

Mineral Discoveries Using Big Data Analytics: Azimut's Exploration Edge

Jean-Marc Lulin, PhD, P.Geo.

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AZIMUT

Azimut: Big Data Analytics in Exploration

- 1) Why use Big Data in Exploration?
- 2) Key Facts about Azimut
- 3) Big Data in Practice
- 4) 2017-2018 Perspectives

Why use Big Data in Exploration?

Declining discovery rates explained by:

1) Increasing maturity of the mining regions

- All deposits that respond well to an existing technology tend to be discovered through time in a given region
- Remaining targets are deeper, or geographically more remote

2) Exponential increase in data availability

- Increase in data generates an increase in the number of potential targets
- Nevertheless, very few tools to discriminate good targets from barren ones (“noise”)
- Quantity is the enemy of quality

3) Non technical factors

- Wars, civil unrest, corruption, adverse mining regimes

Why use Big Data in Exploration?

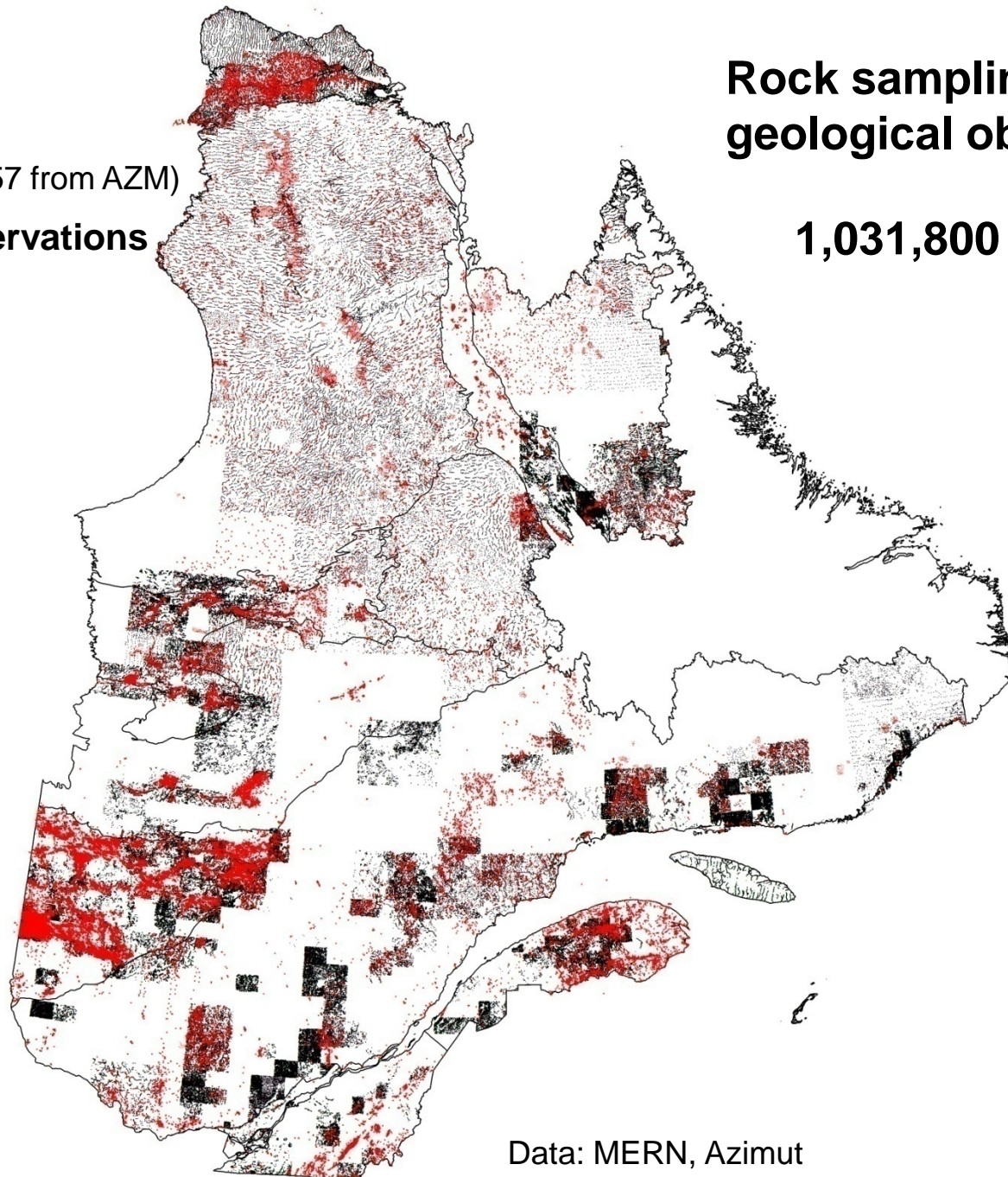
Quality of initial targeting as the crucial step of mineral exploration

- Systematic, large-scale (“province-scale”) data processing approaches are used to recognize the footprint of district-scale targets
- Predictive mineral potential modelling conducted through advanced statistical analysis
- Quebec-scale processing: **87.5 million pixels**; cell size: 200 m by 200 m; up to 70 parameters per pixel; **500 GB** database size
- **Big Data analytics** as an edge against **exploration risk**
- Concurrent **partnership development** as an edge against **business risk**

Rock sampling & geological observations

- **Rock samples**
(299,773 incl. 23,257 from AZM)
- **Geological observations**
(731,991)

