

Longs Peak Resources
 Project: Weld County, CO
 Site: Southblock Ph 2 - Oxnard West Pad SEC.31-T12N-R66W
 Well: Oxnard West 3130-4CH
 Wellbore: Wellbore #1
 Design: Design #1
 Lat: 40.95897°N
 Long: 104.82281°W
 Pad GL: 6011.0
 KB: GL 6011 + 25 KB @ 6036.0usft

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	
2600.0	0.00	0.00	2600.0	0.0	0.0	0.00	0.00	0.0	
3060.7	9.21	207.90	3058.7	-32.7	-17.3	2.00	207.90	-31.9	
7755.9	9.21	207.90	7693.3	-697.0	-369.1	0.00	0.00	-681.6	
8216.5	0.00	0.00	8152.0	-729.7	-386.4	2.00	180.00	-713.5	
8716.5	0.00	0.00	8652.0	-729.7	-386.4	0.00	0.00	-713.5	
9616.5	90.00	359.97	9225.0	-156.7	-386.7	10.00	359.97	-141.0	
19476.2	90.00	359.97	9225.0	9702.9	-392.1	0.00	0.00	9710.9	

WELL DETAILS: Oxnard West 3130-4CH

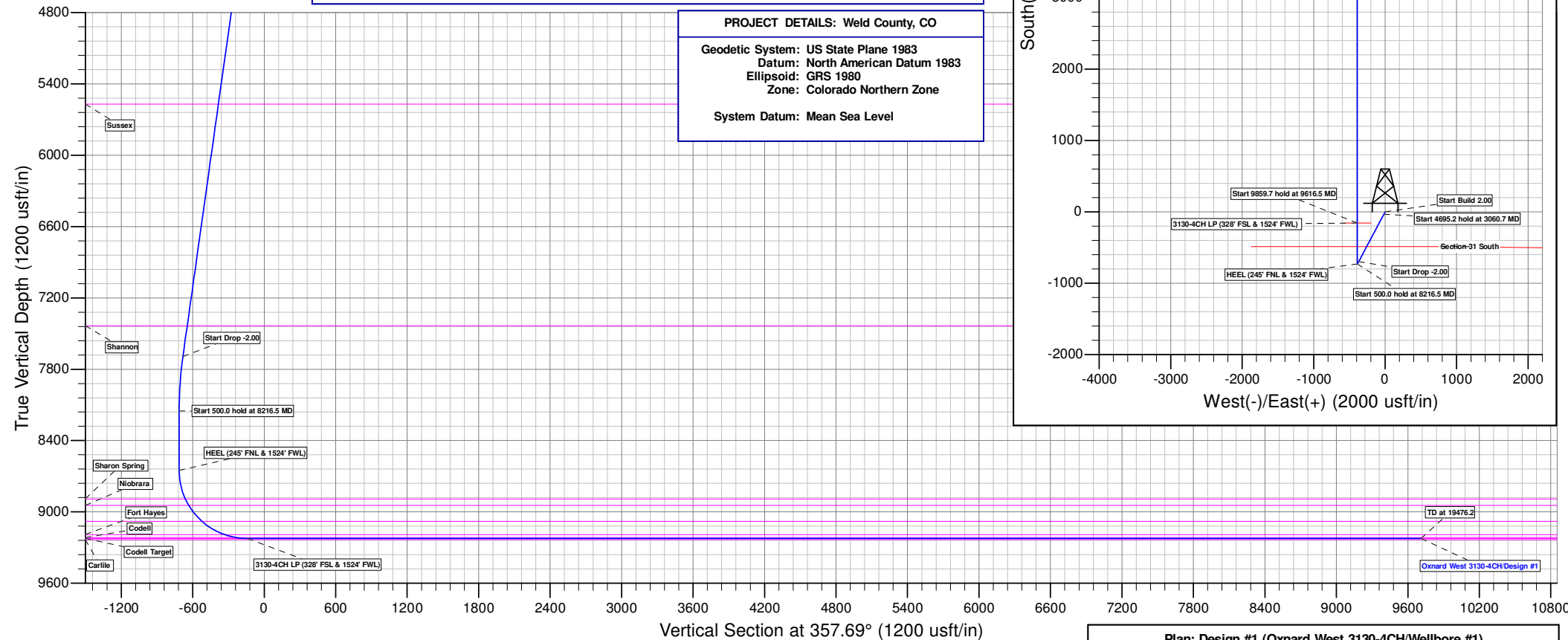
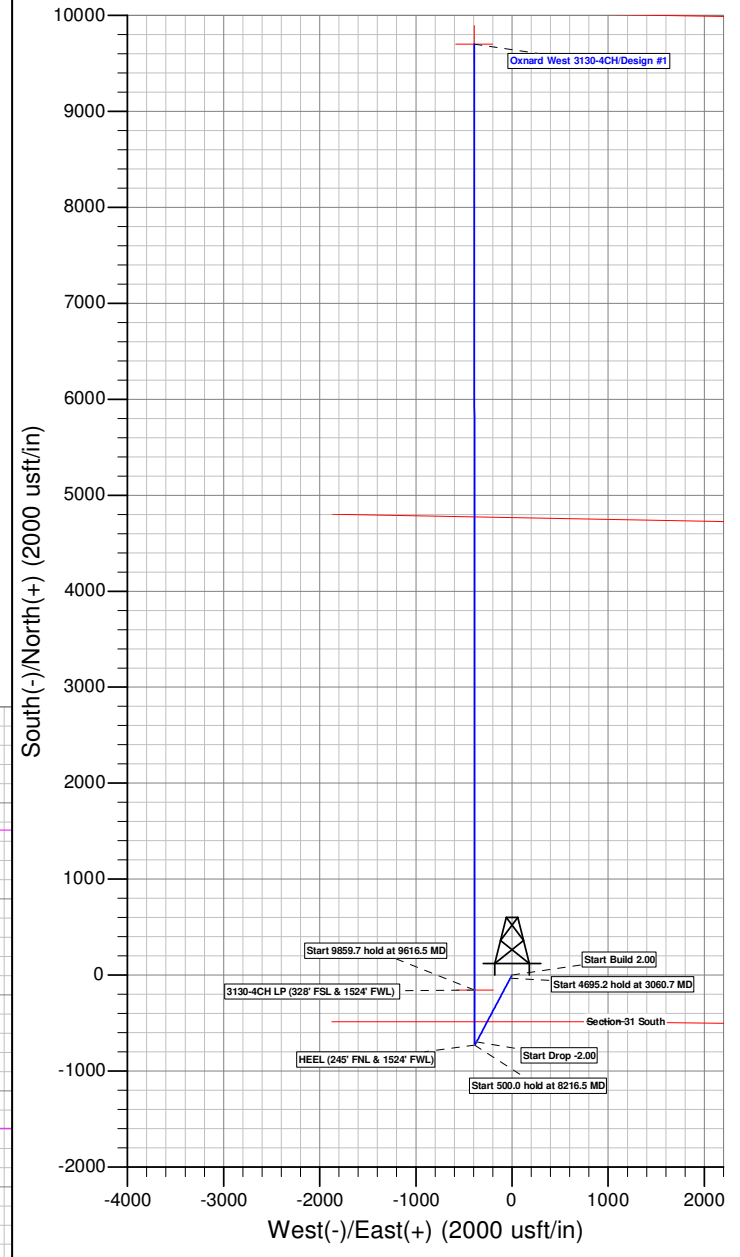
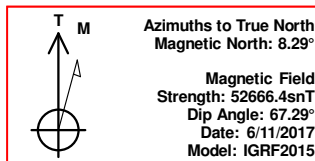
+N/-S	+E/-W	Northing	Easting	6011.0	Latitude	Longitude	Slot
0.0	0.0	1592921.33	3187047.41		40.95897°N	104.82281°W	

