

Project: Rio Blanco County, CO
Site: PCU B27 197 Pad
Well: PCU B27 FED 12B-27 197
Wellbore: OH
Design: Prelim #2
Latitude: 39.940878
Longitude: -108.268439
Ground Level: 6510.0
RKB @ 6540.0usft (30')

FORMATION TOP DETAILS			
TVDPath	MDPath	Formation	
2457.0	2520.8	Orange Marker	
2611.0	2680.0	Wasatch	
5452.0	5616.5	Wasatch G	
5924.0	6104.4	Fort Union	
7398.0	7617.0	Ohio Creek	
8148.0	8367.1	Williams Fork	
10991.0	11210.6	Cameo	
11541.0	11760.7	Rollins	
11658.0	11877.7	Cozzette	
12258.0	12477.8	Corcoran	

REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well PCU B27 FED 12B-27 197 - Slot 12B-27, True North
Vertical (TVD) Reference: RKB @ 6540.0usft (30')
Section (VS) Reference: Slot - 12B-27(0.0N, 0.0E)
Measured Depth Reference: RKB @ 6540.0usft (30')
Calculation Method: Minimum Curvature

WELL DETAILS: PCU B27 FED 12B-27 197

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	14516239.00	2406123.80	39.940878	-108.268439

PROJECT DETAILS: Rio Blanco County, CO

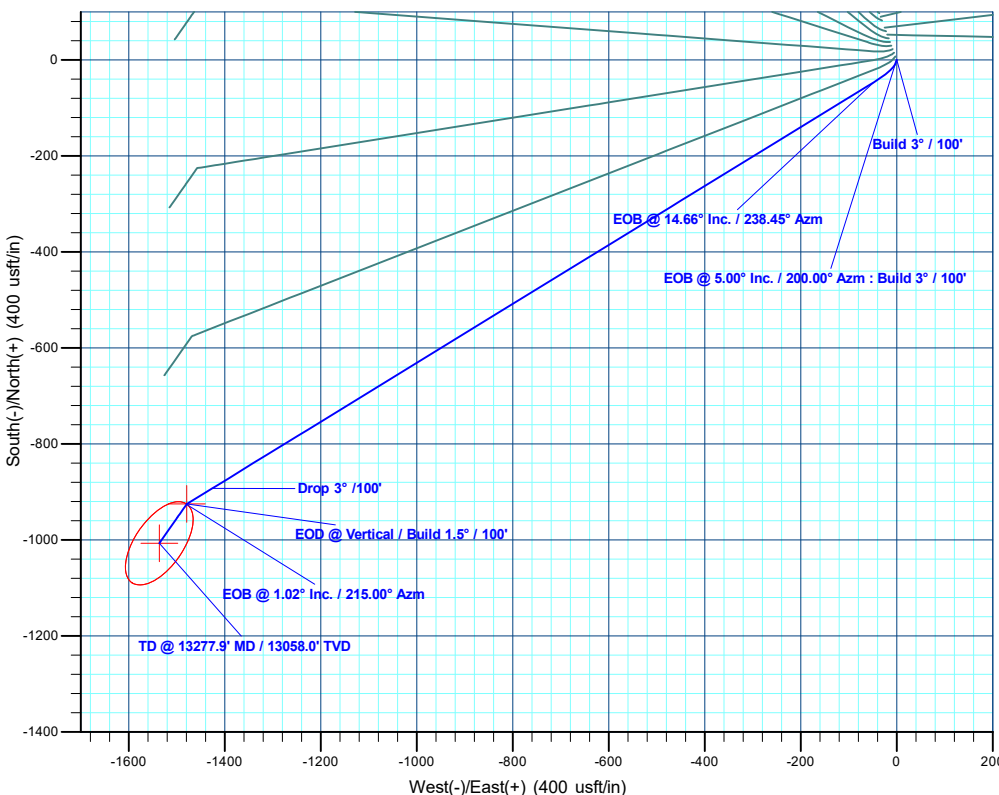
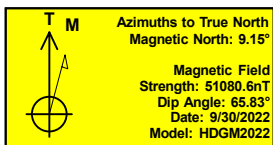
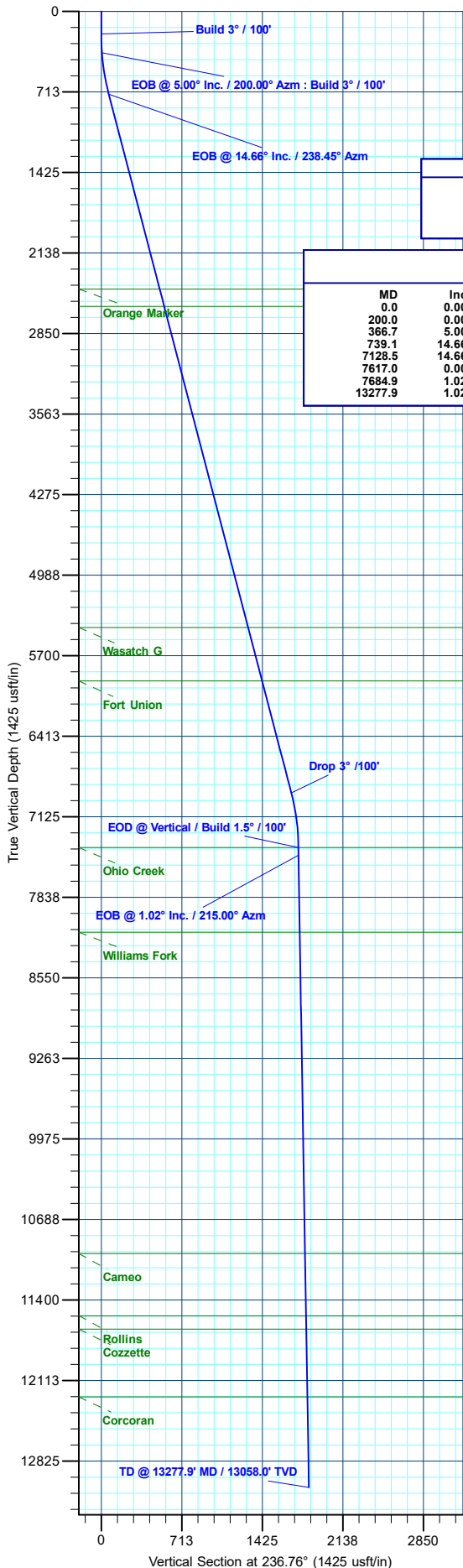
Geodetic System: Universal Transverse Mercator (US Survey Feet)
Datum: NAD 1927 - Western US
Ellipsoid: Clarke 1866
Zone: Zone 12N (114 W to 108 W)
System Datum: Mean Sea Level

