



GMT Exploration Company, LLC

Elbert County, CO (NAD 83)

Irwin-Taylor Pad

IRWIN 6-65 23-11 10HN

Wellbore #1

Plan: Design #1

Standard Planning Report

25 May, 2019



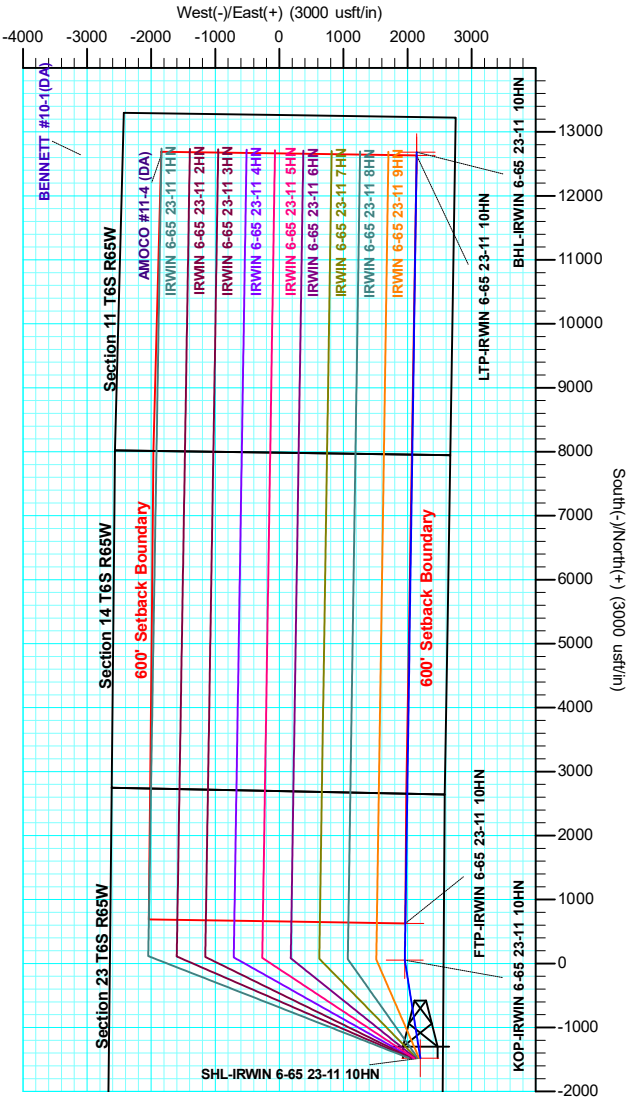
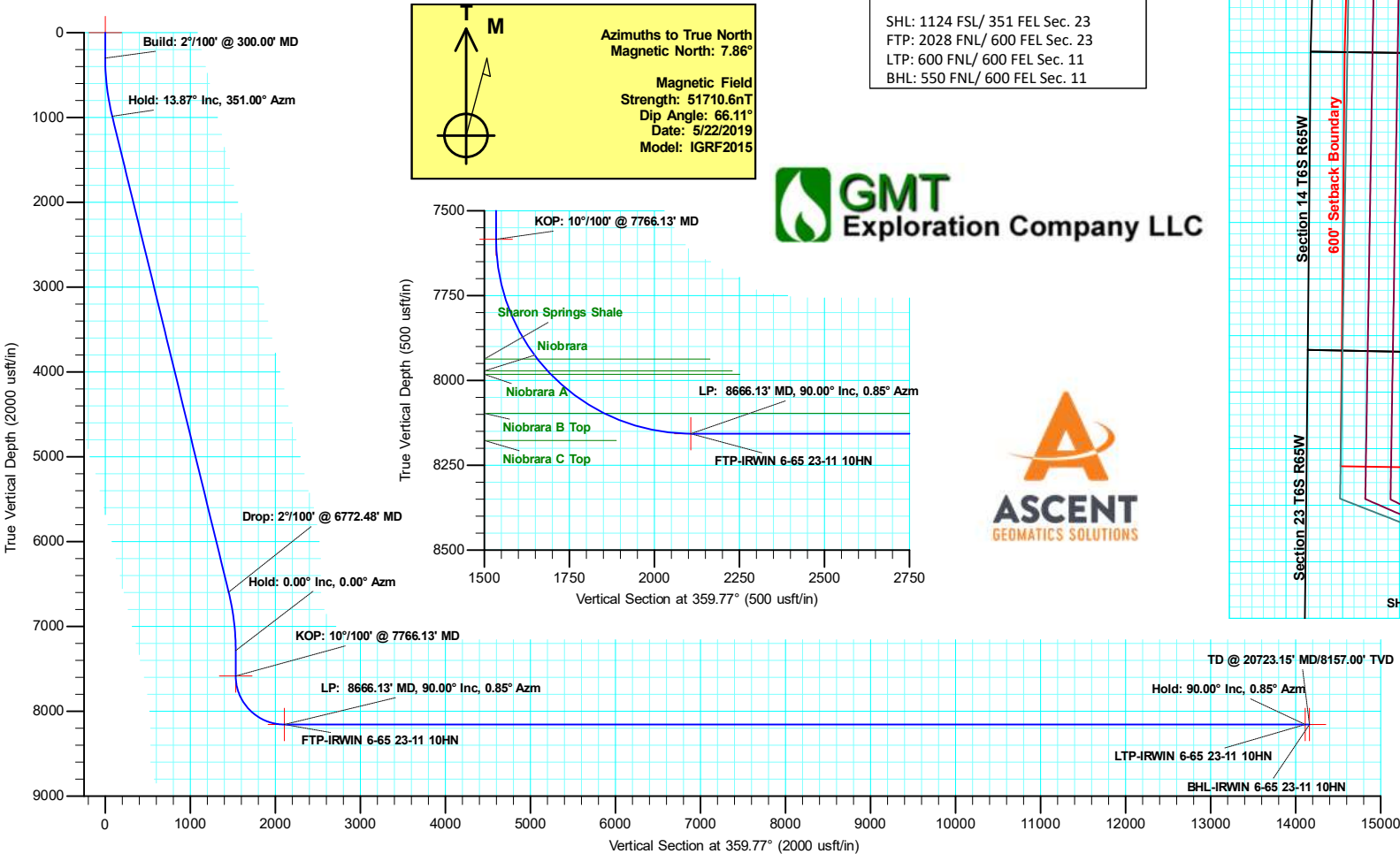
Project: Elbert County, CO (NAD 83)
Site: Irwin-Taylor Pad
Well: IRWIN 6-65 23-11 10HN
Wellbore: Wellbore #1
Design: Design #1

