

Project: Rio Blanco County, CO
 Site: PCU B27 197 Pad
 Well: PCU B27 FED 11B-27 197
 Wellbore: OH
 Design: Prelim #4
 Latitude: 39.940960
 Longitude: -108.268479
 Ground Level: 6510.0
 WELL @ 6540.0usft (30')

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
2481.0	2530.9	Orange Marker
2627.0	2680.7	Wasatch
5496.0	5624.2	Wasatch G
5969.0	6109.5	Fort Union
7455.0	7626.6	Ohio Creek
8205.0	8376.7	Williams Fork
11068.0	11240.0	Cameo
11618.0	11790.1	Rollins
11725.0	11897.1	Cozzette
12325.0	12497.1	Corcoran

REFERENCE INFORMATION

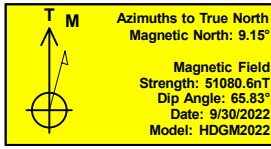
Co-ordinate (N/E) Reference: Well PCU B27 FED 11B-27 197 - Slot 11B-27, True North
 Vertical (TVD) Reference: WELL @ 6540.0usft (30')
 Section (VS) Reference: Slot - 11B-27(0.0N, 0.0E)
 Measured Depth Reference: WELL @ 6540.0usft (30')
 Calculation Method: Minimum Curvature

WELL DETAILS: PCU B27 FED 11B-27 197

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	14516268.60	2406111.70	39.940960	-108.268479