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
12B-27 - OHCR	7398.0	-925.1	-1479.0	14515269.03	2404673.83	39.938339	-108.273712
12B-27 - PBHL	13058.0	-1007.0	-1536.4	14515185.40	2404619.00	39.938114	-108.273917

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VFace	Annotation
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	Build 3° / 100'
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	EOB @ 5.00° Inc. / 200.00° Azm : Build 3° / 100'
366.7	5.00	200.00	366.5	-4.8	-2.5	3.00	200.00	5.3	EOB @ 14.66° Inc. / 238.45° Azm
739.1	14.66	238.45	733.2	-46.9	-48.3	3.00	54.30	66.1	EOB @ 54.30° Inc. / 238.45° Azm
7128.5	14.66	238.45	6914.8	-892.6	-1426.0	0.00	0.00	1682.0	Drop 3° / 100'
7617.0	0.00	0.00	7398.0	-925.1	-1479.0	3.00	180.00	1744.1	EOD @ Vertical / Build 1.5° / 100'
7684.9	1.02	215.00	7465.9	-925.6	-1479.3	1.50	215.00	1744.7	EOB @ 1.02° Inc. / 215.00° Azm
13277.9	1.02	215.00	13058.0	-1007.0	-1536.4	0.00	0.00	1837.0	TD @ 13277.9' MD / 13058.0' TVD



Plan: Prelim #2 (PCU B27 FED 12B-27 197/OH)

