

Better Resource Understanding Changes the Game at Black Swan – 2.2mtpa Plant Option

Resource Update Adds Optionality

The Black Swan and Silver Swan drilling is complete and has been added to the previously announced Golden Swan and Silver Swan Tailings resources. POS now has a nickel (Ni) inventory at the Black Swan complex of 206kt, 104kt of which sits in the Measured and Indicated categories. This compares to the Ni inventory prior to the drilling campaign of 195kt, with 75kt in the Indicated category. POS now understands the structure and grade of the resource much more clearly, enabling greater options on which to base feasibility studies.

Potential for Black Swan Plant Capacity to 2.2mt – Supportive of Proposed Kalgoorlie Refinery

The updated Black Swan Mineral Resource has significantly improved the confidence in the Ni grade and distribution of the metallurgically important serpentinite and talc-carbonated hosted disseminated mineralisation immediately below the Black Swan open pit. An increased Ni grade in the resource of 0.63% (up from 0.59%) increased the Mineral Resource Estimate to 181kt. Importantly, Measured and Indicated Resources now have 80kt of contained Ni, compared to 65kt previously.

The metallurgical test work performed on the ore has demonstrated the responsiveness of concentrate produced from both serpentinite and talc carbonate ore types to pressure oxidation producing a mixed hydroxide precipitate for downstream processing predominantly into the growing battery market. This has a positive outcome on two fronts: it supports continuing discussions with Pure Battery Technologies on supplying its proposed Kalgoorlie pCAM refinery, and it gives POS the option to investigate utilising the Black Swan mill's full 2.2mtpa capacity alongside the current 1.1mtpa option in the feasibility studies.

Nickel Market – A Year of Volatility; Demand Strong

The Ni market has had an extremely volatile year. Prices started the year at US\$9.50/lb, saw a massive spike in March to near US\$22/lb, and have settled back to around US\$10/lb. Despite the extreme volatility, demand for Ni units remains robust, with POS having strong interest from potential customers. In particular, the macro theme of battery demand for electric vehicles remains a major factor for increasing Ni demand and prices going forward.

Valuation: A\$0.21 (from A\$0.24) – Higher Opex + Capex Upside from Black Swan Delivery

The delivery of the Black Swan BFS and subsequent start of production remains the key to our valuation and the upside from the current share price. We have updated our Black Swan forecasts to incorporate higher assumed opex and capex. We have also conservatively assumed that production at Black Swan will start in FY2024. Our valuation is A\$0.21 (fully diluted) from A\$0.24 previously.

Further catalysts include a potential 2.2mtpa plant. Key risks include further delays to the 'fill-the-mill' strategy Ni prices and rising costs.



Poseidon Nickel (POS) owns 100% of the Black Swan, Windarra and Lake Johnston nickel (Ni) assets located in Western Australia's Goldfields Ni province. The Black Swan project is the focus for POS, with the high-grade Golden Swan and Silver Swan adding high-grade Ni tonnes.

<https://poseidon-nickel.com.au/>

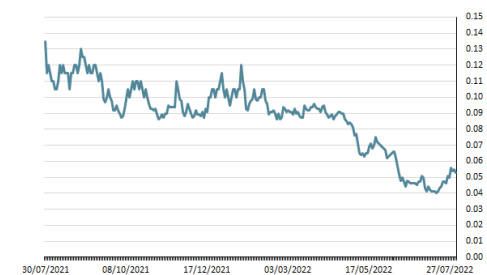
Stock	ASX: POS
Price	A\$0.054
Market cap	A\$166m
Valuation (per share)	A\$0.21 (previous A\$0.24)

Next steps

3Q CY22: 1.1mtpa BFS

4Q CY22: 2.2mtpa BFS

POS share price – 1 year



Source: FactSet.

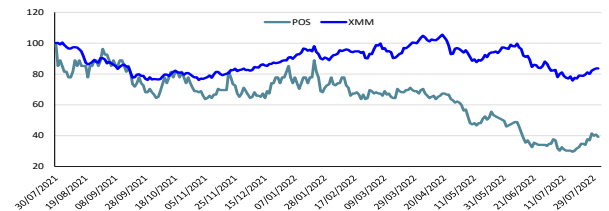
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Exhibit 1 – POS company summary (year-end 30 June)

MARKET DATA 02 August 2022	
Price	\$ 0.05
52 week high / low	\$ 0.14-0.05
Valuation (diluted)	\$ 0.21
Market Capitalisation	\$m 165.5
Enterprise Value	\$m 158.0
Shares on issue (basic)	m 3064.0
Options / Performance shares	m 8.0
Other equity (assumed issue FY2023)	m 90.9
Potential shares on issue (diluted)	m 3162.9