1,031,800 points



500

km

Data: MERN, Azimut
Processing: Azimut

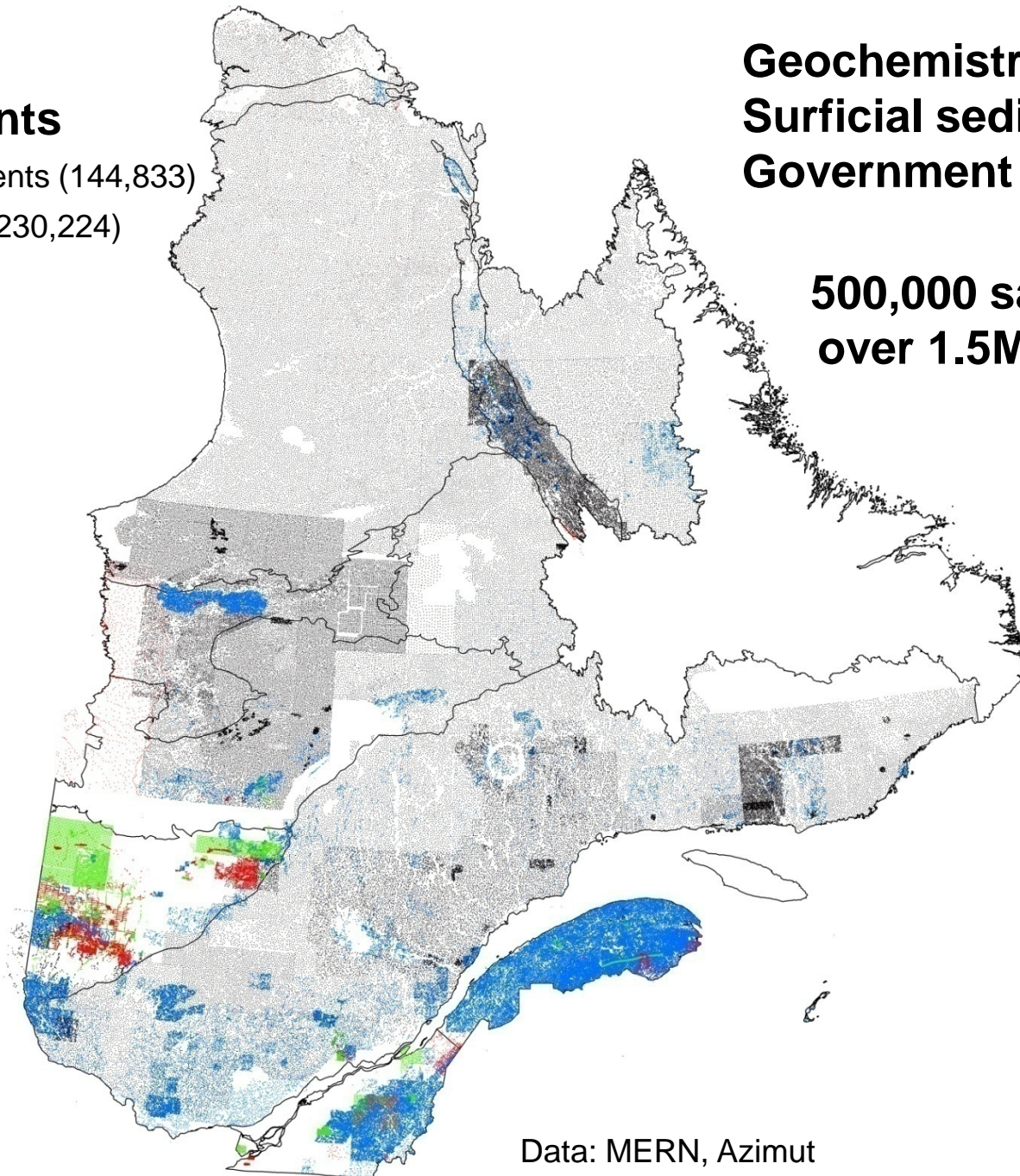
Sampling points

- Lake-bottom sediments (144,833)
- Stream sediments (230,224)
- Soils (75,845)
- Tills (41,041)

