Ardea Resources Limited

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Directors/Employee Performance Rights
4,236,000

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GNCP High Grade Resource - 60 million tonnes at 1.0% nickel Sustainable Long-life Battery Metal Resource Confirmed

Ardea is pleased to present an updated JORC 2012-compliant Mineral Resource Estimate (**MRE**) completed for the **Goongarrie Nickel Cobalt Project (GNCP)**.

The GNCP is planned to be a high quality, long-life operation, with multi-commodity optionality. The GNCP forms part of the broader Kalgoorlie Nickel Project (**KNP**), which Ardea owns 100% and is located within one of the world's most infrastructure-rich and stable mining jurisdictions.

The KNP, commencing with the GNCP can play a critical role as a long-life, sustainable, and ethical supply of nickel, cobalt and associated Critical Minerals for the expanding battery industry.

	GNCP based on 0.8% Ni cut-off grade	GNCP based on 0.5% Ni cut-off grade	KNP based on 0.5% Ni cut-off grade
Measured Indicated & Inferred MRE	**60Mt at 1.0% Ni and 0.07% Co** Contained metal **595kt nickel and 44kt cobalt**	**259Mt at 0.7% Ni and 0.05% Co** Contained metal **1,817kt nickel and 119kt cobalt**	**826Mt at 0.7% Ni and 0.05% Co** Contained metal **5,817kt nickel and 384kt cobalt**
Notes	• **GNCP Maiden scandium component 74Mt at 35ppm scandium** (Table 5-2) • GNCP dominantly premium goethite mineralogy with excellent mineralised zone continuity, low acid consumption and good plant rheology • Manganese credit, potential for Precursor Cathode Active Material (**PCAM**) • Significant alumina credit within Clay Upper Goethite, recent Ardea R&D indicates potential for High Purity Alumina (subject to bench-scale testing)		

Ardea's Managing Director, Andrew Penkethman, said

The GNCP R&D product studies and resource update is the culmination of 12 months' work and demonstrates that the GNCP is one of the largest and most strategic nickel-cobalt deposits in the developed world.

With the GNCP located 70km north of the City of Kalgoorlie-Boulder and the 25km long line of resources on granted mining leases, the project is strategically positioned to provide sustainable and ethical mineral supply in the premier mining jurisdiction in the world, Western Australia.

*Most importantly for future project development, using a 0.8% nickel cut-off grade, the MRE is **60 million tonnes at 1% nickel** with strong cobalt, scandium and aluminium credits. This is a significant project advancement.*

*The Company is targeting leach feed grades to a 2Mtpa High Pressure Acid Leach (**HPAL**) plant exceeding 1% nickel for 25 years. Ardea uniquely within Australian laterites has resource optionality due to the large size and exceptional quality of the KNP resources for mine high grading and selective recovery of key geo-metallurgical mineralisation types.*

*The GNCP also has significant manganese credits and thus has potential for Precursor Cathode Active Material (**PCAM**) for use in lithium-ion batteries (**LIB**). Of significance, the nickel-cobalt-manganese for use in NCM811 cathodes - 8 parts nickel, 1 part cobalt and 1 part manganese – approximates the KNP in-ground metal ratio.*

1. Background

The Goongarrie Nickel Cobalt Project (**GNCP**) is located 70km north of the city of Kalgoorlie-Boulder and is Ardea's most advanced development project, within the broader Kalgoorlie Nickel Project (**KNP** - Figure 2-1). The GNCP resources extend over 25km of strike and are located on granted mining leases within a single consolidated operation with Native Title Agreement in place and tenure controlled 100% by Ardea. The project also has ready access to high quality infrastructure with the Goldfields Highway, rail line and power infrastructure passing through the project area (Figure 2-1), with two port options (Esperance and Kwinana) serviced by the road and rail network and mobile phone/optic fibre coverage. The Goldfields Gas Transmission pipeline is located 30km east (also "green" energy options). The conceptual plan is to commission a single train 2 million tonne per annum (**Mtpa**) High Pressure Acid Leach (**HPAL**) operation at Goongarrie, treating goethite ore with no requirement for screen upgrade or aging the ore. The goethite mineralogy with its premium rheology and low acid-consumption mitigates perceived HPAL project risk.

For the past 12 months, the KNP has undergone a series of high-grade nickel optimisations for >1% Ni plant feed options, "desk-top" by-product metallurgical studies including scandium, and ensured that all mineral resource estimation uses uniform methodologies. A review of the full KNP high-grade nickel Mineral Resource Estimate (**MRE**) has commenced, with initial completion of the Goongarrie area, hosting continuous nickel mineralisation from Goongarrie Hill in the north, to Goongarrie South, Big Four and finally Scotia Dam in the south (Figure 2-2).

Ardea has continued to build value in the KNP with its systematic Research and Development (**R&D**) programs aimed at delineating a long-life sustainable battery metal development project focussed on nickel. The major means of effecting the R&D has been to re-assay the archived drill assay pulps for Ardea's 58 element Critical Minerals assay suite. To re-assay the full archival collection would cost in excess of $5 million, so the methodology is to select pulps on the basis of their specific R&D objectives and incorporate any by-product data as it manifests.

The various active research projects complementing the nickel studies include:

- Precursor Cathode Active Material (**PCAM**), the KNP resources containing nickel, cobalt and manganese in approximate stoichiometric ratios suited to PCAM. Production of PCAM end-products can be tailored to meet the end-user's requirements, offers potential for reducing the capital cost and the site energy consumption.
- Mineralised Neutraliser, usually located in the base of the regolith profile immediately below the high-grade nickel laterite mineralisation, and is able to be recovered by deepening open pit developments from which the overlying high grade material has been mined or where pit slope angles in deeper pit developments would require mining such neutraliser material in advance to recover high grade nickel mineralisation at depth.
- Autoclave discharge metal credits, based solely on HPAL leach feed with viable nickel levels in the plant feed;
  - Scandium (**Sc**), reports to the full nickel laterite profile, highest in the Clay Upper regolith.
  - Rare Earth Elements (**REE**), closely associated with cobalt-manganese enrichment at the Magnesia Discontinuity enrichment zone at the base of Clay Upper regolith.
  - High Purity Alumina (**HPA**), aluminium enrichment in the Clay Upper part of the nickel laterite profile.

The R&D has concomitantly led to an increased confidence in the project MRE, and a very precise definition of material types that can be correlated with observed geo-metallurgical performance during the 2018 PFS pilot studies.

The GNCP encompasses four deposits of laterite mineralisation hosted in the regolith above ultramafic olivine cumulate rocks of the Walter Williams Formation (**WWF**). The project includes from north to south the Goongarrie Hill (**GH**), Goongarrie South (**GS**), Big Four (**BF**) and Scotia Dam (**SD**) deposits These were the focus of a PFS completed by Ardea in 2018 that concluded the potential for a robust mining project with an IRR of 25% based on a 1.5Mtpa mining operation over 25 years (ASX release 28 March 2018)[1].

[1] All the material assumptions underpinning the forecast financial information derived from a production target, in the initial public report referred to in rule 5.17 continue to apply and have not materially changed.

A significant outcome of the GNCP re-assessment is the resulting MRE update for both the GNCP and the overall KNP. Recognition of robust continuity of high nickel and cobalt grades throughout the GNCP has justified reporting of the updated MRE using higher nickel cut-off grades (note 0.8% Ni cut-off presented in Table 1-1) in addition to the base cut-off grade of 0.5% Ni (Table 1-2). To fully understand the scale of the overall KNP the updated MRE for the GNCP based on a 0.5% Ni cut-off reports a nickel metal content of 1.8Mt nickel as part of 5.8Mt nickel based on the updated MRE inventory for the overall KNP (Table 1-3). The MRE has been enhanced in terms of higher nickel grade, higher tonnage and additional Measured and Indicated resources.

Following the completion of the 2018 PFS, Ardea has completed substantial infill RC drilling at the GS, BF and SD deposits targeting high grade regions of the deposits identified in the PFS to be the focus of mining operations for the initial 25 years of production upon the development of the project. The infill RC drilling was augmented with significant diamond and sonic drilling to secure pilot plant materials for metallurgical test work and also enabled verification of the results from the historical and recent RC drilling and provide samples for systematic bulk density determinations of all the mineralised and waste material types identified within the GNCP.

Table 1-1 – GNCP nickel, cobalt and scandium Mineral Resources based on a 0.8% Ni cut-off grade.

Deposit	Resource Category	Tonnes (Mt)	Ni %	Co %	Contained Metal Ni (kt)	Contained Metal Co (kt)	Sc Resources Mt	Sc Resources Sc ppm
Goongarrie Hill	Indicated	5.3	0.92	0.050	49	2.6	2.4	17
	Inferred	1.9	0.92	0.034	17	0.6	0.4	16
	Subtotal	7.2	0.92	0.046	66	3.3	2.8	17
Goongarrie South	Measured	11.0	1.13	0.106	125	11.6	11.0	39
	Indicated	21.1	0.99	0.071	208	15.0	15.5	25
	Inferred	1.2	0.92	0.043	11	0.5	0.5	25
	Subtotal	33.3	1.03	0.081	344	27.1	27.0	31
Big Four	Indicated	12.1	0.97	0.068	118	8.3	8.9	27
	Inferred	2.7	0.94	0.062	25	1.7	0.5	27
	Subtotal	14.7	0.97	0.067	143	9.9	9.4	27
Scotia Dam	Indicated	2.9	0.98	0.108	29	3.2	2.9	28
	Inferred	1.4	1.02	0.057	14	0.8	0.0	26
	Subtotal	4.3	0.99	0.091	43	4.0	2.9	28
GNCP Total	Measured	11.0	1.13	0.106	125	11.6	11.0	39
	Indicated	41.5	0.97	0.070	404	29.0	29.7	25
	Inferred	7.1	0.95	0.051	67	3.6	1.4	23
	Grand Total	**59.6**	**1.00**	**0.074**	**595**	**44.3**	**42.2**	**29**

Table 1-2 – GNCP nickel, cobalt and scandium Mineral Resources based on a 0.5% Ni cut-off grade.

Deposit	Resource Category	Tonnes (Mt)	Ni %	Co %	Contained Metal Ni (kt)	Contained Metal Co (kt)	Sc Resources Mt	Sc Resources Sc ppm
Goongarrie Hill	Indicated	40	0.65	0.037	260	14.7	10.5	16
	Inferred	29	0.60	0.025	178	7.3	2.0	16
	Subtotal	69	0.63	0.032	438	21.9	12.5	16
Goongarrie South	Measured	18	0.94	0.085	172	15.4	18.2	40
	Indicated	82	0.71	0.049	587	40.2	53.1	23
	Inferred	10	0.64	0.033	61	3.1	5.5	24
	Subtotal	110	0.75	0.053	820	58.7	76.8	27
Big Four	Indicated	49	0.71	0.047	345	22.9	31.9	24
	Inferred	14	0.68	0.043	95	6.1	2.9	24
	Subtotal	63	0.70	0.046	440	28.9	34.8	24
Scotia Dam	Indicated	12	0.71	0.065	82	7.4	11.2	25
	Inferred	5	0.72	0.043	37	2.2	0.6	22
	Subtotal	17	0.72	0.058	118	9.6	11.7	25
GNCP Total	Measured	18	0.94	0.085	172	15.4	18.2	40
	Indicated	182	0.70	0.047	1,274	85.1	106.6	23
	Inferred	58	0.64	0.032	371	18.6	11.0	23
	Grand Total	**259**	**0.70**	**0.046**	**1,817**	**119.2**	**135.8**	**25**

Table 1-3 – Updated KNP nickel and cobalt Mineral Resources based on a 0.5% Ni cut-off grade.

Camp	Prospect	Resource Category	Size (Mt)	Ni (%)	Co (%)	Contained Metal Ni (kt)	Contained Metal Co (kt)	Estimation Details Method	Estimation Details Source	Estimation Details Year
Goongarrie	Goongarrie South	Measured	18	0.94	0.085	171	15	LUC	Ardea	2021
		Indicated	82	0.71	0.049	584	40	LUC	Ardea	2021
		Inferred	10	0.64	0.033	61	3	LUC	Ardea	2021
	Highway	Indicated	53	0.66	0.042	349	22	OK	Heron	2009
		Inferred	34	0.64	0.038	218	13	OK	Heron	2009
	Ghost Rocks	Inferred	47	0.66	0.042	312	20	OK	Snowden	2004
	Goongarrie Hill	Indicated	40	0.65	0.037	259	15	LUC	Ardea	2021
		Inferred	29	0.60	0.025	176	7	LUC	Ardea	2021
	Big Four	Indicated	49	0.71	0.047	346	23	LUC	Ardea	2021
		Inferred	14	0.68	0.043	96	6	LUC	Ardea	2021
	Scotia	Indicated	12	0.71	0.065	82	7	LUC	Ardea	2021
		Inferred	5	0.72	0.043	37	2	LUC	Ardea	2021
	Goongarrie Subtotal	Measured	18	0.94	0.085	171	15			
		Indicated	235	0.69	0.046	1,620	108			
		Inferred	140	0.65	0.037	900	52			
		Combined	***393***	***0.68***	***0.044***	***2,692***	***175***			
Siberia	Siberia South	Inferred	81	0.65	0.033	523	27	OK	Snowden	2004
	Siberia North	Indicated	10	0.64	0.051	64	5	OK	Snowden	2009
	Siberia North	Inferred	53	0.66	0.043	352	23	OK	Snowden	2009
	Black Range	Indicated	9	0.67	0.090	62	8	OK	HGMC	2017
	Black Range	Inferred	10	0.69	0.100	68	10	OK	HGMC	2017
	Siberia Subtotal	Indicated	19	0.65	0.070	126	13			
		Inferred	144	0.66	0.041	943	59			
		Combined	163	0.66	0.045	1,070	73			
KNP WEST	**TOTAL**	Measured	18	0.94	0.085	171	15			
		Indicated	255	0.69	0.048	1,747	121			
		Inferred	283	0.65	0.039	1,844	111			
		Combined	***556***	***0.68***	***0.045***	***3,761***	***248***			
Bulong	Taurus	Inferred	14	0.84	0.051	119	7	OK	Snowden	2007
	Bulong East	Indicated	16	1.06	0.055	169	9	OK	Snowden	2004
	Bulong East	Inferred	24	0.79	0.053	190	13	OK	Snowden	2004
	Bulong Subtotal	Indicated	16	1.06	0.055	169	9			
		Inferred	38	0.81	0.052	309	20			
		Combined	***54***	***0.88***	***0.053***	***477***	***29***	-	-	-
Hampton	Kalpini	Inferred	75	0.73	0.044	550	33	OK	Snowden	2004
	Hampton Subtotal	Inferred	75	0.73	0.044	550	33			
KNP EAST	**TOTAL**	Indicated	16	1.06	0.055	169	9			
		Inferred	114	0.76	0.047	859	53			
		Combined	***130***	***0.79***	***0.048***	***1,028***	***62***			
Yerilla	Jump Up Dam	Measured	4	0.94	0.048	36	2	OK	Snowden	2008
		Indicated	42	0.78	0.043	324	18	OK	Snowden	2008
		Inferred	18	0.63	0.034	116	6	OK	Snowden	2008
	Boyce Creek	Indicated	27	0.77	0.058	206	16	OK	Snowden	2009
	Aubils	Inferred	49	0.70	0.066	346	33	OK	Heron	2008
KNP YERILLA	**TOTAL**	Measured	4	0.94	0.048	36	2			
		Indicated	68	0.78	0.049	531	33			
		Inferred	68	0.68	0.057	462	39			
		Combined	***140***	***0.73***	***0.053***	***1,028***	***74***			
KNP TOTAL		Measured	22	0.94	0.079	207	17			
		Indicated	339	0.72	0.048	2,446	163			
		Inferred	465	0.68	0.044	3,165	203			
	GRAND TOTAL	***Combined***	***826***	***0.70***	***0.046***	***5,817***	***384***			

Legend: LUC – Local Uniform Conditioning; OK – Ordinary Kriging.

Given the brownfields GNCP location is in a low rainfall, semi-arid environment dominated by open woodland with no competing land use, then sustainable, ethical project development can be achieved and is an essential component of development plans.

With the project optimisations that came to light through the R&D, the GNCP has evolved with the potential to be a sustainable long-life battery metal project, a project attribute which all potential Strategic Partners require. Importantly, the project can leverage off the existing infrastructure, skilled work force and very strong support from the local community. The current studies are also advancing work towards gaining environment approval for development of the project, targeting suitable water sources for the project and quantifying the potential value of by-product commodities and materials present within the project area.

2. Tenure

The Goongarrie Nickel Cobalt Project covers 142km^2 within the larger Kalgoorlie Nickel Project which totals some 1,738km^2 (Figure 2-1).

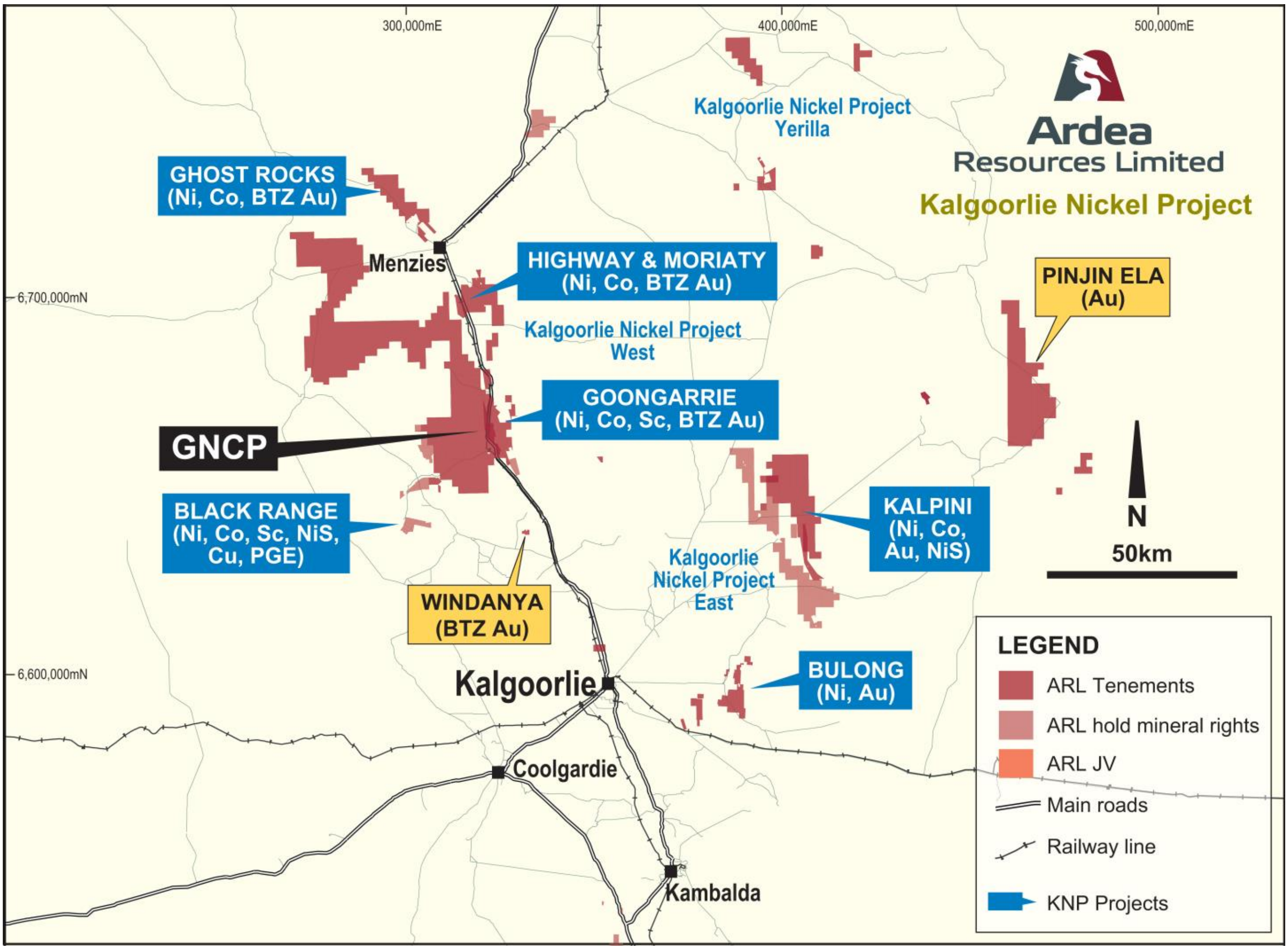


Figure 2-1: The Kalgoorlie Nickel Project (KNP) Regional Geology, showing project areas. Projection: GDA94 MGA Zone 51.

The GNCP resources are located on granted Mining Leases, mainly granted in the early 2000s (Figure 2-2).

Ardea retains 100% ownership of all Mining Leases at Goongarrie and, other than legislated State government royalties there are no project encumbrances. The Native Title Agreement is in place.

The tenement holding is such that there are no impediments at all to site layout and infrastructure location. In particular, although significant gold targets were defined during 2020 to the immediate east of the mineralised WWF (Lily Albany, Zeus, Lady Charlotte, refer Ardea December 2020 Quarterly Report, ASX release 21 January 2021), there is unconstrained tenure west for installing key infrastructure (Figure 2-2).

Specifically, the general arrangement plan following consultant inputs includes a large solar array designed along with the acid plant as the main GNCP power source. This with open-pit back-fill and agroforestry is a key element of the GNCP sustainability model.

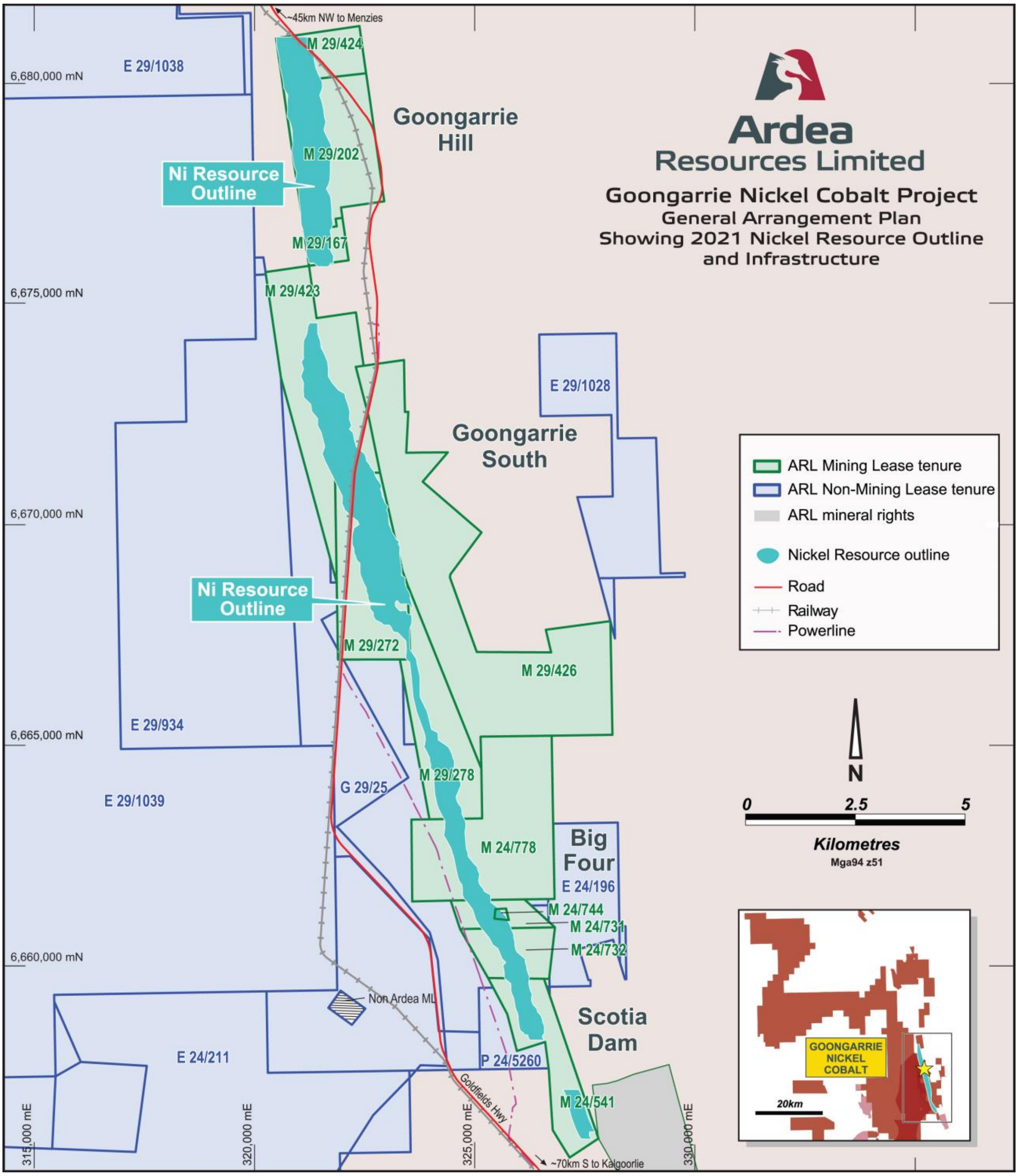


Figure 2-2: The GNCP, with mining licence tenure shown in green. Projection: GDA94 MGA Zone 51.

3. New Exploration Data Informing the Resource Update

Substantial infill RC drilling augmented with diamond and sonic drilling, R&D Xray Diffraction (**XRD**) mineralogy analyses and historical sample pulp re-analysis programmes by Ardea have provided a wealth of new information that has been used together with the large historical GNCP database to produce updated Mineral Resource Estimates for the entire GNCP, including the Goongarrie Hill (**GH**), Goongarrie South (**GS**), Big Four (**BF**) and Scotia Dam (**SD**) deposits.

Ardea has completed a total 40,280m of infill RC drilling in 839 holes at the GS, BF and SD deposits focused on regions identified in the Ardea 2018 PFS as likely sources of high-grade material that would be targeted for mining over the initial 25 years of the project development.

A key element of the Ardea work streams was completing detailed geological logging and XRD analysis of the pilot plant drill core for Ni-Co-Mn goethite mineralisation direct feed (AGSD0010/48-55m), siliceous mineralisation beneficiable feed (AGSD0010/55-70m) and in-pit neutraliser (AGSD0010/70-81m) (Figure 3-1).

Figure 3-1: “Run-of-Mine” mineralised profile at Goongarrie South

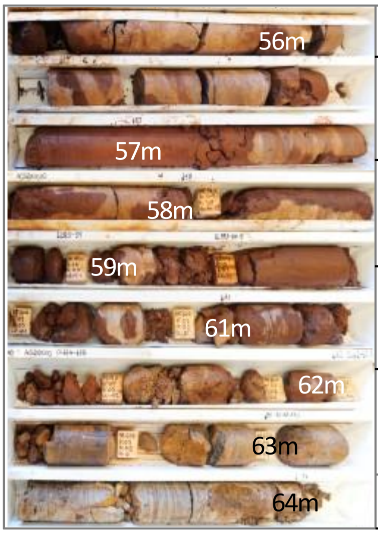
AGSD0010 Regolith and Geochem

Depth m	Regolith	Ni %	Co %	Mn %	Sc ppm	Cr %	V ppm	Al %	Ca %	Fe %	LOI %	Mg %	Si %	Ti %	Zr ppm
47-49	CUGZR	1.86	0.315	2.93	50	1.82	-100	0.7	0.0	46.3	15.8	0.7	1.4	0.04	30
49-51	CUGZR	1.97	0.463	4.37	50	1.73	-100	0.7	0.1	44.0	15.7	0.8	1.3	0.03	20
51-53	CUGZR	2.03	0.463	3.03	50	1.93	-100	0.7	0.0	45.5	14.8	0.8	1.4	0.03	20
53-55	CUGZR	1.83	0.225	1.06	40	1.80	-100	0.6	0.0	43.6	14.1	0.8	5.1	0.03	10

Typical goethite mineralisation (CUGZR) being the most common mined resource material type and is expected to be the dominant HPAL feed in a 2Mtpa operation, producing approximately 20ktpa nickel in PCAM, with significant cobalt-manganese.

CUGZR – Clay Upper Goethite-Asbolite-Chromite

AGSD0010 Regolith and Geochem



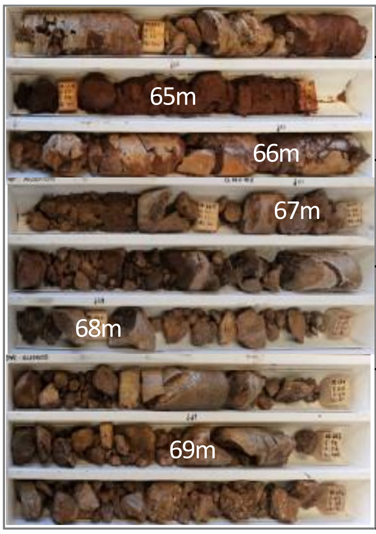
Depth m	Regolith	Ni %	Co %	Mn %	Sc ppm	Cr %	V ppm	Al %	Ca %	Fe %	LOI %	Mg %	Si %	Ti %	Zr ppm
55-57	CVSGR	0.80	0.061	0.21	10	1.60	-100	0.3	0.0	19.6	5.4	0.3	28.2	0.01	10
57-58	CVSGR	1.03	0.063	0.23	20	1.89	-100	0.3	0.0	21.5	6.2	0.4	25.9	0.02	20
59-62	CVSG	0.57	0.029	0.11	10	0.94	-100	0.2	0.0	11.5	3.9	1.2	34.5	0.01	-10
62.5-64	CVSGP	0.84	0.097	0.66	-10	0.51	-100	0.1	0.0	15.8	8.3	1.9	29.2	0.01	-10

Typical silica-goethite mineralisation (CVSGR). If a second HPAL train were to be required at GNCP, this stockpiled material would be wet screened to remove barren silica and the goethite fines used as a >1% Ni leach feed.

CVSGR – Clay Void-fill Silica-Goethite-Chromite

AGSD0010 Regolith and Geochem

Ardea



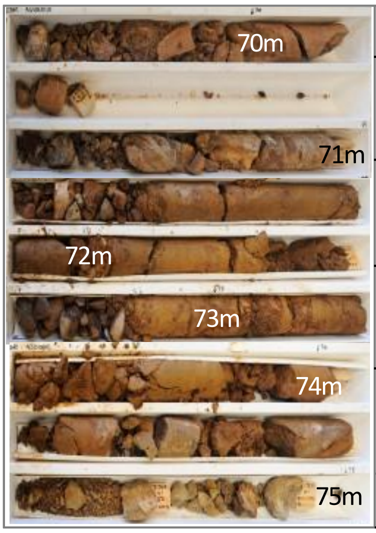
Depth m	Regolith	Ni %	Co %	Mn %	Sc ppm	Cr %	V ppm	Al %	Ca %	Fe %	LOI %	Mg %	Si %	Ti %	Zr ppm
64-66	CVSGP	0.80	0.078	0.50	-10	0.45	-100	0.1	0.0	16.4	8.6	2.5	28.4	0.00	20
66-68	CVSG	0.69	0.060	0.29	-10	0.66	-100	0.1	0.1	13.7	11.2	4.9	27.0	0.01	-10
68-70	CVSG	0.48	0.044	0.29	-10	0.47	-100	0.1	0.1	9.8	5.8	2.4	34.4	0.01	-10

Typical silica-goethite mineralisation (CVSG). The nickel grade reduces with depth in the profile, as silica and magnesite increases.

CVSG – Clay Void-fill Silica-Goethite

AGSD0010 Regolith and Geochem

Ardea



Depth m	Regolith	Ni %	Co %	Mn %	Sc ppm	Cr %	V ppm	Al %	Ca %	Fe %	LOI %	Mg %	Si %	Ti %	Zr ppm
70-72	SRSDP	0.47	0.047	0.65	-10	0.54	-100	0.1	5.5	9.6	19.6	6.0	21.3	0.01	-10
72-74	SRDGP	0.46	0.042	0.61	-10	0.48	-100	0.1	11.1	9.3	33.7	9.9	8.2	0.01	-10
74-76	SRMSX	0.26	0.023	0.24	-10	0.39	-100	0.1	2.0	6.2	9.4	3.8	33.0	0.01	-10

Mineralised neutraliser (SRDGP), the high magnesium-calcium is a high acid consumer, hence can be used to neutralise the autoclave discharge, with additional nickel and cobalt units added to the PLS.

SRDGP – SapRock Dolomite-Goethite-Pyrolusite

AGSD0010 Regolith and Geochem

Ardea

Depth m	Regolith	Ni %	Co %	Mn %	Sc ppm	Cr %	V ppm	Al %	Ca %	Fe %	LOI %	Mg %	Si %	Ti %	Zr ppm
76-78	SRMGP	0.47	0.038	0.37	-10	0.34	-100	0.1	5.3	4.5	31.2	13.2	14.5	0.01	-10
78-80	SRSEP	0.32	0.031	0.38	-10	0.34	-100	0.1	2.5	6.8	13.1	5.2	29.4	0.01	-10
80-82	SRSEP	0.24	0.024	0.31	-10	0.44	-100	0.1	4.4	6.1	14.0	6.0	27.8	0.01	-10

Mineralised neutraliser, the high magnesium-serpentine (SRSEP) is a high acid consumer, hence can be used to neutralise the autoclave discharge, with additional nickel and cobalt units added to the PLS.

SRMGP – SapRock Magnes-Goeth-Pyrolusite

SRSEP – SapRock Silica-Serpentine-Pyrolusite

A total of 45 diamond drillholes for 2,511m of drilling and 19 sonic holes for 1,108m of drilling have also been completed by Ardea, mostly twinning historical Heron and Vale Inco RC drillholes as well as several Ardea RC holes to provide verification of the mineralisation thicknesses and grades based on the RC drilling, and provide material for specific metallurgical test work. Most of these holes were also drilled within the deposit regions highlighted in the Ardea 2018 PFS as the sources of the initial 25 years of mine production focused on high grade material. As such, the bulk of the sonic drill core material and much of the diamond core with selective RC chips was consumed in the bulk sample pilot plant studies in 2018.

A programme of quantitative XRD mineralogy analyses was undertaken in 2019 on 164 representative sample pulps from the 2018 Ardea diamond drilling at GS and 96 pulps from historical Heron RC and Vale Inco diamond drilling at GH targeting all the significant mineralisation styles and overburden transported material types identified in the regolith profiles at the two deposits. Ardea has used this data together with multi-element geochemical assay data for the samples to develop a detailed regolith material type classification scheme based on relationships between the dominant geochemical attributes and various mineral group associations present in the regolith profiles at the GNCP deposits.

Sample pulps from historical drillholes selected on an approximate 80mE by 400mN grid over the southern half of GS and an 80mE by 160mN grid over GH were submitted for re-assay analysis at Bureau Veritas (**BV**) by XRF and laser ablation – MS to collect assay data for 58 grade attributes for the following purposes:

- Verification of historical assay results.
- Quantify Critical Mineral distributions.
- Provide assay data for scandium and REEs, in particular to use in estimation of scandium Mineral Resources.

4. GNCP Updated Resource Estimation

The data from the Ardea 2018 RC and diamond drilling programmes, XRD mineralogy studies and re-assaying of historical drill sample pulps has been used together with the vast historical exploration database for the GNCP to:

- Complete a comprehensive review of the exploration data quality for the GNCP.
- Undertake updated geological modelling of the GNCP mineralisation and regolith profile boundaries to constrain updated resource estimation (Appendix 3).
- Investigate other materials within the weathering profile at the GNCP deposits that could add value to the project, including:
    - Pedogenic calcrete and soils at surface and subsurface paleochannel sediments overlying the nickel laterite mineralisation that are rich in the calcium and magnesium carbonate minerals calcite, dolomite and magnesite that could be used as neutralising reagents in the proposed ore processing flowsheet based on High Pressure Acid Leaching, as well as environmental management of tailings.
    - Materials rich in the carbonate minerals dolomite and magnesite, underlying the nickel laterite mineralisation, particularly nickel-bearing carbonate saprock and serpentine saprock immediately beneath the high-grade nickel and cobalt mineralisation.
- Undertake updated nickel and cobalt resource estimation by Ordinary Kriging (**OK**) followed by Local Uniform Conditioning (**LUC**) to produce recoverable nickel and cobalt grade estimates for a selective mining unit resolution of 10mE by 10mN by 2mRL and coincident grade control drill spacing. Representative cross-sections of the LUC estimates for each deposit are presented in Appendix 3.
- Estimate additional grade attributes into the resource models including MgO, FeO, Al_2O_3, SiO_2, CaO, LOI, Mn, Cr and Sc by ordinary kriging into 10mE by 10mN by 2mRL size blocks.
- Develop comprehensive material type classification schemes for GS and GH based on the multi-element geochemistry and the XRD mineralogy datasets.
- Assign material type codes to the resource models based on the OK multi-element grade estimates and determined material type classification schemes. Representative cross-sections of the material type assignments for each deposit are presented in Appendix 3.

- Determine appropriate average dry bulk density (BD) and moisture content values subdivided by the material type classification schemes based on the datasets of physical measurements of core samples and including where available downhole geophysical density logging.
- Apply Mineral Resource classification based on JORC 2012 Guidelines with definitive classification parameters based on geological confidence and estimation quality statistics relating to the OK/LUC nickel estimates.
- Undertake detailed Mineral Resource reporting based on the updated GNCP resource estimates.

5. GNCP Mineral Resources

The new Mineral Resources for the GNCP have been reported using a base cut-off grade of 0.5% Ni (Table 1-2)

Higher grade 0.8% Ni (Table 1-1) and 1.0% Ni (Table 5-1) cut-offs have also been applied to the MREs in order to provide insight into the tonnages and grades of high-grade material that would likely be the focus of mining operations in the initial 25 years of the GNCP project development. Most importantly there is superb continuity of high nickel and cobalt grades at GS, BF and SD (Figures 5-1 to 5-4) which demonstrates the potential for selective mining and processing high grade material over a prolonged period.

At a 1% Ni cut-off grade, GNCP nickel head grades (refer Table 5-1) approach those of the wet tropical laterites, but without the immense environmental and ethical challenges of mining operations in the wet tropics.

The quantity and continuity of high-grade material at GH (Figures 5-5 and 5-6) is much less than at GS, BF and SD as the result of less intense weathering of the ultramafic protolith and hence metal re-concentration. However, GH remains a potential source or nickel bearing material rich in carbonate minerals, particularly magnesite and dolomite that could become a source of acid neutralisation material (with significant nickel credits) in the proposed ore processing flowsheet.

Table 5-1 – GNCP nickel, cobalt and scandium Mineral Resources based on a 1.0% Ni cut-off grade.

Deposit	Resource Category	Tonnes (Mt)	Ni %	Co %	Contained Metal		Sc Resources	
					Ni (kt)	Co (kt)	Mt	Sc ppm
Goongarrie Hill	Indicated	1.0	1.11	0.061	12	0.6	0.6	17
	Inferred	0.3	1.11	0.039	4	0.1	0.1	14
	Subtotal	1.4	1.11	0.055	15	0.8	0.7	17
Goongarrie South	Measured	6.9	1.28	0.125	88	8.6	6.9	39
	Indicated	7.5	1.17	0.090	88	6.8	5.7	25
	Inferred	0.2	1.11	0.049	3	0.1	0.1	26
	Subtotal	14.6	1.22	0.106	178	15.5	12.7	33
Big Four	Indicated	3.9	1.16	0.089	46	3.5	3.1	28
	Inferred	0.6	1.13	0.088	7	0.5	0.2	29
	Subtotal	4.5	1.15	0.089	52	4.0	3.2	28
Scotia Dam	Indicated	1.0	1.16	0.148	12	1.5	1.0	29
	Inferred	0.7	1.17	0.067	8	0.4	0.0	20
	Subtotal	1.7	1.16	0.116	19	1.9	1.0	29
GNCP Total	Measured	6.9	1.28	0.125	88	8.6	6.9	39
	Indicated	13.5	1.16	0.092	156	12.4	10.3	26
	Inferred	1.8	1.14	0.067	21	1.2	0.4	24
	Grand Total	**22.2**	**1.20**	**0.100**	**265**	**22.2**	**17.6**	**31**

The combined Goongarrie Hill, Goongarrie South, Big Four and Scotia Dam deposits (from north to south) form a continuous zone of mineralisation that extends over a strike length of more than 25km, is up to 1km wide and averages approximately 40m in thickness. This resource continuity and size are particularly well suited to typical Eastern Goldfields open pit grade control and mass excavation methods.

The resource estimates have been classified in accordance with the JORC 2012 guidelines with Measured, Indicated and Inferred Mineral Resources defined at Goongarrie South, and Indicated and Inferred Mineral Resources defined at Big Four, Scotia Dam and Goongarrie Hill.

Scandium has been included in the GNCP MRE, but only when occurring within the nickel grade envelope, where it can be considered a potential by-product. The scandium MRE tonnage is less than the 0.5% Ni cut-off tonnage, due to the minimal scandium assay coverage in historic drilling (Ardea is the first developer to run systematic scandium).

Scandium MRE using varying cut-off grade criteria is shown in Table 1-1, 1-2, 5-1 and 5-2.

Table 5-2 – GNCP nickel, cobalt and scandium Mineral Resources based on a combination of 0.5% Ni and 20 ppm Sc cut-off grades.

Deposit	Resource Category	Tonnes (Mt)	Sc (ppm)	Ni (%)	Co % (%)	Contained Metal		
						Sc (kt)	Ni (kt)	Co (kt)
Goongarrie Hill	Indicated	2.5	25	0.73	0.052	0.06	19	1.3
	Inferred	0.6	24	0.67	0.050	0.01	4	0.3
	Subtotal	3.1	25	0.72	0.052	0.08	23	1.6
Goongarrie South	Measured	16.7	42	0.96	0.086	0.70	160	14.4
	Indicated	28.6	31	0.77	0.066	0.89	220	18.9
	Inferred	2.8	37	0.64	0.035	0.10	18	1.0
	Subtotal	48.2	35	0.83	0.071	1.69	399	34.3
Big Four	Indicated	16.0	35	0.77	0.063	0.56	123	10.0
	Inferred	1.4	36	0.72	0.057	0.05	10	0.8
	Subtotal	17.3	35	0.77	0.062	0.61	133	10.8
Scotia Dam	Indicated	5.5	36	0.75	0.091	0.20	42	5.1
	Inferred	0.2	36	0.62	0.036	0.01	1	0.1
	Subtotal	5.8	36	0.75	0.089	0.21	43	5.1
GNCP Total	Measured	16.7	42	0.96	0.086	0.70	160	14.4
	Indicated	52.7	33	0.77	0.067	1.71	403	35.3
	Inferred	5.0	35	0.66	0.043	0.18	33	2.1
	Grand Total	**74.4**	**35**	**0.80**	**0.070**	**2.59**	**597**	**51.9**

Explanatory Discussion:

The World scandium market is totally opaque, with minimal available definitive data. Peer company feasibility studies are an indicative commodity pricing data source:

- *Clean TeQ Holdings Limited (ASX:CLQ) Sunrise Project, NSW, Definitive Feasibility Study, 25 June 2018, CLQ used scandium oxide (scandia) price of US$1,500/kg.*
- *Platina Resources Limited (ASX:PGM) Owendale Project at Fifield, NSW, Definitive Feasibility Study, 2018, PGM scandia price of US$1,550/kg.*

Alibaba quote a very wide range of ex-PRC pricing (presumably reflecting purity variations), including US$300-800/kg, US $1,000-2,000/kg and US$4.50/gm (US$4,500/kg).

The US Geological Survey (USGS) commodities report for 2020 indicates that the current primary sources of production are located in China, the Philippines and Russia. Any GNCP production at a 35ppm scandium head grade and nominal 2Mtpa would significantly increase world mineral supply with world scandium supply and demand presumably significantly increasing through potential GNCP outputs.

Reflecting indicative scandium pricing, a cut-off of 20ppm Sc was used for resource estimation and is considered consistent with current indicative pricing ranges.

Reporting statistics (USGS, 2015) suggested world scandium production of about 10-15tpa, however, this is outdated by several new offtake agreements and optional volume increases (Traxys 2018, Panasonic 2019, Relativity Space 2020) therefore current scandium production tonnage per annum potentially may be around 30tpa. This does not include future uptake and strong interest from automotive, aviation, space flight and maritime demand of scandium's physical properties (alloy welding, casting, light-weighting, corrosion resistance and significant added strength).

Ardea's GNCP would be expected to be relatively low on the scandium cost curve due to its being a co-product of nickel-cobalt.

Data source: Darren Howe, 2020, MSc thesis Curtin University, unpublished course notes.

A listing of information used in the Mineral Resource estimation is provided in Appendix 3 (in compliance with ASX Listing Rule 5.8.1). All figures with a grid reference use a projection relative to GDA94 MGA Zone 51.

