

# ELECTRIC DRILL AND SLIM HOLE

## *The future for exploration and production of oil and gas*

APGQ – QOGA

Montréal October 2017



# Expertise acquired by Squatex with slim hole drilling lead to the creation of Caron Technologie International (CTI)

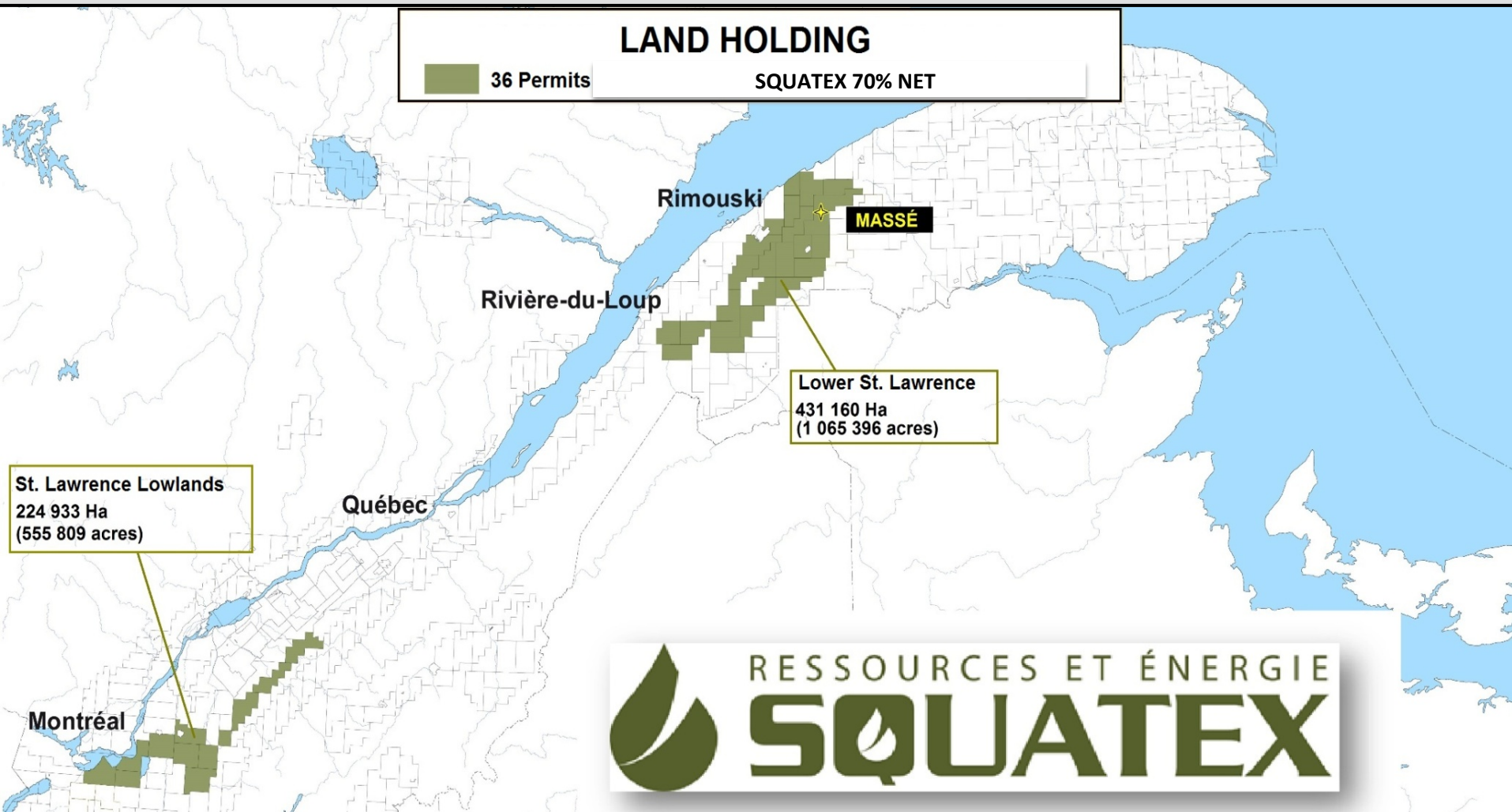
*Jean-Claude Caron*, president of Squatex for the last 17 years, has a **very respectful vision** of oil and gas development

In carrying the various exploration work of Squatex, he realized the importance of having a **minimal environmental impact** and the need to use various **experts** and **advanced equipment** to carry out his operations

