



Solitario Extends Golden Crest Trenching Results To 33 meters @ 17.19 GPT Gold and 60 Meters @ 8.55 GPT Gold

DENVER, CO – October 4, 2022 - Solitario Zinc Corp. (“Solitario”) (NYSE American: XPL; TSX: SLR) is pleased to report that it has received assay results for an additional 23 surface trench samples for the Downpour prospect at its Golden Crest Project, South Dakota. These new results significantly enhance the previously reported 27 surface trench samples and extend the Downpour Zone mineralization in three directions (see [Downpour Zone Image](#) for a detailed map depicting the relative orientation of all five trenches).

The combined trenching highlights include:

- **Trench 1: 33.0 meters (111.2 ft.) @ 17.19 grams per tonne gold (“gpt”)**
Additional new sampling at the western margin of Trench 1 increased the average grade and added to its length by six meters over the previously reported results.
- **Trench 2: 60.0 meters (202.2 ft.) @ 8.55 gpt gold**
Trench 2 is oriented roughly north-south and perpendicular to Trench 1. Thirty meters of significant new assay results were added to the southern end of the previously reported 30 meters.
- **Trench 3: 12.0 meters (40.4 ft.) @ 0.56 gpt gold**
No new assay results are reported for Trench 3.
- **Trench 4: 15.0 meters (50.6 ft.) @ 2.13 gpt gold**
Additional new sampling to the east of Trench 4 added three meters to reported mineralization. This trench is situated about 9 meters east of the end of Trench 1. Soil cover is too deep between Trench 1 and 4 to obtain a representative sample.
- **Trench 5: 12.0 meters (40.4 ft.) @ 14.54 gpt gold**
Trench 5 is a new trench and all assays are newly reported. Trench 5 is roughly perpendicular to Trenches 1 and 2 and further confirms the high-grade nature of this area of Downpour.

Chris Herald, President and CEO of Solitario, stated: *“Our exploration team continues to expand exceptional surface gold mineralization at Downpour, and to confirm excellent continuity of mineralization. We are encouraged by recent work further afield at Downpour to gain a better understanding of the scope of this exciting new gold system. The Downpour system appears to be present for several hundred meters in at least two directions and remains open. In addition to our work at Downpour, we have collected approximately 700 rock and trench samples from other newly discovered prospects over a widespread area on Solitario’s large and*

expanding land position. These samples are in-process for gold assays, and we look forward to reporting new results for the remainder of the year.”

Table 1: Downpour Zone Trench Assay Results*
(Samples reported in bold are newly released assays)

Sample Number	From/To Meters	Gold GPT
Trench 1		
316031	0.0 – 3.0	14.85
316030	3.0 – 6.0	45.60
2722	6.0 - 9.0	57.80
2628	9.0 – 12.0	6.45
2629	12.0 – 15.0	4.78
2630	15.0 – 18.0	7.47
2631	18.0 – 21.0	12.00
2632	21.0 – 24.0	20.70
2633	24.0 – 27.0	3.13
2634	27.0 - 30.0	13.80
2635	30.0 - 33.0	9.15
Average	0.0 - 33.0	17.79

Trench 3		
2718	0.0 – 3.0	0.46
2719	3.0 – 6.0	0.44
2720	6.0 - 9.0	0.93
2721	9.0 – 12.0	0.40
Average	0.0 - 12.0	0.56

Trench 4		
2723	0.0 – 3.0	3.66
2724	3.0 – 6.0	0.26
2725	6.0 - 9.0	3.92
2726	9.0 - 12.0	0.07
316023	12.0 - 15.0	2.73
Average	0.0 – 15.0	2.13

Sample Number	From/To Meters	Gold GPT
Trench 2		
2708	0.0 – 3.0	18.3
2709	3.0 – 6.0	27
2710	6.0 - 9.0	6.96
2711	9.0 – 12.0	8.24
2712	12.0 – 15.0	19.5
2713	15.0 – 18.0	4.17
2714	18.0 – 21.0	13.65
2715	21.0 – 24.0	1.44
2716	24.0 – 27.0	6.15
2717	27.0 – 30.0	5.57
316036	30.0 - 33.0	3.46
316037	33.0 - 36.0	1.38
316038	36.0 - 39.0	17.9
316039	39.0 - 42.0	1.29
316040	42.0 - 45.0	0.72
316041	45.0 - 48.0	1.39
316042	48.0 - 51.0	0.89
316043	51.0 - 54.0	22.4
316044	54.0 - 57.0	6.96
316045	57.0 - 60.0	3.64
Average	0.0 – 60.0	8.55

Trench 5		
316032	0.0 - 3.0	29.20
316033	3.0 - 6.0	15.20
316034	6.0 - 9.0	4.20
316035	9.0 - 12.0	9.58
Average	0.0 - 12.0	14.53

* All non-bold samples were previously reported in releases dated March 1, 2022 and August 24, 2022.
True width/thickness of mineralization cannot be determined because of the lack of sufficient outcrop.

