Premium Nickel Resources Ltd. Announces Its Initial Mineral Resource Estimate of 27.7 MT for the Selebi Mines in Botswana

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- Selebi Main Deposit
- Inferred Mineral Resource Estimate of 18.89 million tonnes at 3.51% CuEq or 1.70% NiEq.
    - Contained metal Inferred - 165,000 tonnes nickel and 319,000 tonnes copper.

- Selebi North Deposit
- Indicated Mineral Resource Estimate of 3.00 million tonnes at 2.92% CuEq or 1.42% NiEq.
    - Contained metal Indicated - 29,000 tonnes nickel and 27,000 tonnes copper.
- Inferred Mineral Resource Estimate of 5.83 million tonnes at 3.11% CuEq or 1.51% NiEq.
    - Contained metal Inferred - 62,000 tonnes nickel and 52,000 tonnes copper.

Toronto, August 8, 2024 - Premium Nickel Resources Ltd. (TSXV: PNRL) ("PNRL" or the "Company") is pleased to report an initial Mineral Resource Estimate ("MRE") with an effective date of June 30, 2024, prepared in accordance with CIM (2014) Definitions Standards incorporated in National Instrument 43-101 - Standards of Disclosure for Mineral Projects ("NI 43-101"), on its past-producing nickel-copper sulphide ("Ni-Cu ") Selebi Main deposit and its Selebi North deposit (together, the "Selebi Mines") in Botswana. The completed NI 43-101 Technical Report, once finalized, will be filed on SEDAR+ (www.sedarplus.ca) under PNRL's issuer profile within 45 days of the date of this news release.

Details of the MRE are shown below along with accompanying tables (Tables 1 through 3) and visuals (Figure 1, Figure 2, Figure 3 and Figure 4). The updated corporate presentation is accessible by clicking here and can also be found on the Company's website at www.premiumnickel.com. To view the 3D modeling, please visit the following link https://vrify.com/decks/16485.

Key Takeaways

- The Selebi Main MRE tonnage is 67% larger than the Historic Resource (as defined herein). In part, the increase in tonnes can be attributed to increased resource thickness in the southeast portion of the deposit and the inclusion of a separate lower domain that was not classified as part of the historic resources by the former operator.
- The Selebi North MRE tonnage is 90% larger than the Historic Resource. In part, this increase can be attributed to PNRL'S drilling success extending mineralization below the N2, N3, and South Limb up to 400 metres beyond the limits of the historical mineral resource, as well as extending the strike extent of the N3 mineralization and including a small number of South Limb footwall zones.
- Borehole electromagnetic surveys and drilling continue to demonstrate expansion potential down-dip and down-plunge of existing resources.
- Drilling is ongoing at both the Selebi Main and Selebi North deposits with the goal to re-classify the Inferred resources to Indicated and to expand the resource.
- Bench scale metallurgical testing and recovery estimates to be completed to a pre-feasibility standard at XPS Expert Process Solutions in Sudbury, Ontario, Canada.
- Cobalt, a potentially valuable by-product has not been included in this initial MRE as cobalt analyses are not consistently available throughout the deposit. Metallurgical studies currently underway will determine payability of cobalt at the Selebi Mine.

Keith Morrison, CEO of PNRL, commented: "The Mineral Resource Estimate at the Selebi Mines is very promising. The results confirm a strong starting resource size and grade which we expect will expand as we continue our drilling program. Ongoing borehole electromagnetics and drilling continue to demonstrate that both deposits extend down dip and down plunge. The MRE also identifies good mineralization continuity, mineable widths and mining dilution characteristics. Importantly, the contained copper significantly exceeds

nickel in the total combined contained metal in the two deposits 398,000 tonnes to 256,000 tonnes (1.55:1).

