

29 March 2021

**ASX Announcement** 

### HIGH-GRADE QUARTZ MINERALISATION DELINEATED BELOW IVITTUUT PIT

#### **Highlights**

- High Silica Grade quartz zone beneath Ivittuut Pit delineated using 3D modelling based on analysis of historical diamond drilling.
- Extensive body of high-grade quartz in Domain 3 intersected below the cryolite-fluorite zone Domain 1 and iron-zinc zone Domain 2. Averaged drill intersections include:
  - o Drill Hole 153 54m @ 97.6% SiO<sub>2</sub> from 32m
  - o Drill Hole 165 24m @ 93.2% SiO<sub>2</sub> from 12m
  - o Drill Hole 165 53m @ 94.8% SiO₂ from 45m
- Analyses of individual 3m intervals of high-grade quartz mineralisation include:
  - o Drill Hole 153 99.60% SiO₂ from 32m
  - o Drill Hole 153 99.33% SiO<sub>2</sub> from 59m
  - o Drill Hole 153 99.98% SiO₂ from 80m
  - o Drill Hole 153 − 99.94% SiO<sub>2</sub> from 86m
  - Drill Hole 165 99.72% SiO<sub>2</sub> from 66m
  - Drill Hole 165 99.13% SiO<sub>2</sub> from 81m
  - O Drill Hole 165 99.02% SiO<sub>2</sub> from 89m
- Significant Exploration Targets defined for the quartz mineralised Domain (Table 1).
- The quartz zone forms a flat roughly circular intrusive body approx. 220m in diameter with a true thickness of approximately 90m.
- The global quartz market has been projected to increase by 6.9% from 2020 to 2030 (Persistence Market Research July 2020).

This potential source of high grade quartz could be treated in Iceland where cheap power is available for refining in order to supply products used in high growth markets including solar, semiconductors, optics, lighting, telecommunications and microelectronics.

Eclipse Metals Ltd (ASX: **EPM**) (**Eclipse Metals** or the **Company**) is pleased to announce results of its ongoing evaluation of definitive historical exploration and analytical data for the Ivittuut open pit reported by independent mining consultants North Atlantic Mining Consultants Ltd. The results demonstrate high grade quartz mineralisation within the historical Ivittuut mine environment. Modelling of historical exploration data from the Ivittuut deposit indicate substantial economic potential within the pit.

### **WORK COMPLETED**

Eclipse has relied heavily on geological maps, assay data and cross sections from the previous operators of the Ivittuut mine. Much of the historical quartz data for the Ivittuut Deposit sourced in open file reports from the GEUS portal required digitisation.

The historical data, comprising paper cross sections and plans containing both lithological and analytical data, were reviewed and digitised to form a 3D database. This review indicated the data are reliable and methods used were appropriate for industry standards of that time.

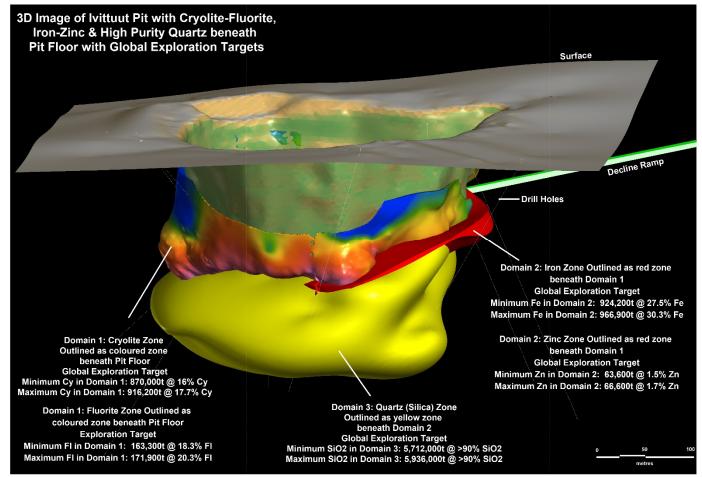


Figure 1: 3D Oblique Image showing Interpreted Domains 1 & 2 with High Grade Quartz in Domain 3

**Cautionary Statement:** The potential quantity and grade of the Exploration Targets are conceptual in nature. There has been insufficient exploration work conducted to estimate a Mineral Resource and it is uncertain if further exploration will result in the estimation of a Mineral Resource. The Exploration Target has been prepared based on actual exploration results described in this report including historical drilling data and geological modelling.

### **Eclipse Metals Ltd Executive Chairman Mr Carl Popal commented:**

To date, evaluation of historical data has unveiled massive economic potential for the Ivittuut project being the world's only known commercial cryolite mine. It also has the potential for multi-commodity deposits of cryolite, fluorite, zinc, iron, high grade quartz and highly sought after rare earth minerals (REE).

This is a global leap forward for the Company to expand its interests with a unique opportunity to contribute to the growing demand for high-grade silica in the European market. This Project also fits the Company's mission to excel in the commercialisation of metals and minerals demanded in the production of green energy required by industry in the reduction of pollutants.

Logistically, the deposits are located in close proximity to an existing port, offering significant commercial benefits in the delivery of its products to market. The global exploration target domains have delineated extensive tonnages and grades across all the commodities with REE exploration yet to be conducted.

EPM is now well positioned to deliver increasing value for our shareholders by being able to achieve cost effective results from assay of 19,000m of drill core from the Project area currently in storage.

