

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

*Solitario Resources Corp.
Gold Forum Americas Conference
September 18-20, 2023*

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, 2022, 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.

Value and Upside

Three Tier One Assets



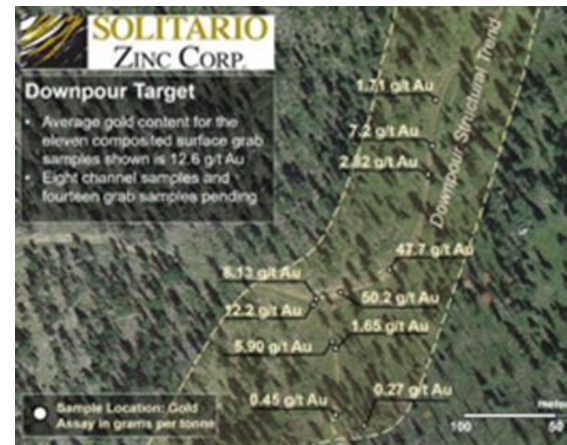
➔ SIGNIFICANTLY UNDERVALUED
HIGH-GRADE ZINC ASSETS

Value
Zn



➔ EXCEPTIONAL POTENTIAL FOR MAJOR
GOLD DEPOSITS AT GOLDEN CREST

Upside
Au



Northern Black Hills: Prolific Gold Endowment



Wharf Mine (Coeur):
8.2 Moz Au



Homestake Mine (Barrick):
68 Moz Au

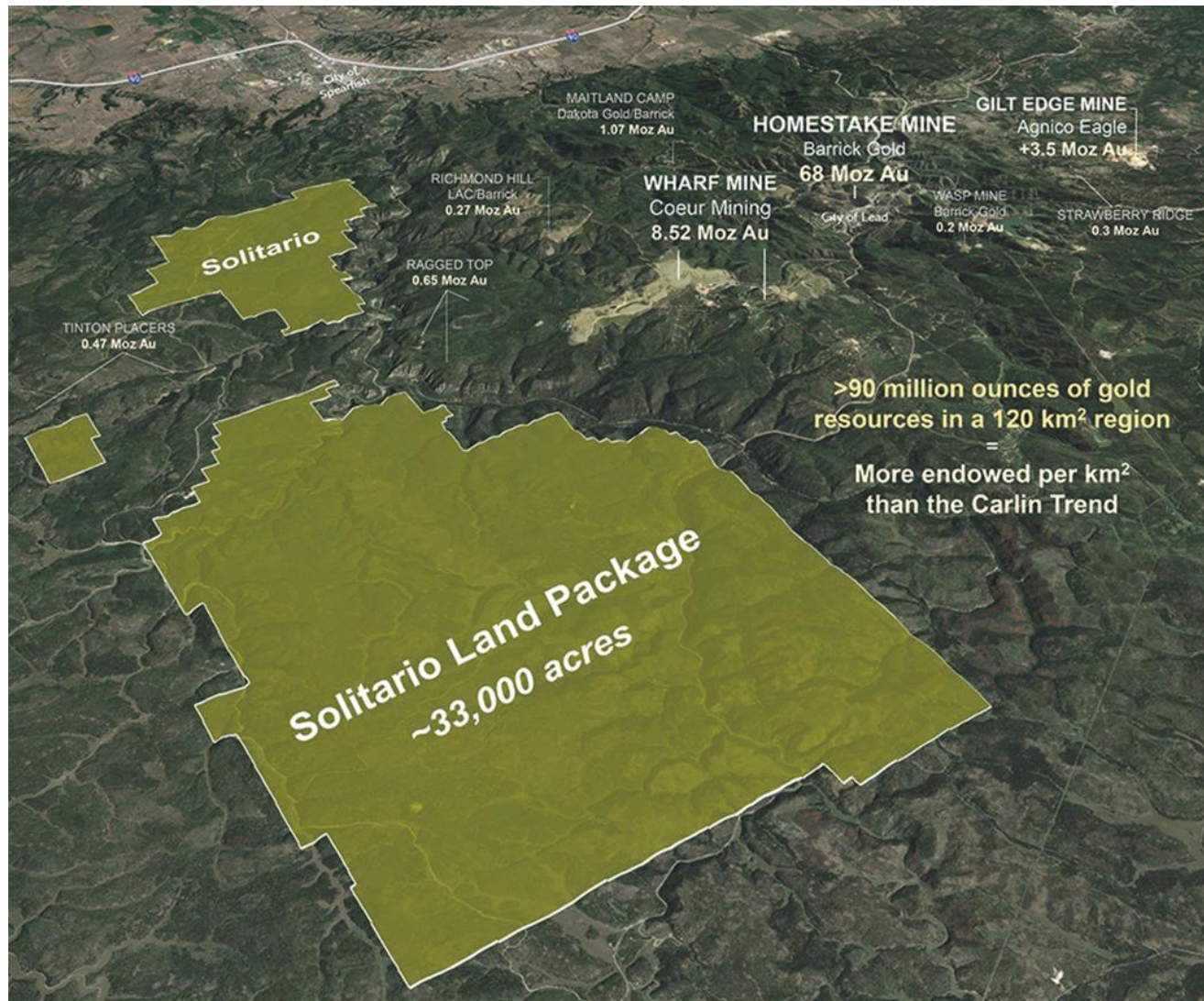


Gilt Edge (AgnicoEagle)
+4.0 Moz Au

NEARLY 80 MILLION OUNCES OF GOLD IN A 200 KM² AREA EQUIV. GOLD ENDOWMENT PER UNIT AREA AS THE CARLIN TREND

Northern Black Hills, S. Dakota

A Super Giant Gold Province



Golden Crest Project

33,000 acres 100%-owned

- One of the largest gold-bearing hydrothermal systems in the world – 40 Km²
- Multiple +10 million-ounce targets adjacent to an 80-million-ounce gold endowment (Homestake-Wharf) – these are original discoveries - never been drilled
- Super high-grade gold values in three stratigraphic horizons identified on surface
- Two most-prolific gold horizons are only 250 to 400 meters below surface



