

# **US ROCKIES REGION PLANNING**

**COLORADO NORTHERN ZONE - 83**

**WELD\_NORTHGLENN STATE PAD**

**Northglenn State 24-36**

**Northglenn State 24-36**

**Plan: Northglenn State 24-36**

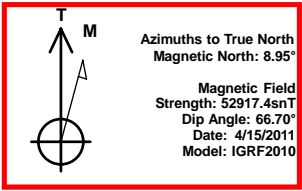
## **Standard Planning Report**

**25 April, 2011**



Project: COLORADO NORTHERN ZONE - 83  
Site: WELD\_NORTHGLENN STATE PAD  
Well: Northglenn State 24-36  
Wellbore: Northglenn State 24-36  
Section:  
SHL:  
Design: Northglenn State 24-36  
Latitude: 40.004067  
Longitude: -104.951438  
GL: 5120.00  
KB: WELL @ 5120.00ft (Original Well Elev)

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
4097.00	4300.81	PK Depth
4847.00	5099.41	SX Depth
7457.00	7728.86	NIO Depth
7903.00	8174.86	CD Depth
7973.00	8244.86	GH Depth
8324.00	8595.86	J Depth



WELL DETAILS: Northglenn State 24-36

+N/-S	+E/-W	Northing	Ground Level: Easting	5120.00 Latitude	Longitude	Slot
0.00	0.00	1244803.52	3153671.53	40.004067	-104.951438	

