

BILL BARRETT CORP

WELD COUNTY, COLORADO

Greasewood 13-28H

Greasewood 13-28H

Wellbore #1

Plan: Design #1

Standard Planning Report

23 May, 2014



Bill Barrett Corporation

COMPANY DETAILS: BILL BARRETT CORP

Calculation Method: Minimum Curvature
Error System: ISCWSA
Scan Method: Closest Approach 3D
Error Surface: Elliptical Conic
Warning Method: Error Ratio

REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well Greasewood 13-28H, True North
Vertical (TVD) Reference: WELL @ 4686.0ft (Original Well Elev)
Section (VS) Reference: Slot - (0.0N, 0.0E)
Measured Depth Reference: WELL @ 4686.0ft (Original Well Elev)
Calculation Method: Minimum Curvature

WELL DETAILS: Greasewood 13-28H

+N/-S +E/-W Northing Easting Latitude Longitude
0.0 0.0 1415064.05 3355418.0440° 27' 56.610 N 104° 13' 21.281 W

PROJECT DETAILS: WELD COUNTY, COLORADO

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

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	164.5	3.29	63.13	164.4	2.1	4.2	2.00	63.13	-1.9	
3	5685.3	3.29	63.13	5676.2	145.3	286.8	0.00	0.00	-126.2	
4	5849.8	0.00	180.00	5840.5	147.5	291.0	2.00	180.00	-128.0	
5	6599.8	90.00	180.00	6318.0	-330.0	291.0	12.00	180.00	348.4	GW 13-28H LP
6	10684.0	90.00	180.00	6318.0	-4414.2	291.0	0.00	0.00	4423.7	GW 13-28H PBHL

