RED CLOUD

Chalice Mining Ltd. (ASX:CHN)
Updated MRE Focuses on High-grade Zones at Gonneville

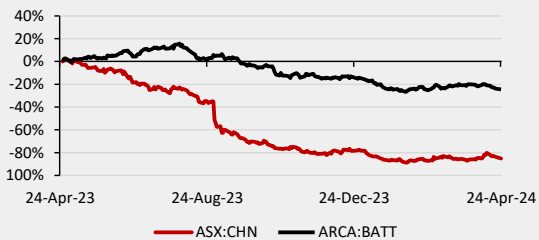**Development Update**
April 24, 2024

(Currency is A$ unless noted otherwise)

Closing Price	$1.16
Rating	NA
Target ($/sh)	NA
Return to Target	NA
52 Week Low / High	$0.86 / $8.07

CAPITALIZATION	Basic	Diluted
Shares Outstanding (M)	389.0	392.1
Market Capitalization ($M)		$449.3
Enterprise Value ($M)		$337.3
Cash and Equivalents ($M)		$112.0
Total Debt ($M)		$0.0

STOCK CHART

RELATIVE PERFORMANCE

RELATIVE VALUATION	US$ EV/oz PdEq
Peer Group	$51
Chalice Mining Ltd.	$13

*S&P Capital IQ Consensus

MAJOR SHAREHOLDERS

Management (13.7%), Goldman Sachs Group. (6.6%), State Str. (4.8%), BlackRock, I (4.1%), The (3.8%), UBS Asset Manageme (3.4%), JPMorgan Chas (3%)

DISCLOSURE CODE:

(Please refer to the disclosures listed on the back page)

Source: RCS, Company Information, Capital IQ

Company Description

Chalice Mining is a well-funded explorer and developer with district-scale exploration projects across the tier-1 mining jurisdiction of Australia. Chalice's key projects are the 100%-owned Julimar Ni-Cu-PGE project located 70km north east of Perth and the Hawkstone Ni-Cu-Co project located in the west Kimberley region of Western Australia.

Impact: Positive

Chalice Mining (CHN) reported an updated mineral resource estimate (MRE) for its 100%-owned Gonneville PGE-Ni-Cu-Co project, located in the Julimar intrusive complex in Western Australia (Figures 1 – 4). The updated MRE outlined 660Mt at 0.79 g/t 3E (PGE+Au), 0.15% Ni, 0.083% Cu, and 0.015% Co for 17M oz 3E, 960kt Ni, 540kt Cu, and 96kt Co (Tables 1 – 7). Notably, this marks an 18% increase in resources from the prior MRE. This estimate includes both an updated global resource and a higher-grade sulphide resource, which was re-modelled with the goal of examining a smaller-scale, higher-grade mining project than that envisioned in the 2023 scoping study (**read note**). **In our opinion, this MRE is a positive step for Chalice. The high-grade resource could lay the foundation for a smaller-scale, more manageable project with a quicker payback, which might ultimately be expanded to include the lower-grade bulk material. This is an important milestone in Chalice's plan to move the project forward.**

- **Global resources increased by ~18% from the previous Mar/23 MRE (Table 8) (read note).** Within the last four years, more than 1,200 drill holes (~320,000m) were completed to define the global resource. This update incorporated 56 additional drill holes, including 15 step-out holes. The resource size and confidence levels increased with the additional drilling, as 61% of resources are now in the M&I categories and 39% in Inferred. CHN aims to target these higher-grade resources earlier on in the LOM. Gonneville remains open to the NW and down-dip.

- **A re-modelled higher-grade sulfide resource marks an important step in development.** The higher-grade sulfide resource contains 59Mt at 2.0 g/t 3E, 0.20% Ni, 0.21% Cu, and 0.019% Co for 3.8M oz 3E, 120kt Ni, 120kt Cu, and 11kt Co. Similarly, 61% of this resource is in the M&I category, while the remainder is an inferred resource. Notably, the high-grade resource begins at a depth of ~40m, with 46% lying within 200m of surface, extending to a ~1.1km depth and remains open for expansion.

