

# Excelsior

MINING CORP

**We make copper green.**

**November 2021**

TSX: MIN  
Frankfurt: 3X3  
OTCQX: EXMGF

# Disclaimers

**Special Note Regarding Forward-Looking Information:** This presentation contains "forward-looking information" concerning anticipated developments and events that may occur in the future. Forward looking information contained in this presentation includes, but is not limited to, statements with respect to: (i) the estimation of mineral resources and mineral reserves; (ii) the robust economics, potential returns associated with the Gunnison Project, (iii) the technical viability of the Gunnison Project; (iv) the market and future price of copper; (v) expected infrastructure requirements; (vi) the updated economics on the Gunnison Project, (vii) the results of the Strong & Harris PEA including statements about future production, future operating and capital costs, the projected IRR, NPV, payback period, construction timelines, permit timelines and production timelines for Strong and Harris; (viii) the potential production from the Johnson Camp mine; (ix) future exploration potential; (x) the permitting process and permitting risk; and (xi) the ability to mine the Gunnison Project using in-situ recovery mining techniques.

In certain cases, forward-looking information can be identified by the use of words such as "plans", "expects" or "does not expect", "is expected", "budget", "scheduled", "estimates", "forecasts", "intends", "anticipates" or "does not anticipate", or "believes", or variations of such words and phrases or state that certain actions, events or results "may", "could", "would", "might" or "will be taken", "occur" or "be achieved" suggesting future outcomes, or other expectations, beliefs, plans, objectives, assumptions, intentions or statements about future events or performance. Forward-looking information contained in this presentation is based on certain factors and assumptions regarding, among other things, the estimation of mineral resources and mineral reserves, the realization of resource and reserve estimates, copper and other metal prices, the timing and amount of future exploration and development expenditures, the estimation of initial and sustaining capital requirements, the estimation of labour and operating costs, the availability of necessary financing and materials to continue to explore and develop the Gunnison Project in the short and long-term, the progress of exploration and development activities, the receipt of necessary regulatory approvals, the completion of the permitting process, the estimation of insurance coverage, and assumptions with respect to currency fluctuations, environmental risks, title disputes or claims, and other similar matters. While the Company considers these assumptions to be reasonable based on information currently available to it, they may prove to be incorrect.

Forward looking information involves known and unknown risks, uncertainties and other factors which may cause the actual results, performance or achievements of the Company to be materially different from any future results, performance or achievements expressed or implied by the forward-looking information. Such factors include risks inherent in the exploration and development of mineral deposits, including risks relating to changes in project parameters as plans continue to be redefined including the possibility that mining operations may not commence at the Gunnison Project, risks relating to variations in mineral resources and reserves, grade or recovery rates resulting from current exploration and development activities, risks relating to the ability to access infrastructure, risks relating to changes in copper and other commodity prices and the worldwide demand for and supply of copper and related products, risks related to increased competition in the market for copper and related products and in the mining industry generally, risks related to current global financial conditions, uncertainties inherent in the estimation of mineral resources, access and supply risks, reliance on key personnel, operational risks inherent in the conduct of mining activities, including the risk of accidents, labour disputes, increases in capital and operating costs and the risk of delays or increased costs that might be encountered during the development process, regulatory risks, including risks relating to the acquisition of the necessary licenses and permits, financing, capitalization and liquidity risks, including the risk that the financing necessary to fund the exploration and development activities at the Gunnison Project may not be available on satisfactory terms, or at all, risks related to disputes concerning property titles and interest, environmental risks and the additional risks identified in the "Risk Factors" section of the Company's reports and filings with applicable Canadian securities regulators.

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Additional information about the Gunnison Copper Project can be found in the technical report filed on SEDAR at [www.sedar.com](http://www.sedar.com) entitled: "Gunnison Copper Project, NI 43-101 Technical Report, Feasibility Study" dated effective December 17, 2016 and the Company's press release dated September 9, 2021. Additional information on Strong & Harris can be found in the Company's press release dated September 9, 2021.

**Qualified Person:** Excelsior's exploration work on the Gunnison Property and Johnson Camp properties is supervised by Stephen Twyerould, Fellow of AUSIMM, President and CEO of Excelsior and a Qualified Person as defined by National Instrument 43-101. Mr. Twyerould has reviewed and approved the technical information contained in this presentation. The technical information contained in this presentation with respect to Strong & Harris has been reviewed and approved by the following Independent Qualified Persons from MDA, a division of RESPEC: Mr. Jeff Bickel, C.P.G., of MDA, Reno, Nevada (geology and mineral resource); Mr. Michael Gustin, PhD., P.Geo, of MDA, Reno, Nevada (geology and mineral resource); Eur. Geol. Robert Howell, PhD, C.Chem, C.Geol, SRK Consulting (UK) Limited, Cardiff, Wales, UK (mineral processing and metallurgical testing, recovery methods) and Mr. Thomas L. Dyer, P.E., of MDA, Reno, Nevada (mining methods, capital and operating costs, and economic analysis).

