INDUCED POLARIZATION SURVEY

executed on the

CARSCALLEN PROJECT

Carscallen Twp
Province of Ontario

(NTS 42 A/05)

on behalf of

XSTRATA COPPER CANADA

November 2010
SUMMARY

In November 2010, a complementary induced polarization and resistivity survey was conducted by Geophysique TMC of Val-d’Or, Quebec, at the request of Xstrata Copper Canada, on the Carscallen project located in Carscallen Twp, Timmins area, north-eastern Ontario. In total, 10.4 km of line-cutting and 8.4 line-km of dipole-dipole IP survey coverage were completed during this period.

The survey outlined several moderate and strong anomalous responses forming the western extension of four previously detected anomalous zones (A to D), as well as creating three new zones, which are all thought to be produced by disseminated to semi-massive and massive conductive mineralization in the underlying rock formations.

Recommendations for further work consist of a geological reconnaissance followed, if warranted, by diamond drilling to test the best selected targets.
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- L –200W (Dipole-Dipole, a=25 m, n = 1 to 6) 1: 2 500
- L –400W (Dipole-Dipole, a=25 m, n = 1 to 6) 1: 2 500
- L –600W (Dipole-Dipole, a=25 m, n = 1 to 6) 1: 2 500
- L –800W (Dipole-Dipole, a=25 m, n = 1 to 6) 1: 2 500
- L –1000W (Dipole-Dipole, a=25 m, n = 1 to 6) 1: 2 500
- L –1200W (Dipole-Dipole, a=25 m, n = 1 to 6) 1: 2 500

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**XSTRATA COPPER CANADA**
1. INTRODUCTION

This report presents the results of an induced polarization / resistivity survey executed in November 2010 by Geophysique TMC of Val-d’Or, Quebec, for Xstrata Copper Canada on the Carscallen project located in Carscallen Twp, Northeastern Ontario.

This survey, which constitutes the western extension of a previous IP survey done recently in February 2010, was executed in order to try to detect the presence of sulphide-rich zones or structures as favourable hosts for base and/or precious metals.

2. PROPERTY, LOCATION AND ACCESS

The property is located about 25 km W.SW of the town of Timmins, in Carscallen Twp, Porcupine Mining District, province of Ontario (NTS 42 A/05, figure 1).

Access to the project is easy from Timmins to the west via provincial road 101 for about 22 km and then to the north for about 6 km along a secondary road.

The mineral permits (2) have been registered with the Ministry of Northern Development and Mines of Ontario, Porcupine Mining Division. The mineral permits and survey grid locations are presented on Figure 2.

3. WORK DONE

From November 11 to 20, 2010, an induced polarization and resistivity survey was carried out by Géophysique TMC of Val-d’Or, Quebec, for Xstrata Copper Canada on the Carscallen project. A N-S oriented grid of lines was also cut prior to the survey.

In total, 10.4 km of line-cutting and 8.4 line-km of dipole-dipole IP survey (6 profiles) were executed on the property during this period.
Figure 1: General location
Figure 2: Claim Map and Survey Location

Carscallen Project – Carscallen Twp, Ont. (1 : 50 000)
4. TECHNICAL SPECIFICATIONS OF THE SURVEY

The survey was executed along a north-south oriented line grid cut prior to the survey and constituting the western extension of a previous grid cut in February 2010. The lines, cut at a 200 m interval, were chained and marked every 25 m. Their deviations were measured by means of a baseline and a tie-line and their exact location was determined by means of a GPS instrument (UTM NAD 27 - Zone 17).

The induced polarization and resistivity survey was carried out with an ELREC-PRO time-domain receiver (2 sec. cycle) manufactured by Iris Instruments and with a GDD 1.8 kW transmitter. A dipole-dipole array was used with a voltage measuring dipole of 25 m and a separation factor n = 1 to 6 between the current dipole and the voltage dipole. The primary voltage (Vp) and the apparent chargeability (Ma) values were measured with a precision of 0.1 mV and of 0.1 mV/V. The integration of the transient voltage after current shut-off was performed in 20 gates of equal widths of 80 milliseconds.

