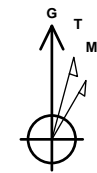




Company: B.P.
Project: Archuleta County, CO NAD83
Site: Ross 2 Pad
Well: Ross 2
Wellbore: Lateral 2
Design: Plan #1

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 2)

Created By: Janie Collins Date: 16:06, April 27 2018

DESIGN TARGET DETAILS

Name TVD +N/-S +E/-W Northing Easting
Ross 2 Lat 2 BHL 2692.30 -854.32 4970.88 1134452.79 2437440.48

SECTION DETAILS

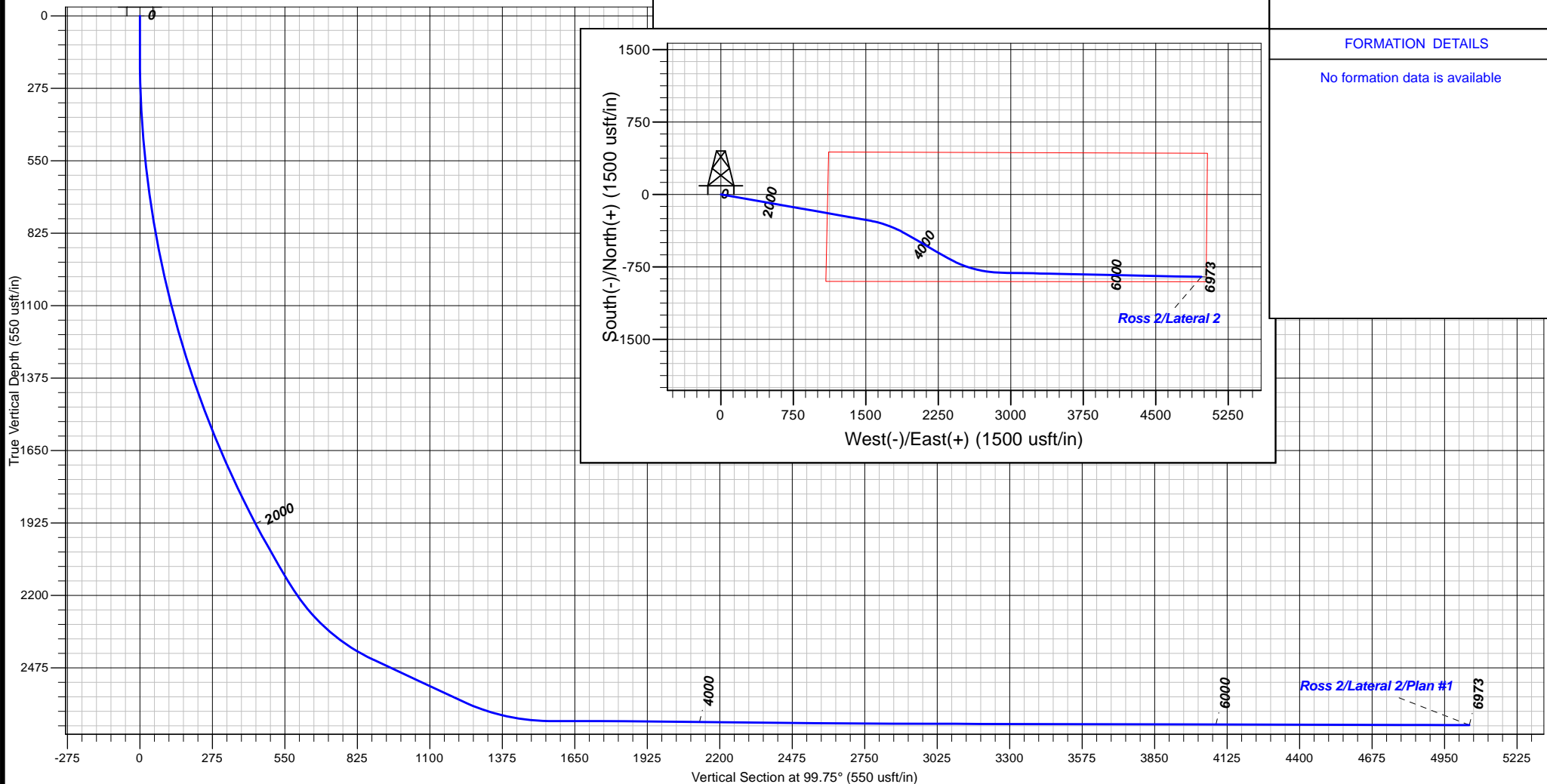
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
3073.00	65.00	100.00	2603.11	-213.05	1208.29	0.00	0.00	1226.92	
3415.47	90.00	100.00	2676.64	-270.65	1534.96	7.30	0.00	1558.62	
3815.62	89.43	120.00	2678.66	-406.82	1909.07	5.00	91.67	1950.39	
4315.62	89.43	120.00	2683.63	-656.81	2342.06	0.00	0.00	2419.46	
4891.31	89.86	91.22	2687.27	-810.08	2890.69	5.00	-89.25	2986.13	
6971.97	89.86	91.22	2692.30	-854.32	4970.88	0.00	0.00	5043.76	Ross 2 Lat 2 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 2

