

BLACK SWAN RESTART UPDATE - FILL THE MILL STRATEGY

9 September 2021

KEY POINTS

- **New strategy to focus on restarting the 1.1Mtpa concentrator at Black Swan to maximise production of nickel given:**
 - large resource base of close to 200kt Ni
 - low estimated refurbishment capex, circa \$22 million
 - low estimated operating expenditure compared to other options
 - short time frame for plant refurbishment and mining ramp up
 - attractive payment terms of nickel in concentrates globally
 - positive outlook for the nickel price
 - potential to treat Windarra ore and 3rd party feeds
- Targeting Financial Investment Decision in May 2022 and mill commissioning by December 2022

Poseidon Nickel (ASX: POS, “the Company”) is pleased to advise that due to the outcomes of the Scoping Study on the estimated capital cost for the refurbishment and operation of two processing plant configurations at Black Swan recently completed by GR Engineering Services Limited (“GRES”), the large (and growing) resource base at Black Swan, improved payabilities of nickel in concentrates globally and the positive outlook for the nickel price the Company has determined the most economically attractive production scenario is to refurbish the 1.1Mtpa processing circuit and fill that plant to maximise nickel concentrate production.

Managing Director and CEO, Peter Harold, commented: *“The results from the GRES Scoping Study demonstrating that while both processing plants can be refurbished at a relatively low cost and in a relatively short time frame (i.e. six months) the large resource base at Black Swan together with the positive outlook for the nickel price and improved payabilities of nickel in concentrates makes the 1.1Mtpa plant, fed by a combination of ore sources, including the underground high-grade, the most attractive project for Poseidon.”*

DETAILS

Background

GRES provided Poseidon with capital and operating cost estimates for the refurbishment and operation of the separate 150ktpa and 1.1Mtpa ore treatment circuits at Black Swan to a +/- 20% level of accuracy, collectively referred to as the Scoping Study (*refer ASX release dated 27 July 2021*).



Figure 1 – Black Swan 2Mtpa processing plant

Capital cost estimates

GRES undertook the Scoping Study based on three possible plant configurations as follows:

- 150ktpa plant (the original Silver Swan high-grade circuit) with contract crushing;
- 150ktpa plant with the secondary and tertiary crusher refurbished; and
- 1.1Mtpa plant (the original 2Mtpa Black Swan plant for treating low grade disseminated open pit ore) derated to process 1.1Mtpa of ore.

Based on these three possible plant configurations GRES estimated the refurbishments costs that are summarised in Table 1. GRES advised that each plant configuration refurbishment would take approximately six months to complete based on their current forward order book.

Table 1 – Capital cost estimates for the various processing circuits

Circuit configuration	150ktpa Silver Swan circuit with contract crushing	150ktpa Silver Swan circuit with secondary & tertiary crushing	1.1Mtpa Black Swan circuit (derated from 2Mtpa)
Capital cost estimate	\$13.4M	\$15.9M	\$22.1M

Operating cost estimates

GRES also determined the following operating cost estimated for the various plant configurations:

Table 2 – Operating cost estimates for the various processing circuits

Circuit configuration	150ktpa circuit with contract crushing	150ktpa circuit with secondary & tertiary crushing	1.1Mtpa
Operating cost estimate	\$91.60/tonne	\$79.09/tonne	\$29.39/tonne

