



**SOLITARIO**  
ZINC CORP.

*Focused on High Quality Tier 1 Gold and Zinc Assets*

*Solitario Corporate Presentation*  
*December 2022*

# Forward Looking Statements



This presentation includes certain "Forward-Looking Statements" within the meaning of section 21E of the United States Securities Exchange Act of 1934, as amended. All statements, other than statements of historical fact, included herein, including without limitation, statements regarding potential mineralization and reserves, exploration results and future plans and objectives of Solitario, are forward-looking statements that involve various risks and uncertainties. There can be no assurance that such statements will prove to be accurate and actual results and future events could differ materially from those anticipated in such statements. Solitario's Golden Crest land position does not cover any of the areas of historical gold production or historical unmined resources but are thought to be on trend with these known areas of mineralization. Certain historical information concerning exploration and gold production in the Black Hills region has been obtained through both public and private sources and are believed to be substantially factual, but Solitario can give no assurances of the accuracy of such information. Development of Solitario's properties are subject to the success of exploration, completion and implementation of an economically viable mining plan, obtaining the necessary permits and approvals from various regulatory authorities, compliance with operating parameters established by such authorities and political risks such as higher tax and royalty rates, foreign ownership controls and our ability to finance in countries that may become politically unstable. Important factors that could cause actual results to differ materially from Solitario's expectations are disclosed under the heading "Risks and Uncertainties" as well as the COVID-19 related risks as disclosed on Form 10-K for the year ended December 31, 2021, filed with the SEC and elsewhere in Solitario's documents filed from time to time with Canadian Securities Commissions, the United States Securities and Exchange Commission and other regulatory authorities.

This presentation contains estimates of mineralized material based upon measured, indicated and inferred mineral resource categories that are recognized and required by Canadian regulations, but the SEC does not recognize them and U.S. reporting companies are normally prohibited from including resource estimates in their U.S. filing. U.S. investors are cautioned not to assume that any part, or all, of mineralized material or mineral resources categories will ever be converted into reserves. The economic significance of Proven and Probable Reserves differ substantially from mineralized material and measured and indicated mineral resources. Furthermore, economic viability has yet to be established by a feasibility report for mineralized material and the Company has not yet determined that any part of the mineralized material can be legally mined. This presentation also contains information about adjacent properties on which we have no right to explore or mine. We advise U.S. investors that the SEC's mining guidelines strictly prohibit information of this type in documents filed with the SEC. U.S. investors are cautioned that mineral deposits on adjacent properties are not indicative of mineral deposits on our properties.

This presentation (including drill hole information and mineral reserve and resource numbers) has been reviewed for accuracy by Mr. Walt Hunt, COO for Solitario Zinc Corp., who is a qualified person as defined by National Instrument 43-101.

# Solitario Investment Proposition



**Major New Gold Initiative** in South Dakota; 2021-2022 exploration results points to potential new district scale gold discovery.

**Significant Joint Venture Interests** in two high-grade zinc development projects, ~12% Zn Eq. M&I resource = 2.5 billion lbs., Inferred = 2.1 billion lbs.

**Florida Canyon Zinc Project** in Peru is a high-grade development asset held jointly with Nexa Resources

**Lik Zinc Project** is a large-tonnage, high-grade, open-pit development project in Alaska, partnered with Teck Resources

**Well-financed** ~US\$5.5 million in cash and marketable securities

**Disciplined Capital Structure** 64.7M shares outstanding

**Experienced and Respected Management Team** track-record of creating value by moving assets through feasibility and permitting



# Capital Structure



<b>Current Price</b>	US\$0.62/C\$0.84	<b>Market Cap</b>	~US\$40.7 Mil/C\$54.3 Mil
<b>Shares Outstanding</b>	64.7 Mil	<b>Avg. Daily Vol. NYSE/TSX (3month)</b>	56K/3K
<b>Options</b>	5.5 Mil	<b>Cash and Marketable Securities</b>	\$5.5 Mil
<b>Fully Diluted</b>	70.2 Mil	<b>Annual G &amp; A</b>	\$1.2 Mil
<b>52-Week High</b>	US\$0.98/C\$1.20	<b>Analyst</b>	Heiko Ihle, H.C. Wainwright XPL price target USD\$0.90
<b>52-Week Low</b>	US\$0.41/C\$0.53	<b>Top Holders</b>	Mgmt. and Directors: 5.6 Mil Zebra Hldgs. (Lukas Lundin): 3.9 Mil Newmont Mining: 2.7 Mil

# Solitario Valuation



## ➔ SIGNIFICANTLY UNDERVALUED HIGH-GRADE ZINC ASSETS

Value  
**Zn**

DEPOSIT	INDICATED	INFERRED
	LBS. ZN-EQ	LBS. ZN-EQ
FLORIDA CANYON + LIK	2.55 billion	2.10 billion
Average Grade approximately 11% Zn-Eq		

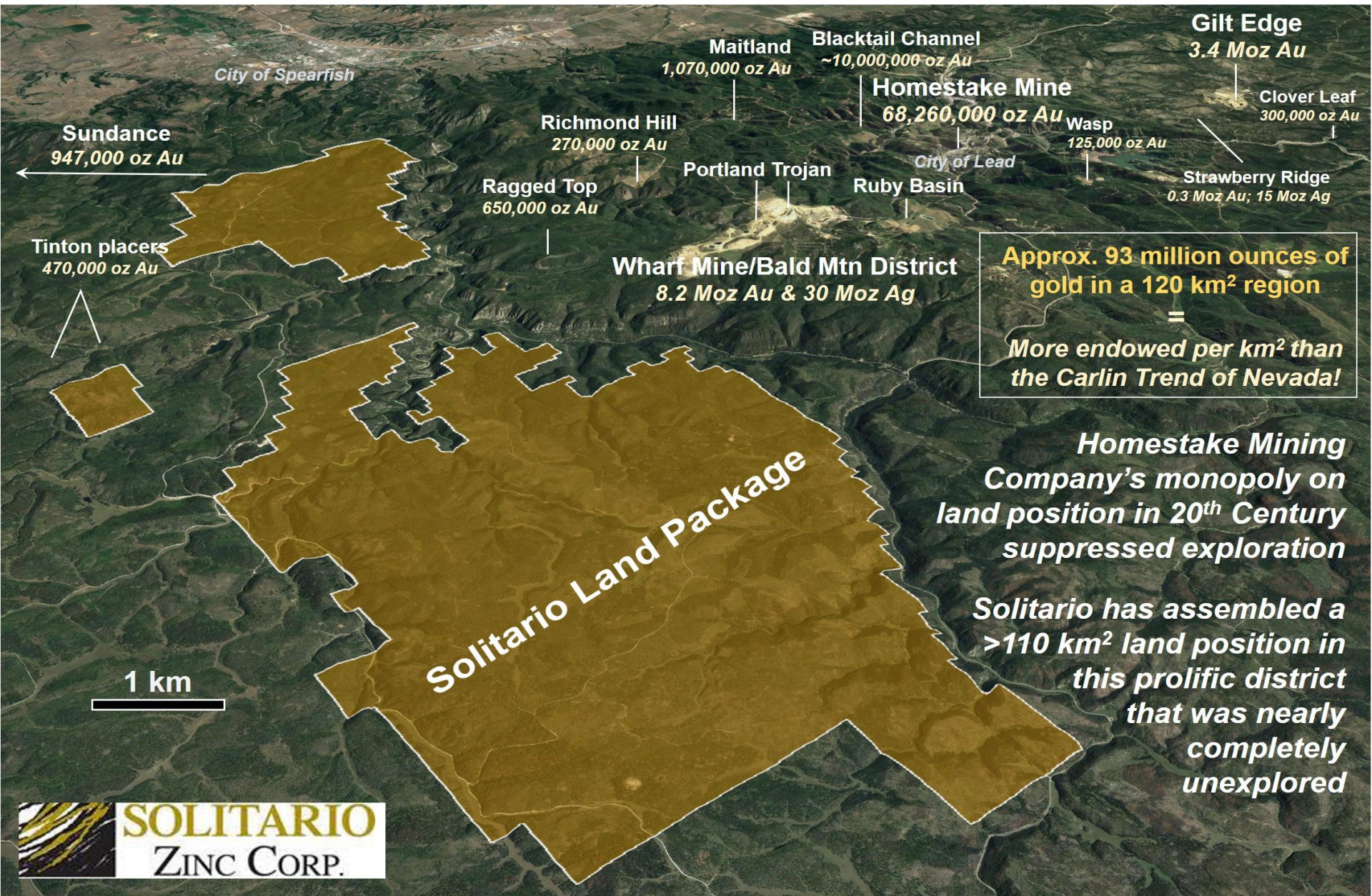
## ➔ EXCEPTIONAL POTENTIAL FOR MAJOR GOLD DEPOSITS AT GOLDEN CREST

Upside  
**Au**

- Potential to become one of North America's most important new green fields gold project
- Significant high-grade gold occurrences over 35 square km area
- These new targets are not "dusted off" marginal prospects or low-quality geochemical anomalies, but true grass roots discoveries that are totally untested adjacent to 70 million ounces of gold

# Northern Black Hills, South Dakota

## A Super Giant Gold Province



# Solitario Re-engages in Gold Exploration



- ✓ Solitario's exploration team is responsible for five gold discoveries in the US totaling 5 million ounces and resulting in US\$250 million in value to shareholders in three transactions

## Golden Crest Project – South Dakota

- 33,000 acres of mining claims in safe, accessible jurisdiction
- Greenfields district-scale exploration in the shadow of a Super Giant Gold Deposit - Homestake/Wharf district
- 20 large robust gold anomalies have been located, covering >40 sq. km
- Excellent potential for stacked carbonate-hosted high-grade gold deposits at depths of no more than 200 to 400 meters and Precambrian hosted high-grade vein deposits.