# Management

## Stephen Twyerould

*President & CEO*

- 30+ years of mining industry experience
- 17 years with WMC Resources Ltd (now BHP)
- Helped take Reliance Mining (now Consolidated Minerals) from A\$3M to A\$100M in 4 years
- Holds a doctorate in Geology and Geochemistry from the University of Oregon



## Roland Goodgame

*SVP, Business Development*

- Over 30 years of mining industry experience
- Former Senior Geologist at Anglo American; responsible for global portfolio of nickel projects
- Former Manager WMC
- Doctorate in Geology - University of Oregon, 1997
- B.Sc. Geological Engineering - Colorado School of Mines, 1987



## Robert Winton

*SVP, General Manager*

- 20+ years of mining industry experience
- Previously President and GM of Nyrstar Clarksville Inc., a 130 kt zinc refinery in Tennessee
- 19-year career with HudBay Minerals, most notably as VP of the Manitoba Business Unit, comprising three underground mines and a zinc refinery



## Greg Duschek

*SVP, CFO*

- Extensive experience in finance, accounting and operations across 4 countries
- Previously Site Controller of Kinross Gold's Fort Knox project in Alaska
- Other industry experience includes Finance & Admin Manager at Detour Gold, and Operations Controller at Gabriel Resources



# America's Newest Copper Producer

- Pure Copper Producer (99.999%)
- Gunnison permitted to 125 M pounds/year
- World's most environmentally-friendly copper project
- Multi-asset mining camp
- Over 24 year mine life
- Potential for 200 M Cu-equivalent pounds/year
- Mining friendly Arizona
- Experienced management team

# One-Year Share Performance

TSX: MIN / OTCQX: EXMGF / FSE: 3XS



**Shares I/O** 274 M  
**Fully Diluted** 330 M  
**Recent Price** US\$0.38

**Market Cap** US\$140 M

**Warrants** 3.5M @ C\$1.50  
 - Exp. Nov 30/23  
 33M @ C1.25  
 - Exp. Aug 22/22

**Top Holders**  
 Greenstone 41.5%  
 Triple Flag 5.0%  
 Management 4.0%

# Backing of Major Base Metal Institutions



**Triple Flag Mining Finance: US\$75M**  
(Stream & Equity)



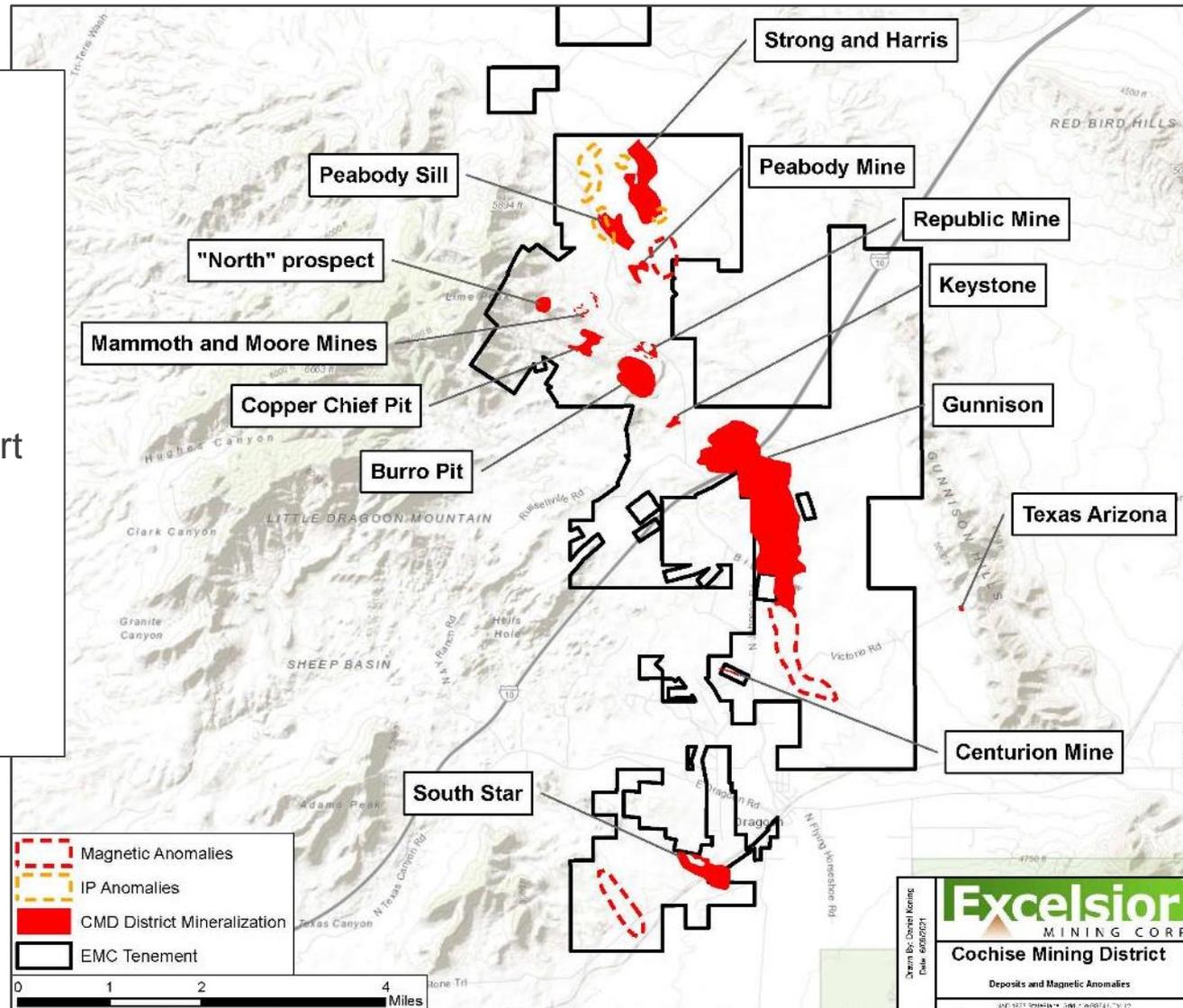
**Greenstone Resources: US\$60M**  
(Equity & Royalty)



