

## 2017 Exploration Relinquishment Report

(Mosku Regional Project - AA Sakatti Mining Oy)

Vanttio 14  
Vanttio 15  
Vanttio 24

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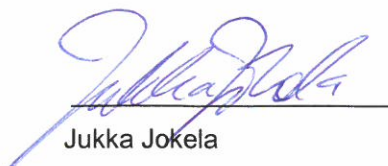
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## **1 INTRODUCTION**

Vanttio 14, Vanttio 15 and Vanttio 24 Ni-Cu-PGE-Au exploration areas are located approximately 12.5 km to north from Sodankylä municipality center in Finnish Lapland and in total they cover an area of 221.01 ha (Fig. 1-1). The areas are located south of Vanttioselkä in mostly boggy area, which are partly ditched. The areas are approximately 2 km to north from Sattanen river and also from the closest major road. Vanttio 15 is completely Metsähallitus owned land. Vanttio 14 and Vanttio 24 are mostly Metsähallitus owned, except for the northermost parts, which are located on privately owned lands (Fig. 1-2).

Anglo American Exploration B.V. Suomen Sivilite (AAE BV) first applied for a claim (KaivNro 8873/1-30) in this region, with the intent to explore for: copper, nickel, PGE and gold in December 2009. The Claim was granted on 20<sup>th</sup> of July 2012 and it has expired on 20<sup>th</sup> of July 2017. Some of the areas within this claim has been relinquished on 18<sup>th</sup> of February 2016, which have been reported earlier. The new extending permit application (ML2017:0046-01) has been done, from which the Vanttio 14 (KaivNro 8873/14), Vanttio 15 (KaivNro 8873/15) and Vanttio 24 (KaivNro 8873/24) claims has been now relinquished.

Geologically the region of interest belongs to the Central Lapland Greenstone Belt, which hosts amongst others the Suurikuusikko and Pahtavaara gold deposits as well as the Kevitsa and Sakatti Cu-Ni-PGE deposits. The main geology of the region belongs to the Savukoski group in stratigraphy (Fig. 1-3). The Vanttio 15 claim lies completely on Matarakoski formation graphitic paraschist, while claims Vanttio 14 and Vanttio 24 are partly on the overlying Sattasvaara formation ultramafic volcanic rocks. The older Sodankylä group rocks are located south from the Vanttio claims. In general the Sodankylä group consists predominantly of psammitic metasediments with minor volcanic rocks. Whereas the Savukoski group is formed of two main formations: the Matarakoski formation of predominantly graphitic sediments with interbedded mafic volcanic rocks and the overlying Sattasvaara formation of komatiitic volcanic rocks. Our primary interests are the ultramafic rocks, which may host economic Ni-Cu-PGE-Au mineralisation.

## **2 EXPLORATION WORK**

Initial exploration in the region started in 2003, targeting was based on regional datasets provided by the GTK (airborne geophysics, geochemistry and geology). An early analogy to the Pechenga–Imandra-Varzuga Greenstone Belt in the Kola-Karelia region was recognised, this led to a focus on the Sodankylä–Savukoski groups. Heavy exploration (BOT-sampling, DDH drilling) is carried out mostly during the winter season to minimise the environmental impact. The main exploration methods and equipment used in general in the field are: airborne geophysics, ground geophysics (Moving Loop Electro-Magnetics), base of till (BOT) sampling and diamond drilling (DDH). The reconnaissance work for individual targets includes frequent field checks and geological mapping during the summer field season. The historic work carried out by Anglo American in the Vanttio 14, 15 and 24 permit areas is detailed below.

### **2.1 GEOLOGICAL MAPPING AND BOULDER HUNTING**

General geological mapping, boulder hunting and interpretation have been completed in Vanttio 14-15 and Vanttio 24 areas during the summer field seasons. Because the now relinquished areas are located mostly on boggy areas, outcropping rocks are absent within the area. Single boulder observation of komatiitic basalt has been made from the northern part of Vanttio 24 claim area. Corresponding data of the observation can be found in the accompanying data files.

### **2.2 GEOPHYSICAL AND PETROPHYSICAL SURVEYS**

#### **2.2.1 Airborne geophysical surveys**

Three regional scale airborne geophysical surveys which include the Vanttio 14, 15 and 24 permits, have been completed (figure 2-2, 2-3 & 2-4). The first was an electro-magnetic survey that took place in July 2009 by

Geotech Airborne LTD, using a helicopter slung, optically pumped cesium vapour system. The second, in June 2014 was a higher resolution magnetic survey, also by Geotech Airborne LTD, using a fixed wing, gradiometer system. The third was Falcon gravity gradiometer survey, which was done by FALCON™ on August 2011. Please see the attached survey reports for the full details; note that some of the report images have been removed as they contain confidential information, unrelated to this area. It is worth noting that this data has been provided in the original coordinate system (GCS\_KKJ\_3) as to avoid reproduction errors.

