

Longs Peak Resources
Project: Weld County, Co (NAD 83)
Site: Spyglass East Pad
Well: Spyglass East 2524-12CH
Wellbore: Wellbore #1
Plan: Design #1 (Spyglass East 2524-12CH/Wellbore #1)



WELL DETAILS: Spyglass East 2524-12CH

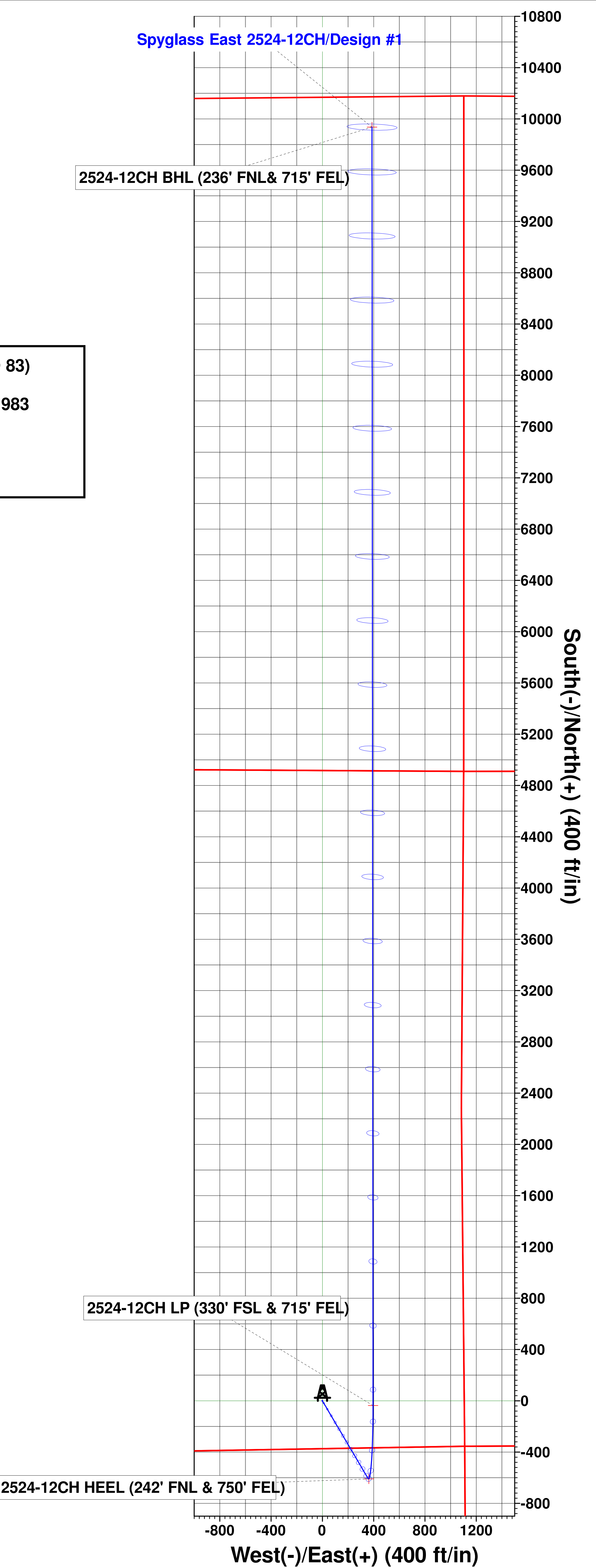
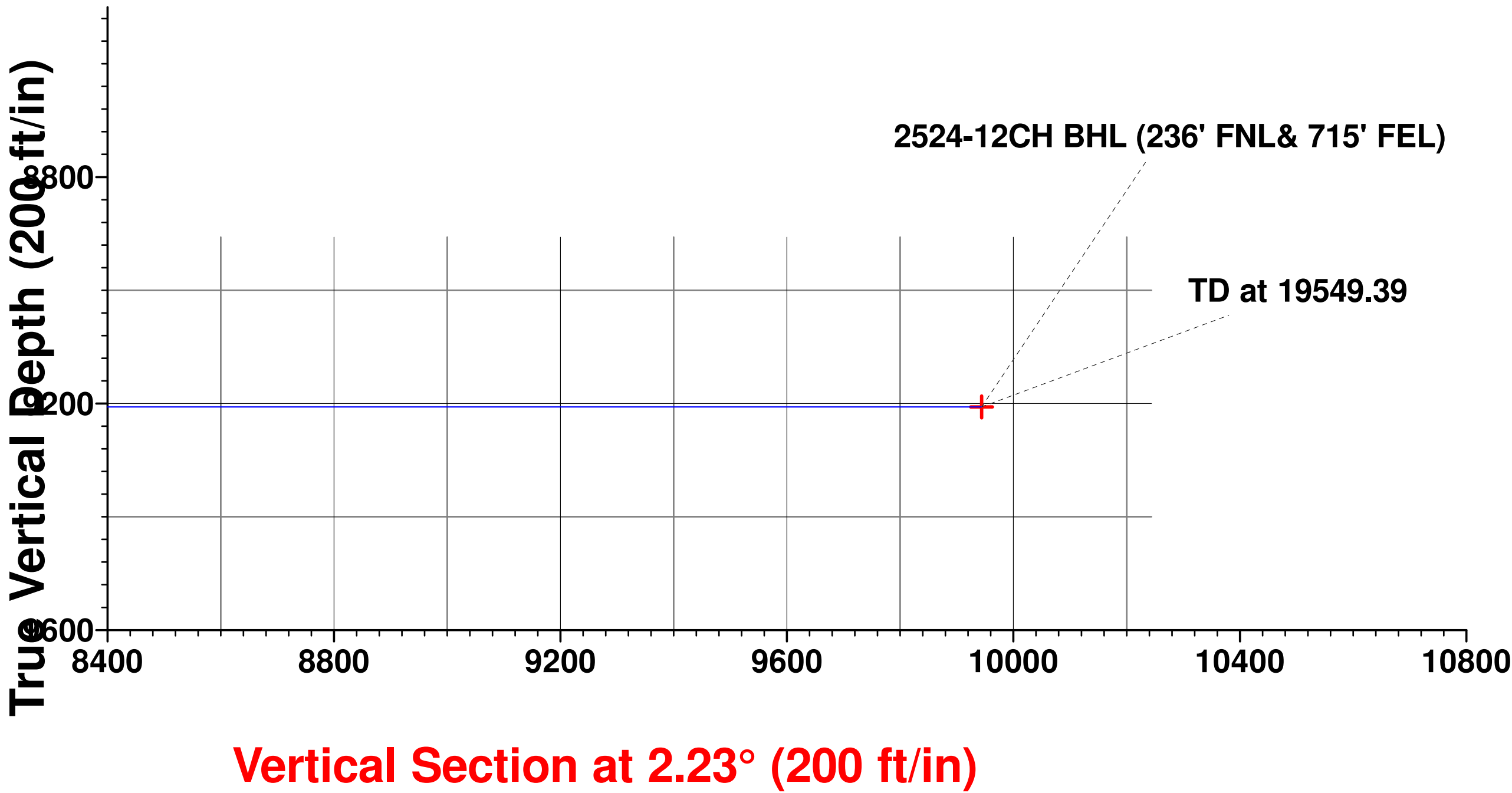
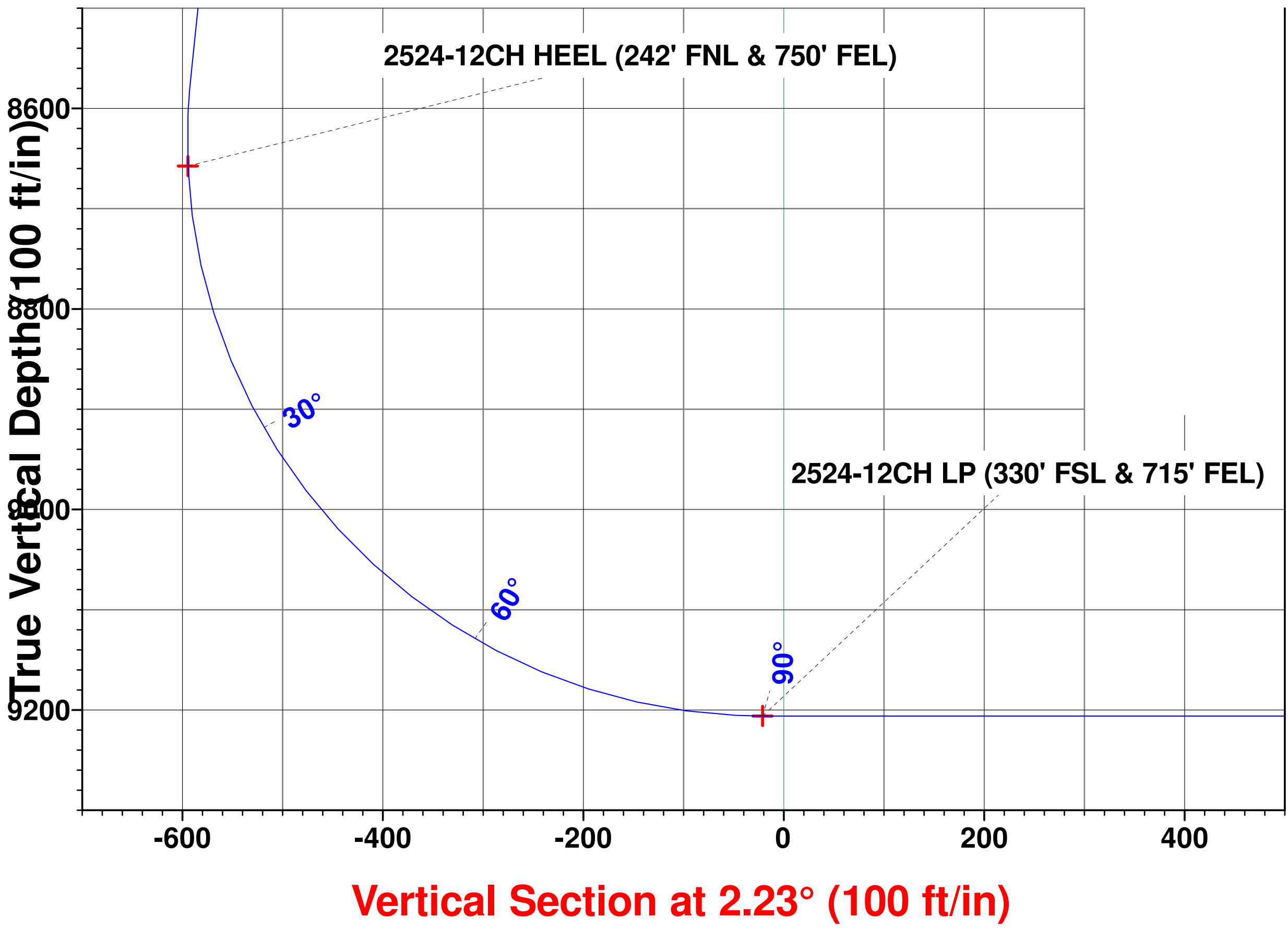