Geochemistry
Surficial sediments
Government surveys

500,000 samples
over 1.5M km²

500
km



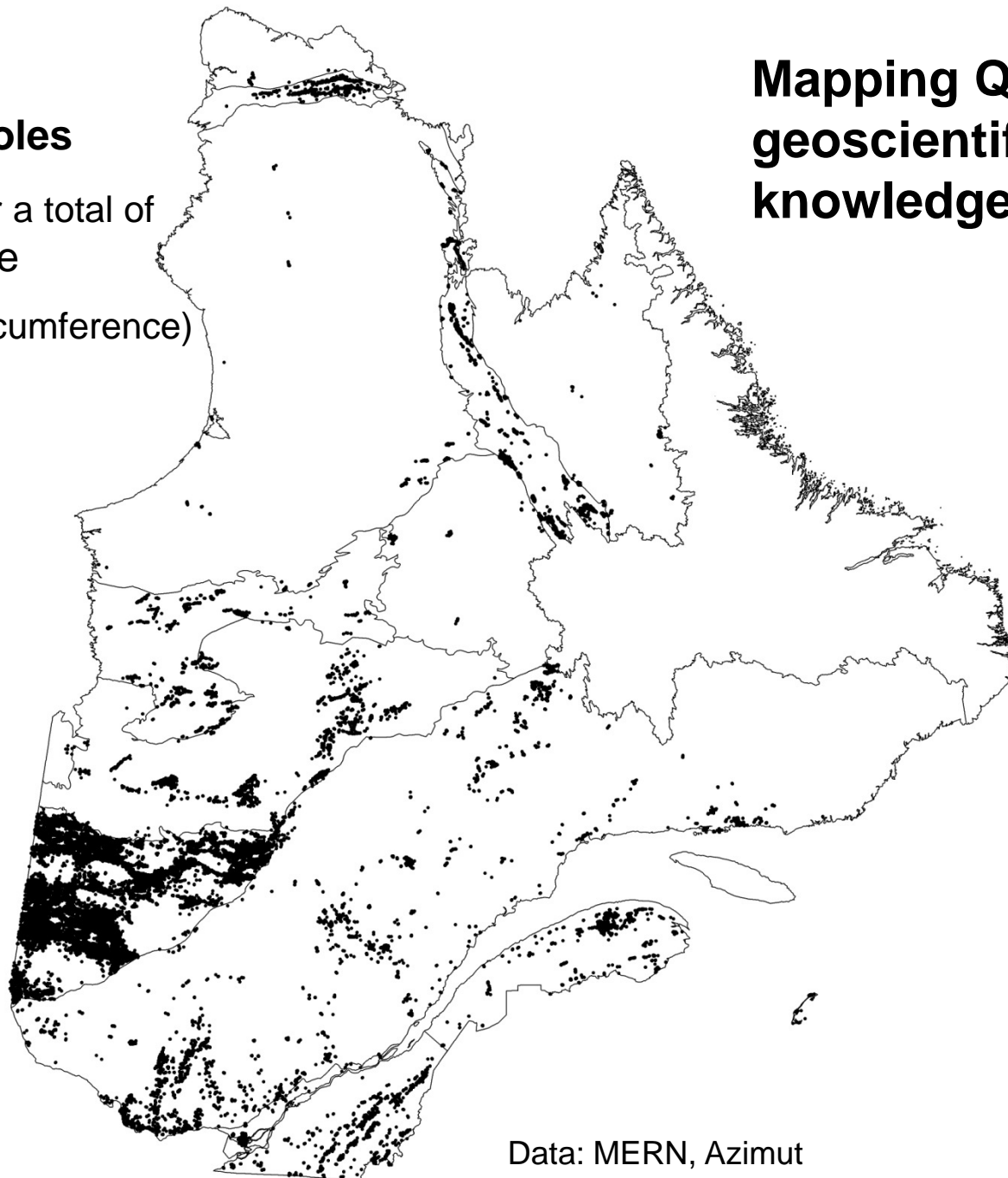
Data: MERN, Azimut
Processing: Azimut

Diamond drill holes

147,506 holes for a total of
24,280 km of core

(60% of Earth's circumference)

Mapping Quebec's geoscientific knowledge: Drilling



500

km

Data: MERN, Azimut
Processing: Azimut

Key Facts about Azimut

TSXV: AZM

- **Core business** since 2003: Big Data analytics applied to mineral exploration, and concurrent partnership development
 - 30 partnership agreements since 2003, including Rio Tinto, Goldcorp, IAMGOLD, Hecla Mining and SOQUEM
 - One of the top exploration portfolios in Quebec including: Eleonore South (Au), Eastmain West (Cr, PGE, Ni), Rex South (Au, Cu, W)
 - Discovery of two new mineral provinces, incl. 400 mineral prospects

Key Facts about Azimut

- Company founded in 1986
- **45.4M** shares outstanding – never consolidated
- 53.3M shares fully diluted, incl. 4.5M warrants (\$0.45)
- Tightly held share structure: **53.8%** of the shares owned by top shareholders:
 - **5.3%** insiders
 - **28.0%** Quebec's institutional funds (Caisse, FSTQ, Desjardins, Sidex,...)
 - **20.5%** ten other individual investors
- **\$2.3 M** working capital, no debt
(as of May 2017)