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
3130-4CH BHL	9225.0	9702.9	-392.1	40.98560°N	104.82423°W	
3130-4CH LP	9225.0	-156.7	-386.7	40.95854°N	104.82421°W	Point

PROJECT DETAILS: Weld County, CO

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



Plan: Design #1 (Oxnard West 3130-4CH/Wellbore #1)

Created By: Stephanie Sneesby

Date: 18:21, June 28 2017

Longs Peak Resources

Weld County, CO

Southblock Ph 2 - Oxnard West Pad SEC.31-T12N-R66W

Oxnard West 3130-4CH

Wellbore #1

Plan: Design #1

Standard Planning Report

25 June, 2017

Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well Oxnard West 3130-4CH
Company:	Longs Peak Resources	TVD Reference:	GL 6011 + 25 KB @ 6036.0usft
Project:	Weld County, CO	MD Reference:	GL 6011 + 25 KB @ 6036.0usft
Site:	Southblock Ph 2 - Oxnard West Pad SEC.31-T12N-R66W	North Reference:	True
Well:	Oxnard West 3130-4CH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

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

Site		Southblock Ph 2 - Oxnard West Pad SEC.31-T12N-R66W			
Site Position:		Northing:	1,592,920.72 usft	Latitude:	40.95897°N
From:	Lat/Long	Easting:	3,186,967.31 usft	Longitude:	104.82310°W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.44 °