# Where do you find gold?

## Next to existing gold deposits



Except conventional wisdom holds there is no more gold to be found next to the Homestake-Wharf mining district

**If the Super Giant Homestake-Wharf gold district is not an isolated Super Giant, then there is the potential for an enormous endowment (+100 million ounces) of undiscovered gold**

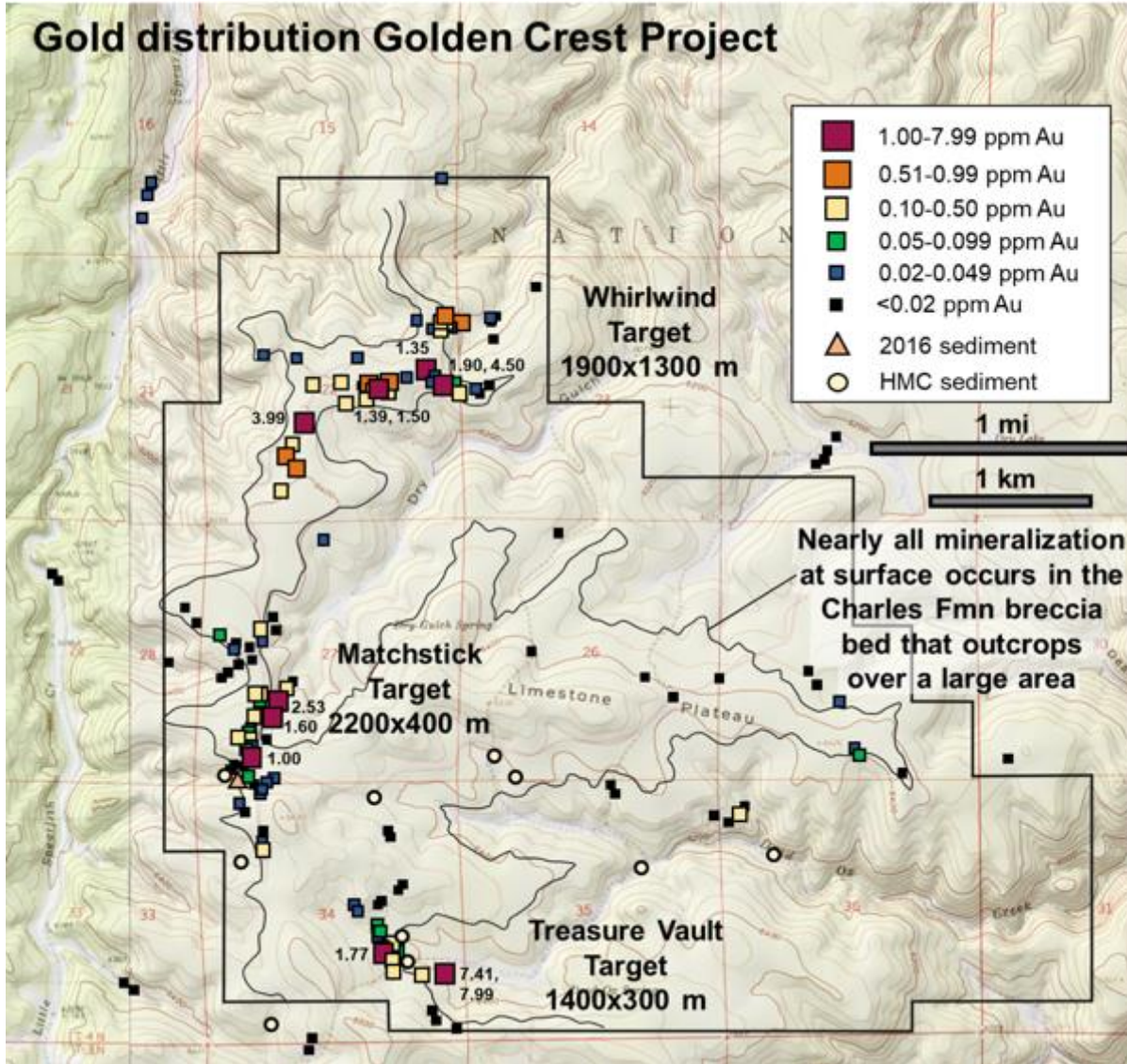
**Where is it? Why hasn't it been found?**

- Virtually no historic or modern exploration conducted to the west of the district – It has long been assumed that Homestake Mining Co. (HMC) thoroughly explored the region
- HMC conducted virtually no exploration work west of the Homestake mine during its entire 140-year history in the area
- Almost all the bedrock is covered by a thin layer of soil, and rocks that are exposed look barren



# A Compelling Au Anomaly of District-Scale

## Gold distribution Golden Crest Project



### Initial Sampling Results 2020 Surface Grab (Rock) Samples:

103 contained gold values >20 ppb Au (41% of samples)

61 contained gold values >50 ppb Au (24% of samples)

45 contained gold values >100 ppb Au (18% of samples)

12 contained gold values >1.0 ppm Au

Compared with typical early-stage exploration results in similar systems in Nevada, this is a compelling result, particularly with 80 million historical ounces of gold within a 20 km radius

# Mineralized Jasperoidal Grab Samples, Golden Crest

**7.41 ppm Au**  
**0.238 opt Au**



**7.99 ppm Au**  
**0.257 opt Au**



Highly silicified paleokarst polymictic breccia samples from the Charles Formation dominated by chert fragments

**0.42 ppm Au**  
**0.014 opt Au**



**Purple fluorite in matrix**  
**0.92 ppm Au**  
**0.030 opt Au**



## On Your Hands and Knees to Find Rocks



This is hard work and probably one reason why Golden Crest was never discovered till now



# Downpour Assay Results for Reconnaissance Rock Grab Samples<sup>1</sup>



New Assay Results			Previously Released Assay Results		
Sample Number	Gold gpt	Silver gpt	Sample Number	Gold gpt	Silver gpt
2585	<b>0.01</b>	0.2	2399	<b>12.20</b>	8.9
2586	<b>1.44</b>	0.1	2400	<b>50.20</b>	2.6
2587	<b>52.30</b>	0.3	2401	<b>47.70</b>	18.4
2588	<b>15.20</b>	0.6	2402	<b>0.27</b>	16.9
2589	<b>126.00</b>	1.6	2403	<b>2.82</b>	6.5
2590	<b>23.30</b>	0.3	2404	<b>7.20</b>	28.9
2591	<b>4.07</b>	0.2	2405	<b>1.71</b>	2.0
2592	<b>12.30</b>	0.6	6055020	<b>8.13</b>	<0.1
2593	<b>30.10</b>	0.2	6055021	<b>5.90</b>	<0.1
2594	<b>0.11</b>	<0.1	6055022	<b>0.45</b>	1.6
2595	<b>83.50</b>	1.1	6055023	<b>1.65</b>	<0.1
2620	<b>0.10</b>	0.5			
2621	<b>19.40</b>	26.1			
2622	<b>7.82</b>	36.6			

<sup>1</sup>Reconnaissance rock grab samples are selective in nature, and therefore reported mineralization and assay results may not be representative nor reflect economic viability.

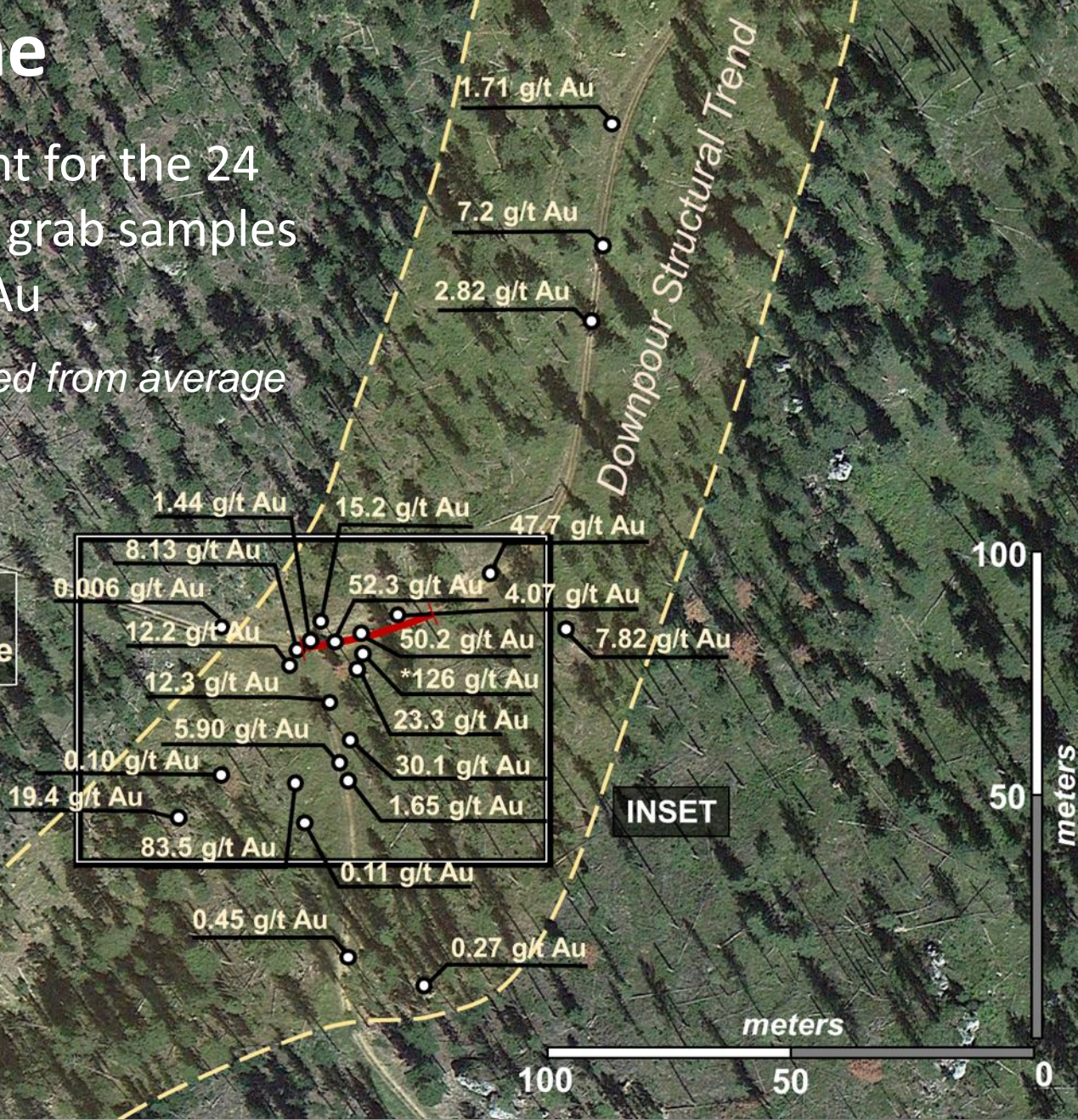
# Downpour Zone

- Average gold content for the 24 composited surface grab samples shown is 16.16 g/t Au

