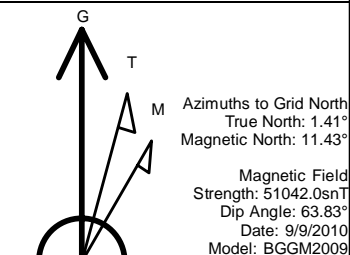


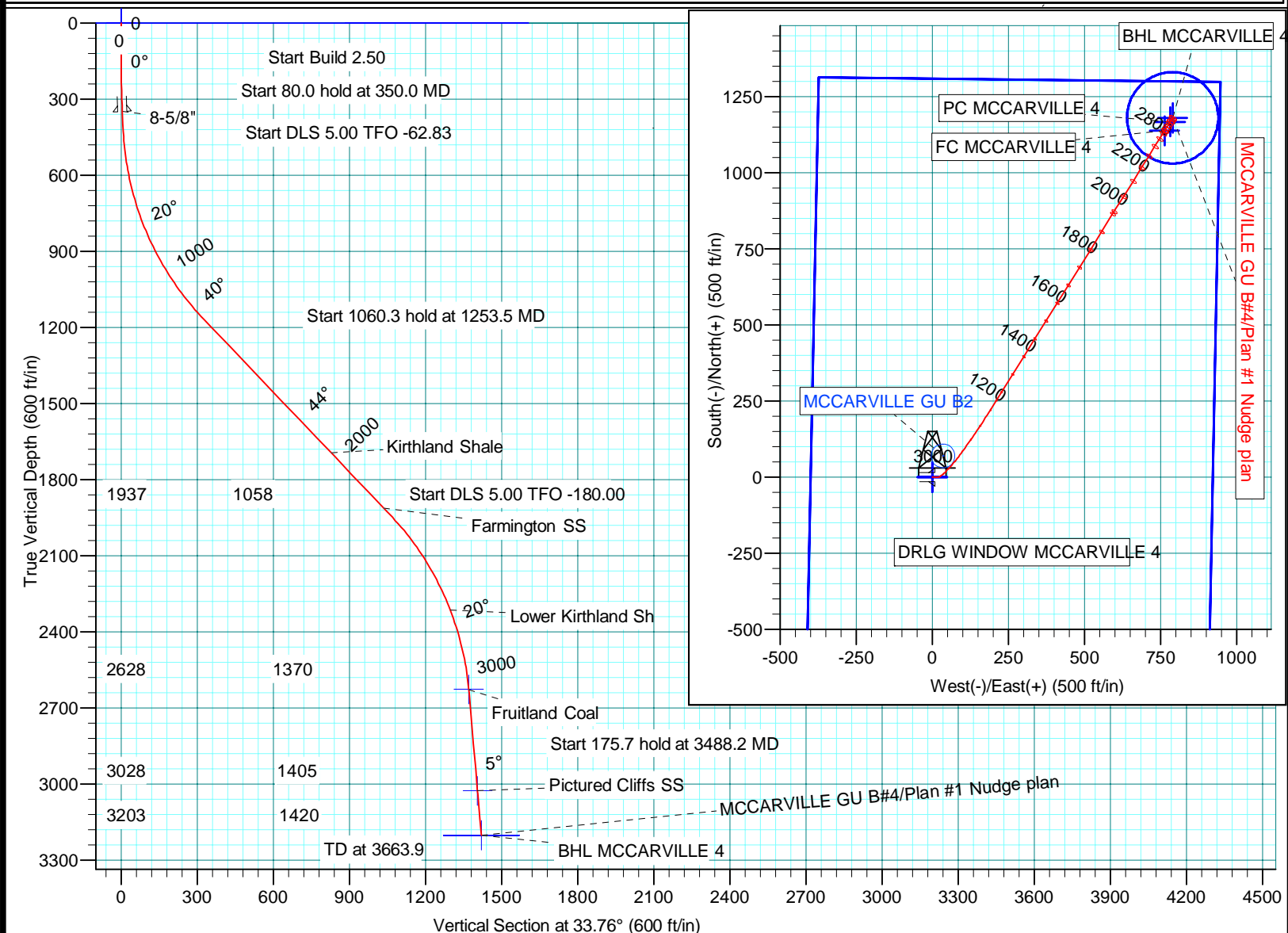
SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
150.0	0.00	360.00	150.0	0.0	0.0	0.00	360.00	0.0	
350.0	5.00	90.00	349.7	0.0	8.7	2.50	90.00	4.8	
430.0	5.00	90.00	429.4	0.0	15.7	0.00	0.00	8.7	
1253.5	43.65	31.94	1169.7	252.1	210.4	5.00	-62.83	326.5	
2313.8	43.65	31.94	1937.0	873.1	597.5	0.00	0.00	1057.9	
3086.7	5.00	31.91	2628.0	1138.2	762.7	5.00	-180.00	1370.1	FC MCCARVILLE 4
3488.2	5.00	31.91	3028.0	1167.9	781.2	0.00	0.00	1405.1	PC MCCARVILLE 4
3663.9	5.00	31.91	3203.0	1180.9	789.3	0.00	0.00	1420.4	BHL MCCARVILLE 4



WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
DRLG WINDOW MCCARVILLE 4	0.0	0.0	0.0	1168106.80	2331599.46	Polygon
TRIBAL MINERAL MCCARVILLE4	0.0	0.0	0.0	1168106.80	2331599.46	Polygon
FC MCCARVILLE 4	2628.0	1138.2	762.7	1169245.03	2332362.18	Point
PC MCCARVILLE 4	3028.0	1167.9	781.2	1169274.73	2332380.68	Point
BHL MCCARVILLE 4	3203.0	1180.9	789.3	1169287.73	2332388.78	Circle (Radius: 150.0)



Plan: Plan #1 Nudge plan (MCCARVILLE GU B#4/Wellbore #1)

Created By: Masoud Khodadad 3/30/2007

Checked: _____

Reviewed: _____

PROJECT DETAILS: Western - San Juan North (NAD 83)

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

System Datum: Mean Sea Level

WELL DETAILS: MCCARVILLE GU B#4

Ground Level: 6687.0
Northing: 1168106.80 Easting: 2331599.46 Latitude: 37° 6' 20.952 N Longitude: 107° 47' 31.704 W

North America - Onshore US - BP

Western - San Juan North (NAD 83)

SEC 14-T33N-R9W

MCCARVILLE GU B#4

Wellbore #1

Plan: Plan #1 Nudge plan

Standard Planning Report

16 September, 2010

D&C Digital

Planning Report

Database:	Houston EDM - EDM21P	Local Co-ordinate Reference:	Well MCCARVILLE GU B#4
Company:	North America - Onshore US - BP	TVD Reference:	WELL @ 6703.0ft (???)
Project:	Western - San Juan North (NAD 83)	MD Reference:	WELL @ 6703.0ft (???)
Site:	SEC 14-T33N-R9W	North Reference:	Grid
Well:	MCCARVILLE GU B#4	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 Nudge plan		

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 14-T33N-R9W											
Site Position:			Northing:			1,168,106.80 ft			Latitude:			37° 6' 20.952 N					
From:			Lat/Long			Easting:			2,331,599.46 ft			Longitude:			107° 47' 31.704 W		
Position Uncertainty:			0.0 ft			Slot Radius:			"			Grid Convergence:			-1.41 °		

Well	MCCARVILLE GU B#4					
Well Position	+N/-S	0.0 ft	Northing:	1,168,106.80 ft	Latitude:	37° 6' 20.952 N
	+E/-W	0.0 ft	Easting:	2,331,599.46 ft	Longitude:	107° 47' 31.704 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	6,703.0 ft	Ground Level:	6,687.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2009	9/9/2010	10.03	63.83	51,042