#### **DRILL HOLE DATA**

Overall, 18 diamond drillholes intersected the body of the quartz zone Domain 3 (Appendix A drill collar file). In 2012, only two drill holes were analysed for quartz purity (Appendix B full assay results). Analytical data associated with each hole has been digitally captured to form a database.

The data was derived from laboratory analytical reports contained in GEUS Report 23656 and verified with historic cross sections and plans. Significant drill intersections derived from digitising the historic analytical data within the pit are shown in **Appendix B**.

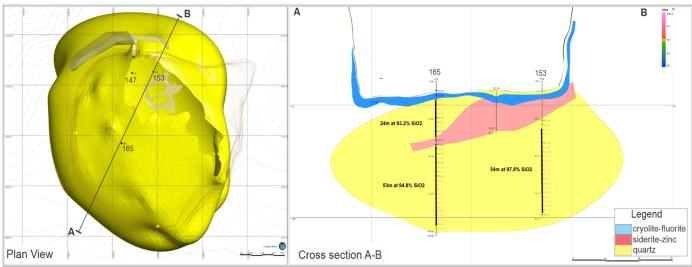


Figure 2: Plan view of the Pit showing Cross Section (A to B)

The analytical data was reviewed in 3D and formed the basis for geological modelling. The high-grade quartz lies directly below the cryolite-fluorite and iron-zinc zones with the silica grade increasing below the iron-zinc zone in the northern portion of the pit (Figure 2). The zones with higher percentages of impurities coincide with the modelled zones of siderite (iron), sphalerite (zinc) and cryolite. Based on data from the two holes which provided a total of 54 samples; 24 or 44% of the samples were higher than 98% in silica. A 95% silica cut-off represents 61% of the samples.

### **GEOLOGICAL MODELLING**

Geological domains were developed to represent the quartz in Domain 3. The quartz zone forms a flat roughly circular intrusive body 220m in diameter with a true thickness of approximately 90m. The modelled domain represents in-situ mineralisation that could be accessed 5m to 10m below the central cryolite-fluorite zone. Immediately below the open pit the quartz domain bulges out to the east and west.

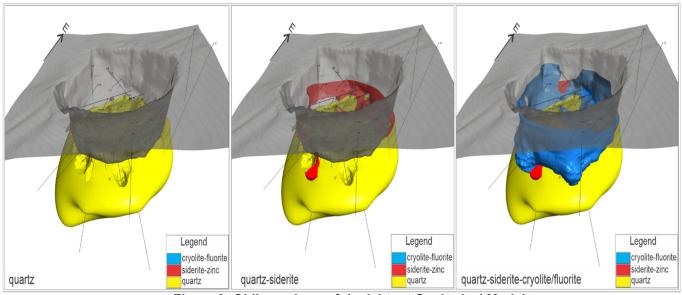


Figure 3: Oblique views of the Ivittuut Geological Model

Exploration Targets (**Table 1**) are based on actual Exploration Results from 18 diamond drill holes representing 1,764m of drilling within and around the historic pit. The assay data used include 1,062 analytical results. Bulk density measurements were assigned using lower value of 2.55 and upper value of 2.65.

Range	Zone	Domain	Cut Off (%)	Quartz Tonnage (t)	Quartz Grade Lower %	Quartz Grade Upper %
Exploration Target - Lower	Quartz	3	0	5,700,000	90.0	95.0
Exploration Target - Upper	Quartz	3	0	5,940,000	90.0	95.0
						-
Exploration Target - Lower	Cy-Fl-Fe-Zn	4+5	0	795,000	60.0	90.0
Exploration Target - Upper	Cy-Fl-Fe-Zn	4+5	0	830,000	60.0	90.0

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Figure 4: High silica grade quartz from Drill Hole 153

### **Forward Strategy**

Subject to COVID restrictions, the Company is planning activities to calculate a JORC Code compliant resource estimate for the lvittuut project at the earliest opportunity. Further analytical work is required over the quartz zones as previous explorers did not assay all quartz intersections for contaminants. Numerous drill holes hosting quartz mineralisation will be systematically split and analysed for contaminants to enable calculation of silica content as part of JORC compliant resource estimation work.

### **Background Information on the Silica Industry**

A constantly growing glass industry in Europe demands increasing amounts of appropriate raw materials, including the most important one: glass silica. High quality quartz is composed of silica which is characterised as having minimum 95% SiO<sub>2</sub> and low levels of impurities. Quartz with higher contaminant levels is in demand by many industries.

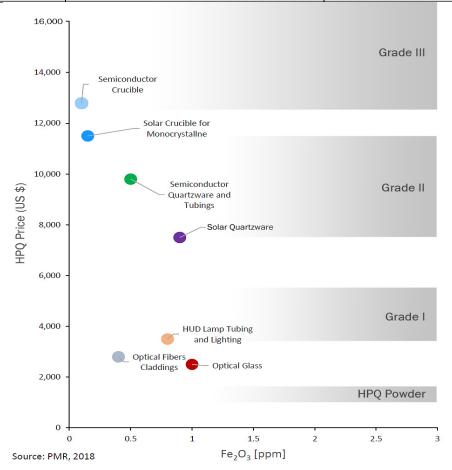
Silica with varying qualities may be used not only for glass production, but also to make casting moulds in foundries; ingredients in ceramics; proppants in shale hydrocarbons extraction; fillers and extenders in polymers, paints and rubber; for water filtration and for many other uses. Quartz can also be the starting point for the manufacturing of water-soluble sodium silicates and other downstream silicon chemicals.

