

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_NORTHGLENN STATE PAD

Northglenn State 33-36

Northglenn State 33-36

Plan: Northglenn State 33-36 (wp01)

Standard Planning Report

25 April, 2011



Project: COLORADO NORTHERN ZONE - 83
Site: WELD_NORTHGLENN STATE PAD
Well: Northglenn State 33-36
Wellbore: Northglenn State 33-36
Section:
SHL:
Design: Northglenn State 33-36 (wp01)
Latitude: 40.003765
Longitude: -104.951437
GL: 5120.00
KB: WELL @ 5120.00ft (Original Well Elev)

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
4105.00	4415.64	PK Depth
4855.00	5244.09	SX Depth
7465.00	8032.48	NIO Depth
7911.00	8478.48	CD Depth
7981.00	8548.48	GH Depth
8332.00	8899.48	J Depth

Azimuths to True North
Magnetic North: 8.95°

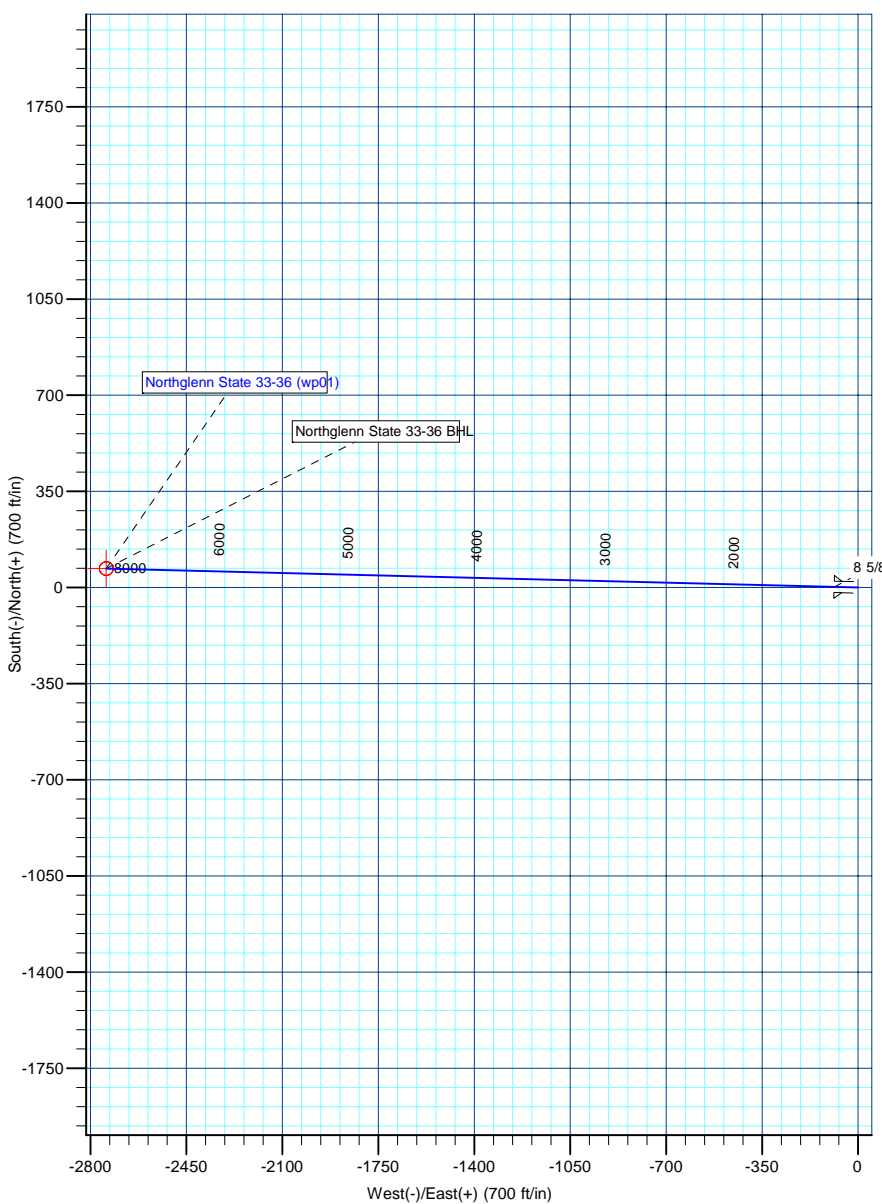
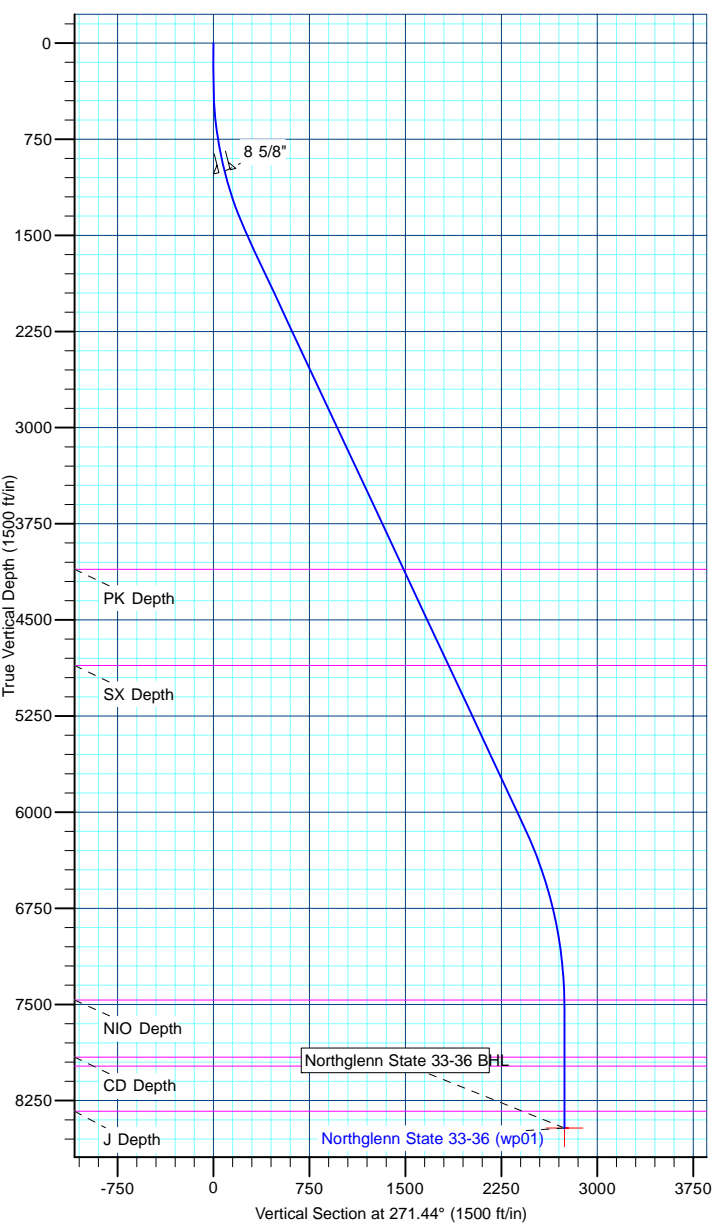
Magnetic Field
Strength: 52916.4snT
Dip Angle: 66.70°
Date: 4/18/2011
Model: IGRF2010

