

Longs Peak Resources  
Project: Weld County, Co (NAD 83)  
Site: Jaco East Pad  
Well: Jaco East 1930-7NH  
Wellbore: Wellbore #1  
Plan: Design #1 (Jaco East 1930-7NH/Wellbore #1)

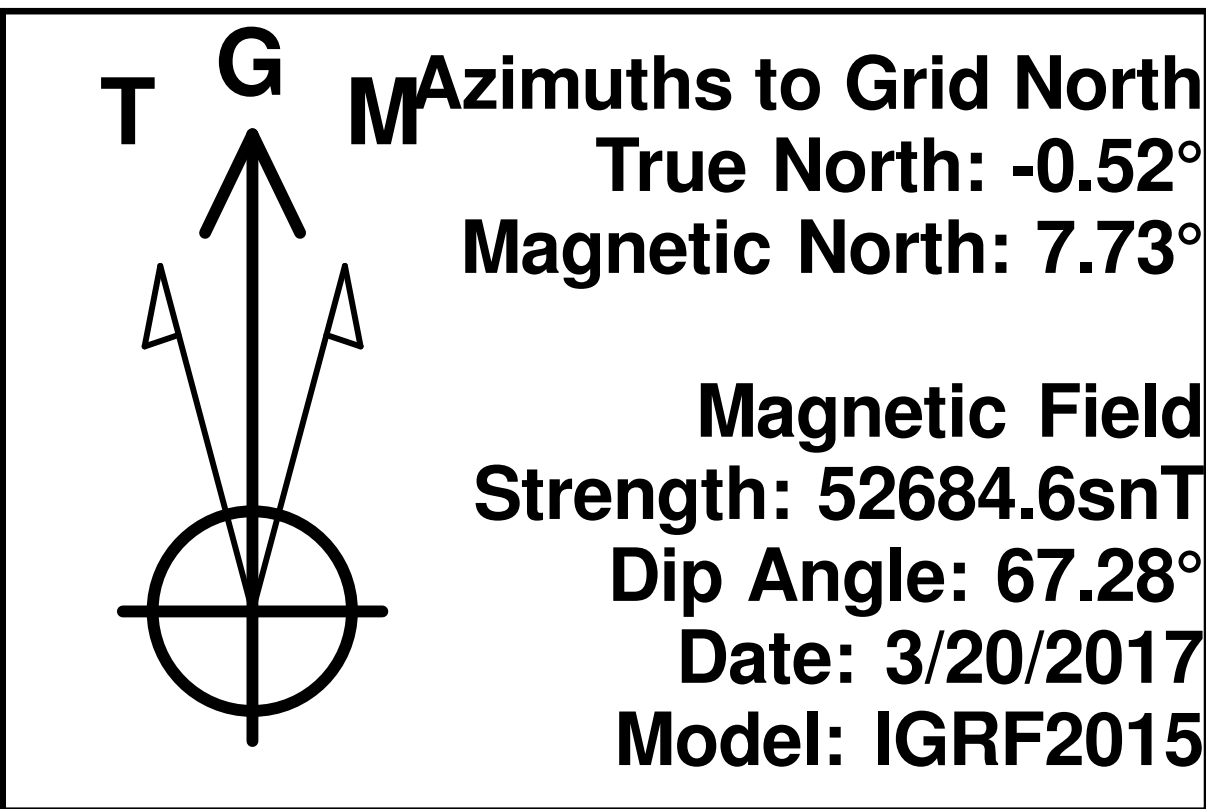
WELL DETAILS: Jaco East 1930-7NH

Ground Elevation:: 5591.00  
RKB Elevation: KB=25' @ 5616.00ft  
Rig Name:

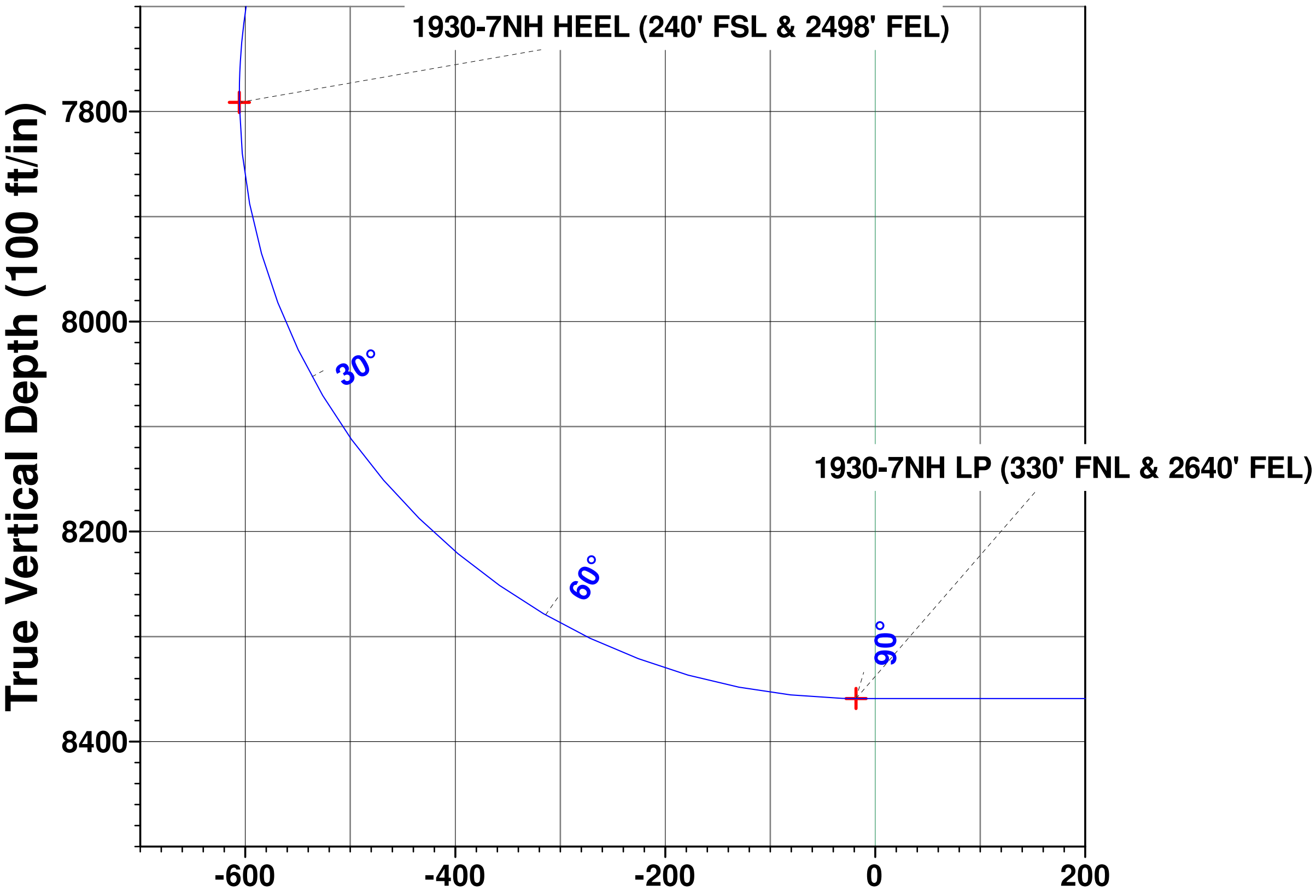
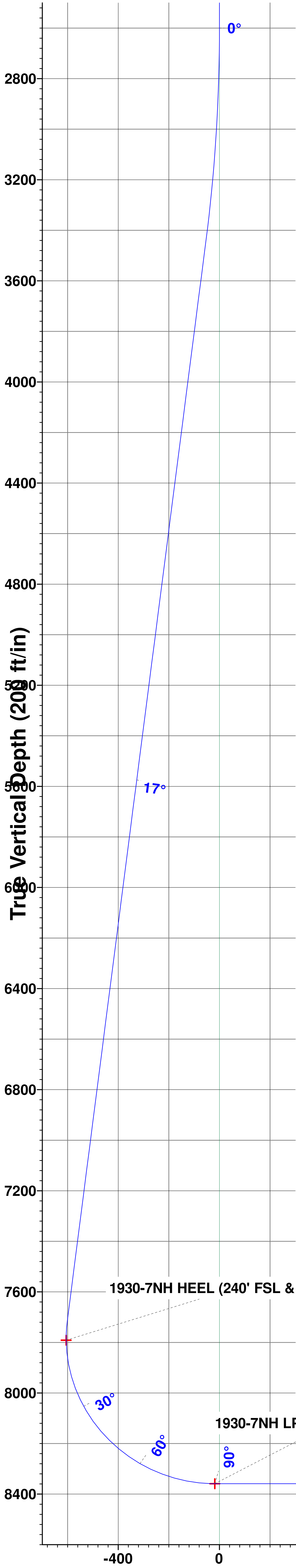
Northing	Easting	Latitude	Longitude
1576121.7860	3220923.1365	40° 54' 43.524 N	104° 42' 2.592 W