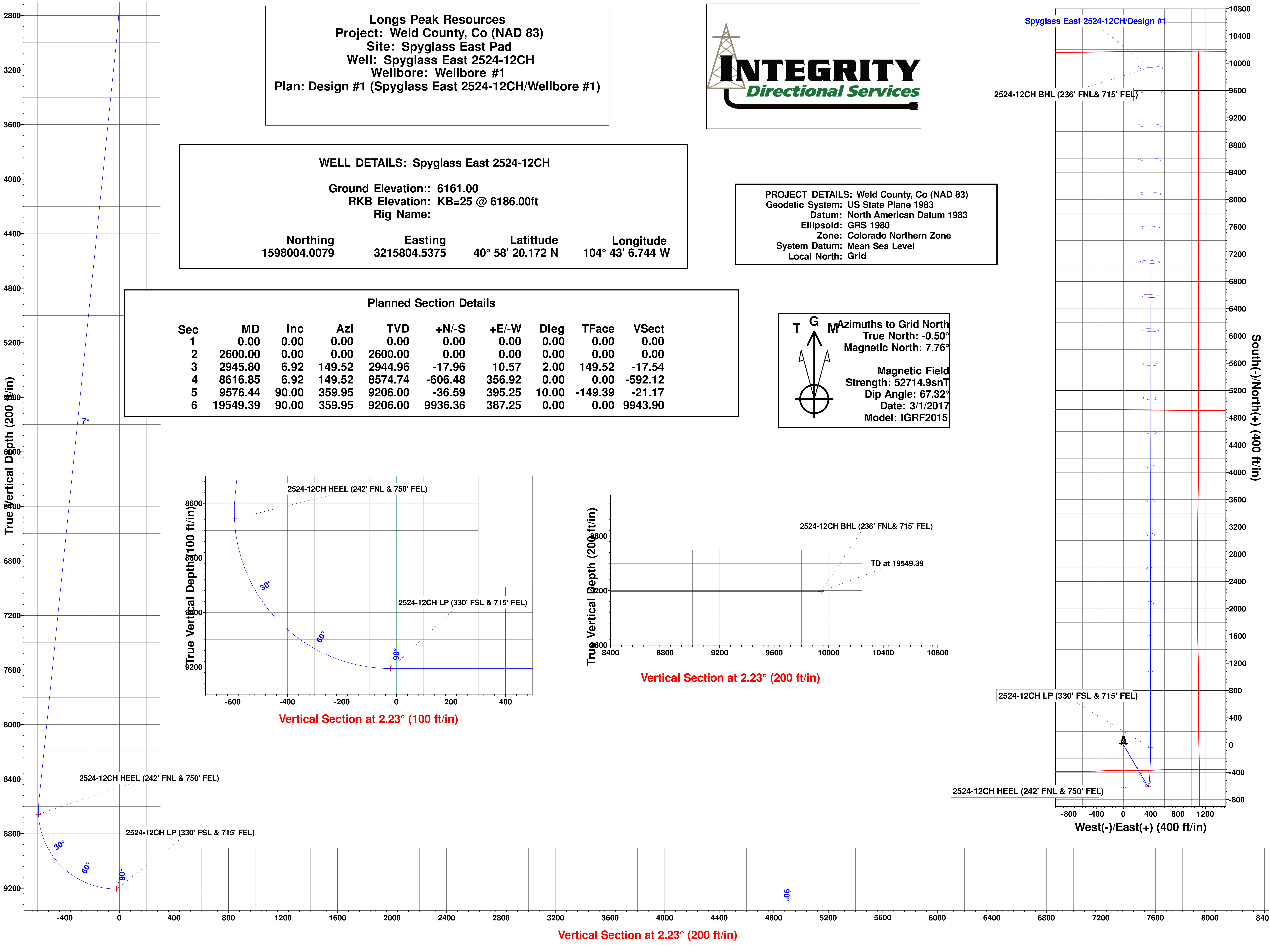
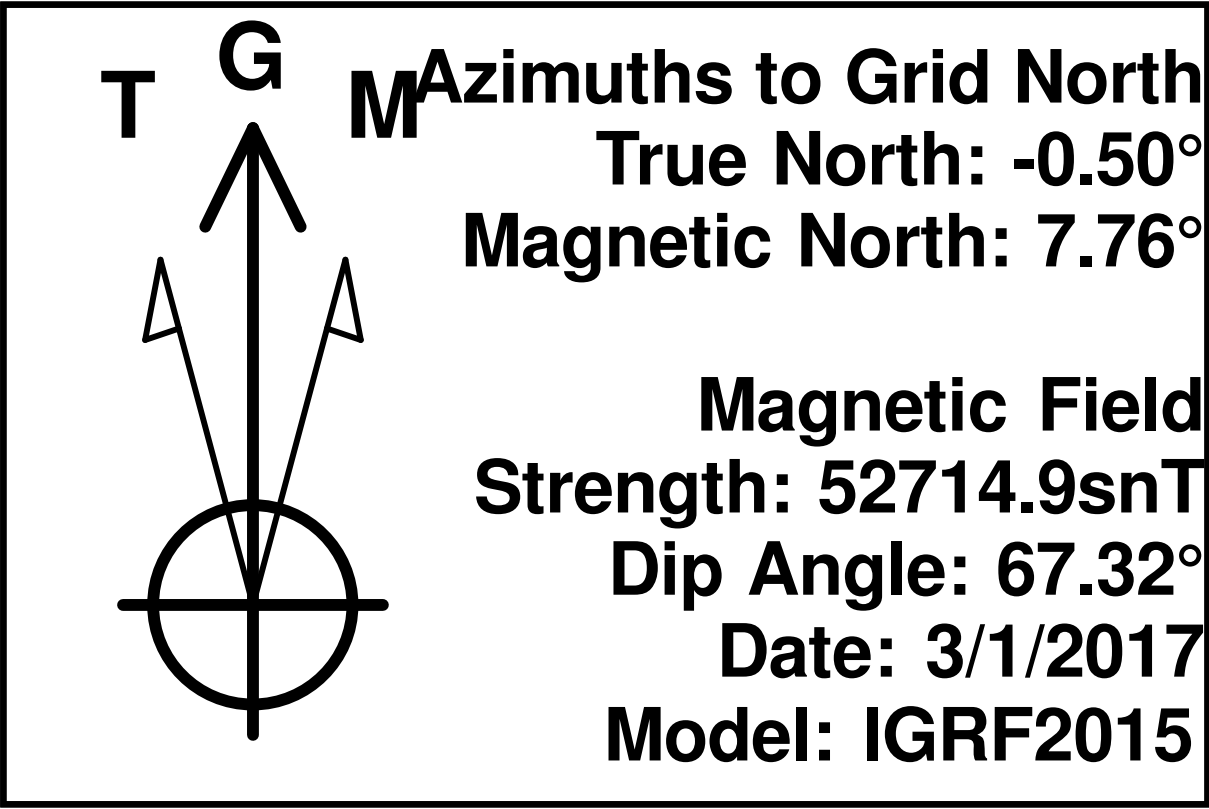
Ground Elevation:: 6161.00
RKB Elevation: KB=25 @ 6186.00ft
Rig Name:

Northing Easting Latitude Longitude
1598004.0079 3215804.5375 40° 58' 20.172 N 104° 43' 6.744 W

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

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	2945.80	6.92	149.52	2944.96	-17.96	10.57	2.00	149.52	-17.54
4	8616.85	6.92	149.52	8574.74	-606.48	356.92	0.00	0.00	-592.12
5	9576.44	90.00	359.95	9206.00	-36.59	395.25	10.00	-149.39	-21.17
6	19549.39	90.00	359.95	9206.00	9936.36	387.25	0.00	0.00	9943.90



Longs Peak Resources

Weld County, Co (NAD 83)

Spyglass East Pad

Spyglass East 2524-12CH

Wellbore #1

Plan: Design #1

Standard Survey Report

02 March, 2017



Integrity Directional Services, LLC

Survey Report



Company:	Longs Peak Resources	Local Co-ordinate Reference:	Well Spyglass East 2524-12CH
Project:	Weld County, Co (NAD 83)	TVD Reference:	KB=25 @ 6186.00ft
Site:	Spyglass East Pad	MD Reference:	KB=25 @ 6186.00ft
Well:	Spyglass East 2524-12CH	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Design #1	Database:	EDM 5000.1 Multi User Db

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

Site	Spyglass East Pad		
Site Position:		Northing:	1,598,002.2642 usft
From:	Lat/Long	Easting:	3,215,605.7106 usft
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "
		Latitude:	40° 58' 20.172 N
		Longitude:	104° 43' 9.336 W
		Grid Convergence:	0.50 °

Well	Spyglass East 2524-12CH		
Well Position	+N/-S	0.00 ft	Northing: 1,598,004.0078 usft
	+E/-W	0.00 ft	Easting: 3,215,804.5375 usft
Position Uncertainty	0.00 ft	Wellhead Elevation:	0.00 ft
		Latitude:	40° 58' 20.172 N
		Longitude:	104° 43' 6.744 W
		Ground Level:	6,161.00 ft

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2015	3/1/2017	8.27
			Dip Angle (°) 67.32
			Field Strength (nT) 52,715

Design	Design #1		
Audit Notes:			
Version:	Phase:	PROTOTYPE	Tie On Depth: 0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)
	0.00	0.00	0.00
			Direction (°) 2.23

Survey Tool Program	Date 3/1/2017		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name
0.00	19,549.39	Design #1 (Wellbore #1)	MWD
			Description MWD - Standard

