

# Southern Silver Technical Report on CLM Project Provides Increased Silver, Lead and Zinc Mineral Resource Estimates

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Vancouver, December 15, 2021 - [Southern Silver Exploration Corp.](#) (TSXV: SSV) ("Southern") reported today that it has filed a technical report ("Report") prepared in accordance with Canadian Securities Administrators' National Instrument 43-101. The Report may be found under the Company's profile at [www.sedar.com](http://www.sedar.com) and on Southern's website, [www.southernsilverexploration.com](http://www.southernsilverexploration.com).

The Report, dated December 13<sup>th</sup>, 2021, entitled "NI 43-101 Technical Report, Mineral Resource Estimate for Cerro Las Minitas Project, Durango State, Mexico " was prepared by Garth D. Kirkham, P.Geo. and Arthur Barnes, P.Eng., FSAIMM, following the guidelines of NI 43-101 and NI 43-101F1.

The updated Mineral Resource estimate features increased sulphide resources from two new mineral deposits, a small oxide resource in one of the new deposit areas and an update of the previously reported deposits utilizing new metal pricing and metallurgical recoveries. Resource reporting now utilizes a Net Smelter Return ("NSR") cut-off and reports average grades on a AgEq, ZnEq and \$US/t NSR basis. The Report supports the disclosure made by the Company in its news release dated October 27, 2021, "Southern Silver Increases Mineral Resource at Cerro Las Minitas to: Indicated 137Mozs AgEq or 2.3Blbs ZnEq: 42.1Mozs Ag, 358Mlbs Pb, and 895Mlbs Zn; and Inferred 198Mozs AgEq or 3.3Blbs ZnEq: 73.6Mozs Ag, 500Mlbs Pb, and 1,009Mlbs Zn."

There are no material differences in the mineral resources contained in the Report from those disclosed in the October 27, 2021 news release.

Cerro Las Minitas Resource Model Highlights:

The 2021 update, at a US\$60/t NSR cut-off, features:

- Indicated Mineral Resources - 137 million ounces silver equivalent or 2.3 billion pounds zinc equivalent from 12.3 million tonnes averaging 106g/t Silver, 0.1g/t Gold, 0.2% Copper, 1.3% Lead and 3.3% Zinc (347g/t AgEq; 8.4% ZnEq) equalling a US\$130/t NSR value, containing:

42.1 million ounces of silver; 28 thousand ounces of gold; 44 million pounds of copper, 358 million pounds of lead; and 895 million pounds of zinc.

- Inferred Mineral resources - 198 million ounces silver equivalent or 3.3 billion pounds zinc equivalent from 19.6 million tonnes averaging 117g/t Silver, 0.1g/t Gold, 0.2% Copper, 1.2% Lead and 2.3% Zinc (314g/t AgEq; 7.6% ZnEq) equalling a US\$123/t NSR value containing:

73.6 million ounces of silver; 78 thousand ounces of gold; 98 million pounds of copper, 500 million pounds of lead; and 1,009 million pounds of zinc (1Blbs Zn).

The new Resource Estimate incorporates an additional 20,991 metres of core drilling completed in 2020-21, updated metal recoveries and pricing and the incorporation of over 1,127 metres of specific gravity ("SG") measurements.

Table 1: Base-case Sulphide Mineral Resource Estimate for CLM Project Utilizing a US\$60/t NSR cut-off value:

Indicated Resources							Average Grade		
Zone	Tonnes	Ag	Au	Pb	Zn	Cu	AgEq	ZnEq	NSR
	(Kt)	(g/t)	(g/t)	(%)	(%)	(%)	(g/t)	(%) (US\$/t)	
Blind Zone	2,347	97	0.04	1.9	2.1	0.11	295	7.2	108
El Sol Zone	1,154	80	0.04	2.2	2.0	0.09	279	6.8	100
Skarn Front Zone	7,254	108	0.06	0.8	4.2	0.19	383	9.3	140
La Bocona Zone	1,571	132	0.19	2.2	1.6	0.17	302	7.3	136
Total	12,325	106	0.07	1.3	3.3	0.16	347	8.4	130

