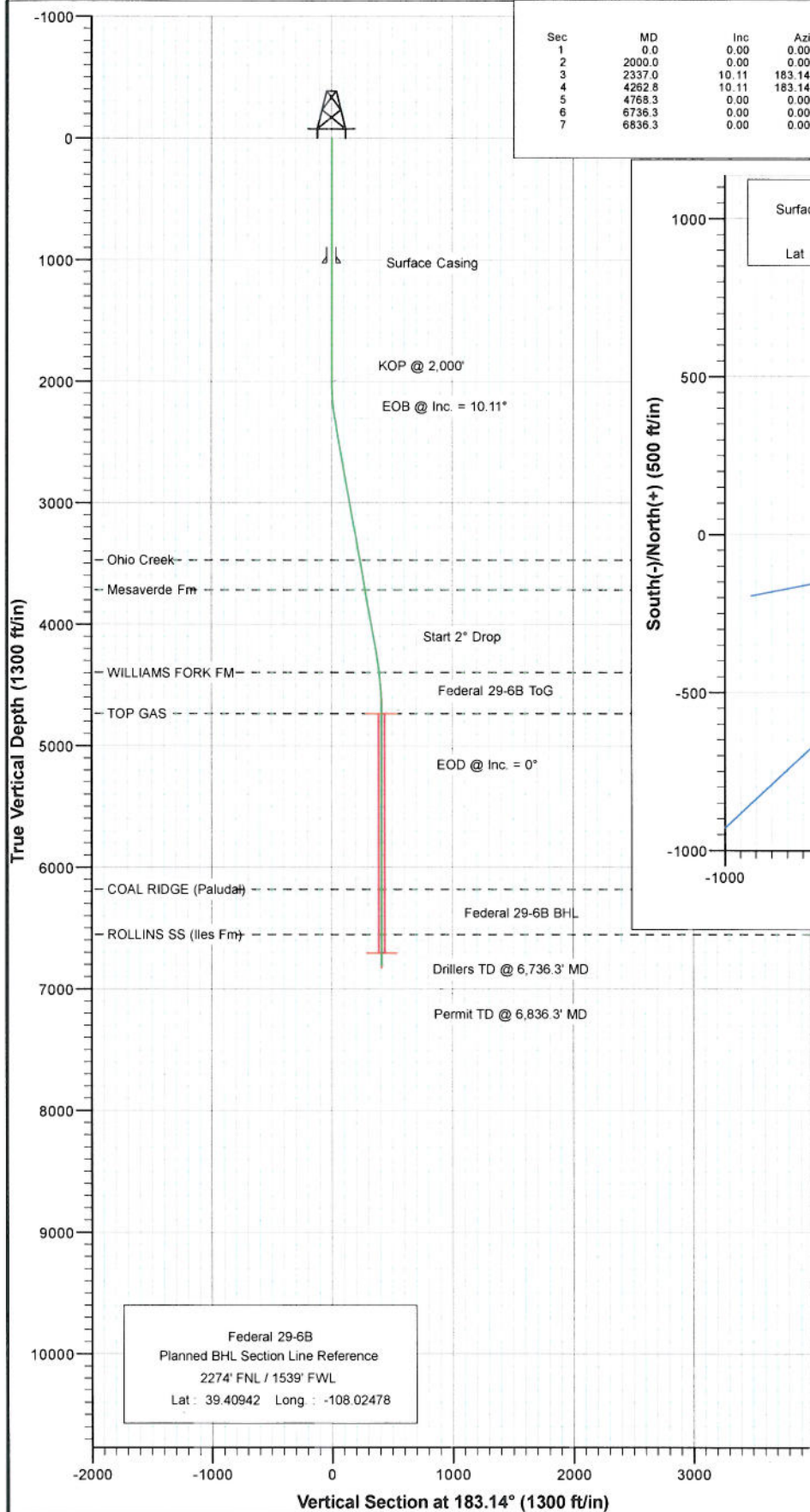
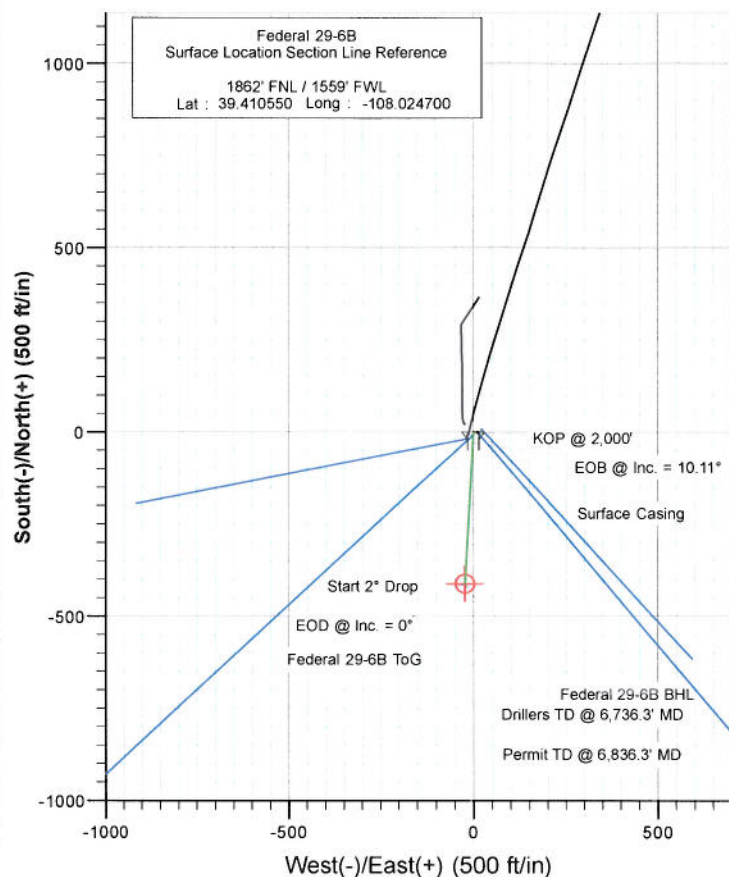




