

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_NORTHGLENN STATE PAD

Northglenn State 9-36

Northglenn State 9-36

Plan: Northglenn State 9-36 (wp02)

Standard Planning Report

26 April, 2011



Project: COLORADO NORTHERN ZONE - 83
 Site: WELD_NORTHGLENN STATE PAD
 Well: Northglenn State 9-36
 Wellbore: Northglenn State 9-36
 Section:
 SHL:
 Design: Northglenn State 9-36 (wp02)
 Latitude: 40.003957
 Longitude: -104.951438
 GL: 5120.00
 KB: WELL @ 5120.00ft (Original Well Elev)

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
4097.00	4587.06	PK Depth
4847.00	5341.63	SX Depth
7457.00	7951.63	NIO Depth
7903.00	8397.63	CD Depth
7973.00	8467.63	GH Depth
8324.00	8818.63	J Depth



Azimuths to True North
 Magnetic North: 8.95°

Magnetic Field
 Strength: 52916.5nT
 Dip Angle: 66.70°
 Date: 4/18/2011
 Model: IGRF2010

WELL DETAILS: Northglenn State 9-36

+N/-S	+E/-W	Northing	Ground Level: Easting	5120.00 Latitude	Longitude	Slot
0.00	0.00	1244763.52	3153671.75	40.003957	-104.951438	

