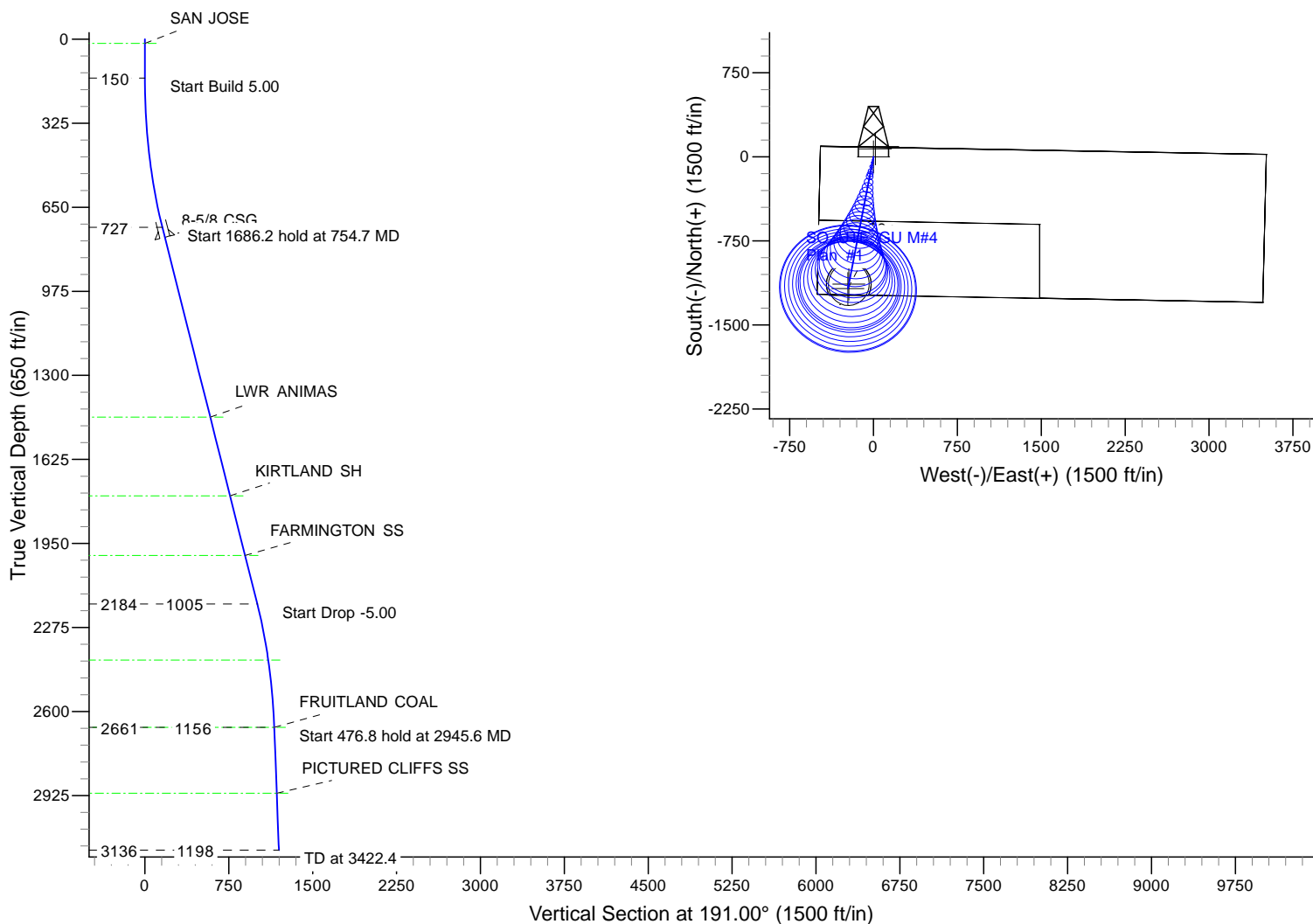


Project: Western - San Juan North (NAD 83)
 Site: SEC 13 -T33N-R08W
 Well: SO. UTE. GU M#4
 Wellbore: So UTE GU M #4 WELLBORE
 Design: Plan #1