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

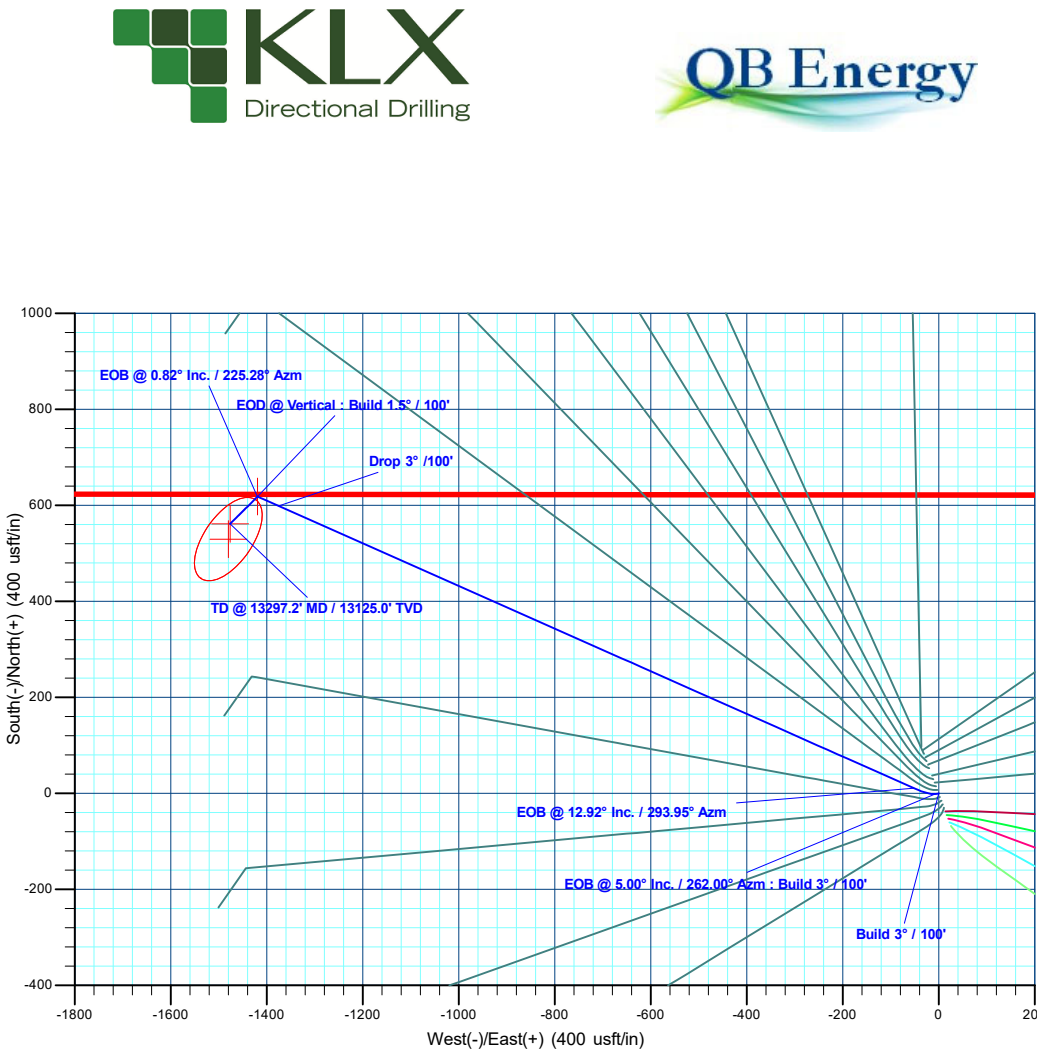
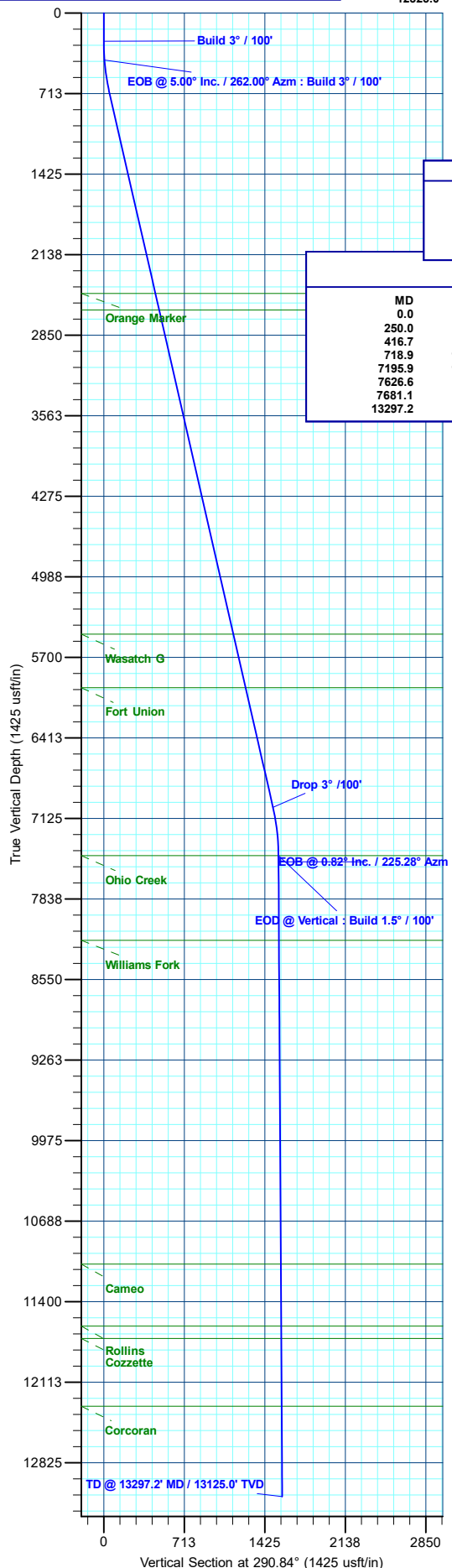


DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
11B-27 - OHCR	7455.0	618.5	-1419.0	14516843.36	2404674.43	39.942657	-108.273538
11B-27 - PBHL	13125.0	561.9	-1476.2	14516785.00	2404619.00	39.942502	-108.273742
11B-27 - target	13125.0	530.0	-1480.0	14516753.04	2404616.17	39.942415	-108.273756