The global quartz market was valued at \$8.23 billion in 2018 and is projected to reach \$13.61 billion by 2026, growing at a CAGR of 6.9% from 2020 to 2030 (Persistence Market Research July 2020). The EU market for quartz exceeds 30 million tonnes per year (including over 15 million tonnes per year for glass production), which is sourced through domestic production, especially in the Netherlands, Italy, France, Germany, Poland, the UK, Spain, Bulgaria and Belgium. Quartz resources for high-quality silica production are limited mostly to the above-mentioned countries, especially the Netherlands, Germany, UK, Poland plus Chechnya.

The price of quartz is based on the grade – simply put, the lower the level of impurities, the higher the price. The price can be adversely affected by the quantity and the type of impurities present (Table 2).

Table 2: Pricing analysis by Grade

Grade	Price Range	Weighted ASP
Powder	US\$ 1,000 – US\$ 1,500	US\$ 1,276
Grade I	US\$ 3,500 - US\$ 5,500	US\$ 4,460
Grade II	US\$ 7,500 – US\$ 11,500	US\$ 8,975
Grade III	US\$ 12,500 - US\$ 19,000	US\$ 15,126



### Authorised for release by the Board

Carl Popal Executive Chairman Pedro Kastellorizos

Non-Executive Director







### **Competent Persons Statement**

The information in this report / ASX release that relates to Exploration Results and Exploration Targets is based on information compiled and reviewed by Mr. Alfred Gillman, Director of independent consulting firm, Odessa Resource Pty Ltd. Mr. Gillman, a Fellow and Chartered Professional of the Australasian Institute of Mining and Metallurgy (the AusIMM) and has sufficient experience relevant to the styles of mineralisation under consideration and to the activity being reported 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 Gillman consents to the inclusion in this report / ASX release of the matters based on information in the form and context in which it appears. Additionally, Mr Gillman confirms that the entity is not aware of any new information or data that materially affects the information contained in the ASX releases referred to in this report.

The Competent Person does not consider the current data to be sufficiently verified to enable preparation of a classified resource estimate. The estimated volumes of the mineral domains are based on historical analytical data and are thus indicative only. Additional work programs, including site visits, resampling of drill core and representative bulk density determination, are required to prior to the estimation and reporting of a classified resource as defined by the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC) 2012.

#### Forward Statement

This news release contains "forward-looking information" within the meaning of applicable securities laws. Generally, any statements that are not historical facts may contain forward-looking information, and forward looking information can be identified by the use of forward-looking terminology such as "plans", "expects" or "does not expect", "is expected", "budget" "scheduled", "estimates", "forecasts", "intends", "anticipates" or "does not anticipate", or "believes", or variations of such words and phrases or indicates that certain actions, events or results "may", "could", "would", "might" or "will be" taken, "occur" or "be achieved." Forward-looking information is based on certain factors and assumptions management believes to be reasonable at the time such statements are made, including but not limited to, continued exploration activities, commodity prices, the estimation of initial and sustaining capital requirements, the estimation of labour costs, the estimation of mineral reserves and resources, assumptions with respect to currency fluctuations, the timing and amount of future exploration and development expenditures, receipt of required regulatory approvals, the availability of necessary financing for the project, permitting and such other assumptions and factors as set out herein.

Forward-looking information is subject to known and unknown risks, uncertainties and other factors that may cause the actual results, level of activity, performance or achievements of the Company to be materially different from those expressed or implied by such forward-looking information, including but not limited to: risks related to changes in commodity prices; sources and cost of power and water for the Project; the estimation of initial capital requirements; the lack of historical operations; the estimation of labour costs; general global markets and economic conditions; risks associated with exploration of mineral deposits; the estimation of initial targeted mineral resource tonnage and grade for the project; risks associated with uninsurable risks arising during the course of exploration; risks associated with currency fluctuations; environmental risks; competition faced in securing experienced personnel; access to adequate infrastructure to support exploration activities; risks associated with changes in the mining regulatory regime governing the Company and the Project; completion of the environmental assessment process; risks related to regulatory and permitting delays; risks related to potential conflicts of interest; the reliance on key personnel; financing, capitalisation and liquidity risks including the risk that the financing necessary to fund continued exploration and development activities at the project may not be available on satisfactory terms, or at all; the risk of potential dilution through the issuance of additional common shares of the Company; the risk of litigation.

Although the Company has attempted to identify important factors that cause results not to be as anticipated, estimated or intended, there can be no assurance that such forward-looking information will prove to be accurate, as actual results and future events could differ materially from those anticipated in such information. Accordingly, readers should not place undue reliance on forward-looking information. Forward looking information is made as of the date of this announcement and the Company does not undertake to update or revise any forward-looking information this is included herein, except in accordance with applicable securities laws

### **REFERENCES**

G B & Associates, 2012, "Ivigtut Annual Report 2013, Licence No. 2007/45 GEUS Open File Series Report No.23656. Persistence Market Research July 2020