- **Advancing on several other fronts to accelerate development work.** Current development work includes: 1) metallurgical testwork to support the PFS (on low-and high-grade samples), including variability tests on defined geo-metallurgical domains and optimization of comminution and flotation parameters, 2) progressing the federal and state approvals process following referral in March 2024, and 3) investigating key infrastructure routes for power, water, and transport, and completing initial engineering work.

- **Chalice is targeting completion of a Gonneville PFS in mid CY25.** It is currently conducting work on a scoping study and examining a high-grade starter case, based on the high-grade sulphide resource. CHN is also continuing discussions in a strategic partnering process, which it is progressing in parallel with the studies and regulatory approvals.

We do not currently rate this stock. We expect further exploration and the PFS to drive the stock in future. **Upcoming catalysts:** 1) Met testwork and UG flowsheet (ongoing), 2) Strategic partnering (ongoing), 3) Permitting and approvals (2024-25), 4) PFS (mid-2025), and 5) Project financing (2026).

Figure 1: Gonneville project location

Source: Company Reports

Figure 2: Plan view of Gonneville block model (high-grade sulfide only) and new drilling
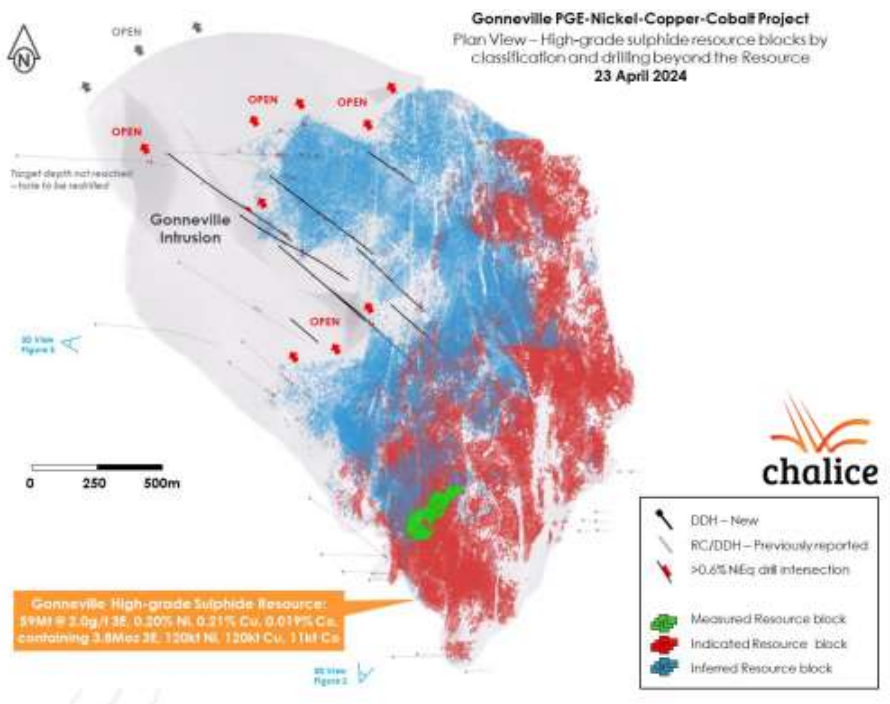
Source: Company Reports

Figure 3: 3D view (looking NNE) of Gonneville block model (high-grade sulphide only) and new drilling