WELL DETAILS: Northglenn State 33-36						
+N/-S	+E/-W	Northing	Ground Level: Easting	5120.00 Latitude	Longitude	Slot
0.00	0.00	1244693.51	3153672.37	40.003765	-104.951437	

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 33-36 BHL	8465.00	68.77	-2742.21	1244745.32	3150929.79	40.003953	-104.961226	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
1556.77	25.14	271.44	1516.84	6.80	-271.19	2.00	271.44	271.27
6646.18	25.14	271.44	6124.33	61.00	-2432.28	0.00	0.00	2433.04
8082.48	0.00	0.00	7515.00	68.77	-2742.21	1.75	180.00	2743.07
9032.48	0.00	0.00	8465.00	68.77	-2742.21	0.00	0.00	2743.07



Database:	edm5000p	Local Co-ordinate Reference:	Well Northglenn State 33-36
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 33-36	Survey Calculation Method:	Minimum Curvature
Wellbore:	Northglenn State 33-36		
Design:	Northglenn State 33-36 (wp01)		

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 33-36					
Well Position	+N-S	-129.82 ft	Northing:	1,244,693.51 ft	Latitude:	40.003765
	+E-W	0.22 ft	Easting:	3,153,672.38 ft	Longitude:	-104.951437
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	5,120.00 ft

Wellbore	Northglenn State 33-36				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/18/2011	8.95	66.70	52,916

Design	Northglenn State 33-36 (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	271.44