12 month Relative Performance versus S&P/ASX300 Metals and Mining



INVESTMENT FUNDAMENTALS	FY21A	FY22E	FY23E	FY24E
Reported NPAT	\$m (10.9)	(8.6)	(17.4)	85.3
Underlying NPAT	\$m (10.9)	(8.6)	(17.4)	85.3
EPS Reported (undiluted)	€ -0.36	-0.28	-0.57	2.78
EPS Underlying (undiluted)	€ -0.36	-0.28	-0.57	2.78
Underlying EPS growth	% 15%	22%	-103%	-590%
P/E Reported (undiluted)	x n/m	n/m	n/m	1.9
P/E Underlying (undiluted)	x n/m	n/m	n/m	1.9
Operating cash flow / share	€ (0.31)	(0.18)	(0.16)	3.75
Price to operating cash flow	x n/m	n/m	n/m	1.44
Free cash flow	\$m (21.4)	(23.6)	(99.4)	49.6
Free cash flow per share	€ (0.7)	(0.8)	(3.2)	1.6
Price to free cash flow	x n/m	n/m	n/m	3.3
Free cash flow yield	% -12.9%	-14.3%	-60.1%	30.0%
Book value / share	€ 1.96	2.60	2.35	5.14
Price to book (NAV)	x 2.8	2.1	2.3	1.1
NTA / share	€ 1.96	2.60	2.36	5.14
Price to NTA	x 2.8	2.1	2.3	1.1
Year end shares	m 2,809	3,064	3,155	0
Market cap (Spot)	\$m 165.5	165.5	165.5	165.5
Net debt / (cash)	\$m (7.4)	(11.8)	82.0	39.9
Enterprise value	\$m 158	154	248	205
EV/Sales	x 214.14	n/m	n/m	0.88
EV/EBITDA	x n/m	n/m	n/m	1.8
EV/EBIT	x n/m	n/m	n/m	2.21
Net debt / EV	x -0.05	-0.07	0.52	0.25
Gearing (net debt / EBITDA)	x n/m	n/m	-16.09	0.35

PROFIT AND LOSS \$Am	FY21A	FY22E	FY23E	FY24E
Sales	0.7	-	-	234.2
COGS	-	-	-	(114.2)
Gross profit	0.7	-	-	120.0
Other income	-	-	-	-
Other operating costs	(10.8)	(5.7)	(5.1)	(5.2)
EBITDA	(10.0)	(5.7)	(5.1)	114.8
Depreciation & amortisation	(0.4)	(3.0)	(8.0)	(22.0)
EBIT	(10.4)	(8.7)	(13.1)	92.7
Interest	(0.5)	0.1	(4.4)	(7.4)
Tax	-	-	-	-
NPAT	(10.9)	(8.6)	(17.4)	85.3
Adjustments & Significant items	-	-	-	-
Underlying NPAT	(10.9)	(8.6)	(17.4)	85.3

BALANCE SHEET \$Am	FY21A	FY22E	FY23E	FY24E
Cash at bank	7.9	11.8	7.4	86.6
Other assets	0.04	0.04	0.04	0.04
Receivables	0.9	0.9	0.9	0.9
Current assets	8.9	12.7	8.3	87.5
PP&E (with accum dep)	24.6	21.6	103.1	141.2
Exploration and evaluation expenditure	87.4	105.4	110.4	115.5
Other assets	4.1	4.1	4.1	4.1
Non current assets	116.1	131.2	217.6	260.8
Total Assets	125.0	143.9	225.9	348.3
Trade and Payables	2.6	2.6	2.6	2.6
Employee benefits	0.1	0.1	0.1	0.1
Provisions	3.5	3.5	3.5	3.5
Borrowings	0.1	0.1	0.1	0.1
Current liabilities	6.4	6.4	6.4	6.4
Loans and borrowings	0.5	-	89.4	126.5
Convertible note derivative	-	-	-	-
Provisions	57.9	57.9	57.9	57.9
Non-Current liabilities	58.4	57.9	147.3	184.4
Total Liabilities	64.8	64.3	153.7	190.8
Share Capital	238.3	266.3	276.3	276.3
Reserves	0.3	0.3	0.3	0.3
Accumulated losses	(178.5)	(187.0)	(204.5)	(119.1)
Total Equity	60.1	79.6	72.1	157.5

PRODUCTION AND PRICING	FY21A	FY22E	FY23E	FY24E
Nickel Production tonnes				
Black Swan	-	-	-	9,655
AUD/USD	-	-	-	0.70
Price				
Nickel US\$/lb	-	-	-	11.00

CASH FLOW \$Am	FY21A	FY22E	FY23E	FY24E
Operating Revenue	0.6	-	-	234.2
Sundry receipts	-	-	-	-
Payments to suppliers and employees	(10.3)	(5.7)	(5.1)	(119.4)
Interest received	0.2	0.1	0.1	0.1
Tax Paid	-	-	-	-
Operating cash flow	(9.5)	(5.6)	(5.0)	114.8
Payments for PPE	(0.2)	-	(89.4)	(60.1)
Proceeds from sale of PPE	-	-	-	-
Exploration and evaluation expenditure	(11.6)	(18.0)	(5.0)	(5.1)
Payments for term deposits	-	-	-	-
Investing cash flow	(11.9)	(18.0)	(94.4)	(65.2)
Proceeds from the issue of shares	9.5	28.0	10.0	-
Proceeds (Repayments) borrowings	(25.2)	(0.5)	89.4	37.1
Interest paid	(0.2)	-	(4.5)	(7.5)
Financing cash flow	(15.9)	27.5	94.9	29.6
Net Increase/Decrease	(37.3)	3.9	(4.5)	79.2
Cash at Beginning Year	45.2	7.9	11.8	7.3
Final Cash Balance	7.9	11.8	7.3	86.6

Resources (kt) by Asset

Nickel Sulphide Resources	Mineral Resource Category											
	MEASURED and INDICATED			INFERRED			TOTAL					
	Tonnes (kt)	Ni% Grade	Ni Metal (t)	Tonnes (kt)	Ni% Grade	Ni Metal (t)	Tonnes (kt)	Ni% Grade	Ni Metal (t)	Tonnes (kt)	Ni% Grade	Ni Metal (t)
Black Swan*	10,700	0.75	80,000	18,200	0.55	101,000	28,900	0.63	181,000			
Silver Swan*	138	9	12,450	8	6	490	146	9.5	12,940			
Golden Swan*	111.6	4.7	5,200	48.4	2.2	1,050	160	3.9	6,250			
Silver Swan Tailings**	674.9	0.92	6,201	-	-	-	674.9	0.92	6,201			
TOTAL	11,625		103,851	18,256		102,540	29,881		206,391			