Source: Company Reports

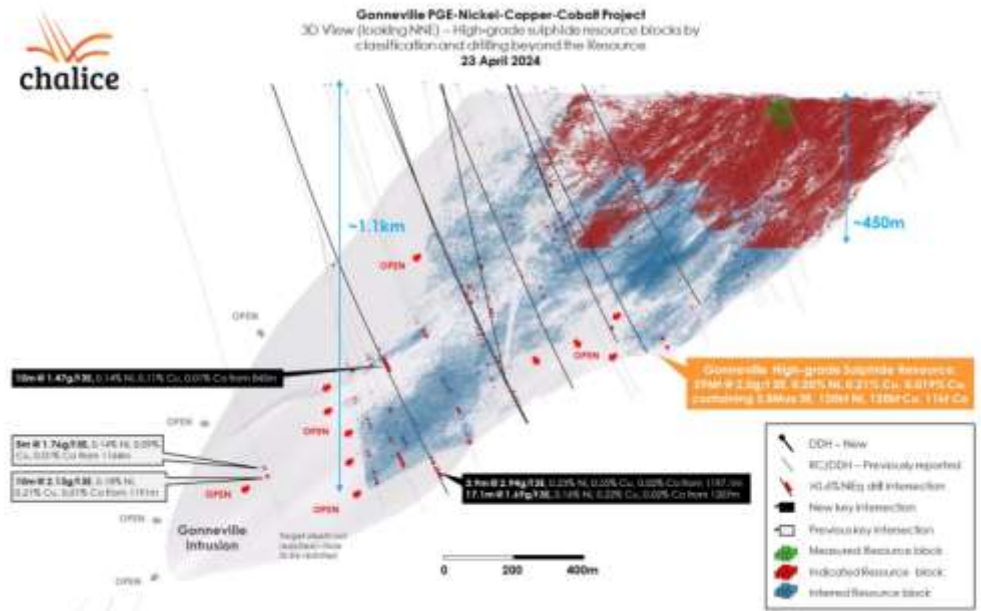**Figure 4: 3D view (looking ESE) of Gonneville block model (high-grade sulphide only) and new drilling**
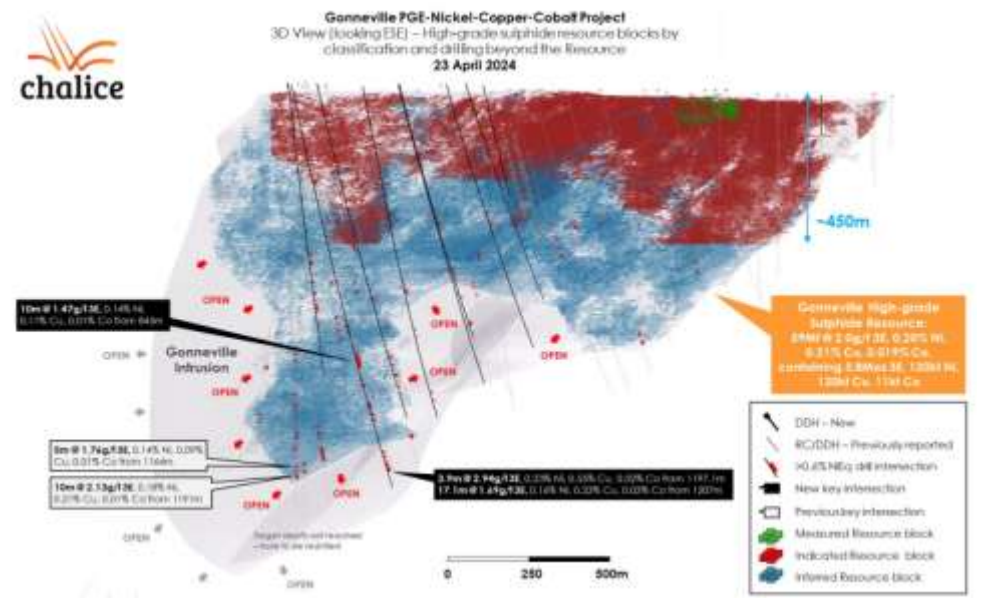
Table 1: April 2024 mineral resource estimate NSR assumptions

