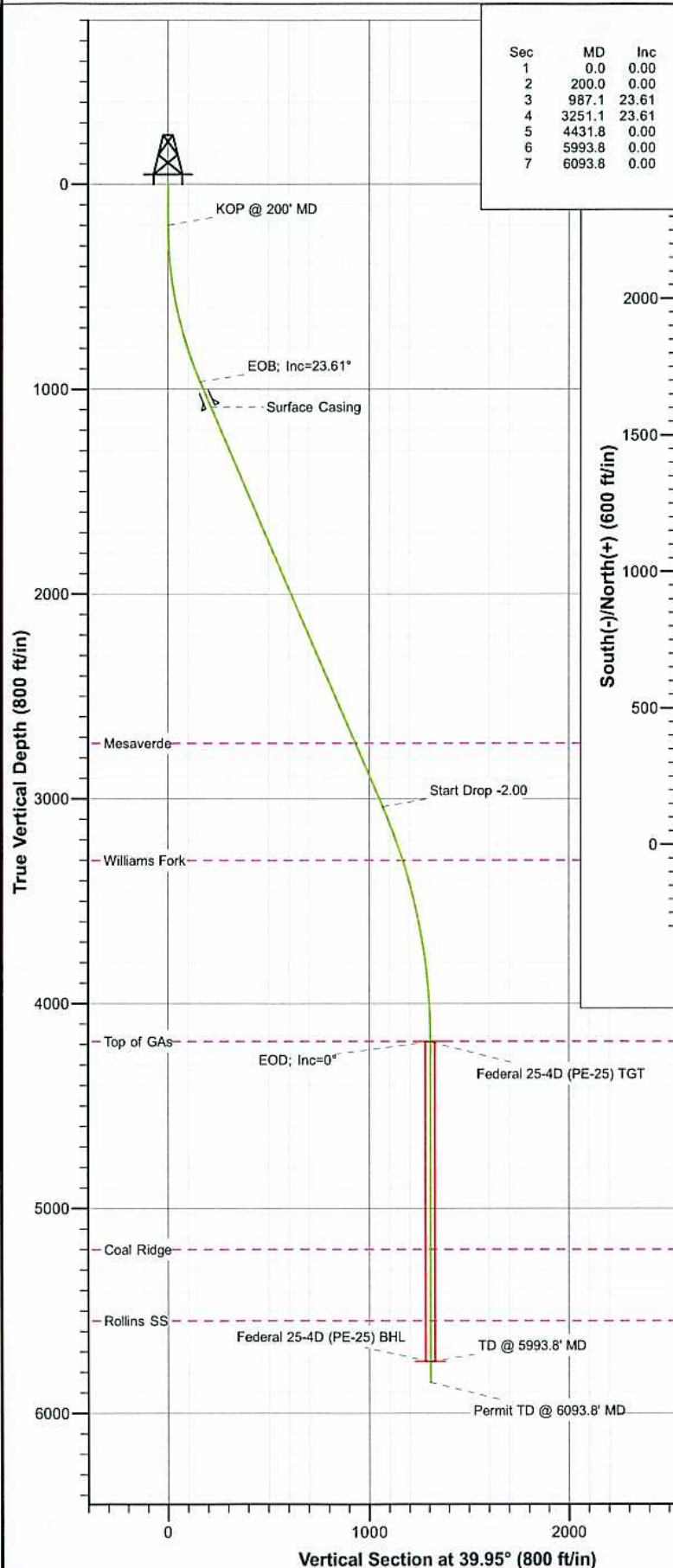
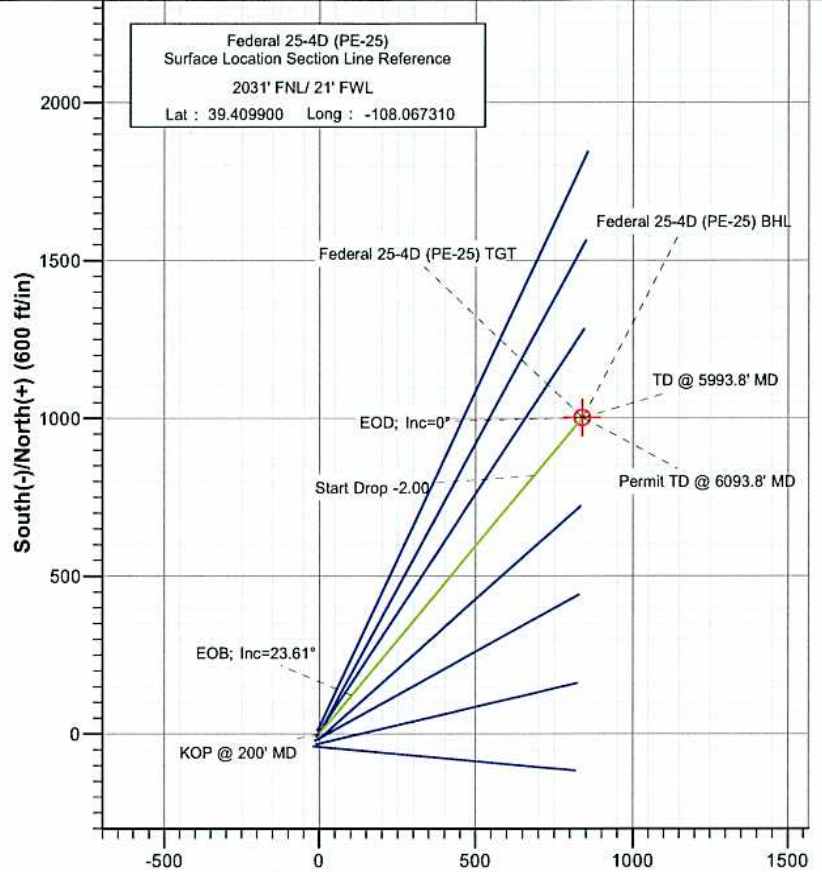