* Indicated ** Measured

Nickel Sulphide Resources	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)	Tonnes (kt)	Ni% Grade	Ni Metal (t)
Maggie Hays	2,600	1.6	41,900	900	1.17	10,100	3,500	1.49	52,000			
Total	2,600	1.60	41,900	900	1.17	10,100	3,500	1.49	52,000			

WINDARRA

Nickel Sulphide Resources	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)	Tonnes (kt)	Ni% Grade	Ni Metal (t)
Mt Windarra	922	1.56	14,000	3,436	1.66	57,500	4,358	1.64	71,500			
South Windarra	772	0.98	8,000	-	-	-	772	0.98	8,000			
Cerberus	2,773	1.25	35,000	1,778	1.91	34,000	4,551	1.51	69,000			
TOTAL	4,467		57,000	5,214		91,500	9,681		148,500			

Nickel Sulphide Reserves	ORE RESERVE CATEGORY		
	PROBABLE		
Silver Swan Underground	130	5.2	6,800
Black Swan Open pit	3,370	0.63	21,500
Total	3,500	0.81	28,300

Source: POS, MST estimates.

The Black Swan Total Resource – Better Understood and Higher Quality

POS has conducted a significant exploration and resource definition drilling campaign over the last 18 months and has delivered a total Ni inventory at Black Swan of 206kt, with 104kt in the Measured and Indicated¹ categories. The previous resource was 195kt with 75kt in the Measured and Indicated categories. The resource contains:

- Black Swan Disseminated 181.0kt
- Silver Swan High Grade Underground 12.9kt
- Golden Swan High Grade Underground 6.3kt
- Silver Swan Tailings 6.2kt

Black Swan Disseminated (BSD) – Significantly Increased Understanding

The updated Black Swan Mineral Resource has significantly improved the confidence in the Ni grade and distribution of the metallurgically important serpentinite and talc-carbonated hosted disseminated mineralisation immediately below the Black Swan open pit. The Mineral Resource Estimate is 181kt of contained Ni compared to 179kt previously. Importantly, Measured and Indicated resources now have 80kt of contained Ni, compared to 65kt previously.

Confirming the distribution of the ore types (and quantifying the talc content) is important to identify mining blocks that will be suitable to produce a smelter-grade concentrate. The talc-carbonate ore is typically high in talc (MgO) content (and low in iron-sulphide content) and does not produce a favourable concentrate feed for conventional smelters.

POS conducted a laboratory pressure oxidation (POX) test on a concentrate produced from a ~50:50 talc-carbonate/serpentine ore blend. The POX leach extraction results were excellent, demonstrating greater than 97% Ni and cobalt extraction to the leach solution. The testwork demonstrated the amenability of concentrate produced from higher-talc ore blends to POX and has the potential to significantly increase the volume of ore from the BSD resource that could be economically mined.

Assessment of the talc distribution within the BSD resource is ongoing and will provide information for mine planning to blend the ore types to produce a flotation concentrate for feed into a POX facility.

Silver Swan Resource – Converting to Indicated

The high-grade underground Silver Swan resource update delivered an increase in quality of the resource, with the Indicated resource increasing by 20% to 12,450t of contained Ni. Although total contained tonnes are lower, a substantially higher portion of the resource can now be taken through to the reserves category.

Exhibit 2 – Black Swan total resource

Nickel Sulphide Resources	Mineral Resource Category								
	MEASURED and INDICATED			INFERRED			TOTAL		
	Tonnes (Kt)	Ni% Grade	Ni Metal (t)	Tonnes (Kt)	Ni% Grade	Ni Metal (t)	Tonnes (Kt)	Ni% Grade	Ni Metal (t)
Black Swan*	10,700	0.75	80,000	18,200	0.55	101,000	28,900	0.63	181,000
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TOTAL	11,625		103,851	18,256	0.56	102,540	29,881	0.69	206,391

* Indicated ** Measured

Source: POS.

¹ Measured and Indicated Resources are important in that they can be converted to Reserves (the parts of a Mineral Resource that can be economically mined)

Resource Understanding Increases Options – Potential Lift to 2.2mtpa

As discussed, the updated Black Swan Mineral Resource has significantly improved the confidence in the Ni grade and distribution of the metallurgically important serpentinite and talc-carbonate hosted disseminated mineralisation immediately below the Black Swan open pit. The metallurgical test work performed on the ore has demonstrated the responsiveness of concentrate produced from both serpentinite and talc-carbonate ore types to pressure oxidation producing a mixed hydroxide precipitate for downstream processing predominantly into the growing battery market.

A better understanding of the resource has:

- enhanced POS's position with respect to supplying to PBT's Kalgoorlie refinery
- opened up potential for a 2.2mt option for the Black Swan Mill.

POS and Pure Battery Technologies:

Black Swan Potential to Supply Proposed Kalgoorlie pCAM Refinery

In July 2021, POS and Pure Battery Technologies (PBT) entered into a Memorandum of Understanding (MoU) whereby both parties would evaluate the establishment of a regional precursor Cathode Active Material (pCAM) refining hub. Australia-based PBT conducts international Ni and cobalt refining, with its operations based in Germany. It is advancing its plan to establish a refinery in Kalgoorlie to produce pCAM battery metal products.

Under the terms of the agreement, PBT will provide its in-house technology and expertise. POS will provide typical specifications and anticipated production volumes of Ni concentrate from POS's projects as potential base feed for the proposed refinery. PBT has received a A\$120m grant from the Federal Government.

The ultimate objective is for the parties to definitively detail how they can work together to fund and develop a regional supply chain from mine to concentrate, to an intermediate mixed nickel-cobalt-hydroxide product that will be further refined in PBT's refinery for the battery markets. The PBT project is in Kalgoorlie, only 50 km from Black Swan, giving POS a strong advantage as a supplier.

