17.21	1428.01	116.80	36.18	122.27	2.00	2.00	0.00	40.1189546	-104.9677937
1460.00	17.20	17.21	1447.14	122.38	37.91	128.12	2.00	2.00	0.00	40.1189700	-104.9677875
1480.00	17.60	17.21	1466.23	128.10	39.68	134.10	2.00	2.00	0.00	40.1189856	-104.9677811
1500.00	18.00	17.21	1485.27	133.94	41.49	140.21	2.00	2.00	0.00	40.1190017	-104.9677747
1520.00	18.40	17.21	1504.27	139.90	43.33	146.46	2.00	2.00	0.00	40.1190181	-104.9677681
1540.00	18.80	17.21	1523.22	146.00	45.22	152.84	2.00	2.00	0.00	40.1190348	-104.9677613
1560.00	19.20	17.21	1542.13	152.22	47.15	159.35	2.00	2.00	0.00	40.1190519	-104.9677544
1580.00	19.60	17.21	1561.00	158.56	49.11	166.00	2.00	2.00	0.00	40.1190693	-104.9677474
1600.00	20.00	17.21	1579.82	165.03	51.12	172.77	2.00	2.00	0.00	40.1190870	-104.9677402
1620.00	20.40	17.21	1598.59	171.63	53.16	179.68	2.00	2.00	0.00	40.1191052	-104.9677329
1640.00	20.80	17.21	1617.31	178.35	55.24	186.71	2.00	2.00	0.00	40.1191236	-104.9677255
1660.00	21.20	17.21	1635.98	185.20	57.36	193.88	2.00	2.00	0.00	40.1191424	-104.9677179
1680.00	21.60	17.21	1654.60	192.17	59.52	201.18	2.00	2.00	0.00	40.1191615	-104.9677102
1700.00	22.00	17.21	1673.17	199.27	61.72	208.61	2.00	2.00	0.00	40.1191810	-104.9677023
<b>Begin Hold @ 22.37°,17.21° Azm</b>											
1718.46	22.37	17.21	1690.26	205.92	63.78	215.58	2.00	2.00	0.00	40.1191993	-104.9676949
 <b>Parkman</b>											
4113.43	22.37	17.21	3905.00	1076.61	333.47	1127.07	0.00	0.00	0.00	40.1215894	-104.9667306
 <b>Sussex</b>											
4654.12	22.37	17.21	4405.00	1273.17	394.36	1332.85	0.00	0.00	0.00	40.1221290	-104.9665128
 <b>Shannon</b>											
5149.39	22.37	17.21	4863.00	1453.23	450.13	1521.34	0.00	0.00	0.00	40.1226233	-104.9663134
<b>Begin Drop @ -2.00°/ 100 Ft</b>											
6133.13	22.37	17.21	5772.71	1810.86	560.90	1895.74	0.00	0.00	0.00	40.1236051	-104.9659173
6153.13	21.97	17.21	5791.23	1818.07	563.13	1903.29	2.00	-2.00	0.00	40.1236249	-104.9659093