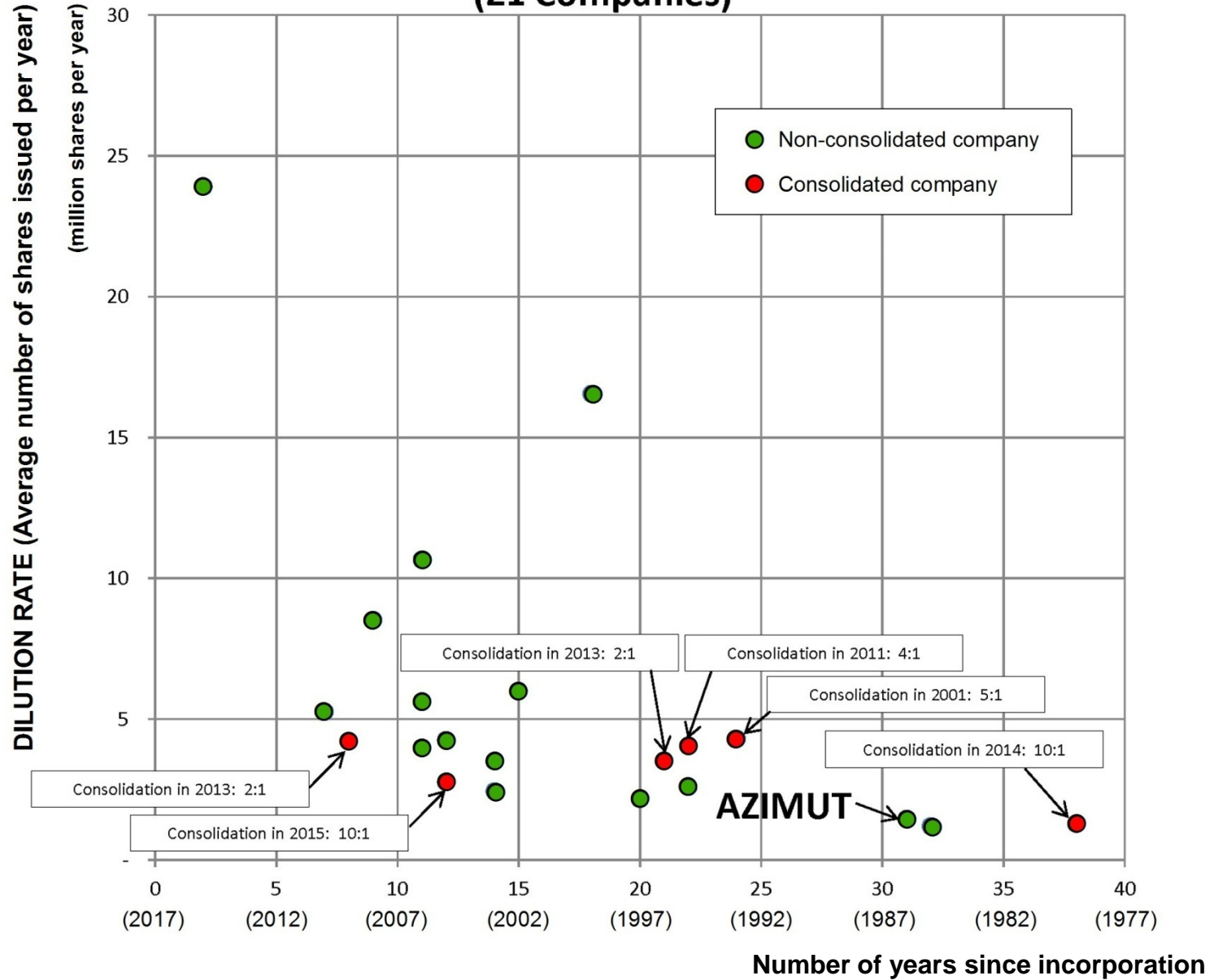
Key Facts about Azimut

2003 – 2016

- **Demonstrated ability to counteract share dilution**
- **One of the best financial leverages among project generators**
- Total expenditures: **\$70.46 M** (5.42 M\$/year)
- Partner expenditures: **\$52.30 M** (4.02 M\$/year)
- AZM's expenditures: **\$18.16 M** (1.39 M\$/year)
- Cash & shares received: **\$10.97 M** (0.84 M\$/year)
- Net expenditures: **\$7.19 M** (0.55 M\$)


Leverage Partners/AZM: 7.27

Dilution Rates for Prospect Generators (21 Companies)



Choice of Quebec for three main reasons



- 
- 1) Huge under-explored territory with favourable geology
 - 2) Outstanding database enables efficient targeting
 - 3) Safe, stable mining jurisdiction; one of the best worldwide

Property portfolio in Quebec

Qassituq (PGE, Cu, Au)

Rex - Duquet (Cu, Au, Ag W, REE)

Rex South (Cu, Au, Ag, W, REE)

NCG (Cu, Au, Ag, W, REE)

**Azimut- SOQUEM
Strategic Alliance**

Pikwa (Au)

Kukamas Est (Au)

Opinaca A (Au)

Opinaca D (Au)

Munischawan (Au)

Duxbury (Au)

Eleonore South (Au)

Opinaca B (Au)

Synclinal (Au)

Eastmain West (Cr, PGE, Ni)

Nantais (Au)

North Rae (U)

Pontois (Au)

Dalmas (Au)

Orsigny (Au)

Sauvolles (Au)

Galinée (Au)

Desceliers (Au)

Valore (Au)

Corvet (Au)

Wabamisk (Au)

500 km

**27 properties
6,266 claims**

Big Data in Practice

High conversion rate from **predictive modelling** to field **mineral discoveries**

Key successes as main driver for current activities:

- 1) Gold in the Eleonore Mining Camp, James Bay
- 2) Polymetallic mineralization in Far North Quebec

