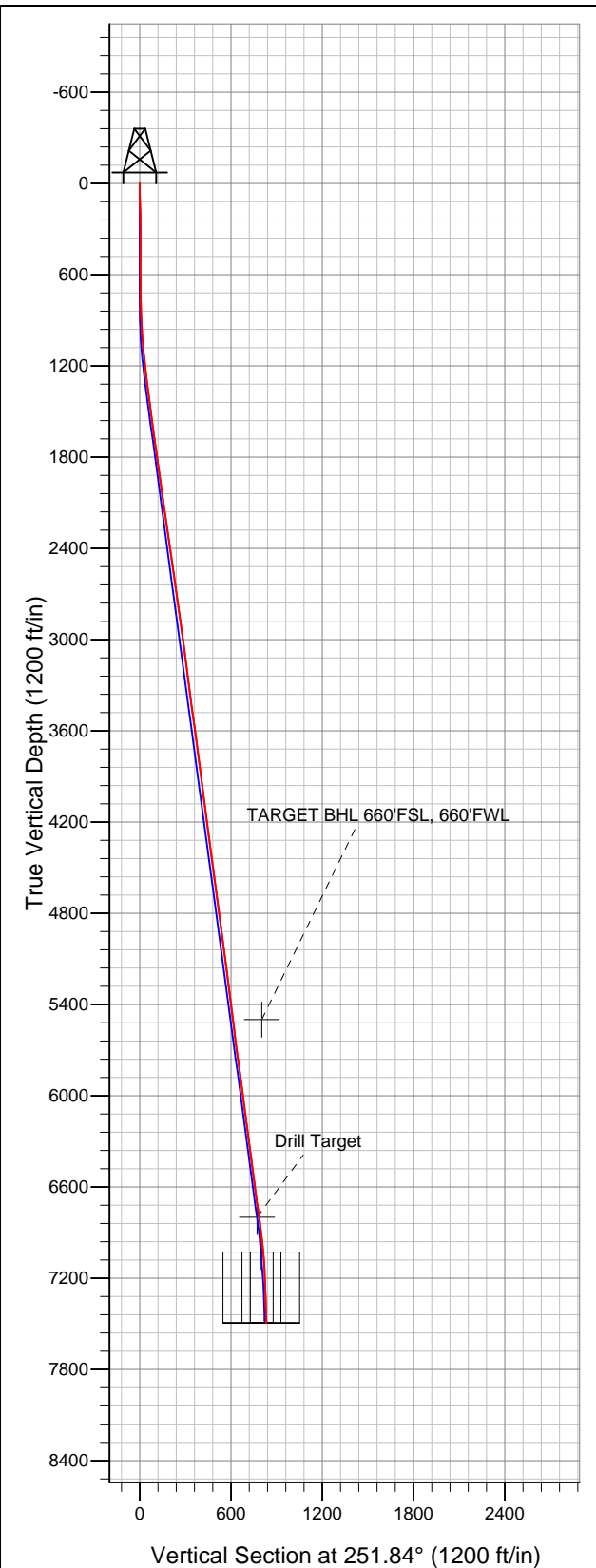


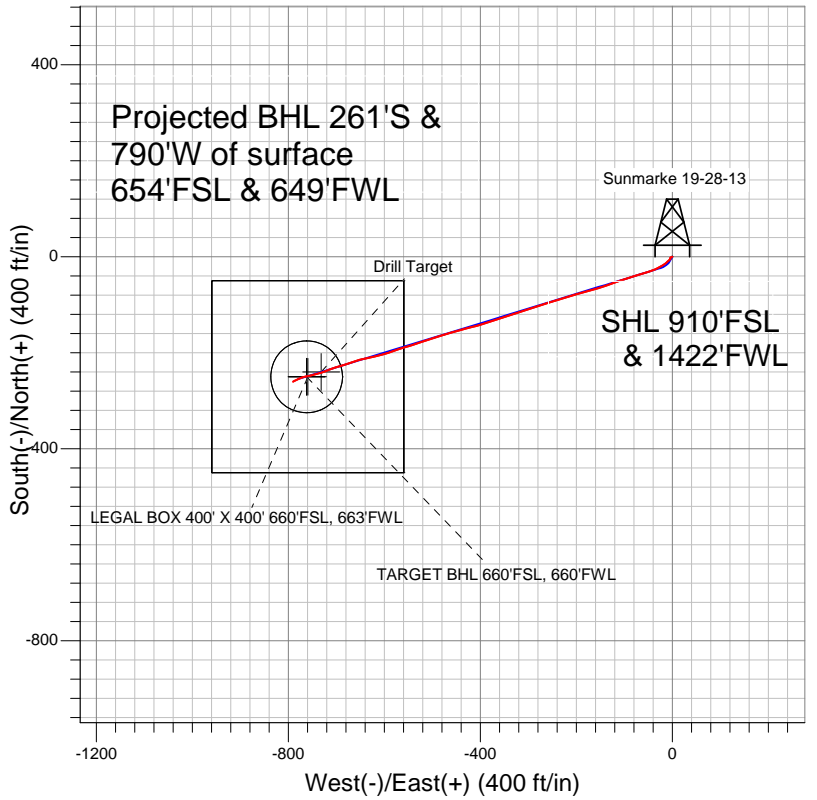
Well Name: Sunmarke 19-28-13

Surface Location: Sunmarke 19-28-11 Pad Sec.28-T4N-R67W
North American Datum 1983 US State Plane 1983Colorado Northern Zone
Ground Elevation: 4975.0

+N/-S 0.0	+E/-W 0.0	Northing 1345107.75	Easting 3167389.95	Latitude 40.279166	Longitude -104.900046	Slot
		Original Well Elev	WELL @ 4989.0ft (Original Well Elev)			



KP KAUFFMAN



LEGEND

- Survey #1
- △ Sunmarke 19-28-13, Wellbore #1, PLAN 3 (MAR 7,2012) V0
- Wellbore #1

Final Survey Plot

Projected Final Survey -
7547'MD & 7493'TVD @ 832'VS
1.40 deg Inc 235.10 deg AZ

Project: SEC.28-T4N-R67W
Site: Sunmarke 19-28-11 Pad Sec.28-T4N-R67W
Well: Sunmarke 19-28-13
Plan: Wellbore #1



KP KAUFFMAN

SEC.28-T4N-R67W

Sunmarke 19-28-11 Pad Sec.28-T4N-R67W

Sunmarke 19-28-13

Wellbore #1

Survey: Survey #1

Standard Survey Report

13 March, 2012

Company:	KP KAUFFMAN	Local Co-ordinate Reference:	Well Sunmarke 19-28-13
Project:	SEC.28-T4N-R67W	TVD Reference:	WELL @ 4989.0ft (Original Well Elev)
Site:	Sunmarke 19-28-11 Pad Sec.28-T4N-R67W	MD Reference:	WELL @ 4989.0ft (Original Well Elev)
Well:	Sunmarke 19-28-13	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.28-T4N-R67W, Weld County, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site	Sunmarke 19-28-11 Pad Sec.28-T4N-R67W		
Site Position:		Northing:	1,345,122.23ft