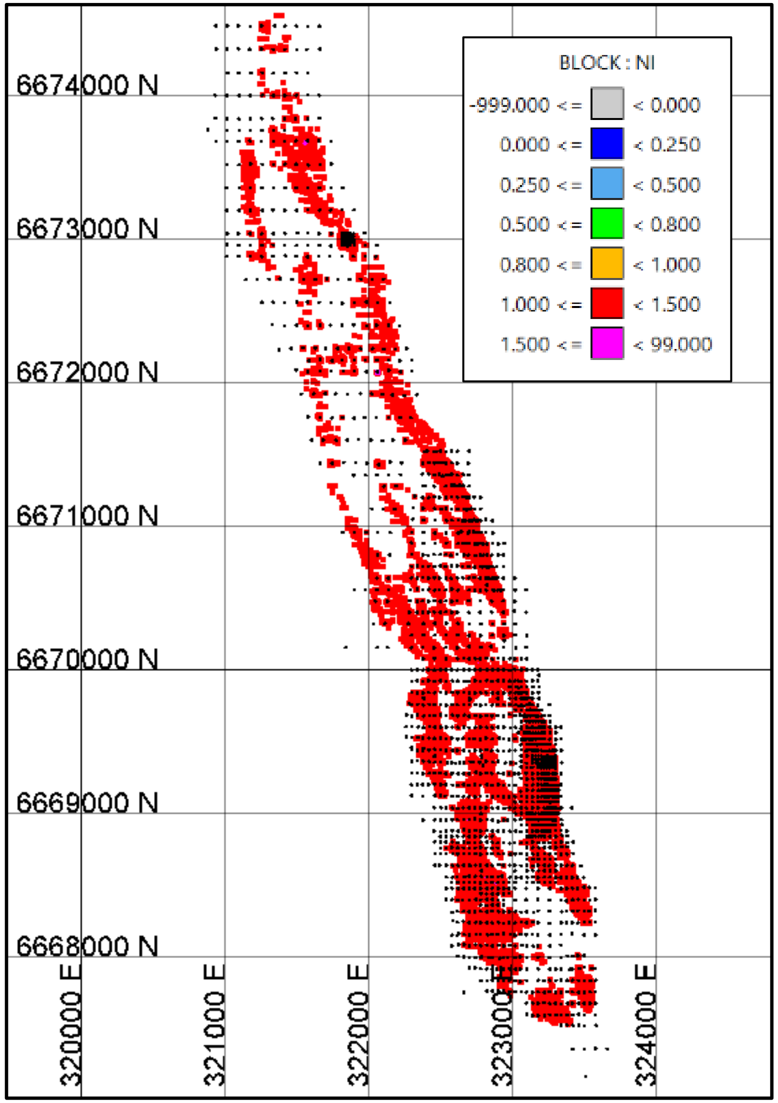


Figure 5-1: GS - Plan view of MRE block model blocks ≥ 1.0 % Ni

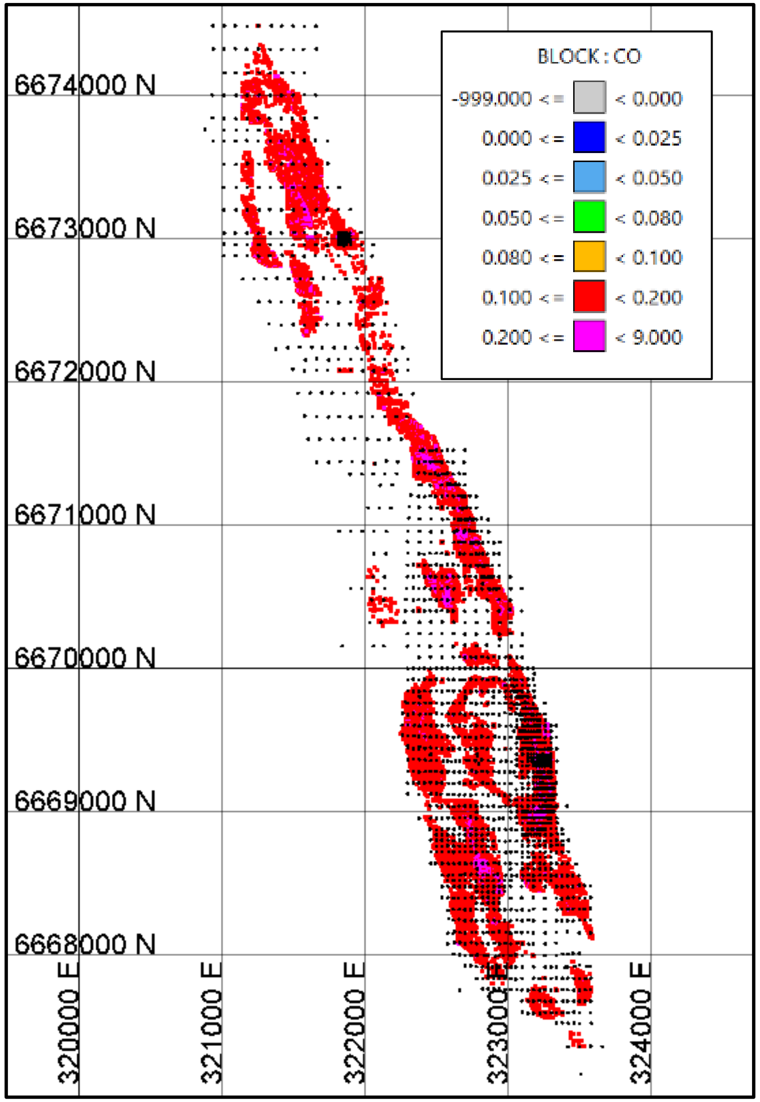


Figure 5-2: GS - Plan view of MRE block model blocks ≥ 0.1 % Co

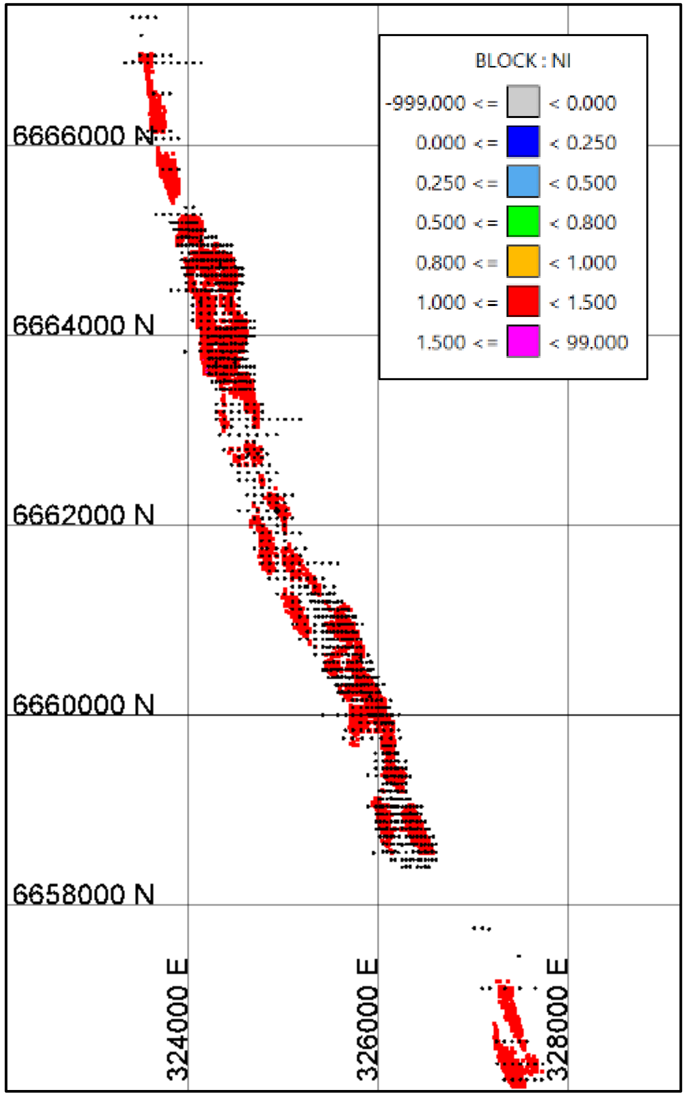


Figure 5-3: BF&SD - Plan view of MRE block model blocks ≥ 1.0 % Ni

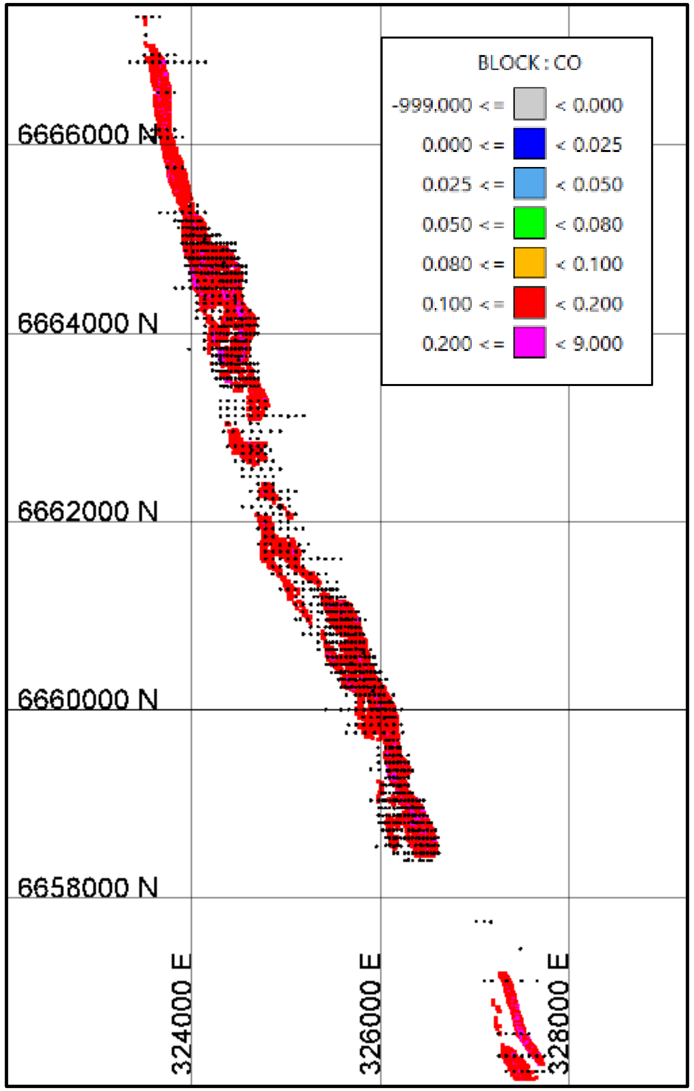


Figure 5-4: BF&SD - Plan view of MRE block model blocks ≥ 0.1 % Co

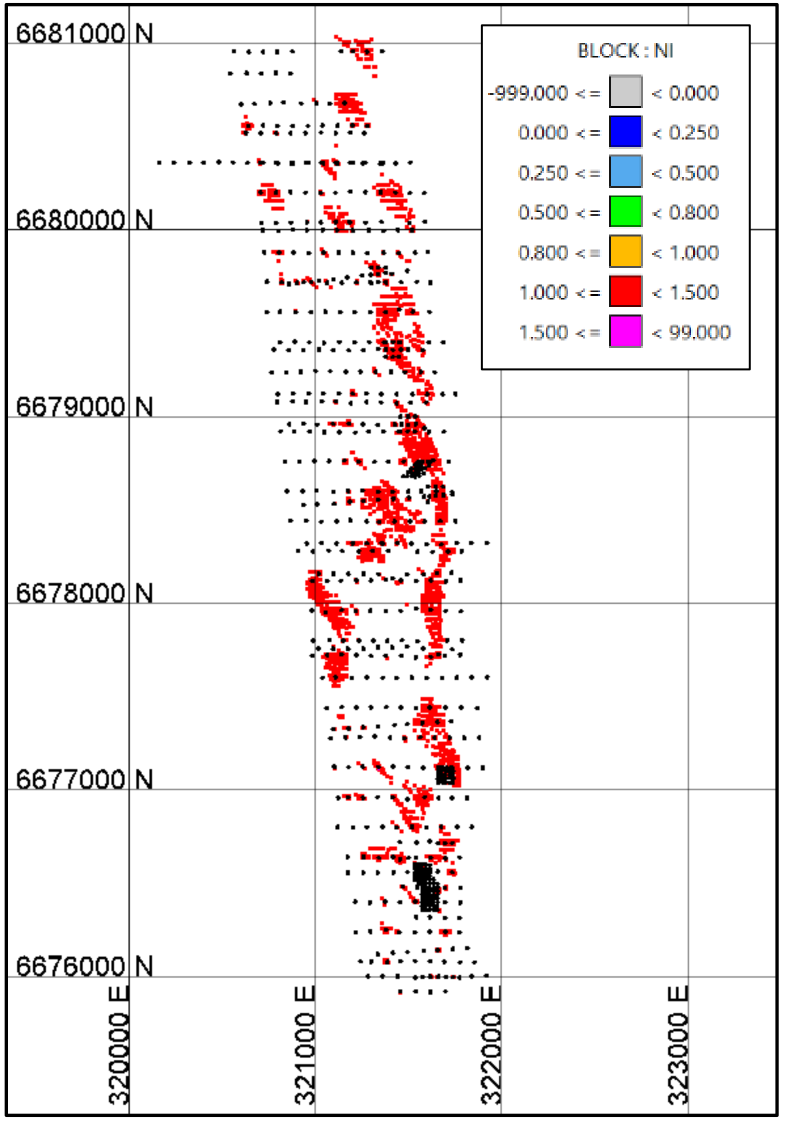


Figure 5-5: GH - Plan view of MRE block model blocks ≥ 1.0 % Ni

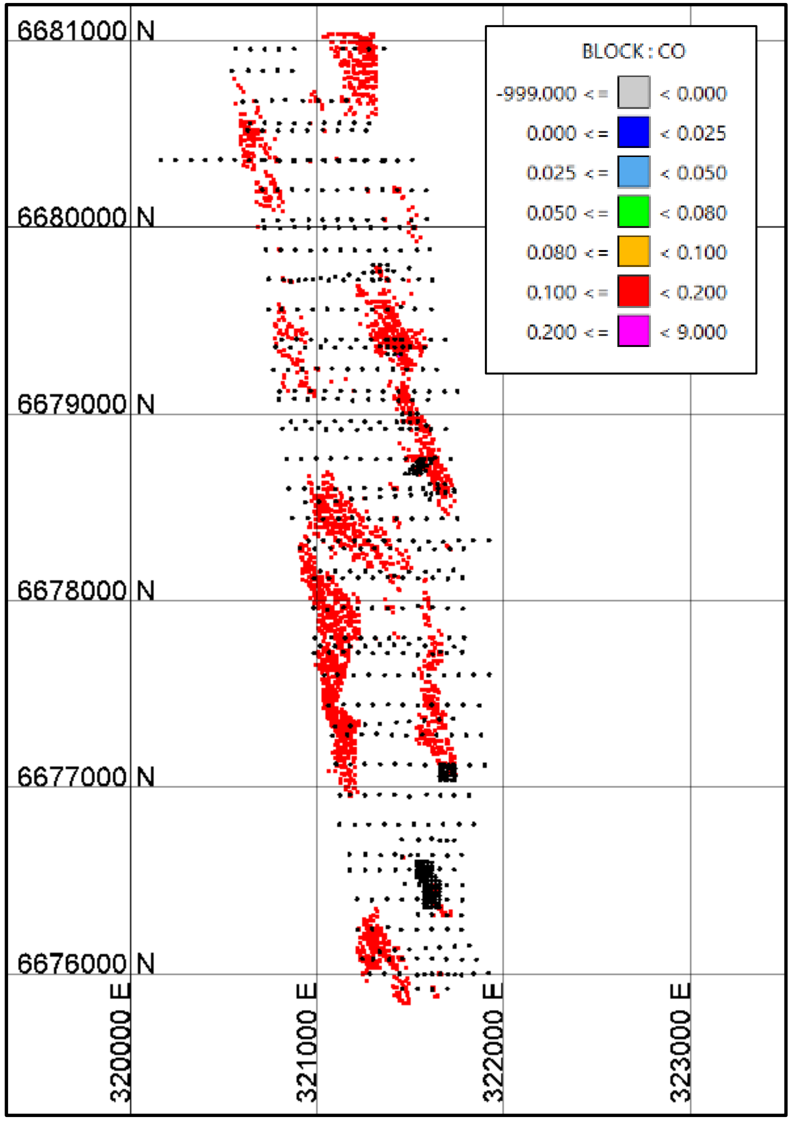


Figure 5-6: GH - Plan view of MRE block model blocks ≥ 0.1 % Co

6. KNP Mineral Resources Update

The total Mineral Resource inventory for the KNP has been updated to reflect the most recent resource estimates available for all Ardea's nickel laterite assets (Table 1-3).

Ardea's total Mineral Resource inventory within the KNP now stands at **826Mt at 0.70% Ni and 0.048% Co** using a 0.5% Ni cut-off grade. All the resources are constrained with optimised pit shells using appropriate nickel and cobalt prices, mining and processing costs and pit slope parameters to determine the material that could potentially be economically mined in the future.

Approximately 30% of the Mineral Resources are based on estimates completed by Snowden Mining Industry Consultants on behalf of Heron Resources Limited (**Heron**) in 2004, 37% by Snowden and Heron resource geologists in 2007 through 2009, 2% by HGMC on behalf of Ardea in 2017 and the remaining 31% (comprising the GNCP) by Ardea's Senior Resource Geologist in 2021. All of the Mineral Resource estimates completed prior to the introduction of the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (**JORC Code 2012**) have been reviewed by Ardea personnel and confirmed to follow JORC Code 2012 guidelines.

Lake Goongarrie, facing east *photography Joseph Clarke*

The Goongarrie South mineral resources are overlain by some 20m of the Tertiary-aged ancestral Lake Goongarrie sediments. Groundwater leaching events in the tropical Tertiary resulted in an intense leaching of the WWF olivine rocks, with removal of magnesium, calcium and silica into saprock for a relative upgrade in the overlying clay of iron as the hydrated iron oxide mineral goethite. These water table events saw a concomitant enrichment of the siderophile Transition Metals of nickel, cobalt and manganese within the goethite, along with scandium and the Lanthanoids cerium, praseodymium and neodymium.

Also enriched is the Post-transition Metal alumina for HPA and potentially the Critical Minerals gallium and indium.

Goongarrie's Tertiary regolith has with uncanny elegance delivered to Ardea the precise element suite which the new Anthropogenic low-carbon era requires for the Lithium Ion Batteries and Electric Vehicles which will arrest climate-change.

7. Material Types

Detailed quantitative R&D XRD mineralogy studies were undertaken to identify the mineralogical composition of the mineralised and waste material types identified within the GNCP. The XRD work focused on samples from GS and GH where there are significant differences in mineral assemblages resulting in the development of two material type classification schemes based on relationships that exist between the multi-element geochemistry and mineralogy within different regions of the weathering profile(s). As the mineral assemblages at BF and SD are very similar to GS, the classification scheme derived for GS was considered directly applicable to the BF and SD deposits. The second classification scheme was developed specifically for GH. The two material type classification schemes are summarised in Tables 7-1 and 7-2 below.

Table 7-1 – Material Type Classification for GS, BF and SD

Profile	Code	Description
Pedolith	PSQ	Sand - quartz dominant
	PSQB	Sand - quartz dominant + carbonate (calcite / dolomite)
	PCF	Clay - Fe oxide dominant
	PCFB	Clay - Fe oxide dominant + carbonate (cal / dol)
Alluvial (Transported)	ALB	Carbonate (dolomite / magnesite) cemented sediments
	ALQK	Quartz dominant sands + kaolinite
	ACKS	Clay - kaolinite dominant + silica sand
	ACKG	Clay - kaolinite dominant + goethite
	ALKFS	Kaolinite + Fe Oxide + silica sand
	LAFKH	Laterite ferruginous - goethite + kaolinite + haematite
Regolith Clay Upper	CUGK	Goethite dominant + kaolinite
	CUGKZ	Goethite dominant + kaolinite + asbolite (cobaltian wad)
	CUGF	Goethite dominant + other Fe oxides
	CUGFZ	Goethite dominant + other Fe oxides + asbolite
	CUGS	Goethite dominant + silica
	CUGSZ	Goethite dominant + silica + asbolite
	CUSG	Silica dominant + goethite
	CUSGZ	Silica dominant + goethite + asbolite
Regolith Clay Lower	CLGE	Goethite dominant + serpentine
Saprock	SRE	Serpentine dominant
	SRBS	Carbonate (dol / mag) dominant + silica
	SRSB	Silica dominant + carbonate (dol / mag)
	SREB	Serpentine dominant + carbonate (dol / mag)
	SRSE	Silica dominant + serpentine
	SRES	Serpentine dominant + silica
	SRE	Serpentine dominant

Table 7-2 – Material Type Classification for GH

Profile	Code	Description
Pedolith	PSQ	Sand - quartz dominant
	PSQB	Sand - quartz dominant + carbonate (cal / dol)
	PCU	Clay - undifferentiated
	PCUB	Clay - undifferentiated + carbonate (cal / dol)
	PCF	Clay - Fe oxide dominant
	PCFB	Clay - Fe oxide dominant + carbonate (cal / dol)
Alluvial (Transported)	ALB	Carbonate (dol / mag) cemented sediments
	ACK	Clay - kaolinite rich
	ALQK	Quartz dominant sands + kaolinite
	LAFKH	Laterite ferruginous - goethite + kaolinite + haematite
Regolith Clay Upper	CUSG	Silica dominant + goethite
	CUSGZ	Silica dominant + goethite + asbolite
	CUSN	Silica dominant + nontronite
	CUSNZ	Silica dominant + nontronite + asbolite
	CUN	Nontronite dominant
	CUNZ	Nontronite dominant + asbolite
	CUS	Silica dominant
	CUSZ	Silica dominant + asbolite
Regolith Clay Lower	CLBS	Carbonate dominant (dol / mag) + silica
	CLBSZ	Carbonate dominant (dol / mag) + silica + asbolite
	CLSB	Silica dominant + carbonate (dol / mag)
	CLSBZ	Silica dominant + carbonate (dol / mag) + asbolite
	CLSE	Silica dominant + serpentine
	CLSEZ	Silica dominant + serpentine + asbolite
Saprock	SRE	Serpentine dominant
	SRES	Serpentine dominant + silica
	SREBS	Serpentine dominant + carbonate (dol / mag) + silica
	SREN	Serpentine dominant + nontronite

Material type classification codes were assigned directly to the updated resource models for the GNCP using domain control based on the geological interpretation(s) and the multi-element geochemistry estimated in the models to enable tracking of mineralised and waste material types in future mining studies and cross correlation with the samples used throughout the extensive historical and more recent metallurgical test work. Detailed Mineral Resource tabulations based on a 0.5% Ni cut-off were produced subdivided by the material type classification schemes (Tables 7-3 to 7-5) which demonstrate the deportment of nickel, cobalt and scandium, the multi-element support grade attributes and estimates of the carbonate mineral content amongst the various material types present within the GNCP deposits.

Table 7-3 – GS Mineral Resources subdivided by Material Type classification using a 0.5% Ni cut-off grade.

Resource	Material	Tonnes	BD	Grade Attributes (%)										Carbonate Minerals (%)				Sc Resource	
Category	Type	(Mt)	(t/m3)	Ni	Co	Mn	FeO	Al2O3	SiO2	MgO	CaO	LOI	Cr	Cal	Dol	Mag	All	Mt	ppm
Measured	CUGK	7.18	1.5	0.81	0.04	0.3	46	9.6	18	1.2	0.2	14	1.4	0.0	0.4	0.9	1.3	7.18	47
	CUGKZ	3.15	1.4	1.07	0.18	1.2	47	8.8	16	1.3	0.1	14	1.3	0.0	0.4	0.7	1.0	3.15	42
	CUGF	2.15	1.5	1.03	0.05	0.3	56	4.2	11	1.2	0.1	15	1.7	0.0	0.3	0.7	1.0	2.15	36
	CUGFZ	1.23	1.2	1.36	0.19	1.2	53	4.2	12	1.3	0.1	15	1.5	0.0	0.3	0.5	0.8	1.23	35
	CUGS	1.52	1.5	0.99	0.06	0.4	41	3.4	30	2.0	0.2	13	1.3	0.0	0.4	1.0	1.4	1.52	29
	CUGSZ	0.78	1.2	1.19	0.17	1.1	42	3.3	28	2.0	0.2	13	1.2	0.0	0.4	0.8	1.2	0.78	29
	CUSG	1.40	1.9	0.75	0.04	0.3	25	4.4	49	2.6	0.2	12	0.9	0.0	0.5	1.9	2.4	1.40	29
	CUSGZ	0.17	1.4	0.92	0.15	0.9	26	4.0	47	2.6	0.2	12	0.9	0.0	0.4	1.6	2.0	0.17	30
	CLGE	0.07	1.6	0.89	0.08	0.5	30	5.4	38	6.5	0.5	11	1.1	0.0	1.1	1.5	2.7	0.07	27
	SRE	0.00	1.6	0.83	0.07	0.4	21	15.5	36	5.1	0.1	16	0.6	0.0	0.0	0.0	0.0	0.00	34
	SRES	0.22	1.6	0.74	0.05	0.3	20	5.7	50	5.2	0.2	11	0.8	0.0	0.3	0.3	0.6	0.22	24
	SREB	0.05	1.7	0.74	0.06	0.3	20	10.9	42	4.4	0.4	16	0.8	0.0	1.3	7.5	8.8	0.05	26
	SRSE	0.09	1.9	0.64	0.04	0.2	15	2.1	66	4.4	0.2	7	0.6	0.0	0.1	0.1	0.1	0.09	16
	SRSB	0.18	2.2	0.65	0.04	0.2	14	8.5	50	3.7	0.3	16	0.6	0.0	0.9	6.4	7.3	0.18	25
	ALL	*18.18*	*1.5*	*0.94*	*0.08*	*0.5*	*44*	*7.1*	*22*	*1.6*	*0.2*	*14*	*1.3*	*0.0*	*0.4*	*1.0*	*1.4*	*18.18*	*40*
Indicated	CUGK	15.70	1.6	0.71	0.05	0.3	44	8.7	23	1.6	0.3	11	1.6	0.0	0.8	1.4	2.2	13.49	34
	CUGKZ	3.42	1.5	0.84	0.16	1.0	46	8.1	20	1.7	0.3	11	1.5	0.0	1.0	1.6	2.5	3.07	32
	CUGF	3.21	1.6	0.83	0.05	0.3	53	4.5	15	1.6	0.3	12	2.1	0.0	0.8	1.5	2.3	2.85	30
	CUGFZ	0.98	1.4	1.03	0.16	0.9	52	4.6	15	1.8	0.4	12	2.0	0.0	1.2	1.9	3.1	0.91	27
	CUGS	10.04	1.5	0.80	0.05	0.2	39	4.0	36	1.9	0.3	9	1.4	0.0	0.6	0.9	1.4	7.63	22
	CUGSZ	1.41	1.2	1.00	0.16	0.8	40	4.0	34	2.0	0.4	9	1.3	0.0	0.8	1.0	1.8	1.17	22
	CUSG	17.87	1.9	0.67	0.03	0.2	23	3.6	56	2.2	0.3	7	0.9	0.0	0.3	0.4	0.7	8.53	18
	CUSGZ	0.77	1.4	0.78	0.15	0.8	25	3.8	53	2.1	0.3	8	0.8	0.0	0.4	0.6	1.0	0.40	21
	CLGE	0.94	1.6	0.79	0.06	0.4	31	4.6	33	10.4	0.9	11	1.4	0.0	2.7	3.4	6.2	0.50	21
	SRE	0.63	1.6	0.75	0.05	0.3	23	4.4	38	16.1	0.3	10	1.2	0.0	0.8	0.9	1.7	0.38	18
	SRES	7.79	1.6	0.67	0.03	0.2	17	3.1	53	11.8	0.5	8	0.8	0.0	0.5	0.2	0.7	2.28	15
	SREB	10.63	1.7	0.66	0.04	0.2	15	2.1	37	18.2	3.3	18	0.7	0.0	10.1	9.9	20.0	7.90	11
	SRSE	2.71	1.9	0.62	0.03	0.1	15	2.0	68	4.4	0.4	6	0.5	0.0	0.0	0.0	0.1	0.80	12
	SRSB	5.32	2.2	0.62	0.03	0.2	12	1.5	49	14.6	3.1	15	0.5	0.0	8.8	5.9	14.7	2.75	10
	SRBS	0.87	2.2	0.60	0.03	0.2	8	0.7	28	21.9	6.0	30	0.3	0.0	20.4	24.3	44.8	0.40	7
	ALL	*82.30*	*1.7*	*0.71*	*0.05*	*0.3*	*29*	*4.4*	*40*	*6.3*	*0.9*	*11*	*1.1*	*0.0*	*2.6*	*2.6*	*5.2*	*53.06*	*23*
Inferred	PSQ	0.00	1.8	0.94	0.15	0.3	11	5.4	62	5.1	3.3	9	0.4	0.0	1.8	0.0	1.8	0.00	11
	PSQB	0.00	1.8	0.53	0.02	0.1	8	5.7	51	4.4	12.0	15	0.7	11.7	3.1	0.0	14.8	0.00	9
	PCF	0.03	1.8	0.62	0.07	0.4	29	7.7	36	3.2	4.5	12	1.3	1.3	7.1	0.0	8.4	0.03	27
	PCFB	0.20	1.8	0.69	0.04	0.3	21	6.0	33	9.6	5.7	18	0.7	1.4	12.4	5.8	19.6	0.14	31
	ALB	0.13	1.6	0.63	0.04	0.2	15	7.9	31	10.3	7.8	22	0.8	0.3	22.0	5.1	27.4	0.01	41
	ALQK	0.12	1.8	0.62	0.03	0.2	16	3.4	66	2.5	0.2	6	0.5	0.0	0.1	0.2	0.2	0.02	19
	ACKS	0.01	1.4	0.63	0.04	0.2	2	30.7	51	0.4	0.1	12	0.1	0.0	0.1	0.1	0.2	0.01	7
	ALKFS	1.35	1.6	0.64	0.04	0.2	31	7.2	41	2.4	0.5	10	1.1	0.0	1.0	1.0	2.0	0.84	27
	LAFKH	1.83	2.0	0.63	0.03	0.2	44	10.1	21	1.1	0.3	12	1.4	0.0	1.0	1.2	2.2	1.71	41
	CUGK	0.28	1.6	0.68	0.03	0.1	35	8.3	32	2.7	0.3	11	1.8	0.0	0.7	3.4	4.2	0.05	34
	CUGKZ	0.00	1.6	0.64	0.13	0.6	36	8.0	30	2.9	0.2	10	1.3	0.0	0.6	2.1	2.7	0.00	32
	CUGF	0.05	1.8	0.70	0.04	0.1	48	5.1	23	2.1	0.2	9	2.5	0.0	0.4	1.9	2.3	0.03	29
	CUGFZ	0.00	0.0	0.00	0.00	0.0	0	0.0	0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.00	0
	CUGS	0.56	1.5	0.72	0.03	0.1	37	4.8	37	2.7	1.0	8	2.2	0.0	0.6	1.1	1.7	0.16	20
	CUGSZ	0.01	1.2	0.66	0.17	1.0	32	5.3	37	2.9	0.2	10	0.9	0.0	0.7	3.1	3.8	0.01	25
	CUSG	0.73	1.9	0.69	0.03	0.2	25	4.0	52	2.8	0.6	8	1.1	0.0	0.4	0.7	1.1	0.17	23
	CUSGZ	0.03	1.4	0.70	0.15	1.0	26	4.0	49	2.9	0.2	8	0.8	0.0	0.4	1.6	1.9	0.02	21
	CLGE	0.09	1.6	0.66	0.03	0.2	29	5.4	39	6.4	2.0	10	1.5	0.0	3.9	1.2	5.0	0.01	21
	SRE	0.07	1.6	0.64	0.04	0.2	20	4.2	40	19.2	0.4	10	0.8	0.0	0.9	1.0	1.9	0.07	16
	SRES	1.13	1.6	0.65	0.03	0.2	17	4.2	52	11.1	0.9	8	0.8	0.0	0.8	0.1	0.9	0.20	15
	SREB	2.17	1.7	0.62	0.03	0.2	15	2.7	37	18.0	4.1	17	0.6	0.0	12.4	6.6	18.9	1.66	11
	SRSE	0.07	1.9	0.59	0.02	0.1	16	2.9	63	3.3	0.9	7	0.7	0.0	0.2	0.1	0.3	0.00	15
	SRSB	0.64	2.2	0.59	0.03	0.2	13	1.7	46	13.5	5.2	16	0.5	0.0	13.7	2.4	16.1	0.39	8
	SRBS	0.06	2.2	0.58	0.03	0.1	12	1.3	25	19.0	7.6	29	0.5	0.0	25.9	16.1	42.0	0.02	5
	ALL	*9.56*	*1.7*	*0.64*	*0.03*	*0.2*	*26*	*5.5*	*38*	*8.1*	*1.9*	*12*	*1.0*	*0.0*	*5.1*	*2.6*	*7.7*	*5.53*	*24*

Resource	Material	Tonnes	BD	Grade Attributes (%)										Carbonate Minerals (%)				Sc Resource	
Category	Type	(Mt)	(t/m3)	Ni	Co	Mn	FeO	Al2O3	SiO2	MgO	CaO	LOI	Cr	Cal	Dol	Mag	All	Mt	ppm
Measured + Indicated + Inferred	PSQ	0.00	1.8	0.94	0.15	0.3	11	5.4	62	5.1	3.3	9	0.4	0.0	1.8	0.0	1.8	0.00	11
	PSQB	0.00	1.8	0.53	0.02	0.1	8	5.7	51	4.4	12.0	15	0.7	11.7	3.1	0.0	14.8	0.00	9
	PCF	0.03	1.8	0.62	0.07	0.4	29	7.7	36	3.2	4.5	12	1.3	1.3	7.1	0.0	8.4	0.03	27
	PCFB	0.20	1.8	0.69	0.04	0.3	21	6.0	33	9.6	5.7	18	0.7	1.4	12.4	5.8	19.6	0.14	31
	ALB	0.13	1.6	0.63	0.04	0.2	15	7.9	31	10.3	7.8	22	0.8	0.3	22.0	5.1	27.4	0.01	41
	ALQK	0.12	1.8	0.62	0.03	0.2	16	3.4	66	2.5	0.2	6	0.5	0.0	0.1	0.2	0.2	0.02	19
	ACKS	0.01	1.4	0.63	0.04	0.2	2	30.7	51	0.4	0.1	12	0.1	0.0	0.1	0.1	0.2	0.01	7
	ALKFS	1.35	1.6	0.64	0.04	0.2	31	7.2	41	2.4	0.5	10	1.1	0.0	1.0	1.0	2.0	0.84	27
	LAFKH	1.83	2.0	0.63	0.03	0.2	44	10.1	21	1.1	0.3	12	1.4	0.0	1.0	1.2	2.2	1.71	41
	CUGK	23.15	1.5	0.74	0.04	0.3	44	9.0	22	1.5	0.2	12	1.5	0.0	0.7	1.3	2.0	20.72	38
	CUGKZ	6.57	1.5	0.95	0.17	1.1	46	8.5	18	1.5	0.2	12	1.4	0.0	0.7	1.1	1.8	6.23	37
	CUGF	5.41	1.6	0.91	0.05	0.3	54	4.4	13	1.4	0.2	13	2.0	0.0	0.6	1.2	1.8	5.03	32
	CUGFZ	2.21	1.3	1.21	0.18	1.1	53	4.4	13	1.5	0.2	14	1.7	0.0	0.7	1.1	1.8	2.15	32
	CUGS	12.12	1.5	0.82	0.05	0.2	39	3.9	35	1.9	0.3	9	1.4	0.0	0.6	0.9	1.4	9.31	23
	CUGSZ	2.19	1.2	1.06	0.16	0.9	40	3.7	32	2.0	0.3	10	1.3	0.0	0.7	0.9	1.6	1.95	25
	CUSG	19.99	1.9	0.68	0.03	0.2	24	3.7	56	2.3	0.3	8	0.9	0.0	0.3	0.5	0.8	10.10	19
	CUSGZ	0.97	1.4	0.81	0.15	0.8	25	3.9	52	2.2	0.3	8	0.9	0.0	0.4	0.8	1.2	0.59	22
	CLGE	1.10	1.6	0.78	0.06	0.4	31	4.7	34	9.8	1.0	11	1.4	0.0	2.7	3.1	5.9	0.57	21
	SRE	0.71	1.6	0.74	0.05	0.3	22	4.4	38	16.3	0.3	10	1.1	0.0	0.8	0.9	1.7	0.45	18
	SRES	9.14	1.6	0.67	0.03	0.2	18	3.3	53	11.6	0.5	8	0.8	0.0	0.6	0.2	0.8	2.69	15
	SREB	12.85	1.7	0.65	0.04	0.2	15	2.2	37	18.1	3.4	18	0.7	0.0	10.5	9.3	19.8	9.60	11
	SRSE	2.87	1.9	0.62	0.03	0.1	15	2.1	67	4.4	0.4	6	0.5	0.0	0.0	0.0	0.1	0.88	12
	SRSB	6.14	2.2	0.61	0.03	0.2	12	1.7	48	14.2	3.2	15	0.5	0.0	9.0	5.6	14.6	3.32	10
	SRBS	0.93	2.2	0.60	0.03	0.2	8	0.7	28	21.7	6.1	30	0.3	0.0	20.8	23.8	44.6	0.42	7
	ALL	*110.05*	*1.6*	*0.75*	*0.05*	*0.3*	*31*	*5.0*	*37*	*5.6*	*0.9*	*11*	*1.1*	*0.0*	*2.4*	*2.3*	*4.8*	*76.77*	*26*

Explanatory Discussion:

- *The blue shaded rows are overburden to the goethite-hosted mineralisation, being P as in Pedogenic (Quaternary-aged soil profile), AL as in Alluvial and AC as in Alluvial or lacustrine Clay (both related to the Tertiary-aged ancestral Lake Goongarrie), LA as in Laterite (Tertiary-aged weathering surface).*

  Their metallurgical performance will not match the premium goethite mineralisation, but resource tonnes are not significant.

- *The orange shaded rows are the premium Clay Upper Goethite mineralisation material types, with variously K being kaolinite, Z being asbolite, F being ferruginous - haematite, magnetite, maghemite, and S silica.*

  Bench-scale metallurgical performance of CUG Material Types is excellent with good rheology and low acid consumption (refer GNCP PFS ASX announcement, 28 March 2018). Most importantly, the Material Types demonstrate a premium mineralogical assemblage in terms of uniformity and hence ability to schedule production with consistent Material Type plant feed.

- *The yellow shaded row represents Clay Lower Goethite Serpentine (CLGE) and manifests in drilling as a lighter hue in RC drill chips, reflecting the initial occurrence within the 0.5% Ni cut-off wireframe of magnesium, with a consequent increase in autoclave acid requirement.*

  Clay Lower resource tonnes are not significant at GS.

- *The green shaded rows represent Saprock (SR) with variable E being Serpentine, S being weathering zone silica, B being the weathering zone carbonates dolomite and magnesite, generally light grey and green hues in RC drill chips, reflecting the occurrence within the 0.5% Ni cut-off wireframe of dolomite and magnesite carbonates. As acid consumers, the saprock is excluded as an autoclave feed, but is an excellent neutraliser acid consumer.*

Table 7-4 – BF+SD Mineral Resources subdivided by Material Type classification using a 0.5% Ni cut-off grade.

Resource Category	Material Type	Tonnes (Mt)	BD (t/m3)	Grade Attributes (%) Ni	Co	Mn	FeO	Al2O3	SiO2	MgO	CaO	LOI	Cr	Carbonate Minerals (%) Cal	Dol	Mag	Carb	Sc Resource Mt	ppm
Indicated	CUGK	8.33	1.6	0.70	0.04	0.2	41	9.1	26	2.2	0.3	11	1.3	0.0	0.8	1.7	2.4	6.61	45
	CUGKZ	2.09	1.4	0.83	0.17	1.1	41	8.4	25	2.1	0.2	11	1.1	0.0	0.7	1.5	2.2	1.90	44
	CUGF	0.85	1.6	0.84	0.05	0.3	50	4.6	19	2.3	0.4	12	1.6	0.0	1.4	2.3	3.7	0.68	31
	CUGFZ	0.33	1.3	1.13	0.21	1.6	51	4.5	18	1.7	0.3	11	1.3	0.0	0.8	1.5	2.3	0.32	34
	CUGS	7.39	1.5	0.78	0.05	0.3	37	3.9	37	2.7	0.4	9	1.3	0.0	1.0	1.0	2.0	5.15	24
	CUGSZ	1.73	1.1	0.93	0.17	1.1	40	3.9	34	2.3	0.3	9	1.1	0.0	0.7	0.9	1.6	1.50	27
	CUSG	15.07	1.8	0.68	0.04	0.2	24	3.5	55	2.5	0.3	8	0.9	0.0	0.3	0.4	0.7	10.14	20
	CUSGZ	1.49	1.6	0.78	0.16	0.9	26	3.9	52	2.3	0.2	8	0.9	0.0	0.3	0.4	0.7	1.18	23
	CLGE	1.66	1.6	0.78	0.06	0.3	30	4.3	38	6.8	1.0	10	1.1	0.0	2.7	1.8	4.6	1.23	26
	SRE	0.21	1.5	0.74	0.05	0.3	23	6.9	39	13.7	0.4	10	0.8	0.0	0.7	0.5	1.2	0.13	28
	SRES	8.22	1.5	0.68	0.04	0.2	19	3.3	54	9.2	0.5	8	0.8	0.0	0.4	0.2	0.6	5.75	18
	SREB	4.96	1.8	0.63	0.03	0.2	15	2.3	39	17.7	3.2	17	0.7	0.0	10.1	7.5	17.5	3.24	12
	SRSE	4.62	1.9	0.63	0.03	0.1	15	1.8	67	4.8	0.5	6	0.5	0.0	0.1	0.1	0.2	3.45	13
	SRSB	2.53	2.1	0.62	0.03	0.2	14	1.8	51	11.9	2.4	14	0.5	0.0	6.7	4.8	11.5	1.64	12
	SRBS	0.71	2.2	0.60	0.02	0.2	10	0.7	27	20.2	7.0	32	0.3	0.0	24.2	22.1	46.3	0.12	6
	ALL	*60.19*	*1.6*	*0.71*	*0.05*	*0.3*	*27*	*4.2*	*45*	*5.6*	*0.8*	*10*	*0.9*	*0.0*	*1.9*	*1.7*	*3.7*	*43.04*	*24*
Inferred	PSQB	0.00	1.8	0.54	0.01	0.1	9	3.0	54	9.5	7.3	15	0.2	0.0	14.5	0.3	14.8	0.00	18
	PCF	0.02	1.8	0.76	0.04	0.2	16	4.8	52	8.0	4.9	11	0.5	0.0	6.4	0.0	6.5	0.01	27
	PCFB	0.09	1.8	0.62	0.02	0.1	17	4.5	37	11.6	6.2	19	0.4	0.4	15.7	6.3	22.4	0.05	30
	ALB	0.92	1.6	0.66	0.05	0.3	15	5.7	28	13.8	7.9	23	0.6	0.2	23.1	7.3	30.6	0.49	16
	ALQK	0.03	1.7	0.66	0.04	0.2	17	3.4	64	3.6	0.6	7	0.8	0.0	0.9	0.2	1.0	0.02	13
	ALKFS	0.48	1.7	0.67	0.04	0.2	29	5.7	43	4.3	0.8	10	1.1	0.0	1.8	1.3	3.1	0.21	25
	LAFKH	0.14	2.0	0.66	0.03	0.2	41	8.7	23	2.3	0.5	13	1.5	0.0	1.7	3.2	4.9	0.11	38
	CUGK	2.62	1.6	0.68	0.04	0.2	37	9.2	32	2.8	0.4	10	1.3	0.0	1.0	2.1	3.0	0.36	43
	CUGKZ	0.66	1.5	0.78	0.16	1.0	37	9.0	32	2.9	0.4	10	1.0	0.0	1.0	2.0	3.0	0.07	39
	CUGF	0.08	1.7	0.80	0.05	0.4	49	5.1	24	2.0	0.4	9	1.6	0.0	1.1	1.3	2.4	0.02	31
	CUGFZ	0.04	1.3	1.18	0.19	1.0	52	4.5	18	2.4	0.6	10	1.7	0.0	1.8	2.0	3.8	0.03	32
	CUGS	2.46	1.5	0.73	0.04	0.2	36	4.1	38	2.6	0.4	9	1.3	0.0	0.9	1.5	2.4	0.12	22
	CUGSZ	0.21	1.1	0.84	0.16	1.0	37	4.6	35	3.2	0.5	10	1.1	0.0	1.4	2.5	4.0	0.02	27
	CUSG	3.29	1.8	0.66	0.03	0.2	26	4.0	50	2.8	0.3	9	1.0	0.0	0.6	1.8	2.4	0.42	28
	CUSGZ	0.15	1.6	0.71	0.15	0.8	26	5.7	46	2.8	0.4	11	0.9	0.0	1.3	2.7	4.0	0.04	34
	CLGE	0.57	1.6	0.73	0.04	0.2	30	4.7	39	6.1	0.9	10	1.1	0.0	2.3	1.5	3.8	0.08	33
	SRE	0.10	1.5	0.68	0.04	0.2	23	7.4	39	12.6	0.8	10	0.8	0.0	1.4	0.7	2.1	0.02	43
	SRES	2.16	1.5	0.63	0.03	0.2	17	3.7	51	14.3	1.1	8	0.6	0.0	1.0	0.3	1.4	0.70	19
	SREB	4.19	1.8	0.72	0.04	0.3	17	6.6	42	14.5	2.0	13	0.5	0.0	5.6	3.5	9.1	0.42	14
	SRSE	0.42	1.9	0.61	0.02	0.1	15	2.4	67	4.5	0.4	6	0.6	0.0	0.0	0.0	0.0	0.17	13
	SRSB	0.53	2.1	0.59	0.03	0.1	14	2.4	49	13.4	2.1	13	0.5	0.0	5.8	4.7	10.5	0.12	10
	SRBS	0.04	2.2	0.58	0.03	0.1	10	1.5	25	21.0	10.0	30	0.4	0.0	33.9	10.0	43.9	0.00	6
	ALL	*19.19*	*1.7*	*0.69*	*0.04*	*0.3*	*26*	*5.6*	*42*	*7.7*	*1.3*	*11*	*0.9*	*0.0*	*3.3*	*2.4*	*5.7*	*3.47*	*23*
Indicated + Inferred	PSQB	0.00	1.8	0.54	0.01	0.1	9	3.0	54	9.5	7.3	15	0.2	0.0	14.5	0.3	14.8	0.00	18
	PCF	0.02	1.8	0.76	0.04	0.2	16	4.8	52	8.0	4.9	11	0.5	0.0	6.4	0.0	6.5	0.01	27
	PCFB	0.09	1.8	0.62	0.02	0.1	17	4.5	37	11.6	6.2	19	0.4	0.4	15.7	6.3	22.4	0.05	30
	ALB	0.92	1.6	0.66	0.05	0.3	15	5.7	28	13.8	7.9	23	0.6	0.2	23.1	7.3	30.6	0.49	16
	ALQK	0.03	1.7	0.66	0.04	0.2	17	3.4	64	3.6	0.6	7	0.8	0.0	0.9	0.2	1.0	0.02	13
	ALKFS	0.48	1.7	0.67	0.04	0.2	29	5.7	43	4.3	0.8	10	1.1	0.0	1.8	1.3	3.1	0.21	25
	LAFKH	0.14	2.0	0.66	0.03	0.2	41	8.7	23	2.3	0.5	13	1.5	0.0	1.7	3.2	4.9	0.11	38
	CUGK	10.95	1.6	0.70	0.04	0.2	40	9.1	28	2.3	0.3	11	1.3	0.0	0.8	1.8	2.6	6.97	44
	CUGKZ	2.74	1.4	0.82	0.17	1.1	40	8.5	27	2.3	0.3	11	1.1	0.0	0.7	1.7	2.4	1.97	44
	CUGF	0.94	1.6	0.84	0.05	0.3	50	4.7	20	2.3	0.4	11	1.6	0.0	1.4	2.2	3.6	0.69	31
	CUGFZ	0.37	1.3	1.14	0.21	1.6	51	4.5	18	1.8	0.3	11	1.3	0.0	0.9	1.6	2.5	0.35	34
	CUGS	9.85	1.5	0.77	0.04	0.3	37	3.9	37	2.6	0.4	9	1.3	0.0	1.0	1.1	2.1	5.27	24
	CUGSZ	1.94	1.1	0.92	0.17	1.1	39	4.0	34	2.4	0.3	9	1.1	0.0	0.8	1.0	1.8	1.52	27
	CUSG	18.36	1.8	0.68	0.03	0.2	24	3.6	54	2.6	0.3	8	0.9	0.0	0.4	0.6	1.0	10.56	20
	CUSGZ	1.63	1.6	0.78	0.16	0.9	26	4.1	51	2.4	0.2	8	0.9	0.0	0.4	0.6	1.0	1.22	24
	CLGE	2.22	1.6	0.77	0.05	0.3	30	4.4	38	6.6	1.0	10	1.1	0.0	2.6	1.7	4.4	1.31	26
	SRE	0.31	1.5	0.72	0.05	0.3	23	7.0	39	13.4	0.5	10	0.8	0.0	0.9	0.6	1.5	0.15	30
	SRES	10.38	1.5	0.67	0.04	0.2	19	3.4	53	10.3	0.6	8	0.7	0.0	0.6	0.2	0.8	6.45	18
	SREB	9.16	1.8	0.67	0.04	0.2	16	4.3	40	16.2	2.6	15	0.6	0.0	8.0	5.7	13.7	3.65	12
	SRSE	5.04	1.9	0.63	0.03	0.1	15	1.9	67	4.8	0.5	6	0.5	0.0	0.1	0.1	0.2	3.62	13
	SRSB	3.07	2.1	0.61	0.03	0.2	14	1.9	50	12.2	2.3	14	0.5	0.0	6.5	4.8	11.3	1.76	12
	SRBS	0.74	2.2	0.60	0.02	0.2	10	0.8	26	20.2	7.2	31	0.3	0.0	24.7	21.5	46.2	0.12	6
	ALL	*79.38*	*1.6*	*0.70*	*0.05*	*0.3*	*27*	*4.5*	*44*	*6.1*	*0.9*	*10*	*0.9*	*0.0*	*2.3*	*1.9*	*4.2*	*46.51*	*24*

Table 7-5 – GH Mineral Resources subdivided by Material Type classification using a 0.5% Ni cut-off grade.

Resource	Material	Tonnes	BD	Grade Attributes (%)										Carbonate Minerals (%)				Sc Resources	
Category	Type	(Mt)	(t/m3)	Ni	Co	Mn	FeO	Al2O3	SiO2	MgO	CaO	LOI	Cr	Cal	Dol	Mag	All	Mt	ppm
Indicated	CUN	4.61	1.5	0.68	0.04	0.2	23	3.5	54	4.7	0.3	7	1.3	0.0	0.3	0.7	1.0	1.69	20
	CUNZ	0.19	1.5	0.80	0.12	0.3	25	3.2	52	4.4	0.2	7	1.5	0.0	0.2	0.7	0.8	0.13	19
	CUS	22.24	1.7	0.63	0.03	0.1	14	2.0	67	4.3	0.3	6	0.6	0.0	0.1	0.8	1.0	4.96	12
	CUSZ	0.20	1.7	0.74	0.11	0.2	16	1.8	66	3.8	0.2	5	0.8	0.0	0.1	0.3	0.4	0.12	12
	CUSG	5.39	1.5	0.70	0.04	0.2	20	2.2	58	5.3	0.2	7	1.1	0.0	0.1	1.1	1.2	1.84	16
	CUSGZ	0.23	1.5	0.83	0.12	0.3	22	2.1	57	4.8	0.1	7	1.4	0.0	0.1	1.3	1.4	0.13	14
	CUSN	2.17	1.6	0.66	0.04	0.2	30	5.4	43	3.7	0.3	10	1.4	0.0	0.6	2.3	2.9	0.75	25
	CUSNZ	0.11	1.6	0.79	0.12	0.4	33	5.1	40	3.5	0.3	10	1.3	0.0	0.6	2.5	3.1	0.10	23
	CLBS	0.20	1.9	0.65	0.02	0.1	11	1.3	47	14.3	0.2	23	0.4	0.0	0.6	26.8	27.3	0.01	13
	CLSB	2.00	1.8	0.66	0.03	0.1	13	1.7	55	10.8	0.2	16	0.5	0.0	0.8	14.8	15.6	0.26	14
	CLSBZ	0.02	1.8	0.82	0.12	0.3	19	2.0	47	10.2	0.1	16	1.0	0.0	0.4	15.1	15.4	0.01	15
	CLSE	2.49	1.7	0.67	0.03	0.2	16	1.9	59	10.2	0.2	7	0.8	0.0	0.3	0.8	1.0	0.53	17
	CLSEZ	0.03	1.7	0.72	0.11	0.3	20	2.2	53	10.2	0.2	7	1.3	0.0	0.1	0.4	0.6	0.02	15
	ALL	39.88	1.6	0.65	0.04	0.2	17	2.4	62	5.2	0.3	7	0.8	0.0	0.2	1.8	2.0	10.54	15
Inferred	PCUB	0.18	1.8	0.62	0.02	0.1	10	3.2	46	10.7	7.7	18	0.4	0.0	18.3	2.6	20.9	0.00	24
	PSQ	0.01	1.8	0.60	0.02	0.0	11	3.2	60	3.9	6.2	11	0.6	0.0	6.9	0.0	6.9	0.00	0
	PSQB	0.05	1.8	0.60	0.02	0.1	8	3.5	53	7.6	8.5	16	0.4	0.0	15.4	0.0	15.5	0.00	13
	PCFB	0.01	1.8	0.56	0.02	0.1	20	5.8	35	8.5	7.0	19	0.6	0.0	19.6	2.4	22.0	0.00	0
	ALB	0.01	1.6	0.57	0.02	0.1	17	3.6	49	10.1	1.0	16	0.5	0.0	3.4	12.5	15.9	0.00	0
	ALQK	0.23	1.8	0.59	0.02	0.1	20	4.0	56	5.0	0.9	8	0.7	0.0	1.1	0.4	1.5	0.03	23
	CUN	0.35	1.5	0.68	0.03	0.1	24	3.5	55	3.8	0.2	7	1.3	0.0	0.1	0.3	0.4	0.05	20
	CUNZ	0.01	1.5	0.67	0.12	0.3	23	3.4	52	5.3	0.1	7	1.5	0.0	0.1	0.8	0.8	0.01	20
	CUS	1.19	1.7	0.60	0.03	0.1	14	1.7	67	4.5	0.3	7	0.7	0.0	0.3	0.9	1.2	0.12	14
	CUSZ	0.01	1.7	0.61	0.11	0.2	18	2.4	65	3.5	0.1	5	0.9	0.0	0.0	0.0	0.0	0.01	19
	CUSG	0.38	1.5	0.69	0.03	0.2	21	2.0	57	5.8	0.2	8	1.3	0.0	0.2	1.6	1.8	0.06	15
	CUSGZ	0.01	1.5	0.65	0.12	0.3	21	2.2	58	5.7	0.1	6	1.5	0.0	0.0	0.5	0.6	0.00	16
	CUSN	0.19	1.6	0.65	0.02	0.1	29	5.8	46	3.5	0.1	8	1.6	0.0	0.2	1.1	1.3	0.06	31
	CLBS	4.77	1.9	0.59	0.02	0.1	9	0.6	39	22.1	1.3	25	0.4	0.0	4.3	29.4	33.7	0.07	11
	CLSB	10.86	1.8	0.61	0.02	0.1	10	0.9	50	17.3	0.6	16	0.5	0.0	2.1	14.8	17.0	0.43	12
	CLSBZ	0.02	1.8	0.88	0.11	0.3	14	1.8	49	15.2	0.1	15	0.6	0.0	0.3	12.7	13.0	0.01	15
	CLSE	6.49	1.7	0.60	0.03	0.2	14	1.4	56	13.9	0.5	9	0.7	0.0	0.8	1.2	2.0	0.86	17
	CLSEZ	0.08	1.7	0.68	0.12	0.3	18	2.0	52	13.5	0.3	8	1.1	0.0	0.5	1.0	1.5	0.05	17
	SRE	0.24	1.7	0.59	0.03	0.2	17	1.1	43	20.5	0.3	10	1.4	0.0	1.0	4.0	5.0	0.01	11
	SREBS	1.34	2.1	0.57	0.02	0.1	10	0.7	43	23.7	2.1	17	0.5	0.0	7.0	10.3	17.2	0.00	10
	SREN	0.64	1.9	0.66	0.03	0.2	14	2.8	50	18.5	0.4	10	0.5	0.0	1.0	2.6	3.5	0.13	21
	SRES	2.26	1.7	0.58	0.03	0.2	12	1.1	52	19.3	0.4	10	0.7	0.0	1.2	3.1	4.3	0.09	16
	ALL	29.35	1.8	0.60	0.02	0.1	12	1.2	50	16.7	0.8	15	0.6	0.0	2.3	11.4	13.7	2.00	14
Indicated + Inferred	PCUB	0.18	1.8	0.62	0.02	0.1	10	3.2	46	10.7	7.7	18	0.4	0.0	18.3	2.6	20.9	0.00	24
	PSQ	0.01	1.8	0.60	0.02	0.0	11	3.2	60	3.9	6.2	11	0.6	0.0	6.9	0.0	6.9	0.00	0
	PSQB	0.05	1.8	0.60	0.02	0.1	8	3.5	53	7.6	8.5	16	0.4	0.0	15.4	0.0	15.5	0.00	13
	PCFB	0.01	1.8	0.56	0.02	0.1	20	5.8	35	8.5	7.0	19	0.6	0.0	19.6	2.4	22.0	0.00	0
	ALB	0.01	1.6	0.57	0.02	0.1	17	3.6	49	10.1	1.0	16	0.5	0.0	3.4	12.5	15.9	0.00	0
	ALQK	0.23	1.8	0.59	0.02	0.1	20	4.0	56	5.0	0.9	8	0.7	0.0	1.1	0.4	1.5	0.03	23
	CUN	4.96	1.5	0.68	0.04	0.2	23	3.5	54	4.6	0.3	7	1.3	0.0	0.3	0.7	0.9	1.74	20
	CUNZ	0.21	1.5	0.79	0.12	0.3	25	3.3	52	4.5	0.2	7	1.5	0.0	0.2	0.7	0.8	0.14	19
	CUS	23.42	1.7	0.63	0.03	0.1	14	2.0	67	4.3	0.3	6	0.6	0.0	0.2	0.8	1.0	5.07	12
	CUSZ	0.21	1.7	0.74	0.11	0.2	16	1.8	66	3.7	0.2	5	0.8	0.0	0.1	0.3	0.3	0.12	13
	CUSG	5.77	1.5	0.70	0.04	0.2	20	2.1	58	5.3	0.2	7	1.1	0.0	0.1	1.1	1.3	1.90	16
	CUSGZ	0.24	1.5	0.82	0.12	0.3	22	2.1	57	4.9	0.1	7	1.4	0.0	0.1	1.3	1.3	0.14	15
	CUSN	2.36	1.6	0.66	0.03	0.2	30	5.4	43	3.7	0.3	10	1.4	0.0	0.6	2.2	2.8	0.81	26
	CUSNZ	0.11	1.6	0.79	0.12	0.4	33	5.1	40	3.6	0.3	10	1.3	0.0	0.5	2.5	3.0	0.10	23
	CLBS	4.98	1.9	0.60	0.02	0.1	9	0.6	39	21.8	1.2	25	0.4	0.0	4.2	29.3	33.5	0.08	11
	CLSB	12.86	1.8	0.62	0.02	0.1	11	1.0	51	16.3	0.6	16	0.5	0.0	1.9	14.8	16.7	0.69	12
	CLSBZ	0.04	1.8	0.85	0.12	0.3	17	1.9	48	12.8	0.1	15	0.8	0.0	0.3	13.9	14.2	0.02	15
	CLSE	8.98	1.7	0.62	0.03	0.2	14	1.6	57	12.9	0.4	8	0.7	0.0	0.7	1.1	1.8	1.38	17
	CLSEZ	0.12	1.7	0.69	0.12	0.3	18	2.0	52	12.6	0.3	8	1.1	0.0	0.4	0.9	1.3	0.07	16
	SRE	0.24	1.7	0.59	0.03	0.2	17	1.1	43	20.5	0.3	10	1.4	0.0	1.0	4.0	5.0	0.01	11
	SREB	1.34	2.1	0.57	0.02	0.1	10	0.7	43	23.7	2.1	17	0.5	0.0	7.0	10.3	17.2	0.00	10
	SRES	0.64	1.9	0.66	0.03	0.2	14	2.8	50	18.5	0.4	10	0.5	0.0	1.0	2.6	3.5	0.13	21
	SRSB	2.27	1.7	0.58	0.03	0.2	12	1.1	52	19.3	0.4	10	0.7	0.0	1.2	3.1	4.3	0.09	16
	ALL	69.23	1.7	0.63	0.03	0.2	15	1.9	57	10.1	0.5	10	0.7	0.0	1.1	5.9	7.0	12.54	14

Explanatory Discussion:

- *The orange shaded rows are the premium Clay Upper mineralisation material types, with variously N being nontronite, Z being asbolite, G being goethite and S being silica.*
- *The yellow shaded rows represent Clay Lower B being carbonate, S being silica, Z being asbolite, E being Serpentine.*
- *The green shaded rows represent Saprock (SR) with variable E being Serpentine, S being weathering zone silica, B being the weathering zone carbonates dolomite and magnesite.*

8. Scandium and Rare Earth Elements

The REEs suite of elements formally include yttrium and the 15 lanthanide elements in the Periodic Table. However, scandium is found in most REE deposits and is usually classified as an REE. The International Union of Pure and Applied Chemistry includes scandium in their rare earth element definition and for the purposes of discussion in this document is included under this heading as part of Ardea's Critical Minerals R&D programme.

