

**Torque Mining Ltd  
Annual Report on Exploration  
EL20/1996 – “Elliott Bay”  
June 2012 to June 2013**

**Grant MacDonald BSc (Hons)  
Exploration Manager  
Torque Mining Ltd  
134 Beveridges Lane,  
Hagley, Tasmania  
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## **Abstract**

No field work was undertaken during the reporting year. Attempts to raise funds to help fund exploration by attracting a JV partner and listing on the ASX proved unsuccessful.

Previous work had defined a maiden resource for the Wart Hill massive sulphide deposit of **665,400t @ 0.45g/t Au, 37g/t Ag, 0.09% Cu, 1.7% Pb and 3.38% Zn** in two lenses with a contained higher grade zone of **46,500t @ 1.45g/t Au, 70g/t Ag, 0.27% Cu, 4.1% Pb and 8.03% Zn**.

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## **1.0 Introduction**

### **1.1 Exploration Rationale**

Torque Mining Ltd is exploring for base and/or precious metals. Mineralisation styles targeted are VHMS (Volcanogenic Hosted Massive Sulphides) either as seafloor precipitates or shallow subseafloor replacement, and/or hybrid VHMS/epithermal precious metal rich vein and/or replacement deposits.

Torque is aware of developments in the use of Short Wavelength Infra-Red and trace element analyses of hydrothermal alteration in defining vectors to mineralization. Torque is aware that the massive sulphide mineralization is not necessarily conductive but sees downhole EM as a valid tool to screen for those bodies which may be conductive.

### **1.2 Geology**

EL 20/1996 covers a highly significant portion of the southernmost land extent of the Mt Read Volcanics.

The reader is referred to (almost all) previous reporting for high quality geological descriptions and fieldwork for details (see fairly comprehensive list of references at end). However, there are a number of contentious issues regarding the geology of the Wart Hill area which warrant comment.

Essentially, the prospective Mt Read Volcanic rocks in the Wart Hill area consist of felsic volcanoclastic mass flows, commonly pumiceous, with lesser finer sediments, coherent, brecciated felsic lavas/intrusives, minor basalt intrusives and occasional shale, limestone and chert.

The volcanics include both dacitic i.e. feldspar phyric volcanoclastics and lavas and more rhyolitic quartz+feldspar phyric volcanoclastics and lavas, the latter reportedly more common in the upper part of the sequence near the overlying Waterloo Creek Group shales and volcanoclastics.