**Altius Minerals: US\$9M**  
(Equity & Royalty)

# Multi-Asset Company

- 14,367 acres in Cochise Mining District
- 11,796 acres in Turquoise Mining District
- Gunnison in production ramp-up (pure Cu)
- Legacy open pits to re-start
- Strong & Harris to be developed
- 200 million pound per annum Cu Equivalent potential



# Excelsior's Flagship Asset

## Gunnison Copper Project & Johnson Camp Mine ("JCM")

Initial production capacity of 25M pounds/year



Pipelines

Wellfield

Process Ponds

EW

SX

Acid Tanks

# First Copper Sales January 2021





- What we are doing is not common
- We have a management team that has been very successful at identifying & solving problems

# 2021 Gunnison Updated Economics

*Includes raffinate neutralization plus an additional year of pre-production rinsing for CO<sub>2</sub>.*

## Post 2018 Project Financing\*

(After-tax, 7.5% discount rate, \$US, Copper Price: **\$3.50**)

Net Present Value: **\$983M**

Internal Rate of Return: **36%**

Life of Mine All-in Cost: **\$1.48/lb**

Life of Mine: **24 years**

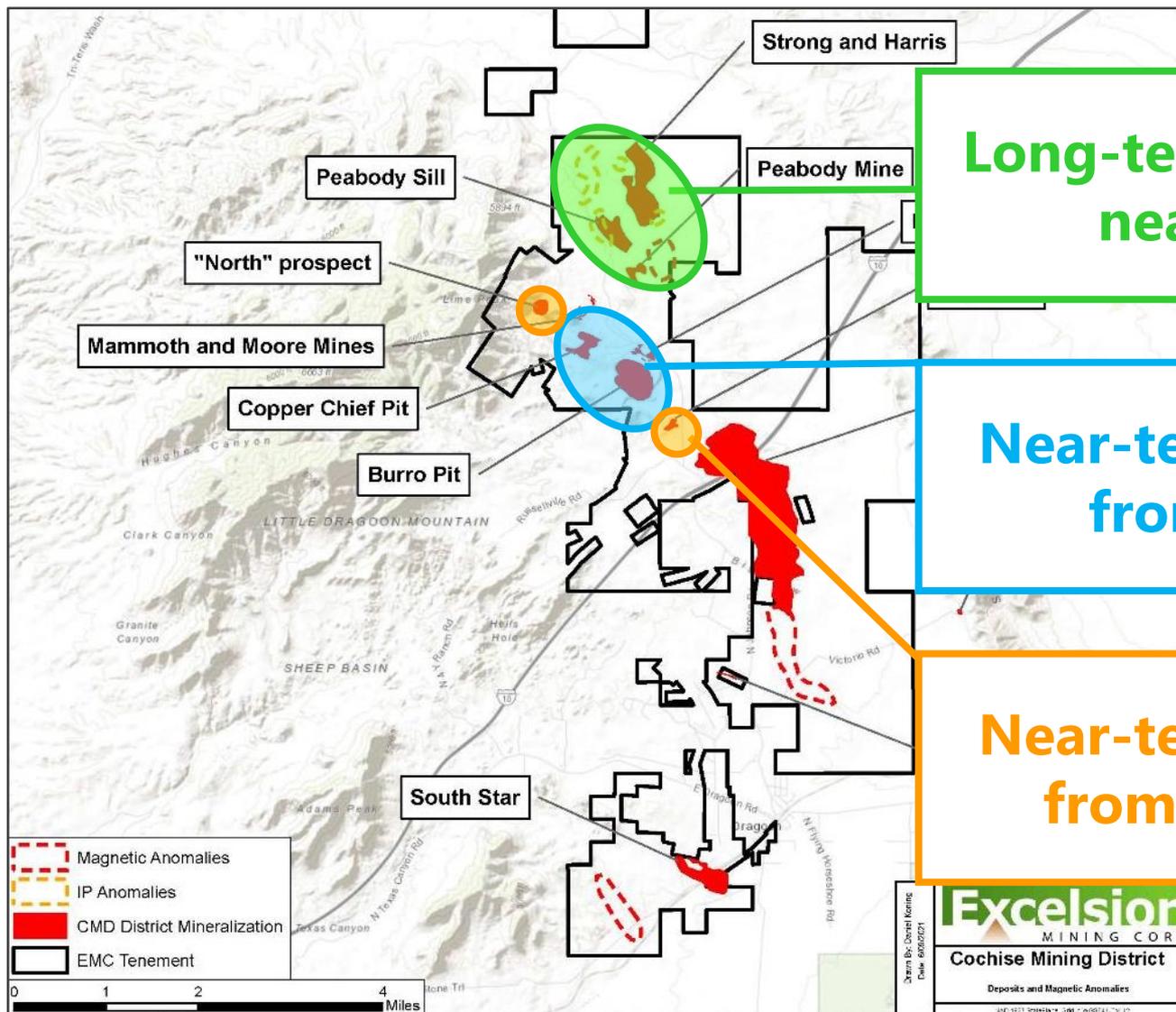
Start at 25M lbs per year

Expand to 125M lbs per year

Cu Price US\$/lb	NPV Pre-Tax @ 7.5%	IRR	NPV After-Tax @ 7.5%	IRR
\$ 2.75	\$ 779,000	28%	\$ 589,000	25%
\$ 3.25	\$ 1,126,000	36%	\$ 853,000	33%
\$ 3.50	<b>\$ 1,298,000</b>	<b>40%</b>	<b>\$ 983,000</b>	<b>36%</b>
\$ 3.75	\$ 1,471,000	44%	\$ 1,113,000	40%
\$ 4.00	\$ 1,644,000	47%	\$ 1,242,000	43%

*\*\* Includes all costs (including royalties and property taxes but excluding corporate G&A and the impact of the stream).  
The impact of the stream is treated as a reduction in selling price in the NPV calculation.*

