

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

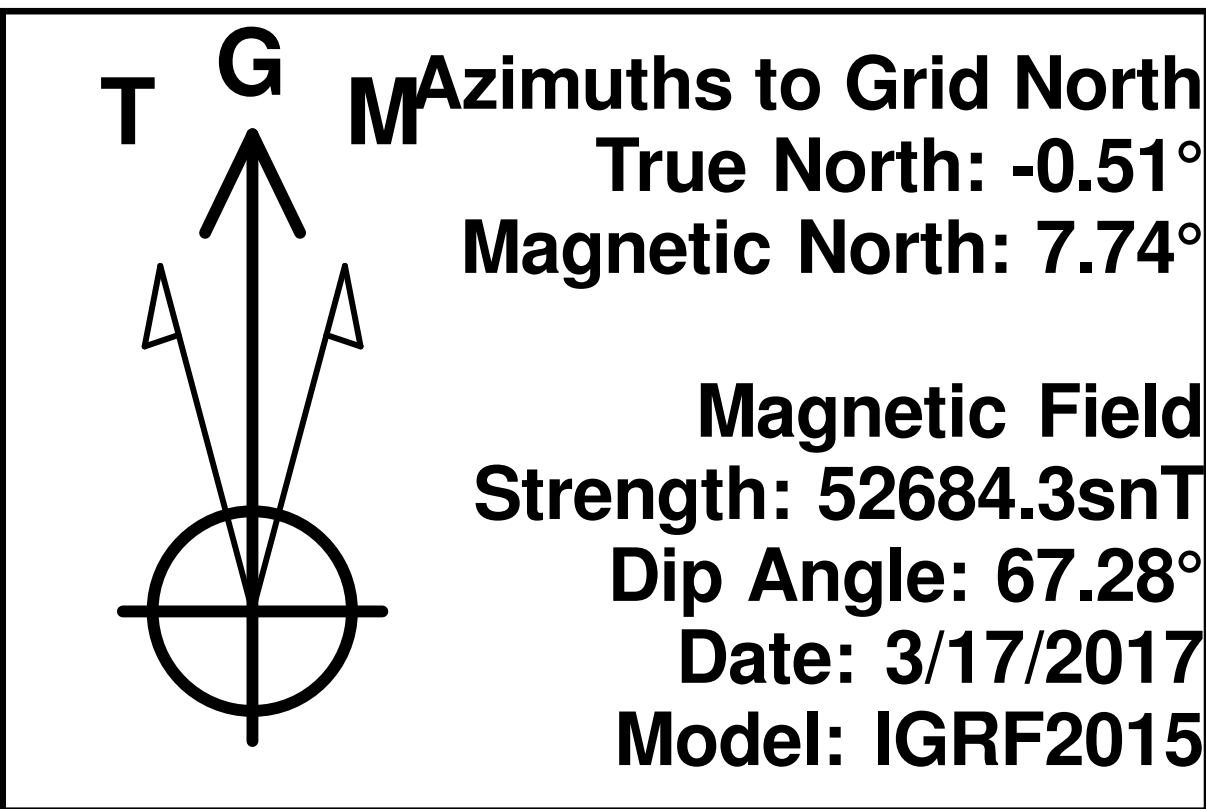
WELL DETAILS: Jaco West 1930-1NH

Ground Elevation:: 5615.00  
RKB Elevation: KB=25' @ 5640.00ft  
Rig Name:

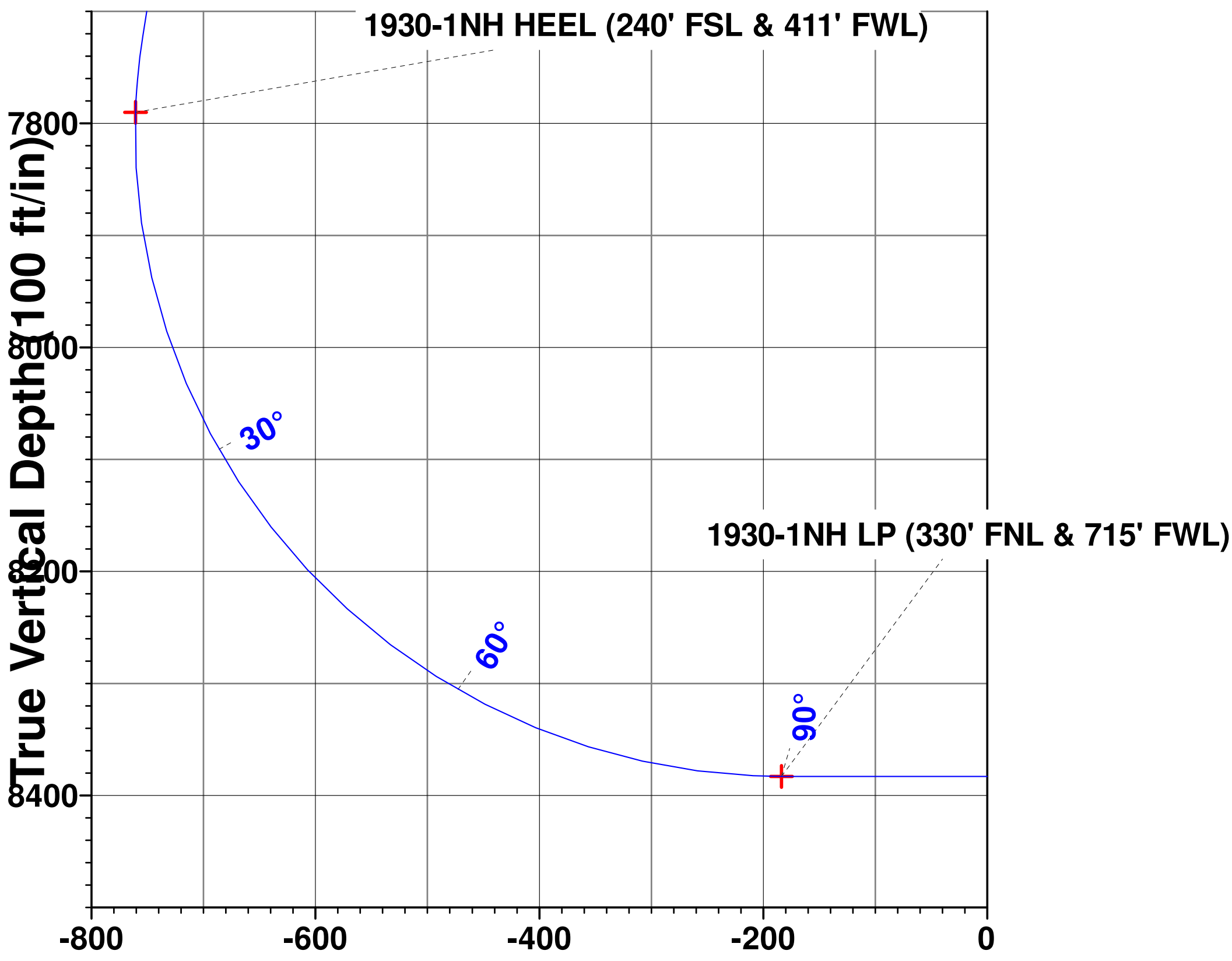
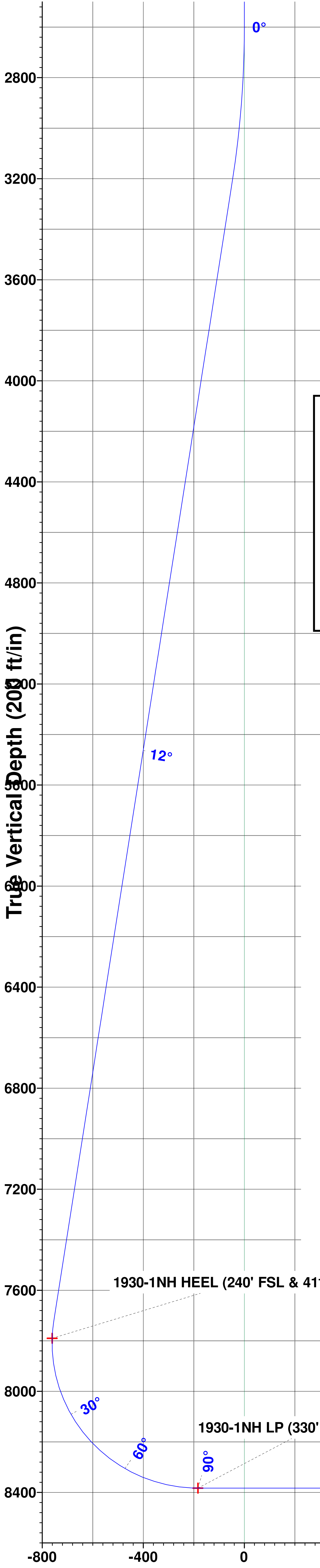
Northing	Easting	Latitude	Longitude
1576067.3644	3218101.3994	40° 54' 43.236 N	104° 42' 39.348 W