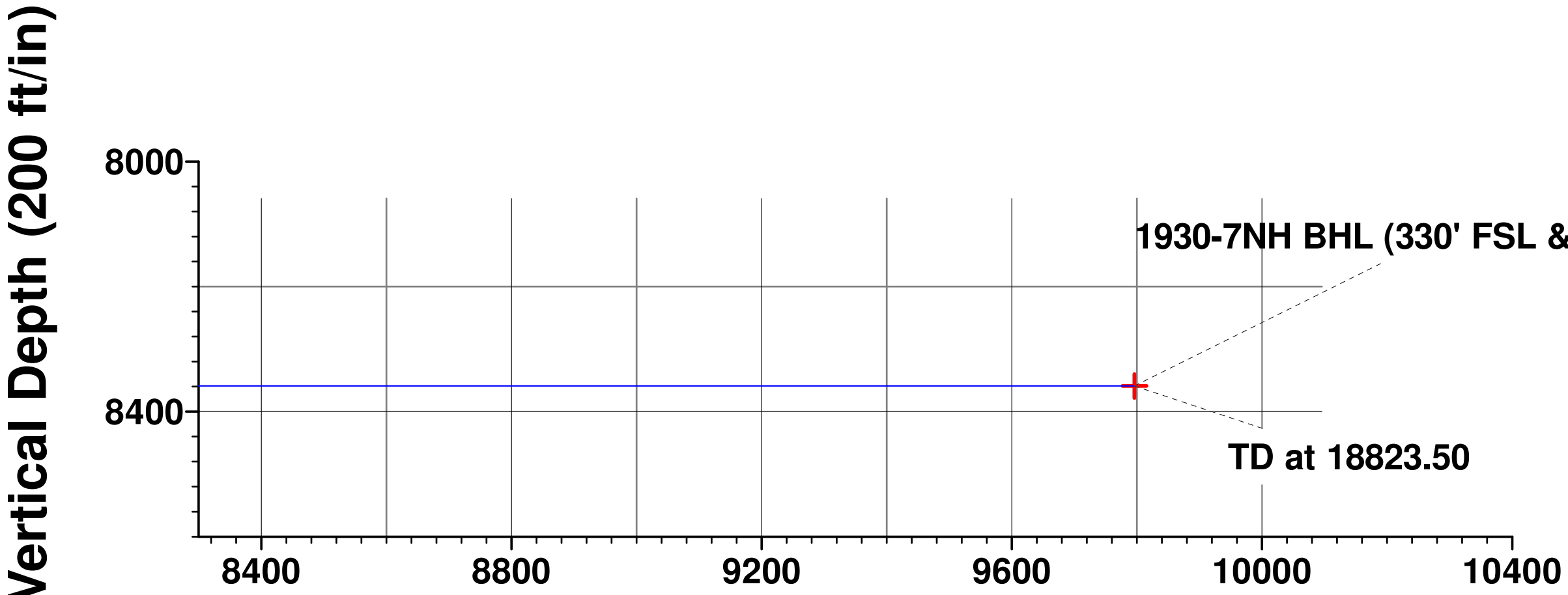
Planned Section Details									
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	2600.00	0.00	0.00	2600.00	0.00	0.00	0.00	0.00	0.00
3	3445.75	16.92	302.79	3433.52	67.13	-104.19	2.00	302.79	-52.25
4	7921.94	16.92	302.79	7716.05	772.51	-1198.98	0.00	0.00	-601.32
5	8912.93	90.00	179.87	8359.00	206.39	-1361.83	10.00	-121.78	-18.25
6	18823.50	90.00	179.87	8359.00	-9704.16	-1339.41	0.00	0.00	9796.16



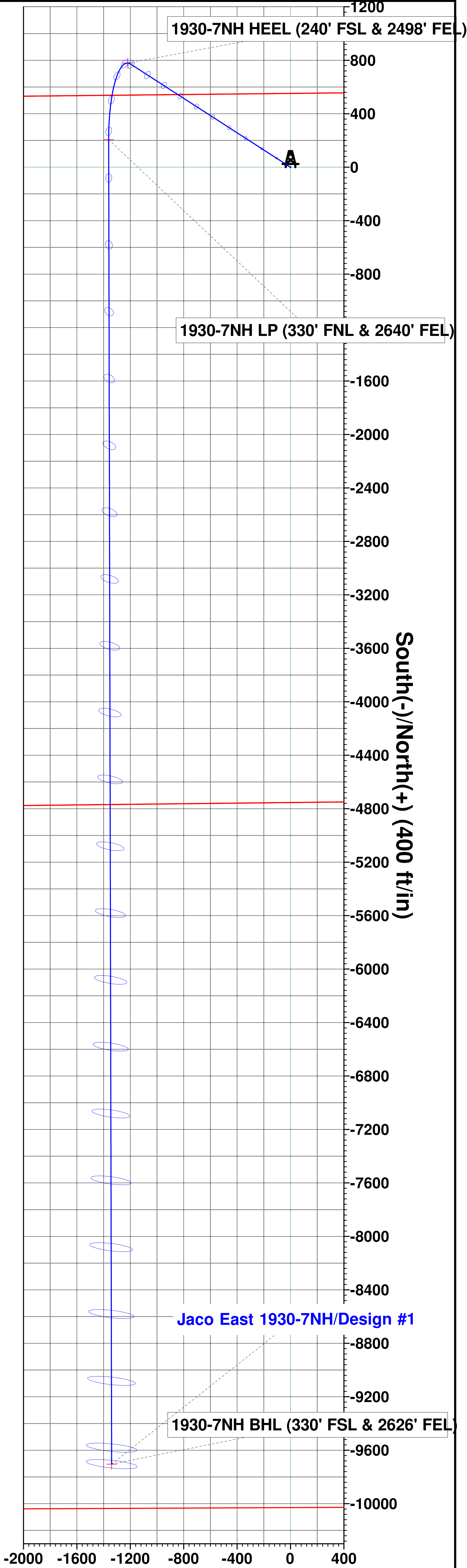
PROJECT DETAILS: Weld County, Co (NAD 83)  
Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: Colorado Northern Zone  
System Datum: Mean Sea Level  
Local North: Grid



Vertical Section at 187.86° (100 ft/in)



Vertical Section at 187.86° (200 ft/in)



Vertical Section at 187.86° (200 ft/in)