Newmont increases its ownership in Solitario to 9.95% with US\$2.5 million strategic investment at 10% premium to market (August 2, 2023)

High-Grade Gold Across Golden Crest Project



Sample 2589
126 g/t Au



Sample DW02
38.4 g/t Au



Sample 2859
43.0 g/t Au
113 g/t Ag



Sample 2587
52.3 g/t Au



Sample 2696
87.3 g/t Au



Sample 2863
94.2 g/t Au
86.7 g/t Ag

Channel and Grab Samples

Downpour Channel Samples

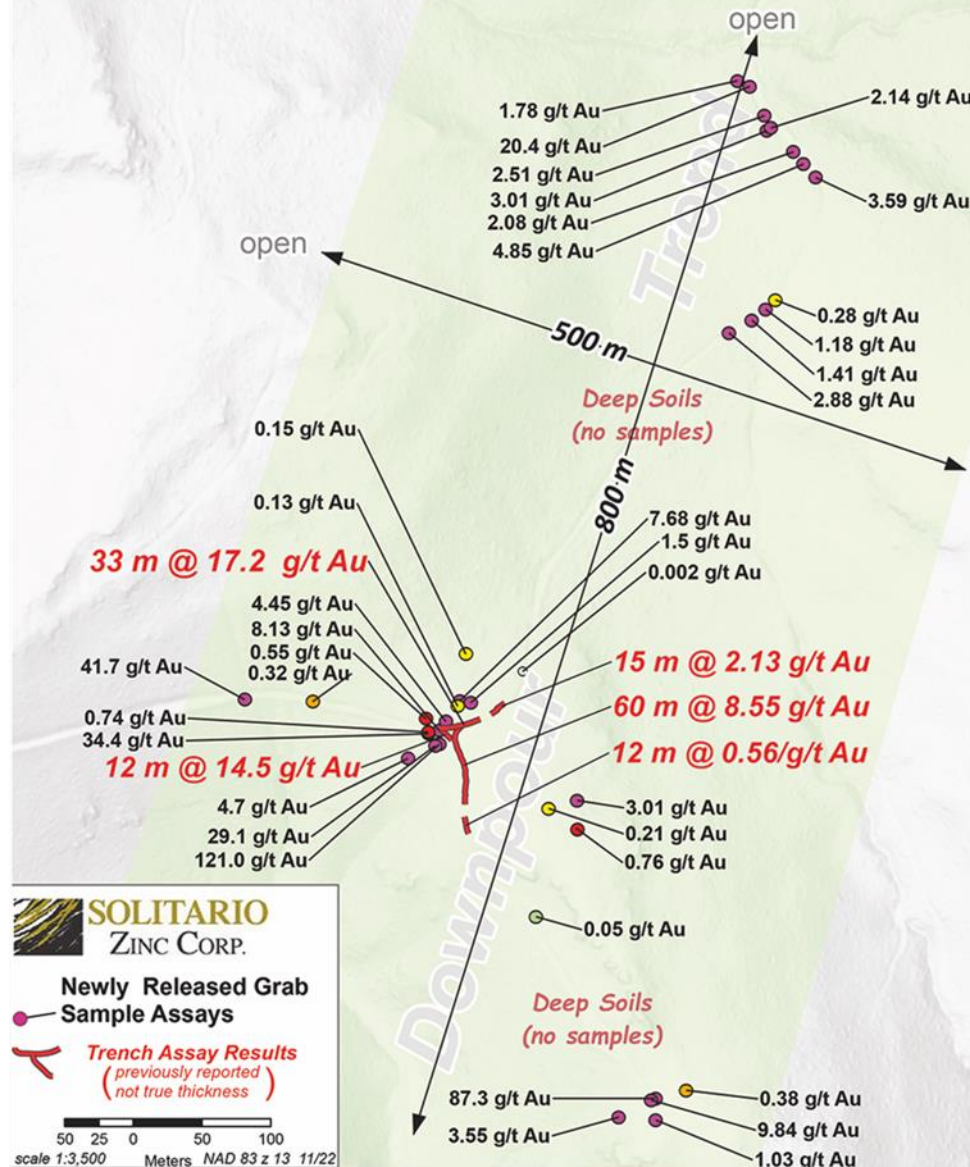


Downpour Bedrock Grab Sample

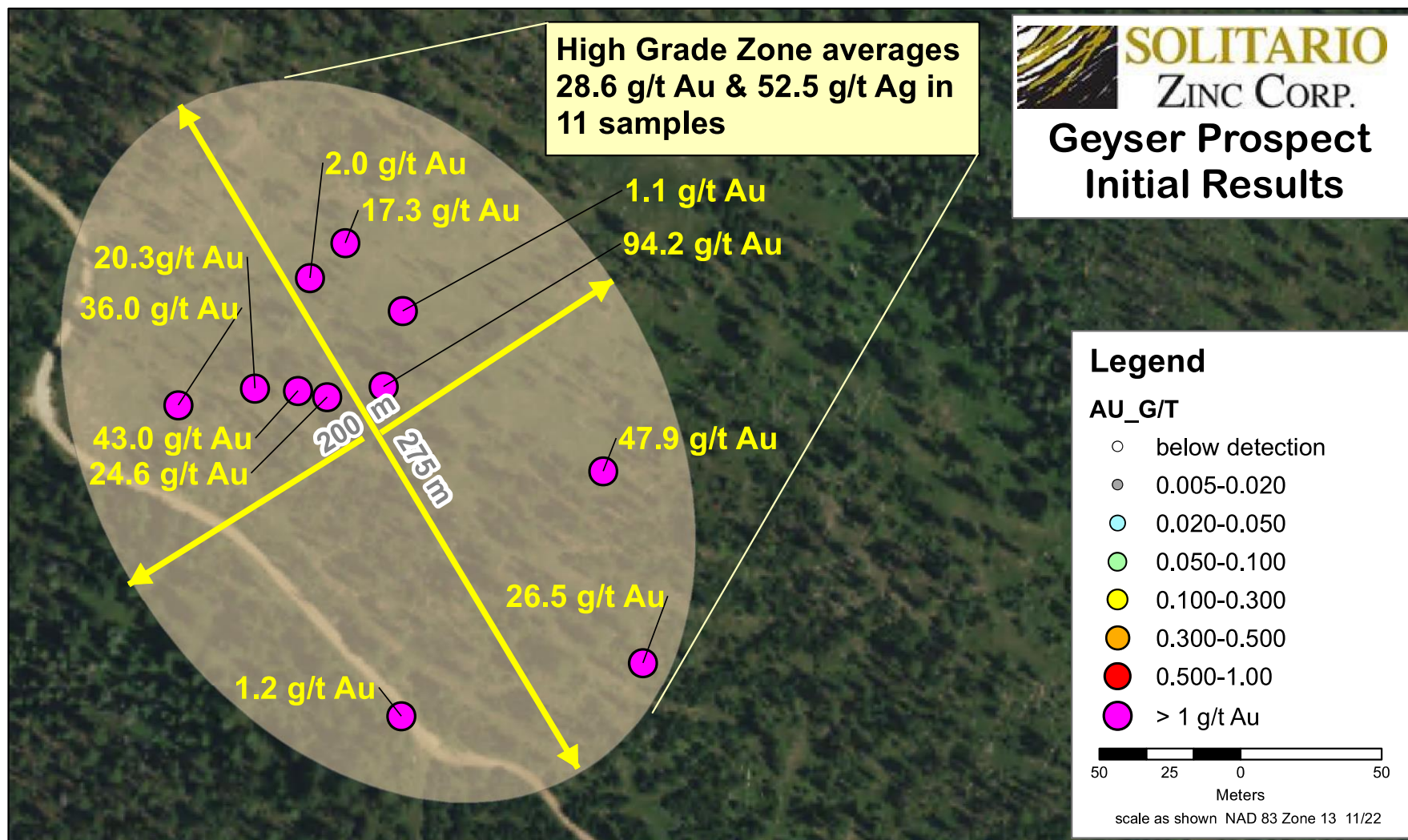




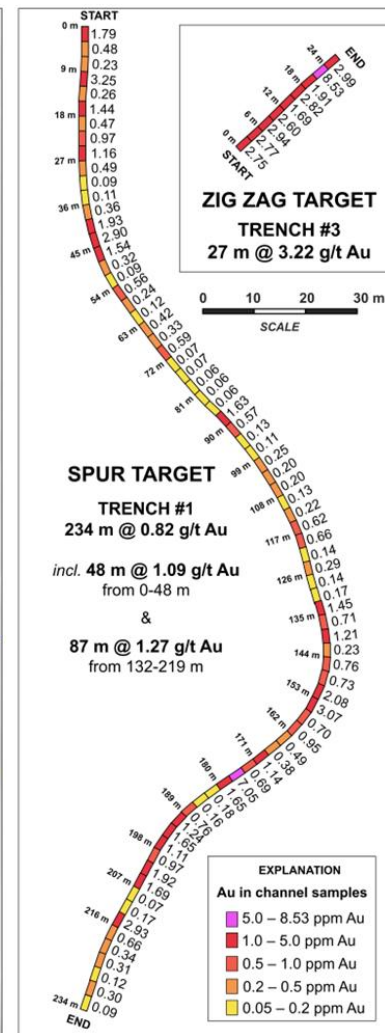
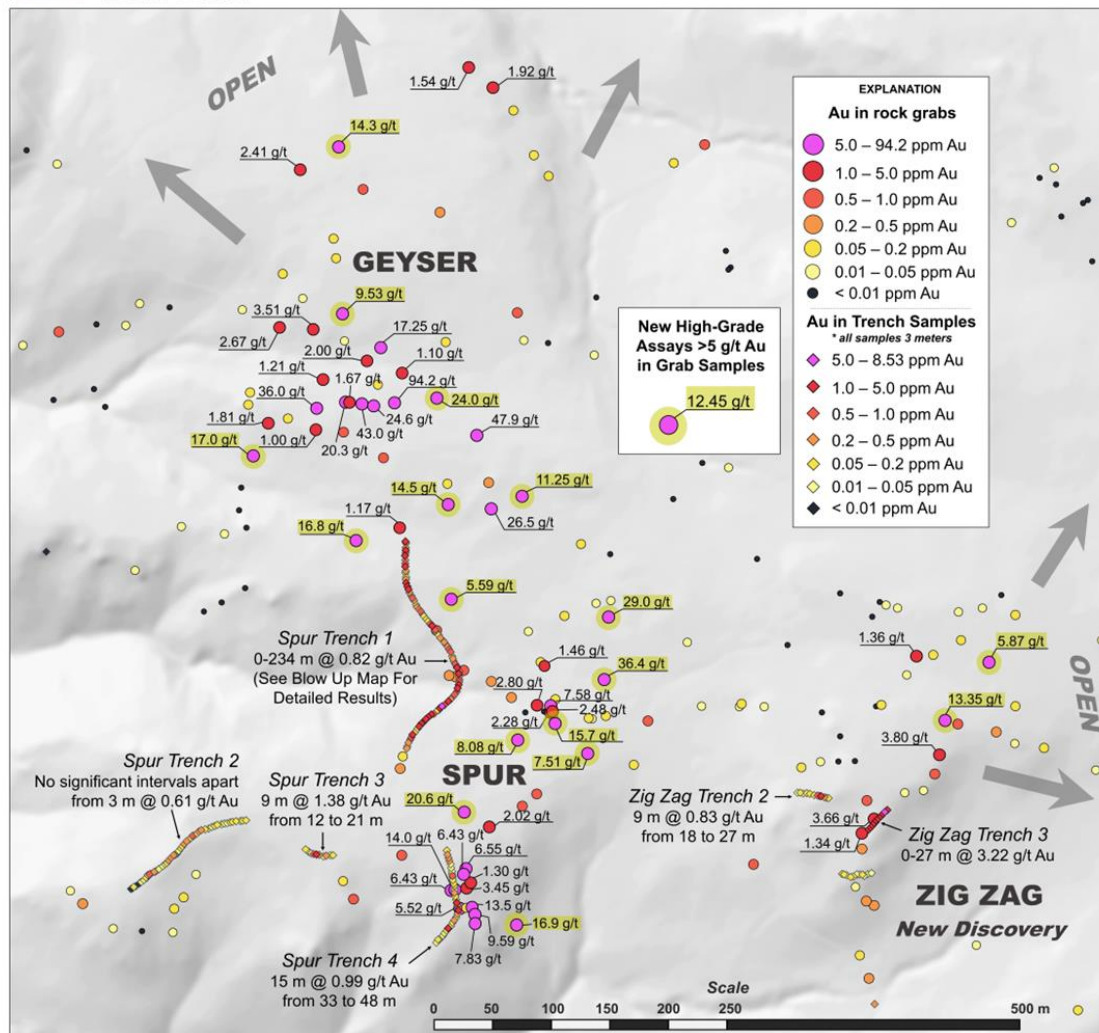
Surface Rock Grab Sample & Trench Assays Downpour Target, Golden Crest Project, SD