FORMATION TOP DETAILS

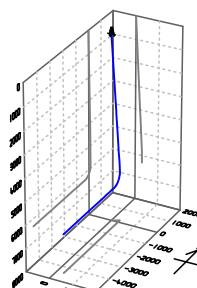
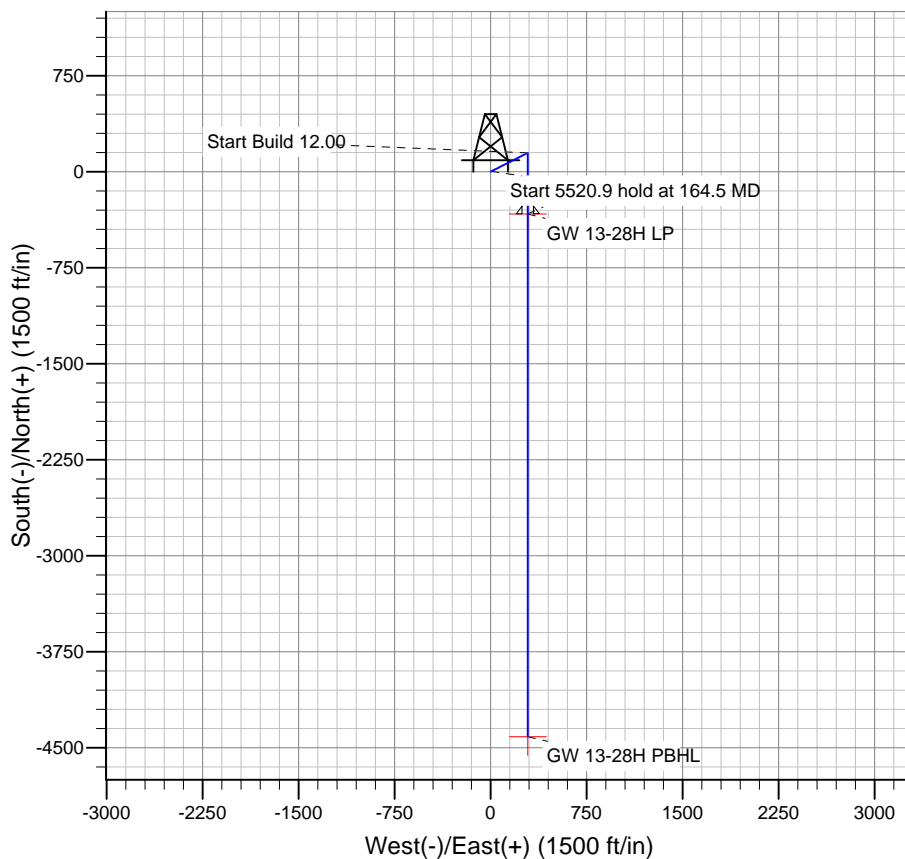
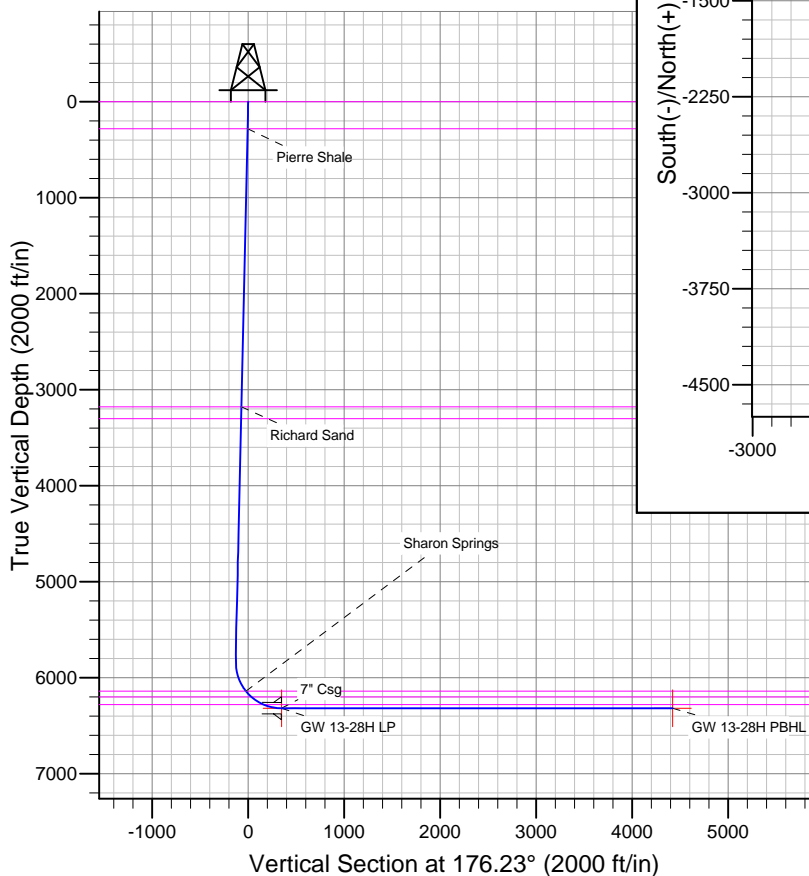
TVDPath	MDPath	Formation
0.0	0.0	Fox Hills
282.0	282.3	Pierre Shale
3177.0	3182.1	Richard Sand
3302.0	3307.3	Hygiene
6139.0	6172.2	Sharon Springs
6199.0	6255.3	Niobrara
6279.0	6405.5	Niobrara B Chalk

CASING DETAILS

TVD	MD	Name	Size
6318.0	6599.0	7" Csg	7

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
GW 13-28H LP	6318.0	-330.0	291.0	Point
GW 13-28H PBHL	6318.0	-4414.2	291.0	Point



Azimuths to True North
Magnetic North: 8.18°

Magnetic Field
Strength: 52913.1snT
Dip Angle: 67.09°
Date: 5/23/2014
Model: IGRF2010

Bill Barrett Corp

Planning Report

Database:	Compass	Local Co-ordinate Reference:	Well Greasewood 13-28H
Company:	BILL BARRETT CORP	TVD Reference:	WELL @ 4686.0ft (Original Well Elev)
Project:	WELD COUNTY, COLORADO	MD Reference:	WELL @ 4686.0ft (Original Well Elev)
Site:	Greasewood 13-28H	North Reference:	True
Well:	Greasewood 13-28H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Project	WELD COUNTY, COLORADO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		Greasewood 13-28H			
Site Position:		Northing:	1,415,064.05 ft	Latitude:	40° 27' 56.610 N
From:	Lat/Long	Easting:	3,355,418.04 ft	Longitude:	104° 13' 21.281 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.83 °