POX test demonstrates potential feed for PBT refinery

Given the results of the testwork and the amenability of concentrate produced from higher-talc ore blends to POX, the POX study will assist POS in its discussions with PBT in relation to the potential supply of concentrate to their proposed Kalgoorlie refinery hub. There is potential for the production of approximately 100ktpa of concentrate to feed into a POX circuit to produce mixed hydroxide precipitate (MHP).

Potential for 2.2mtpa Black Swan Mill




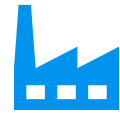




POS had been pursuing an option to run the Black Swan Mill at 50% of its rated capacity of 2.2mtpa to produce a smelter-grade concentrate, requiring low-talc ore.

With a better understanding of the Black Swan Disseminated ore, and in order to fully understand the economics of the downstream production of a mixed hydroxide precipitate, POS has included studies on producing a rougher concentrate feed stock which could be delivered to a POX plant or sold to other Ni plants in WA that utilise autoclave leaching technology. POS is obtaining capex and opex estimates for a POX plant. These estimates incorporate a 2.2mtpa throughput scenario to be used in feasibility studies which assume the full utilisation of current milling infrastructure.

The 2.2mtpa study (inclusive of the POX plant option) will run concurrently with the 1.1mtpa option and are not mutually exclusive. A 2.2mtpa option may well precede a 1.1mtpa option. POS will continue studies and metallurgical testwork to progress the BFS, in order to determine which restart option presents the most viable economic outcome.

Exhibit 3 summarises and compares the two feasibility studies.

Exhibit 3 – Black Swan Restart Project: Comparison of the 1.1mtpa option with the 2.2mtpa option

BLACK SWAN RESTART PROJECT OPTIONS		
<p>1.1mtpa smelter-grade concentrate</p> <ul style="list-style-type: none"> • Potential to economically mine and process low-talc (MgO) serpentinite material • Lower capital requirement and greater near-term mining production potential 	<p>Mining</p> 	<p>2.2mtpa rougher concentrate</p> <ul style="list-style-type: none"> • Potential to economically mine and process a larger portion of the Mineral Resource (to include the talc carbonate ore type) • Reduces reliance on high-grade underground ore sources and tailings
<ul style="list-style-type: none"> • Smelter-grade concentrate production requiring suitable low-talc (MgO) ore feed • Likely project life based on suitable ore feed: less than 5 years 	<p>Concentrate Processing</p> 	<ul style="list-style-type: none"> • Higher talc ore types amenable to POX processing, significantly increasing mine inventory • Likely project life based on suitable ore feed: significantly more than 5 years
<ul style="list-style-type: none"> • Truck concentrate to Kambalda, rail to Esperance/Fremantle, ship to overseas smelter • Potentially higher carbon footprint than trucking to WA downstream processing location 	<p>Logistics</p> 	<ul style="list-style-type: none"> • PBT: truck concentrate to Kalgoorlie – 55kms • Existing WA autoclave operation: truck concentrate less than 300kms • POX located at Black Swan, nil transport
<ul style="list-style-type: none"> • Smelter industry proven path to market • Payabilities increased in recent times for smelter grade (low MgO) concentrate 	<p>Downstream Processing</p> 	<ul style="list-style-type: none"> • Less established technologies compared to smelter path • Value add downstream MHP or pCAM product could attract higher payability
 <ul style="list-style-type: none"> • Smelter grade concentrate produces Class 1 nickel needing further processing for battery applications 	<p>End Customer</p> 	<ul style="list-style-type: none"> • Emerging markets supporting global decarbonisation initiatives (battery, EVs) • Strong interest received from EV and battery manufacturers for product offtake 
<ul style="list-style-type: none"> • Both 1.1mtpa and 2.2mtpa scenarios likely to benefit from existing infrastructure, including: <ul style="list-style-type: none"> ○ lower carbon emission grid power instead of diesel generation; and ○ water from replenishing nearby existing open pit sources rather than bore fields 	<p>ESG</p> 	<ul style="list-style-type: none"> • Shorter concentrate product transport to PBT Kalgoorlie refinery expected to reduce carbon emissions per nickel unit • Downstream processing in a stable mining jurisdiction provides security of supply for customers

Source: POS.

POS Options Opening Up – A Positive Outcome

POS previously looked into a Direct Shipping Ore (DSO) option for the high-grade material. Inflationary pressures over recent years have increased underground mining costs by over 30% compared to the 2018 Black Swan feasibility study. The higher mining costs, together with indicative offtake terms and the capital required for a relatively small amount of contained Ni, resulted in a sub-optimal economic outcome compared to processing the high-grade ore through the Black Swan concentrator. Therefore, the POS ceased studies on a DSO operation.

