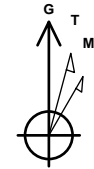




Company: B.P.
Project: Archuleta County, CO NAD83
Site: Kerrigan Pad
Well: Kerrigan GU 32-6-2 #3
Wellbore: Lateral 1 ST1
Design: Plan #4

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: 1.21°
Magnetic North: 10.33°

Magnetic Field
Strength: 50080.7snT
Dip Angle: 63.60°
Date: 9/7/2017
Model: HDGM

WELL DETAILS: Kerrigan GU 32-6-2 #3

GL 6392' & 11' @ 6403.00usft (Aztec 507)
+N/-S +E/-W Northing Easting Latitude Longitude
0.00 0.00 1142918.49 2423954.00 37.0424524 -107.4737064

Plan: Plan #4 (Kerrigan GU 32-6-2 #3/Lateral 1 ST1)

Created By: Janie Collins Date: 12:24, October 30 2017

DESIGN TARGET DETAILS

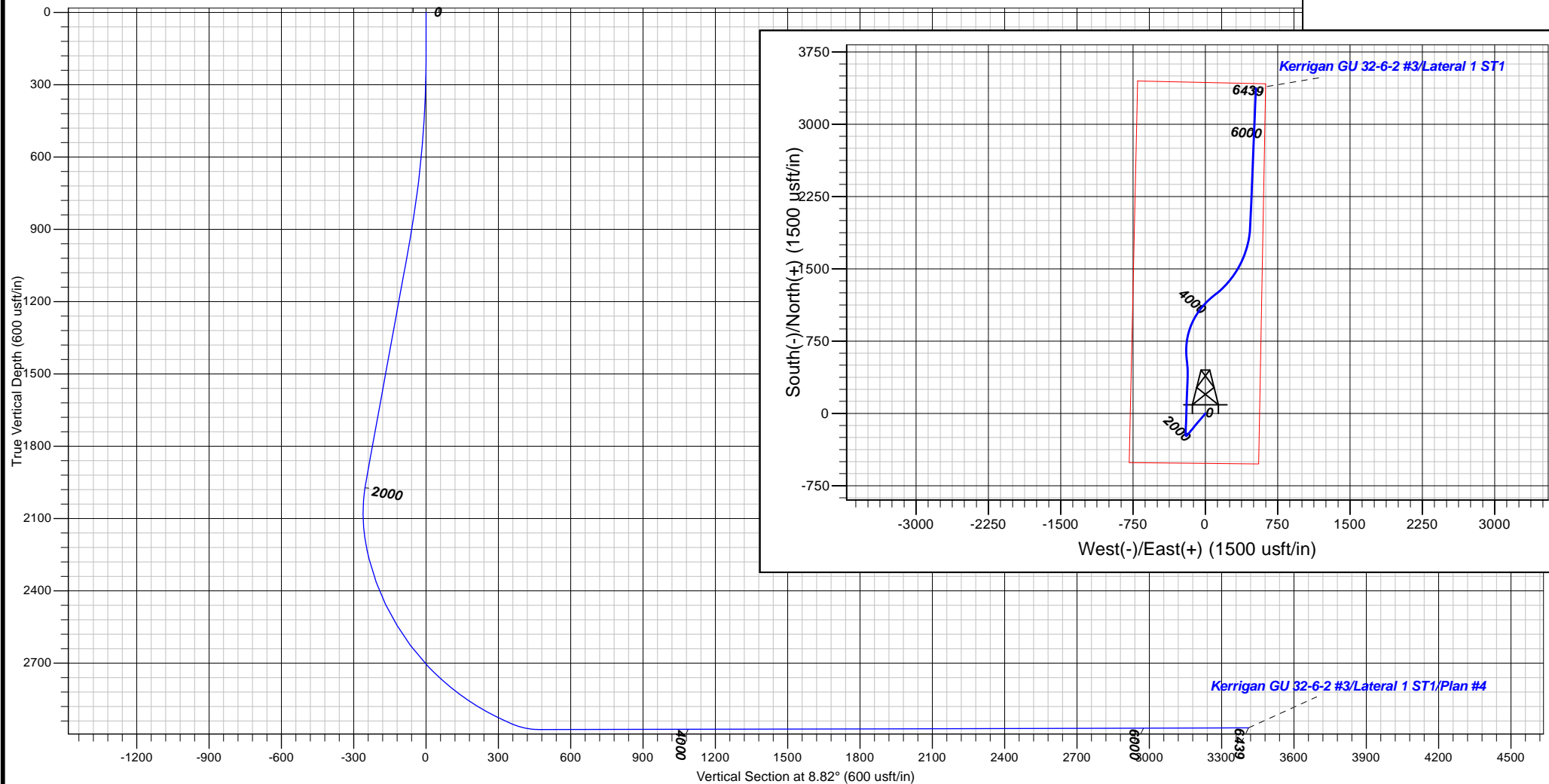
Name TVD +N/-S +E/-W Northing Easting
Kerrigan Lat 1 ST1 PBHL 2968.00 3371.22 523.02 1146289.71 2424477.02