Major results obtained by Azimut and partners since 2003

Prospects

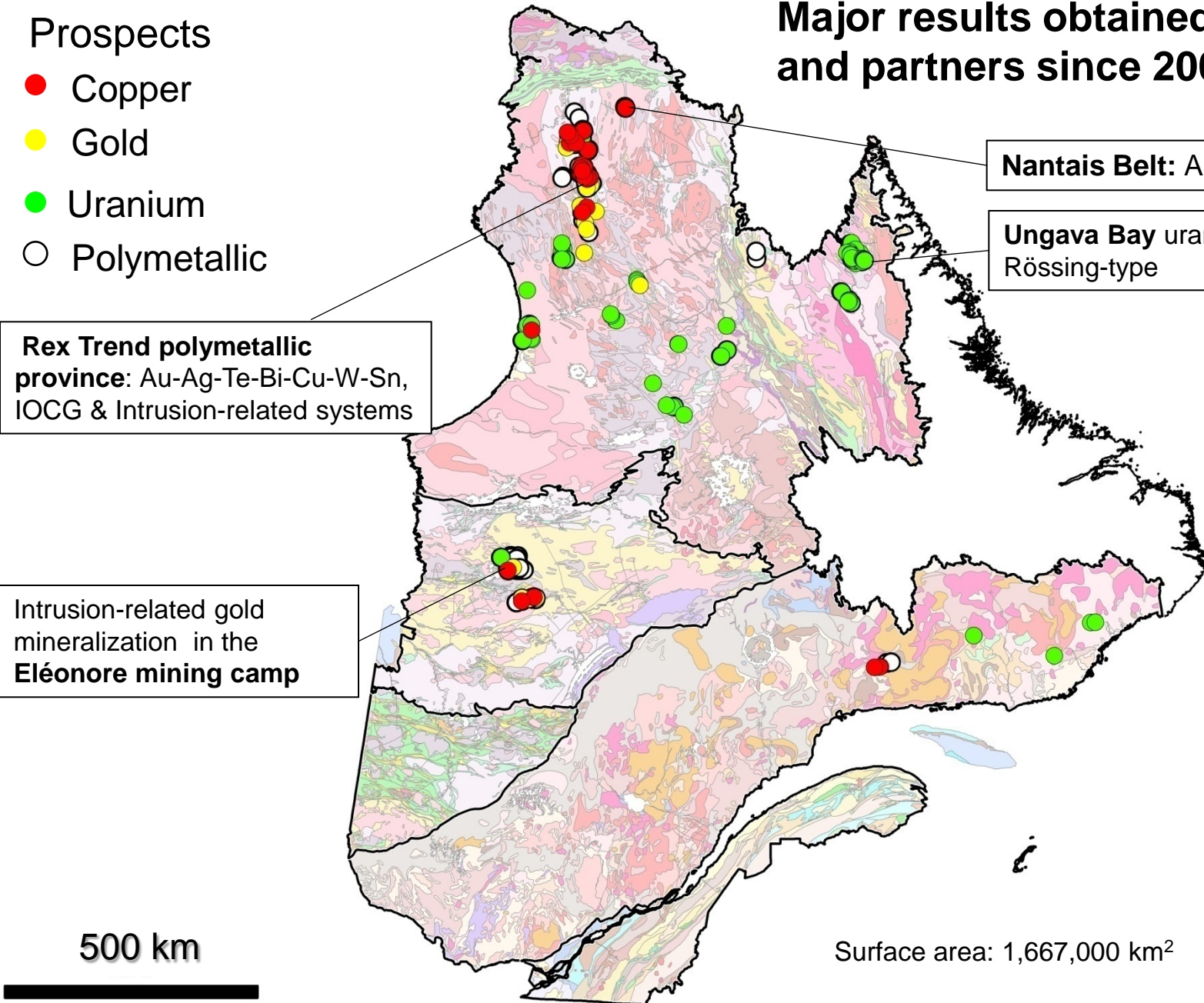
- Copper
- Gold
- Uranium
- Polymetallic

Rex Trend polymetallic province: Au-Ag-Te-Bi-Cu-W-Sn, IOCG & Intrusion-related systems

Intrusion-related gold mineralization in the Eléonore mining camp

Nantais Belt: Au, Ag, Cu, Zn

Ungava Bay uranium province: Rössing-type



500 km

Surface area: 1,667,000 km²

Gold Potential Modelling, James Bay Region

Regional Predictive Modelling	Year	Surface Area
Initial modelling and updates	2003	82,257 km ²
	2005	167,759 km ²
	2009	167,759 km ²
	2015	1,169,369 km ²
	2016	167,509 km ²

Database: lake bottom sediment geochemistry, gravity, magnetism

Decision: project staking by map designation in 2003 and 2004 **before** and during the discovery phase of the Eleonore deposit by Virginia (August 2004)

Results: discovery of **major gold prospects** on the Eleonore South, Opinaca A, Opinaca B and Wabamisk properties

76°15'W
Predictive Gold Potential Modelling (using regional LBS & mag data)
James Bay Region, Quebec, Canada

