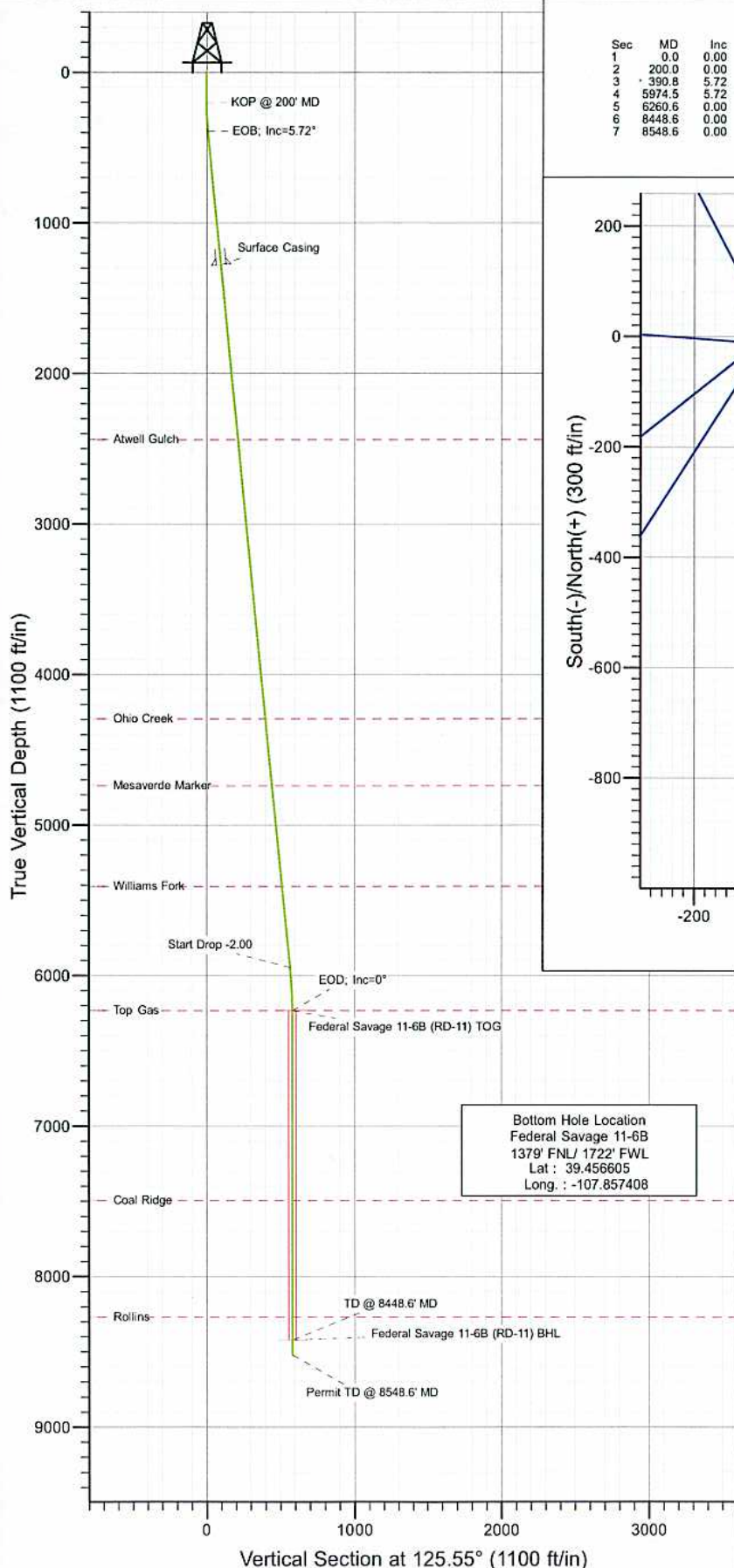
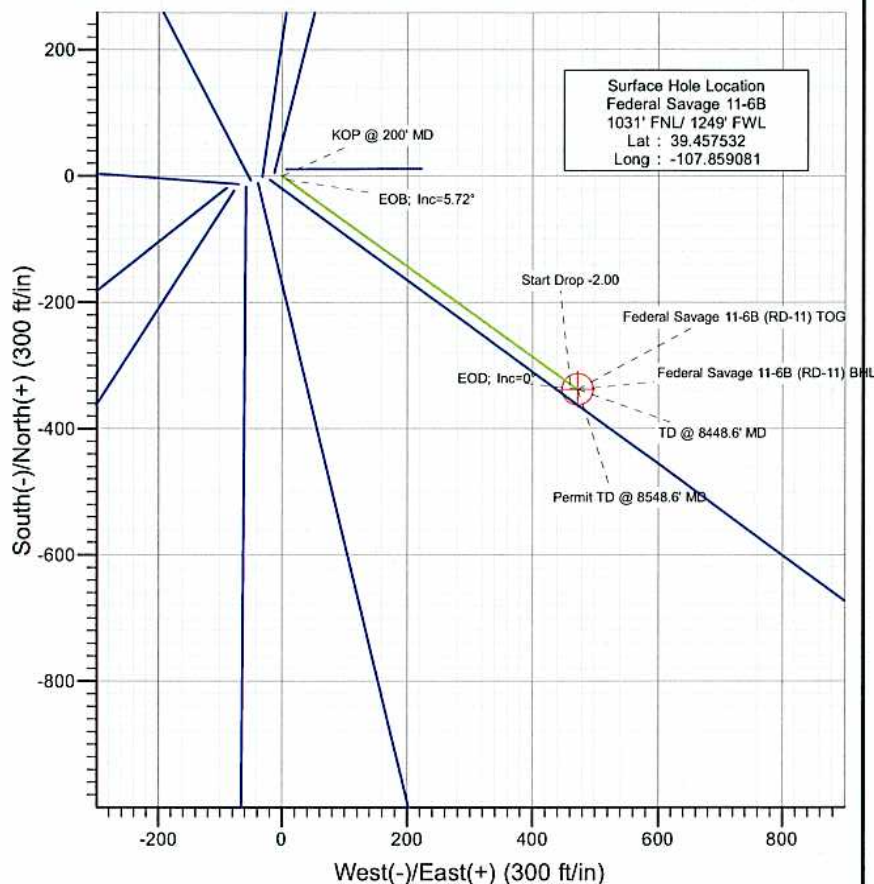