Key assumption	Unit	April 2024 Resource
Long term metals prices		
Ni	US$/t	24,000
Cu	US$/t	10,500
Co	US$/t	50,000
Pd	US$/oz	1,800
Pt	US$/oz	1,200
Au	US$/oz	1,800
Financial		
Exchange rate	A$/US$	0.70
Offtake terms		
Ni payability (in Ni-Co MHP)	% LME	85
Co payability (in Ni-Co MHP)	% LME	85
Cu payability (in Cu conc)	% LME	96.5
Pd payability (in Cu conc)	% LBMA	96
Pt payability (in Cu conc)	% LBMA	92
Au payability (in Cu conc)	% LBMA	97
Cu conc treatment charge	US$/dmt conc	80
Cu refining charge	US$/t	176
Pd/Pt refining charge	US$/oz	25
Au refining charge	US$/oz	5
Other offsite costs		
Cu royalty rate	%	5.0
Ni-Co-Pd-Pt-Au royalty rate	%	2.5
Transport Costs	A$/wmt conc	125

Source: Company Reports

Table 2: Gonneville April 2024 MRE

Classification*	Mass	Grade				Contained Metal			
	Mt	3E (g/t)	Ni (%)	Cu (%)	Co (%)	3E (Moz)	Ni (kt)	Cu (kt)	Co (kt)
Measured	2.9	1.20	0.21	0.17	0.018	0.12	6.1	4.8	0.52
Indicated	400	0.79	0.15	0.087	0.015	10	610	370	65
Inferred	250	0.80	0.15	0.076	0.014	6.4	370	200	37
Total	660	0.79	0.15	0.083	0.015	17	960	540	96

Source: Company Reports

Table 3: Gonneville high-grade sulphide MRE

Classification*	Mass	Grade				Contained Metal			
	Mt	3E (g/t)	Ni (%)	Cu (%)	Co (%)	3E (Moz)	Ni (kt)	Cu (kt)	Co (kt)
Measured	2.9	1.20	0.21	0.17	0.018	0.12	6.1	4.8	0.52
Indicated	400	0.79	0.15	0.087	0.015	10	610	370	65
Inferred	250	0.80	0.15	0.076	0.014	6.4	370	200	37
Total	660	0.79	0.15	0.083	0.015	17	960	540	96

Source: Company Reports

Table 4: Breakdown of Gonneville MRE

Domain	Cut-off NSR (A$/t)	Classification	Mass	Grade						Contained metal					
			(Mt)	Pd (g/t)	Pt (g/t)	Au (g/t)	Ni (%)	Cu (%)	Co (%)	Pd (Moz)	Pt (Moz)	Au (Moz)	Ni (kt)	Cu (kt)	Co (kt)
Oxide – in-pit	25	Measured	-	-	-	-	-	-	-	-	-	-	-	-	-
		Indicated	7.0	1.9	-	0.05	-	-	-	0.43	-	0.01	-	-	-
		Inferred	6.1	0.54	-	0.03	-	-	-	0.11	-	0.01	-	-	-
		Subtotal	13	1.3	-	0.04	-	-	-	0.54	-	0.02	-	-	-
Sulphide (Transitional) – in-pit	25	Measured	0.4	0.82	0.18	0.03	0.19	0.160	0.020	0.01	0.00	0.00	0.67	0.56	0.07
		Indicated	14	0.68	0.16	0.03	0.16	0.103	0.020	0.30	0.07	0.01	22	14	2.7
		Inferred	0.1	0.72	0.21	0.02	0.13	0.101	0.014	0.00	0.00	0.00	0.19	0.15	0.02
		Subtotal	14	0.69	0.16	0.03	0.16	0.104	0.020	0.32	0.08	0.01	23	15	2.8
Sulphide (Fresh) – in-pit	25	Measured	2.5	1.0	0.22	0.03	0.21	0.168	0.018	0.08	0.02	0.00	5.4	4.3	0.45
		Indicated	380	0.60	0.14	0.02	0.15	0.088	0.015	7.4	1.7	0.30	570	340	57
		Inferred	240	0.60	0.14	0.02	0.15	0.074	0.015	4.6	1.1	0.15	350	170	35
		Subtotal	620	0.60	0.14	0.02	0.15	0.083	0.015	12	2.8	0.45	930	520	92
Sulphide (Fresh) – MSO	110	Measured	-	-	-	-	-	-	-	-	-	-	-	-	-
		Indicated	-	-	-	-	-	-	-	-	-	-	-	-	-
		Inferred	7.3	1.7	0.38	0.09	0.16	0.192	0.015	0.40	0.09	0.02	12	14	1.1
		Subtotal	7.3	1.7	0.38	0.09	0.16	0.192	0.015	0.40	0.09	0.02	12	14	1.1
All		Measured	2.9	0.99	0.21	0.03	0.21	0.167	0.018	0.09	0.02	0.00	6.1	4.8	0.52
		Indicated	400	0.63	0.14	0.02	0.15	0.087	0.015	8.1	1.8	0.32	600	350	60
		Inferred	250	0.63	0.14	0.02	0.14	0.076	0.014	5.1	1.1	0.18	360	190	36
		Total	660	0.63	0.14	0.02	0.15	0.083	0.015	13	2.9	0.50	960	540	96