Created By: Will Jircik Date: 18:46, October 03 2024



QB Energy Operating, LLC

Rio Blanco County, CO

PCU B27 197 Pad

PCU B27 FED 12B-27 197 - Slot 12B-27

OH

Plan: Prelim #2

KLX Well Planning Report

03 October, 2024



Database:	KLXDirectional-AD	Local Co-ordinate Reference:	Well PCU B27 FED 12B-27 197 - Slot 12B-27
Company:	QB Energy Operating, LLC	TVD Reference:	RKB @ 6540.0usft (30')
Project:	Rio Blanco County, CO	MD Reference:	RKB @ 6540.0usft (30')
Site:	PCU B27 197 Pad	North Reference:	True
Well:	PCU B27 FED 12B-27 197	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Prelim #2		

Project	Rio Blanco County, CO		
Map System:	Universal Transverse Mercator (US Survey Fee	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 - Western US		
Map Zone:	Zone 12N (114 W to 108 W)		

Site		PCU B27 197 Pad				
Site Position:		Northing:	14,516,246.39 usft	Latitude:	39.940899	
From:	Map	Easting:	2,406,120.81 usft	Longitude:	-108.268449	
Position Uncertainty:		0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	1.75 °

Well	PCU B27 FED 12B-27 197 - Slot 12B-27					
Well Position	+N/-S	-7.5 usft	Northing:	14,516,239.00 usft	Latitude:	39.940878
	+E/-W	2.8 usft	Easting:	2,406,123.80 usft	Longitude:	-108.268440
Position Uncertainty		0.0 usft	Wellhead Elevation:		Ground Level:	6,510.0 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM2022	9/30/2022	9.15	65.83	51,080.60000000

Design	Prelim #2			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	236.76

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
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
366.7	5.00	200.00	366.5	-6.8	-2.5	3.00	3.00	0.00	200.00	
739.1	14.66	238.45	733.2	-46.9	-48.3	3.00	2.59	10.33	54.30	
7,128.5	14.66	238.45	6,914.8	-892.6	-1,426.0	0.00	0.00	0.00	0.00	
7,617.0	0.00	0.00	7,398.0	-925.1	-1,479.0	3.00	-3.00	0.00	180.00	12B-27 - OHCR
7,684.9	1.02	215.00	7,465.9	-925.6	-1,479.3	1.50	1.50	-213.58	215.00	
13,277.9	1.02	215.00	13,058.0	-1,007.0	-1,536.4	0.00	0.00	0.00	0.00	12B-27 - PBHL

Database:	KLXDirectional-AD	Local Co-ordinate Reference:	Well PCU B27 FED 12B-27 197 - Slot 12B-27
Company:	QB Energy Operating, LLC	TVD Reference:	RKB @ 6540.0usft (30')
Project:	Rio Blanco County, CO	MD Reference:	RKB @ 6540.0usft (30')
Site:	PCU B27 197 Pad	North Reference:	True
Well:	PCU B27 FED 12B-27 197	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Prelim #2		