CASING DETAILS

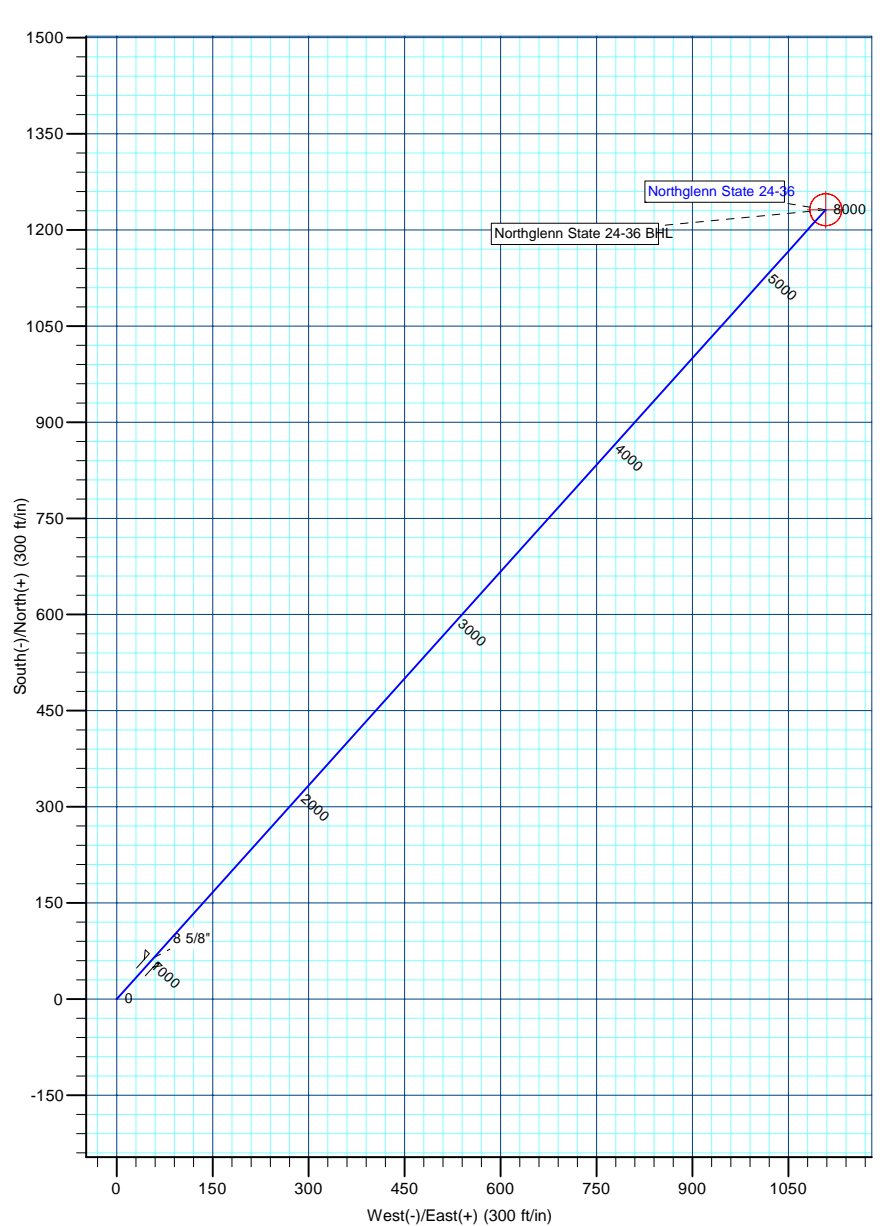
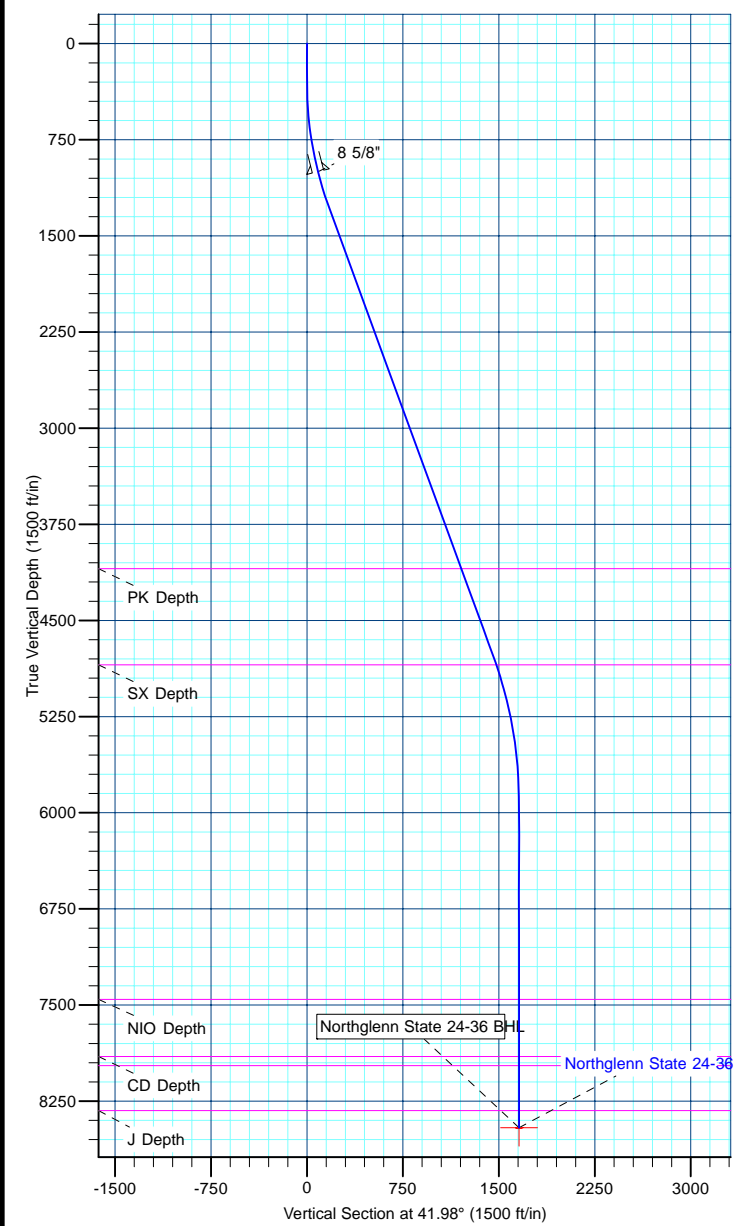
TVD	MD	Name	Size
1000.00	1007.16	8 5/8"	8-5/8

