

# **Noble Energy**

**Mesa County, CO (NAD 83)**

**Sec. 12-T8S-R96W**

**Hyrup 12-33B**

**Plan A - Rev 0 Proposal**

**Plan: Plan A - Rev 0 Proposal**

## **Standard Planning Report**

**07 July, 2011**

# Halliburton Company

## Planning Report

<b>Database:</b>	Noble Database	<b>Local Co-ordinate Reference:</b>	Site Sec. 12-T8S-R96W
<b>Company:</b>	Noble Energy	<b>TVD Reference:</b>	WELL @ 6175.0ft (Original Well Elev)
<b>Project:</b>	Mesa County, CO (NAD 83)	<b>MD Reference:</b>	WELL @ 6175.0ft (Original Well Elev)
<b>Site:</b>	Sec. 12-T8S-R96W	<b>North Reference:</b>	Grid
<b>Well:</b>	Hyrup 12-33B	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A - Rev 0 Proposal		
<b>Design:</b>	Plan A - Rev 0 Proposal		

<b>Project</b>	Mesa County, CO (NAD 83)		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Central Zone		Using geodetic scale factor

Site		Sec. 12-T8S-R96W			
Site Position:		Northing:	478,042.46 m	Latitude:	39° 21' 58.079 N
From:	Lat/Long	Easting:	694,523.52 m	Longitude:	108° 3' 6.876 W
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.61 °

Well	Hyrup 12-33B					
Well Position	+N/-S	0.1 ft	Northing:	478,042.51 m	Latitude:	39° 21' 58.082 N
	+E/-W	7.4 ft	Easting:	694,525.77 m	Longitude:	108° 3' 6.782 W
Position Uncertainty		0.0 ft	Wellhead Elevation:		Ground Level:	6,151.0 ft

<b>Wellbore</b>	Plan A - Rev 0 Proposal				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	7/6/2011	10.35	65.62	52,165

<b>Design</b>	Plan A - Rev 0 Proposal			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.1	7.4	227.49

<b>Plan Sections</b>										
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	0.1	7.4	0.00	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.1	7.4	0.00	0.00	0.00	0.00	
1,034.6	20.87	226.77	1,016.3	-102.8	-102.2	2.50	2.50	0.00	226.77	
3,363.6	20.87	226.77	3,192.5	-670.9	-706.6	0.00	0.00	0.00	0.00	
4,754.6	0.00	0.00	4,553.0	-842.5	-889.1	1.50	-1.50	0.00	180.00	Hyrup 12-33B'_PlanA
6,914.6	2.97	243.41	6,712.0	-867.5	-939.1	0.14	0.14	-5.40	243.41	Hyrup 12-33B'_PlanA

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<b>Company:</b>	Noble Energy	<b>TVD Reference:</b>	WELL @ 6175.0ft (Original Well Elev)
<b>Project:</b>	Mesa County, CO (NAD 83)	<b>MD Reference:</b>	WELL @ 6175.0ft (Original Well Elev)
<b>Site:</b>	Sec. 12-T8S-R96W	<b>North Reference:</b>	Grid
<b>Well:</b>	Hyrup 12-33B	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A - Rev 0 Proposal		
<b>Design:</b>	Plan A - Rev 0 Proposal		