GMT Exploration Company, LLC

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

WELL DETAILS: IRWIN 6-65 23-11 10HN						
+N/-S	+E/-W	Northing	Ground Level:	6222.00	Latitude	Longitude
-1479.16	2200.75	1611774.07	Easting	3246706.90	39.509837	-104.625589

SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
0.00	0.00	0.00	0.00	-1479.16	2200.75	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	-1479.16	2200.75	0.00	0.00	0.00	
993.65	13.87	351.00	986.90	-1396.62	2187.68	2.00	351.00	82.59	
6772.48	13.87	351.00	6597.15	-28.08	1970.91	0.00	0.00	1452.00	
7466.13	0.00	0.00	7284.04	54.46	1957.84	2.00	180.00	1534.59	
7766.13	0.00	0.00	7584.04	54.46	1957.84	0.00	0.00	1534.59	
8666.13	90.00	0.84	8157.00	627.36	1966.26	10.00	0.00	2107.45	FTP-IRWIN 6-65 23-11 10HN
20673.15	90.00	0.84	8157.00	12633.08	2142.76	0.00	0.00	14112.36	LTP-IRWIN 6-65 23-11 10HN
20723.15	90.00	0.84	8157.00	12683.07	2143.50	0.00	0.00	14162.35	BHL-IRWIN 6-65 23-11 10HN



Database:	Local	Local Co-ordinate Reference:	Well IRWIN 6-65 23-11 10HN
Company:	GMT Exploration Company, LLC	TVD Reference:	KB @ 6242.00usft
Project:	Elbert County, CO (NAD 83)	MD Reference:	KB @ 6242.00usft
Site:	Irwin-Taylor Pad	North Reference:	True
Well:	IRWIN 6-65 23-11 10HN	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Project	Elbert County, CO (NAD 83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

Site		Irwin-Taylor Pad				
Site Position:		Northing:	1,613,232.16 usft	Latitude:	39.513898	
From:	Lat/Long	Easting:	3,244,492.14 usft	Longitude:	-104.633389	
Position Uncertainty:		0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.55 °

Well	IRWIN 6-65 23-11 10HN					
Well Position	+N-S	-1,479.16 usft	Northing:	1,611,774.07 usft	Latitude:	39.509837
	+E-W	2,200.75 usft	Easting:	3,246,706.90 usft	Longitude:	-104.625589
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	6,222.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	5/22/2019	7.86	66.11	51,710.63406821

Design	Design #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	359.77

Plan Survey Tool Program	Date	5/24/2019		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	20,723.15	Design #1 (Wellbore #1)	MWD
				OWSG MWD - Standard

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
0.00	0.00	0.00	0.00	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	
993.66	13.87	351.00	986.90	82.54	-13.07	2.00	2.00	0.00	351.00	
6,772.48	13.87	351.00	6,597.15	1,451.10	-229.72	0.00	0.00	0.00	0.00	
7,466.13	0.00	0.00	7,284.04	1,533.64	-242.79	2.00	-2.00	0.00	180.00	
7,766.13	0.00	0.00	7,584.04	1,533.64	-242.79	0.00	0.00	0.00	0.00	
8,666.13	90.00	0.85	8,157.00	2,106.53	-234.31	10.00	10.00	0.00	0.00	FTP-IRWIN 6-65 23
20,673.15	90.00	0.85	8,157.00	14,112.24	-56.78	0.00	0.00	0.00	0.00	LTP-IRWIN 6-65 23
20,723.15	90.00	0.85	8,157.00	14,162.24	-56.04	0.00	0.00	0.00	0.00	BHL-IRWIN 6-65 23