### **2.2.2 Ground geophysical surveys**

A moving loop electro-magnetic (MLEM) survey was conducted over the Vanttio 14, 15 and 24 permit areas during 2013, with a total of 1.6 line Km (Fig. 2-5). This was completed by AGEOS Oy using the Anglo American in-house low temperature SQUID system. It is worth noting that this data has been provided in the original coordinate system (GCS\_KKJ\_3) as to avoid reproduction errors.

### **2.2.3 Borehole geophysical surveys**

No drilling was completed in this area.

## **2.3 SOIL GEOCHEMISTRY**

### **2.3.1 Base of till sampling**

No base of till or soil samples were collected in this area.

### **2.3.2 Soil sampling**

No base of till or soil samples were collected in this area.

## **2.4 DRILLING, CHANNEL SAMPLING AND TRENCHING**

No channel sampling or trenching has occurred in these claims.

### **2.4.1 Drilling**

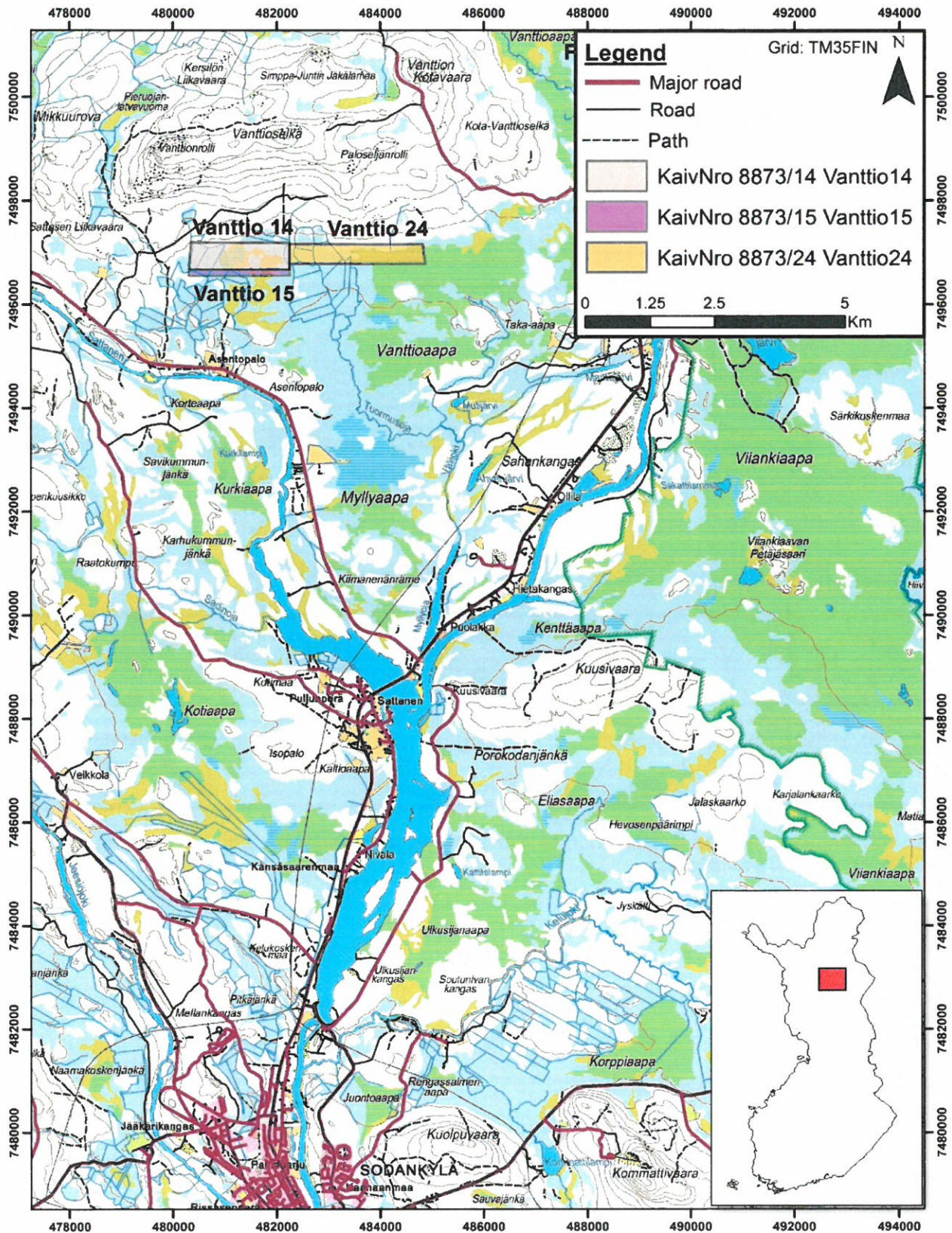
No drilling was completed in this area.