Measured Depth (Ft)	INC Deg	AZM Deg	TVD (Ft)	NS (Ft)	EW (Ft)	VS (Ft)	DLS °/100Ft	Build Rate °/100Ft	Walk Rate °/100Ft	Latitude Dec. Deg	Longitude Dec. Deg
6173.13	21.57	17.21	5809.80	1825.15	565.33	1910.70	2.00	-2.00	0.00	40.1236443	-104.9659014
6193.13	21.17	17.21	5828.43	1832.12	567.48	1917.99	2.00	-2.00	0.00	40.1236634	-104.9658937
6213.13	20.77	17.21	5847.10	1838.95	569.60	1925.15	2.00	-2.00	0.00	40.1236822	-104.9658861
6233.13	20.37	17.21	5865.83	1845.67	571.68	1932.18	2.00	-2.00	0.00	40.1237006	-104.9658787
6253.13	19.97	17.21	5884.60	1852.25	573.72	1939.07	2.00	-2.00	0.00	40.1237187	-104.9658714
6273.13	19.57	17.21	5903.42	1858.72	575.72	1945.84	2.00	-2.00	0.00	40.1237364	-104.9658642
6293.13	19.17	17.21	5922.29	1865.05	577.69	1952.47	2.00	-2.00	0.00	40.1237538	-104.9658572
6313.13	18.77	17.21	5941.20	1871.26	579.61	1958.97	2.00	-2.00	0.00	40.1237709	-104.9658503
6333.13	18.37	17.21	5960.16	1877.35	581.49	1965.34	2.00	-2.00	0.00	40.1237876	-104.9658436
6353.13	17.97	17.21	5979.17	1883.30	583.34	1971.58	2.00	-2.00	0.00	40.1238039	-104.9658370
6373.13	17.57	17.21	5998.21	1889.13	585.14	1977.68	2.00	-2.00	0.00	40.1238199	-104.9658306
6393.13	17.17	17.21	6017.30	1894.84	586.91	1983.65	2.00	-2.00	0.00	40.1238356	-104.9658242
6413.13	16.77	17.21	6036.43	1900.41	588.64	1989.49	2.00	-2.00	0.00	40.1238509	-104.9658181
6433.13	16.37	17.21	6055.60	1905.86	590.33	1995.19	2.00	-2.00	0.00	40.1238659	-104.9658120
6453.13	15.97	17.21	6074.81	1911.18	591.97	2000.76	2.00	-2.00	0.00	40.1238805	-104.9658061
6473.13	15.57	17.21	6094.05	1916.37	593.58	2006.20	2.00	-2.00	0.00	40.1238947	-104.9658004
6493.13	15.17	17.21	6113.34	1921.44	595.15	2011.50	2.00	-2.00	0.00	40.1239086	-104.9657948
6513.13	14.77	17.21	6132.66	1926.37	596.68	2016.67	2.00	-2.00	0.00	40.1239222	-104.9657893
6533.13	14.37	17.21	6152.02	1931.18	598.17	2021.70	2.00	-2.00	0.00	40.1239354	-104.9657840
6553.13	13.97	17.21	6171.41	1935.86	599.62	2026.59	2.00	-2.00	0.00	40.1239482	-104.9657788
6573.13	13.57	17.21	6190.83	1940.40	601.02	2031.35	2.00	-2.00	0.00	40.1239607	-104.9657738
6593.13	13.17	17.21	6210.29	1944.82	602.39	2035.98	2.00	-2.00	0.00	40.1239728	-104.9657689
6613.13	12.77	17.21	6229.78	1949.11	603.72	2040.47	2.00	-2.00	0.00	40.1239846	-104.9657641
6633.13	12.37	17.21	6249.30	1953.27	605.01	2044.82	2.00	-2.00	0.00	40.1239960	-104.9657595
6653.13	11.97	17.21	6268.85	1957.29	606.25	2049.04	2.00	-2.00	0.00	40.1240070	-104.9657551
6673.13	11.57	17.21	6288.43	1961.19	607.46	2053.12	2.00	-2.00	0.00	40.1240177	-104.9657507
6693.13	11.17	17.21	6308.04	1964.96	608.63	2057.06	2.00	-2.00	0.00	40.1240281	-104.9657466
6713.13	10.77	17.21	6327.67	1968.59	609.75	2060.86	2.00	-2.00	0.00	40.1240381	-104.9657425
6733.13	10.37	17.21	6347.33	1972.10	610.84	2064.53	2.00	-2.00	0.00	40.1240477	-104.9657387
6753.13	9.97	17.21	6367.02	1975.47	611.88	2068.06	2.00	-2.00	0.00	40.1240569	-104.9657349
6773.13	9.57	17.21	6386.73	1978.71	612.89	2071.46	2.00	-2.00	0.00	40.1240658	-104.9657313
6793.13	9.17	17.21	6406.46	1981.82	613.85	2074.71	2.00	-2.00	0.00	40.1240744	-104.9657279
6813.13	8.77	17.20	6426.22	1984.80	614.77	2077.83	2.00	-2.00	0.00	40.1240826	-104.9657246
6833.13	8.37	17.20	6445.99	1987.65	615.65	2080.81	2.00	-2.00	0.00	40.1240904	-104.9657214
6853.13	7.97	17.20	6465.79	1990.36	616.50	2083.66	2.00	-2.00	0.00	40.1240978	-104.9657184
6873.13	7.57	17.20	6485.61	1992.95	617.30	2086.36	2.00	-2.00	0.00	40.1241049	-104.9657156
6893.13	7.17	17.20	6505.44	1995.40	618.05	2088.92	2.00	-2.00	0.00	40.1241116	-104.9657129
6913.13	6.77	17.20	6525.29	1997.72	618.77	2091.35	2.00	-2.00	0.00	40.1241180	-104.9657103
6933.13	6.37	17.20	6545.16	1999.90	619.45	2093.64	2.00	-2.00	0.00	40.1241240	-104.9657079
6953.13	5.97	17.20	6565.05	2001.96	620.08	2095.79	2.00	-2.00	0.00	40.1241296	-104.9657056
6973.13	5.57	17.20	6584.95	2003.88	620.68	2097.80	2.00	-2.00	0.00	40.1241349	-104.9657035



