

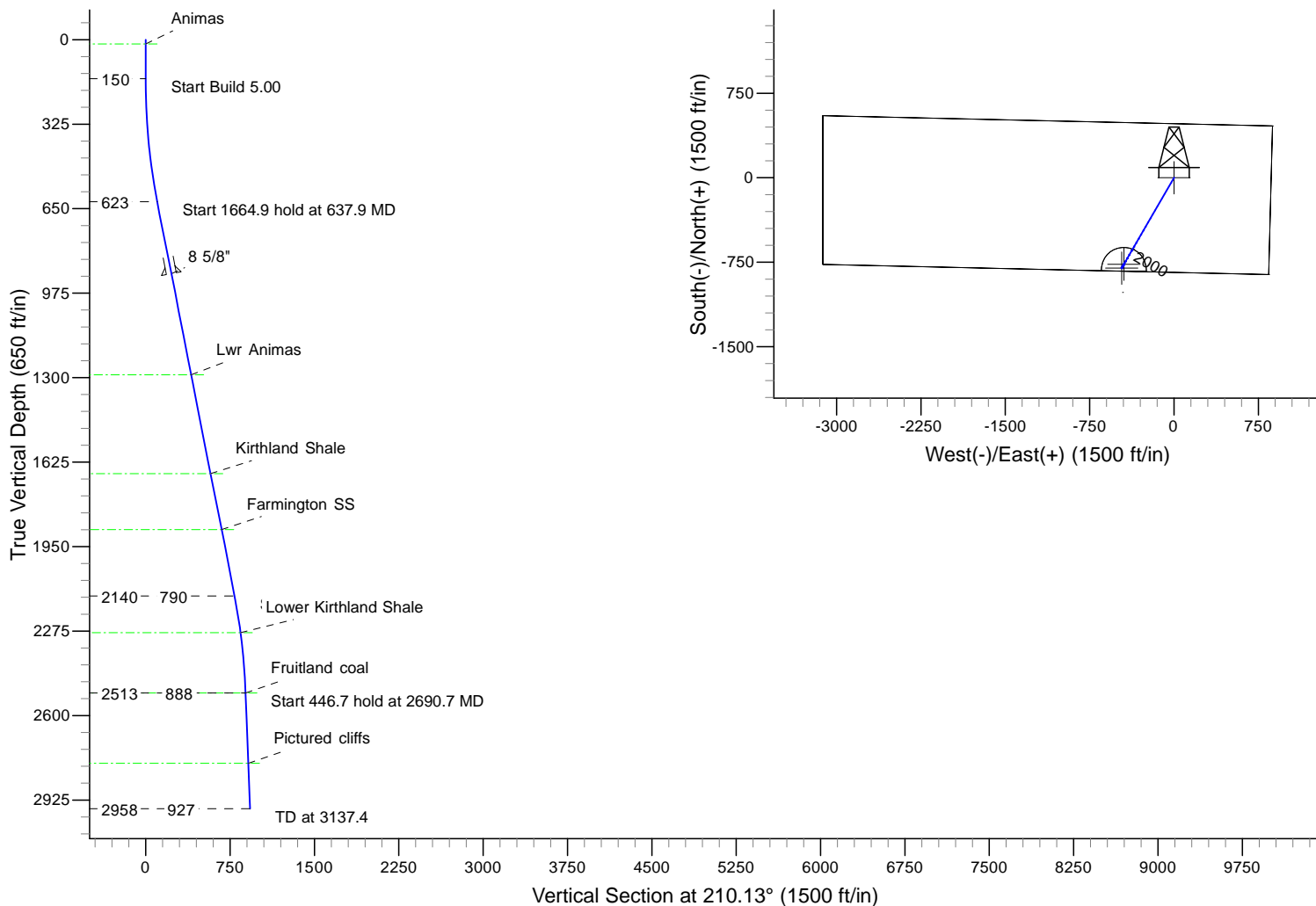
Project: Western - San Juan North (NAD 83)
 Site: SEC 24 -T34N-R08W
 Well: Anderson GC C #3
 Wellbore: Anderson GC C #3
 Design: Plan #1