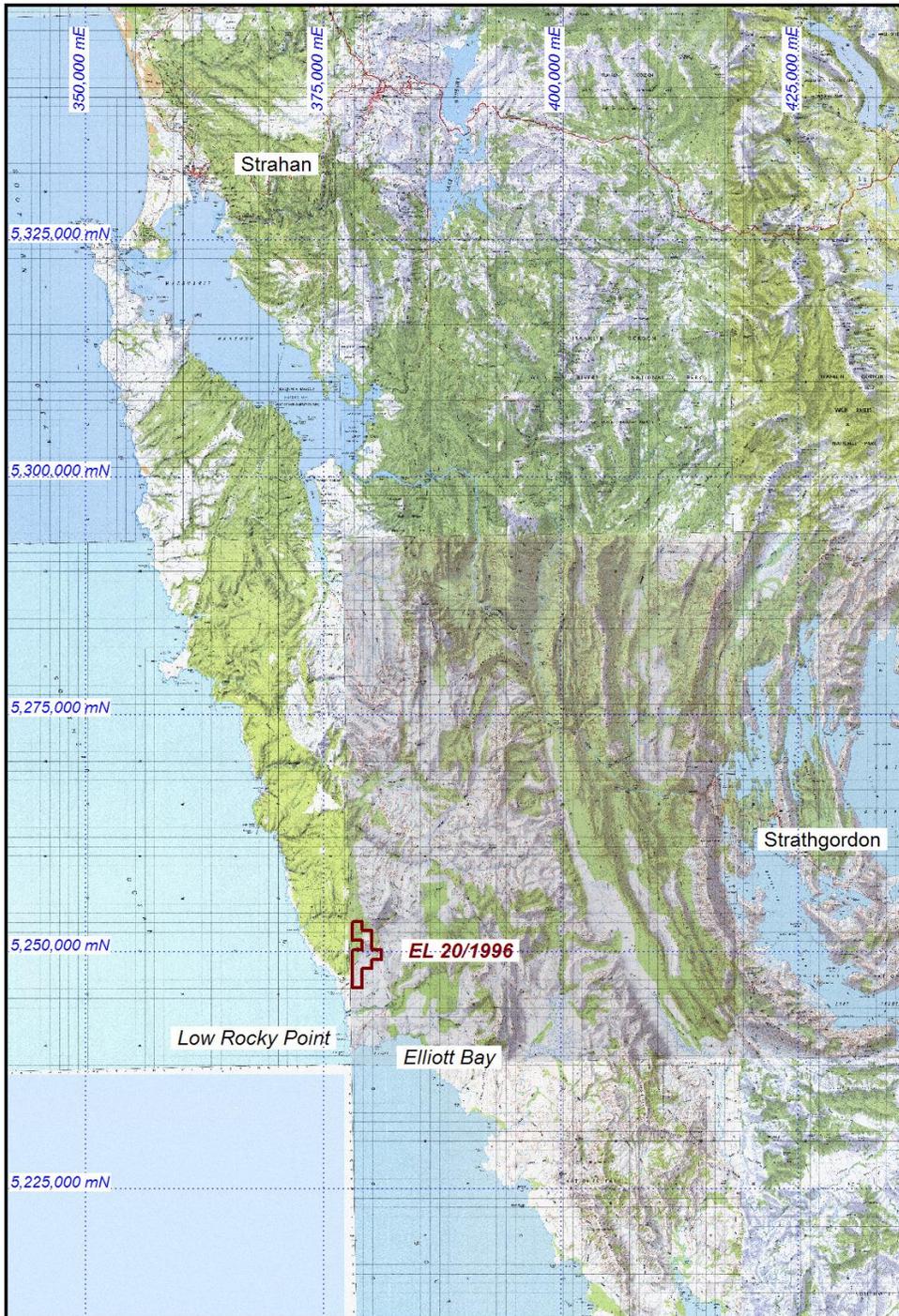
Previous descriptions of the geology of the Elliott Bay region have correlated the quartz phyric rocks with the Eastern Quartz-Phyric Sequence from the base of the Mt Read sequence; however an interdigitating relationship with the overlying Waterloo Creek Group rocks is more suggestive of the Tyndall Group from the uppermost Mt Read Volcanics.

These are overlain by shales with minor interbedded felsic volcanics (in turn overlain by siliciclastics of the Owen Group). The contact between the two has been variously described as unconformable and interdigitating. Frontier's work on the eastern side of the syncline at Aldebaran/V34 has recognized a similar stratigraphic sequence to Wart Hill on the western side of the fold suggesting support for a possible conformable relationship. This also argues against earlier interpretations of separate volcanic units on either side of the Mt Osmund Syncline.

Inherent in this debate is the question of facing of the sequence which has been considered to be either westerly or easterly on an overturned limb. The amount of facing data evidence seen by Frontier geologists surpasses that seen by earlier geologists and strongly argues for an east facing, i.e. steeply overturned sequence.

### **1.3 Location and access**

EL 20/96 is located very near to the remote southwestern coast of Tasmania (see Figure 1.2) around 40 kilometres west of Strathgordon and 80 kilometres south of Strahan.



**Figure 1.1: Location of EL 20/1996 Elliott Bay on Tasmania’s southwest coast.**

Access to the area is difficult with no continuous road access to the rest of the state. The only vehicular track to the area, a rough 4WD track known as the Low Rocky Point Track, commences

at the southern end of Birch's Inlet off the southeastern corner of Macquarie Harbour and thus requires boat transport.

Various modes of access have been utilized by various exploration companies in the past. Frontier initially mobilized its drilling gear, crawler, excavator and larger camping gear in 2005 by sea barging gear from Hobart into the mouth of the Lewis River from where it was driven to the Wart Hill camp over the open heath country. Demobilisation in June 2011 used this same methodology.

Access within the licence is by 4wd bikes or by foot. Frontier has also utilized a rubber tracked crawler for access which has proven to have minimal impact.

#### **1.4 Land status and usage**

The Elliott Bay area is crown land and is classified as part of the South West Conservation Area. As such it is open to mineral exploration.

The Tasmanian Government proclaimed the prospective rocks south of Macquarie Harbour to be within the Sorell Peninsula Prospectivity Zone, recognition of the mineral potential of the area. Under this act any change in the status of the land within the zone requires the approval of both houses of the Tasmanian parliament with any affected party entitled to compensation (this does not cover any decisions of the Federal government).