Assay analysis for all the REEs and scandium has been completed for all the Ardea drillhole samples and the historical pulp re-analysis programmes for GS and GH completed by Ardea. Assessment of the resulting REE data has not identified sufficiently high concentrations of REEs (with the exception of scandium) within the currently defined nickel resource envelope to consider estimation of REE Mineral Resources coincident with the nickel mineralisation within the GNCP. However, Ardea notes that the higher REE assays are strongly associated with high grade cobalt-manganese mineralisation and could potentially be recovered as by-products of processing of material rich in nickel, cobalt and manganese.

During future mining grade control, parts of any pit displaying high REE concentrations could be separately stockpiled on the ROM pad for batch processing of the autoclave discharge through a specialist REE refinery.

Indicative scandium and REE intersections associated with nickel laterite mineralisation are displayed in Table 8-1 while details of drillhole source data are provided in Appendix 4.

Table 8-1 – GNCP Indicative scandium and REE intersections associated with nickel laterite mineralisation

Pit Area	Drill Hole	Int Depth (m)	Int Length (m)	Ni (%)	Co (%)	Mn (%)	Sc (ppm)	Y (ppm)	Ce (ppm)	La (ppm)	Nd (ppm)	Pr (ppm)
Elsie North	AGSR001	14-18	4	0.85	**0.21**	**0.98**	43	6	**968**	10	14	4
Pamela Jean	AGSR170	22-24	2	0.63	0.05	**0.24**	43	**318**	32	**216**	**340**	**75**
Elsie North	AGSR369	18-26	8	0.49	0.14	**1.28**	40	25	325	51	59	16
Patricia Anne	AGSR392	24-26	2	0.49	0.07	0.11	52	**215**	**1120**	**260**	**341**	**87**
Patricia Anne	AGSR430	8-14	6	**1.05**	**0.77**	**4.60**	14	57	447	161	**135**	38
Patricia Anne	AGSR495	18-22	4	**1.19**	**1.01**	**7.53**	24	28	365	30	27	7
Pamela Jean	GSDD003	30-33	3	0.71	**0.64**	**3.03**	16	4	367	10	0	10
Pamela Jean	GSDD004	15-21	6	0.66	0.03	0.07	**161**	6	15	4	4	1
Pamela Jean	GSRC986	29-32	3	0.81	0.04	0.10	8	72	101	103	**110**	28
Canegrass Sth	ABFR012	22-24	2	0.63	0.01	0.13	**122**	14	34	7	8	2
Canegrass Sth	ABFR014	26-28	2	0.51	0.05	**0.52**	**128**	8	43	5	7	2
Mavis North	ABFR061	20-28	8	0.24	0.05	**0.76**	37	190	315	70	**110**	26
Mavis South	ABFR155	20-26	6	0.96	0.18	**0.66**	37	62	116	12	16	5
Mavis South	ABFR164	12-16	4	0.40	0.07	**0.36**	36	8	**1125**	12	16	5

It should be noted that scandium is present in higher grade concentrations overlying the 0.25% nickel grade shell envelope, but as it is currently only considered for processing as a nickel by-product, none of this "non-nickel" material has been domained or included in the scandium resource estimate.

With the expected future growth of the scandium market, this "non-nickel" material could be considered for definition of a separate resource in the future.

No bench-scale metallurgical test work has as yet been completed on REE mineralisation styles. However, desk-top studies suggest a compatibility between REE and scandium in terms of potential metallurgical attributes, which would be expected due to their similar reaction chemistries.

Scandium and REEs are expected to be taken into solution in the proposed HPAL processing flowsheet for the GNCP and could be produced as a by-product. Preliminary calculations for the extraction and deportment of the REEs have been developed, and will be used for the guidance of future investigations.

9. High Purity Alumina

Considering only the Clay Upper Goethite mineralisation (designated CUG, with variable K kaolinite, Z asbolite, S silica and F ferruginous - haematite, magnetite, maghemite), the Material Type distribution for GS is 72.6Mt at 3.7% - 9.0% Al_2O_3 (Table 7-3) and BF+SD is 46.8Mt at 3.6% - 9.1% Al_2O_3 (Table 7-4).

As for REE mineralisation, no bench-scale metallurgical test work has as yet been completed on the high alumina mineralisation styles. Any future alumina resource estimation for the GNCP will include metallurgical test-work to quantify expected performance and to confirm the applicability of the nickel flowsheet for production of a marketable HPA product.

Indicative alumina intersections associated with nickel laterite mineralisation are presented in Table 9-1 while details of source drillhole data are provided in Appendix 4.

Table 9-1 – GNCP Indicative alumina intersections associated with nickel laterite mineralisation

Pit Area	Drill Hole	Int Depth (m)	Int Length (m)	Ni (%)	Co (%)	Mn (%)	Sc (ppm)	Al (ppm)	LOI (ppm)	SI (ppm)	Ce (ppm)	Nd (ppm)
Pamela Jean	AGSR161	36-50	14	0.55	0.03	0.07	13	**14.1**	12.9	19.3	43	18
Pamela Jean	GSDD003	19-33	14	0.81	**0.44**	**2.67**	31	**12.7**	16.3	8.3	143	14
Pamela Jean	GSDD007	11-18	7	**1.08**	**0.38**	**2.06**	49	11.3	18,1	5.6	52	4
Pamela Jean	GSRC334	38-41	3	1.01	0.04	0.08	**149**	10.4	14.8	8.6	9	3
Pamela Jean	GSRC567	25-28	3	0.67	0.05	**0.34**	8	11.6	9.9	26.1	118	33
Mavis South	ABFR041	22-26	4	0.56	0.09	**0.23**	18	**14.8**	11.9	21.0	97	19
Mavis South	ABFR163	26-32	6	0.87	0.08	**0.40**	14	11.4	9.6	24.2	93	50

While these aluminium grades are below those proposed for stand-alone HPA flowsheets, Ardea intends to investigate the benefits of generating an HPA by-product by leveraging off the existing nickel-cobalt production flowsheet. This strategy could result in enhanced HPA production economics through reductions in the capital and operating costs assigned to the HPA flowsheet.

It is apparent that the high-alumina mineralisation is preferentially associated with high Co-Mn and anomalous REEs (notably Ce). It is likely to be a geo-metallurgical style developed at relatively shallow levels in the regolith with a high gibbsite-asbolite content.

The current R&D program indicates an association between REE and alumina enrichment, suggesting potential for a flowsheet with combined campaign processing.

The production model would also consider the potential for stockpiling and dedicated treatment of suitable ROM materials. Processing options will be guided by forthcoming batch test-work, in alignment with the future Strategic Partner’s corporate objectives, once identified.

Authorised for lodgement by the Board of Ardea Resources Limited.

For further information regarding Ardea, please visit https://ardearesources.com.au/ or contact:

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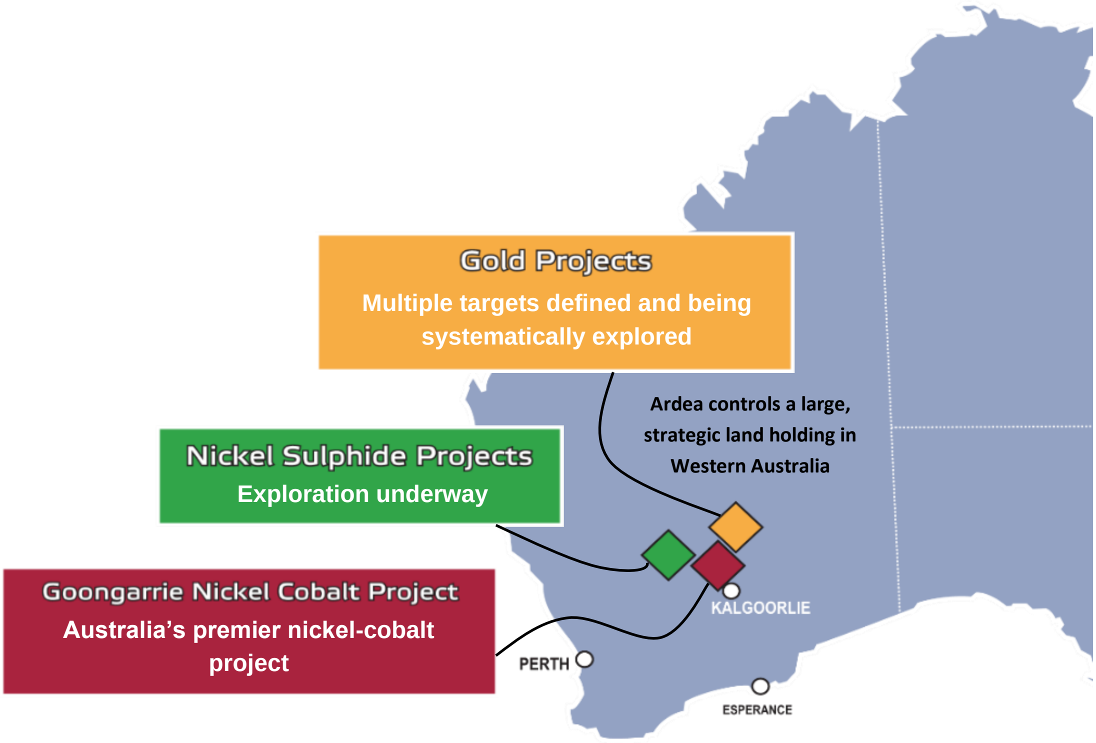
About Ardea Resources

Ardea Resources (ASX:ARL) is an ASX-listed resources company, with a large portfolio of 100%-controlled West Australian-based projects, focussed on:

- Development of the Goongarrie Nickel Cobalt Project, which is part of the encompassing Kalgoorlie Nickel Project, a globally significant series of nickel-cobalt deposits which host the largest nickel-cobalt resource in the developed world, coincidentally located as a cover sequence overlying fertile orogenic gold targets; and
- Advanced-stage exploration within its WA nickel sulphide and gold exploration tenure located on crustal-scale Tectonic Zone structures in lake settings within the Eastern Goldfields world-class nickel-gold province.



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CAUTIONARY NOTE REGARDING FORWARD-LOOKING INFORMATION

This news release contains forward-looking statements and forward-looking information within the meaning of applicable Australian securities laws, which are based on expectations, estimates and projections as of the date of this news release.

This forward-looking information includes, or may be based upon, without limitation, estimates, forecasts and statements as to management's expectations with respect to, among other things, the timing and amount of funding required to execute the Company's exploration, development and business plans, capital and exploration expenditures, the effect on the Company of any changes to existing legislation or policy, government regulation of mining operations, the length of time required to obtain permits, certifications and approvals, the success of exploration, development and mining activities, the geology of the Company's properties, environmental risks, the availability of labour, the focus of the Company in the future, demand and market outlook for precious metals and the prices thereof, progress in development of mineral properties, the Company's ability to raise funding privately or on a public market in the future, the Company's future growth, results of operations, performance, and business prospects and opportunities. Wherever possible, words such as "anticipate", "believe", "expect", "intend", "may" and similar expressions have been used to identify such forward-looking information. Forward-looking information is based on the opinions and estimates of management at the date the information is given, and on information available to management at such time.

Forward-looking information involves significant risks, uncertainties, assumptions, and other factors that could cause actual results, performance or achievements to differ materially from the results discussed or implied in the forward-looking information. These factors, including, but not limited to, the ability to create and spin-out a gold focussed Company, fluctuations in currency markets, fluctuations in commodity prices, the ability of the Company to access sufficient capital on favourable terms or at all, changes in national and local government legislation, taxation, controls, regulations, political or economic developments in Australia or other countries in which the Company does business or may carry on business in the future, operational or technical difficulties in connection with exploration or development activities, employee relations, the speculative nature of mineral exploration and development, obtaining necessary licenses and permits, diminishing quantities and grades of mineral reserves, contests over title to properties, especially title to undeveloped properties, the inherent risks involved in the exploration and development of mineral properties, the uncertainties involved in interpreting drill results and other geological data, environmental hazards, industrial accidents, unusual or unexpected formations, pressures, cave-ins and flooding, limitations of insurance coverage and the possibility of project cost overruns or unanticipated costs and expenses, and should be considered carefully. Many of these uncertainties and contingencies can affect the Company's actual results and could cause actual results to differ materially from those expressed or implied in any forward-looking statements made by, or on behalf of, the Company. Prospective investors should not place undue reliance on any forward-looking information.

Although the forward-looking information contained in this news release is based upon what management believes, or believed at the time, to be reasonable assumptions, the Company cannot assure prospective purchasers that actual results will be consistent with such forward-looking information, as there may be other factors that cause results not to be as anticipated, estimated or intended, and neither the Company nor any other person assumes responsibility for the accuracy and completeness of any such forward-looking information. The Company does not undertake, and assumes no obligation, to update or revise any such forward-looking statements or forward-looking information contained herein to reflect new events or circumstances, except as may be required by law.

No stock exchange, regulation services provider, securities commission or other regulatory authority has approved or disapproved the information contained in this news release.

Compliance Statement (JORC 2012)

The information in this report that relates to KNP Exploration Results is based on information originally compiled by previous full time employees of Heron Resources Limited and or Vale Inco. The Exploration Results and data collection processes have been reviewed, verified and re-interpreted by Mr Ian Buchhorn who is a Member of the Australasian Institute of Mining and Metallurgy and currently an executive director of Ardea Resources Limited. Mr Buchhorn has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the exploration activities undertaken 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'. Mr Buchhorn consents to the inclusion in this report of the matters based on his information in the form and context that it appears.

The information in this report that relates to Mineral Resources for the Goongarrie Hill, Goongarrie South, Big Four and Scotia Dam nickel-cobalt deposits that comprise the Goongarrie Nickel Cobalt Project is based on information compiled by Mr James Ridley who is a Member of the Australasian Institute of Mining and Metallurgy, a full time employee of Ardea Resources and has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is 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. Mr Ridley consents to the inclusion in the report of the matters based on this information in the form and context in which it appears.

The information in this report that relates to Metallurgy for the Goongarrie Hill, Goongarrie South, Big Four and Scotia Dam nickel-cobalt deposits that comprise the Goongarrie Nickel Cobalt Project is based on information compiled by Mr Mike Miller who is a Member of the Australasian Institute of Mining and Metallurgy, a consultant of Ardea Resources and has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is 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. Mr Miller consents to the inclusion in the report of the matters based on this information in the form and context in which it appears.

Appendix 1 – Summary of Information Required according to ASX Listing Rule 5.8.1

10. GNCP Mineral Resource Estimation

10.1. Geology and Geological Interpretation

Nickel laterite mineralisation within the GNCP is developed from the weathering of Achaean-aged olivine-cumulate ultramafic units within the Walter Williams Formation (**WWF**) with resultant near surface metal enrichment. The mineralisation is usually within 80 metres of surface (but can extend to 160m depth) and can be subdivided based on mineralogical and metallurgical characteristics into upper iron-rich ("Clay Upper") and lower magnesium-rich ("Clay Lower") materials based on the ratios of iron to magnesium. These upper and lower layers can be further subdivided into additional mineralogy groups or material types based on ratios of the other major grade attributes. The deposits are analogous to many weathered ultramafic-hosted nickel-cobalt deposits both within Australia and world-wide.

The continuity of mineralisation is strongly controlled by variations in the ultramafic protolith, fracturing and palaeo water flow within the ultramafic host rocks. Areas of deep fracturing and water movement within the bedrock typically have higher grade and more extensive mineralisation in the overlying regolith. There is also often a distinctive increase in grade, widths and depth of mineralisation coinciding with olivine mesocumulate facies and increased structural deformation proximal to more competent thinner orthocumulate facies and mafic rocks immediately to the east and west of the WWF. Where the host regolith overlies olivine adcumulate lithologies there is typically an increase in siliceous material coinciding with mostly lower nickel and cobalt grades along the central axis of the WWF except where deeper fracturing occurs along cross cutting structures which often coincides with narrow higher grade nickel and cobalt mineralisation within the adcumulate facies.

The carbonated saprock variant of adcumulate commonly has a palaeo-karst speleothem development, being coarse residual silicified fragments of light-coloured adcumulate "floating" in a matrix of dark red goethite. The open-space within the breccia constitutes a favourable borefield reservoir rock.

Thin layers of transported colluvial, alluvial and lacustrine sediments overlie much of the insitu nickel laterite mineralisation at the GNCP, with mostly colluvial sediments about 4m thick at GH; all the sediment types present at GS ranging from less than 5m to over 40m thick at GS; and colluvial and alluvial sediments ranging from less than 5m to 40m thick at BF and SD. Much of the high-grade mineralisation at GS, BF and SD is under 10-20m of transported cover.

Nickel mineralisation domains were interpreted using a nominal 0.25% Ni cut-off grade applied to the drillhole assay data, cognisant of all observed geological influences, incorporating internal dilution where necessary to maintain reasonable 3-D continuity of the domain geometry. The envelopes were extended variable distances laterally and along strike from marginal mineralised drill intersections towards adjacent subgrade or barren drillholes with consideration of the lateral extents evident on the current and adjacent drill hole traverses and trends in the width and thickness of the mineralisation along strike. Wireframe solid models were generated based on the interpreted cross-sectional profiles using an extensive network of tie lines to control the interpreted geometry between sections. Cobalt mineralisation domains were interpreted in a similar manner to the nickel domains using a nominal 0.05% Co cut-off grade and restricted to within the nickel domains. While Mineral Resources were ultimately reported using a 0.5% Ni cut-off grade, the nickel envelopes included lower grade material mostly in saprock which is also often rich in basic silicate and carbonate minerals that could be used as acid neutraliser in the proposed ore processing flowsheet and therefore, was included for consideration in downstream mining planning work.

Wireframe surface models of the following boundaries were generated for domaining of the weathering profile at each of the GNCP deposits based on a combination of the drillhole geological logging and assay data:

- Base of pedogenic material rich in calcite and dolomite
- Boundary between transported sediments and underlying insitu regolith
- Boundary between upper iron rich clay and lower magnesium rich saprolite and saprock

Domain envelopes were also modelled of the following material types intersected in paleochannels that could be of potential value as acid neutraliser in the proposed pressure acid leaching of nickel and cobalt ore from the GNCP, or sources of high purity alumina (HPA):

- Dolomite and magnesite-rich alluvial sediments based on a 5% cut-off applied to the sum of the CaO and MgO assay data coinciding with high loss on ignition (LOI) assay values.
- Material rich in kaolinite and silica sand (≥ 25% Al2O3 + SiO2) and low in iron (< 5% FeO).

As scandium assays are not available across the entirety of any of the GNCP deposits, additional boundaries were defined isolating the regions of the modelled nickel mineralisation envelopes informed with scandium assay data to apply corresponding domaining in the resource block models to constrain the spatial extents of scandium grade estimates to the same regions informed with scandium assay data.

A detailed compilation of plans, cross sections and 3-D projections of the geological interpretation accompany the report in Appendix 3.

10.2. Drilling Techniques

A staged series of drilling programs commencing in 1999 has generated a substantial drilling database for the GNCP containing 3,226 RC holes for a total of 156,245m of drilling which has mostly focused on resource definition. Close to 4,000m of diamond drilling amongst 73 drillholes has also been undertaken for multiple purposes including QAQC verification of the geology and sampling from the RC drilling, collection of samples for bulk density determinations and to source material for metallurgical test work. Additional material for metallurgical test work was collected by over 3,400m of sonic drilling amongst 74 drillholes completed by Vale Inco and Ardea. All the diamond and sonic drill drillholes twinned earlier RC holes chosen to verify the full range of material types observed to occur in the weathering profile based on the RC drilling. A detailed summary of the drilling subdivided by the GNCP deposits, company/operator and drilling method is provided in Table 10-1. To date, 55% of all the RC drilling has been completed by Heron, 26% by Ardea, 17% by Vale Inco and 2% by Anaconda, while 64% of the diamond drilling has been completed by Ardea, 26% by Vale Inco and 10% by Heron.

The drillhole spacing at GH is mostly at 80mE intervals along drill traverses alternating between 40mN and 120mN apart (Figure 10-1). Localised regions of 40mE by 40mN and 20mE by 20mN spaced drilling have also been completed. The drillhole spacing at GS ranges from 20mE x 20mN to 80mE x 160mN (Figure 10-2), including regions of 40mE x 80mN, 80mE x 80mN, 40mE x 40mN and 20mE x 40mN spaced drilling in the southern half of the deposit, while 80mE x 160mN and 80mE x 80mN hole spaced drilling dominates in the northern half of the deposit. The drilling at BF (Figure 10-3) is on either 80mE x 80mN or 40mE by 80mN patterns along the southern 6km of strike length, and on an 80mE by 400mN pattern with minor 80mE x 80mN spaced holes along the northern 2km of the deposit. The dominant hole spacing at SD is 40mE x 80mN with minor 80mE x 80mN spaced drilling extending approximately 1.5km south from BF (Figure 10-4). Broader more irregular spaced drilling has been completed at Scotia Dam South with holes at 80mE or 160mE intervals along drill traverses spaced 160mN, 240mN, 560mN and 640mN apart.

The mineralisation within the GNCP has a strong global sub-horizontal orientation. The great majority of the drilling has therefore been vertical and represents the true thickness of the mineralisation. The only exceptions are 9 angled RC drillholes (-60° towards the east) completed by Ardea that accurately test the location and width of mineralisation resulting from deep weathering along steep westerly dipping structures along the eastern side of GS (Pamela Jean Zone - PJZ) that was not adequately drilled out based on the earlier vertical RC holes.

The majority of the drill hole collars have been surveyed using an RTK DGPS system with either a 3 or 7 digit accuracy. The coordinates are stored in the Ardea exploration database referenced to the MGA Zone 51 Datum GDA94.

Table 10-1 – Summary of drilling at the GNCP deposits; Purpose Coding is: QAQC = Quality Assurance Quality Control, RD = Resource Definition, BDM = Bulk Density Measurements, MTW = Metallurgical Test Work.

Deposit	Company	Hole Type	No Holes	No Metres	Purpose	Drill Period
Big Four	Ardea	DD	17	842	QAQC, BDM and MTW	2018
		RC	256	10,943	RD	2018
		Subtotal	*273*	*11,785*		
	Heron	RC	423	19,942	RD	1999-2012
	Vale Inco	DD	6	365	QAQC, BDM and MTW	2006
	Anaconda	RC	73	2,661	RD	2000
	Combined	DD	23	1,207		
		RC	752	33,546		
		Total	*775*	*34,753*		
Goongarrie Hill	Heron	RC	335	12,851	RD	1999-2006
	Vale Inco	DD	10	484	QAQC, BDM and MTW	2006
		RC	320	15,108	RD	2008
		SH	25	940	BDM and MTW	2006-2007
		Subtotal	*355*	*16,532*		
	Combined	DD	10	484		
		RC	655	27,959		
		SH	25	940		
		Total	*690*	*29,383*		
Goongarrie South	Ardea	DD	28	1,669	QAQC, BDM and MTW	2017-2018
		RC	500	25,326	RD	2017-2018
		SH	19	1,108	MT	2018
		Subtotal	*547*	*28,103*		
	Heron	DD	8	406	QAQC, GEOL	2000
		RC	893	48,422	RD	1999-2004
		Subtotal	*901*	*48,828*		
	Vale Inco	DD	2	89	QAQC and MTW	2006
		RC	222	11,717	RD	2007-2008
		SH	30	1,381	MTW	2007-2008
		Subtotal	*254*	*13,187*		
	Combined	DD	38	2,164		
		RC	1,615	85,465		
		SH	49	2,489		
		Total	*1,702*	*90,118*		
Scotia Dam	Ardea	RC	83	4,011	RD	2018
	Heron	RC	119	5,110	RD	1999-2004
	Vale Inco	DD	2	98	QAQC, BDM and MTW	2006
		RC	2	154	RD	2008
		Subtotal	*4*	*252*		
	Combined	DD	2	98		
		RC	204	9,275		
		Total	*206*	*9,373*		
GNCP Total	Ardea	DD	45	2,511		
		RC	839	40,280		
		SH	19	1,108		
		Subtotal	*903*	*43,899*		
	Heron	DD	8	406		
		RC	1,770	86,325		
		Subtotal	*1,778*	*86,731*		
	Vale Inco	DD	20	1,036		
		RC	544	26,979		
		SH	55	2,321		
		Subtotal	*619*	*30,336*		
	Anaconda	RC	73	2,661		
	Combined	DD	73	3,953		
		RC	3,226	156,245		
		SH	74	3,429		
		Total	*3,373*	*163,627*		

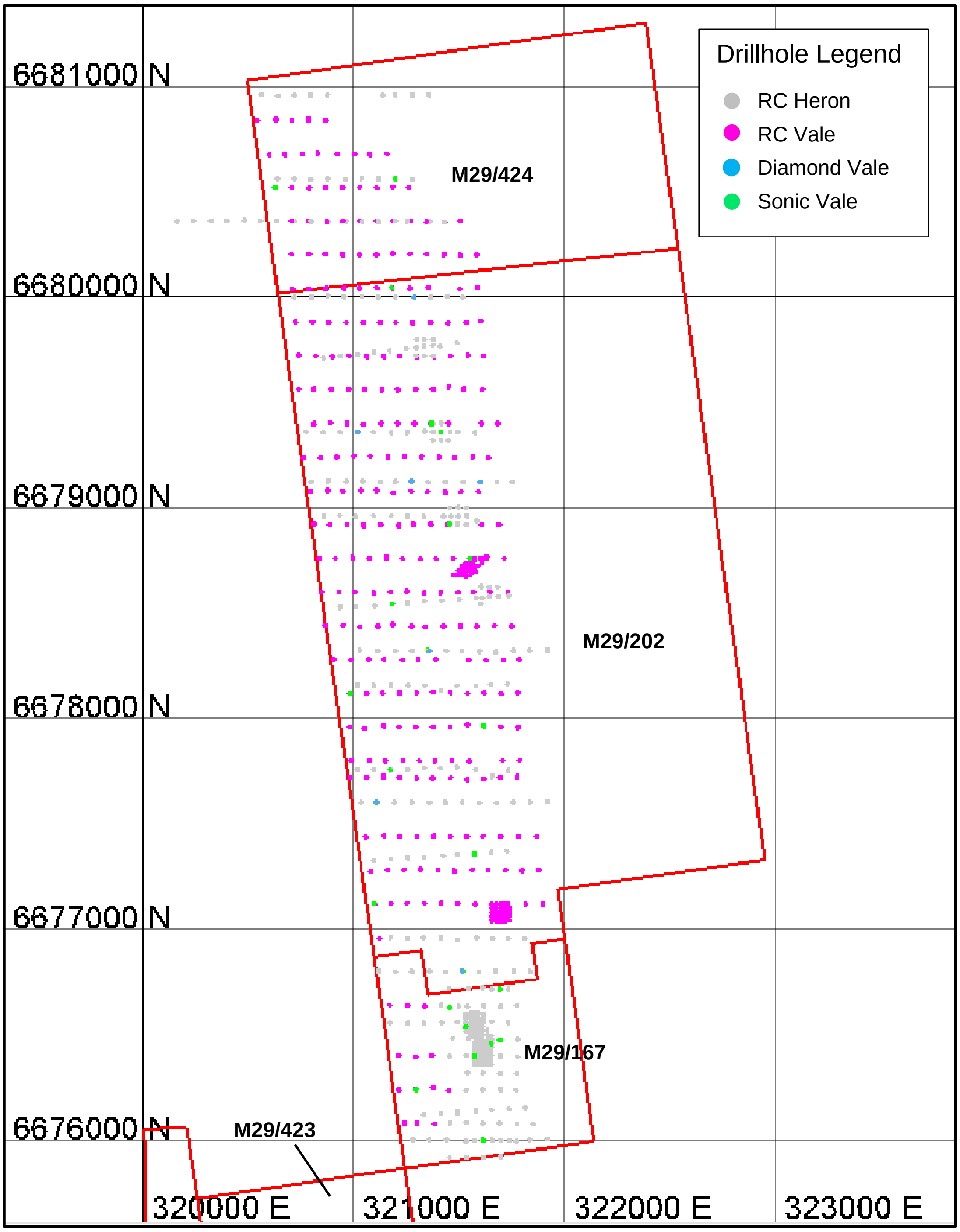


Figure 10-1: Distribution of drilling at GH.

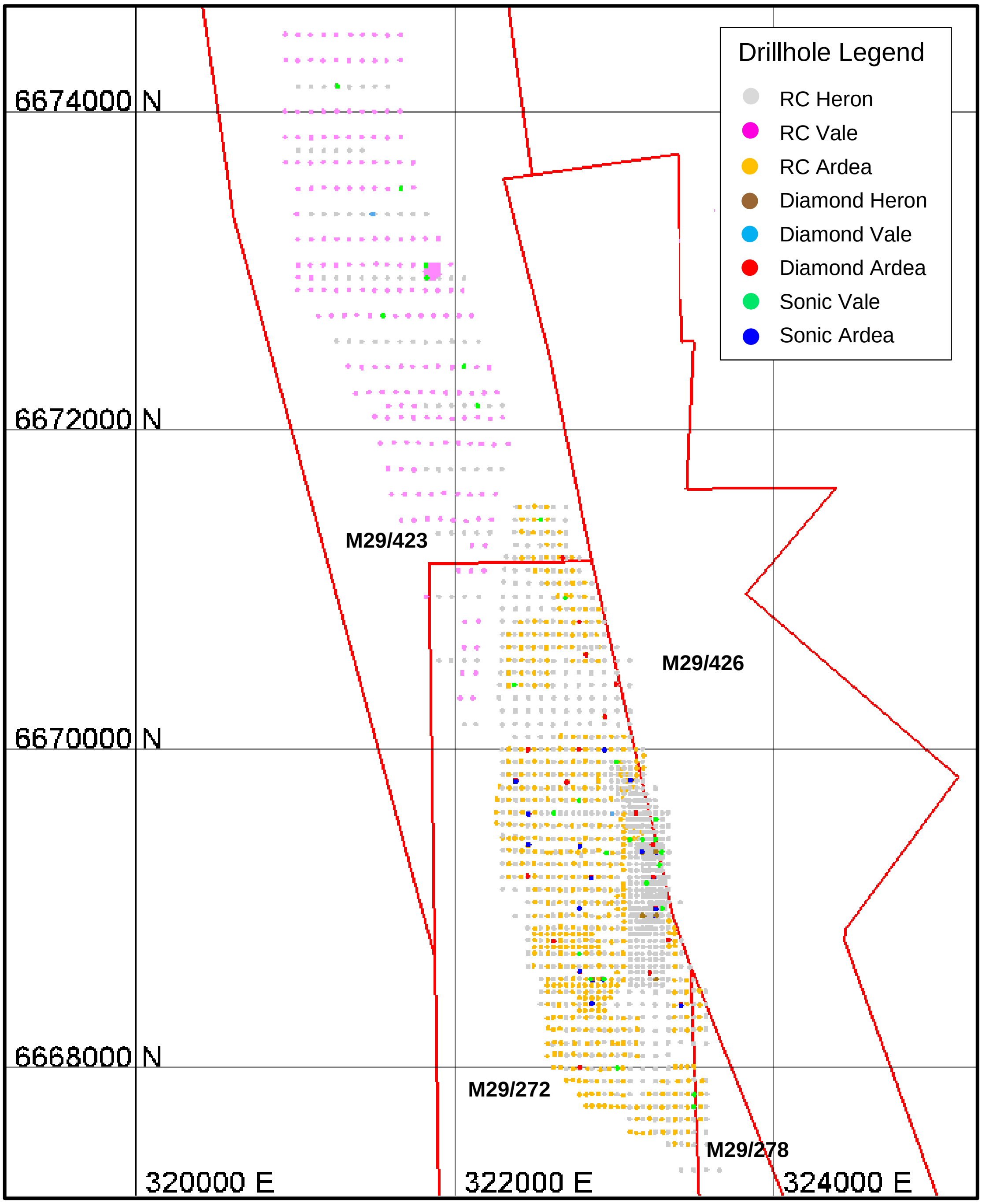


Figure 10-2: Distribution of drilling at GS.

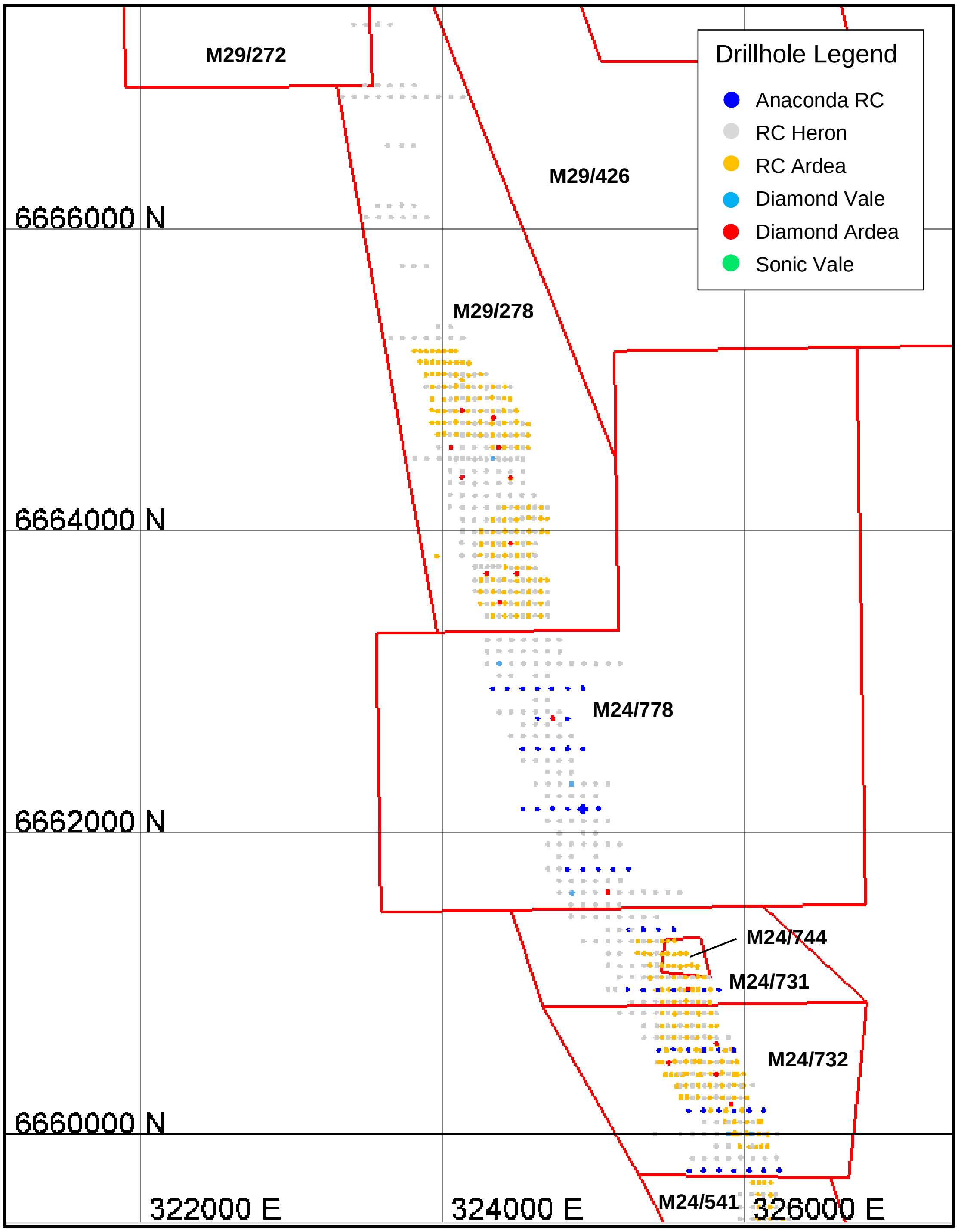


Figure 10-3: Distribution of drilling at BF.

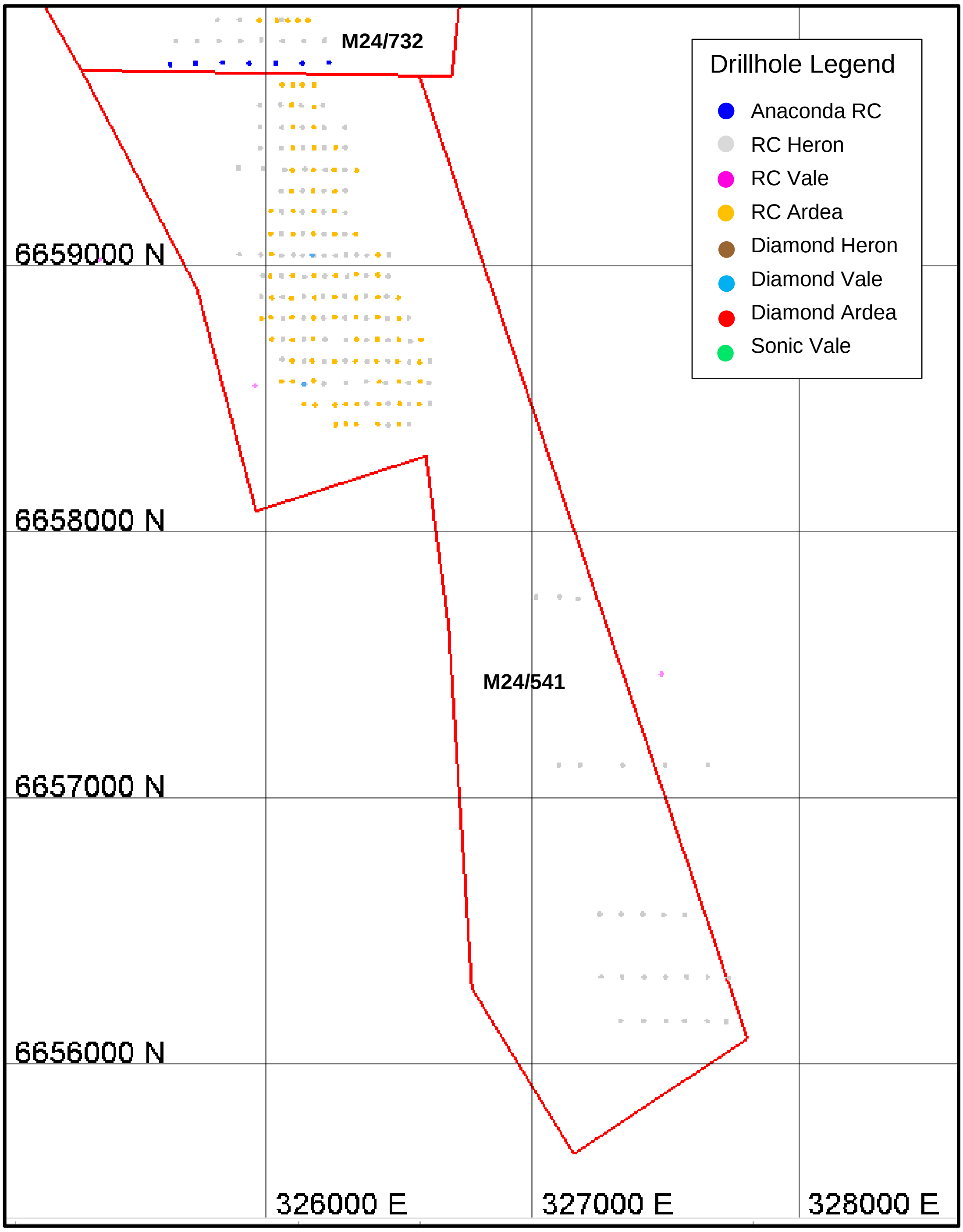


Figure 10-4: Distribution of drilling at SD.

10.3. Sampling and Sub-sampling

All RC drilling was performed with a face sampling hammer (bit diameter between 4½ and 5 ¼ inches) and bulk drill samples collected over 1m downhole intervals via a cyclone into large plastic bags or polyweave bags when wet during the Vale Inco programmes. All diamond drilling used triple tube core barrels to collect predominantly PQ3 size core (minor HQ3). Sonic drill samples were collected as whole core samples either 3.75 or 5.1 inches in diameter of up to 1m lengths in sealed clear plastic wrap. Sonic core of longer run lengths was cut to shorter lengths as it was retrieved from the drill string to facilitate handling of the heavy samples.

Approximately 2.5kg subsamples were collected over 1m intervals from the Heron 1999 to 2002 RC drilling using a riffle splitter when dry or damp, or spear or scoop from the 1m bulk sample bag when wet. Spear/scoop samples for initial assay analysis were also collected, typically over 8m downhole intervals in unmineralised overburden or 4m intervals over mineralised material. The 1m sub-samples over composite sample intervals that returned assays greater than 0.4% Ni were subsequently submitted for analysis with the resultant assays superseding the initial composite sample assays in the project database.

Approximately 3kg subsamples were collected mostly over 2m downhole intervals from the Heron 2004 and 2006 RC drilling at Big Four and Goongarrie Hill using a cone splitter when dry or by spear sampling when wet. Similar size subsamples were collected mostly over 2m intervals from the Ardea 2017 and 2018 RC drilling at Goongarrie South, Big Four and Scotia Dam using a cone splitter in both wet and dry drilling conditions.

Approximately 2.5kg subsamples were mostly collected over 1m intervals from the Vale Inco RC drilling at Goongarrie South and Goongarrie Hill using a cone splitter when dry or later riffle splitting of the drill samples after drying when initially wet.

One or two metre half core samples from the Heron and Ardea diamond drilling were cut using a diamond saw when hard or spatula when soft and submitted for assay analysis along with blanks and standards for QAQC monitoring. Core from the Vale Inco diamond holes was sampled over variable intervals (1-1.5m) with half core samples cut with a diamond saw and submitted for head assay along with blanks and standards, and the other half used for beneficiation test work.

10.4. Sample Analysis Method

Most of the exploration samples from the GNCP have been submitted for sample preparation and chemical analysis to either Kalgoorlie Assay Labs (**KAL**) in Kalgoorlie (by Heron in 1999 through 2002) and Ultratrace come Bureau Veritas (**BV**) in Perth by Heron, Vale Inco and Ardea from 2004 to present. Industry standard sample preparation procedures (of the time) have been used by both laboratories, typically involving; Log samples received (both laboratories), weigh samples as received (BV), dry samples at 105° C (both laboratories), weigh dried samples (BV), jaw crush samples when required e.g., core samples to -3mm; (both laboratories), riffle split RC chips / crushed core samples to produce -3kg subsample for pulverisation (both laboratories).

Subsamples from the majority of the historical RC drilling of the GNCP by Heron were analysed by KAL in Kalgoorlie using the following analytical methods (percentages are relative to all the analyses to date for each deposit):

- Four acid digestion (4AD) with AAS finish for Ni, Co, MgO, FeO, Al2O3, CaO, Mn, Cr, Cu, and Zn (8% of drilling at GS, 6% at BF, 13% at SD and 9% at GH).
- Four acid digestion (4AD) with ICP_OES finish for Ni, Co, MgO, FeO, Al2O3, Mn, Cr, Cu, and Zn (14% of drilling at GS, 15% at BF, 30% at SD and 9% at GH).
- XRF analysis of pressed powder (PP) for Ni, Co, MgO, FeO, Al2O3, SiO2, CaO, Mn, Cr, Cu, and Zn (25% of drilling at GS, 2% at BF, 4% at SD and 4% at GH).

Subsamples from most of the Anaconda RC drilling at Big Four, all the Vale Inco and Ardea RC, diamond and sonic drilling and the remaining Heron RC drilling used for resource estimation (53% at GS, 76% at BF, 53% at SD and 77% at GH) were analysed for Ni, Co, MgO, FeO, Al2O3, SiO2, CaO, Mn, Cr, Cl, Cu, Zn and As by Ultra Trace or Bureau Veritas using fusion XRF analysis. Most of the Vale Inco and Ardea samples were also analysed for loss on ignition (LOI) by thermo-gravimetric analysis. A small percentage of the samples from Big Four (1.5%) were analysed at UltraTrace for the same grade attributes as fusion XRF, but by ICP-OES except SiO2, which was not measured.

The fused discs from all the Ardea samples were also analysed at BV for a suit of 50 additional elements including REEs by laser ablation mass spectrometry. The resulting assays for scandium were used to inform scandium resource estimates for all the GNCP deposits.

The fusion XRF method is widely accepted as the preferred analytical method for multi-element analysis of nickel laterite samples. Thermo-gravimetric analysis is also the leading method used to determine LOI. The 4AD AAS and 4AD ICP-OES analytical methods are unable to test for SiO2 and the digestion method often does not fully attack all minerals which can lead to the understating of the true concentration of some elements particularly Al2O3 and Cr. The pressed powder XRF method is designed to be semi-quantitative and typically suffers from poor analytical accuracy for elements that are not well dispersed in the pressed powder pellet.

Heron inserted standards and/or duplicate RC sample splits into the exploration sample stream for external QAQC monitoring at a frequency of roughly 1 per drill hole for the RC drilling at GS, GH, BF and SD completed in 1999 to 2002. Standards, blanks and duplicate RC sample splits were inserted into the exploration sample stream on a cyclic 1 in 10 frequency (1 in 30 frequency for each type) for the remaining RC drilling completed by Heron at GH and BF in 2004 and 2006. Vale Inco inserted both standards and duplicate RC sample splits into the exploration sample stream alternating on a 1 in 20 frequency. Various umpire assay programmes have also been completed.

All of the QAQC data has been statistically assessed and the precision and accuracy of the assay data for the important grade components (Ni, Co and Sc) have been found to be acceptable and suitable for use in resource estimation. Analysis of the QAQC data for the other grade attributes has also determined acceptable levels of precision and accuracy exist for the analyses completed by UltraTrace / BV using their fusion XRF methodology. However, the accuracy of the KAL pressed power XRF assays for these additional attributes is more varied with elevated overall relative bias levels above 5% evident for Al2O3 (-12%), SiO2 (-9%), CaO (+18%) and Cr (-14%). Elevated overall relative bias levels around 5% are also evident in the KAL ICP-OES assays for MgO (-4.6%), FeO (-4%) and Mn (+5%), and larger relative bias levels for Al2O3 (-10%) and Cr (-25%). While these data have been included in datasets used for corresponding grade estimation in the GNCP resource models, they have been used only as a guide to material type classification assignments which, given the noted bias levels are not considered to have a material impact on the material type assignments considering the global assay data available for each grade attribute.

164 representative sample pulps from the 2018 Ardea diamond drilling at GS and 96 pulps from historical Heron RC and Vale Inco diamond drilling at GH were submitted to BV in Adelaide for quantitative XRD analysis for contained minerals. Part of the BV analysis involved validation of the mineralogy stoichiometry against the multielement geochemistry also determined by BV using fusion XRF analysis.

10.5. Estimation Methodology

Most resource modelling processes were undertaken using Maptek Vulcan software Version 2020.1.

The drillhole assay data for each deposit was assigned coding for regolith, nickel, cobalt, area, region and rare earth domains based on the wireframe solid and surface models from the geological interpretation. Detailed analysis was undertaken of the availability of assay data for input to grade estimation, including the support grade attributes required for material type assignments. While Ni, Co, Mn, MgO, FeO, Al2O3 and Cr assay data were available for most of the drilling, less assay data was available for the following grade attributes:

- SiO2 available for only 74% of the 2m composites within the nickel mineralisation envelope(s) for GS, 76% for GH and 71% for BF+SD.
- CaO available for only 76% of the 2m composites within the nickel mineralisation envelope(s) for GS, 79% for GH and 77% for BF+SD.
- LOI available for only 48% of the 2m composites within the nickel mineralisation envelope(s) for GS, 57% for GH and 38% for BF/SD. However, LOI grades were calculated for additional 23% of the composites for GS, 18% for GH and 32% for BF+SD when there was sufficient assay data for the other grade attributes.
- Sc available for only 36% of the 2m composites within the nickel mineralisation envelope(s) for GS, 39% for BF+SD, and 5% of the composites within the nickel mineralisation envelope(s) for GH.

Most of the sub-samples used for resource estimation were collected over 2m downhole intervals. The domain coded sub-sample assay data of interest were therefore composited to 2m intervals in preparation for statistical analysis, variography and grade estimation. While Ni, Co and Sc are the primary focus of the resource estimate, statistical analysis, variography and grade estimation were also undertaken for FeO, MgO, Al2O3, SiO2, CaO, Mn, Cr, and Loss on Ignition (LOI) which are relevant to assignment of material types and dry bulk density values to the resource models.

Classical statistical analysis for each deposit was undertaken with cell declustering applied and scaled typically to the greatest drillhole spacing of significant coverage at each deposit, and a 2m cell height. The data for nickel and all the other grade attributes except cobalt and manganese were subdivided by the clay (high FeO and low MgO) and saprock (low FeO and high MgO) domains. Conversely, the Co and Mn data, which are moderate to strongly correlated were subdivided by inside versus outside the cobalt resource envelopes within the nickel resource envelope(s). Elevated coefficients of variation (CV) greater than 1.0 but less than 2.0 were reported for Al2O3, CaO, and Cr in the saprock domains, and MgO in clay domains, while similar range CV values were reported for Co in the high Co domains and Mn in the low Co domains. The highest CVs greater than 2.0 but mostly less than 3.0 were reported for CaO in the clay domains.