Well	Greasewood 13-28H					
Well Position	+N-S	0.0 ft	Northing:	1,415,064.05 ft	Latitude:	40° 27' 56.610 N
	+E-W	0.0 ft	Easting:	3,355,418.04 ft	Longitude:	104° 13' 21.281 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	0.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/23/2014	8.18	67.09	52,913

Design	Design #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	176.23

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
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
164.5	3.29	63.13	164.4	2.1	4.2	2.00	2.00	0.00	63.13	
5,685.3	3.29	63.13	5,676.2	145.3	286.8	0.00	0.00	0.00	0.00	
5,849.8	0.00	180.00	5,840.5	147.5	291.0	2.00	-2.00	0.00	180.00	
6,599.8	90.00	180.00	6,318.0	-330.0	291.0	12.00	12.00	0.00	180.00	GW 13-28H LP
10,684.0	90.00	180.00	6,318.0	-4,414.2	291.0	0.00	0.00	0.00	0.00	GW 13-28H PBHL

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Planning Report

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Company:	BILL BARRETT CORP	TVD Reference:	WELL @ 4686.0ft (Original Well Elev)
Project:	WELD COUNTY, COLORADO	MD Reference:	WELL @ 4686.0ft (Original Well Elev)
Site:	Greasewood 13-28H	North Reference:	True
Well:	Greasewood 13-28H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #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)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
Fox Hills									
100.0	2.00	63.13	100.0	0.8	1.6	-0.7	2.00	2.00	0.00
164.5	3.29	63.13	164.4	2.1	4.2	-1.9	2.00	2.00	0.00
200.0	3.29	63.13	199.9	3.1	6.0	-2.7	0.00	0.00	0.00
282.3	3.29	63.13	282.0	5.2	10.2	-4.5	0.00	0.00	0.00
Pierre Shale									
300.0	3.29	63.13	299.7	5.6	11.1	-4.9	0.00	0.00	0.00
400.0	3.29	63.13	399.5	8.2	16.3	-7.2	0.00	0.00	0.00
500.0	3.29	63.13	499.4	10.8	21.4	-9.4	0.00	0.00	0.00
600.0	3.29	63.13	599.2	13.4	26.5	-11.7	0.00	0.00	0.00
700.0	3.29	63.13	699.0	16.0	31.6	-13.9	0.00	0.00	0.00
800.0	3.29	63.13	798.9	18.6	36.7	-16.2	0.00	0.00	0.00
900.0	3.29	63.13	898.7	21.2	41.9	-18.4	0.00	0.00	0.00
1,000.0	3.29	63.13	998.5	23.8	47.0	-20.7	0.00	0.00	0.00
1,100.0	3.29	63.13	1,098.4	26.4	52.1	-22.9	0.00	0.00	0.00
1,200.0	3.29	63.13	1,198.2	29.0	57.2	-25.2	0.00	0.00	0.00
