





B.P.

**Archuleta County, CO NAD83
SEC 8-T32N-R5W
Seibel A 2**

Pilot

Plan: Plan #1

Standard Planning Report

07 April, 2015





Database:	Grand Junction District	Local Co-ordinate Reference:	Well Seibel A 2
Company:	B.P.	TVD Reference:	GL 6158' & RKB 11' @ 6169.00ft
Project:	Archuleta County, CO NAD83	MD Reference:	GL 6158' & RKB 11' @ 6169.00ft
Site:	SEC 8-T32N-R5W	North Reference:	Grid
Well:	Seibel A 2	Survey Calculation Method:	Minimum Curvature
Wellbore:	Pilot		
Design:	Plan #1		

Project	Archuleta County, CO NAD83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Southern Zone		

Site	SEC 8-T32N-R5W			
Site Position:		Northing:	1,137,019.43 usft	Latitude: 37.0273181
From:	Lat/Long	Easting:	2,442,581.73 usft	Longitude: -107.4094873
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence: -1.17 °

Well	Seibel A 2			
Well Position	+N/-S	-0.01 ft	Northing:	1,137,019.42 usft
	+E/-W	0.00 ft	Easting:	2,442,581.73 usft
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft
			Ground Level:	6,158.00 ft

Wellbore	Pilot				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	4/6/2015	9.37	63.67	50,481

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(ft)	(ft)	(ft)	(°)
	0.00	0.00	0.00	289.17

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
150.00	0.00	0.00	150.00	0.00	0.00	0.00	0.00	0.00	0.00	
562.09	8.24	289.17	560.67	9.72	-27.95	2.00	2.00	0.00	289.17	
2,242.10	8.24	289.17	2,223.33	88.80	-255.42	0.00	0.00	0.00	0.00	
2,654.19	0.00	0.00	2,634.00	98.52	-283.37	2.00	-2.00	0.00	180.00	Seibel A2 Pilot BTV
2,965.19	0.00	0.00	2,945.00	98.52	-283.37	0.00	0.00	0.00	0.00	Seibel A2 Pilot PBHL



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Site:	SEC 8-T32N-R5W	North Reference:	Grid
Well:	Seibel A 2	Survey Calculation Method:	Minimum Curvature
Wellbore:	Pilot		
Design:	Plan #1		

