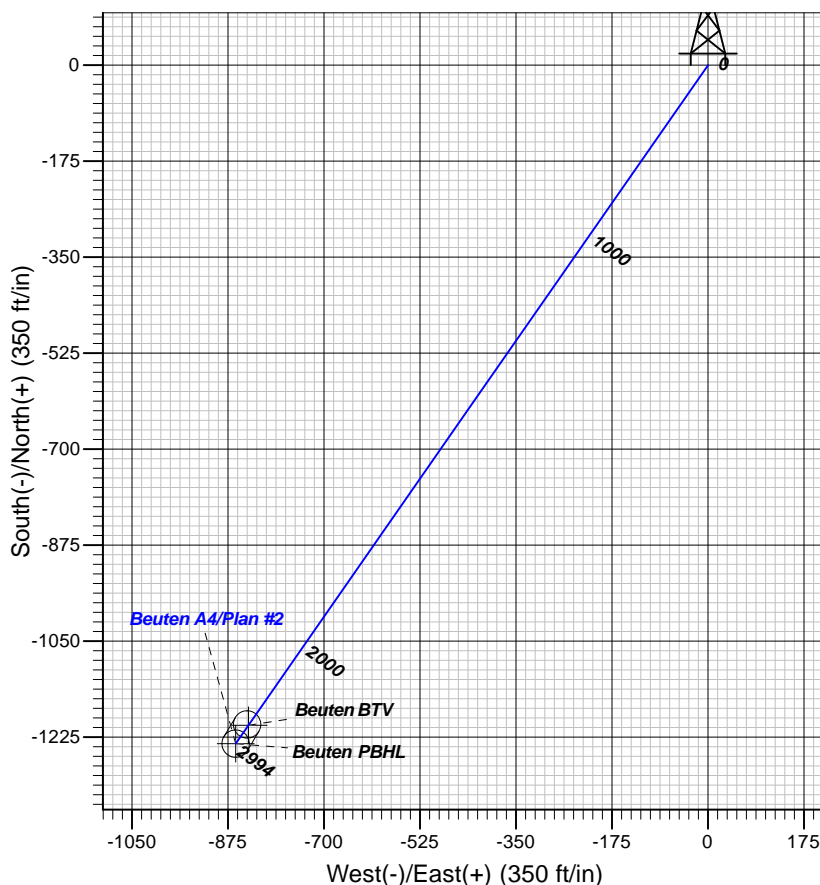
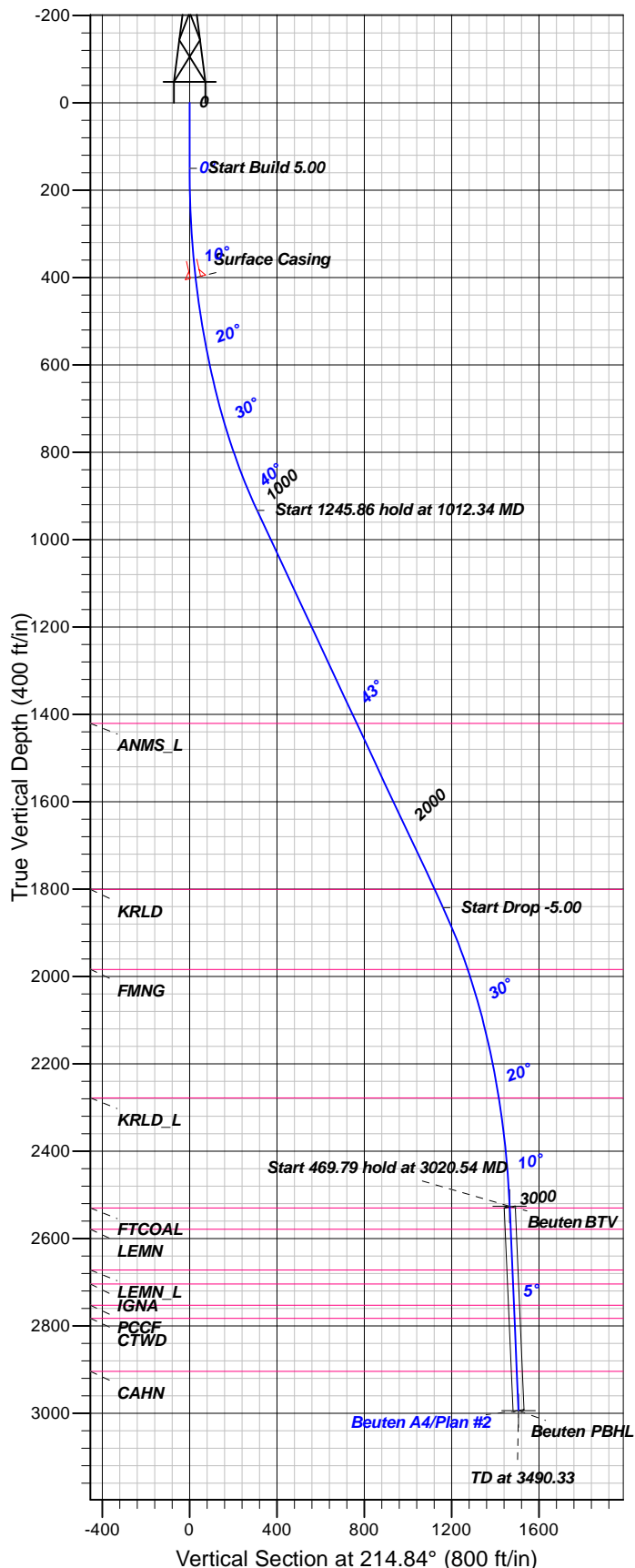