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
250.0	0.00	0.00	250.0	0.0	0.0	0.00	0.00	0.0	Build 3° / 100'
416.7	5.00	262.00	416.5	-1.0	-7.2	3.00	262.00	6.4	EOB @ 5.00° Inc. / 262.00° Azm : Build 3° / 100'
718.9	12.92	293.95	714.9	10.9	-51.2	3.00	48.67	51.7	EOB @ 12.92° Inc. / 293.95° Azm
7195.9	12.92	293.95	7027.9	598.9	-1374.8	0.00	0.00	1497.9	Drop 3° / 100'
7626.6	0.00	0.00	7455.0	618.5	-1419.0	3.00	180.00	1546.2	EOD @ Vertical : Build 1.5° / 100'
7681.1	0.82	225.28	7509.5	618.2	-1419.3	1.50	225.28	1546.4	EOB @ 0.82° Inc. / 225.28° Azm
13297.2	0.82	225.28	13125.0	561.9	-1476.2	0.00	0.00	1579.5	TD @ 13297.2' MD / 13125.0' TVD





QB Energy Operating, LLC

Rio Blanco County, CO

PCU B27 197 Pad

PCU B27 FED 11B-27 197 - Slot 11B-27

OH

Plan: Prelim #4

KLX Well Planning Report

18 June, 2025



Database:	KLXDirectional-AD	Local Co-ordinate Reference:	Well PCU B27 FED 11B-27 197 - Slot 11B-27
Company:	QB Energy Operating, LLC	TVD Reference:	WELL @ 6540.0usft (30')
Project:	Rio Blanco County, CO	MD Reference:	WELL @ 6540.0usft (30')
Site:	PCU B27 197 Pad	North Reference:	True
Well:	PCU B27 FED 11B-27 197	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Prelim #4		

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 11B-27 197 - Slot 11B-27					
Well Position	+N/-S	22.5 usft	Northing:	14,516,268.60 usft	Latitude:	39.940960
	+E/-W	-8.4 usft	Easting:	2,406,111.70 usft	Longitude:	-108.268479
Position Uncertainty		0.0 usft	Wellhead Elevation:		Ground Level:	6,510.0 usft

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

Design	Prelim #4
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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 0.0 290.84

Plan Sections	
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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	
250.0	0.00	0.00	250.0	0.0	0.0	0.00	0.00	0.00	0.00	
416.7	5.00	262.00	416.5	-1.0	-7.2	3.00	3.00	0.00	262.00	
718.9	12.92	293.95	714.9	10.9	-51.2	3.00	2.62	10.57	48.67	
7,195.9	12.92	293.95	7,027.9	598.9	-1,374.8	0.00	0.00	0.00	0.00	
7,626.6	0.00	0.00	7,455.0	618.5	-1,419.0	3.00	-3.00	0.00	180.00	11B-27 - OHCR
7,681.1	0.82	225.28	7,509.5	618.2	-1,419.3	1.50	1.50	-247.28	225.28	
13,297.2	0.82	225.28	13,125.0	561.9	-1,476.2	0.00	0.00	0.00	0.00	11B-27 - PBHL