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	FC SO UTE M4 PBHL SO UTE M4	16.0	16.0	SAN JOSE
2	150.0	0.00	0.00	150.0	0.0	0.0	0.00	0.00	0.0		1461.0	1604.2	LWR ANIMAS
3	754.7	30.23	191.00	727.0	-153.0	-29.7	5.00	191.00	155.9		1766.0	1957.2	KIRTLAND SH
4	2440.9	30.23	191.00	2183.9	-986.5	-191.8	0.00	0.00	1004.9		1996.0	2223.5	FARMINGTON SS
5	2945.6	5.00	191.00	2661.0	-1135.2	-220.7	5.00	180.00	1156.4		2401.0	2679.5	LWR KIRTLAND SH
6	3422.4	5.00	191.00	3136.0	-1176.0	-228.6	0.00	0.00	1198.0		2661.0	2945.6	FRUITLAND COAL
											2916.0	3201.6	PICTURED CLIFFS SS

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)									
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape	
DRILLING WINDOW SO UTE M4	0.0	0.0	0.0	1165879.18	2366121.51	37° 6' 7.092 N	107° 40' 25.032 W	Polygon	
tribal minera gu m3	0.0	72.5	16.3	1165951.65	2366137.78	37° 6' 7.812 N	107° 40' 24.852 W	Polygon	
FC SO UTE M4	2661.0	-1135.2	-220.7	1164743.97	2365900.79	37° 5' 55.820 N	107° 40' 27.430 W	Circle (Radius: 200.0)	
PBHL SO UTE M4	3136.0	-1176.0	-228.6	1164703.15	2365892.90	37° 5' 55.415 N	107° 40' 27.515 W	Point	



<p>Azimuths to Grid North True North: 1.33° Magnetic North: 11.19° Magnetic Field Strength: 50884.5snT Dip Angle: 63.79° Date: 11/8/2011 Model: BGGM2011</p>	PROJECT DETAILS	WELL SURFACE DETAILS	PLAN APPROVAL: 12:10, January 10 2012
	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: 6629.7 Ref. Sec.: Slot - (0.0N, 0.0E) North: 1165879.19 East: 2366121.51 Lat: 37° 6' 7.092 N Long: 107° 40' 25.032 W	Created By: Kimberly Sands Checked: Kimberly Sands Reviewed: Kelli Fereday Approved: _____

North America - Onshore US - BP

Western - San Juan North (NAD 83)

SEC 13 -T33N-R08W

SO. UTE. GU M#4

So UTE GU M #4 WELLBORE

Plan: Plan #1

Standard Planning Report

10 January, 2012

BPPASSPORT

Planning Report

Database:	EDM .16 Hou Prod - WH21P	Local Co-ordinate Reference:	Well SO. UTE. GU M#4
Company:	North America - Onshore US - BP	TVD Reference:	WELL @ 6645.7ft (Original Well Elev)
Project:	Western - San Juan North (NAD 83)	MD Reference:	WELL @ 6645.7ft (Original Well Elev)
Site:	SEC 13 -T33N-R08W	North Reference:	Grid
Well:	SO. UTE. GU M#4	Survey Calculation Method:	Minimum Curvature
Wellbore:	So UTE GU M #4 WELLBORE		
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 13 -T33N-R08W		
Site Position:		Northing:	1,165,951.65 ft
From:	Lat/Long	Easting:	2,366,137.78 ft
Position Uncertainty:	0.0 ft	Slot Radius:	"
		Latitude:	37° 6' 7.812 N
		Longitude:	107° 40' 24.852 W
		Grid Convergence:	-1.33 °

Well	SO. UTE. GU M#4		
Well Position	+N/-S	0.0 ft	Northing:
	+E/-W	0.0 ft	Easting:
Position Uncertainty	0.0 ft	Wellhead Elevation:	6,629.7 ft
		Latitude:	37° 6' 7.092 N
		Longitude:	107° 40' 25.032 W
		Ground Level:	6,629.7 ft

Wellbore	So UTE GU M #4 WELLBORE				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2011	11/8/2011	9.85	63.79	50,884

Design	Plan #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	191.00

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	
754.7	30.23	191.00	727.0	-153.0	-29.7	5.00	5.00	0.00	191.00	
2,440.9	30.23	191.00	2,183.9	-986.5	-191.8	0.00	0.00	0.00	0.00	
2,945.6	5.00	191.00	2,661.0	-1,135.2	-220.7	5.00	-5.00	0.00	180.00	FC SO UTE M4
3,422.4	5.00	191.00	3,136.0	-1,176.0	-228.6	0.00	0.00	0.00	0.00	PBHL SO UTE M4