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Site:	Irwin-Taylor Pad	North Reference:	True
Well:	IRWIN 6-65 23-11 10HN	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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SHL-IRWIN 6-65 23-11 10HN									
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
Build: 2°/100' @ 300.00' MD									
400.00	2.00	351.00	399.98	1.72	-0.27	1.72	2.00	2.00	0.00
500.00	4.00	351.00	499.84	6.89	-1.09	6.90	2.00	2.00	0.00
600.00	6.00	351.00	599.45	15.50	-2.45	15.51	2.00	2.00	0.00
700.00	8.00	351.00	698.70	27.54	-4.36	27.55	2.00	2.00	0.00
800.00	10.00	351.00	797.47	42.99	-6.81	43.01	2.00	2.00	0.00
900.00	12.00	351.00	895.62	61.83	-9.79	61.87	2.00	2.00	0.00
993.66	13.87	351.00	986.90	82.54	-13.07	82.59	2.00	2.00	0.00
Hold: 13.87° Inc, 351.00° Azm									
1,000.00	13.87	351.00	993.06	84.04	-13.30	84.10	0.00	0.00	0.00
1,100.00	13.87	351.00	1,090.14	107.73	-17.05	107.79	0.00	0.00	0.00
1,200.00	13.87	351.00	1,187.22	131.41	-20.80	131.49	0.00	0.00	0.00
1,300.00	13.87	351.00	1,284.31	155.09	-24.55	155.19	0.00	0.00	0.00
1,400.00	13.87	351.00	1,381.39	178.77	-28.30	178.88	0.00	0.00	0.00
1,500.00	13.87	351.00	1,478.47	202.45	-32.05	202.58	0.00	0.00	0.00
1,600.00	13.87	351.00	1,575.55	226.14	-35.80	226.28	0.00	0.00	0.00
1,700.00	13.87	351.00	1,672.64	249.82	-39.55	249.97	0.00	0.00	0.00
1,800.00	13.87	351.00	1,769.72	273.50	-43.30	273.67	0.00	0.00	0.00
1,900.00	13.87	351.00	1,866.80	297.18	-47.05	297.37	0.00	0.00	0.00
2,000.00	13.87	351.00	1,963.89	320.87	-50.80	321.06	0.00	0.00	0.00
2,100.00	13.87	351.00	2,060.97	344.55	-54.54	344.76	0.00	0.00	0.00
2,200.00	13.87	351.00	2,158.05	368.23	-58.29	368.46	0.00	0.00	0.00
2,300.00	13.87	351.00	2,255.13	391.91	-62.04	392.16	0.00	0.00	0.00
2,400.00	13.87	351.00	2,352.22	415.60	-65.79	415.85	0.00	0.00	0.00
2,500.00	13.87	351.00	2,449.30	439.28	-69.54	439.55	0.00	0.00	0.00
2,600.00	13.87	351.00	2,546.38	462.96	-73.29	463.25	0.00	0.00	0.00
2,700.00	13.87	351.00	2,643.47	486.64	-77.04	486.94	0.00	0.00	0.00
2,800.00	13.87	351.00	2,740.55	510.32	-80.79	510.64	0.00	0.00	0.00
2,900.00	13.87	351.00	2,837.63	534.01	-84.54	534.34	0.00	0.00	0.00
3,000.00	13.87	351.00	2,934.72	557.69	-88.29	558.03	0.00	0.00	0.00
3,100.00	13.87	351.00	3,031.80	581.37	-92.03	581.73	0.00	0.00	0.00
3,200.00	13.87	351.00	3,128.88	605.05	-95.78	605.43	0.00	0.00	0.00
3,300.00	13.87	351.00	3,225.96	628.74	-99.53	629.13	0.00	0.00	0.00
3,400.00	13.87	351.00	3,323.05	652.42	-103.28	652.82	0.00	0.00	0.00
3,500.00	13.87	351.00	3,420.13	676.10	-107.03	676.52	0.00	0.00	0.00
3,600.00	13.87	351.00	3,517.21	699.78	-110.78	700.22	0.00	0.00	0.00
3,700.00	13.87	351.00	3,614.30	723.47	-114.53	723.91	0.00	0.00	0.00
3,800.00	13.87	351.00	3,711.38	747.15	-118.28	747.61	0.00	0.00	0.00
3,900.00	13.87	351.00	3,808.46	770.83	-122.03	771.31	0.00	0.00	0.00
4,000.00	13.87	351.00	3,905.54	794.51	-125.78	795.00	0.00	0.00	0.00
4,100.00	13.87	351.00	4,002.63	818.19	-129.53	818.70	0.00	0.00	0.00
4,200.00	13.87	351.00	4,099.71	841.88	-133.27	842.40	0.00	0.00	0.00
4,300.00	13.87	351.00	4,196.79	865.56	-137.02	866.09	0.00	0.00	0.00
4,400.00	13.87	351.00	4,293.88	889.24	-140.77	889.79	0.00	0.00	0.00
4,500.00	13.87	351.00	4,390.96	912.92	-144.52	913.49	0.00	0.00	0.00
4,600.00	13.87	351.00	4,488.04	936.61	-148.27	937.19	0.00	0.00	0.00
4,700.00	13.87	351.00	4,585.12	960.29	-152.02	960.88	0.00	0.00	0.00
4,800.00	13.87	351.00	4,682.21	983.97	-155.77	984.58	0.00	0.00	0.00

