Mount Burgess Mining NL (ASX: MTB)

Focused on the development of 100%-owned polymetallic project in Botswana

Presentation by Ian McGeorge – MTB Director
African Mining Summit, Botswana
21 September 2023

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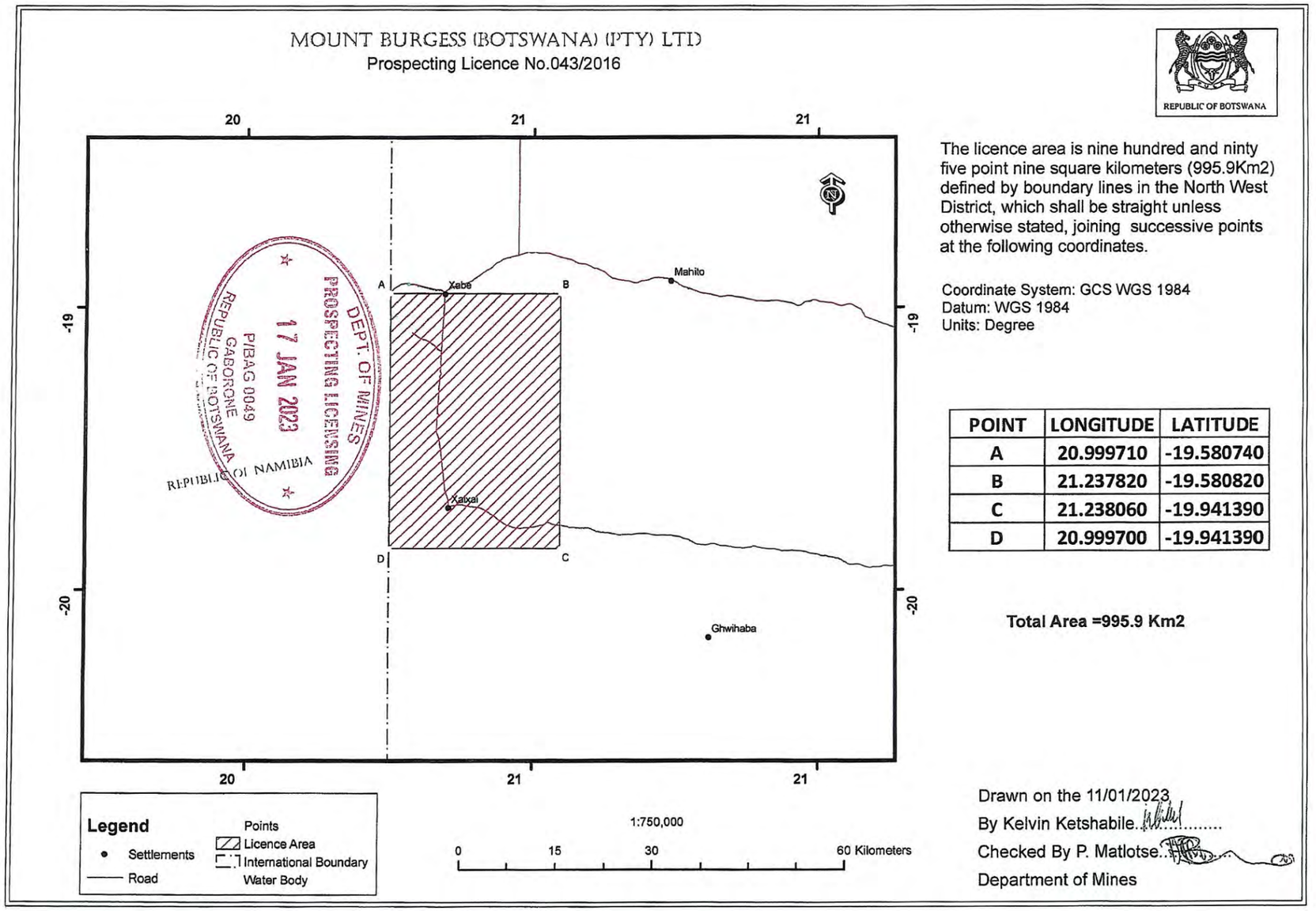
Kihabe-Nxuu Polymetallic Project Western Ngamiland Botswana

Mount Burgess Mining NL, listed on the Australian Securities Exchange (Code: MTB), has title to Prospecting Licence PL 43/2016 through its wholly owned subsidiary Mount Burgess (Botswana) (Proprietary) Ltd.

Situated on the Namibian border, it covers an area of 1,000 sq km from south of the Dobe border gate to south of Xai Xai.



The licence area is nine hundred and ninty five point nine square kilometers (995.9Km2) defined by boundary lines in the North West District, which shall be straight unless otherwise stated, joining successive points at the following coordinates.

Coordinate System: GCS WGS 1984
Datum: WGS 1984
Units: Degree

POINT	LONGITUDE	LATITUDE
A	20.999710	-19.580740
B	21.237820	-19.580820
C	21.238060	-19.941390
D	20.999700	-19.941390

Total Area =995.9 Km2

Drawn on the 11/01/2023
By Kelvin Ketshabile.....
Checked By P. Matlotse.....
Department of Mines

Geological Profile

In the region, a Neo-Proterozoic belt spans the border between Namibia and Botswana. PL 43/2016 covers the whole portion of that Neo-Proterozoic belt situated on the Botswana side of the border, which is highly prospective for base metals. In addition to Zinc, Lead and Copper, the Neo-Proterozoic belt also hosts Silver, Vanadium, Gallium and Germanium.

It is said that national boundaries do not define geological boundaries. However, the Botswana side of the border predominantly hosts the geologically defined fold closures, which through the folding process have generated higher concentrations of mineralisation.

Development to date

To date MTB has developed two of these mineralised fold closures into Indicated/Inferred Mineral Resource Estimates, compliant with the 2012 JORC Code, at the Kihabe and Nxuu Deposits, 7km apart.

Project Location

Combined Indicated/Inferred Kihabe and Nxuu Mineral Resource Estimates include the following metal/mineral volumes:

Resources	Tonnes (Million)	Zinc Tonnes	Lead Tonnes	Silver Ozs	Vanadium Pentoxide Tonnes	Gallium kg	Germanium kg
Kihabe	21	321,000	154,000	5,400,000	10,000	No estimate	No estimate
Nxuu	6	64,000	32,000	1,040,000	2,600	61,000	16,000
Total	**27**	**385,000**	**186,000**	**6,440,000**	**12,600**	**61,000**	**16,000**

A **peripheral Gallium and Germanium** Inferred Mineral Resource Estimate at the Nxuu Deposit includes the following metal volumes:

Resource	Tonnes (Million)	Gallium Kg	Germanium Kg
Nxuu Peripheral	**2.3**	**25,500**	**3,200**

The Mineral Resource Estimates were compiled independently under the supervision of Mr Shaun Searle, a Director of Ashmore Advisory Pty Ltd and a Registered Member of the Australian Institute of Geoscientists. Mr Searle has sufficient experience relevant to the style of mineralisation and type of deposits under consideration and to the activity that he has undertaken, to qualify as a Competent Person, as defined in the JORC Code.