Initial Geyser High-Grade Grab Sample Assay Results

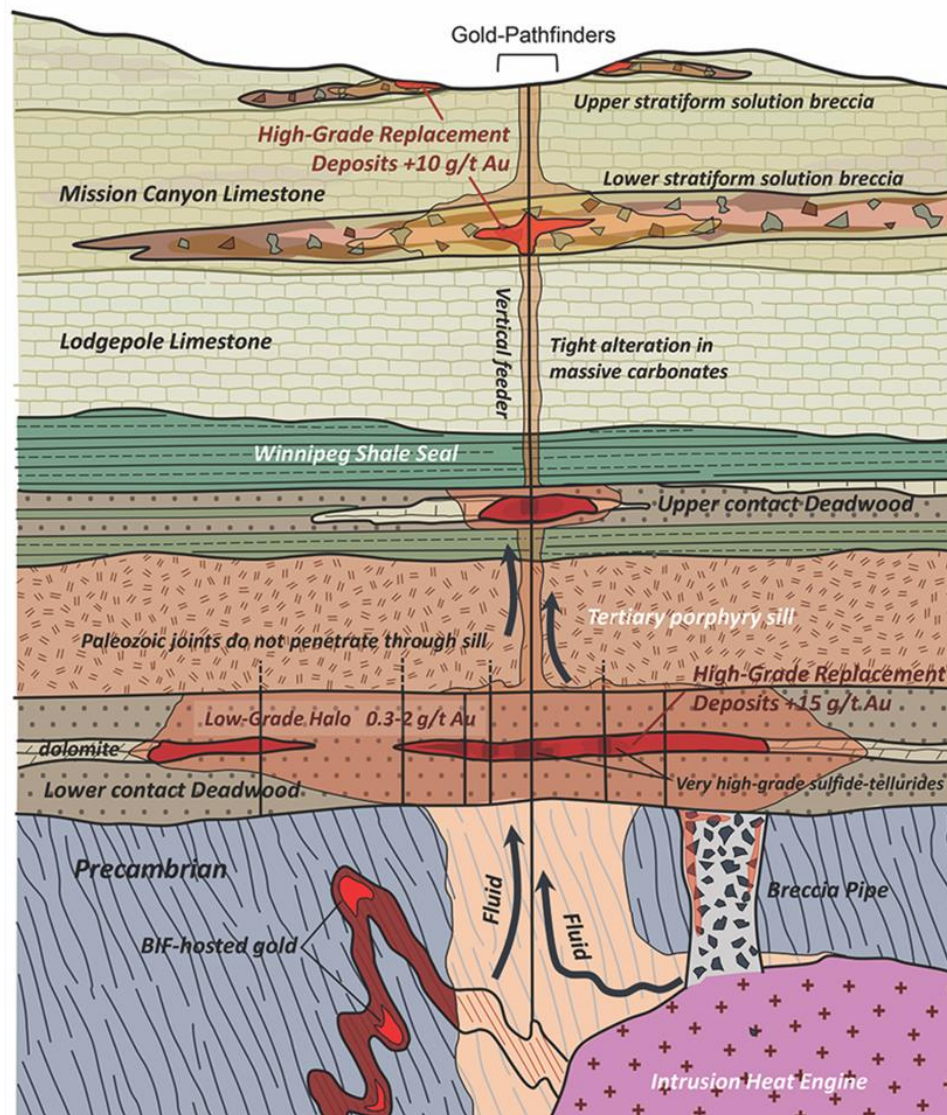


Updated Results From High-Grade Exploration Target: Geyser - Spur - Zig Zag



Initial Drilling Scheduled in 2023

- Golden Crest has been subjected to widespread hydrothermal gold mineralization affecting receptive carbonate rocks over a