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Project:	Elbert County, CO (NAD 83)	MD Reference:	KB @ 6242.00usft
Site:	Irwin-Taylor Pad	North Reference:	True
Well:	IRWIN 6-65 23-11 10HN	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)
4,900.00	13.87	351.00	4,779.29	1,007.65	-159.52	1,008.28	0.00	0.00	0.00
5,000.00	13.87	351.00	4,876.37	1,031.34	-163.27	1,031.97	0.00	0.00	0.00
5,100.00	13.87	351.00	4,973.46	1,055.02	-167.02	1,055.67	0.00	0.00	0.00
5,200.00	13.87	351.00	5,070.54	1,078.70	-170.77	1,079.37	0.00	0.00	0.00
5,300.00	13.87	351.00	5,167.62	1,102.38	-174.51	1,103.06	0.00	0.00	0.00
5,400.00	13.87	351.00	5,264.71	1,126.06	-178.26	1,126.76	0.00	0.00	0.00
5,500.00	13.87	351.00	5,361.79	1,149.75	-182.01	1,150.46	0.00	0.00	0.00
5,600.00	13.87	351.00	5,458.87	1,173.43	-185.76	1,174.16	0.00	0.00	0.00
5,700.00	13.87	351.00	5,555.95	1,197.11	-189.51	1,197.85	0.00	0.00	0.00
5,800.00	13.87	351.00	5,653.04	1,220.79	-193.26	1,221.55	0.00	0.00	0.00
5,900.00	13.87	351.00	5,750.12	1,244.48	-197.01	1,245.25	0.00	0.00	0.00
6,000.00	13.87	351.00	5,847.20	1,268.16	-200.76	1,268.94	0.00	0.00	0.00
6,100.00	13.87	351.00	5,944.29	1,291.84	-204.51	1,292.64	0.00	0.00	0.00
6,200.00	13.87	351.00	6,041.37	1,315.52	-208.26	1,316.34	0.00	0.00	0.00
6,300.00	13.87	351.00	6,138.45	1,339.21	-212.00	1,340.03	0.00	0.00	0.00
6,400.00	13.87	351.00	6,235.53	1,362.89	-215.75	1,363.73	0.00	0.00	0.00
6,500.00	13.87	351.00	6,332.62	1,386.57	-219.50	1,387.43	0.00	0.00	0.00
6,600.00	13.87	351.00	6,429.70	1,410.25	-223.25	1,411.12	0.00	0.00	0.00
6,700.00	13.87	351.00	6,526.78	1,433.93	-227.00	1,434.82	0.00	0.00	0.00
6,772.48	13.87	351.00	6,597.15	1,451.10	-229.72	1,452.00	0.00	0.00	0.00
Drop: 2°/100' @ 6772.48' MD									
6,800.00	13.32	351.00	6,623.90	1,457.49	-230.73	1,458.39	2.00	-2.00	0.00
6,900.00	11.32	351.00	6,721.59	1,478.57	-234.07	1,479.48	2.00	-2.00	0.00
7,000.00	9.32	351.00	6,819.96	1,496.27	-236.87	1,497.19	2.00	-2.00	0.00
7,100.00	7.32	351.00	6,918.91	1,510.56	-239.13	1,511.50	2.00	-2.00	0.00
7,200.00	5.32	351.00	7,018.29	1,521.44	-240.85	1,522.38	2.00	-2.00	0.00
7,300.00	3.32	351.00	7,118.00	1,528.88	-242.03	1,529.83	2.00	-2.00	0.00
7,400.00	1.32	351.00	7,217.92	1,532.89	-242.67	1,533.83	2.00	-2.00	0.00
7,466.13	0.00	0.00	7,284.04	1,533.64	-242.79	1,534.59	2.00	-2.00	0.00
Hold: 0.00° Inc, 0.00° Azm									
7,500.00	0.00	0.00	7,317.91	1,533.64	-242.79	1,534.59	0.00	0.00	0.00
7,600.00	0.00	0.00	7,417.91	1,533.64	-242.79	1,534.59	0.00	0.00	0.00
7,700.00	0.00	0.00	7,517.91	1,533.64	-242.79	1,534.59	0.00	0.00	0.00
7,766.13	0.00	0.00	7,584.04	1,533.64	-242.79	1,534.59	0.00	0.00	0.00
KOP: 10°/100' @ 7766.13' MD - KOP-IRWIN 6-65 23-11 10HN									
7,800.00	3.39	0.85	7,617.89	1,534.64	-242.77	1,535.59	10.00	10.00	0.00
7,850.00	8.39	0.85	7,667.61	1,539.77	-242.69	1,540.71	10.00	10.00	0.00
7,900.00	13.39	0.85	7,716.70	1,549.21	-242.55	1,550.15	10.00	10.00	0.00
7,950.00	18.39	0.85	7,764.77	1,562.89	-242.35	1,563.83	10.00	10.00	0.00
8,000.00	23.39	0.85	7,811.47	1,580.71	-242.09	1,581.65	10.00	10.00	0.00
8,050.00	28.39	0.85	7,856.44	1,602.53	-241.77	1,603.47	10.00	10.00	0.00
8,100.00	33.39	0.85	7,899.33	1,628.18	-241.39	1,629.12	10.00	10.00	0.00
8,150.00	38.39	0.85	7,939.83	1,657.48	-240.95	1,658.42	10.00	10.00	0.00
8,200.00	43.39	0.85	7,977.62	1,690.19	-240.47	1,691.13	10.00	10.00	0.00
8,250.00	48.39	0.85	8,012.41	1,726.08	-239.94	1,727.01	10.00	10.00	0.00
8,300.00	53.39	0.85	8,043.94	1,764.85	-239.37	1,765.79	10.00	10.00	0.00
8,350.00	58.39	0.85	8,071.98	1,806.23	-238.75	1,807.16	10.00	10.00	0.00
8,400.00	63.39	0.85	8,096.30	1,849.90	-238.11	1,850.83	10.00	10.00	0.00
8,450.00	68.39	0.85	8,116.72	1,895.52	-237.43	1,896.44	10.00	10.00	0.00
8,500.00	73.39	0.85	8,133.08	1,942.74	-236.74	1,943.66	10.00	10.00	0.00
8,550.00	78.39	0.85	8,145.27	1,991.21	-236.02	1,992.13	10.00	10.00	0.00
8,600.00	83.39	0.85	8,153.19	2,040.56	-235.29	2,041.47	10.00	10.00	0.00
8,650.00	88.39	0.85	8,156.77	2,090.41	-234.55	2,091.32	10.00	10.00	0.00