# **Longs Peak Resources**

**Weld County, Co (NAD 83)**

**Jaco East Pad**

**Jaco East 1930-7NH**

**Wellbore #1**

**Plan: Design #1**

## **Standard Survey Report**

**22 March, 2017**



# Integrity Directional Services, LLC

## Survey Report



<b>Company:</b>	Longs Peak Resources	<b>Local Co-ordinate Reference:</b>	Well Jaco East 1930-7NH
<b>Project:</b>	Weld County, Co (NAD 83)	<b>TVD Reference:</b>	KB=25' @ 5616.00ft
<b>Site:</b>	Jaco East Pad	<b>MD Reference:</b>	KB=25' @ 5616.00ft
<b>Well:</b>	Jaco East 1930-7NH	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Design #1	<b>Database:</b>	EDM 5000.1 Multi User Db

<b>Project</b>	Weld County, Co (NAD 83)		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		

<b>Site</b>	Jaco East Pad		
<b>Site Position:</b>		<b>Northing:</b>	1,576,300.3192 usft
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,220,921.5272 usft
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13-3/16 "
		<b>Latitude:</b>	40° 54' 45.288 N
		<b>Longitude:</b>	104° 42' 2.592 W
		<b>Grid Convergence:</b>	0.52 °

<b>Well</b>	Jaco East 1930-7NH		
<b>Well Position</b>	<b>+N/-S</b>	0.00 ft	<b>Northing:</b>
	<b>+E/-W</b>	0.00 ft	<b>Easting:</b>
<b>Position Uncertainty</b>	0.00 ft	<b>Wellhead Elevation:</b>	0.00 ft
		<b>Latitude:</b>	40° 54' 43.524 N
		<b>Longitude:</b>	104° 42' 2.592 W
		<b>Ground Level:</b>	5,591.00 ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	3/20/2017	8.25	67.28	52,685

<b>Design</b>	Design #1				
<b>Audit Notes:</b>					
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.00	
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00	187.86	

<b>Survey Tool Program</b>	<b>Date</b>	3/20/2017			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
0.00	18,823.50	Design #1 (Wellbore #1)	MWD	MWD - Standard	

<b>Planned Survey</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00	
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00	
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00	

# Integrity Directional Services, LLC

## Survey Report



<b>Company:</b>	Longs Peak Resources	<b>Local Co-ordinate Reference:</b>	Well Jaco East 1930-7NH
<b>Project:</b>	Weld County, Co (NAD 83)	<b>TVD Reference:</b>	KB=25' @ 5616.00ft
<b>Site:</b>	Jaco East Pad	<b>MD Reference:</b>	KB=25' @ 5616.00ft
<b>Well:</b>	Jaco East 1930-7NH	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Design #1	<b>Database:</b>	EDM 5000.1 Multi User Db

### Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	2.00	302.79	2,699.98	0.95	-1.47	-0.74	2.00	2.00	0.00
2,800.00	4.00	302.79	2,799.84	3.78	-5.87	-2.94	2.00	2.00	0.00
2,900.00	6.00	302.79	2,899.45	8.50	-13.19	-6.62	2.00	2.00	0.00
3,000.00	8.00	302.79	2,998.70	15.10	-23.44	-11.75	2.00	2.00	0.00
3,100.00	10.00	302.79	3,097.47	23.57	-36.59	-18.35	2.00	2.00	0.00
3,200.00	12.00	302.79	3,195.62	33.91	-52.63	-26.39	2.00	2.00	0.00
3,300.00	14.00	302.79	3,293.06	46.09	-71.53	-35.88	2.00	2.00	0.00
3,400.00	16.00	302.79	3,389.64	60.11	-93.29	-46.79	2.00	2.00	0.00
3,445.75	16.92	302.79	3,433.52	67.13	-104.19	-52.25	2.00	2.00	0.00
3,500.00	16.92	302.79	3,485.42	75.68	-117.45	-58.91	0.00	0.00	0.00
3,600.00	16.92	302.79	3,581.09	91.43	-141.91	-71.17	0.00	0.00	0.00
3,700.00	16.92	302.79	3,676.77	107.19	-166.37	-83.44	0.00	0.00	0.00
3,800.00	16.92	302.79	3,772.44	122.95	-190.83	-95.71	0.00	0.00	0.00
3,900.00	16.92	302.79	3,868.12	138.71	-215.29	-107.97	0.00	0.00	0.00
4,000.00	16.92	302.79	3,963.79	154.47	-239.74	-120.24	0.00	0.00	0.00
4,100.00	16.92	302.79	4,059.46	170.23	-264.20	-132.50	0.00	0.00	0.00
4,200.00	16.92	302.79	4,155.14	185.99	-288.66	-144.77	0.00	0.00	0.00
4,300.00	16.92	302.79	4,250.81	201.74	-313.12	-157.04	0.00	0.00	0.00
4,400.00	16.92	302.79	4,346.48	217.50	-337.58	-169.30	0.00	0.00	0.00
4,500.00	16.92	302.79	4,442.16	233.26	-362.04	-181.57	0.00	0.00	0.00
4,600.00	16.92	302.79	4,537.83	249.02	-386.49	-193.84	0.00	0.00	0.00
4,700.00	16.92	302.79	4,633.51	264.78	-410.95	-206.10	0.00	0.00	0.00
4,800.00	16.92	302.79	4,729.18	280.54	-435.41	-218.37	0.00	0.00	0.00
4,900.00	16.92	302.79	4,824.85	296.30	-459.87	-230.64	0.00	0.00	0.00
5,000.00	16.92	302.79	4,920.53	312.05	-484.33	-242.90	0.00	0.00	0.00
5,100.00	16.92	302.79	5,016.20	327.81	-508.79	-255.17	0.00	0.00	0.00
5,200.00	16.92	302.79	5,111.87	343.57	-533.24	-267.44	0.00	0.00	0.00