CASING DETAILS

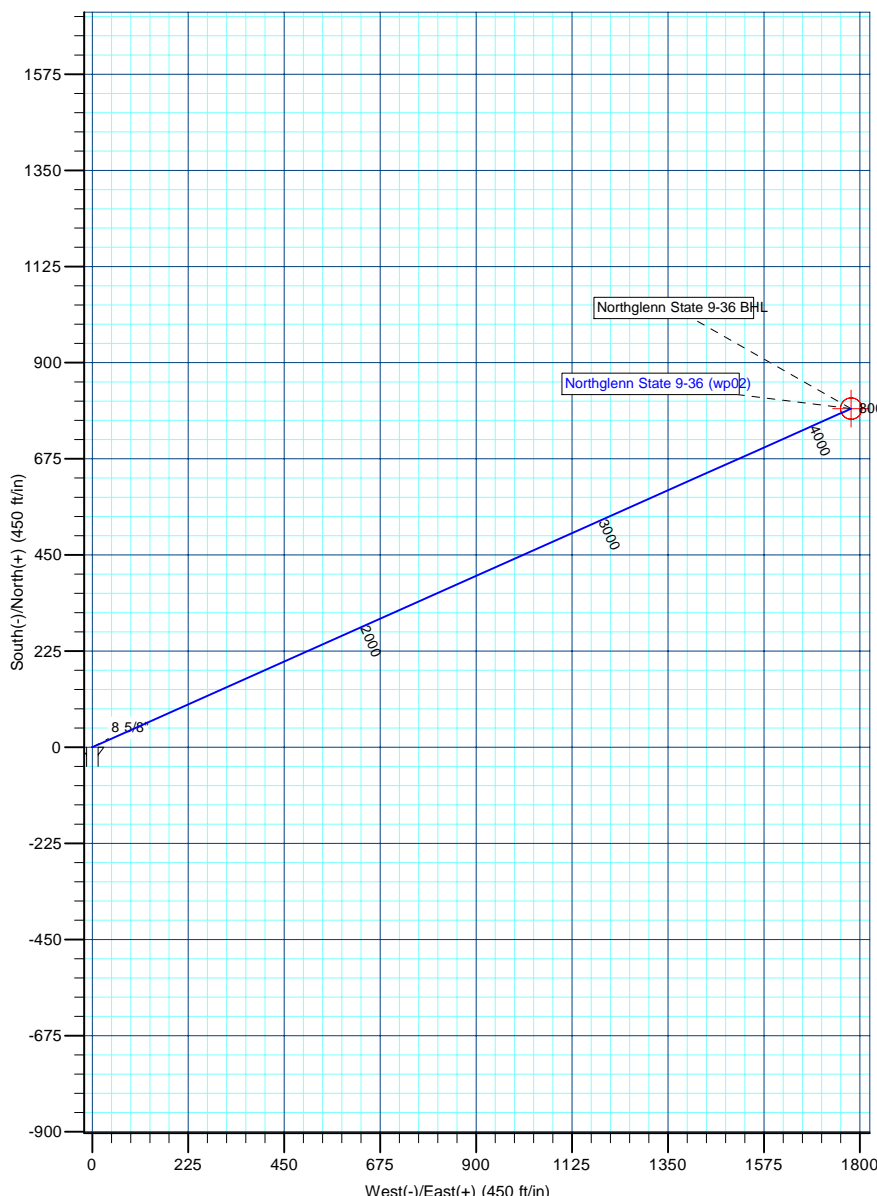
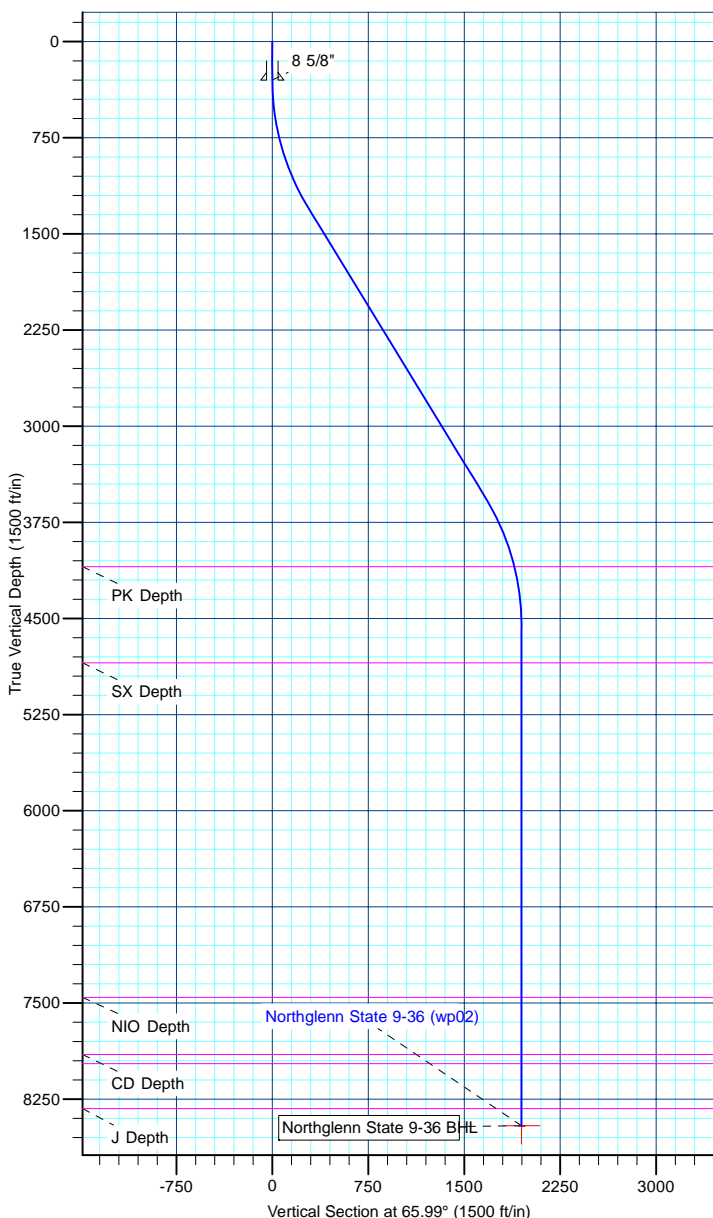
TVD	MD	Name	Size
300.00	300.00	8 5/8"	8-5/8

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
Northglenn State 9-36 BHL	8457.00	792.42	1779.35	1245566.94	3155446.16	40.006132	-104.945086	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
1349.56	31.49	65.99	1297.52	114.40	256.88	3.00	65.99	281.21
4002.07	31.49	65.99	3559.48	678.02	1522.46	0.00	0.00	1666.62
5051.63	0.00	0.00	4557.00	792.42	1779.35	3.00	180.00	1947.82
8951.63	0.00	0.00	8457.00	792.42	1779.35	0.00	0.00	1947.82



Database:	edm5000p	Local Co-ordinate Reference:	Well Northglenn State 9-36
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 5120.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 5120.00ft (Original Well Elev)
Site:	WELD_NORTHGLENN STATE PAD	North Reference:	True
Well:	Northglenn State 9-36	Survey Calculation Method:	Minimum Curvature
Wellbore:	Northglenn State 9-36		
Design:	Northglenn State 9-36 (wp02)		

Project	COLORADO NORTHERN ZONE - 83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	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 9-36					
Well Position	+N-S	-59.80 ft	Northing:	1,244,763.52 ft	Latitude:	40.003957
	+E-W	0.03 ft	Easting:	3,153,671.75 ft	Longitude:	-104.951438
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	5,120.00 ft