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
Northglenn State 24-36 BHL	8457.00	1231.77	1108.39	1246042.13	3154772.28	40.007448	-104.947481	Circle (Radius: 25.00)

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
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
1307.39	20.15	41.98	1286.76	130.31	117.26	2.00	41.98	175.31
5027.56	20.15	41.98	4779.27	1082.84	974.38	0.00	0.00	1456.69
6178.86	0.00	0.00	5907.00	1231.77	1108.39	1.75	180.00	1657.04
8728.86	0.00	0.00	8457.00	1231.77	1108.39	0.00	0.00	1657.04



<b>Database:</b>	edm5000p	<b>Local Co-ordinate Reference:</b>	Well Northglenn State 24-36
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	WELL @ 5120.00ft (Original Well Elev)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	WELL @ 5120.00ft (Original Well Elev)
<b>Site:</b>	WELD_NORTHGLENN STATE PAD	<b>North Reference:</b>	True
<b>Well:</b>	Northglenn State 24-36	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Northglenn State 24-36		
<b>Design:</b>	Northglenn State 24-36		

<b>Project</b>	COLORADO NORTHERN ZONE - 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		WELD_NORTHGLENN STATE PAD			
Site Position:		Northing:	1,244,823.33 ft	Latitude:	40.004121
From:	Lat/Long	Easting:	3,153,671.35 ft	Longitude:	-104.951438
Position Uncertainty:	0.00 ft	Slot Radius:	0 "	Grid Convergence:	0.35

Well	Northglenn State 24-36					
Well Position	+N-S	-19.81 ft	Northing:	1,244,803.52 ft	Latitude:	40.004067
	+E-W	0.06 ft	Easting:	3,153,671.53 ft	Longitude:	-104.951438
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	5,120.00 ft

<b>Wellbore</b>	Northglenn State 24-36				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	4/15/2011	8.95	66.70	52,917

<b>Design</b>	Northglenn State 24-36			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<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	41.98

<b>Plan Sections</b>										
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	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,307.39	20.15	41.98	1,286.76	130.31	117.26	2.00	2.00	0.00	41.98	
5,027.56	20.15	41.98	4,779.27	1,082.84	974.38	0.00	0.00	0.00	0.00	
6,178.86	0.00	0.00	5,907.00	1,231.77	1,108.39	1.75	-1.75	0.00	180.00	
8,728.86	0.00	0.00	8,457.00	1,231.77	1,108.39	0.00	0.00	0.00	0.00	Northglenn State 24

<b>Database:</b>	edm5000p	<b>Local Co-ordinate Reference:</b>	Well Northglenn State 24-36
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	WELL @ 5120.00ft (Original Well Elev)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	WELL @ 5120.00ft (Original Well Elev)
<b>Site:</b>	WELD_NORTHGLENN STATE PAD	<b>North Reference:</b>	True
<b>Well:</b>	Northglenn State 24-36	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Northglenn State 24-36		
<b>Design:</b>	Northglenn State 24-36		