Database:	KLXDirectional-AD	Local Co-ordinate Reference:	Well PCU B27 FED 11B-27 197 - Slot 11B-27
Company:	QB Energy Operating, LLC	TVD Reference:	WELL @ 6540.0usft (30')
Project:	Rio Blanco County, CO	MD Reference:	WELL @ 6540.0usft (30')
Site:	PCU B27 197 Pad	North Reference:	True
Well:	PCU B27 FED 11B-27 197	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Prelim #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)
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
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
Build 3° / 100'									
250.0	0.00	0.00	250.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	1.50	262.00	300.0	-0.1	-0.6	0.6	3.00	3.00	0.00
400.0	4.50	262.00	399.8	-0.8	-5.8	5.2	3.00	3.00	0.00
EOB @ 5.00° Inc. / 262.00° Azm : Build 3° / 100'									
416.7	5.00	262.00	416.5	-1.0	-7.2	6.4	3.00	3.00	0.00
500.0	6.91	277.80	499.3	-0.8	-15.8	14.4	3.00	2.29	18.96
600.0	9.57	287.66	598.3	2.5	-29.6	28.6	3.00	2.66	9.86
700.0	12.38	293.18	696.5	9.2	-47.4	47.6	3.00	2.81	5.52
EOB @ 12.92° Inc. / 293.95° Azm									
718.9	12.92	293.95	714.9	10.9	-51.2	51.7	3.00	2.86	4.10
800.0	12.92	293.95	794.0	18.3	-67.8	69.8	0.00	0.00	0.00
900.0	12.92	293.95	891.4	27.3	-88.2	92.2	0.00	0.00	0.00
1,000.0	12.92	293.95	988.9	36.4	-108.7	114.5	0.00	0.00	0.00
1,100.0	12.92	293.95	1,086.4	45.5	-129.1	136.8	0.00	0.00	0.00
1,200.0	12.92	293.95	1,183.8	54.6	-149.5	159.2	0.00	0.00	0.00
1,300.0	12.92	293.95	1,281.3	63.7	-170.0	181.5	0.00	0.00	0.00
1,400.0	12.92	293.95	1,378.8	72.7	-190.4	203.8	0.00	0.00	0.00
1,500.0	12.92	293.95	1,476.2	81.8	-210.8	226.1	0.00	0.00	0.00
1,600.0	12.92	293.95	1,573.7	90.9	-231.3	248.5	0.00	0.00	0.00
1,700.0	12.92	293.95	1,671.2	100.0	-251.7	270.8	0.00	0.00	0.00
1,800.0	12.92	293.95	1,768.6	109.0	-272.1	293.1	0.00	0.00	0.00
1,900.0	12.92	293.95	1,866.1	118.1	-292.6	315.5	0.00	0.00	0.00
2,000.0	12.92	293.95	1,963.6	127.2	-313.0	337.8	0.00	0.00	0.00
2,100.0	12.92	293.95	2,061.0	136.3	-333.4	360.1	0.00	0.00	0.00
2,200.0	12.92	293.95	2,158.5	145.3	-353.9	382.4	0.00	0.00	0.00
2,300.0	12.92	293.95	2,256.0	154.4	-374.3	404.8	0.00	0.00	0.00
2,400.0	12.92	293.95	2,353.4	163.5	-394.7	427.1	0.00	0.00	0.00
2,500.0	12.92	293.95	2,450.9	172.6	-415.2	449.4	0.00	0.00	0.00
Orange Marker									
2,530.9	12.92	293.95	2,481.0	175.4	-421.5	456.3	0.00	0.00	0.00
2,600.0	12.92	293.95	2,548.4	181.7	-435.6	471.7	0.00	0.00	0.00
Wasatch									
2,680.7	12.92	293.95	2,627.0	189.0	-452.1	489.8	0.00	0.00	0.00
2,700.0	12.92	293.95	2,645.8	190.7	-456.1	494.1	0.00	0.00	0.00
2,800.0	12.92	293.95	2,743.3	199.8	-476.5	516.4	0.00	0.00	0.00
2,900.0	12.92	293.95	2,840.8	208.9	-496.9	538.7	0.00	0.00	0.00
3,000.0	12.92	293.95	2,938.3	218.0	-517.4	561.1	0.00	0.00	0.00
3,100.0	12.92	293.95	3,035.7	227.0	-537.8	583.4	0.00	0.00	0.00
3,200.0	12.92	293.95	3,133.2	236.1	-558.2	605.7	0.00	0.00	0.00
3,300.0	12.92	293.95	3,230.7	245.2	-578.7	628.0	0.00	0.00	0.00
3,400.0	12.92	293.95	3,328.1	254.3	-599.1	650.4	0.00	0.00	0.00
3,500.0	12.92	293.95	3,425.6	263.4	-619.5	672.7	0.00	0.00	0.00
3,600.0	12.92	293.95	3,523.1	272.4	-640.0	695.0	0.00	0.00	0.00
3,700.0	12.92	293.95	3,620.5	281.5	-660.4	717.4	0.00	0.00	0.00
3,800.0	12.92	293.95	3,718.0	290.6	-680.8	739.7	0.00	0.00	0.00
3,900.0	12.92	293.95	3,815.5	299.7	-701.3	762.0	0.00	0.00	0.00
4,000.0	12.92	293.95	3,912.9	308.7	-721.7	784.3	0.00	0.00	0.00
4,100.0	12.92	293.95	4,010.4	317.8	-742.1	806.7	0.00	0.00	0.00
4,200.0	12.92	293.95	4,107.9	326.9	-762.6	829.0	0.00	0.00	0.00
4,300.0	12.92	293.95	4,205.3	336.0	-783.0	851.3	0.00	0.00	0.00