This initial Mineral Resource Estimate combined with further drilling could allow PNRL to advance to a Preliminary Feasibility Study ("PFS") at the Selebi Mine, with a completion target of the end of H1 2025. We are currently finalizing arrangements for a consultant for this Preliminary Feasibility Study work. These resources are (i) high grade, (ii) permitted for mining, (iii) have key operational infrastructure (e.g. shafts, declines, and related equipment) already in place and (iv) are supported by a skilled workforce critical to the underground resource drilling program and later mining and processing plans. These attributes are a crucial and positive distinction between PNRL and other mining/development entities. We will continue to rapidly redevelop the Selebi Mine working towards a potential mine reopening in late 2027.

I want to thank our team for their safe and professional hard work on the Mineral Resource Estimate. It is a very positive step in the re-development of the Selebi Mines. "

The MRE shown in Table 1 was prepared by SLR Consulting Ltd. ("SLR") using a Net Smelter Return ("NSR") cut-off value of US$70/tonne and consensus metal pricing (Table 2).

Table 1: Selebi Mines Mineral Resource Estimate -- June 30, 2024

Deposit	Classification	Tonnage Mt	Ni %	Cu %	NiEq* %	CuEq** %	Ni Kt	Cu Kt
Selebi North	Indicated	3.00	0.98	0.90	1.42	2.92	29.5	27.1
Total	Indicated	3.00	0.98	0.90	1.42	2.92	29.5	27.1
Selebi Main	Inferred	18.89	0.88	1.69	1.70	3.51	165	319
Selebi North	Inferred	5.83	1.07	0.90	1.51	3.11	62.4	52.5
Total	Inferred	24.7	0.92	1.50	1.65	3.40	227	371

* NiEq% calculated using the formula Ni%+Cu%*(50.24/103.67) using metal prices and recoveries listed below in Notes
**CuEq% calculated using the formula Cu%+ Ni%*(103.67/50.24) using metal prices and recoveries listed below in Notes

Notes:

1. CIM (2014) definitions were followed for mineral resources.
2. Mineral resources are estimated at a NSR value of $70/t.
3. Mineral resources are estimated using long-term prices of US$10.50/lb Ni and US$4.75/lb Cu and a US$: BWP exchange rate of 1.00:13.23.
4. Mineral resources are estimated using nickel and copper recoveries of 72.0% and 92.4% respectively, derived from metallurgical studies which consider a conceptual bulk concentrate scenario.
5. Bulk density has been estimated and averages 3.39 t/m^3 at Selebi Main and 3.60 t/m^3 at Selebi North.
6. Mineral resources are reported within conceptual underground reporting shapes considering a minimum thickness of 1.5 metres.
7. There are no mineral reserves.
8. Mineral resources that are not mineral reserves do not have demonstrated economic viability.
9. Totals may not add or multiply accurately due to rounding.

Drilling

At Selebi Main, the Company drilled a total of 15,074 metres in 12 surface drill holes and 2 wedges, and 740 metres in the extensions of two historical holes. Historical drilling, including 28,488 metres in 31 surface drill holes, and 11 wedges and 8,400 metres in 219 underground delineation drill holes, were combined with the Company drilling for a total drill hole database of 52,702 metres in 277 holes which support the new MRE at the Selebi Main deposit.

Similarly, at Selebi North, included in the MRE were a total of 29,984 metres in 82 underground holes drilled by the Company, historical surface drilling (24,504 metres in 21 holes and 9 wedges) and historical delineation drilling (20,638 metres in 354 holes) for a total drilling database of 75,126 metres in 466 holes. In addition, the database also included samples from 704 channels over 2,791 metres.

Ongoing underground drilling at Selebi North, totaling 18,042 meters across 33 completed holes with 3 more in progress as of August 6, 2024, is not included in the MRE. This new drilling is a combination of infill and exploration drilling to follow the extension of the mineralization down dip and down plunge. New assay results not captured in the MRE will be published as they are received and verified by the Company.

Mineral Resource Estimate

All mineral resource domains at Selebi Main were defined within Seequent's Leapfrog Geo software, and sub-block model estimates were completed within Leapfrog Edge software using drilling and assays results as of June 30, 2024. All Mineral Resource domains at Selebi North were defined within Leapfrog Geo software and sub-block model estimates were completed within Resource Modeling Solutions Platform (RMSP) and Leapfrog Edge software. Underground constraining shapes were optimized using Deswik stope optimizer software.