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	2.00	41.98	399.98	1.30	1.17	1.75	2.00	2.00	0.00
500.00	4.00	41.98	499.84	5.19	4.67	6.98	2.00	2.00	0.00
600.00	6.00	41.98	599.45	11.67	10.50	15.69	2.00	2.00	0.00
700.00	8.00	41.98	698.70	20.72	18.65	27.88	2.00	2.00	0.00
800.00	10.00	41.98	797.47	32.35	29.11	43.52	2.00	2.00	0.00
900.00	12.00	41.98	895.62	46.54	41.87	62.60	2.00	2.00	0.00
1,000.00	14.00	41.98	993.06	63.26	56.92	85.10	2.00	2.00	0.00
1,007.16	14.14	41.98	1,000.00	64.55	58.09	86.84	2.00	2.00	0.00
8 5/8"									
1,100.00	16.00	41.98	1,089.64	82.50	74.23	110.98	2.00	2.00	0.00
1,200.00	18.00	41.98	1,185.27	104.23	93.79	140.21	2.00	2.00	0.00
1,300.00	20.00	41.98	1,279.82	128.43	115.56	172.77	2.00	2.00	0.00
1,307.39	20.15	41.98	1,286.76	130.31	117.26	175.31	2.00	2.00	0.00
1,400.00	20.15	41.98	1,373.70	154.03	138.60	207.20	0.00	0.00	0.00
1,500.00	20.15	41.98	1,467.58	179.63	161.64	241.65	0.00	0.00	0.00
1,600.00	20.15	41.98	1,561.46	205.23	184.68	276.09	0.00	0.00	0.00
1,700.00	20.15	41.98	1,655.34	230.84	207.72	310.54	0.00	0.00	0.00
1,800.00	20.15	41.98	1,749.22	256.44	230.76	344.98	0.00	0.00	0.00
1,900.00	20.15	41.98	1,843.10	282.05	253.80	379.43	0.00	0.00	0.00
2,000.00	20.15	41.98	1,936.98	307.65	276.84	413.87	0.00	0.00	0.00
2,100.00	20.15	41.98	2,030.86	333.26	299.88	448.31	0.00	0.00	0.00
2,200.00	20.15	41.98	2,124.75	358.86	322.92	482.76	0.00	0.00	0.00
2,300.00	20.15	41.98	2,218.63	384.47	345.96	517.20	0.00	0.00	0.00
2,400.00	20.15	41.98	2,312.51	410.07	369.00	551.65	0.00	0.00	0.00
2,500.00	20.15	41.98	2,406.39	435.67	392.03	586.09	0.00	0.00	0.00
2,600.00	20.15	41.98	2,500.27	461.28	415.07	620.54	0.00	0.00	0.00
2,700.00	20.15	41.98	2,594.15	486.88	438.11	654.98	0.00	0.00	0.00
2,800.00	20.15	41.98	2,688.03	512.49	461.15	689.43	0.00	0.00	0.00
2,900.00	20.15	41.98	2,781.91	538.09	484.19	723.87	0.00	0.00	0.00
3,000.00	20.15	41.98	2,875.79	563.70	507.23	758.31	0.00	0.00	0.00
3,100.00	20.15	41.98	2,969.67	589.30	530.27	792.76	0.00	0.00	0.00
3,200.00	20.15	41.98	3,063.55	614.91	553.31	827.20	0.00	0.00	0.00
3,300.00	20.15	41.98	3,157.43	640.51	576.35	861.65	0.00	0.00	0.00
3,400.00	20.15	41.98	3,251.31	666.11	599.39	896.09	0.00	0.00	0.00
3,500.00	20.15	41.98	3,345.19	691.72	622.43	930.54	0.00	0.00	0.00
3,600.00	20.15	41.98	3,439.07	717.32	645.47	964.98	0.00	0.00	0.00
3,700.00	20.15	41.98	3,532.96	742.93	668.51	999.42	0.00	0.00	0.00
3,800.00	20.15	41.98	3,626.84	768.53	691.55	1,033.87	0.00	0.00	0.00
3,900.00	20.15	41.98	3,720.72	794.14	714.59	1,068.31	0.00	0.00	0.00
4,000.00	20.15	41.98	3,814.60	819.74	737.63	1,102.76	0.00	0.00	0.00
4,100.00	20.15	41.98	3,908.48	845.35	760.67	1,137.20	0.00	0.00	0.00
4,200.00	20.15	41.98	4,002.36	870.95	783.71	1,171.65	0.00	0.00	0.00
4,300.00	20.15	41.98	4,096.24	896.55	806.75	1,206.09	0.00	0.00	0.00
4,300.81	20.15	41.98	4,097.00	896.76	806.94	1,206.37	0.00	0.00	0.00
PK Depth									
4,400.00	20.15	41.98	4,190.12	922.16	829.79	1,240.54	0.00	0.00	0.00
4,500.00	20.15	41.98	4,284.00	947.76	852.83	1,274.98	0.00	0.00	0.00
4,600.00	20.15	41.98	4,377.88	973.37	875.87	1,309.42	0.00	0.00	0.00
4,700.00	20.15	41.98	4,471.76	998.97	898.91	1,343.87	0.00	0.00	0.00
4,800.00	20.15	41.98	4,565.64	1,024.58	921.95	1,378.31	0.00	0.00	0.00