Design	Plan #1 Nudge plan			
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	33.76

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	360.00	150.0	0.0	0.0	0.00	0.00	0.00	360.00	
350.0	5.00	90.00	349.7	0.0	8.7	2.50	2.50	0.00	90.00	
430.0	5.00	90.00	429.4	0.0	15.7	0.00	0.00	0.00	0.00	
1,253.5	43.65	31.94	1,169.7	252.1	210.4	5.00	4.69	-7.05	-62.83	
2,313.8	43.65	31.94	1,937.0	873.1	597.5	0.00	0.00	0.00	0.00	
3,086.7	5.00	31.91	2,628.0	1,138.2	762.7	5.00	-5.00	0.00	-180.00	FC MCCARVILLE 4
3,488.2	5.00	31.91	3,028.0	1,167.9	781.2	0.00	0.00	0.00	0.00	PC MCCARVILLE 4
3,663.9	5.00	31.91	3,203.0	1,180.9	789.3	0.00	0.00	0.00	0.00	BHL MCCARVILLE 4

Database:	Houston EDM - EDM21P	Local Co-ordinate Reference:	Well MCCARVILLE GU B#4
Company:	North America - Onshore US - BP	TVD Reference:	WELL @ 6703.0ft (???)
Project:	Western - San Juan North (NAD 83)	MD Reference:	WELL @ 6703.0ft (???)
Site:	SEC 14-T33N-R9W	North Reference:	Grid
Well:	MCCARVILLE GU B#4	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 Nudge plan		