Wellbore	Northglenn State 9-36				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/18/2011	8.95	66.70	52,917

Design	Northglenn State 9-36 (wp02)			
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	65.99

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	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,349.56	31.49	65.99	1,297.52	114.40	256.88	3.00	3.00	0.00	65.99	
4,002.07	31.49	65.99	3,559.48	678.02	1,522.46	0.00	0.00	0.00	0.00	
5,051.63	0.00	0.00	4,557.00	792.42	1,779.35	3.00	-3.00	0.00	180.00	
8,951.63	0.00	0.00	8,457.00	792.42	1,779.35	0.00	0.00	0.00	0.00	Northglenn State 9-

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Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 5120.00ft (Original Well Elev)
Site:	WELD_NORTHGLENN STATE PAD	North Reference:	True
Well:	Northglenn State 9-36	Survey Calculation Method:	Minimum Curvature
Wellbore:	Northglenn State 9-36		
Design:	Northglenn State 9-36 (wp02)		

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
8 5/8"									
400.00	3.00	65.99	399.95	1.06	2.39	2.62	3.00	3.00	0.00
500.00	6.00	65.99	499.63	4.26	9.56	10.46	3.00	3.00	0.00
600.00	9.00	65.99	598.77	9.57	21.48	23.51	3.00	3.00	0.00
700.00	12.00	65.99	697.08	16.98	38.13	41.74	3.00	3.00	0.00
800.00	15.00	65.99	794.31	26.47	59.45	65.08	3.00	3.00	0.00
900.00	18.00	65.99	890.18	38.03	85.39	93.48	3.00	3.00	0.00
1,000.00	21.00	65.99	984.43	51.61	115.88	126.85	3.00	3.00	0.00
1,100.00	24.00	65.99	1,076.81	67.17	150.83	165.12	3.00	3.00	0.00
1,200.00	27.00	65.99	1,167.06	84.69	190.16	208.16	3.00	3.00	0.00
1,300.00	30.00	65.99	1,254.93	104.10	233.74	255.87	3.00	3.00	0.00
1,349.56	31.49	65.99	1,297.52	114.40	256.88	281.21	3.00	3.00	0.00
1,400.00	31.49	65.99	1,340.54	125.12	280.95	307.55	0.00	0.00	0.00
1,500.00	31.49	65.99	1,425.81	146.37	328.66	359.78	0.00	0.00	0.00
1,600.00	31.49	65.99	1,511.09	167.62	376.38	412.01	0.00	0.00	0.00
1,700.00	31.49	65.99	1,596.37	188.87	424.09	464.24	0.00	0.00	0.00
1,800.00	31.49	65.99	1,681.64	210.11	471.80	516.47	0.00	0.00	0.00
1,900.00	31.49	65.99	1,766.92	231.36	519.51	568.70	0.00	0.00	0.00
2,000.00	31.49	65.99	1,852.19	252.61	567.23	620.93	0.00	0.00	0.00
2,100.00	31.49	65.99	1,937.47	273.86	614.94	673.16	0.00	0.00	0.00
2,200.00	31.49	65.99	2,022.75	295.11	662.65	725.39	0.00	0.00	0.00
2,300.00	31.49	65.99	2,108.02	316.36	710.36	777.62	0.00	0.00	0.00
2,400.00	31.49	65.99	2,193.30	337.61	758.08	829.85	0.00	0.00	0.00
2,500.00	31.49	65.99	2,278.57	358.85	805.79	882.08	0.00	0.00	0.00
2,600.00	31.49	65.99	2,363.85	380.10	853.50	934.31	0.00	0.00	0.00
2,700.00	31.49	65.99	2,449.13	401.35	901.21	986.54	0.00	0.00	0.00
2,800.00	31.49	65.99	2,534.40	422.60	948.93	1,038.77	0.00	0.00	0.00
2,900.00	31.49	65.99	2,619.68	443.85	996.64	1,091.00	0.00	0.00	0.00
3,000.00	31.49	65.99	2,704.95	465.10	1,044.35	1,143.23	0.00	0.00	0.00
3,100.00	31.49	65.99	2,790.23	486.35	1,092.06	1,195.46	0.00	0.00	0.00
3,200.00	31.49	65.99	2,875.51	507.59	1,139.78	1,247.70	0.00	0.00	0.00
3,300.00	31.49	65.99	2,960.78	528.84	1,187.49	1,299.93	0.00	0.00	0.00
3,400.00	31.49	65.99	3,046.06	550.09	1,235.20	1,352.16	0.00	0.00	0.00
3,500.00	31.49	65.99	3,131.33	571.34	1,282.91	1,404.39	0.00	0.00	0.00
3,600.00	31.49	65.99	3,216.61	592.59	1,330.63	1,456.62	0.00	0.00	0.00
3,700.00	31.49	65.99	3,301.89	613.84	1,378.34	1,508.85	0.00	0.00	0.00
3,800.00	31.49	65.99	3,387.16	635.09	1,426.05	1,561.08	0.00	0.00	0.00
3,900.00	31.49	65.99	3,472.44	656.33	1,473.77	1,613.31	0.00	0.00	0.00
4,000.00	31.49	65.99	3,557.71	677.58	1,521.48	1,665.54	0.00	0.00	0.00
4,002.07	31.49	65.99	3,559.48	678.02	1,522.46	1,666.62	0.00	0.00	0.00
4,100.00	28.55	65.99	3,644.27	697.95	1,567.21	1,715.60	3.00	-3.00	0.00
4,200.00	25.55	65.99	3,733.32	716.45	1,608.75	1,761.07	3.00	-3.00	0.00
4,300.00	22.55	65.99	3,824.63	733.03	1,645.97	1,801.82	3.00	-3.00	0.00
4,400.00	19.55	65.99	3,917.94	747.64	1,678.78	1,837.73	3.00	-3.00	0.00
4,500.00	16.55	65.99	4,013.01	760.24	1,707.08	1,868.71	3.00	-3.00	0.00
4,587.06	13.94	65.99	4,097.00	769.55	1,727.99	1,891.60	3.00	-3.00	0.00
PK Depth									
4,600.00	13.55	65.99	4,109.57	770.80	1,730.79	1,894.67	3.00	-3.00	0.00
4,700.00	10.55	65.99	4,207.36	779.29	1,749.86	1,915.54	3.00	-3.00	0.00
4,800.00	7.55	65.99	4,306.10	785.69	1,764.23	1,931.27	3.00	-3.00	0.00