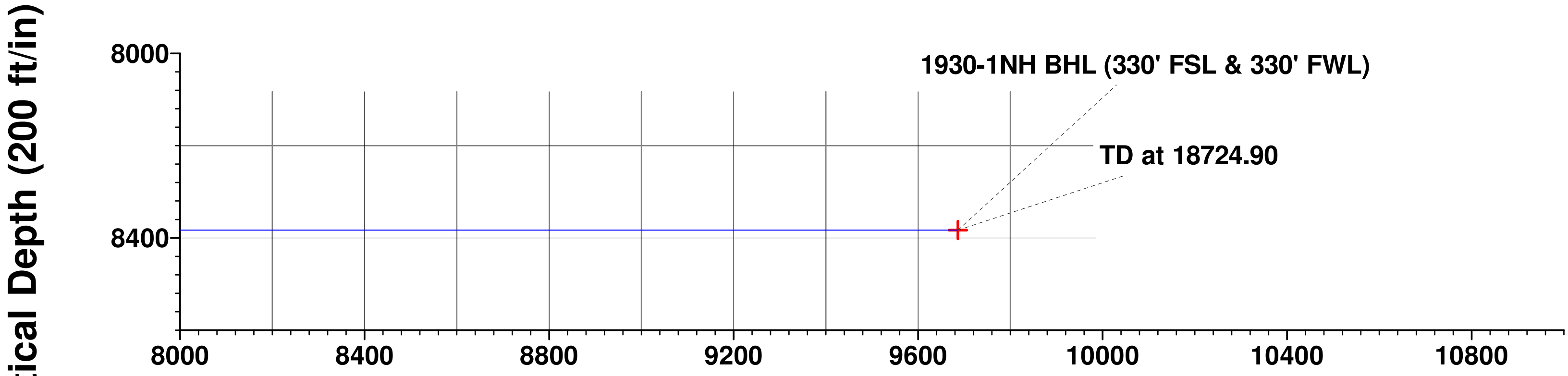
Planned Section Details									
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	2600.00	0.00	0.00	2600.00	0.00	0.00	0.00	0.00	0.00
3	3209.67	12.19	320.52	3205.07	49.88	-41.09	2.00	320.52	-46.83
4	7831.14	12.19	320.52	7722.29	803.24	-661.76	0.00	0.00	-754.19
5	8825.43	90.00	179.65	8383.00	237.49	-748.44	10.00	-140.22	-183.70
6	18724.90	90.00	179.65	8383.00	-9661.80	-688.30	0.00	0.00	9686.28



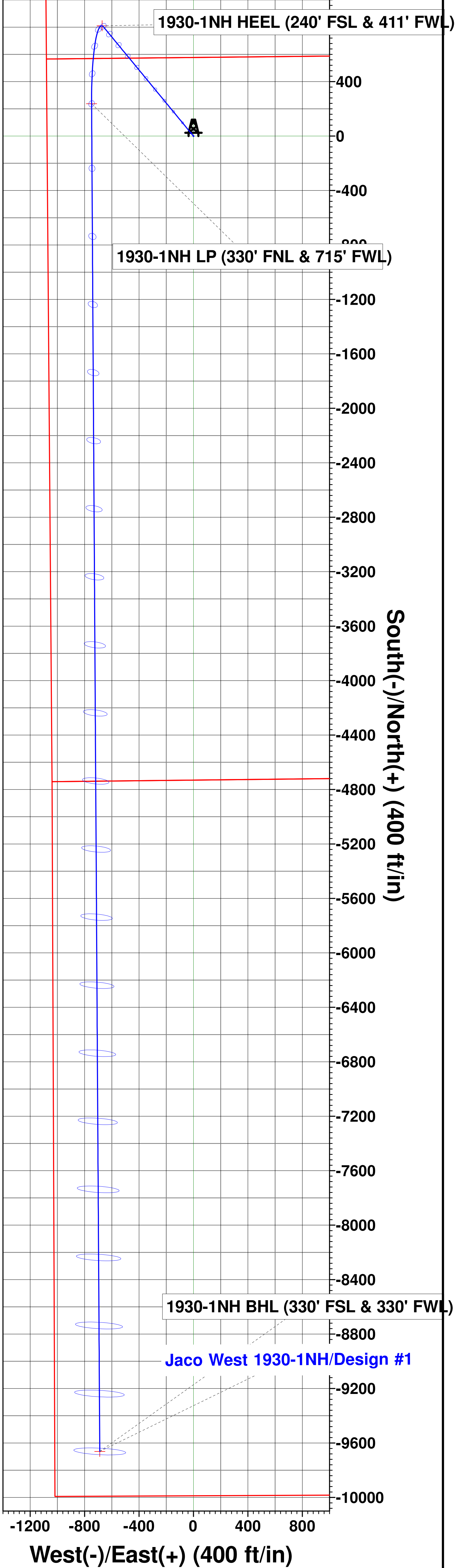
PROJECT DETAILS: Weld County, Co (NAD 83)  
Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: Colorado Northern Zone  
System Datum: Mean Sea Level  
Local North: Grid