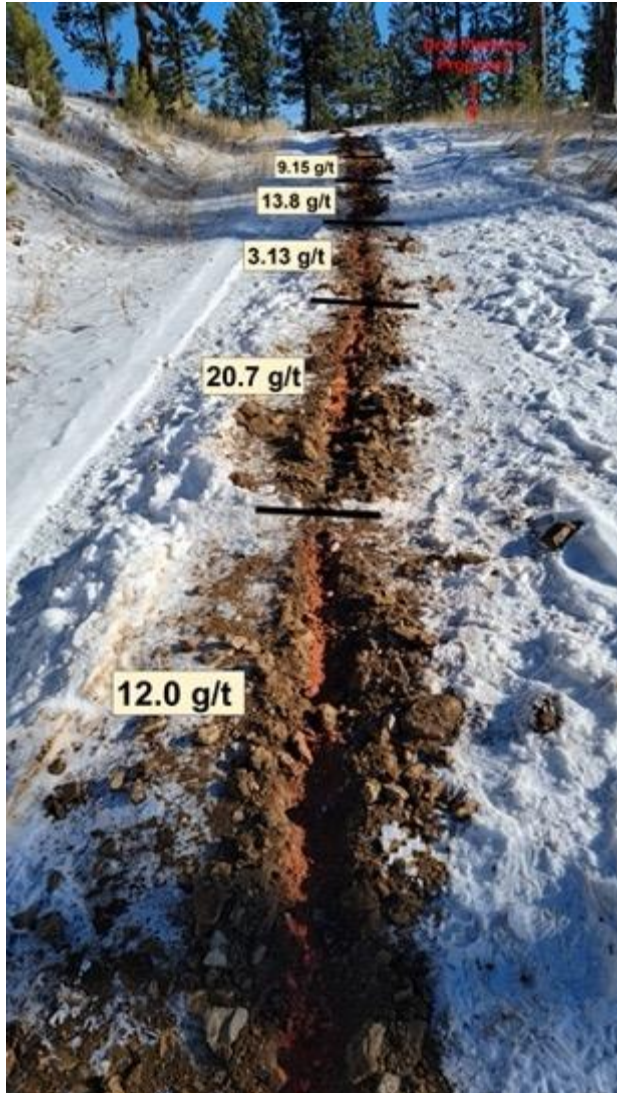
\* 126 g/t Au sample excluded from average