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	0.1	7.4	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.1	7.4	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.1	7.4	0.0	0.00	0.00	0.00
300.0	2.50	226.77	300.0	-1.3	5.8	2.2	2.50	2.50	0.00
400.0	5.00	226.77	399.7	-5.8	1.0	8.7	2.50	2.50	0.00
500.0	7.50	226.77	499.1	-13.3	-6.9	19.6	2.50	2.50	0.00
600.0	10.00	226.77	598.0	-23.7	-18.0	34.8	2.50	2.50	0.00
700.0	12.50	226.77	696.0	-37.1	-32.2	54.3	2.50	2.50	0.00
800.0	15.00	226.77	793.2	-53.3	-49.5	78.1	2.50	2.50	0.00
900.0	17.50	226.77	889.2	-72.5	-69.9	106.1	2.50	2.50	0.00
1,000.0	20.00	226.77	983.9	-94.5	-93.3	138.2	2.50	2.50	0.00
1,034.6	20.87	226.77	1,016.3	-102.8	-102.2	150.3	2.50	2.50	0.00
1,100.0	20.87	226.77	1,077.4	-118.7	-119.1	173.6	0.00	0.00	0.00
1,200.0	20.87	226.77	1,170.8	-143.1	-145.1	209.2	0.00	0.00	0.00
1,300.0	20.87	226.77	1,264.3	-167.5	-171.0	244.8	0.00	0.00	0.00
1,400.0	20.87	226.77	1,357.7	-191.9	-197.0	280.4	0.00	0.00	0.00
1,500.0	20.87	226.77	1,451.2	-216.3	-222.9	316.0	0.00	0.00	0.00
1,600.0	20.87	226.77	1,544.6	-240.7	-248.9	351.6	0.00	0.00	0.00
1,700.0	20.87	226.77	1,638.0	-265.1	-274.8	387.3	0.00	0.00	0.00
1,800.0	20.87	226.77	1,731.5	-289.5	-300.8	422.9	0.00	0.00	0.00
1,900.0	20.87	226.77	1,824.9	-313.9	-326.7	458.5	0.00	0.00	0.00
2,000.0	20.87	226.77	1,918.4	-338.3	-352.7	494.1	0.00	0.00	0.00
2,100.0	20.87	226.77	2,011.8	-362.7	-378.6	529.7	0.00	0.00	0.00
2,200.0	20.87	226.77	2,105.2	-387.1	-404.6	565.3	0.00	0.00	0.00
2,300.0	20.87	226.77	2,198.7	-411.5	-430.6	601.0	0.00	0.00	0.00
2,400.0	20.87	226.77	2,292.1	-435.9	-456.5	636.6	0.00	0.00	0.00
2,500.0	20.87	226.77	2,385.6	-460.3	-482.5	672.2	0.00	0.00	0.00
2,600.0	20.87	226.77	2,479.0	-484.7	-508.4	707.8	0.00	0.00	0.00
2,700.0	20.87	226.77	2,572.5	-509.1	-534.4	743.4	0.00	0.00	0.00
2,800.0	20.87	226.77	2,665.9	-533.5	-560.3	779.0	0.00	0.00	0.00
2,900.0	20.87	226.77	2,759.3	-557.8	-586.3	814.6	0.00	0.00	0.00
3,000.0	20.87	226.77	2,852.8	-582.2	-612.2	850.3	0.00	0.00	0.00
3,100.0	20.87	226.77	2,946.2	-606.6	-638.2	885.9	0.00	0.00	0.00
3,200.0	20.87	226.77	3,039.7	-631.0	-664.1	921.5	0.00	0.00	0.00
3,300.0	20.87	226.77	3,133.1	-655.4	-690.1	957.1	0.00	0.00	0.00
3,363.6	20.87	226.77	3,192.5	-670.9	-706.6	979.7	0.00	0.00	0.00
3,400.0	20.32	226.77	3,226.6	-679.7	-715.9	992.6	1.50	-1.50	0.00
3,500.0	18.82	226.77	3,320.8	-702.6	-740.3	1,026.0	1.50	-1.50	0.00
3,600.0	17.32	226.77	3,415.9	-723.9	-762.9	1,057.1	1.50	-1.50	0.00
3,700.0	15.82	226.77	3,511.7	-743.4	-783.7	1,085.6	1.50	-1.50	0.00
3,800.0	14.32	226.77	3,608.3	-761.2	-802.6	1,111.6	1.50	-1.50	0.00
3,900.0	12.82	226.77	3,705.5	-777.3	-819.7	1,135.0	1.50	-1.50	0.00
4,000.0	11.32	226.77	3,803.3	-791.6	-835.0	1,155.9	1.50	-1.50	0.00
4,100.0	9.82	226.77	3,901.6	-804.2	-848.3	1,174.3	1.50	-1.50	0.00
4,200.0	8.32	226.77	4,000.3	-815.0	-859.8	1,190.0	1.50	-1.50	0.00
4,300.0	6.82	226.77	4,099.5	-824.0	-869.4	1,203.2	1.50	-1.50	0.00
4,400.0	5.32	226.77	4,198.9	-831.2	-877.1	1,213.8	1.50	-1.50	0.00
4,500.0	3.82	226.77	4,298.6	-836.7	-882.9	1,221.7	1.50	-1.50	0.00
4,600.0	2.32	226.77	4,398.4	-840.4	-886.8	1,227.1	1.50	-1.50	0.00
4,700.0	0.82	226.77	4,498.4	-842.2	-888.8	1,229.8	1.50	-1.50	0.00
4,754.6	0.00	0.00	4,553.0	-842.5	-889.1	1,230.2	1.50	-1.50	0.00
4,800.0	0.06	243.41	4,598.4	-842.5	-889.1	1,230.3	0.14	0.14	0.00
4,900.0	0.20	243.41	4,698.4	-842.6	-889.3	1,230.5	0.14	0.14	0.00
5,000.0	0.34	243.41	4,798.4	-842.8	-889.7	1,230.9	0.14	0.14	0.00