Project: S. Piceance (Parachute)  
 Site: NWNW S11-T7S-R94W (RD-11)  
 Well: Federal Savage 11-6B  
 Wellbore: DD  
 Design: Plan #1



SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSeet	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	390.8	5.72	125.55	390.5	-5.5	7.7	3.00	125.55	9.5	
4	5974.5	5.72	125.55	5946.3	-329.3	460.8	0.00	0.00	566.4	
5	6260.6	0.00	0.00	6232.0	-337.6	472.4	2.00	180.00	580.6	Federal Savage 11-6B (RD-11) TOG
6	8448.6	0.00	0.00	8420.0	-337.6	472.4	0.00	0.00	580.6	Federal Savage 11-6B (RD-11) BHL
7	8548.6	0.00	0.00	8520.0	-337.6	472.4	0.00	0.00	580.6	



Azimuths to True North  
 Magnetic North: 10.29°

Magnetic Field  
 Strength: 52249.8nT  
 Dip Angle: 65.73°  
 Date: 5/24/2011  
 Model: IGRF2010

#### FORMATION TOP DETAILS

TVDPath	MDPath	Formation
2437.0	2447.6	Atwell Gulch
4294.0	4313.9	Ohio Creek
4739.0	4761.1	Mesaverde Marker
5407.0	5432.5	Williams Fork
6232.0	6260.6	Top Gas
7494.0	7522.6	Coal Ridge
8270.0	8298.6	Rollins

#### DESIGN DETAILS: Plan #1

115XXX; BH  
 KBE @ 6409.0ft (Original Well Elev)

Target	Azimuth	Origin	N/S	E/W	From TVD
Federal Savage 11-6B (RD-11) BHL	125.55	Slot	0.0	0.0	0.0

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	EDM 5000.1 US Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Federal Savage 11-6B
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	KBE @ 6409.0ft (Original Well Elev)
<b>Project:</b>	S. Piceance (Parachute)	<b>MD Reference:</b>	KBE @ 6409.0ft (Original Well Elev)
<b>Site:</b>	NWNW S11-T7S-R94W (RD-11)	<b>North Reference:</b>	True
<b>Well:</b>	Federal Savage 11-6B	<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	NWNW S11-T7S-R94W (RD-11)				
Site Position:		Northing:	1,600,170.34 ft	Latitude:	39.457481
From:	Lat/Long	Easting:	2,333,893.08 ft	Longitude:	-107.859394
Position Uncertainty:	0.0 ft	Slot Radius:	13.200in	Grid Convergence:	-1.49 °

Well	Federal Savage 11-6B					
Well Position	+N/-S	0.0 ft	Northing:	1,600,186.61 ft	Latitude:	39.457532
	+E/-W	0.0 ft	Easting:	2,333,981.91 ft	Longitude:	-107.859081
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	6,387.0 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>
	IGRF2010	5/24/2011	10.29	65.73	52,250