# More than Gunnison Copper Project

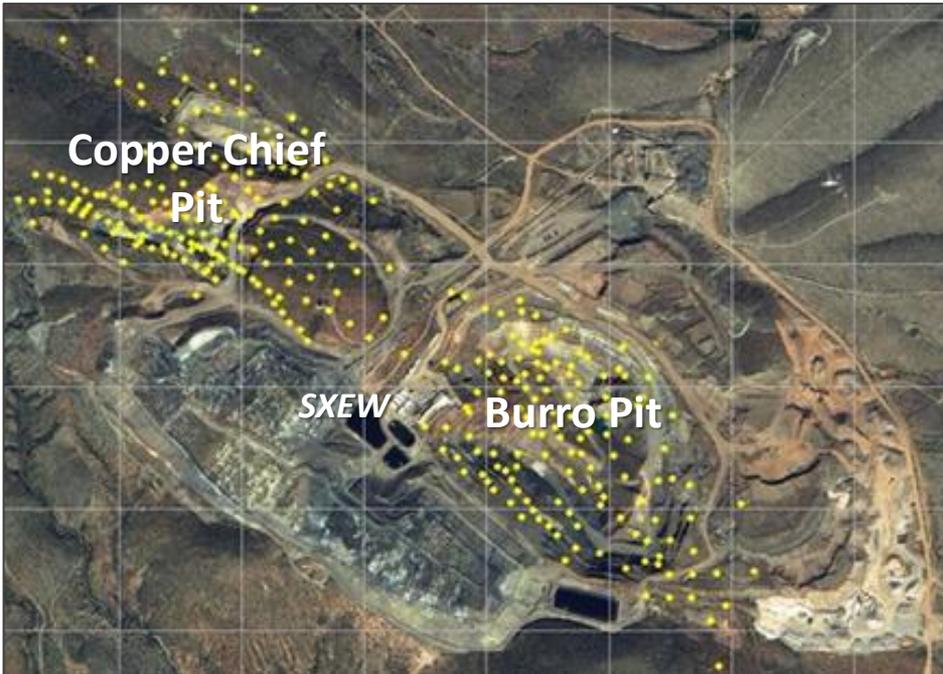


Long-term upside from nearby assets

Near-term production from JCM pits

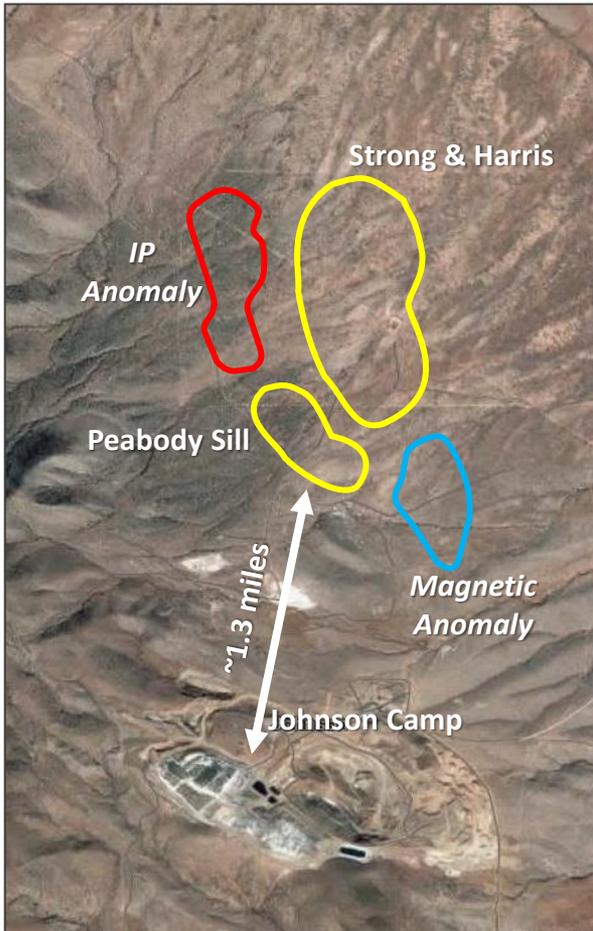
Near-term production from other assets

# JCM Pits



- **Internal Scoping Study**
- **125 Mlb over 5 years (~ 25 Mlb/yr)**
- **First Cu production H2 2022**
- **Minimal up-front Capex**
- **Other assets available:**
  - **Keystone Deposit ~1 mile south**
  - **North Deposit ~ 1 mile north**
  - **Low-grade waste stockpile**

# Peabody Sill and Strong & Harris



## Next Steps:

- **Expand resource and drill geophysical anomalies**
- **Feasibility Study**

## PEA 2021: Combined Pits @ US\$3.50/lb Cu

Mine Life	~7 years
Ore Mined	~54 M ton
Cu / Zn Grades	0.56% / 0.68%
Cu / Zn Produced	437 M lb / 575 M lb
Cu Equivalent	648 M lb
Average Cu / Zn annual production	62 Mlbpa / 82 Mlbpa
Pre-Tax NPV / IRR (8% discount rate)	\$325M / 25%

- The PEA is preliminary in nature and includes inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves. There is no certainty that the conclusions reached in the PEA will be realized. Mineral resources that are not mineral reserves do not have demonstrated economic viability.
- Mineral resources of 76.1M tons @ 0.1% Cu Cutoff - 794M lbs Cu (0.52% Cu), 500M lbs CuOx (0.33% CuOX), 858M lbs Zn (0.56% Zn) and 9M oz AG (0.12 Ag/ton)
- Deposits are open
- Covered magnetic +/- IP Anomaly south of Strong and Harris
- Covered IP Anomaly north of Peabody Sill

# Schedule

## 2022

1. Permit new JCM leach-pad and commence Cu production from JCM pits
2. Design & planning for Raffinate Neutralization
3. Progress Strong & Harris (plus other targets)
  - a) Anomaly drilling, metallurgical testing, geotechnical and engineering
  - b) Permitting

## Long-term

- Produce base load (25M lb/yr) from JCM pits to support development of all assets
- Ramp-up Gunnison to 125M lb/yr
- Bring on Peabody Sill and Strong & Harris
- Combined production > 200M lb/yr
- Explore all exploration targets (Cochise and Turquoise Mining Districts)



**We make copper green.**

Stock Symbol: **EXMGF**

**Excelsior**  
MINING CORP

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# Appendix

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# Large Deposit – Excellent Infrastructure

- 2.5 hour drive SE of Phoenix; 65 miles SE of Tucson
- Mining district with direct access to major road, rail, power and water infrastructure
- 9,560 acres (3,868 ha)