Metals NOT included in Kihabe Mineral Resource Estimate

Significant intersections of **Copper, Gallium and Germanium** have been intersected in the Kihabe Deposit over a strike length of 2.4km. Further infill drilling will be required to include these in a Mineral Resource Estimate

Combined Kihabe and Nxuu Gallium and Germanium Exploration Targets

In addition to the Mineral Resource Estimates, **Gallium and Germanium Exploration Targets for the Kihabe and Nxuu Deposits** have also been estimated independently by Mr Shaun Searle, as follows:

Deposit	Gallium				Germanium			
	Lower Range		Upper Range		Lower Range		Upper Range	
	Tonnage	Grade	Tonnage	Grade	Tonnage	Grade	Tonnage	Grade
Kihabe	75,000,000	9g/t	100,000,000	12g/t	*Not included*		*Not included*	
Nxuu	4,000,000	9g/t	8,000,000	12g/t	4,000,000	2g/t	8,000,000	3g/t
Total	**79,000,000**	**9g/t**	**108,000,000**	**12g/t**	**4,000,000**	**2g/t**	**8,000,000**	**3g/t**

Future Development

MTB intends to develop the shallow, basin shaped, totally oxidised and weathered Nxuu Deposit first, as it presents as a low cost, low risk operation. With the addition of Vanadium Pentoxide, Gallium and Germanium alongside Zinc, Lead and Silver, it will have **a low waste and high ore ratio**.

The potential contribution of modern strategic metals, Gallium, Germanium and Vanadium Pentoxide, for the Nxuu Deposit

A total of 40 drill hole lengths in the Nxuu Deposit, so far assayed for Gallium and Germanium, when combined with Vanadium Pentoxide, represent credits additional to Zinc, Lead and Silver.

Nxuu Deposit - 40 Drill Hole Data:

- Total of 1,711.7m to base of mineralisation, averaging 42.79m per hole
- Kalahari sand cover = 231.9m (13.5% of 1,711.7m), averaging 5.8m per hole
- Mineralised quartz wacke = 1,479.8m (86.45% of 1711.7m)
- Associated Zn/Pb/Ag/V2O5/Ga/Ge = 535.7m (31.3% of 1,711m)
- Combined V2O5/Ga/Ge, above, in between, below and outside of Zn/Pb/Ag = 662.8m (38.7% of 1,771m)
- 535.7m + 662.8m = 1,198.5m **(70% of 1,771m)** which contain combined Zn/Pb/Ag/V2O5/Ga/Ge

662.8m of V2O5/Ga/Ge, above, in between, below and outside of Zn/Pb/Ag intersections, **more than double the 535.7m of Zn/Pb/Ag. 519.43m of V2O5/Ga/Ge** are associated with **535.7m of Zn/Pb/Ag adding additional value to the Zn/Pb/Ag domain.**

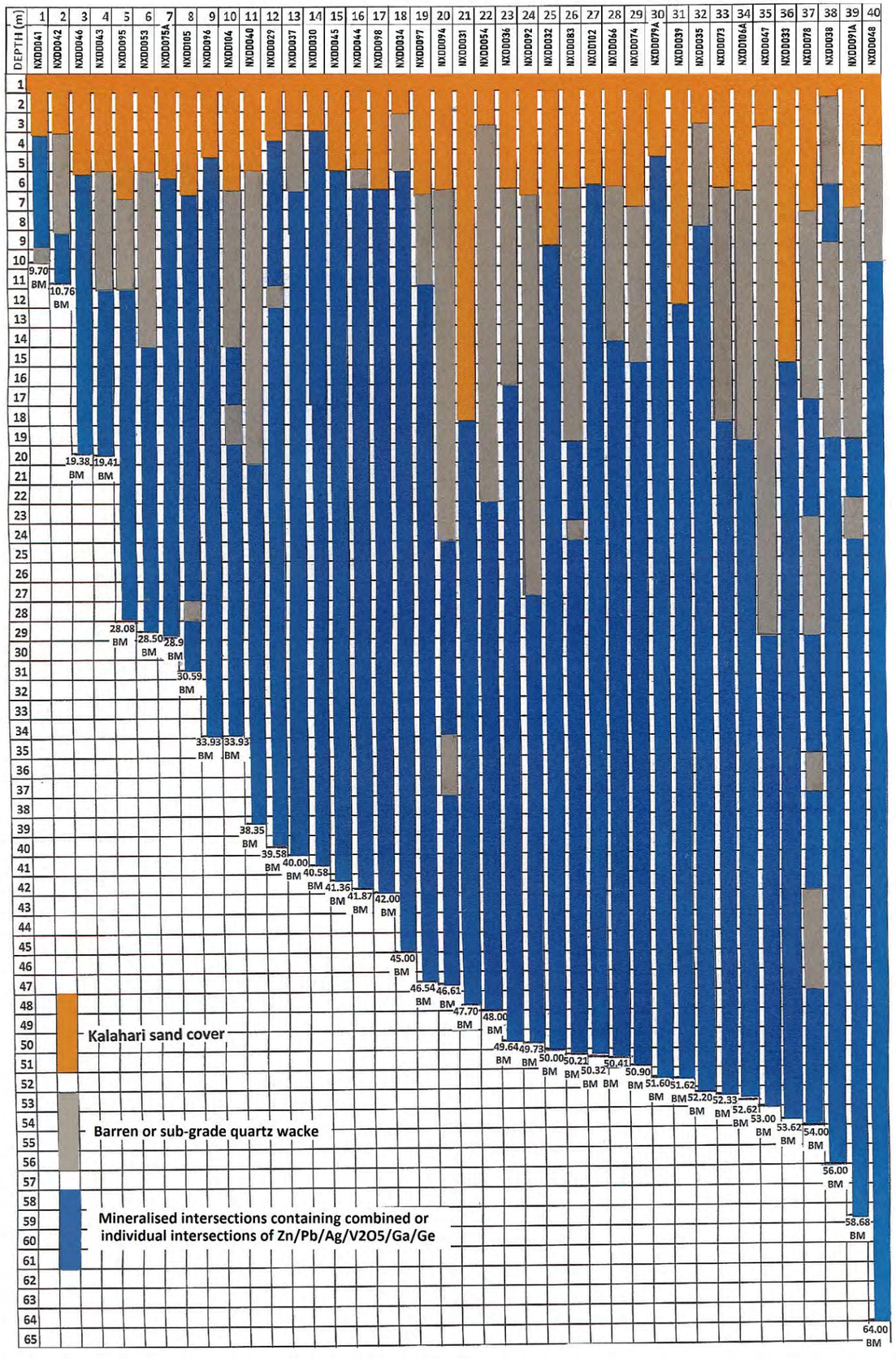
If Kalahari sand cover of 231.9m can be scraped off, leaving 1,479.8m of quartz wacke to the base of mineralisation, the **1,198.5m of mineralised quartz wacke equates to 81%, leaving only 19% of quartz wacke as waste.**

A further 2,500m of vertical HQ diamond core drilling is required at the Nxuu Deposit to quote a Measured/Indicated Resource compliant with the 2012 JORC Code, to then proceed to a Pre-Feasibility Study, followed by a Definitive Feasibility Study, subject to the availability of a commercial power supply.