## Well Details: Beuten A4

GL 6470.15 & RKB 11' @ 6481.15ft (Aztec 507)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1156681.21	2379542.85	37.0775639	-107.6268952	

**G** **T** **M**  
 Azimuths to Grid North  
 True North: 1.30°  
 Magnetic North: 10.77°  
 Magnetic Field  
 Strength: 50480.1snT  
 Dip Angle: 63.68°  
 Date: 4/2/2015  
 Model: IGRF2015



### FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1421.00	1680.56	ANMS_L
1801.00	2201.14	KRLD
1984.00	2439.23	FMNG
2278.00	2767.09	KRLD_L
2530.00	3024.55	FTCOAL
2579.00	3073.74	LEMN
2672.00	3167.10	LEMN_L
2704.00	3199.22	IGNA
2753.00	3248.41	PCCF
2783.00	3278.52	CTWD
2904.00	3399.98	CAHN

### Plan: Plan #2

11:09, April 06 2015  
Created By: Janie Collins

PROJECT DETAILS: La Plata County, CO NAD83

Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: Colorado Southern Zone

System Datum: Mean Sea Level

### CASING DETAILS

TVD	MD	Name	Size
400.00	402.03	Surface Casing	9.625

### SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	150.00	0.00	0.00	150.00	0.00	0.00	0.00	0.00	0.00	
3	1012.34	43.12	214.84	933.22	-253.97	-176.79	5.00	214.84	309.44	
4	2258.20	43.12	214.84	1842.65	-952.85	-663.28	0.00	0.00	0.00	0.00
5	3020.54	5.00	214.84	2526.00	-1203.24	-837.58	5.00	180.00	1466.06	Beuten BTB
6	3490.33	5.00	214.84	2994.00	-1236.84	-860.97	0.00	0.00	1507.00	Beuten PBHL

### DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
Beuten BTB	2526.00	-1203.24	-837.58	1155447.97	2378705.27	37.0742078	-107.6296714	Point
- plan hits target center								
Beuten PBHL	2994.00	-1236.84	-860.97	1155444.37	2378681.88	37.0741141	-107.6297489	Circle (Radius: 25.00)
- plan hits target center								



**B.P.**

**La Plata County, CO NAD83  
SEC 29-T33N-R7W  
Beuten A4**

**OH**

**Plan: Plan #2**

## **Standard Planning Report**

**06 April, 2015**



[www.scientificdrilling.com](http://www.scientificdrilling.com)





<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well Beuten A4
<b>Company:</b>	B.P.	<b>TVD Reference:</b>	GL 6470.15 & RKB 11' @ 6481.15ft (Aztec 507)
<b>Project:</b>	La Plata County, CO NAD83	<b>MD Reference:</b>	GL 6470.15 & RKB 11' @ 6481.15ft (Aztec 507)
<b>Site:</b>	SEC 29-T33N-R7W	<b>North Reference:</b>	Grid
<b>Well:</b>	Beuten A4	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #2		

<b>Project</b>	La Plata County, CO NAD83		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Southern Zone		

Site		SEC 29-T33N-R7W			
Site Position:		Northing:	1,156,681.22 usft	Latitude:	37.0775640
From:	Lat/Long	Easting:	2,379,542.85 usft	Longitude:	-107.6268952
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.30 °

Well	Beuten A4					
Well Position	+N/-S	-0.01 ft	Northing:	1,156,681.21 usft	Latitude:	37.0775639
	+E/-W	0.00 ft	Easting:	2,379,542.85 usft	Longitude:	-107.6268952
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	6,470.15 ft

<b>Wellbore</b>	OH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	4/2/2015	9.47	63.68	50,480

<b>Design</b>	Plan #2			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	214.84