Project: S. Piceance (Parachute)
 Site: S29-T7S-R95W (PF-29 Pad)
 Well: Federal 29-6B
 Wellbore: DD
 Plan: Plan #2



SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	2000.0	0.00	0.00	2000.0	0.0	0.0	0.00	0.00	0.0	
3	2337.0	10.11	183.14	2335.3	-29.6	-1.6	3.00	183.14	29.7	
4	4262.8	10.11	183.14	4231.1	-367.2	-20.2	0.00	0.00	367.7	
5	4768.3	0.00	0.00	4734.0	-411.6	-22.6	2.00	180.00	412.2	Federal 29-6B ToG
6	6736.3	0.00	0.00	6702.0	-411.6	-22.6	0.00	0.00	412.2	Federal 29-6B BHL
7	6836.3	0.00	0.00	6802.0	-411.6	-22.6	0.00	0.00	412.2	



FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
3470.0	3489.6	Ohio Creek
3716.0	3739.5	Mesaverde Fm
4397.0	4430.5	WILLIAMS FORK FM
4734.0	4768.3	TOP GAS
6180.0	6214.3	COAL RIDGE (Paludal)
6552.0	6586.3	ROLLINS SS (Iles Fm)



Azimuths to True North
 Magnetic North: 10.42°

Magnetic Field
 Strength: 52302.1nT
 Dip Angle: 65.69°
 Date: 9/27/2010
 Model: IGRF200510

DESIGN DETAILS: Plan #2
 115XXX; SC

WELL @ 6058.0ft (Original Well Elev)
 183.14

target	Azimuth	Origin Type	N/S	E/W
ederal 29-6B BHL		Slot	0.0	0.0

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Federal 29-6B
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 6058.0ft (Original Well Elev)
Project:	S. Piceance (Parachute)	MD Reference:	WELL @ 6058.0ft (Original Well Elev)
Site:	S29-T7S-R95W (PF-29 Pad)	North Reference:	True
Well:	Federal 29-6B	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #2		

Project	S. Piceance (Parachute), Garfield County, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

Site	S29-T7S-R95W (PF-29 Pad)				
Site Position:		Northing:	1,584,347.66 ft	Latitude:	39.410580
From:	Lat/Long	Easting:	2,286,791.27 ft	Longitude:	-108.024590
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.59 °

Well	Federal 29-6B					
Well Position	+N/-S	0.0 ft	Northing:	1,584,337.59 ft	Latitude:	39.410550
	+E/-W	0.0 ft	Easting:	2,286,759.90 ft	Longitude:	-108.024700
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft	Ground Level:	6,036.0 ft	

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	9/27/2010	10.42	65.69	52,302

Design	Plan #2			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(ft)	(ft)	(ft)	(°)
	0.0	0.0	0.0	183.14

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
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,337.0	10.11	183.14	2,335.3	-29.6	-1.6	3.00	3.00	0.00	183.14	
4,262.8	10.11	183.14	4,231.1	-367.2	-20.2	0.00	0.00	0.00	0.00	
4,768.3	0.00	0.00	4,734.0	-411.6	-22.6	2.00	-2.00	0.00	180.00	Federal 29-6B ToG
6,736.3	0.00	0.00	6,702.0	-411.6	-22.6	0.00	0.00	0.00	0.00	Federal 29-6B BHL
6,836.3	0.00	0.00	6,802.0	-411.6	-22.6	0.00	0.00	0.00	0.00	