Source: Company Reports

Table 5: High-grade sulphide (transitional and fresh) breakdown within Gonneville

Domain	Cut-off NSR (A$/t)	Classification	Mass (Mt)	Grade						Contained metal					
				Pd (g/t)	Pt (g/t)	Au (g/t)	Ni (%)	Cu (%)	Co (%)	Pd (Moz)	Pt (Moz)	Au (Moz)	Ni (kt)	Cu (kt)	Co (kt)
HG Sulphide – above 200m depth in-pit	100	Measured	0.8	2.3	0.45	0.05	0.37	0.35	0.026	0.06	0.01	0.00	2.8	2.7	0.20
		Indicated	25	1.4	0.32	0.07	0.21	0.22	0.020	1.1	0.26	0.06	54	54	5.1
		Inferred	1.1	1.2	0.37	0.04	0.20	0.14	0.019	0.05	0.01	0.00	2.2	1.6	0.21
		Subtotal	27	1.4	0.33	0.07	0.22	0.22	0.020	1.2	0.28	0.06	59	58	5.5
HG Sulphide – below 200m depth in-pit	110	Measured	-	-	-	-	-	-	-	-	-	-	-	-	-
		Indicated	9.7	1.6	0.43	0.13	0.19	0.27	0.018	0.51	0.14	0.04	19	26	1.7
		Inferred	15	1.6	0.39	0.07	0.21	0.16	0.019	0.76	0.18	0.03	30	24	2.7
		Subtotal	24	1.6	0.41	0.09	0.20	0.20	0.018	1.3	0.32	0.07	49	50	4.4
HG Sulphide – MSO	110	Measured	-	-	-	-	-	-	-	-	-	-	-	-	-
		Indicated	-	-	-	-	-	-	-	-	-	-	-	-	-
		Inferred	7.3	1.7	0.38	0.09	0.16	0.19	0.015	0.40	0.09	0.02	12	14	1.1
		Subtotal	7.3	1.7	0.38	0.09	0.16	0.19	0.015	0.40	0.09	0.02	12	14	1.1
All HG Sulphide		Measured	0.8	2.3	0.45	0.05	0.37	0.35	0.026	0.06	0.01	0.00	2.8	2.7	0.20
		Indicated	35	1.5	0.35	0.09	0.21	0.23	0.019	1.7	0.39	0.10	73	80	6.8
		Inferred	23	1.6	0.39	0.07	0.19	0.17	0.018	1.2	0.29	0.06	44	39	4.1
		Total	59	1.5	0.37	0.08	0.20	0.21	0.019	2.9	0.69	0.15	120	120	11