Inferred Resources							Average Grade		
Zone	Tonnes	Ag	Au	Pb	Zn	Cu	AgEq	ZnEq	NSR
	(Kt)	(g/t)	(g/t)	(%)	(%)	(%)	(g/t)	(%) (US\$/t)	
Blind Zone	1,347	83	0.14	1.4	1.8	0.06	248	6.0	88
El Sol Zone	863	65	0.03	1.8	2.3	0.05	263	6.4	90
Las Victorias Zone	1,083	148	0.66	2.1	2.6	0.14	431	10.5	145
Skarn Front Zone	11,466	115	0.05	0.7	2.7	0.32	318	7.7	126
South Skarn Zone	3,789	140	0.18	2.0	1.3	0.09	309	7.5	130
La Bocona Zone	1,057	106	0.20	1.3	2.2	0.18	293	7.1	117
Total	19,605	117	0.12	1.2	2.3	0.23	314	7.6	123

Indicated Resources							Contained Metal		
Zone	Tonnes	Ag	TrOz	Au	TrOz	Pb	Zn	Cu	AgEq
	(Kt)	(000's)	(000's)	(000's)	(Mlbs)	(Mlbs)	(Mlbs)	(Mlbs)	(000's)
Blind Zone	2,347	7,350		3	99	109	5.5	22,291	371
El Sol Zone	1,154	2,956		2	55	51	2.2	10,337	172
Skarn Front Zone	7,254	25,106		14	126	678	30.7	89,421	1,490
La Bocona Zone	1,571	6,688		10	77	56	6.0	15,275	255
Total	12,325	42,100		28	358	895	44	137,323	2,288

Inferred Resources							Contained Metal		
Zone	Tonnes	Ag	TrOz	Au	TrOz	Pb	Zn	Cu	AgEq
	(Kt)	(000's)	(000's)	(000's)	(Mlbs)	(Mlbs)	(Mlbs)	(Mlbs)	(000's)
Blind Zone	1,347	3,582		6	40	55	2	10,749	179
El Sol Zone	863	1,816		1	35	43	1	7,283	121
Las Victorias Zone	1,083	5,152		23	51	62	3	15,006	250
Skarn Front Zone	11,466	42,462		18	177	687	80	117,065	1,951
South Skarn Zone	3,789	17,007		22	167	112	7	37,660	628
La Bocona Zone	1,057	3,589		7	30	51	4	9,950	166
Total	19,605	73,610		78	500	1,009	98	197,712	3,295

- 1) The current Resource Estimate was prepared by Garth Kirkham, P.Geo., of Kirkham Geosystems Ltd.
- 2) All mineral resources have been estimated in accordance with Canadian Institute of Mining and Metallurgy and Petroleum ("CIM") definitions, as required under National Instrument 43-101 ("NI43-101").
- 3) Mineral resources were constrained using continuous mining units demonstrating reasonable prospects of eventual economic extraction.
- 4) Silver Equivalents were calculated from the interpolated block values using relative recoveries and prices between the component metals and silver to determine a final AgEq value. The same methodology was used to calculate the ZnEq value.
- 5) Silver Equivalents and NSR\$/t values were calculated using average long-term prices of \$20/oz. silver, \$1,650/oz. gold, \$3.25/lb. copper, \$1.0/lb. lead and \$1.20/lb. zinc. Metal recoveries, payables and

deductions are reported in Table 1. All prices are stated in \$USD.

6) Mineral resources are not mineral reserves until they have demonstrated economic viability. Mineral resource estimates do not account for a resource's mineability, selectivity, mining loss, or dilution.

7) An Inferred Mineral Resource has a lower level of confidence than that applying to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.