1,300.0	3.29	63.13	1,298.0	31.6	62.3	-27.4	0.00	0.00	0.00
1,400.0	3.29	63.13	1,397.9	34.2	67.4	-29.7	0.00	0.00	0.00
1,500.0	3.29	63.13	1,497.7	36.8	72.6	-31.9	0.00	0.00	0.00
1,600.0	3.29	63.13	1,597.5	39.4	77.7	-34.2	0.00	0.00	0.00
1,700.0	3.29	63.13	1,697.4	42.0	82.8	-36.4	0.00	0.00	0.00
1,800.0	3.29	63.13	1,797.2	44.6	87.9	-38.7	0.00	0.00	0.00
1,900.0	3.29	63.13	1,897.1	47.1	93.0	-40.9	0.00	0.00	0.00
2,000.0	3.29	63.13	1,996.9	49.7	98.2	-43.2	0.00	0.00	0.00
2,100.0	3.29	63.13	2,096.7	52.3	103.3	-45.4	0.00	0.00	0.00
2,200.0	3.29	63.13	2,196.6	54.9	108.4	-47.7	0.00	0.00	0.00
2,300.0	3.29	63.13	2,296.4	57.5	113.5	-49.9	0.00	0.00	0.00
2,400.0	3.29	63.13	2,396.2	60.1	118.6	-52.2	0.00	0.00	0.00
2,500.0	3.29	63.13	2,496.1	62.7	123.8	-54.4	0.00	0.00	0.00
2,600.0	3.29	63.13	2,595.9	65.3	128.9	-56.7	0.00	0.00	0.00
2,700.0	3.29	63.13	2,695.7	67.9	134.0	-58.9	0.00	0.00	0.00
2,800.0	3.29	63.13	2,795.6	70.5	139.1	-61.2	0.00	0.00	0.00
2,900.0	3.29	63.13	2,895.4	73.1	144.2	-63.4	0.00	0.00	0.00
3,000.0	3.29	63.13	2,995.2	75.7	149.3	-65.7	0.00	0.00	0.00
3,100.0	3.29	63.13	3,095.1	78.3	154.5	-67.9	0.00	0.00	0.00
3,182.1	3.29	63.13	3,177.0	80.4	158.7	-69.8	0.00	0.00	0.00
Richard Sand									
3,200.0	3.29	63.13	3,194.9	80.9	159.6	-70.2	0.00	0.00	0.00
3,300.0	3.29	63.13	3,294.7	83.5	164.7	-72.4	0.00	0.00	0.00
3,307.3	3.29	63.13	3,302.0	83.7	165.1	-72.6	0.00	0.00	0.00
Hygiene									
3,400.0	3.29	63.13	3,394.6	86.1	169.8	-74.7	0.00	0.00	0.00
3,500.0	3.29	63.13	3,494.4	88.6	174.9	-77.0	0.00	0.00	0.00
3,600.0	3.29	63.13	3,594.2	91.2	180.1	-79.2	0.00	0.00	0.00
3,700.0	3.29	63.13	3,694.1	93.8	185.2	-81.5	0.00	0.00	0.00
3,800.0	3.29	63.13	3,793.9	96.4	190.3	-83.7	0.00	0.00	0.00
3,900.0	3.29	63.13	3,893.8	99.0	195.4	-86.0	0.00	0.00	0.00
4,000.0	3.29	63.13	3,993.6	101.6	200.5	-88.2	0.00	0.00	0.00
4,100.0	3.29	63.13	4,093.4	104.2	205.6	-90.5	0.00	0.00	0.00
4,200.0	3.29	63.13	4,193.3	106.8	210.8	-92.7	0.00	0.00	0.00
4,300.0	3.29	63.13	4,293.1	109.4	215.9	-95.0	0.00	0.00	0.00
4,400.0	3.29	63.13	4,392.9	112.0	221.0	-97.2	0.00	0.00	0.00
4,500.0	3.29	63.13	4,492.8	114.6	226.1	-99.5	0.00	0.00	0.00