The country is quite flat, being part of the coastal plain, though with some excising creeks. The significant exception in the licence area is Wart Hill.

The majority of the licence is covered with low standing, open coastal heath and button grass. Creek gullies and some of the areas in the western and easternmost parts have wet sclerophyll vegetation.

#### **1.5 Tenure**

EL 20/1996, was first granted to EMC Consultants (EMC) in June 1996. EMC vended 90% into new listing Tasex. Tasex, subsequently changed its name to Tasgold and then again to Frontier. The licence was renewed, on an annual basis, until June 2012. On 4<sup>th</sup> May 2012 Frontier's 90% share in the tenement was transferred to Torque Mining Ltd.

Application is being made to renew the licence for a further year to June 2014.

## **2.0 Review of Previous Work**

### **2.1 Prior to current tenement**

Previous exploration has been summarized in considerable detail in previous reports (Herrmann, 1996; McNeil, 2000) and will not be detailed here.

### **2.2 During current tenement**

Torque Mining Ltd's parent Frontier Resources Ltd and its predecessor Tasgold have carried out a large body of work on EL 20/1996 "Elliott Bay" with a total of 55 drillholes for 10517 metres and a total expenditure exceeding \$3.5 million. It remains a focus of Torque Mining Ltd's exploration in the state. That work is detailed in a number of reports listed in the references.

In the 2011/12 year three bodies of work were completed.

- A JORC compliant Inferred Resource was estimated for the Wart Hill massive sulphide deposit.
- A new generation helicopter borne EM survey, VTEM by Geotech, was flown over EL 20/1996 and the newly granted EL 33/2010 "Wanderer River".
- Existing 3D IP was reappraised and drill targets defined.

#### **2.2.1 Resource Estimation**

A maiden JORC compliant Inferred Resource was estimated for the Wart Hill massive sulphide deposit. An overall model incorporating clastic and disseminated sulphide as well as in-situ massive sulphide mineralization was generated with two discrete zones – Central Zone and South Zone estimated.

In addition the arguably coherent massive sulphide lens (lying near the top of the deeper South Zone) defined by intersections in DDH'sWH10, WD009, WD012, WD019 and WD025 were modeled and estimated as a discrete resource.

The resource estimate for the Wart Hill massive sulphide deposit has been classified as Inferred Mineral Resources in accordance with the guidelines as set out in the Joint Ore Reserves Committee (JORC) Code (2004).

At a 0g/t Au equivalent cut-off (i.e. including all material within wireframes) stands at:

**Central Zone 309,200t @ 0.12g/t Au, 25g/t Ag, 0.03% Cu, 1.03% Pb and 2.16% Zn**

**South Zone 356,200t @ 0.74g/t Au, 48g/t Ag, 0.14% Cu, 2.29% Pb and 4.44% Zn**

**Total Resource 665,400t @ 0.45g/t Au, 37g/t Ag, 0.09% Cu, 1.7% Pb and 3.38% Zn**

The South Lens resource is wholly contained within the South Zone. At a 0g/t Au equivalent cutoff the resource in the South Lens (wholly contained within South Zone) is:

**South Lens 46,500t @ 1.45g/t Au, 70g/t Ag, 0.27% Cu, 4.1% Pb and 8.03% Zn**

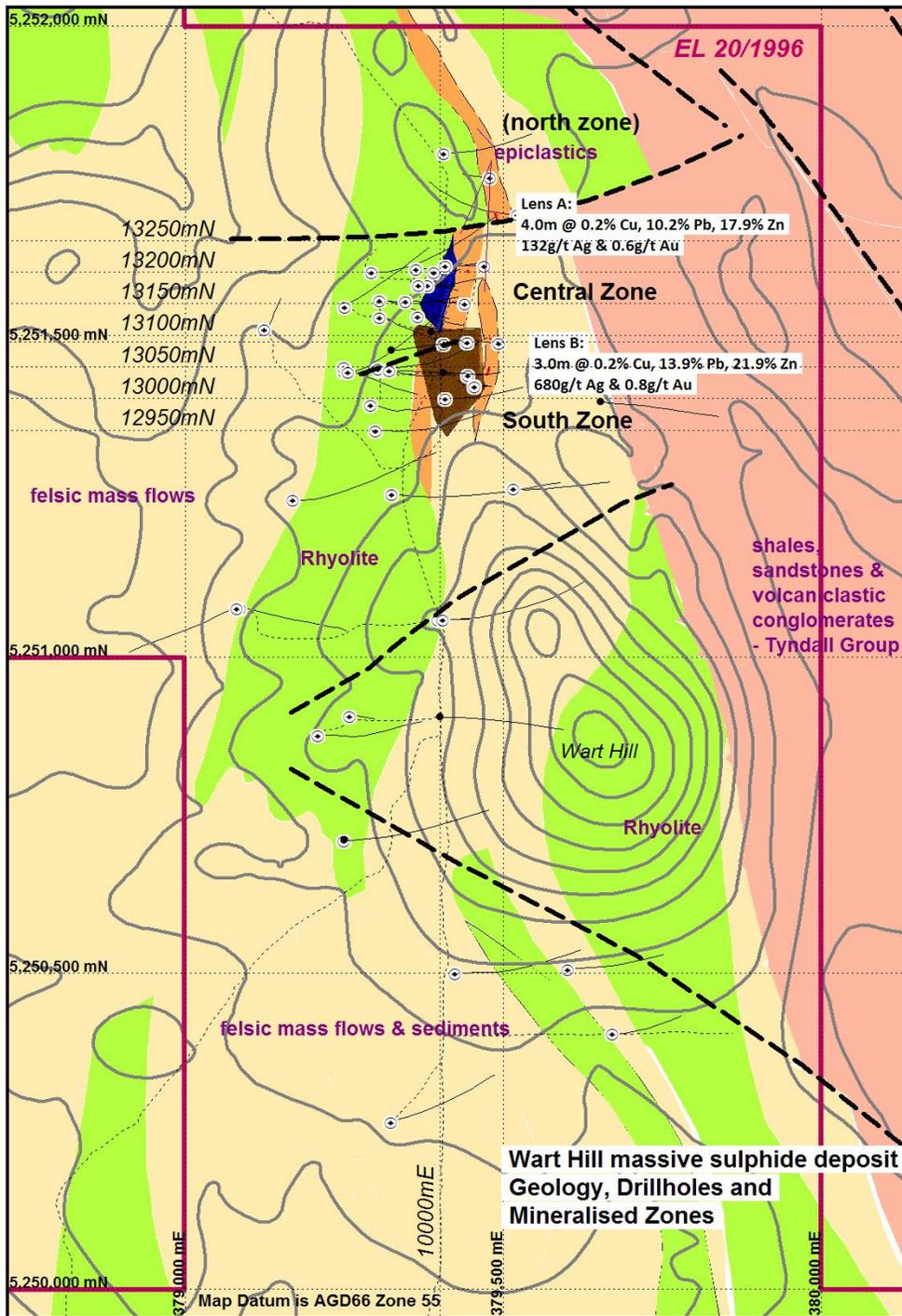
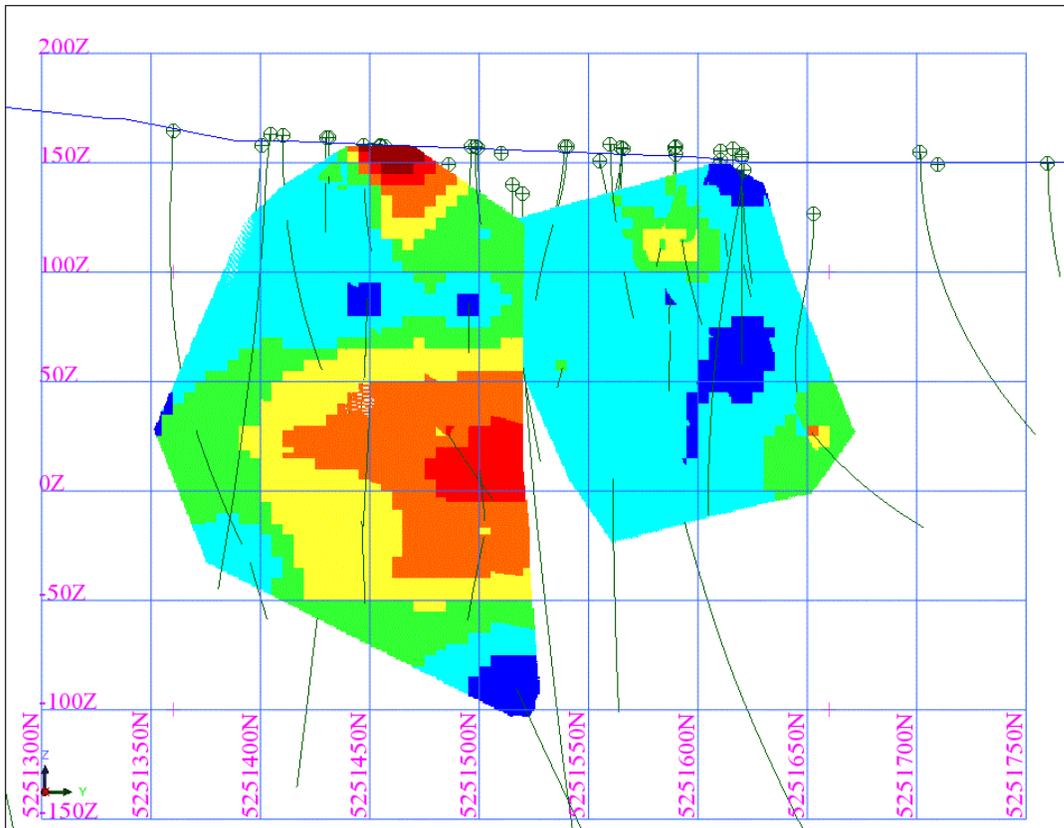