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)
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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Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Design #1	Database:	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
Start Build 2.00									
2,700.00	2.00	149.52	2,699.98	-1.50	0.89	-1.47	2.00	2.00	0.00
2,800.00	4.00	149.52	2,799.84	-6.01	3.54	-5.87	2.00	2.00	0.00
2,900.00	6.00	149.52	2,899.45	-13.53	7.96	-13.20	2.00	2.00	0.00
2,945.80	6.92	149.52	2,944.96	-17.96	10.57	-17.54	2.00	2.00	0.00
Start 5671.05 hold at 2945.80 MD									
3,000.00	6.92	149.52	2,998.77	-23.59	13.88	-23.03	0.00	0.00	0.00
3,100.00	6.92	149.52	3,098.04	-33.97	19.99	-33.16	0.00	0.00	0.00
3,200.00	6.92	149.52	3,197.31	-44.34	26.10	-43.29	0.00	0.00	0.00
3,300.00	6.92	149.52	3,296.58	-54.72	32.20	-53.43	0.00	0.00	0.00
3,400.00	6.92	149.52	3,395.86	-65.10	38.31	-63.56	0.00	0.00	0.00
3,500.00	6.92	149.52	3,495.13	-75.48	44.42	-73.69	0.00	0.00	0.00
3,600.00	6.92	149.52	3,594.40	-85.85	50.53	-83.82	0.00	0.00	0.00
3,700.00	6.92	149.52	3,693.67	-96.23	56.63	-93.95	0.00	0.00	0.00
3,800.00	6.92	149.52	3,792.95	-106.61	62.74	-104.09	0.00	0.00	0.00
3,900.00	6.92	149.52	3,892.22	-116.99	68.85	-114.22	0.00	0.00	0.00
4,000.00	6.92	149.52	3,991.49	-127.36	74.96	-124.35	0.00	0.00	0.00
4,100.00	6.92	149.52	4,090.76	-137.74	81.06	-134.48	0.00	0.00	0.00
4,200.00	6.92	149.52	4,190.04	-148.12	87.17	-144.61	0.00	0.00	0.00
4,300.00	6.92	149.52	4,289.31	-158.50	93.28	-154.74	0.00	0.00	0.00
4,400.00	6.92	149.52	4,388.58	-168.88	99.39	-164.88	0.00	0.00	0.00
4,500.00	6.92	149.52	4,487.85	-179.25	105.49	-175.01	0.00	0.00	0.00
4,600.00	6.92	149.52	4,587.12	-189.63	111.60	-185.14	0.00	0.00	0.00
4,700.00	6.92	149.52	4,686.40	-200.01	117.71	-195.27	0.00	0.00	0.00
4,800.00	6.92	149.52	4,785.67	-210.39	123.81	-205.40	0.00	0.00	0.00
4,900.00	6.92	149.52	4,884.94	-220.76	129.92	-215.54	0.00	0.00	0.00
5,000.00	6.92	149.52	4,984.21	-231.14	136.03	-225.67	0.00	0.00	0.00

Integrity Directional Services, LLC

Survey Report



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Project:	Weld County, Co (NAD 83)	TVD Reference:	KB=25 @ 6186.00ft
Site:	Spyglass East Pad	MD Reference:	KB=25 @ 6186.00ft
Well:	Spyglass East 2524-12CH	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Design #1	Database:	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)
5,100.00	6.92	149.52	5,083.49	-241.52	142.14	-235.80	0.00	0.00	0.00
5,200.00	6.92	149.52	5,182.76	-251.90	148.24	-245.93	0.00	0.00	0.00
5,300.00	6.92	149.52	5,282.03	-262.27	154.35	-256.06	0.00	0.00	0.00
5,400.00	6.92	149.52	5,381.30	-272.65	160.46	-266.19	0.00	0.00	0.00
5,500.00	6.92	149.52	5,480.58	-283.03	166.57	-276.33	0.00	0.00	0.00
5,600.00	6.92	149.52	5,579.85	-293.41	172.67	-286.46	0.00	0.00	0.00
5,700.00	6.92	149.52	5,679.12	-303.78	178.78	-296.59	0.00	0.00	0.00
5,800.00	6.92	149.52	5,778.39	-314.16	184.89	-306.72	0.00	0.00	0.00
5,900.00	6.92	149.52	5,877.67	-324.54	190.99	-316.85	0.00	0.00	0.00
6,000.00	6.92	149.52	5,976.94	-334.92	197.10	-326.99	0.00	0.00	0.00
6,100.00	6.92	149.52	6,076.21	-345.29	203.21	-337.12	0.00	0.00	0.00
6,200.00	6.92	149.52	6,175.48	-355.67	209.32	-347.25	0.00	0.00	0.00
6,300.00	6.92	149.52	6,274.76	-366.05	215.42	-357.38	0.00	0.00	0.00
6,400.00	6.92	149.52	6,374.03	-376.43	221.53	-367.51	0.00	0.00	0.00
6,500.00	6.92	149.52	6,473.30	-386.80	227.64	-377.65	0.00	0.00	0.00
6,600.00	6.92	149.52	6,572.57	-397.18	233.75	-387.78	0.00	0.00	0.00
6,700.00	6.92	149.52	6,671.85	-407.56	239.85	-397.91	0.00	0.00	0.00
6,800.00	6.92	149.52	6,771.12	-417.94	245.96	-408.04	0.00	0.00	0.00
6,900.00	6.92	149.52	6,870.39	-428.31	252.07	-418.17	0.00	0.00	0.00
7,000.00	6.92	149.52	6,969.66	-438.69	258.18	-428.30	0.00	0.00	0.00
7,100.00	6.92	149.52	7,068.93	-449.07	264.28	-438.44	0.00	0.00	0.00
7,200.00	6.92	149.52	7,168.21	-459.45	270.39	-448.57	0.00	0.00	0.00
7,300.00	6.92	149.52	7,267.48	-469.82	276.50	-458.70	0.00	0.00	0.00
7,400.00	6.92	149.52	7,366.75	-480.20	282.60	-468.83	0.00	0.00	0.00
7,500.00	6.92	149.52	7,466.02	-490.58	288.71	-478.96	0.00	0.00	0.00
7,600.00	6.92	149.52	7,565.30	-500.96	294.82	-489.10	0.00	0.00	0.00
7,700.00	6.92	149.52	7,664.57	-511.33	300.93	-499.23	0.00	0.00	0.00
7,800.00	6.92	149.52	7,763.84	-521.71	307.03	-509.36	0.00	0.00	0.00
7,900.00	6.92	149.52	7,863.11	-532.09	313.14	-519.49	0.00	0.00	0.00
8,000.00	6.92	149.52	7,962.39	-542.47	319.25	-529.62	0.00	0.00	0.00
8,100.00	6.92	149.52	8,061.66	-552.84	325.36	-539.75	0.00	0.00	0.00
8,200.00	6.92	149.52	8,160.93	-563.22	331.46	-549.89	0.00	0.00	0.00
8,300.00	6.92	149.52	8,260.20	-573.60	337.57	-560.02	0.00	0.00	0.00
8,400.00	6.92	149.52	8,359.48	-583.98	343.68	-570.15	0.00	0.00	0.00
8,500.00	6.92	149.52	8,458.75	-594.35	349.78	-580.28	0.00	0.00	0.00
8,600.00	6.92	149.52	8,558.02	-604.73	355.89	-590.41	0.00	0.00	0.00
8,616.85	6.92	149.52	8,574.74	-606.48	356.92	-592.12	0.00	0.00	0.00
Start DLS 10.00 TFO -149.39									
8,700.00	4.23	56.10	8,657.63	-609.09	362.02	-594.53	10.00	-3.23	-112.35
8,800.00	12.84	15.59	8,756.49	-596.30	368.08	-581.51	10.00	8.61	-40.50
8,900.00	22.62	8.43	8,851.64	-566.50	373.90	-551.51	10.00	9.78	-7.16
9,000.00	32.53	5.48	8,940.18	-520.60	379.30	-505.44	10.00	9.91	-2.95
9,100.00	42.47	3.80	9,019.41	-460.00	384.12	-444.69	10.00	9.95	-1.68
9,200.00	52.44	2.66	9,086.95	-386.53	388.21	-371.12	10.00	9.96	-1.14