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Project:	WELD COUNTY, COLORADO	MD Reference:	WELL @ 4686.0ft (Original Well Elev)
Site:	Greasewood 13-28H	North Reference:	True
Well:	Greasewood 13-28H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #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)
4,600.0	3.29	63.13	4,592.6	117.2	231.2	-101.7	0.00	0.00	0.00
4,700.0	3.29	63.13	4,692.4	119.8	236.4	-104.0	0.00	0.00	0.00
4,800.0	3.29	63.13	4,792.3	122.4	241.5	-106.2	0.00	0.00	0.00
4,900.0	3.29	63.13	4,892.1	125.0	246.6	-108.5	0.00	0.00	0.00
5,000.0	3.29	63.13	4,991.9	127.6	251.7	-110.7	0.00	0.00	0.00
5,100.0	3.29	63.13	5,091.8	130.1	256.8	-113.0	0.00	0.00	0.00
5,200.0	3.29	63.13	5,191.6	132.7	261.9	-115.2	0.00	0.00	0.00
5,300.0	3.29	63.13	5,291.4	135.3	267.1	-117.5	0.00	0.00	0.00
5,400.0	3.29	63.13	5,391.3	137.9	272.2	-119.7	0.00	0.00	0.00
5,500.0	3.29	63.13	5,491.1	140.5	277.3	-122.0	0.00	0.00	0.00
5,600.0	3.29	63.13	5,591.0	143.1	282.4	-124.2	0.00	0.00	0.00
5,685.3	3.29	63.13	5,676.2	145.3	286.8	-126.2	0.00	0.00	0.00
5,700.0	3.00	63.13	5,690.8	145.7	287.5	-126.5	2.00	-2.00	0.00
5,800.0	1.00	63.13	5,790.7	147.3	290.6	-127.8	2.00	-2.00	0.00
5,849.8	0.00	180.00	5,840.5	147.5	291.0	-128.0	2.00	-2.00	0.00
5,900.0	6.02	180.00	5,890.6	144.8	291.0	-125.4	12.00	12.00	0.00
6,000.0	18.02	180.00	5,988.3	124.0	291.0	-104.6	12.00	12.00	0.00
6,100.0	30.02	180.00	6,079.4	83.4	291.0	-64.1	12.00	12.00	0.00
6,172.2	38.69	180.00	6,139.0	42.7	291.0	-23.4	12.00	12.00	0.00
Sharon Springs									
6,200.0	42.02	180.00	6,160.2	24.7	291.0	-5.5	12.00	12.00	0.00
6,255.3	48.66	180.00	6,199.0	-14.6	291.0	33.7	12.00	12.00	0.00
Niobrara									
6,300.0	54.02	180.00	6,226.9	-49.5	291.0	68.5	12.00	12.00	0.00
6,400.0	66.02	180.00	6,276.8	-136.0	291.0	154.8	12.00	12.00	0.00
6,405.5	66.68	180.00	6,279.0	-141.0	291.0	159.8	12.00	12.00	0.00
Niobrara B Chalk									
6,500.0	78.02	180.00	6,307.6	-230.9	291.0	249.6	12.00	12.00	0.00
6,599.0	89.90	180.00	6,318.0	-329.2	291.0	347.6	12.00	12.00	0.00
7" Csg									
6,599.8	90.00	180.00	6,318.0	-330.0	291.0	348.4	12.00	12.00	0.00
GW 13-28H LP									
6,600.0	90.00	180.00	6,318.0	-330.2	291.0	348.6	0.00	0.00	0.00
6,700.0	90.00	180.00	6,318.0	-430.2	291.0	448.4	0.00	0.00	0.00
6,800.0	90.00	180.00	6,318.0	-530.2	291.0	548.2	0.00	0.00	0.00
6,900.0	90.00	180.00	6,318.0	-630.2	291.0	648.0	0.00	0.00	0.00
7,000.0	90.00	180.00	6,318.0	-730.2	291.0	747.7	0.00	0.00	0.00
7,100.0	90.00	180.00	6,318.0	-830.2	291.0	847.5	0.00	0.00	0.00
7,200.0	90.00	180.00	6,318.0	-930.2	291.0	947.3	0.00	0.00	0.00
7,300.0	90.00	180.00	6,318.0	-1,030.2	291.0	1,047.1	0.00	0.00	0.00
7,400.0	90.00	180.00	6,318.0	-1,130.2	291.0	1,146.9	0.00	0.00	0.00
7,500.0	90.00	180.00	6,318.0	-1,230.2	291.0	1,246.7	0.00	0.00	0.00
7,600.0	90.00	180.00	6,318.0	-1,330.2	291.0	1,346.4	0.00	0.00	0.00
7,700.0	90.00	180.00	6,318.0	-1,430.2	291.0	1,446.2	0.00	0.00	0.00
7,800.0	90.00	180.00	6,318.0	-1,530.2	291.0	1,546.0	0.00	0.00	0.00
7,900.0	90.00	180.00	6,318.0	-1,630.2	291.0	1,645.8	0.00	0.00	0.00
8,000.0	90.00	180.00	6,318.0	-1,730.2	291.0	1,745.6	0.00	0.00	0.00
8,100.0	90.00	180.00	6,318.0	-1,830.2	291.0	1,845.4	0.00	0.00	0.00
8,200.0	90.00	180.00	6,318.0	-1,930.2	291.0	1,945.1	0.00	0.00	0.00
8,300.0	90.00	180.00	6,318.0	-2,030.2	291.0	2,044.9	0.00	0.00	0.00
8,400.0	90.00	180.00	6,318.0	-2,130.2	291.0	2,144.7	0.00	0.00	0.00
8,500.0	90.00	180.00	6,318.0	-2,230.2	291.0	2,244.5	0.00	0.00	0.00
8,600.0	90.00	180.00	6,318.0	-2,330.2	291.0	2,344.3	0.00	0.00	0.00