## **2.5 PETROLOGICAL, GEOCHEMICAL AND OTHER GEOLOGICAL SURVEYS**

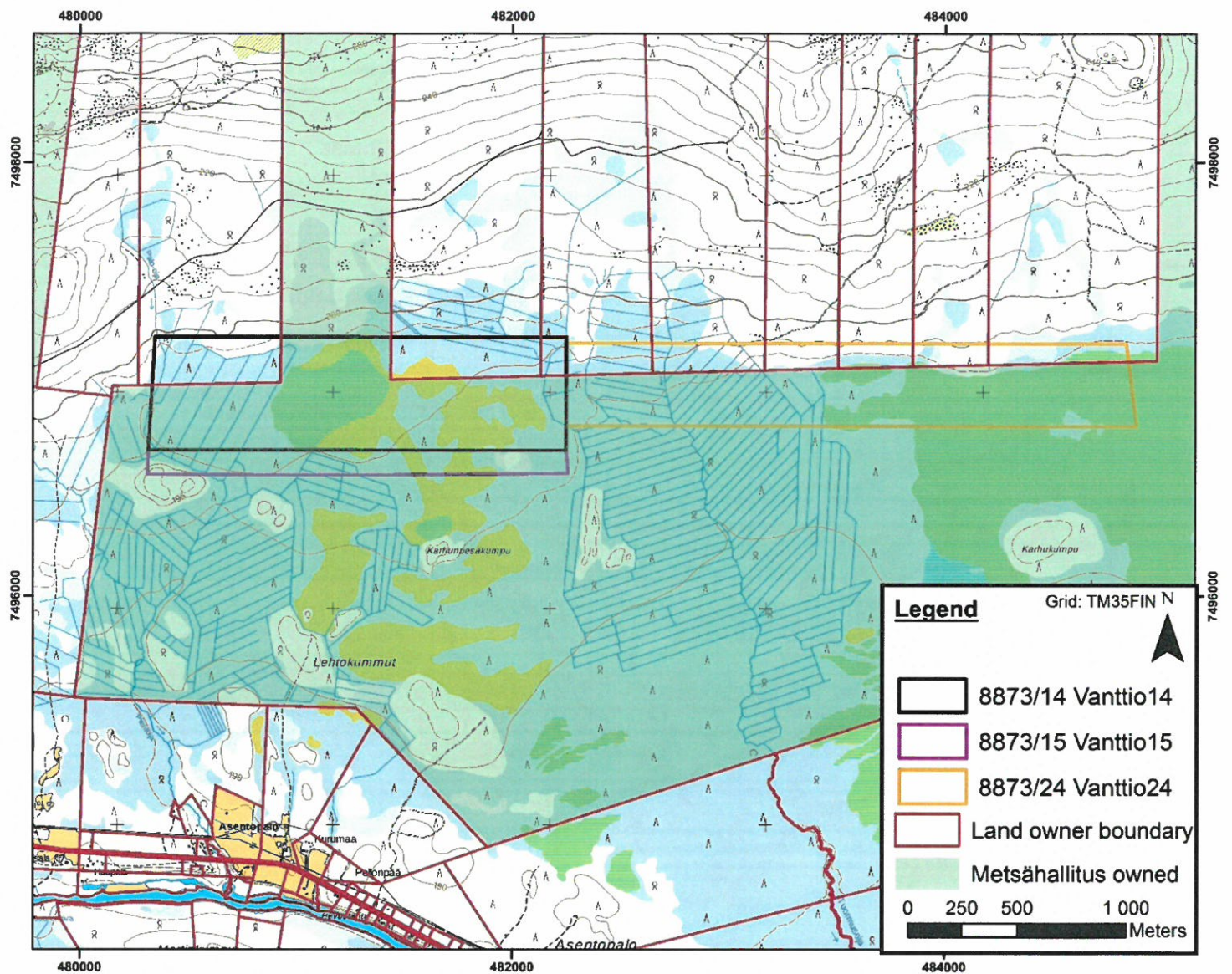
There is no other work to report.