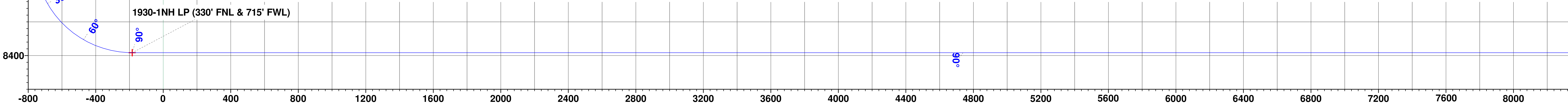
Vertical Section at 184.07° (100 ft/in)



Vertical Section at 184.07° (200 ft/in)



Vertical Section at 184.07° (200 ft/in)



Vertical Section at 184.07° (200 ft/in)

# **Longs Peak Resources**

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

**Jaco West Pad**

**Jaco West 1930-1NH**

**Wellbore #1**

**Plan: Design #1**

## **Standard Survey Report**

**17 March, 2017**



# Integrity Directional Services, LLC

## Survey Report



<b>Company:</b>	Longs Peak Resources	<b>Local Co-ordinate Reference:</b>	Well Jaco West 1930-1NH
<b>Project:</b>	Weld County, Co (NAD 83)	<b>TVD Reference:</b>	KB=25' @ 5640.00ft
<b>Site:</b>	Jaco West Pad	<b>MD Reference:</b>	KB=25' @ 5640.00ft
<b>Well:</b>	Jaco West 1930-1NH	<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		

Site	Jaco West Pad				
Site Position:		Northing:	1,576,245.8732 usft	Latitude:	40° 54' 45.000 N
From:	Lat/Long	Easting:	3,218,097.0468 usft	Longitude:	104° 42' 39.384 W
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.51 °

Well	Jaco West 1930-1NH					
Well Position	+N/-S	0.00 ft	Northing:	1,576,067.3644 usfl	Latitude:	40° 54' 43.236 N
	+E/-W	0.00 ft	Easting:	3,218,101.3994 usfl	Longitude:	104° 42' 39.348 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	5,615.00 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	3/17/2017	8.25	67.28	52,684

<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	184.07	

<b>Survey Tool Program</b>	<b>Date</b>	3/17/2017			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
0.00	18,724.90	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



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<b>Site:</b>	Jaco West Pad	<b>MD Reference:</b>	KB=25' @ 5640.00ft
<b>Well:</b>	Jaco West 1930-1NH	<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	320.52	2,699.98	1.35	-1.11	-1.26	2.00	2.00	0.00
2,800.00	4.00	320.52	2,799.84	5.39	-4.44	-5.06	2.00	2.00	0.00
2,900.00	6.00	320.52	2,899.45	12.11	-9.98	-11.37	2.00	2.00	0.00
3,000.00	8.00	320.52	2,998.70	21.52	-17.73	-20.20	2.00	2.00	0.00
3,100.00	10.00	320.52	3,097.47	33.59	-27.67	-31.54	2.00	2.00	0.00
3,200.00	12.00	320.52	3,195.62	48.32	-39.81	-45.37	2.00	2.00	0.00
3,209.67	12.19	320.52	3,205.07	49.88	-41.09	-46.83	2.00	2.00	0.00
3,300.00	12.19	320.52	3,293.37	64.61	-53.23	-60.66	0.00	0.00	0.00
3,400.00	12.19	320.52	3,391.11	80.91	-66.66	-75.97	0.00	0.00	0.00
3,500.00	12.19	320.52	3,488.86	97.21	-80.09	-91.27	0.00	0.00	0.00
3,600.00	12.19	320.52	3,586.60	113.51	-93.52	-106.58	0.00	0.00	0.00
3,700.00	12.19	320.52	3,684.35	129.81	-106.95	-121.88	0.00	0.00	0.00
3,800.00	12.19	320.52	3,782.09	146.11	-120.38	-137.19	0.00	0.00	0.00
3,900.00	12.19	320.52	3,879.84	162.41	-133.81	-152.49	0.00	0.00	0.00
4,000.00	12.19	320.52	3,977.58	178.71	-147.24	-167.80	0.00	0.00	0.00
4,100.00	12.19	320.52	4,075.32	195.02	-160.67	-183.11	0.00	0.00	0.00
4,200.00	12.19	320.52	4,173.07	211.32	-174.10	-198.41	0.00	0.00	0.00
4,300.00	12.19	320.52	4,270.81	227.62	-187.53	-213.72	0.00	0.00	0.00
4,400.00	12.19	320.52	4,368.56	243.92	-200.96	-229.02	0.00	0.00	0.00
4,500.00	12.19	320.52	4,466.30	260.22	-214.39	-244.33	0.00	0.00	0.00
4,600.00	12.19	320.52	4,564.04	276.52	-227.82	-259.64	0.00	0.00	0.00
4,700.00	12.19	320.52	4,661.79	292.82	-241.25	-274.94	0.00	0.00	0.00
4,800.00	12.19	320.52	4,759.53	309.13	-254.68	-290.25	0.00	0.00	0.00
4,900.00	12.19	320.52	4,857.28	325.43	-268.11	-305.55	0.00	0.00	0.00
5,000.00	12.19	320.52	4,955.02	341.73	-281.54	-320.86	0.00	0.00	0.00
5,100.00	12.19	320.52	5,052.76	358.03	-294.97	-336.16	0.00	0.00	0.00
5,200.00	12.19	320.52	5,150.51	374.33	-308.40	-351.47	0.00	0.00	0.00