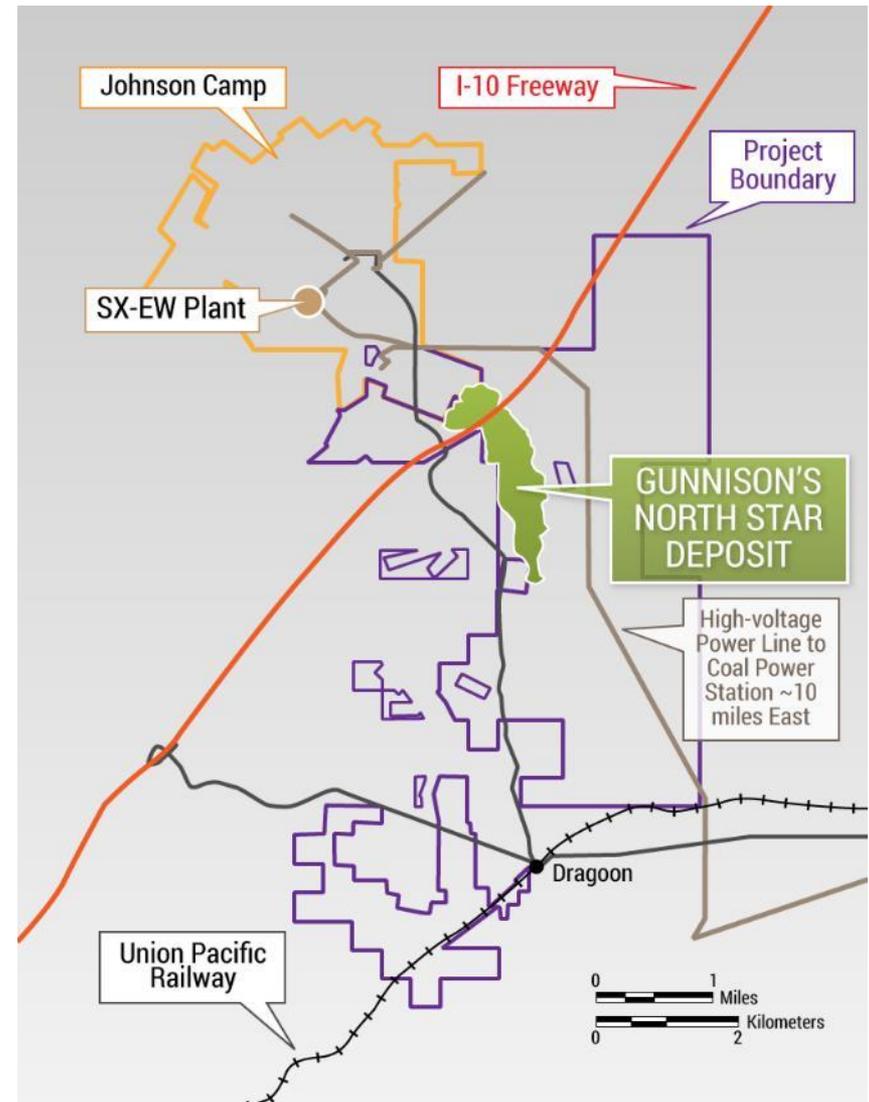
## North Star Mineral Reserves

	Short Tons (millions)	Total Copper %	Pounds of Cu (billions)
<b>Probable</b>	<b>782</b>	<b>0.29</b>	<b>4.5</b>

## North Star Mineral Resources (as of July 7, 2015)

	Short Tons (millions)	Total Copper %	Pounds of Cu (billions)
Measured	199	0.36	1.43
Indicated	674	0.27	3.57
<b>Measured + Indicated</b>	<b>873</b>	<b>0.29</b>	<b>4.99</b>
Inferred	187	0.17	0.63

The Mineral Resources (0.05% cut-off) are inclusive of Mineral Reserves (0.05% cut-off). The