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	
1,556.77	25.14	271.44	1,516.84	6.80	-271.19	2.00	2.00	0.00	271.44	
6,646.18	25.14	271.44	6,124.33	61.00	-2,432.28	0.00	0.00	0.00	0.00	
8,082.49	0.00	0.00	7,515.00	68.77	-2,742.21	1.75	-1.75	0.00	180.00	
9,032.49	0.00	0.00	8,465.00	68.77	-2,742.21	0.00	0.00	0.00	0.00	Northglenn State 33

Database:	edm5000p	Local Co-ordinate Reference:	Well Northglenn State 33-36
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 33-36	Survey Calculation Method:	Minimum Curvature
Wellbore:	Northglenn State 33-36		
Design:	Northglenn State 33-36 (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	2.00	271.44	399.98	0.04	-1.74	1.75	2.00	2.00	0.00
500.00	4.00	271.44	499.84	0.17	-6.98	6.98	2.00	2.00	0.00
600.00	6.00	271.44	599.45	0.39	-15.69	15.69	2.00	2.00	0.00
700.00	8.00	271.44	698.70	0.70	-27.87	27.88	2.00	2.00	0.00
800.00	10.00	271.44	797.47	1.09	-43.51	43.52	2.00	2.00	0.00
900.00	12.00	271.44	895.62	1.57	-62.58	62.60	2.00	2.00	0.00
1,000.00	14.00	271.44	993.06	2.13	-85.07	85.10	2.00	2.00	0.00
1,007.16	14.14	271.44	1,000.00	2.18	-86.81	86.84	2.00	2.00	0.00
8 5/8"									
1,100.00	16.00	271.44	1,089.64	2.78	-110.94	110.98	2.00	2.00	0.00
1,200.00	18.00	271.44	1,185.27	3.52	-140.17	140.21	2.00	2.00	0.00
1,300.00	20.00	271.44	1,279.82	4.33	-172.71	172.77	2.00	2.00	0.00
1,400.00	22.00	271.44	1,373.17	5.23	-208.54	208.60	2.00	2.00	0.00
1,500.00	24.00	271.44	1,465.21	6.21	-247.60	247.67	2.00	2.00	0.00
1,556.77	25.14	271.44	1,516.84	6.80	-271.19	271.27	2.00	2.00	0.00
1,600.00	25.14	271.44	1,555.98	7.26	-289.55	289.64	0.00	0.00	0.00
1,700.00	25.14	271.44	1,646.51	8.33	-332.01	332.11	0.00	0.00	0.00
1,800.00	25.14	271.44	1,737.04	9.39	-374.47	374.59	0.00	0.00	0.00
1,900.00	25.14	271.44	1,827.57	10.46	-416.94	417.07	0.00	0.00	0.00
2,000.00	25.14	271.44	1,918.10	11.52	-459.40	459.54	0.00	0.00	0.00
2,100.00	25.14	271.44	2,008.63	12.59	-501.86	502.02	0.00	0.00	0.00
2,200.00	25.14	271.44	2,099.17	13.65	-544.32	544.49	0.00	0.00	0.00
2,300.00	25.14	271.44	2,189.70	14.72	-586.78	586.97	0.00	0.00	0.00
2,400.00	25.14	271.44	2,280.23	15.78	-629.25	629.45	0.00	0.00	0.00
2,500.00	25.14	271.44	2,370.76	16.85	-671.71	671.92	0.00	0.00	0.00
2,600.00	25.14	271.44	2,461.29	17.91	-714.17	714.40	0.00	0.00	0.00
2,700.00	25.14	271.44	2,551.82	18.98	-756.63	756.87	0.00	0.00	0.00
2,800.00	25.14	271.44	2,642.35	20.04	-799.10	799.35	0.00	0.00	0.00
2,900.00	25.14	271.44	2,732.88	21.11	-841.56	841.82	0.00	0.00	0.00
3,000.00	25.14	271.44	2,823.41	22.17	-884.02	884.30	0.00	0.00	0.00
3,100.00	25.14	271.44	2,913.94	23.24	-926.48	926.78	0.00	0.00	0.00
3,200.00	25.14	271.44	3,004.47	24.30	-968.95	969.25	0.00	0.00	0.00
3,300.00	25.14	271.44	3,095.00	25.36	-1,011.41	1,011.73	0.00	0.00	0.00
3,400.00	25.14	271.44	3,185.53	26.43	-1,053.87	1,054.20	0.00	0.00	0.00
3,500.00	25.14	271.44	3,276.06	27.49	-1,096.33	1,096.68	0.00	0.00	0.00
3,600.00	25.14	271.44	3,366.60	28.56	-1,138.80	1,139.15	0.00	0.00	0.00
3,700.00	25.14	271.44	3,457.13	29.62	-1,181.26	1,181.63	0.00	0.00	0.00
3,800.00	25.14	271.44	3,547.66	30.69	-1,223.72	1,224.11	0.00	0.00	0.00
3,900.00	25.14	271.44	3,638.19	31.75	-1,266.18	1,266.58	0.00	0.00	0.00
4,000.00	25.14	271.44	3,728.72	32.82	-1,308.65	1,309.06	0.00	0.00	0.00
4,100.00	25.14	271.44	3,819.25	33.88	-1,351.11	1,351.53	0.00	0.00	0.00
4,200.00	25.14	271.44	3,909.78	34.95	-1,393.57	1,394.01	0.00	0.00	0.00
4,300.00	25.14	271.44	4,000.31	36.01	-1,436.03	1,436.48	0.00	0.00	0.00
4,400.00	25.14	271.44	4,090.84	37.08	-1,478.50	1,478.96	0.00	0.00	0.00
4,415.64	25.14	271.44	4,105.00	37.25	-1,485.14	1,485.60	0.00	0.00	0.00
PK Depth									
4,500.00	25.14	271.44	4,181.37	38.14	-1,520.96	1,521.44	0.00	0.00	0.00
4,600.00	25.14	271.44	4,271.90	39.21	-1,563.42	1,563.91	0.00	0.00	0.00
4,700.00	25.14	271.44	4,362.43	40.27	-1,605.88	1,606.39	0.00	0.00	0.00
4,800.00	25.14	271.44	4,452.96	41.34	-1,648.34	1,648.86	0.00	0.00	0.00