As the necessary equipment was not always available, he created in 2014 the **independent company CTI** to optimize exploration and production tools that would be more efficient from an environmental point of view and would also be more socially acceptable

# SQUATEX

17 YEARS OF EXPERIENCE AND A MAJOR DISCOVERY: MASSÉ

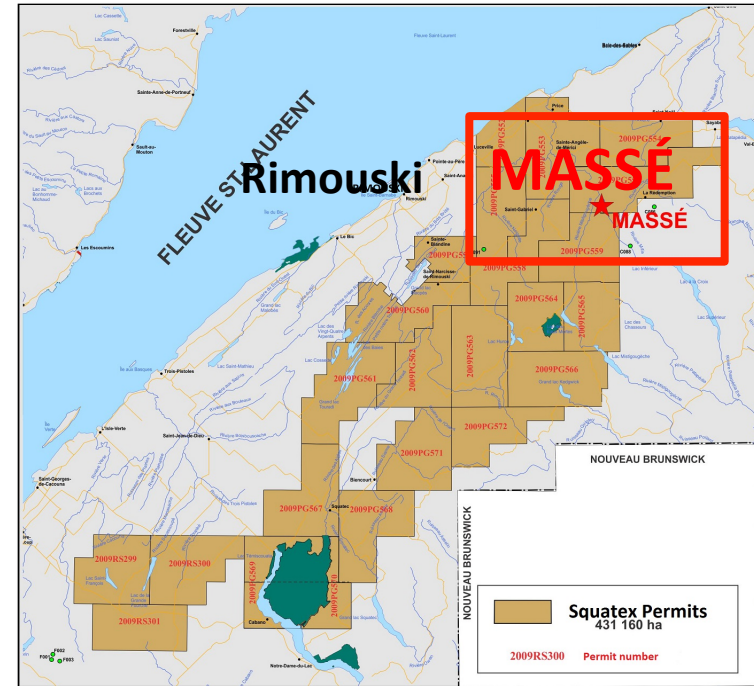


**656 093 Hectares (1 621 205 Acres)**

# THE MASSÉ STRUCTURE

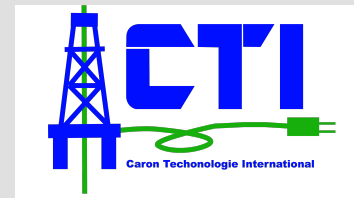
# CONVENTIONAL RESERVOIRS OF POROUS HYDROTHERMAL DOLOMITES (HTD)

Sproule in place hydrocarbon assessment report over 5.2km<sup>2</sup>: «Average probability of **52.2 million barrels of oil and 53.6 BCF of gas**»  
Studies show that the dolomitized zone can extend over **80km<sup>2</sup>**