Well	Oxnard West 3130-4CH					
Well Position	+N/-S	0.0 usft	Northing:	1,592,921.33 usft	Latitude:	40.95897°N
	+E/-W	80.1 usft	Easting:	3,187,047.41 usft	Longitude:	104.82281°W
Position Uncertainty		0.0 usft	Wellhead Elevation:	25.0 usft	Ground Level:	6,011.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	6/11/2017	8.29	67.29	52,666.43587653

Design	Design #1				
Audit Notes:					
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	9,225.0	0.0	0.0	357.69	

Plan Survey Tool Program	Date	6/25/2017			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.0	2,600.0	Design #1 (Wellbore #1)		

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	
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.00	0.00	0.00	0.00	

Planning Report

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Project:	Weld County, CO	MD Reference:	GL 6011 + 25 KB @ 6036.0usft
Site:	Southblock Ph 2 - Oxnard West Pad SEC.31-T12N-R66W	North Reference:	True
Well:	Oxnard West 3130-4CH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #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)	
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	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00	
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00	
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,153.0	0.00	0.00	2,153.0	0.0	0.0	0.0	0.00	0.00	0.00	
Fox Hills										
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,427.0	0.00	0.00	2,427.0	0.0	0.0	0.0	0.00	0.00	0.00	
Pierre										
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,700.0	2.00	207.90	2,700.0	-1.5	-0.8	-1.5	2.00	2.00	0.00	
2,782.1	3.64	207.90	2,782.0	-5.1	-2.7	-5.0	2.00	2.00	0.00	
Teapot										
2,800.0	4.00	207.90	2,799.8	-6.2	-3.3	-6.0	2.00	2.00	0.00	
2,900.0	6.00	207.90	2,899.5	-13.9	-7.3	-13.6	2.00	2.00	0.00	
3,000.0	8.00	207.90	2,998.7	-24.6	-13.0	-24.1	2.00	2.00	0.00	
3,060.7	9.21	207.90	3,058.7	-32.7	-17.3	-31.9	2.00	2.00	0.00	
3,100.0	9.21	207.90	3,097.5	-38.2	-20.2	-37.4	0.00	0.00	0.00	
3,200.0	9.21	207.90	3,196.2	-52.4	-27.7	-51.2	0.00	0.00	0.00	
3,300.0	9.21	207.90	3,294.9	-66.5	-35.2	-65.1	0.00	0.00	0.00	
3,400.0	9.21	207.90	3,393.6	-80.7	-42.7	-78.9	0.00	0.00	0.00	
3,500.0	9.21	207.90	3,492.3	-94.8	-50.2	-92.7	0.00	0.00	0.00	
3,600.0	9.21	207.90	3,591.1	-109.0	-57.7	-106.6	0.00	0.00	0.00	
3,700.0	9.21	207.90	3,689.8	-123.1	-65.2	-120.4	0.00	0.00	0.00	
3,800.0	9.21	207.90	3,788.5	-137.3	-72.7	-134.2	0.00	0.00	0.00	
3,900.0	9.21	207.90	3,887.2	-151.4	-80.2	-148.1	0.00	0.00	0.00	
4,000.0	9.21	207.90	3,985.9	-165.6	-87.7	-161.9	0.00	0.00	0.00	
4,100.0	9.21	207.90	4,084.6	-179.7	-95.2	-175.7	0.00	0.00	0.00	
4,200.0	9.21	207.90	4,183.3	-193.9	-102.7	-189.6	0.00	0.00	0.00	
4,300.0	9.21	207.90	4,282.0	-208.0	-110.2	-203.4	0.00	0.00	0.00	
4,400.0	9.21	207.90	4,380.7	-222.2	-117.7	-217.2	0.00	0.00	0.00	
4,500.0	9.21	207.90	4,479.4	-236.3	-125.1	-231.1	0.00	0.00	0.00	