Suitable upper and lower cuts were determined for any grade variables showing anomalously high or low outlier grades. The application of the cuts only had local influences on the corresponding grade estimates with no material effects on the domain global mean grades. A similar approach to grade cutting was adopted for the paleochannel carbonate and high alumina domains.

Continuity analysis (variography) was undertaken for all grade attributes subdivided by the clay and saprock domains and grouped area domains with similar grade trends and mineralisation characteristics. Co and Mn were subdivided by the grouped high grade and low-grade cobalt domains. 3-D variography was generated as semi-variograms normalised to an overall sill of 1.0 based on the non-declustered composite grades or normal score transform of the grades for each domain or domain group. The variography was modelled with a nugget effect and up to three spherical structures. The continuity analysis determined that the drillhole spacing within all the deposits is considered sufficient for the estimation of Ni, Co and Sc mineral resource grades, and support grade attributes.

A 3-D regular block model was constructed of each of the GNCP deposits (combined for BF and SD) with nickel, cobalt, rare earth, regolith (including transported) and area (orientation and data spacing) domain coding assigned based on the geological interpretation. Grouped domain coding based on the initial domain assignments was also defined to facilitate running of resource modelling processes, where appropriate, for similar trending regions and/or styles of mineralisation. All the block models were constructed using regular block dimensions of 10mE by 10mN by 2mRL.

Mineral Resource nickel and cobalt grades were estimated by ordinary kriging into panels ranging in size from 20mE x 20mN x 4mRL to 40mE by 80mN x 4mRL mostly based on half the dominant drillhole spacing in the area domain or area domain group. The ordinary kriged panel estimation was followed by Local Uniform Conditioning (LUC) to produce final nickel and cobalt resource grade estimates for 10mE by 10mN by 2mRL selective mining unit blocks reflecting recoverable volume and grade estimates expected upon mining based on a 10mE by 10mN by 2mRL grade control spacing or less.

Validation of the ordinary kriged panel and LUC SMU estimates for each deposit was undertaken by detailed visual review of the block model estimates relative to the input drillhole composite grade data, global mean grade comparisons between the input composites data and the block model grade estimates and grade-volume curve comparisons between the block model estimates and gaussian Global Change of Support (GCOS) estimates. The validation indicated that the ordinary kriged panel and LUC SMU nickel and cobalt estimates are appropriate in relation to the input composites data.

The supporting grade attributes including, MgO, FeO, Al2O3, and Cr with similar drillhole sample assay availability as Ni and Co were estimated by ordinary kriging into 10mE by 10mN by 2mRL size blocks using the same search neighbourhood parameters and domain control used for estimation of nickel grades. Estimation of Mn used the same constraints used for Co (high and low-grade cobalt domains). Visual and global mean grade comparisons between the resultant grade estimates compared to the input composites data subdivided by the estimation domains were considered acceptable.

Ordinary kriging of SiO2, CaO, and LOI grades, was undertaken using larger search neighbourhoods to account for the absence of assay data for 20-30% of the samples. Similar validation processes were completed as for the other support grade attributes followed by adjustment of the initial SiO2, CaO, and LOI grade estimates on a relative ratio basis forcing the sum of all the estimated grade attributes (as oxides) to range between 95% and 105%. This was required for robust application of the material type classification scheme discussed below.

Ordinary kriging of scandium grades into 10mE by 10mN by 2mRL size blocks was also undertaken using larger search neighbourhoods to account for the broad data spacing (up to 80mE by 400mN at GS) outside the areas of Ardea infill drilling in the southern half of GS (effectively 80mE by 80mN spacing), the areas of Ardea infill drilling at BF and SD (also effectively 80mE by 80mN spacing), and a crude 80mE by 160mN spacing over selected regions and drillhole intervals at GH. These estimates were further constrained by the regions and drillhole intervals informed with scandium assay data. No adjustments were made to the ordinary kriged scandium estimates. Validation of the scandium grade estimates was undertaken in a similar manner to the support grade attributes with reasonable correlation evident between the input data and the block model grade estimates.

Quantitative XRD mineralogy data for 164 samples from the Ardea 2017 and 2018 diamond drilling at GS and 96 pulps from historical RC and diamond drillholes at GH was merged with the multi-element geochemical data for the samples, and detailed analysis undertaken of the mineralogy data subdivided by the geological interpretation and a combination of grade and grade ratio thresholds based on the major geochemical attributes in the samples (MgO/FeO, Al2O3/SiO2 and SiO2/(MgO+FeO+Al2O3). The analysis resulted in the development of material type classification schemes for GS and GH based on geological and geochemical classification criteria relating to natural mineral groupings present in the GNCP weathering profile. Algorithms were developed in MS Excel and Vulcan block model scripts to assign material type codes to the drillhole samples for control in the statistical analysis of the bulk density data, and to control the assignment of determined bulk density values to the resource models.

Wet and dry bulk density and moisture measurements were determined for a representative suite of diamond and sonic drill core samples from each of the GNCP deposits, including 828 samples from 36 diamond holes at GS, 402 samples from 21 diamond drillholes at BF and SD, and 105 samples from 3 diamond and 8 sonic drillholes at GH. All the material types (mineralised and waste) in the weathering profile were targeted for density determinations. The measurements were completed either by the Archimedes method or physical measuring of the sample dimensions and weighing the samples, with appropriate sealing of samples with wax or vacuum seal to account for pore space.

Downhole geophysical density logging was also undertaken by Vale Inco of 14 sonic and 8 RC drillholes at GS, and 11 sonic and 13 RC holes at GH. Caliper (hole diameter), short space density and long space density values were recorded at 10cm downhole increments in each hole. The resulting data were composited to 1m downhole intervals coinciding with the dominant sub-sampling interval used by Vale Inco during their RC drilling.

The bulk density data was merged with multi-element data.

10.6. Resource Classification

The Mineral Resource Estimates for the GNCP have been classified in accordance with the JORC Code (2012 Edition) guidelines.

With consideration of all the classification criteria in JORC Table 1 and the dominance of nickel in the overall value of the GNCP, slope of regression and kriging efficiency statistics recorded for the ordinary kriged panel nickel estimates were reviewed and suitable confidence thresholds selected as a guide to subdividing the combined nickel, cobalt and scandium estimates for the GNCP deposits into Measured, Indicated and Inferred Mineral Resources. A slope of regression threshold of 0.7 was used to define boundaries between Indicated Resources (> 0.7) and Inferred Resources (< 0.7) within the insitu regolith domains of all the GNCP deposits, while a kriging efficiency threshold of 0.6 was used to define boundaries between Measured Resources (> 0.6) and Indicated Resources (< 0.6) at the GS deposit.

Initial resource classification assignments based on these criteria were applied to the resource models and used as a basis for defining 3-D envelopes constraining the resource model blocks showing strong continuity of blocks with the same classification assignments and downgrading the confidence of blocks showing poor continuity in terms of the initial classification.

Wireframe solids of the modified resource classification boundaries were used to assign final resource classification codes to all blocks within the nickel mineralisation domains, with any mineralised blocks in transported material classified as Inferred Resources.

It must be emphasised that the resource classification is based on the nickel estimates, which Ardea considers to be equally applicable to the cobalt estimates. However, the confidence in the scandium resource estimates is less due to the variable broader data spacing reflecting the assay data based only on the Ardea drilling and pulp re-assay programmes.

10.7. Cut-off Grade

Cut-off grades 0.25% Ni and 0.05% Co were used to interpret and model nickel and cobalt mineralisation envelopes used to constrain the GNCP resource estimates. These thresholds were chosen based on geological observation of the continuity of the nickel and cobalt grades within various regions of the weathering profile that could be of potential economic value to the project. Ardea has undertaken internal mining studies since the Ardea 2018 PFS that indicate the potential for significant nickel credits from saprock material rich in dolomite and magnesite (carbonate minerals), typically containing an average of 0.25% Ni that could be used as a neutraliser in the proposed pressure acid leach processing flow sheet and contribute additional nickel units to production.

Mineral Resource reporting has been undertaken using a 0.5% Ni cut-off grade which is the common industry threshold used for resource reporting for typical Nickel Laterite deposits. While cobalt and scandium contribute to the project value, the grades and associated value are much less than nickel and therefore are not incorporated into the resource reporting cut-off grade criteria. The 0.5% Ni cut-off has also consistently been used by Heron, Vale Inco and Ardea since 2004 for reporting the overall Mineral Resources in the KNP which have been updated in this report to include the updated resource estimates for the GNCP. All the other Mineral Resources outside the GNCP, stated in this report have previously been reported in the public domain.

Ardea notes that while scandium would inherently be taken into solution with nickel-cobalt in the proposed pressure acid leach processing flowsheet, it would unlikely be economic to recover scandium from solution when present in low concentrations. Scandium was also noted within the GNCP assay suite in higher grade concentrations above the 0.25% nickel grade shell envelope. None of this material has been domained or included in the resource estimate. On this basis, Ardea has also reported scandium resources using a 20 ppm Sc cut-off grade applied to the Ni and Co resources based on a 0.5% Ni cut-off grade.

10.8. Mining and Metallurgical Methods and Parameters and other modifying factors

Open pit mining via conventional dig and haul is assumed for all the GNCP deposits. The need for blasting is likely to be limited to pedogenic calcrete at surface, a layer of indurated ferruginous laterite that often overlies the nickel and cobalt mineralisation at GS, BF and SD, and underlying saprock rich in serpentine and the carbonate minerals dolomite and magnesite, should saprock be mined for use as acid neutralising material for ore processing.

For the purposes of removing unlikely to be economic resources from the resource statement, TME Mine Consulting (**TME**) carried out a pit optimisation for each of the GNCP deposits using a “blue sky” US$27,558 per tonne nickel price (consistent with the price used for similar pit optimisation work as part of the Ardea PFS in 2018, and Heron in 2013 when converting earlier JORC 2004 compliant resource estimates to JORC 2012 compliant estimates). A “blue sky” US$64,485 per tonne cobalt price was also applied in the resource pit optimisation work undertaken by TME. Mining and processing costs and other appropriate costs were also used to complete the resource optimisation work. All the GNCP resource model blocks based on a 0.5% Ni cut-off were deemed potentially economic based on the resource optimisation parameters and therefore have been reported as Mineral Resources in this report.

The GNCP deposits have been the subject of detailed metallurgical studies. The preferred metallurgical approach is based on an “off-the-shelf” HPAL flow sheet with a particular focus on improving the recovery of reagents during processing to improve unit costs.

Appendix 2 – JORC Code, 2012 Edition, Table 1 report

Section 1 – Sampling Techniques and Data

(Criteria in this section applies to all succeeding sections)

Criteria	JORC Code explanation	Commentary

Sampling techniques
 	
Note: Due to the similarity of the deposit styles, procedures and estimations used this table represents the combined methods for all Ardea Resources (ARL) Cobalt and Nickel Laterite Resources. Where data not collected by ARL has been used in the resource calculations, variances in techniques are noted.
	• *Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.*
	• *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.*
	• *Aspects of the determination of mineralisation that are Material to the Public Report.*
	• *In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.*
		• The nickel and cobalt laterite resources at Goongarrie have been sampled dominantly using Reverse Circulation (RC) drilling on various grid spacings from 10x10 metre to 80x160 metre spacing, with occasional diamond and sonic drilling (DD and SD) for QAQC verification of the RC drilling, collection of bulk density measurements and material for metallurgical testwork Most holes were vertical and designed to optimally intersect the sub-horizontal mineralisation with the exception of ten relatively deep Ardea RC holes at Goongarrie South declined at -60 towards the east to assess the width of deeper nickel laterite mineralisation developed along steep westerly dipping structure termed the Pamela Jean zone. RC drill samples were collected using a face sampling hammer over 1m intervals via cyclone into plastic bags when dry or polyweave bags when wet. Subsamples of significant mineralized material for routine assay analysis were collected by riffle or cone splitting when dry or damp or by spear when wet, over 1m or 2m intervals with the aim of collecting a 2-3kg sub-sample over each down hole sample interval.
		• Most of the sampling data used to inform the resource estimate is from RC drilling.
		• DD holes collecting predominantly PQ3 size core (and minor HQ3) were drilled for the purposes of:
		  ◦ verification of geology and sampling determined from the RC drilling;
		  ◦ collection of bulk density measurements;
		  ◦ metallurgical test work.
		• Several large diameter (900 to 1200mm) bulk sample holes were completed at Goongarrie South and Goongarrie Hill using a Calweld well boring rig to collect material for metallurgical testwork.
		• Additional material for metallurgical test work, further verification of the RC drilling and collection of additional bulk density measurements was obtained by sonic drilling recovering 3.75 or 5.1 inch diameter core.
		• Most of the RC drilling informing the Mineral Resource estimates was completed by Heron Resources between 1999 and 2006, Vale Inco in 2007 and 2008 and Ardea in 2017 and 2018. Anaconda Nickel also completed RC drilling at Big Four in 2000. The diamond and sonic drilling was completed by Heron in 2000 (DD only), Vale Inco in 2006 to 2008 and Ardea in 2017 and 2018.
		• Down geophysical density measurements were also collected for selected Vale Inco RC and sonic drill holes with readings collected at 10cm downhole increment using a gamma-gamma downhole survey tool. This data provided a check against conventional bulk density measurements collected by Heron, Vale Inco and Ardea on billets of diamond and sonic drill core.

Drilling techniques	• *Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	• RC drilling was performed with a face sampling hammer (bit diameter between 4½ and 5 ¼ inches) and samples were collected via a cyclone into plastic bags when dry or polyweave bags when wet. • All diamond drilling used triple tube core barrels to collect predominantly PQ3 size core (minor HQ3). • Sonic drill samples were collected as whole core samples either 3.75 or 5.1 inches diameter of up to 1 metre lengths in sealed clear plastic wrap. Sonic core of longer lengths was cut to shorter lengths as it was retrieved from the drill string to facilitate handling of the heavy samples.
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the*	• Recovery for the historic and current RC bulk drill samples was based on visual estimates (%) while weights of the RC bulk drill samples were measured as a proxy for recovery for the Vale Inco samples. The overall average RC sample

Criteria	JORC Code explanation	Commentary
	samples. • *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	recovery at Goongarrie is estimated to be 75% which is considered acceptable for nickel laterite deposits. • RC sample moisture content has also routinely been recorded with approximately 80% RC samples from GS, 40% from BF/SD and 10% from GH from the Heron drilling logged as being wet, as compared to approximately 10% of the samples from the Vale Inco RC drilling at GS and GH drilling logged as wet. Water injection to facilitate improved sample recovery and minimise dust emissions has been routinely used by Ardea producing similar percentages of wet samples as the Heron RC drilling. Statistical analysis indicates that wet samples tend to report higher nickel grades at GS and BF where the water table is approximately 12m below surface. Plots of sample recovery versus grade also indicate a tendency for higher recoveries for samples with higher Ni grades particularly for wet samples from the Heron RC drilling. While this does not demonstrate any clear evidence of grade bias resulting from RC drilling and sampling processes, it does highlight a need for routine verification of the RC drill samples and assay data with core drilling (diamond or sonic). • Measures taken to ensure maximum RC sample recoveries included maintaining a clean cyclone and drilling equipment, using water injection at times of reduced air circulation, as well as regular communication with the drillers and slowing drill advance rates when variable to poor ground conditions are encountered. • For diamond drilling, drill runs were reduced to as little as 0.5 metre in poor ground conditions to maximise core recovery. Core recovery was excellent mostly averaging over 90% for each deposit except Big Four where the average core recovery from the Ardea diamond drilling was 85%. • Recovery from Sonic drilling was excellent with very good recoveries experienced in soft goethite clays where water injection was required in RC to facilitate acceptable recoveries. • In Calweld drilling, drill bit diameter was changed to account for ground hardness to maximise sample recovery and bore hole penetration. A specialised shoot was constructed to maximise the recovery from the drill head. Samples were stored in bulka bags to prevent contamination or sample loss.
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant intersections logged.*	• Visual geological logging of samples from all RC drilling was completed on 1 metre intervals. The logging system was developed by Heron Resources Ltd specifically for the KNP and was designed to facilitate future geo-metallurgical studies. Logging was performed at the time of drilling, and planned drill hole target lengths adjusted by the geologist during drilling. The geologist also oversaw all sampling and drilling practices. All the drilling was supervised by experienced geologists. A small selection of representative chips were also collected for every 1 metre interval and stored in chip-trays for future reference. Only drilling contractors with previous nickel laterite experience and suitable rigs were used. • For DD holes, both visual geological and geotechnical logging were performed on all drill core. Core was also selectively sampled for both geological and metallurgical test work. • Calweld and Sonic holes were visually geologically logged prior to being sampled for metallurgical test work. • The geological legend used by Heron is a qualitative legend designed to capture the key physical and metallurgical features of the nickel laterite mineralisation. Logging captured the colour, regolith unit and mineralisation style, often accompanied by the logging of protolith, estimated percentage of free silica, texture, grain size and alteration. Most of the logging correlates well with material type predictions from algorithms developed based on XRD mineralogy analyses and corresponding multi-element assay data. • Drilling conducted by Vale Inco and Ardea has been logged in similar detail to Heron's procedures, but using slightly modified geological logging legends. There are direct translations between the Vale Inco, Ardea and Heron logging legends.
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise*	• Approximately 2.5kg subsamples were collected over 1m intervals from the Heron 1999 to 2002 RC drilling using a riffle splitter when dry or damp, or spear or scoop from the 1m bulk sample bag when wet. Spear/scoop samples for initial assay analysis were also collected, typically over 8m downhole intervals in unmineralised overburden or 4m intervals over mineralised material. The 1m sub-samples over the composite sample intervals that returned assays greater than 0.4% Ni were subsequently submitted for analysis with the resultant assays superseding the initial composite sample assays in the project database.

Criteria	JORC Code explanation	Commentary
	representivity of samples. • *Measures taken to ensure that the sampling is representative of the in-situ material collected, including for instance results for field duplicate/second-half sampling.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• Approximately 3kg subsamples were collected mostly over 2m downhole intervals from the Heron 2004 and 2006 RC drilling at Big Four and Goongarrie Hill using a cone splitter when dry or by spear sampling when wet. Similar size subsamples were collected mostly over 2m intervals from the Ardea 2017 and 2018 RC drilling at Goongarrie South, Big Four and Scotia Dam using a cone splitter in both wet and dry drilling conditions. • Approximately 2.5 kg subsamples were mostly collected over 1m intervals from the Vale Inco RC drilling at Goongarrie South and Goongarrie Hill using a cone splitter when dry or by spear sampling when wet. • Heron inserted analytical standards and/or duplicate RC sample splits into the exploration sample stream for external QAQC monitoring at a frequency of roughly 1 per drill hole for approximately 50% of the Heron RC drilling at GS, GH, BF and SD completed in 1999 to 2002. Standards, blanks and duplicate RC sample splits were inserted into the exploration sample stream on a cyclic 1 in 10 frequency (1 in 30 frequency for each type) for the remaining RC drilling completed by Heron at GH and BF in 2004 and 2006. Vale Inco also routinely inserted standards and duplicate RC sample splits into their exploration sample streams for QAQC monitoring. • A small percentage of holes were separately resampled post drilling to confirm the integrity of the different sampling techniques employed. • One metre half core samples from the Heron and Ardea diamond drilling were cut using a diamond saw when hard or spatula when soft, and submitted for assay analysis along with blanks and standards for QAQC monitoring. Core from the Vale Inco diamond holes was sampled over variable intervals (1-1.5m) with half core samples cut with a diamond saw and submitted for head assay along with blanks and standards, and the other half for beneficiation test work. • Most of the exploration samples from the GNCP have been submitted for sample preparation and chemical analysis to either Kalgoorlie Assay Labs (KAL) in Kalgoorlie (by Heron in 1999 through 2002) and Ultratrace come Bureau Veritas (BV) in Perth by Heron, Vale Inco and Ardea from 2004 to present. • Industry standard sample preparation procedures have been used by both labs: ○ Log samples received (both labs), weigh samples as received (BV), dry samples at 105° C (both labs), weigh dried samples (BV), jaw crush samples when required eg core samples to -3mm; (both labs), riffle split RC chips / crushed core samples to produce -3kg subsample for pulverisation (both labs).

Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.*
	• *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.*
	• *Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.*
		• Subsamples from the much of the historical RC drilling of the GNCP by Heron were analysed by KAL Labs in Kalgoorlie using the following analytical methods (percentages are relative to all the analyses to date for each deposit):
		  ○ Four acid digestion (4AD) with AAS finish for Ni, Co, MgO, FeO, Al2O3, CaO, Mn, Cr, Cu, and Zn (8% of drilling at GS, 6% at BF, 13% at SD and 9% at GH).
		  ○ Four acid digestion (4AD) with ICP_OES finish for Ni, Co, MgO, FeO, Al2O3, Mn, Cr, Cu, and Zn (14% of drilling at GS, 15% at BF, 30% at SD and 9% at GH).
		  ○ XRF analysis of pressed powder (PP) for Ni, Co, MgO, FeO, Al2O3, SiO2, CaO, Mn, Cr, Cu, and Zn (25% of drilling at GS, 2% at BF, 4% at SD and 4% at GH).
		• Subsamples from most of the Anaconda RC drilling at Big Four, all the Vale Inco and Ardea RC, diamond and sonic drilling and the remaining Heron RC drilling used for resource estimation (53% at GS, 76% at BF, 53% at SD and 77% at GH) were analysed for Ni, Co, MgO, FeO, Al2O3, SiO2, CaO, Mn, Cr, Cl, Cu, Zn and As by Ultra Trace or Bureau Veritas using fusion XRF analysis. Most of the Vale Inco and Ardea samples were also analysed for loss on ignition (LOI) by thermo-gravimetric analysis. A small percentage of the samples from Big Four (1.5%) were analysed at UltraTrace for the same grade attributes as fusion XRF, but by ICP-OES except SiO2, which was not measured.
		• The fused discs from all the Ardea samples were also analysed at BV for a suit of 50 additional elements including REEs by laser ablation mass spectrometry. The resulting assays for scandium were used to inform scandium resource estimates for all the GNCP deposits.
		• The fusion XRF method is widely accepted as the preferred analytical method for multi-element analysis of nickel laterite samples. Thermo-gravimetric analysis is also the leading method used to determine LOI. The 4AD AAS and 4AD ICP-OES analytical methods are unable to test for SiO2 and the digestion method often does not fully attack all minerals which can lead to the understating of the true concentration of some elements particularly Al2O3 and Cr. The pressed powder XRF method is designed to be semi-quantitative and typically suffers from poor analytical accuracy

Criteria	JORC Code explanation	Commentary
		for elements that are poorly dispersed in the pressed powder pellet. • KAL Labs and Ultratrace / BV routinely inserted analytical blanks, standards and duplicates into the client sample batches for laboratory QAQC performance monitoring. • Heron inserted standards and/or duplicate RC sample splits into the exploration sample stream for external QAQC monitoring at a frequency of roughly 1 per drill hole for the RC drilling at GS, GH, BF and SD completed in 1999 to 2002. Standards, blanks and duplicate RC sample splits were inserted into the exploration sample stream on a cyclic 1 in 10 frequency (1 in 30 frequency for each type) for the remaining RC drilling completed by Heron at GH and BF in 2004 and 2006. Vale Inco inserted both standards and duplicate RC sample splits into the exploration sample stream alternating on a 1 in 20 frequency. • The following umpire assay programmes have also been completed: ○ Representative sample pulps from RC drilling GS, GH, BF and SD covering the three analytical methods used at KAL labs were submitted for umpire assay at Ultra Trace (Perth) using Fusion XRF analysis at approximately 1 in 50 frequency (Heron umpire programme). ○ Amdel (Perth) fusion XRF umpire analyses of Ultra Trace lab pulps (1 in 50) from the Heron 2004 drilling programme at BF (Heron umpire programme). ○ Intertek (Perth) fusion XRF assays of pulps from Ardea 2018 RC and diamond drilling at GS, BF and SD prospects from approximately 2.5% of the core samples and 1% of the RC samples reporting initial assays >= 0.2% Ni. • All of the QAQC data has been statistically assessed and the precision and accuracy of the assay data for the important grade components (Ni, Co and Sc) have been found to be acceptable and suitable for use in resource estimation. Analysis of the QAQC data for the other grade attributes has also determined acceptable levels of precision and accuracy exist for the analyses completed by UltraTrace / BV using their fusion XRF methodology. However, the accuracy of the KAL pressed power XRF assays for these additional attributes is more varied with elevated overall relative bias levels above 5% evident for Al_2O_3 (-12%), SiO_2 (-9%), CaO (+18%) and Cr (-14%). Elevated overall relative bias levels around 5% are also evident in the KAL ICP-OES assays for MgO (-4.6%), FeO (-4%) and Mn (+5%), and larger relative bias levels for Al_2O_3 (-10%) and Cr (-25%). While these data have been included in datasets used for corresponding grade estimation in the GNCP resource models, they have been used only as a guide to material type classification assignments which, given the noted bias levels are not considered to have a material impact on the material type assignments considering the global assay data available for each grade attribute. • 164 representative sample pulps from the 2018 Ardea diamond drilling at GS and 96 pulps from historical Heron RC and Vale Inco diamond drilling at GH were submitted to BV in Adelaide for quantitative XRD analysis for contained minerals. Part of the BV analysis involved validation of the mineralogy stoichiometry against the multielement geochemistry also determined by BV using fusion XRF analysis.
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	• The reliability of RC sampling which forms the majority basis of the source data used for resource estimation has been checked by collecting and statistically assessing the following verification sample datasets: ○ Routine duplicate RC sub-samples and associated multi-element fusion XRF assay data (UltraTrace / BV) for the Heron RC drilling programmes completed at BF and GH in 2004 and 2006, all the subsequent Vale Inco and Ardea drilling. Comparative statistics of the duplicate RC sample datasets subdivided by the GNCP prospect areas indicates that acceptable overall levels of precision were achieved for Ni, Co and more recently for Sc in relation to the Ardea drilling. ○ Bureau Veritas (Perth) fusion XRF assays of pulps from early Heron RC drilling for holes at an 80m spacing along sections 400m apart. This provided umpire assays for 1911 RC samples originally analysed by KAL labs using 4 acid digest ICP-OES and 687 RC samples originally analysed by KAL labs using pressed powder XRF methods (Ardea umpire programme). ○ Heron twinning of seven Heron RC holes at Goongarrie South with PQ3 diamond drill holes and multi-element analysis of duplicate splits of 1m half core samples by two labs using 4 acid digest ICP-OES and pressed powder XRF techniques (Kalgoorlie Assay Laboratories - KAL), and 4 acid digest ICP-OES and fusion XRF

Criteria	JORC Code explanation	Commentary
		techniques (Ultra Trace Laboratories). o Vale Inco twinning of previous Heron RC holes with PQ3 diamond drill holes including two at GS, six at BF, two at SD and seven at GH, and analysis of half core samples at UltraTrace by Fusion XRF. o Vale Inco twinning of three Vale Inco RC holes and one Heron RC hole at GS and eight Vale Inco RC holes at GH with 5.1 and 3.75 inch sonic drill holes, and analysis of half core samples at Ultra Trace by Fusion XRF. o Vale Inco collection of RC sample resplits (Jones riffle) from bulk sample residues from the RC holes twinned with PQ3 holes at BF, and analysis of the resplit samples by Ultra Trace using Fusion XRF. • Two metre composites for the RC and DD or Sonic twin hole pairs have been statistically compared and determined to have similar unbiased chemical compositions. Whilst there was some variability in the geology of the close spaced drill holes, the short range variance is typical of nickel laterite deposits in WA. • Where geology agreed between the twinned holes, assays were generally similar between the different methods. • Despite the evidence for grade differences in some of the twined holes related to the RC drilling process, overall, the RC drilling is still considered to provide samples that adequately represent the true geochemistry of the regolith which are suitable for the purpose of resource estimation. • No adjustments have been made to the assay data.
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• The majority of the drill hole collars have been surveyed using an RTK DGPS system with either a 3 or 7 digit accuracy. The coordinates are stored in the Ardea exploration database referenced to the MGA Zone 51 Datum GDA94. • Most of the exploration drill holes used for resource estimation are vertical and have not down hole surveyed. However, the sub-horizontal orientation of the mineralisation combined with the soft nature of host material is considered to result in minimal deviation of vertical RC drill holes. • Verification down hole surveying with gyro instrumentation has been undertaken on 9 of the vertical RC holes averaging 95m deep, and an additional 9 angled RC holes averaging 140m downhole depth completed in the Ardea 2018 drilling programme. There was 2 degrees or less dip deviation from vertical in 7 of the 9 vertical RC holes and maximum 3 and 4 degree dip deviations from vertical in the remaining two holes. This indicates that significant dip deviations are unlikely to have occurred in the other vertical drill holes within the GNCP. Dip deviations were mostly within 3 degrees of -60 towards the east and azimuth deviations typically up to 5 degrees in the angled drill holes. • The grid system for all models is GDA94. Any historic drillhole collar coordinate surveyed in AMG84 has been transformed into GDA94. Both original and transformed data is stored in the digital database. • The topographic control over the GNCP is based on high resolution aerial photography flown by Arvista in March 2018 with subsequent photogrammetric processing to a vertical accuracy of: 1 Sigma = 0.1m completed by Aerometrex. The resulting 30cm contour data has been used to generate high definition wireframe models of the surface topography over the GNCP deposit areas from which more manageable lower resolution grid models were generated (10mE x 10mN over GH and 20mE x 20mN over GS, BF and SD) for use in resource modelling.
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* • *Whether sample compositing has been applied.*	• The drill spacing at GS ranges from 20mE x 20mN to 80mE x 160mN, including regions of 40mE x 80mN, 80mE x 80mN, 40mE x 40mN and 20mE x 40mN spaced drilling in the southern half of the deposit, while 80mE x 160mN and 80mE x 80mN hole spaced drilling dominates in the northern half of the deposit. • The drilling at BF is on either 80mE x 80mN or 40mE by 80mN patterns along the southern 6km of strike length, and on an 80mE by 400mN pattern with minor 80mE x 80mN spaced holes along the northern 2km of the deposit. • The dominant hole spacing at SD is 40mE x 80mN with minor 80mE x 80mN spaced drilling extending approximately 1.5km south from BF. Broader more irregular spaced drilling has been completed at SD South with holes at 80mE or 160mE intervals along drill traverses spaced 160mN, 240mN, 560mN and 640mN apart. • The drillhole spacing at GH is mostly at 80mE intervals along drill traverses alternating between 40mN and 120mN apart. Localised regions of 40mE by 40mN and 20mE by 20mN spaced drilling has also been completed. • All assay data for the RC drilling was composited over 2m downhole intervals to match the most common longest sample interval through the mineralisation prior to resource estimation. • Studies of the spatial continuity of nickel and cobalt grades at the Goongarrie deposits have determined that the drill

Criteria	JORC Code explanation	Commentary
		spacing within the GNCP is sufficient to define Measured, Indicated and Inferred resources in the project area.
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	• Most of the drill holes are vertical and give true width of the regolith layers and mineralisation. • On a local scale there is some variability due to sub-vertical to vertical structures which may not be picked up with the vertical drilling employed. This local variability is not considered to be significant for the overall project but may well have local effects on mining and scheduling later in the project life, particularly mineralisation along more deeply weathered narrow structures that may enable localised deeper pit developments along such structures. • However, Ardea's angled RC drilling at GS was useful to confirm the widths and location of laterite mineralisation along deeply weathered structure along the eastern side of the deposit and appropriately considered in future mining studies.
Sample security	• *The measures taken to ensure sample security.*	• All samples were collected and accounted for by Heron, Vale Inco or Ardea employees during drilling. All sub-samples in calico bags were packaged into large plastic bags and closed with cable ties. Samples were transported to Kalgoorlie from site by relevant employees in sealed bulka bags. • Consignments were transported to Ultratrace Laboratories in Perth by reputable commercial transport companies. All samples were transported with a manifest of sample numbers and a sample submission form containing laboratory instructions. Any discrepancies between sample submissions and samples received were routinely followed up and accounted for.

Audits or reviews	• *The results of any Audits or reviews of sampling techniques and data.*	• Heron periodically conducted internal reviews of sampling techniques relating to resultant exploration datasets, and larger scale reviews capturing the data from multiple drilling programmes within the KNP.
		• Internal reviews of the exploration data included the following:
		  • Unsurveyed drill hole collars (less than 1% of collars).
		  • Drill Holes with overlapping intervals (0%).
		  • Drill Holes with no logging data (less than 2% of holes).
		  • Sample logging intervals beyond end of hole depths (0%).
		  • Samples with no assay data (from 0 to < 5% for any given prospect) related to issues with sample recovery from difficult ground conditions mechanical issues with drill rig, damage to samples in transport or sample preparation
		  • Assay grade ranges.
		  • Collar coordinate ranges
		  • Valid hole orientation data.
		• All the exploration and corresponding QAQC data were reviewed and assessed again by Vale Inco in 2008, Heron in 2009 and Ardea in 2019 and 2020. Vale Inco, Heron and Ardea all concluded that the quality of the data was suitable for use in resource estimation studies.

Section 2 – Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* • *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	• All Mineral Resources reported in this report occur within tenement holdings 100% owned by Ardea Resources.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• Nickel laterite mineralisation at Goongarrie Hill, Goongarrie South, Scotia Dam and the northern half of Big Four was initially discovered by Heron Resources Limited with RC drilling in 1999 and 2000, while Anaconda Nickel was the first to drill test (RC) the southern half of Big Four in 2000. • Heron's typical drilling strategy was to complete initial RC drilling of weathered ultramafic rocks of the Walter Williams Formation on an 80mE x 800mN grid, followed by infill drilling resulting in 80mE x 400mN drillhole spacing. Subsequent infill drilling was undertaken on an 80mE by 80mN grid in regions where well developed nickel laterite mineralisation was intersected by earlier drilling. • In 2001 Heron undertook closer spaced infill drilling of deep high grade laterite mineralisation along the eastern side of GS (Pamela Jean zone) initially on a 40mE by 40mN grid, then further infilling to a 20mE x 40mN hole spacing. • After acquiring BF South from receivers of Anaconda Nickel Heron undertook broad spaced infill drilling of BF South in 2004 followed by further infill drilling to 80mE by 80mN spacing in 2006. • Drilling of GH has been less systematic than at the other GNCP deposits. While Heron began drilling GH initially on 80mE x 400mN grid followed by commencement of 80mE by 80mN infill drilling at the south end of the deposit, the 80mE x 80mN infill drilling was abandoned in favour of drilling a number of small areas with 20mE by 20mN spaced holes in mid 2000 and two small drilling programmes in 2001 and 2002. This was followed by broad infill drilling on an 80mE x 800mN grid offset from the initial 80mE x 400mN spaced drilling 160mN in 2004 and 2006. • Heron also completed eight PQ3 size diamond drillholes at GS in 2000 to gain improved understanding of the deposit insitu structure, material types and solid samples for bulk density determinations. • A joint venture between Heron and Inco-come-Vale Inco from 2005 to 2009 saw Vale Inco complete significant diamond and sonic drilling as twins to earlier Heron RC holes at the GNCP deposits. This previously enabled verification of the geology and assay data from the Heron RC drilling and collection of samples/material for bulk density measurements and metallurgical testwork. • Vale Inco also undertook infill RC drilling in the northern half of GS and throughout GH for input to updated resource estimates completed by Vale Inco in 2009 and revised estimates by Heron in 2010. • All the exploration datasets collected by previous explorers have been assessed by Ardea technical staff and most of the data found to be suitable for use in resource estimation.
Geology	• *Deposit type, geological setting and style of mineralisation.*	• The KNP nickel laterite mineralisation, including cobalt rich areas is developed from the weathering and near surface enrichment of Achaean-aged olivine-cumulate ultramafic units within the Walter Williams Formation. The mineralisation is usually within 60 metres of surface and can be further sub divided on mineralogical and metallurgical characteristics into upper iron-rich material and lower magnesium-rich material based on the ratios of iron to magnesium. The deposits are analogous to many weathered ultramafic-hosted nickel-cobalt deposits both within Australia and world-wide. • The continuity of mineralisation is strongly controlled by bed rock alteration and paleo water flow within the ultramafic host rocks. Areas of deep fracturing and water movement within the bedrock typically have higher grade and more extensive mineralisation in the overlying regolith. In the proximity of geological contacts between the ultramafic hosts and surrounding mafic and felsic lithologies there is often a distinctive increase in grade and widths of mineralisation,

Criteria	JORC Code explanation	Commentary
		often coinciding with meso-cumulate facies and increased structural deformation proximal to more competent thinner ortho-cumulate facies and mafic rocks immediately to the east and west of the WWF. Where the host regolith overlies olivine ad-cumulate lithologies there is an increase in siliceous material with lower nickel and cobalt grades and a loss of the high magnesium mineralisation horizon. Furthermore, in areas where the host ultramafic is altered to talc, or talc-carbonate lithologies there is often little to no development of nickel mineralisation in the regolith. These areas typically occur along shears, and sheared contacts within the bedrock. • Frequent northwest trending and lesser northeast trending fault structures are evident cross cutting the WWF along the entire strike length of the GNCP deposits based on a combination of aeromagnetic and the drilling data. Differential movement along these structures, particularly those with relatively minor apparent offsets in the contacts between the host WWF and adjacent lithological units appears to have provided a structural network interacting with stratigraphic based ultramafic lithology variations for ground water movement giving rise to the extensive nickel laterite mineralisation present within the GNCP. • More prominent structures with evidently greater displacement, specifically the NW trending structure between GS and BF and a NNE trending structure at the north end of GS appear to coincide with poorly developed nickel laterite mineralisation where it appears that either greater compression, strain and shearing towards the NE at the north end of GS has resulted in strong talc alteration unconducive to concentrating nickel in the weathering profile, or the more abrupt displacement of the WWF at the south end of GS transitioning immediately into a much thinner WWF extending south through the BF and SD prospect areas. • Transported colluvial, alluvial and lacustrine sediments overlie much of the insitu laterite mineralisation at the GNCP, with mostly colluvial sediments about 4m thick at GH, all the sediment types present at GS ranging from less than 5m to over 40m thick at GS, and colluvial and alluvial sediments ranging from less than 5m to 40m thick at BF and SD.

Drill hole Information	• *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:*
	  • *easting and northing of the drill hole collar*
	  • *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar*
	  • *dip and azimuth of the hole*
	  • *down hole length and interception depth*
	  • *hole length.*
		• Data from thousands of drillholes with significant intersections have been used to generate the updated resource estimates for the GNCP deposits. Most of the drilling is vertical and represents the true thickness of the sub-horizontal mineralisation. Representative cross sections through each of the GNCP deposits are presented in Appendix 3.
		• All the exploration drilling activities undertaken in the GNCP and representative results for 'Material' drillholes have previously been reported to the public by Heron and Ardea.

Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.* • *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• Most drill hole samples have been collected over 1m or 2m down hole intervals. Assay compositing completed for each deposit in preparation for statistical analysis and grade estimation was conducted using length weighted averaging of the input assay data by corresponding sample lengths. Typically a 2 compositing length was used aligned with the dominant sampling interval used for drill sub-sample collection. • No metal equivalent calculations have been used in this assessment.
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').*	• The mineralisation within the GNCP has a strong global sub-horizontal orientation. The great majority of the drill holes focused on the nickel – cobalt laterite mineralisation at the GNCP are therefore vertical and represent the true thickness of the mineralisation. The only exceptions to this are 9 angled drill holes (-60° towards the east) that test the precise location and width of mineralisation resulting from deep weathering along steep westerly dipping structures along the eastern side of GS (Pamela Jean Zone - PJZ), which could not adequately be determined based on the earlier vertical RC holes.
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of*	• No new discoveries of nickel laterite mineralisation or cobalt rich areas are presented in this report other than improved definition of the spatial extents of higher grade mineralisation internally within the previously defined geographic extents

Criteria	JORC Code explanation	Commentary
	drill hole collar locations and appropriate sectional views.	of the mineralisation.
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	• The updated GNCP resource estimates are reported using several lower nickel cut-off grades in order to provide explanation of variations in tonnage as a function of grade and the corresponding 3-D continuity of the lower and higher grade mineralisation. New scandium resource estimates in this study are reported globally for mineralisation captured within the nickel mineralisation envelope based on reasonable nickel cut-off grade criteria (0.5% Ni cut-off) and further by adding a 20ppm Sc cut-off grade to reflect a threshold at which scandium grades are envisaged to sufficient to produce scandium product(s) based on international market demand.
Other substantive exploration data	• *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	• Not applicable to this report.
Further work	• *The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• No further drilling is currently planned to further evaluate the nickel laterite resources within the GNCP. However, it is anticipated that further sonic and diamond drilling may be required to collect more material for metallurgical test work as the project advances.

Section 3 – Estimation and Reporting of Mineral Resources

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Database integrity	• *Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.* • *Data validation procedures used.*	• Heron, Vale Inco and Ardea have employed robust procedures for the collection of and storage of sample data. This included auto-validation of sample data on entry, cross checking of sample batches between the laboratory and the database and regular auditing of samples during the exploration phase. • Sample numbers were both recorded manually and entered automatically. Discrepancies within batches (samples were batched daily) were field checked at the time of data entry, and resampled if errors could not be resolved after field inspection. • Data validation procedures include digital validation of the database on entry (no acceptance of overlapping intervals, duplicate hole and sample ID, incorrect legend information, out of range assay results, incorrect pattern of QAQC in sampling stream, failed QAQC, missing assays, samples and geological logging). • At the time of resource modelling all data was visually checked on screen, and manually validated against field notes. Any changes to the database were verified by field checks. • Ardea undertook a program of drill hole collar survey and validation. All drill holes were surveyed using DGPS with an established base station control in the vicinity of the Goongarrie South, Big Four, Scotia Dam and Goongarrie Hill deposit areas.
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* • *If no site visits have been undertaken indicate why this is the case.*	• The Competent Person, James Ridley has conducted numerous visits to all of the GNCP deposit areas as a Senior Resource Geologist in full time employment with Heron from 2004 to 2011 and Ardea from 2017 to present, and a secondee to Vale Inco from 2005 to 2007. The drilling, sampling and geological practices used for data collection were standardised for all deposits. RC drilling was generally effective, although minor localised issues with sampling accuracy of wet puggy clays were encountered. Overall procedures were consistent and the results from the RC drilling were found to be valid based on comparisons with the results of verification diamond drilling. • No comment can be made on the validity of historic work by Anaconda at Big Four, except to say that infill drilling has broadly similar results to the historic data.
Geological interpretation	• *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* • *Nature of the data used and of any assumptions made.* • *The effect, if any, of alternative interpretations on Mineral Resource estimation.* • *The use of geology in guiding and controlling Mineral Resource estimation.* • *The factors affecting continuity both of grade and geology.*	• There is a strong correlation in the geology between adjacent drill holes in all the GNCP deposits. There is also a strong global correlation between the weathering profile, lithology and mineralisation intensity. On a local scale the changes in the weathering profile is often discrete, but of a complex geometry influenced to a large degree by faulting and fracturing in the ultramafic protolith. • Nickel and cobalt mineralisation domains were interpreted in cross section using a combination of assay data and observed geological logging data. The outlines were extended variable distances laterally from marginal mineralised drill intersections to adjacent subgrade or barren drillholes with consideration of the lateral extents evident on the current and adjacent drill hole traverses. Typically, the outlines were tapered to a degree reflecting how thick the subgrade intersection was in the adjacent drillhole or an extension tapering to zero thickness where there was little to no grade anomaly in the adjacent hole but truncated vertically before reaching the barren hole. Outlines on sections where the mineralisation fails to continue on an adjacent section were terminated halfway to the adjacent drill traverse, often with a thinner outline reflecting an interpreted thinning of the mineralisation considering the tenor of any anomalous grades in the drilling on the adjacent drill traverse. Outlines based on mineralised drill intersections on the final drill traverse where no further drilling has been completed along strike were typically projected either 80m or 160m north or south depending on the tenor and thickness of the mineralised drill intersections on these 'end' drill traverses. The resulting outlines were then used to create wireframe solids of the mineralised domains to constrain resource estimation. • Nickel envelopes were defined using a notional 0.25% Ni cut-off grade applied to the drillhole assay data incorporating internal dilution where necessary to maintain reasonable 3-D continuity of the mineralised domain geometry. While

Criteria	JORC Code explanation	Commentary
		Mineral Resources were ultimately reported using a 0.5% Ni cut-off grade, the nickel envelopes included lower grade material, primarily in saprock, which is often rich in carbonate minerals that could be used as acid neutraliser in the proposed ore processing flowsheet. This would enable recovery of additional nickel metal (as a credit) to the metal recovered from the plant ore feed stock. • Cobalt envelopes were defined using a notional 0.05% Co cut-off grade applied to the drillhole assay data, also incorporating internal dilution where necessary to maintain reasonable 3-D continuity of the mineralised domain geometry as well as being constrained within the nickel envelopes. These envelopes were used to subdivide the nickel domains cobalt rich and cobalt poor domains. • The mineralisation envelopes were subdivided into area domains where there was either changes in the dominant local drillhole spacing or trend in the nickel and cobalt mineralisation based on the interpreted orientation of the host protolith and structures influencing variations in both the tenor of grades and depth of the regolith profile. • A combination of geological logging and assay data was used to sub divide the mineralisation into high-iron (goethite rich) domains of more intensely weathered insitu material, and underlying high-magnesium (saprock) mineralisation within the mineralised domains. These were interpreted as cross sectional profiles from which 'top of saprock' wireframe surface models were generated. • The interface between insitu nickel bearing clays derived from ultramafic protolith, and overlying transported sediments comprised of alluvium, colluvium, and pedogenic surficial material has also been modelled for each of the GNCP deposits mostly based on drill hole geological logging data. Occasionally elevated nickel and cobalt grades in the transported material are interpreted to be colluvial material derived from nickel laterite mineralisation exposed at surface in the past. The base of transported sediments was also interpreted as cross-sectional profiles from which wireframe surface models were generated. • Paleochannel and surficial calcrete / pedogenic sediments domains rich in carbonate minerals were modelled to constrain estimation of carbonate mineral quantities for consideration as acid neutralisation materials in the proposed ore processing flowsheet in future mining studies. A threshold of 5% CaO+MgO (equating to a minimum of 10% contained carbonate mineralogy), elevated Loss On Ignition (LOI) assays, and drill hole logging data was used to interpret cross-sectional paleochannel carbonate outlines from which wireframe solid models were generated. Cross sectional profiles defining the base of combined surficial calcrete and carbonate rich pedogenic soils were also interpreted based on similar assay and geological data considerations. • Envelopes constraining paleochannel material particularly high in kaolinite (with Al2O3 $\geq$ 25%), but also low in iron (FeO < 5% were also modelled to allow quantification of material that could potentially be a future source of High Purity Alumina. • As scandium assays were not available across the entirety of any of the GNCP deposits, additional boundaries were defined isolating the regions of the modelled nickel mineralisation envelopes informed with scandium assay data in order to apply corresponding domaining in the resource block models to constrain the spatial extents of scandium grade estimates to the same regions informed with scandium assay data. • As scandium assay data was only available for selected down hole intervals for an irregular pattern of historical drillholes on roughly an 80mE by 160mN grid at GH, REE resource envelopes were modelled based on the drillhole intervals over which pulp re-assaying was undertaken by Ardea to enable estimation of scandium resources and provide data for gold and nickel sulphide exploration targeting. Cross sectional outlines were interpreted based on 15 ppm cut-off applied to the sum of the scandium, cerium, neodymium and praseodymium assay data, with the resulting outlines used to construct wireframe solids to constrain estimation of scandium resources. • The entire geological modelling process involved a thorough analysis of the complex relationships between the ultramafic protolith, structure, variations in the nature of the overlying regolith, and more recent weathering processes responsible for the deposition of overlying transported sediments and the composition of these sediments as a potential to add value in the development of the GNCP. The Competent Person has over 10 years of experience in resource estimation focused on nickel laterite deposits with much of this experience focused on building a detailed understanding of the geology, mineralogy and geochemistry of the GNCP deposits. The CP considers the updated geological interpretation of the GNCP deposits to be robust and to provide suitable constraints for resource estimation accounting

Criteria	JORC Code explanation	Commentary
		for variations in the complexity of the geology and minimising the potential for any bias in the interpretation by incorporating subgrade drill intercepts and sample intervals into the resource envelopes where the local drillhole spacing is too broad to assume connectivity of higher grades.
Dimensions	• *The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.*	• Resource dimensions vary between deposits. The total length of the main GS nickel and cobalt mineralisation domains is approximately 7,400 metres with observed widths of approximately 400 and up to 1000 metres. Several semi-parallel mineralisation zones for the smaller cobalt domains are observed are with variable thicknesses typically ranging in the order of 5-20 metres thick with some zones being up to and exceeding 50 meters thick in the area referred to as the Pamela-Jean zone. Interpreted mineralisation has been modelled from near topographic surface (378mRL) down to approximately the 220m RL (approximately 160m vertical from surface). • The total length of the main BF deposit nickel and cobalt mineralisation domains is approximately 7,700 metres with observed widths of approximately 300 metres. In the cobalt domains, several semi-parallel mineralisation zones are observed with variable thicknesses typically in the order of 5-15 metres thick with some zones being in the range of 20 to 40 metres thick. Interpreted mineralisation has been modelled from near topographic surface (380mRL) down to approximately the 298m RL (approximately 80m vertical from surface). • The total length of the main SD nickel and cobalt mineralisation domains is approximately 1,300 metres with observed widths of approximately 250 and up to 550 metres. Possibly two (2) cobalt mineralisation zones are observed with variable thicknesses typically in the order of 5-25 metres thick with some zones being up to and exceeding 35 meters thick towards the northern end of the main mineralised zone. Interpreted mineralisation has been modelled from near topographic surface (378mRL) down to approximately the 324m RL (approximately 55m vertical from surface). • At GH, the total length of the nickel and cobalt mineralisation domains is 5200 metres with the nickel envelope averaging 750 metres wide and 50m thick. The main cobalt domain is approximately 700m wide extending 2.2km south from the northern end of GH, bifurcating into a 500m wide western zone extending another 1.1km south before tapering to 140m wide and extending a further 1km south. The 150m wide eastern zone extends 3km south from the bifurcation to the south end of the deposit. The cobalt domains range from 2m to 30m thick and average approximately 15m thick.