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
Animas - DRLG WINDOW MCCARVILLE 4 - TRIBAL MINERAL MCCARVILLE4									
100.0	0.00	360.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
150.0	0.00	360.00	150.0	0.0	0.0	0.0	0.00	0.00	0.00
Start Build 2.50									
200.0	1.25	90.00	200.0	0.0	0.5	0.3	2.50	2.50	0.00
300.0	3.75	90.00	299.9	0.0	4.9	2.7	2.50	2.50	0.00
350.0	5.00	90.00	349.7	0.0	8.7	4.8	2.50	2.50	0.00
Start 80.0 hold at 350.0 MD - 8-5/8"									
400.0	5.00	90.00	399.6	0.0	13.1	7.3	0.00	0.00	0.00
430.0	5.00	90.00	429.4	0.0	15.7	8.7	0.00	0.00	0.00
Start DLS 5.00 TFO -62.83									
500.0	7.29	64.67	499.0	1.9	22.8	14.2	5.00	3.28	-36.18
600.0	11.66	49.40	597.7	11.2	36.2	29.4	5.00	4.36	-15.27
700.0	16.39	42.60	694.7	28.2	53.4	53.1	5.00	4.73	-6.81
800.0	21.24	38.80	789.3	52.7	74.3	85.1	5.00	4.85	-3.79
900.0	26.14	36.38	880.9	84.6	98.8	125.2	5.00	4.91	-2.43
1,000.0	31.08	34.68	968.6	123.5	126.5	173.0	5.00	4.93	-1.70
1,100.0	36.03	33.40	1,051.9	169.3	157.4	228.3	5.00	4.95	-1.28
1,200.0	40.99	32.40	1,130.2	221.6	191.2	290.5	5.00	4.96	-1.00
1,253.5	43.65	31.94	1,169.7	252.1	210.4	326.5	5.00	4.97	-0.86
Start 1060.3 hold at 1253.5 MD									
1,300.0	43.65	31.94	1,203.4	279.3	227.3	358.6	0.00	0.00	0.00
1,400.0	43.65	31.94	1,275.7	337.9	263.9	427.6	0.00	0.00	0.00
1,500.0	43.65	31.94	1,348.1	396.5	300.4	496.5	0.00	0.00	0.00
1,600.0	43.65	31.94	1,420.5	455.1	336.9	565.5	0.00	0.00	0.00
1,700.0	43.65	31.94	1,492.8	513.6	373.4	634.5	0.00	0.00	0.00
1,800.0	43.65	31.94	1,565.2	572.2	409.9	703.5	0.00	0.00	0.00
1,900.0	43.65	31.94	1,637.5	630.8	446.4	772.5	0.00	0.00	0.00
1,980.8	43.65	31.94	1,696.0	678.1	475.9	828.2	0.00	0.00	0.00
Kirthland Shale									
2,000.0	43.65	31.94	1,709.9	689.3	482.9	841.5	0.00	0.00	0.00
2,100.0	43.65	31.94	1,782.3	747.9	519.4	910.4	0.00	0.00	0.00
2,200.0	43.65	31.94	1,854.6	806.5	555.9	979.4	0.00	0.00	0.00
2,280.7	43.65	31.94	1,913.0	853.7	585.4	1,035.1	0.00	0.00	0.00
Farmington SS									
2,300.0	43.65	31.94	1,927.0	865.1	592.5	1,048.4	0.00	0.00	0.00
2,313.8	43.65	31.94	1,937.0	873.1	597.5	1,057.9	0.00	0.00	0.00
Start DLS 5.00 TFO -180.00									
2,400.0	39.33	31.94	2,001.5	921.6	627.7	1,115.0	5.00	-5.00	0.00
2,500.0	34.33	31.94	2,081.5	972.4	659.4	1,174.9	5.00	-5.00	0.00
2,600.0	29.33	31.94	2,166.5	1,017.2	687.3	1,227.6	5.00	-5.00	0.00
2,700.0	24.33	31.93	2,255.7	1,055.5	711.2	1,272.7	5.00	-5.00	0.00
2,764.3	21.12	31.93	2,315.0	1,076.6	724.3	1,297.5	5.00	-5.00	0.00
Lower Kirthland Sh									
2,800.0	19.33	31.93	2,348.5	1,087.0	730.8	1,309.9	5.00	-5.00	0.00
2,900.0	14.33	31.93	2,444.2	1,111.6	746.1	1,338.8	5.00	-5.00	0.00
3,000.0	9.33	31.92	2,542.0	1,129.0	757.0	1,359.3	5.00	-5.00	-0.01
3,086.7	5.00	31.91	2,628.0	1,138.2	762.7	1,370.1	5.00	-5.00	-0.02
Start 401.5 hold at 3086.7 MD - Fruitland Coal - FC MCCARVILLE 4									
3,100.0	5.00	31.91	2,641.3	1,139.2	763.3	1,371.3	0.00	0.00	0.00
3,200.0	5.00	31.91	2,740.9	1,146.6	767.9	1,380.0	0.00	0.00	0.00

Database:	Houston EDM - EDM21P	Local Co-ordinate Reference:	Well MCCARVILLE GU B#4
Company:	North America - Onshore US - BP	TVD Reference:	WELL @ 6703.0ft (???)
Project:	Western - San Juan North (NAD 83)	MD Reference:	WELL @ 6703.0ft (???)
Site:	SEC 14-T33N-R9W	North Reference:	Grid
Well:	MCCARVILLE GU B#4	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 Nudge plan		

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)
3,300.0	5.00	31.91	2,840.5	1,154.0	772.5	1,388.7	0.00	0.00	0.00
3,400.0	5.00	31.91	2,940.1	1,161.4	777.1	1,397.4	0.00	0.00	0.00
3,488.2	5.00	31.91	3,028.0	1,167.9	781.2	1,405.1	0.00	0.00	0.00
Start 175.7 hold at 3488.2 MD - Pictured Cliffs SS - PC MCCARVILLE 4									
3,500.0	5.00	31.91	3,039.7	1,168.8	781.7	1,406.1	0.00	0.00	0.00
3,600.0	5.00	31.91	3,139.4	1,176.2	786.3	1,414.8	0.00	0.00	0.00
3,663.9	5.00	31.91	3,203.0	1,180.9	789.3	1,420.4	0.00	0.00	0.00
TD at 3663.9 - BHL MCCARVILLE 4									