## **Slim Hole stratigraphic drillings allowed the discovery of the Massé structure in 2013**

# THE COMPANY



## Expertise and Activities

### Complete range of eco-friendly services for the oil and gas industry

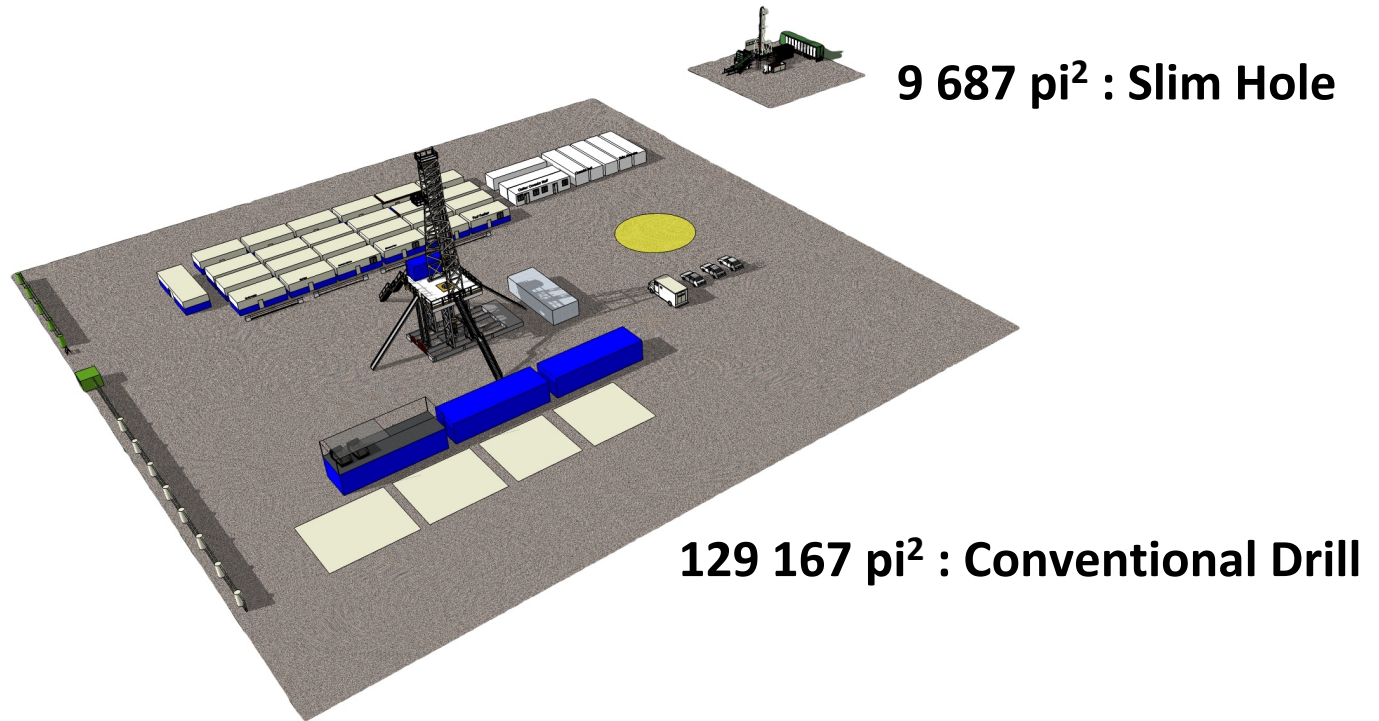
- ★ Electric drilling without CO<sup>2</sup> emission in the atmosphere
- ★ Coring or destructive drilling, tests, logging and other measuring instruments at the cutting edge of technology
- ★ Vertical drilling with controlled deviation or lateral hole up to the horizontal
- ★ Depth capacity of 3500 meters in 3 "or 1800 meters in 5"
- ★ Team of seasoned professionals (engineers, geologists and technicians)

### Research & Development in Quebec for technological applications adapted to the needs of the planet

- ★ Partnership with companies, research centers and universities

# Why the "Slim Hole"

Reduced area affected by the facilities



SIZE OF THE DRILLING SITE: **7.5%** of the conventional site



# SLIM HOLE TESTS AND PRODUCTION

Logging tools are the same as for a 10 " borehole, however, the recorded results are **more accurate** for a 3" hole

Small diameter well testing tools (DSTs) exist and are used all over the world to measure the same production parameters

In Slim Hole, **completion and production** techniques for hydrocarbon wells exist and are proven