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Planning Report

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Company:	BILL BARRETT CORP	TVD Reference:	WELL @ 4686.0ft (Original Well Elev)
Project:	WELD COUNTY, COLORADO	MD Reference:	WELL @ 4686.0ft (Original Well Elev)
Site:	Greasewood 13-28H	North Reference:	True
Well:	Greasewood 13-28H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #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)	
8,700.0	90.00	180.00	6,318.0	-2,430.2	291.0	2,444.1	0.00	0.00	0.00	
8,800.0	90.00	180.00	6,318.0	-2,530.2	291.0	2,543.8	0.00	0.00	0.00	
8,900.0	90.00	180.00	6,318.0	-2,630.2	291.0	2,643.6	0.00	0.00	0.00	
9,000.0	90.00	180.00	6,318.0	-2,730.2	291.0	2,743.4	0.00	0.00	0.00	
9,100.0	90.00	180.00	6,318.0	-2,830.2	291.0	2,843.2	0.00	0.00	0.00	
9,200.0	90.00	180.00	6,318.0	-2,930.2	291.0	2,943.0	0.00	0.00	0.00	
9,300.0	90.00	180.00	6,318.0	-3,030.2	291.0	3,042.8	0.00	0.00	0.00	
9,400.0	90.00	180.00	6,318.0	-3,130.2	291.0	3,142.5	0.00	0.00	0.00	
9,500.0	90.00	180.00	6,318.0	-3,230.2	291.0	3,242.3	0.00	0.00	0.00	
9,600.0	90.00	180.00	6,318.0	-3,330.2	291.0	3,342.1	0.00	0.00	0.00	
9,700.0	90.00	180.00	6,318.0	-3,430.2	291.0	3,441.9	0.00	0.00	0.00	
9,800.0	90.00	180.00	6,318.0	-3,530.2	291.0	3,541.7	0.00	0.00	0.00	
9,900.0	90.00	180.00	6,318.0	-3,630.2	291.0	3,641.5	0.00	0.00	0.00	
10,000.0	90.00	180.00	6,318.0	-3,730.2	291.0	3,741.3	0.00	0.00	0.00	
10,100.0	90.00	180.00	6,318.0	-3,830.2	291.0	3,841.0	0.00	0.00	0.00	
10,200.0	90.00	180.00	6,318.0	-3,930.2	291.0	3,940.8	0.00	0.00	0.00	
10,300.0	90.00	180.00	6,318.0	-4,030.2	291.0	4,040.6	0.00	0.00	0.00	
10,400.0	90.00	180.00	6,318.0	-4,130.2	291.0	4,140.4	0.00	0.00	0.00	
10,500.0	90.00	180.00	6,318.0	-4,230.2	291.0	4,240.2	0.00	0.00	0.00	
10,600.0	90.00	180.00	6,318.0	-4,330.2	291.0	4,340.0	0.00	0.00	0.00	
10,684.0	90.00	180.00	6,318.0	-4,414.2	291.0	4,423.7	0.00	0.00	0.00	
GW 13-28H PBHL										

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
6,599.0	6,318.0	7" Csg	7	8-3/4	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
0.0	0.0	Fox Hills		0.00		
282.3	282.0	Pierre Shale		0.00		
3,182.1	3,177.0	Richard Sand		0.00		
3,307.3	3,302.0	Hygiene		0.00		
6,172.2	6,139.0	Sharon Springs		0.00		
6,255.3	6,199.0	Niobrara		0.00		
6,405.5	6,279.0	Niobrara B Chalk		0.00		