Estimation and modelling techniques	• *The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.*
	• *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.*
	• *The assumptions made regarding recovery of by-products.*
	• *Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).*
	• *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.*
	• *Any assumptions behind modelling of selective mining units.*
	• *Any assumptions about correlation between variables.*
	• *Description of how the geological interpretation was used to control the resource estimates.*
	• *Discussion of basis for using or not using grade cutting or capping.*
	• *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*
		• Most resource modelling processes were undertaken using Maptek Vulcan software Version 2020.1.
		• The drillhole assay data for each deposit was domain coded using the wireframe solid and surface models generated from the geological interpretation. Regolith, nickel, cobalt, area, region and rare earth (GH only) domain codes were assigned.
		• Detailed analysis was undertaken of the availability of assay data for the grade attributes considered important for grade estimation in the resource models, particularly, Ni, Co, Sc, MgO, FeO, Al2O3, SiO2, CaO, Mn, Cr and LOI. While Ni, Co, Mn, MgO, FeO, Al2O3 and Cr assay data are available for most of the drillhole samples within the modelled nickel mineralisation domain(s) used to constrain the resource estimates, assay data for:
		  ○ SiO2 are available for only 74% of the 2m composites within the nickel mineralisation envelope(s) for GS, 76% for GH and 71% for BF+SD.
		  ○ CaO are available for only 76% of the 2m composites within the nickel mineralisation envelope(s) for GS, 79% for GH and 77% for BF+SD.
		  ○ LOI are available for only 48% of the 2m composites within the nickel mineralisation envelope(s) for GS, 57% for GH and 38% for BF/SD. However, LOI grades were calculated for additional 23% of the composites for GS, 18% for GH and 32% for BF+SD when there was sufficient assay data for the dominant grade attributes, including Ni, Co, MgO, FeO, Al2O3, SiO2, CaO, Mn and Cr, as well as K2O and NaCl when available. Calculated LOI values were checked against real LOI assays when available and found to be in reasonable agreement.
		  ○ Sc are available for only 36% of the 2m composites within the nickel mineralisation envelope(s) for GS, 39% for BF+SD, and 5% of the composites within the nickel mineralisation envelope(s) for GH which are also constrained within modelled REE envelopes.
		• Analysis of the drillhole sub-sample interval- lengths indicated that most of the sub-samples to be used for GNCP

Criteria	JORC Code explanation	Commentary
		resource estimation update have been collected over 2m downhole intervals, except mostly 1m subsamples collected from the Vale Inco RC drilling, composite RC subsamples up to 8m long of unmineralized overburden for much of the Heron RC drilling, and variable length core samples up to 2m long from the various diamond drilling programmes. • Based on the drill sub-sample length analysis, the domain coded sub-sample assay data of interest excluding any unsurveyed drillholes (collars) were composited to 2m intervals in preparation for statistical analysis, variography and grade estimation. While Ni, Co and Sc are the primary focus of the resource estimate, statistical analysis, variography and grade estimation were also undertaken for FeO, MgO, Al2O3, SiO2, CaO, Mn, Cr, and Loss On Ignition (LOI) which are relevant to assignment of geo-metallurgical material types and dry bulk density values to the resource models. • Classical statistical analysis was undertaken based on the 2m composite grade data for each deposit using Phinar Supervisor V software (2008). Cell declustering weights were applied to the composite grade data based on the greatest drillhole grid spacing representing significant volumetric proportions of the nickel resource envelopes and a 2m cell height. Tabulated descriptive statistics, histograms and probability plots were compiled based on the declustered data for each grade attribute within the combined nickel resource envelope(s) for each deposit. The data for nickel and all the other grade attributes except cobalt and manganese were subdivided by the clay (high FeO & low MgO) and saprock (low FeO & high MgO) domains. The composite Co and Mn grade data, which are typically moderate to strongly correlated were subdivided by inside versus outside the combined cobalt resource envelopes, within the nickel resource envelope(s) for each deposit. Elevated coefficients of variation (CV) greater than 1 but less than 2.0 were reported for Al2O3, CaO, and Cr in the saprock domains, and MgO in clay domains, while similar range CV values were reported for Co in the high Co domains and Mn in the low Co domains. The highest CVs greater than 2.0 but less than 3.1 were reported for CaO in the clay domains. • Suitable upper and lower cuts were determined in relation to any grade variables showing anomalously high or low outlier grades relative to the dominant grade characteristics for each sample population. However, application of the cuts only had local influences on the corresponding grade estimates, with no material affects on the global mean grades of the domains. A similar approach to grade cutting was adopted for the paleochannel carbonate and high alumina domains. No upper cuts were assigned to the grade data for the pedogenic carbonate domains. • Continuity analysis (variography) was undertaken for all grade attributes using Phinar Supervisor V software (2008) based on the cut composite grade datasets with the attributes excluding Co and Mn subdivided by the clay and saprock domains and grouped for area domains with similar orientation grade trends and mineralisation characteristics (the latter for GS only), and Co and Mn subdivided by the grouped high grade cobalt domains and the remaining low grade cobalt domain(s) for each deposit. Experimental 3-D variography was generated as semi-variograms normalised to an overall sill of 1.0 based on non-declustered composite grades or normal score transform of the grades for each domain or domain group, depending on the degree of skew in the histogram distribution of grades. The variography was modelled with a nugget effect and up to three spherical structures. Low relative nugget effects, typically less than 12% of the overall variance for Ni and Sc (often 5% or less) and less than 20% of the variance for Co (often 10% or less) have been modelled for the various GNCP deposit domains. Relative nuggets less than 10% and often less than 5% of the overall variance for most of the other grade attributes have also been modelled for the various domains. Approximately 60% to 75% of the spatial variance in the Ni, Co and Sc grades is dominated by a short range structure with ranges often approximating the dominant relatively closer drillhole spacing in the domain. However, overall ranges in at least several multiples of the average drillhole spacing are evident for most of the grade variables in most of the domains. The drillhole spacing within all the deposits is considered sufficient for the estimation of Ni, Co and Sc mineral resource grades, and support grade attributes. • A 3-D regular block model was constructed of each of the GNCP deposits (combined for BF and SD) with nickel, cobalt, rare earth, regolith (including transported) and area (orientation and data spacing) domain coding assigned based on the geological interpretation. Grouped domain coding based on the initial domain assignments was also defined to facilitate running of resource modelling processes, where appropriate, for similar trending regions and/or styles of mineralisation. All the block models were constructed using regular block dimensions of 10mE by 10mN by 2mRL. • All variables necessary to record grade estimates for all chemical attributes of interest and accompanying estimation

Criteria	JORC Code explanation	Commentary
		statistics, various geochemical ratios, geo-metallurgical material type assignments, dry bulk density assignments, and resource classification coding were incorporated into the block models. • The normalised variogram model parameters (nugget and sill values) for Ni and Co in all domains were converted on a ratio basis to 'true' variance values with the overall sill based on the variance of the declustered Ni and Co data for each domain or domain group. • Mineral Resource nickel and cobalt grades were estimated by ordinary kriging into panels ranging in size from 20mE x 20mN x 4mRL to 40mE by 80mN x 4mRL mostly based on half the dominant drillhole spacing in the area domain or area domain group. The ordinary kriged panel estimation was followed by local uniform conditioning (LUC) to produce final nickel and cobalt resource grade estimates for 10mE by 10mN by 2mRL selective mining unit blocks reflecting the volumes and grades predicted to be recoverable upon mining based on a 10mE by 10mN by 2mRL grade control spacing or less. Where the local drillhole spacing was less than or equal to 20mE by 20mN over any significant area, the minimum size panel used for ordinary kriging was no less than 20mE x 20mN x 4mRL. Similarly, the maximum panel size was no greater than 40mE by 80mN x 4mRL where drillhole grid spacings exceeded 80mE by 160mN. Gaussian anamorphosis modelling of the Ni and Co grade distributions was undertaken using 40 hermite polynomials based on declustered datasets for each area domain or domain group subdivided by the clay and saprock domains (or high and low grade domains for Co), with validations indicating robust transformations. • Back transform grade distribution modelling for each domain or domain group was undertaken using linear modelling typically between the 10th and 90th percentiles (+/- 5%) of the domain cumulative grade distributions, and power modelling of the lower tail and hyperbolic modelling of the upper tail using an application developed in MS Excel. • Ordinary kriging of panel Ni and Co grades, and LUC estimation of SMU block grades for each domain or domain group was completed in a single pass estimation process using the LUC executable in Maptek Vulcan software version 2020.1. Sample search neighbourhoods for kriging were based on domain orientations determined from the variography with a large vertical search used, often equal to the semi-major axis search (horizontal - normal to strike) to enable composites from shallow drillholes that intersect relatively shallow poorly developed regolith and lower nickel grades to be selected for grade estimation along the margins of much deeper well developed regolith and higher grade material intersected in adjacent drillholes. This is an important consideration that results in the estimation of a lower grades along the margins of abruptly thicker and deeper high grade mineralisation along fault related fracture zones of more favourable ultramafic protolith, the grades of which may otherwise, be over-estimated if only based on higher grade samples in drillholes that test the deeper mineralisation. • To account for variations in the drillhole spacing, which often systematically changes between regions of higher and lower grade mineralisation, the ellipsoidal search neighbourhood for each estimation domain was divided into octants with a maximum of 4 composites selected from any one octant, and usually, a minimum of 8 and a maximum of 24 composites used to estimate each panel. In addition, the maximum number of composites selected from each drillhole was restricted to 4. • Hard boundaries between the clay and saprock domains was used for the estimation of nickel grades and similarly between the high and low grade cobalt domains when estimating cobalt grades. However, soft boundaries with no restrictions other than the search neighbourhood parameters noted above were used between the mineralisation orientation / drillhole spacing domains within the clay and saprock domains. • Validation of the ordinary kriged panel and LUC SMU estimates for each deposit was undertaken by detailed visual review of the block model estimates relative to the input drillhole composite grade data, global mean grade comparisons between the input composites data and the block model grade estimates subdivided by the estimation domains, and grade-volume curve comparisons between the block model estimates and gaussian global change of support (GSOS) data generated for the panel and SMU dimensions subdivided by the clay and saprock domains and the deposit area domains based on the declustered composite grade datasets for each deposit. The validation indicated that the ordinary kriged panel and LUC SMU nickel and cobalt estimates are with acceptable ranges considering the influences of soft estimation boundaries between adjacent area domains, the large vertical sample searches and geostatistical considerations, particularly, Information Effect (relating to the local exploration drillhole spacing). • Most of the support grade attributes including, MgO, FeO, Al2O3, and Cr with similar drillhole sample assay availability

Criteria	JORC Code explanation	Commentary
		as Ni and Co were estimated by ordinary kriging into 10mE by 10mN by 2mRL size blocks for all the deposits (except GH) using the same search neighbourhood parameters and domain control used for estimation of nickel grades (primarily the clay and saprock domains), while estimation of Mn used the same constraints based on the high and low grade cobalt domains) While the block size is much smaller than would ordinarily be acceptable for resource grade estimation within most of the domains, the estimation strategy was to produce grade estimates for a block size where changes in the dominant local material types (based on relationships between the multielement geochemistry and dominant mineral occurrences) are less sensitive to the accuracy of local block estimates and appear to be better represented based on small block estimates that better reflect undulations in weathering profile between the drillholes. Visual and global mean grade comparisons between the resultant grade estimates compared to the input composites data subdivided by the estimation domains were considered acceptable. • Ordinary kriging of SiO2, CaO and LOI grades, was undertaken using larger search neighbourhoods to account for a lack of assay data for 20-30% of the sample populations, after calculating LOI grades for 23% of the sample population at GS, 18% at GH and 32% at BF+SD. The ordinary kriged block model estimates were checked against the input composites data and grade totals were calculated based on the sum of the estimated grade attributes converted to oxides. Adjusted SiO2, CaO and LOI grades were then calculated for any blocks with grade totals less than 95% or greater than 105%, based on the assumption that such deviations result from the lack of SiO2, CaO and LOI grade data for up to 30% of the input sample populations. The grade adjustments were based on the ratios between the initial ordinary kriged SiO2, CaO and LOI estimates and the difference between the initial calculated grade totals from 95% when less than 95%, or from 105% when greater than 105%. Allowance was also made for differing distances to the nearest sample informing the initial SiO2, CaO and LOI estimates for a block. Relatively greater adjustments were made to grades where the closest sample was located further away compared to the samples with grade data available for the other grade attributes. • Ordinary kriging of scandium grades into 10mE by 10mN by 2mRL size blocks was also undertaken using larger search neighbourhoods to account for the broad data spacing (up to 80mE by 400mN at GS) outside the areas of Ardea infill drilling in the southern half of GS (effectively 80mE by 80mN spacing), the areas of Ardea infill drilling at BF and SD (also effectively 80mE by 80mN spacing), and a crude 80mE by 160mN spacing over selected regions and drillhole intervals at GH. These estimates were further constrained by the regions and drillhole intervals informed with scandium assay data. No adjustments were made to the ordinary kriged scandium estimates. Validation of the scandium grade estimates was undertaken in a similar manner to the support grade attributes with reasonable correlation evident between the input data and the block model grade estimates. • Quantitative XRD mineralogy data for 164 samples from the Ardea 2017 and 2018 diamond drilling at GS and 96 pulps from historical RC and diamond drillholes at GH was merged with the multi-element geochemical data for the samples, and detailed analysis undertaken of the mineralogy data subdivided by the geological interpretation and a combination of grade and grade ratio thresholds based on the major geochemical attributes in the source samples (MgO/FeO, Al2O3/SiO2 and SiO2/(MgO+FeO+Al2O3). • The analysis of the joint XRD and geochemical datasets resulted in the development of material type classification schemes for GS and GH based on geological and geochemical classification criteria that relate to natural mineral groupings present in the GNCP weathering profile. Algorithms were developed in MS Excel and Vulcan block model scripts to assign material type codes to the drillhole samples for control in the statistical analysis of the bulk density data, and the block models to control the assignment of determined bulk density values to the models and provide material type coding relevant to downstream mining studies.
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• All tonnages are reported as dry tonnes for all models. Wet and dry bulk density and moisture measurements were determined for a comprehensive suite of diamond and sonic drill core samples from each of the GNCP deposits. Sample volumes were calculated based on the sample dimensions (length and diameter) measured for each sample. The moisture content of each sample was determined by weighing the sample when wet (as recovered from the drillhole) and then weighing it again after thorough oven drying and calculation of moisture by (wet_wt – dry_wt) / wet_wt * 100. Wet and dry bulk density measurements were determined by dividing the respective sample weight by

Criteria	JORC Code explanation	Commentary
		the volume determined based on the core sample dimension measurements.
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	• 0.25% Ni and 0.05% Co cut-off grades were used to interpret and model nickel and cobalt mineralisation envelopes used to constrain the GNCP resource estimates. Both the 0.25% Ni and 0.05% Co cut-off grades were chosen based on geological observation of the continuity of the nickel and cobalt grades within various regions of the weathering profile that could be of potential economic value to the project. Ardea has undertaken internal mining studies since the Ardea 2018 PFS that indicate the potential for significant nickel credits from saprock material rich in dolomite and magnesite (carbonate minerals), typically containing an average of 0.25% Ni that could be used as neutraliser in the proposed pressure acid leach processing flow sheet and contribute additional nickel production. • Mineral Resource reporting has been undertaken using a 0.5% Ni cut-off grade which is a common threshold used for resource reporting for typical Nickel Laterite deposits. While cobalt and scandium contribute to the project value, the grades and associated value are much less than nickel and therefore are not incorporated into the resource reporting cut-off grade criteria. The 0.5% Ni cut-off has also consistently been used for by Heron and Ardea for reporting the overall Mineral Resources in the KNP which have been updated in this report to include the update resource estimates for the GNCP. All the other Mineral Resources outside the GNCP, stated in this report have previously been reported to the public. • Ardea notes that while scandium would inherently be taken into solution in the proposed pressure acid leach processing flowsheet, it would unlikely be economic to recover scandium from solution when present in low concentrations. On this basis, Ardea has also reported scandium resources using a 20 ppm Sc cut-off grade applied to the Ni and Co resources based on a 0.5% Ni cut-off grade.
Mining factors or assumptions	• *Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is* • *always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining* • *methods, but the assumptions made regarding mining methods and* • *parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.*	• Open pit mining via conventional dig and haul is assumed for all the GNCP deposits. The need for blasting is likely to be limited to pedogenic calcrete at surface, a layer of indurated ferruginous laterite that often overlies the nickel and cobalt mineralisation at GS, BF and SD, and underlying saprock rich in serpentine and the carbonate minerals dolomite and magnesite, should saprock be mined for use as acid neutralising material for ore processing. • For the purposes of removing unlikely to be economic resources from the resource statement, TME Mine Consulting (TME) carried out a pit optimization for each of the GNCP deposits using an US$27,558 per tonne nickel price (consistent with the price used for similar pit optimisation work as part of the Ardea PFS in 2018, and Heron in 2013 when converting earlier JORC 2004 compliant resource estimates to JORC 2012 compliant estimates. A US$64,485 per tonne cobalt price was also applied in the resource pit optimisation work recently undertaken by TME. Estimated mining and processing costs, along with royalty and recovery factors were also updated by TME for this process. The evaluation was carried out on the LUC estimated nickel and cobalt grades only, except ordinary kriged cobalt grades for several small cobalt domains in the BF-SD resource model. The other assumptions used in the TME resource pit optimisation study were: Pit slope of 55 degrees, 0.5% Ni resource cut-off grade, 0% ore dilution and 100% ore recovery, Mining costs of AU$7.70 to AU$7.81 per bcm, Processing costs of AU$125/t plus AU$2.24 haulage from BF, SD and GH, Process recovery of 94.5% for Ni and 95.5% for Co, Ni and Co sales terms of 110% (for sulphate products), Selling costs of AU$132/t of sulphate product, AUD:USD exchange rate of 0.75 and 2.5% royalty on metal sales. • All the GNCP resource model blocks based on a 0.5% Ni cut-off were deemed economic based on the resource optimisation parameters and therefore have been reported as Mineral Resources in this report.
Metallurgical factors or assumptions	• *The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining* • *reasonable prospects for eventual economic extraction to consider potential* • *metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should* • *be reported with an explanation of the basis of the metallurgical* • *assumptions made.*	• The GNCP deposits have been the subject of detailed metallurgical studies. • The current focus of studies into a preferred metallurgical approach is on high pressure acid leaching methods with a particular focus on improving the recovery of reagents during processing to improve unit costs.

Criteria	JORC Code explanation	Commentary
Environmental factors or assumptions	• *Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining* • *reasonable prospects for eventual economic extraction to consider the* • *potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.*	• It is expected that waste rock material will largely be disposed of inside previously completed pits during the life of mine. Tailings disposal will consist of a mixture of conventional tailings dams and disposal in mined out pits. As all of the material mined will be of an oxidised nature and as such there is not expected to any acid generating minerals in the waste rock material. The processed tailings will need to be neutralised or recovered from the tailings stream prior to disposal in waste storage facilities. The expected land forms at the conclusion of the project will be of similar profile to the current land forms. • Environmental studies for the project have been started with base line surveys for flora and fauna. However, as the final process route is currently subject to research, the final environmental plans are yet to be developed. It is reasonable, given the existing nickel laterite operations in WA, that all environmental issues can be resolved and it will be possible to mine the resources within current environmental guidelines.
Bulk density	• *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of* • *the samples.* • *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.* • *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	• Wet and dry bulk density and moisture measurements were determined for a representative suite of diamond and sonic drill core samples from each of the GNCP deposits, including 828 samples from 36 diamond holes at GS, 402 samples from 21 diamond drillholes at BF and SD, and 105 samples from 3 diamond and 8 sonic drillholes at GH. All the material types (mineralised and waste) in the weathering profile were targeted for density determinations. ○ Heron and Ardea density sample volumes were calculated based on the sample dimensions (length and diameter) measured for each sample. The moisture content of each sample was determined by weighing the sample when wet (as recovered from the drillhole) and then weighing it again after thorough oven drying and calculation of moisture by (wet_wt – dry_wt) / wet_wt * 100. Wet and dry bulk density measurements were determined by dividing the respective sample weight by the volume determined based on the core sample dimension measurements. ○ Wet density values of the Vale Inco diamond and sonic core samples were measured using the Archimedes method including either coating the samples with wax or vacuum sealing them in plastic bags prior to weighing them submerged in water. Wet sample weights were recorded pre-wax coating or vacuum sealing, after coating or sealing, and after removal of the coating or sealing (after weighing submerged in water). The samples were thoroughly oven dried after removing the coating or sealing, and subsequently reweighed to determine the dry sample weight and moisture content. The dry bulk density was then calculated by multiplying the wet density by (1 – moisture) with percentage moisture in the wet sample expressed as a proportion value between 0 and 1. • Downhole geophysical density logging was also undertaken by Vale Inco of 14 sonic and 8 RC drillholes at GS, and 11 sonic and 13 RC holes at GH. Caliper (hole diameter), short space density and long space density values were recorded at 10 cm downhole increments in each hole. The resulting data were composited to 1m downhole intervals coinciding with the dominant sub-sampling interval used by Vale Inco during their RC drilling. • The manually determined bulk density and moisture data for the core samples and 1m composites of the geophysical density data were merged with the corresponding assay data (if available) for the samples or sample intervals and material types assigned based on the geochemical criteria derived from the analysis of the XRD mineralogy data. The holes drilled primarily to collect bulk material for metallurgical testwork and therefore no detailed downhole sampling and assaying undertaken, typically twinned earlier Heron RC holes. If assay data for sufficient grade attributes (including SiO2 and CaO) were available for the twinned RC hole, material type assignments were calculated and assigned to the same downhole interval in the more recent sonic or diamond drillhole for which downhole geophysical density logging had been undertaken. Assays were available for all the grade attributes required to calculate material type assignments for the following bulk density datasets: ○ All 828 manual bulk density measurements for GS, and 402 manual bulk density measurements for BF+SD based on assays of samples from the same diamond drillholes. ○ All 105 manual bulk density measurements for GH based on assays of samples from the twinned RC holes. ○ A total of 349 x 1m composites of the geophysical density data for GS, and 500 x 1m composites of the geophysical density data for GH based on assays of samples from the twinned RC holes. • Average wet and dry bulk density and moisture values for each deposit (combined for BF and SD) were calculated

Criteria	JORC Code explanation	Commentary
		subdivided by the material type classification schemes for GS and GH based on the density and moisture measurements of the core samples for each deposit. The material type classification scheme for GS was applied to the dataset for BF+SD due to the similar distribution of mineralogy and material types at these deposits and absence of an XRD mineralogy dataset and corresponding classification scheme dedicated to BF+SD. • The 1m composite datasets of the long and short spaced geophysical density data for GS and GH were assessed in a similar manner subdivided by the respective material type classification schemes. The long space density averages were found to reconcile closely with the wet density averages based on the manual measurements and therefore, were treated as the preferred geophysical wet density average values. This is well justified as the short space geophysical density values are highly susceptible to low bias in drillholes with significant variations in diameter over short downhole intervals, which is expected within the very soft earthy goethite rich material and local variations in material type hardness within the weathering profile at the GNCP deposits. • Given the close overall agreement between the averages based on the manual density measurements of core samples and geophysical density measurements for GS, the average dry density values ranging from 1.1 t/m3 to 2.3 t/m3 based on the larger datasets of manual measurements subdivided by the GS material type classification scheme were assigned to the resource models for GS, BF and SD. • Conversely, given the relatively small dataset of manual measurements compared to geophysical dataset available for GH, average dry bulk density values ranging from 1.5 t/m3 to 2.1 t/m3 based on the combined manual and geophysical datasets for GH were assigned to the resource model for GH, subdivided by the GH material type classification scheme. • The magnitude and variation of the average dry bulk density values assigned to the GNCP resource models are aligned with expectations of the variations in bulk density within the GNCP deposits observed in the core samples collected from the extensive diamond and sonic drilling completed at the deposits.
Classification	• *The basis for the classification of the Mineral Resources into varying confidence categories.* • *Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data,* • *confidence in continuity of geology and metal values, quality, quantity and* • *distribution of the data).* • *Whether the result appropriately reflects the Competent Person's view of* • *the deposit.*	• Classification of the Mineral Resources within the GNCP GS, GH, BF and SD deposits has been undertaken with detailed consideration of the following: o The quality of all the historical and more recent exploration data available for the project. o The weathering and geochemical processes resulting in the regolith that hosts the nickel, cobalt and scandium mineralisation, variations within the insitu regolith profile due to variations in the ultramafic protolith and the fault and shear structures that pass through it, and the presence and distribution of transported materials (colluvial, alluvial and lacustrine sediments, and pedogenic soils and calcrete) that often overlie the insitu regolith. o The continuity of nickel, cobalt and scandium grades within the regolith profile. There is robust continuity of nickel grades throughout all the GNCP deposits using a 0.5% Ni cut-off grade. However, there is much greater continuity of higher grades at GS, BF and SD resulting from the development of a far more mature regolith profile over these deposits compared to GH. While selective mining of higher grades using cut-off grades as high as 0.8% Ni to 1.0% Ni at GS, BF and SD appears to be entirely plausible, the less mature weathering profile at GH fails to concentrate higher nickel grades continuous enough for selective mining and therefore should only be considered as a potential lower grade bulk mining target, or a source of carbonate rich material for acid neutralisation in the proposed pressure acid leaching ore processing flowsheet for the project. o Confidence in the interpretation and modelling of 3-D geological boundaries used to constrain the resource estimates is high and well supported with drilling. o Detailed geostatistical estimation quality statistics were recorded in relation to the ordinary kriging estimation of panel grades which form the basis of the recoverable nickel and cobalt resource grade estimates based on local uniform conditioning (LUC). Classification of the Mineral Resources at the GNCP deposits was ultimately based on 'slope of regression' and 'kriging efficiency' statistics reflecting measures of bias from the expected distribution of panel estimates and accuracy of the panel estimates relative to predictions of the true panel grades. The specific criteria based on these measures is discussed in more detail below. o A comprehensive understanding of local mineral assemblages in the weathering profile based on a

Criteria	JORC Code explanation	Commentary
		combination of multi-element geochemistry and mineralogy data. Distinct mineral assemblages that occur locally within different regions of the weathering profile have been classified as a range of material types based on relationships identified between the mineralogy and multi-element geochemical attributes that have been estimated into the resource models. The material type classification schemes are broadly confirmed by the initial geological logging of the samples and therefore provide a framework of material type assignments in the resource models that would otherwise be extremely difficult to define as individual domains suitable for constraining resource estimation. Importantly, the material types are transitional depending on variations in the concentrations of the various grade attributes and therefore the smoothing of grades within a framework of larger estimations domains does not necessarily negate the reliability of the resulting material type assignments based on the multi-element geochemistry estimated in the resource block models. ○ Bulk density assignments based on the material type classification schemes make sense. Typically higher average densities have been determined for material types high in free silica (amorphous quartz) and carbonate minerals, while lower densities have been determined for material types containing higher concentrations of kaolinite and earthy goethite. Variations in the transported material types which are often more dense due to iron and silica induration have also been accounted for in the bulk density assignments. • With consideration of all the comments noted above and the dominance of nickel in the overall value of the GNCP, slope of regression and kriging efficiency statistics recorded for the ordinary kriged panel nickel estimates were reviewed and suitable confidence thresholds selected as a guide to subdividing the combined nickel, cobalt and scandium estimates for the GNCP deposits into Measured, Indicated and Inferred Mineral Resources. A slope of regression threshold of 0.7 was used to define boundaries between Indicated Resources (≥ 0.7) and Inferred Resources (< 0.7) within the insitu regolith domains of all the GNCP deposits, while a kriging efficiency threshold of 0.6 was used to define to define boundaries between Measured Resources (≥ 0.6) and Indicated Resources (< 0.6) at the GS deposit. Initial resource classification assignments based on these criteria were applied to the resource models and used as a basis for defining 3-D envelopes constraining the resource model blocks showing strong continuity of blocks with the same classification assignments and downgrading the confidence of blocks showing poor continuity in terms of the initial classification. Wireframe solids of the modified resource classification boundaries were used to assign final resource classification codes to all blocks within the nickel mineralisation domains, with any mineralised blocks in transported material classified as Inferred Resources. • While the Mineral Resource classification criteria are primarily based on relative levels of confidence in the nickel grade estimates, cobalt and scandium resources have been reported based on the same criteria, given that they make up a relatively small proportion of the project value. • The CP, Mr James Ridley, considers the resource classification applied to the GNCP resource models to reflect appropriate confidence in the input exploration data, geological interpretation and resource grade and tonnage estimates.
Audits or reviews	• *The results of any Audits or reviews of Mineral Resource estimates.*	• In December 2020, Ardea commissioned consultants, Optiro Pty Ltd, to undertake a high-level independent review of Ardea's new resource estimate for GS in order to provide comment on the exploration input data, resource modelling processes and results for the largest GNCP deposit. Optiro concluded there are no material issues with the Goongarrie South Mineral Resource Estimate and while they identified areas for improvement, these should not prevent reporting of the Mineral Resource estimates prepared by Ardea to the Market. • Ardea has compared the new resource estimates for the GNCP deposits with the previous resource estimates for all the deposits prepared by HGMC in 2018, for GS, GH and BF prepared by Heron in 2009 and for SD by Snowden in 2004. The changes in resource tonnages, grades and resource classification reflect the following: ○ Infill RC drilling and diamond drilling completed by Ardea at GS, BF and SD in 2018. ○ Increased understanding of material types within the weathering profile and corresponding variations in bulk density. ○ Improved approach to the estimation of cobalt resources that better reflects global and local mean grades

Criteria	JORC Code explanation	Commentary
		based on the input drilling data compared to the HGMC estimates completed in 2018. ○ Resource classification criteria based on geostatistical quality of estimation data rather than blanket drillhole spacing criteria.
Discussion of relative accuracy/ confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure* • *deemed appropriate by the Competent Person. For example, the* • *application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.* • *The statement should specify whether it relates to global or local estimates,* • *and, if local, state the relevant tonnages, which should be relevant to* • *technical and economic evaluation. Documentation should include assumptions made and the procedures used.* • *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	• The classification of Mineral Resources in the GNCP is based on consistent criteria determined according to measures of estimation confidence and accuracy (slope of regression and kriging efficiency) relating to the ordinary kriging of panel nickel grades that form the basis of the recoverable resource estimates for nickel based on LUC. The slope of regression and kriging efficiency thresholds used to guide definition of the resource classification boundaries are similar to those used throughout the mining industry when developing resource classification criteria based on these measures. • These geostatistical criteria and overall approach to the classification of GNCP Mineral Resources is considered appropriate by the CP and has recently been endorsed by Optiro in their high level review of Ardea's resource estimate for GS.

Appendix 3 – Plans, Cross sections and 3-D Projections supporting GNCP Resource Estimates

Goongarrie Hill

LEGEND

Cross Section Locations

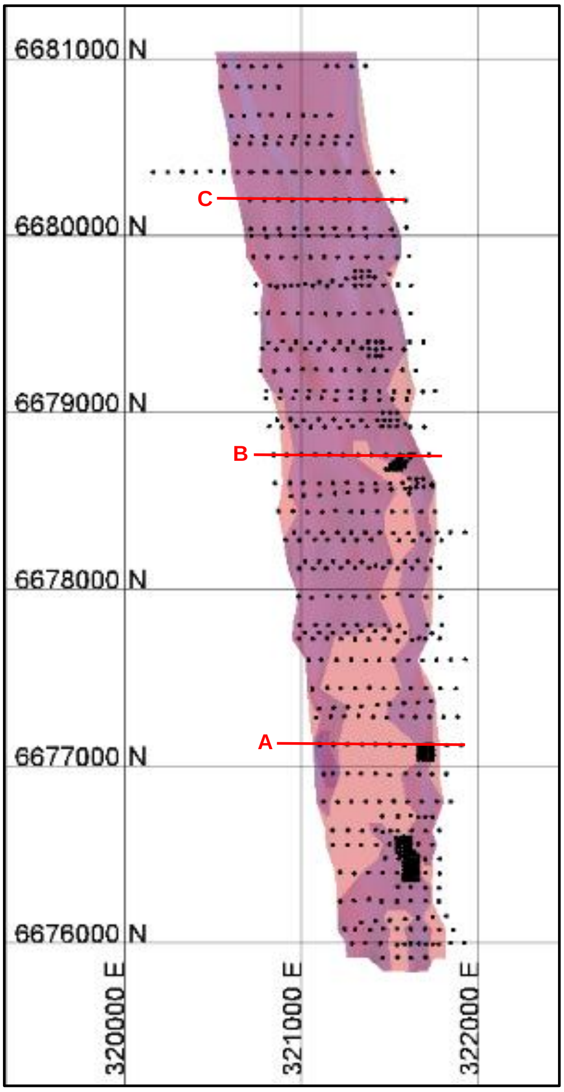
- Nickel mineralisation envelope
- Cobalt mineralisation envelope
- Surface topography
- Base of calcrete
- Base of transported sediments
- Top of saprock

Drill hole Traces

FeO %

- -999.000 <= < 0.000
- 0.000 <= < 10.000
- 10.000 <= < 20.000
- 20.000 <= < 30.000
- 30.000 <= < 40.000
- 40.000 <= < 50.000
- 50.000 <= < 100.000

Cross Section Locations



- Nickel mineralisation envelope
- Cobalt mineralisation envelope

Goongarrie Hill

Geological Interpretation

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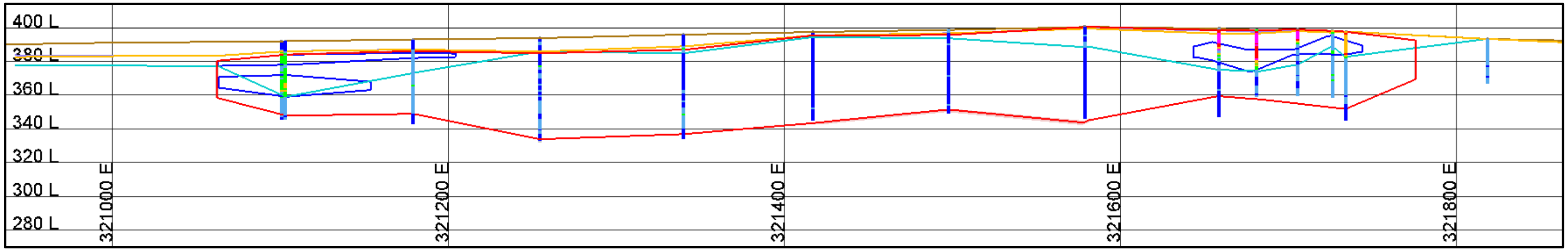
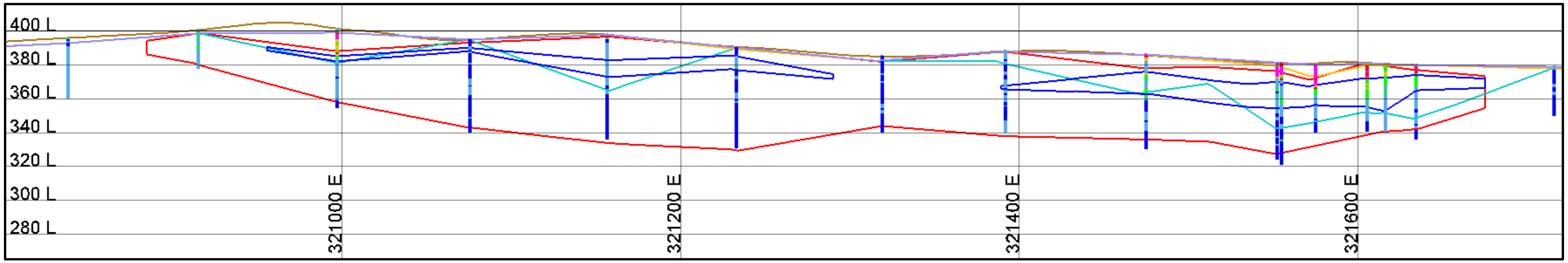
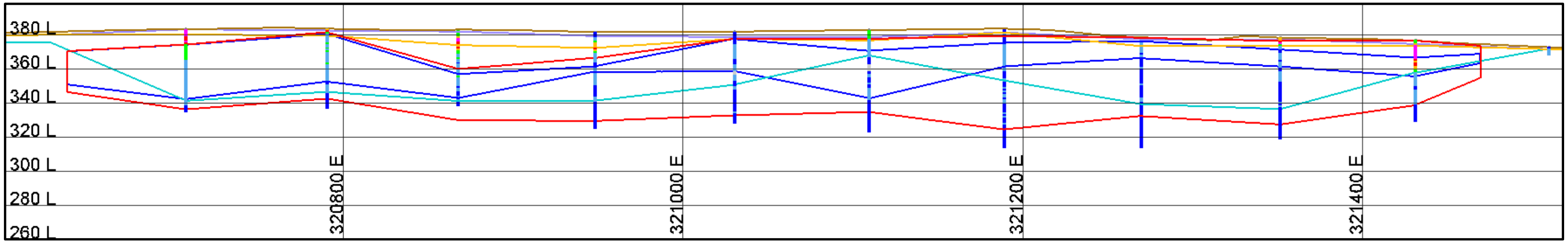


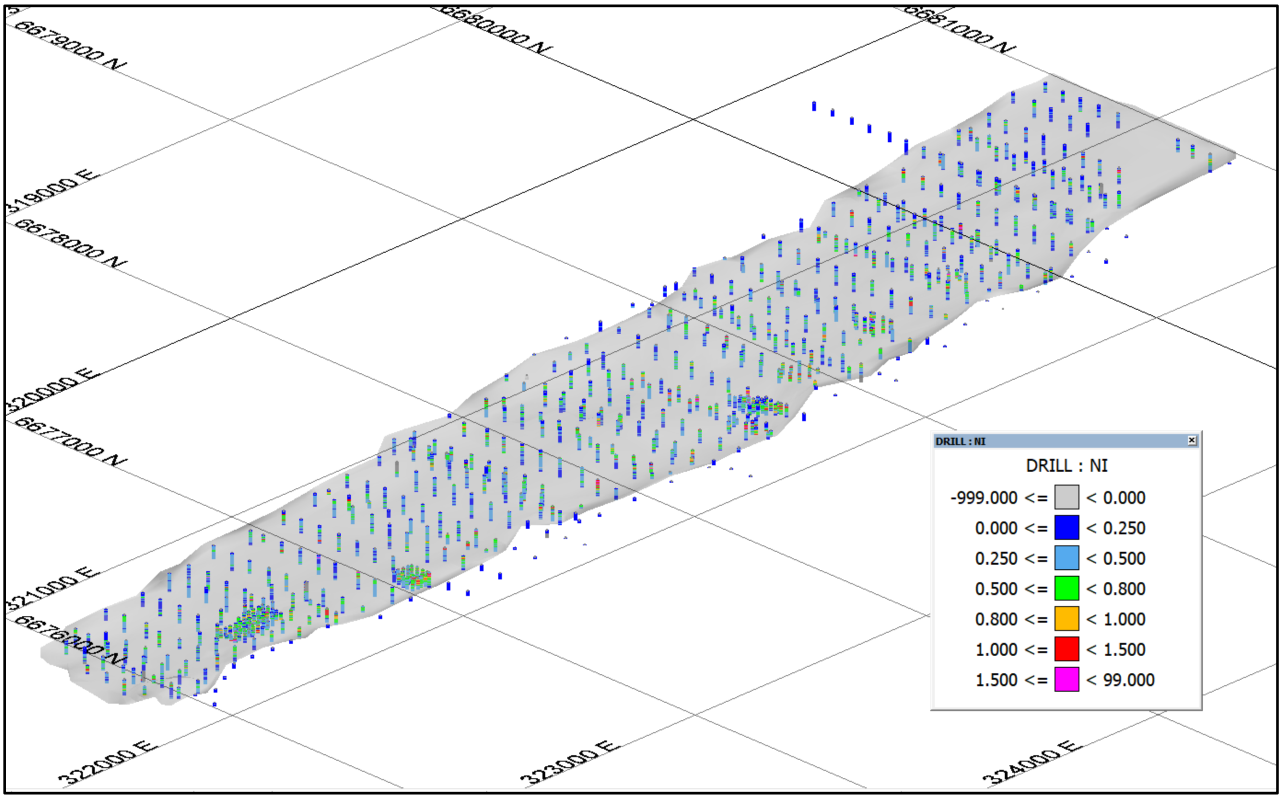
6678765 N (Section B)



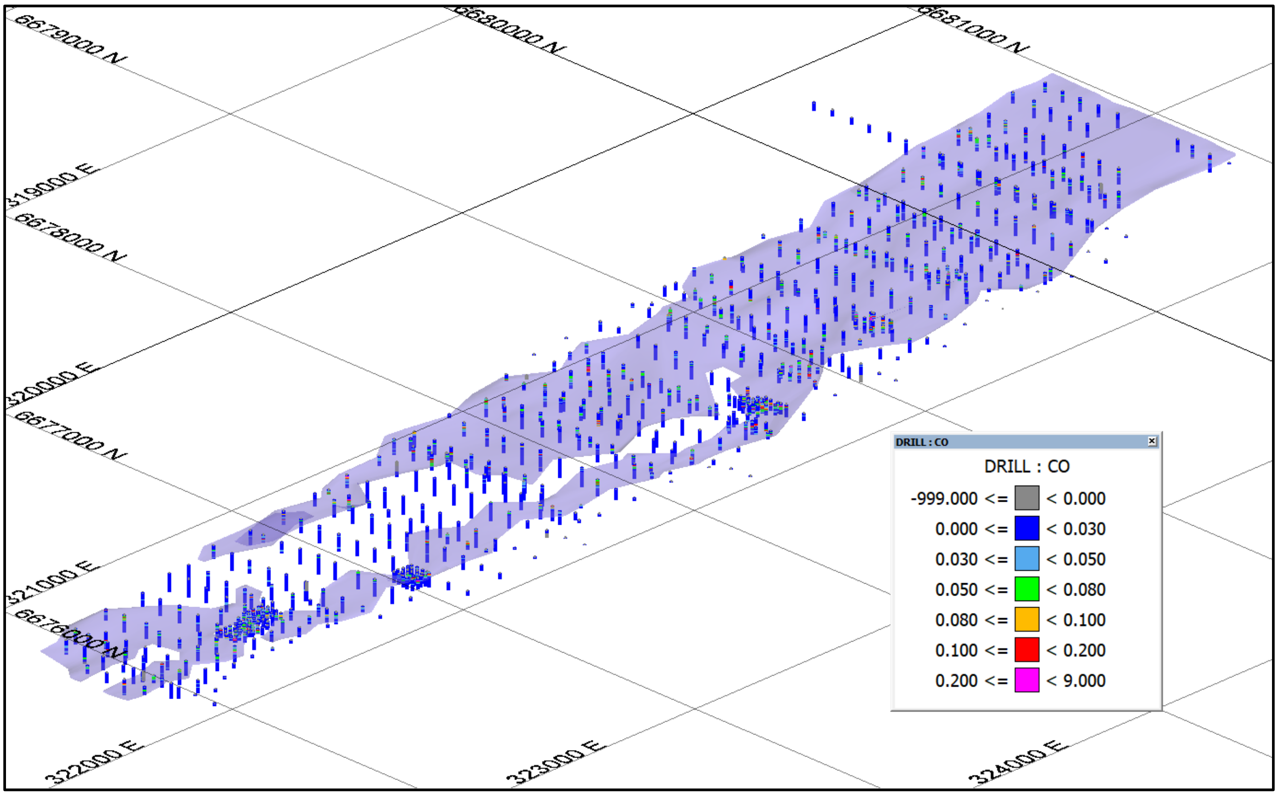
6680205 N (Section C)



Goongarrie Hill

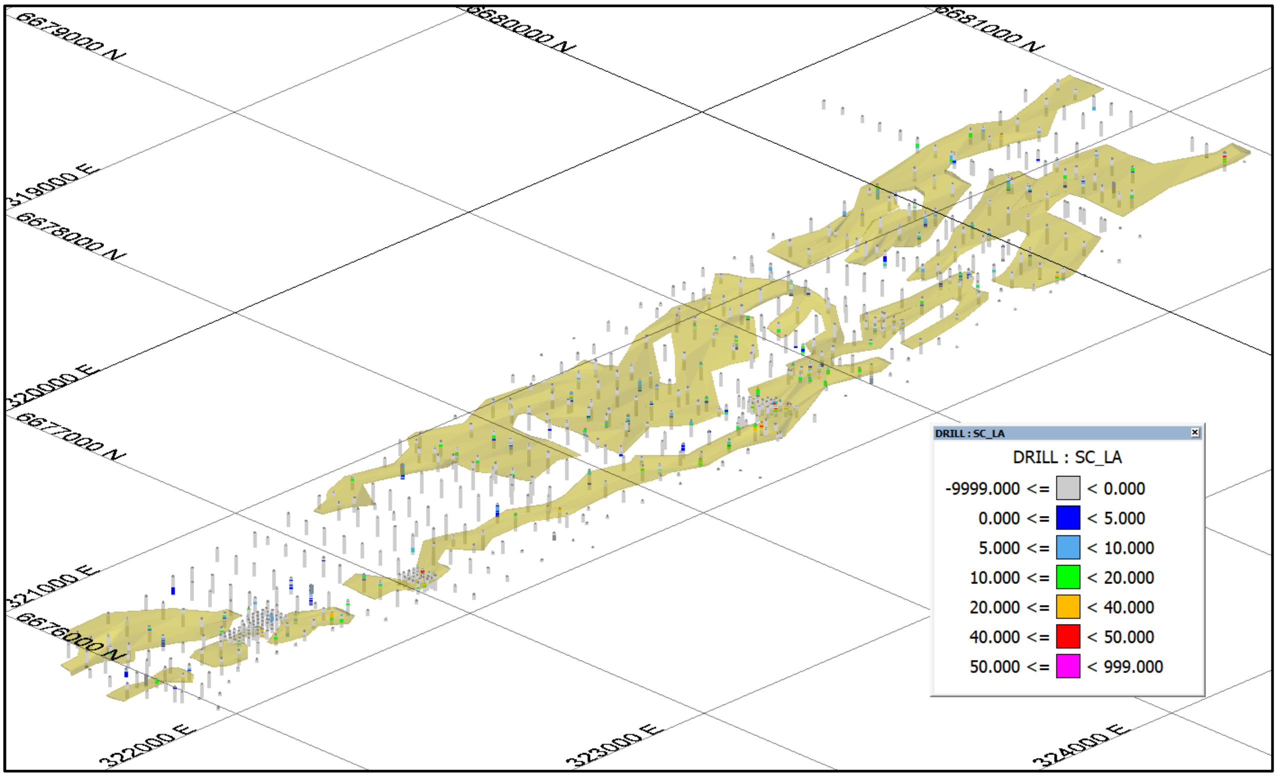


3-D view towards the NW showing wireframe solid model of nickel mineralisation envelope based on a notional 0.25% Ni cut-off



3-D view towards the NW showing wireframe solid models of cobalt mineralisation envelopes based on a notional 0.03% Co cut-off

Goongarrie Hill



3-D view towards the NW showing wireframe solid models of REE mineralisation envelopes based on a notional 15 ppm cut-off applied to sum of Sc, Ce, Nd and Pr grades

Goongarrie Hill

LEGEND

Geological Interpretation (X-Sections)

- Red line: Nickel mineralisation envelope
- Blue line: Cobalt mineralisation envelope
- Brown line: Surface topography
- Purple line: Base of calcrete
- Yellow line: Base of transported sediments
- Cyan line: Top of saprock

Drillhole Traces & Block Model (X-S)

Upper X-Section (Ni %)

-99.000 <=	brown	< 0.000
0.000 <=	blue	< 0.250
0.250 <=	light blue	< 0.500
0.500 <=	green	< 0.800
0.800 <=	orange	< 1.000
1.000 <=	red	< 1.500
1.500 <=	magenta	< 9.000

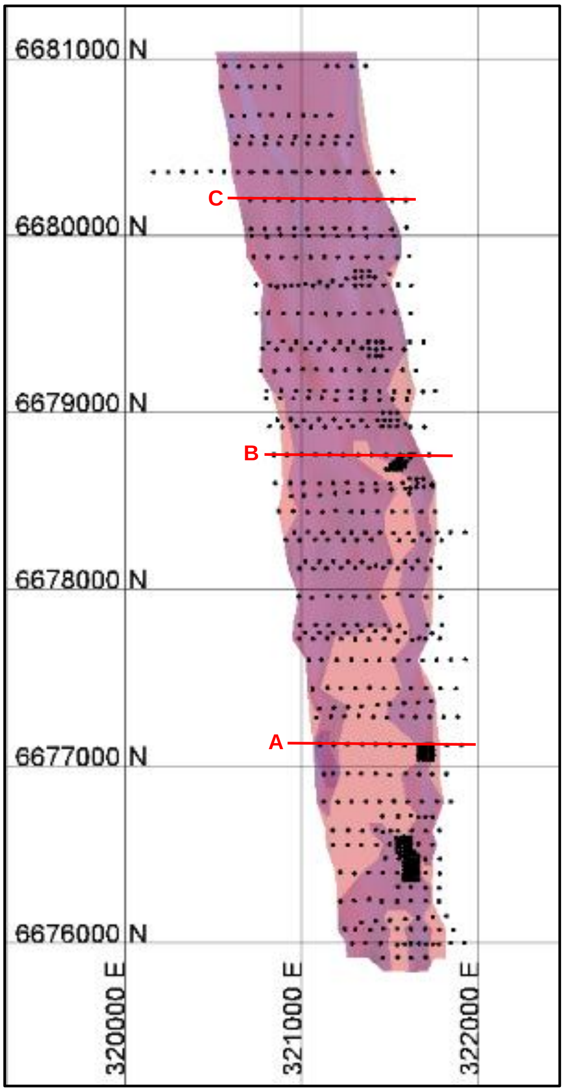
Middle X-Section (Co %)

-99.000 <=	brown	< 0.000
0.000 <=	blue	< 0.025
0.025 <=	light blue	< 0.050
0.050 <=	green	< 0.080
0.080 <=	orange	< 0.100
0.100 <=	red	< 0.200
0.200 <=	magenta	< 9.000

Lower X-Section
(Material Type)

NONE	ACK	CLSB*
PSQ	ALQK	CLBS*
PSQB	LAFKH	SREN
PCF	CUSG*	SRES
PCFB	CUSN*	SREBS
PCU	CUN*	SRE
PCUB	CUS*	
ALB	CLSE*	

Cross Section Locations

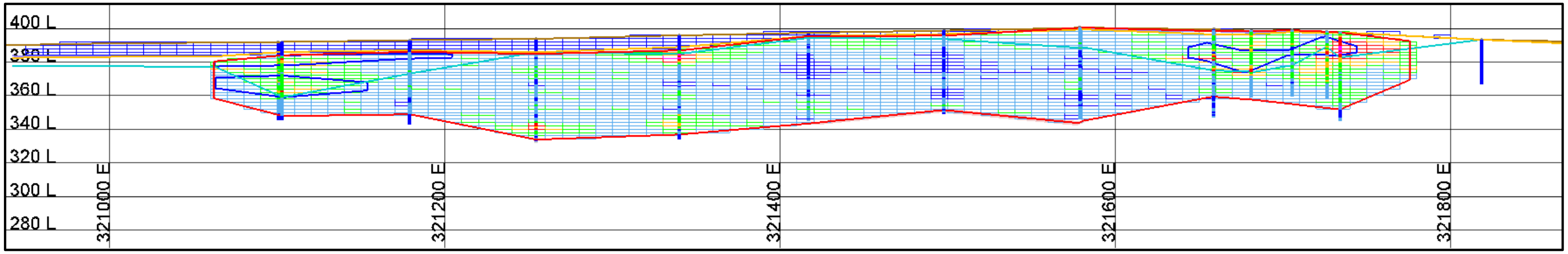


- Pink: Nickel mineralisation envelope
- Purple: Cobalt mineralisation envelope

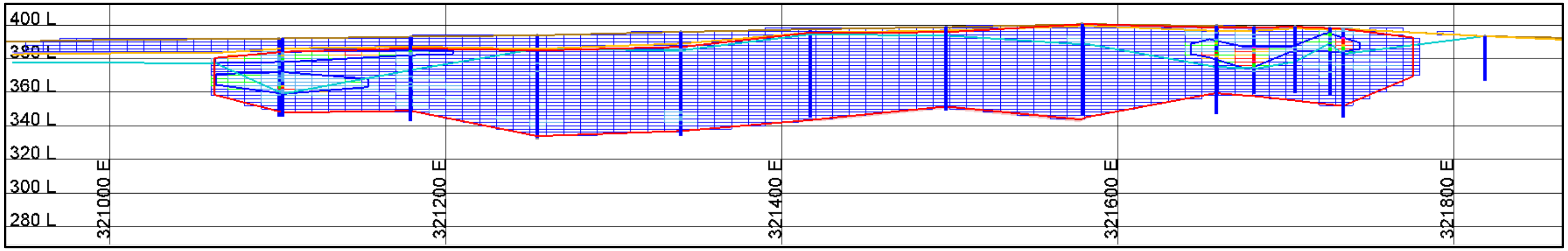
Goongarrie Hill

6670125 N (Section A)

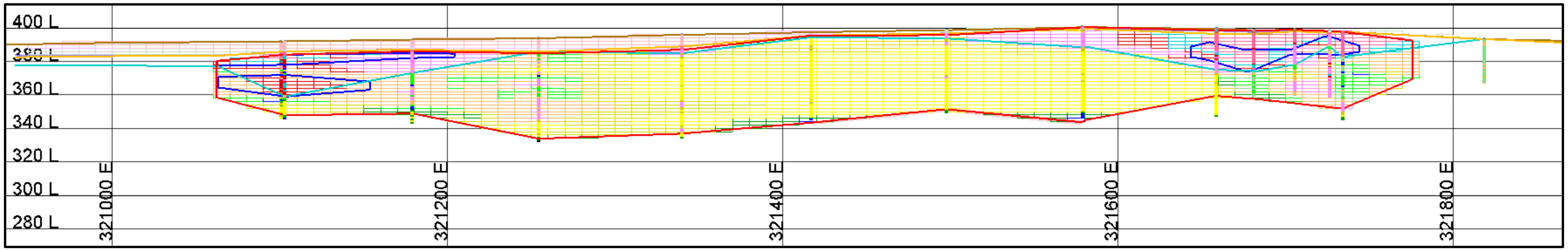
Block model LUC nickel estimates



Block model LUC cobalt estimates



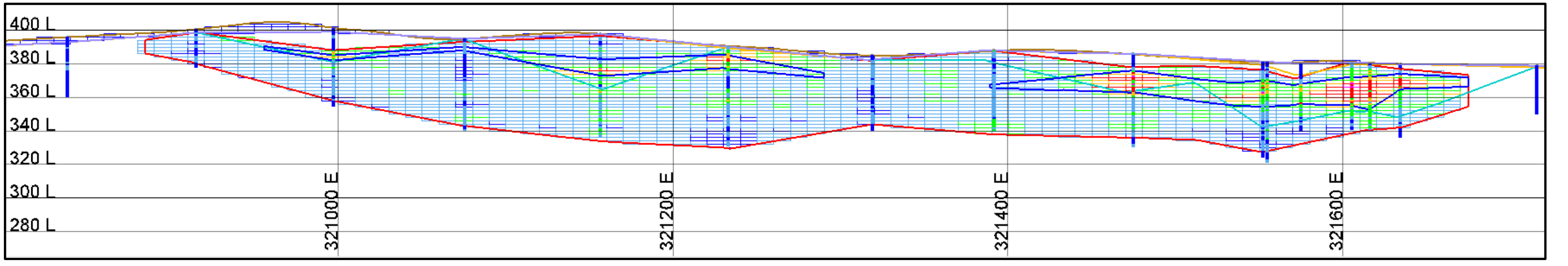
Block model material type determinations