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Project:	Weld County, CO	MD Reference:	GL 6011 + 25 KB @ 6036.0usft
Site:	Southblock Ph 2 - Oxnard West Pad SEC.31-T12N-R66W	North Reference:	True
Well:	Oxnard West 3130-4CH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #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)	
4,600.0	9.21	207.90	4,578.2	-250.5	-132.6	-244.9	0.00	0.00	0.00	
4,694.1	9.21	207.90	4,671.0	-263.8	-139.7	-257.9	0.00	0.00	0.00	
Parkman										
4,700.0	9.21	207.90	4,676.9	-264.6	-140.1	-258.8	0.00	0.00	0.00	
4,800.0	9.21	207.90	4,775.6	-278.8	-147.6	-272.6	0.00	0.00	0.00	
4,900.0	9.21	207.90	4,874.3	-292.9	-155.1	-286.4	0.00	0.00	0.00	
5,000.0	9.21	207.90	4,973.0	-307.1	-162.6	-300.3	0.00	0.00	0.00	
5,100.0	9.21	207.90	5,071.7	-321.2	-170.1	-314.1	0.00	0.00	0.00	
5,200.0	9.21	207.90	5,170.4	-335.4	-177.6	-327.9	0.00	0.00	0.00	
5,300.0	9.21	207.90	5,269.1	-349.5	-185.1	-341.8	0.00	0.00	0.00	
5,400.0	9.21	207.90	5,367.8	-363.7	-192.6	-355.6	0.00	0.00	0.00	
5,500.0	9.21	207.90	5,466.5	-377.8	-200.1	-369.4	0.00	0.00	0.00	
5,600.0	9.21	207.90	5,565.3	-392.0	-207.6	-383.3	0.00	0.00	0.00	
5,605.8	9.21	207.90	5,571.0	-392.8	-208.0	-384.1	0.00	0.00	0.00	
Sussex										
5,700.0	9.21	207.90	5,664.0	-406.1	-215.1	-397.1	0.00	0.00	0.00	
5,800.0	9.21	207.90	5,762.7	-420.3	-222.6	-411.0	0.00	0.00	0.00	
5,900.0	9.21	207.90	5,861.4	-434.4	-230.0	-424.8	0.00	0.00	0.00	
6,000.0	9.21	207.90	5,960.1	-448.6	-237.5	-438.6	0.00	0.00	0.00	
6,100.0	9.21	207.90	6,058.8	-462.7	-245.0	-452.5	0.00	0.00	0.00	
6,200.0	9.21	207.90	6,157.5	-476.9	-252.5	-466.3	0.00	0.00	0.00	
6,300.0	9.21	207.90	6,256.2	-491.0	-260.0	-480.1	0.00	0.00	0.00	
6,400.0	9.21	207.90	6,354.9	-505.2	-267.5	-494.0	0.00	0.00	0.00	
6,500.0	9.21	207.90	6,453.6	-519.3	-275.0	-507.8	0.00	0.00	0.00	
6,600.0	9.21	207.90	6,552.4	-533.5	-282.5	-521.6	0.00	0.00	0.00	
6,700.0	9.21	207.90	6,651.1	-547.6	-290.0	-535.5	0.00	0.00	0.00	
6,800.0	9.21	207.90	6,749.8	-561.8	-297.5	-549.3	0.00	0.00	0.00	
6,900.0	9.21	207.90	6,848.5	-575.9	-305.0	-563.1	0.00	0.00	0.00	
7,000.0	9.21	207.90	6,947.2	-590.1	-312.5	-577.0	0.00	0.00	0.00	
7,100.0	9.21	207.90	7,045.9	-604.2	-320.0	-590.8	0.00	0.00	0.00	
7,200.0	9.21	207.90	7,144.6	-618.4	-327.5	-604.7	0.00	0.00	0.00	
7,300.0	9.21	207.90	7,243.3	-632.5	-334.9	-618.5	0.00	0.00	0.00	
7,400.0	9.21	207.90	7,342.0	-646.7	-342.4	-632.3	0.00	0.00	0.00	
7,495.2	9.21	207.90	7,436.0	-660.2	-349.6	-645.5	0.00	0.00	0.00	
Shannon										
7,500.0	9.21	207.90	7,440.7	-660.8	-349.9	-646.2	0.00	0.00	0.00	
7,600.0	9.21	207.90	7,539.5	-675.0	-357.4	-660.0	0.00	0.00	0.00	
7,700.0	9.21	207.90	7,638.2	-689.1	-364.9	-673.8	0.00	0.00	0.00	
7,755.9	9.21	207.90	7,693.3	-697.0	-369.1	-681.6	0.00	0.00	0.00	
7,800.0	8.33	207.90	7,736.9	-703.0	-372.3	-687.4	2.00	-2.00	0.00	
7,900.0	6.33	207.90	7,836.1	-714.3	-378.2	-698.4	2.00	-2.00	0.00	
8,000.0	4.33	207.90	7,935.7	-722.5	-382.6	-706.4	2.00	-2.00	0.00	
8,100.0	2.33	207.90	8,035.5	-727.6	-385.3	-711.5	2.00	-2.00	0.00	
8,200.0	0.33	207.90	8,135.5	-729.7	-386.4	-713.5	2.00	-2.00	0.00	
8,216.5	0.00	0.00	8,152.0	-729.7	-386.4	-713.5	2.00	-2.00	0.00	
8,300.0	0.00	0.00	8,235.5	-729.7	-386.4	-713.5	0.00	0.00	0.00	
8,400.0	0.00	0.00	8,335.5	-729.7	-386.4	-713.5	0.00	0.00	0.00	
8,500.0	0.00	0.00	8,435.5	-729.7	-386.4	-713.5	0.00	0.00	0.00	
8,600.0	0.00	0.00	8,535.5	-729.7	-386.4	-713.5	0.00	0.00	0.00	
8,700.0	0.00	0.00	8,635.5	-729.7	-386.4	-713.5	0.00	0.00	0.00	
8,716.5	0.00	0.00	8,652.0	-729.7	-386.4	-713.5	0.00	0.00	0.00	
8,750.0	3.35	359.97	8,685.4	-728.7	-386.4	-712.5	10.00	10.00	0.00	
8,800.0	8.35	359.97	8,735.2	-723.6	-386.4	-707.4	10.00	10.00	0.00	