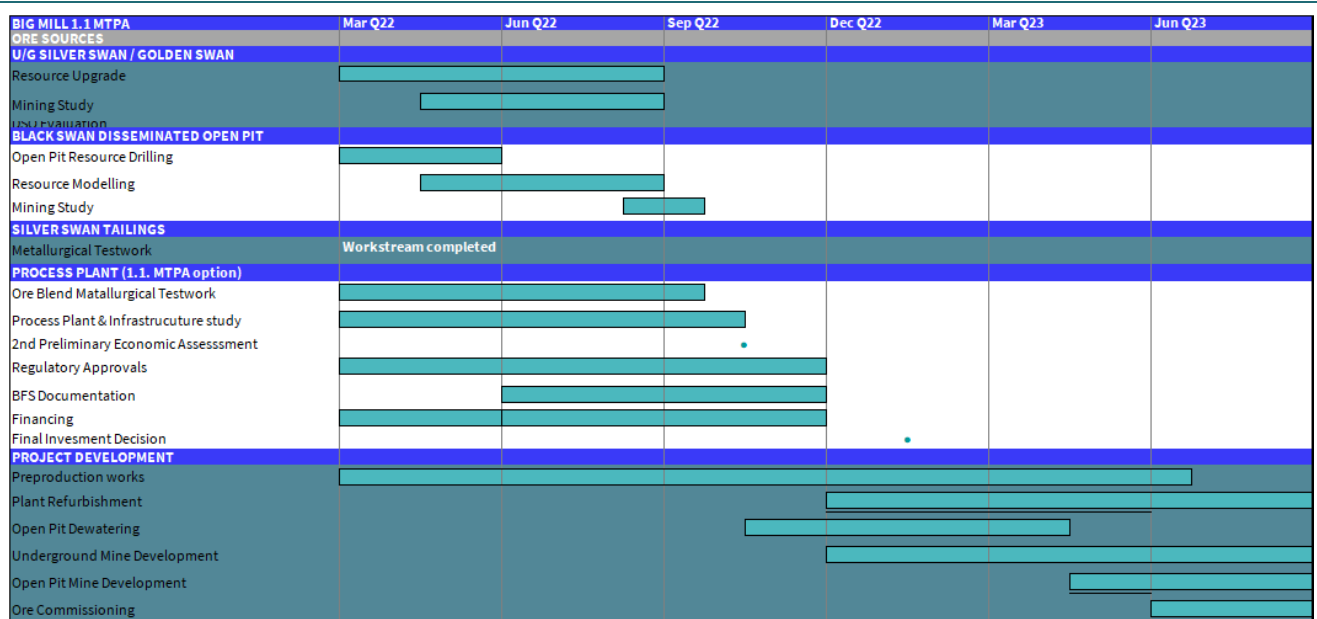
The potential for two potential significant options available to POS to process Black Swan ore is a very positive outcome. The ability to utilise the high-talc ore within the Black Swan Disseminated system could potentially add significant value to POS. Strong Ni demand has increased POS’s ability to assess the two options, rather than being bound by just the one option.

Timing: 1.1mtpa Option – Targeting Black Swan Restart in Q2CY23

The 1.1mtpa BFS remains on track for completion at the end of September 2022, with the 2.2mtpa studies requiring further work beyond this date to achieve a bankable feasibility level of accuracy.

If the 1.1mtpa option were to go ahead, commissioning of first ore from Black Swan would be in 2QCY23.

Exhibit 4 – Black Swan timetable: 1.1mtpa option



Source: POS.

Lake Johnston and Windarra – Further Options for POS

Lake Johnston: Low-Capex Restart – Just Like Black Swan

The Lake Johnston plant started operating in 1998, treating ore from the Emily Ann underground Ni mine. 1.5m tonnes of ore were mined and processed, at an average grade of 3.8% Ni, delivering 57,000 tonnes of contained Ni between 1998 and 2007. There have been a number of expansions since, the most recent being a major expansion to 1.5mtpa throughput capacity in 2006. The Maggie Hays deposit was brought online in 2007 with a resource of 12.3m tonnes at 1.5% Ni for 182,000 contained Ni and mined and processed between 2008 and 2013. The plant was refurbished in 2011 before being placed on care and maintenance in 2013. In 2017, certain pieces of infrastructure were removed from the Maggie Hays mine and the workings were allowed to flood.

The Lake Johnston resource is 3.5Mt @ 1.5% Ni for 52kt Ni (Maggie Hays).

In order to restart Lake Johnston, the mine would need to be dewatered and the mill refurbished. In 2020, mining consultants Entech costed the dewatering and rehabilitation of the submerged ground support and reinstallation of required infrastructure at \$26.4m. The expected duration of these works was 22 months.

POS engaged GR Engineering (GRES), the same organisation that reviewed the Black Swan start up, to review a Lake Johnston mill restart scenario in late 2021. GRES estimated that the processing plant and associated infrastructure could be refurbished for an estimated cost of \$31m and that this would take approximately seven months to complete. The operating cost for the process plant is estimated at approximately A\$36 per tonne of ore based on a throughput rate of 0.9mtpa. The project also has a 200-person village, tailings dam and airstrip.

POS plans to conduct an aggressive exploration program to increase the Lake Johnston resources and a 15,000m RC program is scheduled to commence in the June quarter on the highly prospective Western Ultramafic. The addition of Lake Johnston to POS's production profile would contribute to its corporate strategy of producing >15,000t of Ni in concentrate per annum.

Windarra: Option to Process Nickel from Windarra Nickel Project

The Windarra Nickel project sits some 250 km north of Black Swan in WA's Mt Margaret Goldfields, about 25 km west of Laverton. The project, in a well-established mining precinct, is well serviced by regional infrastructure with a skilled labour and contracting workforce available. Since 2008, POS has completed over 550 drill holes for ~70km of drilling on the project to bring the historical mine resources into JORC-compliant status and has discovered a new resource at Cerberus.

The Windarra deposit consists of three broad geologically based mineralised areas: Mt Windarra, South Windarra and Cerberus. A more recent exploration focus lies between Cerberus and Mt Windarra at Crazy Diamond.

Windarra underground mine remnants contain resources of 148,500 t of contained Ni at an average grade of around 1.5%. There are no processing facilities at Windarra.

With the Black Swan mill in operation, the option to process ore from the Windarra deposit opens up, with ore being trucked to Black Swan.

Nickel Market: Short Squeeze Drives Huge Price Action; Long Term Looks Strong as Batteries Play Increasing Role

Ni is traded on the London Metal Exchange (LME), and over the past decade has traded roughly between US\$4.50/lb and US\$9.00/lb.