vertical dimension of at least 200 meters with a lateral footprint of 40 km² (and growing).
- Drilling permit process nearly complete.



World Class Partners

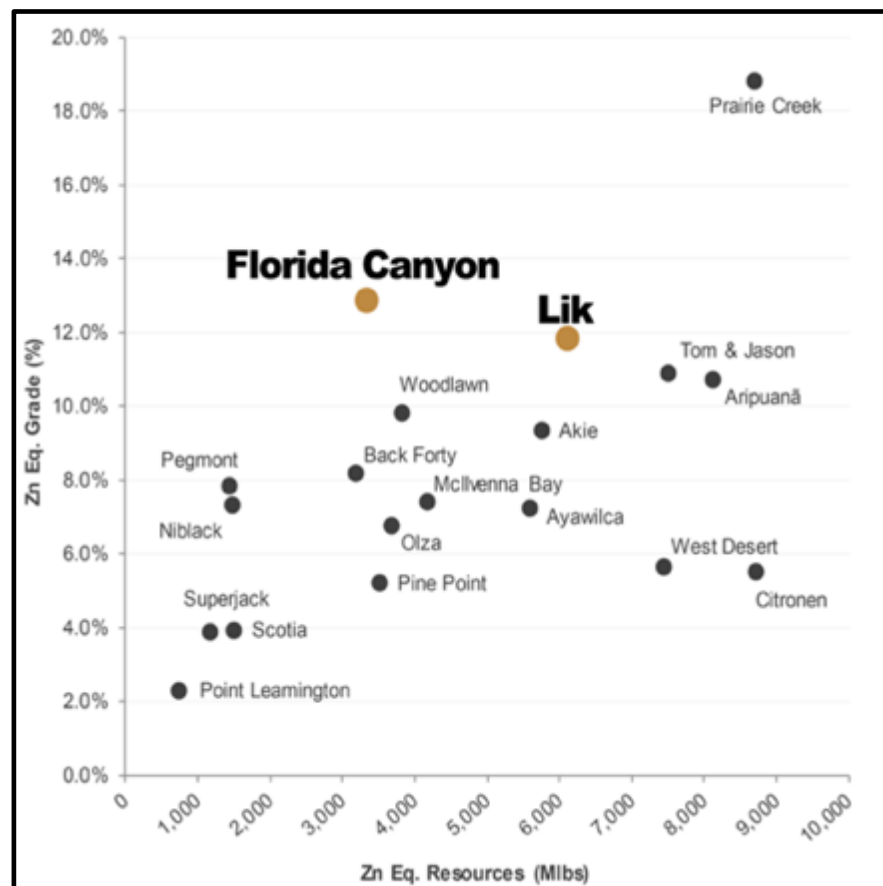
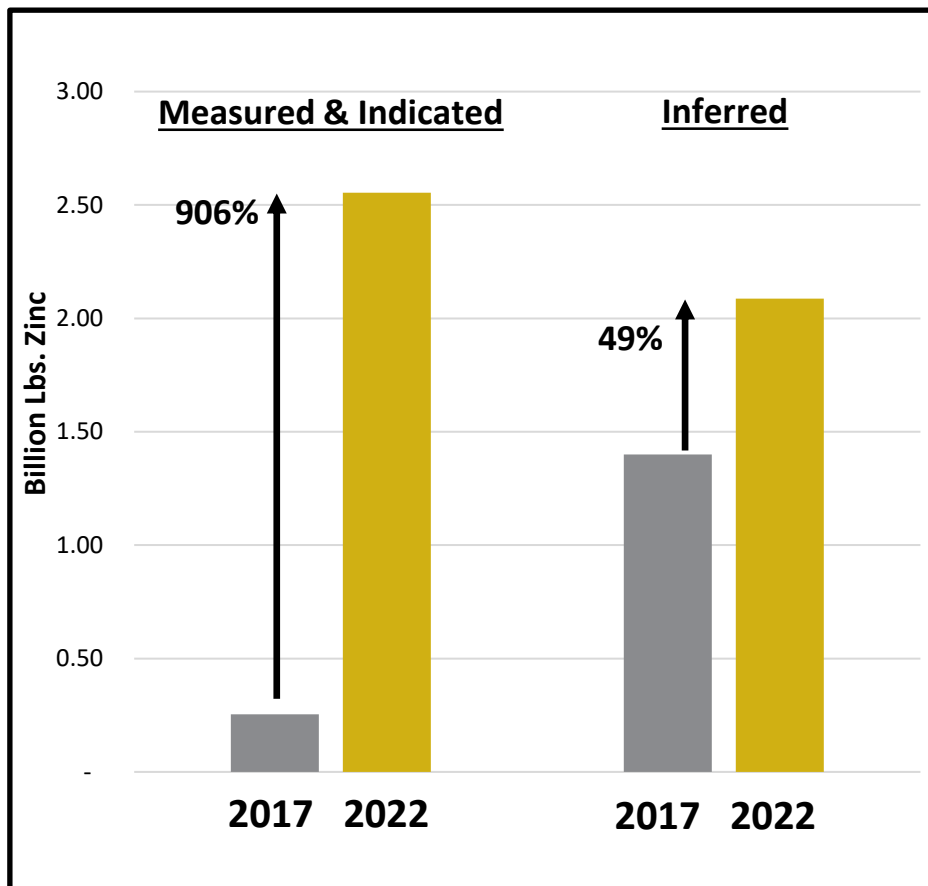
Partnering with well funded, leading zinc producers reduces costs, risk and capital requirements