BPPASSPORT

Planning Report

Database:	EDM .16 Hou Prod - WH21P	Local Co-ordinate Reference:	Well SO. UTE. GU M#4
Company:	North America - Onshore US - BP	TVD Reference:	WELL @ 6645.7ft (Original Well Elev)
Project:	Western - San Juan North (NAD 83)	MD Reference:	WELL @ 6645.7ft (Original Well Elev)
Site:	SEC 13 -T33N-R08W	North Reference:	Grid
Well:	SO. UTE. GU M#4	Survey Calculation Method:	Minimum Curvature
Wellbore:	So UTE GU M #4 WELLBORE		
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
SAN JOSE									
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	191.00	200.0	-1.1	-0.2	1.1	5.00	5.00	0.00
300.0	7.50	191.00	299.6	-9.6	-1.9	9.8	5.00	5.00	0.00
400.0	12.50	191.00	398.0	-26.7	-5.2	27.2	5.00	5.00	0.00
500.0	17.50	191.00	494.6	-52.1	-10.1	53.0	5.00	5.00	0.00
600.0	22.50	191.00	588.5	-85.6	-16.6	87.2	5.00	5.00	0.00
700.0	27.50	191.00	679.1	-127.1	-24.7	129.5	5.00	5.00	0.00
754.7	30.23	191.00	727.0	-153.0	-29.7	155.9	5.00	5.00	0.00
800.0	30.23	191.00	766.2	-175.4	-34.1	178.7	0.00	0.00	0.00
8-5/8 CSG									
900.0	30.23	191.00	852.6	-224.8	-43.7	229.0	0.00	0.00	0.00
1,000.0	30.23	191.00	939.0	-274.3	-53.3	279.4	0.00	0.00	0.00
1,100.0	30.23	191.00	1,025.4	-323.7	-62.9	329.8	0.00	0.00	0.00
1,200.0	30.23	191.00	1,111.8	-373.1	-72.5	380.1	0.00	0.00	0.00
1,300.0	30.23	191.00	1,198.2	-422.5	-82.2	430.5	0.00	0.00	0.00
1,400.0	30.23	191.00	1,284.5	-472.0	-91.8	480.8	0.00	0.00	0.00
1,500.0	30.23	191.00	1,370.9	-521.4	-101.4	531.2	0.00	0.00	0.00
1,600.0	30.23	191.00	1,457.3	-570.8	-111.0	581.5	0.00	0.00	0.00
1,604.2	30.23	191.00	1,461.0	-572.9	-111.4	583.6	0.00	0.00	0.00
LWR ANIMAS									
1,700.0	30.23	191.00	1,543.7	-620.3	-120.6	631.9	0.00	0.00	0.00
1,800.0	30.23	191.00	1,630.1	-669.7	-130.2	682.2	0.00	0.00	0.00
1,900.0	30.23	191.00	1,716.5	-719.1	-139.8	732.6	0.00	0.00	0.00
1,957.2	30.23	191.00	1,766.0	-747.4	-145.3	761.4	0.00	0.00	0.00
KIRTLAND SH									
2,000.0	30.23	191.00	1,802.9	-768.5	-149.4	782.9	0.00	0.00	0.00
2,100.0	30.23	191.00	1,889.3	-818.0	-159.0	833.3	0.00	0.00	0.00
2,200.0	30.23	191.00	1,975.7	-867.4	-168.6	883.6	0.00	0.00	0.00
2,223.5	30.23	191.00	1,996.0	-879.0	-170.9	895.4	0.00	0.00	0.00
FARMINGTON SS									
2,300.0	30.23	191.00	2,062.1	-916.8	-178.3	934.0	0.00	0.00	0.00
2,400.0	30.23	191.00	2,148.5	-966.2	-187.9	984.3	0.00	0.00	0.00
2,440.9	30.23	191.00	2,183.9	-986.5	-191.8	1,004.9	0.00	0.00	0.00
2,500.0	27.28	191.00	2,235.7	-1,014.4	-197.2	1,033.4	5.00	-5.00	0.00
2,600.0	22.28	191.00	2,326.4	-1,055.5	-205.2	1,075.3	5.00	-5.00	0.00
2,679.5	18.30	191.00	2,401.0	-1,082.6	-210.5	1,102.8	5.00	-5.00	0.00
LWR KIRTLAND SH									
2,700.0	17.28	191.00	2,420.5	-1,088.7	-211.7	1,109.1	5.00	-5.00	0.00
2,800.0	12.28	191.00	2,517.2	-1,113.7	-216.5	1,134.6	5.00	-5.00	0.00
2,900.0	7.28	191.00	2,615.7	-1,130.4	-219.8	1,151.6	5.00	-5.00	0.00
2,945.6	5.00	191.00	2,661.0	-1,135.2	-220.7	1,156.4	5.00	-5.00	0.00
FRUITLAND COAL - FC SO UTE M4									
3,000.0	5.00	191.00	2,715.2	-1,139.8	-221.6	1,161.2	0.00	0.00	0.00
3,100.0	5.00	191.00	2,814.8	-1,148.4	-223.3	1,169.9	0.00	0.00	0.00
3,200.0	5.00	191.00	2,914.4	-1,157.0	-224.9	1,178.6	0.00	0.00	0.00
3,201.6	5.00	191.00	2,916.0	-1,157.1	-225.0	1,178.8	0.00	0.00	0.00
PICTURED CLIFFS SS									
3,300.0	5.00	191.00	3,014.1	-1,165.5	-226.6	1,187.3	0.00	0.00	0.00
3,400.0	5.00	191.00	3,113.7	-1,174.1	-228.3	1,196.0	0.00	0.00	0.00