Figure 2.1: Wart Hill (Voyager 19) prospect showing the South and Central Zones resource shapes projected to surface.



**Figure 2.2: Wart Hill massive sulphide deposit long section view showing gold equivalent grade looking west. Grid is AGD66.**

### 2.2.2 VTEM Survey

A new generation helicopter borne EM survey – VTEM – was flown by Geotech over all prospective rocks within Frontier's two tenements in the Southern Mt. Read Volcanics area.

The full survey report was included as appendix A in Frontier Resource's Annual Report on Exploration 2011-2012 (MacDonald 2012).

Whilst the survey did not locate any first order conductors in the area of EL 20/1996, it did recognize and define a broader zone of very subtly elevated conductivity over a strike length of 1km and 300-500m depth (see figure 2.3).

Whilst the anomalous zone appears lithological and corresponds with the Waterloo Creek Group shales on the surface, the shales are not conductive to the north and south along strike. Further, the west dipping anomaly lies physically beneath but stratigraphically above the South Wart zone of highly anomalous Zn and Pb in soils (which would correspond to the footwall alteration zone).

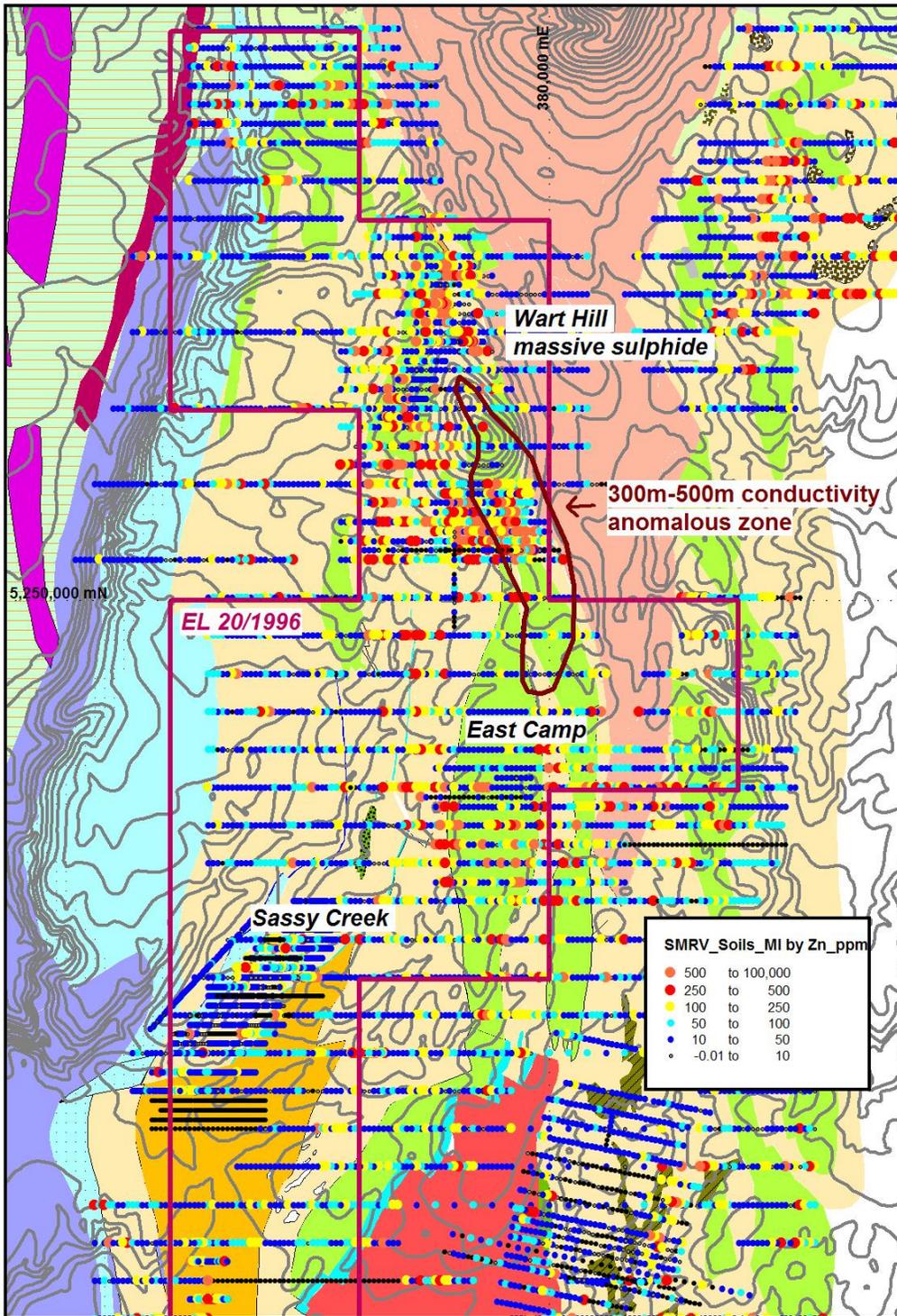


Figure 2.3: South Wart anomalous conductivity zone at 300m – 400m with Zn soils.

The anomaly is probably due to shales but the possibility of a large massive sulphide deposit remains a possibility.

### **2.2.3 3D IP Reappraisal**

The third body of work completed was a reappraisal of the 3D IP data over the Wart Hill area to see if it could help targeting drilling in the more immediate vicinity of the Wart Hill massive sulphide deposit. Five drill targets were defined in this work.

### **3.0 Exploration completed during the report period**

The early part of the 2012/13 reporting year was spent attempting to attract a JV partner to help fund deeper drilling. Discussions were held with Xstrata who independently appraised the VTEM data. Unfortunately Xstrata chose not to advance discussions and enter into a JV with Torque Mining Pty Ltd.