# Integrity Directional Services, LLC

## Survey Report



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<b>Project:</b>	Weld County, Co (NAD 83)	<b>TVD Reference:</b>	KB=25' @ 5640.00ft
<b>Site:</b>	Jaco West Pad	<b>MD Reference:</b>	KB=25' @ 5640.00ft
<b>Well:</b>	Jaco West 1930-1NH	<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	12.19	320.52	5,248.25	390.63	-321.83	-366.78	0.00	0.00	0.00
5,400.00	12.19	320.52	5,346.00	406.93	-335.26	-382.08	0.00	0.00	0.00
5,500.00	12.19	320.52	5,443.74	423.23	-348.69	-397.39	0.00	0.00	0.00
5,600.00	12.19	320.52	5,541.48	439.54	-362.12	-412.69	0.00	0.00	0.00
5,700.00	12.19	320.52	5,639.23	455.84	-375.55	-428.00	0.00	0.00	0.00
5,800.00	12.19	320.52	5,736.97	472.14	-388.98	-443.30	0.00	0.00	0.00
5,900.00	12.19	320.52	5,834.72	488.44	-402.41	-458.61	0.00	0.00	0.00
6,000.00	12.19	320.52	5,932.46	504.74	-415.84	-473.92	0.00	0.00	0.00
6,100.00	12.19	320.52	6,030.20	521.04	-429.27	-489.22	0.00	0.00	0.00
6,200.00	12.19	320.52	6,127.95	537.34	-442.70	-504.53	0.00	0.00	0.00
6,300.00	12.19	320.52	6,225.69	553.64	-456.13	-519.83	0.00	0.00	0.00
6,400.00	12.19	320.52	6,323.44	569.95	-469.56	-535.14	0.00	0.00	0.00
6,500.00	12.19	320.52	6,421.18	586.25	-482.99	-550.44	0.00	0.00	0.00
6,600.00	12.19	320.52	6,518.92	602.55	-496.42	-565.75	0.00	0.00	0.00
6,700.00	12.19	320.52	6,616.67	618.85	-509.85	-581.06	0.00	0.00	0.00
6,800.00	12.19	320.52	6,714.41	635.15	-523.28	-596.36	0.00	0.00	0.00
6,900.00	12.19	320.52	6,812.16	651.45	-536.71	-611.67	0.00	0.00	0.00
7,000.00	12.19	320.52	6,909.90	667.75	-550.14	-626.97	0.00	0.00	0.00
7,100.00	12.19	320.52	7,007.65	684.05	-563.57	-642.28	0.00	0.00	0.00
7,200.00	12.19	320.52	7,105.39	700.36	-577.00	-657.58	0.00	0.00	0.00
7,300.00	12.19	320.52	7,203.13	716.66	-590.43	-672.89	0.00	0.00	0.00
7,400.00	12.19	320.52	7,300.88	732.96	-603.86	-688.20	0.00	0.00	0.00
7,500.00	12.19	320.52	7,398.62	749.26	-617.29	-703.50	0.00	0.00	0.00
7,600.00	12.19	320.52	7,496.37	765.56	-630.72	-718.81	0.00	0.00	0.00
7,700.00	12.19	320.52	7,594.11	781.86	-644.15	-734.11	0.00	0.00	0.00
7,800.00	12.19	320.52	7,691.85	798.16	-657.58	-749.42	0.00	0.00	0.00
7,831.14	12.19	320.52	7,722.29	803.24	-661.76	-754.19	0.00	0.00	0.00
7,900.00	8.17	287.85	7,790.11	810.36	-671.05	-760.63	10.00	-5.84	-47.44
8,000.00	10.75	225.57	7,888.97	806.00	-684.51	-755.32	10.00	2.58	-62.28
8,100.00	19.06	202.91	7,985.60	784.37	-697.56	-732.82	10.00	8.31	-22.66
8,200.00	28.45	194.23	8,077.05	746.15	-709.80	-693.83	10.00	9.39	-8.68
8,300.00	38.14	189.66	8,160.55	692.48	-720.86	-639.51	10.00	9.69	-4.57
8,400.00	47.94	186.72	8,233.56	625.01	-730.41	-571.52	10.00	9.80	-2.93
8,500.00	57.79	184.58	8,293.86	545.77	-738.15	-491.94	10.00	9.85	-2.14
8,600.00	67.67	182.86	8,339.62	457.18	-743.85	-403.17	10.00	9.88	-1.72
8,700.00	77.57	181.37	8,369.45	361.93	-747.34	-307.91	10.00	9.90	-1.49
8,800.00	87.48	180.00	8,382.44	262.91	-748.51	-209.06	10.00	9.91	-1.38
8,825.43	90.00	179.65	8,383.00	237.49	-748.44	-183.70	10.00	9.91	-1.35
8,900.00	90.00	179.65	8,383.00	162.92	-747.98	-109.36	0.00	0.00	0.00
9,000.00	90.00	179.65	8,383.00	62.92	-747.37	-9.66	0.00	0.00	0.00
9,100.00	90.00	179.65	8,383.00	-37.08	-746.77	90.05	0.00	0.00	0.00
9,200.00	90.00	179.65	8,383.00	-137.07	-746.16	189.75	0.00	0.00	0.00
9,300.00	90.00	179.65	8,383.00	-237.07	-745.55	289.45	0.00	0.00	0.00