Database:	KLXDirectional-AD	Local Co-ordinate Reference:	Well PCU B27 FED 11B-27 197 - Slot 11B-27
Company:	QB Energy Operating, LLC	TVD Reference:	WELL @ 6540.0usft (30')
Project:	Rio Blanco County, CO	MD Reference:	WELL @ 6540.0usft (30')
Site:	PCU B27 197 Pad	North Reference:	True
Well:	PCU B27 FED 11B-27 197	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Prelim #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)
4,400.0	12.92	293.95	4,302.8	345.1	-803.5	873.6	0.00	0.00	0.00
4,500.0	12.92	293.95	4,400.3	354.1	-823.9	896.0	0.00	0.00	0.00
4,600.0	12.92	293.95	4,497.7	363.2	-844.3	918.3	0.00	0.00	0.00
4,700.0	12.92	293.95	4,595.2	372.3	-864.8	940.6	0.00	0.00	0.00
4,800.0	12.92	293.95	4,692.7	381.4	-885.2	963.0	0.00	0.00	0.00
4,900.0	12.92	293.95	4,790.1	390.4	-905.6	985.3	0.00	0.00	0.00
5,000.0	12.92	293.95	4,887.6	399.5	-926.1	1,007.6	0.00	0.00	0.00
5,100.0	12.92	293.95	4,985.1	408.6	-946.5	1,029.9	0.00	0.00	0.00
5,200.0	12.92	293.95	5,082.5	417.7	-966.9	1,052.3	0.00	0.00	0.00
5,300.0	12.92	293.95	5,180.0	426.8	-987.4	1,074.6	0.00	0.00	0.00
5,400.0	12.92	293.95	5,277.5	435.8	-1,007.8	1,096.9	0.00	0.00	0.00
5,500.0	12.92	293.95	5,374.9	444.9	-1,028.2	1,119.2	0.00	0.00	0.00
5,600.0	12.92	293.95	5,472.4	454.0	-1,048.7	1,141.6	0.00	0.00	0.00
Wasatch G									
5,624.2	12.92	293.95	5,496.0	456.2	-1,053.6	1,147.0	0.00	0.00	0.00
5,700.0	12.92	293.95	5,569.9	463.1	-1,069.1	1,163.9	0.00	0.00	0.00
5,800.0	12.92	293.95	5,667.4	472.1	-1,089.5	1,186.2	0.00	0.00	0.00
5,900.0	12.92	293.95	5,764.8	481.2	-1,110.0	1,208.6	0.00	0.00	0.00
6,000.0	12.92	293.95	5,862.3	490.3	-1,130.4	1,230.9	0.00	0.00	0.00
6,100.0	12.92	293.95	5,959.8	499.4	-1,150.8	1,253.2	0.00	0.00	0.00
Fort Union									
6,109.5	12.92	293.95	5,969.0	500.2	-1,152.8	1,255.3	0.00	0.00	0.00
6,200.0	12.92	293.95	6,057.2	508.5	-1,171.3	1,275.5	0.00	0.00	0.00
6,300.0	12.92	293.95	6,154.7	517.5	-1,191.7	1,297.9	0.00	0.00	0.00
6,400.0	12.92	293.95	6,252.2	526.6	-1,212.2	1,320.2	0.00	0.00	0.00
6,500.0	12.92	293.95	6,349.6	535.7	-1,232.6	1,342.5	0.00	0.00	0.00
6,600.0	12.92	293.95	6,447.1	544.8	-1,253.0	1,364.9	0.00	0.00	0.00
6,700.0	12.92	293.95	6,544.6	553.8	-1,273.5	1,387.2	0.00	0.00	0.00
6,800.0	12.92	293.95	6,642.0	562.9	-1,293.9	1,409.5	0.00	0.00	0.00
6,900.0	12.92	293.95	6,739.5	572.0	-1,314.3	1,431.8	0.00	0.00	0.00
7,000.0	12.92	293.95	6,837.0	581.1	-1,334.8	1,454.2	0.00	0.00	0.00
7,100.0	12.92	293.95	6,934.4	590.2	-1,355.2	1,476.5	0.00	0.00	0.00
Drop 3° /100'									
7,195.9	12.92	293.95	7,027.9	598.9	-1,374.8	1,497.9	0.00	0.00	0.00
7,200.0	12.80	293.95	7,031.9	599.2	-1,375.6	1,498.8	3.00	-3.00	0.00
7,300.0	9.80	293.95	7,130.0	607.2	-1,393.5	1,518.4	3.00	-3.00	0.00
7,400.0	6.80	293.95	7,228.9	613.0	-1,406.7	1,532.8	3.00	-3.00	0.00
7,500.0	3.80	293.95	7,328.5	616.8	-1,415.2	1,542.0	3.00	-3.00	0.00
7,600.0	0.80	293.95	7,428.4	618.4	-1,418.8	1,546.0	3.00	-3.00	0.00
EOD @ Vertical : Build 1.5° / 100' - Ohio Creek									
7,626.6	0.00	0.00	7,455.0	618.5	-1,419.0	1,546.2	3.00	-3.00	0.00
EOB @ 0.82° Inc. / 225.28° Azm									
7,681.1	0.82	225.28	7,509.5	618.2	-1,419.3	1,546.4	1.50	1.50	0.00
7,700.0	0.82	225.28	7,528.4	618.0	-1,419.5	1,546.5	0.00	0.00	0.00
7,800.0	0.82	225.28	7,628.4	617.0	-1,420.5	1,547.1	0.00	0.00	0.00
7,900.0	0.82	225.28	7,728.3	616.0	-1,421.5	1,547.7	0.00	0.00	0.00
8,000.0	0.82	225.28	7,828.3	615.0	-1,422.5	1,548.2	0.00	0.00	0.00
8,100.0	0.82	225.28	7,928.3	614.0	-1,423.5	1,548.8	0.00	0.00	0.00
8,200.0	0.82	225.28	8,028.3	613.0	-1,424.5	1,549.4	0.00	0.00	0.00
8,300.0	0.82	225.28	8,128.3	612.0	-1,425.5	1,550.0	0.00	0.00	0.00
Williams Fork									
8,376.7	0.82	225.28	8,205.0	611.2	-1,426.3	1,550.5	0.00	0.00	0.00
8,400.0	0.82	225.28	8,228.3	611.0	-1,426.6	1,550.6	0.00	0.00	0.00

