

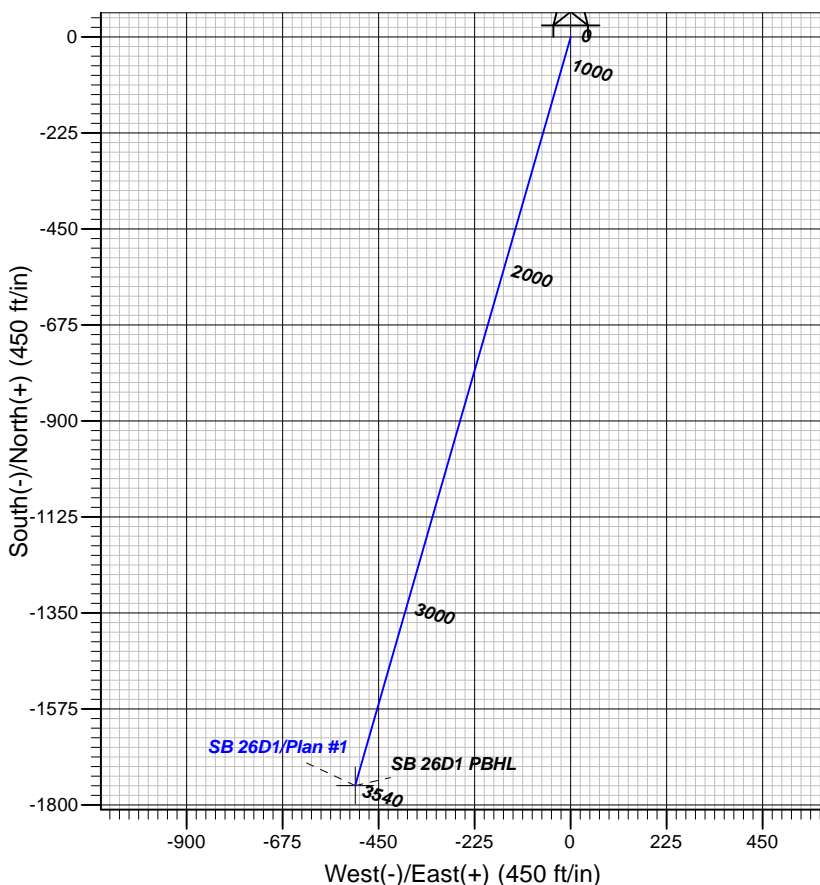
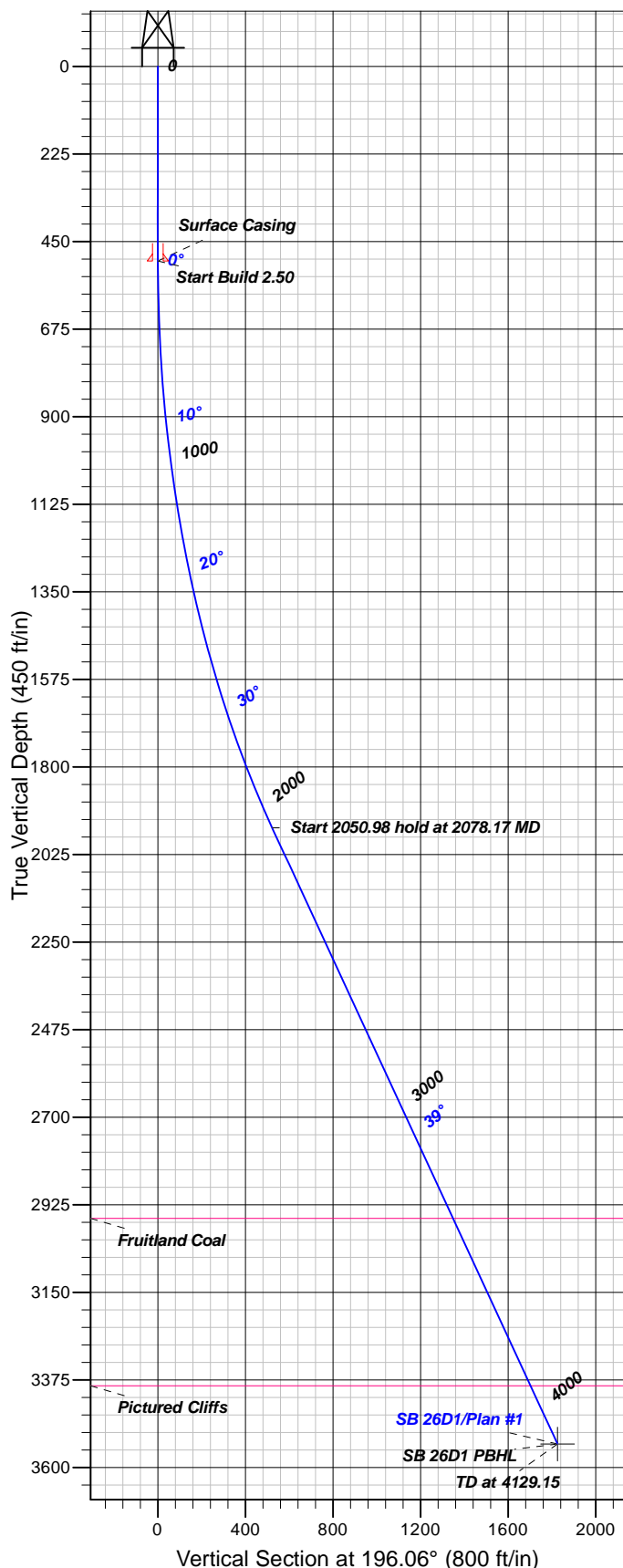
Well Details: SB 26D1