8) All figures are rounded to reflect the relative accuracy of the estimate and therefore numbers may not appear to add precisely.

## Oxide Resources

A small oxide resource was identified within the upper 100 metres of surface in the La Bocona zone. The 2021 oxide resources at a US\$60/t cut-off are:

An Indicated Mineral resource totalling 65,000 tonnes averaging 28g/t Ag and 2.2 g/t Au equalling a US\$93/t NSR value, containing:

58,000 ounces of silver and 4,500 ounces of gold.

An Inferred Mineral resource totalling 219,000 tonnes averaging 120g/t Ag and 0.8g/t Au equalling a US\$88/t NSR value, containing:

844,000 ounces of silver and 5,600 ounces of gold

A 74% silver recovery was utilized in the resource model and was based on acid-leach test work conducted on samples from the Blind - El Sol zone. Gold recovery has been estimated at 70% for the purposes of this report. Further metallurgical test work is required to confirm the gold recovery from the La Bocona oxides.

Table 2: Base-case Oxide Mineral Resource Estimate for CLM Project Utilizing a US\$60/t NSR cut-off value:

	Tonnes	Average Grade		Contained Metal		
		Ag	Au	NSR Ag	TrOz Au	TrOz
	(kt)	(g/t)	(g/t)	(US\$/t)	(koz)	(koz)
Indicated	65	28	2.2	93	58	4.5
Inferred	219	120	0.8	88	844	5.6

Notes: The \$60/t NSR cut-off value was calculated using average long-term prices of \$20/oz. silver, \$1,650/oz. gold. Base metals were not recovered in the leach circuit. Metallurgical work from batch test work recovered 74% silver from oxidized composites from the Blind - El Sol zones. Gold recovery was not assessed and is estimated at 70% for the purposes of this report. This work, along with marketing studies, were used to decide the NSR cut-off value. All prices are stated in \$USD.

## Cerro Las Minitas Project Highlights:

- The updated NI43-101 Mineral Resource estimate significantly increases the size of the resource on a tonnage basis by approximately 33%, with most of the increase resulting from the addition and delineation of the La Bocona and the South Skarn deposits;

- The Mineral Resource update features a significant increase in contained silver in both the indicated and inferred categories which now total Indicated: 42.1Mozs Silver and Inferred: 73.6 Mozs Silver representing an approximate 38% increase from the 2019 resource estimate;
- The new deposits have a much stronger Silver-Lead bias resulting in generally higher overall NSR values for the South Skarn and the Indicated component of the La Bocona resource estimates compared to previous resource estimates. Similarly, silver maintains a higher proportion of the overall metal content of the deposits than in earlier estimates;
- Higher grade portions of the new resources are relatively shallow and occur within 300 metres of surface which could potentially benefit future mining scenarios;
- Gold recovery is currently not considered in the sulphide NSR calculation. Further metallurgical work is planned to assess gold recoveries in both the sulphide and oxidized mineralization;
- Mineralization in both the South Skarn and Mina La Bocona deposits remains open at depths below 500 metres, leaving additional exploration potential. Several other targets remain un-tested or poorly-tested in the area of the Cerro and will form the basis for further exploration on the project through 2022;
- This new Mineral Resource estimate will now form the basis for a Preliminary Economic Assessment ("PEA"), which is expected to be completed by Q2 2022; and

### Modelled Deposits

Six separate mineral deposits were modelled in the resource estimate, four deposits in 2019 and two in 2021. The Blind, El Sol and Las Victorias deposits form sets of sub-parallel, northwest-trending and steeply dipping mineralized zones which are traced for over 1300 metres strike and up to 600 metres depth. The Skarn Front forms beneath the Blind, El Sol and Las Victorias deposits and is localized on the outer edge of the skarn alteration zone surrounding the Central Monzonite Intrusion and has been drilled along an approximate 1100 metre strike length and to depths of up to 1000 metres.