2022: A Huge Shake-up in the Nickel Market – From ‘March Madness’ to Correction

Russia invades Ukraine in late February, prompting buyers to seek alternative sources

Russia’s invasion of Ukraine in late February shook the Ni market, as Russia is the world’s third-largest Ni supplier. Ni buyers began looking for alternatives to Russian sources. The Ni price moved sharply higher in the week after Russia’s invasion.

Prices spike in early March

In early March, the Ni market unravelled, with prices rising in huge leaps, hitting a US\$45/lb high on a 250% price spike in little more than 24 hours. The market was chaotic and billions of dollars in losses were accumulated for those with a short position in the market, leading the LME to suspend trading for the first time in 30 years. So what happened?

The spike drove a ‘short squeeze’ which drove prices higher. This is when traders who previously bet on a drop in the price are put in an ever-tighter financial position by rising prices, as they are forced to buy into the market to cover their short position. Other participants may also push up prices in anticipation of that short covering.

The short squeeze focused on Chinese production and trading company Tsingshan, which was planning to bring 850kt of nickel matte into the market in 2022 and took a position that the price would go down as a result. On the other side of the market was Glencore, with half the ownership of the Ni on the LME.

On 7 March, the Ni price began to rise sharply, surging from \$13.50/lb to more than \$23/lb, creating a large amount of margin calls. Tsingshan’s were roughly \$3 bn and its obligations were much larger than its cash and bank credit. Some of Tsingshan’s bankers started to buy back Ni contracts, sending the price of Ni spiralling ever higher.

LME suspends trade

On 8 March, the LME suspended trading, saying that the day’s price movements ‘created a systemic risk to the market’. The decision meant traders wouldn’t need to pay margin calls on the basis of the \$35/lb Ni price. Effectively, it rewound the market to the moment when prices closed on 7 March at \$21.80/lb. Tsingshan’s short position had now racked up billions of dollars in losses. The company’s bankers agreed to support the company going forward.

Subsequent correction in nickel price

The second quarter of 2022 saw the commodity and mining-related equity prices downturn sharply, as macro factors such as high global inflation rates, increasing interest rates and supply chain issues stoked fears of a global recession.

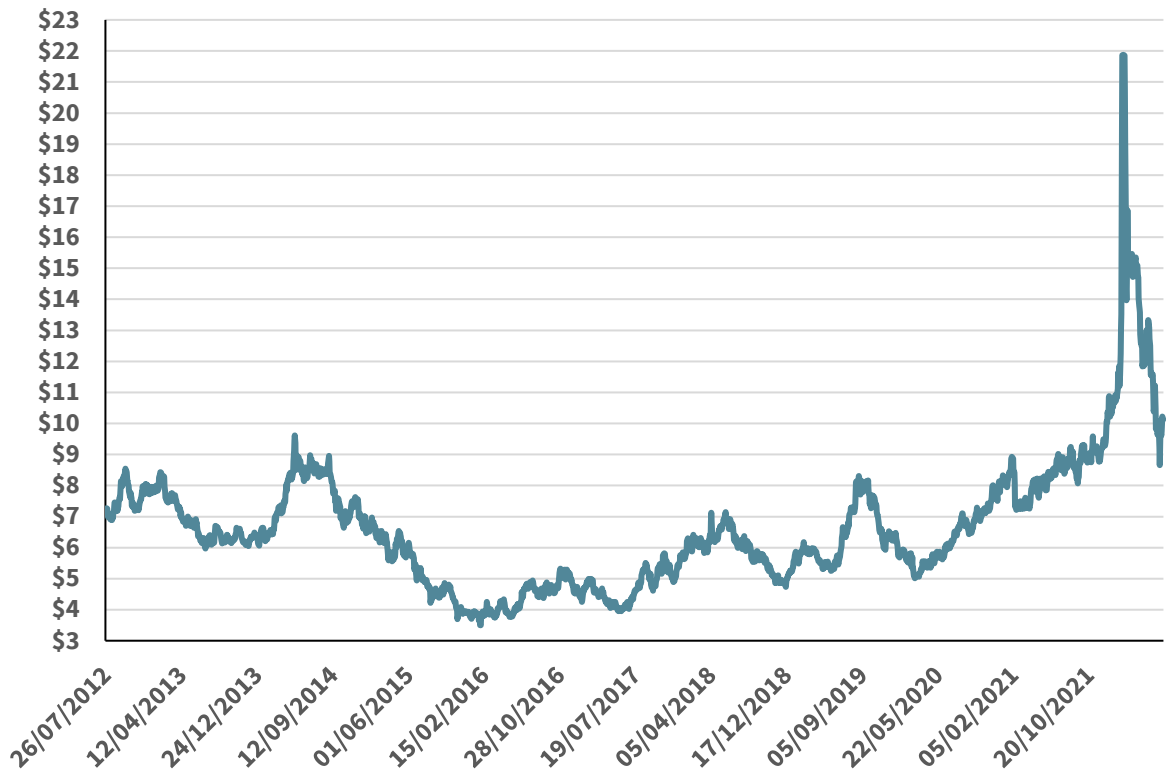
The Ni market was no exception, and has corrected significantly from its March highs of US\$22/lb to around US\$10/lb now. Despite the severe correction, Ni is trading above its price at the start of 2022 of around US\$9.50/lb (see Exhibit 5) and sits well above Ni prices of the last 10 years (see Exhibit 6).

Exhibit 5 – Ni price, 1 year (US\$/lb)



Source: FactSet.

Exhibit 6 – Ni price, 10 years (US\$/lb)



Source: FactSet.