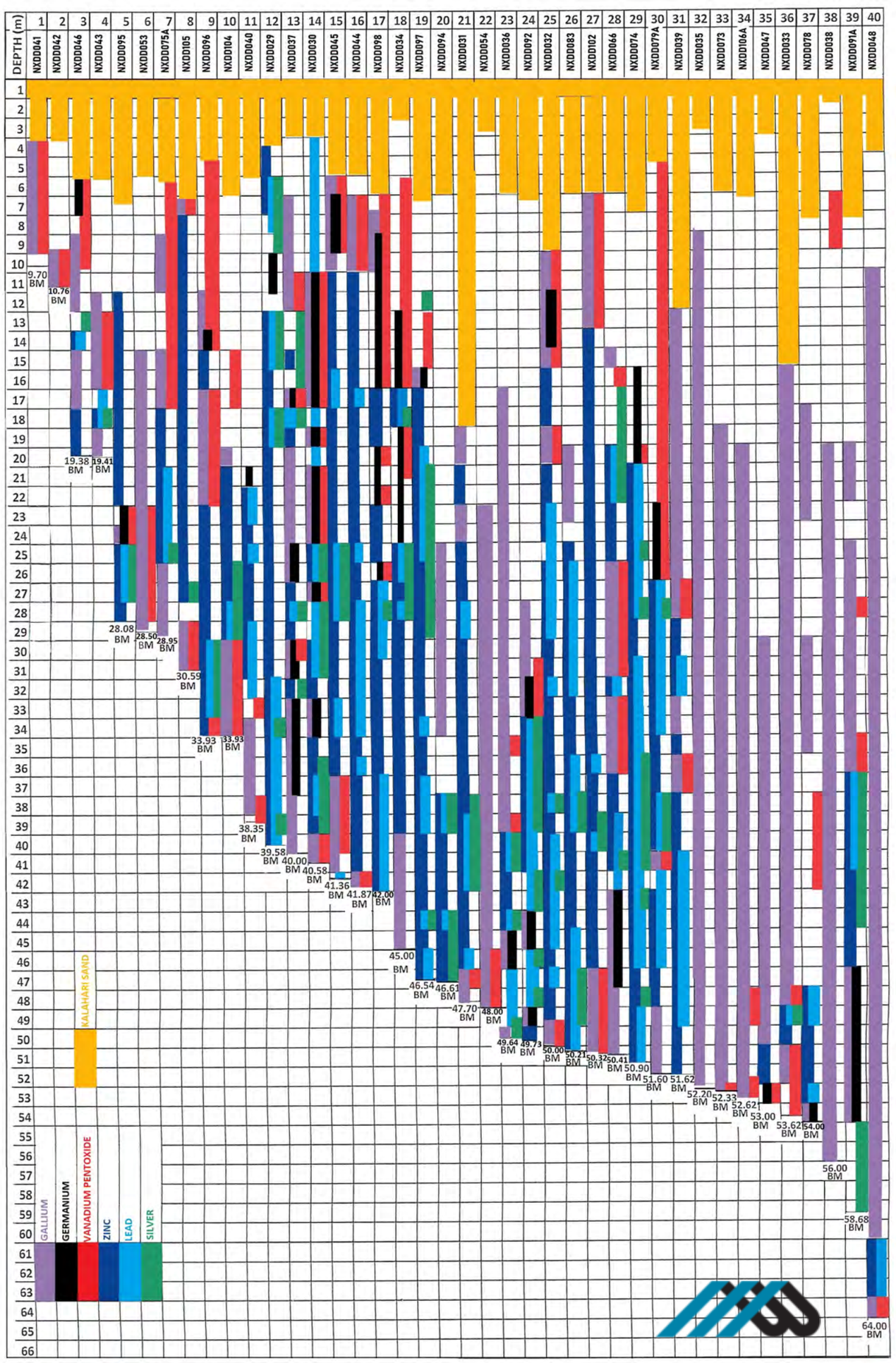
NXUU DEPOSIT

Showing

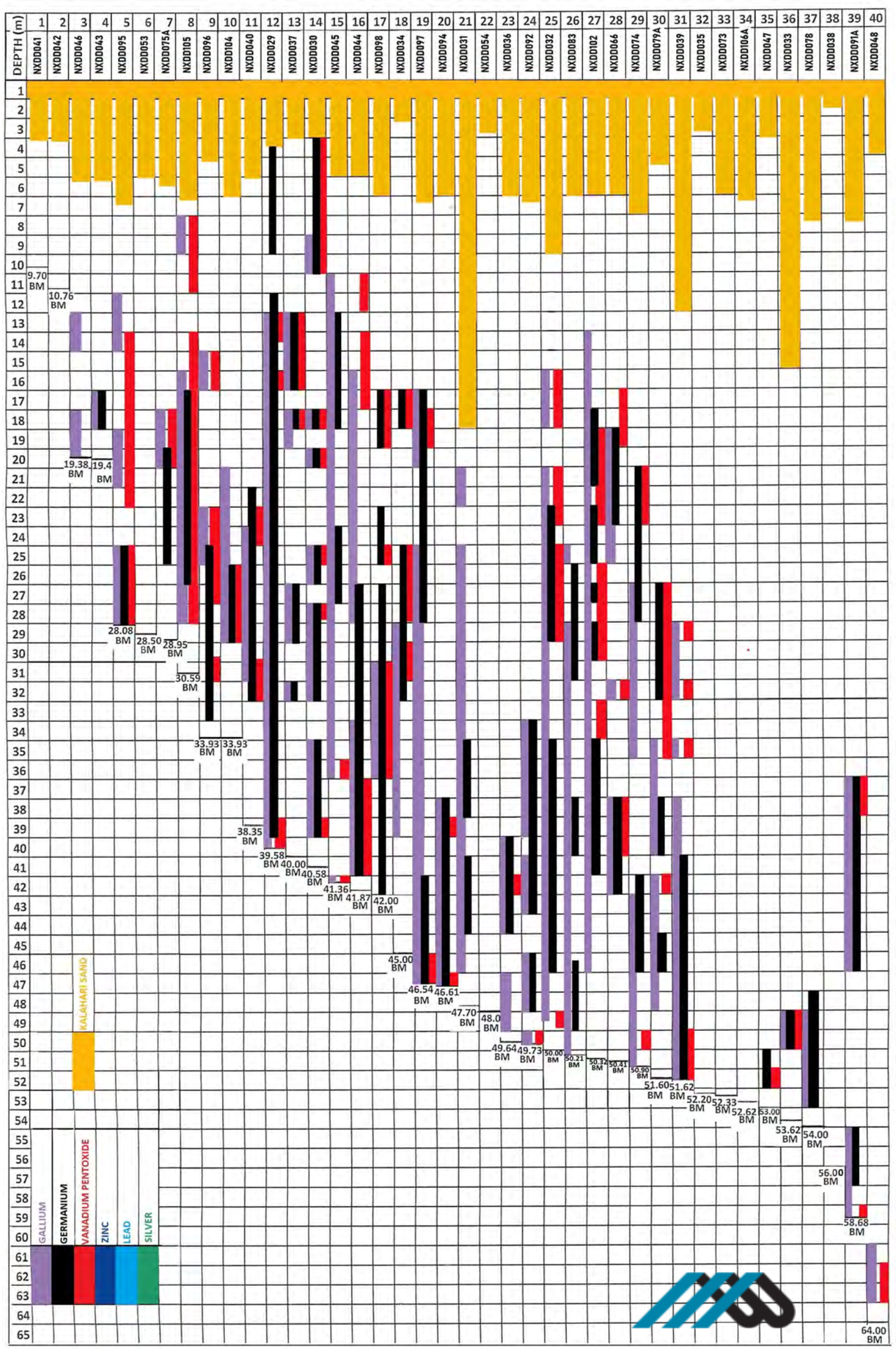
- Kalahari Sand Cover
- Barren or sub-grade quartz wacke (grey) and
- Mineralised intersections in blue containing combined or individual intersections of Zn/Pb/Ag/V2O5/Ga and Ge