● Sample Location: Gold Assay in grams per tonne

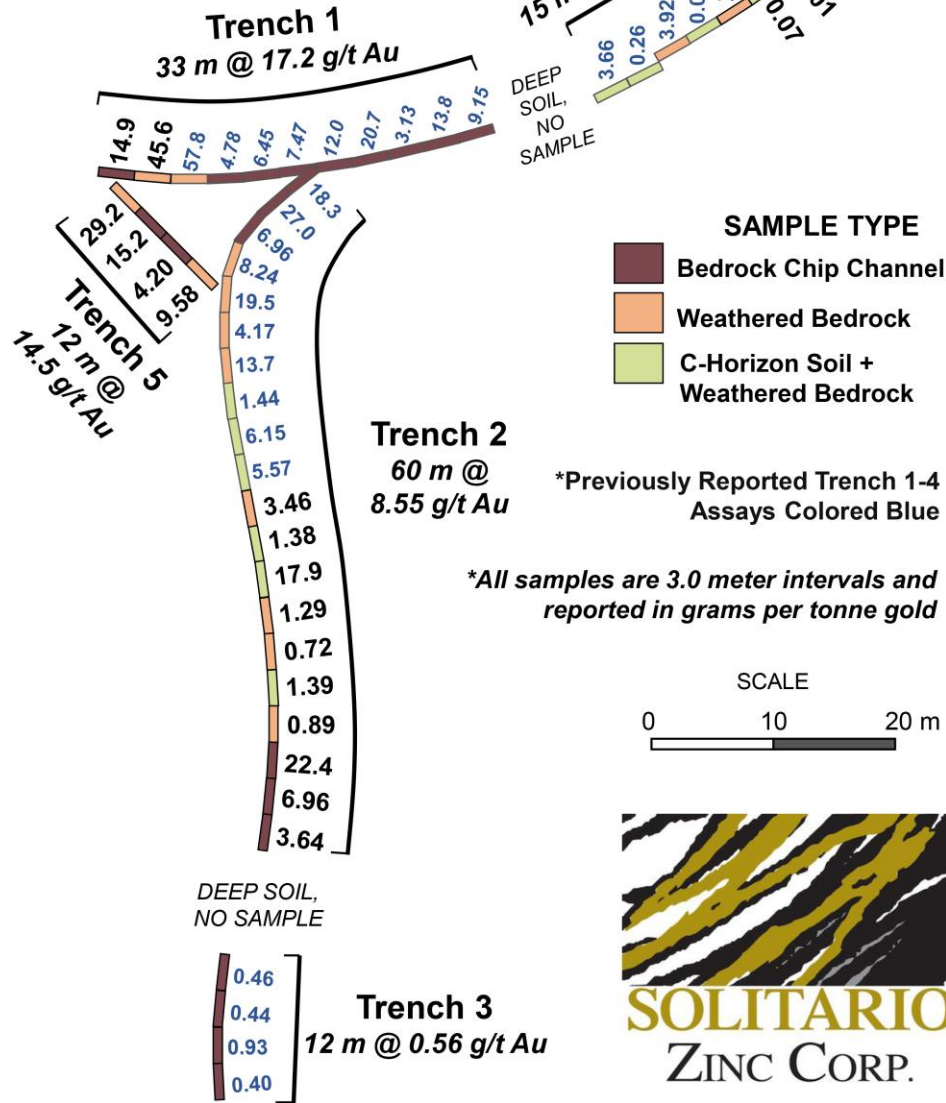
— Channel Location: 24 m @ 9.69 g/t Au



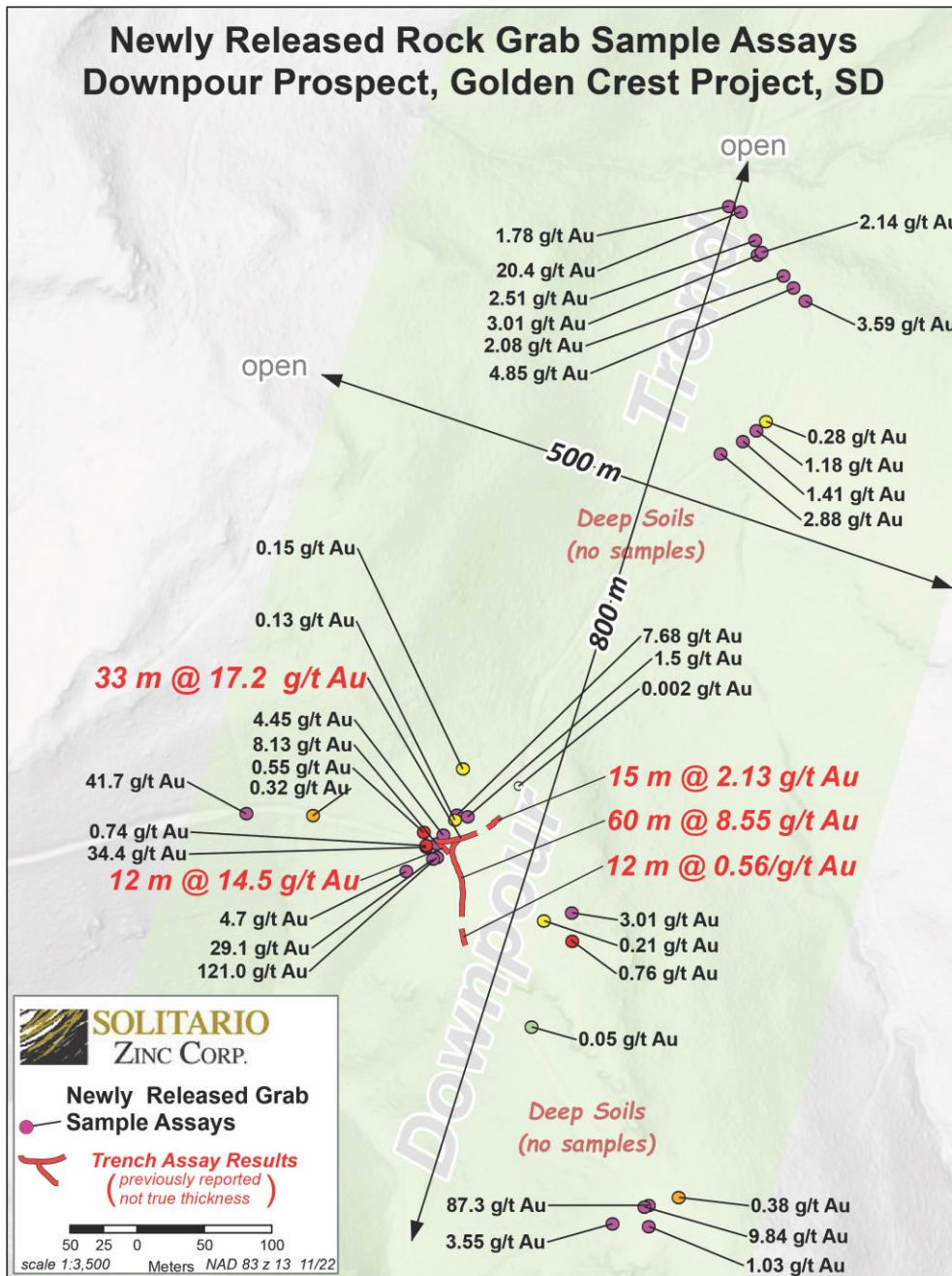
# Channel and Grab Samples



## Downpour Target Trench Results



# Newly Released Rock Grab Sample Assays Downpour Prospect, Golden Crest Project, SD



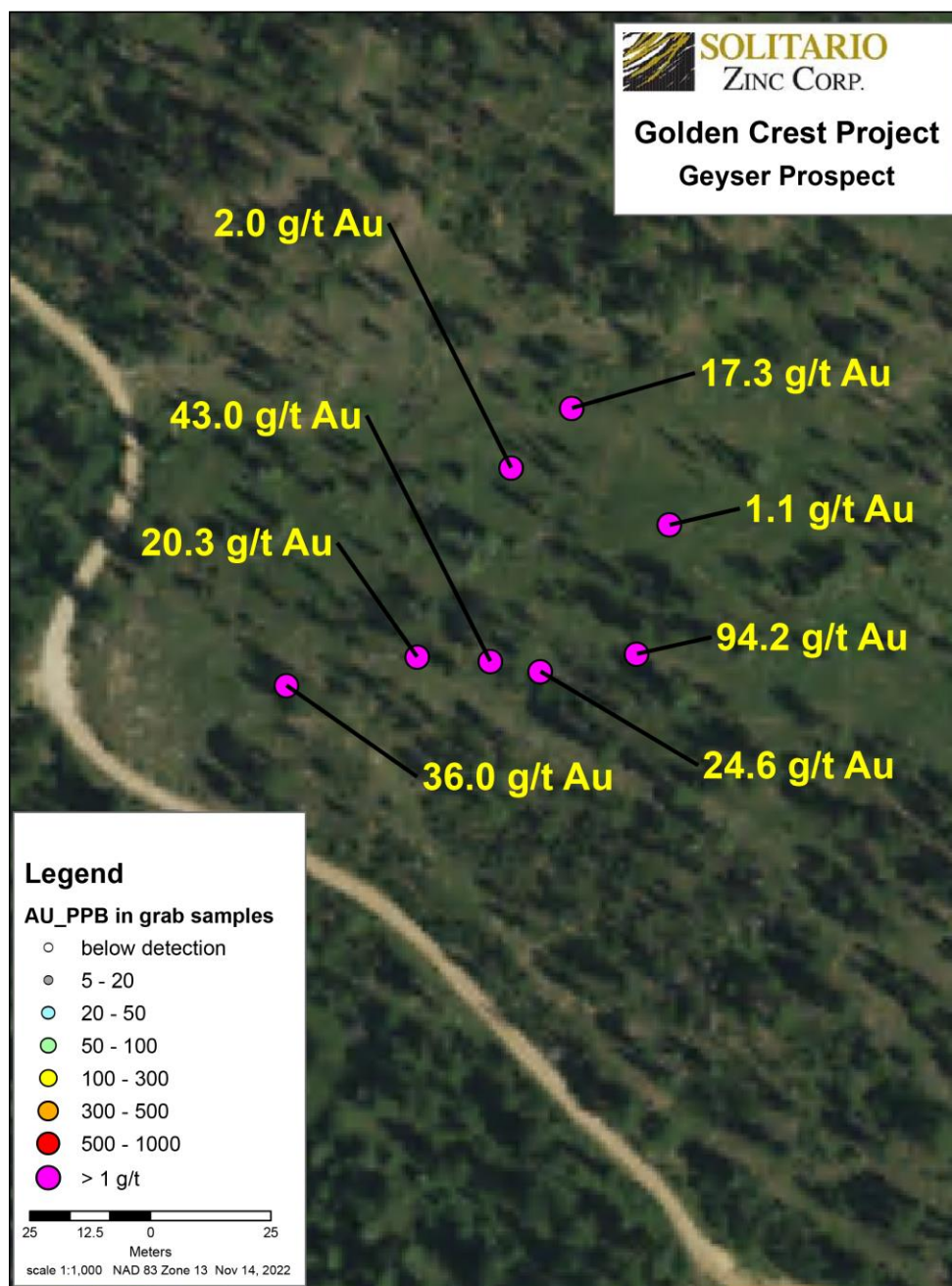
**SOLITARIO ZINC CORP.**

**Newly Released Grab Sample Assays**

**Trench Assay Results**  
*(previously reported, not true thickness)*

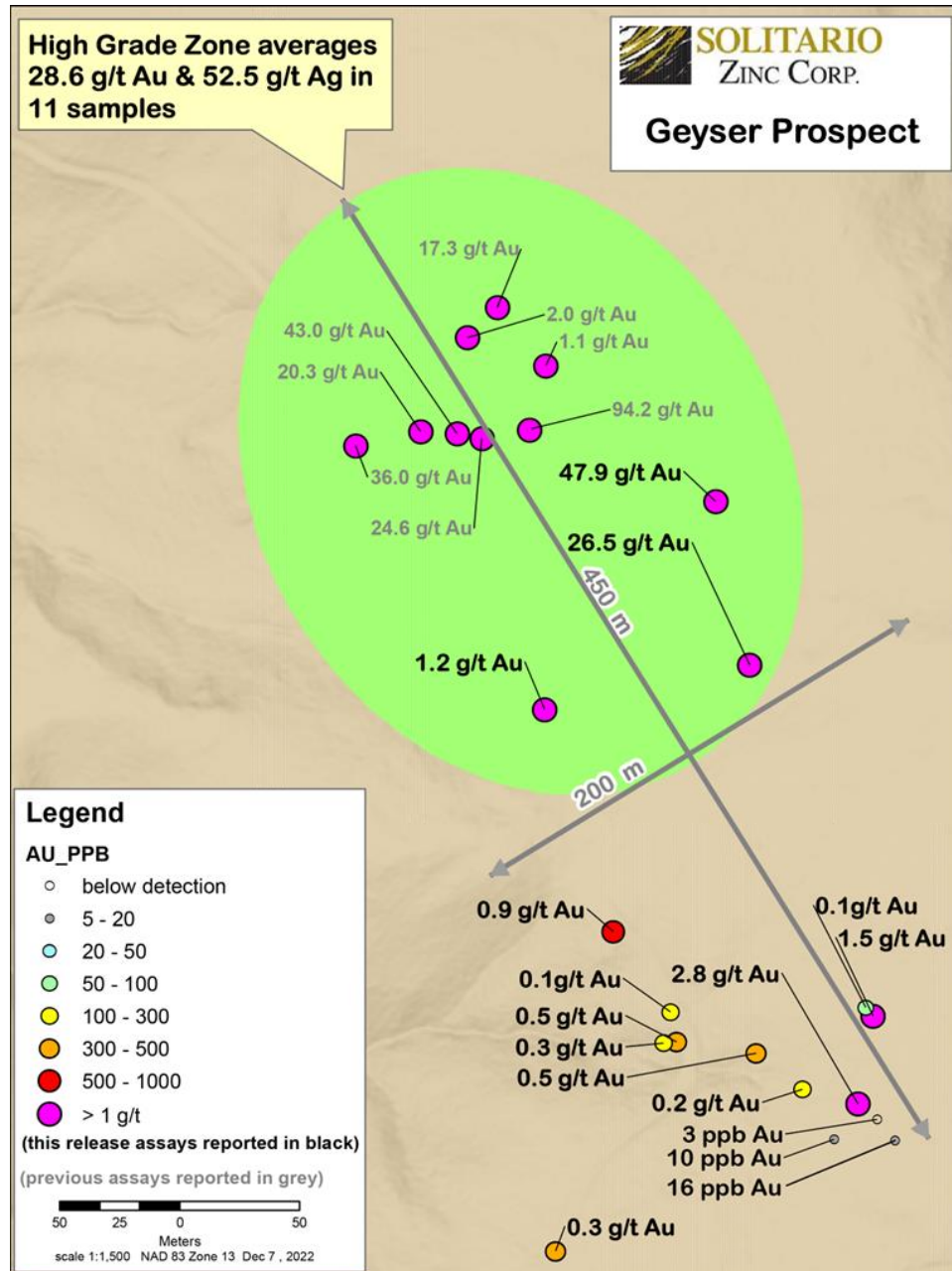
50 25 0 50 100  
scale 1:3,500 Meters NAD 83 z 13 11/22