5. RESULTS AND INTERPRETATION

The results of the present survey, executed on lines 200W to 1200W inclusively, are presented on the 6 interpreted individual pseudo-sections, in Appendix. In order to have a complete image of the property, the previous survey results were integrated to the present survey to generate the resistivity contours, chargeability contours and interpretation maps. The chargeability and resistivity readings shown on the two contours maps come only from the present survey (Fraser filter).

The apparent resistivities measured along the six surveyed lines are quite variable with values ranging from less than 200 ohm-m where the overburden is thick and conductive to more than 5 000 to 10 000 ohm-m where the bedrock is sub-outcropping to outcropping. The large, well-marked and linear zones of resistivity lows visible within the high resistivity zone are likely due to shallow and very strong bedrock conductors (graphite, sulphides). These low resistivity readings are associated with very low voltage readings and created erratic and spurious chargeability readings which were discarded. However, the apparent chargeabilities, in general, present noiseless readings with a low background level near 0 mV/V in areas of low resistivities, which could reach 2 to 4 mV/V in areas of higher resistivities.

The survey outlined several anomalous responses which constitute the western extension of previously detected anomalous zones A, B, C and D (February 2010) while a few others form three new anomalous zones (E, F and G).
Anomalous zones B, C and D present the best responses with strong (and often noisy) chargeability patterns of 20 to 60 mV/V mostly associated with strong and well-marked resistivity decreases. These zones are probably known and explained by massive mineralization (graphite, sulphides?) forming EM conductors.

Anomalous zones A, E and G also present interesting responses characterized by well-defined chargeability patterns of 15 to 20 mV/V with locally, for zones E and G, weak resistivity decreases. They could be explained by stringer to semi-massive mineralization.

Finally, anomalous zone F is characterized by weaker polarization patterns of 8 to 15 mV/V associated with a resistivity high, and seems to present a limited extension at depth on line 1200W where it could be explained by disseminated mineralization.

6. CONCLUSION AND RECOMMENDATIONS

The induced polarization and resistivity survey executed on the Carscallen project allowed the detection of several moderate and strong anomalous responses forming the extension of four previously detected anomalous zones and, also, constituting three new anomalous zones which could be explained by disseminated, stringer to semi-massive and massive conductive mineralization.

These results should be first re-evaluated in the light of all geological, geochemical and geophysical information available on the property. It is recommended to carry out a geological reconnaissance in areas of high resistivities (outcrop?) in order to try to explain anomalous zones B, C, D, E and F.

Recommendations for further work should also consist of diamond drilling to test, if warranted, all unexplained IP anomalous zones.
7. CERTIFICATE OF QUALIFICATION

I, PIERRE BOILEAU of the town of Rivière-Rouge, Laurentides, Québec, do certify that:

1) I am a graduate of Ecole Polytechnique of Montréal (B.Sc.A Eng. 1971) in Geological Sciences

2) I have practised my profession continuously for 39 years since my graduation from Ecole Polytechnique

3) I am a member of l’Ordre des Ingénieurs du Québec (31228)

4) I have no beneficial interest in the property discussed in this report nor do I expect to receive any in the future

November 24, 2010

Consulting geophysicist
## APPENDIX

### Induced Polarization and Resistivity Pseudo-Sections (6)

<table>
<thead>
<tr>
<th>Distance (W)</th>
<th>Configuration</th>
<th>Scale</th>
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<tbody>
<tr>
<td>L –200W</td>
<td>(Dipole-Dipole, a=25 m, n = 1 to 6)</td>
<td>1: 2 500</td>
</tr>
<tr>
<td>L –400W</td>
<td>(Dipole-Dipole, a=25 m, n = 1 to 6)</td>
<td>1: 2 500</td>
</tr>
<tr>
<td>L –600W</td>
<td>(Dipole-Dipole, a=25 m, n = 1 to 6)</td>
<td>1: 2 500</td>
</tr>
<tr>
<td>L –800W</td>
<td>(Dipole-Dipole, a=25 m, n = 1 to 6)</td>
<td>1: 2 500</td>
</tr>
<tr>
<td>L –1000W</td>
<td>(Dipole-Dipole, a=25 m, n = 1 to 6)</td>
<td>1: 2 500</td>
</tr>
<tr>
<td>L –1200W</td>
<td>(Dipole-Dipole, a=25 m, n = 1 to 6)</td>
<td>1: 2 500</td>
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