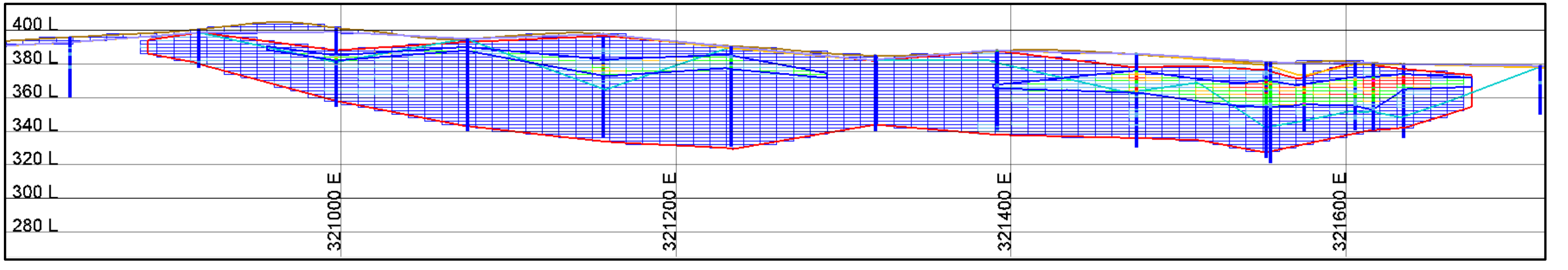
Goongarrie Hill

6678765 N (Section B)

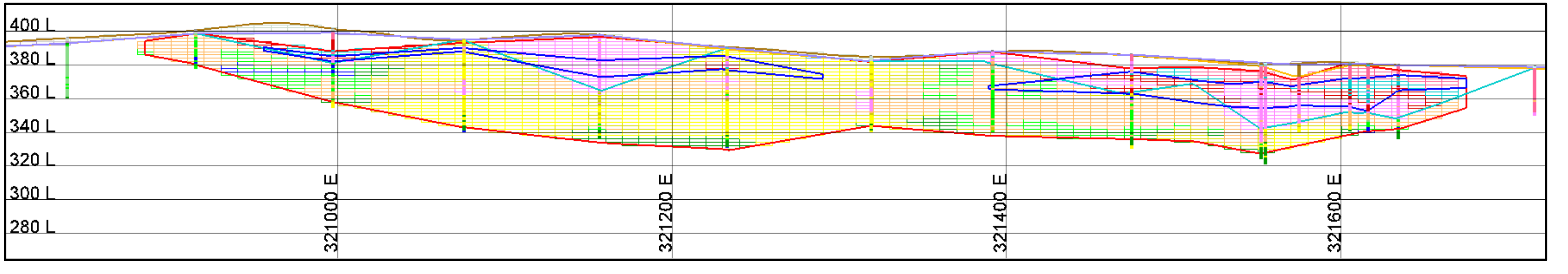
Block model LUC nickel estimates



Block model LUC cobalt estimates



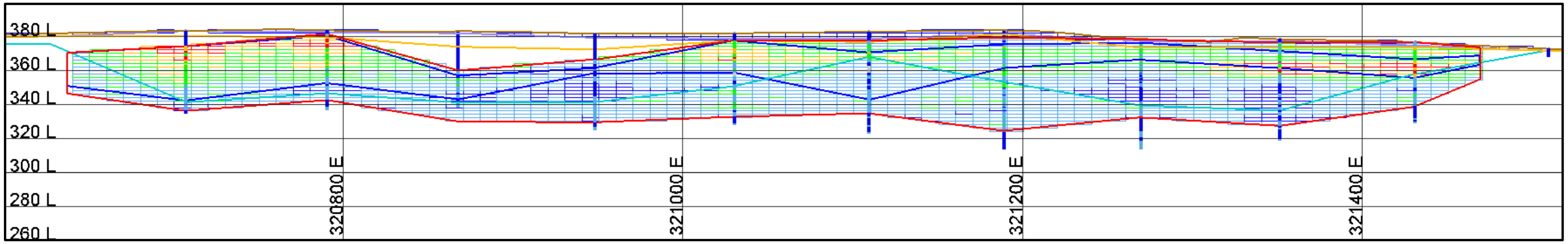
Block model material type determinations



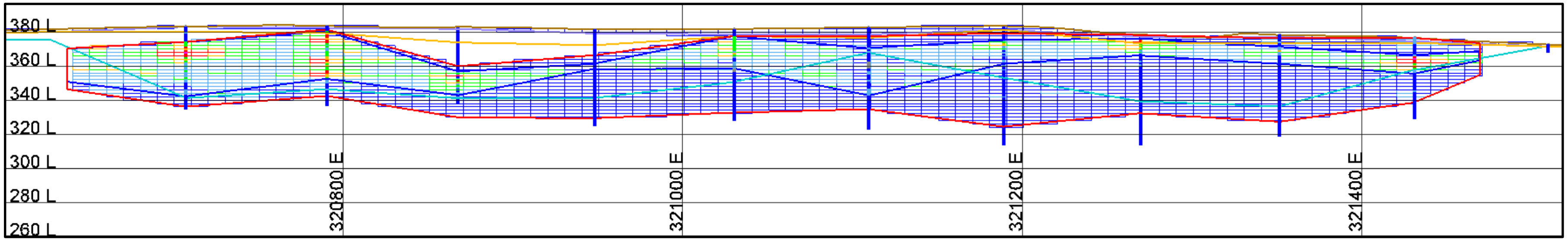
Goongarrie Hill

6680205 N (Section C)

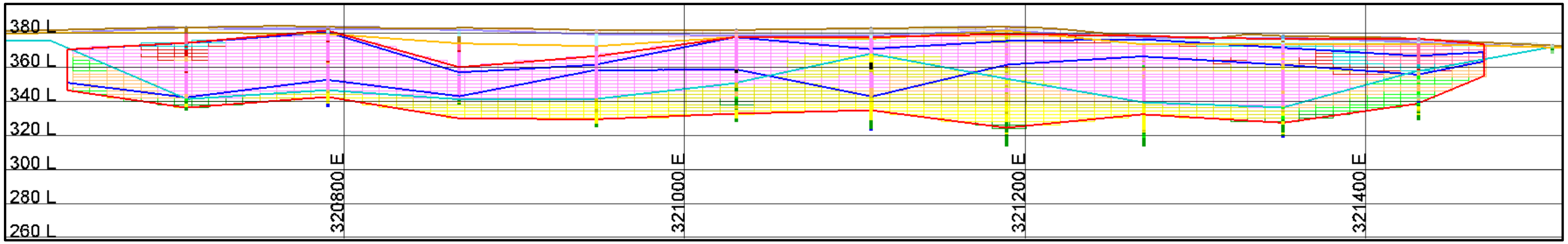
Block model LUC nickel estimates



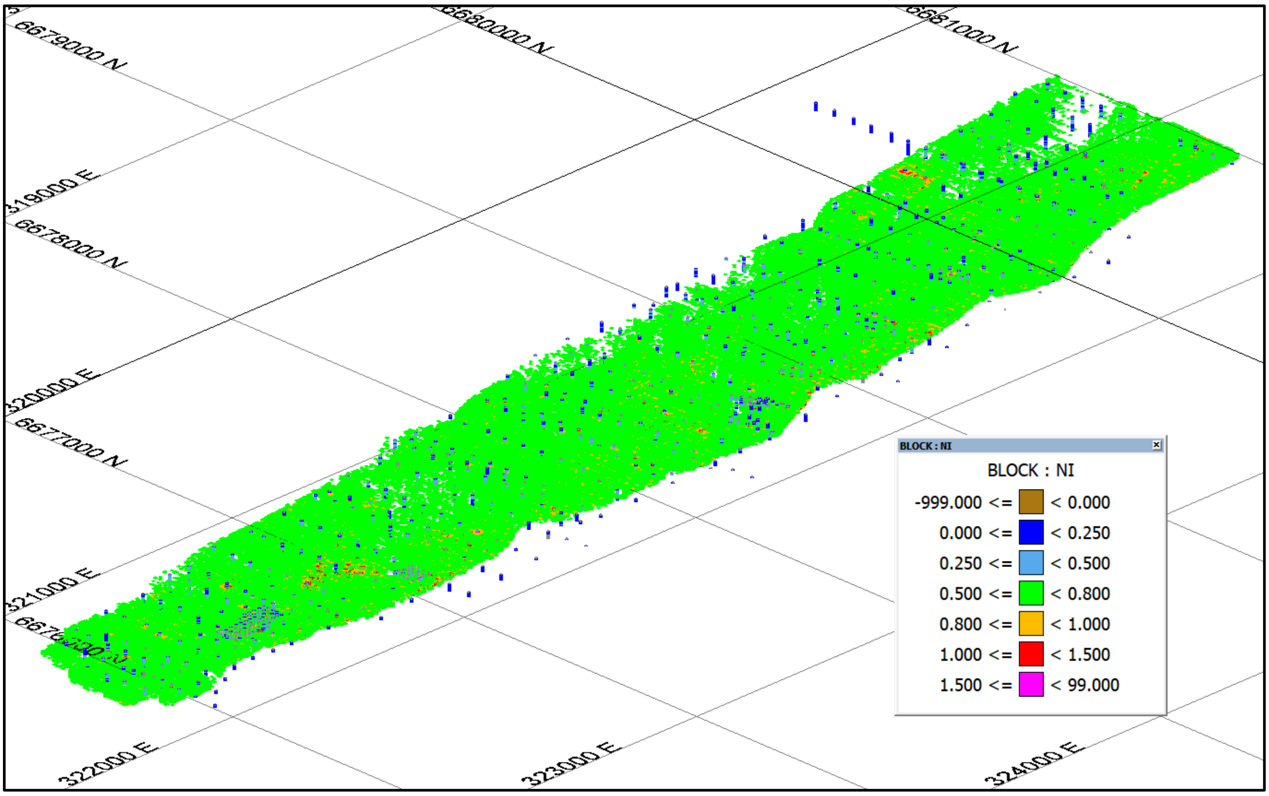
Block model LUC cobalt estimates



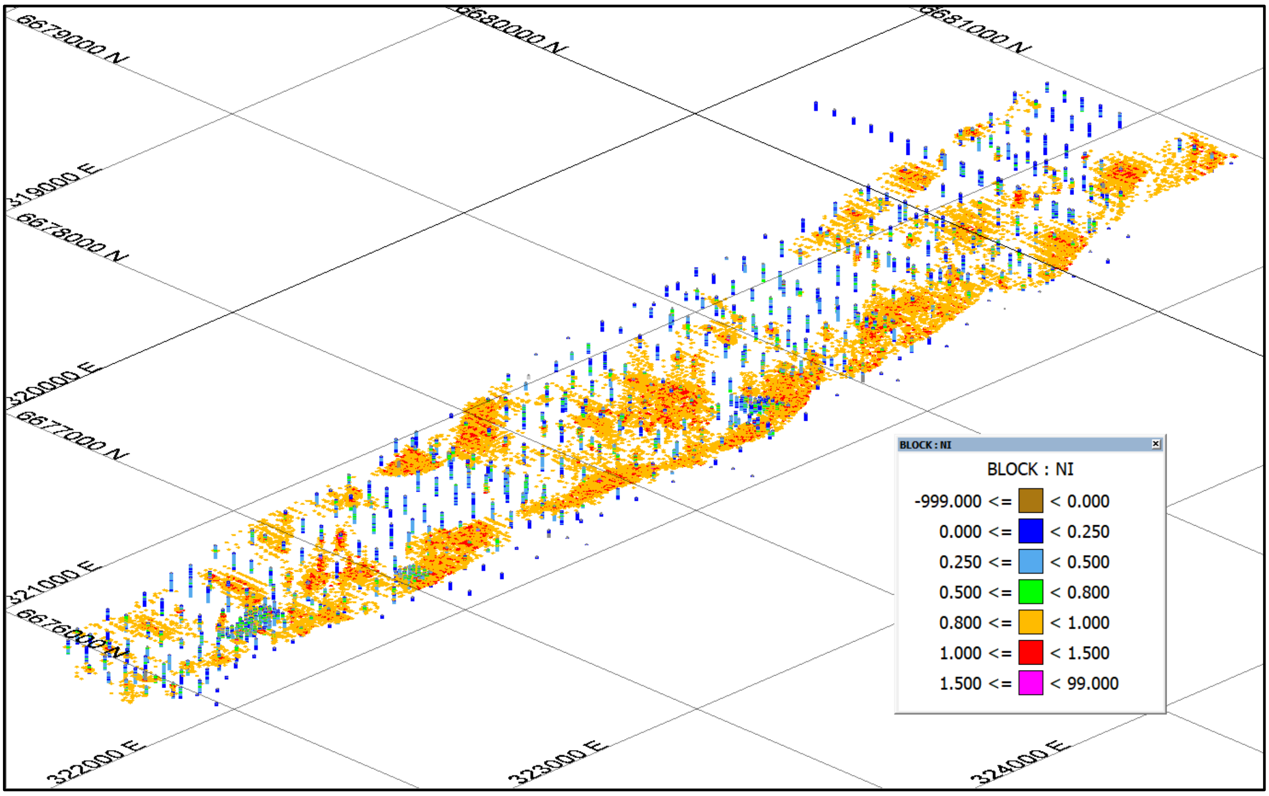
Block model material type determinations



Goongarrie Hill

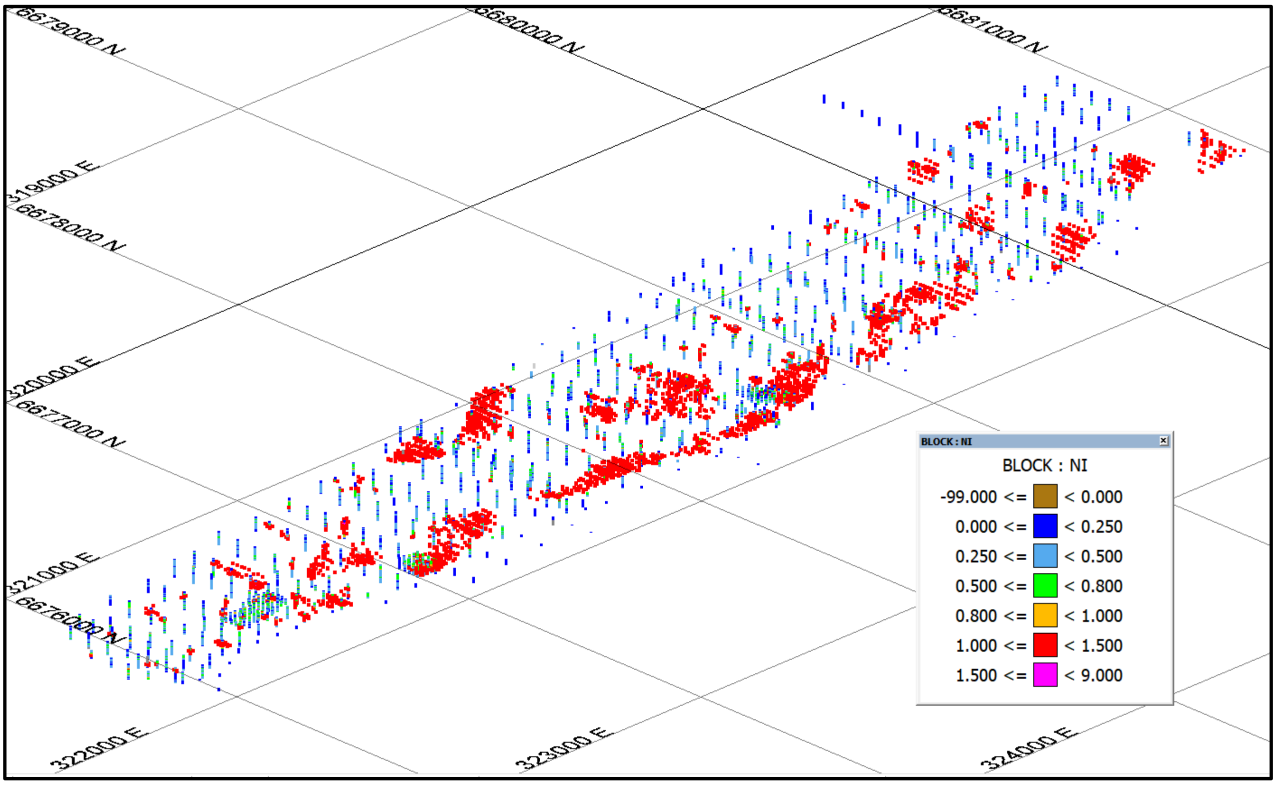


3-D view towards the NW showing resource model blocks $\geq$ 0.5% Ni versus drillhole traces colour coded by Ni % (same as block legend)

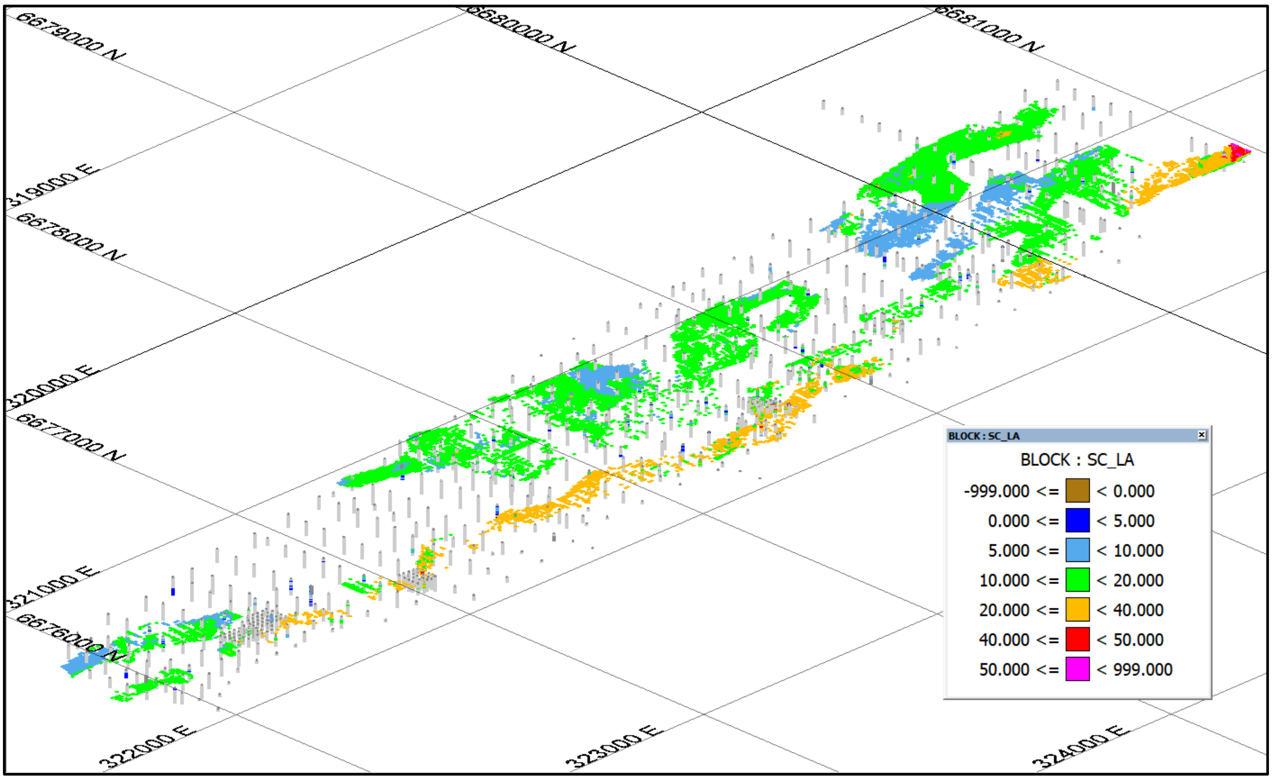


3-D view towards the NW showing resource model blocks $\geq$ 0.8% Ni versus drillhole traces colour coded by Ni % (same as block legend)

Goongarrie Hill



3-D view towards the NW showing resource model blocks > 1.0% Ni versus drillhole traces colour coded by Ni % (same as block legend)



3-D view towards the NW showing resource model Scandium estimates where Nickel estimates are > 0.5% Ni

Goongarrie South

LEGEND

Geological Interpretation (X-Sections)

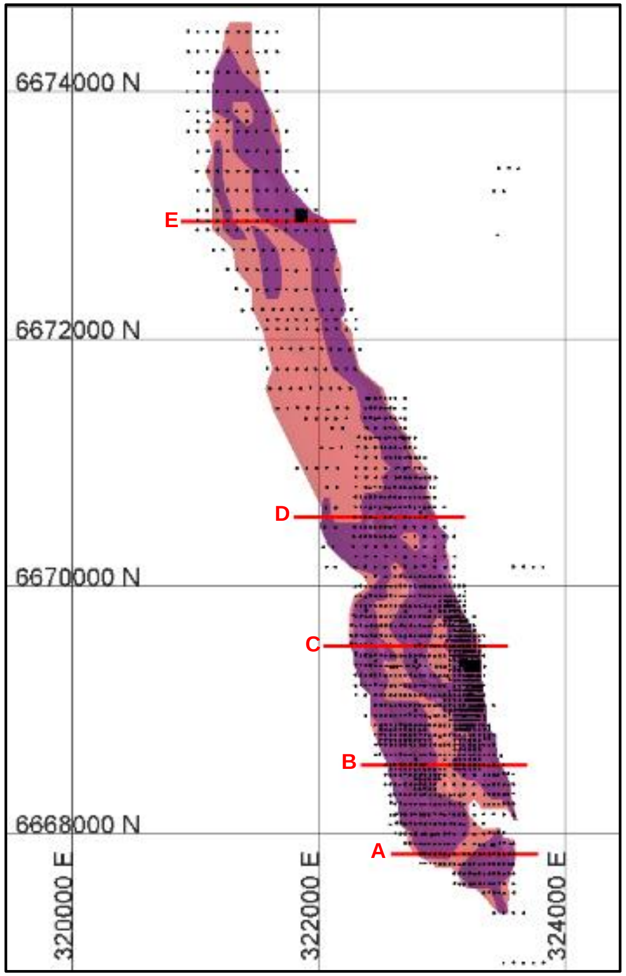
- Nickel mineralisation envelope (red line)
- Cobalt mineralisation envelope (blue line)
- Surface topography (brown line)
- Base of calcitic calcrete (pink line)
- Base of dolomitic calcrete (purple line)
- Paleochannel carbonate (grey line)
- Base of transported sediments (yellow line)
- Top of saprock (light blue line)

Drill hole Traces (X-S)

FeO %

-999.000 <=	(grey)	< 0.000
0.000 <=	(blue)	< 10.000
10.000 <=	(light blue)	< 20.000
20.000 <=	(green)	< 30.000
30.000 <=	(orange)	< 40.000
40.000 <=	(red)	< 50.000
50.000 <=	(magenta)	< 100.000

Cross Section Locations

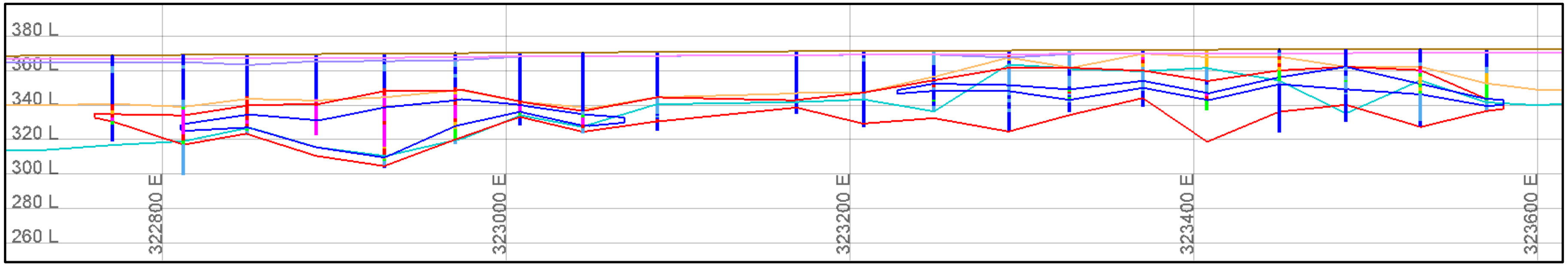


- Nickel mineralisation envelope (salmon)
- Cobalt mineralisation envelope (purple)

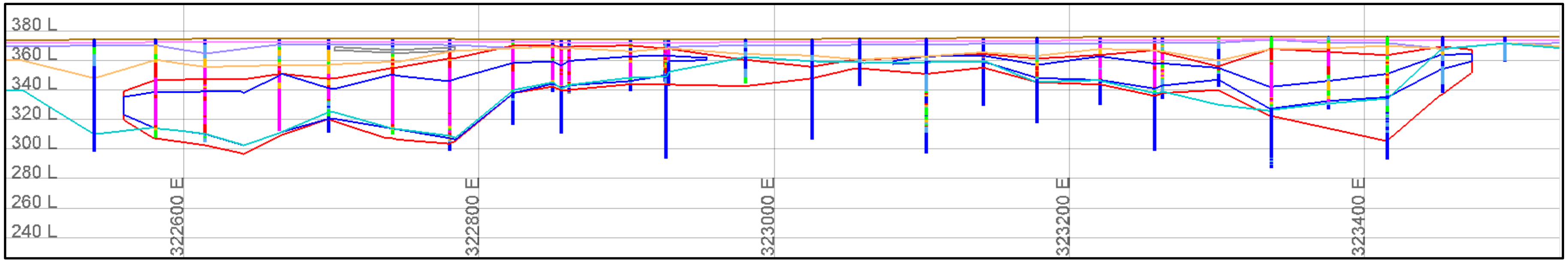
Goongarrie South

Geological Interpretation

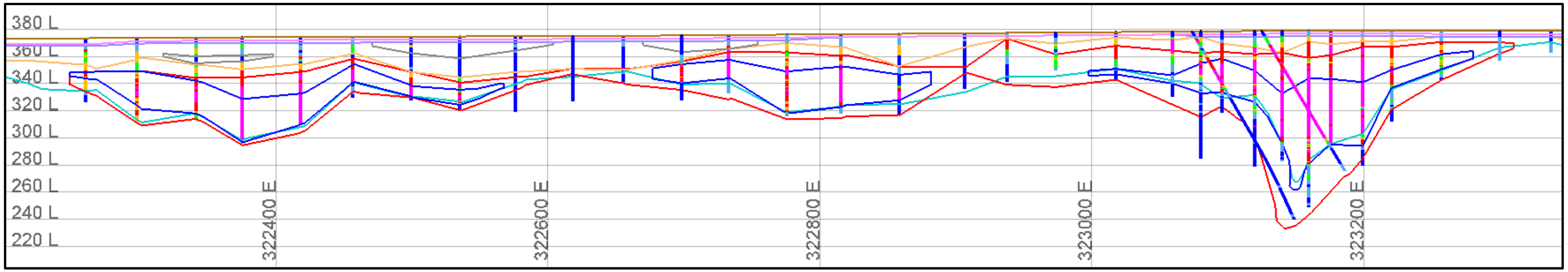
6667840N (Section A)



6668560 (Section B)



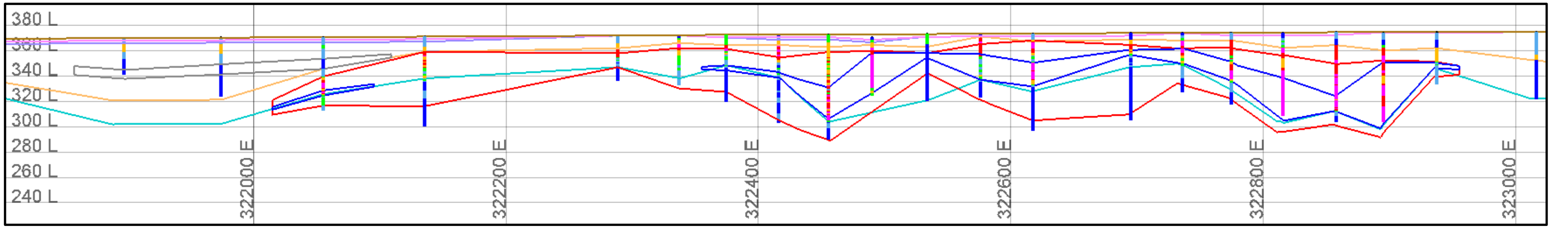
6669520N (Section C)



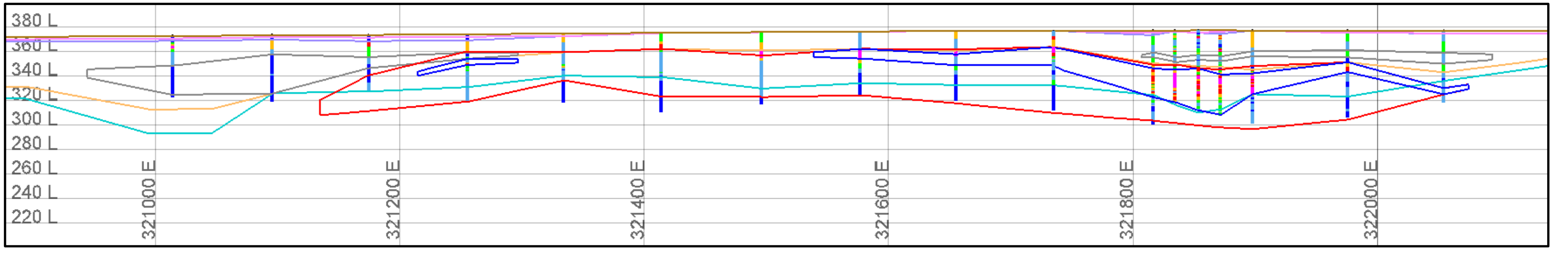
Goongarrie South

Geological Interpretation

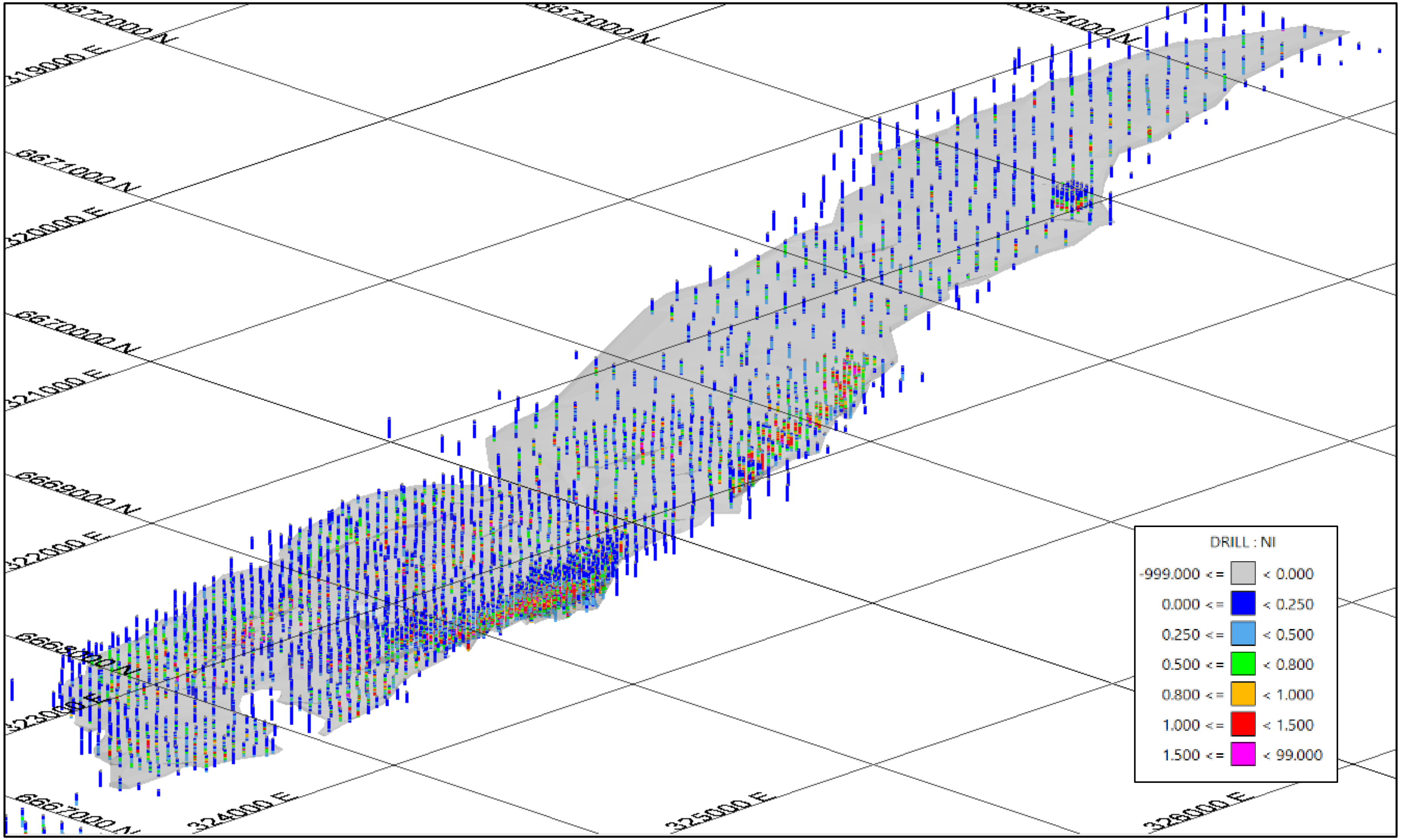
6670560N (Section D)



6672960N (Section E)

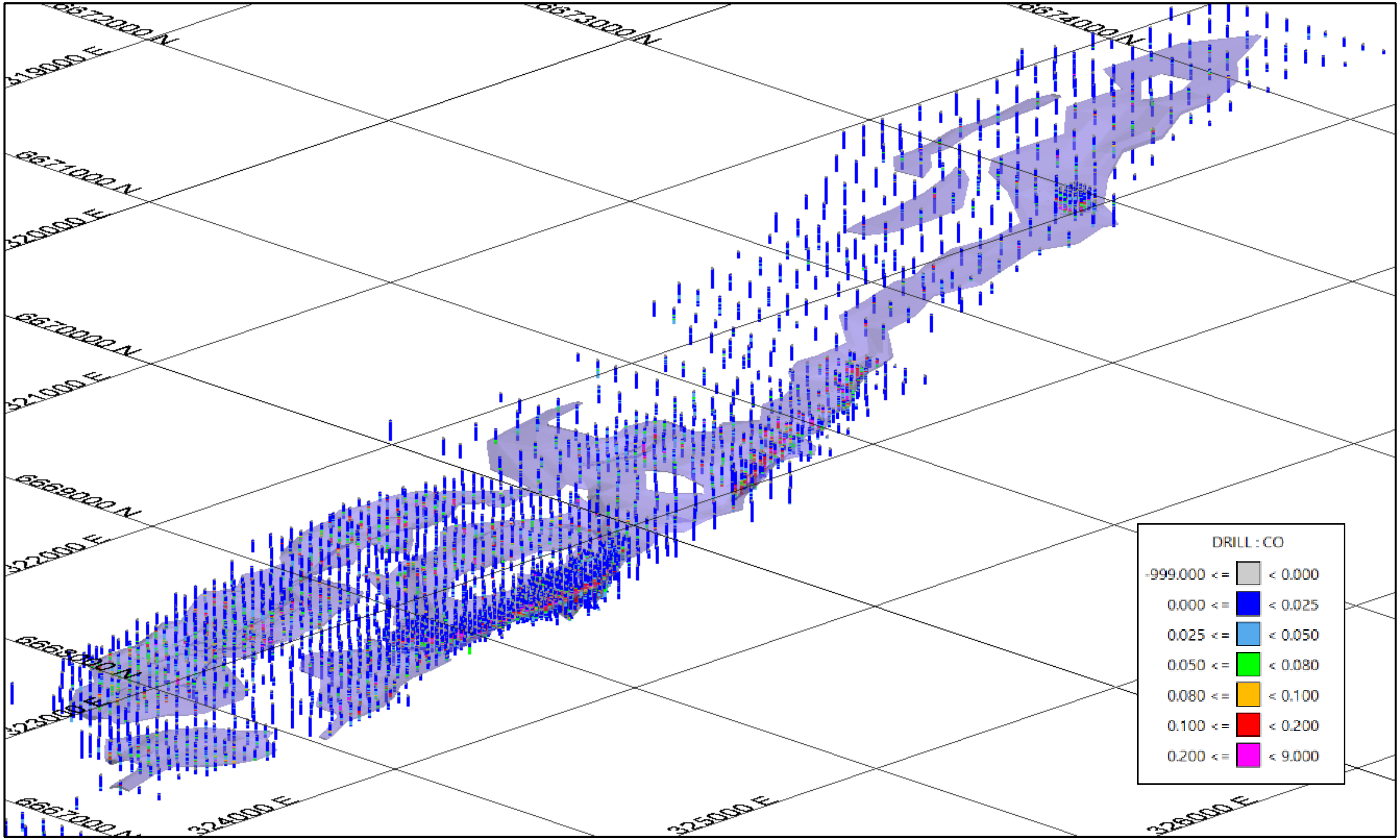


Goongarrie South



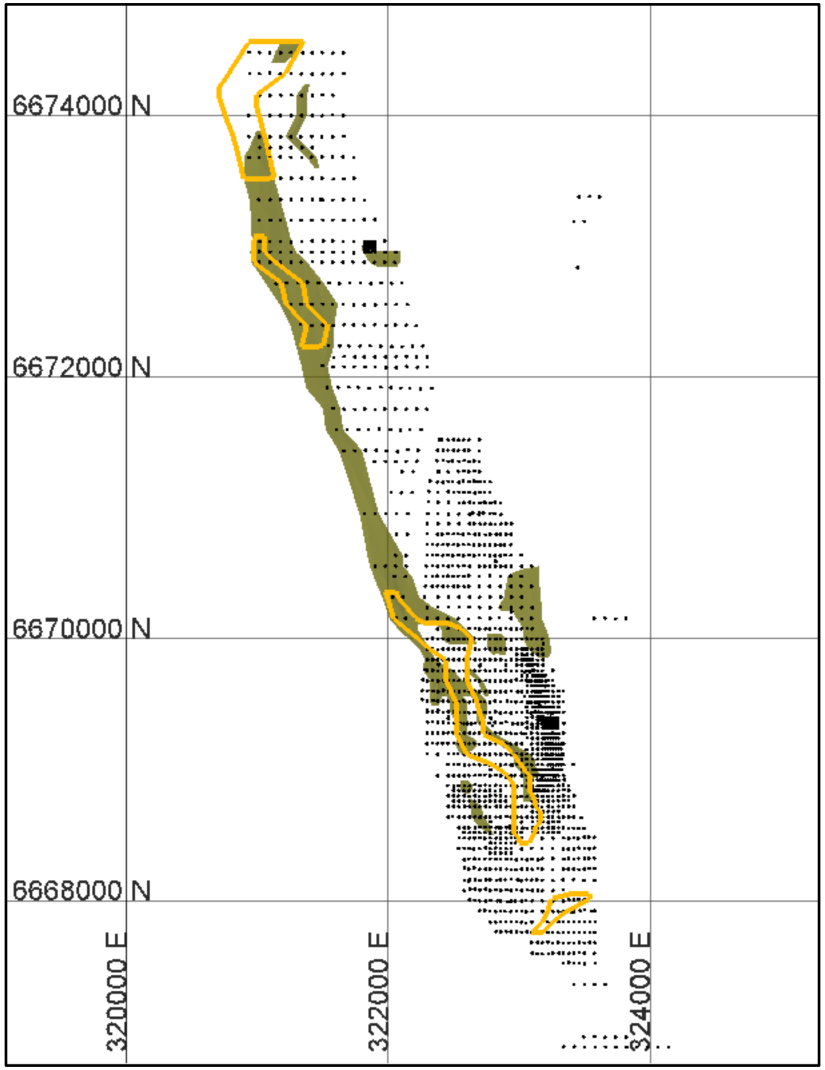
3-D view towards the NW showing wireframe solid model of nickel mineralisation extents based on a notional 0.25% Ni cut-off grade

Goongarrie South

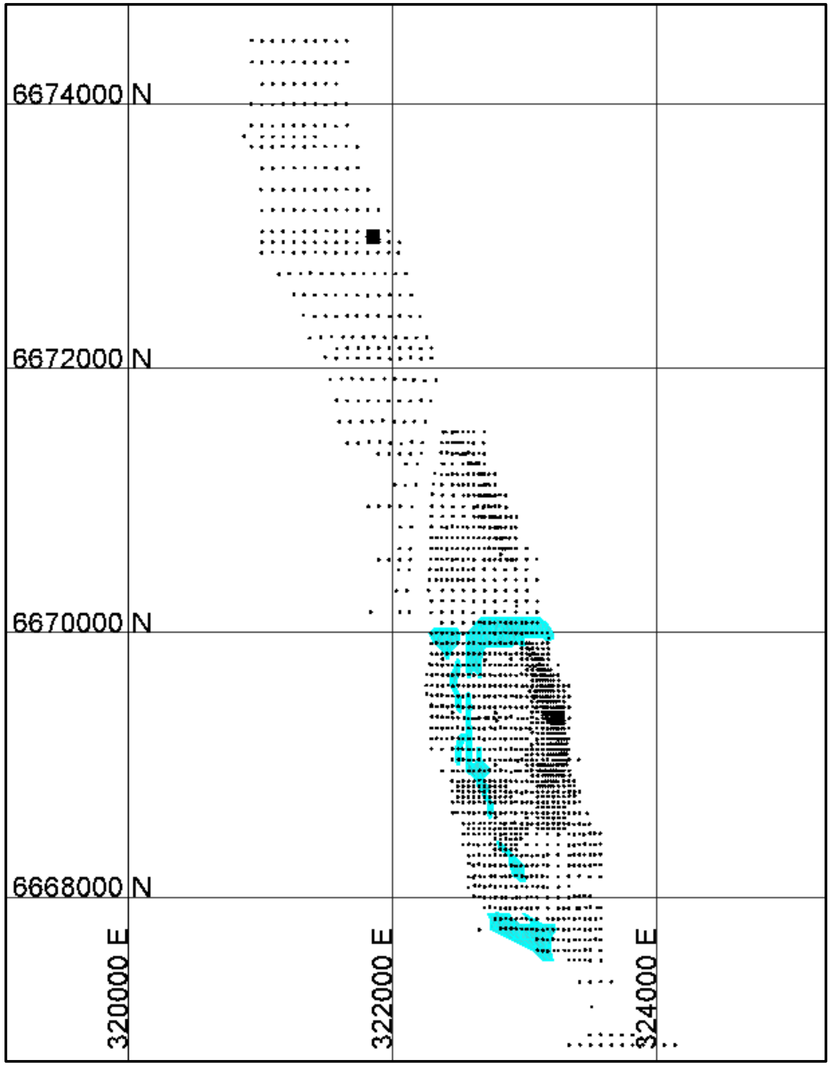


3-D view towards the NW showing wireframe solid models of cobalt mineralisation extents based on a notional 0.05% Co cut-off grade

Goongarrie South



Wireframe models of paleochannel carbonate envelopes (olive), alluvial sands outlines (yellow)



Wireframe models of paleochannel high alumina material

Goongarrie South

LEGEND

Geological Interpretation (X-Sections)

- Nickel mineralisation envelope
- Cobalt mineralisation envelope
- Surface topography
- Base of calcitic calcrete
- Base of dolomitic calcrete
- Paleochannel carbonate envelop
- Base of transported sediments
- Top of saprock

Drillhole Traces & Block Model (X-S)

Upper X-Section (Ni%)

-999.000 <=		< 0.000
0.000 <=		< 0.250
0.250 <=		< 0.500
0.500 <=		< 0.750
0.750 <=		< 1.000
1.000 <=		< 1.500
1.500 <=		< 99.000

Drillhole Traces & Block Model

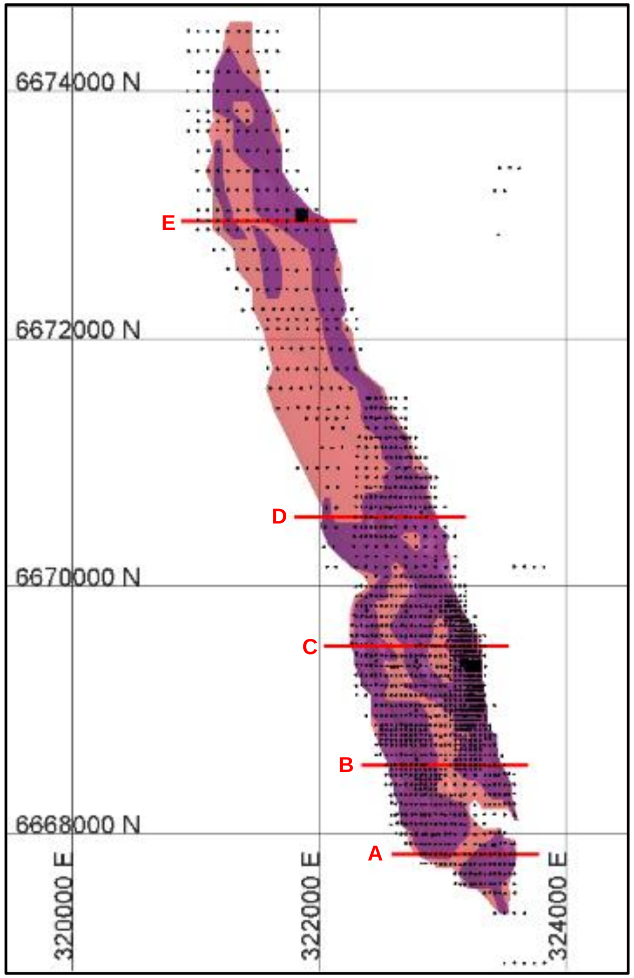
Middle X-Section (Co%)

-999.000 <=		< 0.000
0.000 <=		< 0.025
0.025 <=		< 0.050
0.050 <=		< 0.080
0.080 <=		< 0.100
0.100 <=		< 0.200
0.200 <=		< 9.000

Lower X-Section
(Material Type)

NA	CUGU	SRE
PSQH	CUGK	SRES
PSQB	CUGF	SREB
PCFB	CUGZ	SRSB
ALB	CUGS	SRB
ACK	CUSG	
ALQK	CLGEC	
LAFKH	CLSG	

Cross Section Locations



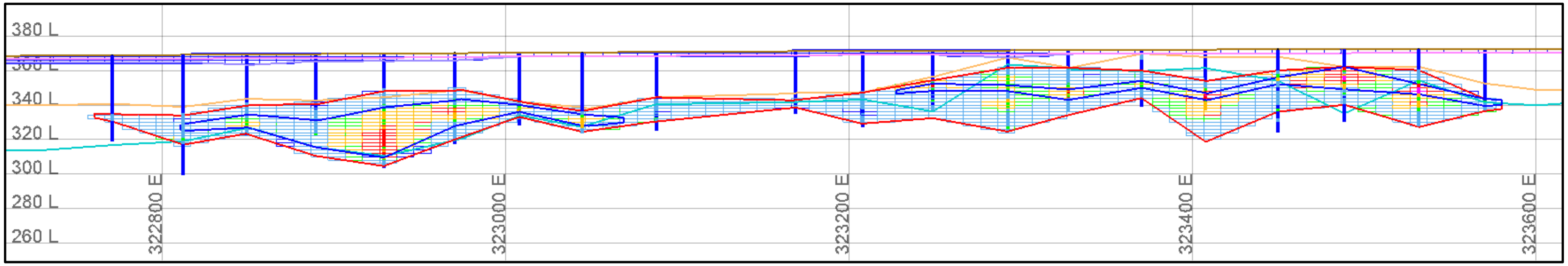
Nickel mineralisation envelope

Cobalt mineralisation envelope

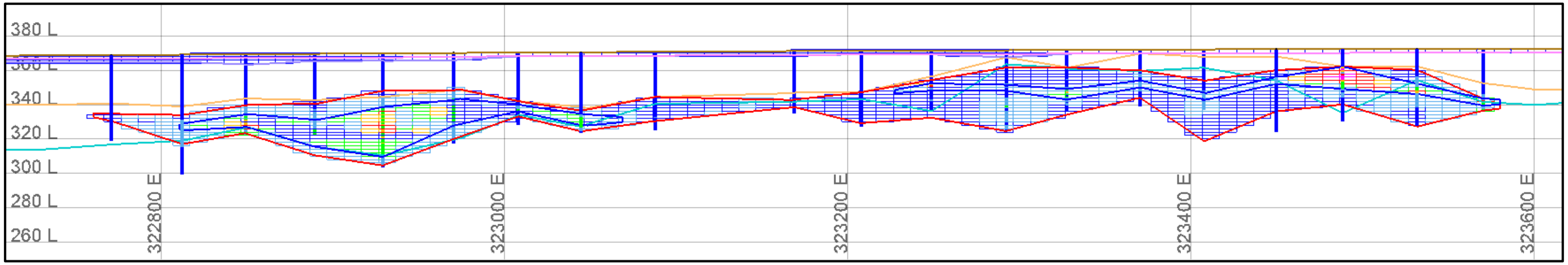
Goongarrie South

6667840N (Section A)