<b>Plan Sections</b>										
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	
1,012.34	43.12	214.84	933.22	-253.97	-176.79	5.00	5.00	0.00	214.84	
2,258.20	43.12	214.84	1,842.65	-952.85	-663.28	0.00	0.00	0.00	0.00	
3,020.54	5.00	214.84	2,526.00	-1,203.24	-837.58	5.00	-5.00	0.00	180.00	Beuten BTW
3,490.33	5.00	214.84	2,994.00	-1,236.84	-860.97	0.00	0.00	0.00	0.00	Beuten PBHL



<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well Beuten A4
<b>Company:</b>	B.P.	<b>TVD Reference:</b>	GL 6470.15 & RKB 11' @ 6481.15ft (Aztec 507)
<b>Project:</b>	La Plata County, CO NAD83	<b>MD Reference:</b>	GL 6470.15 & RKB 11' @ 6481.15ft (Aztec 507)
<b>Site:</b>	SEC 29-T33N-R7W	<b>North Reference:</b>	Grid
<b>Well:</b>	Beuten A4	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #2		

**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	2.50	214.84	199.98	-0.90	-0.62	1.09	5.00	5.00	0.00
300.00	7.50	214.84	299.57	-8.05	-5.60	9.80	5.00	5.00	0.00
400.00	12.50	214.84	398.02	-22.29	-15.52	27.16	5.00	5.00	0.00
402.03	12.60	214.84	400.00	-22.65	-15.77	27.60	5.00	5.00	0.00
<b>Surface Casing</b>									
500.00	17.50	214.84	494.58	-43.53	-30.30	53.04	5.00	5.00	0.00
600.00	22.50	214.84	588.52	-71.59	-49.83	87.23	5.00	5.00	0.00
700.00	27.50	214.84	679.12	-106.27	-73.97	129.48	5.00	5.00	0.00
800.00	32.50	214.84	765.70	-147.29	-102.53	179.46	5.00	5.00	0.00
900.00	37.50	214.84	847.59	-194.35	-135.29	236.80	5.00	5.00	0.00
1,000.00	42.50	214.84	924.17	-247.09	-172.00	301.06	5.00	5.00	0.00
1,012.34	43.12	214.84	933.22	-253.97	-176.79	309.44	5.00	5.00	0.00
1,100.00	43.12	214.84	997.21	-303.14	-211.02	369.36	0.00	0.00	0.00
1,200.00	43.12	214.84	1,070.21	-359.24	-250.07	437.71	0.00	0.00	0.00
1,300.00	43.12	214.84	1,143.20	-415.34	-289.12	506.06	0.00	0.00	0.00
1,400.00	43.12	214.84	1,216.20	-471.43	-328.17	574.41	0.00	0.00	0.00
1,500.00	43.12	214.84	1,289.19	-527.53	-367.21	642.75	0.00	0.00	0.00
1,600.00	43.12	214.84	1,362.19	-583.62	-406.26	711.10	0.00	0.00	0.00
1,680.56	43.12	214.84	1,421.00	-628.82	-437.72	766.17	0.00	0.00	0.00
<b>ANMS_L</b>									
1,700.00	43.12	214.84	1,435.19	-639.72	-445.31	779.45	0.00	0.00	0.00
1,800.00	43.12	214.84	1,508.18	-695.82	-484.36	847.80	0.00	0.00	0.00
1,900.00	43.12	214.84	1,581.18	-751.91	-523.41	916.15	0.00	0.00	0.00
2,000.00	43.12	214.84	1,654.18	-808.01	-562.46	984.50	0.00	0.00	0.00
2,100.00	43.12	214.84	1,727.17	-864.10	-601.51	1,052.85	0.00	0.00	0.00
2,200.00	43.12	214.84	1,800.17	-920.20	-640.56	1,121.20	0.00	0.00	0.00
2,201.14	43.12	214.84	1,801.00	-920.84	-641.00	1,121.98	0.00	0.00	0.00
<b>KRLD</b>									
2,258.20	43.12	214.84	1,842.65	-952.85	-663.28	1,160.98	0.00	0.00	0.00
2,300.00	41.03	214.84	1,873.68	-975.84	-679.28	1,188.98	5.00	-5.00	0.00
2,400.00	36.03	214.84	1,951.88	-1,026.94	-714.86	1,251.25	5.00	-5.00	0.00
2,439.23	34.07	214.84	1,984.00	-1,045.43	-727.73	1,273.78	5.00	-5.00	0.00
<b>FMNG</b>									
2,500.00	31.03	214.84	2,035.22	-1,072.26	-746.40	1,306.47	5.00	-5.00	0.00
2,600.00	26.03	214.84	2,123.05	-1,111.44	-773.68	1,354.21	5.00	-5.00	0.00
2,700.00	21.03	214.84	2,214.71	-1,144.19	-796.48	1,394.11	5.00	-5.00	0.00
2,767.09	17.67	214.84	2,278.00	-1,162.43	-809.18	1,416.34	5.00	-5.00	0.00
<b>KRLD_L</b>									
2,800.00	16.03	214.84	2,309.50	-1,170.26	-814.63	1,425.88	5.00	-5.00	0.00
2,900.00	11.03	214.84	2,406.69	-1,189.45	-827.98	1,449.26	5.00	-5.00	0.00
3,000.00	6.03	214.84	2,505.56	-1,201.62	-836.45	1,464.08	5.00	-5.00	0.00
3,020.54	5.00	214.84	2,526.00	-1,203.24	-837.58	1,466.06	5.00	-5.00	0.00
<b>Beuten BTV</b>									
3,024.56	5.00	214.84	2,530.00	-1,203.53	-837.78	1,466.41	0.00	0.00	0.00
<b>FTCOAL</b>									
3,073.74	5.00	214.84	2,579.00	-1,207.05	-840.23	1,470.70	0.00	0.00	0.00
<b>LEMN</b>									
3,100.00	5.00	214.84	2,605.16	-1,208.92	-841.54	1,472.98	0.00	0.00	0.00