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## Planning Report

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<b>Company:</b>	Noble Energy	<b>TVD Reference:</b>	WELL @ 6175.0ft (Original Well Elev)
<b>Project:</b>	Mesa County, CO (NAD 83)	<b>MD Reference:</b>	WELL @ 6175.0ft (Original Well Elev)
<b>Site:</b>	Sec. 12-T8S-R96W	<b>North Reference:</b>	Grid
<b>Well:</b>	Hyrup 12-33B	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A - Rev 0 Proposal		
<b>Design:</b>	Plan A - Rev 0 Proposal		

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)	
5,100.0	0.47	243.41	4,898.4	-843.1	-890.4	1,231.6	0.14	0.14	0.00	
5,200.0	0.61	243.41	4,998.4	-843.6	-891.2	1,232.5	0.14	0.14	0.00	
5,300.0	0.75	243.41	5,098.4	-844.1	-892.3	1,233.7	0.14	0.14	0.00	
5,400.0	0.89	243.41	5,198.4	-844.7	-893.6	1,235.0	0.14	0.14	0.00	
5,500.0	1.02	243.41	5,298.4	-845.5	-895.1	1,236.6	0.14	0.14	0.00	
5,600.0	1.16	243.41	5,398.3	-846.3	-896.8	1,238.5	0.14	0.14	0.00	
5,700.0	1.30	243.41	5,498.3	-847.3	-898.7	1,240.5	0.14	0.14	0.00	
5,800.0	1.44	243.41	5,598.3	-848.4	-900.8	1,242.8	0.14	0.14	0.00	
5,900.0	1.57	243.41	5,698.2	-849.5	-903.2	1,245.3	0.14	0.14	0.00	
6,000.0	1.71	243.41	5,798.2	-850.8	-905.7	1,248.1	0.14	0.14	0.00	
6,100.0	1.85	243.41	5,898.2	-852.2	-908.5	1,251.1	0.14	0.14	0.00	
6,200.0	1.98	243.41	5,998.1	-853.7	-911.5	1,254.3	0.14	0.14	0.00	
6,300.0	2.12	243.41	6,098.0	-855.3	-914.7	1,257.7	0.14	0.14	0.00	
6,400.0	2.26	243.41	6,198.0	-857.0	-918.1	1,261.4	0.14	0.14	0.00	
6,500.0	2.40	243.41	6,297.9	-858.8	-921.7	1,265.3	0.14	0.14	0.00	
6,600.0	2.53	243.41	6,397.8	-860.8	-925.6	1,269.5	0.14	0.14	0.00	
6,700.0	2.67	243.41	6,497.7	-862.8	-929.6	1,273.8	0.14	0.14	0.00	
6,800.0	2.81	243.41	6,597.6	-864.9	-933.9	1,278.4	0.14	0.14	0.00	
6,900.0	2.95	243.41	6,697.4	-867.2	-938.4	1,283.3	0.14	0.14	0.00	
6,914.6	2.97	243.41	6,712.0	-867.5	-939.1	1,284.0	0.14	0.14	0.00	

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (m)	Easting (m)	Latitude	Longitude	
- hit/miss target										
- Shape										
Hyrup 12-33B'_PlanA - F	0.00	360.00	4,553.0	-867.5	-939.1	477,778.05	694,237.31	39° 21' 49.247 N	108° 3' 18.518 W	
- plan misses target center by 55.9ft at 4754.6ft MD (4553.0 TVD, -842.5 N, -889.1 E)										
- Rectangle (sides W200.0 H100.0 D2,159.0)										
Hyrup 12-33B'_PlanA - F	0.00	360.00	4,553.0	-842.5	-889.1	477,785.68	694,252.54	39° 21' 49.508 N	108° 3' 17.891 W	
- plan hits target center										
- Rectangle (sides W25.0 H25.0 D0.0)										
Hyrup 12-33B'_PlanA - F	0.00	360.00	6,712.0	-867.5	-939.1	477,778.05	694,237.31	39° 21' 49.247 N	108° 3' 18.518 W	
- plan hits target center										
- Point										

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,500.0	1,451.2	8 5/8" Surface Casing	8.625	12.250	
6,914.6	6,712.0	4 1/2" Production Casing	4.500	6.000	

