TELKWA GOLD CORPORATION
REPORT ON
GROUND MAGNETIC, MAXMIN E.M.
AND DOWNHOLE TEM SURVEY
DEL SANTO PROPERTY
SMITHERS, B.C.

Omineca Mining Division

Del and Santo Claim Blocks
Latitude: 54° 39'N
Longitude: 126° 40'E
NTS 93L/10

by
John Liu, Ph.D.
Cliff Candy, P.Geo

September, 1998

Frontier Geosciences Inc. 237 St. Georges Avenue, North Vancouver, BC, Canada V7J 4T7
Tel: (604) 987 3037  Fax: (604) 984 3074

25,779
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DWG: 9801N  Channel Amplitude Profiles (Drillhole 9801, Loop N)
DWG: 9801S  Channel Amplitude Profiles (Drillhole 9801, Loop S)
DWG: 9801W  Channel Amplitude Profiles (Drillhole 9801, Loop W)
DWG: 9801E  Channel Amplitude Profiles (Drillhole 9801, Loop E)
DWG: 9801C  Channel Amplitude Profiles (Drillhole 9801, Loop C)
DWG: 9803N  Channel Amplitude Profiles (Drillhole 9803, Loop N)
DWG: 9803S  Channel Amplitude Profiles (Drillhole 9803, Loop S)
DWG: 9803W  Channel Amplitude Profiles (Drillhole 9803, Loop W)
DWG: 9803E  Channel Amplitude Profiles (Drillhole 9803, Loop E)
DWG: 9803C  Channel Amplitude Profiles (Drillhole 9803, Loop C)
DWG: 9804N  Channel Amplitude Profiles (Drillhole 9804, Loop N)
DWG: 9804S  Channel Amplitude Profiles (Drillhole 9804, Loop S)
DWG: 9804W  Channel Amplitude Profiles (Drillhole 9804, Loop W)
DWG: 9804E  Channel Amplitude Profiles (Drillhole 9804, Loop E)
DWG: 9804C  Channel Amplitude Profiles (Drillhole 9804, Loop C)
1. INTRODUCTION

In the period September 3 to September 11, 1998, Frontier Geosciences Inc. carried out a geophysical survey for Telkwa Gold Corporation on the Del Santo Property near Smithers, B.C. The geophysical program consisted of magnetometer, MaxMin Electromagnetic (EM) and downhole Transient Electromagnetic (TEM) surveys. A Survey Location plan of the site area is shown at 1:50,000 scale in Figure 1 with a Site Plan of the survey grid shown at 1:15,000 scale in Figure 2. The objective of the geophysical survey was to provide geophysical information in support of the geologic mapping, and to detect potential massive sulphide mineralization in the survey area.

2. HISTORY

This geophysical survey follows a helicopter airborne survey by Geotech Ltd. in March, 1997 which gathered electromagnetic data at four frequencies, VLF electromagnetic data and total field magnetometer data. This data was interpreted by Frontier Geosciences Inc. in a report dated September, 1997. The airborne survey was the first geophysical coverage obtained on the Del Santo property additional to the geological mapping information available. The airborne survey provided the background information and acted as a guide to the ground follow-up survey. During the summer of 1998, drillholes 9801, 9802, 9803 and 9804 were put down to 100m depth to target a conductor around Line -600N (600 South). These holes were drilled at a dip of -65 degrees with real azimuths of 240, 240, 50 and 65 degrees, respectively. Drillhole 9803 intercepted sulphide mineralization. Exposed mineralization in the property consists of a pyrrhotite and pyrite, magnetite-rich body hosting smaller zones of semi-massive to massive areas of chalcopyrite, pyrrhotite and minor sphalerite.
NOTE:
This figure is a segment of the NTS map sheet 93 L/10, "Quick"
3. CLAIMS INFORMATION

A description of the Del Santo group is as follows:

<table>
<thead>
<tr>
<th>Claim Name</th>
<th>Tenure No.</th>
<th>Units</th>
<th>Expiry Date</th>
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<tr>
<td>Del</td>
<td>314603</td>
<td>10</td>
<td>Nov. 10, 1999</td>
</tr>
<tr>
<td>Santo</td>
<td>318125</td>
<td>10</td>
<td>June. 14, 2000</td>
</tr>
</tbody>
</table>

Total Units 20

4. LOCATION AND ACCESS

The Del Santo Property is situated approximately 37 kilometres southeast of Smithers, B.C., on the west side of the Bulkley Valley, south of the Dome Mountain mining area. Access to the claims is by road departing from Highway 16, just south of Round Lake, 25 kilometres south of Smithers, and 10 kilometres south of Telkwa, B.C. The property is located at approximately the 3900 to 4700 foot elevation at longitude 126° 40' by latitude 54° 39' on NTS mapsheet 93L/10.