Project: S. Piceance (Parachute)  
 Site: SWNW Sec 25-T7S-R96W (PE-25 Pad)  
 Well: Federal 25-4D (PE-25)  
 Wellbore: DD  
 Plan: Plan #1



SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSecl	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	987.1	23.61	39.95	965.0	122.6	102.7	3.00	39.95	159.9	
4	3251.1	23.61	39.95	3039.4	817.8	685.1	0.00	0.00	1066.8	
5	4431.8	0.00	0.00	4187.0	1001.7	839.1	2.00	180.00	1306.7	Federal 25-4D (PE-25) TGT
6	5993.8	0.00	0.00	5749.0	1001.7	839.1	0.00	0.00	1306.7	Federal 25-4D (PE-25) BHL
7	6093.8	0.00	0.00	5849.0	1001.7	839.1	0.00	0.00	1306.7	



FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
2729.0	2912.3	Mesaverde
3302.0	3532.1	Williams Fork
4187.0	4431.8	Top of Gas
5201.0	5445.8	Coal Ridge
5549.0	5793.8	Rollins SS



Azimuths to True North  
 Magnetic North: 10.41°  
 Magnetic Field  
 Strength: 52278.5nT  
 Dip Angle: 65.68°  
 Date: 12/22/2010  
 Model: IGRF200510

Plan #1 Federal 25-4D (PE-25) 105XXX; BH					
KBE @ 5410.0ft (Original Well Elev) North American Datum 1983 Well Federal 25-4D (PE-25), True North					
Type	Target	Azimuth	Origin	Type	N/S
Target	Federal 25-4D (PE-25)	BH99.95	Slot	0.0	0.0
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
Federal 25-4D (PE-25) TGT	4187.0	1001.7	839.1	39.412650	-108.064340
Federal 25-4D (PE-25) BHL	5749.0	1001.7	839.1	39.412650	-108.064340

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	EDM 5000.1 US Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Federal 25-4D (PE-25)
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	KBE @ 5410.0ft (Original Well Elev)
<b>Project:</b>	S. Piceance (Parachute)	<b>MD Reference:</b>	KBE @ 5410.0ft (Original Well Elev)
<b>Site:</b>	SWNW Sec 25-T7S-R96W (PE-25 Pad)	<b>North Reference:</b>	True
<b>Well:</b>	Federal 25-4D (PE-25)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<b>Design:</b>	Plan #1		