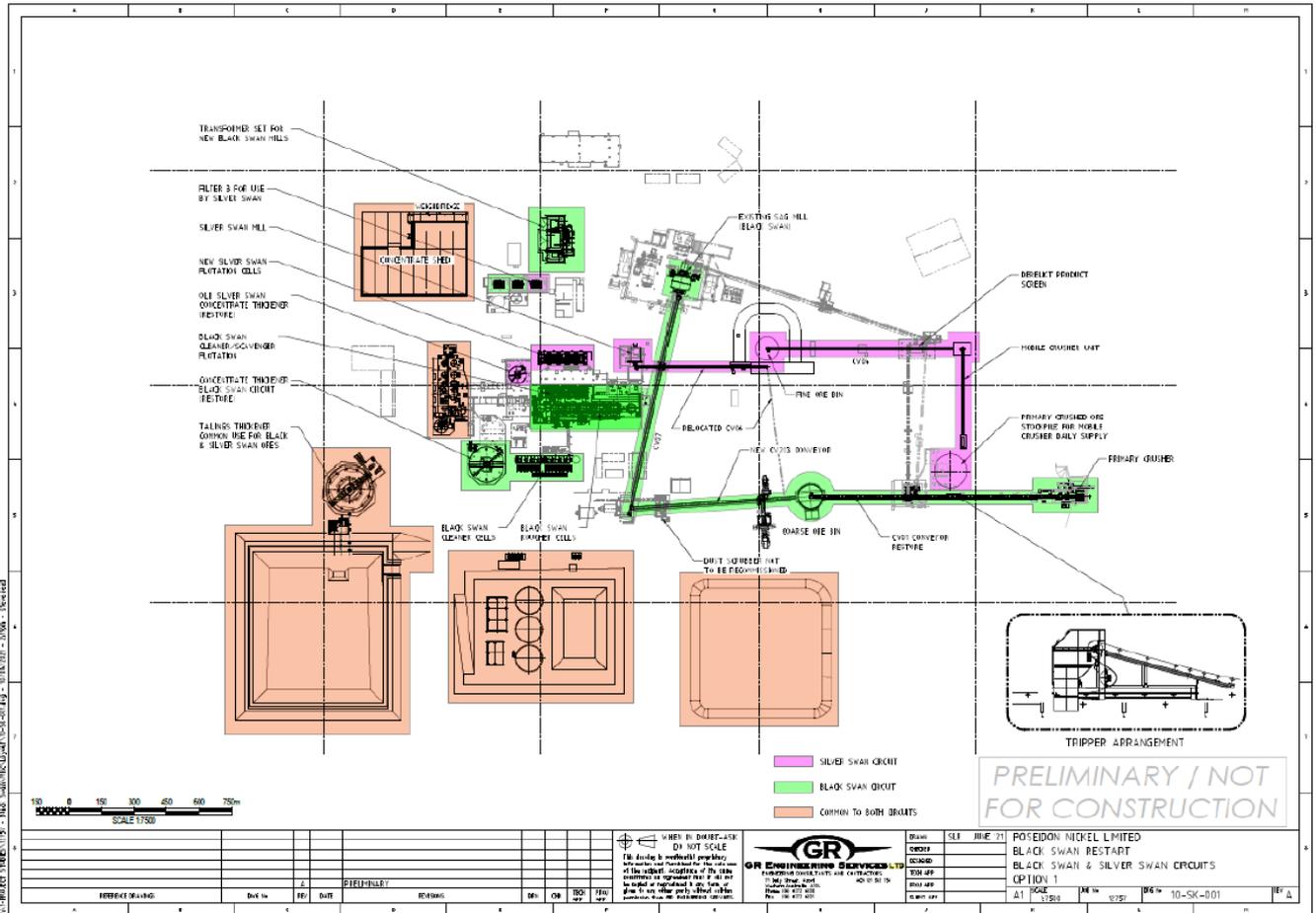


Figure 2 – Black Swan 1.1Mtpa circuit in green, Silver Swan circuit in purple and common areas in orange

NEW FILL THE MILL STRATEGY

As mentioned in the Scoping Study ASX release (27 July 2021) the Company was considering a small high grade underground mining operation with ore sourced from Golden Swan and Silver Swan and processing this ore through the refurbished 150ktpa Silver Swan processing circuit. The Company was also considering the merits of refurbishing the 1.1Mtpa Black Swan circuit and processing a number of ore sources (low and high grade) to fill that circuit.