Florida Canyon Zinc Project held jointly with Nexa Resources S.A., 5th largest zinc producer with three underground zinc mines and large zinc smelter in Peru.

Lik Zinc Project in partnership with Teck Resources, 3rd largest zinc producer with worlds largest zinc mine (Red Dog) situated just 11 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 \$80 million in partner investments (526 drill holes; 134,416 meters)

Preliminary Economic Assessment demonstrates robust economics

Funded to Production

Significant resource increase announced February 16th, 2021

4,000-meter drilling program scheduled beginning in September 2023



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

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!

Florida Canyon Zn Project



Outstanding

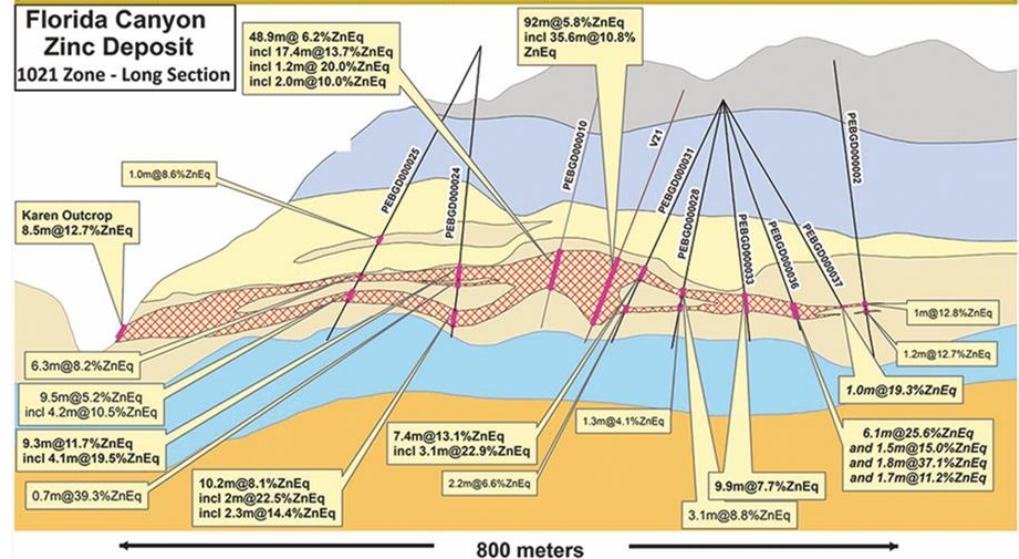
- Economics
- Resources
- Expansion Potential

Florida Canyon Zinc Price Sensitivity								
Zn Price	\$1.00		\$1.10		\$1.20		\$1.30	
	Pre-tax	After-tax	Pre-tax	After-tax	Pre-tax	After Tax	Pre-tax	After Tax
FCF (\$ millions)	408	267	535	352	662	437	788	521
NPV 8% (\$ millions)	187	96	263	147	339	198	414	248
IRR	24.5%	17.0%	29.7%	21.0%	34.5%	24.7%	38.9%	28.1%