# Geyser High-Grade Zone

- 225 x 125 meters
- 28.6 g/t gold.
- Open to expansion in multiple-directions

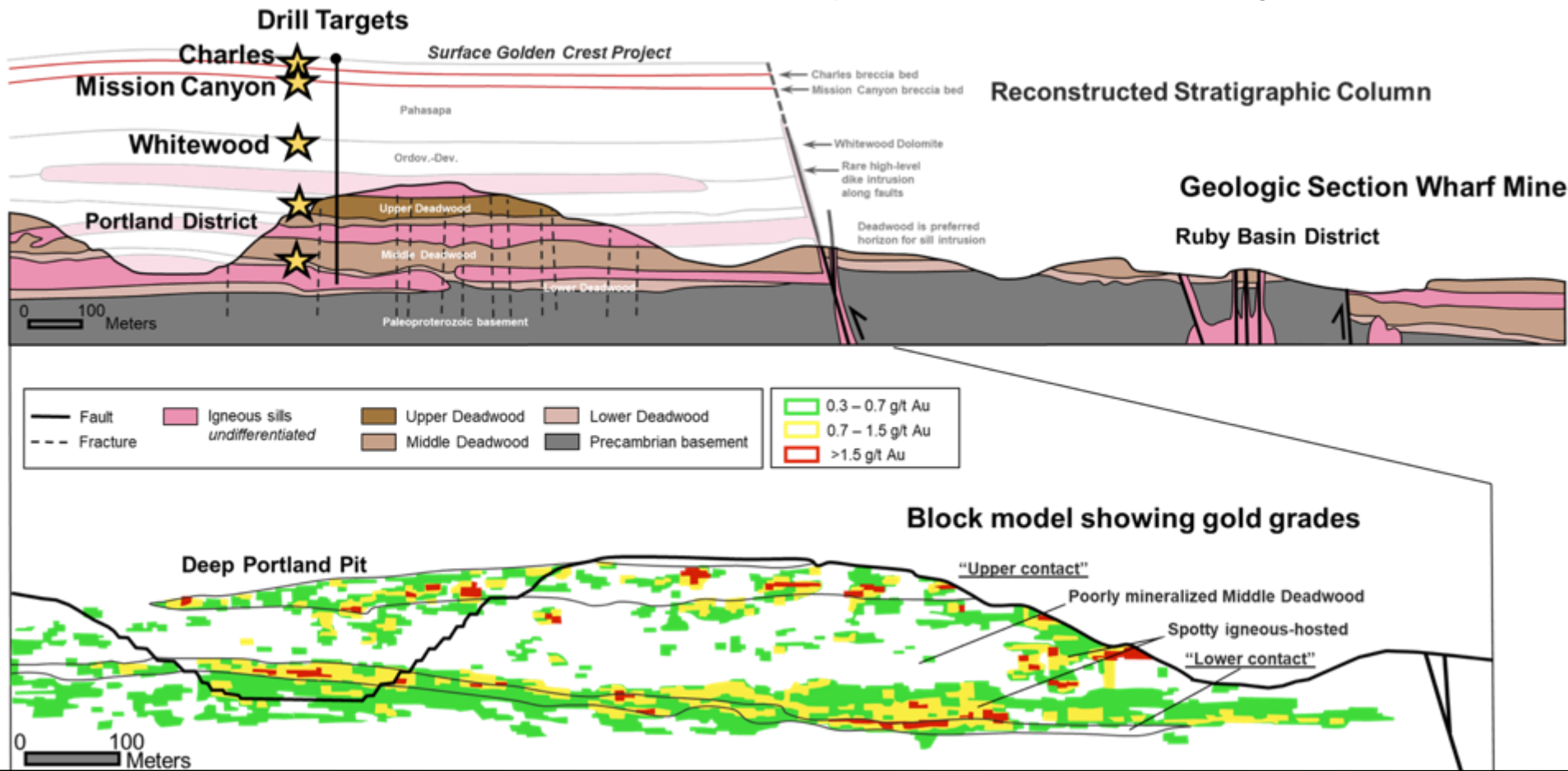




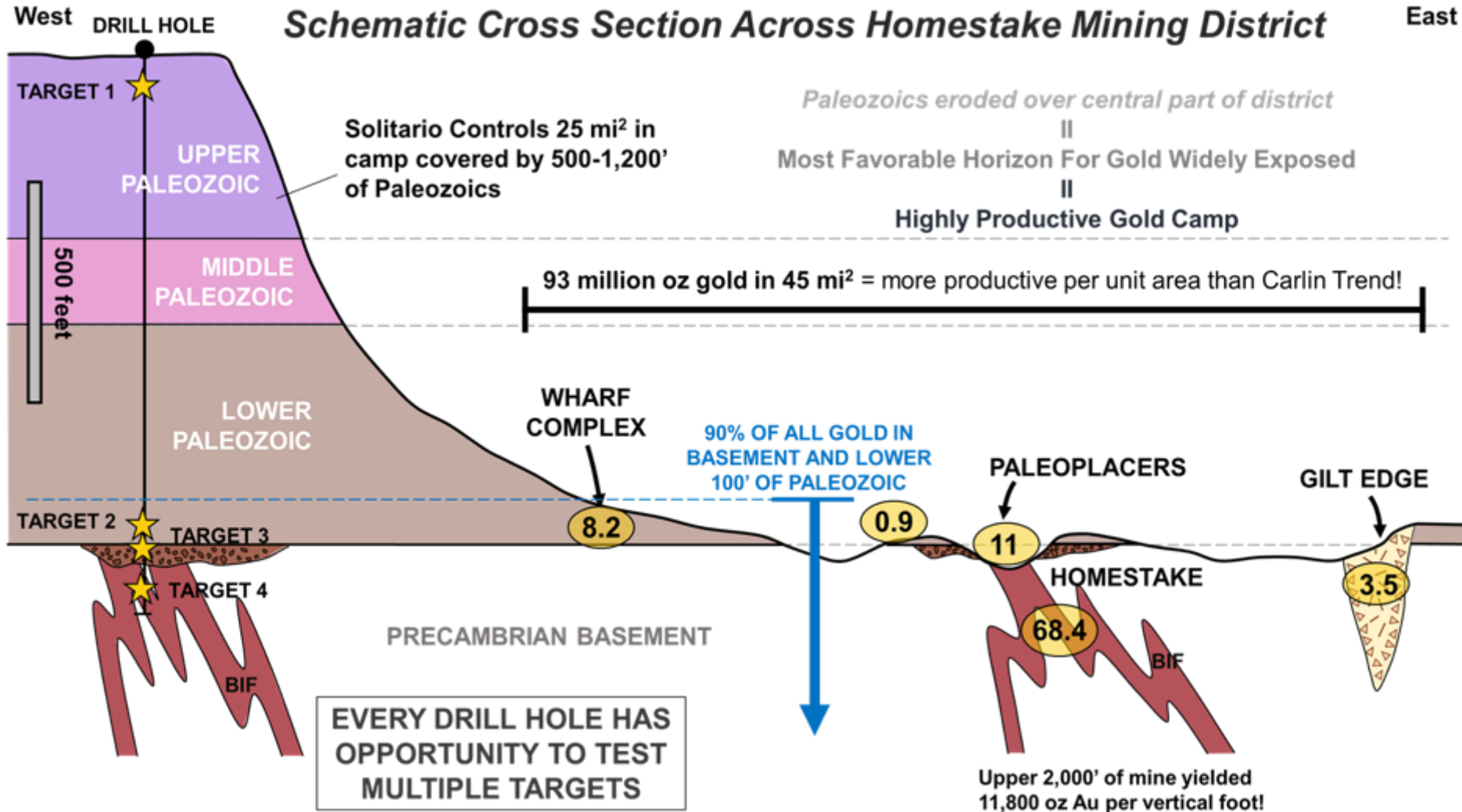
Excellent target at depth in Cambro-Ordovician for major Au:  
 Wharf Mine analogy (8.2 Moz Au) just 8 km to NE



It is entirely reasonable to expect that hydrothermal fluids producing Deadwood-hosted mineralization would continue upwards into upper Paleozoic units like the Pahasapa to form large areas of hydrothermal alteration with gold mineralization



# Exploration in Covered Terrain



# Golden Crest Project Summary

- Spring 2021 - Signed Mining Lease Agreement on initial 4,820 acres and initiated an aggressive claim staking program based on field verified altered (silicified) areas. Current land position 33,000 acres (134 km<sup>2</sup>).
- If the Super Giant Homestake-Wharf gold complex is not an isolated Super Giant, then there is an enormous endowment of undiscovered gold.
- Golden Crest has been subjected to widespread hydrothermal gold mineralization affecting receptive carbonate rocks over a vertical dimension of at least 300 meters with a lateral footprint of 40 km<sup>2</sup> (and growing).
- Wharf gold target is very explorable with a strong high-grade component.
- Prospective Homestake Formation exists below Golden Crest claim block.
- Plan of Operation filed in early 2022, Environment Assessment expected to be completed in second quarter of 2023.

# Why Should You Care About Zinc?

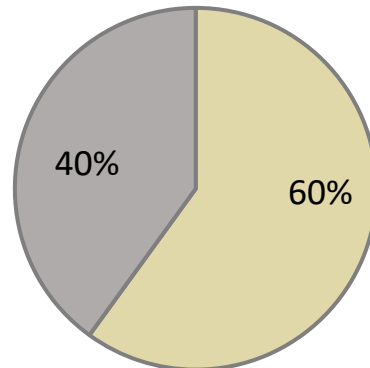


Stimulus Spending Has the Potential to Create \$4 to \$6 Trillion in Infrastructure Spending

- Infrastructure Buildout **==** Increased Demand for Steel
- More Steel **➡** Significant Increase in Demand for Zinc

## Other Uses 40%

Utilized in die-casting, production of brass and bronze, and into oxides and chemicals



## Galvanization 60%

Utilized for its corrosion resistance (galvanized steel, rebar, autos, structural steel).

## Green Energy - Batteries

Zinc is increasingly being investigated for large-scale energy storage batteries for alternative energy systems, such as solar and wind. Potentially a massive new demand for zinc supply.

# World Class Partners

Partnering with well funded, leading zinc producers reduces costs, risk and capital requirements

