

US ROCKIES REGION PLANNING

**COLORADO CENTRAL ZONE - 83
ARAPAHOE_STATE OF CO 5-24HZ
STATE OF CO 5-24HZ**

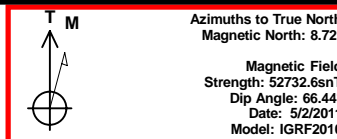
STATE OF CO 5-24HZ

Plan: STATE OF CO 5-24HZ (wp01)

Standard Planning Report

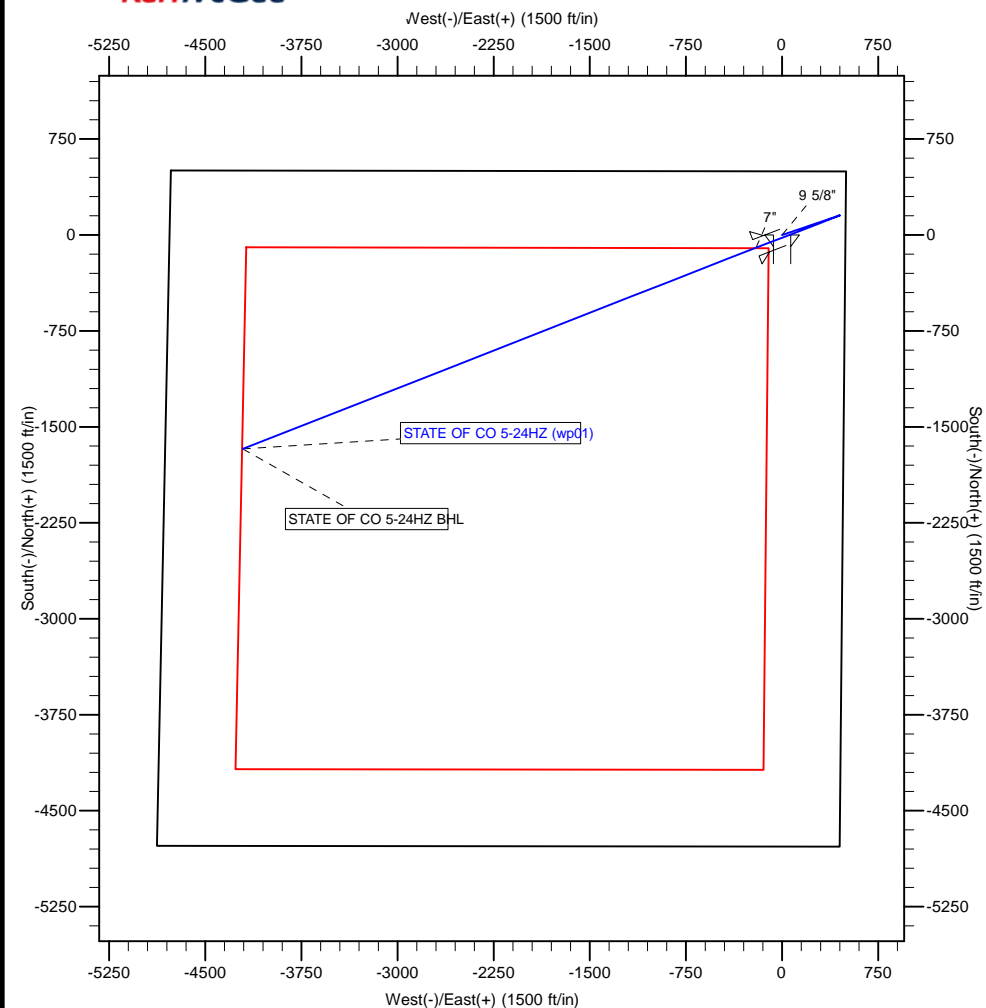
02 May, 2011





Azimuths to True North
Magnetic North: 8.72°
Magnetic Field
Strength: 52732.6snT
Dip Angle: 66.44°
Date: 5/2/2011
Model: IGRF2010

