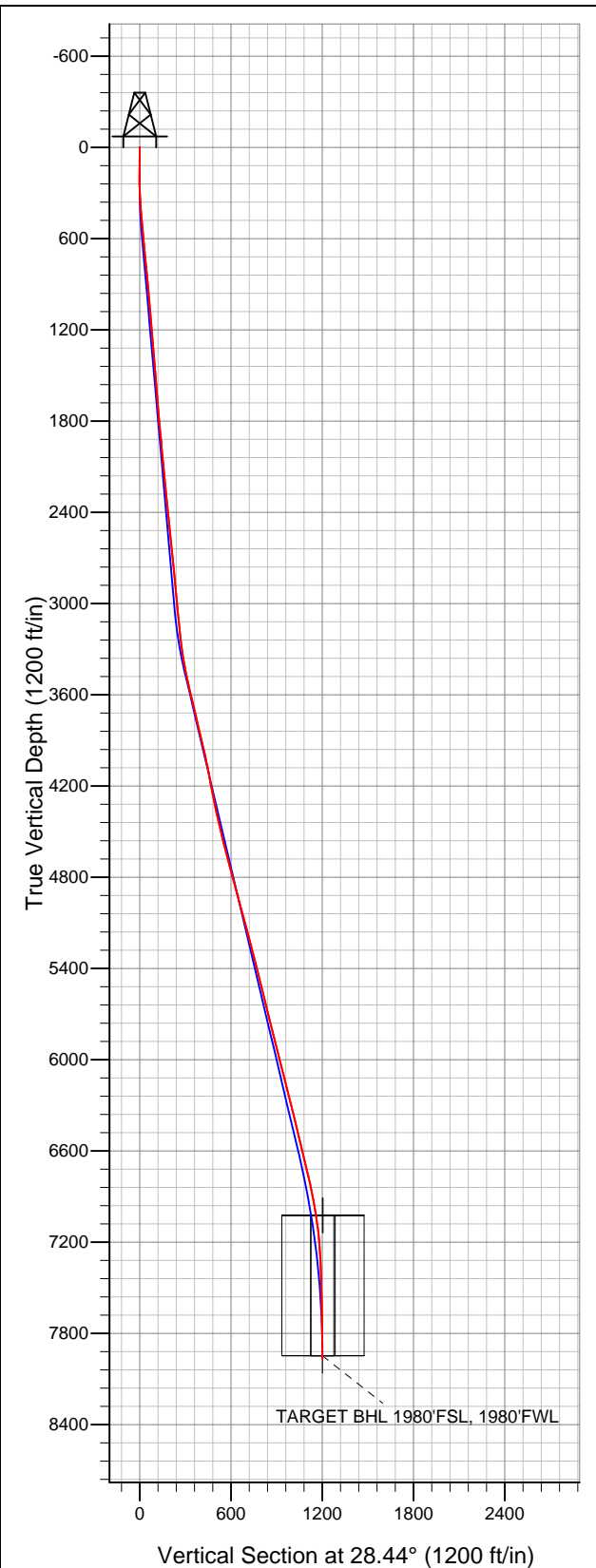


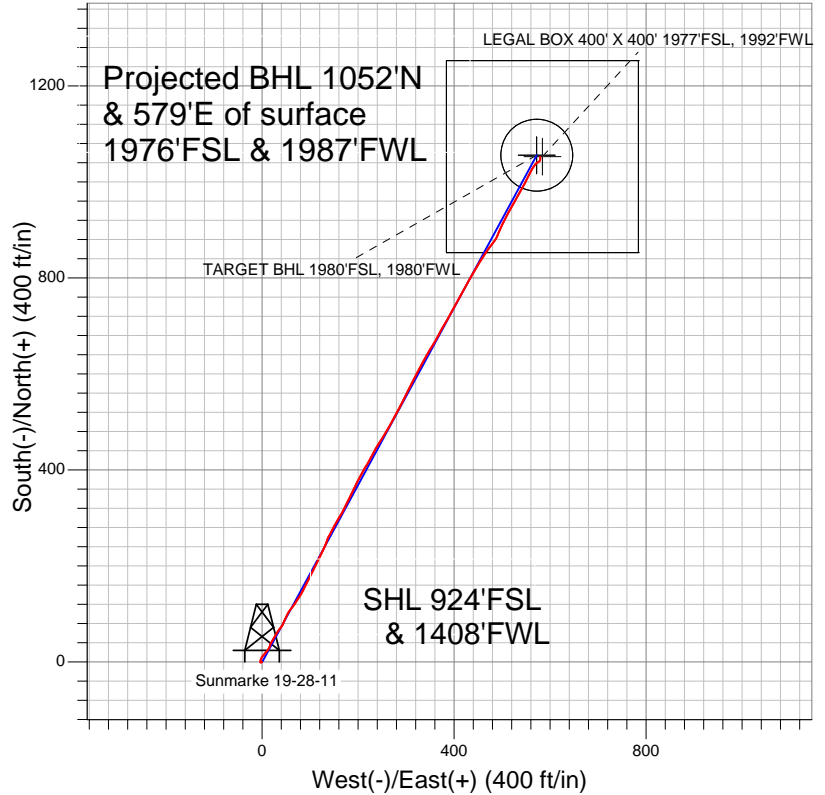
Well Name: Sunmarke 19-28-11

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 1345122.22	Easting 3167375.90	Latitude 40.279206	Longitude -104.900096	Slot
		Original Well Elev	WELL @ 4989.0ft (Original Well Elev)			



KP KAUFFMAN



LEGEND

- Survey #1
- + Sunmarke 19-28-11, Wellbore #1, Plan #2 (2-27-12) R V0
- Wellbore #1

Final Survey Plot

Projected Final Survey -
8085'MD & 7966'TVD @ 1201'VS
1.00 deg Inc 350.40 deg AZ

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



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SEC.28-T4N-R67W

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

Sunmarke 19-28-11

Wellbore #1

Survey: Survey #1

Standard Survey Report

06 March, 2012

Company:	KP KAUFFMAN	Local Co-ordinate Reference:	Well Sunmarke 19-28-11
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 19-28-11	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					Latitude:					40.279206									
From:					Lat/Long					Easting:					3,167,375.90ft					Longitude:					-104.900096				
Position Uncertainty:					0.0 ft					Slot Radius:					"					Grid Convergence:					0.39 °				

Well	Sunmarke 19-28-11					
Well Position	+N-S	0.0 ft	Northing:	1,345,122.22 ft	Latitude:	40.279206