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 2		
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 2				
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:	3,073.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	99.75	

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
3,073.00	65.00	100.00	2,603.11	-213.05	1,208.29	0.00	0.00	0.00	0.00	
3,415.47	90.00	100.00	2,676.65	-270.65	1,534.96	7.30	7.30	0.00	0.00	
3,815.62	89.43	120.00	2,678.66	-406.82	1,909.07	5.00	-0.14	5.00	91.67	
4,315.62	89.43	120.00	2,683.63	-656.81	2,342.06	0.00	0.00	0.00	0.00	
4,891.31	89.86	91.22	2,687.27	-810.08	2,890.69	5.00	0.07	-5.00	-89.25	
6,971.97	89.86	91.22	2,692.30	-854.32	4,970.88	0.00	0.00	0.00	0.00	Ross 2 Lat 2 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 2		
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)
3,073.00	65.00	100.00	2,603.11	-213.05	1,208.29	1,226.92	0.00	0.00	0.00
3,100.00	66.97	100.00	2,614.10	-217.34	1,232.58	1,251.58	7.30	7.30	0.00
3,200.00	74.27	100.00	2,647.26	-233.71	1,325.42	1,345.85	7.30	7.30	0.00
3,300.00	81.57	100.00	2,668.17	-250.68	1,421.66	1,443.57	7.30	7.30	0.00
3,400.00	88.87	100.00	2,676.49	-267.97	1,519.73	1,543.16	7.30	7.30	0.00
3,415.47	90.00	100.00	2,676.65	-270.65	1,534.96	1,558.62	7.30	7.30	0.00
3,500.00	89.88	104.22	2,676.74	-288.39	1,617.59	1,643.06	5.00	-0.15	5.00
3,600.00	89.73	109.22	2,677.08	-317.15	1,713.33	1,742.29	5.00	-0.14	5.00
3,700.00	89.59	114.22	2,677.67	-354.15	1,806.20	1,840.09	5.00	-0.14	5.00
3,800.00	89.45	119.22	2,678.50	-399.10	1,895.49	1,935.70	5.00	-0.14	5.00
3,815.62	89.43	120.00	2,678.66	-406.82	1,909.07	1,950.39	5.00	-0.14	5.00
3,900.00	89.43	120.00	2,679.50	-449.01	1,982.14	2,029.55	0.00	0.00	0.00
4,000.00	89.43	120.00	2,680.49	-499.00	2,068.74	2,123.36	0.00	0.00	0.00
4,100.00	89.43	120.00	2,681.48	-549.00	2,155.34	2,217.18	0.00	0.00	0.00
4,200.00	89.43	120.00	2,682.48	-599.00	2,241.93	2,310.99	0.00	0.00	0.00
4,300.00	89.43	120.00	2,683.47	-649.00	2,328.53	2,404.81	0.00	0.00	0.00
4,315.62	89.43	120.00	2,683.63	-656.81	2,342.06	2,419.46	0.00	0.00	0.00
4,400.00	89.49	115.78	2,684.43	-696.27	2,416.62	2,499.63	5.00	0.07	-5.00
4,500.00	89.56	110.78	2,685.26	-735.78	2,508.44	2,596.82	5.00	0.07	-5.00