NXUU DEPOSIT
Zn/Pb/Ag/V2O5/Ga/Ge
MINERALISATION

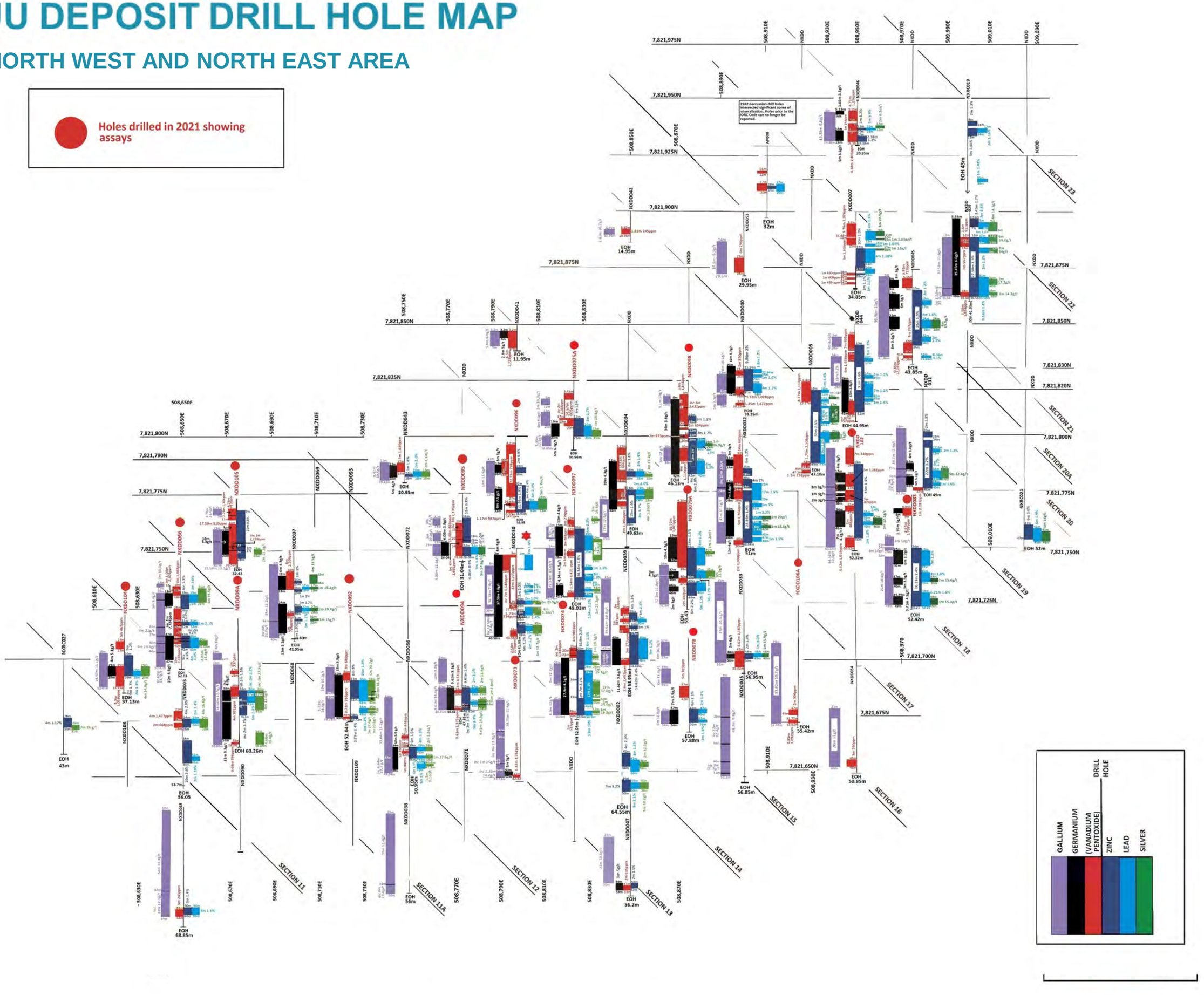


NXUU DEPOSIT Ga/Ge/V2O5 MINERALISATION COINCIDENT WITH Zn/Pb/Ag MINERALISATION

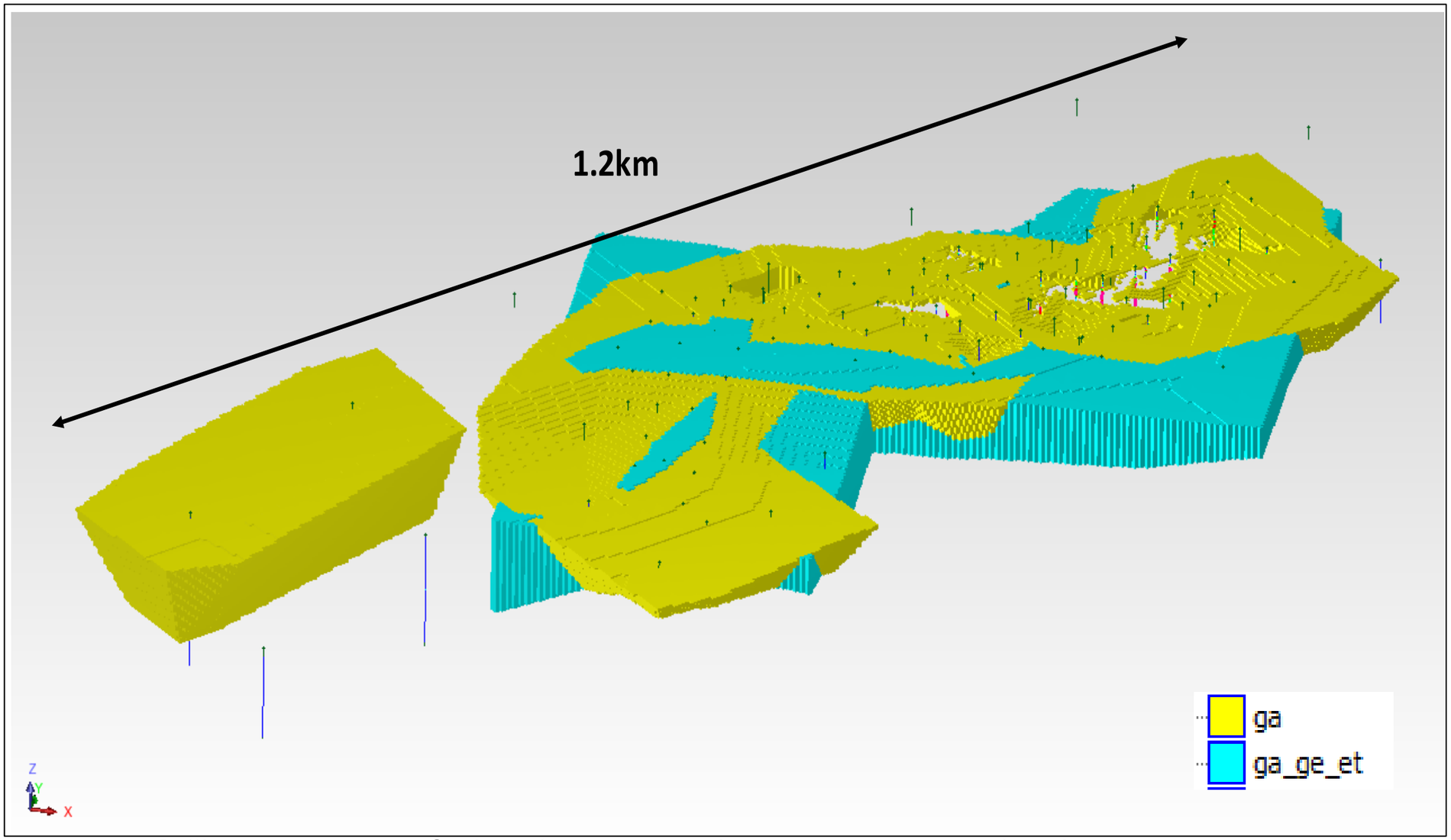


NXUU DEPOSIT DRILL HOLE MAP

NORTH WEST AND NORTH EAST AREA



NXUU DEPOSIT GALLIUM AND GERMANIUM EXPLORATION TARGET



Note: ga = Gallium component of Mineral Resource Estimate, ga_ge_et = Exploration Target

Range	Tonnage (Million Tonnes)	Gallium Grade (ppm)	Germanium Grade (ppm)
Lower	4	9	2
Upper	8	12	3

The potential quantity and grade of the Exploration Target is conceptual in nature. There has been insufficient exploration to estimate a Mineral Resource for all target areas reported. It is uncertain if further exploration will result in the estimation of a Mineral Resource. The Exploration Target has been prepared and reported in accordance with the 2012 edition of the JORC Code.

MINERALOGICAL/METALLURGICAL TEST WORK CONDUCTED ON THE NXUU DEPOSIT TO DATE HAS SHOWN THAT

- 93% Zn can be recovered on site from the oxide mineral smithsonite, through solvent extraction and electro-winning (SXEW)
- Pb carbonate in the oxide mineral cerussite, can be recovered as a concentrate by gravity separation, followed by flotation, which will also recover Ag minerals and inclusions with cerussite.
- Ag is known to be recoverable from oxide deposits through processing circuits within concentrators.
- 82% Vanadium Pentoxide can be recovered on site from the oxide mineral descloizite, through gravity separation followed by flotation using a hydroximate acid for recovery.
- Both Ga and Ge are hosted in oxidised micas , which through flotation produce high percentage mica concentrates available for mineral extraction. Metallurgical test work is currently being conducted to determine appropriate processing routes for on-site recoveries.

COMMINUTION MILLING TEST WORK CONDUCTED ON THE NXUU DEPOSIT