Integrity Directional Services, LLC

Survey Report



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9,300.00	62.41	1.79	9,140.72	-302.43	391.45	-286.96	10.00	9.97	-0.87
9,400.00	72.39	1.07	9,179.10	-210.26	393.73	-194.76	10.00	9.98	-0.72
9,500.00	82.37	0.43	9,200.92	-112.80	395.00	-97.34	10.00	9.98	-0.65
9,576.44	90.00	359.95	9,206.00	-36.59	395.25	-21.17	10.00	9.98	-0.62
Start 9972.95 hold at 9576.44 MD									
9,600.00	90.00	359.95	9,206.00	-13.03	395.23	2.37	0.00	0.00	0.00
9,700.00	90.00	359.95	9,206.00	86.97	395.15	102.29	0.00	0.00	0.00
9,800.00	90.00	359.95	9,206.00	186.97	395.07	202.21	0.00	0.00	0.00
9,900.00	90.00	359.95	9,206.00	286.97	394.99	302.13	0.00	0.00	0.00
10,000.00	90.00	359.95	9,206.00	386.97	394.91	402.06	0.00	0.00	0.00
10,100.00	90.00	359.95	9,206.00	486.97	394.83	501.98	0.00	0.00	0.00
10,200.00	90.00	359.95	9,206.00	586.97	394.75	601.90	0.00	0.00	0.00
10,300.00	90.00	359.95	9,206.00	686.97	394.67	701.82	0.00	0.00	0.00
10,400.00	90.00	359.95	9,206.00	786.97	394.59	801.74	0.00	0.00	0.00
10,500.00	90.00	359.95	9,206.00	886.97	394.51	901.66	0.00	0.00	0.00
10,600.00	90.00	359.95	9,206.00	986.97	394.43	1,001.58	0.00	0.00	0.00
10,700.00	90.00	359.95	9,206.00	1,086.97	394.35	1,101.50	0.00	0.00	0.00
10,800.00	90.00	359.95	9,206.00	1,186.97	394.27	1,201.42	0.00	0.00	0.00
10,900.00	90.00	359.95	9,206.00	1,286.97	394.19	1,301.34	0.00	0.00	0.00
11,000.00	90.00	359.95	9,206.00	1,386.97	394.11	1,401.27	0.00	0.00	0.00
11,100.00	90.00	359.95	9,206.00	1,486.97	394.03	1,501.19	0.00	0.00	0.00
11,200.00	90.00	359.95	9,206.00	1,586.97	393.95	1,601.11	0.00	0.00	0.00
11,300.00	90.00	359.95	9,206.00	1,686.97	393.87	1,701.03	0.00	0.00	0.00
11,400.00	90.00	359.95	9,206.00	1,786.97	393.79	1,800.95	0.00	0.00	0.00
11,500.00	90.00	359.95	9,206.00	1,886.97	393.70	1,900.87	0.00	0.00	0.00
11,600.00	90.00	359.95	9,206.00	1,986.97	393.62	2,000.79	0.00	0.00	0.00
11,700.00	90.00	359.95	9,206.00	2,086.97	393.54	2,100.71	0.00	0.00	0.00
11,800.00	90.00	359.95	9,206.00	2,186.97	393.46	2,200.63	0.00	0.00	0.00
11,900.00	90.00	359.95	9,206.00	2,286.97	393.38	2,300.55	0.00	0.00	0.00
12,000.00	90.00	359.95	9,206.00	2,386.97	393.30	2,400.48	0.00	0.00	0.00
12,100.00	90.00	359.95	9,206.00	2,486.97	393.22	2,500.40	0.00	0.00	0.00
12,200.00	90.00	359.95	9,206.00	2,586.97	393.14	2,600.32	0.00	0.00	0.00
12,300.00	90.00	359.95	9,206.00	2,686.97	393.06	2,700.24	0.00	0.00	0.00
12,400.00	90.00	359.95	9,206.00	2,786.97	392.98	2,800.16	0.00	0.00	0.00
12,500.00	90.00	359.95	9,206.00	2,886.97	392.90	2,900.08	0.00	0.00	0.00
12,600.00	90.00	359.95	9,206.00	2,986.97	392.82	3,000.00	0.00	0.00	0.00
12,700.00	90.00	359.95	9,206.00	3,086.97	392.74	3,099.92	0.00	0.00	0.00
12,800.00	90.00	359.95	9,206.00	3,186.97	392.66	3,199.84	0.00	0.00	0.00
12,900.00	90.00	359.95	9,206.00	3,286.97	392.58	3,299.76	0.00	0.00	0.00
13,000.00	90.00	359.95	9,206.00	3,386.97	392.50	3,399.69	0.00	0.00	0.00
13,100.00	90.00	359.95	9,206.00	3,486.97	392.42	3,499.61	0.00	0.00	0.00
13,200.00	90.00	359.95	9,206.00	3,586.97	392.34	3,599.53	0.00	0.00	0.00
13,300.00	90.00	359.95	9,206.00	3,686.97	392.26	3,699.45	0.00	0.00	0.00