At Selebi Main, un-composited density measurements and one-meter composites of uncapped nickel and capped copper sample grades from underground and surface drillholes were estimated into an oriented sub-blocked model using a multi-pass inverse distance squared (ID2) interpolation approach and mined out areas were depleted where needed to represent in situ material.

At Selebi North, one-metre composites of capped nickel, copper, and density sample grades from channels and underground and surface drill holes were estimated into a sub-blocked model using a multi-pass ordinary kriging (OK) interpolation approach in unfolded space in the main domain and using a multi-pass inverse distance weighted (ID2) interpolation approach and dynamic anisotropy (no unfolding) in the footwall domains.

The Selebi North Mineral Resources were estimated using a sub-block model defining one principal domain and three small footwall domains representing mineralization extension below 150 metre elevation (approximately 750 metres below surface), where adjacent and below (mostly below) existing historical mine workings. The estimate uses all information available as of June 30, 2024.

Domain orientation and morphology have been informed by underground mapping, channel sampling, and surface and underground drilling completed by historical operators as well as by PNRL. The structures mimic the mined-out areas with respect to orientation and form and have been confirmed to continue down plunge through drill core observations and downhole geophysics.

In addition to standard database validation techniques, wireframe and block model validation procedures including wireframe to block volume confirmation, statistical comparisons with composite and nearest neighbour estimates, swath plots, visual reviews in 3D, longitudinal, cross section and plan views, as well as cross software reporting confirmation, were completed. In addition to SLR's internal peer and senior review processes, PNRL's technical team have reviewed the MRE.

Blocks were classified following CIM Definitions (2014) as Indicated and Inferred using drill hole spacing based criterion. Inferred mineral resources at Selebi Main were defined where drill hole spacings of up to approximately 200 metres was achieved. Indicated and Inferred Mineral Resources at Selebi North were defined where drill hole spacings of up to approximately 50 metres and 150 metres were achieved, respectively, modified in some areas to reflect geological and grade uncertainty. At both deposits, Mineral Resources are reported within conceptual underground reporting shapes (resource panels) defined using a minimum thickness of 1.5 metres and a NSR cut-off value of US$70/t. All blocks within the resource panels have been included within the Mineral Resource estimate. Mined-out areas were depleted where needed to represent in-situ material, and resource panels in the crown pillar area at Selebi North were excluded from the estimate.

NSR and Mineral Resources Cut-off Value

NSR values have been estimated for an operating scenario that includes production of a bulk nickel-copper sulphide concentrate for both the Selebi Main and Selebi North deposits. Metal prices are based on long-term forecasts from banks, financial institutions and other sources. The metal prices and other input

parameters used in development of a unit NSR value for each block are provided in Table 2.

Table 2: NSR Value Calculation

Commodity	Metal Prices (USD$/lb)	Net Metallurgical Recovery (%)	Refining Cost (USD$/lb)	Transport Cost/wmt (Bulk Con)	Treatment Cost/dmt (Bulk Con)	Royalty
Nickel	$10.50	72.0%	$0.96	US$150	US$220	2.00%
Copper	$4.75	94.4%	$0.45	US$150	US$220	2.00%

For the purpose of mineral resource reporting, underground constraining shapes were developed using the Deswik Stope Optimizer (DSO) based on an NSR cut-off value of US$70/tonne. Parameters used to calculate the cut-off grade are given in Table 3.