# APPENDIX A: COLLAR FILE IVITTUUT DRILLING

Hole Id	Local East	Local North	RL (m)	Total Depth	Dip	Azimuth
106	1085.8	974.9	-58	24.2	-90	0
129	1201.3	935.1	-52	42.7	0	144
130	1199.3	938.6	-54	21.98	-90	0
150	1156	1000.5	-56.7	40.9	-90	0
154	1144.6	1014.8	-58.2	54.1	-30	324
157	1149.3	973.3	-58.9	32	-90	0
158	1122.2	977.4	-58	38.8	-90	0
162	1080.9	983.4	-59	117.1	-60	324
164	1098.5	958.6	-58	16.8	-90	0
165	1110.4	942.2	-59	103	-90	0
166	1122	926.9	-59	12.9	-90	0
167	1156.5	878.3	-54.5	36.3	-30	144
175	1108.8	978.9	-58	13.9	-90	0
J3	1090	928.6	-58.2	172.6	-54	234
J4	938	1098	-58	138	-90	0
J5	1016	1207.5	-7.2	172.6	-90	0
OIII	782	1187	-39.5	224.05	-60	329
Α	934	1684	-54	502.62	-45	75



### **ECLIPSE METALS LTD (ASX:EPM)**

### **APPENDIX B: DRILL HOLE ASSAYS**

Hole	IDIX D.	Weight	HOLL A	Sample	Al <sub>2</sub> O <sub>3</sub>	Fe <sub>2</sub> O <sub>3</sub>	CaO	Na₂O	K <sub>2</sub> O	MgO	TiO <sub>2</sub>	MnO	P <sub>2</sub> O <sub>5</sub>	ZnO	V <sub>2</sub> O <sub>5</sub>	NiO	PbO	CuO	CoO	CdO	Cr <sub>2</sub> O <sub>3</sub>	S <sub>2</sub> O <sub>3</sub>	Total	SiO <sub>2</sub>
Id	Depth	(grams)	Mineral	Id	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	impurity	%
			Siderite,																					
			Quartz,																					
			Sphalerite,																					
			Galena,	IVDC-																				
153	26.00	333.00	Mica	12-003	4.30	8.44	0.85	0.05	1.35	0.33	0.01	0.18	0.00	1.10	0.00	0.00	0.16	0.03	0.00	0.00	0.00	0.00	16.82	83.18
			Siderite,																					
			Quartz,																					
450	20.00	252.00	Sphalerite,	IVDC-	2.00	- 40	0.46	0.00	0.04	0.00	0.04	0.00	0.00	0.07	0.00	0.00	0.04	0.00	0.00	0.00	0.00		40.50	
153	29.00	352.00	Mica	12-004	2.99	5.49	0.46	0.06	0.91	0.26	0.01	0.06	0.00	0.27	0.00	0.00	0.01	0.02	0.00	0.00	0.00	0.00	10.53	89.47
452	22.00	200.00	0 - 1	IVDC-	0.00	0.04	0.26	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.40	00.00
153	32.00	268.00	Quartz	12-005	0.08	0.04	0.26	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.40	99.60
153	35.00	314.00	Quartz, Siderite	IVDC- 12-006	0.36	0.28	0.28	0.13	0.00	0.04	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.11	98.89
133	33.00	314.00	Grey	12-000	0.30	0.20	0.28	0.13	0.00	0.04	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.11	36.63
			Granite,																					1
			Cryolite,	IVDC-																				
153	38.00	241.00	Sphalerite	12-007																				1
			Grey																					<del>                                     </del>
			Granite,	IVDC-																				1
153	41.00	399.00	Sphalerite	12-008	6.33	0.79	0.36	0.54	3.77	0.03	0.01	0.03	0.01	0.22	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	12.10	87.90
			Grey																					
			Granite,	IVDC-																				1
153	44.00	311.00	Sphalerite	12-009	1.82	0.43	0.47	0.05	1.44	0.01	0.00	0.01	0.00	0.45	0.00	0.00	0.01	0.02	0.00	0.00	0.00	0.00	4.73	95.27
			Grey,																					1
			white.																					
			Granite,																					
452	47.00	242.00	quartz,	IVDC-	2.60	0.42	0.00	0.00	2.20	0.00	0.00	0.01	0.01	0.47	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	7.40	02.00
153	47.00	343.00	Sphalerite	12-010	3.68	0.42	0.09	0.06	2.30	0.02	0.00	0.01	0.01	0.47	0.00	0.00	0.03	0.01	0.00	0.00	0.00	0.00	7.10	92.90
153	50.00	336.00	Ouest-	IVDC- 12-011	0.12	0.26	0.40	0.01	0.04	0.00	0.00	0.01	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.91	99.09
153	50.00	336.00	Quartz Grey	12-011	0.12	0.26	0.40	0.01	0.04	0.00	0.00	0.01	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.91	99.09
			Quartz,	IVDC-																				1
153	53.00	438.00	Sphalerite	12-012	0.86	0.20	0.57	0.02	0.04	0.00	0.00	0.00	0.00	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.90	98.10
133	33.00	150.00	Spridicire	IVDC-	0.00	0.20	0.57	0.02	0.01	0.00	0.00	0.00	0.00	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.50	30.10
153	56.00	435.00	Quartz	12-013	0.03	0.93	0.01	0.01	0.01	0.00	0.00	0.04	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.03	98.97
			Quartz,	IVDC-																				1
153	59.00	312.00	Sphalerite	12-014	0.05	0.29	0.11	0.01	0.01	0.00	0.00	0.01	0.00	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.67	99.33