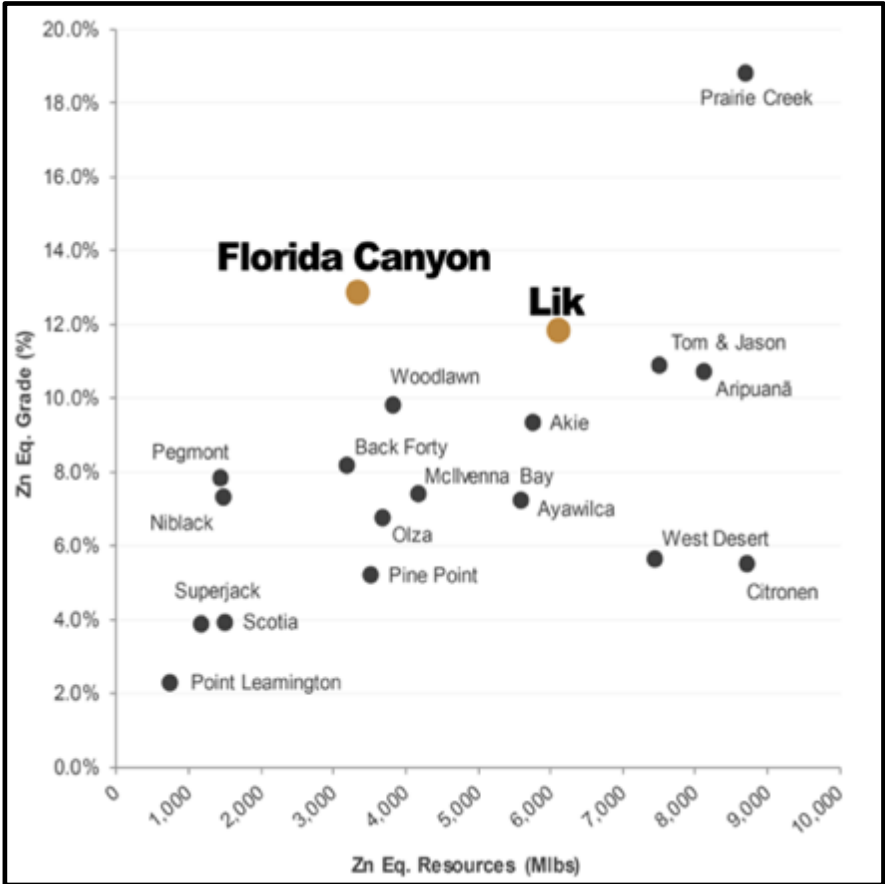
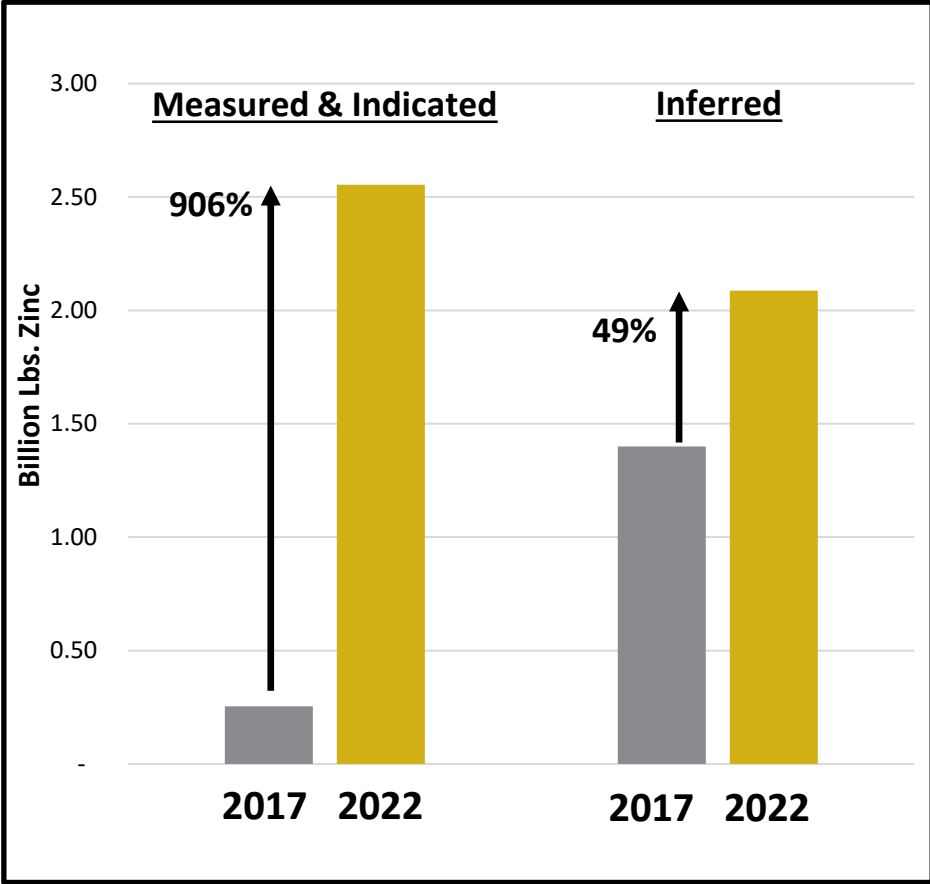
Florida Canyon Zinc Project held jointly with Nexa Resources S.A., 4<sup>th</sup> largest zinc producer with three underground zinc mines and large zinc smelter in Peru.

Lik Zinc Project in partnership with Teck Resources, 3<sup>rd</sup> largest zinc producer with worlds largest zinc mine (Red Dog) situated just 14 miles from Solitario's Lik deposit.





# Exceptional Resource Growth Exceptional Grade



Lik and Florida Canyon - Solitario Attributable

# Florida Canyon Zinc Project, Peru

Joint ventured with Nexa Resources S.A.

Advanced exploration project with \$70 million in partner investments (526 drill holes; 134,416 meters)

Preliminary Economic Assessment demonstrates robust economics

Funded to Production

17,000-meter drilling program completed in 2019 was the most aggressive annual program to date

Significant resource increase announced February 16<sup>th</sup>, 2021



# Funded to Production



All future costs - drilling, PEA updates, pre-feasibility costs, community relations, environmental expenses, metallurgical studies, engineering & feasibility - will be funded by Nexa to earn its 70%-interest in the project.

- ✓ Solitario will not pay back any of these costs.

After feasibility, Nexa will fund Solitario's 30% participating interest through a loan to Solitario.

- ✓ Interest rate will be at Nexa's cost of funds – currently about 5%.

Solitario will fund loan repayment to Nexa through 50% of the net cash flow from its 30% participating interest.

- ✓ Allows for significant cash flow to be achieved early.

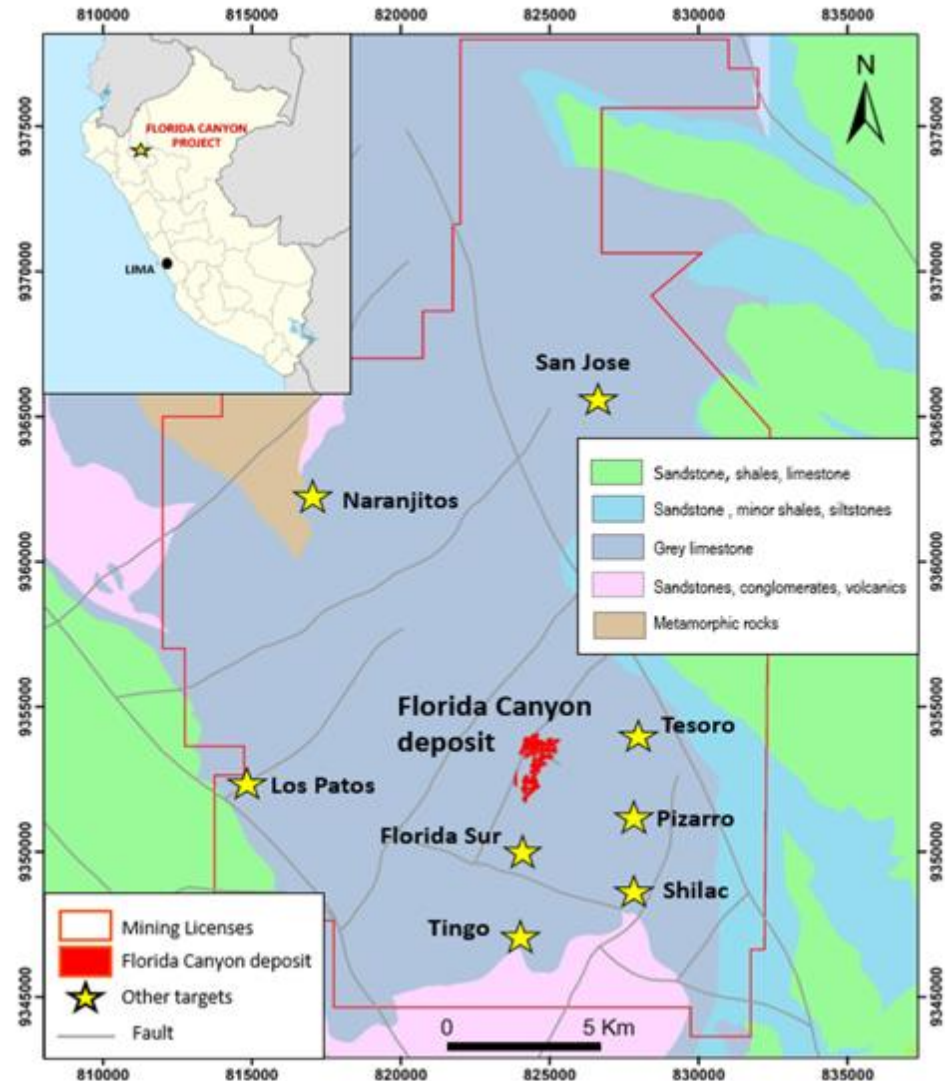
Solitario achieves production without capital risk or equity dilution!



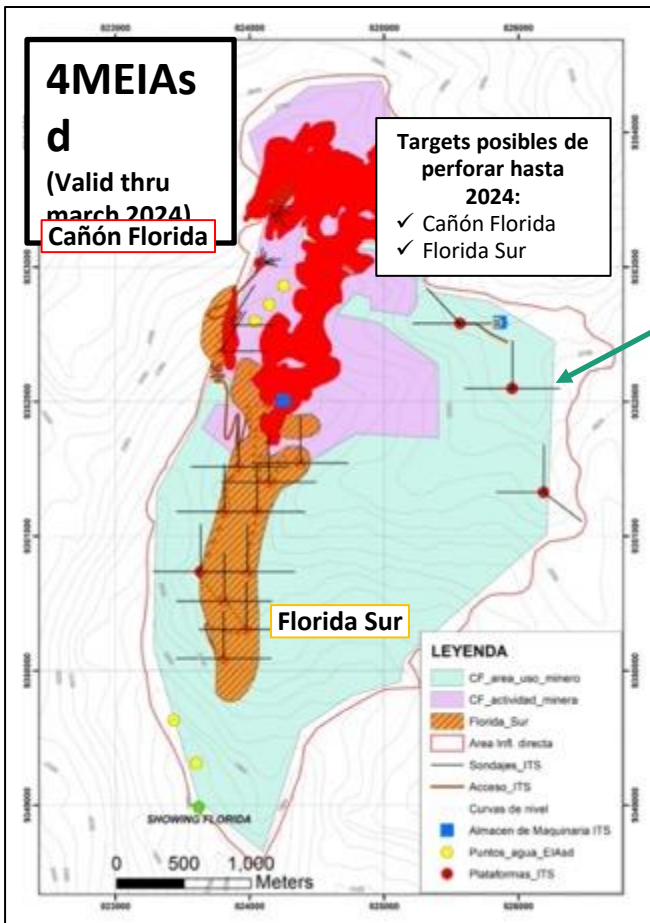
# Game Changing Exploration Potential

Multiple exploratory targets have been identified immediately south, north, east and west of the Florida Canyon deposit with mineralized outcrops.