# Integrity Directional Services, LLC

## Survey Report



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9,400.00	90.00	179.65	8,383.00	-337.07	-744.94	389.15	0.00	0.00	0.00
9,500.00	90.00	179.65	8,383.00	-437.07	-744.34	488.86	0.00	0.00	0.00
9,600.00	90.00	179.65	8,383.00	-537.07	-743.73	588.56	0.00	0.00	0.00
9,700.00	90.00	179.65	8,383.00	-637.07	-743.12	688.26	0.00	0.00	0.00
9,800.00	90.00	179.65	8,383.00	-737.06	-742.51	787.96	0.00	0.00	0.00
9,900.00	90.00	179.65	8,383.00	-837.06	-741.91	887.66	0.00	0.00	0.00
10,000.00	90.00	179.65	8,383.00	-937.06	-741.30	987.37	0.00	0.00	0.00
10,100.00	90.00	179.65	8,383.00	-1,037.06	-740.69	1,087.07	0.00	0.00	0.00
10,200.00	90.00	179.65	8,383.00	-1,137.06	-740.09	1,186.77	0.00	0.00	0.00
10,300.00	90.00	179.65	8,383.00	-1,237.05	-739.48	1,286.47	0.00	0.00	0.00
10,400.00	90.00	179.65	8,383.00	-1,337.05	-738.87	1,386.18	0.00	0.00	0.00
10,500.00	90.00	179.65	8,383.00	-1,437.05	-738.26	1,485.88	0.00	0.00	0.00
10,600.00	90.00	179.65	8,383.00	-1,537.05	-737.66	1,585.58	0.00	0.00	0.00
10,700.00	90.00	179.65	8,383.00	-1,637.05	-737.05	1,685.28	0.00	0.00	0.00
10,800.00	90.00	179.65	8,383.00	-1,737.04	-736.44	1,784.98	0.00	0.00	0.00
10,900.00	90.00	179.65	8,383.00	-1,837.04	-735.83	1,884.69	0.00	0.00	0.00
11,000.00	90.00	179.65	8,383.00	-1,937.04	-735.23	1,984.39	0.00	0.00	0.00
11,100.00	90.00	179.65	8,383.00	-2,037.04	-734.62	2,084.09	0.00	0.00	0.00
11,200.00	90.00	179.65	8,383.00	-2,137.04	-734.01	2,183.79	0.00	0.00	0.00
11,300.00	90.00	179.65	8,383.00	-2,237.04	-733.40	2,283.50	0.00	0.00	0.00
11,400.00	90.00	179.65	8,383.00	-2,337.03	-732.80	2,383.20	0.00	0.00	0.00
11,500.00	90.00	179.65	8,383.00	-2,437.03	-732.19	2,482.90	0.00	0.00	0.00
11,600.00	90.00	179.65	8,383.00	-2,537.03	-731.58	2,582.60	0.00	0.00	0.00
11,700.00	90.00	179.65	8,383.00	-2,637.03	-730.97	2,682.30	0.00	0.00	0.00
11,800.00	90.00	179.65	8,383.00	-2,737.03	-730.37	2,782.01	0.00	0.00	0.00
11,900.00	90.00	179.65	8,383.00	-2,837.02	-729.76	2,881.71	0.00	0.00	0.00
12,000.00	90.00	179.65	8,383.00	-2,937.02	-729.15	2,981.41	0.00	0.00	0.00
12,100.00	90.00	179.65	8,383.00	-3,037.02	-728.54	3,081.11	0.00	0.00	0.00
12,200.00	90.00	179.65	8,383.00	-3,137.02	-727.94	3,180.82	0.00	0.00	0.00
12,300.00	90.00	179.65	8,383.00	-3,237.02	-727.33	3,280.52	0.00	0.00	0.00
12,400.00	90.00	179.65	8,383.00	-3,337.02	-726.72	3,380.22	0.00	0.00	0.00
12,500.00	90.00	179.65	8,383.00	-3,437.01	-726.11	3,479.92	0.00	0.00	0.00
12,600.00	90.00	179.65	8,383.00	-3,537.01	-725.51	3,579.62	0.00	0.00	0.00
12,700.00	90.00	179.65	8,383.00	-3,637.01	-724.90	3,679.33	0.00	0.00	0.00
12,800.00	90.00	179.65	8,383.00	-3,737.01	-724.29	3,779.03	0.00	0.00	0.00
12,900.00	90.00	179.65	8,383.00	-3,837.01	-723.68	3,878.73	0.00	0.00	0.00