<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well Beuten A4
<b>Company:</b>	B.P.	<b>TVD Reference:</b>	GL 6470.15 & RKB 11' @ 6481.15ft (Aztec 507)
<b>Project:</b>	La Plata County, CO NAD83	<b>MD Reference:</b>	GL 6470.15 & RKB 11' @ 6481.15ft (Aztec 507)
<b>Site:</b>	SEC 29-T33N-R7W	<b>North Reference:</b>	Grid
<b>Well:</b>	Beuten A4	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #2		

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)
3,167.10	5.00	214.84	2,672.00	-1,213.72	-844.88	1,478.83	0.00	0.00	0.00
<b>LEMN_L</b>									
3,199.22	5.00	214.84	2,704.00	-1,216.02	-846.48	1,481.63	0.00	0.00	0.00
<b>IGNA</b>									
3,200.00	5.00	214.84	2,704.78	-1,216.08	-846.52	1,481.70	0.00	0.00	0.00
3,248.41	5.00	214.84	2,753.00	-1,219.54	-848.93	1,485.92	0.00	0.00	0.00
<b>PCCF</b>									
3,278.52	5.00	214.84	2,783.00	-1,221.69	-850.43	1,488.54	0.00	0.00	0.00
<b>CTWD</b>									
3,300.00	5.00	214.84	2,804.40	-1,223.23	-851.50	1,490.41	0.00	0.00	0.00
3,399.98	5.00	214.84	2,904.00	-1,230.38	-856.47	1,499.13	0.00	0.00	0.00
<b>CAHN</b>									
3,400.00	5.00	214.84	2,904.02	-1,230.38	-856.47	1,499.13	0.00	0.00	0.00
3,490.33	5.00	214.84	2,994.00	-1,236.84	-860.97	1,507.00	0.00	0.00	0.00
<b>Beuten PBHL</b>									

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Beuten BTV - plan hits target center - Point	0.00	0.00	2,526.00	-1,203.24	-837.58	1,155,477.97	2,378,705.28	37.0742078	-107.6296714
Beuten PBHL - plan hits target center - Circle (radius 25.00)	-5.00	210.84	2,994.00	-1,236.84	-860.97	1,155,444.37	2,378,681.88	37.0741141	-107.6297489

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
402.03	400.00	Surface Casing	9.625	12.250	



<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well Beuten A4
<b>Company:</b>	B.P.	<b>TVD Reference:</b>	GL 6470.15 & RKB 11' @ 6481.15ft (Aztec 507)
<b>Project:</b>	La Plata County, CO NAD83	<b>MD Reference:</b>	GL 6470.15 & RKB 11' @ 6481.15ft (Aztec 507)
<b>Site:</b>	SEC 29-T33N-R7W	<b>North Reference:</b>	Grid
<b>Well:</b>	Beuten A4	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #2		

Formations						
	Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
	1,680.56	1,421.00	ANMS_L		0.00	
	2,201.14	1,801.00	KRLD		0.00	
	2,439.23	1,984.00	FMNG		0.00	
	2,767.09	2,278.00	KRLD_L		0.00	
	3,024.56	2,530.00	FTCOAL		0.00	
	3,073.74	2,579.00	LEMN		0.00	
	3,167.10	2,672.00	LEMN_L		0.00	
	3,199.22	2,704.00	IGNA		0.00	
	3,248.41	2,753.00	PCCF		0.00	
	3,278.52	2,783.00	CTWD		0.00	
	3,399.98	2,904.00	CAHN		0.00	