### 3 Maps

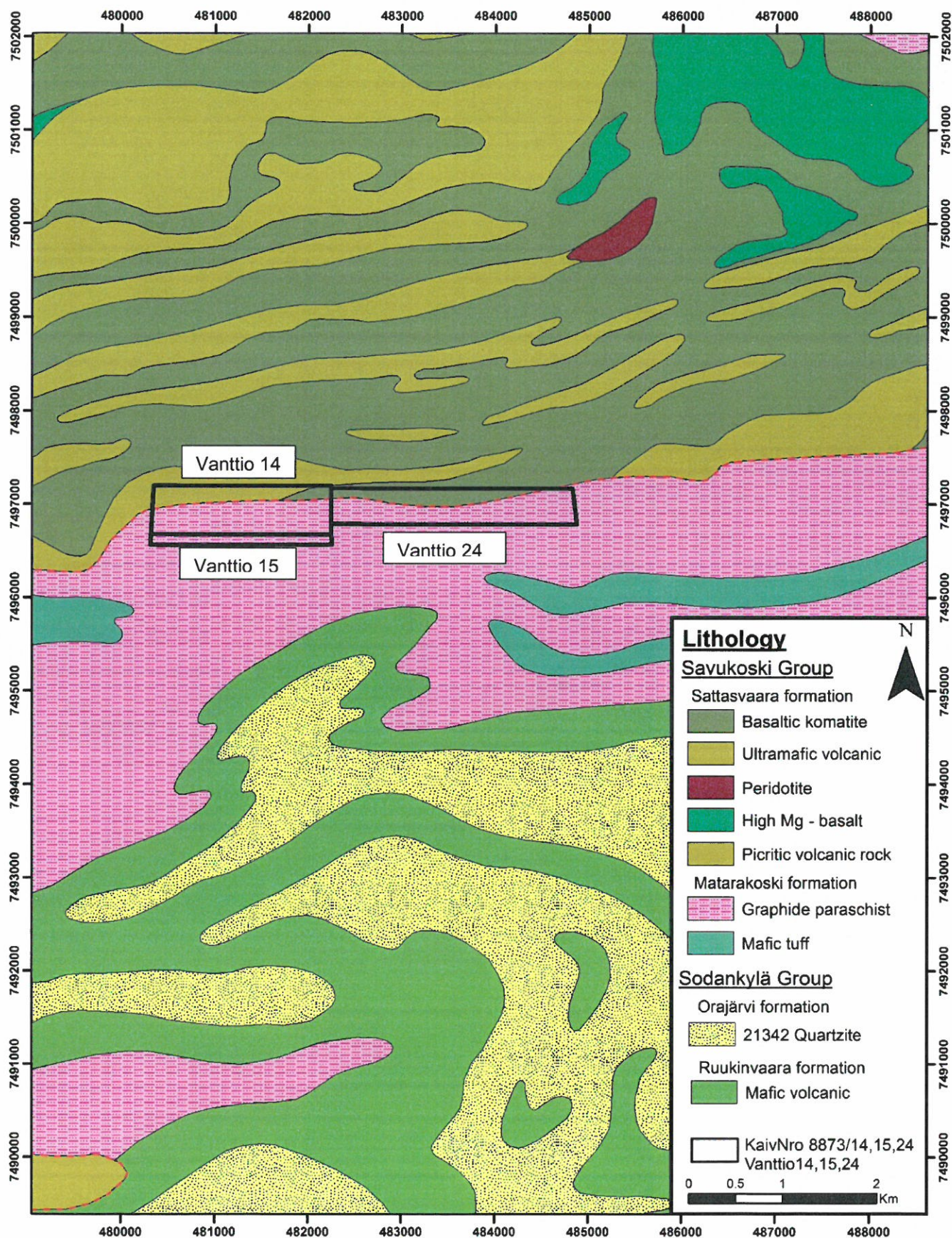






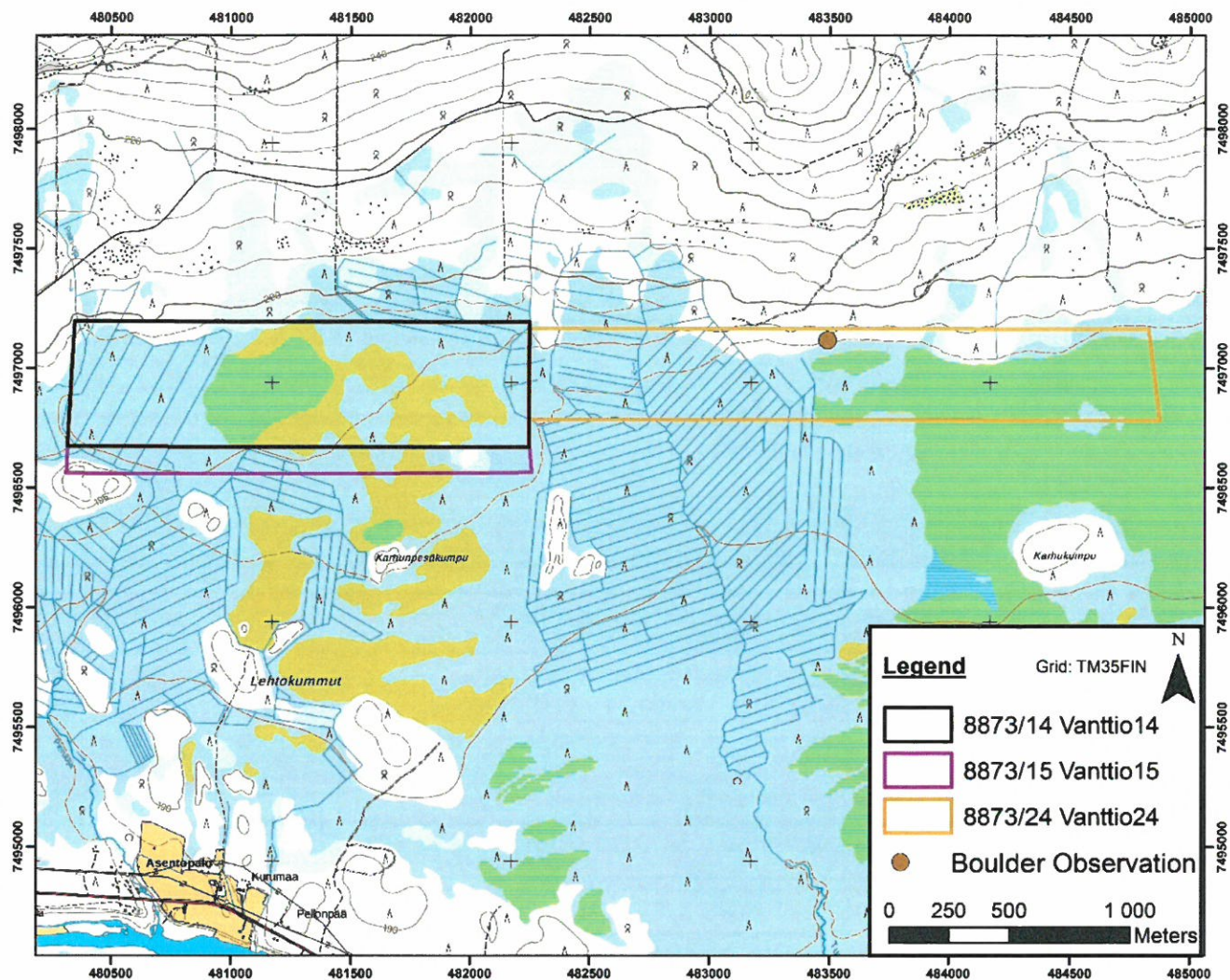
**Figure 1-2: Map showing the lands owned by Metsähallitus and landowner boundaries of the Vanttio 14-15 and Vanttio 24 permit areas.**