Vertical milling test work conducted by EDS South Africa proved to be very successful for the Nxuu Deposit's totally oxidised, weathered, mineralised quartz wacke. This will result in significant savings in power and capital costs. Typical ball mill feed requires at least an extra 40% of power. The capital cost of conventional Ball/SAG/Rod mill is significantly more than the cost of an EDS Vertical Mill.

GALLIUM, GERMANIUM AND VANADIUM PENTOXIDE – MODERN STRATEGIC METALS

Gallium

Gallium, a low melting point, soft metallic element is used for semi-conductors, blue ray technology, light emitting diodes (LEDs), mobile phones and as an additive to produce low melting point alloys.

Listed by the United States Geological Survey as a critical mineral because of the increase of required access through imported supply. This imported supply increase has been generated by significant increase in demand for Gallium Nitride (GaN) energy saving chips, as a result of:

- Recent significant increase in demand for cost effective fifth generation (5G) networks requiring Gallium computer chips which are more efficient than silicon chips at higher temperatures, caused by the significant growth in internet traffic.
- Wireless charging required for future electric vehicles. GaN chips have energy efficiency levels of 96%, compared to current levels, at best of 93%. The 3% increase will reduce CO2 emissions equal to those generated by one million cars with combustion engines.
- GaN chips have low power loss and provide smooth connection of solar energy to grid power storage systems.

In order to meet future demand, the Fraunhofer Institute System and Innovation Research estimates that by 2030, worldwide production of Gallium will need to be six times higher than current world production of around 720 tonnes per annum.

An international team of scientists at the University of New South Wales School of Chemical Engineering, Australia, has developed a reactor requiring Gallium and nano-sized silver rods to break down CO2 into constituent elements. It is anticipated that such reactors can be employed for mitigating the impact of greenhouse emissions.