From:	Lat/Long	Easting:	3,167,375.90ft
Position Uncertainty:	0.0 ft	Slot Radius:	"
		Latitude:	40.279206
		Longitude:	-104.900096
		Grid Convergence:	0.39 °

Well	Sunmarke 19-28-13		
Well Position	+N/-S	0.0 ft	Northing:
	+E/-W	0.0 ft	Easting:
Position Uncertainty		0.0 ft	Wellhead Elevation:
			Latitude:
			Longitude:
			Ground Level:

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2010	3/7/2012	8.83
			Dip Angle (°)
			66.91
			Field Strength (nT)
			52,975

Design	Wellbore #1		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)
	6,800.0	0.0	0.0
			Direction (°)
			251.84

Survey Program	Date	3/13/2012		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
111.0	7,547.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
111.0	1.50	248.30	111.0	-0.5	-1.3	1.5	1.35	1.35	0.00	
202.0	0.80	243.50	202.0	-1.3	-3.0	3.3	0.78	-0.77	-5.27	
293.0	0.70	247.20	293.0	-1.8	-4.1	4.5	0.12	-0.11	4.07	
384.0	0.10	146.40	384.0	-2.0	-4.6	5.0	0.80	-0.66	-110.77	
475.0	0.10	151.00	475.0	-2.2	-4.5	4.9	0.01	0.00	5.05	
570.0	0.30	144.20	570.0	-2.5	-4.3	4.9	0.21	0.21	-7.16	
665.0	0.70	180.90	665.0	-3.2	-4.2	5.0	0.52	0.42	38.63	
715.0	0.70	201.40	715.0	-3.8	-4.3	5.3	0.50	0.00	41.00	
765.0	0.70	201.40	764.9	-4.4	-4.5	5.7	0.00	0.00	0.00	
799.0	2.00	217.20	798.9	-5.1	-4.9	6.3	3.94	3.82	46.47	
894.0	2.90	230.00	893.8	-7.9	-7.8	9.9	1.10	0.95	13.47	
988.0	4.10	225.00	987.7	-11.8	-12.0	15.1	1.32	1.28	-5.32	