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Site:	Irwin-Taylor Pad	North Reference:	True
Well:	IRWIN 6-65 23-11 10HN	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)	
8,666.13	90.00	0.85	8,157.00	2,106.53	-234.31	2,107.45	10.00	10.00	0.00	
LP: 8666.13' MD, 90.00° Inc, 0.85° Azm - FTP-IRWIN 6-65 23-11 10HN										
8,700.00	90.00	0.85	8,157.00	2,140.40	-233.81	2,141.31	0.00	0.00	0.00	
8,800.00	90.00	0.85	8,157.00	2,240.39	-232.33	2,241.29	0.00	0.00	0.00	
8,900.00	90.00	0.85	8,157.00	2,340.38	-230.86	2,341.27	0.00	0.00	0.00	
9,000.00	90.00	0.85	8,157.00	2,440.37	-229.38	2,441.26	0.00	0.00	0.00	
9,100.00	90.00	0.85	8,157.00	2,540.36	-227.90	2,541.24	0.00	0.00	0.00	
9,200.00	90.00	0.85	8,157.00	2,640.34	-226.42	2,641.22	0.00	0.00	0.00	
9,300.00	90.00	0.85	8,157.00	2,740.33	-224.94	2,741.20	0.00	0.00	0.00	
9,400.00	90.00	0.85	8,157.00	2,840.32	-223.46	2,841.18	0.00	0.00	0.00	
9,500.00	90.00	0.85	8,157.00	2,940.31	-221.98	2,941.17	0.00	0.00	0.00	
9,600.00	90.00	0.85	8,157.00	3,040.30	-220.51	3,041.15	0.00	0.00	0.00	
9,700.00	90.00	0.85	8,157.00	3,140.29	-219.03	3,141.13	0.00	0.00	0.00	
9,800.00	90.00	0.85	8,157.00	3,240.28	-217.55	3,241.11	0.00	0.00	0.00	
9,900.00	90.00	0.85	8,157.00	3,340.27	-216.07	3,341.10	0.00	0.00	0.00	
10,000.00	90.00	0.85	8,157.00	3,440.26	-214.59	3,441.08	0.00	0.00	0.00	
10,100.00	90.00	0.85	8,157.00	3,540.25	-213.11	3,541.06	0.00	0.00	0.00	
10,200.00	90.00	0.85	8,157.00	3,640.24	-211.63	3,641.04	0.00	0.00	0.00	
10,300.00	90.00	0.85	8,157.00	3,740.22	-210.16	3,741.03	0.00	0.00	0.00	
10,400.00	90.00	0.85	8,157.00	3,840.21	-208.68	3,841.01	0.00	0.00	0.00	
10,500.00	90.00	0.85	8,157.00	3,940.20	-207.20	3,940.99	0.00	0.00	0.00	
10,600.00	90.00	0.85	8,157.00	4,040.19	-205.72	4,040.97	0.00	0.00	0.00	
10,700.00	90.00	0.85	8,157.00	4,140.18	-204.24	4,140.96	0.00	0.00	0.00	
10,800.00	90.00	0.85	8,157.00	4,240.17	-202.76	4,240.94	0.00	0.00	0.00	
10,900.00	90.00	0.85	8,157.00	4,340.16	-201.28	4,340.92	0.00	0.00	0.00	
11,000.00	90.00	0.85	8,157.00	4,440.15	-199.80	4,440.90	0.00	0.00	0.00	
11,100.00	90.00	0.85	8,157.00	4,540.14	-198.33	4,540.89	0.00	0.00	0.00	
11,200.00	90.00	0.85	8,157.00	4,640.13	-196.85	4,640.87	0.00	0.00	0.00	
11,300.00	90.00	0.85	8,157.00	4,740.12	-195.37	4,740.85	0.00	0.00	0.00	
11,400.00	90.00	0.85	8,157.00	4,840.10	-193.89	4,840.83	0.00	0.00	0.00	
11,500.00	90.00	0.85	8,157.00	4,940.09	-192.41	4,940.82	0.00	0.00	0.00	
11,600.00	90.00	0.85	8,157.00	5,040.08	-190.93	5,040.80	0.00	0.00	0.00	
11,700.00	90.00	0.85	8,157.00	5,140.07	-189.45	5,140.78	0.00	0.00	0.00	
11,800.00	90.00	0.85	8,157.00	5,240.06	-187.98	5,240.76	0.00	0.00	0.00	
11,900.00	90.00	0.85	8,157.00	5,340.05	-186.50	5,340.75	0.00	0.00	0.00	
12,000.00	90.00	0.85	8,157.00	5,440.04	-185.02	5,440.73	0.00	0.00	0.00	
12,100.00	90.00	0.85	8,157.00	5,540.03	-183.54	5,540.71	0.00	0.00	0.00	
12,200.00	90.00	0.85	8,157.00	5,640.02	-182.06	5,640.69	0.00	0.00	0.00	
12,300.00	90.00	0.85	8,157.00	5,740.01	-180.58	5,740.68	0.00	0.00	0.00	
12,400.00	90.00	0.85	8,157.00	5,840.00	-179.10	5,840.66	0.00	0.00	0.00	
12,500.00	90.00	0.85	8,157.00	5,939.98	-177.63	5,940.64	0.00	0.00	0.00	
12,600.00	90.00	0.85	8,157.00	6,039.97	-176.15	6,040.62	0.00	0.00	0.00	
12,700.00	90.00	0.85	8,157.00	6,139.96	-174.67	6,140.61	0.00	0.00	0.00	
12,800.00	90.00	0.85	8,157.00	6,239.95	-173.19	6,240.59	0.00	0.00	0.00	
12,900.00	90.00	0.85	8,157.00	6,339.94	-171.71	6,340.57	0.00	0.00	0.00	
13,000.00	90.00	0.85	8,157.00	6,439.93	-170.23	6,440.55	0.00	0.00	0.00	
13,100.00	90.00	0.85	8,157.00	6,539.92	-168.75	6,540.54	0.00	0.00	0.00	
13,200.00	90.00	0.85	8,157.00	6,639.91	-167.28	6,640.52	0.00	0.00	0.00	
13,300.00	90.00	0.85	8,157.00	6,739.90	-165.80	6,740.50	0.00	0.00	0.00	
13,400.00	90.00	0.85	8,157.00	6,839.89	-164.32	6,840.48	0.00	0.00	0.00	
13,500.00	90.00	0.85	8,157.00	6,939.87	-162.84	6,940.46	0.00	0.00	0.00	
13,600.00	90.00	0.85	8,157.00	7,039.86	-161.36	7,040.45	0.00	0.00	0.00	
13,700.00	90.00	0.85	8,157.00	7,139.85	-159.88	7,140.43	0.00	0.00	0.00	
13,800.00	90.00	0.85	8,157.00	7,239.84	-158.40	7,240.41	0.00	0.00	0.00	