<b>Database:</b>	edm5000p	<b>Local Co-ordinate Reference:</b>	Well Northglenn State 24-36
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	WELL @ 5120.00ft (Original Well Elev)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	WELL @ 5120.00ft (Original Well Elev)
<b>Site:</b>	WELD_NORTHGLENN STATE PAD	<b>North Reference:</b>	True
<b>Well:</b>	Northglenn State 24-36	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Northglenn State 24-36		
<b>Design:</b>	Northglenn State 24-36		

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)
4,900.00	20.15	41.98	4,659.52	1,050.18	944.99	1,412.76	0.00	0.00	0.00
5,000.00	20.15	41.98	4,753.40	1,075.79	968.03	1,447.20	0.00	0.00	0.00
5,027.56	20.15	41.98	4,779.27	1,082.84	974.38	1,456.69	0.00	0.00	0.00
5,099.41	18.89	41.98	4,847.00	1,100.69	990.44	1,480.70	1.75	-1.75	0.00
<b>SX Depth</b>									
5,100.00	18.88	41.98	4,847.56	1,100.83	990.56	1,480.89	1.75	-1.75	0.00
5,200.00	17.13	41.98	4,942.65	1,123.81	1,011.24	1,511.80	1.75	-1.75	0.00
5,300.00	15.38	41.98	5,038.65	1,144.61	1,029.96	1,539.79	1.75	-1.75	0.00
5,400.00	13.63	41.98	5,135.46	1,163.23	1,046.71	1,564.84	1.75	-1.75	0.00
5,500.00	11.88	41.98	5,232.99	1,179.64	1,061.48	1,586.91	1.75	-1.75	0.00
5,600.00	10.13	41.98	5,331.15	1,193.83	1,074.25	1,606.00	1.75	-1.75	0.00
5,700.00	8.38	41.98	5,429.84	1,205.79	1,085.01	1,622.09	1.75	-1.75	0.00
5,800.00	6.63	41.98	5,528.98	1,215.50	1,093.74	1,635.15	1.75	-1.75	0.00
5,900.00	4.88	41.98	5,628.47	1,222.95	1,100.45	1,645.17	1.75	-1.75	0.00
6,000.00	3.13	41.98	5,728.23	1,228.14	1,105.12	1,652.16	1.75	-1.75	0.00
6,100.00	1.38	41.98	5,828.14	1,231.07	1,107.76	1,656.09	1.75	-1.75	0.00
6,178.86	0.00	0.00	5,907.00	1,231.77	1,108.39	1,657.04	1.75	-1.75	0.00
6,200.00	0.00	0.00	5,928.14	1,231.77	1,108.39	1,657.04	0.00	0.00	0.00
6,300.00	0.00	0.00	6,028.14	1,231.77	1,108.39	1,657.04	0.00	0.00	0.00
6,400.00	0.00	0.00	6,128.14	1,231.77	1,108.39	1,657.04	0.00	0.00	0.00
6,500.00	0.00	0.00	6,228.14	1,231.77	1,108.39	1,657.04	0.00	0.00	0.00
6,600.00	0.00	0.00	6,328.14	1,231.77	1,108.39	1,657.04	0.00	0.00	0.00
6,700.00	0.00	0.00	6,428.14	1,231.77	1,108.39	1,657.04	0.00	0.00	0.00
6,800.00	0.00	0.00	6,528.14	1,231.77	1,108.39	1,657.04	0.00	0.00	0.00
6,900.00	0.00	0.00	6,628.14	1,231.77	1,108.39	1,657.04	0.00	0.00	0.00
7,000.00	0.00	0.00	6,728.14	1,231.77	1,108.39	1,657.04	0.00	0.00	0.00
7,100.00	0.00	0.00	6,828.14	1,231.77	1,108.39	1,657.04	0.00	0.00	0.00
7,200.00	0.00	0.00	6,928.14	1,231.77	1,108.39	1,657.04	0.00	0.00	0.00
7,300.00	0.00	0.00	7,028.14	1,231.77	1,108.39	1,657.04	0.00	0.00	0.00