GL 6688' @ 6688.00ft

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1142870.70	2326465.85	37.0361860	-107.8076000	

T M Azimuths to True North
 Magnetic North: 9.59°

Magnetic Field
 Strength: 50419.6snT
 Dip Angle: 63.63°
 Date: 3/6/2015
 Model: BGGM2014



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
2960.00	3377.98	Fruitland Coal
3390.00	3934.88	Pictured Cliffs

Plan: Plan #1

11:30, March 06 2015
 Created By: Janie Collins

PROJECT DETAILS: La Plata County, Colorado NAD27

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
500.00	500.00	Surface Casing	9.625

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	
3	2078.17	39.45	196.06	1956.37	-501.85	-144.47	2.50	196.06	522.23	
4	4129.15	39.45	196.06	3540.00	-1754.31	-505.03	0.00	0.00	1825.55	SB 26D1 PBHL

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
SB 26D1 PBHL	3540.00	-1754.31	-505.03	1141129.40	2325917.64	37.0313680	-107.8093300	Point

- plan hits target center

Brammer Engineering

La Plata County, Colorado NAD27

SB 21 Pad

SB 26D1

OH

Plan: Plan #1

Standard Planning Report

06 March, 2015



Database:	Grand Junction District	Local Co-ordinate Reference:	Well SB 26D1
Company:	Brammer Engineering	TVD Reference:	GL 6688' @ 6688.00ft
Project:	La Plata County, Colorado NAD27	MD Reference:	GL 6688' @ 6688.00ft
Site:	SB 21 Pad	North Reference:	True
Well:	SB 26D1	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Project	La Plata County, Colorado NAD27		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Southern Zone		

Site		SB 21 Pad			
Site Position:		Northing:	1,142,870.70 usft	Latitude:	37.0361860
From:	Lat/Long	Easting:	2,326,465.85 usft	Longitude:	-107.8076000
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.42 °

Well	SB 26D1					
Well Position	+N/-S	-0.01 ft	Northing:	1,142,870.69 usft	Latitude:	37.0361859
	+E/-W	0.00 ft	Easting:	2,326,465.85 usft	Longitude:	-107.8076000
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	6,688.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2014	3/6/2015	9.59	63.63	50,420

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	196.06

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	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,078.17	39.45	196.06	1,956.37	-501.85	-144.47	2.50	2.50	0.00	196.06	
4,129.15	39.45	196.06	3,540.00	-1,754.31	-505.03	0.00	0.00	0.00	0.00	SB 26D1 PBHL