Planning Report

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Project:	Weld County, CO	MD Reference:	GL 6011 + 25 KB @ 6036.0usft
Site:	Southblock Ph 2 - Oxnard West Pad SEC.31-T12N-R66W	North Reference:	True
Well:	Oxnard West 3130-4CH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #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)	
8,850.0	13.35	359.97	8,784.3	-714.2	-386.4	-698.0	10.00	10.00	0.00	
8,900.0	18.35	359.97	8,832.3	-700.6	-386.4	-684.4	10.00	10.00	0.00	
8,950.0	23.35	359.97	8,879.1	-682.8	-386.4	-666.6	10.00	10.00	0.00	
8,963.1	24.65	359.97	8,891.0	-677.5	-386.4	-661.3	10.00	10.00	0.00	
Sharon Spring										
9,000.0	28.35	359.97	8,924.0	-661.0	-386.4	-644.9	10.00	10.00	0.00	
9,025.3	30.87	359.97	8,946.0	-648.5	-386.4	-632.4	10.00	10.00	0.00	
Niobrara										
9,050.0	33.35	359.97	8,966.9	-635.4	-386.5	-619.3	10.00	10.00	0.00	
9,100.0	38.35	359.97	9,007.5	-606.1	-386.5	-590.0	10.00	10.00	0.00	
9,150.0	43.35	359.97	9,045.3	-573.4	-386.5	-557.3	10.00	10.00	0.00	
9,200.0	48.35	359.97	9,080.1	-537.5	-386.5	-521.5	10.00	10.00	0.00	
9,201.4	48.48	359.97	9,081.0	-536.5	-386.5	-520.5	10.00	10.00	0.00	
Niobrara Target										
9,250.0	53.35	359.97	9,111.7	-498.8	-386.5	-482.8	10.00	10.00	0.00	
9,300.0	58.35	359.97	9,139.7	-457.4	-386.5	-441.4	10.00	10.00	0.00	
9,350.0	63.35	359.97	9,164.1	-413.8	-386.6	-397.8	10.00	10.00	0.00	
9,400.0	68.35	359.97	9,184.5	-368.2	-386.6	-352.3	10.00	10.00	0.00	
9,418.3	70.17	359.97	9,191.0	-351.1	-386.6	-335.2	10.00	10.00	0.00	
Fort Hayes										
9,450.0	73.35	359.97	9,200.9	-320.9	-386.6	-305.1	10.00	10.00	0.00	
9,500.0	78.35	359.97	9,213.1	-272.5	-386.6	-256.6	10.00	10.00	0.00	
9,515.1	79.86	359.97	9,216.0	-257.7	-386.7	-241.8	10.00	10.00	0.00	
Codell										
9,550.0	83.35	359.97	9,221.1	-223.1	-386.7	-207.3	10.00	10.00	0.00	
9,600.0	88.35	359.97	9,224.7	-173.3	-386.7	-157.5	10.00	10.00	0.00	
9,616.5	90.00	359.97	9,225.0	-156.7	-386.7	-141.0	10.00	10.00	0.00	
Codell Target										
9,616.6	90.00	359.97	9,225.0	-156.7	-386.7	-140.9	0.00	0.00	0.00	
3130-4CH LP										
9,700.0	90.00	359.97	9,225.0	-73.3	-386.8	-57.6	0.00	0.00	0.00	
9,800.0	90.00	359.97	9,225.0	26.7	-386.8	42.3	0.00	0.00	0.00	
9,900.0	90.00	359.97	9,225.0	126.7	-386.9	142.2	0.00	0.00	0.00	
10,000.0	90.00	359.97	9,225.0	226.7	-386.9	242.2	0.00	0.00	0.00	
10,100.0	90.00	359.97	9,225.0	326.7	-387.0	342.1	0.00	0.00	0.00	
10,200.0	90.00	359.97	9,225.0	426.7	-387.0	442.0	0.00	0.00	0.00	
10,300.0	90.00	359.97	9,225.0	526.7	-387.1	541.9	0.00	0.00	0.00	
10,400.0	90.00	359.97	9,225.0	626.7	-387.1	641.8	0.00	0.00	0.00	
10,500.0	90.00	359.97	9,225.0	726.7	-387.2	741.8	0.00	0.00	0.00	
10,600.0	90.00	359.97	9,225.0	826.7	-387.2	841.7	0.00	0.00	0.00	
10,700.0	90.00	359.97	9,225.0	926.7	-387.3	941.6	0.00	0.00	0.00	
10,800.0	90.00	359.97	9,225.0	1,026.7	-387.4	1,041.5	0.00	0.00	0.00	
10,900.0	90.00	359.97	9,225.0	1,126.7	-387.4	1,141.4	0.00	0.00	0.00	
11,000.0	90.00	359.97	9,225.0	1,226.7	-387.5	1,241.4	0.00	0.00	0.00	
11,100.0	90.00	359.97	9,225.0	1,326.7	-387.5	1,341.3	0.00	0.00	0.00	
11,200.0	90.00	359.97	9,225.0	1,426.7	-387.6	1,441.2	0.00	0.00	0.00	
11,300.0	90.00	359.97	9,225.0	1,526.7	-387.6	1,541.1	0.00	0.00	0.00	
11,400.0	90.00	359.97	9,225.0	1,626.7	-387.7	1,641.0	0.00	0.00	0.00	
11,500.0	90.00	359.97	9,225.0	1,726.7	-387.7	1,741.0	0.00	0.00	0.00	
11,600.0	90.00	359.97	9,225.0	1,826.7	-387.8	1,840.9	0.00	0.00	0.00	
11,700.0	90.00	359.97	9,225.0	1,926.7	-387.8	1,940.8	0.00	0.00	0.00	
11,800.0	90.00	359.97	9,225.0	2,026.7	-387.9	2,040.7	0.00	0.00	0.00	

Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well Oxnard West 3130-4CH
Company:	Longs Peak Resources	TVD Reference:	GL 6011 + 25 KB @ 6036.0usft
Project:	Weld County, CO	MD Reference:	GL 6011 + 25 KB @ 6036.0usft
Site:	Southblock Ph 2 - Oxnard West Pad SEC.31-T12N-R66W	North Reference:	True
Well:	Oxnard West 3130-4CH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #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)
11,900.0	90.00	359.97	9,225.0	2,126.7	-388.0	2,140.6	0.00	0.00	0.00
12,000.0	90.00	359.97	9,225.0	2,226.7	-388.0	2,240.6	0.00	0.00	0.00
12,100.0	90.00	359.97	9,225.0	2,326.7	-388.1	2,340.5	0.00	0.00	0.00
12,200.0	90.00	359.97	9,225.0	2,426.7	-388.1	2,440.4	0.00	0.00	0.00
12,300.0	90.00	359.97	9,225.0	2,526.7	-388.2	2,540.3	0.00	0.00	0.00
12,400.0	90.00	359.97	9,225.0	2,626.7	-388.2	2,640.2	0.00	0.00	0.00
12,500.0	90.00	359.97	9,225.0	2,726.7	-388.3	2,740.2	0.00	0.00	0.00
12,600.0	90.00	359.97	9,225.0	2,826.7	-388.3	2,840.1	0.00	0.00	0.00
12,700.0	90.00	359.97	9,225.0	2,926.7	-388.4	2,940.0	0.00	0.00	0.00
12,800.0	90.00	359.97	9,225.0	3,026.7	-388.4	3,039.9	0.00	0.00	0.00
12,900.0	90.00	359.97	9,225.0	3,126.7	-388.5	3,139.9	0.00	0.00	0.00
13,000.0	90.00	359.97	9,225.0	3,226.7	-388.5	3,239.8	0.00	0.00	0.00
13,100.0	90.00	359.97	9,225.0	3,326.7	-388.6	3,339.7	0.00	0.00	0.00
13,200.0	90.00	359.97	9,225.0	3,426.7	-388.7	3,439.6	0.00	0.00	0.00
13,300.0	90.00	359.97	9,225.0	3,526.7	-388.7	3,539.5	0.00	0.00	0.00
13,400.0	90.00	359.97	9,225.0	3,626.7	-388.8	3,639.5	0.00	0.00	0.00
13,500.0	90.00	359.97	9,225.0	3,726.7	-388.8	3,739.4	0.00	0.00	0.00
13,600.0	90.00	359.97	9,225.0	3,826.7	-388.9	3,839.3	0.00	0.00	0.00
13,700.0	90.00	359.97	9,225.0	3,926.7	-388.9	3,939.2	0.00	0.00	0.00
13,800.0	90.00	359.97	9,225.0	4,026.7	-389.0	4,039.1	0.00	0.00	0.00
13,900.0	90.00	359.97	9,225.0	4,126.7	-389.0	4,139.1	0.00	0.00	0.00
14,000.0	90.00	359.97	9,225.0	4,226.7	-389.1	4,239.0	0.00	0.00	0.00
14,100.0	90.00	359.97	9,225.0	4,326.7	-389.1	4,338.9	0.00	0.00	0.00
14,200.0	90.00	359.97	9,225.0	4,426.7	-389.2	4,438.8	0.00	0.00	0.00
14,300.0	90.00	359.97	9,225.0	4,526.7	-389.3	4,538.7	0.00	0.00	0.00
14,400.0	90.00	359.97	9,225.0	4,626.7	-389.3	4,638.7	0.00	0.00	0.00
14,500.0	90.00	359.97	9,225.0	4,726.7	-389.4	4,738.6	0.00	0.00	0.00
14,600.0	90.00	359.97	9,225.0	4,826.7	-389.4	4,838.5	0.00	0.00	0.00
14,700.0	90.00	359.97	9,225.0	4,926.7	-389.5	4,938.4	0.00	0.00	0.00
14,800.0	90.00	359.97	9,225.0	5,026.7	-389.5	5,038.3	0.00	0.00	0.00
14,900.0	90.00	359.97	9,225.0	5,126.7	-389.6	5,138.3	0.00	0.00	0.00
15,000.0	90.00	359.97	9,225.0	5,226.7	-389.6	5,238.2	0.00	0.00	0.00
15,100.0	90.00	359.97	9,225.0	5,326.7	-389.7	5,338.1	0.00	0.00	0.00
15,200.0	90.00	359.97	9,225.0	5,426.7	-389.7	5,438.0	0.00	0.00	0.00
15,300.0	90.00	359.97	9,225.0	5,526.7	-389.8	5,537.9	0.00	0.00	0.00
15,400.0	90.00	359.97	9,225.0	5,626.7	-389.9	5,637.9	0.00	0.00	0.00
15,500.0	90.00	359.97	9,225.0	5,726.7	-389.9	5,737.8	0.00	0.00	0.00
15,600.0	90.00	359.97	9,225.0	5,826.7	-390.0	5,837.7	0.00	0.00	0.00
15,700.0	90.00	359.97	9,225.0	5,926.7	-390.0	5,937.6	0.00	0.00	0.00