GALLIUM, GERMANIUM AND VANADIUM PENTOXIDE – MODERN STRATEGIC METALS

Germanium

Germanium, also listed by the United States Geological Survey as a critical mineral because of required access to imported supply through significant increase in demand for its use in:

- Fibre-optics, infra-red optics, high brightness LEDs used in automobile headlights, mobile phone lights and in semi-conductors for transistors in thousands of electric applications.
- Night vision and night targeting
- Solar panels as the most efficient energy generator, converting more than 40% of sunlight into power. Silicon based solar cells only have a maximum capacity of 20%

Vanadium Pentoxide

Vanadium Pentoxide is used in the manufacture of Vanadium Redox Flow (VRF) batteries, which can store huge amounts of power over long periods of time. They can be subject to significant variations in high/low power storage levels over short periods of time, with little impact on power storage capability. Li-ion batteries must be maintained at constant power storage levels, otherwise they deteriorate.

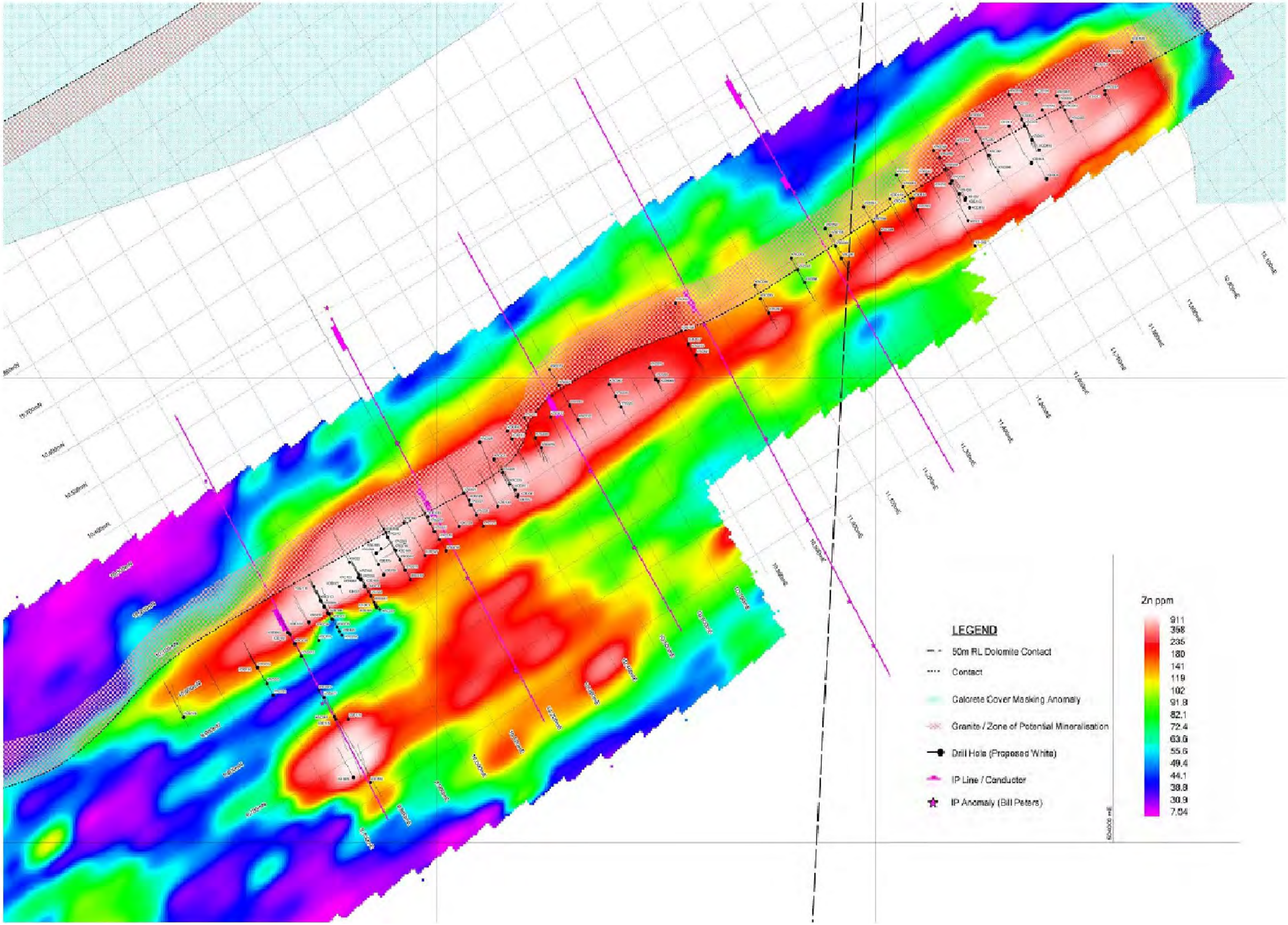
BENEFITS FOR BOTSWANA

This is a project which contains SEDEX style, oxidised, shallow level mineralistion, which to date has shown that Zinc metal and Vanadium Pentoxide can be produced on site, eliminating the cost and requirement to export concentrates for smelting.

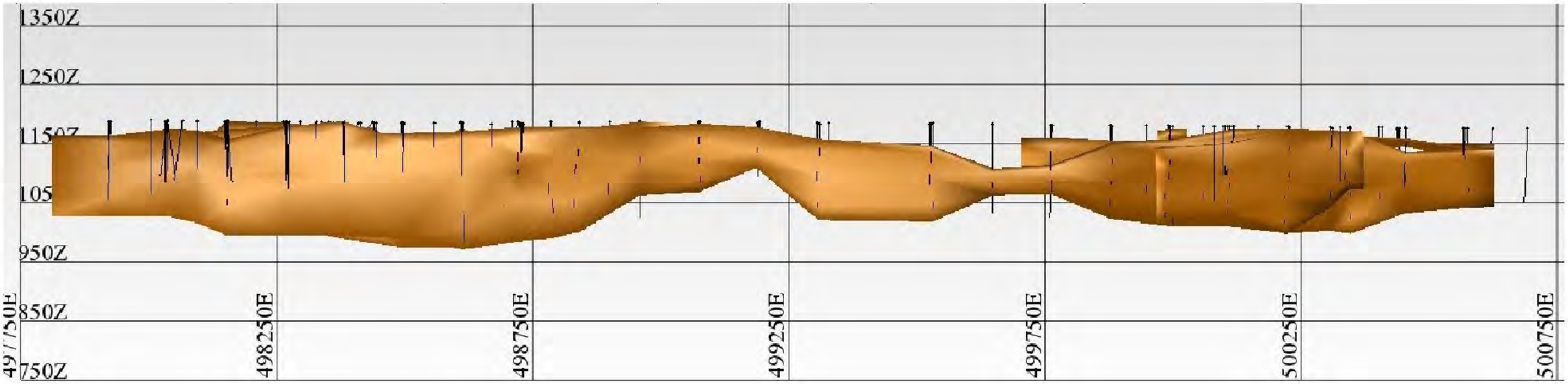
Vanadium Pentoxide can be used to locally manufacture VRF batteries, which in a country like Botswana with significant areas of rural population, can be used for power storage generated from solar.