**Figure 1-3: Geological map of the relinquished Vanttio 14, Vanttio 15 and Vanttio 24 areas. Geological map and amended legend from GTK, DigiKP200.**







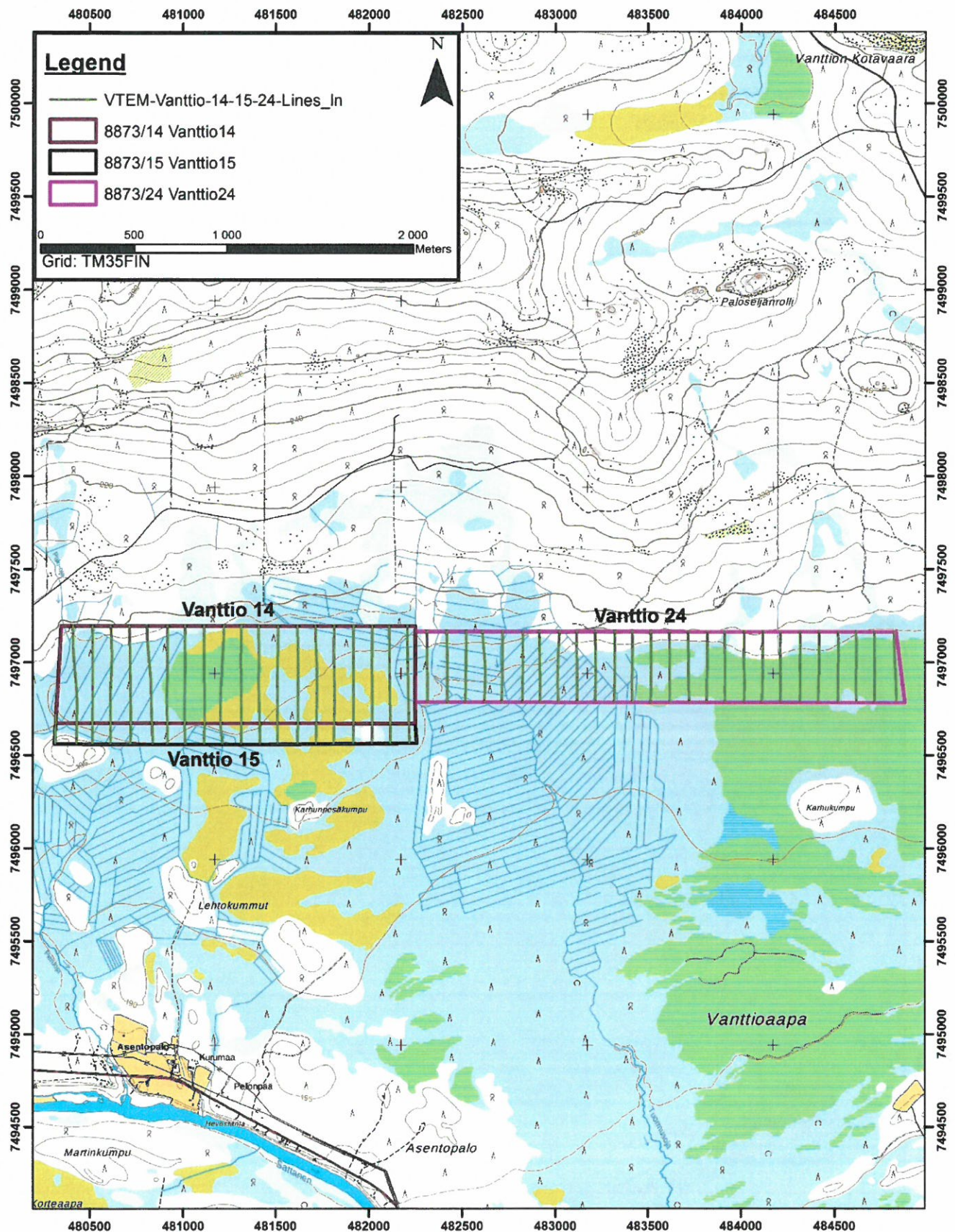


Figure 2-2: Map showing the 2010 VTEM survey lines of the Vanttio 14, 15 and 24 claims.