Table 3: The cut-off parameters, based on previous study work

Parameter	Unit	Value
Mining (Underground)	US$/t milled	$48.00
Processing	US$/t milled	$20.00
G&A	US$/t milled	$4.92
Total Unit Operating Cost	US$/t milled	$67.94

Quality Control

The underground drilling program is being carried out through an agreement with Forage Fusion Drilling Ltd. of Hawkesbury, Ontario, Canada, who have provided three Zinex U-5 drills for purchase and training of local operators. Drill core samples are BQTK (40.7 mm diameter). All samples are ½ core cut by a diamond saw on site. Half of the core is retained for reference purposes. Samples are generally 1.0 to 1.5 metre intervals or less at the discretion of the site geologists. Sample preparation and lab analysis was completed at ALS Chemex in Johannesburg, South Africa. Commercially prepared blank samples and certified Cu/Ni sulphide analytical control standards with a range of grades are inserted in every batch of 20 samples or a minimum of one set per sample batch. Analyses for Ni, Cu and Co are completed using a peroxide fusion preparation and ICP-AES finish (ME-ICP81).

Qualified Persons

The mineral resource estimate described in this news release was reviewed and approved by Valerie Wilson, M.Sc., P.Geo. (Ontario) SLR Consulting Ltd. Principal Resource Geologist, who is independent of PNRL and a "qualified person" for purposes of NI 43-101.

Verification included a site visit to inspect mineralization in underground workings, active drilling, mineralized core, logging, density measurement procedures and sampling procedures, and a review of the control sample results used to assess laboratory assay quality. In addition, 100% of samples collected by PNRL have been verified against independently accessed assay certificates and a random selection of historical database results have been compared against original paper and digital records.

The scientific and technical content of this news release has been reviewed and approved by Sharon Taylor, Vice President Exploration of the Company, who is a "qualified person" for the purposes of NI 43-101.

Historic Resource Estimate

The historical mineral resource estimate referenced herein (the "Historical Resource") was calculated for the Selebi North, Selebi Main, Phikwe South and Southeast Extension deposits in accordance with the South African Mineral Resource Committee (SAMREC), in 2016, and does not comply with NI 43-101. PNRL is not treating the historical mineral estimates as current mineral resource estimates. To that end, the Historical Resource is considered to be historical in nature and should not be relied upon as a current mineral resource estimate. In addition, the Historical Resource has been superseded by the MRE reported herein.

About Premium Nickel Resources Ltd.

PNRL is a mineral exploration and development company that is focused on the redevelopment of the previously producing nickel, copper and cobalt resources mines owned by the Company in the Republic of Botswana.

PNRL is committed to governance through transparent accountability and open communication within our team and our stakeholders. Our skilled team has worked over 100 projects collectively, accumulating over 400 years of resource discoveries, mine development and mine re-engineering experience on projects like the Company's Selebi and Selkirk mines. PNRL's senior team members have on average more than 20 years of experience in every single aspect of mine discovery and development, from geology to operations.

ON BEHALF OF THE BOARD OF DIRECTORS

Keith Morrison
Director and Chief Executive Officer
Premium Nickel Resources Ltd.

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development of projects; the other risks involved in the mineral exploration and development industry; and those risks set out in the Company's public disclosure record on SEDAR+ (www.sedarplus.com) under PNRL's issuer profile. Although the Company believes that the assumptions and factors used in preparing the forward-looking information in this news release are reasonable, undue reliance should not be placed on such information, which only applies as of the date of this news release, and no assurance can be given that such events will occur in the disclosed time frames or at all. The Company disclaims any intention or obligation to update or revise any forward-looking information, whether as a result of new information, future events or otherwise, other than as required by law.

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Figure 1. Long Section of the Selebi Main and Selebi North Mineral Resource Estimate as defined by wireframes of mineralized zones

To view an enhanced version of this graphic, please visit:
https://images.newsfilecorp.com/files/7759/219231_9fde5112544b0899_003full.jpg

Long Section Showing Modeled BHEM Plates

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Figure 2. Selebi Main Initial MRE and Modeled BHEM Plates

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Figure 3: Selebi North Initial MRE, PNRL and Historic Drill Hole Traces, Underground Infrastructure, Historic Resources and Modeled BHEM Plates

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Figure 4: Location of Ongoing Selebi North Underground Drill and BHEM Programs

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