5. PHYSIOGRAPHY AND VEGETATION

The property is located in a road accessible valley. The topography includes a broad plateau area, as well as rugged topography extending to 4700 foot altitude. The property has a lake and drainage system, and thus a wide range of vegetation cover is present.
6. GENERAL GEOLOGY


Del Santo (Mineral Inventory 093L-025)

"The Del Santo prospect is located near the headwaters of Deep Creek. The showing was originally called Deep Creek and is described in the 1929 Minister or Mines Annual Report. The showing was restaked by Mel Chapman and Frances Madigan in the mid 1960's. Texas Gulf Sulphur Co., Falconbridge Limited, Bovan Mines Ltd., Midwest Oil Ltd., Union Miniere and Petra Gem Exploration of Canada Ltd. have all explored the property.

The main showing is a north trending band of massive pyrrhotite, chalcopyrite and minor sphalerite that apparently overlies east-dipping chlorite-epidote altered amygdaloidal andesite or basalt (1JN1). The sulphide band, which appears to occupy a fold closure, has been exposed by trenching over a strike length of 50 metres. Overlying the massive sulphides are thin-bedded shaly siltstones and argillaceous limestones that are probably part of the Nilkitkwa Formation. East of the showing, these rocks are overlain by tuffaceous sandstones of the Smithers Formation. A biotite granodiorite crops out southeast of the showing and has been dated at 47.1 ± 1.6 Ma (unpublished data, The University of British Columbia geochronology laboratory)."

7. MAGNETOMETER SURVEY

7.1 Instrumentation and Field Procedure

The magnetometer survey was carried out using a GEM Systems, GSM-19, portable, high sensitivity, Overhauser-effect magnetometer. The unit is a standard for measurement of the earth's magnetic field, having 0.01 nT (nanoTesla) resolution and 0.2 nT absolute accuracy over its full temperature range. In operation, a strong RF current is passed through the sensor head mounted on a 56 cm long aluminum staff. This creates a polarization of the proton-rich fluid in the sensor followed by a process of "deflection" whereby a short pulse deflects the
proton magnetization (secondary magnetic field) into the plane of precession (earth's magnetic field). A slight pause in the process allows the electrical transients to die off, leaving a slowly decaying proton precession signal above the noise level. The proton precession frequency is then measured and converted into magnetic field units. Essentially, the data collected is a measurement of the earth's magnetic field plus any effect on the secondary magnetic field by ferrous objects and/or high concentrations of ferromagnetic minerals.

Magnetometer readings were recorded at 12.5 metre intervals for lines -100N (100S) to -1100N (1100S) and at 5 metre intervals for infill lines -50N (50S) to -650N (650S). Since only one unit was employed in the survey, base station looping was required for diurnal corrections of the earth's magnetic field.

7.2 Data Processing

The data during field surveying was logged digitally in the instrument memory together with date, time and coordinate information. The results were then downloaded to a field computer for further processing after the diurnal corrections were applied to the data. The data was then smoothed, gridded, contoured and plotted for interpretation.

8. THE MAXMIN E.M. SURVEY

8.1 Instrumentation and Field Procedure

The horizontal loop electromagnetometer survey was carried out using an Apex Parametrics MaxMin 1-10 horizontal loop EM system. A 75 metre coil separation was utilized and stations were occupied at 25 metre intervals. Corrections to separation and slope were applied in the field using the MMC data logging computer attached to the receiver unit. The transmit and receiver coils were maintained horizontal and coplanar for the readings. Frequencies of 28K, 14K, 7040, 3520, 1760, 880, 440, 220 and 110 Hz were recorded at each station.

