



31 January 2019

## **QUARTERLY ACTIVITIES REPORT**

### **DECEMBER 2018**

#### **HIGHLIGHTS**

- **Highly respected geological consultant Rocky Osborne completes technical review of Koppar's projects.**
- **New focus on Tverfjellet and Undal Projects which have not undergone modern day exploration**
- **High priority targets identified at Tverfjellet including mapped massive sulphide occurrences**
- **Prospectivity of Grimsdalen Project confirmed, with planned drilling subject to approvals**
- **2019 exploration program underway following strategic review of tenement package and renewal of key exploration permits**
- **In addition to developing its Norwegian Projects, Company reviewing potential acquisitions and investments across a range of commodities and jurisdictions**

#### **TECHNICAL REVIEW OF NORWEGIAN LANDHOLDINGS**

During the Quarter a detailed technical review of Koppar's extensive copper-zinc portfolio in Norway, which covered an area of 737 km<sup>2</sup>, was completed by highly respected geological consultant Grant "Rocky" Osborne (refer ASX Announcement 19<sup>th</sup> December 2018).

Central findings of the review indicated that the western terrains within the Trondheim Nappe Complex are structurally higher, and hence relatively less-deformed than those in the east. These geological terranes are considered the most prospective to host large tonnage VMS-style base metal mineralisation due to their estimated metal endowment (based on recorded historical production data) and their lower degree of deformation. Results highlighted that Koppar's projects in the Støren Nappe and Meråker Nappe, being the Tverfjellet, Undal, and Grimsdal Projects, to be considered as the most prospective and should be the focus of Koppar's exploration program going forward.



The idea of clusters of VHMS deposits with individual deposits forming at specified distances (4km-5km) along Sediment Interface Zones is well documented and an accepted theory worldwide. Given that the Tverrfjellet deposit in the Støren Nappe is a single deposit, and the Undal project area consists of two known mined deposits, the review suggests that there is a high likelihood of underexplored targets within the immediate area, making Koppar's Tverrfjellet and Undal projects, along with drilling at Grimsdalen and further historical data compilation at Vangrofta, KRX's primary focus for exploration during H1 2019. Excitingly the Tverrfjellet and Undal projects are where the least amount of modern-day exploration has been carried out, including the absence of modern day airborne or ground geophysical surveys.

The **Tverrfjellet** deposit is approximately 1.8 km in length and was operation from 1968 until 1993 producing circa 15 Mt at 1.0% Cu, 1.2% Zn, 0.2% Pb and 36% sulphur. At its time, the Tverrfjellet mine was the largest producer of pyrite concentrate, chalcopyrite and sphalerite in Norway.