Project: COLORADO CENTRAL ZONE - 83
Site: ARAPAHOE STATE OF CO 5-24HZ
Well: STATE OF CO 5-24HZ
Wellbore: STATE OF CO 5-24HZ
Section:
SHL:
Design: STATE OF CO 5-24HZ (wp01)
Latitude: 39.607989
Longitude: -104.605935
GL: 5954.00
KB: 17' RKB + 5954' GL @ 5971.00ft



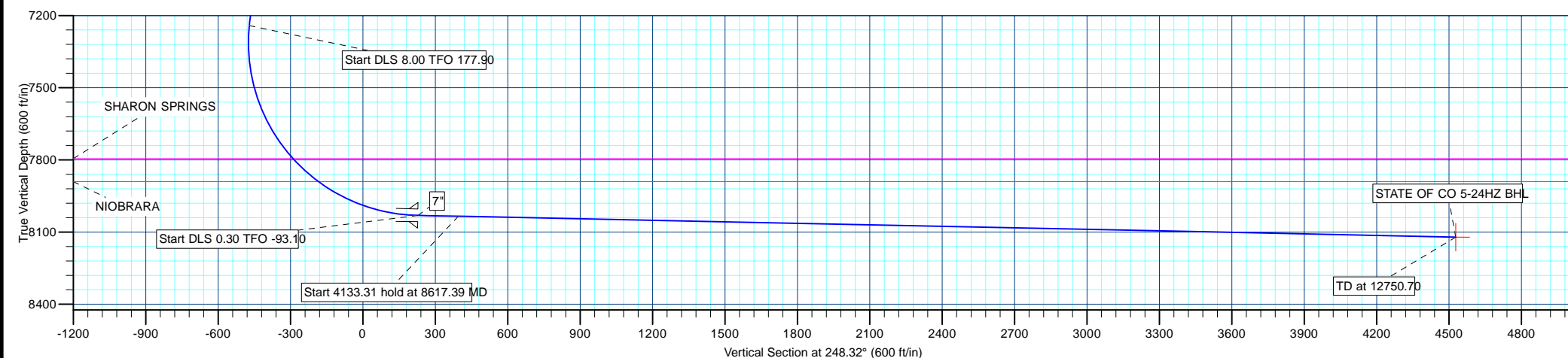
WELL DETAILS: STATE OF CO 5-24HZ						
+N/-S	+E/-W	Northing	Easting	Ground Level:	Latitude	Longitude
0.00	0.00	1647577.90	3251900.05	5954.00	39.607989	-104.605935

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)						
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
STATE OF CO 5-24HZ BHL	8121.00	-1673.01	-4207.67	39.603395	-104.620868	Point

SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2470.00	0.00	0.00	2470.00	0.00	0.00	0.00	0.00	0.00	
2760.60	5.81	71.13	2760.10	4.76	13.93	2.00	71.13	-14.71	
7266.14	5.81	71.13	7242.48	152.33	445.67	0.00	0.00	-470.41	
8449.09	88.83	249.04	8031.00	-99.99	-205.00	8.00	177.90	227.44	
8617.39	88.80	248.54	8034.48	-160.87	-361.86	0.30	-93.10	395.70	
12750.70	88.80	248.54	8121.00	-1673.01	-4207.67	0.00	0.00	4528.07	STATE OF CO 5-24HZ BHL

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
2171.00	2171.00	FOX HILLS
2271.00	2271.00	PARKMAN
2731.00	2731.36	SUSSEX
3141.00	3143.47	SHANNON
7795.00	7864.84	SHARON SPRINGS
7891.00	8008.04	NIOBRARA

CASING DETAILS			
TVD	MD	Name	Size
2320.00	2320.00	9 5/8"	9-5/8
8031.00	8449.09	7"	7