13,000.00	90.00	179.65	8,383.00	-3,937.00	-723.08	3,978.43	0.00	0.00	0.00
13,100.00	90.00	179.65	8,383.00	-4,037.00	-722.47	4,078.14	0.00	0.00	0.00
13,200.00	90.00	179.65	8,383.00	-4,137.00	-721.86	4,177.84	0.00	0.00	0.00
13,300.00	90.00	179.65	8,383.00	-4,237.00	-721.25	4,277.54	0.00	0.00	0.00
13,400.00	90.00	179.65	8,383.00	-4,337.00	-720.65	4,377.24	0.00	0.00	0.00
13,500.00	90.00	179.65	8,383.00	-4,437.00	-720.04	4,476.94	0.00	0.00	0.00
13,600.00	90.00	179.65	8,383.00	-4,536.99	-719.43	4,576.65	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 West 1930-1NH
<b>Project:</b>	Weld County, Co (NAD 83)	<b>TVD Reference:</b>	KB=25' @ 5640.00ft
<b>Site:</b>	Jaco West Pad	<b>MD Reference:</b>	KB=25' @ 5640.00ft
<b>Well:</b>	Jaco West 1930-1NH	<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	179.65	8,383.00	-4,636.99	-718.82	4,676.35	0.00	0.00	0.00
13,800.00	90.00	179.65	8,383.00	-4,736.99	-718.22	4,776.05	0.00	0.00	0.00
13,900.00	90.00	179.65	8,383.00	-4,836.99	-717.61	4,875.75	0.00	0.00	0.00
14,000.00	90.00	179.65	8,383.00	-4,936.99	-717.00	4,975.46	0.00	0.00	0.00
14,100.00	90.00	179.65	8,383.00	-5,036.98	-716.39	5,075.16	0.00	0.00	0.00
14,200.00	90.00	179.65	8,383.00	-5,136.98	-715.79	5,174.86	0.00	0.00	0.00
14,300.00	90.00	179.65	8,383.00	-5,236.98	-715.18	5,274.56	0.00	0.00	0.00
14,400.00	90.00	179.65	8,383.00	-5,336.98	-714.57	5,374.26	0.00	0.00	0.00
14,500.00	90.00	179.65	8,383.00	-5,436.98	-713.96	5,473.97	0.00	0.00	0.00
14,600.00	90.00	179.65	8,383.00	-5,536.97	-713.36	5,573.67	0.00	0.00	0.00
14,700.00	90.00	179.65	8,383.00	-5,636.97	-712.75	5,673.37	0.00	0.00	0.00
14,800.00	90.00	179.65	8,383.00	-5,736.97	-712.14	5,773.07	0.00	0.00	0.00
14,900.00	90.00	179.65	8,383.00	-5,836.97	-711.53	5,872.78	0.00	0.00	0.00
15,000.00	90.00	179.65	8,383.00	-5,936.97	-710.93	5,972.48	0.00	0.00	0.00
15,100.00	90.00	179.65	8,383.00	-6,036.97	-710.32	6,072.18	0.00	0.00	0.00
15,200.00	90.00	179.65	8,383.00	-6,136.96	-709.71	6,171.88	0.00	0.00	0.00
15,300.00	90.00	179.65	8,383.00	-6,236.96	-709.10	6,271.58	0.00	0.00	0.00
15,400.00	90.00	179.65	8,383.00	-6,336.96	-708.50	6,371.29	0.00	0.00	0.00
15,500.00	90.00	179.65	8,383.00	-6,436.96	-707.89	6,470.99	0.00	0.00	0.00
15,600.00	90.00	179.65	8,383.00	-6,536.96	-707.28	6,570.69	0.00	0.00	0.00
15,700.00	90.00	179.65	8,383.00	-6,636.95	-706.67	6,670.39	0.00	0.00	0.00
15,800.00	90.00	179.65	8,383.00	-6,736.95	-706.07	6,770.09	0.00	0.00	0.00
15,900.00	90.00	179.65	8,383.00	-6,836.95	-705.46	6,869.80	0.00	0.00	0.00
16,000.00	90.00	179.65	8,383.00	-6,936.95	-704.85	6,969.50	0.00	0.00	0.00
16,100.00	90.00	179.65	8,383.00	-7,036.95	-704.24	7,069.20	0.00	0.00	0.00
16,200.00	90.00	179.65	8,383.00	-7,136.95	-703.64	7,168.90	0.00	0.00	0.00