# Integrity Directional Services, LLC

## Survey Report



<b>Company:</b>	Longs Peak Resources	<b>Local Co-ordinate Reference:</b>	Well Jaco East 1930-7NH
<b>Project:</b>	Weld County, Co (NAD 83)	<b>TVD Reference:</b>	KB=25' @ 5616.00ft
<b>Site:</b>	Jaco East Pad	<b>MD Reference:</b>	KB=25' @ 5616.00ft
<b>Well:</b>	Jaco East 1930-7NH	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Design #1	<b>Database:</b>	EDM 5000.1 Multi User Db

### Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,300.00	16.92	302.79	5,207.55	359.33	-557.70	-279.70	0.00	0.00	0.00
5,400.00	16.92	302.79	5,303.22	375.09	-582.16	-291.97	0.00	0.00	0.00
5,500.00	16.92	302.79	5,398.90	390.85	-606.62	-304.24	0.00	0.00	0.00
5,600.00	16.92	302.79	5,494.57	406.61	-631.08	-316.50	0.00	0.00	0.00
5,700.00	16.92	302.79	5,590.24	422.36	-655.53	-328.77	0.00	0.00	0.00
5,800.00	16.92	302.79	5,685.92	438.12	-679.99	-341.03	0.00	0.00	0.00
5,900.00	16.92	302.79	5,781.59	453.88	-704.45	-353.30	0.00	0.00	0.00
6,000.00	16.92	302.79	5,877.26	469.64	-728.91	-365.57	0.00	0.00	0.00
6,100.00	16.92	302.79	5,972.94	485.40	-753.37	-377.83	0.00	0.00	0.00
6,200.00	16.92	302.79	6,068.61	501.16	-777.83	-390.10	0.00	0.00	0.00
6,300.00	16.92	302.79	6,164.29	516.92	-802.28	-402.37	0.00	0.00	0.00
6,400.00	16.92	302.79	6,259.96	532.67	-826.74	-414.63	0.00	0.00	0.00
6,500.00	16.92	302.79	6,355.63	548.43	-851.20	-426.90	0.00	0.00	0.00
6,600.00	16.92	302.79	6,451.31	564.19	-875.66	-439.17	0.00	0.00	0.00
6,700.00	16.92	302.79	6,546.98	579.95	-900.12	-451.43	0.00	0.00	0.00
6,800.00	16.92	302.79	6,642.65	595.71	-924.58	-463.70	0.00	0.00	0.00
6,900.00	16.92	302.79	6,738.33	611.47	-949.03	-475.97	0.00	0.00	0.00
7,000.00	16.92	302.79	6,834.00	627.23	-973.49	-488.23	0.00	0.00	0.00
7,100.00	16.92	302.79	6,929.68	642.98	-997.95	-500.50	0.00	0.00	0.00
7,200.00	16.92	302.79	7,025.35	658.74	-1,022.41	-512.76	0.00	0.00	0.00
7,300.00	16.92	302.79	7,121.02	674.50	-1,046.87	-525.03	0.00	0.00	0.00
7,400.00	16.92	302.79	7,216.70	690.26	-1,071.32	-537.30	0.00	0.00	0.00
7,500.00	16.92	302.79	7,312.37	706.02	-1,095.78	-549.56	0.00	0.00	0.00
7,600.00	16.92	302.79	7,408.04	721.78	-1,120.24	-561.83	0.00	0.00	0.00
7,700.00	16.92	302.79	7,503.72	737.54	-1,144.70	-574.10	0.00	0.00	0.00
7,800.00	16.92	302.79	7,599.39	753.29	-1,169.16	-586.36	0.00	0.00	0.00
7,900.00	16.92	302.79	7,695.07	769.05	-1,193.62	-598.63	0.00	0.00	0.00
7,921.94	16.92	302.79	7,716.05	772.51	-1,198.98	-601.32	0.00	0.00	0.00
8,000.00	14.38	275.08	7,791.32	779.53	-1,218.21	-605.65	10.00	-3.25	-35.50
8,100.00	16.71	238.10	7,887.89	773.02	-1,242.85	-595.82	10.00	2.34	-36.98
8,200.00	23.40	216.02	7,981.90	749.30	-1,266.79	-569.05	10.00	6.69	-22.09
8,300.00	31.81	204.18	8,070.51	709.09	-1,289.32	-526.14	10.00	8.40	-11.84
8,400.00	40.88	197.02	8,151.01	653.62	-1,309.74	-468.40	10.00	9.07	-7.15
8,500.00	50.25	192.13	8,220.96	584.57	-1,327.44	-397.58	10.00	9.37	-4.90
8,600.00	59.78	188.42	8,278.24	504.04	-1,341.88	-315.83	10.00	9.53	-3.71
8,700.00	69.40	185.38	8,321.10	414.47	-1,352.62	-225.64	10.00	9.62	-3.04
8,800.00	79.06	182.70	8,348.25	318.59	-1,359.34	-129.74	10.00	9.66	-2.68
8,900.00	88.75	180.19	8,358.86	219.32	-1,361.82	-31.06	10.00	9.68	-2.51
8,912.93	90.00	179.87	8,359.00	206.39	-1,361.83	-18.25	10.00	9.69	-2.47
9,000.00	90.00	179.87	8,359.00	119.32	-1,361.63	67.98	0.00	0.00	0.00
9,100.00	90.00	179.87	8,359.00	19.32	-1,361.40	167.01	0.00	0.00	0.00
9,200.00	90.00	179.87	8,359.00	-80.68	-1,361.18	266.04	0.00	0.00	0.00
9,300.00	90.00	179.87	8,359.00	-180.68	-1,360.95	365.07	0.00	0.00	0.00