Cathedral Energy Services

Planning Report

Database: USA EDM 5000 Multi Users DB
 Company: EnCana Oil & Gas (USA) Inc
 Project: S. Piceance (Parachute)
 Site: S29-T7S-R95W (PF-29 Pad)
 Well: Federal 29-6B
 Wellbore: DD
 Design: Plan #2

Local Co-ordinate Reference: Well Federal 29-6B
 TVD Reference: WELL @ 6058.0ft (Original Well Elev)
 MD Reference: WELL @ 6058.0ft (Original Well Elev)
 North Reference: True
 Survey Calculation Method: Minimum Curvature

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)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	
1,025.0	0.00	0.00	1,025.0	0.0	0.0	0.0	0.00	0.00	Surface Casing
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	KOP @ 2,000'
2,100.0	3.00	183.14	2,100.0	-2.6	-0.1	2.6	3.00	3.00	
2,200.0	6.00	183.14	2,199.6	-10.4	-0.6	10.5	3.00	3.00	
2,300.0	9.00	183.14	2,298.8	-23.5	-1.3	23.5	3.00	3.00	
2,337.0	10.11	183.14	2,335.3	-29.6	-1.6	29.7	3.00	3.00	EOB @ Inc. = 10.11°
2,400.0	10.11	183.14	2,397.3	-40.7	-2.2	40.7	0.00	0.00	
2,500.0	10.11	183.14	2,495.7	-58.2	-3.2	58.3	0.00	0.00	
2,600.0	10.11	183.14	2,594.2	-75.7	-4.2	75.8	0.00	0.00	
2,700.0	10.11	183.14	2,692.6	-93.2	-5.1	93.4	0.00	0.00	
2,800.0	10.11	183.14	2,791.1	-110.8	-6.1	110.9	0.00	0.00	
2,900.0	10.11	183.14	2,889.5	-128.3	-7.0	128.5	0.00	0.00	
3,000.0	10.11	183.14	2,988.0	-145.8	-8.0	146.0	0.00	0.00	
3,100.0	10.11	183.14	3,086.4	-163.3	-9.0	163.6	0.00	0.00	
3,200.0	10.11	183.14	3,184.9	-180.9	-9.9	181.1	0.00	0.00	
3,300.0	10.11	183.14	3,283.3	-198.4	-10.9	198.7	0.00	0.00	
3,400.0	10.11	183.14	3,381.7	-215.9	-11.9	216.3	0.00	0.00	
3,489.6	10.11	183.14	3,470.0	-231.6	-12.7	232.0	0.00	0.00	Ohio Creek
3,500.0	10.11	183.14	3,480.2	-233.5	-12.8	233.8	0.00	0.00	
3,600.0	10.11	183.14	3,578.6	-251.0	-13.8	251.4	0.00	0.00	
3,700.0	10.11	183.14	3,677.1	-268.5	-14.7	268.9	0.00	0.00	
3,739.5	10.11	183.14	3,716.0	-275.4	-15.1	275.9	0.00	0.00	Mesaverde Fm
3,800.0	10.11	183.14	3,775.5	-286.0	-15.7	286.5	0.00	0.00	
3,900.0	10.11	183.14	3,874.0	-303.6	-16.7	304.0	0.00	0.00	
4,000.0	10.11	183.14	3,972.4	-321.1	-17.6	321.6	0.00	0.00	
4,100.0	10.11	183.14	4,070.9	-338.6	-18.6	339.1	0.00	0.00	
4,200.0	10.11	183.14	4,169.3	-356.2	-19.6	356.7	0.00	0.00	
4,262.8	10.11	183.14	4,231.1	-367.2	-20.2	367.7	0.00	0.00	Start 2" Drop
4,300.0	9.37	183.14	4,267.8	-373.4	-20.5	374.0	2.00	-2.00	
4,400.0	7.37	183.14	4,366.7	-388.0	-21.3	388.6	2.00	-2.00	
4,430.5	6.76	183.14	4,397.0	-391.7	-21.5	392.3	2.00	-2.00	WILLIAMS FORK FM
4,500.0	5.37	183.14	4,466.1	-399.0	-21.9	399.6	2.00	-2.00	

Cathedral Energy Services

Planning Report

Database: USA EDM 5000 Multi Users DB
Company: EnCana Oil & Gas (USA) Inc
Project: S. Piceance (Parachute)
Site: S29-T7S-R95W (PF-29 Pad)
Well: Federal 29-6B
Wellbore: DD
Design: Plan #2

Local Co-ordinate Reference: Well Federal 29-6B
TVD Reference: WELL @ 6058.0ft (Original Well Elev)
MD Reference: WELL @ 6058.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