Database:	KLXDirectional-AD	Local Co-ordinate Reference:	Well PCU B27 FED 11B-27 197 - Slot 11B-27
Company:	QB Energy Operating, LLC	TVD Reference:	WELL @ 6540.0usft (30')
Project:	Rio Blanco County, CO	MD Reference:	WELL @ 6540.0usft (30')
Site:	PCU B27 197 Pad	North Reference:	True
Well:	PCU B27 FED 11B-27 197	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Prelim #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)	
8,500.0	0.82	225.28	8,328.3	610.0	-1,427.6	1,551.2	0.00	0.00	0.00	
8,600.0	0.82	225.28	8,428.3	609.0	-1,428.6	1,551.8	0.00	0.00	0.00	
8,700.0	0.82	225.28	8,528.3	608.0	-1,429.6	1,552.4	0.00	0.00	0.00	
8,800.0	0.82	225.28	8,628.3	607.0	-1,430.6	1,553.0	0.00	0.00	0.00	
8,900.0	0.82	225.28	8,728.2	606.0	-1,431.6	1,553.6	0.00	0.00	0.00	
9,000.0	0.82	225.28	8,828.2	605.0	-1,432.6	1,554.1	0.00	0.00	0.00	
9,100.0	0.82	225.28	8,928.2	604.0	-1,433.7	1,554.7	0.00	0.00	0.00	
9,200.0	0.82	225.28	9,028.2	603.0	-1,434.7	1,555.3	0.00	0.00	0.00	
9,300.0	0.82	225.28	9,128.2	602.0	-1,435.7	1,555.9	0.00	0.00	0.00	
9,400.0	0.82	225.28	9,228.2	601.0	-1,436.7	1,556.5	0.00	0.00	0.00	
9,500.0	0.82	225.28	9,328.2	600.0	-1,437.7	1,557.1	0.00	0.00	0.00	
9,600.0	0.82	225.28	9,428.2	599.0	-1,438.7	1,557.7	0.00	0.00	0.00	
9,700.0	0.82	225.28	9,528.2	598.0	-1,439.7	1,558.3	0.00	0.00	0.00	
9,800.0	0.82	225.28	9,628.1	597.0	-1,440.7	1,558.9	0.00	0.00	0.00	
9,900.0	0.82	225.28	9,728.1	596.0	-1,441.8	1,559.5	0.00	0.00	0.00	
10,000.0	0.82	225.28	9,828.1	595.0	-1,442.8	1,560.0	0.00	0.00	0.00	
10,100.0	0.82	225.28	9,928.1	593.9	-1,443.8	1,560.6	0.00	0.00	0.00	
10,200.0	0.82	225.28	10,028.1	592.9	-1,444.8	1,561.2	0.00	0.00	0.00	
10,300.0	0.82	225.28	10,128.1	591.9	-1,445.8	1,561.8	0.00	0.00	0.00	
10,400.0	0.82	225.28	10,228.1	590.9	-1,446.8	1,562.4	0.00	0.00	0.00	
10,500.0	0.82	225.28	10,328.1	589.9	-1,447.8	1,563.0	0.00	0.00	0.00	
10,600.0	0.82	225.28	10,428.1	588.9	-1,448.9	1,563.6	0.00	0.00	0.00	