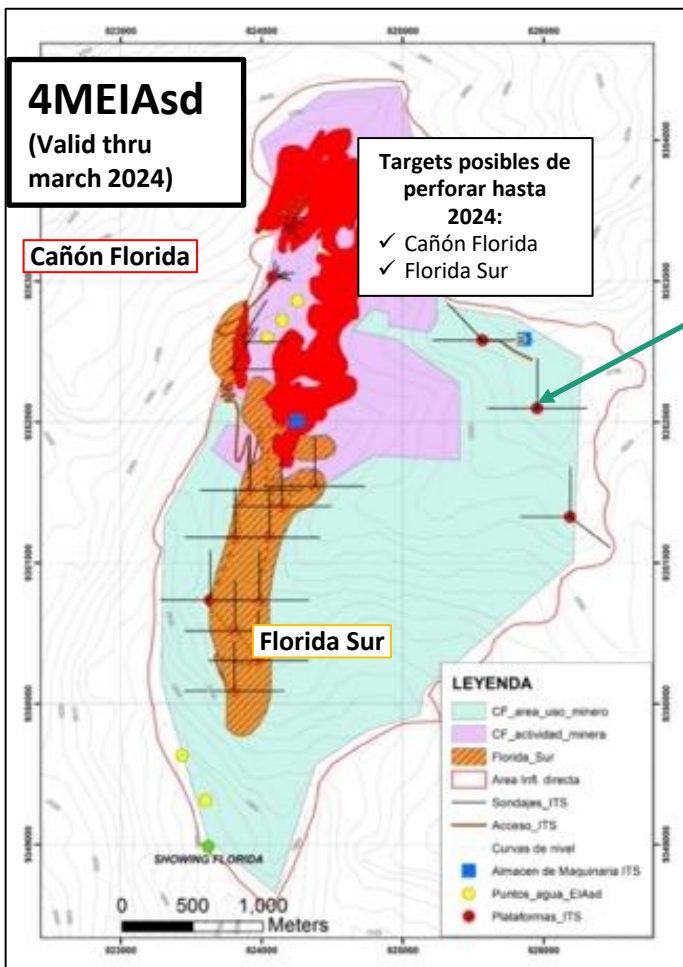
Pb: \$1.00; Ag: \$16.50

2021 Florida Canyon Mineral Resource Estimate

Category	Tonnes Millions	Zinc %	Lead %	Silver g/t	ZnEq %	Contained Metal Zinc-Equivalent Billion Lbs.	Contained Silver Million Ozs.
Measured	0.81	11.32	1.40	15.4	12.78	0.29	0.40
Indicated	1.63	10.28	1.31	14.9	11.66	0.42	0.78
M + I	2.44	10.63	1.34	15.05	12.04	0.65	1.18
Inferred	14.86	9.63	1.26	11.3	10.89	3.57	5.39



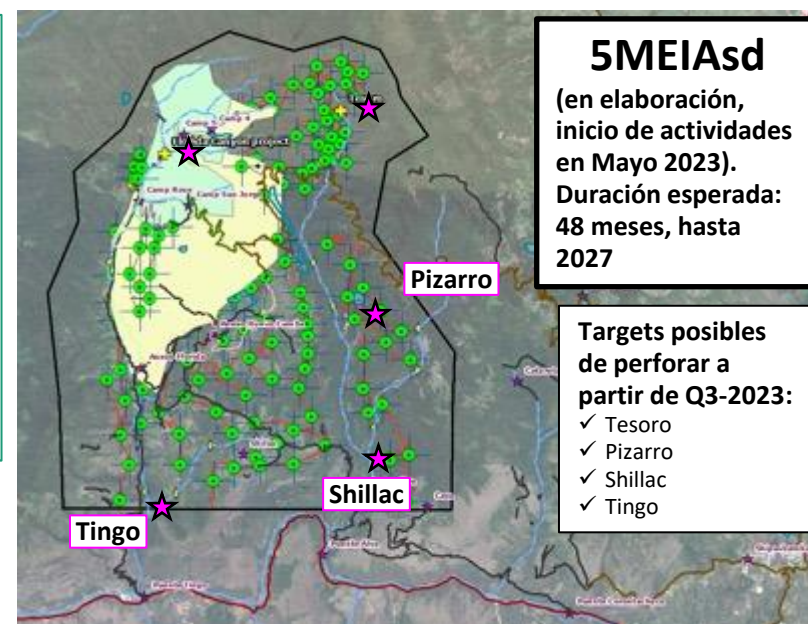
Florida Canyon Drill Site Permitting



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

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



2023 Florida Canyon Work Program



- 4,000 + meter core drilling program – Florida Canyon south extensions
- Completion of access road to the project and local communities to fulfill community sustainability commitments
- Significant metallurgical testing program to achieve prefeasibility level
- Complete phase 5 permit that allows for massive new drilling effort covering five new target areas (approximately 80 drill sites)