Sampling Methodology, Chain of Custody, Quality Control and Assurance

The collection of all trenching samples reported in this release was supervised by project geologists, including chain of custody. Trench samples were systematically collected using non-mechanized hand tools. Continuous sampling was conducted along the length of each trench at three-meter intervals. Samples were then categorized into one of the following three categories:

1. **Bedrock:** >75% is fresh massive bedrock with <25% weathered subcrop
2. **Weathered Bedrock:** +60% is blocky subcrop with minor fresh bedrock ribs and soil
3. **C-Horizon Soil + Weathered Bedrock:** +60% is rocky soil with up to 40% weathered bedrock blocks

Bedrock and weathered bedrock were sampled by the chip channel method to the extent possible and are judged to be representative of bedrock mineralization. All samples were analyzed by ALS USA Inc., a laboratory accredited in accordance with the standards of ISO 17025:2017. The samples were crushed and pulverized, and sample pulps were analyzed using industry standard fire assay methods. A certified reference sample or duplicate was inserted at least every 20th sample.

Walter Hunt, COO of Solitario, is a qualified person as defined by NI 43-101, Standards of Disclosure for Mineral Projects, responsible for approving the scientific and technical information contained in this news release.

Drill Hole Permitting and Project Overview

Drill hole permitting has advanced significantly since its initiation in the spring of 2022, when a Plan of Operations was filed with the U.S. Forest Service. Environmental baseline studies in support of permitting documents required for drilling are currently in progress. Pending receipt of drill-hole permits, core drilling is scheduled to begin in the second quarter of 2023. Solitario's exploration programs in 2021 and 2022 have consisted of surface prospecting and a pilot level induced polarization geophysical survey. Surface prospecting has included sampling of bedrock, float rocks and soils.

The 28,000-acre Golden Crest property is located in southwestern South Dakota and constitutes a 100%-owned strategic land position along the western extension of the Homestake-Wharf mining district that has produced approximately 52 million ounces of gold with another 30 million ounces in historical resources. The project area is in a safe jurisdiction with highly developed infrastructure, an unbroken 145-year record of continuous gold mining, a skilled mining workforce, and a history of high-grade, underground mineable gold deposits.

About Solitario

Solitario is a natural resource exploration and development company focused on high-quality Tier-1 gold and zinc projects. The Company is traded on the NYSE American ("XPL") and on the Toronto Stock Exchange ("SLR"). In addition to its Golden Crest project, Solitario holds 50% joint venture interest (Teck Resources 50%) in the high-grade Lik zinc deposit in Alaska and a 39% joint venture interest (Nexa Resources holds the remaining 61% interest) on the high-

grade Florida Canyon zinc project in Peru. Solitario is carried to production through its joint venture arrangement with Nexa. Solitario's Management and Directors hold approximately 9.3% (excluding options) of the Company's 62 million shares outstanding. Solitario's cash balance and marketable securities stand at approximately US\$6.0 million. Additional information about Solitario is available online at www.solitariozinc.com.

Solitario has a long history of committed Environmental, Social and Responsible Governance ("ESG") of its business. We realize ESG issues are also important to investors, employees and all stakeholders, including communities in which we work. We are pledged to operate our business in a manner that supports environmental and social initiatives and responsible corporate governance. Importantly, we selected joint venture partners that also value the importance of ESG issues in the conduct of their business on our joint venture projects and are leaders in the industry in this important segment of our business.

For More Information Please Contact:

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Cautionary Statement Regarding Forward Looking Information

This press release contains forward-looking statements within the meaning of the U.S. Securities Act of 1933 and the U.S. Securities Exchange Act of 1934, and as defined in the United States Private Securities Litigation Reform Act of 1995 (and the equivalent under Canadian securities laws), that are intended to be covered by the safe harbor created by such sections. Forward-looking statements are statements that are not historical facts. They are based on the beliefs, estimates and opinions of the Company's management on the date the statements are made and address activities, events or developments that Solitario expects or anticipates will or may occur in the future, and are based on current expectations and assumptions. Forward-looking statements involve a number of risks and uncertainties. Consequently, there can be no assurances 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. 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. The existence of historic mines and resources adjacent to Solitario's land position do not necessarily support the existence economic mineral deposits on Solitario's land position. Such forward-looking statements include, without limitation, statements regarding the Company's expectation of the projected timing and outcome of engineering studies; expectations regarding the receipt of all necessary permits and approvals to implement a mining plan, if any, at any of its mineral properties. Important factors that could cause actual results to differ materially from those in the forward-looking statements include, among others, risks relating to risks that Solitario's and its joint venture partners' exploration and property advancement efforts will not be successful; risks relating to fluctuations in the price of zinc, gold, lead and silver; the inherently hazardous nature of mining-related activities; uncertainties concerning reserve and resource estimates; availability of outside contractors, and other activities; uncertainties relating to obtaining approvals and permits from governmental regulatory authorities; the possibility that environmental laws and regulations will change over time and become even more restrictive; and availability and timing of capital for financing the Company's exploration and development activities, including uncertainty of being able to raise capital on favorable terms or at all; risks relating to the impacts of Covid-19 or similar variants; as well as those factors discussed in Solitario's filings with the U.S. Securities and Exchange Commission (the "SEC") including Solitario's latest Annual Report on Form 10-K and its other SEC filings (and Canadian filings) including, without limitation, its latest Quarterly Report on Form 10-Q. The Company does not intend to publicly update any forward-looking statements, whether as a result of new information, future events, or otherwise, except as may be required under applicable securities laws.