Database:	Local	Local Co-ordinate Reference:	Well IRWIN 6-65 23-11 10HN
Company:	GMT Exploration Company, LLC	TVD Reference:	KB @ 6242.00usft
Project:	Elbert County, CO (NAD 83)	MD Reference:	KB @ 6242.00usft
Site:	Irwin-Taylor Pad	North Reference:	True
Well:	IRWIN 6-65 23-11 10HN	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)
13,900.00	90.00	0.85	8,157.00	7,339.83	-156.93	7,340.39	0.00	0.00	0.00
14,000.00	90.00	0.85	8,157.00	7,439.82	-155.45	7,440.38	0.00	0.00	0.00
14,100.00	90.00	0.85	8,157.00	7,539.81	-153.97	7,540.36	0.00	0.00	0.00
14,200.00	90.00	0.85	8,157.00	7,639.80	-152.49	7,640.34	0.00	0.00	0.00
14,300.00	90.00	0.85	8,157.00	7,739.79	-151.01	7,740.32	0.00	0.00	0.00
14,400.00	90.00	0.85	8,157.00	7,839.78	-149.53	7,840.31	0.00	0.00	0.00
14,500.00	90.00	0.85	8,157.00	7,939.77	-148.05	7,940.29	0.00	0.00	0.00
14,600.00	90.00	0.85	8,157.00	8,039.75	-146.58	8,040.27	0.00	0.00	0.00
14,700.00	90.00	0.85	8,157.00	8,139.74	-145.10	8,140.25	0.00	0.00	0.00
14,800.00	90.00	0.85	8,157.00	8,239.73	-143.62	8,240.24	0.00	0.00	0.00
14,900.00	90.00	0.85	8,157.00	8,339.72	-142.14	8,340.22	0.00	0.00	0.00
15,000.00	90.00	0.85	8,157.00	8,439.71	-140.66	8,440.20	0.00	0.00	0.00
15,100.00	90.00	0.85	8,157.00	8,539.70	-139.18	8,540.18	0.00	0.00	0.00
15,200.00	90.00	0.85	8,157.00	8,639.69	-137.70	8,640.17	0.00	0.00	0.00
15,300.00	90.00	0.85	8,157.00	8,739.68	-136.23	8,740.15	0.00	0.00	0.00
15,400.00	90.00	0.85	8,157.00	8,839.67	-134.75	8,840.13	0.00	0.00	0.00
15,500.00	90.00	0.85	8,157.00	8,939.66	-133.27	8,940.11	0.00	0.00	0.00
15,600.00	90.00	0.85	8,157.00	9,039.65	-131.79	9,040.10	0.00	0.00	0.00
15,700.00	90.00	0.85	8,157.00	9,139.63	-130.31	9,140.08	0.00	0.00	0.00
15,800.00	90.00	0.85	8,157.00	9,239.62	-128.83	9,240.06	0.00	0.00	0.00
15,900.00	90.00	0.85	8,157.00	9,339.61	-127.35	9,340.04	0.00	0.00	0.00
16,000.00	90.00	0.85	8,157.00	9,439.60	-125.88	9,440.03	0.00	0.00	0.00
16,100.00	90.00	0.85	8,157.00	9,539.59	-124.40	9,540.01	0.00	0.00	0.00
16,200.00	90.00	0.85	8,157.00	9,639.58	-122.92	9,639.99	0.00	0.00	0.00
16,300.00	90.00	0.85	8,157.00	9,739.57	-121.44	9,739.97	0.00	0.00	0.00
16,400.00	90.00	0.85	8,157.00	9,839.56	-119.96	9,839.96	0.00	0.00	0.00
16,500.00	90.00	0.85	8,157.00	9,939.55	-118.48	9,939.94	0.00	0.00	0.00
16,600.00	90.00	0.85	8,157.00	10,039.54	-117.00	10,039.92	0.00	0.00	0.00
16,700.00	90.00	0.85	8,157.00	10,139.53	-115.53	10,139.90	0.00	0.00	0.00
16,800.00	90.00	0.85	8,157.00	10,239.51	-114.05	10,239.89	0.00	0.00	0.00
16,900.00	90.00	0.85	8,157.00	10,339.50	-112.57	10,339.87	0.00	0.00	0.00
17,000.00	90.00	0.85	8,157.00	10,439.49	-111.09	10,439.85	0.00	0.00	0.00
17,100.00	90.00	0.85	8,157.00	10,539.48	-109.61	10,539.83	0.00	0.00	0.00
17,200.00	90.00	0.85	8,157.00	10,639.47	-108.13	10,639.82	0.00	0.00	0.00
17,300.00	90.00	0.85	8,157.00	10,739.46	-106.65	10,739.80	0.00	0.00	0.00
17,400.00	90.00	0.85	8,157.00	10,839.45	-105.17	10,839.78	0.00	0.00	0.00
17,500.00	90.00	0.85	8,157.00	10,939.44	-103.70	10,939.76	0.00	0.00	0.00
17,600.00	90.00	0.85	8,157.00	11,039.43	-102.22	11,039.74	0.00	0.00	0.00
17,700.00	90.00	0.85	8,157.00	11,139.42	-100.74	11,139.73	0.00	0.00	0.00
17,800.00	90.00	0.85	8,157.00	11,239.40	-99.26	11,239.71	0.00	0.00	0.00
17,900.00	90.00	0.85	8,157.00	11,339.39	-97.78	11,339.69	0.00	0.00	0.00
18,000.00	90.00	0.85	8,157.00	11,439.38	-96.30	11,439.67	0.00	0.00	0.00
18,100.00	90.00	0.85	8,157.00	11,539.37	-94.82	11,539.66	0.00	0.00	0.00
18,200.00	90.00	0.85	8,157.00	11,639.36	-93.35	11,639.64	0.00	0.00	0.00
18,300.00	90.00	0.85	8,157.00	11,739.35	-91.87	11,739.62	0.00	0.00	0.00
18,400.00	90.00	0.85	8,157.00	11,839.34	-90.39	11,839.60	0.00	0.00	0.00
18,500.00	90.00	0.85	8,157.00	11,939.33	-88.91	11,939.59	0.00	0.00	0.00
18,600.00	90.00	0.85	8,157.00	12,039.32	-87.43	12,039.57	0.00	0.00	0.00
18,700.00	90.00	0.85	8,157.00	12,139.31	-85.95	12,139.55	0.00	0.00	0.00
18,800.00	90.00	0.85	8,157.00	12,239.30	-84.47	12,239.53	0.00	0.00	0.00
18,900.00	90.00	0.85	8,157.00	12,339.28	-83.00	12,339.52	0.00	0.00	0.00
19,000.00	90.00	0.85	8,157.00	12,439.27	-81.52	12,439.50	0.00	0.00	0.00
19,100.00	90.00	0.85	8,157.00	12,539.26	-80.04	12,539.48	0.00	0.00	0.00
19,200.00	90.00	0.85	8,157.00	12,639.25	-78.56	12,639.46	0.00	0.00	0.00