#### **ECLIPSE METALS LTD**

Hole		Weight		Sample	Al <sub>2</sub> O <sub>3</sub>	Fe <sub>2</sub> O <sub>3</sub>	CaO	Na₂O	K <sub>2</sub> O	MgO	TiO <sub>2</sub>	MnO	P <sub>2</sub> O <sub>5</sub>	ZnO	V <sub>2</sub> O <sub>5</sub>	NiO	PbO	CuO	CoO	CdO	Cr <sub>2</sub> O <sub>3</sub>	S <sub>2</sub> O <sub>3</sub>	Total	SiO <sub>2</sub>
Id	Depth	(grams)	Mineral	Id	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	impurity	%
			Quartz with																					
			minor																					
			siderite,	IVDC-																				
153	62.00	442.00	Sphalerite	12-015	0.12	1.21	0.05	0.01	0.04	0.01	0.00	0.03	0.00	1.85	0.00	0.00	0.01	0.02	0.00	0.01	0.00	0.00	3.35	96.65
			Quartz																					
			with																					
			minor siderite,	IVDC-																				
153	65.00	211.00	Sphalerite	12-016	0.04	1.21	0.01	0.01	0.01	0.00	0.00	0.04	0.00	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.46	98.54
150	05.00	212.00	Quartz	12 010	0.0 .		0.01	0.02	0.01	0.00	0.00	0.0.	0.00	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20	56.5
			with																					
			minor																					
			siderite,																					
153	68.00	408.00	Sphalerite, Galena	IVDC- 12-017	0.03	0.66	0.03	0.01	0.02	0.11	0.00	0.02	0.00	0.57	0.00	0.00	0.09	0.01	0.00	0.00	0.00	0.00	1.57	98.43
155	00.00	400.00	Quartz	12-017	0.03	0.00	0.03	0.01	0.02	0.11	0.00	0.02	0.00	0.57	0.00	0.00	0.03	0.01	0.00	0.00	0.00	0.00	1.57	30.43
			with																					
			minor																					
			siderite,	IVDC-																				
153	71.00	460.00	Sphalerite	12-018	0.01	0.56	0.02	0.01	0.01	0.00	0.00	0.02	0.00	0.23	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.88	99.12
			Quartz																					
			with minor																					
			siderite,	IVDC-																				
153	74.00	295.00	Sphalerite	12-019	0.08	4.43	0.04	0.01	0.03	0.01	0.00	0.21	0.00	0.13	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	4.97	95.03
				IVDC-																				
153	77.00	386.00	Quartz	12-020	0.03	0.16	0.03	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	99.74
			White	IV/DC																				
153	80.00	386.00	very pure quartz	IVDC- 12-021	0.00	0.01	0.00	0.01	0.00	<0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	99.98
133	00.00	300.00	White	12 021	0.00	0.01	0.00	0.01	0.00	10.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	33.30
			very pure	IVDC-																				
153	83.00	191.00	quartz	12-022	0.01	0.00	0.00	0.00	0.00	<0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	99.98
			White	IVDC-																				
153	86.00	327.00	Quartz	12-023	0.01	0.01	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	99.94
			White and green																					
			Quartz,																					
			Siderite,	IVDC-																				
153	89.00	385.00	Mica	12-024	6.51	2.14	0.45	0.04	2.17	0.21	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.54	88.46
			Gray																					
450	02.00	246.00	white	IVDC-	6.00	4 70	0.24	0.13	4.05	0.05	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.00	00.00
153	92.00	346.00	Granite,	12-025	6.89	1.70	0.21	0.12	4.05	0.05	0.01	0.04	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.08	86.92