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Project:	La Plata County, Colorado NAD27	MD Reference:	GL 6688' @ 6688.00ft
Site:	SB 21 Pad	North Reference:	True
Well:	SB 26D1	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
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
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
Surface Casing									
600.00	2.50	196.06	599.97	-2.10	-0.60	2.18	2.50	2.50	0.00
700.00	5.00	196.06	699.75	-8.38	-2.41	8.72	2.50	2.50	0.00
800.00	7.50	196.06	799.14	-18.84	-5.42	19.61	2.50	2.50	0.00
900.00	10.00	196.06	897.97	-33.46	-9.63	34.82	2.50	2.50	0.00
1,000.00	12.50	196.06	996.04	-52.21	-15.03	54.33	2.50	2.50	0.00
1,100.00	15.00	196.06	1,093.17	-75.04	-21.60	78.09	2.50	2.50	0.00
1,200.00	17.50	196.06	1,189.17	-101.93	-29.34	106.07	2.50	2.50	0.00
1,300.00	20.00	196.06	1,283.85	-132.82	-38.24	138.21	2.50	2.50	0.00
1,400.00	22.50	196.06	1,377.05	-167.65	-48.26	174.46	2.50	2.50	0.00
1,500.00	25.00	196.06	1,468.57	-206.35	-59.40	214.73	2.50	2.50	0.00
1,600.00	27.50	196.06	1,558.25	-248.85	-71.64	258.95	2.50	2.50	0.00
1,700.00	30.00	196.06	1,645.92	-295.06	-84.94	307.05	2.50	2.50	0.00
1,800.00	32.50	196.06	1,731.40	-344.91	-99.29	358.92	2.50	2.50	0.00
1,900.00	35.00	196.06	1,814.54	-398.30	-114.66	414.47	2.50	2.50	0.00
2,000.00	37.50	196.06	1,895.18	-455.12	-131.02	473.60	2.50	2.50	0.00
2,078.17	39.45	196.06	1,956.37	-501.85	-144.47	522.23	2.50	2.50	0.00
2,100.00	39.45	196.06	1,973.23	-515.18	-148.31	536.11	0.00	0.00	0.00
2,200.00	39.45	196.06	2,050.44	-576.25	-165.89	599.65	0.00	0.00	0.00
2,300.00	39.45	196.06	2,127.65	-637.32	-183.47	663.20	0.00	0.00	0.00
2,400.00	39.45	196.06	2,204.87	-698.38	-201.05	726.75	0.00	0.00	0.00
2,500.00	39.45	196.06	2,282.08	-759.45	-218.63	790.29	0.00	0.00	0.00
2,600.00	39.45	196.06	2,359.29	-820.51	-236.21	853.84	0.00	0.00	0.00
2,700.00	39.45	196.06	2,436.51	-881.58	-253.79	917.38	0.00	0.00	0.00
2,800.00	39.45	196.06	2,513.72	-942.65	-271.37	980.93	0.00	0.00	0.00
2,900.00	39.45	196.06	2,590.93	-1,003.71	-288.95	1,044.48	0.00	0.00	0.00
3,000.00	39.45	196.06	2,668.15	-1,064.78	-306.53	1,108.02	0.00	0.00	0.00
3,100.00	39.45	196.06	2,745.36	-1,125.84	-324.11	1,171.57	0.00	0.00	0.00
3,200.00	39.45	196.06	2,822.57	-1,186.91	-341.69	1,235.11	0.00	0.00	0.00
3,300.00	39.45	196.06	2,899.79	-1,247.98	-359.27	1,298.66	0.00	0.00	0.00
3,377.98	39.45	196.06	2,960.00	-1,295.60	-372.98	1,348.22	0.00	0.00	0.00
Fruitland Coal									
3,400.00	39.45	196.06	2,977.00	-1,309.04	-376.85	1,362.21	0.00	0.00	0.00
3,500.00	39.45	196.06	3,054.21	-1,370.11	-394.43	1,425.75	0.00	0.00	0.00
3,600.00	39.45	196.06	3,131.43	-1,431.18	-412.01	1,489.30	0.00	0.00	0.00
3,700.00	39.45	196.06	3,208.64	-1,492.24	-429.59	1,552.85	0.00	0.00	0.00
3,800.00	39.45	196.06	3,285.85	-1,553.31	-447.17	1,616.39	0.00	0.00	0.00
3,900.00	39.45	196.06	3,363.07	-1,614.37	-464.75	1,679.94	0.00	0.00	0.00
3,934.88	39.45	196.06	3,390.00	-1,635.68	-470.88	1,702.11	0.00	0.00	0.00
Pictured Cliffs									
4,000.00	39.45	196.06	3,440.28	-1,675.44	-482.33	1,743.48	0.00	0.00	0.00
4,100.00	39.45	196.06	3,517.49	-1,736.51	-499.91	1,807.03	0.00	0.00	0.00
4,129.15	39.45	196.06	3,540.00	-1,754.31	-505.03	1,825.55	0.00	0.00	0.00
SB 26D1 PBHL									

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Site:	SB 21 Pad	North Reference:	True
Well:	SB 26D1	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)		
- Shape									
SB 26D1 PBHL	0.00	0.00	3,540.00	-1,754.31	-505.03	1,141,129.40	2,325,917.64	37.0313680	-107.8093300
- plan hits target center									
- Point									

Casing Points					
Measured Depth	Vertical Depth	Name		Casing Diameter	Hole Diameter
(ft)	(ft)			(in)	(in)
500.00	500.00	Surface Casing		9.625	12.250

Formations					
Measured Depth	Vertical Depth	Name		Dip	Dip Direction
(ft)	(ft)			(°)	(°)
3,377.98	3,761.00	Fruitland Coal		0.00	
3,934.88	4,191.00	Pictured Cliffs		0.00	