Going Forward: Battery-Related Demand to Play Growing Role in Overall Ni Demand

Over the medium to long term, Ni demand will be incrementally driven by the battery market off the back of EV demand. Recent shifts in legislation that favour EVs will likely result in a surge in demand for Ni units to be used in battery production. Despite the general adverse economic conditions encountered in 2020 as a result of COVID-19, EV battery sales exceeded all expectations. 2020 saw EV batteries consume around 200,000 tonnes of Ni, with well over 300,000 tonnes in 2021. Total Ni demand is around 2.4mt. Market consensus appears to be that by 2030, battery-related demand for Ni will be around 1.7mt, or 35% of total forecast Ni demand (compared to 12% in 2021).

The use of high-quality Ni in EV batteries represents a long-term driver for demand and upside to the Ni price. Battery manufacturers are now adopting battery chemistries with higher Ni content. The Ni market is likely to encounter significant supply deficits over this time and we expect prices to rise, incentivising new production capacity. A recent announcement by Jaguar, outlining how the Land Rover-owned business will be all-electric by 2025, demonstrates the scale growth Ni will likely encounter in the near future. The UK's goal to outlaw the sale of wholly petrol and diesel cars from 2030 is an indication of where the global motor vehicle industry is heading and the forces which will drive Ni demand.

BHP's view on Ni supports this view, with its Chief Commercial Officer stating in late 2021: 'Demand for nickel in batteries is estimated to grow by over 500 per cent over the next decade, in large part to support the world's rising demand for electric vehicles.' 85% of BHP's Ni is now sold to global battery material suppliers.

BHP recently signed an agreement with Tesla for the long-term supply of some 18,000 tonnes of Ni per year. Tesla has acted early to secure significant volumes of Ni to fuel its lithium-ion battery demand, with an estimated 50% of Tesla's battery chemistry to be high-Ni cathode.

BHP's deal with Tesla can be seen as positive for the Australian Ni market generally (and the global Ni market more broadly).

Valuation: A\$0.21 (Previous A\$0.24):

Timing, Pricing, Costs – Increased Capex and Opex Assumptions

Valuation Methodology: SOTP with Risked NPV

After reviewing our assumptions, we value POS at A\$0.21, down from A\$0.24 previously. We use a sum-of-the-parts methodology, valuing Black Swan, Windarra Gold and Lake Johnston on a risked NPV basis (see Exhibit 7). We have incorporated Windarra Nickel into the Black Swan production model.

Black Swan Valuation Forms Bulk of Valuation

Our valuation is based on POS adopting the Black Swan 1.1mtpa concentrator. We have assumed a 20-year low-grade mine life in this model and have now included the Golden Swan resource and Silver Swan tailings in our model. We have also included the option of processing Windarra Nickel through the Black Swan mill. We have not included any Southern Terrace exploration success in our valuation at this stage.

Upside potential from 2.2mtpa option

At this early stage we have not modelled the 2.2mtpa Black Swan rougher concentrate or POX plant in our model. As POS is in process of a BFS on the 2.2mtpa option we will await further detail before including the option in our modelling.

We consider that the 2.2mtpa option has the potential to increase the valuation of POS due to the following:

- producing a larger amount of concentrate sooner, thus bringing forward higher cashflows
- reducing reliance on high grade ore
- longer mine life
- lowering unit operating costs
- requiring minimal additional capex for the rougher concentrate option
- providing broader market options and possible better payment terms
- with the inclusion of a POX plant, producing a significantly higher-value product (we estimate a POX plant would cost around A\$100m)

Exhibit 7 – Valuation summary

VALUATION	Current Valuation			Previous Valuation	Valuation Methodology
	A\$m	Risk Weighting	EQUITY VALUE A\$/SHARE FULLY DILUTED	EQUITY VALUE A\$/SHARE FULLY DILUTED	
Equity Valuation of Black Swan	\$486.0	100%	\$0.15	\$0.17	Risked NPV
Equity Valuation of Lake Johnston	\$295.4	50%	\$0.05	\$0.05	Risked NPV
Equity Valuation of Windarra Gold	\$55.5	100%	\$0.02	\$0.02	Risked NPV
EQUITY VALUE PROJECTS	\$836.8		\$0.22	\$0.24	
Add: Cash	\$11.0		\$0.00	\$0.01	At 30 June 2022
EQUITY VALUE PRE SG&A	\$847.8		\$0.22	\$0.25	
SG&A	-\$31.7		-\$0.01	-\$0.01	NPV of Corporate Costs
EQUITY VALUE	\$816.1		\$0.21	\$0.24	

Source: MST estimates.

Exhibit 8 – Core modelling assumptions

CORE ASSUMPTIONS	
Price and Currency	
AUD/ USD	0.70
Nickel Price US\$/lb	11.00
Cost and Financing	
Discount Rate Nickel Projects %	10%
Discount Rate Gold Projects %	8%
Inflation %	2.5%
Interest on Cash %	1%
Interest on Borrowings %	6%
Modelling	
Depreciation	LOM
Depreciation Rate	10.00%
Taxation Rate	30%

Source: MST estimates.

Review of Inputs – Timing, Nickel Price, Capex and Opex, AUD/USD

POS’s operating environment has changed in a number of ways since our last report in March 2022. The timing of the Black Swan project has been pushed out and we see risk to the capex numbers. However, we also need to account for the broader commodity environment – we think there has been a structural change in the Ni market and that higher pricing sooner needs to be taken into consideration.

Timing – assume no production until FY24

Black Swan has suffered some delays, as flagged by POS in recent market updates, with indication of first ore from Black Swan 1.1mtpa in Q2CY23. We have taken a conservative view, assuming no production in FY23 and a full year of production in FY24.

Nickel price – a more complex but also more bullish picture

The Ni market has seen a substantial shake-up in recent months. We have a view the market has structurally changed given the need for Ni as a key input to batteries. We also see recent turbulence in the Ni market as indicative of the market’s extreme tightness and tendency to experience price shocks, with the Ni price particularly volatile due to the market’s relatively small size.

