

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	10.00	60.00	349.0	8.7	15.1	5.00	60.00	16.1	
430.0	10.00	60.00	427.8	15.7	27.1	0.00	0.00	29.0	
1186.1	46.76	35.86	1083.0	281.4	253.6	5.00	-29.08	377.8	
1647.5	46.76	35.86	1399.1	553.8	450.5	0.00	0.00	713.7	
2482.7	5.00	35.86	2134.0	842.7	659.3	5.00	180.00	1070.0	FC billy ray 3
2903.3	5.00	35.86	2553.0	872.4	680.8	0.00	0.00	1106.6	PC billy ray 3
3078.9	5.00	35.86	2728.0	884.8	689.8	0.00	0.00	1121.9	BHL billy ray 3



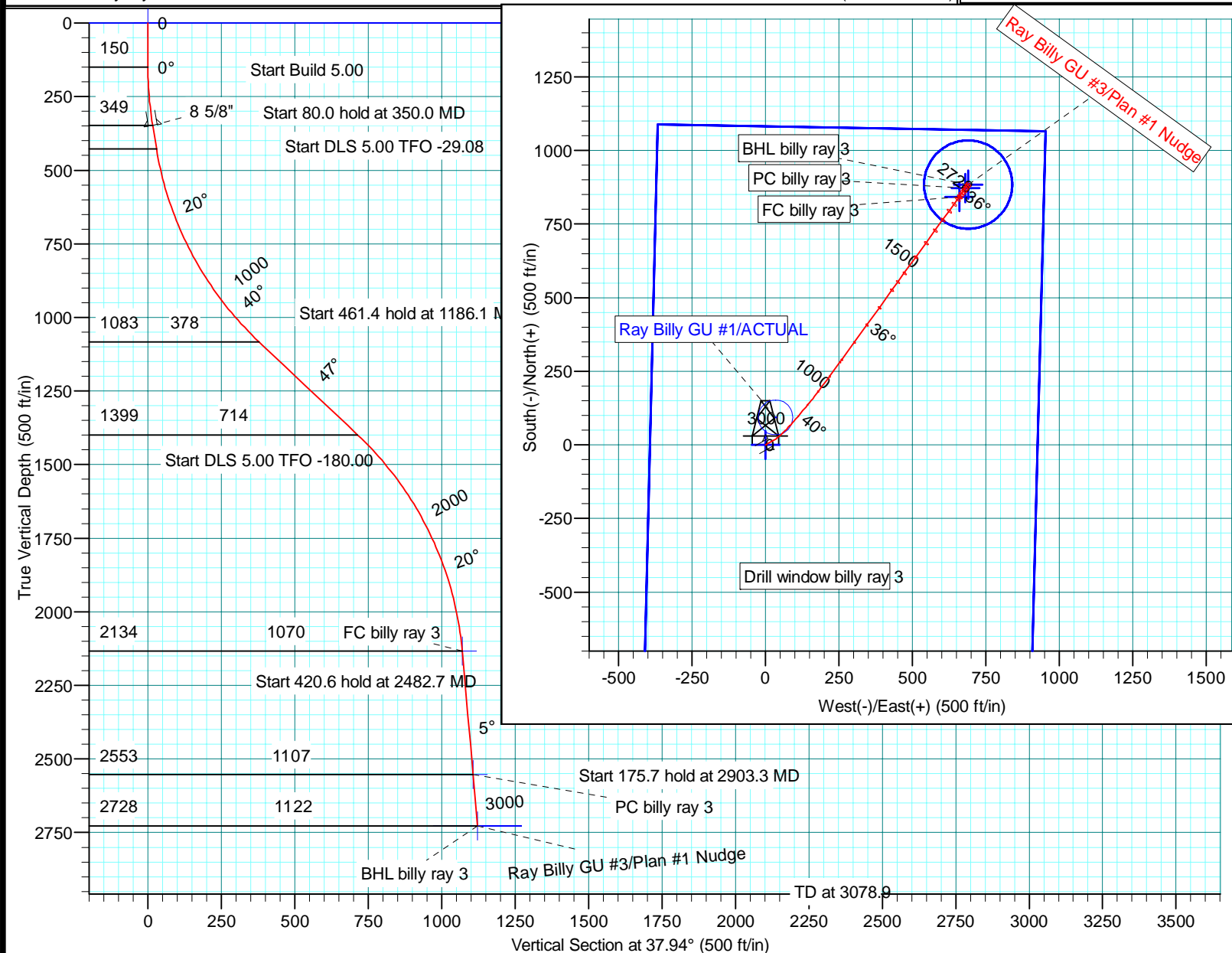
Azimuths to Grid North
 True North: 1.45°
 Magnetic North: 11.55°
 Magnetic Field
 Strength: 51090.7snT
 Dip Angle: 63.88°
 Date: 7/6/2010
 Model: BGGM2009

