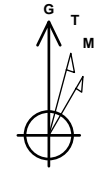




Company: B.P.
Project: Archuleta County, CO NAD83
Site: Ross 2 Pad
Well: Ross 2
Wellbore: Lateral 1
Design: Plan #1

PROJECT DETAILS: Archuleta County, CO NAD83

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



Azimuths to Grid North
True North: 1.19°
Magnetic North: 10.26°

Magnetic Field
Strength: 50001.0snT
Dip Angle: 63.53°
Date: 4/27/2018
Model: HDGM

WELL DETAILS: Ross 2

GL 6224.30' & RKB 11' @ 6235.30usft (Aztec 507)
+N/-S +E/-W Northing Easting Latitude Longitude
0.00 0.00 1135307.11 2432469.60 37.0220437 -107.4439953

Plan: Plan #1 (Ross 2/Lateral 1)

Created By: Janie Collins Date: 15:59, April 27 2018

DESIGN TARGET DETAILS

Name TVD +N/-S +E/-W Northing Easting
Ross 2 Lat 1 BHL 2725.30 375.69 4982.10 1135682.80 2437451.70

SECTION DETAILS

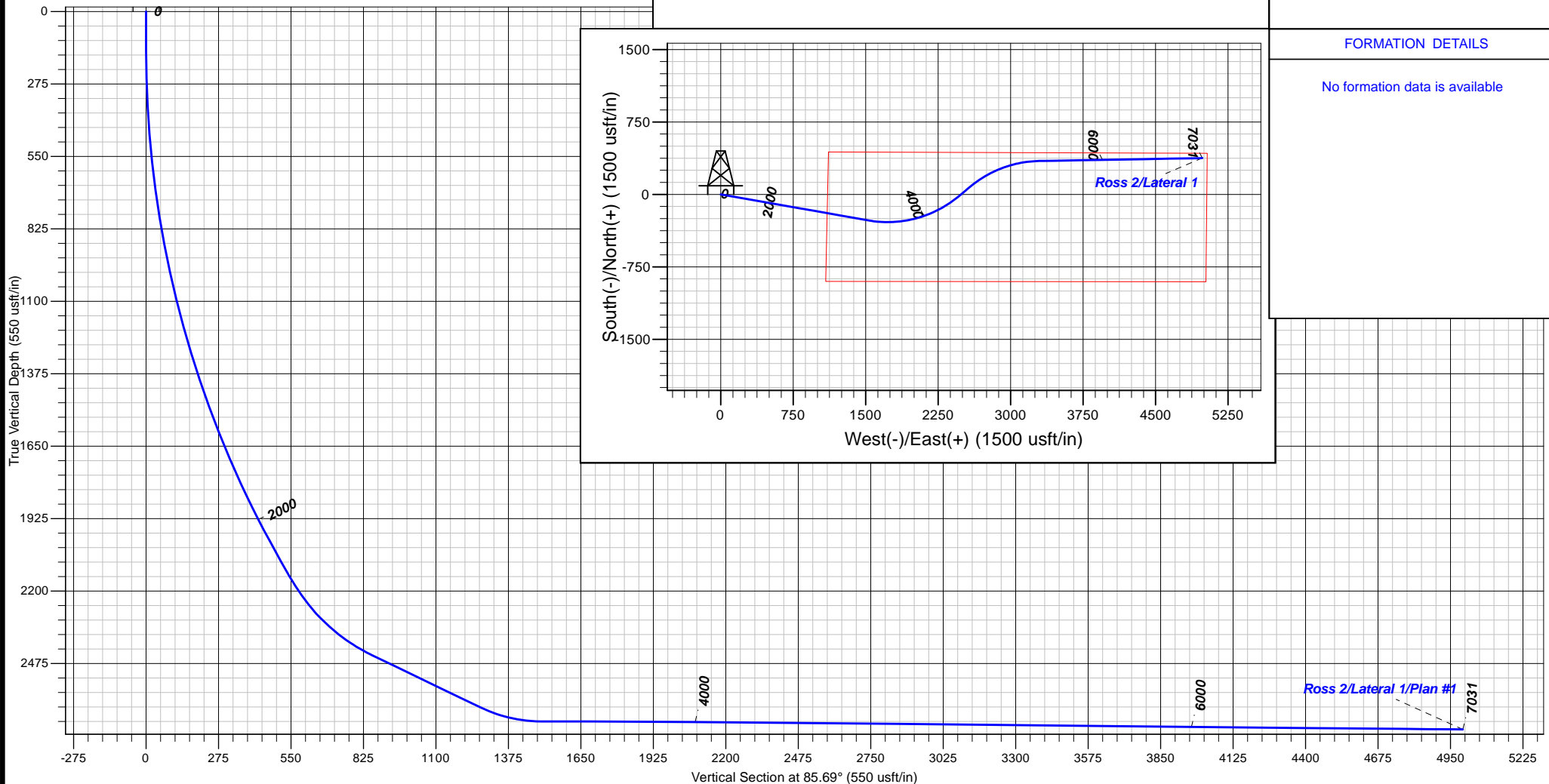
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
3163.42	65.00	100.00	2641.32	-227.29	1289.00	0.00	0.00	1268.26	
3413.42	90.00	100.00	2695.00	-269.33	1527.46	10.00	0.00	1502.88	
4413.46	89.46	50.00	2700.04	-18.65	2463.06	5.00	-90.70	2454.68	
4563.46	89.46	50.00	2701.45	77.76	2577.96	0.00	0.00	2576.51	
5343.03	89.45	88.98	2709.15	345.65	3294.08	5.00	90.20	3310.74	
7031.40	89.45	88.98	2725.30	375.69	4982.10	0.00	0.00	4996.24	Ross 2 Lat 1 BHL