Our Ni price assumptions as follows:

- FY23 at US\$11.00/lb and holding that price for two years
- tapering down to a long-term price of US\$10/lb
- assuming 5% pa growth from that base.

We believe this reflects the tightness of the Ni market while acknowledging that higher prices will encourage some further supply into the market over the longer term.

We also consider Black Swan may attract a premium in the market going forward. The recent BHP/Tesla deal demonstrates the underlying demand for quality Ni.

Capex and opex – we see more pressure on costs

We had increased our capex and opex estimates previously. However, as POS is in a challenging operating environment in WA and we expect further capex/opex pressure, we have increased both opex and capex.

Our cost estimates are up from US\$4.36/lb to US\$5.00 on a 100% basis. Note that both capex and opex are our preliminary estimates, which we will refine further as POS comes to market with feasibility studies.

Exhibit 9 – Capex assumptions – Black Swan restart (A\$m, FY2023)

BLACK SWAN PROJECT CAPEX ESTIMATES (A\$m)	FY2023	Previous Estimate
Pre-Production - Silver Swan Underground	11,000,000	11,000,000
Pre-Production - Black Swan Processing Plant	30,000,000	24,200,000
Black Swan Mine Development	6,000,000	5,500,000
Golden Swan Mine Development	14,400,000	13,200,000
Windarra Mine Development	23,000,000	22,000,000
	\$84,400,000	\$75,900,000

Source: MST estimates.

Positive Catalysts for the Share Price

Key drivers of share price upside

2.2mtpa DFS

We consider that the 2.2mtpa option has the potential to increase the valuation of POS given a larger amount of concentrate production in a shorter time period. Additional capex for the larger production (ex a POX plant) appears to be minimal).

Further development with PBT

The MoU with PBT opens up many processing and marketing options for POS.

Southern Terrace exploration

The Golden Swan prospect is a potential high-grade Ni deposit. Continued exploration success at the Southern Terrace could enhance the project and add significant valuation upside.

FID for Black Swan mill refurbishment

The FID for the Black Swan mill refurbishment will mark a major step towards first production and will be a positive catalyst.

First production from Black Swan mill

The first production from the Black Swan mill refurbishment will mark the start of cash flow generation for POS and will be a positive catalyst.

Exploration success at Lake Johnston/Windarra Ni

The Lake Johnston and Windarra projects both have exploration potential. Exploration success at either project would accelerate the potential and add to the valuation.

Ni price increases

POS is directly leveraged to higher Ni prices. A sustainable increase in the Ni price would accelerate the potential start of Black Swan in particular, even without exploration success.

Other potential share price catalysts

Offtake agreements for Ni production

Any agreements to purchase Ni from POS would be a positive indication of the Ni market's acceptance of the product.

Potential processing of third-party ores at Black Swan/Lake Johnston

Black Swan and Lake Johnston have processing facilities. Any agreements to process third-party ore could generate cash at high margins.

Sale of Windarra Gold

The Windarra gold project has been flagged as an asset up for sale, as POS is focusing on the Ni 'fill the mill' strategy. We value the project at A\$30m as a project in POS's hands. The generation of cash form such as le would be a positive for the stock.

Risks to the Share Price and Valuation

Key risks to the share price

Delays to or not achieving FID for Black Swan mill refurbishment

The FID for the Black Swan mill refurbishment will mark a major milestone. Any delay or non-achievement of FID would be a negative catalyst for the stock.

Delay to first production from Black Swan mill

The first production from the Black Swan mill refurbishment will mark the start of cash flow generation for POS. Any delay to first production would be a negative for the stock.

Extended period of low Ni prices

Ni prices are the key driver of POS's valuation. Extended periods of low Ni prices could delay projects, even with exploration success.

Disappointing exploration at Windarra Ni/Lake Johnston

As longer-term drivers of value, any disappointing exploration results at Lake Johnston/Windarra could lead to a decrease in the share price/valuation.

Other potential risks to the share price and valuation

Further capital cost increases for projects

Capital cost increases lead to direct valuation decreases. Capital costs at the POS projects are relatively low, and therefore have a smaller effect on valuation, but increases could nonetheless be negative to stock sentiment.

Further operating cost increases

Any increase in operating costs would have a direct negative effect on valuation.

Appreciating AUD vs USD

An increasing AUD against the USD would lead to a decreased AUD Ni price, reducing cashflow and valuation.

Financials – Exploration at Golden Swan the Focus; Exploration Spend to Drive Value

Cash Position

The company had a cash position on 30 June 2022 of A\$11.m. The cash on hand will be used to fund further exploration, resource definition drilling, production and marketing studies, mine planning, reserve definition and the ‘fill the mill’ feasibility. POS estimates that expenditure in the next quarter will be A\$5.5m.

Black Swan Funding and Equity

We have assumed the Black Swan project is funded predominantly by debt.

The DSO program and/or the concentrator option could be funded in a number of ways:

- project/bank finance
- pre-sale agreement
- trader/customer finance.

We have assumed a further small equity issue of \$10m (at the current share price) as part of the funding.

Windarra Gold Project – Up for Sale

The Windarra gold project has been flagged as an asset up for sale, as POS is focusing on the Ni ‘fill the mill’ strategy. We value the project at A\$30m as a project in POS’s hands.

Other Financials

We have assumed that any further projects such as Lake Johnston can be funded from Black Swan cash flow or via debt funding.

POS has at 30 June 2021 (to be updated at release of FY2022 annual results) approximately A\$38.1m in accumulated tax losses. These losses have been applied to earnings, with cash tax forecast to be paid from FY2025 going forward.

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