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Site:	WELD_NORTHGLENN STATE PAD	North Reference:	True
Well:	Northglenn State 9-36	Survey Calculation Method:	Minimum Curvature
Wellbore:	Northglenn State 9-36		
Design:	Northglenn State 9-36 (wp02)		

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	4.55	65.99	4,405.53	789.98	1,773.85	1,941.81	3.00	-3.00	0.00
5,000.00	1.55	65.99	4,505.38	792.14	1,778.71	1,947.12	3.00	-3.00	0.00
5,051.63	0.00	0.00	4,557.00	792.42	1,779.35	1,947.82	3.00	-3.00	0.00
5,100.00	0.00	0.00	4,605.37	792.42	1,779.35	1,947.82	0.00	0.00	0.00
5,200.00	0.00	0.00	4,705.37	792.42	1,779.35	1,947.82	0.00	0.00	0.00
5,300.00	0.00	0.00	4,805.37	792.42	1,779.35	1,947.82	0.00	0.00	0.00
5,341.63	0.00	0.00	4,847.00	792.42	1,779.35	1,947.82	0.00	0.00	0.00
SX Depth									
5,400.00	0.00	0.00	4,905.37	792.42	1,779.35	1,947.82	0.00	0.00	0.00
5,500.00	0.00	0.00	5,005.37	792.42	1,779.35	1,947.82	0.00	0.00	0.00
5,600.00	0.00	0.00	5,105.37	792.42	1,779.35	1,947.82	0.00	0.00	0.00
5,700.00	0.00	0.00	5,205.37	792.42	1,779.35	1,947.82	0.00	0.00	0.00
5,800.00	0.00	0.00	5,305.37	792.42	1,779.35	1,947.82	0.00	0.00	0.00
5,900.00	0.00	0.00	5,405.37	792.42	1,779.35	1,947.82	0.00	0.00	0.00
6,000.00	0.00	0.00	5,505.37	792.42	1,779.35	1,947.82	0.00	0.00	0.00
6,100.00	0.00	0.00	5,605.37	792.42	1,779.35	1,947.82	0.00	0.00	0.00
6,200.00	0.00	0.00	5,705.37	792.42	1,779.35	1,947.82	0.00	0.00	0.00
6,300.00	0.00	0.00	5,805.37	792.42	1,779.35	1,947.82	0.00	0.00	0.00
6,400.00	0.00	0.00	5,905.37	792.42	1,779.35	1,947.82	0.00	0.00	0.00
6,500.00	0.00	0.00	6,005.37	792.42	1,779.35	1,947.82	0.00	0.00	0.00
6,600.00	0.00	0.00	6,105.37	792.42	1,779.35	1,947.82	0.00	0.00	0.00
6,700.00	0.00	0.00	6,205.37	792.42	1,779.35	1,947.82	0.00	0.00	0.00
6,800.00	0.00	0.00	6,305.37	792.42	1,779.35	1,947.82	0.00	0.00	0.00
6,900.00	0.00	0.00	6,405.37	792.42	1,779.35	1,947.82	0.00	0.00	0.00
7,000.00	0.00	0.00	6,505.37	792.42	1,779.35	1,947.82	0.00	0.00	0.00
7,100.00	0.00	0.00	6,605.37	792.42	1,779.35	1,947.82	0.00	0.00	0.00
7,200.00	0.00	0.00	6,705.37	792.42	1,779.35	1,947.82	0.00	0.00	0.00
7,300.00	0.00	0.00	6,805.37	792.42	1,779.35	1,947.82	0.00	0.00	0.00
7,400.00	0.00	0.00	6,905.37	792.42	1,779.35	1,947.82	0.00	0.00	0.00
7,500.00	0.00	0.00	7,005.37	792.42	1,779.35	1,947.82	0.00	0.00	0.00
7,600.00	0.00	0.00	7,105.37	792.42	1,779.35	1,947.82	0.00	0.00	0.00
7,700.00	0.00	0.00	7,205.37	792.42	1,779.35	1,947.82	0.00	0.00	0.00
7,800.00	0.00	0.00	7,305.37	792.42	1,779.35	1,947.82	0.00	0.00	0.00
7,900.00	0.00	0.00	7,405.37	792.42	1,779.35	1,947.82	0.00	0.00	0.00
7,951.63	0.00	0.00	7,457.00	792.42	1,779.35	1,947.82	0.00	0.00	0.00
NIO Depth									
8,000.00	0.00	0.00	7,505.37	792.42	1,779.35	1,947.82	0.00	0.00	0.00
8,100.00	0.00	0.00	7,605.37	792.42	1,779.35	1,947.82	0.00	0.00	0.00
8,200.00	0.00	0.00	7,705.37	792.42	1,779.35	1,947.82	0.00	0.00	0.00
8,300.00	0.00	0.00	7,805.37	792.42	1,779.35	1,947.82	0.00	0.00	0.00
8,397.63	0.00	0.00	7,903.00	792.42	1,779.35	1,947.82	0.00	0.00	0.00
CD Depth									
8,400.00	0.00	0.00	7,905.37	792.42	1,779.35	1,947.82	0.00	0.00	0.00
8,467.63	0.00	0.00	7,973.00	792.42	1,779.35	1,947.82	0.00	0.00	0.00
GH Depth									
8,500.00	0.00	0.00	8,005.37	792.42	1,779.35	1,947.82	0.00	0.00	0.00
8,600.00	0.00	0.00	8,105.37	792.42	1,779.35	1,947.82	0.00	0.00	0.00
8,700.00	0.00	0.00	8,205.37	792.42	1,779.35	1,947.82	0.00	0.00	0.00
8,800.00	0.00	0.00	8,305.37	792.42	1,779.35	1,947.82	0.00	0.00	0.00
8,818.63	0.00	0.00	8,324.00	792.42	1,779.35	1,947.82	0.00	0.00	0.00
J Depth									
8,900.00	0.00	0.00	8,405.37	792.42	1,779.35	1,947.82	0.00	0.00	0.00
8,951.63	0.00	0.00	8,457.00	792.42	1,779.35	1,947.82	0.00	0.00	0.00

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Well:	Northglenn State 9-36	Survey Calculation Method:	Minimum Curvature
Wellbore:	Northglenn State 9-36		
Design:	Northglenn State 9-36 (wp02)		

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)	
Northglenn State 9-36 BHL										

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Northglenn State 9-36 - hit/miss target - Shape - plan hits target center - Circle (radius 25.00)	0.00	0.00	8,457.00	792.42	1,779.35	1,245,566.94	3,155,446.16	40.006132	-104.945086

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
300.00	300.00	8 5/8"	8-5/8	11	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
4,587.06	4,097.00	PK Depth				
5,341.63	4,847.00	SX Depth				
7,951.63	7,457.00	NIO Depth				
8,397.63	7,903.00	CD Depth				
8,467.63	7,973.00	GH Depth				
8,818.63	8,324.00	J Depth				