CASING DETAILS

No casing data is available

FORMATION DETAILS

No formation data is available





B.P.

Archuleta County, CO NAD83

Ross 2 Pad

Ross 2

Lateral 1

Plan: Plan #1

Standard Planning Report

27 April, 2018





Database:	Grand Junction District	Local Co-ordinate Reference:	Well Ross 2
Company:	B.P.	TVD Reference:	GL 6224.30' & RKB 11' @ 6235.30usft (Aztec 507)
Project:	Archuleta County, CO NAD83	MD Reference:	GL 6224.30' & RKB 11' @ 6235.30usft (Aztec 507)
Site:	Ross 2 Pad	North Reference:	Grid
Well:	Ross 2	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral 1		
Design:	Plan #1		

Project	Archuleta County, CO NAD83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Southern Zone		

Site		Ross 2 Pad			
Site Position:		Northing:	1,135,307.11 usft	Latitude:	37.0220436
From:	Map	Easting:	2,432,469.60 usft	Longitude:	-107.4439953
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	-1.19 °

Well	Ross 2					
Well Position	+N/-S	0.00 usft	Northing:	1,135,307.11 usft	Latitude:	37.0220436
	+E/-W	0.00 usft	Easting:	2,432,469.60 usft	Longitude:	-107.4439953
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	6,224.30 usft

Wellbore	Lateral 1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	4/27/2018	9.07	63.53	50,001

Design	Plan #1				
Audit Notes:					
Version:	Phase:	PLAN		Tie On Depth:	3,163.42
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	85.69	

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
3,163.42	65.00	100.00	2,641.32	-227.29	1,289.00	0.00	0.00	0.00	0.00	
3,413.42	90.00	100.00	2,695.00	-269.33	1,527.46	10.00	10.00	0.00	0.00	
4,413.46	89.46	50.00	2,700.04	-18.65	2,463.06	5.00	-0.05	-5.00	-90.70	
4,563.46	89.46	50.00	2,701.45	77.76	2,577.96	0.00	0.00	0.00	0.00	
5,343.03	89.45	88.98	2,709.15	345.65	3,294.08	5.00	0.00	5.00	90.20	
7,031.40	89.45	88.98	2,725.30	375.69	4,982.10	0.00	0.00	0.00	0.00	Ross 2 Lat 1 BHL