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
TRIBAL MINERAL MCC - plan hits target center - Polygon	0.00	360.00	0.0	0.0	0.0	1,168,106.80	2,331,599.46	37° 6' 20.952 N	107° 47' 31.704 W
Point 1			0.0	-2,036.6	256.2	1,166,070.15	2,331,855.66		
Point 2			0.0	-2,010.9	-438.2	1,166,095.85	2,331,161.25		
Point 3			0.0	-2,695.1	-451.5	1,165,411.63	2,331,147.95		
Point 4			0.0	-2,747.6	234.6	1,165,359.13	2,331,834.06		
DRLG WINDOW MCCA - plan hits target center - Polygon	0.00	360.00	0.0	0.0	0.0	1,168,106.80	2,331,599.46	37° 6' 20.952 N	107° 47' 31.704 W
Point 1			0.0	1,298.1	946.7	1,169,404.93	2,332,546.18		
Point 2			0.0	1,313.0	-373.2	1,169,419.83	2,331,226.25		
Point 3			0.0	-2,695.9	-451.5	1,165,410.83	2,331,147.95		
Point 4			0.0	-2,795.9	866.7	1,165,310.83	2,332,466.18		
PC MCCARVILLE 4 - plan hits target center - Point	0.00	0.00	3,028.0	1,167.9	781.2	1,169,274.73	2,332,380.68	37° 6' 32.685 N	107° 47' 22.417 W
BHL MCCARVILLE 4 - plan hits target center - Circle (radius 150.0)	0.00	360.00	3,203.0	1,180.9	789.3	1,169,287.73	2,332,388.78	37° 6' 32.816 N	107° 47' 22.321 W
FC MCCARVILLE 4 - plan hits target center - Point	0.00	0.00	2,628.0	1,138.2	762.7	1,169,245.03	2,332,362.18	37° 6' 32.387 N	107° 47' 22.636 W

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
350.0	349.7	8-5/8"	8-5/8	12-1/4

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Planning Report

Database:	Houston EDM - EDM21P	Local Co-ordinate Reference:	Well MCCARVILLE GU B#4
Company:	North America - Onshore US - BP	TVD Reference:	WELL @ 6703.0ft (???)
Project:	Western - San Juan North (NAD 83)	MD Reference:	WELL @ 6703.0ft (???)
Site:	SEC 14-T33N-R9W	North Reference:	Grid
Well:	MCCARVILLE GU B#4	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 Nudge plan		

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
0.0	0.0	Animas		0.00	359.95
1,980.8	1,696.0	Kirthland Shale		0.00	359.95
2,280.7	1,913.0	Farmington SS		0.00	359.95
2,764.3	2,315.0	Lower Kirthland Sh		0.00	359.95
3,086.7	2,628.0	Fruitland Coal		0.00	359.95
3,488.2	3,028.0	Pictured Cliffs SS		0.00	359.95

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
150.0	150.0	0.0	0.0	Start Build 2.50
350.0	349.7	0.0	8.7	Start 80.0 hold at 350.0 MD
430.0	429.4	0.0	15.7	Start DLS 5.00 TFO -62.83
1,253.5	1,169.7	252.1	210.4	Start 1060.3 hold at 1253.5 MD
2,313.8	1,937.0	873.1	597.5	Start DLS 5.00 TFO -180.00
3,086.7	2,628.0	1,138.2	762.7	Start 401.5 hold at 3086.7 MD
3,488.2	3,028.0	1,167.9	781.2	Start 175.7 hold at 3488.2 MD
3,663.9	3,203.0	1,180.9	789.3	TD at 3663.9