10,700.0	0.82	225.28	10,528.1	587.9	-1,449.9	1,564.2	0.00	0.00	0.00	
10,800.0	0.82	225.28	10,628.0	586.9	-1,450.9	1,564.8	0.00	0.00	0.00	
10,900.0	0.82	225.28	10,728.0	585.9	-1,451.9	1,565.4	0.00	0.00	0.00	
11,000.0	0.82	225.28	10,828.0	584.9	-1,452.9	1,565.9	0.00	0.00	0.00	
11,100.0	0.82	225.28	10,928.0	583.9	-1,453.9	1,566.5	0.00	0.00	0.00	
11,200.0	0.82	225.28	11,028.0	582.9	-1,454.9	1,567.1	0.00	0.00	0.00	
Cameo										
11,240.0	0.82	225.28	11,068.0	582.5	-1,455.3	1,567.4	0.00	0.00	0.00	
11,300.0	0.82	225.28	11,128.0	581.9	-1,455.9	1,567.7	0.00	0.00	0.00	
11,400.0	0.82	225.28	11,228.0	580.9	-1,457.0	1,568.3	0.00	0.00	0.00	
11,500.0	0.82	225.28	11,328.0	579.9	-1,458.0	1,568.9	0.00	0.00	0.00	
11,600.0	0.82	225.28	11,428.0	578.9	-1,459.0	1,569.5	0.00	0.00	0.00	
11,700.0	0.82	225.28	11,528.0	577.9	-1,460.0	1,570.1	0.00	0.00	0.00	
Rollins										
11,790.1	0.82	225.28	11,618.0	577.0	-1,460.9	1,570.6	0.00	0.00	0.00	
11,800.0	0.82	225.28	11,627.9	576.9	-1,461.0	1,570.7	0.00	0.00	0.00	
Cozette										
11,897.1	0.82	225.28	11,725.0	575.9	-1,462.0	1,571.2	0.00	0.00	0.00	
11,900.0	0.82	225.28	11,727.9	575.9	-1,462.0	1,571.3	0.00	0.00	0.00	
12,000.0	0.82	225.28	11,827.9	574.9	-1,463.0	1,571.8	0.00	0.00	0.00	
12,100.0	0.82	225.28	11,927.9	573.9	-1,464.1	1,572.4	0.00	0.00	0.00	
12,200.0	0.82	225.28	12,027.9	572.9	-1,465.1	1,573.0	0.00	0.00	0.00	
12,300.0	0.82	225.28	12,127.9	571.9	-1,466.1	1,573.6	0.00	0.00	0.00	
12,400.0	0.82	225.28	12,227.9	570.9	-1,467.1	1,574.2	0.00	0.00	0.00	
Corcoran										
12,497.1	0.82	225.28	12,325.0	569.9	-1,468.1	1,574.8	0.00	0.00	0.00	
12,500.0	0.82	225.28	12,327.9	569.9	-1,468.1	1,574.8	0.00	0.00	0.00	
12,600.0	0.82	225.28	12,427.9	568.9	-1,469.1	1,575.4	0.00	0.00	0.00	
12,700.0	0.82	225.28	12,527.9	567.9	-1,470.1	1,576.0	0.00	0.00	0.00	
12,800.0	0.82	225.28	12,627.8	566.9	-1,471.2	1,576.6	0.00	0.00	0.00	
12,900.0	0.82	225.28	12,727.8	565.8	-1,472.2	1,577.2	0.00	0.00	0.00	