Source: Company Reports

Table 6: Gonneville resource grade-tonne table

NSR Cut-off in-pit A$/t	NSR Cut-off in MSO A$/t	Total Mass (Mt)	Grade							Contained metal						
			3E (g/t)	Pd (g/t)	Pt (g/t)	Au (g/t)	Ni (%)	Cu (%)	Co (%)	3E (Moz)	Pd (Moz)	Pt (Moz)	Au (Moz)	Ni (kt)	Cu (kt)	Co (kt)
15	110	690	0.75	0.59	0.14	0.02	0.15	0.082	0.015	17	13	3.0	0.50	1,000	560	100
25	110	640	0.78	0.62	0.14	0.02	0.15	0.085	0.015	16	13	2.9	0.49	960	540	96
35	110	530	0.85	0.67	0.15	0.03	0.16	0.092	0.015	15	12	2.6	0.45	830	490	82
45	110	390	0.97	0.76	0.17	0.03	0.16	0.11	0.016	12	9.6	2.2	0.39	640	410	63
55	110	270	1.1	0.88	0.20	0.04	0.17	0.12	0.017	9.6	7.5	1.7	0.33	460	330	44
65	110	180	1.3	1.0	0.23	0.05	0.18	0.14	0.017	7.6	5.9	1.4	0.27	330	260	31
75	110	130	1.5	1.2	0.27	0.06	0.19	0.16	0.018	6.1	4.8	1.1	0.23	240	210	23
85	110	95	1.7	1.3	0.30	0.06	0.19	0.18	0.018	5.1	4.0	0.93	0.20	180	170	17
95	110	73	1.8	1.4	0.34	0.07	0.20	0.19	0.019	4.3	3.4	0.79	0.17	150	140	14
105	110	58	2.0	1.6	0.37	0.08	0.20	0.21	0.019	3.7	2.9	0.69	0.15	120	120	11
115	110	47	2.2	1.7	0.40	0.09	0.21	0.22	0.019	3.3	2.5	0.61	0.14	99	110	9.0
125	110	40	2.3	1.8	0.42	0.10	0.21	0.23	0.019	2.9	2.3	0.54	0.12	84	93	7.6
135	110	34	2.4	1.9	0.45	0.10	0.21	0.24	0.019	2.7	2.1	0.49	0.11	74	83	6.6
145	110	30	2.5	1.9	0.47	0.11	0.22	0.25	0.019	2.4	1.9	0.45	0.10	65	75	5.8
155	110	27	2.6	2.0	0.48	0.11	0.22	0.26	0.019	2.2	1.7	0.41	0.10	58	68	5.1

Source: Company Reports

Table 7: Gonneville resource grade-tonne (sulphide domains, excluding oxides)

NSR Cut-off in-pit A$/t	NSR Cut-off in MSO A$/t	Total Mass (Mt)	Grade 3E (g/t)	Pd (g/t)	Pt (g/t)	Au (g/t)	Ni (%)	Cu (%)	Co (%)	Contained metal 3E (Moz)	Pd (Moz)	Pt (Moz)	Au (Moz)	Ni (kt)	Cu (kt)	Co (kt)
15	110	690	0.75	0.59	0.14	0.02	0.15	0.082	0.015	17	13	3.0	0.50	1,000	560	100
25	110	640	0.78	0.62	0.14	0.02	0.15	0.085	0.015	16	13	2.9	0.49	960	540	96
35	110	530	0.85	0.67	0.15	0.03	0.16	0.092	0.015	15	12	2.6	0.45	830	490	82
45	110	390	0.97	0.76	0.17	0.03	0.16	0.11	0.016	12	9.6	2.2	0.39	640	410	63
55	110	270	1.1	0.88	0.20	0.04	0.17	0.12	0.017	9.6	7.5	1.7	0.33	460	330	44
65	110	180	1.3	1.0	0.23	0.05	0.18	0.14	0.017	7.6	5.9	1.4	0.27	330	260	31
75	110	130	1.5	1.2	0.27	0.06	0.19	0.16	0.018	6.1	4.8	1.1	0.23	240	210	23
85	110	95	1.7	1.3	0.30	0.06	0.19	0.18	0.018	5.1	4.0	0.93	0.20	180	170	17
95	110	73	1.8	1.4	0.34	0.07	0.20	0.19	0.019	4.3	3.4	0.79	0.17	150	140	14
105	110	58	2.0	1.6	0.37	0.08	0.20	0.21	0.019	3.7	2.9	0.69	0.15	120	120	11
115	110	47	2.2	1.7	0.40	0.09	0.21	0.22	0.019	3.3	2.5	0.61	0.14	99	110	9.0
125	110	40	2.3	1.8	0.42	0.10	0.21	0.23	0.019	2.9	2.3	0.54	0.12	84	93	7.6
135	110	34	2.4	1.9	0.45	0.10	0.21	0.24	0.019	2.7	2.1	0.49	0.11	74	83	6.6
145	110	30	2.5	1.9	0.47	0.11	0.22	0.25	0.019	2.4	1.9	0.45	0.10	65	75	5.8
155	110	27	2.6	2.0	0.48	0.11	0.22	0.26	0.019	2.2	1.7	0.41	0.10	58	68	5.1