Integrity Directional Services, LLC

Survey Report



Company:	Longs Peak Resources	Local Co-ordinate Reference:	Well Spyglass East 2524-12CH
Project:	Weld County, Co (NAD 83)	TVD Reference:	KB=25 @ 6186.00ft
Site:	Spyglass East Pad	MD Reference:	KB=25 @ 6186.00ft
Well:	Spyglass East 2524-12CH	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Design #1	Database:	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)
13,400.00	90.00	359.95	9,206.00	3,786.97	392.18	3,799.37	0.00	0.00	0.00
13,500.00	90.00	359.95	9,206.00	3,886.97	392.10	3,899.29	0.00	0.00	0.00
13,600.00	90.00	359.95	9,206.00	3,986.97	392.02	3,999.21	0.00	0.00	0.00
13,700.00	90.00	359.95	9,206.00	4,086.97	391.94	4,099.13	0.00	0.00	0.00
13,800.00	90.00	359.95	9,206.00	4,186.97	391.86	4,199.05	0.00	0.00	0.00
13,900.00	90.00	359.95	9,206.00	4,286.97	391.78	4,298.97	0.00	0.00	0.00
14,000.00	90.00	359.95	9,206.00	4,386.97	391.70	4,398.90	0.00	0.00	0.00
14,100.00	90.00	359.95	9,206.00	4,486.97	391.62	4,498.82	0.00	0.00	0.00
14,200.00	90.00	359.95	9,206.00	4,586.97	391.54	4,598.74	0.00	0.00	0.00
14,300.00	90.00	359.95	9,206.00	4,686.97	391.46	4,698.66	0.00	0.00	0.00
14,400.00	90.00	359.95	9,206.00	4,786.97	391.38	4,798.58	0.00	0.00	0.00
14,500.00	90.00	359.95	9,206.00	4,886.97	391.30	4,898.50	0.00	0.00	0.00
14,600.00	90.00	359.95	9,206.00	4,986.97	391.22	4,998.42	0.00	0.00	0.00
14,700.00	90.00	359.95	9,206.00	5,086.97	391.14	5,098.34	0.00	0.00	0.00
14,800.00	90.00	359.95	9,206.00	5,186.97	391.06	5,198.26	0.00	0.00	0.00
14,900.00	90.00	359.95	9,206.00	5,286.97	390.98	5,298.18	0.00	0.00	0.00
15,000.00	90.00	359.95	9,206.00	5,386.97	390.90	5,398.11	0.00	0.00	0.00
15,100.00	90.00	359.95	9,206.00	5,486.97	390.82	5,498.03	0.00	0.00	0.00
15,200.00	90.00	359.95	9,206.00	5,586.97	390.74	5,597.95	0.00	0.00	0.00
15,300.00	90.00	359.95	9,206.00	5,686.97	390.66	5,697.87	0.00	0.00	0.00
15,400.00	90.00	359.95	9,206.00	5,786.97	390.58	5,797.79	0.00	0.00	0.00
15,500.00	90.00	359.95	9,206.00	5,886.97	390.50	5,897.71	0.00	0.00	0.00
15,600.00	90.00	359.95	9,206.00	5,986.97	390.42	5,997.63	0.00	0.00	0.00
15,700.00	90.00	359.95	9,206.00	6,086.97	390.34	6,097.55	0.00	0.00	0.00
15,800.00	90.00	359.95	9,206.00	6,186.97	390.26	6,197.47	0.00	0.00	0.00
15,900.00	90.00	359.95	9,206.00	6,286.97	390.18	6,297.39	0.00	0.00	0.00
16,000.00	90.00	359.95	9,206.00	6,386.97	390.10	6,397.31	0.00	0.00	0.00
16,100.00	90.00	359.95	9,206.00	6,486.97	390.02	6,497.24	0.00	0.00	0.00
16,200.00	90.00	359.95	9,206.00	6,586.97	389.94	6,597.16	0.00	0.00	0.00
16,300.00	90.00	359.95	9,206.00	6,686.97	389.86	6,697.08	0.00	0.00	0.00
16,400.00	90.00	359.95	9,206.00	6,786.97	389.78	6,797.00	0.00	0.00	0.00
16,500.00	90.00	359.95	9,206.00	6,886.97	389.70	6,896.92	0.00	0.00	0.00
16,600.00	90.00	359.95	9,206.00	6,986.97	389.62	6,996.84	0.00	0.00	0.00
16,700.00	90.00	359.95	9,206.00	7,086.97	389.54	7,096.76	0.00	0.00	0.00
16,800.00	90.00	359.95	9,206.00	7,186.97	389.46	7,196.68	0.00	0.00	0.00
16,900.00	90.00	359.95	9,206.00	7,286.97	389.38	7,296.60	0.00	0.00	0.00
17,000.00	90.00	359.95	9,206.00	7,386.97	389.30	7,396.52	0.00	0.00	0.00
17,100.00	90.00	359.95	9,206.00	7,486.97	389.22	7,496.45	0.00	0.00	0.00
17,200.00	90.00	359.95	9,206.00	7,586.97	389.14	7,596.37	0.00	0.00	0.00
17,300.00	90.00	359.95	9,206.00	7,686.97	389.06	7,696.29	0.00	0.00	0.00
17,400.00	90.00	359.95	9,206.00	7,786.97	388.98	7,796.21	0.00	0.00	0.00
17,500.00	90.00	359.95	9,206.00	7,886.97	388.90	7,896.13	0.00	0.00	0.00
17,600.00	90.00	359.95	9,206.00	7,986.97	388.82	7,996.05	0.00	0.00	0.00