<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)</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Direction</b>
	(ft)	(ft)	(ft)	(°)
	0.0	0.0	0.0	125.55

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	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
390.8	5.72	125.55	390.5	-5.5	7.7	3.00	3.00	0.00	125.55	
5,974.5	5.72	125.55	5,946.3	-329.3	460.8	0.00	0.00	0.00	0.00	
6,260.6	0.00	0.00	6,232.0	-337.6	472.4	2.00	-2.00	0.00	180.00	Federal Savage 11-6B
8,448.6	0.00	0.00	8,420.0	-337.6	472.4	0.00	0.00	0.00	0.00	Federal Savage 11-6B
8,548.6	0.00	0.00	8,520.0	-337.6	472.4	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:** NWNW S11-T7S-R94W (RD-11)  
**Well:** Federal Savage 11-6B  
**Wellbore:** DD  
**Design:** Plan #1

**Local Co-ordinate Reference:** Well Federal Savage 11-6B  
**TVD Reference:** KBE @ 6409.0ft (Original Well Elev)  
**MD Reference:** KBE @ 6409.0ft (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	125.55	300.0	-1.5	2.1	2.6	3.00	3.00	
390.8	5.72	125.55	390.5	-5.5	7.7	9.5	3.00	3.00	EOB; Inc=5.72°
400.0	5.72	125.55	399.6	-6.1	8.5	10.4	0.00	0.00	
500.0	5.72	125.55	499.1	-11.9	16.6	20.4	0.00	0.00	
600.0	5.72	125.55	598.6	-17.7	24.7	30.4	0.00	0.00	
700.0	5.72	125.55	698.1	-23.5	32.8	40.4	0.00	0.00	
800.0	5.72	125.55	797.6	-29.3	40.9	50.3	0.00	0.00	
900.0	5.72	125.55	897.1	-35.1	49.1	60.3	0.00	0.00	
1,000.0	5.72	125.55	996.6	-40.9	57.2	70.3	0.00	0.00	
1,100.0	5.72	125.55	1,096.1	-46.7	65.3	80.2	0.00	0.00	
1,200.0	5.72	125.55	1,195.6	-52.5	73.4	90.2	0.00	0.00	
1,282.0	5.72	125.55	1,277.2	-57.2	80.1	98.4	0.00	0.00	Surface Casing
1,300.0	5.72	125.55	1,295.2	-58.3	81.5	100.2	0.00	0.00	
1,400.0	5.72	125.55	1,394.7	-64.1	89.6	110.2	0.00	0.00	
1,500.0	5.72	125.55	1,494.2	-69.9	97.7	120.1	0.00	0.00	
1,600.0	5.72	125.55	1,593.7	-75.7	105.9	130.1	0.00	0.00	
1,700.0	5.72	125.55	1,693.2	-81.5	114.0	140.1	0.00	0.00	
1,800.0	5.72	125.55	1,792.7	-87.3	122.1	150.1	0.00	0.00	
1,900.0	5.72	125.55	1,892.2	-93.1	130.2	160.0	0.00	0.00	
2,000.0	5.72	125.55	1,991.7	-98.9	138.3	170.0	0.00	0.00	
2,100.0	5.72	125.55	2,091.2	-104.7	146.4	180.0	0.00	0.00	
2,200.0	5.72	125.55	2,190.7	-110.5	154.5	189.9	0.00	0.00	
2,300.0	5.72	125.55	2,290.2	-116.3	162.6	199.9	0.00	0.00	
2,400.0	5.72	125.55	2,389.7	-122.0	170.8	209.9	0.00	0.00	
2,447.6	5.72	125.55	2,437.0	-124.8	174.6	214.6	0.00	0.00	Atwell Gulch
2,500.0	5.72	125.55	2,489.2	-127.8	178.9	219.9	0.00	0.00	
2,600.0	5.72	125.55	2,588.7	-133.6	187.0	229.8	0.00	0.00	
2,700.0	5.72	125.55	2,688.2	-139.4	195.1	239.8	0.00	0.00	
2,800.0	5.72	125.55	2,787.7	-145.2	203.2	249.8	0.00	0.00	
2,900.0	5.72	125.55	2,887.2	-151.0	211.3	259.8	0.00	0.00	
3,000.0	5.72	125.55	2,986.7	-156.8	219.4	269.7	0.00	0.00	
3,100.0	5.72	125.55	3,086.2	-162.6	227.6	279.7	0.00	0.00	
3,200.0	5.72	125.55	3,185.7	-168.4	235.7	289.7	0.00	0.00	
3,300.0	5.72	125.55	3,285.2	-174.2	243.8	299.6	0.00	0.00	
3,400.0	5.72	125.55	3,384.7	-180.0	251.9	309.6	0.00	0.00	
3,500.0	5.72	125.55	3,484.2	-185.8	260.0	319.6	0.00	0.00	
3,600.0	5.72	125.55	3,583.7	-191.6	268.1	329.6	0.00	0.00	
3,700.0	5.72	125.55	3,683.2	-197.4	276.2	339.5	0.00	0.00	
3,800.0	5.72	125.55	3,782.7	-203.2	284.3	349.5	0.00	0.00	
3,900.0	5.72	125.55	3,882.2	-209.0	292.5	359.5	0.00	0.00	
4,000.0	5.72	125.55	3,981.7	-214.8	300.6	369.5	0.00	0.00	
4,100.0	5.72	125.55	4,081.2	-220.6	308.7	379.4	0.00	0.00	
4,200.0	5.72	125.55	4,180.7	-226.4	316.8	389.4	0.00	0.00	
4,300.0	5.72	125.55	4,280.2	-232.2	324.9	399.4	0.00	0.00	
4,313.9	5.72	125.55	4,294.0	-233.0	326.0	400.8	0.00	0.00	Ohio Creek
4,400.0	5.72	125.55	4,379.7	-238.0	333.0	409.3	0.00	0.00	
4,500.0	5.72	125.55	4,479.2	-243.8	341.1	419.3	0.00	0.00	
4,600.0	5.72	125.55	4,578.7	-249.6	349.3	429.3	0.00	0.00	
4,700.0	5.72	125.55	4,678.2	-255.4	357.4	439.3	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: NWNW S11-T7S-R94W (RD-11)  
Well: Federal Savage 11-6B  
Wellbore: DD  
Design: Plan #1