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)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
Build 3° / 100'									
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	3.00	200.00	300.0	-2.5	-0.9	2.1	3.00	3.00	0.00
EOB @ 5.00° Inc. / 200.00° Azm : Build 3° / 100'									
366.7	5.00	200.00	366.5	-6.8	-2.5	5.8	3.00	3.00	0.00
400.0	5.64	208.29	399.6	-9.6	-3.8	8.4	3.00	1.93	24.87
500.0	8.02	223.96	498.9	-19.0	-10.9	19.6	3.00	2.38	15.67
600.0	10.71	232.17	597.6	-29.7	-23.1	35.6	3.00	2.69	8.21
700.0	13.53	237.05	695.4	-41.8	-40.3	56.6	3.00	2.82	4.88
EOB @ 14.66° Inc. / 238.45° Azm									
739.1	14.66	238.45	733.2	-46.9	-48.3	66.1	3.00	2.87	3.59
800.0	14.66	238.45	792.2	-54.9	-61.5	81.5	0.00	0.00	0.00
900.0	14.66	238.45	888.9	-68.2	-83.0	106.8	0.00	0.00	0.00
1,000.0	14.66	238.45	985.7	-81.4	-104.6	132.1	0.00	0.00	0.00
1,100.0	14.66	238.45	1,082.4	-94.6	-126.2	157.4	0.00	0.00	0.00
1,200.0	14.66	238.45	1,179.2	-107.9	-147.7	182.7	0.00	0.00	0.00
1,300.0	14.66	238.45	1,275.9	-121.1	-169.3	208.0	0.00	0.00	0.00
1,400.0	14.66	238.45	1,372.7	-134.3	-190.8	233.3	0.00	0.00	0.00
1,500.0	14.66	238.45	1,469.4	-147.6	-212.4	258.5	0.00	0.00	0.00
1,600.0	14.66	238.45	1,566.2	-160.8	-234.0	283.8	0.00	0.00	0.00
1,700.0	14.66	238.45	1,662.9	-174.1	-255.5	309.1	0.00	0.00	0.00
1,800.0	14.66	238.45	1,759.7	-187.3	-277.1	334.4	0.00	0.00	0.00
1,900.0	14.66	238.45	1,856.4	-200.5	-298.7	359.7	0.00	0.00	0.00
2,000.0	14.66	238.45	1,953.2	-213.8	-320.2	385.0	0.00	0.00	0.00
2,100.0	14.66	238.45	2,049.9	-227.0	-341.8	410.3	0.00	0.00	0.00
2,200.0	14.66	238.45	2,146.7	-240.2	-363.3	435.6	0.00	0.00	0.00
2,300.0	14.66	238.45	2,243.4	-253.5	-384.9	460.9	0.00	0.00	0.00
2,400.0	14.66	238.45	2,340.1	-266.7	-406.5	486.2	0.00	0.00	0.00
2,500.0	14.66	238.45	2,436.9	-279.9	-428.0	511.4	0.00	0.00	0.00
Orange Marker									
2,520.8	14.66	238.45	2,457.0	-282.7	-432.5	516.7	0.00	0.00	0.00
2,600.0	14.66	238.45	2,533.6	-293.2	-449.6	536.7	0.00	0.00	0.00
Wasatch									
2,680.0	14.66	238.45	2,611.0	-303.8	-466.8	557.0	0.00	0.00	0.00
2,700.0	14.66	238.45	2,630.4	-306.4	-471.2	562.0	0.00	0.00	0.00
2,800.0	14.66	238.45	2,727.1	-319.7	-492.7	587.3	0.00	0.00	0.00
2,900.0	14.66	238.45	2,823.9	-332.9	-514.3	612.6	0.00	0.00	0.00
3,000.0	14.66	238.45	2,920.6	-346.1	-535.8	637.9	0.00	0.00	0.00
3,100.0	14.66	238.45	3,017.4	-359.4	-557.4	663.2	0.00	0.00	0.00
3,200.0	14.66	238.45	3,114.1	-372.6	-579.0	688.5	0.00	0.00	0.00
3,300.0	14.66	238.45	3,210.9	-385.8	-600.5	713.8	0.00	0.00	0.00
3,400.0	14.66	238.45	3,307.6	-399.1	-622.1	739.1	0.00	0.00	0.00
3,500.0	14.66	238.45	3,404.4	-412.3	-643.6	764.3	0.00	0.00	0.00
3,600.0	14.66	238.45	3,501.1	-425.5	-665.2	789.6	0.00	0.00	0.00
3,700.0	14.66	238.45	3,597.8	-438.8	-686.8	814.9	0.00	0.00	0.00
3,800.0	14.66	238.45	3,694.6	-452.0	-708.3	840.2	0.00	0.00	0.00
3,900.0	14.66	238.45	3,791.3	-465.3	-729.9	865.5	0.00	0.00	0.00
4,000.0	14.66	238.45	3,888.1	-478.5	-751.5	890.8	0.00	0.00	0.00
4,100.0	14.66	238.45	3,984.8	-491.7	-773.0	916.1	0.00	0.00	0.00
4,200.0	14.66	238.45	4,081.6	-505.0	-794.6	941.4	0.00	0.00	0.00
4,300.0	14.66	238.45	4,178.3	-518.2	-816.1	966.7	0.00	0.00	0.00
4,400.0	14.66	238.45	4,275.1	-531.4	-837.7	992.0	0.00	0.00	0.00