- ✓ Targets to the south appear to be extensions to the Florida Canyon mineralized corridor.
- ✓ Drill testing some of these satellite targets is planned as they have the potential to significantly increase the mineral resource at the Florida Canyon Project.



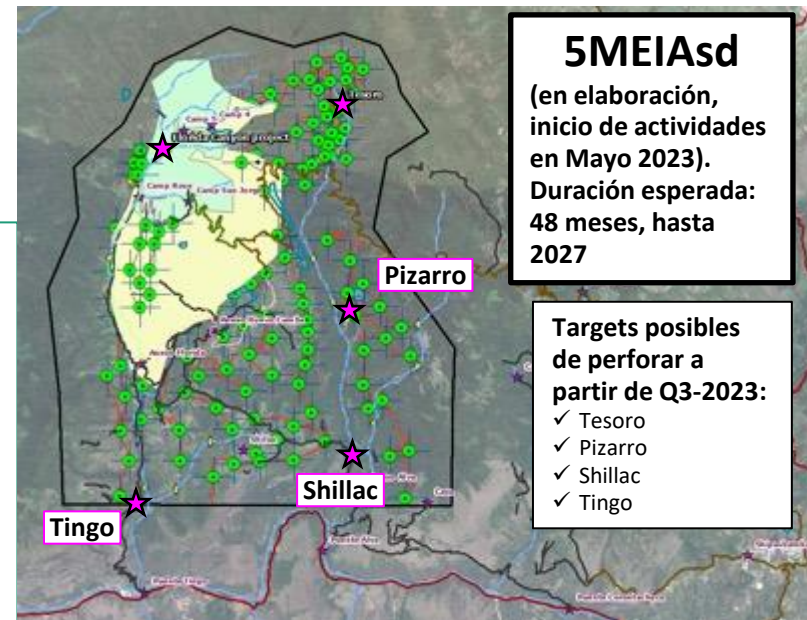
## BONGARÁ DRILL SITE PERMITTING



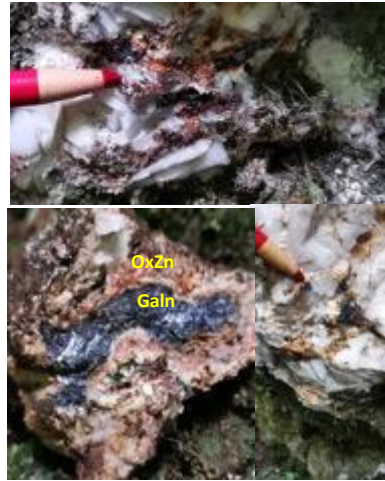
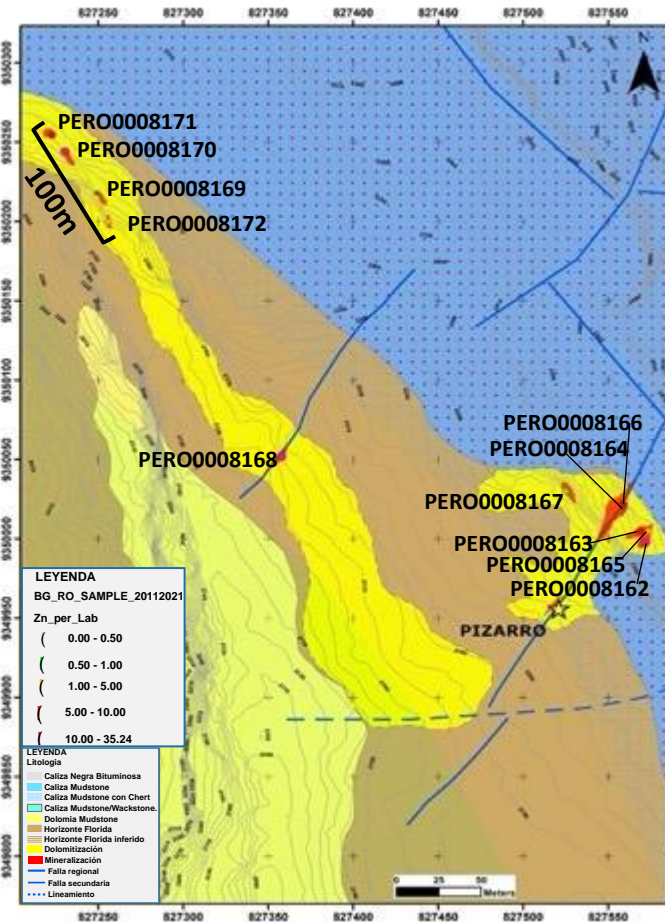
FLORIDA CANYON PROJECT			
PERMISOS Y AUTORIZACIONES	ENTIDAD	APROBACIÓN	VIGENCIA
Cuarta Modificatoria del Estudio de Impacto Ambiental Semidetallada (4MEIAsd) RD_137_2018_MINEM_DGAAM	MINEM	19/07/2018	4 years
Certificación de Inexistencia de Restos Arqueológicos – CIRA2012-010-ANC	MINCU	7/04/2012	No Caduca
Autorización de Usos de Agua con fines Exploratorios R.D. 383-2020-ANA-AAAM	ALA	20/07/2020	2 years
ITS - Informe Técnico Sustentatorio - 2021	MINEM	07/05/2021	12 months

### 5MEIAsd:

- Baseline field data collection in process
- Dry season data collected
- Rainy season to be collected early 2022
- To be enter mid 2022
- Approval expected for mid 2023



# PIZARRO SHOWING GRADE OF 2021 SURFACE SAMPLES



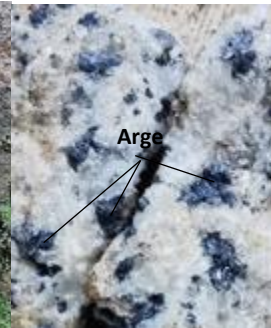
**PERO0008169**



**PERO0008170**



**PERO0008171**



*Hemimorfita de textura coloformica y OxZn en cavidades.*

**PERO0008168**



**PERO0008172**

Sample	Ag_ppm	Pb_per	Zn_per
PERO0008168	0.98	0.06	31.01
PERO0008169	40.6	6.83	0.30
PERO0008170	4.52	0.09	20.00
PERO0008171	19.9	6.57	8.16
PERO0008172	14.65	0.04	3.91

# 2022 Bongara Work Program

- Completion of access road to the project and local communities to fulfill community sustainability commitments
- Significant metallurgical testing program to achieve prefeasibility level
- Surface exploration to better define drill targets and to discovery new surface showings
- Complete phase 5 permit that allows for massive new drilling effort covering five new target areas (approximately 80 drill sites)



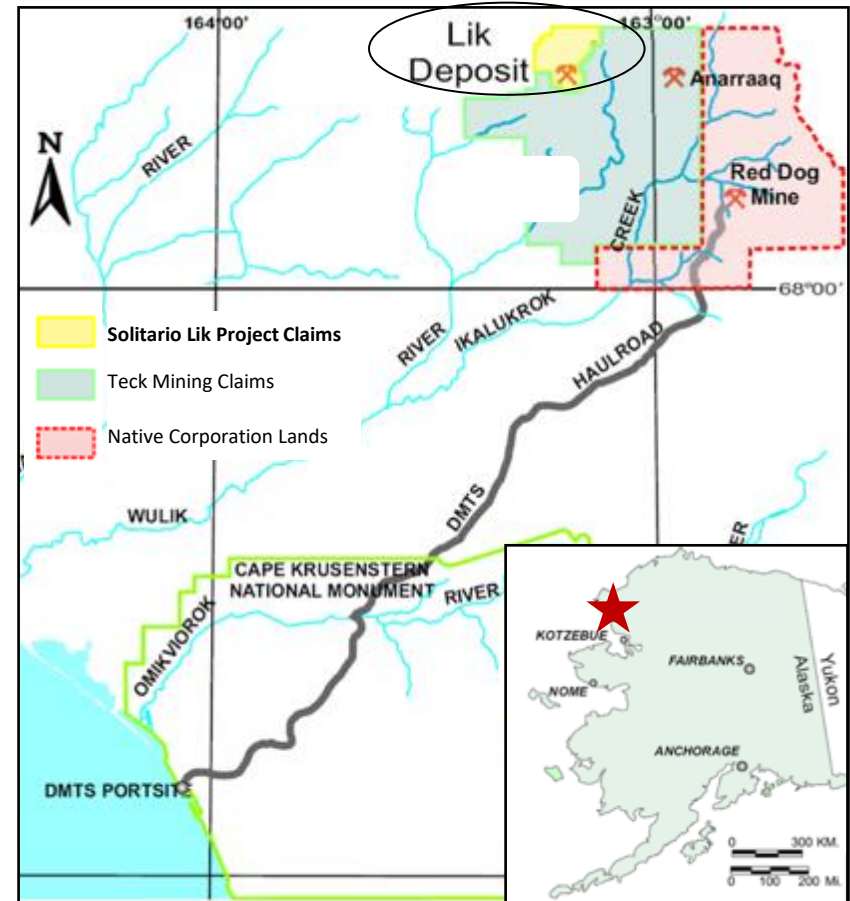
# Lik Zinc Project, Alaska



- Mining claims covering 6,075 acres located ~14 miles from Teck's Red Dog Mine, in mining friendly jurisdiction
- 50/50 joint venture with Teck; Solitario is the operator
- Large tonnage, high-grade, open-pittable resources, with significant underground expansion potential
- Clean metallurgy