Source: Company Reports

Table 8: Key differences between Mar/23 and Apr/24 MREs

Key parameter	March 2023	April 2024
High-grade sulphide Resource	120Mt @ 1.6g/t 3E, 0.20% Ni, 0.18% Cu, 0.017% Co	59Mt @ 2.0g/t 3E (+25%), 0.20% Ni (0%), 0.21% Cu (+17%), 0.019% Co (+12%)
Global Resource	560Mt @ 0.88g/t 3E, 0.16% Ni, 0.09% Cu, 0.015% Co	660Mt @ 0.79g/t 3E, 0.15% Ni, 0.083% Cu, 0.015% Co
Global Resource Contained Metal	16Moz 3E, 860kt Ni, 520kt Cu, 83kt Co	17Moz 3E (+6%), 960kt Ni (+12%), 540kt Cu (+4%), 96kt Co (+16%)
Mineralisation wireframing approach	Modelling of high-grade sulphide rich horizons above a nominal >0.9g/t Pd cut-off grade	Separate Pd, Ni and Cu high-grade sulphide wireframes
No. of wireframes	14	100
Mining approach	Bulk open-pit mining only (larger block sizes)	Selective open-pit and underground mining (smaller block sizes)
Revenue / cut-off approach	Nickel equivalent grade applied to each block – fixed recoveries used in the nickel equivalent formula	Net Smelter Return (NSR) applied to each block – variable recoveries according to grade based on metallurgical testwork to date and offtake terms from indicative western copper smelter proposals, western nickel-cobalt MHP benchmarks and an independent marketing expert
Economic constraint approach	Pit shell and nickel equivalent cut-off determined using Whittle pit optimisation, below-pit	Pit shell and NSR cut-off determined using Whittle pit optimisation, below-pit material reported within Mineable Shape
	material reported above sub-level cave cut-off mining method	Optimiser (MSO) based on long-hole open stoping mining method
Open-pit cut-off	0.35% NiEq	A$25/t NSR
Underground cut-off	0.40% NiEq	A$110/t NSR
High-grade sulphide cut-off	0.60% NiEq	A$100-110/t NSR in-pit and A$110/t NSR underground

Source: Company Reports

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Disclosure Statement
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Recommendation / Target Change			Red Cloud Securities has this percentage of its universe assigned as the following:	
Date	**Rating**	**Target**	**Status**	**%**
2022-05-03	NA	NA	BUY	71%
2022-07-11	NA	NA	BUY (S)	28%
2022-10-20	NA	NA	HOLD	0%
2023-03-06	NA	NA	TENDER	0%
2023-08-02	NA	NA	NA	1%
2023-08-31	NA	NA	UNDER REVIEW	0%
2023-12-07	NA	NA		
2024-04-24	NA	NA		

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Company Name	Ticker Symbol	Disclosures
Chalice Mining Ltd.	ASX:CHN	

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