	+E-W	0.0 ft	Easting:	3,167,375.90 ft	Longitude:	-104.900096
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,975.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2/27/2012	8.83	66.91	52,978

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)	Direction (°)	
	0.0	0.0	0.0	28.44	

Survey Program		Date	3/6/2012		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
82.0	8,085.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	

Survey	Wellbore Data									
	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)
Main Wellbore	0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
	82.0	1.90	252.20	82.0	-0.4	-1.3	-1.0	2.32	2.32	0.00
	173.0	0.60	269.30	173.0	-0.9	-3.2	-2.3	1.47	-1.43	18.79
	264.0	1.50	351.00	263.9	0.3	-3.9	-1.6	1.68	0.99	89.78
	354.0	3.70	14.10	353.9	4.3	-3.3	2.2	2.66	2.44	25.67
	445.0	5.40	36.30	444.6	10.6	-0.1	9.2	2.66	1.87	24.40
	540.0	5.80	41.40	539.1	17.8	5.7	18.4	0.67	0.42	5.37
	635.0	5.00	38.20	633.7	24.6	11.5	27.1	0.90	-0.84	-3.37
	718.0	5.40	17.50	716.4	31.2	14.9	34.5	2.30	0.48	-24.94
	799.0	6.20	26.50	796.9	38.7	18.0	42.6	1.49	0.99	11.11
	894.0	5.10	31.10	891.5	46.9	22.4	52.0	1.25	-1.16	4.84
	988.0	4.60	30.10	985.1	53.8	26.5	59.9	0.54	-0.53	-1.06
1,083.0	5.40	31.90	1,079.8	60.9	30.8	68.2	0.86	0.84	1.89	