Similarly, the South Skarn Zone is localized on the outer edge of the skarn alteration zone surrounding the Central Monzonite Intrusion, but on the eastern side. The deposit forms a tabular, steeply east-dipping body that has a strike length of approximately 350m and has been drilled to a depth of 500m. The Bocona Zone consists of two separate sub-zones - the Bocona Skarn Zone and the Muralla Zone. The Bocona Skarn Zone is also localized on the outer edge of the skarn alteration zone surrounding the Central Monzonite Intrusion, but on the North side, wrapping around the Northeastern Margin. The upper part of the Muralla zone is strongly oxidized and is the basis of the quoted oxide resource.

### Mineral Resource Estimate Parameters for the South Skarn and Bocona Zones

- The estimate was carried out using separate block models for the Bocona and South Skarn Zones constrained by 3D wireframes of the individual mineralized zones. The block model is comprised of an array of blocks measuring 10m x 3m x 10m which are sub-blocked to 0.5m x 0.3m x 0.5m, with grades for Ag, Au, Cu, Pb and Zn interpolated using Inverse Distance to the Second Power (ID2) weighting. NSR/t, silver equivalent and zinc equivalent values were subsequently calculated from the interpolated block grades.
- The interpolation was carried out in two passes using progressively larger search radii of 60m x 60m x 30m to a maximum of 100m x 100m x 50m for all zones with the exception of the La Bocona Skarn zone where the second pass was limited to 60m x 15m x 25m at an orientation of 60 degrees perpendicular to strike and -80 degrees down dip. The first pass was restricted to a minimum of 2 and a maximum of 12 composites, with a maximum of 4 composites from any one drill hole (i.e. a minimum of two drill holes required for >4 composites) while the second pass was more restrictive using a minimum of 3 and a maximum of 9 composites, with a maximum of 3 composites from any one drill hole.

- Bulk densities at La Bocona were based on a total of 418 sample interval measurements taken by Southern field personnel. For each sample interval, sub-samples were taken from each individual length of core and the weighted average for the sample used. Density values ranged from 1.9 t/m<sup>3</sup> to 4.73 t/m<sup>3</sup>. Bulk densities at Skarn South were based on a total of 387 sample interval measurements where density values ranged from 1.51 t/m<sup>3</sup> to 4.35 t/m<sup>3</sup>. Density values were interpolated on a block-by-block basis using an inverse distance to the second power. An average value of 2.97 t/m<sup>3</sup> was assigned to blocks that were not interpolated.
- Silver composite values have been capped in order to remove the effects of potential overestimation due to statistical outliers. The threshold chosen was 700 g/t silver for both La Bocona and South Skarn. In addition, outlier values for the co-product metals were capped at the threshold levels of 5 g/t gold, 1.4% copper, 15% lead and 10% zinc at La Bocona and 2.5 g/t gold, 0.5% copper, 15% lead and 8% zinc at South Skarn, respectively.
- The mineralized zones were initially defined by Southern personnel and subsequently validated and refined by KGL. The mineralized wire frames were defined using a combination of geological constraints and grade boundaries with no minimum mining thickness applied. Intervals that were not sampled were assigned a zero grade.
- For all zones, blocks are classified as Inferred if they are included within 75m of at least one drill hole intercept. Blocks within 40m of the nearest intercept, and estimated by at least two drill holes were classified as Indicated. However, an interpreted boundary is the final determination of indicated and inferred resources in order to remove outlier blocks and the "spotted dog" effect. In addition, continuous potentially underground mining panels were created to demonstrate "reasonable prospect of eventual economic extraction."

Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability. Inferred Resources are considered too speculative geologically to have economic considerations applied to them that would enable them to be classified as Mineral Reserves. An Inferred Mineral Resource has a lower level of confidence than that applying to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.