BPPASSPORT

Planning Report

Database:	EDM .16 Hou Prod - WH21P	Local Co-ordinate Reference:	Well SO. UTE. GU M#4
Company:	North America - Onshore US - BP	TVD Reference:	WELL @ 6645.7ft (Original Well Elev)
Project:	Western - San Juan North (NAD 83)	MD Reference:	WELL @ 6645.7ft (Original Well Elev)
Site:	SEC 13 -T33N-R08W	North Reference:	Grid
Well:	SO. UTE. GU M#4	Survey Calculation Method:	Minimum Curvature
Wellbore:	So UTE GU M #4 WELLBORE		
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)
3,422.4	5.00	191.00	3,136.0	-1,176.0	-228.6	1,198.0	0.00	0.00	0.00
PBHL SO UTE M4									

Targets									
Target Name	- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	
- Shape									Latitude Longitude
DRILLING WINDOW :		0.00	0.00	0.0	0.0	0.0	1,165,879.18	2,366,121.51	37° 6' 7.092 N 107° 40' 25.032 W
- plan hits target center									
- Polygon									
Point 1				0.0	93.2	-473.7	1,165,972.38	2,365,647.80	
Point 2				0.0	21.7	3,513.5	1,165,900.88	2,369,635.10	
Point 3				0.0	-1,298.0	3,480.9	1,164,581.15	2,369,602.50	
Point 4				0.0	-1,226.5	-504.4	1,164,652.65	2,365,617.10	
tribal minera gu m3		0.00	360.00	0.0	72.5	16.3	1,165,951.65	2,366,137.78	37° 6' 7.812 N 107° 40' 24.852 W
- plan misses target center by 74.3ft at 0.0ft MD (0.0 TVD, 0.0 N, 0.0 E)									
- Polygon									
Point 1				0.0	23.1	3,514.0	1,165,902.25	2,369,635.58	
Point 2				0.0	97.3	-473.0	1,165,976.45	2,365,648.47	
Point 3				0.0	-565.4	-488.5	1,165,313.73	2,365,632.97	
Point 4				0.0	-602.7	1,485.9	1,165,276.43	2,367,607.42	
Point 5				0.0	-1,259.4	1,485.9	1,164,619.71	2,367,607.42	
Point 6				0.0	-1,296.5	3,481.5	1,164,582.61	2,369,603.08	
FC SO UTE M4		0.00	0.00	2,661.0	-1,135.2	-220.7	1,164,743.97	2,365,900.79	37° 5' 55.820 N 107° 40' 27.430 W
- plan hits target center									
- Circle (radius 200.0)									
PBHL SO UTE M4		0.00	0.00	3,136.0	-1,176.0	-228.6	1,164,703.15	2,365,892.90	37° 5' 55.415 N 107° 40' 27.515 W
- plan hits target center									
- Point									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
800.0	766.2	8-5/8 CSG	8-5/8	12-1/4	

BPPASSPORT

Planning Report

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Company:	North America - Onshore US - BP	TVD Reference:	WELL @ 6645.7ft (Original Well Elev)
Project:	Western - San Juan North (NAD 83)	MD Reference:	WELL @ 6645.7ft (Original Well Elev)
Site:	SEC 13 -T33N-R08W	North Reference:	Grid
Well:	SO. UTE. GU M#4	Survey Calculation Method:	Minimum Curvature
Wellbore:	So UTE GU M #4 WELLBORE		
Design:	Plan #1		

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
16.0	16.0	SAN JOSE		0.00	
1,604.2	1,461.0	LWR ANIMAS			
1,957.2	1,766.0	KIRTLAND SH			
2,223.5	1,996.0	FARMINGTON SS			
2,679.5	2,401.0	LWR KIRTLAND SH			
2,945.6	2,661.0	FRUITLAND COAL			
3,201.6	2,916.0	PICTURED CLIFFS SS			