Database:	Local	Local Co-ordinate Reference:	Well IRWIN 6-65 23-11 10HN
Company:	GMT Exploration Company, LLC	TVD Reference:	KB @ 6242.00usft
Project:	Elbert County, CO (NAD 83)	MD Reference:	KB @ 6242.00usft
Site:	Irwin-Taylor Pad	North Reference:	True
Well:	IRWIN 6-65 23-11 10HN	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)	
19,300.00	90.00	0.85	8,157.00	12,739.24	-77.08	12,739.45	0.00	0.00	0.00	
19,400.00	90.00	0.85	8,157.00	12,839.23	-75.60	12,839.43	0.00	0.00	0.00	
19,500.00	90.00	0.85	8,157.00	12,939.22	-74.12	12,939.41	0.00	0.00	0.00	
19,600.00	90.00	0.85	8,157.00	13,039.21	-72.65	13,039.39	0.00	0.00	0.00	
19,700.00	90.00	0.85	8,157.00	13,139.20	-71.17	13,139.38	0.00	0.00	0.00	
19,800.00	90.00	0.85	8,157.00	13,239.19	-69.69	13,239.36	0.00	0.00	0.00	
19,900.00	90.00	0.85	8,157.00	13,339.18	-68.21	13,339.34	0.00	0.00	0.00	
20,000.00	90.00	0.85	8,157.00	13,439.16	-66.73	13,439.32	0.00	0.00	0.00	
20,100.00	90.00	0.85	8,157.00	13,539.15	-65.25	13,539.31	0.00	0.00	0.00	
20,200.00	90.00	0.85	8,157.00	13,639.14	-63.77	13,639.29	0.00	0.00	0.00	
20,300.00	90.00	0.85	8,157.00	13,739.13	-62.30	13,739.27	0.00	0.00	0.00	
20,400.00	90.00	0.85	8,157.00	13,839.12	-60.82	13,839.25	0.00	0.00	0.00	
20,500.00	90.00	0.85	8,157.00	13,939.11	-59.34	13,939.24	0.00	0.00	0.00	
20,600.00	90.00	0.85	8,157.00	14,039.10	-57.86	14,039.22	0.00	0.00	0.00	
20,673.15	90.00	0.85	8,157.00	14,112.24	-56.78	14,112.36	0.00	0.00	0.00	
Hold: 90.00° Inc, 0.85° Azm - LTP-IRWIN 6-65 23-11 10HN										
20,700.00	90.00	0.85	8,157.00	14,139.09	-56.38	14,139.20	0.00	0.00	0.00	
20,723.15	90.00	0.85	8,157.00	14,162.24	-56.04	14,162.35	0.00	0.00	0.00	
TD @ 20723.15' MD/8157.00' TVD - BHL-IRWIN 6-65 23-11 10HN										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
SHL-IRWIN 6-65 23-1 - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	1,611,774.07	3,246,706.90	39.509837	-104.625589	
KOP-IRWIN 6-65 23-1 - plan hits target center - Point	0.00	0.00	7,584.04	1,533.64	-242.79	1,613,305.30	3,246,449.37	39.514047	-104.626450	
BHL-IRWIN 6-65 23-1 - plan hits target center - Point	0.00	0.00	8,157.00	14,162.24	-56.04	1,625,935.11	3,246,514.55	39.548718	-104.625788	
LTP-IRWIN 6-65 23-1 - plan hits target center - Point	0.00	0.00	8,157.00	14,112.24	-56.78	1,625,885.11	3,246,514.30	39.548581	-104.625791	
FTP-IRWIN 6-65 23-1 - plan hits target center - Point	0.00	0.00	8,157.00	2,106.53	-234.31	1,613,878.25	3,246,452.32	39.515620	-104.626420	