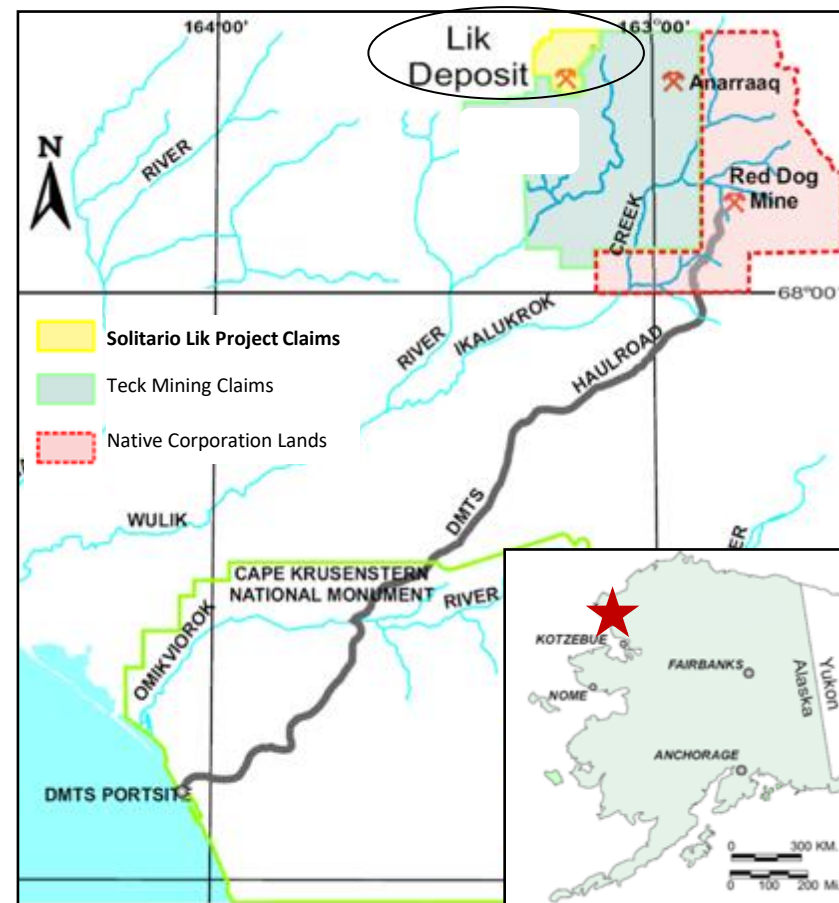
Lik Zinc Project, Alaska



50/50 Joint venture with



- Drilling underway in September-23
- Mining claims covering 6,075 acres located 11 miles from Teck's Red Dog Mine, in mining friendly jurisdiction
- Large tonnage, high-grade, potentially open-pittable resource, with significant underground expansion potential
- Clean metallurgy



Lik Regional Map

Lik Zinc Project, Alaska



Proximity to Red Dog Mine



Lik Project

Resources

100% Basis

Indicated

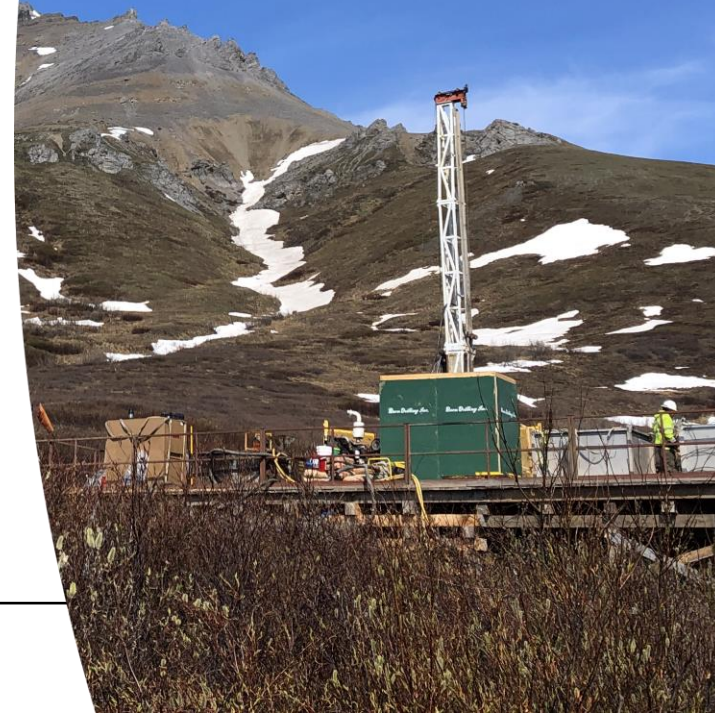
**4.54 B Lbs.
11.37% ZnEq**

Inferred

**1.37 B Lbs.
11.66% ZnEq**

2024 Catalysts

- *Drilling at Golden Crest – up to 10,000 meters*
- *Excellent potential for additional Golden Crest surface discoveries*
- *Drilling at Florida Canyon*
- *Drilling at Lik*



Capital Structure



Current Price Sept. 14, 2023	US\$0.60/C\$0.80	Cash and Securities	US\$6.0 Mil
Shares Outstanding	69.0 Mil	Annual G&A	US\$1.4 Mil
Options	5.5 Mil	Analyst	Heiko Ihle, H.C. Wainwright
Warrants	None		XPL price target: US\$0.90
Fully Diluted	74.5 Mil		
52-Week High	US\$0.77/C\$1.07	Major Shareholders	<ul style="list-style-type: none"> • Newmont: 6.9 Mil • Mgmt. & Dirs.: 5.6 Mil • Zebra Trust.: 3.9 Mil (Lukas Lundin)
52-Week Low	US\$0.46/C\$0.66		
Market Cap	US\$42 Mil/C\$56 Mil		

Value and Upside

➔ SIGNIFICANTLY UNDERVALUED HIGH-GRADE ZINC ASSETS

Value

Zn



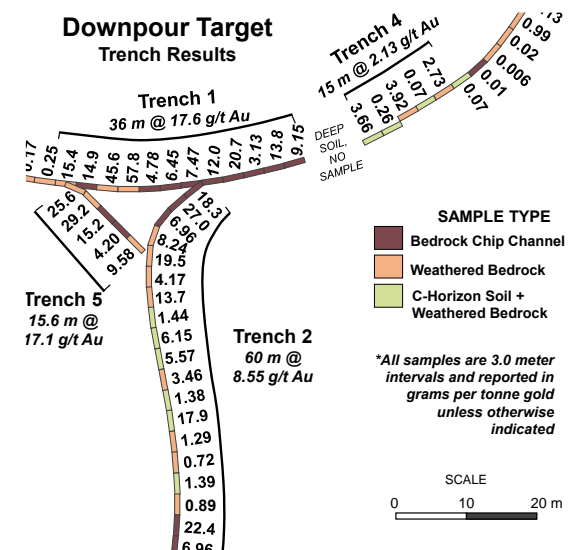
➔ EXCEPTIONAL POTENTIAL FOR MAJOR GOLD DEPOSITS AT GOLDEN CREST

Upside

Au



Strategic Investment



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.



Lik Zinc Project, Alaska



Florida Canyon Zinc Project, Peru

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