Database:	edm5000p	Local Co-ordinate Reference:	Well STATE OF CO 5-24HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	17' RKB + 5954' GL @ 5971.00ft
Project:	COLORADO CENTRAL ZONE - 83	MD Reference:	17' RKB + 5954' GL @ 5971.00ft
Site:	ARAPAHOE_STATE OF CO 5-24HZ	North Reference:	True
Well:	STATE OF CO 5-24HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	STATE OF CO 5-24HZ		
Design:	STATE OF CO 5-24HZ (wp01)		

Project	COLORADO CENTRAL ZONE - 83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

Site	ARAPAHOE_STATE OF CO 5-24HZ				
Site Position:		Northing:	1,647,577.92 ft	Latitude:	39.607989
From:	Lat/Long	Easting:	3,251,900.05 ft	Longitude:	-104.605935
Position Uncertainty:	0.00 ft	Slot Radius:	0 "	Grid Convergence:	0.56 °

Well	STATE OF CO 5-24HZ					
Well Position	+N-S	-0.02 ft	Northing:	1,647,577.89 ft	Latitude:	39.607989
	+E-W	0.00 ft	Easting:	3,251,900.05 ft	Longitude:	-104.605935
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	5,954.00 ft

Wellbore	STATE OF CO 5-24HZ				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/2/2011	8.72	66.44	52,733

Design	STATE OF CO 5-24HZ (wp01)			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	248.32

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,470.00	0.00	0.00	2,470.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,760.60	5.81	71.13	2,760.10	4.76	13.93	2.00	2.00	0.00	71.13	
7,266.14	5.81	71.13	7,242.48	152.33	445.67	0.00	0.00	0.00	0.00	
8,449.09	88.83	249.04	8,031.00	-99.99	-205.00	8.00	7.02	15.04	177.90	
8,617.39	88.80	248.54	8,034.48	-160.87	-361.86	0.30	-0.02	-0.30	-93.10	
12,750.70	88.80	248.54	8,121.00	-1,673.01	-4,207.67	0.00	0.00	0.00	0.00	STATE OF CO 5-24

Database:	edm5000p	Local Co-ordinate Reference:	Well STATE OF CO 5-24HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	17' RKB + 5954' GL @ 5971.00ft
Project:	COLORADO CENTRAL ZONE - 83	MD Reference:	17' RKB + 5954' GL @ 5971.00ft
Site:	ARAPAHOE_STATE OF CO 5-24HZ	North Reference:	True
Well:	STATE OF CO 5-24HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	STATE OF CO 5-24HZ		
Design:	STATE OF CO 5-24HZ (wp01)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
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
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
2,171.00	0.00	0.00	2,171.00	0.00	0.00	0.00	0.00	0.00	0.00
FOX HILLS									
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,271.00	0.00	0.00	2,271.00	0.00	0.00	0.00	0.00	0.00	0.00
PARKMAN									
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,320.00	0.00	0.00	2,320.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8"									
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,470.00	0.00	0.00	2,470.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
2,500.00	0.60	71.13	2,500.00	0.05	0.15	-0.16	2.00	2.00	0.00
2,600.00	2.60	71.13	2,599.96	0.95	2.79	-2.95	2.00	2.00	0.00
2,700.00	4.60	71.13	2,699.75	2.98	8.73	-9.22	2.00	2.00	0.00
2,731.36	5.23	71.13	2,731.00	3.85	11.27	-11.90	2.00	2.00	0.00
SUSSEX									
2,760.60	5.81	71.13	2,760.10	4.76	13.93	-14.71	2.00	2.00	0.00
Start 4505.54 hold at 2760.60 MD									
2,800.00	5.81	71.13	2,799.30	6.05	17.71	-18.69	0.00	0.00	0.00
2,900.00	5.81	71.13	2,898.79	9.33	27.29	-28.81	0.00	0.00	0.00
3,000.00	5.81	71.13	2,998.27	12.60	36.87	-38.92	0.00	0.00	0.00
3,100.00	5.81	71.13	3,097.76	15.88	46.46	-49.04	0.00	0.00	0.00
3,143.47	5.81	71.13	3,141.00	17.30	50.62	-53.43	0.00	0.00	0.00
SHANNON									
3,200.00	5.81	71.13	3,197.24	19.15	56.04	-59.15	0.00	0.00	0.00
3,300.00	5.81	71.13	3,296.73	22.43	65.62	-69.27	0.00	0.00	0.00
3,400.00	5.81	71.13	3,396.22	25.70	75.20	-79.38	0.00	0.00	0.00
3,500.00	5.81	71.13	3,495.70	28.98	84.79	-89.49	0.00	0.00	0.00
3,600.00	5.81	71.13	3,595.19	32.25	94.37	-99.61	0.00	0.00	0.00
3,700.00	5.81	71.13	3,694.67	35.53	103.95	-109.72	0.00	0.00	0.00
3,800.00	5.81	71.13	3,794.16	38.80	113.53	-119.84	0.00	0.00	0.00