Planning for field work including a 3D IP survey was put on hold in early 2013 when the company's attempt to raise funds and list on the ASX was unsuccessful.

Exploration at Elliott Bay is costly with a big overhead in the form of helicopter access before any field work even commences. An inability to prioritise Elliott Bay for a share of limited funds meant no field work was carried out during this reporting period.

#### **4.0 Discussion of Results**

There are no results to discuss.

## **5.0 Conclusions**

EL 20/1996 "Elliott Bay" has excellent potential for a high grade polymetallic massive sulphide deposit of Rosebery-type.

The small resource calculated for the Wart Hill massive sulphide deposit of 665,400t @ 0.45g/t Au, 37g/t Ag, 0.09% Cu, 1.7% Pb and 3.38% Zn consists of a mixture of both exotic clastic and arguably massive in-situ material and includes the massive South Lens resource of 46,500t @ 1.45g/t Au, 70g/t Ag, 0.27% Cu, 4.1% Pb and 8.03% Zn.

The juxtaposition of clastic material and arguably in-situ massive material is unsurprising and is consistent with an active submarine environment. A Rosebery model of discrete lenses is suggested.

Deeper drilling is required to test the target horizon below the current level of drilling and beyond the penetration of geophysical surveys.

In particular further work on the South Wart VTEM anomalous conductivity zone and coincident anomalous soils is warranted.

## **6.0 Environment**

No field work was undertaken and thus there has been no environmental impact on the licence area. An extensive report accompanying the last field programme was provided in MacDonald (2011).

**7.0 Expenditure**

|                      |            |                 |
|----------------------|------------|-----------------|
| Geoscientific costs  | geology    | \$9,842         |
|                      | geophysics | \$6,782         |
| Administration costs |            | <u>\$1,602</u>  |
| <b>Total costs</b>   |            | <b>\$18,226</b> |

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