Company:	KP KAUFFMAN	Local Co-ordinate Reference:	Well Sunmarke 19-28-11
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 19-28-11	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)	
1,178.0	5.10	37.20	1,174.4	68.0	35.7	76.8	0.60	-0.32	5.58	
1,273.0	4.10	35.00	1,269.1	74.2	40.2	84.4	1.07	-1.05	-2.32	
1,368.0	4.80	25.10	1,363.8	80.6	43.8	91.7	1.09	0.74	-10.42	
1,463.0	4.90	23.30	1,458.5	87.9	47.1	99.7	0.19	0.11	-1.89	
1,558.0	4.40	26.80	1,553.1	94.9	50.3	107.4	0.60	-0.53	3.68	
1,653.0	4.20	26.10	1,647.9	101.2	53.5	114.5	0.22	-0.21	-0.74	
1,748.0	5.10	38.90	1,742.6	107.7	57.7	122.1	1.44	0.95	13.47	
1,843.0	5.60	36.00	1,837.1	114.7	63.1	130.9	0.60	0.53	-3.05	
1,938.0	5.10	34.70	1,931.7	121.9	68.2	139.7	0.54	-0.53	-1.37	
2,035.0	6.20	32.60	2,028.3	129.9	73.5	149.2	1.15	1.13	-2.16	
2,127.0	5.80	32.50	2,119.8	138.0	78.7	158.8	0.43	-0.43	-0.11	
2,222.0	5.20	31.10	2,214.3	145.7	83.5	167.9	0.65	-0.63	-1.47	
2,317.0	5.00	26.00	2,308.9	153.1	87.5	176.3	0.52	-0.21	-5.37	
2,412.0	5.40	25.40	2,403.6	160.9	91.2	184.9	0.42	0.42	-0.63	
2,507.0	5.80	23.20	2,498.1	169.3	95.0	194.2	0.48	0.42	-2.32	
2,602.0	6.20	28.30	2,592.6	178.3	99.4	204.1	0.70	0.42	5.37	
2,697.0	6.20	27.00	2,687.0	187.3	104.1	214.3	0.15	0.00	-1.37	
2,792.0	6.20	28.40	2,781.5	196.4	108.9	224.6	0.16	0.00	1.47	
2,887.0	5.30	24.30	2,876.0	204.9	113.1	234.1	1.04	-0.95	-4.32	
2,981.0	5.30	25.40	2,969.6	212.8	116.8	242.8	0.11	0.00	1.17	
3,076.0	4.70	25.90	3,064.2	220.3	120.4	251.0	0.63	-0.63	0.53	
3,171.0	6.10	27.60	3,158.8	228.3	124.4	260.0	1.48	1.47	1.79	
3,266.0	7.80	23.80	3,253.1	238.6	129.4	271.4	1.85	1.79	-4.00	
3,360.0	8.30	19.50	3,346.2	250.9	134.2	284.5	0.83	0.53	-4.57	
3,455.0	10.50	27.60	3,439.9	265.0	140.5	299.9	2.70	2.32	8.53	
3,550.0	13.60	28.10	3,532.8	282.5	149.8	319.8	3.26	3.26	0.53	
3,645.0	13.20	31.40	3,625.2	301.6	160.7	341.8	0.91	-0.42	3.47	
3,740.0	12.70	26.80	3,717.8	320.2	171.0	363.0	1.21	-0.53	-4.84	
3,835.0	13.50	25.70	3,810.3	339.5	180.6	384.5	0.88	0.84	-1.16	
3,930.0	13.00	26.00	3,902.8	359.1	190.0	406.3	0.53	-0.53	0.32	
4,025.0	13.10	27.80	3,995.3	378.3	199.8	427.7	0.44	0.11	1.89	
4,120.0	11.60	28.90	4,088.1	396.1	209.4	448.1	1.60	-1.58	1.16	
4,214.0	10.20	30.50	4,180.4	411.6	218.2	465.8	1.52	-1.49	1.70	
4,309.0	11.20	29.00	4,273.8	426.9	226.9	483.5	1.09	1.05	-1.58	
4,404.0	11.50	29.20	4,366.9	443.2	236.0	502.1	0.32	0.32	0.21	
4,499.0	13.60	30.70	4,459.7	461.1	246.3	522.8	2.24	2.21	1.58	
4,594.0	14.60	31.20	4,551.8	481.0	258.2	545.9	1.06	1.05	0.53	
4,689.0	14.40	31.10	4,643.8	501.3	270.5	569.7	0.21	-0.21	-0.11	
4,784.0	14.60	26.80	4,735.7	522.1	282.0	593.4	1.15	0.21	-4.53	
4,878.0	15.20	26.80	4,826.6	543.7	292.9	617.6	0.64	0.64	0.00	
4,973.0	15.20	26.70	4,918.3	565.9	304.2	642.5	0.03	0.00	-0.11	
5,068.0	14.80	26.40	5,010.0	587.9	315.1	667.1	0.43	-0.42	-0.32	
5,163.0	15.20	28.00	5,101.8	609.8	326.4	691.6	0.61	0.42	1.68	
5,258.0	15.40	30.50	5,193.4	631.7	338.6	716.7	0.73	0.21	2.63	
5,353.0	14.50	30.80	5,285.2	652.7	351.1	741.2	0.95	-0.95	0.32	
5,448.0	13.60	28.40	5,377.4	672.8	362.5	764.2	1.13	-0.95	-2.53	
5,542.0	14.00	29.00	5,468.6	692.5	373.3	786.7	0.45	0.43	0.64	
5,637.0	13.40	29.70	5,560.9	712.1	384.3	809.2	0.66	-0.63	0.74	
5,732.0	14.40	29.00	5,653.2	732.0	395.5	832.0	1.07	1.05	-0.74	
5,827.0	14.90	30.80	5,745.1	752.8	407.5	856.0	0.71	0.53	1.89	
5,922.0	14.00	28.20	5,837.1	773.4	419.2	879.7	1.17	-0.95	-2.74	
6,017.0	13.60	27.80	5,929.3	793.4	429.8	902.4	0.43	-0.42	-0.42	
6,112.0	14.40	31.50	6,021.5	813.4	441.2	925.3	1.26	0.84	3.89	
6,207.0	13.80	29.90	6,113.6	833.3	453.0	948.4	0.75	-0.63	-1.68	