oxide and transition portion of the Mineral Reserve has the potential to be mined using in-situ recovery methods with an estimated total copper recovery of 48%.



# In-Situ Copper Production in Arizona

## Arizona has a positive track record for ISR mining

### San Manuel (BHP/Magma Copper)

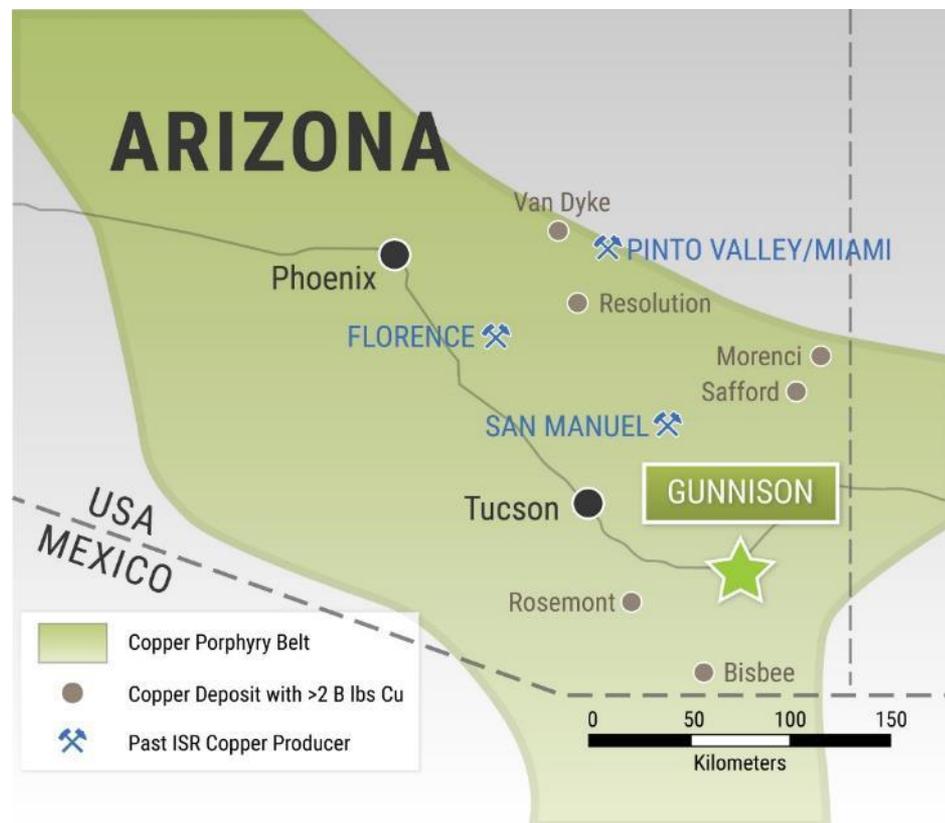
- Historical in-situ mine (+ open pit & U/G)
- 10+ years of production (>1000 wells)
- Produced copper at less than US\$0.40 per lb
- 3.25 billion lbs of Cu (284M tonnes at 0.52%)