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
3408.00	90.07	352.52	2974.94	553.37	-193.74	0.00	0.00	517.12	
4164.00	90.07	53.00	2973.92	1218.59	85.34	8.00	89.96	1217.27	
5008.44	90.16	2.33	2972.07	1942.34	464.79	6.00	-89.85	1990.64	
6438.51	90.16	2.33	2968.00	3371.22	523.02	0.00	0.00	3411.55	Kerrigan Lat 1 ST1 PBHL

FORMATION TOP DETAILS

No formation data is available





B.P.

Archuleta County, CO NAD83

Kerrigan Pad

Kerrigan GU 32-6-2 #3

Lateral 1 ST1

Plan: Plan #4

Standard Planning Report

30 October, 2017





Database:	Grand Junction District	Local Co-ordinate Reference:	Well Kerrigan GU 32-6-2 #3
Company:	B.P.	TVD Reference:	GL 6392' & 11' @ 6403.00usft (Aztec 507)
Project:	Archuleta County, CO NAD83	MD Reference:	GL 6392' & 11' @ 6403.00usft (Aztec 507)
Site:	Kerrigan Pad	North Reference:	Grid
Well:	Kerrigan GU 32-6-2 #3	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral 1 ST1		
Design:	Plan #4		

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	Kerrigan Pad			
Site Position:		Northing:	1,142,918.49 usft	Latitude: 37.0424523
From: Map		Easting:	2,423,954.00 usft	Longitude: -107.4737065
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence: -1.21 °

Well	Kerrigan GU 32-6-2 #3			
Well Position	+N/-S	0.00 usft	Northing:	1,142,918.49 usft
	+E/-W	0.00 usft	Easting:	2,423,954.00 usft
Position Uncertainty	0.00 usft		Wellhead Elevation:	0.00 usft
			Ground Level:	6,392.00 usft

Wellbore	Lateral 1 ST1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	9/7/2017	9.12	63.60	50,081

Design	Plan #4			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	3,408.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	8.82

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
3,408.00	90.07	352.52	2,974.94	553.37	-193.74	0.00	0.00	0.00	0.00	
4,164.00	90.07	53.00	2,973.92	1,218.59	85.34	8.00	0.00	8.00	89.96	
5,008.44	90.16	2.33	2,972.08	1,942.34	464.79	6.00	0.01	-6.00	-89.85	
6,438.51	90.16	2.33	2,968.00	3,371.22	523.02	0.00	0.00	0.00	0.00	Kerrigan Lat 1 ST1 Pf



Database:	Grand Junction District	Local Co-ordinate Reference:	Well Kerrigan GU 32-6-2 #3
Company:	B.P.	TVD Reference:	GL 6392' & 11' @ 6403.00usft (Aztec 507)
Project:	Archuleta County, CO NAD83	MD Reference:	GL 6392' & 11' @ 6403.00usft (Aztec 507)
Site:	Kerrigan Pad	North Reference:	Grid
Well:	Kerrigan GU 32-6-2 #3	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral 1 ST1		
Design:	Plan #4		