Hole		Weight		Sample	Al <sub>2</sub> O <sub>3</sub>	Fe <sub>2</sub> O₃	CaO	Na₂O	K <sub>2</sub> O	MgO	TiO <sub>2</sub>	MnO	P <sub>2</sub> O <sub>5</sub>	ZnO	V <sub>2</sub> O <sub>5</sub>	NiO	PbO	CuO	CoO	CdO	Cr <sub>2</sub> O <sub>3</sub>	S <sub>2</sub> O <sub>3</sub>	Total	SiO <sub>2</sub>
Id	Depth	(grams)	Mineral	ld	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	impurity	%
			Fluorite																					
165	6.00	276.00	Cryolite	IVDC- 12-052	7.12	0.68	16.54	6.26	1 1 5	2.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	34.44	65.56
105	6.00	276.00	Mica Fluorite	IVDC-	7.12	0.08	10.54	0.20	1.15	2.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	34.44	05.50
165	9.00	319.00	Cryolite	12-053	2.94	0.15	30.43	2.46	0.08	1.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	37.17	62.83
100	3.00	013.00	Quartz	12 000	2.0 .	0.125	301.13	21.10	0.00	1.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	07.127	02.00
			Siderite	IVDC-																				
165	12.00	323.00	Galena	12-054	0.79	3.99	2.07	0.30	0.07	0.04	0.00	0.02	0.00	0.01	0.00	0.00	0.57	0.10	0.00	0.00	0.00	0.00	7.96	92.04
			Quartz	IVDC-																				
165	15.00	388.00	Fluorite	12-055	0.39	0.86	5.27	0.03	0.10	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.67	93.33
			Quartz with little	IVDC-																				
165	18.00	322.00	Siderite	12-056	0.33	0.46	0.34	0.03	0.09	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	1.26	98.74
103	10.00	322.00	Quartz	12 030	0.55	0.10	0.5 1	0.03	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	1.20	30.74
			with little	IVDC-																				
165	21.00	282.00	Siderite	12-057	0.30	0.38	0.36	0.02	0.07	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.15	98.85
			Quartz,																					
4.65	24.00	450.00	Siderite,	IVDC-		46.00		0.40	0.46	0.00	0.00	0.40	0.00	0.04	0.00	0.00	0.04	0.40	0.00	0.00			40.67	
165	24.00	459.00	Mica	12-058	1.24	16.02	0.44	0.18	0.16	0.03	0.00	0.48	0.00	0.01	0.00	0.00	0.01	0.10	0.00	0.00	0.01	0.00	18.67	81.33
			Quartz, Siderite,	IVDC-																				
165	27.00	250.00	Fluorite	12-059	0.49	1.15	3.36	0.08	0.10	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.22	94.78
100	27.00	250.00	Quartz	12 005	01.5	1.13	0.00	0.00	0.10	0.02	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.22	
			with little	IVDC-																				
165	30.00	331.00	Siderite	12-060	0.11	0.19	0.11	0.02	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.46	99.54
			Quartz,																					
4.65	22.00	272.00	Siderite,	IVDC-		46.00	0.07	0.00	0.44	0.00	0.00	0.40	0.00	0.04	0.00	0.00	0.04	0.00	0.00	0.00	0.04		40.00	
165	33.00	378.00	Mica	12-061	0.44	16.88	0.97	0.02	0.14	0.03	0.00	0.49	0.00	0.01	0.00	0.00	0.01	0.02	0.00	0.00	0.01	0.00	19.02	80.98
			Quartz with little	IVDC-																				
165	36.00	389.00	siderite	12-062	0.20	0.23	0.61	0.03	0.05	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.13	98.87
			Quartz,																					
			Siderite,	IVDC-																				
165	39.00	304.00	Fluorite	12-063	0.93	49.95	1.72	0.02	0.26	0.14	0.00	2.18	0.00	0.02	0.00	0.00	0.04	0.03	0.00	0.00	0.03	0.00	55.31	44.69
			Siderite,																					
165	42.00	290.00	Sphalerite,	IVDC- 12-064	0.58	40.92	0.26	0.03	0.19	0.10	0.00	1.79	0.00	0.19	0.00	0.00	0.05	0.02	0.00	0.00	0.02	0.00	44.15	55.85
103	42.00	290.00	Mica Siderite,	12-004	0.58	40.92	0.20	0.03	0.19	0.10	0.00	1.79	0.00	0.19	0.00	0.00	0.05	0.02	0.00	0.00	0.02	0.00	44.15	33.83
			Sphalerite,	IVDC-																				
165	45.00	444.00	Mica	12-065	0.14	6.64	0.10	0.02	0.06	0.02	0.00	0.26	0.00	0.32	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	7.58	92.42
			Siderite,																					
			Sphalerite,	IVDC-																				
165	48.00	366.00	Mica	12-066	5.48	3.15	1.61	0.04	1.75	0.13	0.00	0.02	0.00	0.92	0.00	0.00	0.02	0.03	0.00	0.00	0.00	0.00	13.16	86.84