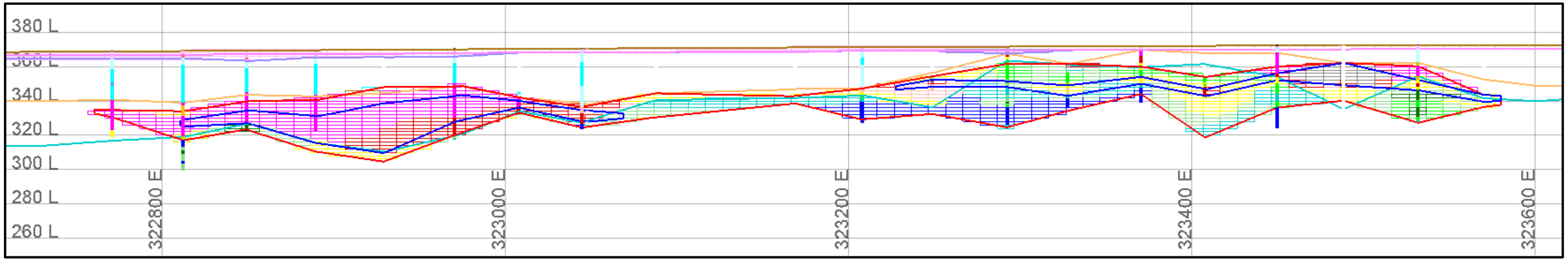
Block model LUC nickel estimates



Block model LUC cobalt estimates



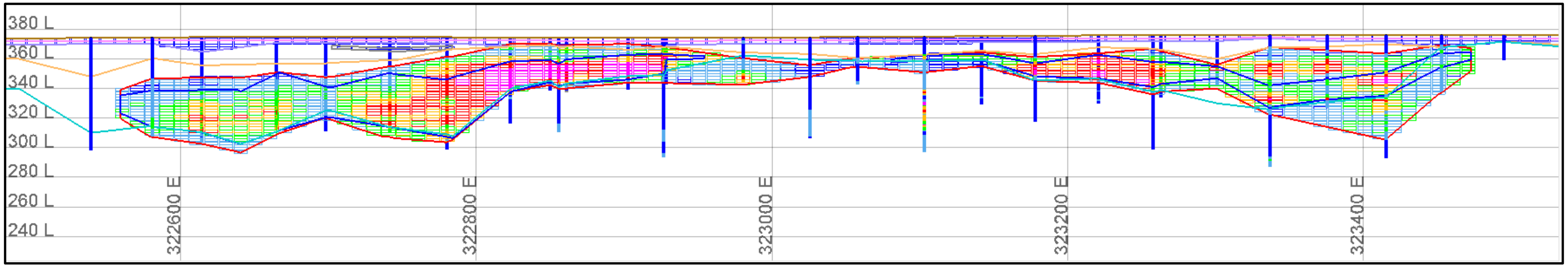
Block model material type assignments



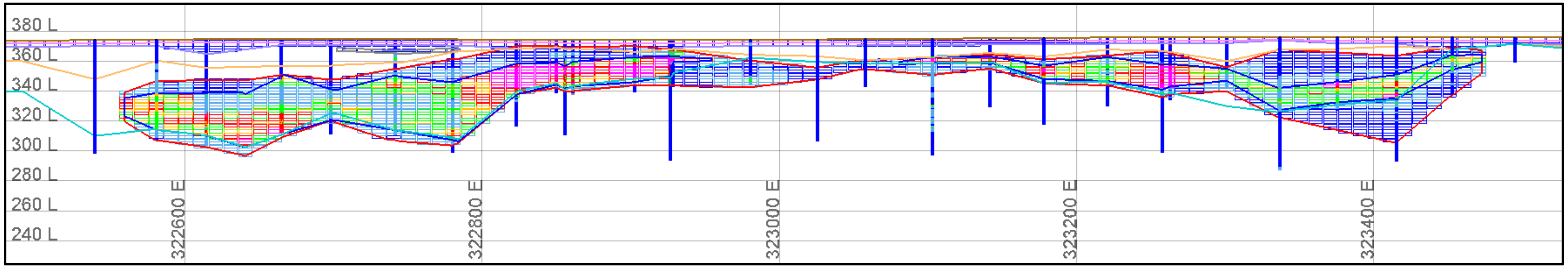
Goongarrie South

6668560 (Section B)

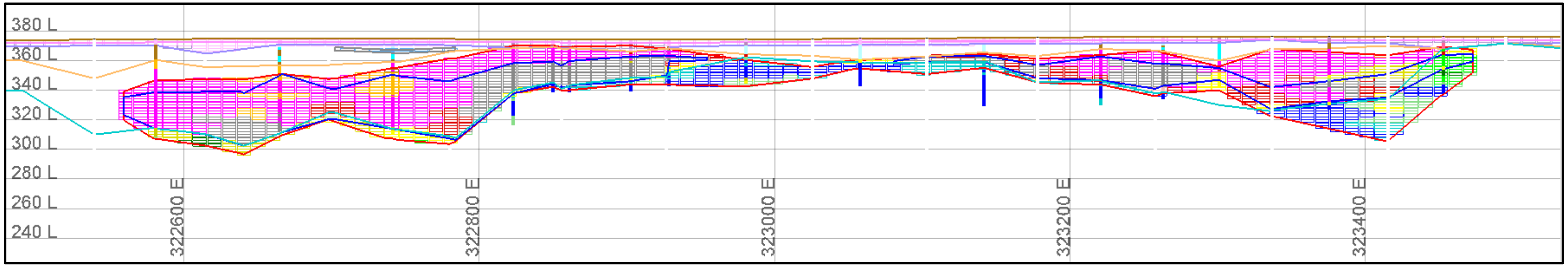
Block model LUC nickel estimates



Block model LUC cobalt estimates



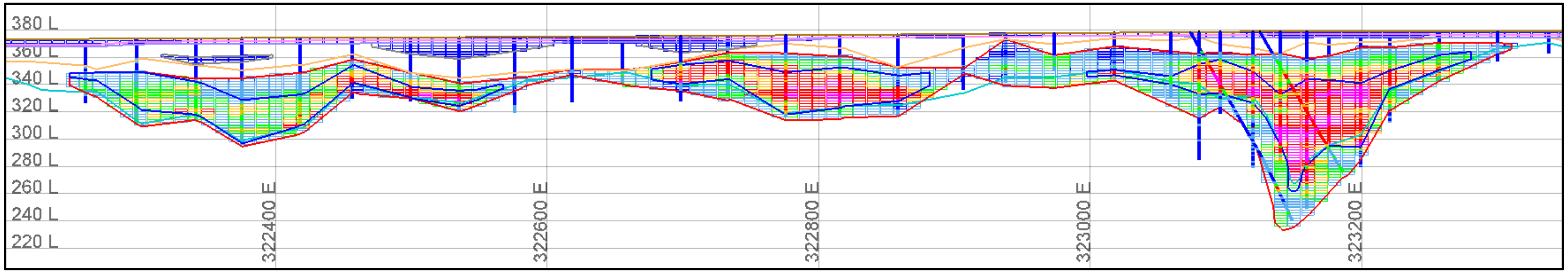
Block model material type assignments



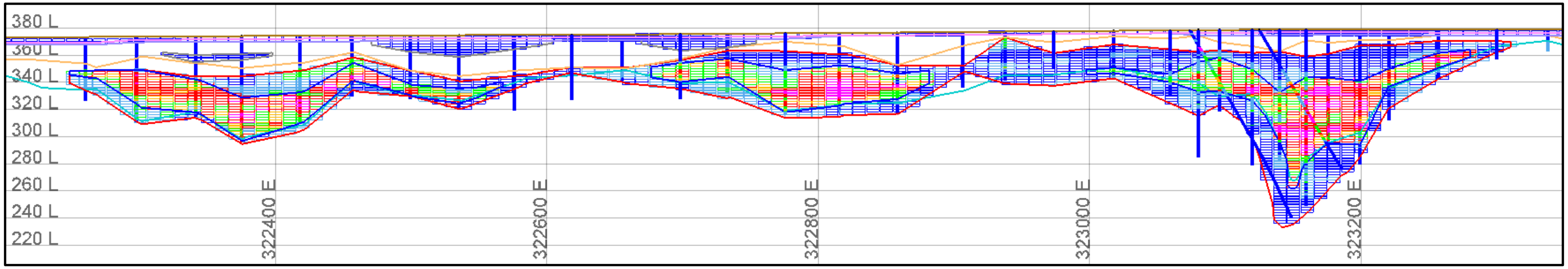
Goongarrie South

6669520N (Section C)

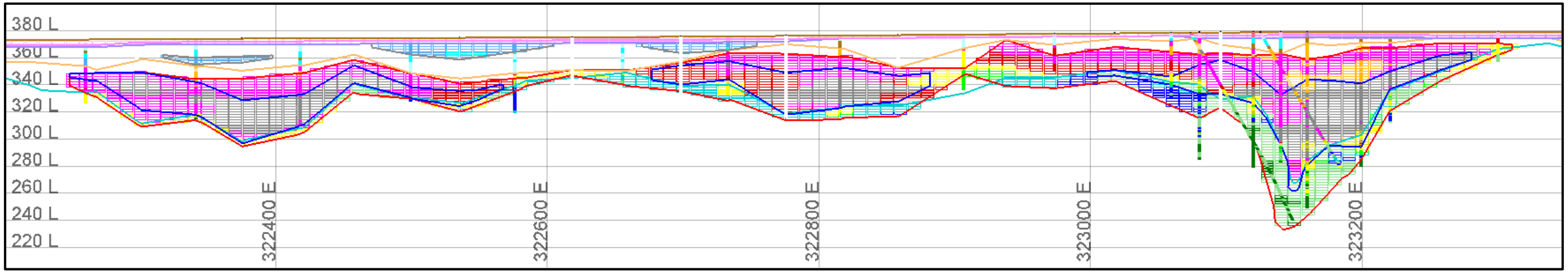
Block model LUC nickel estimates



Block model LUC cobalt estimates



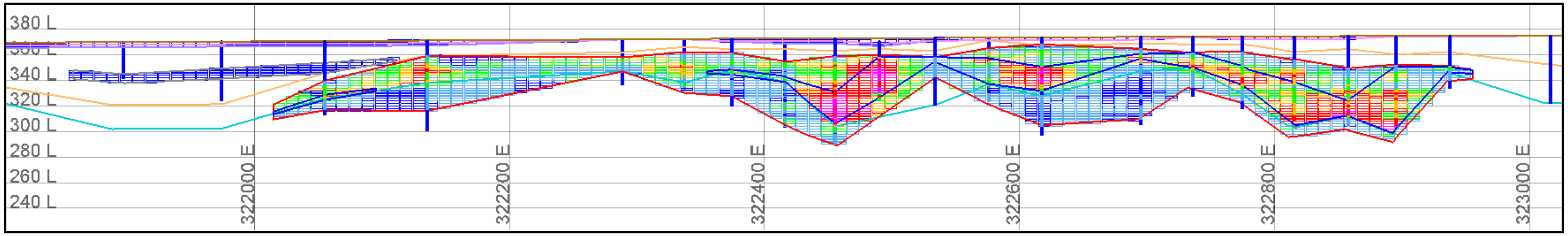
Block model material type assignments



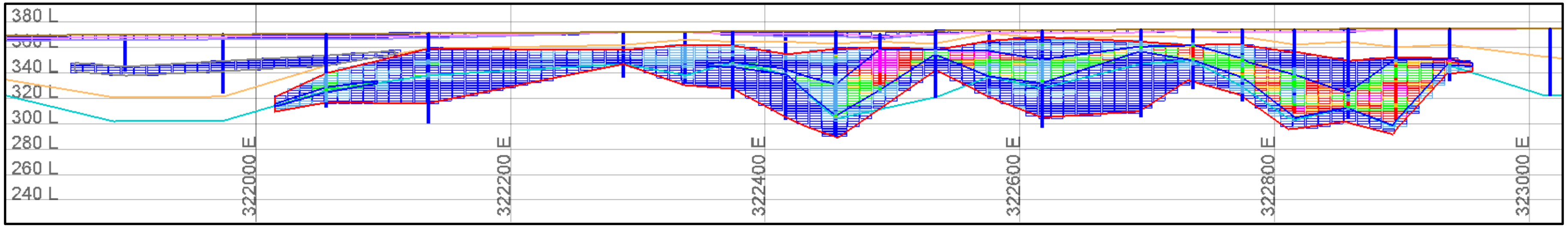
Goongarrie South

6670560N (Section D)

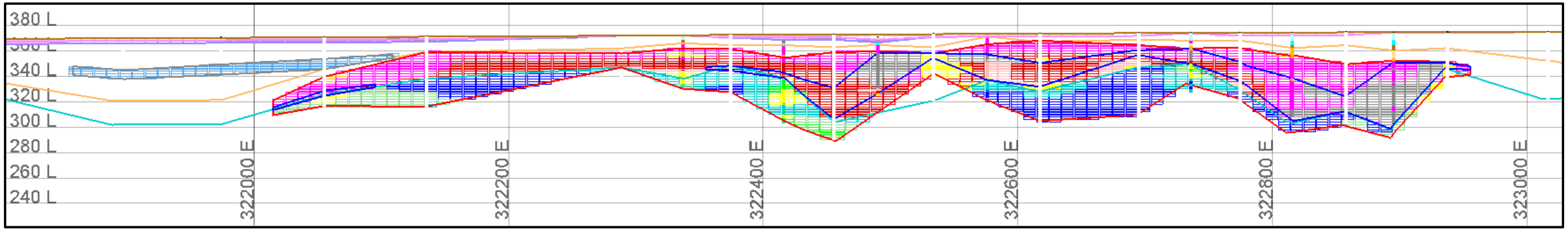
Block model LUC nickel estimates



Block model LUC cobalt estimates



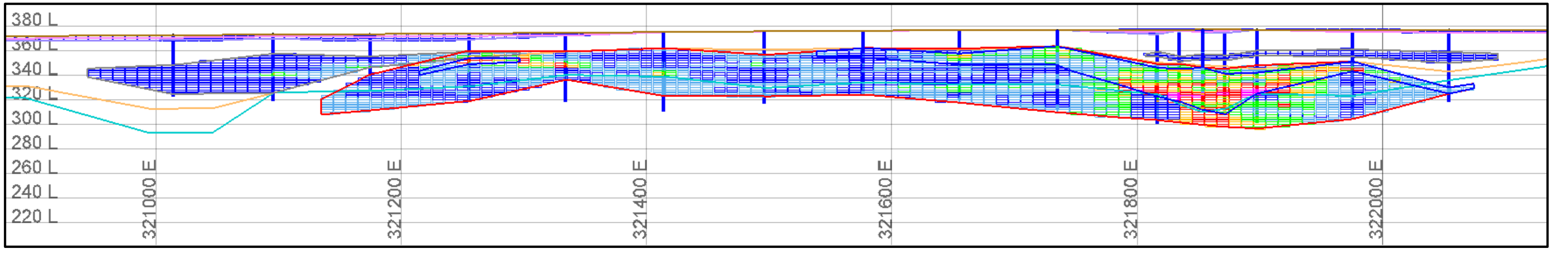
Block model material type assignments



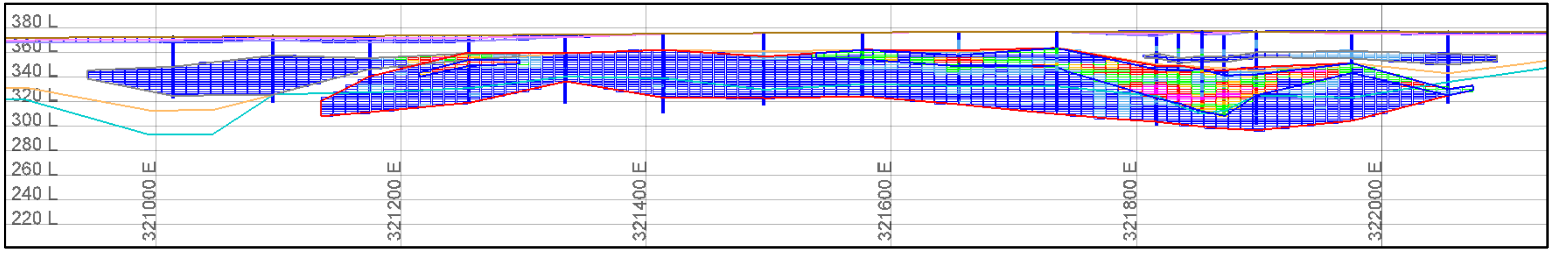
Goongarrie South

6672960N (Section E)

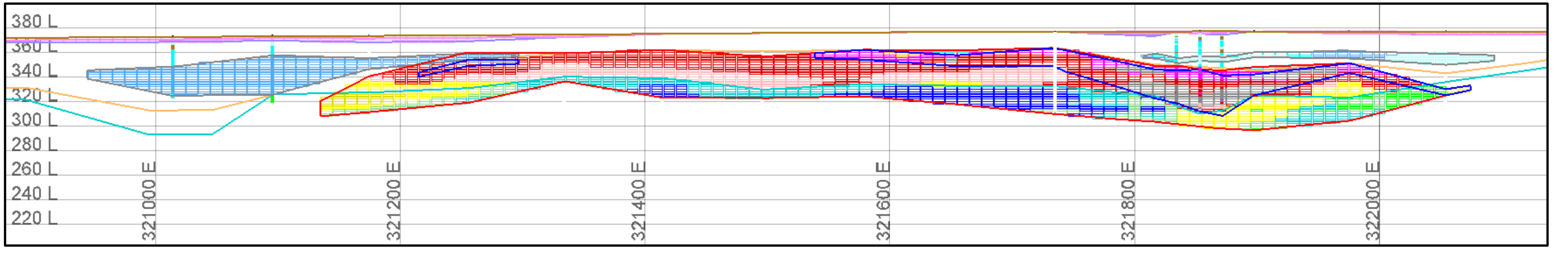
Block model LUC nickel estimates



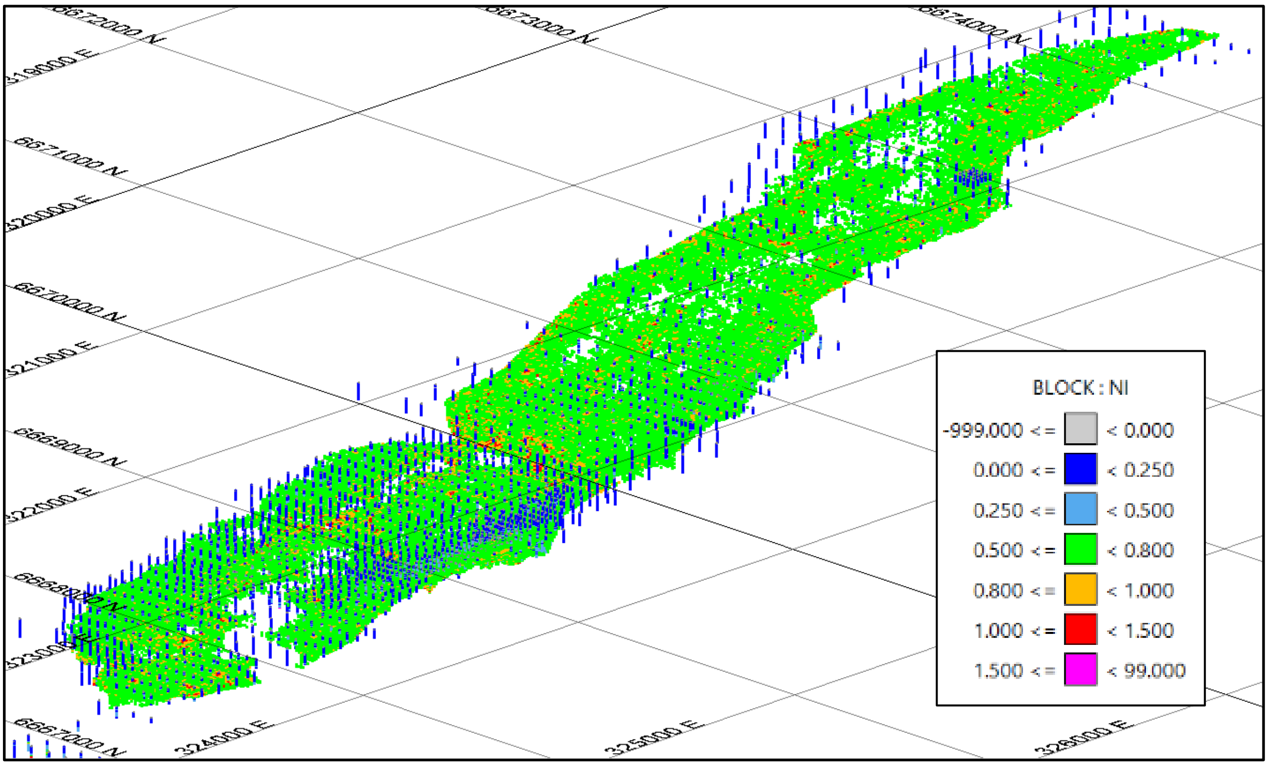
Block model LUC cobalt estimates



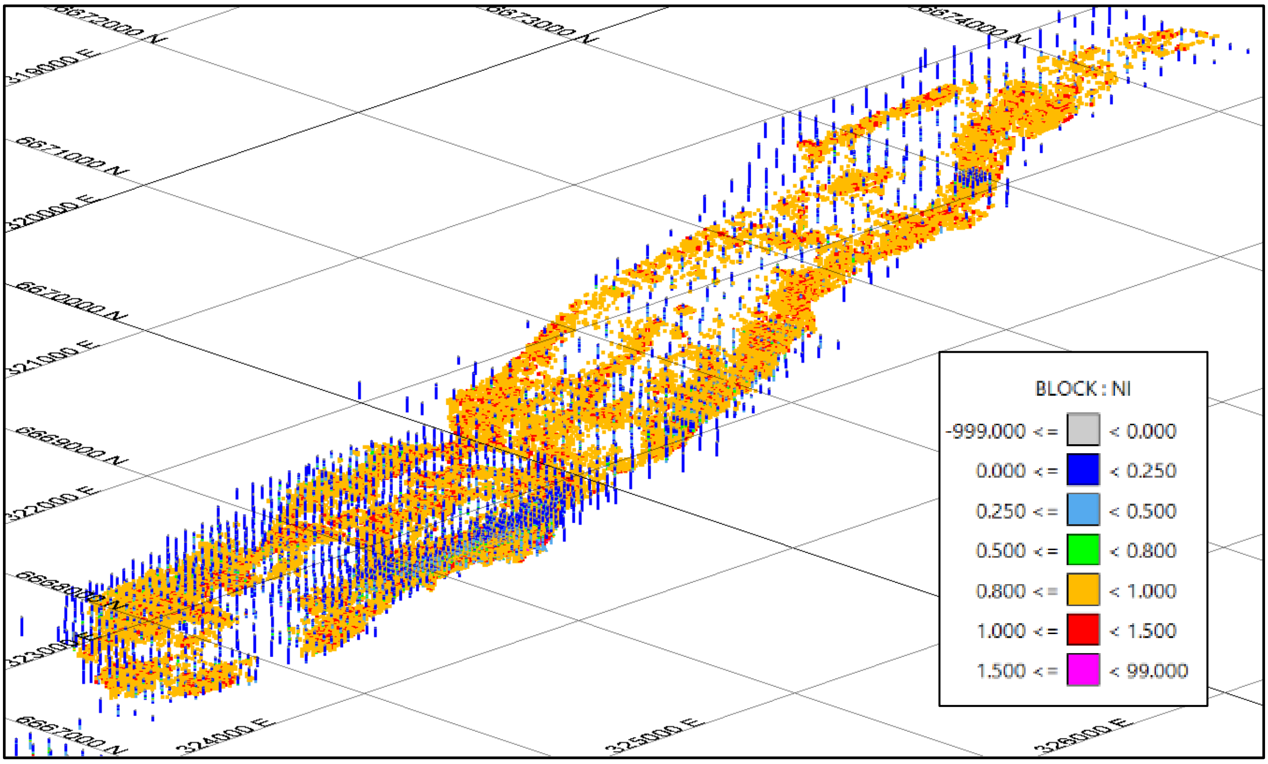
Block model material type assignments



Goongarrie South

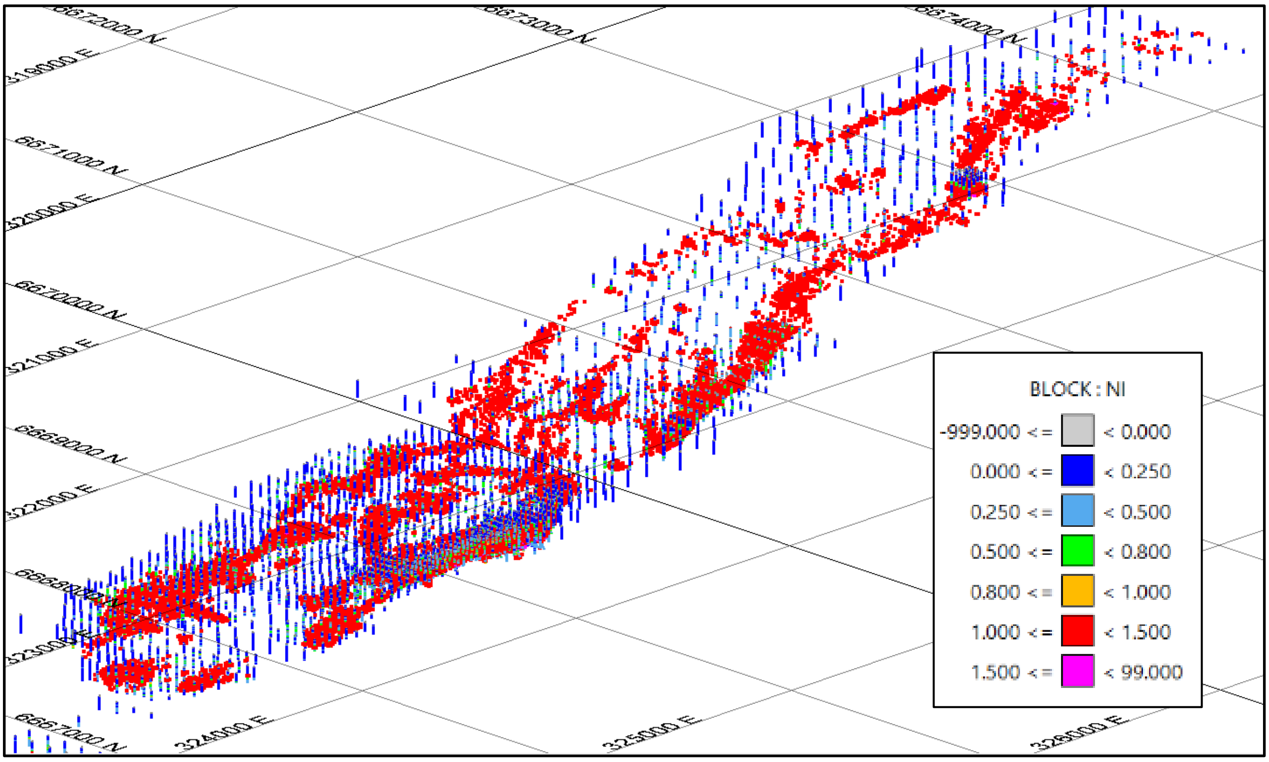


3-D view towards the NW showing resource model blocks ≥ 0.5% Ni versus drillhole traces colour coded by Ni % (same as block legend)

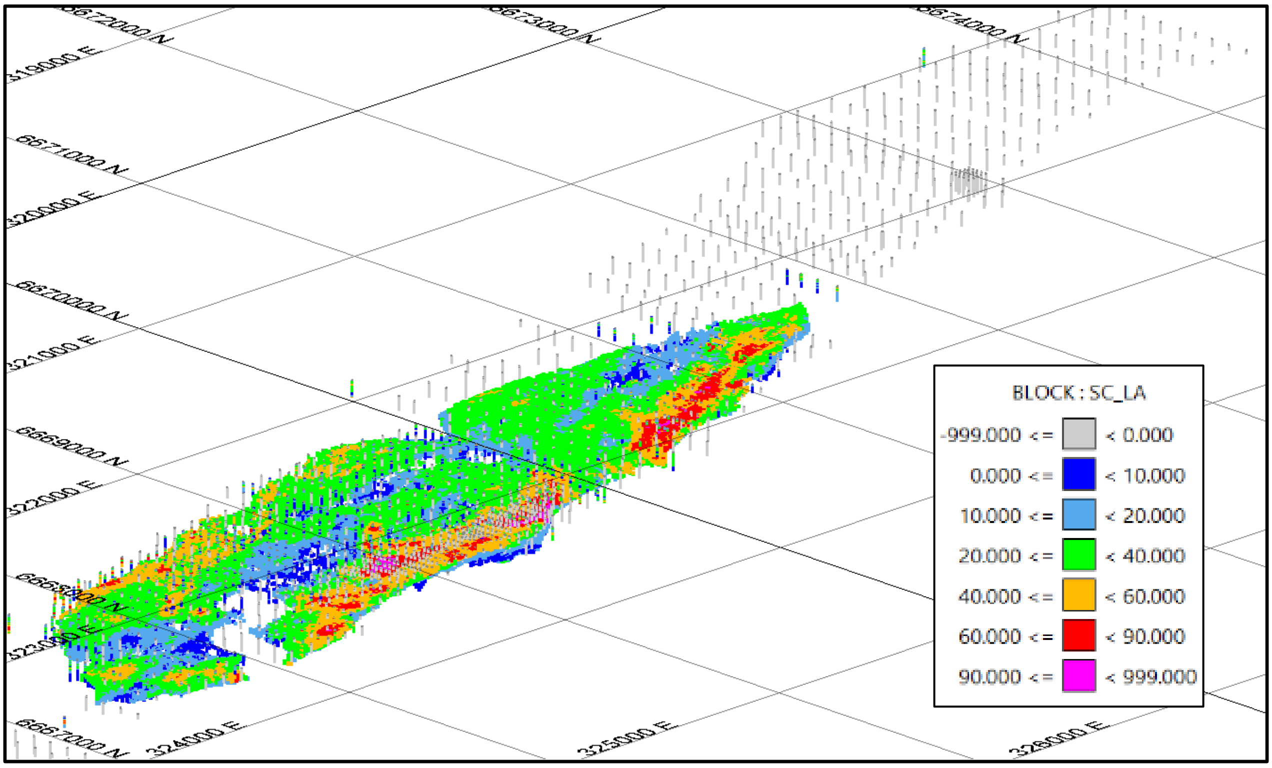


3-D view towards the NW showing resource model blocks ≥ 0.8% Ni versus drillhole traces colour coded by Ni % (same as block legend)

Goongarrie South



3-D view towards the NW showing resource model blocks $\geq$ 1.0% Ni versus drillhole traces colour coded by Ni % (same as block legend)



3-D view towards the NW showing resource model scandium estimates where Nickel estimates are $\geq$ 0.5% Ni. Drillhole traces where assayed for Sc are colour coded as per the blocks

Big Four and Scotia Dam

LEGEND

Geological Interpretation (X-Sections)

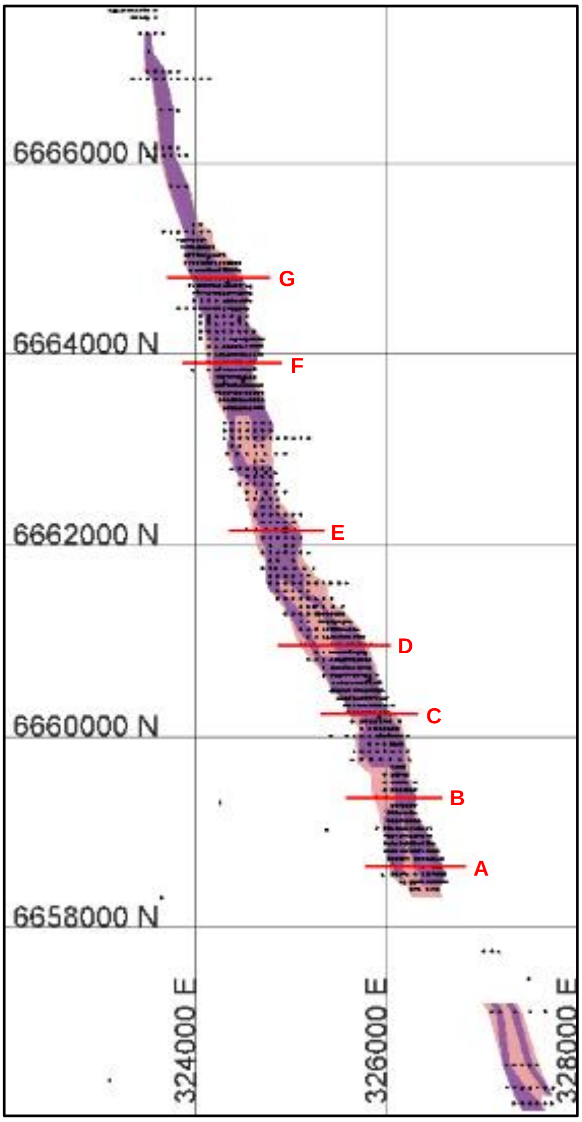
- Nickel mineralisation envelope
- Cobalt mineralisation envelope
- Surface topography
- Base of dolomitic calcrete
- Paleochannel carbonate
- Base of transported sediments
- Top of saprock

Drill hole Traces (X-S)

FeO %

-999.000 <=	grey	< 0.000
0.000 <=	blue	< 10.000
10.000 <=	light blue	< 20.000
20.000 <=	green	< 30.000
30.000 <=	orange	< 40.000
40.000 <=	red	< 50.000
50.000 <=	magenta	< 100.000

Cross Section Locations

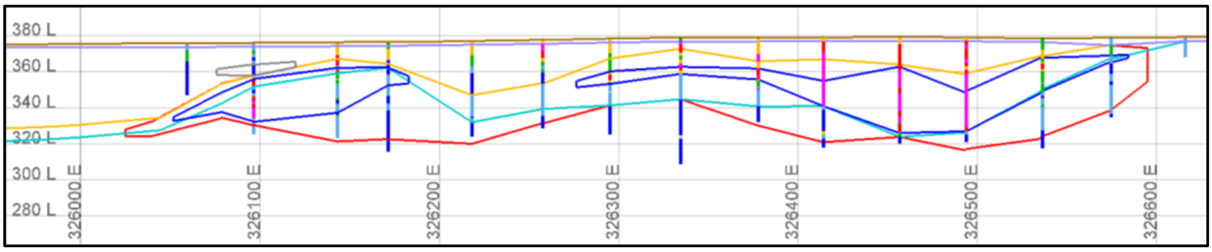


- Nickel mineralisation envelope
- Cobalt mineralisation envelope

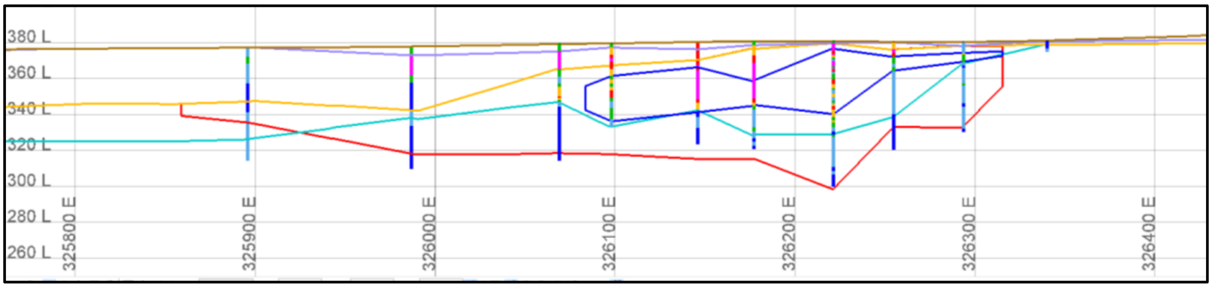
Big Four and Scotia Dam

Geological Interpretation

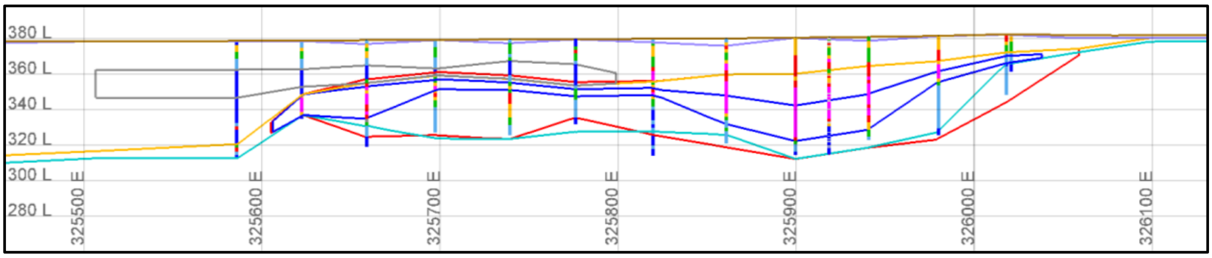
6658640N (Section A)



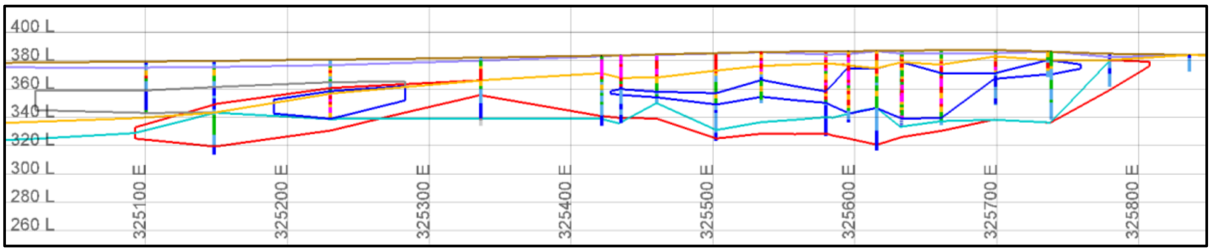
6659360N (Section B)



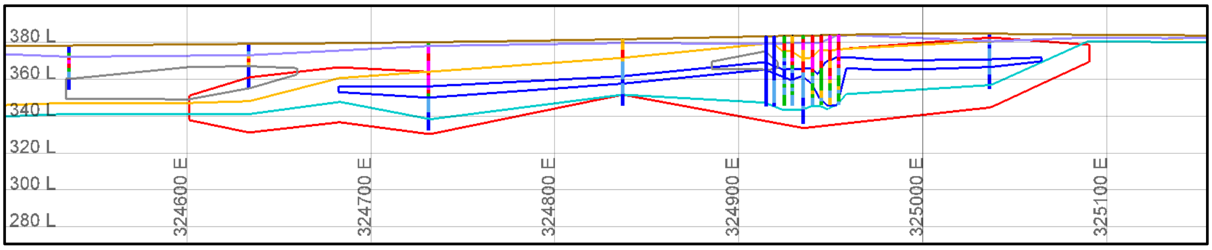
6660240N (Section C)



6660960N (Section D)



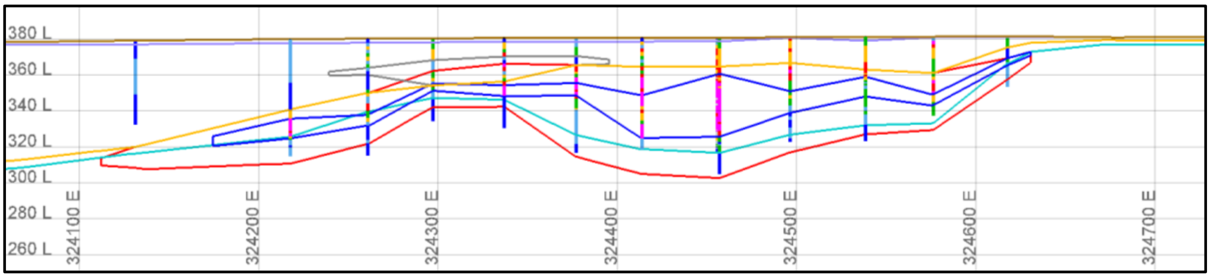
6662160N (Section E)



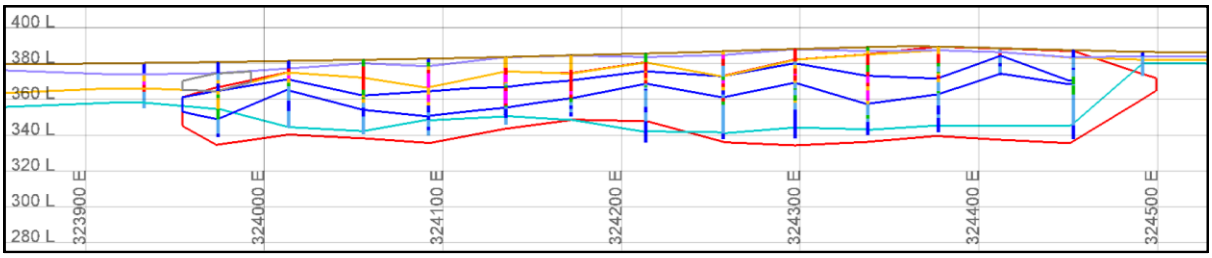
Big Four and Scotia Dam

Geological Interpretation

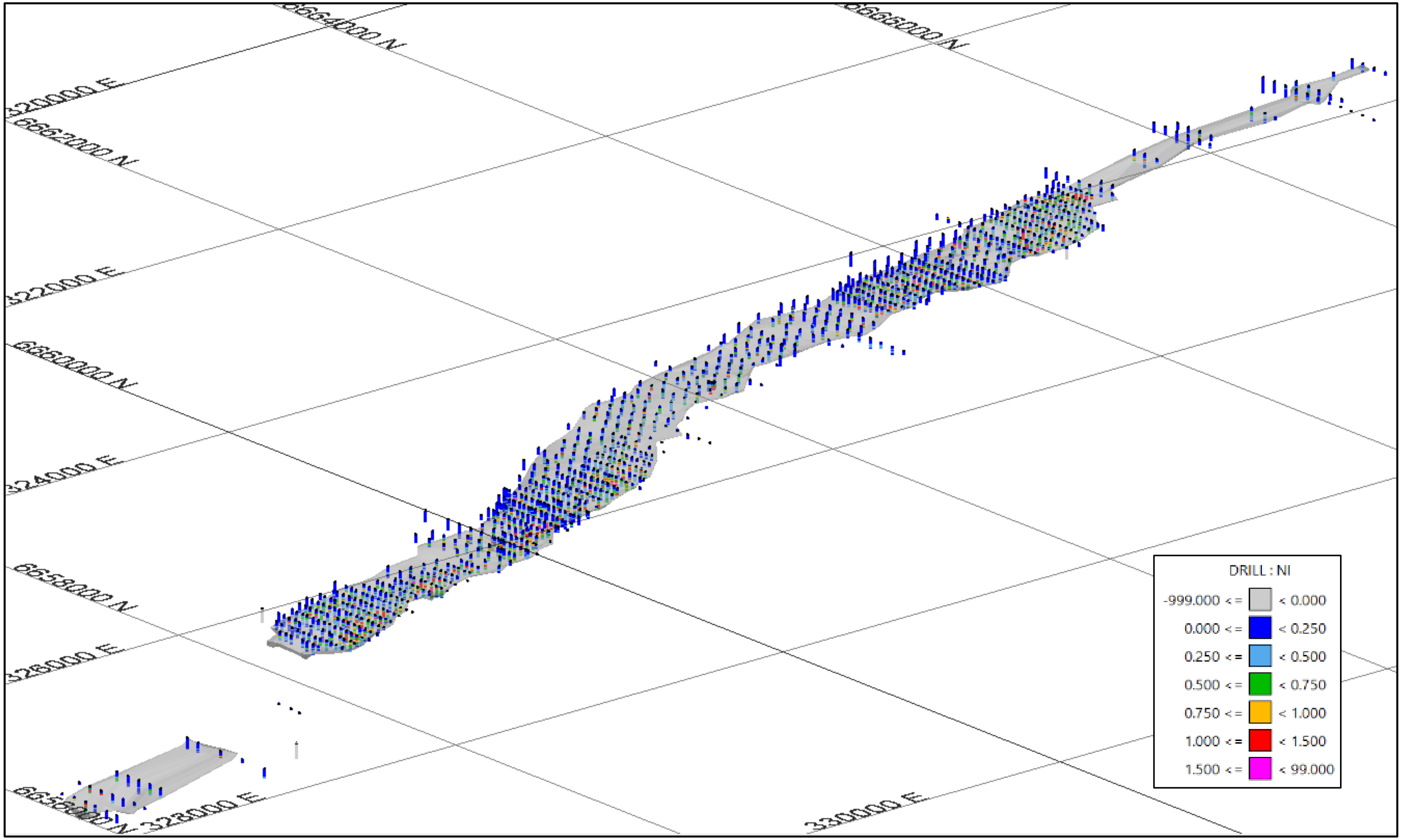
6663920N (Section F)



6664800N (Section G)

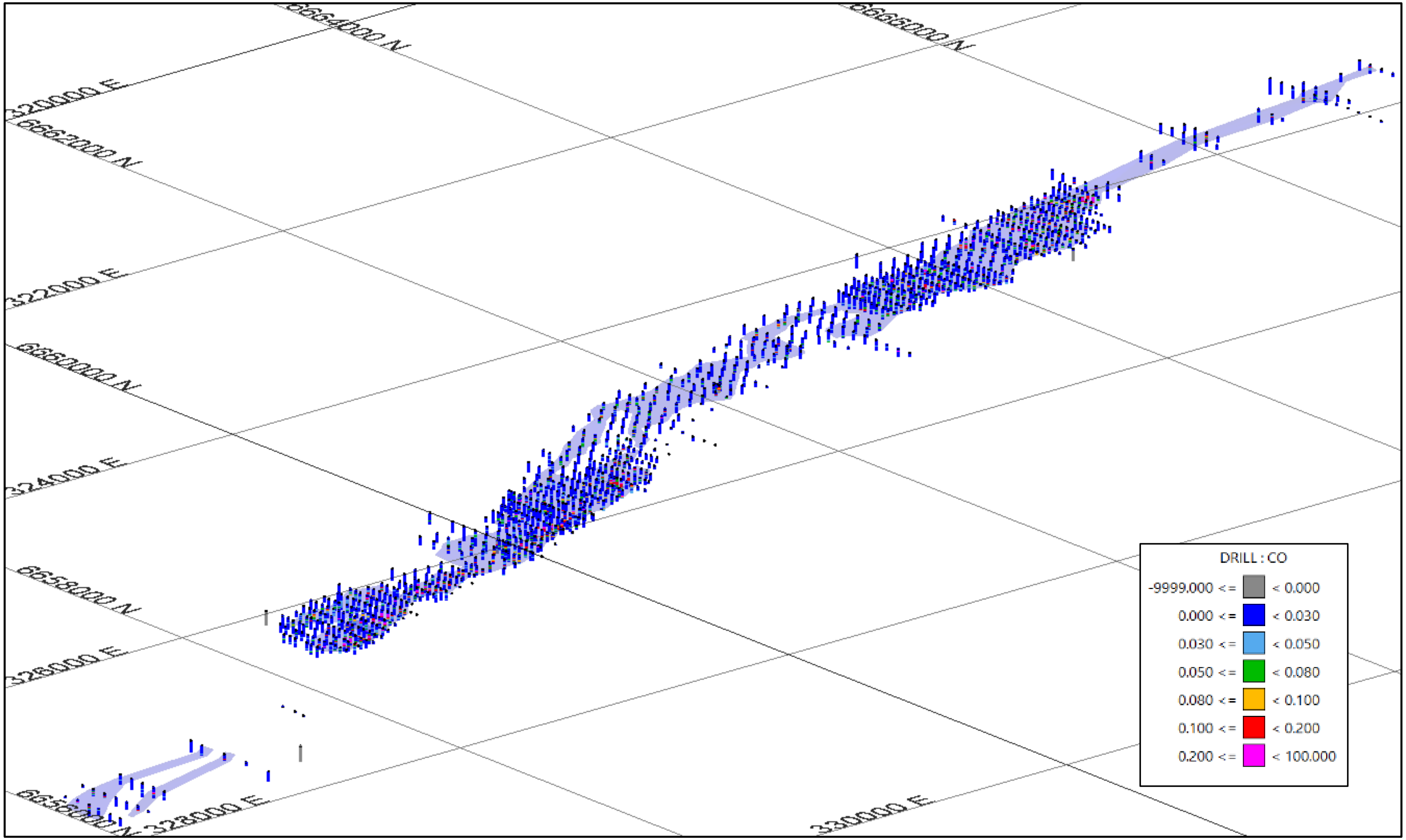


Big Four and Scotia Dam



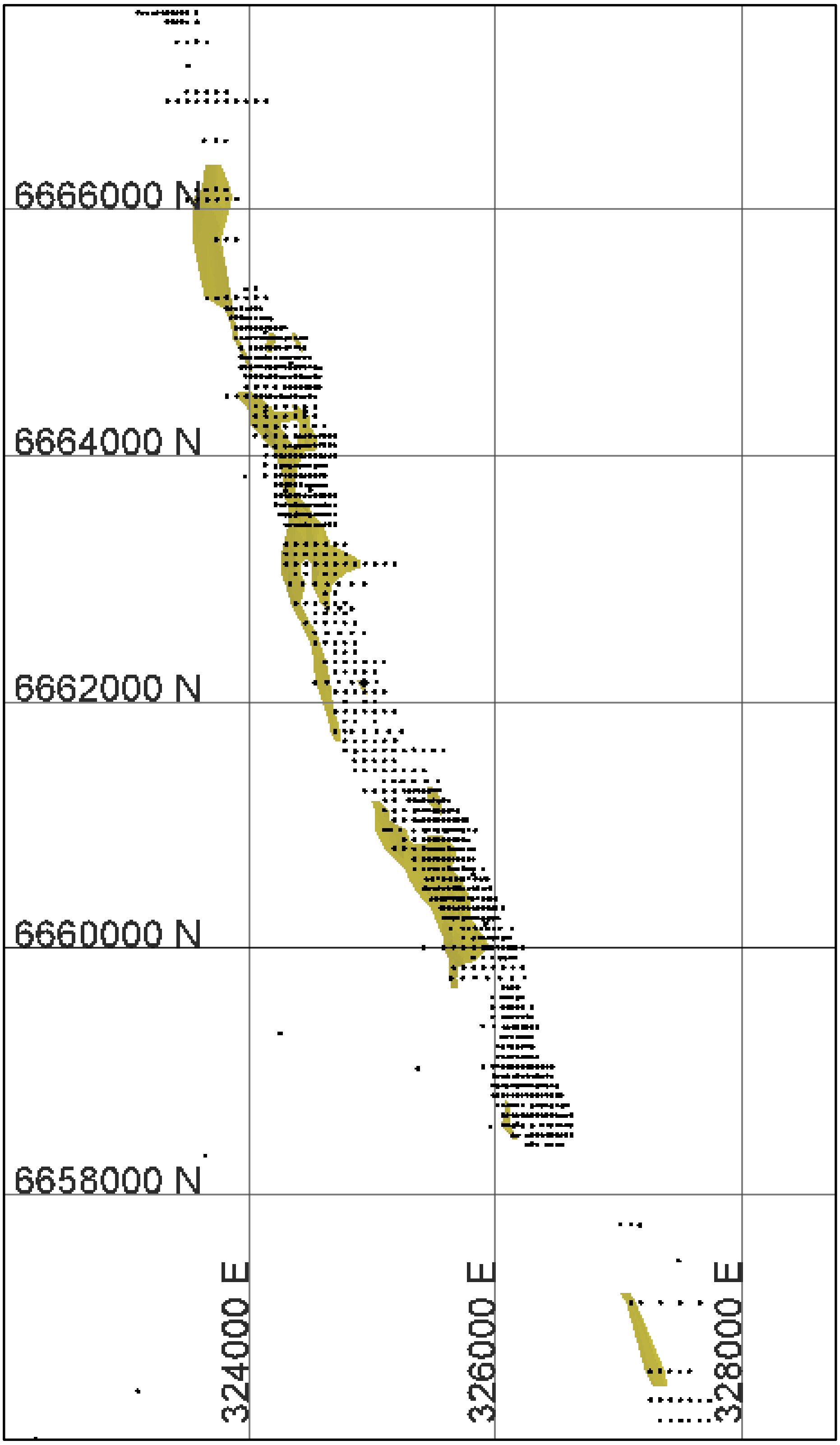
3-D view towards the NW showing wireframe solid models of nickel mineralisation extents based on a notional 0.25% Ni cutoff grade