# Integrity Directional Services, LLC

## Survey Report



<b>Company:</b>	Longs Peak Resources	<b>Local Co-ordinate Reference:</b>	Well Jaco East 1930-7NH
<b>Project:</b>	Weld County, Co (NAD 83)	<b>TVD Reference:</b>	KB=25' @ 5616.00ft
<b>Site:</b>	Jaco East Pad	<b>MD Reference:</b>	KB=25' @ 5616.00ft
<b>Well:</b>	Jaco East 1930-7NH	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Design #1	<b>Database:</b>	EDM 5000.1 Multi User Db

### Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,400.00	90.00	179.87	8,359.00	-280.68	-1,360.72	464.09	0.00	0.00	0.00
9,500.00	90.00	179.87	8,359.00	-380.68	-1,360.50	563.12	0.00	0.00	0.00
9,600.00	90.00	179.87	8,359.00	-480.68	-1,360.27	662.15	0.00	0.00	0.00
9,700.00	90.00	179.87	8,359.00	-580.68	-1,360.05	761.18	0.00	0.00	0.00
9,800.00	90.00	179.87	8,359.00	-680.68	-1,359.82	860.21	0.00	0.00	0.00
9,900.00	90.00	179.87	8,359.00	-780.68	-1,359.59	959.24	0.00	0.00	0.00
10,000.00	90.00	179.87	8,359.00	-880.68	-1,359.37	1,058.27	0.00	0.00	0.00
10,100.00	90.00	179.87	8,359.00	-980.68	-1,359.14	1,157.30	0.00	0.00	0.00
10,200.00	90.00	179.87	8,359.00	-1,080.68	-1,358.91	1,256.33	0.00	0.00	0.00
10,300.00	90.00	179.87	8,359.00	-1,180.68	-1,358.69	1,355.36	0.00	0.00	0.00
10,400.00	90.00	179.87	8,359.00	-1,280.68	-1,358.46	1,454.39	0.00	0.00	0.00
10,500.00	90.00	179.87	8,359.00	-1,380.68	-1,358.24	1,553.42	0.00	0.00	0.00
10,600.00	90.00	179.87	8,359.00	-1,480.68	-1,358.01	1,652.45	0.00	0.00	0.00
10,700.00	90.00	179.87	8,359.00	-1,580.68	-1,357.78	1,751.48	0.00	0.00	0.00
10,800.00	90.00	179.87	8,359.00	-1,680.68	-1,357.56	1,850.51	0.00	0.00	0.00
10,900.00	90.00	179.87	8,359.00	-1,780.68	-1,357.33	1,949.54	0.00	0.00	0.00
11,000.00	90.00	179.87	8,359.00	-1,880.68	-1,357.11	2,048.57	0.00	0.00	0.00
11,100.00	90.00	179.87	8,359.00	-1,980.68	-1,356.88	2,147.60	0.00	0.00	0.00
11,200.00	90.00	179.87	8,359.00	-2,080.68	-1,356.65	2,246.63	0.00	0.00	0.00
11,300.00	90.00	179.87	8,359.00	-2,180.68	-1,356.43	2,345.66	0.00	0.00	0.00
11,400.00	90.00	179.87	8,359.00	-2,280.68	-1,356.20	2,444.69	0.00	0.00	0.00
11,500.00	90.00	179.87	8,359.00	-2,380.68	-1,355.97	2,543.72	0.00	0.00	0.00
11,600.00	90.00	179.87	8,359.00	-2,480.68	-1,355.75	2,642.75	0.00	0.00	0.00
11,700.00	90.00	179.87	8,359.00	-2,580.68	-1,355.52	2,741.78	0.00	0.00	0.00
11,800.00	90.00	179.87	8,359.00	-2,680.68	-1,355.30	2,840.81	0.00	0.00	0.00
11,900.00	90.00	179.87	8,359.00	-2,780.68	-1,355.07	2,939.84	0.00	0.00	0.00
12,000.00	90.00	179.87	8,359.00	-2,880.67	-1,354.84	3,038.87	0.00	0.00	0.00
12,100.00	90.00	179.87	8,359.00	-2,980.67	-1,354.62	3,137.90	0.00	0.00	0.00
12,200.00	90.00	179.87	8,359.00	-3,080.67	-1,354.39	3,236.93	0.00	0.00	0.00
12,300.00	90.00	179.87	8,359.00	-3,180.67	-1,354.16	3,335.96	0.00	0.00	0.00
12,400.00	90.00	179.87	8,359.00	-3,280.67	-1,353.94	3,434.99	0.00	0.00	0.00
12,500.00	90.00	179.87	8,359.00	-3,380.67	-1,353.71	3,534.02	0.00	0.00	0.00
12,600.00	90.00	179.87	8,359.00	-3,480.67	-1,353.49	3,633.04	0.00	0.00	0.00
12,700.00	90.00	179.87	8,359.00	-3,580.67	-1,353.26	3,732.07	0.00	0.00	0.00
12,800.00	90.00	179.87	8,359.00	-3,680.67	-1,353.03	3,831.10	0.00	0.00	0.00
12,900.00	90.00	179.87	8,359.00	-3,780.67	-1,352.81	3,930.13	0.00	0.00	0.00
13,000.00	90.00	179.87	8,359.00	-3,880.67	-1,352.58	4,029.16	0.00	0.00	0.00
13,100.00	90.00	179.87	8,359.00	-3,980.67	-1,352.36	4,128.19	0.00	0.00	0.00
13,200.00	90.00	179.87	8,359.00	-4,080.67	-1,352.13	4,227.22	0.00	0.00	0.00
13,300.00	90.00	179.87	8,359.00	-4,180.67	-1,351.90	4,326.25	0.00	0.00	0.00
13,400.00	90.00	179.87	8,359.00	-4,280.67	-1,351.68	4,425.28	0.00	0.00	0.00
13,500.00	90.00	179.87	8,359.00	-4,380.67	-1,351.45	4,524.31	0.00	0.00	0.00
13,600.00	90.00	179.87	8,359.00	-4,480.67	-1,351.22	4,623.34	0.00	0.00	0.00