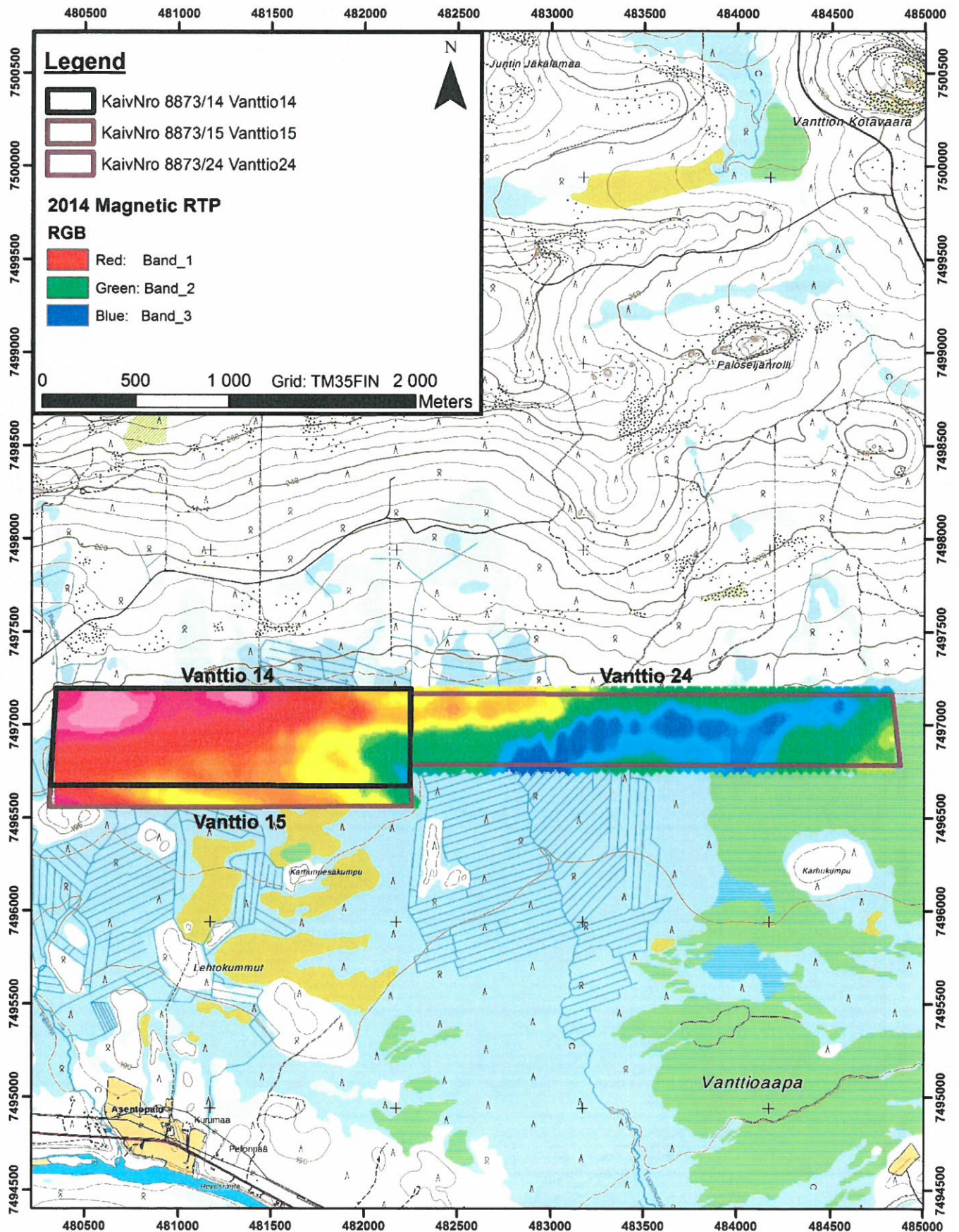
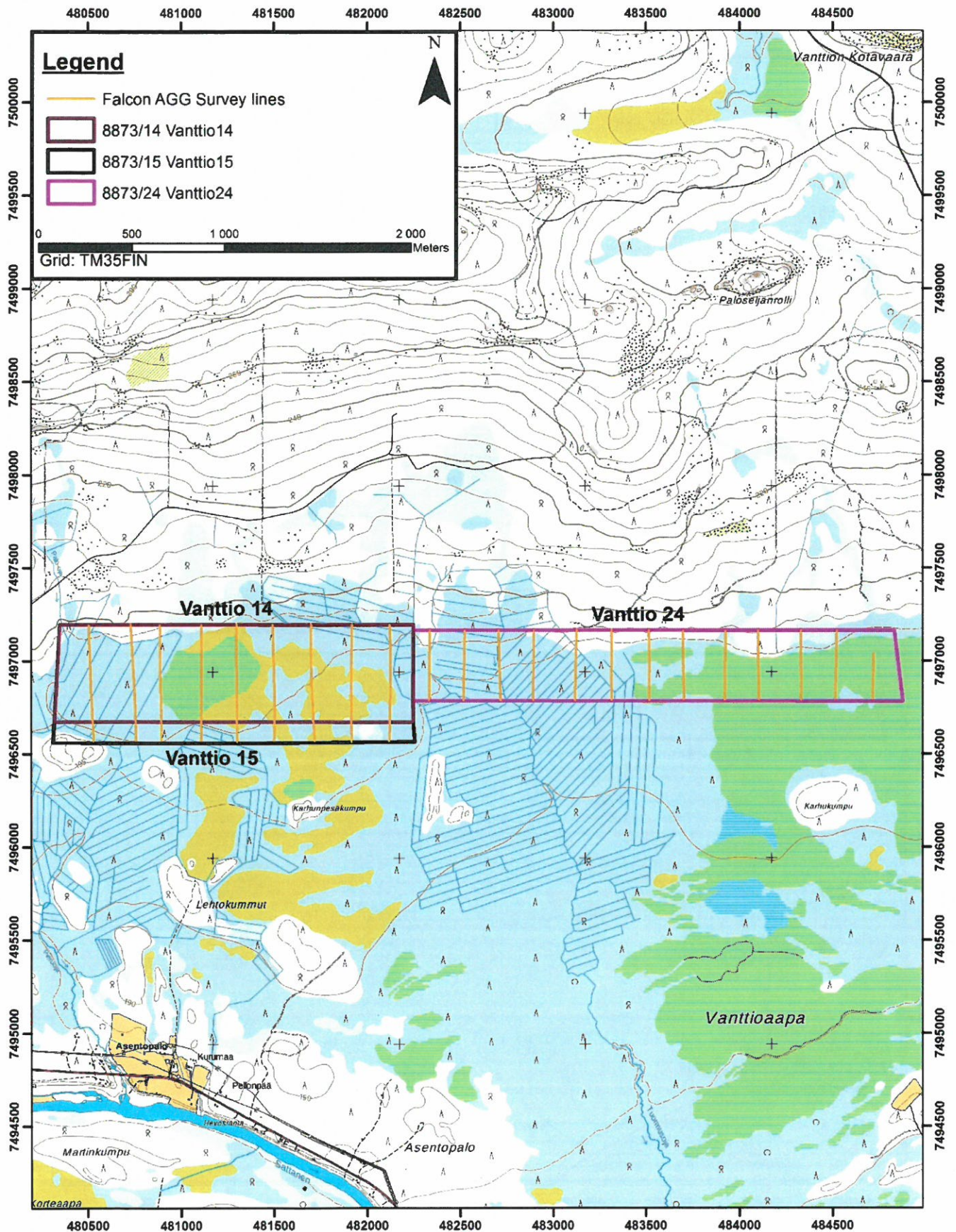