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Site:	WELD_NORTHGLENN STATE PAD	North Reference:	True
Well:	Northglenn State 33-36	Survey Calculation Method:	Minimum Curvature
Wellbore:	Northglenn State 33-36		
Design:	Northglenn State 33-36 (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)
4,900.00	25.14	271.44	4,543.49	42.40	-1,690.81	1,691.34	0.00	0.00	0.00
5,000.00	25.14	271.44	4,634.03	43.47	-1,733.27	1,733.81	0.00	0.00	0.00
5,100.00	25.14	271.44	4,724.56	44.53	-1,775.73	1,776.29	0.00	0.00	0.00
5,200.00	25.14	271.44	4,815.09	45.60	-1,818.19	1,818.77	0.00	0.00	0.00
5,244.09	25.14	271.44	4,855.00	46.07	-1,836.92	1,837.49	0.00	0.00	0.00
SX Depth									
5,300.00	25.14	271.44	4,905.62	46.66	-1,860.66	1,861.24	0.00	0.00	0.00
5,400.00	25.14	271.44	4,996.15	47.73	-1,903.12	1,903.72	0.00	0.00	0.00
5,500.00	25.14	271.44	5,086.68	48.79	-1,945.58	1,946.19	0.00	0.00	0.00
5,600.00	25.14	271.44	5,177.21	49.86	-1,988.04	1,988.67	0.00	0.00	0.00
5,700.00	25.14	271.44	5,267.74	50.92	-2,030.51	2,031.14	0.00	0.00	0.00
5,800.00	25.14	271.44	5,358.27	51.99	-2,072.97	2,073.62	0.00	0.00	0.00
5,900.00	25.14	271.44	5,448.80	53.05	-2,115.43	2,116.10	0.00	0.00	0.00
6,000.00	25.14	271.44	5,539.33	54.12	-2,157.89	2,158.57	0.00	0.00	0.00
6,100.00	25.14	271.44	5,629.86	55.18	-2,200.36	2,201.05	0.00	0.00	0.00
6,200.00	25.14	271.44	5,720.39	56.25	-2,242.82	2,243.52	0.00	0.00	0.00
6,300.00	25.14	271.44	5,810.92	57.31	-2,285.28	2,286.00	0.00	0.00	0.00
6,400.00	25.14	271.44	5,901.46	58.38	-2,327.74	2,328.47	0.00	0.00	0.00
6,500.00	25.14	271.44	5,991.99	59.44	-2,370.21	2,370.95	0.00	0.00	0.00
6,600.00	25.14	271.44	6,082.52	60.51	-2,412.67	2,413.43	0.00	0.00	0.00
6,646.18	25.14	271.44	6,124.33	61.00	-2,432.28	2,433.04	0.00	0.00	0.00
6,700.00	24.19	271.44	6,173.23	61.56	-2,454.73	2,455.50	1.75	-1.75	0.00
6,800.00	22.44	271.44	6,265.06	62.55	-2,494.30	2,495.08	1.75	-1.75	0.00
6,900.00	20.69	271.44	6,358.06	63.48	-2,531.05	2,531.84	1.75	-1.75	0.00
7,000.00	18.94	271.44	6,452.13	64.33	-2,564.94	2,565.75	1.75	-1.75	0.00
7,100.00	17.19	271.44	6,547.19	65.10	-2,595.94	2,596.76	1.75	-1.75	0.00
7,200.00	15.44	271.44	6,643.16	65.81	-2,624.03	2,624.86	1.75	-1.75	0.00
7,300.00	13.69	271.44	6,739.94	66.44	-2,649.18	2,650.01	1.75	-1.75	0.00
7,400.00	11.94	271.44	6,837.45	66.99	-2,671.35	2,672.19	1.75	-1.75	0.00
7,500.00	10.19	271.44	6,935.58	67.48	-2,690.55	2,691.39	1.75	-1.75	0.00
7,600.00	8.44	271.44	7,034.26	67.88	-2,706.73	2,707.58	1.75	-1.75	0.00
7,700.00	6.69	271.44	7,133.38	68.21	-2,719.90	2,720.75	1.75	-1.75	0.00
7,800.00	4.94	271.44	7,232.87	68.47	-2,730.03	2,730.89	1.75	-1.75	0.00
7,900.00	3.19	271.44	7,332.61	68.64	-2,737.13	2,737.99	1.75	-1.75	0.00
8,000.00	1.44	271.44	7,432.52	68.75	-2,741.17	2,742.03	1.75	-1.75	0.00
8,032.48	0.88	271.44	7,465.00	68.76	-2,741.83	2,742.69	1.75	-1.75	0.00
NIO Depth									
8,082.49	0.00	0.00	7,515.00	68.77	-2,742.21	2,743.07	1.75	-1.75	0.00
8,100.00	0.00	0.00	7,532.52	68.77	-2,742.21	2,743.07	0.00	0.00	0.00
8,200.00	0.00	0.00	7,632.52	68.77	-2,742.21	2,743.07	0.00	0.00	0.00
8,300.00	0.00	0.00	7,732.52	68.77	-2,742.21	2,743.07	0.00	0.00	0.00
8,400.00	0.00	0.00	7,832.52	68.77	-2,742.21	2,743.07	0.00	0.00	0.00
8,478.49	0.00	0.00	7,911.00	68.77	-2,742.21	2,743.07	0.00	0.00	0.00
CD Depth									
8,500.00	0.00	0.00	7,932.52	68.77	-2,742.21	2,743.07	0.00	0.00	0.00
8,548.49	0.00	0.00	7,981.00	68.77	-2,742.21	2,743.07	0.00	0.00	0.00
GH Depth									
8,600.00	0.00	0.00	8,032.52	68.77	-2,742.21	2,743.07	0.00	0.00	0.00
8,700.00	0.00	0.00	8,132.52	68.77	-2,742.21	2,743.07	0.00	0.00	0.00
8,800.00	0.00	0.00	8,232.52	68.77	-2,742.21	2,743.07	0.00	0.00	0.00
8,899.49	0.00	0.00	8,332.00	68.77	-2,742.21	2,743.07	0.00	0.00	0.00
J Depth									
8,900.00	0.00	0.00	8,332.52	68.77	-2,742.21	2,743.07	0.00	0.00	0.00

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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 33-36	Survey Calculation Method:	Minimum Curvature
Wellbore:	Northglenn State 33-36		
Design:	Northglenn State 33-36 (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)
9,000.00	0.00	0.00	8,432.52	68.77	-2,742.21	2,743.07	0.00	0.00	0.00
9,032.49	0.00	0.00	8,465.00	68.77	-2,742.21	2,743.07	0.00	0.00	0.00
Northglenn State 33-36 BHL									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
Northglenn State 33-3	0.00	0.00	8,465.00	68.77	-2,742.21	1,244,745.32	3,150,929.79	40.003953	-104.961226
- plan hits target center									
- Circle (radius 25.00)									

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 (°)	
4,415.64	4,105.00	PK Depth				
5,244.09	4,855.00	SX Depth				
8,032.48	7,465.00	NIO Depth				
8,478.49	7,911.00	CD Depth				
8,548.49	7,981.00	GH Depth				
8,899.49	8,332.00	J Depth				