SECTION DETAILS											FORMATION TOP DETAILS		
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target	TVDPath	MDPath	Formation
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0		16.0	16.0	Animas
2	150.0	0.00	0.00	150.0	0.0	0.0	0.00	0.00	0.0		1289.0	1368.9	Lwr Animas
3	637.9	24.40	210.13	623.3	-88.5	-51.4	5.00	210.13	102.3		1669.0	1786.1	Kirthland Shale
4	2302.8	24.40	210.13	2139.6	-683.3	-396.5	0.00	0.00	790.0		1884.0	2022.2	Farmington SS
5	2690.7	5.00	210.13	2513.0	-768.0	-445.7	5.00	180.00	887.9	Anderson GC C #3 FC	2281.0	2454.0	Lower Kirthland Shale
6	3137.4	5.00	210.13	2958.0	-801.7	-465.2	0.00	0.00	926.9	Anderson GC C #3 PBHL	2513.0	2690.7	Fruitland coal
											2783.0	2961.8	Pictured cliffs

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
Anderson GC C #3 Drilling Window	0.0	0.0	0.0	1191851.63	2369395.67	37° 10' 24.564 N	107° 39' 52.056 W	Polygon
Anderson GC C #3 FC	2513.0	-768.0	-445.7	1191083.62	2368950.00	37° 10' 16.871 N	107° 39' 57.341 W	Circle (Radius: 200.0)
Anderson GC C #3 PBHL	2958.0	-801.7	-465.2	1191049.92	2368930.46	37° 10' 16.533 N	107° 39' 57.573 W	Point



	PROJECT DETAILS	WELL SURFACE DETAILS	PLAN APPROVAL: 13:13, December 13 2011
	Geodetic System: US State Plane 1983 Datum: North American Datum 1983 Ellipsoid: GRS 1980 Zone: Colorado Southern Zone System Datum: Mean Sea Level	Ground Level: 6668.0 Ref. Sec.: Slot - (0.0N, 0.0E) North: 1191851.62 East: 2369395.67 Lat: 37° 10' 24.564 N Long: 107° 39' 52.056 W	Created By: Kimberly Sands Checked: Kimberly Sands Reviewed: Kelli Fereday Approved: _____

North America - Onshore US - BP

Western - San Juan North (NAD 83)

SEC 24 -T34N-R08W

Anderson GC C #3

Anderson GC C #3

Plan: Plan #1

Standard Planning Report

13 December, 2011

bp
Planning Report

Database:	EDM .16 Hou Prod - WH21P	Local Co-ordinate Reference:	Well Anderson GC C #3
Company:	North America - Onshore US - BP	TVD Reference:	WELL @ 6684.0ft (Original Well Elev)
Project:	Western - San Juan North (NAD 83)	MD Reference:	WELL @ 6684.0ft (Original Well Elev)
Site:	SEC 24 -T34N-R08W	North Reference:	Grid
Well:	Anderson GC C #3	Survey Calculation Method:	Minimum Curvature
Wellbore:	Anderson GC C #3		
Design:	Plan #1		

Project	Western - San Juan North (NAD 83), LAPLATA COUNTY COLORADO, USA		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Southern Zone		Using geodetic scale factor

Site		SEC 24 -T34N-R08W			
Site Position:		Northing:	1,194,597.12 ft	Latitude:	37° 10' 51.780 N
From:	Lat/Long	Easting:	2,369,739.06 ft	Longitude:	107° 39' 48.600 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	-1.33 °

Well	Anderson GC C #3					
Well Position	+N/-S	0.0 ft	Northing:	1,191,851.62 ft	Latitude:	37° 10' 24.564 N
	+E/-W	0.0 ft	Easting:	2,369,395.67 ft	Longitude:	107° 39' 52.056 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	6,668.0 ft

Wellbore	Anderson GC C #3				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2011	12/6/2011	9.85	63.85	50,916