<b>Project</b>	S. Piceance (Parachute), Garfield County, CO		
<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 Central Zone		

Site		SWNW Sec 25-T7S-R96W (PE-25 Pad)			
Site Position:		Northing:	1,584,438.30ft	Latitude:	39.409900
From:	Lat/Long	Easting:	2,274,718.76ft	Longitude:	-108.067310
Position Uncertainty:	0.0 ft	Slot Radius:	13.200in	Grid Convergence:	-1.62 °

Well	Federal 25-4D (PE-25)					
Well Position	+N/-S	0.0 ft	Northing:	1,584,438.29 ft	Latitude:	39.409900
	+E/-W	0.0 ft	Easting:	2,274,718.76 ft	Longitude:	-108.067310
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	5,388.0 ft

<b>Wellbore</b>	DD				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF200510	12/22/2010	10.41	65.68	52,279

<b>Design</b>	Plan #1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	39.95

<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
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
987.1	23.61	39.95	965.0	122.6	102.7	3.00	3.00	0.00	39.95	
3,251.1	23.61	39.95	3,039.4	817.8	685.1	0.00	0.00	0.00	0.00	
4,431.8	0.00	0.00	4,187.0	1,001.7	839.1	2.00	-2.00	0.00	180.00	Federal 25-4D (PE-25)
5,993.8	0.00	0.00	5,749.0	1,001.7	839.1	0.00	0.00	0.00	0.00	Federal 25-4D (PE-25)
6,093.8	0.00	0.00	5,849.0	1,001.7	839.1	0.00	0.00	0.00	0.00	



# Cathedral Energy Services

## Planning Report

**Database:** EDM 5000.1 US Multi Users DB  
**Company:** EnCana Oil & Gas (USA) Inc  
**Project:** S. Piceance (Parachute)  
**Site:** SWNW Sec 25-T7S-R96W (PE-25 Pad)  
**Well:** Federal 25-4D (PE-25)  
**Wellbore:** DD  
**Design:** Plan #1