7,400.00	0.00	0.00	7,128.14	1,231.77	1,108.39	1,657.04	0.00	0.00	0.00
7,500.00	0.00	0.00	7,228.14	1,231.77	1,108.39	1,657.04	0.00	0.00	0.00
7,600.00	0.00	0.00	7,328.14	1,231.77	1,108.39	1,657.04	0.00	0.00	0.00
7,700.00	0.00	0.00	7,428.14	1,231.77	1,108.39	1,657.04	0.00	0.00	0.00
7,728.86	0.00	0.00	7,457.00	1,231.77	1,108.39	1,657.04	0.00	0.00	0.00
<b>NIO Depth</b>									
7,800.00	0.00	0.00	7,528.14	1,231.77	1,108.39	1,657.04	0.00	0.00	0.00
7,900.00	0.00	0.00	7,628.14	1,231.77	1,108.39	1,657.04	0.00	0.00	0.00
8,000.00	0.00	0.00	7,728.14	1,231.77	1,108.39	1,657.04	0.00	0.00	0.00
8,100.00	0.00	0.00	7,828.14	1,231.77	1,108.39	1,657.04	0.00	0.00	0.00
8,174.86	0.00	0.00	7,903.00	1,231.77	1,108.39	1,657.04	0.00	0.00	0.00
<b>CD Depth</b>									
8,200.00	0.00	0.00	7,928.14	1,231.77	1,108.39	1,657.04	0.00	0.00	0.00
8,244.86	0.00	0.00	7,973.00	1,231.77	1,108.39	1,657.04	0.00	0.00	0.00
<b>GH Depth</b>									
8,300.00	0.00	0.00	8,028.14	1,231.77	1,108.39	1,657.04	0.00	0.00	0.00
8,400.00	0.00	0.00	8,128.14	1,231.77	1,108.39	1,657.04	0.00	0.00	0.00
8,500.00	0.00	0.00	8,228.14	1,231.77	1,108.39	1,657.04	0.00	0.00	0.00
8,595.86	0.00	0.00	8,324.00	1,231.77	1,108.39	1,657.04	0.00	0.00	0.00
<b>J Depth</b>									
8,600.00	0.00	0.00	8,328.14	1,231.77	1,108.39	1,657.04	0.00	0.00	0.00
8,700.00	0.00	0.00	8,428.14	1,231.77	1,108.39	1,657.04	0.00	0.00	0.00
8,728.86	0.00	0.00	8,457.00	1,231.77	1,108.39	1,657.04	0.00	0.00	0.00
<b>Northglenn State 24-36 BHL</b>									

<b>Database:</b>	edm5000p	<b>Local Co-ordinate Reference:</b>	Well Northglenn State 24-36
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	WELL @ 5120.00ft (Original Well Elev)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	WELL @ 5120.00ft (Original Well Elev)
<b>Site:</b>	WELD_NORTHGLENN STATE PAD	<b>North Reference:</b>	True
<b>Well:</b>	Northglenn State 24-36	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Northglenn State 24-36		
<b>Design:</b>	Northglenn State 24-36		

#### Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Northglenn State 24-3 - plan hits target center - Circle (radius 25.00)	0.00	0.00	8,457.00	1,231.77	1,108.39	1,246,042.12	3,154,772.28	40.007448	-104.947481

#### Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
1,007.16	1,000.00	8 5/8"	8-5/8	11

#### Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,300.81	4,097.00	PK Depth			
5,099.41	4,847.00	SX Depth			
7,728.86	7,457.00	NIO Depth			
8,174.86	7,903.00	CD Depth			
8,244.86	7,973.00	GH Depth			
8,595.86	8,324.00	J Depth			