Hole	5	Weight	NAT	Sample	Al <sub>2</sub> O <sub>3</sub>	Fe <sub>2</sub> O <sub>3</sub>	CaO	Na₂O	K₂O	MgO	TiO <sub>2</sub>	MnO	P <sub>2</sub> O <sub>5</sub>	ZnO	V <sub>2</sub> O <sub>5</sub>	NiO	PbO	CuO	CoO	CdO	Cr <sub>2</sub> O <sub>3</sub>	S <sub>2</sub> O <sub>3</sub>	Total	SiO <sub>2</sub>
Id	Depth	(grams)	Mineral	Id	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	impurity	%
			Siderite, Sphalerite,	IVDC-																				
165	51.00	306.00	Mica	12-067	0.23	0.52	0.07	0.01	0.07	0.01	0.00	0.00	0.00	1.24	0.00	0.00	0.02	0.01	0.00	0.00	0.00	0.00	2.19	97.81
100	52.00	000.00	Siderite,	12 007	0.20	0.02	0.07	0.01	0.07	0.01	0.00	0.00	0.00		0.00	0.00	0.02	0.01	0.00	0.00	0.00	0.00	2.13	
			Sphalerite,	IVDC-																				
165	54.00	377.00	Mica	12-068	6.09	0.69	0.01	0.08	4.38	0.05	0.00	0.01	0.00	0.15	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	11.49	88.51
				IVDC-																				
165	57.00	387.00	Quartz	12-069	1.02	0.38	1.34	0.02	0.36	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.14	96.86
				IVDC-																				
165	60.00	389.00	Quartz	12-070	1.11	0.54	0.16	0.02	0.44	0.02	0.00	0.01	0.00	0.10	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	2.42	97.58
			Galena,	IV/DC																				
165	63.00	296.00	Sphalerite, Mica	IVDC- 12-071	12.79	0.88	0.60	0.18	10.26	0.06	0.00	0.01	0.00	0.87	0.00	0.00	0.23	0.05	0.00	0.00	0.00	0.00	25.94	74.06
103	03.00	230.00	IVIICa	IVDC-	12.79	0.88	0.00	0.16	10.20	0.00	0.00	0.01	0.00	0.87	0.00	0.00	0.23	0.03	0.00	0.00	0.00	0.00	23.34	74.00
165	66.00	371.00	Quartz	12-072	0.07	0.10	0.05	0.01	0.03	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28	99.72
		0.100		IVDC-		-																	0.20	
165	69.00	394.00	Quartz	12-073	0.11	0.25	0.22	0.01	0.04	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.69	99.31
				IVDC-																				
165	72.00	384.00	Quartz	12-074	0.06	0.25	0.07	0.01	0.03	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.53	99.47
			Galena,	IVDC-																				
165	75.00	336.00	Sphalerite	12-075	0.39	0.35	0.59	0.01	0.05	0.00	0.00	0.00	0.00	1.16	0.00	0.00	0.14	0.04	0.00	0.00	0.00	0.00	2.74	97.26
4.65	70.00	207.00	Quartz,	IVDC-	0.43	0.46	0.20	0.00	0.04	0.04	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	00.07
165	78.00	297.00	pyrite	12-076	0.13	0.46	0.20	0.02	0.04	0.01	0.00	0.01	0.00	0.02	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.93	99.07
165	81.00	374.00	Quartz	IVDC- 12-077	0.12	0.09	0.59	0.01	0.04	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.87	99.13
103	81.00	374.00	Quartz,	IVDC-	0.12	0.03	0.33	0.01	0.04	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.87	99.13
165	84.00	377.00	Sphalerite	12-078	1.25	0.32	1.86	0.02	0.43	0.04	0.00	0.00	0.00	0.15	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	4.09	95.91
				IVDC-																				
165	86.00	364.00	Quartz	12-091	0.20	0.24	1.13	0.02	0.07	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	1.71	98.29
				IVDC-																				
165	89.00	368.00	Quartz	12-092	0.35	0.23	0.24	0.02	0.12	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.98	99.02
			_	IVDC-																				
165	92.00	334.00	Quartz	12-093	0.62	0.22	1.28	0.02	0.23	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.38	97.62
			Quartz,	IV/DC																				
165	95.00	403.00	Siderite, Sphalerite	IVDC- 12-094	0.28	3.18	1.77	0.02	0.10	0.02	0.00	0.14	0.00	1.63	0.00	0.00	0.01	0.04	0.00	0.00	0.00	0.00	7.19	92.81
103	33.00	+03.00	Spriaterite	IVDC-	0.20	3.10	1.//	0.02	0.10	0.02	0.00	0.14	0.00	1.03	0.00	0.00	0.01	0.04	0.00	0.00	0.00	0.00	7.13	32.01
165	98.00	320.00	Granite	12-095	3.78	2.02	2.23	0.05	1.49	0.09	0.03	0.03	0.00	0.54	0.00	0.00	0.01	0.04	0.00	0.00	0.00	0.00	10.32	89.68

### Appendix C

### JORC Code, 2012 Edition - Table 1 report

### **Section 1 Sampling Techniques and Data**

(Criteria in this section apply to all succeeding sections)

Criteria in this section apply to	o all succeeding sections)
Criteria	JORC Code explanation
Sampling techniques	Nature and quality of sampling (eg 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 (eg '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 (eg

of detailed information.

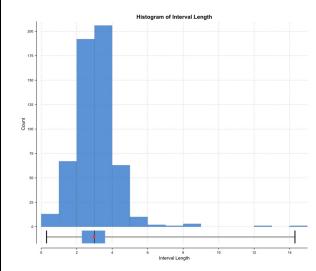
submarine nodules) may warrant disclosure

Commentary

Diamond drilling completed within the pit area, totalled approximately 8,100m with 98% of core still

available in Greenland with core from two other diamond holes located in Denmark (refer to Table 1).

After selecting the cores, a mark was placed every 3 meters and the diamond drill core photographed. A sample was taken at each mark by splitting the core in two with a diamond saw. Each sample collected was between 150-450 grams.



All information regarding the project has been downloaded from the Geological Survey of Greenland and Denmark (GEUS).

Drill samples were analysed for quartz. Assays results are given as a percentage.

Criteria	JORC Code explanation	Commentary
Drilling techniques	Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg 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).	All information sourced from the literature has stated approx. 19,000m diamond drilling was completed. No details of the drilling methods have been identified in the historic data. From the information reviewed there was no information regarding core orientated or down hole surveys taken during drilling programs. Most of diamond drill hole were drilled vertically into the pit.
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	No information has been provided if the drilled metres were weighted with no sample recovery numbers given within the reports.  Core recovery/sample data – yet to be determined.
	of the 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.	Relationship between sample recovery and grade is unknown – no information has been stated within the historical reports.
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,	Geological logging was completed over all drill holes.  The geological logs appear to be relatively qualitative and quantitative in nature.  Photographs were taken of each sample submitted and are available in the reports.
Sub-sampling techniques	channel, etc) photography.  The total length and percentage of the relevant intersections logged.  If core, whether cut or sawn and whether	Some core has been sawn in half and some quartered. No details have been provided of the sub-
and sample preparation	quarter, half or all core taken. If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.	sampling or sample preparation methods. Based on the absence of data, no comment can be made on the appropriateness of the sample preparation techniques historically undertaken.  No evidence of control/procedures adopted for sub-sampling stages.