### Florence (Taseko, formally Curis Resources)

- 2.84 billion lbs of oxide Cu (429M tons at 0.33% measured & indicated)
- Test facility in operation

### Globe - Miami Unit (BHP/Magma Copper)

- Operations: Miami unit: ISR and SX-EW
- Combined underground and in-situ
- 20+ years of production
- 1.47 billion lbs of Cu (214M tonnes at 0.31%)



*Note: Production from, and mineralization on, these properties is not necessarily indicative of the production from, or mineralization on, the Gunnison Project.*

# ISR in Arizona

Arizona has a positive track record for ISR mining

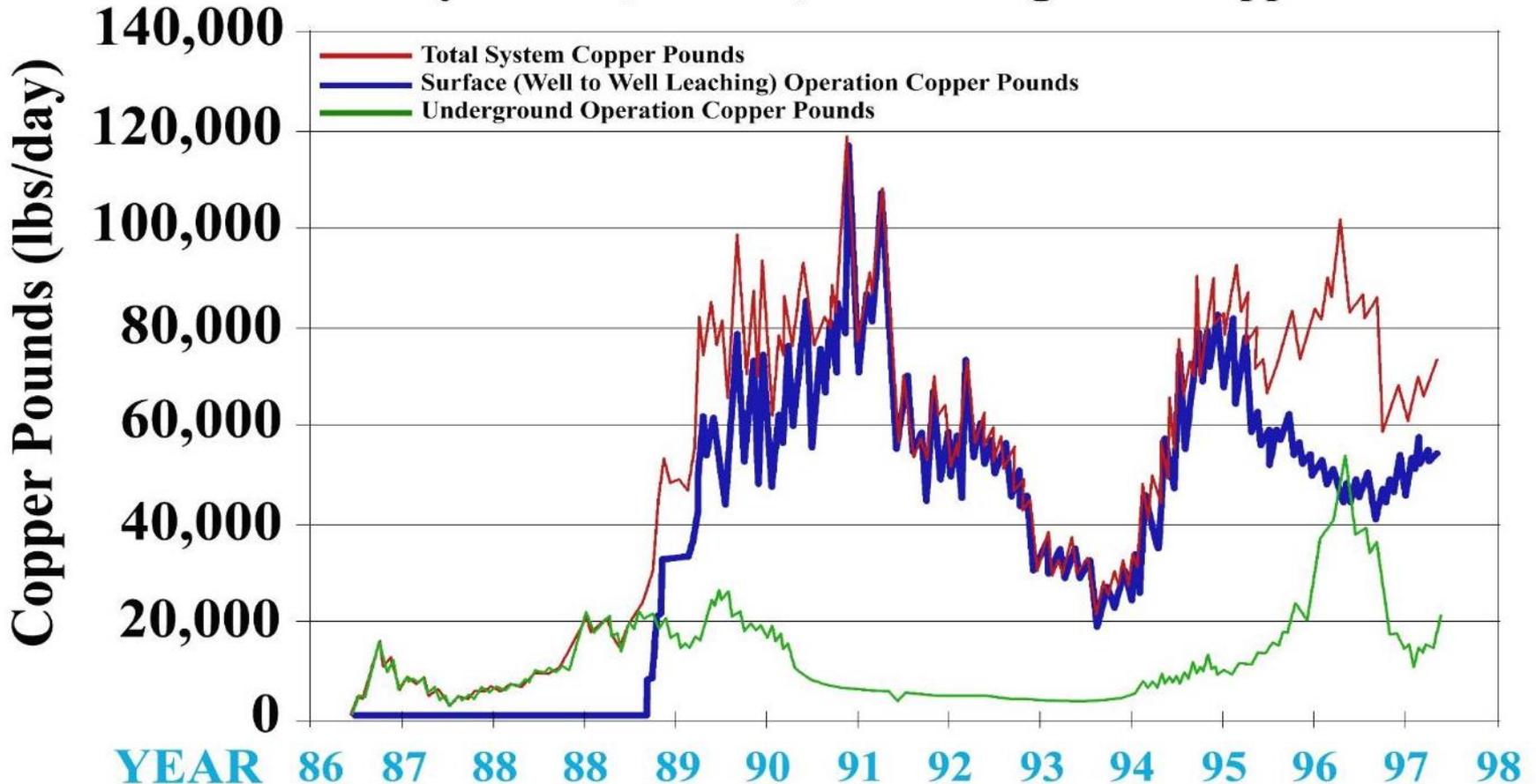
## Florence Copper (Taseko)

- Successful test facility in late 2020
- Had similar challenges in ramp-up
- Steep learning curve
- Took 12 months to reach FS-levels

*Note: Production from, and mineralization on, these properties is not necessarily indicative of the production from, or mineralization on, the Gunnison Project.*

# San Manuel: 10+ Years of ISR Copper Production

## History of Total, Surface, and Underground Copper Pounds



**Over 1000 Operating Wells / Copper produced at <\$0.40/lb**

Source: 1998 Dissertation – University of Arizona: Case Study – BHP Copper, San Manuel, Arizona

# Board of Directors

## **Fred DuVal - Chairman of the Board**

Democratic nominee for Governor of Arizona in 2014 and served as Chairman of the Arizona Board of Regents; former Chief of Protocol of the United States and Assistant to President Clinton, and former Political Director for VP Al Gore.