## Lik Regional Map





# Lik Project Resource



## 100% Basis

**Indicated**

**4.54 B Lbs.  
11.37% ZnEq**

**Inferred**

**1.37 B Lbs.  
11.66% ZnEq**

## Solitario's 50% Share

**Indicated**

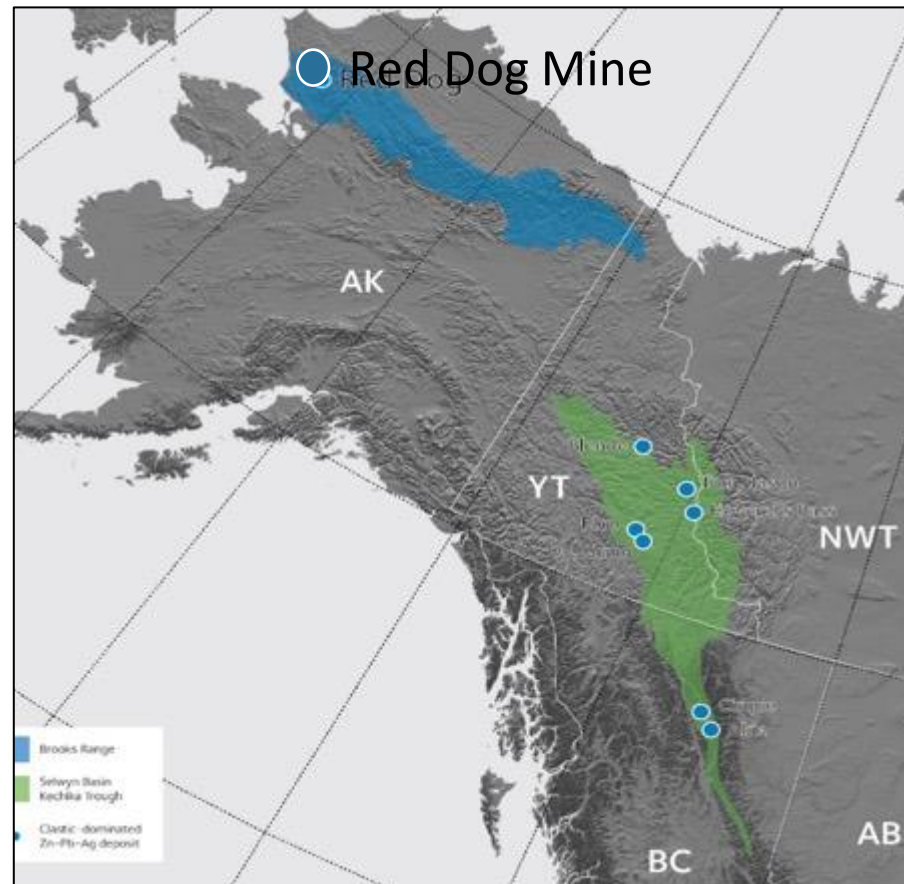
**2.2 B Lbs.  
11.37% ZnEq**

**Inferred**

**0.69 B Lbs.  
11.66% ZnEq**

*Price assumptions for Zinc-Equivalent grade: Zinc \$1.20/lb; Lead \$1.00/lb; Silver \$16.50/oz.*

# Lik Project, Alaska (proximity to Red Dog)



# Lik Joint Venture Considerations



- Teck Resources is the third largest zinc producer in the world and operates the largest and most profitable zinc mine in the world - Red Dog. Red Dog is a core asset of Teck. Red Dog is a relatively easy 14-mile ore haul from Lik.
- Red Dog production is subject to costly (35% NPI) and increasing (to 50% in 2032) to NANA Native Corporation. Lik is not subject to a NANA Royalty.
- Joint Venture relationship is excellent.
- During the past three years, Teck has become increasingly more engaged and enthusiastic concerning Lik. Teck wants to become majority owner and manager of the JV.



# Nexa Acquires Karmin - 2019



## Karmin Transaction Valuation

- Nexa Resources acquires remaining 30% interest in Aripuana Zinc project, acquiring all shares of Karmin Exploration TSX:V- KAR.
- Karmin shareholders received approximately US\$0.77 per share or US\$70 million, representing a 30% premium to the previous days closing share price

## Key Comparisons between Karmin-Aripuana and Solitario-Florida Canyon

- Florida Canyon is 25% higher grade
- Florida Canyon has better quality zinc concentrate (low iron/higher grade)
- Aripuana deposit has larger defined tonnage; but huge exploration upside exists at Florida Canyon
- Karmin had to independently fund its 30% share of construction costs for Aripuana; Nexa will fund Solitario's 30% share of construction funding for Florida Canyon

# Value and Upside

➔ SIGNIFICANTLY UNDERVALUED HIGH-GRADE ZINC ASSETS

Value

Zn



➔ EXCEPTIONAL POTENTIAL FOR MAJOR GOLD DEPOSITS AT GOLDEN CREST

Upside

Au





*Lik Zinc Project, Alaska*



*Florida Canyon Zinc Project, Peru*

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## ■ **Christopher Herald**, *President, CEO & Director*



Mr. Herald has served as Chief Executive Officer since June 1999, President since 1993, and a director of Solitario since 1992. Prior to its acquisition by Kinross Gold Corp., Mr. Herald also served in various capacities for Crown Resources from 1987-2006, including, Chief Executive Officer, President and director. Prior to joining Crown, Mr. Herald was a Senior Geologist with Echo Bay Mines and Anaconda Minerals. Mr. Herald serves as non-executive Chairman of Viva Gold Corp. Mr. Herald received a M.S. in Geology from the Colorado School of Mines and a B.S. in Geology from the University of Notre Dame.

## ■ **Walter H. Hunt**, *Chief Operating Officer*



Prior to his appointment as COO in June of 2008, Mr. Hunt was Vice President - Operations and President - South American Operations of Solitario since June 1999. He also served as Vice President - Peru Operations from 1994 until 1999. Mr. Hunt was Vice President Operations of Crown Resources from 1994 to 2006. Mr. Hunt has over 30 years of exploration, development and operational experience with Anaconda Minerals, Noranda and Echo Bay Mines where he served as Superintendent, Technical Services and Chief Geologist at Echo Bay's Kettle River Operations. Mr. Hunt received his M.S. degree in Geology from the Colorado School of Mines and a B.S. degree from Furman University.

## ■ **James R. Maronick**, *Chief Financial Officer*



Mr. Maronick has served as Chief Financial Officer and Secretary/Treasurer of Solitario since 1999. He also served as Chief Financial Officer of Crown Resources from 1999 to 2006. Prior to that, Mr. Maronick served as Vice President - Finance and Secretary/Treasurer of Consolidated Nevada Gold Fields Corporation from November 1994 to September 1997. Mr. Maronick graduated with honors from the University of Notre Dame in 1977 with a BA in accounting and received his Masters degree in Finance with highest honors from the University of Denver in 1986.

# Board of Directors



**Brian Labadie, Chairman of the Board** - Mr. Labadie has been a director of Solitario since June 2006 and Chairman since March of 2009. Mr. Labadie has over forty years-experience in the mining industry including experience as a mining engineer developing and operating mines, both as a mine manager and as a senior executive at Miramar Mining Corporation and Echo Bay Mines. Currently, he is an independent mining industry consultant. He was a former director of Crown Resources Corporation and Battle Mountain Gold Corporation. Mr. Labadie holds a Bachelor of Science degree in geological engineering from the University of Toronto.

**Gil Atzmon, Director** - Gil was the founder, Chairman, Chief Executive Officer and a Director of Zazu Metals before its acquisition by Solitario in June 2017. Mr. Atzmon has over 20 years' experience in the mineral resources sector including positions as a mining executive, investment banker, mining fund manager and geologist. Previously, Mr. Atzmon acted as VP, Corporate Development of Ivanhoe Mines Ltd., a global energy and mining specialist for BNP Paribas and Portfolio Manager for US Global Investors, Inc. Mr. Atzmon holds a Bachelor's degree in Geology and Geography from Columbia University and a Master Degree in Energy and Mineral Resources from the University of Texas.

**Joshua Crumb, Director** - Mr. Crumb is a founder, Director and Chief Financial Officer of Goldmoney Inc., a financial service and technology company, serving in this role since 2014. Mr. Crumb was previously an Executive Director at Goldman Sachs and also held positions within the Lundin group of companies. Mr. Crumb served as a founder and Director of Loma Vista Capital, and an independent Director of Silver Bull Resources Inc., Astur Gold Corp and Zazu Metals. Mr. Crumb holds a Master's of Science degree in Mineral Economics, a Graduate Certificate in International Political Economy, and a BS degree in Engineering from the Colorado School of Mines.

**Jim Hesketh, Director** - Mr. Hesketh has over 35 years' experience in the mining industry and is presently serving as President, CEO and Director of Viva Gold Corp. Previously, Mr. Hesketh served as President, CEO and Director of Atna Resource, Ltd, and its' predecessor Canyon Resources Corporation. He was also a principal mining engineer and VP of NM Rothschild & Sons. Mr. Hesketh holds a BS in Mining engineering and an MS in Mineral economics, both from the Colorado School of Mines.

**Christopher Herald, Director** - See management slide

**John Labate, Director** - Mr. Labate is a seasoned executive with over thirty years of financial management and accounting experience. Currently he serves as CFO of Gold Resource Corporation. He has previously served as CFO of Golden Star Resources, Ltd., Constellation Cooper Corporation, Crown Resources Corporation and Applied Optical Technologies. Mr. Labate received a bachelor's degree in Accounting from San Diego State University.

**Debbie Mino Austin** - Ms. Mino-Austin joined the board in April 2022. She worked for more than thirty years with at Solitario, most recently as Vice-President of Investor Relations, before retiring in 2018. She has a unique understanding of corporate operations and the mining industry in general, the structure and goals of Solitario as well the investment community associated with the junior mining industry. Ms. Mino-Austin currently serves on the board of directors of the Yoakum National Bank in Yoakum, Texas. Ms. Mino-Austin received her B.S. degree magna cum laude from Texas A&M University.