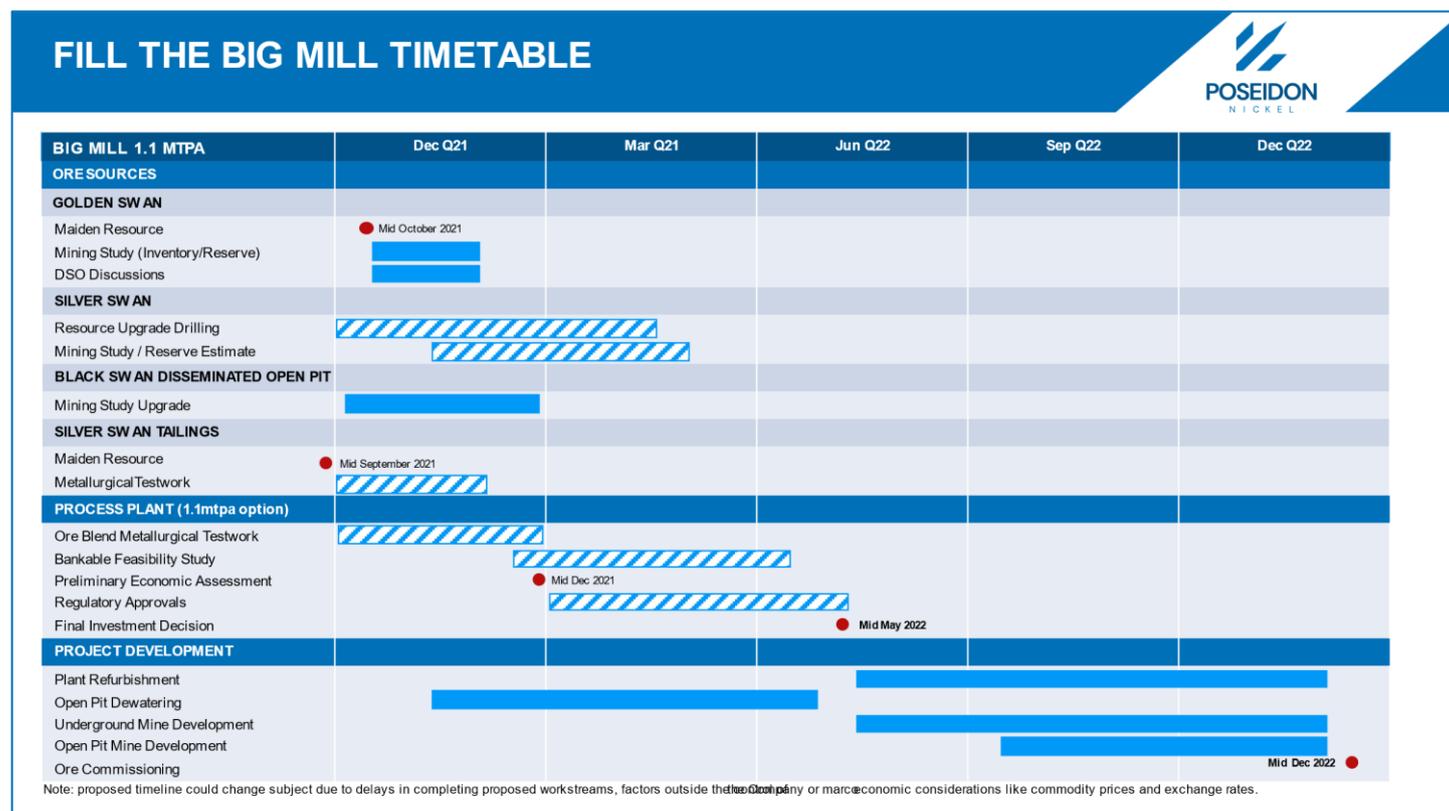
While both production options are attractive, internal studies have confirmed that maximising nickel tonnes produced will have the best economic outcome given:

- the large resource base at Black Swan (**approaching 200kt Ni**)
- the low capital and operating expenditure estimates for the 1.1Mtpa plant
- the recent improvements in payability of nickel in concentrates globally, due to a tightening market
- the strong spot nickel price (**at US\$9/lb today**) and positive outlook for the nickel price
- the ability to have a long-life project that primarily sources feed from Black Swan orebodies but could treat ore from Windarra (100% Poseidon owned) and potentially 3rd party feed (subject to plant capacity availability and other factors)

Consequently, the Company is now focused on maximising nickel units from Black Swan which means the focus is on refurbishing the 1.1Mtpa processing plant and feeding that plant with a combination of open pit and underground ore and Silver Swan tailings to improve concentrate quality (specifically the Fe:MgO ratio).

TIMETABLE

The indicative timetable for studies, development, commissioning and ramp up of the 1.1Mtpa mill and mining operations is summarised as follows:



Based on this timetable the concentrator could produce first concentrate in December next year which is only 15 months away.

NEXT STEPS

The following workstreams are underway:

- updating the Black Swan open pit study including determining the optimal pit shell and production rate and estimated capital and operating costs;
- delivering a maiden Resource from Golden Swan and converting that to a Reserve;
- undertake further drilling at Silver Swan to convert additional Resource to Reserve;
- deliver a maiden Resource on the Silver Swan Tailings;
- metallurgical test work on blending all the various ore sources to determine the optimum feed blend and typical concentrate specifications;
- seek indicative offtake terms for the quality and quantity of nickel concentrate expected to be produced;
- seek financing proposals for the debt component of the restart capital; and
- complete a full Bankable Feasibility Study.