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)	
3,408.00	90.07	352.52	2,974.94	553.37	-193.74	517.12	0.00	0.00	0.00	
3,500.00	90.08	359.88	2,974.82	645.10	-199.83	606.84	8.00	0.00	8.00	
3,600.00	90.08	7.88	2,974.69	744.79	-193.07	706.39	8.00	0.00	8.00	
3,700.00	90.08	15.88	2,974.55	842.57	-172.50	806.16	8.00	0.00	8.00	
3,800.00	90.08	23.88	2,974.41	936.54	-138.53	904.23	8.00	0.00	8.00	
3,900.00	90.08	31.88	2,974.27	1,024.86	-91.80	998.67	8.00	0.00	8.00	
4,000.00	90.08	39.88	2,974.13	1,105.82	-33.24	1,087.65	8.00	0.00	8.00	
4,100.00	90.07	47.88	2,974.00	1,177.84	36.02	1,169.43	8.00	0.00	8.00	
4,164.00	90.07	53.00	2,973.92	1,218.59	85.34	1,217.27	8.00	-0.01	8.00	
4,200.00	90.08	50.84	2,973.87	1,240.79	113.68	1,243.55	6.00	0.02	-6.00	
4,300.00	90.09	44.84	2,973.72	1,307.88	187.77	1,321.20	6.00	0.02	-6.00	
4,400.00	90.11	38.84	2,973.55	1,382.34	254.45	1,405.01	6.00	0.01	-6.00	
4,500.00	90.12	32.84	2,973.36	1,463.37	312.97	1,494.05	6.00	0.01	-6.00	
4,600.00	90.13	26.84	2,973.14	1,550.07	362.71	1,587.35	6.00	0.01	-6.00	
4,700.00	90.14	20.84	2,972.90	1,641.50	403.11	1,683.89	6.00	0.01	-6.00	
4,800.00	90.15	14.84	2,972.65	1,736.65	433.73	1,782.61	6.00	0.01	-6.00	
4,900.00	90.16	8.84	2,972.38	1,834.47	454.24	1,882.42	6.00	0.01	-6.00	
5,000.00	90.16	2.84	2,972.10	1,933.91	464.41	1,982.24	6.00	0.01	-6.00	
5,008.44	90.16	2.33	2,972.08	1,942.34	464.79	1,990.64	6.00	0.00	-6.00	
5,100.00	90.16	2.33	2,971.81	2,033.82	468.52	2,081.61	0.00	0.00	0.00	
5,200.00	90.16	2.33	2,971.53	2,133.74	472.59	2,180.97	0.00	0.00	0.00	
5,300.00	90.16	2.33	2,971.24	2,233.66	476.66	2,280.33	0.00	0.00	0.00	
5,400.00	90.16	2.33	2,970.96	2,333.57	480.73	2,379.69	0.00	0.00	0.00	
5,500.00	90.16	2.33	2,970.67	2,433.49	484.81	2,479.05	0.00	0.00	0.00	
5,600.00	90.16	2.33	2,970.39	2,533.41	488.88	2,578.41	0.00	0.00	0.00	
5,700.00	90.16	2.33	2,970.10	2,633.32	492.95	2,677.77	0.00	0.00	0.00	
5,800.00	90.16	2.33	2,969.82	2,733.24	497.02	2,777.13	0.00	0.00	0.00	
5,900.00	90.16	2.33	2,969.53	2,833.16	501.09	2,876.49	0.00	0.00	0.00	
6,000.00	90.16	2.33	2,969.25	2,933.07	505.16	2,975.85	0.00	0.00	0.00	
6,100.00	90.16	2.33	2,968.96	3,032.99	509.24	3,075.20	0.00	0.00	0.00	
6,200.00	90.16	2.33	2,968.68	3,132.91	513.31	3,174.56	0.00	0.00	0.00	
6,300.00	90.16	2.33	2,968.39	3,232.82	517.38	3,273.92	0.00	0.00	0.00	
6,400.00	90.16	2.33	2,968.11	3,332.74	521.45	3,373.28	0.00	0.00	0.00	
6,438.51	90.16	2.33	2,968.00	3,371.22	523.02	3,411.55	0.00	0.00	0.00	

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Kerrigan Lat 1 ST1 PBH	0.00	0.00	2,968.00	3,371.22	523.02	1,146,289.71	2,424,477.02	37.0517392	-107.4721588
- plan hits target center									
- Point									