Local Co-ordinate Reference: Well Federal Savage 11-6B  
TVD Reference: KBE @ 6409.0ft (Original Well Elev)  
MD Reference: KBE @ 6409.0ft (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
4,761.1	5.72	125.55	4,739.0	-259.0	362.3	445.4	0.00	0.00	Mesaverde Marker
4,800.0	5.72	125.55	4,777.7	-261.2	365.5	449.2	0.00	0.00	
4,900.0	5.72	125.55	4,877.2	-267.0	373.6	459.2	0.00	0.00	
5,000.0	5.72	125.55	4,976.7	-272.8	381.7	469.2	0.00	0.00	
5,100.0	5.72	125.55	5,076.2	-278.6	389.8	479.2	0.00	0.00	
5,200.0	5.72	125.55	5,175.7	-284.4	397.9	489.1	0.00	0.00	
5,300.0	5.72	125.55	5,275.2	-290.2	406.0	499.1	0.00	0.00	
5,400.0	5.72	125.55	5,374.7	-296.0	414.2	509.1	0.00	0.00	
5,432.5	5.72	125.55	5,407.0	-297.9	416.8	512.3	0.00	0.00	Williams Fork
5,500.0	5.72	125.55	5,474.2	-301.8	422.3	519.0	0.00	0.00	
5,600.0	5.72	125.55	5,573.7	-307.6	430.4	529.0	0.00	0.00	
5,700.0	5.72	125.55	5,673.2	-313.4	438.5	539.0	0.00	0.00	
5,800.0	5.72	125.55	5,772.7	-319.2	446.6	549.0	0.00	0.00	
5,900.0	5.72	125.55	5,872.2	-325.0	454.7	558.9	0.00	0.00	
5,974.5	5.72	125.55	5,946.3	-329.3	460.8	566.4	0.00	0.00	Start Drop -2.00
6,000.0	5.21	125.55	5,971.7	-330.7	462.7	568.8	2.00	-2.00	
6,100.0	3.21	125.55	6,071.5	-335.0	468.7	576.1	2.00	-2.00	
6,200.0	1.21	125.55	6,171.4	-337.3	471.9	580.0	2.00	-2.00	
6,260.6	0.00	0.00	6,232.0	-337.6	472.4	580.6	2.00	-2.00	EOD; Inc=0° - Top Gas - Federal Savage 11-6E
6,300.0	0.00	0.00	6,271.4	-337.6	472.4	580.6	0.00	0.00	
6,400.0	0.00	0.00	6,371.4	-337.6	472.4	580.6	0.00	0.00	
6,500.0	0.00	0.00	6,471.4	-337.6	472.4	580.6	0.00	0.00	
6,600.0	0.00	0.00	6,571.4	-337.6	472.4	580.6	0.00	0.00	
6,700.0	0.00	0.00	6,671.4	-337.6	472.4	580.6	0.00	0.00	
6,800.0	0.00	0.00	6,771.4	-337.6	472.4	580.6	0.00	0.00	
6,900.0	0.00	0.00	6,871.4	-337.6	472.4	580.6	0.00	0.00	
7,000.0	0.00	0.00	6,971.4	-337.6	472.4	580.6	0.00	0.00	
7,100.0	0.00	0.00	7,071.4	-337.6	472.4	580.6	0.00	0.00	
7,200.0	0.00	0.00	7,171.4	-337.6	472.4	580.6	0.00	0.00	
7,300.0	0.00	0.00	7,271.4	-337.6	472.4	580.6	0.00	0.00	
7,400.0	0.00	0.00	7,371.4	-337.6	472.4	580.6	0.00	0.00	
7,500.0	0.00	0.00	7,471.4	-337.6	472.4	580.6	0.00	0.00	
7,522.6	0.00	0.00	7,494.0	-337.6	472.4	580.6	0.00	0.00	Coal Ridge
7,600.0	0.00	0.00	7,571.4	-337.6	472.4	580.6	0.00	0.00	
7,700.0	0.00	0.00	7,671.4	-337.6	472.4	580.6	0.00	0.00	
7,800.0	0.00	0.00	7,771.4	-337.6	472.4	580.6	0.00	0.00	
7,900.0	0.00	0.00	7,871.4	-337.6	472.4	580.6	0.00	0.00	
8,000.0	0.00	0.00	7,971.4	-337.6	472.4	580.6	0.00	0.00	
8,100.0	0.00	0.00	8,071.4	-337.6	472.4	580.6	0.00	0.00	
8,200.0	0.00	0.00	8,171.4	-337.6	472.4	580.6	0.00	0.00	
8,298.6	0.00	0.00	8,270.0	-337.6	472.4	580.6	0.00	0.00	Rollins
8,300.0	0.00	0.00	8,271.4	-337.6	472.4	580.6	0.00	0.00	
8,400.0	0.00	0.00	8,371.4	-337.6	472.4	580.6	0.00	0.00	
8,448.6	0.00	0.00	8,420.0	-337.6	472.4	580.6	0.00	0.00	TD @ 8448.6' MD - Federal Savage 11-6B (RD)
8,500.0	0.00	0.00	8,471.4	-337.6	472.4	580.6	0.00	0.00	
8,548.6	0.00	0.00	8,520.0	-337.6	472.4	580.6	0.00	0.00	Permit TD @ 8548.6' MD