Gold Prospects

- ≥ 1 g/t Au
- 0.1 – 1.0 g/t Au

5 km

Date: 2003

Surface area: 82,257 km²

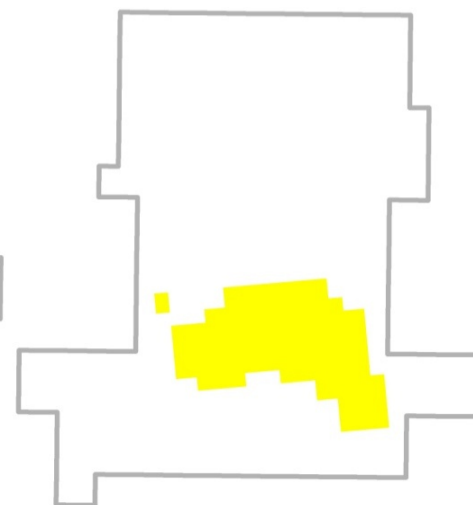
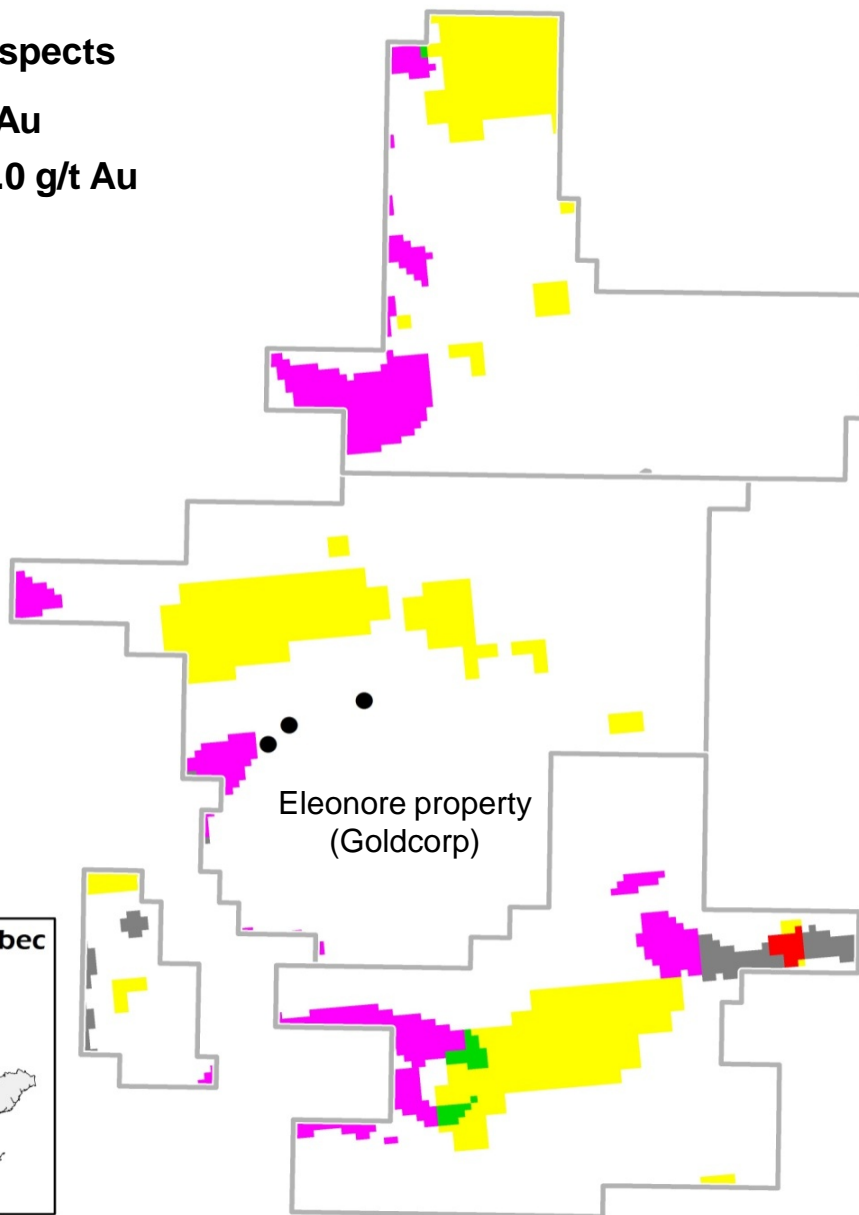
This slide: 2017 project boundaries covering the Eleonore, Eleonore South, Opinaca A and Opinaca B properties

Known gold prospects in 2002

Data: MERN

Processing: Azimut

52°45'N



76°15'W
Predictive Gold Potential Modelling (using regional LBS & mag data)
James Bay Region, Quebec, Canada

Gold Prospects

- ≥ 1 g/t Au
- 0.1 – 1.0 g/t Au

5 km

Date: 2003

Surface area: 82,257 km²

This slide: 2017 project boundaries covering the Eleonore, Eleonore South, Opinaca A and Opinaca B properties

Known gold prospects in 2017

Data: MERN

Processing: Azimut

ELEONORE MINE
Surface projection
8 Moz Au

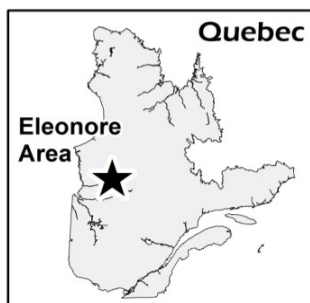
Eleonore
(Goldcorp)

Eleonore South
(Azimut/Goldcorp/Eastmain)

Opinaca A
(Azimut/Everton)

Opinaca B
(Azimut/Everton
Hecla Option)

4,90 g/t Au / 45,0 m



76°15'W
Predictive Gold Potential Modelling (using regional LBS data)
James Bay Region, Quebec, Canada

5 km

Deposit footprint identified through data processing at the James Bay-scale

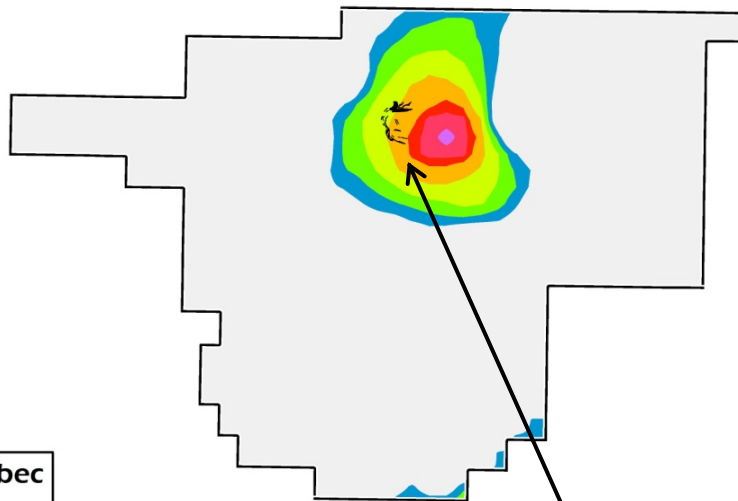
Date: 2016

Surface area: 167,509 km²

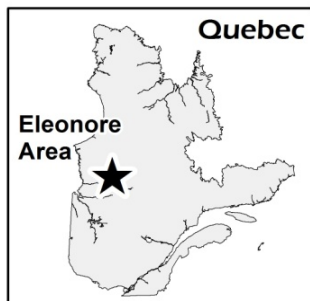
This slide: 2017 Eleonore Property boundary (192.7 km²)

Data: MERN

Processing: Azimut



Eleonore Gold Deposit (8 Moz Au)



Mineral Potential Modelling, Far North Quebec

Regional Predictive Modelling	Year	Surface Area
Initial modelling and update	2009	1,248,000 km ²
	2015	1,167,103 km ²