Prominent Arizona  
Politician

## **Stephen Twyerould, Ph.D. - President & CEO, Director**

**Colin Kinley** - Over 26 years of experience as an executive for Christensen Company specializing in engineered drilling and development projects. Currently with Kinley Exploration.

Valuable industry  
experience

**Stephen Axcell** - Over 38 years of experience in mining operations and project management execution, including process plant design and construction management.

**Lord Robin Renwick** - Vice Chairman, Investment Banking, JP Morgan Europe; former British Ambassador to South Africa and the United States.

Greenstone  
Nominees

**Michael Haworth** - Co-founder of Greenstone Resources. Former Managing Director at JP Morgan and Head of Mining and Metals and Metals Corporate Finance in London.

**Mark Morabito, J.D.** - Founder of several exploration companies; over 25 years' experience in public markets with a strong focus on junior mining.

Extensive capital  
markets expertise

**Jim Kolbe** - Eleven-term member of the US House of Representatives for Arizona's 8<sup>th</sup> Congressional District.

Prominent Arizona  
Citizens



# Environment

- ✓ **World's most environmentally-friendly copper project**
- ✓ Tiny footprint compared traditional mines
- ✓ Negligible dust, air or sound pollution
- ✓ Low water consumption compared to traditional mine and other industries
- ✓ Surface is available for use after mine closure
- ✓ No acid mine drainage or similar legacies
- ✓ No tailings or potential for dam failures
- ✓ Low carbon footprint (no earth moving)





# Environment

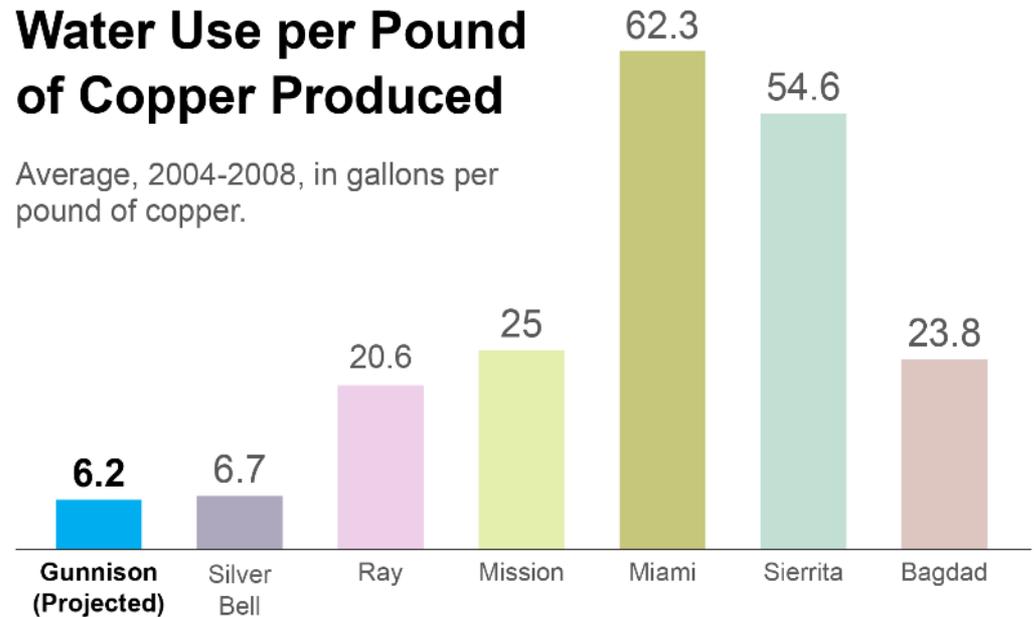
## In-situ copper mining consumes less water

Unlike traditional mining that uses water for dust suppression or mineral extraction, Excelsior's in-situ mine mostly recycles all the water used during operations.



### Water Use per Pound of Copper Produced

Average, 2004-2008, in gallons per pound of copper.



Source: Arizona Department of Mines & Mineral Resources SR 29 2010



# Environment

**Gunnison has no cultural sites; the habitat does not support any endangered species**



# Unique Requirements for ISR

- Orebody is **naturally broken, fractured and permeable** (no fracking)
- Deposit is **below the water table** (very unusual for Cu oxides)
- Solutions **controlled by differential pumping pressures**
- **Very established mining method**: e.g., Uranium for over 40 years