# Integrity Directional Services, LLC

## Survey Report



<b>Company:</b>	Longs Peak Resources	<b>Local Co-ordinate Reference:</b>	Well Jaco East 1930-7NH
<b>Project:</b>	Weld County, Co (NAD 83)	<b>TVD Reference:</b>	KB=25' @ 5616.00ft
<b>Site:</b>	Jaco East Pad	<b>MD Reference:</b>	KB=25' @ 5616.00ft
<b>Well:</b>	Jaco East 1930-7NH	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Design #1	<b>Database:</b>	EDM 5000.1 Multi User Db

### Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
13,700.00	90.00	179.87	8,359.00	-4,580.67	-1,351.00	4,722.37	0.00	0.00	0.00
13,800.00	90.00	179.87	8,359.00	-4,680.67	-1,350.77	4,821.40	0.00	0.00	0.00
13,900.00	90.00	179.87	8,359.00	-4,780.67	-1,350.55	4,920.43	0.00	0.00	0.00
14,000.00	90.00	179.87	8,359.00	-4,880.67	-1,350.32	5,019.46	0.00	0.00	0.00
14,100.00	90.00	179.87	8,359.00	-4,980.67	-1,350.09	5,118.49	0.00	0.00	0.00
14,200.00	90.00	179.87	8,359.00	-5,080.67	-1,349.87	5,217.52	0.00	0.00	0.00
14,300.00	90.00	179.87	8,359.00	-5,180.67	-1,349.64	5,316.55	0.00	0.00	0.00
14,400.00	90.00	179.87	8,359.00	-5,280.67	-1,349.42	5,415.58	0.00	0.00	0.00
14,500.00	90.00	179.87	8,359.00	-5,380.67	-1,349.19	5,514.61	0.00	0.00	0.00
14,600.00	90.00	179.87	8,359.00	-5,480.67	-1,348.96	5,613.64	0.00	0.00	0.00
14,700.00	90.00	179.87	8,359.00	-5,580.67	-1,348.74	5,712.67	0.00	0.00	0.00
14,800.00	90.00	179.87	8,359.00	-5,680.67	-1,348.51	5,811.70	0.00	0.00	0.00
14,900.00	90.00	179.87	8,359.00	-5,780.67	-1,348.28	5,910.73	0.00	0.00	0.00
15,000.00	90.00	179.87	8,359.00	-5,880.67	-1,348.06	6,009.76	0.00	0.00	0.00
15,100.00	90.00	179.87	8,359.00	-5,980.67	-1,347.83	6,108.79	0.00	0.00	0.00
15,200.00	90.00	179.87	8,359.00	-6,080.67	-1,347.61	6,207.82	0.00	0.00	0.00
15,300.00	90.00	179.87	8,359.00	-6,180.67	-1,347.38	6,306.85	0.00	0.00	0.00
15,400.00	90.00	179.87	8,359.00	-6,280.67	-1,347.15	6,405.88	0.00	0.00	0.00
15,500.00	90.00	179.87	8,359.00	-6,380.67	-1,346.93	6,504.91	0.00	0.00	0.00
15,600.00	90.00	179.87	8,359.00	-6,480.67	-1,346.70	6,603.94	0.00	0.00	0.00
15,700.00	90.00	179.87	8,359.00	-6,580.67	-1,346.47	6,702.96	0.00	0.00	0.00
15,800.00	90.00	179.87	8,359.00	-6,680.67	-1,346.25	6,801.99	0.00	0.00	0.00
15,900.00	90.00	179.87	8,359.00	-6,780.67	-1,346.02	6,901.02	0.00	0.00	0.00
16,000.00	90.00	179.87	8,359.00	-6,880.66	-1,345.80	7,000.05	0.00	0.00	0.00
16,100.00	90.00	179.87	8,359.00	-6,980.66	-1,345.57	7,099.08	0.00	0.00	0.00
16,200.00	90.00	179.87	8,359.00	-7,080.66	-1,345.34	7,198.11	0.00	0.00	0.00
16,300.00	90.00	179.87	8,359.00	-7,180.66	-1,345.12	7,297.14	0.00	0.00	0.00
16,400.00	90.00	179.87	8,359.00	-7,280.66	-1,344.89	7,396.17	0.00	0.00	0.00
16,500.00	90.00	179.87	8,359.00	-7,380.66	-1,344.67	7,495.20	0.00	0.00	0.00
16,600.00	90.00	179.87	8,359.00	-7,480.66	-1,344.44	7,594.23	0.00	0.00	0.00
16,700.00	90.00	179.87	8,359.00	-7,580.66	-1,344.21	7,693.26	0.00	0.00	0.00
16,800.00	90.00	179.87	8,359.00	-7,680.66	-1,343.99	7,792.29	0.00	0.00	0.00
16,900.00	90.00	179.87	8,359.00	-7,780.66	-1,343.76	7,891.32	0.00	0.00	0.00
17,000.00	90.00	179.87	8,359.00	-7,880.66	-1,343.53	7,990.35	0.00	0.00	0.00
17,100.00	90.00	179.87	8,359.00	-7,980.66	-1,343.31	8,089.38	0.00	0.00	0.00
17,200.00	90.00	179.87	8,359.00	-8,080.66	-1,343.08	8,188.41	0.00	0.00	0.00
17,300.00	90.00	179.87	8,359.00	-8,180.66	-1,342.86	8,287.44	0.00	0.00	0.00
17,400.00	90.00	179.87	8,359.00	-8,280.66	-1,342.63	8,386.47	0.00	0.00	0.00
17,500.00	90.00	179.87	8,359.00	-8,380.66	-1,342.40	8,485.50	0.00	0.00	0.00
17,600.00	90.00	179.87	8,359.00	-8,480.66	-1,342.18	8,584.53	0.00	0.00	0.00
17,700.00	90.00	179.87	8,359.00	-8,580.66	-1,341.95	8,683.56	0.00	0.00	0.00
17,800.00	90.00	179.87	8,359.00	-8,680.66	-1,341.73	8,782.59	0.00	0.00	0.00
17,900.00	90.00	179.87	8,359.00	-8,780.66	-1,341.50	8,881.62	0.00	0.00	0.00
18,000.00	90.00	179.87	8,359.00	-8,880.66	-1,341.27	8,980.65	0.00	0.00	0.00