16,300.00	90.00	179.65	8,383.00	-7,236.94	-703.03	7,268.61	0.00	0.00	0.00
16,400.00	90.00	179.65	8,383.00	-7,336.94	-702.42	7,368.31	0.00	0.00	0.00
16,500.00	90.00	179.65	8,383.00	-7,436.94	-701.81	7,468.01	0.00	0.00	0.00
16,600.00	90.00	179.65	8,383.00	-7,536.94	-701.21	7,567.71	0.00	0.00	0.00
16,700.00	90.00	179.65	8,383.00	-7,636.94	-700.60	7,667.41	0.00	0.00	0.00
16,800.00	90.00	179.65	8,383.00	-7,736.93	-699.99	7,767.12	0.00	0.00	0.00
16,900.00	90.00	179.65	8,383.00	-7,836.93	-699.38	7,866.82	0.00	0.00	0.00
17,000.00	90.00	179.65	8,383.00	-7,936.93	-698.78	7,966.52	0.00	0.00	0.00
17,100.00	90.00	179.65	8,383.00	-8,036.93	-698.17	8,066.22	0.00	0.00	0.00
17,200.00	90.00	179.65	8,383.00	-8,136.93	-697.56	8,165.93	0.00	0.00	0.00
17,300.00	90.00	179.65	8,383.00	-8,236.93	-696.95	8,265.63	0.00	0.00	0.00
17,400.00	90.00	179.65	8,383.00	-8,336.92	-696.35	8,365.33	0.00	0.00	0.00
17,500.00	90.00	179.65	8,383.00	-8,436.92	-695.74	8,465.03	0.00	0.00	0.00
17,600.00	90.00	179.65	8,383.00	-8,536.92	-695.13	8,564.73	0.00	0.00	0.00
17,700.00	90.00	179.65	8,383.00	-8,636.92	-694.52	8,664.44	0.00	0.00	0.00
17,800.00	90.00	179.65	8,383.00	-8,736.92	-693.92	8,764.14	0.00	0.00	0.00
17,900.00	90.00	179.65	8,383.00	-8,836.91	-693.31	8,863.84	0.00	0.00	0.00
18,000.00	90.00	179.65	8,383.00	-8,936.91	-692.70	8,963.54	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 West 1930-1NH
<b>Project:</b>	Weld County, Co (NAD 83)	<b>TVD Reference:</b>	KB=25' @ 5640.00ft
<b>Site:</b>	Jaco West Pad	<b>MD Reference:</b>	KB=25' @ 5640.00ft
<b>Well:</b>	Jaco West 1930-1NH	<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	179.65	8,383.00	-9,036.91	-692.09	9,063.25	0.00	0.00	0.00
18,200.00	90.00	179.65	8,383.00	-9,136.91	-691.49	9,162.95	0.00	0.00	0.00
18,300.00	90.00	179.65	8,383.00	-9,236.91	-690.88	9,262.65	0.00	0.00	0.00
18,400.00	90.00	179.65	8,383.00	-9,336.90	-690.27	9,362.35	0.00	0.00	0.00
18,500.00	90.00	179.65	8,383.00	-9,436.90	-689.66	9,462.05	0.00	0.00	0.00
18,600.00	90.00	179.65	8,383.00	-9,536.90	-689.06	9,561.76	0.00	0.00	0.00
18,700.00	90.00	179.65	8,383.00	-9,636.90	-688.45	9,661.46	0.00	0.00	0.00
18,724.90	90.00	179.65	8,383.00	-9,661.80	-688.30	9,686.28	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
1930-1NH HEEL (240 - plan hits target center - Point	0.00	0.00	7,790.11	810.36	-671.05	1,576,877.723 4	3,217,430.348 4	40° 54' 51.301 N	104° 42' 47.994 W
1930-1NH LP (330' FI - plan hits target center - Point	0.00	0.00	8,383.00	237.49	-748.44	1,576,304.849 2	3,217,352.965 8	40° 54' 45.648 N	104° 42' 49.068 W
1930-1NH BHL (330' I - plan hits target center - Point	0.00	0.00	8,383.00	-9,661.80	-688.30	1,566,405.588 5	3,217,413.102 2	40° 53' 7.836 N	104° 42' 49.428 W

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