Database:	Grand Junction District	Local Co-ordinate Reference:	Well Ross 2
Company:	B.P.	TVD Reference:	GL 6224.30' & RKB 11' @ 6235.30usft (Aztec 507)
Project:	Archuleta County, CO NAD83	MD Reference:	GL 6224.30' & RKB 11' @ 6235.30usft (Aztec 507)
Site:	Ross 2 Pad	North Reference:	Grid
Well:	Ross 2	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral 1		
Design:	Plan #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
3,163.42	65.00	100.00	2,641.32	-227.29	1,289.00	1,268.26	0.00	0.00	0.00
3,200.00	68.66	100.00	2,655.71	-233.12	1,322.11	1,300.84	10.00	10.00	0.00
3,300.00	78.66	100.00	2,683.81	-249.77	1,416.49	1,393.70	10.00	10.00	0.00
3,400.00	88.66	100.00	2,694.85	-267.00	1,514.25	1,489.88	10.00	10.00	0.00
3,413.42	90.00	100.00	2,695.00	-269.33	1,527.46	1,502.88	10.00	10.00	0.00
3,500.00	89.95	95.67	2,695.04	-281.13	1,613.21	1,587.51	5.00	-0.06	-5.00
3,600.00	89.89	90.67	2,695.19	-286.66	1,713.03	1,686.62	5.00	-0.06	-5.00
3,700.00	89.83	85.67	2,695.44	-283.48	1,812.94	1,786.50	5.00	-0.06	-5.00
3,800.00	89.77	80.67	2,695.80	-271.59	1,912.20	1,886.37	5.00	-0.06	-5.00
3,900.00	89.71	75.67	2,696.26	-251.10	2,010.05	1,985.48	5.00	-0.06	-5.00
4,000.00	89.65	70.67	2,696.81	-222.16	2,105.73	2,083.07	5.00	-0.05	-5.00
4,100.00	89.60	65.67	2,697.46	-184.99	2,198.53	2,178.40	5.00	-0.05	-5.00
4,200.00	89.55	60.67	2,698.20	-139.88	2,287.74	2,270.75	5.00	-0.05	-5.00
4,300.00	89.51	55.67	2,699.02	-87.16	2,372.68	2,359.40	5.00	-0.05	-5.00
4,400.00	89.47	50.67	2,699.91	-27.24	2,452.69	2,443.70	5.00	-0.04	-5.00
4,413.46	89.46	50.00	2,700.04	-18.65	2,463.06	2,454.68	5.00	-0.04	-5.00
4,500.00	89.46	50.00	2,700.86	36.97	2,529.34	2,524.96	0.00	0.00	0.00
4,563.46	89.46	50.00	2,701.45	77.76	2,577.96	2,576.51	0.00	0.00	0.00
4,600.00	89.45	51.83	2,701.80	100.80	2,606.31	2,606.52	5.00	-0.02	5.00
4,700.00	89.44	56.83	2,702.77	159.09	2,687.52	2,691.87	5.00	-0.01	5.00
4,800.00	89.43	61.83	2,703.75	210.09	2,773.50	2,781.44	5.00	-0.01	5.00
4,900.00	89.42	66.83	2,704.75	253.39	2,863.59	2,874.54	5.00	-0.01	5.00
5,000.00	89.42	71.83	2,705.76	288.68	2,957.12	2,970.46	5.00	0.00	5.00
5,100.00	89.43	76.83	2,706.77	315.69	3,053.37	3,068.46	5.00	0.00	5.00
5,200.00	89.43	81.83	2,707.76	334.20	3,151.60	3,167.81	5.00	0.01	5.00
5,300.00	89.45	86.83	2,708.74	344.08	3,251.08	3,267.75	5.00	0.01	5.00
5,343.03	89.45	88.98	2,709.15	345.65	3,294.08	3,310.74	5.00	0.01	5.00
5,400.00	89.45	88.98	2,709.70	346.66	3,351.03	3,367.61	0.00	0.00	0.00
5,500.00	89.45	88.98	2,710.65	348.44	3,451.01	3,467.44	0.00	0.00	0.00
5,600.00	89.45	88.98	2,711.61	350.22	3,550.99	3,567.27	0.00	0.00	0.00
5,700.00	89.45	88.98	2,712.57	352.00	3,650.97	3,667.10	0.00	0.00	0.00
5,800.00	89.45	88.98	2,713.52	353.78	3,750.95	3,766.93	0.00	0.00	0.00
5,900.00	89.45	88.98	2,714.48	355.56	3,850.93	3,866.76	0.00	0.00	0.00
6,000.00	89.45	88.98	2,715.44	357.34	3,950.91	3,966.59	0.00	0.00	0.00
6,100.00	89.45	88.98	2,716.39	359.12	4,050.89	4,066.42	0.00	0.00	0.00
6,200.00	89.45	88.98	2,717.35	360.90	4,150.87	4,166.25	0.00	0.00	0.00
6,300.00	89.45	88.98	2,718.31	362.68	4,250.85	4,266.08	0.00	0.00	0.00
6,400.00	89.45	88.98	2,719.26	364.46	4,350.83	4,365.92	0.00	0.00	0.00
6,500.00	89.45	88.98	2,720.22	366.23	4,450.81	4,465.75	0.00	0.00	0.00
6,600.00	89.45	88.98	2,721.17	368.01	4,550.79	4,565.58	0.00	0.00	0.00
6,700.00	89.45	88.98	2,722.13	369.79	4,650.77	4,665.41	0.00	0.00	0.00
6,800.00	89.45	88.98	2,723.09	371.57	4,750.75	4,765.24	0.00	0.00	0.00
6,900.00	89.45	88.98	2,724.04	373.35	4,850.73	4,865.07	0.00	0.00	0.00
6,997.98	89.45	88.98	2,724.98	375.10	4,948.69	4,962.88	0.00	0.00	0.00
Ross 2 Lat 2 BHL									
7,000.00	89.45	88.98	2,725.00	375.13	4,950.71	4,964.90	0.00	0.00	0.00
7,031.40	89.45	88.98	2,725.30	375.69	4,982.10	4,996.25	0.00	0.00	0.00
Ross 2 Lat 1 BHL									



Database:	Grand Junction District	Local Co-ordinate Reference:	Well Ross 2
Company:	B.P.	TVD Reference:	GL 6224.30' & RKB 11' @ 6235.30usft (Aztec 507)
Project:	Archuleta County, CO NAD83	MD Reference:	GL 6224.30' & RKB 11' @ 6235.30usft (Aztec 507)
Site:	Ross 2 Pad	North Reference:	Grid
Well:	Ross 2	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral 1		
Design:	Plan #1		

Design Targets

Target Name

- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- Shape									
Ross 2 Lat 1 BHL	0.00	360.00	2,725.30	375.69	4,982.10	1,135,682.80	2,437,451.70	37.0233587	-107.4269612
- plan hits target center									
- Point									