DIRECTIONAL



DST



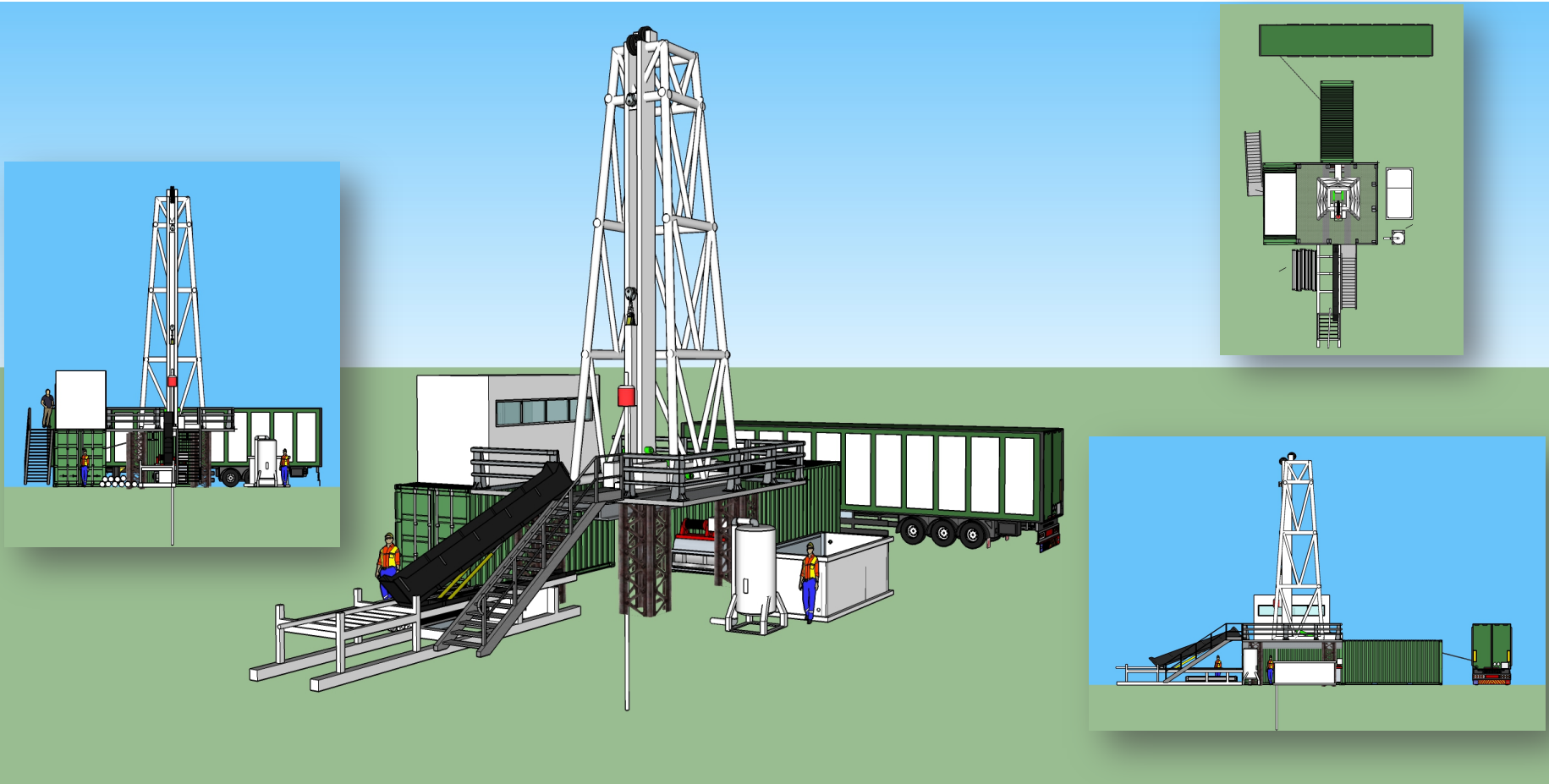
LOGGING



PRODUCTION

# CTI DRILL 001

## CONCEPT OF SELF-CONTAINED ELECTRIC DRILL (PENDING PATENT)





# CTI: ELECTRIC ACCUMULATOR

- For its drill concept, CTI proposes the use of high-power accumulators replacing diesel generators to make electrical drilling possible in remote areas
- The power pack of CTI will have a power of 4MWh giving an autonomy of 13 hours each
- This system will allow to operate a **100% electric** drilling independently



Example of High power accumulator

# 100% Electric CTI Drill

**Electricity as a source of energy for drilling  
is the solution of the future for a minimal  
environmental impact**

The use of 100% electric slim hole drilling **eliminates carbon emissions** into the atmosphere

Dramatic **decrease in the sound level** of drilling operations

Elimination of the **risk of surface contamination** by diesel

# ADVANTAGE SLIM HOLE AND ELECTRICITY

## Reduced fears and nuisances for residents near the drilling site

	Electric Slim Hole 3"	Conventional Drilling 10"
Reduction of the quantities of water used: <b>90% less</b> (Objective 0% drinking water)	40 000 Litres	400 000 Litres
Reduced drilling additives used: <b>90% less</b>	1200 Litres	12 000 Litres
Use of non-toxic product that does not accumulate in the environment	100%	Unknown
Reduction of cuttings of 3 "vs 10" over 2000m: <b>91% less</b>	9 m <sup>3</sup>	101.34 m <sup>3</sup>
Reduction of road traffic and weight of equipment on the roads	100 000 Kg	950 000 Kg
No CO <sup>2</sup> emissions from the drill into the atmosphere (Also: noticeable decrease in noise level)	<b>0</b>	119 Tonnes



# MULTIDISCIPLINARY DRILLING COMPANY

## Oil and Gas



## Geothermal



## Mines



**Team of  
Expert Consultants**



**7055, boulevard Taschereau Suite 500,  
Brossard QC J4Z 1A7**  
[www.squatex.com](http://www.squatex.com)



**154 Quimpert  
Matane QC G4W 4E6**

# Thank You

**For more information**

**M. Jean-Claude Caron,**  
president,  
jccaron@squatex.com  
450-766-0861

**M. Mario Lévesque,**  
Development manager,  
mlevesque@squatex.com  
418-391-1155