# Halliburton Company

## Planning Report

<b>Database:</b>	Noble Database	<b>Local Co-ordinate Reference:</b>	Site Sec. 12-T8S-R96W
<b>Company:</b>	Noble Energy	<b>TVD Reference:</b>	WELL @ 6175.0ft (Original Well Elev)
<b>Project:</b>	Mesa County, CO (NAD 83)	<b>MD Reference:</b>	WELL @ 6175.0ft (Original Well Elev)
<b>Site:</b>	Sec. 12-T8S-R96W	<b>North Reference:</b>	Grid
<b>Well:</b>	Hyrup 12-33B	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A - Rev 0 Proposal		
<b>Design:</b>	Plan A - Rev 0 Proposal		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,218.6	3,057.0	Williams Fork				
4,754.6	4,553.0	Top of Gas				
5,645.7	5,444.0	Cameo				
6,031.8	5,830.0	Rollins				
6,313.0	6,111.0	Cozzette				
6,549.2	6,347.0	Corcoran				
6,664.3	6,462.0	Mancos				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
200.0	200.0	0.1	7.4	Kick Off Point at 200.00 ft	
500.0	499.1	-13.3	-6.9	Build Rate = 2.00"/100 ft	
1,034.6	1,016.3	-102.8	-102.2	End Build at 1034.6 ft	
2,200.0	2,105.2	-387.1	-404.6	Hold Angle 20.87°	
3,363.6	3,192.5	-670.9	-706.6	Begin Drop at 3363.6 ft	
4,000.0	3,803.3	-791.6	-835.0	Drop Rate = 1.50"/100 ft	
4,754.6	4,553.0	-842.5	-889.1	End Drop at 4754.6 ft	
6,914.6	6,712.0	-867.5	-939.1	Total Depth at 6914.6 ft	

Project: Mesa County, CO (NAD 83)  
Site: Sec. 12-T8S-R96W  
Well: Hyrup 12-33B  
Wellbore: Plan A - Rev 0 Proposal  
Design: Plan A - Rev 0 Proposal

# Noble Energy

HALLIBURTON

## SECTION DETAILS

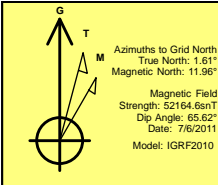
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.1	7.4	0.00	0.00	0.0	
2	200.0	0.00	0.00	200.0	0.1	7.4	0.00	0.00	0.0	
3	1034.6	20.87	226.77	1016.3	-102.8	-102.2	2.50	226.77	150.3	
4	3363.6	20.87	226.77	3192.5	-670.9	-706.6	0.00	0.00	979.7	
5	4754.6	0.00	0.00	4553.0	-842.5	-889.1	1.50	180.00	1230.2	Hyrup 12-33B'_PlanA - Rev0_Driller's Tgt
6	6914.6	2.97	243.41	6712.0	-867.5	-939.1	0.14	243.41	1284.0	Hyrup 12-33B'_PlanA - Rev0_BHL Tgt

## WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
Hyrup 12-33B'_PlanA - Rev0_Driller's Tgt	4553.0	-842.5	-889.1	Rectangle (Sides: L25.0 W25.0)
Hyrup 12-33B'_PlanA - Rev0_Zone Tgt	4553.0	-867.5	-939.1	Rectangle (Sides: L100.0 W200.0)
Hyrup 12-33B'_PlanA - Rev0_BHL Tgt	6712.0	-867.5	-939.1	Point