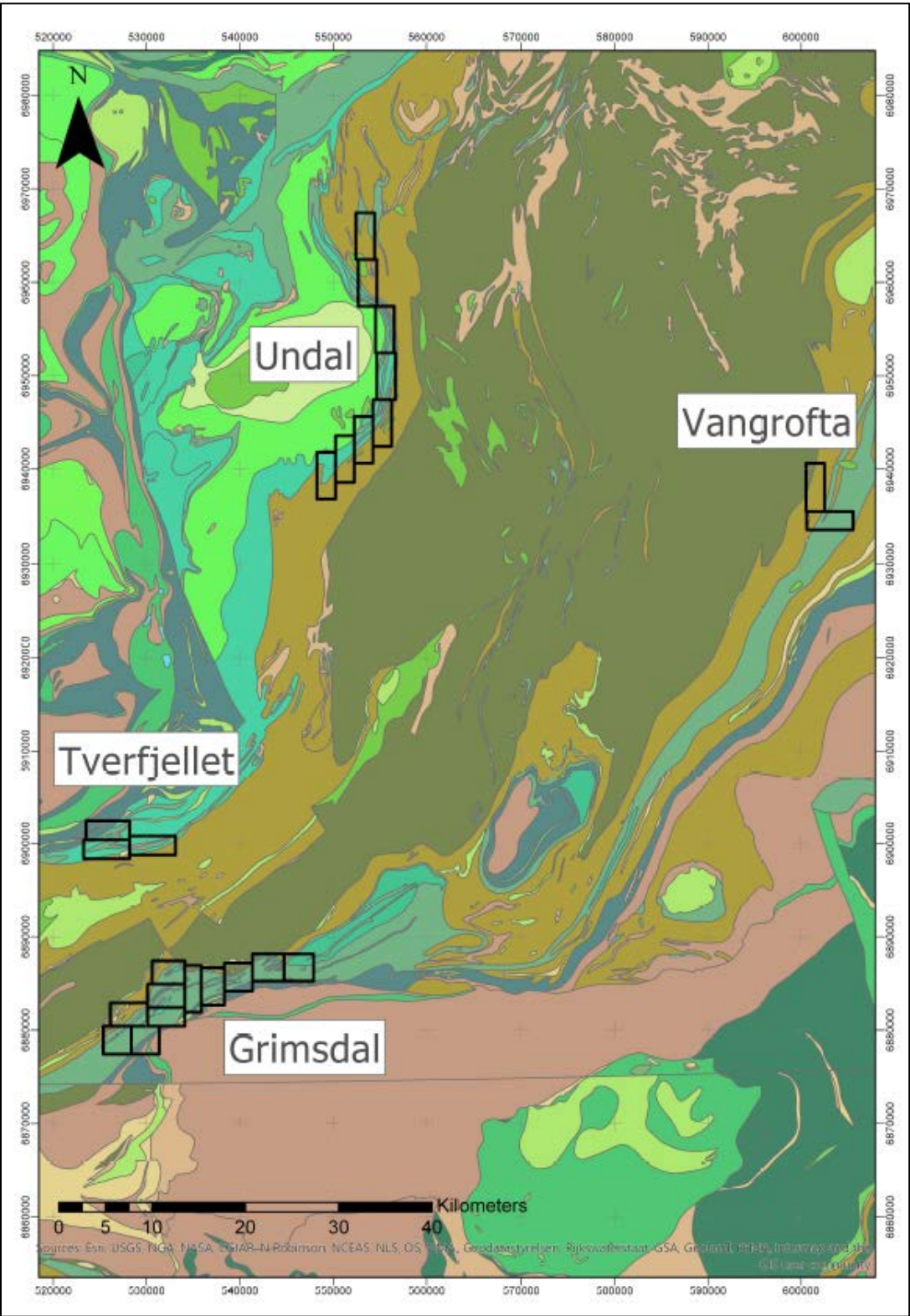
Historic EM and regional magnetic surveys show a conductive and coincident magnetic trend traversing into the lease and weakening from the east. This trend (combined with historical regional geological mapping) was the rationale for additional tenements being pegged in this area during 2018.

The **Undal** Project historically produced 280,000 tonnes at reported grades of 1.15% Cu, 1.86% Zn, 43.2% Fe and 41.1% S from sulphide hosted mineralisation (pyrite with subordinate chalcopyrite and sphalerite). Compositionally similar to Tverrfjellet, but smaller, the Undal deposit is hosted by massive sulphides situated in a metabasaltic lens in the "Selbusjøen mélange" zone between the Gula and Støren Nappes.

The Undal Project also includes the historical Nyberget copper and zinc mine along with a further 23 mineral occurrences. Of these 4 are classed as magnetite exhalative and 20 as base metal sulphide occurrences, with the majority having had no modern day exploration and almost no drilling.



Figure 1: Overview of Koppar's renewed tenement holding and the focus of the Company's 2019 Norway exploration program underlain by regional 1:250,000 mapping by the Norwegian Geological Survey





The **Grimsdal** deposit occurs within the Meråker Nappe within an area of strong deformation which is interpreted to represent a high likelihood of fold repeats. Mineralisation at the Grimsdalen deposit is the largest in the Folldal district, with a strike length of approximately 9 km, a maximum width of 1,000 m and an average thickness of 3 m. Approximately 300,000t is recorded to have been mined at 0.85 % Cu and 3.5 % Zn (NGU Ore Database) from the neighbouring Nygruva mine during the period 1783 to 1952.