Company:	KP KAUFFMAN	Local Co-ordinate Reference:	Well Sunmarke 19-28-11
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 19-28-11	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)
6,302.0	14.20	34.50	6,205.8	852.7	465.3	971.4	1.24	0.42	4.84
6,397.0	14.50	38.90	6,297.9	871.5	479.3	994.6	1.19	0.32	4.63
6,492.0	13.80	25.10	6,390.0	891.1	491.6	1,017.7	3.62	-0.74	-14.53
6,587.0	13.80	22.60	6,482.3	911.8	500.8	1,040.2	0.63	0.00	-2.63
6,682.0	13.20	28.60	6,574.6	931.8	510.3	1,062.4	1.60	-0.63	6.32
6,777.0	13.60	28.90	6,667.1	951.1	520.9	1,084.4	0.43	0.42	0.32
6,871.0	12.70	31.10	6,758.6	969.6	531.6	1,105.7	1.10	-0.96	2.34
6,966.0	12.00	28.30	6,851.4	987.2	541.7	1,126.0	0.97	-0.74	-2.95
7,061.0	10.70	26.50	6,944.5	1,003.8	550.3	1,144.7	1.42	-1.37	-1.89
7,148.8	8.76	27.77	7,031.1	1,017.0	557.0	1,159.6	2.22	-2.21	1.45
TARGET CIRCLE 1980'FSL, 1980'FWL - LEGAL BOX 400' X 400' 1977'FSL, 1992'FWL									
7,156.0	8.60	27.90	7,038.2	1,018.0	557.5	1,160.7	2.22	-2.21	1.80
7,251.0	6.60	30.40	7,132.3	1,029.0	563.6	1,173.2	2.13	-2.11	2.63
7,346.0	4.40	41.40	7,226.9	1,036.4	568.8	1,182.2	2.56	-2.32	11.58
7,441.0	3.30	61.20	7,321.7	1,040.5	573.6	1,188.1	1.80	-1.16	20.84
7,536.0	1.50	38.50	7,416.6	1,042.8	576.8	1,191.6	2.11	-1.89	-23.89
7,631.0	1.30	29.50	7,511.6	1,044.7	578.1	1,193.9	0.31	-0.21	-9.47
7,726.0	1.10	21.20	7,606.6	1,046.5	578.9	1,195.9	0.28	-0.21	-8.74
7,820.0	0.70	12.50	7,700.5	1,047.9	579.4	1,197.3	0.45	-0.43	-9.26
7,915.0	0.90	1.30	7,795.5	1,049.2	579.5	1,198.6	0.27	0.21	-11.79
8,010.0	1.00	350.50	7,890.5	1,050.7	579.4	1,199.9	0.22	0.11	-11.37
8,042.0	1.00	350.40	7,922.5	1,051.3	579.3	1,200.3	0.01	0.00	-0.31
8,065.6	1.00	350.40	7,946.1	1,051.7	579.3	1,200.6	0.00	0.00	0.00
TARGET BHL 1980'FSL, 1980'FWL									
8,085.0	1.00	350.40	7,965.5	1,052.0	579.2	1,200.9	0.00	0.00	0.00

Checked By: _____	Approved By: _____	Date: _____
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