Assuming the Company can deliver the above outcomes then restarting the 1.1Mtpa concentrator will become a very attractive option based on the GRES Scoping Study results and assuming acceptable mining costs, metallurgical recoveries, concentrate payabilities, A\$ nickel price and attractive overall project economics.



Peter Harold
Managing Director & CEO
9 September 2021

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The announcement was authorised for lodgement by the board of Poseidon Nickel Limited.

COMPETENT PERSON STATEMENTS:

The information in this report that relates to Exploration Targeting and Results is based on, and fairly represents, information compiled and reviewed by Mr Andrew Pearce, who is an employee of Poseidon Nickel, and is a Member of The Australian Institute of Geoscientists.

The information in this report which relates to the Black Swan Mineral Resource is based on, and fairly represents, information compiled by Mr Andrew Weeks who is a full-time employee of Golder Associates Pty Ltd. The information in this report which relates to the Black Swan Ore Reserve is based on, and fairly represents, information compiled by Mr Andrew Weeks who is a full-time employee of Golder Associates Pty Ltd and who is a Members of the Australasian Institute of Mining and Metallurgy.

The information in this report which relates to the Silver Swan Mineral Resource is based on, and fairly represents, information compiled by Mr Steve Warriner, who was a full-time employee at Poseidon Nickel, and is a Member of The Australian Institute of Geoscientists and Mr Kahan Cervoj who is a full time employee of Optiro Pty Ltd and is a Fellow of the Australasian Institute of Mining and Metallurgy. The information in this report which relates to the Silver Swan Ore Reserve is based on, and fairly represents, information compiled by Mr Matthew Keenan who is a full-time employee of Entech Pty Ltd and is a Member of the Australasian Institute of Mining and Metallurgy.

Mr Pearce, Mr Warriner, Mr Cervoj, Mr Weeks, Mr Glacken and Mr Keenan all have sufficient experience which is relevant to the style of mineralisation and type of deposits under consideration and to the activity which they are undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves' (the JORC Code 2012). Mr Warriner, Mr Cervoj, Mr Weeks, Mr Glacken and Mr Keenan have consented to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The Australian Securities Exchange has not reviewed and does not accept responsibility for the accuracy or adequacy of this release

FORWARD LOOKING STATEMENTS:

This release contains certain forward looking statements including nickel production targets. Often, but not always, forward looking statements can generally be identified by the use of forward looking words such as "may", "will", "except", "intend", "plan", "estimate", "anticipate", "continue", and "guidance", or other similar words and may include, without limitation, statements regarding plans, strategies and objectives of management, anticipated production and expected costs. Indications of, and guidance on future earnings, cash flows, costs, financial position and performance are also forward looking statements.

Forward looking statements, opinions and estimates included in this announcement are based on assumptions and contingencies which are subject to change, without notice, as are statements about market and industry trends, which are based on interpretation of current market conditions. Forward looking statements are provided as a general guide only and should not be relied on as a guarantee of future performance.

Forward looking statements may be affected by a range of variables that could cause actual results or trends to differ materially. These variations, if materially adverse, may affect the timing or the feasibility and potential development of the Golden Swan underground mine.

About Poseidon Nickel Limited

Poseidon Nickel Limited (ASX Code: POS) is a nickel sulphide exploration and development company with three projects located within a 300km radius of Kalgoorlie in the Goldfields region of Western Australia and a resource base of around 400,000 tonnes of nickel and 180,000 ounces of gold.

Poseidon's strategy is focused on the restart of its established nickel operations in Western Australia where project risk capital and operating costs are low. A critical element of this strategy has been to acquire projects and operations with high levels of geological prospectivity likely to lead to potential substantial extension of the operation's life through the application of modern exploration techniques.

Poseidon owns the Windarra, Black Swan and the Lake Johnston Nickel Projects. In addition to the mines and infrastructure including concentrators at Black Swan and Lake Johnston, these projects have significant exploration opportunities demonstrated by the discovery of the Abi Rose deposit at Lake Johnston and the recent discovery of the Golden Swan mineralisation at Black Swan. The Company has recently completed a Definitive Feasibility Study on retreating the gold tailings at Windarra given the strength of the A\$ gold price which showed positive economics.