#### NSR Calculation Parameters

- The NSR values were calculated using average long-term prices of \$20/oz. silver, \$1,650/oz. gold, \$3.25/lb. copper, \$1.00/lb. lead and \$1.20/lb. zinc. Metallurgical test work identified three saleable concentrates for the Skarn zones and two from the Blind, El Sol and Las Victorias zones (BESS). NSR values for each concentrate were calculated utilizing the parameters summarized in Table 1 and summed to determine a total NSR value for each block.
- Only silver and gold recoveries in dore were considered for the oxide NSR calculations. Gold was not recovered in the sulphide concentrates and is estimated at 70% in the oxide circuit for the purposes of this reporting.
- All prices are stated in \$USD.

Table 3: Variables considered in the NSR calculations for each concentrate.

Item	Sulfides				Oxides	
	Pb Concentrate		Zn Concentrate		Cu Conc. Ag-Au leach	
	Skarn	BESS	Skarn	BESS	Skarn	
Pb Recovery	84%	90%				
Zn Recovery			95%	78%		
Cu Recovery					60%	
Ag Recovery	77%	79%	8%	12%	7%	74%
Au Recovery						70%
Payable Metals	Pb, Ag	Pb, Ag	Zn, Ag	Zn, Ag	Cu, Ag	Au, Ag
Concentrate grade, (primary base metal)	65%	70%	54%	52%	27%	

Transport, Treatment, Penalty charges, \$ dmt	230	267	358	364	183
Base metal Concentrate Grade Deduction	3 units	3 units	8 units	8 units	1 unit
Ag Concentrate Grade Deduction, g/t	50	50	93	93	
Ag Refining charge, \$/oz	0.6	0.6			0.4
Base metal Refining, \$/lb					0.107
Ag payable					90%

#### Qualified Persons

The independent Qualified Persons for the Technical Report are Garth Kirkham, P.Geo., Principal, Kirkham Geosystems Ltd and Arthur Barnes P.Eng., FSAIMM, Principal, MPC Metallurgical Process Consultants Limited, who have reviewed and approved the contents of this release. In accordance with National Instrument 43-101 Standards of Disclosure for Mineral Projects, Robert Macdonald, P.Geo, Vice President Exploration, is the Qualified Person for the Company and has validated and approved the technical and scientific content of this news release.

#### Risk Factors

Southern Silver is aware this project is subject to the same types of risks that large precious and base metal projects experience at an early stage of development in Mexico. The Company has engaged experienced management and specialized consultants to identify, manage and mitigate those risks. However, the types of risks will change as the project evolves and more information becomes available.

#### About Southern Silver Exploration Corp.

[Southern Silver Exploration Corp.](#) is an exploration and development company with a focus on the discovery of world-class mineral deposits. Our specific emphasis is the 100% owned Cerro Las Minitas silver-lead-zinc project located in the heart of Mexico's Faja de Plata, which hosts multiple world-class mineral deposits such as Penasquito, San Martin, Naica and Pitarrilla. We have assembled a team of highly experienced technical, operational and transactional professionals to support our exploration efforts in developing the Cerro Las Minitas project into a premier, high-grade, silver-lead-zinc mine.

The Company's property portfolio also includes the Oro porphyry copper-gold project located in southern New Mexico, USA, which includes patented land, State leases and BLM mineral claims totalling 22.3 sq. km. Targeting has been finalized and bonding pending for a 4,000m drill program, designed to test several copper-molybdenum porphyry and copper-gold skarn targets within a broad quartz-sericite-pyrite alteration zone, interpreted to overlie an unexposed porphyry centre. Permitting is in the final stages with drilling expected to commence in Q1, 2022.

On behalf of the Board of Directors

"Lawrence Page"

Lawrence Page, Q.C.  
President & Director, [Southern Silver Exploration Corp.](#)

For further information, please visit Southern Silver's website at [southernsilverexploration.com](http://southernsilverexploration.com) or contact us at 604.641.2759 or by email at [ir@mnxltltd.com](mailto:ir@mnxltltd.com).

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