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Project:	COLORADO CENTRAL ZONE - 83	MD Reference:	17' RKB + 5954' GL @ 5971.00ft
Site:	ARAPAHOE_STATE OF CO 5-24HZ	North Reference:	True
Well:	STATE OF CO 5-24HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	STATE OF CO 5-24HZ		
Design:	STATE OF CO 5-24HZ (wp01)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
3,900.00	5.81	71.13	3,893.64	42.08	123.11	-129.95	0.00	0.00	0.00
4,000.00	5.81	71.13	3,993.13	45.36	132.70	-140.07	0.00	0.00	0.00
4,100.00	5.81	71.13	4,092.62	48.63	142.28	-150.18	0.00	0.00	0.00
4,200.00	5.81	71.13	4,192.10	51.91	151.86	-160.29	0.00	0.00	0.00
4,300.00	5.81	71.13	4,291.59	55.18	161.44	-170.41	0.00	0.00	0.00
4,400.00	5.81	71.13	4,391.07	58.46	171.03	-180.52	0.00	0.00	0.00
4,500.00	5.81	71.13	4,490.56	61.73	180.61	-190.64	0.00	0.00	0.00
4,600.00	5.81	71.13	4,590.05	65.01	190.19	-200.75	0.00	0.00	0.00
4,700.00	5.81	71.13	4,689.53	68.28	199.77	-210.87	0.00	0.00	0.00
4,800.00	5.81	71.13	4,789.02	71.56	209.36	-220.98	0.00	0.00	0.00
4,900.00	5.81	71.13	4,888.50	74.83	218.94	-231.09	0.00	0.00	0.00
5,000.00	5.81	71.13	4,987.99	78.11	228.52	-241.21	0.00	0.00	0.00
5,100.00	5.81	71.13	5,087.48	81.38	238.10	-251.32	0.00	0.00	0.00
5,200.00	5.81	71.13	5,186.96	84.66	247.68	-261.44	0.00	0.00	0.00
5,300.00	5.81	71.13	5,286.45	87.93	257.27	-271.55	0.00	0.00	0.00
5,400.00	5.81	71.13	5,385.93	91.21	266.85	-281.67	0.00	0.00	0.00
5,500.00	5.81	71.13	5,485.42	94.48	276.43	-291.78	0.00	0.00	0.00
5,600.00	5.81	71.13	5,584.91	97.76	286.01	-301.89	0.00	0.00	0.00
5,700.00	5.81	71.13	5,684.39	101.03	295.60	-312.01	0.00	0.00	0.00
5,800.00	5.81	71.13	5,783.88	104.31	305.18	-322.12	0.00	0.00	0.00
5,900.00	5.81	71.13	5,883.36	107.58	314.76	-332.24	0.00	0.00	0.00
6,000.00	5.81	71.13	5,982.85	110.86	324.34	-342.35	0.00	0.00	0.00
6,100.00	5.81	71.13	6,082.34	114.13	333.92	-352.47	0.00	0.00	0.00
6,200.00	5.81	71.13	6,181.82	117.41	343.51	-362.58	0.00	0.00	0.00
6,300.00	5.81	71.13	6,281.31	120.68	353.09	-372.69	0.00	0.00	0.00
6,400.00	5.81	71.13	6,380.79	123.96	362.67	-382.81	0.00	0.00	0.00
6,500.00	5.81	71.13	6,480.28	127.23	372.25	-392.92	0.00	0.00	0.00
6,600.00	5.81	71.13	6,579.77	130.51	381.84	-403.04	0.00	0.00	0.00
6,700.00	5.81	71.13	6,679.25	133.78	391.42	-413.15	0.00	0.00	0.00
6,800.00	5.81	71.13	6,778.74	137.06	401.00	-423.27	0.00	0.00	0.00
6,900.00	5.81	71.13	6,878.22	140.33	410.58	-433.38	0.00	0.00	0.00
7,000.00	5.81	71.13	6,977.71	143.61	420.16	-443.49	0.00	0.00	0.00
7,100.00	5.81	71.13	7,077.20	146.88	429.75	-453.61	0.00	0.00	0.00
7,200.00	5.81	71.13	7,176.68	150.16	439.33	-463.72	0.00	0.00	0.00
7,266.14	5.81	71.13	7,242.48	152.33	445.67	-470.41	0.00	0.00	0.00
Start DLS 8.00 TFO 177.90									
7,300.00	3.11	72.96	7,276.24	153.15	448.17	-473.04	8.00	-7.99	5.40
7,400.00	4.91	246.57	7,376.14	152.24	446.83	-471.46	8.00	1.80	173.61
7,500.00	12.90	248.12	7,474.86	146.37	432.53	-456.00	8.00	8.00	1.55
7,600.00	20.90	248.49	7,570.46	135.65	405.53	-426.95	8.00	8.00	0.37
7,700.00	28.90	248.66	7,661.09	120.29	366.36	-384.88	8.00	8.00	0.17
7,800.00	36.90	248.76	7,744.98	100.59	315.78	-330.61	8.00	8.00	0.10
7,864.84	42.09	248.81	7,795.00	85.67	277.35	-289.38	8.00	8.00	0.07
SHARON SPRINGS									
7,900.00	44.90	248.83	7,820.50	76.93	254.79	-265.19	8.00	8.00	0.06
8,000.00	52.90	248.88	7,886.19	49.78	184.56	-189.89	8.00	8.00	0.05
8,008.04	53.54	248.89	7,891.00	47.46	178.55	-183.45	8.00	8.00	0.05
NIOBRARA									
8,100.00	60.90	248.93	7,940.75	19.65	106.47	-106.19	8.00	8.00	0.04
8,200.00	68.90	248.96	7,983.14	-12.86	22.02	-15.71	8.00	8.00	0.04
8,300.00	76.90	248.99	8,012.51	-47.11	-67.12	79.78	8.00	8.00	0.03
8,400.00	84.90	249.03	8,028.32	-82.46	-159.24	178.44	8.00	8.00	0.03
8,449.09	88.83	249.04	8,031.00	-99.99	-205.00	227.44	8.00	8.00	0.03