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	210.13

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	
150.0	0.00	0.00	150.0	0.0	0.0	0.00	0.00	0.00	0.00	
637.9	24.40	210.13	623.3	-88.5	-51.4	5.00	5.00	0.00	210.13	
2,302.8	24.40	210.13	2,139.6	-683.3	-396.5	0.00	0.00	0.00	0.00	
2,690.7	5.00	210.13	2,513.0	-768.0	-445.7	5.00	-5.00	0.00	180.00	Anderson GC C #3
3,137.4	5.00	210.13	2,958.0	-801.7	-465.2	0.00	0.00	0.00	0.00	Anderson GC C #3

bp
Planning Report

Database:	EDM .16 Hou Prod - WH21P	Local Co-ordinate Reference:	Well Anderson GC C #3
Company:	North America - Onshore US - BP	TVD Reference:	WELL @ 6684.0ft (Original Well Elev)
Project:	Western - San Juan North (NAD 83)	MD Reference:	WELL @ 6684.0ft (Original Well Elev)
Site:	SEC 24 -T34N-R08W	North Reference:	Grid
Well:	Anderson GC C #3	Survey Calculation Method:	Minimum Curvature
Wellbore:	Anderson GC C #3		
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)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
16.0	0.00	0.00	16.0	0.0	0.0	0.0	0.00	0.00	0.00
Animas									
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
150.0	0.00	0.00	150.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	2.50	210.13	200.0	-0.9	-0.5	1.1	5.00	5.00	0.00
300.0	7.50	210.13	299.6	-8.5	-4.9	9.8	5.00	5.00	0.00
400.0	12.50	210.13	398.0	-23.5	-13.6	27.2	5.00	5.00	0.00
500.0	17.50	210.13	494.6	-45.9	-26.6	53.0	5.00	5.00	0.00
600.0	22.50	210.13	588.5	-75.4	-43.8	87.2	5.00	5.00	0.00
637.9	24.40	210.13	623.3	-88.5	-51.4	102.3	5.00	5.00	0.00
700.0	24.40	210.13	679.8	-110.7	-64.2	128.0	0.00	0.00	0.00
800.0	24.40	210.13	770.9	-146.4	-85.0	169.3	0.00	0.00	0.00
900.0	24.40	210.13	862.0	-182.1	-105.7	210.6	0.00	0.00	0.00
941.7	24.40	210.13	900.0	-197.0	-114.3	227.8	0.00	0.00	0.00
8 5/8"									
1,000.0	24.40	210.13	953.1	-217.8	-126.4	251.9	0.00	0.00	0.00
1,100.0	24.40	210.13	1,044.1	-253.6	-147.1	293.2	0.00	0.00	0.00
1,200.0	24.40	210.13	1,135.2	-289.3	-167.9	334.5	0.00	0.00	0.00
1,300.0	24.40	210.13	1,226.3	-325.0	-188.6	375.8	0.00	0.00	0.00
1,368.9	24.40	210.13	1,289.0	-349.6	-202.9	404.2	0.00	0.00	0.00
Lwr Animas									
1,400.0	24.40	210.13	1,317.3	-360.7	-209.3	417.1	0.00	0.00	0.00
1,500.0	24.40	210.13	1,408.4	-396.5	-230.1	458.4	0.00	0.00	0.00
1,600.0	24.40	210.13	1,499.5	-432.2	-250.8	499.7	0.00	0.00	0.00
1,700.0	24.40	210.13	1,590.6	-467.9	-271.5	541.0	0.00	0.00	0.00
1,786.1	24.40	210.13	1,669.0	-498.7	-289.4	576.6	0.00	0.00	0.00
Kirthland Shale									
1,800.0	24.40	210.13	1,681.6	-503.6	-292.3	582.3	0.00	0.00	0.00
1,900.0	24.40	210.13	1,772.7	-539.4	-313.0	623.6	0.00	0.00	0.00
2,000.0	24.40	210.13	1,863.8	-575.1	-333.7	664.9	0.00	0.00	0.00
2,022.2	24.40	210.13	1,884.0	-583.0	-338.3	674.1	0.00	0.00	0.00
Farmington SS									
2,100.0	24.40	210.13	1,954.9	-610.8	-354.5	706.2	0.00	0.00	0.00
2,200.0	24.40	210.13	2,045.9	-646.5	-375.2	747.5	0.00	0.00	0.00
2,300.0	24.40	210.13	2,137.0	-682.3	-395.9	788.8	0.00	0.00	0.00
2,302.8	24.40	210.13	2,139.6	-683.3	-396.5	790.0	0.00	0.00	0.00
2,400.0	19.54	210.13	2,229.7	-714.7	-414.7	826.3	5.00	-5.00	0.00
2,454.0	16.83	210.13	2,281.0	-729.3	-423.2	843.2	5.00	-5.00	0.00
Lower Kirthland Shale									
2,500.0	14.54	210.13	2,325.2	-740.0	-429.4	855.6	5.00	-5.00	0.00
2,600.0	9.54	210.13	2,423.0	-758.1	-439.9	876.4	5.00	-5.00	0.00
2,690.7	5.00	210.13	2,513.0	-768.0	-445.7	887.9	5.00	-5.00	0.00
Fruitland coal - Anderson GC C #3 FC									
2,700.0	5.00	210.13	2,522.2	-768.7	-446.1	888.7	0.00	0.00	0.00
2,800.0	5.00	210.13	2,621.8	-776.2	-450.4	897.4	0.00	0.00	0.00
2,900.0	5.00	210.13	2,721.5	-783.8	-454.8	906.2	0.00	0.00	0.00
2,961.8	5.00	210.13	2,783.0	-788.4	-457.5	911.5	0.00	0.00	0.00
Pictured cliffs									
3,000.0	5.00	210.13	2,821.1	-791.3	-459.2	914.9	0.00	0.00	0.00
3,100.0	5.00	210.13	2,920.7	-798.8	-463.6	923.6	0.00	0.00	0.00
3,137.4	5.00	210.13	2,958.0	-801.7	-465.2	926.9	0.00	0.00	0.00
Anderson GC C #3 PBHL									