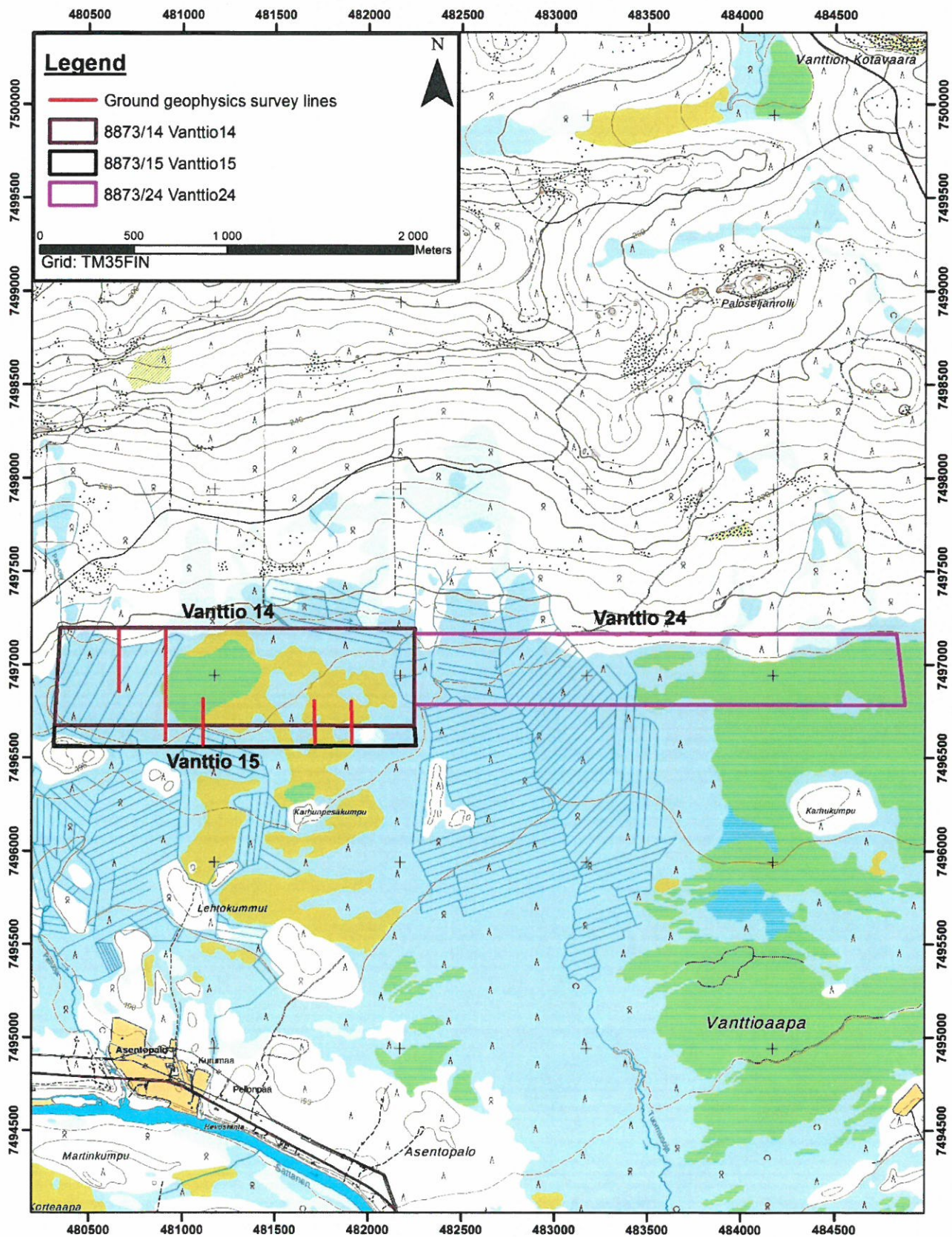
Figure 2-3: Map showing the 2014 Magnetic survey of the Vanttio 14, 15 and 24 claims.





**Figure 2-4: Map showing the location of the Gravity survey lines within the Vanttio 14, 15 and 24 claim areas.**





**Figure 2-5: Map showing the location of the MLEM survey lines within the Vanttio 14, 15 and 24 claim areas.**



## **4 SUMMARY AND CONCLUSIONS**

After an extensive exploration program, all viable targets within the Vanttio 14, 15 and 24 claims have been tested. No ultramafic signals from the exploration work conducted were detected. The claims KaivNro 8873/14-15, 24 are being relinquished as the overall results did not give evidence to support continuing the exploration program in the area.

## **5 APPENDIXES**

Accompanying data files:

- KaivNro\_8873\_Template4\_2017\_12\_22.xlsx
- KaivNro\_8873\_Template2\_2017\_12\_22.xlsx
- KaivNro\_8873\_Template3\_2017\_12\_22.xlsx
- 2010\_VTEM survey\_A806\_Report.pdf
- AGG\_2011\_Logistics\_and\_Processing\_Report.pdf
- Magnetic survey\_Anglo American Exploration Finland\_2014\_Report.pdf
- KaivNro\_8873\_mapappendix1\_2017\_12\_22.jpg
- KaivNro\_8873\_mapappendix2\_2017\_12\_22.jpg
- KaivNro\_8873\_mapappendix3\_2017\_12\_22.jpg
- KaivNro\_8873\_mapappendix4\_2017\_12\_22.jpg
- KaivNro\_8873\_mapappendix5\_2017\_12\_22.jpg
- KaivNro\_8873\_mapappendix6\_2017\_12\_22.jpg
- KaivNro\_8873\_mapappendix7\_2017\_12\_22.jpg
- KaivNro\_8873\_mapappendix8\_2017\_12\_22.jpg