Database:	KLXDirectional-AD	Local Co-ordinate Reference:	Well PCU B27 FED 12B-27 197 - Slot 12B-27
Company:	QB Energy Operating, LLC	TVD Reference:	RKB @ 6540.0usft (30')
Project:	Rio Blanco County, CO	MD Reference:	RKB @ 6540.0usft (30')
Site:	PCU B27 197 Pad	North Reference:	True
Well:	PCU B27 FED 12B-27 197	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Prelim #2		

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)
4,500.0	14.66	238.45	4,371.8	-544.7	-859.3	1,017.2	0.00	0.00	0.00
4,600.0	14.66	238.45	4,468.6	-557.9	-880.8	1,042.5	0.00	0.00	0.00
4,700.0	14.66	238.45	4,565.3	-571.2	-902.4	1,067.8	0.00	0.00	0.00
4,800.0	14.66	238.45	4,662.1	-584.4	-924.0	1,093.1	0.00	0.00	0.00
4,900.0	14.66	238.45	4,758.8	-597.6	-945.5	1,118.4	0.00	0.00	0.00
5,000.0	14.66	238.45	4,855.5	-610.9	-967.1	1,143.7	0.00	0.00	0.00
5,100.0	14.66	238.45	4,952.3	-624.1	-988.6	1,169.0	0.00	0.00	0.00
5,200.0	14.66	238.45	5,049.0	-637.3	-1,010.2	1,194.3	0.00	0.00	0.00
5,300.0	14.66	238.45	5,145.8	-650.6	-1,031.8	1,219.6	0.00	0.00	0.00
5,400.0	14.66	238.45	5,242.5	-663.8	-1,053.3	1,244.9	0.00	0.00	0.00
5,500.0	14.66	238.45	5,339.3	-677.0	-1,074.9	1,270.1	0.00	0.00	0.00
5,600.0	14.66	238.45	5,436.0	-690.3	-1,096.5	1,295.4	0.00	0.00	0.00
Wasatch G									
5,616.5	14.66	238.45	5,452.0	-692.5	-1,100.0	1,299.6	0.00	0.00	0.00
5,700.0	14.66	238.45	5,532.8	-703.5	-1,118.0	1,320.7	0.00	0.00	0.00
5,800.0	14.66	238.45	5,629.5	-716.8	-1,139.6	1,346.0	0.00	0.00	0.00
5,900.0	14.66	238.45	5,726.3	-730.0	-1,161.1	1,371.3	0.00	0.00	0.00
6,000.0	14.66	238.45	5,823.0	-743.2	-1,182.7	1,396.6	0.00	0.00	0.00
6,100.0	14.66	238.45	5,919.8	-756.5	-1,204.3	1,421.9	0.00	0.00	0.00
Fort Union									
6,104.4	14.66	238.45	5,924.0	-757.1	-1,205.2	1,423.0	0.00	0.00	0.00
6,200.0	14.66	238.45	6,016.5	-769.7	-1,225.8	1,447.2	0.00	0.00	0.00
6,300.0	14.66	238.45	6,113.3	-782.9	-1,247.4	1,472.5	0.00	0.00	0.00
6,400.0	14.66	238.45	6,210.0	-796.2	-1,269.0	1,497.8	0.00	0.00	0.00
6,500.0	14.66	238.45	6,306.7	-809.4	-1,290.5	1,523.0	0.00	0.00	0.00
6,600.0	14.66	238.45	6,403.5	-822.7	-1,312.1	1,548.3	0.00	0.00	0.00
6,700.0	14.66	238.45	6,500.2	-835.9	-1,333.6	1,573.6	0.00	0.00	0.00
6,800.0	14.66	238.45	6,597.0	-849.1	-1,355.2	1,598.9	0.00	0.00	0.00
6,900.0	14.66	238.45	6,693.7	-862.4	-1,376.8	1,624.2	0.00	0.00	0.00
7,000.0	14.66	238.45	6,790.5	-875.6	-1,398.3	1,649.5	0.00	0.00	0.00
7,100.0	14.66	238.45	6,887.2	-888.8	-1,419.9	1,674.8	0.00	0.00	0.00
Drop 3° /100'									
7,128.5	14.66	238.45	6,914.8	-892.6	-1,426.0	1,682.0	0.00	0.00	0.00
7,200.0	12.51	238.45	6,984.3	-901.4	-1,440.3	1,698.8	3.00	-3.00	0.00
7,300.0	9.51	238.45	7,082.4	-911.4	-1,456.6	1,717.9	3.00	-3.00	0.00
7,400.0	6.51	238.45	7,181.5	-918.7	-1,468.5	1,731.8	3.00	-3.00	0.00
7,500.0	3.51	238.45	7,281.1	-923.2	-1,475.9	1,740.5	3.00	-3.00	0.00
7,600.0	0.51	238.45	7,381.0	-925.1	-1,478.9	1,744.0	3.00	-3.00	0.00
EOD @ Vertical / Build 1.5° / 100' - Ohio Creek									
7,617.0	0.00	0.00	7,398.0	-925.1	-1,479.0	1,744.1	3.00	-3.00	0.00
EOB @ 1.02° Inc. / 215.00° Azm									
7,684.9	1.02	215.00	7,465.9	-925.6	-1,479.3	1,744.7	1.50	1.50	0.00
7,700.0	1.02	215.00	7,481.0	-925.8	-1,479.5	1,744.9	0.00	0.00	0.00
7,800.0	1.02	215.00	7,581.0	-927.3	-1,480.5	1,746.6	0.00	0.00	0.00
7,900.0	1.02	215.00	7,680.9	-928.7	-1,481.5	1,748.2	0.00	0.00	0.00
8,000.0	1.02	215.00	7,780.9	-930.2	-1,482.5	1,749.9	0.00	0.00	0.00
8,100.0	1.02	215.00	7,880.9	-931.7	-1,483.6	1,751.5	0.00	0.00	0.00
8,200.0	1.02	215.00	7,980.9	-933.1	-1,484.6	1,753.2	0.00	0.00	0.00
8,300.0	1.02	215.00	8,080.9	-934.6	-1,485.6	1,754.8	0.00	0.00	0.00
Williams Fork									
8,367.1	1.02	215.00	8,148.0	-935.5	-1,486.3	1,755.9	0.00	0.00	0.00
8,400.0	1.02	215.00	8,180.9	-936.0	-1,486.6	1,756.5	0.00	0.00	0.00
8,500.0	1.02	215.00	8,280.9	-937.5	-1,487.6	1,758.1	0.00	0.00	0.00