15,800.0	90.00	359.97	9,225.0	6,026.7	-390.1	6,037.5	0.00	0.00	0.00
15,900.0	90.00	359.97	9,225.0	6,126.7	-390.1	6,137.5	0.00	0.00	0.00
16,000.0	90.00	359.97	9,225.0	6,226.7	-390.2	6,237.4	0.00	0.00	0.00
16,100.0	90.00	359.97	9,225.0	6,326.7	-390.2	6,337.3	0.00	0.00	0.00
16,200.0	90.00	359.97	9,225.0	6,426.7	-390.3	6,437.2	0.00	0.00	0.00
16,300.0	90.00	359.97	9,225.0	6,526.7	-390.3	6,537.2	0.00	0.00	0.00
16,400.0	90.00	359.97	9,225.0	6,626.7	-390.4	6,637.1	0.00	0.00	0.00
16,500.0	90.00	359.97	9,225.0	6,726.7	-390.5	6,737.0	0.00	0.00	0.00
16,600.0	90.00	359.97	9,225.0	6,826.7	-390.5	6,836.9	0.00	0.00	0.00
16,700.0	90.00	359.97	9,225.0	6,926.7	-390.6	6,936.8	0.00	0.00	0.00
16,800.0	90.00	359.97	9,225.0	7,026.7	-390.6	7,036.8	0.00	0.00	0.00
16,900.0	90.00	359.97	9,225.0	7,126.7	-390.7	7,136.7	0.00	0.00	0.00
17,000.0	90.00	359.97	9,225.0	7,226.7	-390.7	7,236.6	0.00	0.00	0.00
17,100.0	90.00	359.97	9,225.0	7,326.7	-390.8	7,336.5	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well Oxnard West 3130-4CH
Company:	Longs Peak Resources	TVD Reference:	GL 6011 + 25 KB @ 6036.0usft
Project:	Weld County, CO	MD Reference:	GL 6011 + 25 KB @ 6036.0usft
Site:	Southblock Ph 2 - Oxnard West Pad SEC.31-T12N-R66W	North Reference:	True
Well:	Oxnard West 3130-4CH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #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)	
17,200.0	90.00	359.97	9,225.0	7,426.7	-390.8	7,436.4	0.00	0.00	0.00	
17,300.0	90.00	359.97	9,225.0	7,526.7	-390.9	7,536.4	0.00	0.00	0.00	
17,400.0	90.00	359.97	9,225.0	7,626.7	-390.9	7,636.3	0.00	0.00	0.00	
17,500.0	90.00	359.97	9,225.0	7,726.7	-391.0	7,736.2	0.00	0.00	0.00	
17,600.0	90.00	359.97	9,225.0	7,826.7	-391.0	7,836.1	0.00	0.00	0.00	
17,700.0	90.00	359.97	9,225.0	7,926.7	-391.1	7,936.0	0.00	0.00	0.00	
17,800.0	90.00	359.97	9,225.0	8,026.7	-391.2	8,036.0	0.00	0.00	0.00	
17,900.0	90.00	359.97	9,225.0	8,126.7	-391.2	8,135.9	0.00	0.00	0.00	
18,000.0	90.00	359.97	9,225.0	8,226.7	-391.3	8,235.8	0.00	0.00	0.00	
18,100.0	90.00	359.97	9,225.0	8,326.7	-391.3	8,335.7	0.00	0.00	0.00	
18,200.0	90.00	359.97	9,225.0	8,426.7	-391.4	8,435.6	0.00	0.00	0.00	
18,300.0	90.00	359.97	9,225.0	8,526.7	-391.4	8,535.6	0.00	0.00	0.00	
18,400.0	90.00	359.97	9,225.0	8,626.7	-391.5	8,635.5	0.00	0.00	0.00	
18,500.0	90.00	359.97	9,225.0	8,726.7	-391.5	8,735.4	0.00	0.00	0.00	
18,600.0	90.00	359.97	9,225.0	8,826.7	-391.6	8,835.3	0.00	0.00	0.00	
18,700.0	90.00	359.97	9,225.0	8,926.7	-391.6	8,935.2	0.00	0.00	0.00	
18,800.0	90.00	359.97	9,225.0	9,026.7	-391.7	9,035.2	0.00	0.00	0.00	
18,900.0	90.00	359.97	9,225.0	9,126.7	-391.8	9,135.1	0.00	0.00	0.00	
19,000.0	90.00	359.97	9,225.0	9,226.7	-391.8	9,235.0	0.00	0.00	0.00	
19,100.0	90.00	359.97	9,225.0	9,326.7	-391.9	9,334.9	0.00	0.00	0.00	
19,200.0	90.00	359.97	9,225.0	9,426.7	-391.9	9,434.9	0.00	0.00	0.00	
19,300.0	90.00	359.97	9,225.0	9,526.7	-392.0	9,534.8	0.00	0.00	0.00	
19,400.0	90.00	359.97	9,225.0	9,626.7	-392.0	9,634.7	0.00	0.00	0.00	
19,476.2	90.00	359.97	9,225.0	9,702.9	-392.1	9,710.9	0.00	0.00	0.00	
3130-4CH BHL										