Integrity Directional Services, LLC

Survey Report



Company:	Longs Peak Resources	Local Co-ordinate Reference:	Well Spyglass East 2524-12CH
Project:	Weld County, Co (NAD 83)	TVD Reference:	KB=25 @ 6186.00ft
Site:	Spyglass East Pad	MD Reference:	KB=25 @ 6186.00ft
Well:	Spyglass East 2524-12CH	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Design #1	Database:	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)
17,700.00	90.00	359.95	9,206.00	8,086.97	388.74	8,095.97	0.00	0.00	0.00
17,800.00	90.00	359.95	9,206.00	8,186.97	388.65	8,195.89	0.00	0.00	0.00
17,900.00	90.00	359.95	9,206.00	8,286.97	388.57	8,295.81	0.00	0.00	0.00
18,000.00	90.00	359.95	9,206.00	8,386.97	388.49	8,395.73	0.00	0.00	0.00
18,100.00	90.00	359.95	9,206.00	8,486.97	388.41	8,495.66	0.00	0.00	0.00
18,200.00	90.00	359.95	9,206.00	8,586.97	388.33	8,595.58	0.00	0.00	0.00
18,300.00	90.00	359.95	9,206.00	8,686.97	388.25	8,695.50	0.00	0.00	0.00
18,400.00	90.00	359.95	9,206.00	8,786.97	388.17	8,795.42	0.00	0.00	0.00
18,500.00	90.00	359.95	9,206.00	8,886.97	388.09	8,895.34	0.00	0.00	0.00
18,600.00	90.00	359.95	9,206.00	8,986.97	388.01	8,995.26	0.00	0.00	0.00
18,700.00	90.00	359.95	9,206.00	9,086.97	387.93	9,095.18	0.00	0.00	0.00
18,800.00	90.00	359.95	9,206.00	9,186.97	387.85	9,195.10	0.00	0.00	0.00
18,900.00	90.00	359.95	9,206.00	9,286.97	387.77	9,295.02	0.00	0.00	0.00
19,000.00	90.00	359.95	9,206.00	9,386.97	387.69	9,394.94	0.00	0.00	0.00
19,100.00	90.00	359.95	9,206.00	9,486.97	387.61	9,494.87	0.00	0.00	0.00
19,200.00	90.00	359.95	9,206.00	9,586.97	387.53	9,594.79	0.00	0.00	0.00
19,300.00	90.00	359.95	9,206.00	9,686.97	387.45	9,694.71	0.00	0.00	0.00
19,400.00	90.00	359.95	9,206.00	9,786.97	387.37	9,794.63	0.00	0.00	0.00
19,500.00	90.00	359.95	9,206.00	9,886.97	387.29	9,894.55	0.00	0.00	0.00
19,549.39	90.00	359.95	9,206.00	9,936.36	387.25	9,943.90	0.00	0.00	0.00
TD at 19549.39									

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
2524-12CH HEEL (24)	0.00	0.00	8,657.59	-609.09	362.01	1,597,394.919	3,216,166.550	40° 58' 14.123 N	104° 43' 2.095 W
- hit/miss target									
- Shape									
- plan hits target center									
- Point									
2524-12CH BHL (236)	0.00	0.00	9,206.00	9,936.36	387.25	1,607,940.347	3,216,191.789	40° 59' 58.308 N	104° 43' 0.552 W
- plan hits target center									
- Point									
2524-12CH LP (330° I	0.00	0.01	9,206.00	-36.59	395.25	1,597,967.420	3,216,199.783	40° 58' 19.776 N	104° 43' 1.596 W
- plan hits target center									
- Point									

Integrity Directional Services, LLC

Survey Report



Company:	Longs Peak Resources	Local Co-ordinate Reference:	Well Spyglass East 2524-12CH
Project:	Weld County, Co (NAD 83)	TVD Reference:	KB=25 @ 6186.00ft
Site:	Spyglass East Pad	MD Reference:	KB=25 @ 6186.00ft
Well:	Spyglass East 2524-12CH	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Design #1	Database:	EDM 5000.1 Multi User Db

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
2600	2600	0	0	Start Build 2.00
2946	2945	-18	11	Start 5671.05 hold at 2945.80 MD
8617	8575	-606	357	Start DLS 10.00 TFO -149.39
9576	9206	-37	395	Start 9972.95 hold at 9576.44 MD
19,549	9206	9936	387	TD at 19549.39

Checked By: _____ Approved By: _____ Date: _____