**Local Co-ordinate Reference:** Well Federal 25-4D (PE-25)  
**TVD Reference:** KBE @ 5410.0ft (Original Well Elev)  
**MD Reference:** KBE @ 5410.0ft (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	KOP @ 200' MD
300.0	3.00	39.95	300.0	2.0	1.7	2.6	3.00	3.00	
400.0	6.00	39.95	399.6	8.0	6.7	10.5	3.00	3.00	
500.0	9.00	39.95	498.8	18.0	15.1	23.5	3.00	3.00	
600.0	12.00	39.95	597.1	32.0	26.8	41.7	3.00	3.00	
700.0	15.00	39.95	694.3	49.9	41.8	65.1	3.00	3.00	
800.0	18.00	39.95	790.2	71.7	60.0	93.5	3.00	3.00	
900.0	21.00	39.95	884.4	97.2	81.5	126.9	3.00	3.00	
987.1	23.61	39.95	965.0	122.6	102.7	159.9	3.00	3.00	EOB; Inc=23.61°
1,000.0	23.61	39.95	976.8	126.5	106.0	165.1	0.00	0.00	
1,100.0	23.61	39.95	1,068.5	157.2	131.7	205.1	0.00	0.00	
1,120.0	23.61	39.95	1,086.8	163.4	136.9	213.1	0.00	0.00	Surface Casing
1,200.0	23.61	39.95	1,160.1	188.0	157.5	245.2	0.00	0.00	
1,300.0	23.61	39.95	1,251.7	218.7	183.2	285.2	0.00	0.00	
1,400.0	23.61	39.95	1,343.3	249.4	208.9	325.3	0.00	0.00	
1,500.0	23.61	39.95	1,435.0	280.1	234.6	365.4	0.00	0.00	
1,600.0	23.61	39.95	1,526.6	310.8	260.4	405.4	0.00	0.00	
1,700.0	23.61	39.95	1,618.2	341.5	286.1	445.5	0.00	0.00	
1,800.0	23.61	39.95	1,709.8	372.2	311.8	485.5	0.00	0.00	
1,900.0	23.61	39.95	1,801.5	402.9	337.5	525.6	0.00	0.00	
2,000.0	23.61	39.95	1,893.1	433.6	363.2	565.7	0.00	0.00	
2,100.0	23.61	39.95	1,984.7	464.3	389.0	605.7	0.00	0.00	
2,200.0	23.61	39.95	2,076.3	495.0	414.7	645.8	0.00	0.00	
2,300.0	23.61	39.95	2,168.0	525.7	440.4	685.8	0.00	0.00	
2,400.0	23.61	39.95	2,259.6	556.4	466.1	725.9	0.00	0.00	
2,500.0	23.61	39.95	2,351.2	587.1	491.9	765.9	0.00	0.00	
2,600.0	23.61	39.95	2,442.9	617.8	517.6	806.0	0.00	0.00	
2,700.0	23.61	39.95	2,534.5	648.5	543.3	846.1	0.00	0.00	
2,800.0	23.61	39.95	2,626.1	679.3	569.0	886.1	0.00	0.00	
2,900.0	23.61	39.95	2,717.7	710.0	594.8	926.2	0.00	0.00	
2,912.3	23.61	39.95	2,729.0	713.7	597.9	931.1	0.00	0.00	Mesaverde
3,000.0	23.61	39.95	2,809.4	740.7	620.5	966.2	0.00	0.00	
3,100.0	23.61	39.95	2,901.0	771.4	646.2	1,006.3	0.00	0.00	
3,200.0	23.61	39.95	2,992.6	802.1	671.9	1,046.3	0.00	0.00	
3,251.1	23.61	39.95	3,039.4	817.8	685.1	1,066.8	0.00	0.00	Start Drop -2.00
3,300.0	22.64	39.95	3,084.4	832.5	697.4	1,086.0	2.00	-2.00	
3,400.0	20.64	39.95	3,177.3	860.8	721.1	1,122.9	2.00	-2.00	
3,500.0	18.64	39.95	3,271.5	886.5	742.7	1,156.5	2.00	-2.00	
3,532.1	17.99	39.95	3,302.0	894.2	749.1	1,166.6	2.00	-2.00	Williams Fork
3,600.0	16.64	39.95	3,366.8	909.7	762.1	1,186.8	2.00	-2.00	
3,700.0	14.64	39.95	3,463.1	930.4	779.4	1,213.7	2.00	-2.00	
3,800.0	12.64	39.95	3,560.3	948.5	794.6	1,237.3	2.00	-2.00	
3,900.0	10.64	39.95	3,658.2	963.9	807.5	1,257.5	2.00	-2.00	
4,000.0	8.64	39.95	3,756.8	976.8	818.3	1,274.2	2.00	-2.00	
4,100.0	6.64	39.95	3,855.9	986.9	826.8	1,287.5	2.00	-2.00	
4,200.0	4.64	39.95	3,955.4	994.5	833.1	1,297.3	2.00	-2.00	
4,300.0	2.64	39.95	4,055.2	999.3	837.2	1,303.7	2.00	-2.00	
4,400.0	0.64	39.95	4,155.2	1,001.5	839.0	1,306.5	2.00	-2.00	
4,431.8	0.00	0.00	4,187.0	1,001.7	839.1	1,306.7	2.00	-2.00	EOD; Inc=0° - Top of GAs - Federal 25-4D (PE-
4,500.0	0.00	0.00	4,255.2	1,001.7	839.1	1,306.7	0.00	0.00	

# Cathedral Energy Services

## Planning Report

**Database:** EDM 5000.1 US Multi Users DB  
**Company:** EnCana Oil & Gas (USA) Inc  
**Project:** S. Piceance (Parachute)  
**Site:** SWNW Sec 25-T7S-R96W (PE-25 Pad)  
**Well:** Federal 25-4D (PE-25)  
**Wellbore:** DD  
**Design:** Plan #1