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
16.0	16.0	Animas
977.0	1040.7	Kirtland Sh
1315.0	1524.7	Farmington ss
1712.0	2040.8	Lwr. Kirtland Sh
2134.0	2482.7	Fruitland coal
2553.0	2903.3	Pictured cliffs

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
Drill window billy ray 3	0.0	0.0	0.0	1195361.51	2308866.00	Polygon
FC billy ray 3	2134.0	842.7	659.3	1196204.23	2309525.36	Point
PC billy ray 3	2553.0	872.4	680.8	1196233.92	2309546.81	Point
BHL billy ray 3	2728.0	884.8	689.8	1196246.32	2309555.81	Circle (Radius: 150.0)



Plan: Plan #1 Nudge (Ray Billy GU #3/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: Ray Billy GU #3

Ground Level: 6359.0
 Northing: 1195361.51
 Easting: 2308866.00
 Latitude: 37° 10' 44.724 N
 Longitude: 107° 52' 20.784 W

North America - Onshore US - BP

Western - San Juan North (NAD 83)

Sec 19-T34N-R9W

Ray Billy GU #3

Wellbore #1

Plan: Plan #1 Nudge

Standard Planning Report

06 July, 2010

D&C Digital
Planning Report

Database:	EDM .16 Hou Prod - WH21P	Local Co-ordinate Reference:	Well Ray Billy GU #3
Company:	North America - Onshore US - BP	TVD Reference:	WELL @ 6375.0ft (Original Well Elev)
Project:	Western - San Juan North (NAD 83)	MD Reference:	WELL @ 6375.0ft (Original Well Elev)
Site:	Sec 19-T34N-R9W	North Reference:	Grid
Well:	Ray Billy GU #3	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 Nudge		

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 19-T34N-R9W			
Site Position:		Northing:	1,193,501.22 ft	Latitude:	37° 10' 26.544 N
From:	Lat/Long	Easting:	2,309,690.22 ft	Longitude:	107° 52' 10.020 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	-1.45 °

Well	Ray Billy GU #3					
Well Position	+N/-S	0.0 ft	Northing:	1,195,361.51 ft	Latitude:	37° 10' 44.724 N
	+E/-W	0.0 ft	Easting:	2,308,866.00 ft	Longitude:	107° 52' 20.784 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	6,375.0 ft	Ground Level:	6,359.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2007	7/6/2010	10.19	63.82	51,035

Design	Plan #1 Nudge			
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	37.94

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	10.00	60.00	349.0	8.7	15.1	5.00	5.00	0.00	60.00	
430.0	10.00	60.00	427.8	15.7	27.1	0.00	0.00	0.00	0.00	
1,186.1	46.76	35.86	1,083.0	281.4	253.6	5.00	4.86	-3.19	-29.08	
1,647.5	46.76	35.86	1,399.1	553.8	450.5	0.00	0.00	0.00	0.00	
2,482.7	5.00	35.86	2,134.0	842.7	659.3	5.00	-5.00	0.00	-180.00	FC billy ray 3
2,903.3	5.00	35.86	2,553.0	872.4	680.8	0.00	0.00	0.00	0.00	PC billy ray 3
3,078.9	5.00	35.86	2,728.0	884.8	689.8	0.00	0.00	0.00	0.00	BHL billy ray 3