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Company:	US ROCKIES REGION PLANNING	TVD Reference:	17' RKB + 5954' GL @ 5971.00ft
Project:	COLORADO CENTRAL ZONE - 83	MD Reference:	17' RKB + 5954' GL @ 5971.00ft
Site:	ARAPAHOE_STATE OF CO 5-24HZ	North Reference:	True
Well:	STATE OF CO 5-24HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	STATE OF CO 5-24HZ		
Design:	STATE OF CO 5-24HZ (wp01)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
Start DLS 0.30 TFO -93.10 - 7"									
8,500.00	88.82	248.89	8,032.05	-118.26	-252.51	278.34	0.30	-0.02	-0.30
8,600.00	88.80	248.59	8,034.12	-154.52	-345.68	378.31	0.30	-0.02	-0.30
8,617.39	88.80	248.54	8,034.48	-160.87	-361.86	395.70	0.30	-0.02	-0.30
Start 4133.31 hold at 8617.39 MD									
8,700.00	88.80	248.54	8,036.21	-191.09	-438.73	478.29	0.00	0.00	0.00
8,800.00	88.80	248.54	8,038.31	-227.68	-531.77	578.27	0.00	0.00	0.00
8,900.00	88.80	248.54	8,040.40	-264.26	-624.82	678.24	0.00	0.00	0.00
9,000.00	88.80	248.54	8,042.49	-300.85	-717.86	778.22	0.00	0.00	0.00
9,100.00	88.80	248.54	8,044.58	-337.43	-810.90	878.20	0.00	0.00	0.00
9,200.00	88.80	248.54	8,046.68	-374.02	-903.95	978.17	0.00	0.00	0.00
9,300.00	88.80	248.54	8,048.77	-410.60	-996.99	1,078.15	0.00	0.00	0.00
9,400.00	88.80	248.54	8,050.86	-447.18	-1,090.04	1,178.13	0.00	0.00	0.00
9,500.00	88.80	248.54	8,052.96	-483.77	-1,183.08	1,278.11	0.00	0.00	0.00
9,600.00	88.80	248.54	8,055.05	-520.35	-1,276.13	1,378.08	0.00	0.00	0.00
9,700.00	88.80	248.54	8,057.14	-556.94	-1,369.17	1,478.06	0.00	0.00	0.00
9,800.00	88.80	248.54	8,059.24	-593.52	-1,462.21	1,578.04	0.00	0.00	0.00
9,900.00	88.80	248.54	8,061.33	-630.10	-1,555.26	1,678.02	0.00	0.00	0.00
10,000.00	88.80	248.54	8,063.42	-666.69	-1,648.30	1,777.99	0.00	0.00	0.00
10,100.00	88.80	248.54	8,065.52	-703.27	-1,741.35	1,877.97	0.00	0.00	0.00
10,200.00	88.80	248.54	8,067.61	-739.86	-1,834.39	1,977.95	0.00	0.00	0.00
10,300.00	88.80	248.54	8,069.70	-776.44	-1,927.43	2,077.93	0.00	0.00	0.00