Big Four and Scotia Dam



3-D view towards the NW showing wireframe solid models of cobalt mineralisation extents based on a notional 0.05% Co cutoff grade

Big Four and Scotia Dam



Plan view of paleochannel carbonate zones

Big Four and Scotia Dam

LEGEND

Geological Interpretation (X-Sections)

- Nickel mineralisation envelope
- Cobalt mineralisation envelope
- Surface topography
- Base of dolomitic calcrete
- Paleochannel carbonate
- Base of transported sediments
- Top of saprock

Drill hole Traces & Block Model (X-S)

Upper X-Section (Ni %)

- -999.000 <= < 0.000
- 0.000 <= < 0.100
- 0.100 <= < 0.250
- 0.250 <= < 0.500
- 0.500 <= < 0.750
- 0.750 <= < 1.000
- 1.000 <= < 1.500
- 1.500 <= < 99.000

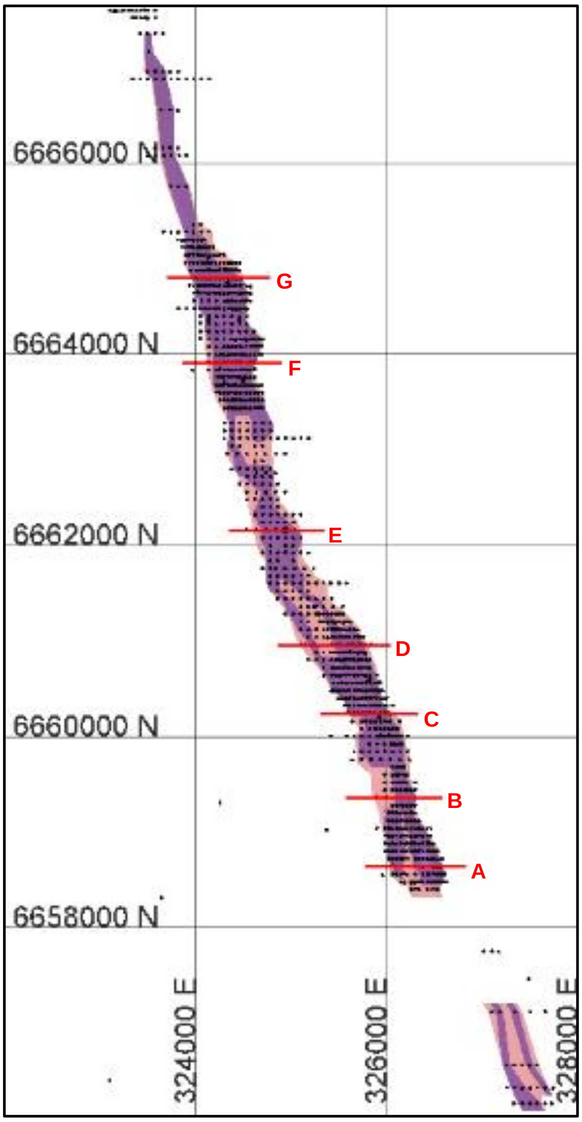
Middle X-Section (Co %)

- -9999.000 <= < 0.000
- 0.000 <= < 0.030
- 0.030 <= < 0.050
- 0.050 <= < 0.080
- 0.080 <= < 0.100
- 0.100 <= < 0.200
- 0.200 <= < 100.000

Lower X-Section
(Material Type)

NA	CUGU	SRE
PSQH	CUGK	SRES
PSQB	CUGF	SREB
PCFB	CUGZ	SRSB
ALB	CUGS	SRB
ACK	CUSG	
ALQK	CLGEC	
LAFKH	CLSG	

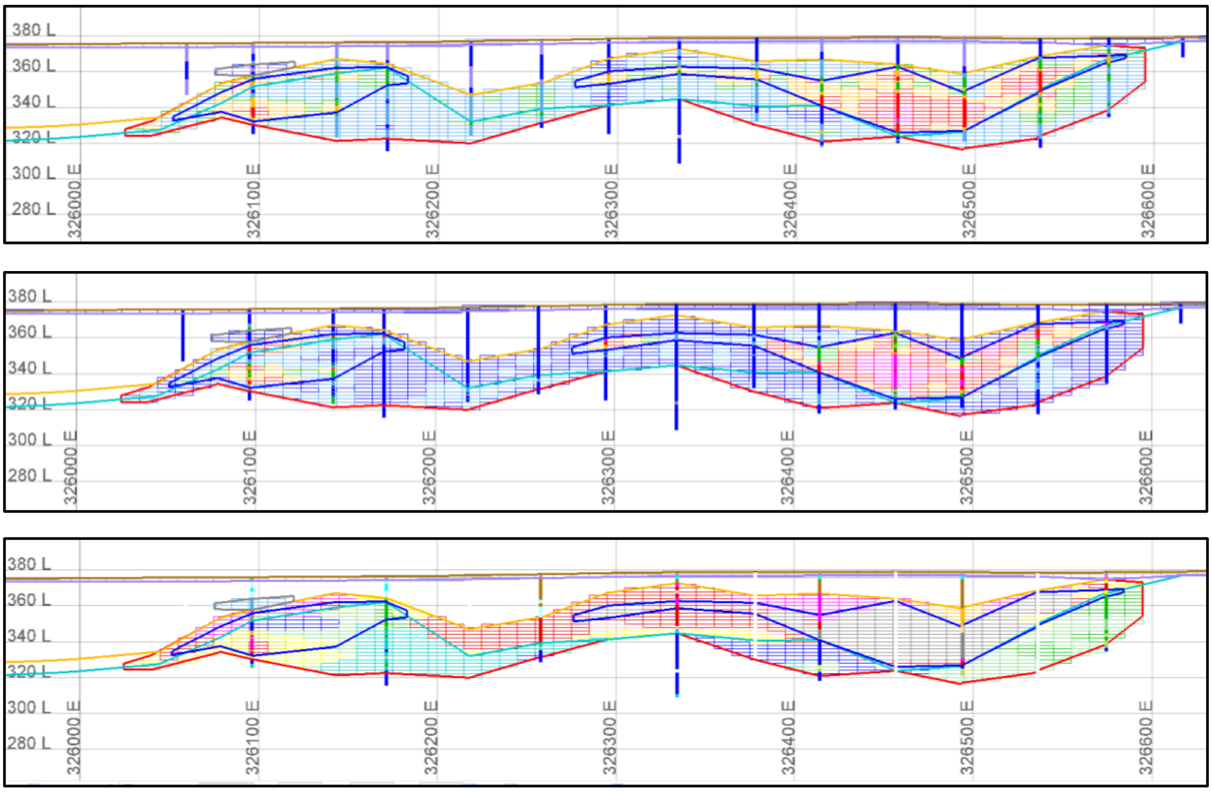
Cross Section Locations



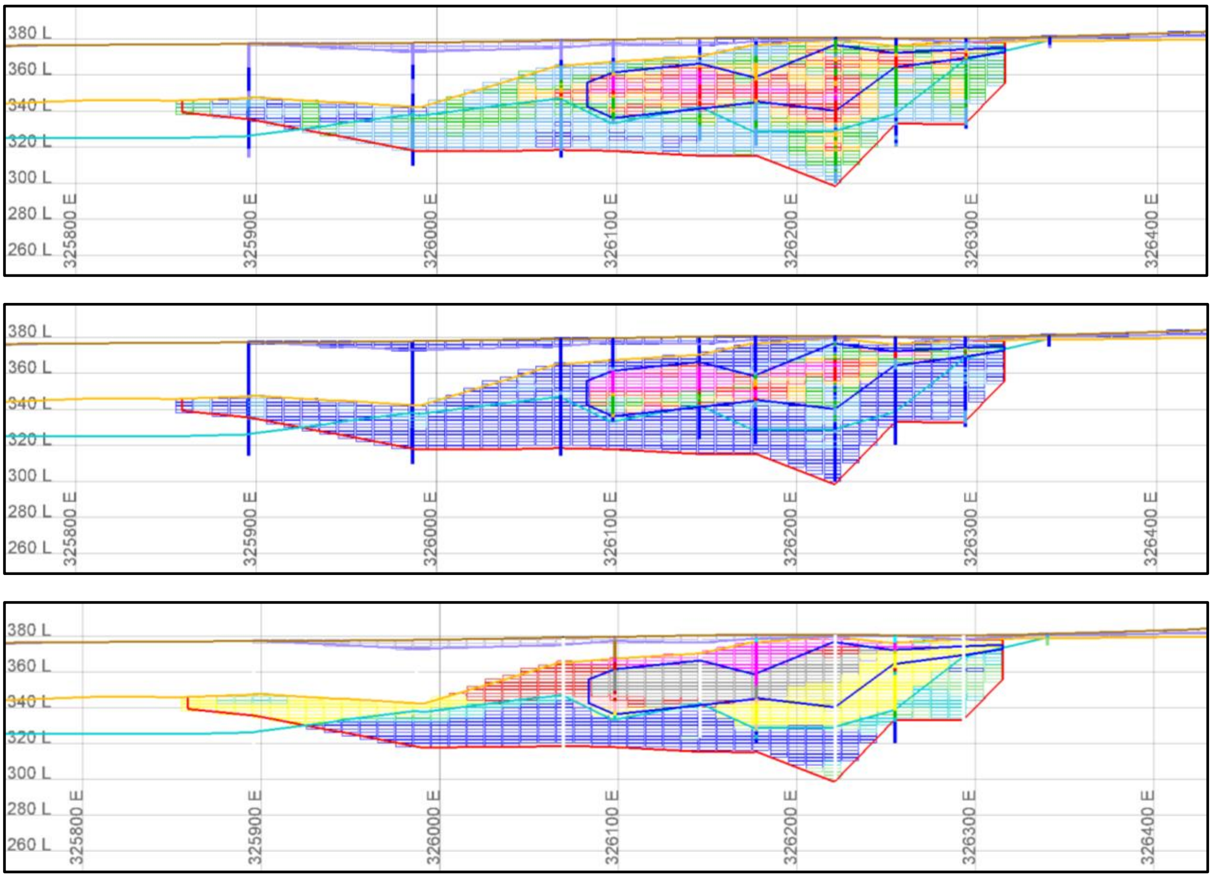
- Nickel mineralisation envelope
- Cobalt mineralisation envelope

Big Four and Scotia Dam

6658640N (Section A) – Colour coded by Ni% (top), Co% (middle), Material Type (bottom)

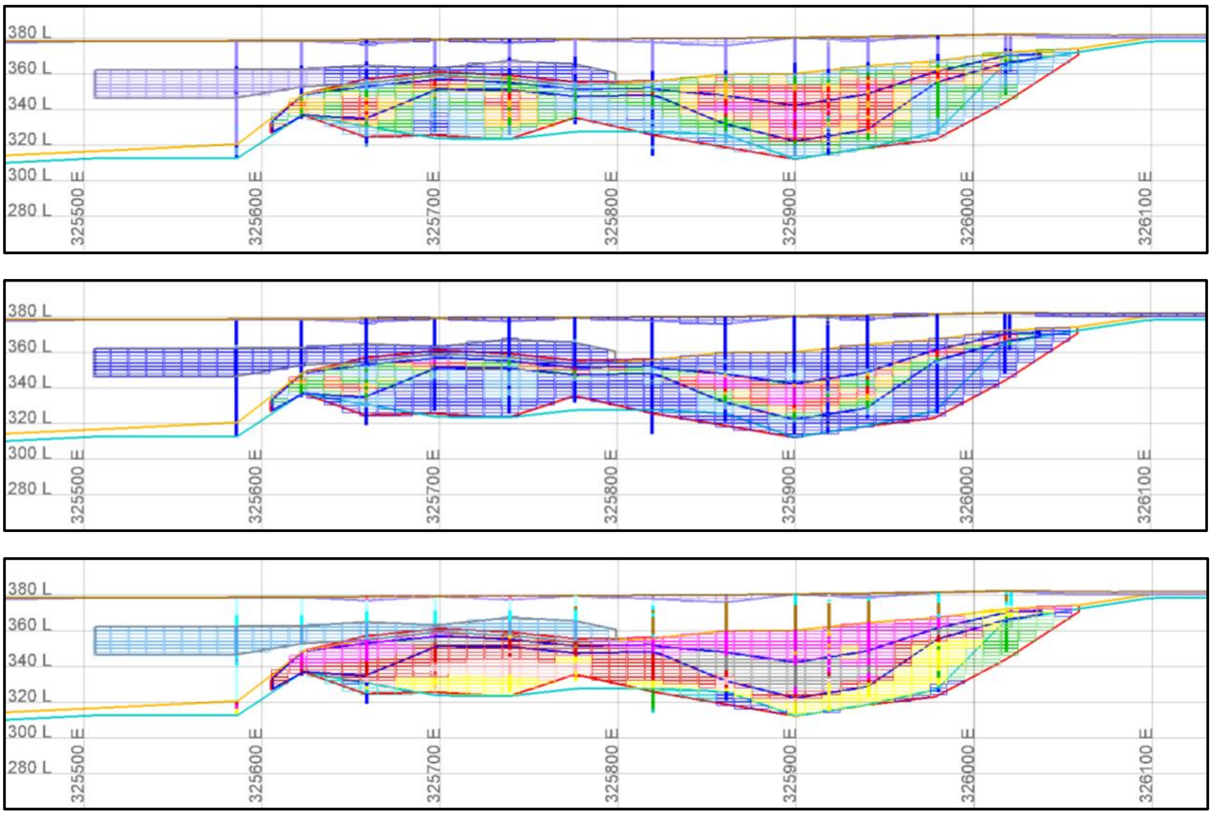


6659360N (Section B) – Colour coded by Ni% (top), Co% (middle), Material Type (bottom)

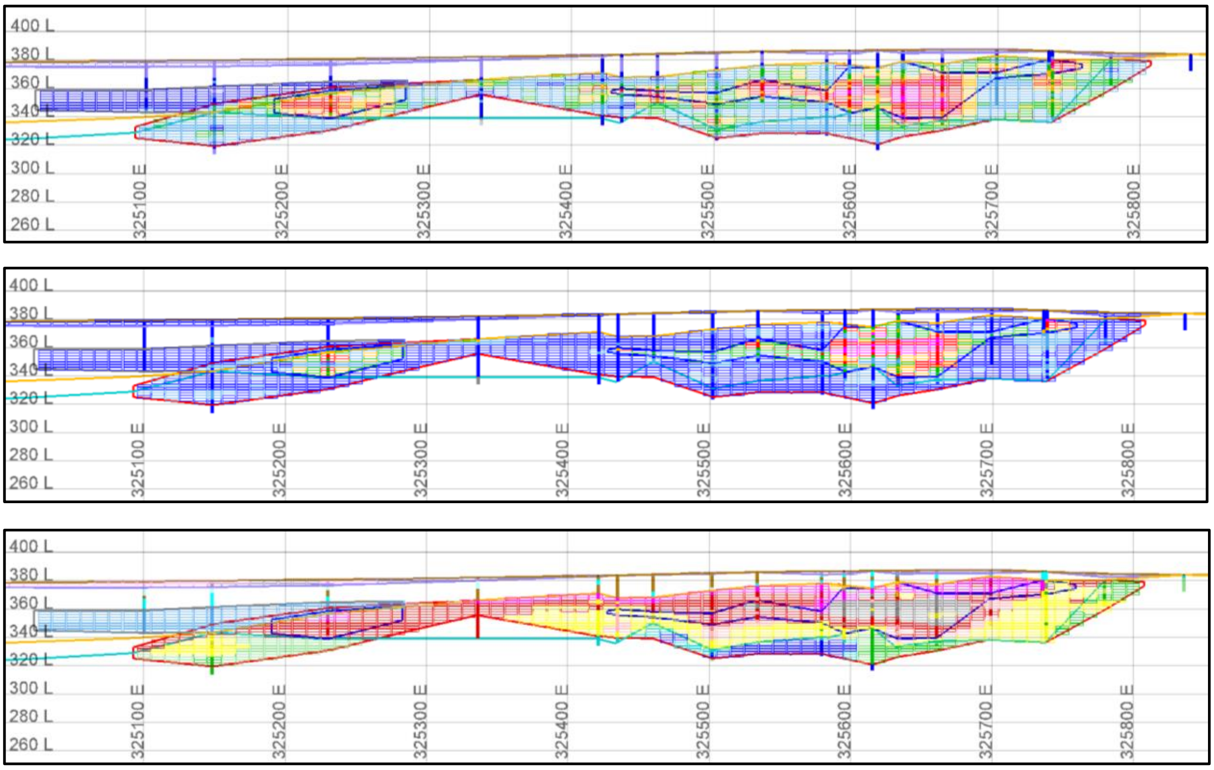


Big Four and Scotia Dam

6660240N (Section C) – Colour coded by Ni% (top), Co% (middle), Material Type (bottom)

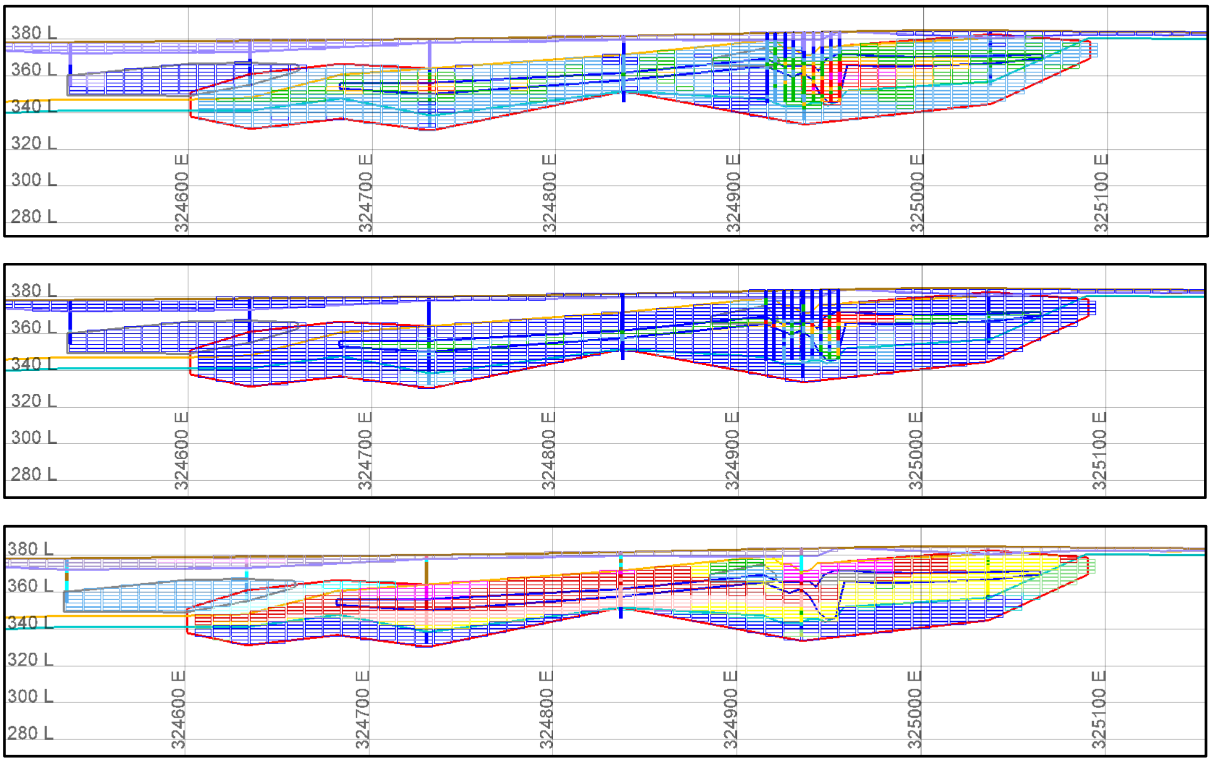


6660960N (Section D) – Colour coded by Ni% (top), Co% (middle), Material Type (bottom)

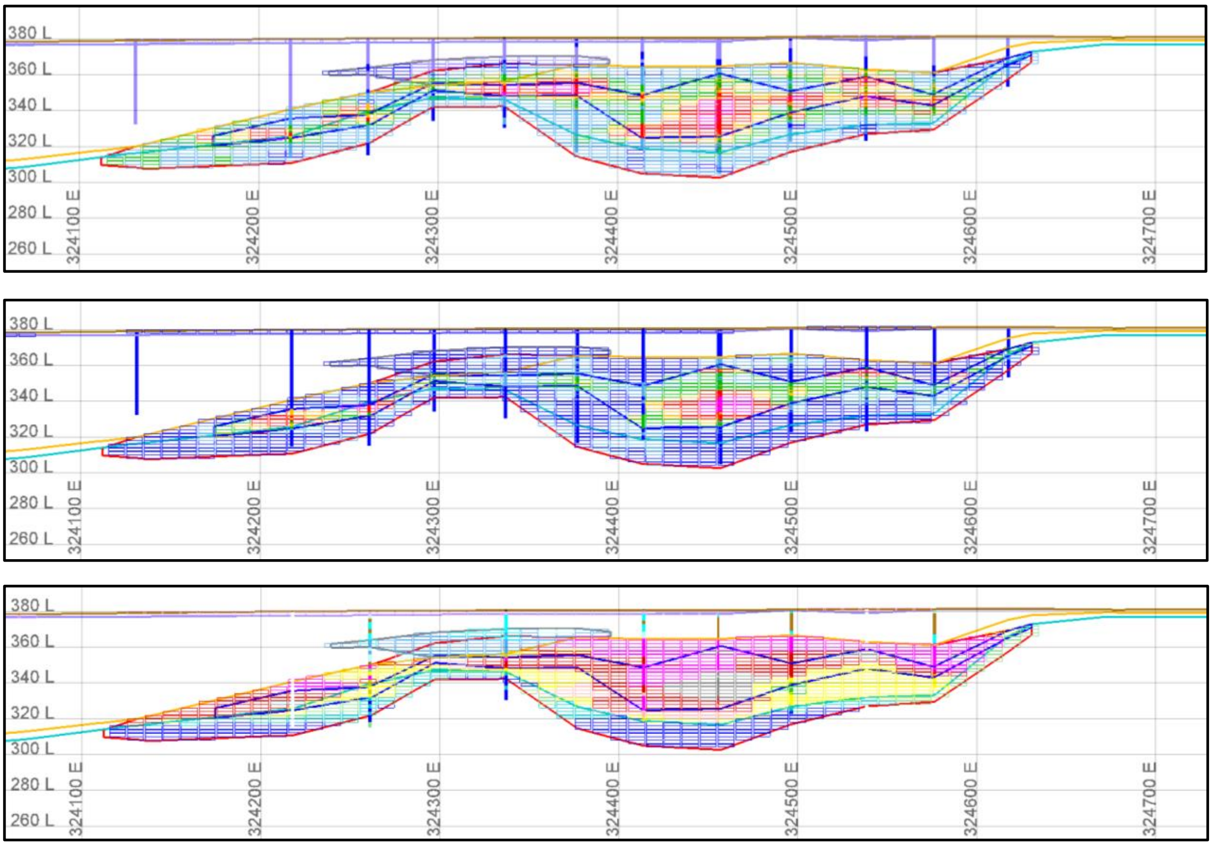


Big Four and Scotia Dam

6662160N (Section E) – Colour coded by Ni% (top), Co% (middle), Material Type (bottom)

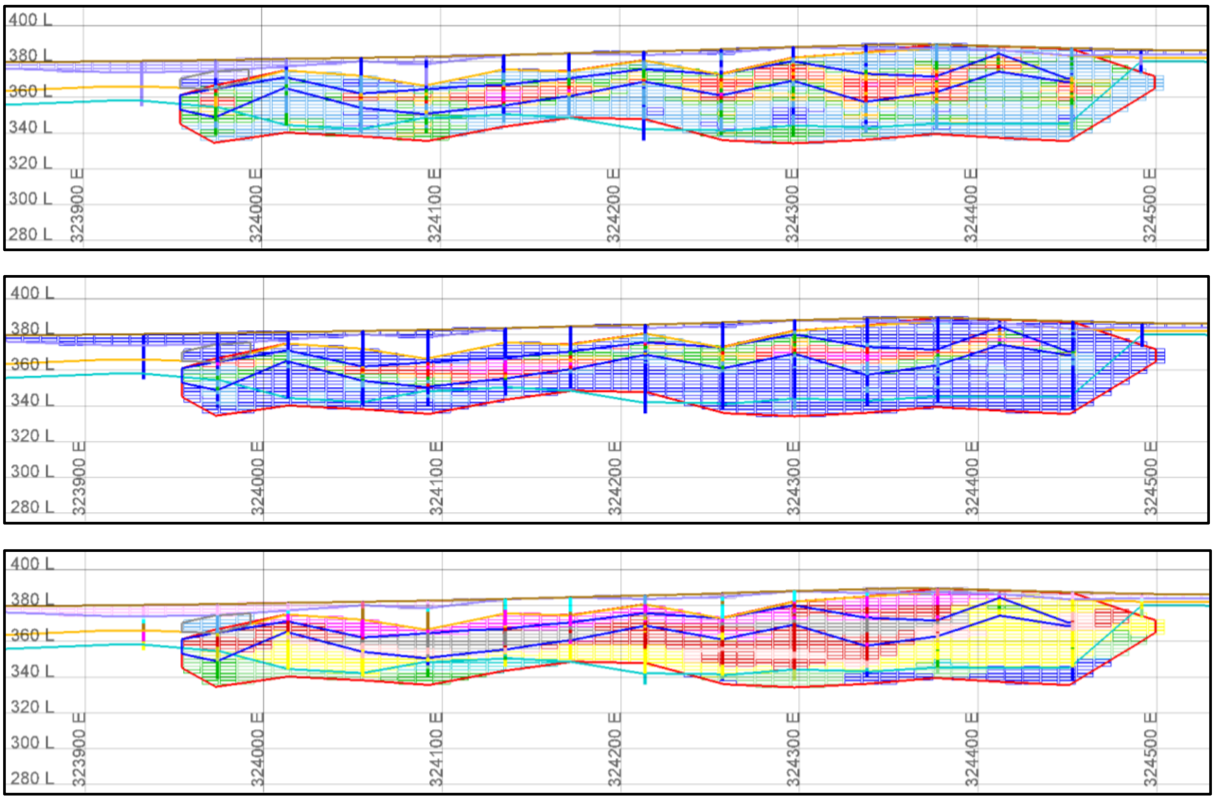


6663920N (Section F) – Colour coded by Ni% (top), Co% (middle), Material Type (bottom)

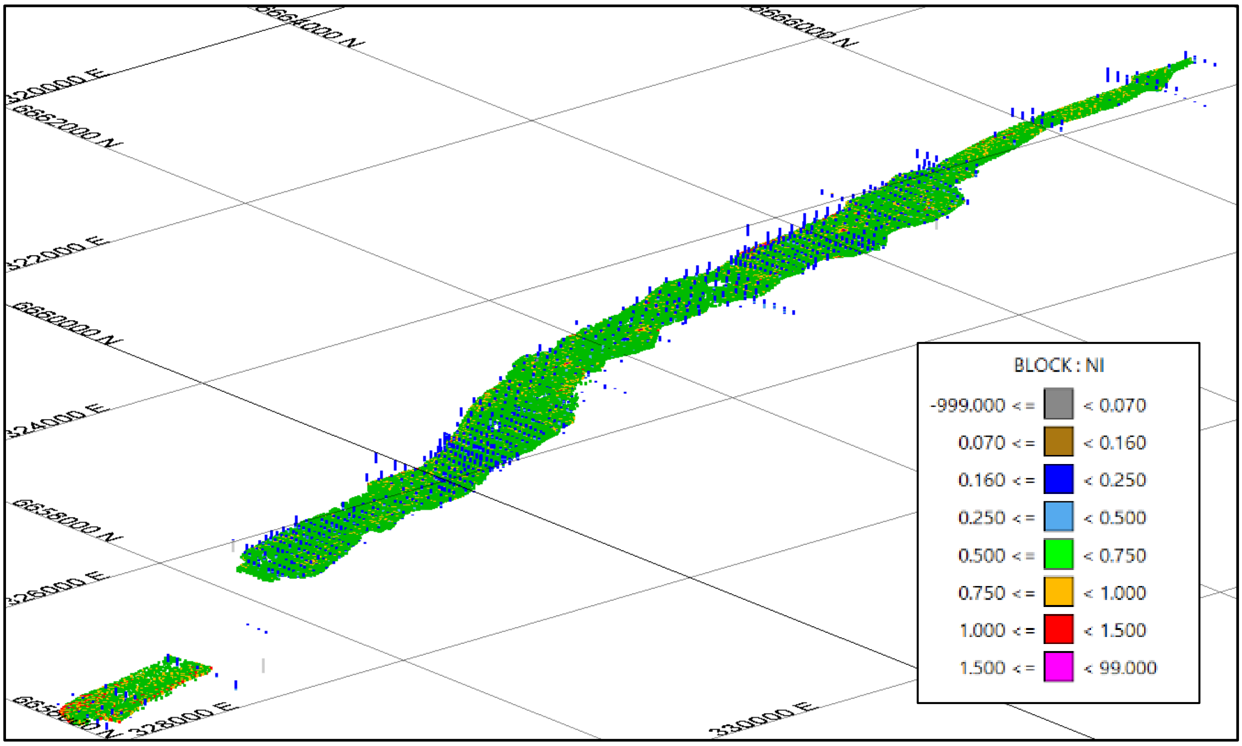


Big Four and Scotia Dam

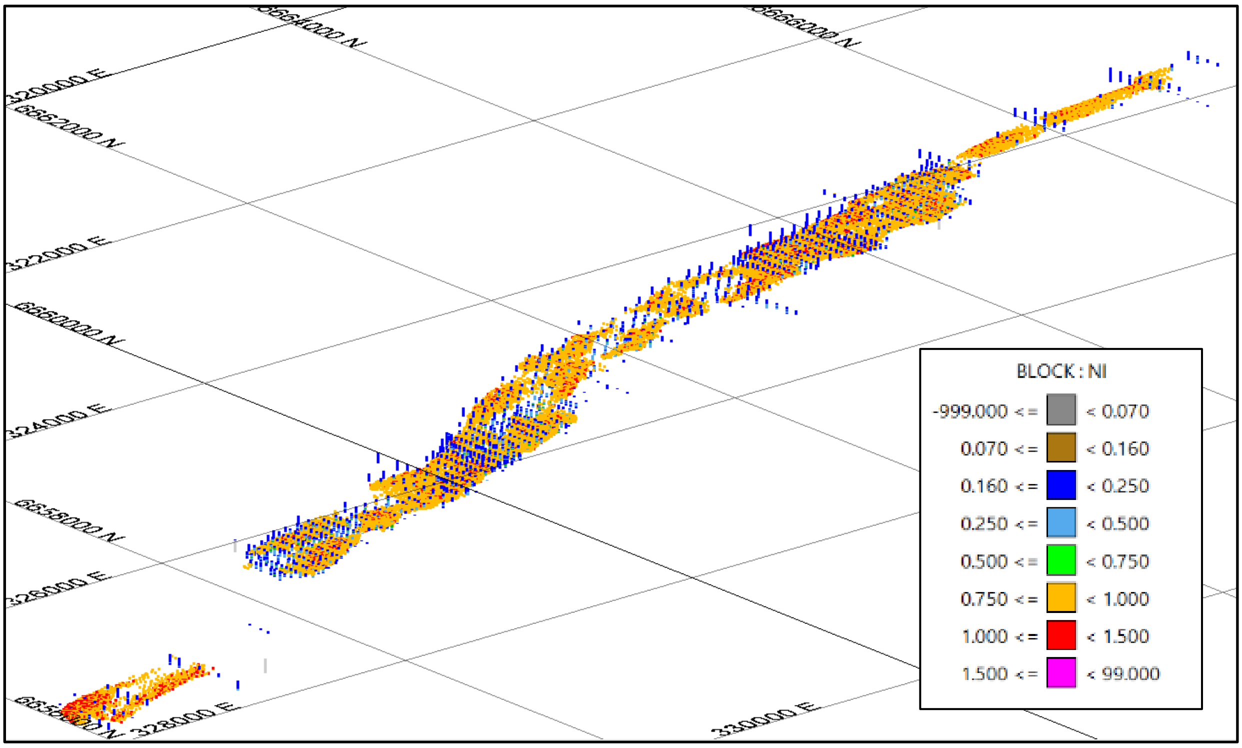
6664800N (Section G) – Colour coded by Ni% (top), Co% (middle), Material Type (bottom)



Big Four and Scotia Dam

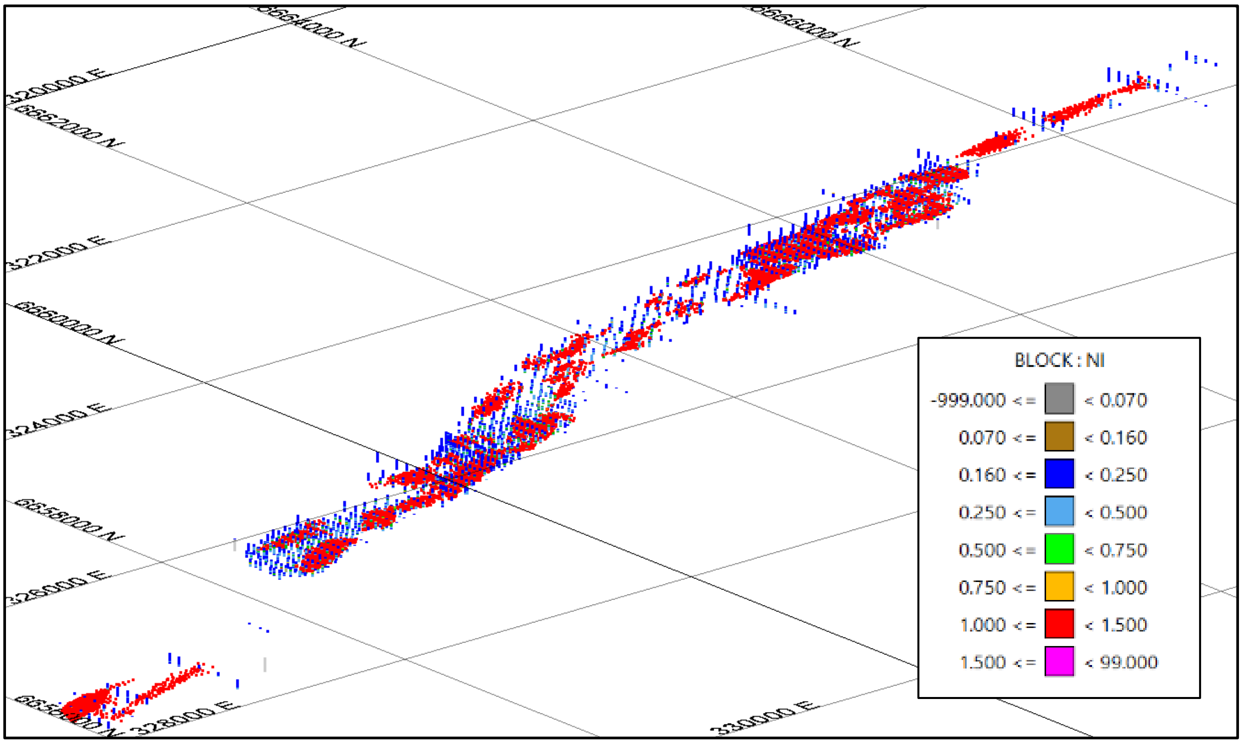


3-D view towards the NW showing resource model blocks ≥ 0.5% Ni versus drillhole traces colour coded by Ni % (same as block legend)

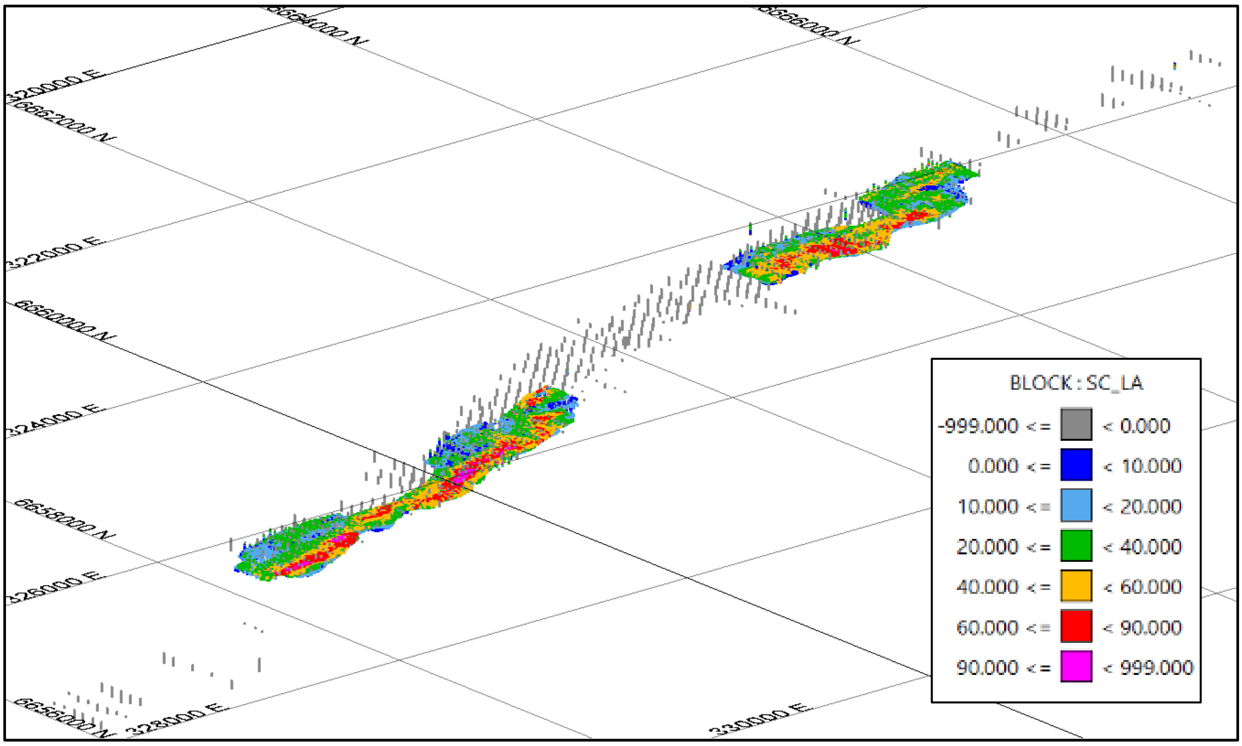


3-D view towards the NW showing resource model blocks ≥ 0.8% Ni versus drillhole traces colour coded by Ni % (same as block legend)

Big Four and Scotia Dam



3-D view towards the NW showing resource model blocks > 1.0% Ni versus drillhole traces colour coded by Ni % (same as block legend)



3-D view towards the NW showing resource model scandium estimates where Nickel estimates are > 0.5% Ni

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Appendix 4 – Drill collar locations and assay data, indicative REE and Alumina drill-holes

Rare Earth Element Drill Collars - Projection: GDA94 MGA Zone 51

Hole_ID	Northing	Easting	Declination	Azimuth
AGSR0001	6,669,840	322,816	-90	-
AGSR0170	6,668,922	323,343	-90	-
AGSR0369	6,669,281	322,337	-90	-
AGSR0392	6,670,641	322,899	-90	-
AGSR0430	6,670,476	322,575	-90	-
AGSR0495	6,671,283	322,594	-90	-
GSDD0003	6,668,556	323,262	-90	-
GSDD0004	6,668,955	323,181	-90	-
GSRC0986	6,668,794	323,300	-90	-
ABFR0012	6,660,197	325,918	-90	-
ABFR0014	6,660,323	325,859	-90	-
ABFR0061	6,665,194	323,857	-90	-
ABFR0155	6,663,838	324,576	-90	-
ABFR0164	6,663,676	324,578	-90	-

Alumina Drill Collars - Projection: GDA94 MGA Zone 51

Hole_ID	Northing	Easting	Declination	Azimuth
AGSR0161	6,669,120	323,058	-90	-
GSDD0003	6,668,556	323,262	-90	-
GSDD0007	6,669,357	323,260	-90	-
GSRC0334	6,669,200	323,176	-90	-
GSRC0567	6,669,598	322,857	-90	-
ABFR0041	6,663,714	324,497	-90	-
ABFR0163	6,663,671	324,498	-90	-

Rare Earth Element Drill Assay Suite

Hole_ID	mFrom	mTo	mWidth	Ni %	Co %	Mn %	Sc ppm	Al %	Fe %	LOI %	Si %	Y ppm	Ce ppm	Dy ppm	Gd ppm	La ppm	Nd ppm	Pr ppm	Sm ppm	Yb ppm
AGSR0001	14	16	2	0.82	0.08	0.17	49	5.5	36.9	12.0	9.8	5	485	1	1	7	9	3	2	1
AGSR0001	16	18	2	0.89	0.34	1.80	38	2.8	32.5	10.0	13.7	6	1450	2	2	13	18	5	4	1
AGSR0170	22	24	2	0.63	0.05	0.24	43	6.0	11.8	7.4	21.4	318	32	68	77	216	340	75	80	31
AGSR0369	18	20	2	0.53	0.09	0.85	46	9.6	23.9	11.9	13.3	13	482	4	3	17	20	5	4	3
AGSR0369	20	22	2	0.54	0.07	0.59	24	5.2	15.8	7.6	21.7	18	281	7	8	60	70	20	14	4
AGSR0369	22	24	2	0.45	0.11	1.25	39	5.6	24.8	8.0	17.4	33	176	11	11	61	74	20	15	6
AGSR0369	24	26	2	0.45	0.29	2.45	49	7.3	25.4	10.2	14.0	34	362	9	10	67	71	20	13	5
AGSR0392	24	26	2	0.48	0.07	0.11	52	6.8	12.1	8.2	21.8	215	1120	53	55	260	341	87	70	27
AGSR0430	8	10	2	1.09	0.82	2.14	27	8.7	12.9	10.6	19.7	99	146	22	26	201	166	45	30	10
AGSR0430	10	12	2	0.65	0.47	3.69	7	8.3	14.5	9.1	20.0	27	483	9	11	104	95	27	17	4
AGSR0430	12	14	2	1.41	1.01	7.97	7	6.8	7.5	9.6	20.9	46	712	12	15	178	144	42	24	6
AGSR0495	18	20	2	1.04	0.59	3.15	31	6.7	37.2	13.1	5.3	19	304	6	5	16	18	4	5	3
AGSR0495	20	22	2	1.34	1.43	11.9	18	3.9	34.6	12.4	3.5	37	425	9	8	44	36	10	9	6
GSDD0003	30	31	1	0.55	0.41	1.87	20	18.7	14.5	20.6	7.9	4	351	1	1	8	7	2	2	1
GSDD0003	31	32	1	0.59	0.39	2.05	15	19.7	10.5	20.6	9.6	3	87	1	1	7	6	2	2	0
GSDD0003	32	33	1	1.00	1.11	5.18	14	18.4	12.2	21.2	6.8	4	664	2	2	15	16	5	3	1
GSDD0004	15	16	1	0.51	0.01	0.01	222	8.3	39.5	16.1	1.8	6	12	1	1	3	4	1	1	1
GSDD0004	16	17	1	0.63	0.02	0.01	252	8.7	37.6	15.3	3.7	7	11	1	1	4	4	1	1	1
GSDD0004	17	18	1	0.90	0.05	0.15	184	8.6	34.5	15.3	5.6	6	28	1	1	4	4	1	1	1
GSDD0004	18	19	1	1.15	0.07	0.21	139	6.0	40.4	14.3	4.8	6	25	1	1	3	5	1	1	1
GSDD0004	19	20	1	0.22	0.00	0.03	48	3.2	24.1	24.0	5.0	7	9	1	1	7	6	1	1	1
GSDD0004	20	21	1	0.54	0.01	0.04	120	6.0	39.5	14.4	3.3	5	8	1	1	3	3	1	1	1
GSRC0986	29	30	1	0.96	0.05	0.12	7	4.9	13.0	10.4	19.0	67	60	16	18	83	106	27	22	10
GSRC0986	30	31	1	0.79	0.04	0.10	8	7.3	11.3	9.1	20.9	81	109	16	19	117	120	29	23	9
GSRC0986	31	32	1	0.66	0.03	0.07	8	9.3	8.5	8.3	23.0	68	135	12	15	110	104	27	18	6
ABFR0012	22	24	2	0.63	0.01	0.13	122	7.4	31.6	12.3	9.8	14	34	2	2	7	8	2	2	1
ABFR0014	26	28	2	0.51	0.05	0.52	128	6.4	40.1	11.7	6.8	8	43	2	2	5	7	2	2	1
ABFR0061	20	22	2	0.23	0.05	0.97	38	7.4	15.5	9.7	21.1	42	275	10	11	62	67	17	14	5
ABFR0061	22	24	2	0.20	0.03	0.48	31	6.2	8.9	23.5	14.9	53	119	12	11	31	41	9	10	7
ABFR0061	24	26	2	0.26	0.03	0.60	38	7.9	11.3	14.6	19.7	218	208	49	34	61	91	21	28	32
ABFR0061	26	28	2	0.27	0.08	0.99	43	8.5	11.1	11.6	21.3	448	659	114	79	128	242	58	77	73
ABFR0155	20	22	2	1.10	0.33	1.07	35	4.1	20.9	7.7	20.4	33	262	12	7	9	15	3	7	8
ABFR0155	22	24	2	0.80	0.11	0.50	38	4.8	18.6	7.7	21.0	41	67	11	12	55	73	18	15	6
ABFR0155	24	26	2	0.98	0.09	0.42	38	5.1	15.2	7.9	21.3	113	20	26	25	89	118	29	26	16
ABFR0164	12	14	2	0.44	0.07	0.42	34	5.5	13.2	7.4	27.2	4	1530	2	2	11	10	3	3	2
ABFR0164	14	16	2	0.37	0.07	0.31	39	4.9	14.3	8.2	27.2	11	720	6	4	12	22	6	7	5

Ardea Resources Limited

Alumina Drill Assay Suite

Hole_ID	mFrom	mTo	mWidth	Ni %	Co %	Mn %	Sc ppm	Al %	Fe %	LOI %	Si %	Y ppm	Ce ppm	Dy ppm	Gd ppm	La ppm	Nd ppm	Pr ppm	Sm ppm	Yb ppm
AGSR0161	36	38	2	0.74	0.035	0.06	14	13.1	11.2	12.8	18.1	8	23	2	2	5	11	2	3	1
AGSR0161	38	40	2	0.44	0.021	0.05	15	14.0	8.6	12.8	19.6	8	21	2	2	5	10	2	3	1
AGSR0161	40	42	2	0.54	0.026	0.06	13	14.2	8.5	12.9	19.3	8	25	2	2	6	12	2	3	1
AGSR0161	42	44	2	0.54	0.026	0.06	14	14.0	8.2	13.0	19.4	8	43	2	2	14	16	4	4	1
AGSR0161	44	46	2	0.60	0.046	0.07	13	14.0	7.1	13.0	19.5	9	86	2	3	31	31	8	5	1
AGSR0161	46	48	2	0.45	0.029	0.08	12	14.3	6.9	13.0	19.5	9	60	2	3	22	25	6	5	1
AGSR0161	48	50	2	0.55	0.034	0.08	11	15.0	6.1	13.1	19.4	8	45	2	2	16	19	4	4	1
GSDD0003	19	20	1	0.38	0.103	0.54	54	14.2	16.2	13.4	15.4	1	104	0	0	1	1	0	0	0
GSDD0003	20	21	1	0.60	0.183	1.24	50	12.6	20.4	13.4	13.4	2	139	1	0	2	2	0	1	0
GSDD0003	21	22	1	0.87	0.288	2.17	51	9.1	30.5		8.5	6	58	2	2	6	6	2	2	1
GSDD0003	22	23	1	1.15	0.542	5.55	42	6.1	36.1		6.1	15	98	4	4	33	28	9	6	3
GSDD0003	23	24	1	1.20	0.449	2.92	31	5.9	39.6	9.1	6.1	9	33	2	2	11	11	3	2	1
GSDD0003	24	25	1	0.87	0.347	3.33	30	11.8	27.0	16.6	6.2	15	76	3	4	43	32	11	5	2
GSDD0003	25	26	1	0.84	0.355	2.57	31	11.7	29.7	17.5	4.7	11	35	3	3	25	24	7	4	1
GSDD0003	26	27	1	1.14	0.629	3.59	29	6.6	40.8	12.8	3.2	7	37	1	2	17	13	4	2	1
GSDD0003	27	28	1	0.88	0.268	1.35	27	11.0	28.2	15.1	8.2	3	38	1	1	6	5	1	1	1
GSDD0003	28	29	1	0.63	0.427	2.09	24	13.7	19.8	15.9	10.5	3	113	1	1	6	5	2	1	1
GSDD0003	29	30	1	0.58	0.593	2.87	15	18.5	12.0	19.6	9.4	3	172	1	1	6	6	2	1	1
GSDD0003	30	31	1	0.55	0.412	1.87	20	18.7	14.5	20.6	7.9	4	351	1	1	8	7	2	2	1
GSDD0003	31	32	1	0.59	0.385	2.05	15	19.7	10.5	20.6	9.6	3	87	1	1	7	6	2	2	0
GSDD0003	32	33	1	1.00	1.110	5.18	14	18.4	12.2	21.2	6.8	4	664	2	2	15	16	5	3	1
GSDD0007	11	12	1	0.64	0.024	0.12	68	10.8	26.3	19.9	7.6	4	6	1	1	1	1	0	0	0
GSDD0007	12	13	1	1.01	0.033	0.22	50	10.1	32.3		5.8	10	3	1	1	3	3	1	1	1
GSDD0007	13	14	1	1.20	0.608	3.40	39	13.0	26.8	17.9	4.5	13	130	4	3	2	5	1	2	3
GSDD0007	14	15	1	1.29	0.674	3.09	43	13.2	25.3	18.9	4.9	9	97	3	2	2	4	1	2	2
GSDD0007	15	16	1	1.22	0.493	2.78	43	13.2	26.2	18.0	4.9	15	55	4	3	5	6	1	3	3
GSDD0007	16	17	1	1.13	0.056	0.26	67	6.3	38.7		5.5	17	13	3	3	4	6	1	2	1
GSDD0007	17	18	1	1.10	0.774	4.53	32	12.4	26.0	15.6	6.1	9	57	2	1	3	4	1	1	2
GSRC0334	38	39	1	1.11	0.047	0.08	156	10.3	29.8	16.5	6.5	5	6	2	1	13	4	1	1	2
GSRC0334	39	40	1	0.91	0.044	0.08	138	10.4	23.6	13.8	9.2	5	10	2	1	8	4	1	1	2
GSRC0334	40	41	1	1.00	0.041	0.06	152	10.4	22.4	14.0	10.2	5	10	2	1	6	3	1	2	1
GSRC0567	25	26	1	0.76	0.071	0.70	9	11.0	4.0	9.7	26.2	10	178	3	3	19	21	6	5	2
GSRC0567	26	27	1	0.70	0.031	0.19	8	11.1	3.4	9.5	27.0	9	90	2	3	23	23	6	4	1
GSRC0567	27	28	1	0.54	0.035	0.14	8	12.8	3.8	10.4	25.0	13	85	3	5	78	57	17	8	2
ABFR0041	22	24	2	0.44	0.031	0.08	21	15.3	7.3	12.4	20.3	18	35	3	3	10	16	3	4	2
ABFR0041	24	26	2	0.68	0.138	0.39	14	14.3	5.7	11.4	21.8	19	160	3	4	22	23	6	5	2
ABFR0163	26	28	2	0.78	0.082	0.33	18	12.1	10.1	11.2	21.0	36	117	7	9	85	71	20	11	4
ABFR0163	28	30	2	0.93	0.083	0.48	11	11.3	4.3	9.2	25.5	37	88	5	6	64	48	13	8	3
ABFR0163	30	32	2	0.91	0.062	0.39	11	10.8	4.1	8.3	26.1	22	74	3	4	39	31	8	5	2