Database:	EDM .16 Hou Prod - WH21P	Local Co-ordinate Reference:	Well Ray Billy GU #3
Company:	North America - Onshore US - BP	TVD Reference:	WELL @ 6375.0ft (Original Well Elev)
Project:	Western - San Juan North (NAD 83)	MD Reference:	WELL @ 6375.0ft (Original Well Elev)
Site:	Sec 19-T34N-R9W	North Reference:	Grid
Well:	Ray Billy GU #3	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 Nudge		

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
Drill window billy ray 3									
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	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 5.00									
200.0	2.50	60.00	200.0	0.5	0.9	1.0	5.00	5.00	0.00
300.0	7.50	60.00	299.6	4.9	8.5	9.1	5.00	5.00	0.00
350.0	10.00	60.00	349.0	8.7	15.1	16.1	5.00	5.00	0.00
Start 80.0 hold at 350.0 MD - 8 5/8"									
400.0	10.00	60.00	398.2	13.0	22.6	24.2	0.00	0.00	0.00
430.0	10.00	60.00	427.8	15.7	27.1	29.0	0.00	0.00	0.00
Start DLS 5.00 TFO -29.08									
500.0	13.17	52.52	496.3	23.5	38.7	42.4	5.00	4.53	-10.69
600.0	17.91	46.49	592.7	41.1	58.9	68.6	5.00	4.74	-6.03
700.0	22.75	42.94	686.4	65.8	83.2	103.1	5.00	4.85	-3.55
800.0	27.65	40.60	776.9	97.6	111.5	145.6	5.00	4.90	-2.35
900.0	32.58	38.91	863.3	136.2	143.6	195.7	5.00	4.93	-1.69
1,000.0	37.53	37.62	945.2	181.3	179.1	253.1	5.00	4.95	-1.28
1,040.7	39.54	37.18	977.0	201.5	194.5	278.5	5.00	4.95	-1.09
Kirtland Sh									
1,100.0	42.49	36.60	1,021.7	232.6	217.9	317.4	5.00	4.96	-0.98
1,186.1	46.76	35.86	1,083.0	281.4	253.6	377.8	5.00	4.96	-0.86
Start 461.4 hold at 1186.1 MD									
1,200.0	46.76	35.86	1,092.5	289.6	259.5	387.9	0.00	0.00	0.00
1,300.0	46.76	35.86	1,161.0	348.6	302.2	460.7	0.00	0.00	0.00
1,400.0	46.76	35.86	1,229.6	407.7	344.9	533.5	0.00	0.00	0.00
1,500.0	46.76	35.86	1,298.1	466.7	387.5	606.3	0.00	0.00	0.00
1,524.7	46.76	35.86	1,315.0	481.3	398.1	624.3	0.00	0.00	0.00
Farmington ss									
1,600.0	46.76	35.86	1,366.6	525.7	430.2	679.1	0.00	0.00	0.00
1,647.5	46.76	35.86	1,399.1	553.8	450.5	713.7	0.00	0.00	0.00
Start DLS 5.00 TFO -180.00									
1,700.0	44.13	35.86	1,435.9	584.1	472.4	751.1	5.00	-5.00	0.00
1,800.0	39.13	35.86	1,510.7	637.9	511.3	817.5	5.00	-5.00	0.00
1,900.0	34.13	35.86	1,590.9	686.3	546.3	877.1	5.00	-5.00	0.00
2,000.0	29.13	35.86	1,676.0	728.8	577.0	929.5	5.00	-5.00	0.00
2,040.8	27.09	35.86	1,712.0	744.3	588.2	948.7	5.00	-5.00	0.00
Lwr. Kirtland Sh									
2,100.0	24.13	35.86	1,765.4	765.1	603.2	974.3	5.00	-5.00	0.00
2,200.0	19.13	35.86	1,858.3	794.9	624.8	1,011.1	5.00	-5.00	0.00
2,300.0	14.13	35.86	1,954.1	818.1	641.6	1,039.7	5.00	-5.00	0.00
2,400.0	9.13	35.86	2,052.0	834.5	653.4	1,059.8	5.00	-5.00	0.00
2,482.7	5.00	35.86	2,134.0	842.7	659.3	1,070.0	5.00	-5.00	0.00
Start 420.6 hold at 2482.7 MD - Fruitland coal - FC billy ray 3									
2,500.0	5.00	35.86	2,151.3	843.9	660.2	1,071.5	0.00	0.00	0.00
2,600.0	5.00	35.86	2,250.9	851.0	665.3	1,080.2	0.00	0.00	0.00
2,700.0	5.00	35.86	2,350.5	858.1	670.4	1,088.9	0.00	0.00	0.00
2,800.0	5.00	35.86	2,450.1	865.1	675.5	1,097.6	0.00	0.00	0.00
2,900.0	5.00	35.86	2,549.7	872.2	680.7	1,106.3	0.00	0.00	0.00
2,903.3	5.00	35.86	2,553.0	872.4	680.8	1,106.6	0.00	0.00	0.00