Table 1: Nickel Projects Mineral Resources Statement

Nickel Sulphide Resources	JORC Compliance	Cut Off Grade	MINERAL RESOURCE CATEGORY												
			INDICATED			INFERRED			TOTAL						
			Tonnes (Kt)	Ni% Grade	Ni Metal (t)	Tonnes (Kt)	Ni% Grade	Ni Metal (t)	Tonnes (Kt)	Ni% Grade	Ni Metal (t)	Co% Grade	Co Metal (t)	Cu% Grade	Cu Metal (t)
BLACK SWAN PROJECT															
Black Swan	2012	0.40%	9,600	0.68	64,900	21,100	0.54	113,800	30,700	0.58	179,000	0.01	4,200	NA	-
Silver Swan	2012	4.50%	108	9.4	10,130	61	9.7	5,900	168	9.5	16,030	0.19	316	0.4	679
LAKE JOHNSTON PROJECT															
Maggie Hays	2012	0.80%	2,600	1.60	41,900	900	1.17	10,100	3,500	1.49	52,000	0.05	1,800	0.10	3,400
WINDARRA PROJECT															
Mt Windarra	2012	0.90%	922	1.56	14,500	3,436	1.66	57,500	4,358	1.64	72,000	0.03	1,200	0.13	5,700
South Windarra	2004	0.80%	772	0.98	7,500	-	-	-	772	0.98	7,500	NA	-	NA	-
Cerberus	2004	0.75%	2,773	1.25	34,600	1,778	1.91	34,000	4,551	1.51	69,000	NA	-	0.08	3,600
TOTAL															
Total Ni, Co, Cu Resources	2004 & 2012	-	16,775	1.03	173,530	27,275	0.81	221,300	44,049	0.90	395,530	0.02	7,516	0.03	13,379

Note: totals may not sum exactly due to rounding. NA = Information Not Available from reported resource model. The Indicated Mineral Resources are inclusive of those Mineral Resources modelled to produce the Ore Reserves

- **Black Swan Resource** as at 22 July 2014 (see ASX announcement "Poseidon Announces Black Swan Mineral Resource" released 4th August 2014)
- **Silver Swan Resource** as at 5 August 2019 (see ASX announcement "Silver Swan Resource Upgrade" released 5th August 2019)
- **Maggie Hays Resource** as at 17 March 2015 (see ASC announcement "50% Increase in Indicated Resources at Lake Johnston" released 17th March 2015)
- **Mt Windarra Resource** as at 7 November 2014 (see ASX announcement "Poseidon Announces Revised Mt Windarra Resource" released 7th November 2014)
- **South Windarra and Cerberus Resource** as at 30 April 2013 (see ASX announcement "Resource Increase of 25% at Windarra Nickel Project" released 1st December 2011)

The Company is not aware of any new information or data that materially affects the information in the relevant market announcements. All material assumptions and technical parameters underpinning the estimates in the relevant market announcements continue to apply and have not materially changed.

ORE RESERVE STATEMENT

Table 2: Nickel Projects Ore Reserve Statement

Nickel Sulphide Reserves	JORC Compliance	ORE RESERVE CATEGORY		
		PROBABLE		
		Tonnes (Kt)	Ni% Grade	Ni Metal (t)
SILVER SWAN PROJECT				
Silver Swan Underground	2012	130	5.2	6,800
Black Swan Open pit	2012	3,370	0.63	21,500
TOTAL				
Total Ni Reserves	2012	3,500	0.81	28,300

Note: Calculations have been rounded to the nearest 10,000 t of ore, 0.01 % Ni grade 100 t Ni metal and 10t of cobalt metal.

Silver Swan Underground Reserve as at 26 May 2017 (see ASX announcement "Silver Swan Definitive Feasibility Study" released 26th May 2017) Black Swan Open Pit Reserve as at 5 November 2014 (see ASX announcement "Poseidon Announces Black Swan Ore Reserve" dated 5th November 2014).

The Company completed an upgrade to the Silver Swan Indicated Resource in 2019 which was based upon the 2015 Silver Swan Resource Estimate (refer to Table 1 above for the new Silver Swan Resource estimate). At this point it is not known the impact the update to the Silver Swan Resources will have on the Silver Swan Reserve.

The Company is not aware of any other new information or data that materially affects the information in the relevant market announcements for the Black Swan Open Pit Reserve. All material assumptions and technical parameters underpinning the estimates in the relevant market announcements continue to apply and have not materially changed.