Criteria	JORC Code explanation	Commentary
	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 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.	Specific Gravity measures were also taken for certain core intervals. An average value of 2.65 was used for specific gravity for the quartz zone. No duplicate samples have been stated within historical reporting or whether the samples are appropriate for the material sampled
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 (eg standards, blanks, duplicates, external laboratory checks) and whether	All assaying and determination of quartz was carried out by the owner/operator on the mine site at the time. Internal company quality control assurance has not been documented within the reports.  Base metal assays were carried out by Northern Atlantic Mining Associates Ltd consultants.  No information has been supplied regarding duplicates and laboratory checks.  No information provided regarding quality control procedures adopted by the various exploration companies.
Verification of sampling and assaying	acceptable levels of accuracy (ie lack of bias) and precision have been established.  The verification of significant intersections by either independent or alternative company personnel.  The use of twinned holes.	Based on historical results reported, verification of significant intersections has been completed as per in the highlight section of the announcement  There is no evidence of twinned holes in the project area.

Criteria JORC Code explanation Commentary Documentation of primary data, data entry procedures, data verification, data storage Documentation of primary data, data entry procedures, data verification protocols have been (physical and electronic) protocols. completed. Discuss any adjustment to assay data. Historical data was sourced from reports lodged to the Greenland authorities. VIGTUT KRYOLITBRUD 61.V1.Q Drillhole collar positions digitised and checked on historic drill plans

Criteria	JORC Code explanation	Commentary
		Location and values of analytical data verified on historic cross sections
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	All drill holes collars were reported as being located on a local grid system.  Adequate topographic control has been completed by digitizing the pit through surveyed cross section to form a 3D Model  A total 262 survey points were digitized from the pit survey plan included in GEUS 20656; capturing X, Y and Z coordinates. Additional survey points and pit profile lines were digitized as each data source appeared to have a different interpretation of the pit surface particularly at the base of the pit where undercut mining had taken place. Digitized survey points, where available, took precedence over the other data.

Criteria	JORC Code explanation	Commentary
		Plan View Plan View digitised survey points digitised profiles
Data spacing and distribut	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.	Drill Holes are spaced between 10 and 15m apart within the pit area.  Data spacings and distribution at this stage are not satisfactory for estimation of a Mineral Resource or Ore Reserve, as the quality of the drill hole data precludes its use for these estimations.  Quartz has been determined by subtracting the amount of impurities analysed in core samples.
Orientation of data in relat to geological structure		Most holes were drilled vertically to obtain geological and structural information; some were steeply inclined to sample mineralisation in the pit walls.  No information is known if the core sampling in the historic campaigns has introduced any significant bias.

Criteria	JORC Code explanation	Commentary
Sample security	The measures taken to ensure sample security.	No information relating to the sample security have been identified.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	No details observed on any previous sampling reviews or audits. Its assumed that industry standard practices and procedure were implemented at that time.

## **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.	MEL27007-45 with an area of 50sqkm has been transferred to Eclipse Metals Limited.  Security over the tenure by agreement with vendor and Greenland mines department.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	GEUS Report File No. 20656  "Ivigtut Annual Report 2012 Exploration Licence 2007/45" During the year a joint Nama-Rimbal task face re-examined all old data, examined all cores in both angerdlugssuaq plus those in Copenhagen to review:  (a) How much quartz was within the structure?  (b) How much quartz was left in the pit after mining was finished?  (c) What is the quality of the quartz?  Cross Section, 3D Mineralised Models, raw assay data selected from various drill holes targeting the quartz mineralisation.
Geology	Deposit type, geological setting and style of mineralisation.	Granitic Layered Intrusive Deposits
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:	The drill hole information has been inserted and tubulated within the document for the drill holes reported. Further desktop study work is in progress for the quartz and zinc mineralisation and will be released as soon as the data has been captured and

Criteria	JORC Code explanation	Commentary
	<ul> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> <li>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</li> </ul>	interpretation completed
Data aggregation methods	In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg 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.	Modelling cut off grades for higher grade mineralisation: Cryolite 2% Fe 0.5%  There are three main flat to shallow dipping, mineralised domains beneath and surrounding the lower portions of the pit. Domain D1: Cy-Fl Cryolite and Fluorite co-exist Domain D2: Fe-Zn; iron (siderite) and zinc co-exist Domain D3: Quartz zone  Cy and Fl grades to be estimated within Domain 1 Fe-Zn grades to be estimated within Domain 2 D2 is clipped against D1  No metal equivalent grades have been sourced from historic reports

Criteria	JORC Code explanation	Commentary
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 (eg 'down hole length, true width not known').	All drill holes intersect the mineralisation at an angle of approx. 90 degrees. Thus, the intersections are close to true width if not 100% of true width. For example, in places where the mineralisation is horizontal the drillholes are vertical.  Interval widths have been reported in Table 3 has been documented of the ASX release
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 drill hole collar locations and appropriate sectional views.	All grades have been included including the lower grades and significant intersections been reported within the release document.  Drill cross sections and 3D models have been included within the document.
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 assay results have been sourced from the historical reports and have been substantially documented
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.	The assay results have been sourced from the historical reports and have been substantially documented
Further work	The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale stepout 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.	Further work is currently underway for the incorporation of all quartz zones within the pit area. Work will include data capture, re-logging of historical drill holes, interpretation of cross section and volume calculations.