# Integrity Directional Services, LLC

## Survey Report



<b>Company:</b>	Longs Peak Resources	<b>Local Co-ordinate Reference:</b>	Well Jaco East 1930-7NH
<b>Project:</b>	Weld County, Co (NAD 83)	<b>TVD Reference:</b>	KB=25' @ 5616.00ft
<b>Site:</b>	Jaco East Pad	<b>MD Reference:</b>	KB=25' @ 5616.00ft
<b>Well:</b>	Jaco East 1930-7NH	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Design #1	<b>Database:</b>	EDM 5000.1 Multi User Db

### Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
18,100.00	90.00	179.87	8,359.00	-8,980.66	-1,341.05	9,079.68	0.00	0.00	0.00
18,200.00	90.00	179.87	8,359.00	-9,080.66	-1,340.82	9,178.71	0.00	0.00	0.00
18,300.00	90.00	179.87	8,359.00	-9,180.66	-1,340.59	9,277.74	0.00	0.00	0.00
18,400.00	90.00	179.87	8,359.00	-9,280.66	-1,340.37	9,376.77	0.00	0.00	0.00
18,500.00	90.00	179.87	8,359.00	-9,380.66	-1,340.14	9,475.80	0.00	0.00	0.00
18,600.00	90.00	179.87	8,359.00	-9,480.66	-1,339.92	9,574.83	0.00	0.00	0.00
18,700.00	90.00	179.87	8,359.00	-9,580.66	-1,339.69	9,673.86	0.00	0.00	0.00
18,800.00	90.00	179.87	8,359.00	-9,680.66	-1,339.46	9,772.89	0.00	0.00	0.00
18,823.50	90.00	179.87	8,359.00	-9,704.16	-1,339.41	9,796.16	0.00	0.00	0.00

### Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
1930-7NH HEEL (240 - plan hits target center - Point	0.00	0.00	7,791.30	779.53	-1,218.21	1,576,901.314 4	3,219,704.933 1	40° 54' 51.334 N	104° 42' 18.367 W
1930-7NH LP (330' FI - plan hits target center - Point	0.00	0.00	8,359.00	206.39	-1,361.83	1,576,328.176 6	3,219,561.313 4	40° 54' 45.684 N	104° 42' 20.304 W
1930-7NH BHL (330' I - plan hits target center - Point	0.00	0.00	8,359.00	-9,704.16	-1,339.41	1,566,417.644 5	3,219,583.729 1	40° 53' 7.764 N	104° 42' 21.168 W

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_