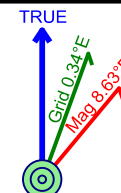
Measured Depth (Ft)	INC Deg	AZM Deg	TVD (Ft)	NS (Ft)	EW (Ft)	VS (Ft)	DLS °/100Ft	Build Rate °/100Ft	Walk Rate °/100Ft	Latitude Dec. Deg	Longitude Dec. Deg		
6993.13	5.17	17.20	6604.86	2005.67	621.23	2099.67	2.00	-2.00	-0.01	40.1241398	-104.9657015		
7013.13	4.77	17.20	6624.78	2007.32	621.74	2101.40	2.00	-2.00	-0.01	40.1241444	-104.9656997		
7033.13	4.37	17.20	6644.72	2008.84	622.22	2103.00	2.00	-2.00	-0.01	40.1241486	-104.9656980		
7053.13	3.97	17.19	6664.67	2010.23	622.65	2104.45	2.00	-2.00	-0.01	40.1241524	-104.9656964		
7073.13	3.57	17.19	6684.62	2011.49	623.03	2105.77	2.00	-2.00	-0.01	40.1241558	-104.9656951		
7093.13	3.17	17.19	6704.59	2012.61	623.38	2106.94	2.00	-2.00	-0.01	40.1241589	-104.9656938		
7113.13	2.77	17.19	6724.56	2013.60	623.69	2107.98	2.00	-2.00	-0.02	40.1241616	-104.9656927		
7133.13	2.37	17.18	6744.54	2014.46	623.95	2108.88	2.00	-2.00	-0.02	40.1241640	-104.9656918		
7153.13	1.97	17.18	6764.53	2015.18	624.18	2109.63	2.00	-2.00	-0.03	40.1241660	-104.9656910		
7173.13	1.57	17.17	6784.52	2015.77	624.36	2110.25	2.00	-2.00	-0.05	40.1241676	-104.9656903		
7193.13	1.17	17.15	6804.51	2016.23	624.50	2110.73	2.00	-2.00	-0.08	40.1241688	-104.9656898		
7213.13	0.77	17.12	6824.51	2016.55	624.60	2111.07	2.00	-2.00	-0.16	40.1241697	-104.9656895		
7233.13	0.37	17.02	6844.51	2016.74	624.66	2111.27	2.00	-2.00	-0.51	40.1241702	-104.9656892		
Begin Hold @ Vertical													
7250.86	0.02	12.53	6862.24	2016.80	624.68	2111.33	2.00	-2.00	-25.33	40.1241704	-104.9656892		
 Niobrara	7641.62	0.02	12.53	7253.00	2016.90	624.70	2111.43	0.00	0.00	40.1241707	-104.9656891		
 Fort Hays	7901.62	0.02	12.53	7513.00	2016.97	624.71	2111.50	0.00	0.00	40.1241709	-104.9656890		
 Codell	7921.62	0.02	12.53	7533.00	2016.98	624.72	2111.51	0.00	0.00	40.1241709	-104.9656890		
PBHL @ 2647' FSL & 1323' FEL  Grant Brothers 23-2 Ae Target													
8080.62	0.02	12.53	7692.00	2017.02	624.72	2111.55	0.00	0.00	0.00	40.1241710	-104.9656890		
TARGET DATA													
Name		Shape	Easting (Ft)		Northing (Ft)		Subsea (Ft)	TVD (Ft)	NS (Ft)	EW (Ft)	Side A (Ft)	Side B (Ft)	Dia. (Ft)
Grant Brothers 23-2 Ae Target		CIRCLE	3149413.0		1288529.5		2759.0	7692.0	2017.0	624.7	100.0	200.0	100.0
LITHOLOGY DATA													
Name		Description			Pattern		TVD Top (Ft)		TVD Bottom (Ft)		Dip Angle (deg)		Dip Direction (deg)
Parkman		Parkman			SANDSTON		3905		4405		0.0		0.0
Sussex		Sussex			SANDSTON		4405		4863		0.0		0.0
Shannon		Shannon			SANDSTON		4863		7253		0.0		0.0
Niobrara		Niobrara			CHALK		7253		7513		0.0		0.0
Fort Hays		Fort Hays			LIMESTON		7513		7533		0.0		0.0
Codell		Codell			SANDSTON		7533		7698		0.0		0.0