Database: lake bottom sediment geochemistry, gravity, magnetism

Target types: IOCG (Cu, REE), intrusion-related gold mineralization

Decision: staking by map designation in 2009 and 2010 of four major projects

Results: outline of a **new mineral province** (“the Rex Trend”) including the discovery of 5 IOCG systems and of a major intrusion-related polymetallic mineral system (Au, Ag, Te, Bi, Cu, W, Sn, fluorite, topaz)

Azimut

Rex (Cu, Au, Ag)

- 30 km long prospective corridor with numerous high grade prospects

Rex South (Cu, Au, Ag, Te, Bi, W, Sn)

- 18 mineralized zones
- ±60 km cumulative length of highly prospective targets

Nantais (Au-Ag-Cu-Zn)

- 3 km x 200 m mineralized corridor
- 18 km cumulative length of electromagnetic conductors

2017 - 2018 Perspectives

Projects	Budget	Funding	Planning
Eleonore South	\$3,900,000	73,4% partners (G, ER) 26.6% AZM	8,000 m of drilling stripping, prospecting
Opinaca B	\$925,000	100% Hecla Mining	2,500 m of drilling
SOQUEM	\$770,000	100% SOQUEM	Prospecting, geochemistry
Other Eastmain West Opinaca A	\$400 000	100% AZM	Prospecting, drilling

\$6 M budget, 76% funded by partners

Eleonore South

- Located 6 km from the world-class gold Eleonore Mine (8 Moz Au)
- Adjacent to and on-strike with Cheechoo discovery
- Highly prospective 4 km x 500 m gold-bearing corridor
- \$3.9 million exploration budget in 2017 including:
 - 8,000 m of diamond drilling
 - Heliborne geophysics
 - Mechanized stripping
 - Prospecting
- Azimut 26.6%, Goldcorp 36.7%, Eastmain 36.7%
- Azimut manager

Eleonore Gold Mine Area James Bay Region, Quebec, Canada



Gold Prospects (Azimut and partners)

- ≥ 1 g/t Au
- 0.1 - 1 g/t Au

Inex Prospect
up to 50.9 g/t Au

Charles Prospect
up to 35.9 g/t Au

Smiley Prospect
4.24 g/t Au / 1 m (D)

OPINACA D
(Azimut)

7.32 g/t Au (soil)

OPINACA A
(Azimut / Everton)

Cheechoo Property
(Sirios)

ELEONORE MINE (Goldcorp)

Surface projection
Proven and probable reserves:
23.44 Mt @ 6.07 g/t Au (4.57 Moz Au)
Measured and indicated resources:
5.14 Mt @ 5.66 g/t Au (0.93 Moz Au)
Inferred resources:
9.73 Mt @ 7.52 g/t Au (2.35 Moz Au)
(as of June 30, 2016)

Eleonore Property (Goldcorp)

FD Prospect

Moni Prospect
49.18 g/t Au / 4 m (channel)

JT Prospect

OPINACA B
(Azimut / Everton /
Hecla Option)

Fishhook Prospect

Dominic Prospect

Claude Prospect
0.22 g/t Au / 187 m
incl. 1 g/t Au / 21.5 m (D)

P n lope Prospect
4.26 g/t Au

D8 Prospect
2.3 g/t Au / 1.0 m (channel)
0.55 g/t Au / 4.0 m (channel)

ELEONORE SOUTH
(Azimut / Goldcorp / Eastmain)

4.9 g/t Au / 45.0 m (Hole ES17-64)

10 km



76°20'W

75°50'W

52°45'N

52°45'N

76°30'W



75°40'W

Footprint of the Eleonore Gold Deposit and Eleonore South Property

ELEONORE MINE (Goldcorp)

Surface projection
 Proven and probable reserves:
 23.44 Mt @ 6.07 g/t Au (4.57 Moz Au)
 Measured and indicated resources:
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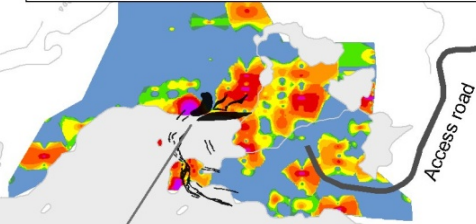
D = Drilling C = Channel

-  Tonalite / sediments contact
-  Eleonore deposit (Goldcorp) Surface projection

Gold in soil (B horizon)

Percentile range
100%
99%
96% - 98%
91% - 95%
86% - 90%
81% - 85%
71% - 80%
61% - 70%
51% - 60%
1% - 50%

2.5 km



CHEECHOO PROPERTY
(Sirios)

FD Prospect

Moni Prospect
 49.18 g/t Au / 4 m (C)
 8.88 g/t Au / 2.5 m (D)

JT Prospect
 1.33 g/t Au / 7.5 m (D)
 1.54 g/t Au / 5.7 m (D)
 5.33 g/t Au / 8 m (C)
 1.5 g/t Au / 16 m (C)