10,400.00	88.80	248.54	8,071.80	-813.02	-2,020.48	2,177.90	0.00	0.00	0.00
10,500.00	88.80	248.54	8,073.89	-849.61	-2,113.52	2,277.88	0.00	0.00	0.00
10,600.00	88.80	248.54	8,075.98	-886.19	-2,206.57	2,377.86	0.00	0.00	0.00
10,700.00	88.80	248.54	8,078.08	-922.78	-2,299.61	2,477.84	0.00	0.00	0.00
10,800.00	88.80	248.54	8,080.17	-959.36	-2,392.66	2,577.81	0.00	0.00	0.00
10,900.00	88.80	248.54	8,082.26	-995.94	-2,485.70	2,677.79	0.00	0.00	0.00
11,000.00	88.80	248.54	8,084.36	-1,032.53	-2,578.74	2,777.77	0.00	0.00	0.00
11,100.00	88.80	248.54	8,086.45	-1,069.11	-2,671.79	2,877.74	0.00	0.00	0.00
11,200.00	88.80	248.54	8,088.54	-1,105.70	-2,764.83	2,977.72	0.00	0.00	0.00
11,300.00	88.80	248.54	8,090.63	-1,142.28	-2,857.88	3,077.70	0.00	0.00	0.00
11,400.00	88.80	248.54	8,092.73	-1,178.87	-2,950.92	3,177.68	0.00	0.00	0.00
11,500.00	88.80	248.54	8,094.82	-1,215.45	-3,043.97	3,277.65	0.00	0.00	0.00
11,600.00	88.80	248.54	8,096.91	-1,252.03	-3,137.01	3,377.63	0.00	0.00	0.00
11,700.00	88.80	248.54	8,099.01	-1,288.62	-3,230.05	3,477.61	0.00	0.00	0.00
11,800.00	88.80	248.54	8,101.10	-1,325.20	-3,323.10	3,577.59	0.00	0.00	0.00
11,900.00	88.80	248.54	8,103.19	-1,361.79	-3,416.14	3,677.56	0.00	0.00	0.00
12,000.00	88.80	248.54	8,105.29	-1,398.37	-3,509.19	3,777.54	0.00	0.00	0.00
12,100.00	88.80	248.54	8,107.38	-1,434.95	-3,602.23	3,877.52	0.00	0.00	0.00
12,200.00	88.80	248.54	8,109.47	-1,471.54	-3,695.27	3,977.50	0.00	0.00	0.00
12,300.00	88.80	248.54	8,111.57	-1,508.12	-3,788.32	4,077.47	0.00	0.00	0.00
12,400.00	88.80	248.54	8,113.66	-1,544.71	-3,881.36	4,177.45	0.00	0.00	0.00
12,500.00	88.80	248.54	8,115.75	-1,581.29	-3,974.41	4,277.43	0.00	0.00	0.00
12,600.00	88.80	248.54	8,117.85	-1,617.87	-4,067.45	4,377.41	0.00	0.00	0.00
12,700.00	88.80	248.54	8,119.94	-1,654.46	-4,160.50	4,477.38	0.00	0.00	0.00
12,750.70	88.80	248.54	8,121.00	-1,673.01	-4,207.67	4,528.07	0.00	0.00	0.00
TD at 12750.70 - STATE OF CO 5-24HZ BHL									