8.2 Data Processing

The survey data was logged digitally in the field, and downloaded to a field computer for further processing. Slope corrections were applied to the data and the results plotted in
stacked profile form for interpretation. The field data were found to be of good to excellent quality with generally low inphase noise levels.

8.3 Limitations

The primary sources of error in MaxMin surveying are related to accurate topographic readings between stations and errors in maintaining accurate separation between receiver and transmitter operators, especially in steep terrain. In addition, coplanarity between the receiver (Rx) and transmitter (Tx) coils is very important. Inaccuracies in the separation and orientation of the Rx and Tx coils due to rough terrain, can adversely affect the MaxMin in-phase readings to a significant degree and the out-of-phase readings to a lesser degree. In rugged terrain, errors in the in-phase readings for a 100 m coil separation are of the order of 1 to 1.5 percent.

9. THE DOWNHOLE TEM METHOD

9.1 Instrumentation and Field Procedure

The downhole TEM survey employed the Geonic's Ltd., Protem, TEM-57 transmitter and receiver system, together with the BH-43 downhole probe and winch. The field procedure entailed setting out five transmitter loops on the ground surface around the drillhole collar. The drillhole was then logged from each of these transmitter loops. This process provides a variety of primary field coupling angles at the depth of interest. A comparison of the responses from each of the transmitter loops indicates whether a conductor is entirely offhole, intersected near an edge or continuous in all directions from the drillhole. Shape and amplitude information allow inferences of conductor type, attitude and position.

9.2 Data Processing

At every metre interval in the drillhole, the Hz, or vertical component of the field was recorded digitally over 20 channels of decay of the field. The data for each drillhole loop was then downloaded to the notebook computer for subsequent splining and plotting for further interpretation.
10. GEOPHYSICAL RESULTS

10.1 General

The magnetometer data is contoured at 1:2500 scale in Figure 3. In order to facilitate comparisons between the data sets the MaxMin outphase profiles are profiled on this map. The MaxMin profile data are reproduced at 1:2500 scale in the geological plan in Figure 4. Also shown in both plans are interpreted EM conductors together with borehole and loop locations for the TEM survey.

Transient E.M. amplitude responses for the five transmitter loop locations for each hole are shown in the drawings in the Appendix. For each hole, four directional loops were placed around the drillhole collar plus a central loop was surveyed over the drillhole. Drillhole 9802 was not surveyed due to its proximity to drillhole 9801.

10.2 Magnetic Data Interpretation

The higher intensity magnetic data show generally good correlation with mapped showings of granodiorite and volcanic tuff. Additional magnetic high areas are indicated in areas generally mapped as IJN1, mafic flows and tuffs. An interruption to the north-south continuity of the magnetics highs suggests a possible cross structure in the area of line -600N (600S).

Magnetically low areas are generally consistent with the areas mapped as mafic flows and tuffs. There is a very strong magnetic low anomaly trending NNW approximately 100 m east of the baseline. Magnetic modeling of this feature was carried out for line -400 N (400S), the results of which are shown in Figure 5. In most geologic situations, the presence of pyrrhotite and magnetite in outcrop in this area would result in a pronounced magnetics high, however, a strong magnetics low is correlated. The magnetic modeling suggests that remnant magnetization was acquired during a geomagnetic field reversal which opposes the present geomagnetic field, resulting in a strong magnetic low. Rock samples from this area are presently being evaluated to test for remnant magnetization.
10.3 MaxMin Data Interpretation

The results of the MaxMin interpretation are shown as relatively continuous or isolated conductors in Figures 3 and 4. Analysis of the MaxMin data indicated eleven relatively strong vertical conductors denoted as A1 to A11 in the drawings. Seven relatively weaker conductors were identified and labelled B1 to B7. Three dipping conductors were also interpreted and denoted as C1, C2 and C3. Dipping anomalies C2 and C3 were modelled using the Petros Eikon Ltd, Emigma Forward Modelling Software. Based on the modelling results, anomaly C2 dips -55 degrees to the east with a depth extent of up to 100 metres (Figure 7). Anomaly C2 dips approximately -63 degrees to the east with a depth extent of about 40 metres (Figure 6).