The **Vangrøfta** Project area contains five (5) known copper occurrences according to the Norwegian Geological Survey (NGU); Fredrik IV, Flatskarvåsen, Vangrøften Skjerp, Fossgruva, and Storebekdal. Copper mineralisation was discovered at Fredrik IV by two prospectors in 1707 but despite the mine existing for over 200 years it has only been worked for a total of 30 years during this period. Recorded production is approximately 2,600 t at 5 to 6 % Cu (NGU Ore Database).

KRX has completed a sampling programme of the accessible dumps and mine workings at Vangrøfta with assays received including copper grades ranging up to 16.75% and gold grades up to 3.33g/t were reported with 11 of 13 samples returning grades above 1% Cu and 10 of 13 samples returning grades above 0.3g/t gold (refer and ASX Announcement 16 October 2018). In addition several samples returned anomalous concentrations of cobalt which could add significant value to mineralisation defined at the Project (depending on the metallurgical process to be used).

Subsequent to the end of the Quarter, the Company chose not to renew tenements related to the Løkken, Killingdal, Storwatz, and Fløttum projects following Mr Osborne's review and its own assessment of their prospectivity, enabling resources to be fully focussed on the Tverfjellet, Undal, Grimsdal and Vangrøfta Projects, as well as reviewing potential acquisitions and investments across a range of commodities and jurisdictions.

#### **FORWARD WORK PROGRAM**

Following the results of the technical review, Koppar is currently planning its 2019 field program which will focus on advancing exploration at the Tverfjellet and Undal Projects via airborne geophysical surveys which will be followed by ground geophysical surveys to define targets for drilling. A number of airborne EM survey proposals have been received and are currently being assessed by the Company.

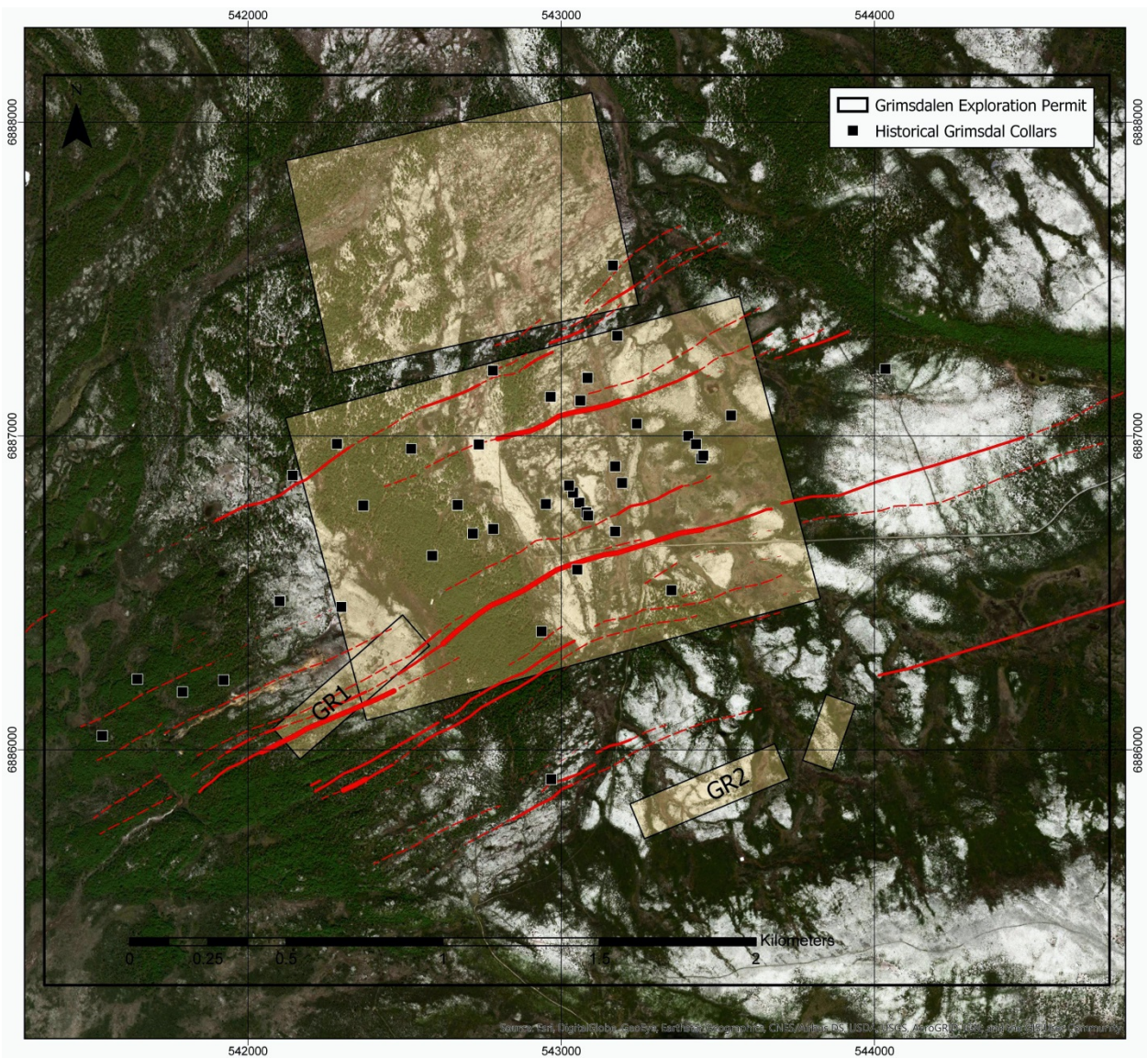
In addition, the Company intends carrying out a detailed compilation of historical Tverfjellet drilling and mapping data and review of historic ground geophysics data at Tverfjellet and Undal. This work has commenced with results to follow later in the March quarter.