Planned 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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
150.00	0.00	0.00	150.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	1.00	289.17	200.00	0.14	-0.41	0.44	2.00	2.00	0.00
300.00	3.00	289.17	299.93	1.29	-3.71	3.93	2.00	2.00	0.00
400.00	5.00	289.17	399.68	3.58	-10.30	10.90	2.00	2.00	0.00
400.32	5.01	289.17	400.00	3.59	-10.32	10.93	2.00	2.00	0.00
Surface Casing									
500.00	7.00	289.17	499.13	7.01	-20.17	21.35	2.00	2.00	0.00
562.09	8.24	289.17	560.67	9.72	-27.95	29.59	2.00	2.00	0.00
600.00	8.24	289.17	598.19	11.50	-33.08	35.02	0.00	0.00	0.00
700.00	8.24	289.17	697.16	16.21	-46.62	49.36	0.00	0.00	0.00
800.00	8.24	289.17	796.12	20.92	-60.16	63.69	0.00	0.00	0.00
900.00	8.24	289.17	895.09	25.62	-73.70	78.03	0.00	0.00	0.00
1,000.00	8.24	289.17	994.06	30.33	-87.24	92.36	0.00	0.00	0.00
1,100.00	8.24	289.17	1,093.02	35.04	-100.78	106.70	0.00	0.00	0.00
1,200.00	8.24	289.17	1,191.99	39.75	-114.32	121.03	0.00	0.00	0.00
1,300.00	8.24	289.17	1,290.96	44.45	-127.86	135.37	0.00	0.00	0.00
1,400.00	8.24	289.17	1,389.93	49.16	-141.40	149.70	0.00	0.00	0.00
1,500.00	8.24	289.17	1,488.89	53.87	-154.94	164.04	0.00	0.00	0.00
1,600.00	8.24	289.17	1,587.86	58.58	-168.48	178.37	0.00	0.00	0.00
1,700.00	8.24	289.17	1,686.83	63.28	-182.02	192.71	0.00	0.00	0.00
1,730.49	8.24	289.17	1,717.00	64.72	-186.15	197.08	0.00	0.00	0.00
ANMS_L									
1,800.00	8.24	289.17	1,785.80	67.99	-195.56	207.04	0.00	0.00	0.00
1,884.07	8.24	289.17	1,869.00	71.95	-206.95	219.10	0.00	0.00	0.00
KRLD									
1,900.00	8.24	289.17	1,884.76	72.70	-209.10	221.38	0.00	0.00	0.00
2,000.00	8.24	289.17	1,983.73	77.41	-222.64	235.71	0.00	0.00	0.00
2,035.64	8.24	289.17	2,019.00	79.08	-227.47	240.82	0.00	0.00	0.00
FMNG									
2,100.00	8.24	289.17	2,082.70	82.11	-236.18	250.05	0.00	0.00	0.00
2,200.00	8.24	289.17	2,181.66	86.82	-249.72	264.38	0.00	0.00	0.00
2,242.10	8.24	289.17	2,223.33	88.80	-255.42	270.42	0.00	0.00	0.00
2,300.00	7.08	289.17	2,280.71	91.34	-262.72	278.14	2.00	-2.00	0.00
2,400.00	5.08	289.17	2,380.14	94.82	-272.73	288.74	2.00	-2.00	0.00
2,474.07	3.60	289.17	2,454.00	96.66	-278.02	294.35	2.00	-2.00	0.00
KRLD_L									
2,500.00	3.08	289.17	2,479.88	97.16	-279.45	295.86	2.00	-2.00	0.00
2,600.00	1.08	289.17	2,579.81	98.35	-282.89	299.50	2.00	-2.00	0.00
2,654.19	0.00	0.00	2,634.00	98.52	-283.37	300.01	2.00	-2.00	0.00
FTCOAL - Seibel A2 Pilot BTV									
2,668.19	0.00	0.00	2,648.00	98.52	-283.37	300.01	0.00	0.00	0.00
LEMN									
2,700.00	0.00	0.00	2,679.81	98.52	-283.37	300.01	0.00	0.00	0.00
2,713.19	0.00	0.00	2,693.00	98.52	-283.37	300.01	0.00	0.00	0.00
LEML_L									
2,765.19	0.00	0.00	2,745.00	98.52	-283.37	300.01	0.00	0.00	0.00
PCCF									
2,800.00	0.00	0.00	2,779.81	98.52	-283.37	300.01	0.00	0.00	0.00
2,900.00	0.00	0.00	2,879.81	98.52	-283.37	300.01	0.00	0.00	0.00
2,965.19	0.00	0.00	2,945.00	98.52	-283.37	300.01	0.00	0.00	0.00
Seibel A2 Pilot PBHL									



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Wellbore:	Pilot		
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Planned 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)

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Seibel A2 Pilot BTV	0.00	360.00	2,634.00	98.52	-283.37	1,137,117.94	2,442,298.36	37.0275727	-107.4104646
- plan hits target center									
- Point									
Seibel A2 Pilot PBHL	0.00	360.00	2,945.00	98.52	-283.37	1,137,117.94	2,442,298.36	37.0275727	-107.4104646
- plan hits target center									
- Point									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
400.32	400.00	Surface Casing	8.625	12.250	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,730.49	1,717.00	ANMS_L		0.00		
1,884.07	1,869.00	KRLD		0.00		
2,035.64	2,019.00	FMNG		0.00		
2,474.07	2,454.00	KRLD_L		0.00		
2,654.19	2,634.00	FTCOAL		0.00		
2,668.19	2,648.00	LEMN		0.00		
2,713.19	2,693.00	LEML_L		0.00		
2,765.19	2,745.00	PCCF		0.00		