**Local Co-ordinate Reference:** Well Federal 25-4D (PE-25)  
**TVD Reference:** KBE @ 5410.0ft (Original Well Elev)  
**MD Reference:** KBE @ 5410.0ft (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	0.00	0.00	4,355.2	1,001.7	839.1	1,306.7	0.00	0.00	
4,700.0	0.00	0.00	4,455.2	1,001.7	839.1	1,306.7	0.00	0.00	
4,800.0	0.00	0.00	4,555.2	1,001.7	839.1	1,306.7	0.00	0.00	
4,900.0	0.00	0.00	4,655.2	1,001.7	839.1	1,306.7	0.00	0.00	
5,000.0	0.00	0.00	4,755.2	1,001.7	839.1	1,306.7	0.00	0.00	
5,100.0	0.00	0.00	4,855.2	1,001.7	839.1	1,306.7	0.00	0.00	
5,200.0	0.00	0.00	4,955.2	1,001.7	839.1	1,306.7	0.00	0.00	
5,300.0	0.00	0.00	5,055.2	1,001.7	839.1	1,306.7	0.00	0.00	
5,400.0	0.00	0.00	5,155.2	1,001.7	839.1	1,306.7	0.00	0.00	
5,445.8	0.00	0.00	5,201.0	1,001.7	839.1	1,306.7	0.00	0.00	Coal Ridge
5,500.0	0.00	0.00	5,255.2	1,001.7	839.1	1,306.7	0.00	0.00	
5,600.0	0.00	0.00	5,355.2	1,001.7	839.1	1,306.7	0.00	0.00	
5,700.0	0.00	0.00	5,455.2	1,001.7	839.1	1,306.7	0.00	0.00	
5,793.8	0.00	0.00	5,549.0	1,001.7	839.1	1,306.7	0.00	0.00	Rollins SS
5,800.0	0.00	0.00	5,555.2	1,001.7	839.1	1,306.7	0.00	0.00	
5,900.0	0.00	0.00	5,655.2	1,001.7	839.1	1,306.7	0.00	0.00	
5,993.8	0.00	0.00	5,749.0	1,001.7	839.1	1,306.7	0.00	0.00	TD @ 5993.8' MD - Federal 25-4D (PE-25) BHL
6,000.0	0.00	0.00	5,755.2	1,001.7	839.1	1,306.7	0.00	0.00	
6,093.8	0.00	0.00	5,849.0	1,001.7	839.1	1,306.7	0.00	0.00	Permit TD @ 6093.8' 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 25-4D (PE-25) T	0.00	0.00	4,187.0	1,001.7	839.1	1,585,415.84	2,275,585.85	39.412650	-108.064340
- plan hits target center									
- Circle (radius 25.0)									
Federal 25-4D (PE-25) E	0.00	0.00	5,749.0	1,001.7	839.1	1,585,415.84	2,275,585.85	39.412650	-108.064340
- plan hits target center									
- Circle (radius 25.0)									

### Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
1,120.0	1,086.8	Surface Casing	0.000	0.000

### Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,912.3	2,729.0	Mesaverde		0.00	
3,532.1	3,302.0	Williams Fork		0.00	
4,431.8	4,187.0	Top of GAS		0.00	
5,445.8	5,201.0	Coal Ridge		0.00	
5,793.8	5,549.0	Rollins SS		0.00	



# Cathedral Energy Services

## Planning Report

**Database:** EDM 5000.1 US Multi Users DB  
**Company:** EnCana Oil & Gas (USA) Inc  
**Project:** S. Piceance (Parachute)  
**Site:** SWNW Sec 25-T7S-R96W (PE-25 Pad)  
**Well:** Federal 25-4D (PE-25)  
**Wellbore:** DD  
**Design:** Plan #1

**Local Co-ordinate Reference:** Well Federal 25-4D (PE-25)  
**TVD Reference:** KBE @ 5410.0ft (Original Well Elev)  
**MD Reference:** KBE @ 5410.0ft (Original Well Elev)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature

### Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
200.0	200.0	0.0	0.0	KOP @ 200' MD
987.1	965.0	122.6	102.7	EOB; Inc=23.61°
3,251.1	3,039.4	817.8	685.1	Start Drop -2.00
4,431.8	4,187.0	1,001.7	839.1	EOD; Inc=0°
5,993.8	5,749.0	1,001.7	839.1	TD @ 5993.8' MD
6,093.8	5,849.0	1,001.7	839.1	Permit TD @ 6093.8' MD