Drilling permission is currently pending at the Company's Grimsdal Project. Following identification of the drill targets at Grimsdal, the Company has been advancing the various permits and permissions required for drilling at Grimsdal. Whilst the proposed drill locations lie outside a National Park, permission to drill



is required from the National Park authorities, who have requested, and been provided with, more information from both the Company and the Norwegian Mines Directorate which they are currently considering.

Figure 2: Plan of Grimsdalen Project showing historical drillhole collars (black squares), current modelled plates from KRX 2018 ground EM survey (yellow, dipping to NNW), and historic Turam conductors (red lines) overlain on satellite imagery.





**For and on behalf of the board:**

Mauro Piccini  
Company Secretary

**About Koppar**

Koppar is a junior exploration company established with the purpose of exploring and developing copper, zinc and other mineral opportunities. The Company has a conditional right to acquire mineral exploration projects located in the Trøndelag region of Norway, namely the Løkken Project, Tverrfjellet Project, Grimsdal Project, Killingdal Project and Storwartz Project. The Projects are located in a historic mining area, and mining has been previously carried out on several of the projects.

For further information visit [www.kopparresources.com](http://www.kopparresources.com)

**Competent Persons Statement**

The technical information in this announcement complies with the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code) and has been compiled and assessed under the supervision of Miss Rebecca Morgan, the Non-Executive Technical Director of Koppar Resources Ltd. Miss Morgan is a Member of the Australasian Institute of Geoscientists. She has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the JORC Code. Miss Morgan consents to the inclusion in this announcement of the matters based on his information in the form and context in which it appears.

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## APPENDIX 1 – LICENSES HELD BY KOPPAR RESOURCES AS AT 31 DECEMBER 2018