**Job Number:** Grant Brothers Pad  
**Company:** Sundance Energy, Inc.  
**Lease/Well:** Grant Bros 23-2 Ae  
**Location:** Sec 23 T2N R68W  
**Rig Name:** Cade 25  
**State/County:** CO/ Weld  
**Country:** USA  
**API Number:** 05-123-xxxx

**Elevation :** 4919.00 ft  
**RKB:** 14.00 ft  
**Projection System:** US State Plane 1983  
**Projection Group:** Colorado Northern Zone  
**Projection Datum:** GRS80  
**Mag. Declination:** 8.63°  
**Grid Convergence:** 0.34379 E  
**Date:** Monday, June 24, 2013

Calculated by HawkEye Software  
Minimum Curvature Method  
Vertical Section Plane 17.21°  
Northing (US ft): 1286508.81 Easting (US ft): 3148800.36  
Latitude: 40°07'7.0824" N Longitude: -104°58'4.5228" W  
Well Location: 647.07 FSL, 1956.32 FEL, Section 23, T2N, R68W, Meridian 06, Weld County, CO  
Direction Reference: True North



Measured Depth (Ft)	INC Deg	AZM Deg	TVD (Ft)	NS (Ft)	EW (Ft)	VS (Ft)	DLS °/100Ft	Build Rate °/100Ft	Walk Rate °/100Ft	Latitude Dec. Deg	Longitude Dec. Deg
<b>SHL @ 628' FSL &amp; 1955' FEL</b>											
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	40.1186340	-104.9679230
<b>KOP-Begin Build @ 600.00MD ,2.00°/ 100 Ft</b>											
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00	40.1186340	-104.9679230
<b>Begin Hold @ 22.37°,17.21° Azm</b>											
1718.46	22.37	17.21	1690.26	205.92	63.78	215.58	2.00	2.00	0.00	40.1191993	-104.9676949
<b>Parkman</b>											
4113.44	22.37	17.21	3905.01	1076.61	333.47	1127.07	0.00	0.00	0.00	40.1215894	-104.9667306
<b>Sussex</b>											
4654.12	22.37	17.21	4405.00	1273.17	394.36	1332.85	0.00	0.00	0.00	40.1221290	-104.9665128
<b>Shannon</b>											
5149.39	22.37	17.21	4863.00	1453.22	450.13	1521.34	0.00	0.00	0.00	40.1226233	-104.9663134
<b>Begin Drop @ -2.00°/ 100 Ft</b>											
6133.13	22.37	17.21	5772.71	1810.86	560.90	1895.74	0.00	0.00	0.00	40.1236051	-104.9659173
<b>Begin Hold @ Vertical</b>											
7250.86	0.02	12.53	6862.24	2016.80	624.68	2111.33	2.00	-2.00	-25.33	40.1241704	-104.9656892
<b>Niobrara</b>											
7641.62	0.02	12.53	7253.00	2016.90	624.70	2111.43	0.00	0.00	0.00	40.1241707	-104.9656891
<b>Fort Hays</b>											
7901.62	0.02	12.53	7513.00	2016.97	624.71	2111.50	0.00	0.00	0.00	40.1241709	-104.9656890
<b>Codell</b>											
7921.62	0.02	12.53	7533.00	2016.98	624.72	2111.51	0.00	0.00	0.00	40.1241709	-104.9656890
<b>PBHL @ 2647' FSL &amp; 1323' FEL     ● Grant Brothers 23-2 Ae Target</b>											
8080.62	0.02	12.53	7692.00	2017.02	624.72	2111.55	0.00	0.00	0.00	40.1241710	-104.9656890

#### TARGET DATA

Name	Shape	Easting (Ft)	Northing (Ft)	Subsea (Ft)	TVD (Ft)	NS (Ft)	EW (Ft)	Side A (Ft)	Side B (Ft)	Dia. (Ft)
Grant Brothers 23-2 Ae Target	CIRCLE	3149413.0	1288529.5	2759.0	7692.0	2017.0	624.7	100.0	200.0	100.0

LITHOLOGY DATA						
Name	Description	Pattern	TVD Top (Ft)	TVD Bottom (Ft)	Dip Angle (deg)	Dip Direction (deg)
Parkman	Parkman	SANDSTON	3905	4405	0.0	0.0
Sussex	Sussex	SANDSTON	4405	4863	0.0	0.0
Shannon	Shannon	SANDSTON	4863	7253	0.0	0.0
Niobrara	Niobrara	CHALK	7253	7513	0.0	0.0
Fort Hays	Fort Hays	LIMESTON	7513	7533	0.0	0.0
Codell	Codell	SANDSTON	7533	7698	0.0	0.0