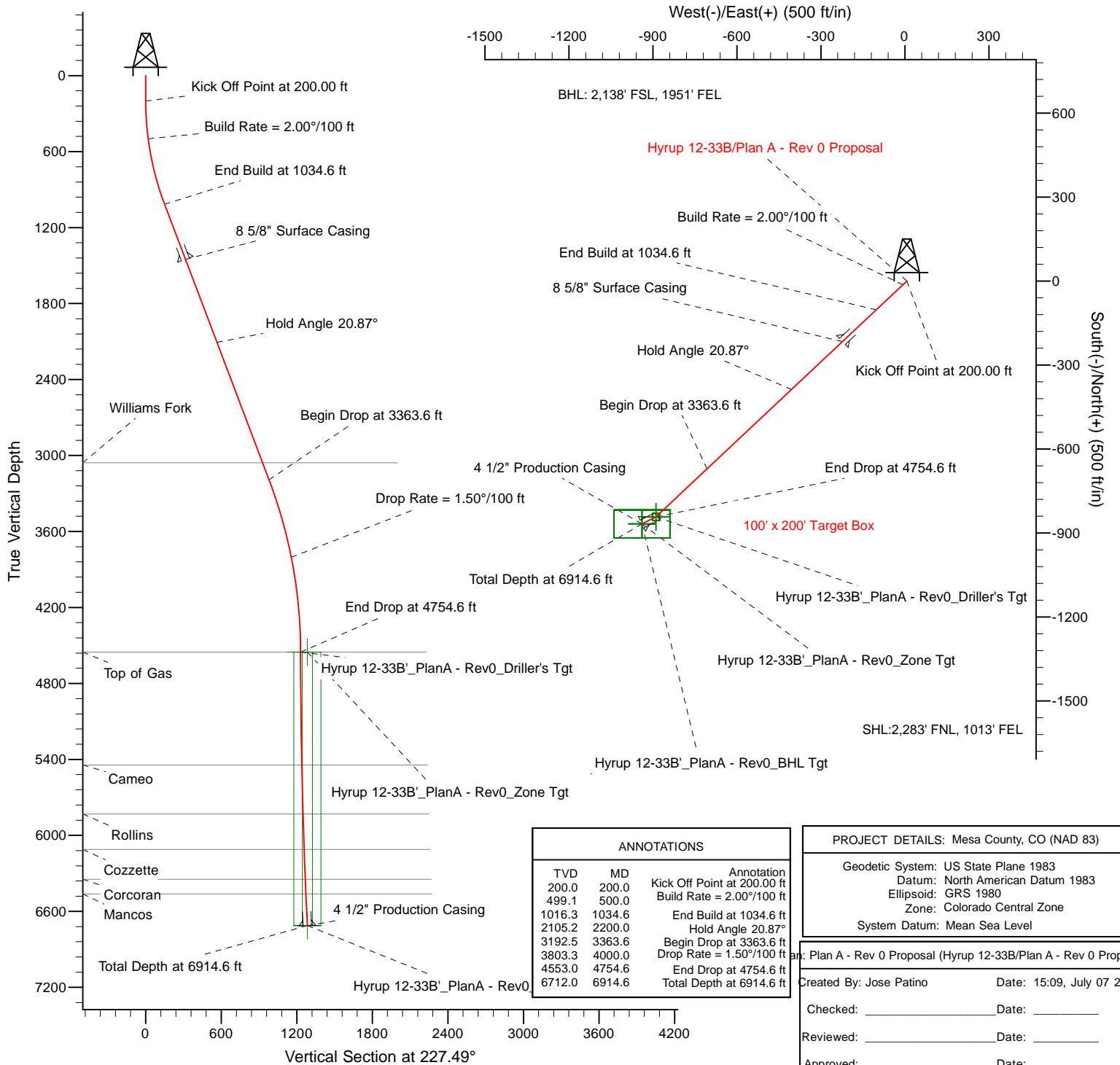
## WELL DETAILS: Hyrup 12-33B

Ground Level:	6151.0
Northings	478042.51
Easting	694525.77
Latitude	39° 21' 58.082 N
Longitude	108° 3' 6.782 W



## FORMATION TOP DETAILS

TVDPATH	MDPATH	Formation
3057.0	3218.6	Williams Fork
4553.0	4754.6	Top of Gas
5444.0	5645.7	Cameo
5830.0	6031.8	Rollins
6111.0	6313.0	Cozzette
6347.0	6549.2	Corcoran
6462.0	6664.3	Mancos



## ANNOTATIONS

TVD	MD	Annotation
200.0	200.0	Kick Off Point at 200.00 ft
499.1	500.0	Build Rate = 2.00°/100 ft
1016.3	1034.6	End Build at 1034.6 ft
2105.2	2200.0	Hold Angle 20.87°
3192.5	3363.6	Begin Drop at 3363.6 ft
3803.3	4000.0	Drop Rate = 1.50°/100 ft
4553.0	4754.6	End Drop at 4754.6 ft
6712.0	6914.6	Total Depth at 6914.6 ft

## PROJECT DETAILS: Mesa County, CO (NAD 83)

Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: Colorado Central Zone  
System Datum: Mean Sea Level

Wellbore: Plan A - Rev 0 Proposal (Hyrup 12-33B/Plan A - Rev 0 Proposal)

Created By: Jose Patino Date: 15:09, July 07 2011

Checked: \_\_\_\_\_ Date: \_\_\_\_\_

Reviewed: \_\_\_\_\_ Date: \_\_\_\_\_

Approved: \_\_\_\_\_ Date: \_\_\_\_\_