Table 1: List of exploration permits as at 31 December 2018

NAME	STATUS	PERMIT TYPE	AREA (KM2)
Hoydalsgruva 100	Granted	Exploration	4.0
Meldal 100	Granted	Exploration	5.3
Svorka 100	Granted	Exploration	1.4
Lokken 100	Granted	Exploration	8.6
Killingdal	Granted	Exploration	4.5
Nygruva	Granted	Exploration	9.14
Grimsdalen	Granted	Exploration	9.86
Storwartz	Granted	Exploration	5.20
Tverrfjellet	Granted	Exploration	9.99
Fløttum 101	Granted	Exploration	10.0
Fløttum 102	Granted	Exploration	10.0
Fløttum 103	Granted	Exploration	10.0
Rødalen 101	Granted	Exploration	10.0
Rødalen 102	Granted	Exploration	10.0
Undal 101	Granted	Exploration	10.0
Undal 102	Granted	Exploration	10.0
Nyberget 101	Granted	Exploration	10.0
Nyberget 102	Granted	Exploration	10.0
Meldal 101	Granted	Exploration	10.0
Meldal 102	Granted	Exploration	10.0
Meldal 103	Granted	Exploration	10.0
Meldal 104	Granted	Exploration	10.0
Lomsjødalen 101	Granted	Exploration	10.0
Lomsjødalen 102	Granted	Exploration	10.0
Innerdalen 101	Granted	Exploration	10.0
Innerdalen 102	Granted	Exploration	10.0
Innerdalen 103	Granted	Exploration	10.0
Innerdalen 104	Granted	Exploration	10.0
Klinkengruva 101	Granted	Exploration	10.0
Klinkengruva 102	Granted	Exploration	10.0
Killingdal 101	Granted	Exploration	10.0
Killingdal 102	Granted	Exploration	10.0
Killingdal 103	Granted	Exploration	10.0
Killingdal 104	Granted	Exploration	10.0
Killingdal 105	Granted	Exploration	7.5
Klasberget 101	Granted	Exploration	10.0
Klasberget 102	Granted	Exploration	10.0
Finnlandsvollen 101	Granted	Exploration	10.0



NAME	STATUS	PERMIT TYPE	AREA (KM2)
Finnlandsvollen 102	Granted	Exploration	10.0
Os 101	Granted	Exploration	10.0
Os 102	Granted	Exploration	10.0
Os 103	Granted	Exploration	10.0
Os 104	Granted	Exploration	10.0
Abrahams gruve 101	Granted	Exploration	10.0
Abrahams gruve 102	Granted	Exploration	10.0
Abrahams gruve 103	Granted	Exploration	10.0
Rødhammer 101	Granted	Exploration	10.0
Rødhammer 102	Granted	Exploration	10.0
Rødhammer 103	Granted	Exploration	10.0
Gressli 101	Granted	Exploration	10.0
Gressli 102	Granted	Exploration	10.0
Gressli 103	Granted	Exploration	10.0
Gressli 104	Granted	Exploration	10.0
Gressli 105	Granted	Exploration	10.0
Løkken 101	Granted	Exploration	10.0
Løkken 102	Granted	Exploration	10.0
Løkken 103	Granted	Exploration	10.0
Løkken 104	Granted	Exploration	10.0
Løkken 105	Granted	Exploration	10.0
Storwatz 101	Granted	Exploration	10.0
Vangrofta 101	Granted	Exploration	10.0
Vangrofta 102	Granted	Exploration	9.8
Roros 101	Granted	Exploration	10.0
Roros 102	Granted	Exploration	10.0
Roros 103	Granted	Exploration	9.8
Roros 104	Granted	Exploration	9.8
Roros 105	Granted	Exploration	10.0
Tverrfjellet 101	Granted	Exploration	9.4
Tverrfjellet 102	Granted	Exploration	10.0
Grimsdalen 101	Granted	Exploration	9.0
Grimsdalen 102	Granted	Exploration	10.0
Grimsdalen 103	Granted	Exploration	8.8
Grimsdalen 104	Granted	Exploration	8.8
Grimsdalen 105	Granted	Exploration	10.0
Grimsdalen 106	Granted	Exploration	8.0
Grimsdalen 107	Granted	Exploration	10.0
Grimsdalen 108	Granted	Exploration	9.0
Grimsdalen 109	Granted	Exploration	9.0



**The mining tenement interests relinquished during the quarter and their location**

None

**The mining tenement interests acquired during the quarter and their location**

Acquired - None

Granted – None

**Beneficial percentage interests held in farm-in or farm-out agreements at the end of the quarter**

Not applicable.

**Beneficial percentage interests in farm-in or farm-out agreements acquired or disposed of during the quarter**

Not applicable.