Database:	KLXDirectional-AD	Local Co-ordinate Reference:	Well PCU B27 FED 11B-27 197 - Slot 11B-27
Company:	QB Energy Operating, LLC	TVD Reference:	WELL @ 6540.0usft (30')
Project:	Rio Blanco County, CO	MD Reference:	WELL @ 6540.0usft (30')
Site:	PCU B27 197 Pad	North Reference:	True
Well:	PCU B27 FED 11B-27 197	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Prelim #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)	
13,000.0	0.82	225.28	12,827.8	564.8	-1,473.2	1,577.7	0.00	0.00	0.00	
13,100.0	0.82	225.28	12,927.8	563.8	-1,474.2	1,578.3	0.00	0.00	0.00	
13,200.0	0.82	225.28	13,027.8	562.8	-1,475.2	1,578.9	0.00	0.00	0.00	
TD @ 13297.2' MD / 13125.0' TVD										
13,297.2	0.82	225.28	13,125.0	561.9	-1,476.2	1,579.5	0.00	0.00	0.00	

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
11B-27 - OHCR	- plan hits target center	0.00	0.00	7,455.0	618.5	-1,419.0	14,516,843.37	2,404,674.43	39.942658	-108.273539
	- Point									
11B-27 - target	- plan misses target center by 32.1usft at 13297.2usft MD (13125.0 TVD, 561.9 N, -1476.2 E)	0.00	0.00	13,125.0	530.0	-1,480.0	14,516,753.04	2,404,616.17	39.942415	-108.273756
	- Ellipse (radii L100.0 W50.0 on 215.00 azi)									
11B-27 - PBHL	- plan hits target center	0.00	0.00	13,125.0	561.9	-1,476.2	14,516,785.00	2,404,619.00	39.942502	-108.273743
	- Point									

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
2,530.9	2,481.0	Orange Marker				
2,680.7	2,627.0	Wasatch				
5,624.2	5,496.0	Wasatch G				
6,109.5	5,969.0	Fort Union				
7,626.6	7,455.0	Ohio Creek				
8,376.7	8,205.0	Williams Fork				
11,240.0	11,068.0	Cameo				
11,790.1	11,618.0	Rollins				
11,897.1	11,725.0	Cozzette				
12,497.1	12,325.0	Corcoran				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Comment	
250.0	250.0	0.0	0.0	Build 3° / 100'	
416.7	416.5	-1.0	-7.2	EOB @ 5.00° Inc. / 262.00° Azm : Build 3° / 100'	
718.9	714.9	10.9	-51.2	EOB @ 12.92° Inc. / 293.95° Azm	
7,195.9	7,027.9	598.9	-1,374.8	Drop 3° / 100'	
7,626.6	7,455.0	618.5	-1,419.0	EOD @ Vertical : Build 1.5° / 100'	
7,681.1	7,509.5	618.2	-1,419.3	EOB @ 0.82° Inc. / 225.28° Azm	
13,297.2	13,125.0	561.9	-1,476.2	TD @ 13297.2' MD / 13125.0' TVD	