Database:	Local	Local Co-ordinate Reference:	Well IRWIN 6-65 23-11 10HN
Company:	GMT Exploration Company, LLC	TVD Reference:	KB @ 6242.00usft
Project:	Elbert County, CO (NAD 83)	MD Reference:	KB @ 6242.00usft
Site:	Irwin-Taylor Pad	North Reference:	True
Well:	IRWIN 6-65 23-11 10HN	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
482.12	482.00	Denver				
2,307.07	2,262.00	Upper Arapahoe				
2,389.48	2,342.00	Laramie - Fox Hills				
2,482.18	2,432.00	Pierre Shale (Base of Fox Hills)				
5,788.63	5,642.00	Sussex Sandstone				
8,146.40	7,937.00	Sharon Springs Shale				
8,192.32	7,972.00	Niobrara				
8,206.06	7,982.00	Niobrara A				
8,401.58	8,097.00	Niobrara B Top				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
300.00	300.00	0.00	0.00	Build: 2°/100' @ 300.00' MD	
993.66	986.90	82.54	-13.07	Hold: 13.87° Inc, 351.00° Azm	
6,772.48	6,597.15	1,451.10	-229.72	Drop: 2°/100' @ 6772.48' MD	
7,466.13	7,284.04	1,533.64	-242.79	Hold: 0.00° Inc, 0.00° Azm	
7,766.13	7,584.04	1,533.64	-242.79	KOP: 10°/100' @ 7766.13' MD	
8,666.13	8,157.00	2,106.53	-234.31	LP: 8666.13' MD, 90.00° Inc, 0.85° Azm	
20,673.15	8,157.00	14,112.24	-56.78	Hold: 90.00° Inc, 0.85° Azm	
20,723.15	8,157.00	14,162.24	-56.04	TD @ 20723.15' MD/8157.00' TVD	