Database:	KLXDirectional-AD	Local Co-ordinate Reference:	Well PCU B27 FED 12B-27 197 - Slot 12B-27
Company:	QB Energy Operating, LLC	TVD Reference:	RKB @ 6540.0usft (30')
Project:	Rio Blanco County, CO	MD Reference:	RKB @ 6540.0usft (30')
Site:	PCU B27 197 Pad	North Reference:	True
Well:	PCU B27 FED 12B-27 197	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Prelim #2		

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)
8,600.0	1.02	215.00	8,380.8	-938.9	-1,488.7	1,759.8	0.00	0.00	0.00
8,700.0	1.02	215.00	8,480.8	-940.4	-1,489.7	1,761.4	0.00	0.00	0.00
8,800.0	1.02	215.00	8,580.8	-941.8	-1,490.7	1,763.1	0.00	0.00	0.00
8,900.0	1.02	215.00	8,680.8	-943.3	-1,491.7	1,764.7	0.00	0.00	0.00
9,000.0	1.02	215.00	8,780.8	-944.8	-1,492.7	1,766.4	0.00	0.00	0.00
9,100.0	1.02	215.00	8,880.8	-946.2	-1,493.8	1,768.0	0.00	0.00	0.00
9,200.0	1.02	215.00	8,980.7	-947.7	-1,494.8	1,769.7	0.00	0.00	0.00
9,300.0	1.02	215.00	9,080.7	-949.1	-1,495.8	1,771.3	0.00	0.00	0.00
9,400.0	1.02	215.00	9,180.7	-950.6	-1,496.8	1,773.0	0.00	0.00	0.00
9,500.0	1.02	215.00	9,280.7	-952.0	-1,497.8	1,774.6	0.00	0.00	0.00
9,600.0	1.02	215.00	9,380.7	-953.5	-1,498.9	1,776.3	0.00	0.00	0.00
9,700.0	1.02	215.00	9,480.7	-954.9	-1,499.9	1,777.9	0.00	0.00	0.00
9,800.0	1.02	215.00	9,580.6	-956.4	-1,500.9	1,779.6	0.00	0.00	0.00
9,900.0	1.02	215.00	9,680.6	-957.9	-1,501.9	1,781.2	0.00	0.00	0.00
10,000.0	1.02	215.00	9,780.6	-959.3	-1,502.9	1,782.9	0.00	0.00	0.00
10,100.0	1.02	215.00	9,880.6	-960.8	-1,504.0	1,784.5	0.00	0.00	0.00
10,200.0	1.02	215.00	9,980.6	-962.2	-1,505.0	1,786.2	0.00	0.00	0.00
10,300.0	1.02	215.00	10,080.6	-963.7	-1,506.0	1,787.8	0.00	0.00	0.00
10,400.0	1.02	215.00	10,180.6	-965.1	-1,507.0	1,789.5	0.00	0.00	0.00
10,500.0	1.02	215.00	10,280.5	-966.6	-1,508.0	1,791.1	0.00	0.00	0.00
10,600.0	1.02	215.00	10,380.5	-968.0	-1,509.1	1,792.8	0.00	0.00	0.00
10,700.0	1.02	215.00	10,480.5	-969.5	-1,510.1	1,794.4	0.00	0.00	0.00
10,800.0	1.02	215.00	10,580.5	-971.0	-1,511.1	1,796.1	0.00	0.00	0.00
10,900.0	1.02	215.00	10,680.5	-972.4	-1,512.1	1,797.7	0.00	0.00	0.00
11,000.0	1.02	215.00	10,780.5	-973.9	-1,513.1	1,799.4	0.00	0.00	0.00
11,100.0	1.02	215.00	10,880.4	-975.3	-1,514.2	1,801.0	0.00	0.00	0.00
11,200.0	1.02	215.00	10,980.4	-976.8	-1,515.2	1,802.7	0.00	0.00	0.00
Cameo									
11,210.6	1.02	215.00	10,991.0	-976.9	-1,515.3	1,802.9	0.00	0.00	0.00
11,300.0	1.02	215.00	11,080.4	-978.2	-1,516.2	1,804.3	0.00	0.00	0.00
11,400.0	1.02	215.00	11,180.4	-979.7	-1,517.2	1,806.0	0.00	0.00	0.00
11,500.0	1.02	215.00	11,280.4	-981.2	-1,518.2	1,807.6	0.00	0.00	0.00
11,600.0	1.02	215.00	11,380.4	-982.6	-1,519.2	1,809.3	0.00	0.00	0.00
11,700.0	1.02	215.00	11,480.3	-984.1	-1,520.3	1,810.9	0.00	0.00	0.00
Rollins									
11,760.7	1.02	215.00	11,541.0	-984.9	-1,520.9	1,811.9	0.00	0.00	0.00
11,800.0	1.02	215.00	11,580.3	-985.5	-1,521.3	1,812.6	0.00	0.00	0.00
Cozzette									
11,877.7	1.02	215.00	11,658.0	-986.6	-1,522.1	1,813.9	0.00	0.00	0.00
11,900.0	1.02	215.00	11,680.3	-987.0	-1,522.3	1,814.2	0.00	0.00	0.00
12,000.0	1.02	215.00	11,780.3	-988.4	-1,523.3	1,815.9	0.00	0.00	0.00
12,100.0	1.02	215.00	11,880.3	-989.9	-1,524.3	1,817.5	0.00	0.00	0.00
12,200.0	1.02	215.00	11,980.3	-991.3	-1,525.4	1,819.2	0.00	0.00	0.00
12,300.0	1.02	215.00	12,080.3	-992.8	-1,526.4	1,820.8	0.00	0.00	0.00
12,400.0	1.02	215.00	12,180.2	-994.3	-1,527.4	1,822.5	0.00	0.00	0.00
Corcoran									
12,477.8	1.02	215.00	12,258.0	-995.4	-1,528.2	1,823.8	0.00	0.00	0.00
12,500.0	1.02	215.00	12,280.2	-995.7	-1,528.4	1,824.1	0.00	0.00	0.00
12,600.0	1.02	215.00	12,380.2	-997.2	-1,529.4	1,825.8	0.00	0.00	0.00
12,700.0	1.02	215.00	12,480.2	-998.6	-1,530.5	1,827.4	0.00	0.00	0.00
12,800.0	1.02	215.00	12,580.2	-1,000.1	-1,531.5	1,829.1	0.00	0.00	0.00
12,900.0	1.02	215.00	12,680.2	-1,001.5	-1,532.5	1,830.7	0.00	0.00	0.00
13,000.0	1.02	215.00	12,780.1	-1,003.0	-1,533.5	1,832.4	0.00	0.00	0.00