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
3130-4CH BHL - hit/miss target - Shape - Point	0.00	0.00	9,225.0	9,702.9	-392.1	1,602,620.99	3,186,581.25	40.98560°N	104.82423°W
3130-4CH LP - plan hits target center - Point	0.00	0.00	9,225.0	-156.7	-386.7	1,592,761.72	3,186,661.91	40.95854°N	104.82421°W

Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well Oxnard West 3130-4CH
Company:	Longs Peak Resources	TVD Reference:	GL 6011 + 25 KB @ 6036.0usft
Project:	Weld County, CO	MD Reference:	GL 6011 + 25 KB @ 6036.0usft
Site:	Southblock Ph 2 - Oxnard West Pad SEC.31-T12N-R66W	North Reference:	True
Well:	Oxnard West 3130-4CH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
2,153.0	2,153.0	Fox Hills				
2,427.0	2,427.0	Pierre				
2,782.1	2,782.0	Teapot				
4,694.1	4,671.0	Parkman				
5,605.8	5,571.0	Sussex				
7,495.2	7,436.0	Shannon				
8,963.1	8,891.0	Sharon Spring				
9,025.3	8,946.0	Niobrara				
9,201.4	9,081.0	Niobrara Target				
9,418.3	9,191.0	Fort Hayes				
9,515.1	9,216.0	Codell				
9,616.5	9,225.0	Codell Target				