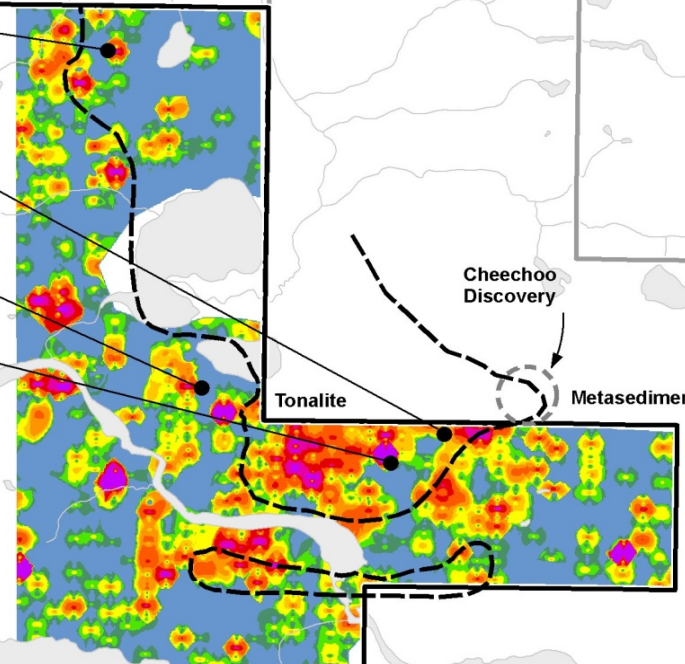
Trench Prospect
 76.1 g/t Au / 1.55 m (D)

ELEONORE SOUTH PROPERTY
(Azimut / Goldcorp / Eastmain)

Cheecho Discovery

Tonalite

Metasediments

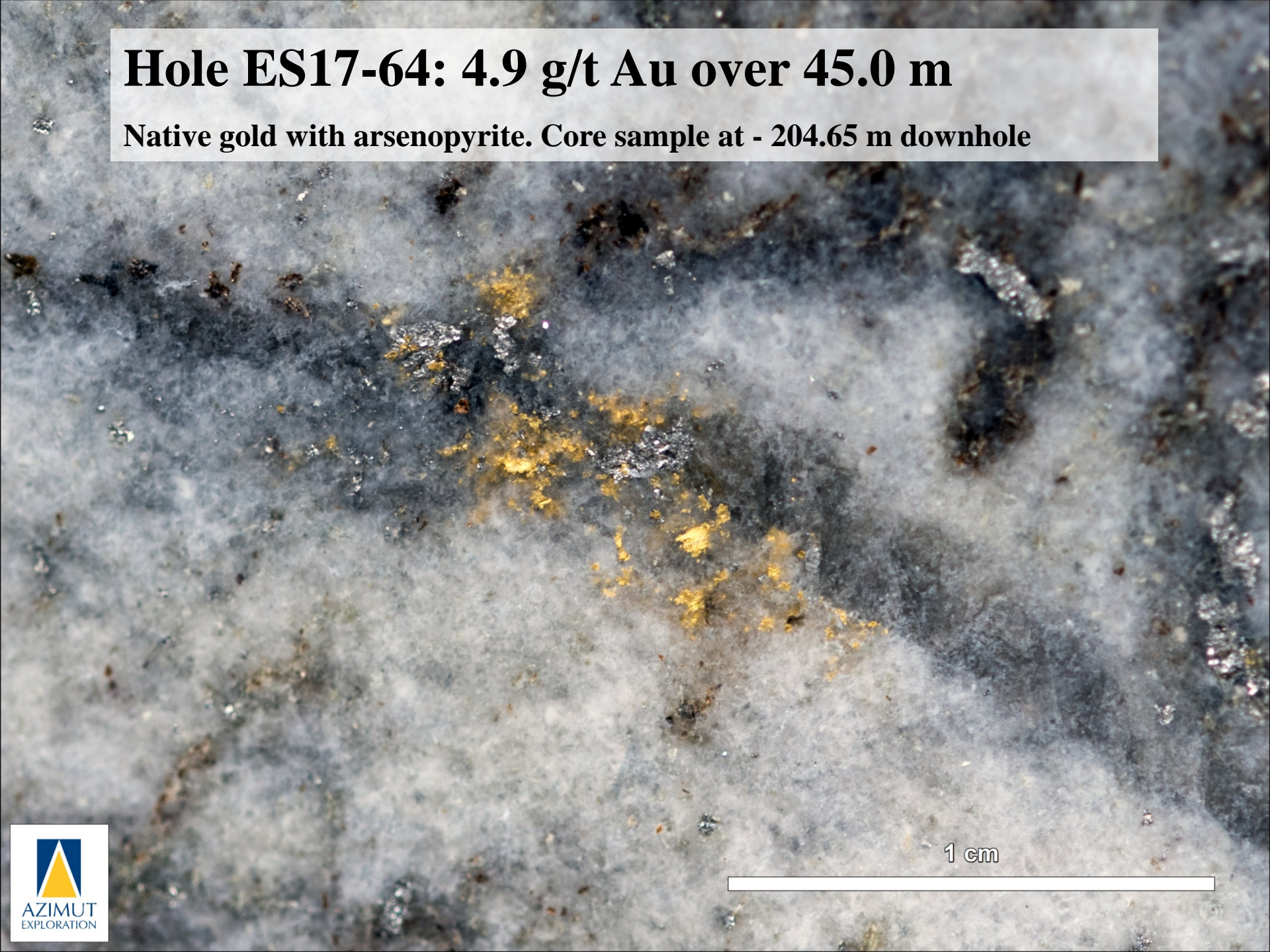




Moni Prospect
49.18 g/t Au over 4.0 m

Hole ES17-64: 4.9 g/t Au over 45.0 m

Native gold with arsenopyrite. Core sample at - 204.65 m downhole



1 cm



AZIMUT
EXPLORATION

Conclusion

- Pioneer in Big Data analytics applied to exploration
- Quebec-scale strategic positioning
- Tight share structure, financial discipline
- \$6 M budget, including > 10,000 m of drilling
- Major results expected in 2017-2018



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Thank you!