D&C Digital
Planning Report

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Site:	Sec 19-T34N-R9W	North Reference:	Grid
Well:	Ray Billy GU #3	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 Nudge		

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)
Start 175.7 hold at 2903.3 MD - Pictured cliffs - PC billy ray 3									
3,000.0	5.00	35.86	2,649.4	879.3	685.8	1,115.1	0.00	0.00	0.00
3,078.9	5.00	35.86	2,728.0	884.8	689.8	1,121.9	0.00	0.00	0.00
TD at 3078.9 - BHL billy ray 3									

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
BHL billy ray 3 - plan hits target center - Circle (radius 150.0)	0.00	360.00	2,728.0	884.8	689.8	1,196,246.32	2,309,555.81	37° 10' 53.642 N	107° 52' 12.541 W
Drill window billy ray 3 - plan hits target center - Polygon	0.00	0.00	0.0	0.0	0.0	1,195,361.51	2,308,866.00	37° 10' 44.724 N	107° 52' 20.784 W
Point 1			0.0	1,065.9	953.2	1,196,427.42	2,309,819.21		
Point 2			0.0	1,088.5	-366.9	1,196,450.02	2,308,499.10		
Point 3			0.0	-2,899.9	-465.9	1,192,461.58	2,308,400.10		
Point 4			0.0	-2,940.6	853.8	1,192,420.88	2,309,719.81		
PC billy ray 3 - plan hits target center - Point	0.00	360.00	2,553.0	872.4	680.8	1,196,233.92	2,309,546.81	37° 10' 53.518 N	107° 52' 12.648 W
FC billy ray 3 - plan hits target center - Point	0.00	0.00	2,134.0	842.7	659.3	1,196,204.23	2,309,525.36	37° 10' 53.219 N	107° 52' 12.904 W

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name		Casing Diameter (")	Hole Diameter (")
350.0	349.0	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	0.00
1,040.7	977.0	Kirtland Sh		0.00	0.00
1,524.7	1,315.0	Farmington ss		0.00	0.00
2,040.8	1,712.0	Lwr. Kirtland Sh		0.00	0.00
2,482.7	2,134.0	Fruitland coal		0.00	0.00
2,903.3	2,553.0	Pictured cliffs		0.00	0.00

D&C Digital

Planning Report

Database:	EDM .16 Hou Prod - WH21P	Local Co-ordinate Reference:	Well Ray Billy GU #3
Company:	North America - Onshore US - BP	TVD Reference:	WELL @ 6375.0ft (Original Well Elev)
Project:	Western - San Juan North (NAD 83)	MD Reference:	WELL @ 6375.0ft (Original Well Elev)
Site:	Sec 19-T34N-R9W	North Reference:	Grid
Well:	Ray Billy GU #3	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 Nudge		

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 5.00
350.0	349.0	8.7	15.1	Start 80.0 hold at 350.0 MD
430.0	427.8	15.7	27.1	Start DLS 5.00 TFO -29.08
1,186.1	1,083.0	281.4	253.6	Start 461.4 hold at 1186.1 MD
1,647.5	1,399.1	553.8	450.5	Start DLS 5.00 TFO -180.00
2,482.7	2,134.0	842.7	659.3	Start 420.6 hold at 2482.7 MD
2,903.3	2,553.0	872.4	680.8	Start 175.7 hold at 2903.3 MD
3,078.9	2,728.0	884.8	689.8	TD at 3078.9