Company:	KP KAUFFMAN	Local Co-ordinate Reference:	Well Sunmarke 19-28-13
Project:	SEC.28-T4N-R67W	TVD Reference:	WELL @ 4989.0ft (Original Well Elev)
Site:	Sunmarke 19-28-11 Pad Sec.28-T4N-R67W	MD Reference:	WELL @ 4989.0ft (Original Well Elev)
Well:	Sunmarke 19-28-13	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
1,083.0	5.90	237.40	1,082.3	-16.9	-18.5	22.8	2.20	1.89	13.05	
1,178.0	6.30	241.10	1,176.8	-22.0	-27.2	32.7	0.59	0.42	3.89	
1,273.0	6.60	246.30	1,271.2	-26.7	-36.7	43.2	0.69	0.32	5.47	
1,368.0	7.30	251.80	1,365.5	-30.8	-47.5	54.7	1.02	0.74	5.79	
1,463.0	7.30	253.80	1,459.7	-34.4	-59.0	66.8	0.27	0.00	2.11	
1,558.0	7.50	255.00	1,553.9	-37.7	-70.8	79.0	0.27	0.21	1.26	
1,653.0	8.00	251.50	1,648.0	-41.4	-83.0	91.8	0.72	0.53	-3.68	
1,748.0	8.10	252.10	1,742.1	-45.5	-95.7	105.1	0.14	0.11	0.63	
1,843.0	7.90	252.50	1,836.2	-49.5	-108.3	118.3	0.22	-0.21	0.42	
1,938.0	8.10	250.00	1,930.3	-53.8	-120.8	131.5	0.42	0.21	-2.63	
2,064.0	7.90	249.70	2,055.0	-59.8	-137.3	149.1	0.16	-0.16	-0.24	
2,191.0	7.80	254.00	2,180.8	-65.2	-153.7	166.4	0.47	-0.08	3.39	
2,317.0	8.10	253.70	2,305.6	-70.1	-170.5	183.8	0.24	0.24	-0.24	
2,444.0	8.70	253.70	2,431.3	-75.3	-188.3	202.4	0.47	0.47	0.00	
2,571.0	8.40	255.50	2,556.9	-80.3	-206.5	221.2	0.32	-0.24	1.42	
2,697.0	8.40	254.10	2,681.5	-85.1	-224.2	239.6	0.16	0.00	-1.11	
2,823.0	7.60	251.80	2,806.3	-90.3	-241.0	257.1	0.68	-0.63	-1.83	
2,950.0	7.90	252.30	2,932.1	-95.5	-257.3	274.3	0.24	0.24	0.39	
3,076.0	7.70	251.70	3,057.0	-100.8	-273.6	291.4	0.17	-0.16	-0.48	
3,202.0	7.20	253.30	3,181.9	-105.7	-289.1	307.7	0.43	-0.40	1.27	
3,329.0	7.20	251.00	3,307.9	-110.6	-304.3	323.6	0.23	0.00	-1.81	
3,455.0	7.70	252.20	3,432.8	-115.8	-319.8	339.9	0.42	0.40	0.95	
3,582.0	8.00	252.50	3,558.6	-121.0	-336.3	357.3	0.24	0.24	0.24	
3,709.0	7.40	250.50	3,684.5	-126.4	-352.5	374.3	0.52	-0.47	-1.57	
3,835.0	7.70	253.60	3,809.4	-131.5	-368.2	390.8	0.40	0.24	2.46	
3,961.0	8.00	252.70	3,934.2	-136.5	-384.7	408.0	0.26	0.24	-0.71	
4,088.0	7.50	251.50	4,060.1	-141.8	-401.0	425.2	0.41	-0.39	-0.94	
4,214.0	6.70	257.50	4,185.1	-146.0	-415.9	440.7	0.86	-0.63	4.76	
4,341.0	6.80	254.20	4,311.2	-149.6	-430.4	455.6	0.32	0.08	-2.60	
4,467.0	7.50	253.20	4,436.2	-154.0	-445.5	471.3	0.56	0.56	-0.79	
4,594.0	7.70	255.90	4,562.1	-158.5	-461.6	488.0	0.32	0.16	2.13	
4,720.0	8.00	251.90	4,686.9	-163.3	-478.2	505.2	0.49	0.24	-3.17	
4,847.0	8.10	252.70	4,812.7	-168.7	-495.1	523.0	0.12	0.08	0.63	
4,973.0	8.00	251.80	4,937.4	-174.0	-511.9	540.7	0.13	-0.08	-0.71	
5,100.0	6.90	251.40	5,063.4	-179.2	-527.5	557.1	0.87	-0.87	-0.31	
5,226.0	6.80	251.40	5,188.5	-184.0	-541.8	572.2	0.08	-0.08	0.00	
5,353.0	8.00	254.30	5,314.4	-188.8	-557.4	588.5	0.99	0.94	2.28	
5,479.0	6.90	252.70	5,439.3	-193.4	-573.1	604.8	0.89	-0.87	-1.27	
5,562.4	6.70	249.79	5,522.1	-196.6	-582.4	614.7	0.48	-0.24	-3.49	
TARGET BHL 660'FSL, 660'FWL										
5,606.0	6.60	248.20	5,565.5	-198.4	-587.1	619.7	0.48	-0.23	-3.65	
5,732.0	7.90	256.00	5,690.5	-203.2	-602.3	635.6	1.29	1.03	6.19	
5,859.0	8.10	255.20	5,816.2	-207.6	-619.4	653.2	0.18	0.16	-0.63	
5,985.0	7.40	260.10	5,941.1	-211.3	-636.0	670.1	0.76	-0.56	3.89	
6,112.0	7.30	254.60	6,067.0	-214.8	-651.8	686.3	0.56	-0.08	-4.33	
6,239.0	7.60	250.20	6,193.0	-219.8	-667.5	702.7	0.51	0.24	-3.46	
6,365.0	8.00	254.00	6,317.8	-225.0	-683.7	719.8	0.52	0.32	3.02	
6,492.0	7.30	253.40	6,443.7	-229.8	-700.0	736.7	0.55	-0.55	-0.47	
6,618.0	7.10	244.80	6,568.7	-235.4	-714.7	752.5	0.87	-0.16	-6.83	
6,745.0	8.30	254.70	6,694.5	-241.1	-730.6	769.4	1.41	0.94	7.80	
6,849.5	8.13	255.28	6,797.9	-245.0	-745.1	784.3	0.18	-0.16	0.55	
Drill Target										
6,871.0	8.10	255.40	6,819.2	-245.8	-748.0	787.3	0.18	-0.16	0.57	
6,998.0	6.40	258.40	6,945.2	-249.5	-763.6	803.3	1.37	-1.34	2.36	