MaxMin conductors A1, C1 and C3 correlate well with the strong north-south trending low identified in the magnetic data. Many additional conductors correlate with areas of high magnetic intensity especially in the broad zone in the northeast part of the survey area.

10.4 Downhole TEM Data Interpretation

Drillholes 9801, 9802 and 9804 were surveyed using the downhole TEM method. Drillhole 9802 was not surveyed due to its proximity to drillhole 9801. All three surveyed drillholes were put down to 100 metre depths at a dip of -65 degrees. At the time of the surveying, drillhole 9803 and 9804 were both accessible to a depth of approximately 74 metres. Drillhole 9803 intercepted sulphide mineralization at a depth interval of -52 to -56 metres.

There was no discernible TEM response in DH9801 (see, DWG.9801C, DWG.9801E, DWG.9801W, DWG9801N AND DWG.9801S) down to -35 metres, except the response from the steel collar pipe at the top of the drillhole.

The TEM response around -52 metres is the strongest from the east loop in DH9803, (see, DWG.9803C, DWG.9803E, DWG.9803W, DWG9803N AND DWG.9803S) resulting from better coupling in this direction. This suggests that the conductor is on the east side of the borehole and dips east.
There is also some TEM response from the east loop in DH9804 even though this drillhole doesn't intercept the mineralized zone (see, DWG.9804C, DWG.9804E, DWG.9804W, DWG.9804N AND DWG.9804S). This response, although weaker than data from the same loop in DH9803, indicates that the mineralization extends close to this depth point in the drillhole.

11. SUMMARY AND CONCLUSIONS

A magnetometer, MaxMin Electromagnetic (EM) and downhole Transient Electromagnetic (TEM) survey was completed at the Del Santo property in September, 1998. The electromagnetic program delineated twenty-one conductors throughout the survey grid. Three of the E.M. conductors are related to a strong north-south trending magnetic low with the majority of the remaining features in areas of high magnetic intensity. The drillhole TEM survey confirmed the intersected conductive mineralization in drillhole 9803 and provided information into the extent of a zone of offhole mineralization.

A series of well-defined conductors are present to the north of the area of present drill testing. These conductive responses represent important targets for followup exploration.

for Frontier Geosciences Inc.,

John Liu, Ph.D.

Cliff Candy, P.Geo.

Frontier Geosciences Inc.
12. STATEMENT OF QUALIFICATIONS, CLIFF CANDY

I, Cliff Candy, hereby certify that:

1) I am a geophysicist with business offices at 237 St. Georges Ave., North Vancouver, B.C., V7L 4T4.

2) I am a principle of Frontier Geosciences Inc., a company performing geophysical consulting and surveys.

3) I am a graduate of the University of British Columbia in Geophysics (B.Sc., 1977).

4) I am a member of the Association of Professional Engineers and Geoscientists of British Columbia.

5) I have practiced my profession as geophysicist for over 20 years.

Signed  
Cliff Candy, P.Geo.
North Vancouver, B.C., Nov. 1998
13. COST BREAKDOWN

Geophysical Surveys (Sept. 3 to Sept 11, 1998):

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<th>Description</th>
<th>Cost</th>
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<tr>
<td>Mobilization, demobilization:</td>
<td>$1,300.00</td>
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<td>MaxMin surveying: (2.5 days at $750/day)</td>
<td>$1,875.00</td>
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<tr>
<td>Magnetics surveying: (1.5 day at $650/day)</td>
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<tr>
<td>TEM surveying: (3 days at $1000/day)</td>
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<tr>
<td>MaxMin Data Processing, Interpretation, and Reporting, (4 km at $140/km)</td>
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<td>Magnetics Data Processing, Interpretation, and Reporting, (5.26 km at $80/km)</td>
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<td>Downhole TEM Data Processing, Interpretation, and Reporting,</td>
<td>$900.00</td>
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<tr>
<td><strong>Total:</strong></td>
<td>$9,030.80</td>
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NOTE:

MODELLING CURVE:
FIELD DATA:

MODELLING PARAMETERS:

DIP: -55°
STRIKE: 90° (in local grid)
PLATE TOP AT: x=50 m, z=-2 m, y=500 m
CONDUCTANCE: 200
PLATE LENGTH (depth extent): 100 m
PLATE WIDTH (strike length): 50 m

25,779