bp
Planning Report

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Project:	Western - San Juan North (NAD 83)	MD Reference:	WELL @ 6684.0ft (Original Well Elev)
Site:	SEC 24 -T34N-R08W	North Reference:	Grid
Well:	Anderson GC C #3	Survey Calculation Method:	Minimum Curvature
Wellbore:	Anderson GC C #3		
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)

Targets										
Target Name										
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting			
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)	Latitude	Longitude	
Anderson GC C #3 PE - plan hits target center - Point	0.00	0.00	2,958.0	-801.7	-465.2	1,191,049.92	2,368,930.46	37° 10' 16.533 N	107° 39' 57.573 W	
Anderson GC C #3 FC - plan hits target center - Circle (radius 200.0)	0.00	0.00	2,513.0	-768.0	-445.7	1,191,083.62	2,368,950.00	37° 10' 16.871 N	107° 39' 57.341 W	
Anderson GC C #3 Dr - plan hits target center - Polygon	0.00	360.00	0.0	0.0	0.0	1,191,851.63	2,369,395.67	37° 10' 24.564 N	107° 39' 52.056 W	
Point 1			0.0	550.6	-3,122.6	1,192,402.24	2,366,273.03			
Point 2			0.0	460.7	876.5	1,192,312.34	2,370,272.18			
Point 3			0.0	-858.9	842.1	1,190,992.72	2,370,237.78			
Point 4			0.0	-769.1	-3,122.6	1,191,082.52	2,366,273.03			

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
941.7	900.0	8 5/8"	8-5/8	12-1/4	

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
16.0	16.0	Animas		0.00	359.88
1,368.9	1,289.0	Lwr Animas		0.00	
1,786.1	1,669.0	Kirthland Shale		0.00	359.88
2,022.2	1,884.0	Farmington SS		0.00	359.88
2,454.0	2,281.0	Lower Kirthland Shale		0.00	359.88
2,690.7	2,513.0	Fruitland coal		0.00	359.88
2,961.8	2,783.0	Pictured cliffs		0.00	359.88