4,600.00	89.63	105.78	2,685.97	-767.14	2,603.36	2,695.68	5.00	0.07	-5.00
4,700.00	89.71	100.78	2,686.55	-790.10	2,700.65	2,795.45	5.00	0.08	-5.00
4,800.00	89.79	95.78	2,686.99	-804.50	2,799.58	2,895.39	5.00	0.08	-5.00
4,891.31	89.86	91.22	2,687.27	-810.08	2,890.69	2,986.13	5.00	0.08	-5.00
4,900.00	89.86	91.22	2,687.29	-810.26	2,899.38	2,994.73	0.00	0.00	0.00
5,000.00	89.86	91.22	2,687.53	-812.39	2,999.36	3,093.62	0.00	0.00	0.00
5,100.00	89.86	91.22	2,687.77	-814.51	3,099.34	3,192.51	0.00	0.00	0.00
5,200.00	89.86	91.22	2,688.01	-816.64	3,199.31	3,291.40	0.00	0.00	0.00
5,300.00	89.86	91.22	2,688.26	-818.77	3,299.29	3,390.30	0.00	0.00	0.00
5,400.00	89.86	91.22	2,688.50	-820.89	3,399.27	3,489.19	0.00	0.00	0.00
5,500.00	89.86	91.22	2,688.74	-823.02	3,499.24	3,588.08	0.00	0.00	0.00
5,600.00	89.86	91.22	2,688.98	-825.15	3,599.22	3,686.98	0.00	0.00	0.00
5,700.00	89.86	91.22	2,689.22	-827.27	3,699.20	3,785.87	0.00	0.00	0.00
5,800.00	89.86	91.22	2,689.46	-829.40	3,799.18	3,884.76	0.00	0.00	0.00
5,900.00	89.86	91.22	2,689.71	-831.53	3,899.15	3,983.65	0.00	0.00	0.00
6,000.00	89.86	91.22	2,689.95	-833.65	3,999.13	4,082.55	0.00	0.00	0.00
6,100.00	89.86	91.22	2,690.19	-835.78	4,099.11	4,181.44	0.00	0.00	0.00
6,200.00	89.86	91.22	2,690.43	-837.91	4,199.08	4,280.33	0.00	0.00	0.00
6,300.00	89.86	91.22	2,690.67	-840.03	4,299.06	4,379.23	0.00	0.00	0.00
6,400.00	89.86	91.22	2,690.92	-842.16	4,399.04	4,478.12	0.00	0.00	0.00
6,500.00	89.86	91.22	2,691.16	-844.28	4,499.02	4,577.01	0.00	0.00	0.00
6,600.00	89.86	91.22	2,691.40	-846.41	4,598.99	4,675.91	0.00	0.00	0.00
6,700.00	89.86	91.22	2,691.64	-848.54	4,698.97	4,774.80	0.00	0.00	0.00
6,800.00	89.86	91.22	2,691.88	-850.66	4,798.95	4,873.69	0.00	0.00	0.00
6,900.00	89.86	91.22	2,692.13	-852.79	4,898.92	4,972.58	0.00	0.00	0.00
6,957.12	89.86	91.22	2,692.26	-854.00	4,956.03	5,029.07	0.00	0.00	0.00
Ross 2 Lat 1 BHL									
6,971.97	89.86	91.22	2,692.30	-854.32	4,970.88	5,043.76	0.00	0.00	0.00
Ross 2 Lat 2 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 2		
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 2 BHL	0.00	360.00	2,692.30	-854.32	4,970.88	1,134,452.79	2,437,440.48	37.0199807	-107.4269128
- plan hits target center									
- Point									