Company: KP KAUFFMAN
Project: SEC.28-T4N-R67W
Site: Sunmarke 19-28-11 Pad Sec.28-T4N-R67W
Well: Sunmarke 19-28-13
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Sunmarke 19-28-13
TVD Reference: WELL @ 4989.0ft (Original Well Elev)
MD Reference: WELL @ 4989.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: Landmark

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
7,080.9	4.93	251.92	7,027.8	-251.5	-771.5	811.5	1.93	-1.78	-7.82
LEGAL BOX 400' X 400' 660'FSL, 663'FWL									
7,081.3	4.92	251.88	7,028.1	-251.5	-771.5	811.5	1.93	-1.73	-10.14
TARGET CIRCLE 660'FSL, 660'FWL									
7,124.0	4.20	246.80	7,070.7	-252.7	-774.7	814.9	1.93	-1.69	-11.90
7,251.0	2.60	241.40	7,197.5	-255.9	-781.5	822.4	1.28	-1.26	-4.25
7,377.0	1.80	249.30	7,323.4	-258.0	-785.9	827.1	0.68	-0.63	6.27
7,504.0	1.40	235.10	7,450.3	-259.6	-789.0	830.6	0.44	-0.31	-11.18
7,547.0	1.40	235.10	7,493.3	-260.2	-789.9	831.6	0.00	0.00	0.00

Checked By: _____ Approved By: _____ Date: _____