Database:	edm5000p	Local Co-ordinate Reference:	Well STATE OF CO 5-24HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	17' RKB + 5954' GL @ 5971.00ft
Project:	COLORADO CENTRAL ZONE - 83	MD Reference:	17' RKB + 5954' GL @ 5971.00ft
Site:	ARAPAHOE_STATE OF CO 5-24HZ	North Reference:	True
Well:	STATE OF CO 5-24HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	STATE OF CO 5-24HZ		
Design:	STATE OF CO 5-24HZ (wp01)		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
STATE OF CO 5-24H	0.00	0.00	8,121.00	-1,673.01	-4,207.67	1,645,863.56	3,247,709.05	39.603395	-104.620868
- plan hits target center									
- Point									

Casing Points					
Measured Depth	Vertical Depth		Name	Casing Diameter	Hole Diameter
(ft)	(ft)			(")	(")
2,320.00	2,320.00	9 5/8"		9-5/8	12-1/4
8,449.09	8,031.00	7"		7	8-3/4

Formations						
Measured Depth	Vertical Depth		Name	Lithology	Dip	Dip Direction
(ft)	(ft)				(°)	(°)
2,171.00	2,171.00	FOX HILLS			0.00	
2,271.00	2,271.00	PARKMAN			0.00	
2,731.36	2,731.00	SUSSEX			0.00	
3,143.47	3,141.00	SHANNON			0.00	
7,864.84	7,795.00	SHARON SPRINGS			0.00	
8,008.04	7,891.00	NIOBRARA			0.00	

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates			
(ft)	(ft)	+N/-S	+E/-W	Comment	
(ft)	(ft)	(ft)	(ft)		
2,470.00	2,470.00	0.00	0.00	Start Build 2.00	
2,760.60	2,760.10	4.76	13.93	Start 4505.54 hold at 2760.60 MD	
7,266.14	7,242.48	152.33	445.67	Start DLS 8.00 TFO 177.90	
8,449.09	8,031.00	-99.99	-205.00	Start DLS 0.30 TFO -93.10	
8,617.39	8,034.48	-160.87	-361.86	Start 4133.31 hold at 8617.39 MD	
12,750.70	8,121.00	-1,673.01	-4,207.67	TD at 12750.70	