Database:	KLXDirectional-AD	Local Co-ordinate Reference:	Well PCU B27 FED 12B-27 197 - Slot 12B-27
Company:	QB Energy Operating, LLC	TVD Reference:	RKB @ 6540.0usft (30')
Project:	Rio Blanco County, CO	MD Reference:	RKB @ 6540.0usft (30')
Site:	PCU B27 197 Pad	North Reference:	True
Well:	PCU B27 FED 12B-27 197	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Prelim #2		

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)	
13,100.0	1.02	215.00	12,880.1	-1,004.4	-1,534.5	1,834.0	0.00	0.00	0.00	
13,200.0	1.02	215.00	12,980.1	-1,005.9	-1,535.6	1,835.7	0.00	0.00	0.00	
TD @ 13277.9' MD / 13058.0' TVD										
13,277.9	1.02	215.00	13,058.0	-1,007.0	-1,536.4	1,837.0	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	
12B-27 - OHCR	0.00	0.00	7,398.0	-925.1	-1,479.0	14,515,269.03	2,404,673.83	39.938339	-108.273712	
- hit/miss target										
- plan hits target center										
- Point										
12B-27 - PBHL	0.00	0.00	13,058.0	-1,007.0	-1,536.4	14,515,185.40	2,404,619.00	39.938114	-108.273917	
- plan hits target center										
- Ellipse (radii L100.0 W50.0 on 215.00 azi)										

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
2,520.8	2,457.0	Orange Marker				
2,680.0	2,611.0	Wasatch				
5,616.5	5,452.0	Wasatch G				
6,104.4	5,924.0	Fort Union				
7,617.0	7,398.0	Ohio Creek				
8,367.1	8,148.0	Williams Fork				
11,210.6	10,991.0	Cameo				
11,760.7	11,541.0	Rollins				
11,877.7	11,658.0	Cozzette				
12,477.8	12,258.0	Corcoran				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
200.0	200.0	0.0	0.0	Build 3° / 100'	
366.7	366.5	-6.8	-2.5	EOB @ 5.00° Inc. / 200.00° Azm : Build 3° / 100'	
739.1	733.2	-46.9	-48.3	EOB @ 14.66° Inc. / 238.45° Azm	
7,128.5	6,914.8	-892.6	-1,426.0	Drop 3° / 100'	
7,617.0	7,398.0	-925.1	-1,479.0	EOD @ Vertical / Build 1.5° / 100'	
7,684.9	7,465.9	-925.6	-1,479.3	EOB @ 1.02° Inc. / 215.00° Azm	
13,277.9	13,058.0	-1,007.0	-1,536.4	TD @ 13277.9' MD / 13058.0' TVD	