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)	Comments / Formations
4,600.0	3.37	183.14	4,565.8	-406.6	-22.3	407.2	2.00	-2.00	
4,700.0	1.37	183.14	4,665.7	-410.8	-22.6	411.4	2.00	-2.00	
4,768.3	0.00	0.00	4,734.0	-411.6	-22.6	412.2	2.00	-2.00	EOD @ Inc. = 0° - TOP GAS
4,800.0	0.00	0.00	4,765.7	-411.6	-22.6	412.2	0.00	0.00	
4,900.0	0.00	0.00	4,865.7	-411.6	-22.6	412.2	0.00	0.00	
5,000.0	0.00	0.00	4,965.7	-411.6	-22.6	412.2	0.00	0.00	
5,100.0	0.00	0.00	5,065.7	-411.6	-22.6	412.2	0.00	0.00	
5,200.0	0.00	0.00	5,165.7	-411.6	-22.6	412.2	0.00	0.00	
5,300.0	0.00	0.00	5,265.7	-411.6	-22.6	412.2	0.00	0.00	
5,400.0	0.00	0.00	5,365.7	-411.6	-22.6	412.2	0.00	0.00	
5,500.0	0.00	0.00	5,465.7	-411.6	-22.6	412.2	0.00	0.00	
5,600.0	0.00	0.00	5,565.7	-411.6	-22.6	412.2	0.00	0.00	
5,700.0	0.00	0.00	5,665.7	-411.6	-22.6	412.2	0.00	0.00	
5,800.0	0.00	0.00	5,765.7	-411.6	-22.6	412.2	0.00	0.00	
5,900.0	0.00	0.00	5,865.7	-411.6	-22.6	412.2	0.00	0.00	
6,000.0	0.00	0.00	5,965.7	-411.6	-22.6	412.2	0.00	0.00	
6,100.0	0.00	0.00	6,065.7	-411.6	-22.6	412.2	0.00	0.00	
6,200.0	0.00	0.00	6,165.7	-411.6	-22.6	412.2	0.00	0.00	
6,214.3	0.00	0.00	6,180.0	-411.6	-22.6	412.2	0.00	0.00	COAL RIDGE (Paludal)
6,300.0	0.00	0.00	6,265.7	-411.6	-22.6	412.2	0.00	0.00	
6,400.0	0.00	0.00	6,365.7	-411.6	-22.6	412.2	0.00	0.00	
6,500.0	0.00	0.00	6,465.7	-411.6	-22.6	412.2	0.00	0.00	
6,586.3	0.00	0.00	6,552.0	-411.6	-22.6	412.2	0.00	0.00	ROLLINS SS (Iles Fm)
6,600.0	0.00	0.00	6,565.7	-411.6	-22.6	412.2	0.00	0.00	
6,700.0	0.00	0.00	6,665.7	-411.6	-22.6	412.2	0.00	0.00	
6,736.3	0.00	0.00	6,702.0	-411.6	-22.6	412.2	0.00	0.00	Drillers TD @ 6,736.3' MD
6,800.0	0.00	0.00	6,765.7	-411.6	-22.6	412.2	0.00	0.00	
6,836.3	0.00	0.00	6,802.0	-411.6	-22.6	412.2	0.00	0.00	Permit TD @ 6,836.3' MD

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									
Federal 29-6B ToG	0.00	0.00	4,734.0	-411.6	-22.6	1,583,926.80	2,286,725.87	39.409420	-108.024780
- plan hits target center									
- Point									
Federal 29-6B BHL	0.00	0.00	6,702.0	-411.6	-22.6	1,583,926.80	2,286,725.87	39.409420	-108.024780
- plan hits target center									
- Circle (radius 25.0)									

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
1,025.0	1,025.0	Surface Casing	5.500	6.000

Cathedral Energy Services

Planning Report

Database: USA EDM 5000 Multi Users DB
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Project: S. Piceance (Parachute)
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Well: Federal 29-6B
Wellbore: DD
Design: Plan #2

Local Co-ordinate Reference: Well Federal 29-6B
TVD Reference: WELL @ 6058.0ft (Original Well Elev)
MD Reference: WELL @ 6058.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,489.6	3,470.0	Ohio Creek			
3,739.5	3,716.0	Mesaverde Fm			
4,430.5	4,397.0	WILLIAMS FORK FM			
4,768.3	4,734.0	TOP GAS			
6,214.3	6,180.0	COAL RIDGE (Paludal)			
6,586.3	6,552.0	ROLLINS SS (Iles Fm)			

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
2,000.0	2,000.0	0.0	0.0	KOP @ 2,000'
2,337.0	2,335.3	-29.6	-1.6	EOB @ Inc. = 10.11°
4,262.8	4,231.1	-367.2	-20.2	Start 2° Drop
4,768.3	4,734.0	-411.6	-22.6	EOD @ Inc. = 0°
6,736.3	6,702.0	-411.6	-22.6	Drillers TD @ 6,736.3' MD
6,836.3	6,802.0	-411.6	-22.6	Permit TD @ 6,836.3' MD