# Cathedral Energy Services

## Planning Report

<b>Database:</b>	EDM 5000.1 US Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Federal Savage 11-6B
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	KBE @ 6409.0ft (Original Well Elev)
<b>Project:</b>	S. Piceance (Parachute)	<b>MD Reference:</b>	KBE @ 6409.0ft (Original Well Elev)
<b>Site:</b>	NWNW S11-T7S-R94W (RD-11)	<b>North Reference:</b>	True
<b>Well:</b>	Federal Savage 11-6B	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<b>Design:</b>	Plan #1		

### Targets

Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
- Shape									
Federal Savage 11-6B (I - plan hits target center - Circle (radius 25.0)	0.00	0.00	8,420.0	-337.6	472.4	1,599,836.82	2,334,445.37	39.456605	-107.857408
Federal Savage 11-6B (I - plan hits target center - Point	0.00	0.00	6,232.0	-337.6	472.4	1,599,836.82	2,334,445.37	39.456605	-107.857408

### Casing Points

Measured Depth	Vertical Depth	Name	Casing Diameter	Hole Diameter
(ft)	(ft)		(in)	(in)
1,282.0	1,277.2	Surface Casing	0.000	0.000

### Formations

Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction
(ft)	(ft)			(°)	(°)
2,447.6	2,437.0	Atwell Gulch			
4,313.9	4,294.0	Ohio Creek			
4,761.1	4,739.0	Mesaverde Marker			
5,432.5	5,407.0	Williams Fork			
6,260.6	6,232.0	Top Gas			
7,522.6	7,494.0	Coal Ridge			
8,298.6	8,270.0	Rollins			

### Plan Annotations

Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	
200.0	200.0	0.0	0.0	KOP @ 200' MD
390.8	390.5	-5.5	7.7	EOB; Inc=5.72°
5,974.5	5,946.3	-329.3	460.8	Start Drop -2.00
6,260.6	6,232.0	-337.6	472.4	EOD; Inc=0°
8,448.6	8,420.0	-337.6	472.4	TD @ 8448.6' MD
8,548.6	8,520.0	-337.6	472.4	Permit TD @ 8548.6' MD