Test work is currently being conducted to determine whether Gallium and Germanium hosted in oxidised micas can be recovered on site. These are modern strategic metals in significant international demand.

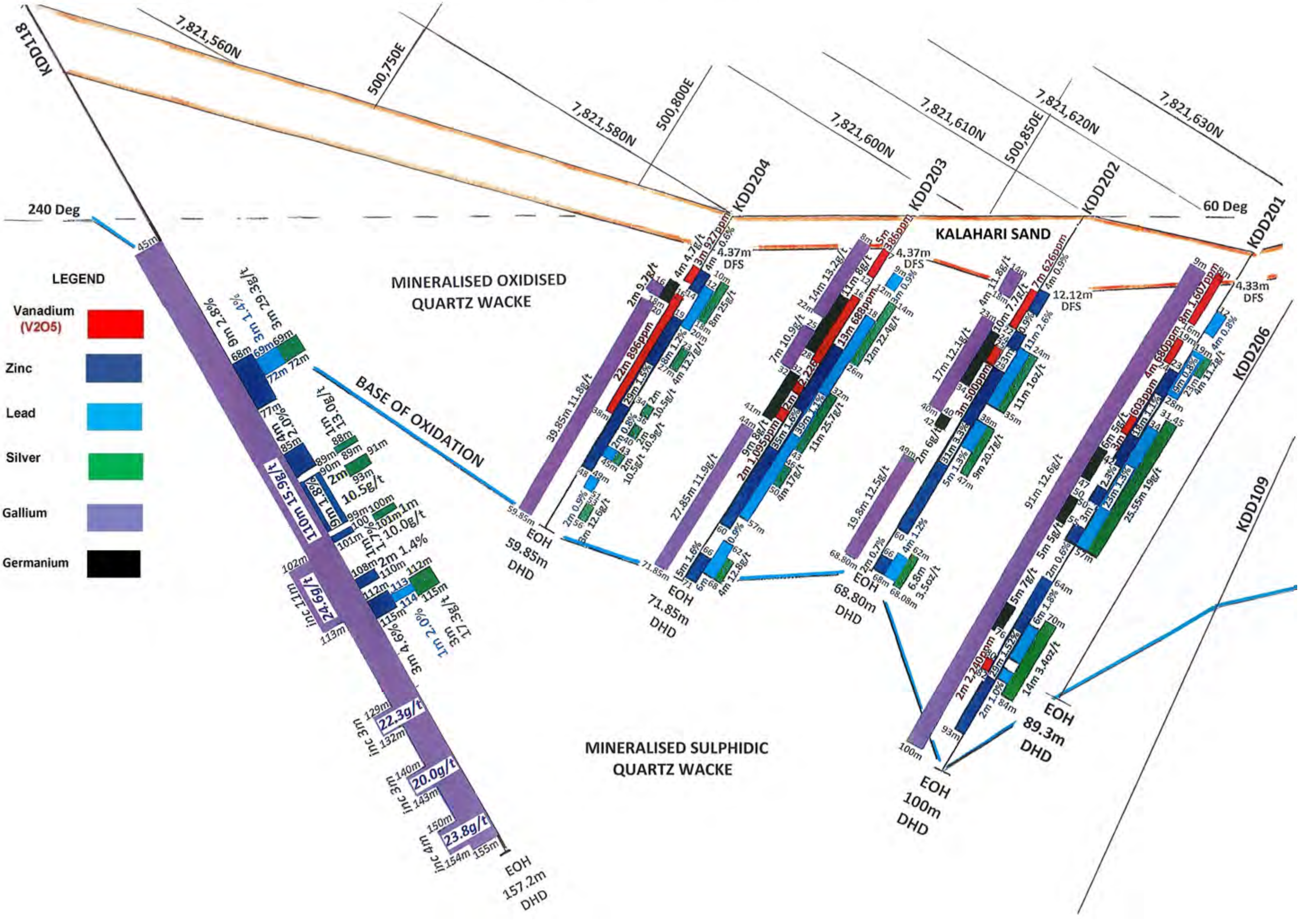
KIHABE DEPOSIT – 2.4KM IN LENGTH



KIHABE DEPOSIT Zn/Pb/Ag/V2O5 LONG SECTION

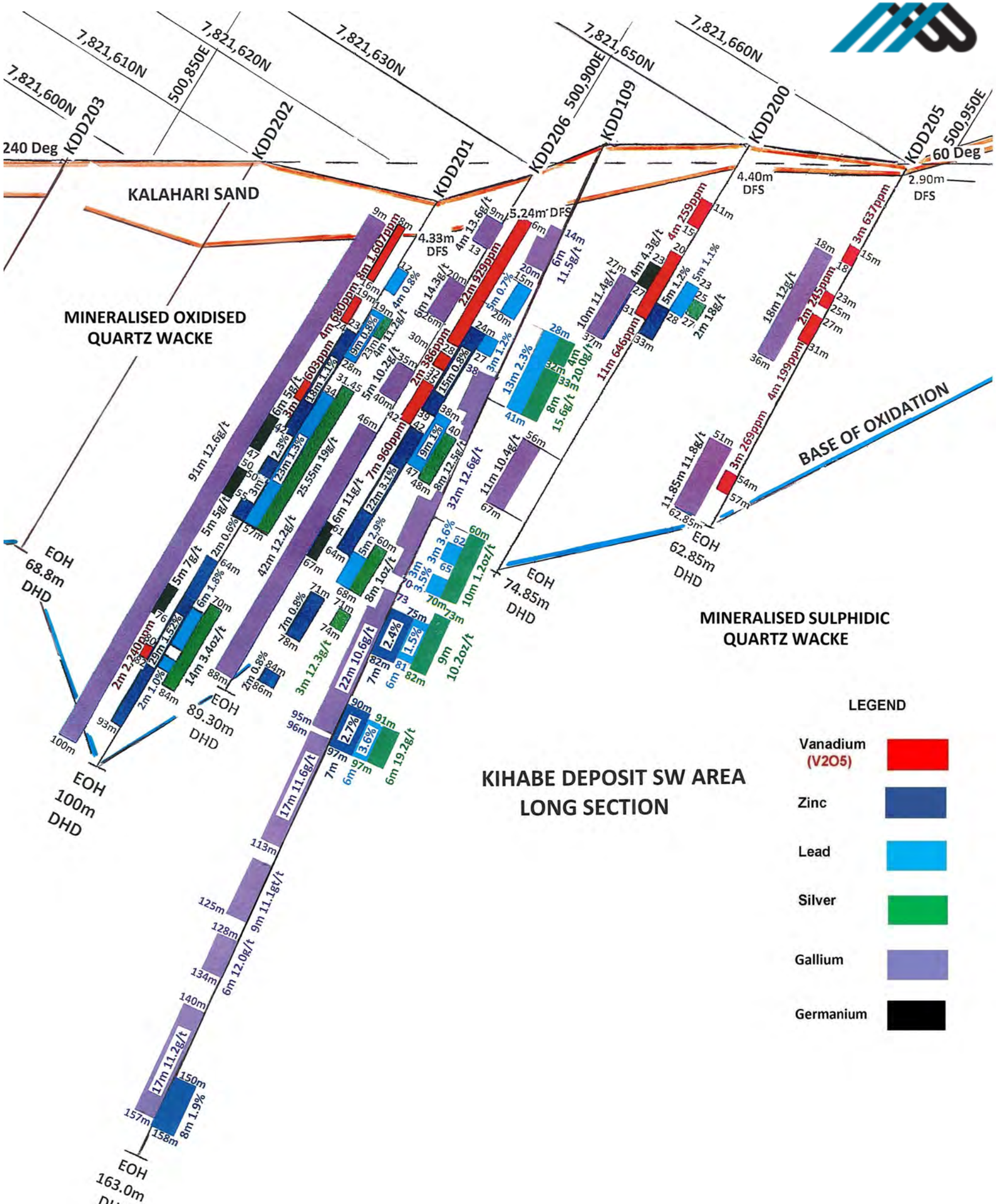


KIHABE DEPOSIT SW AREA – LONG SECTION

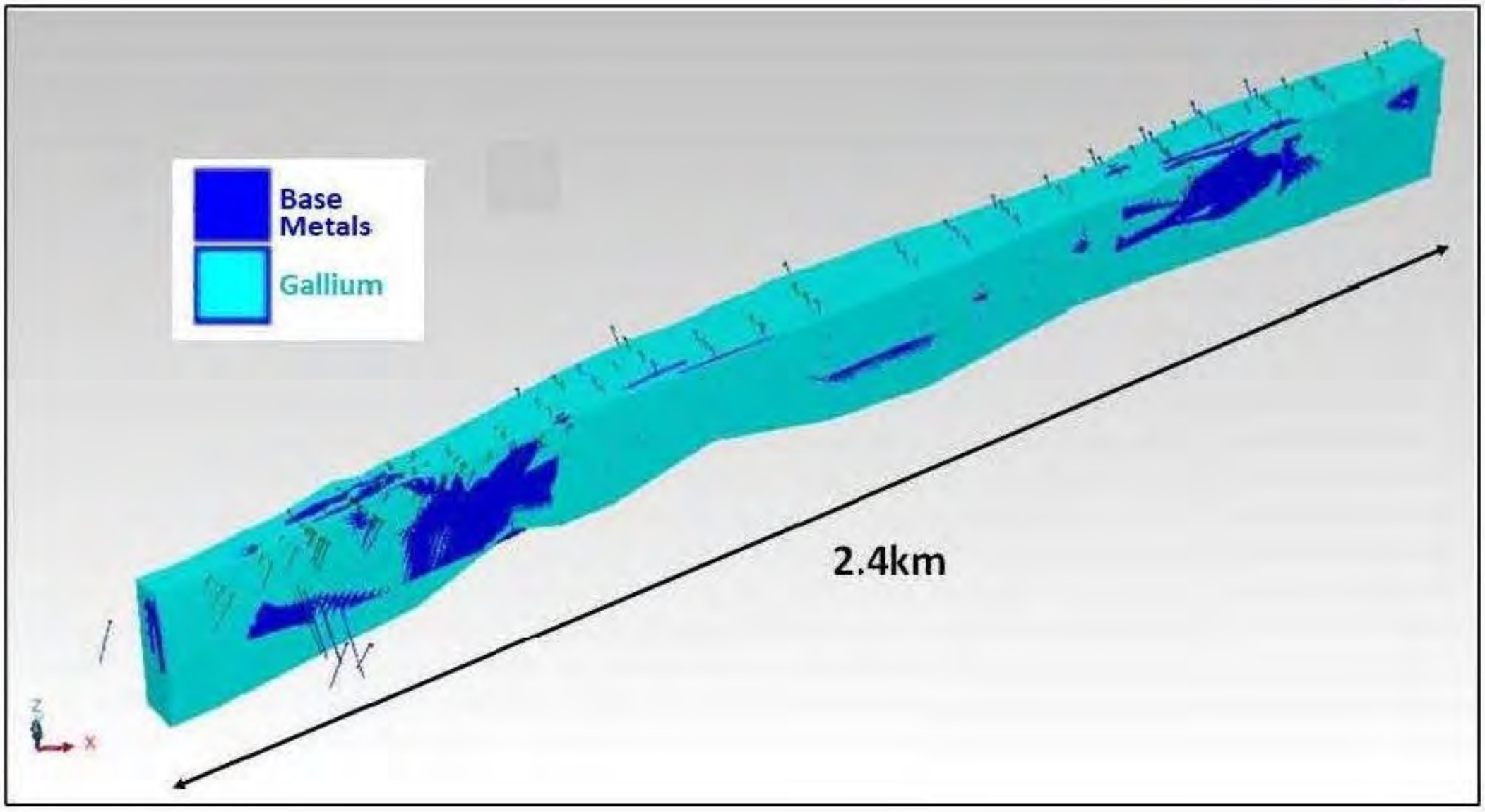


KIHABE DEPOSIT

SW AREA LONG SECTION



KIHABE GALLIUM EXPLORATION TARGET



Range	Tonnage (Million Tonnes)	Gallium Grade (ppm)
Lower	75	9
Upper	100	12

Note:

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KIHABE RESOURCE – MINERALOGY AND METALLURGY

The Kihabe Resource contains oxide mineralisation in the top 25% of the deposit. Upon development, it can contribute to the timeline of production from the oxidised Nxuu Deposit. The bottom 75% of the Kihabe Resource is in sulphide mineralisation.

Test Work Conducted to Date on the Kihabe Deposit

Within the Kihabe Oxide Zone, test work has shown that:

- 96.9% Zinc can be recovered on site from baileychlore through SX/EW
- 91.9% Lead can be recovered on site from galena through acid leaching
- Silver is known to be recoverable from oxide deposits through processing circuits within concentrators
- 82% Vanadium Pentoxide can be recovered on site from descloizite, through gravity separation, followed by flotation using hydroximate acid for recovery
- Test work is currently being conducted on Gallium and Germanium, hosted in oxidised micas, to determine processes required to recover the metals on site

Within the Kihabe sulphide zone test work has shown that:

- 93.8% Zinc can be recovered from sphalerite in concentrate containing 66% Zn
- 88.1% Lead can be recovered from galena in concentrate containing 66% Pb
- 96.4% Silver can be recovered from concentrate containing 66% Ag
- Test work for Vanadium Pentoxide, Gallium and Germanium, still to be conducted

REGIONAL TARGETS

Several regional targets have been identified through geochemical soil sampling and initial exploratory drilling, which can be developed over time to contribute to the project’s life span.