Logistics Report

for a

Helicopter Magnetic Survey

of the

Bear Pass Properties, British Columbia

carried out on behalf of

Transworld Trading Corporation

by

High-Sense Geophysics Limited
960703 - 2

Toronto, Canada
September, 1996

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1. INTRODUCTION

In July of 1996, High-Sense Geophysics Ltd. was contracted by Transworld Trading Corporation to provide a helicopter borne magnetic survey for M.L. Drilling Incorporated over the Bear Pass properties situated in northern British Columbia, Canada. Flight operations commenced on July 25, 1996 and were completed by July 26, 1996 after a total of five(5) sorties. Approximately 249 line kilometers of total field magnetic data, flown along east-west traverse lines, were collected, processed and plotted.

The technical objective of the survey was to provide high resolution magnetic maps, suited for anomaly definition, detailed structural evaluation and identification of lithologic trends. All magnetic, positioning, and altimeter data were recorded in a digital format. Fully corrected magnetic maps were prepared by High-Sense's Toronto office after completion of survey activities.

The remainder of this report discusses survey location, logistics, equipment, personnel and parameters, plus flight operations and data processing/presentation, in more detail under the appropriate headings.

2. LOCATION

The survey area, identified as the Bear Pass Property, was situated in northern British Columbia, approximately 40 kilometres north-east of Stewart. Terrain was characterised by extreme mountainous conditions. The area was flown in two separate survey blocks, identified as 'north' and 'south', at a programmed line spacing of 100 metres, with a traverse line direction of east-west. Additional details are provided below, using UTM coordinates for a central meridian of 129°W - Zone 9 (see also accompanying map):

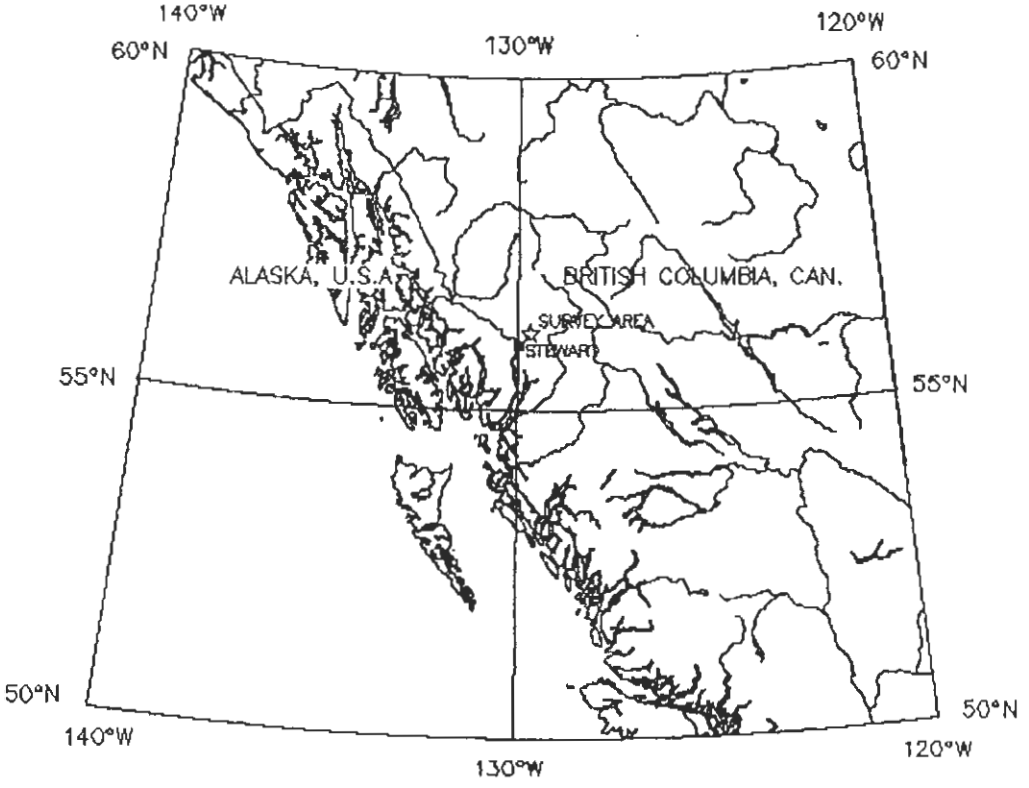
North Block *(NTH) - approx. 40km north-east of Stewart, British Columbia*

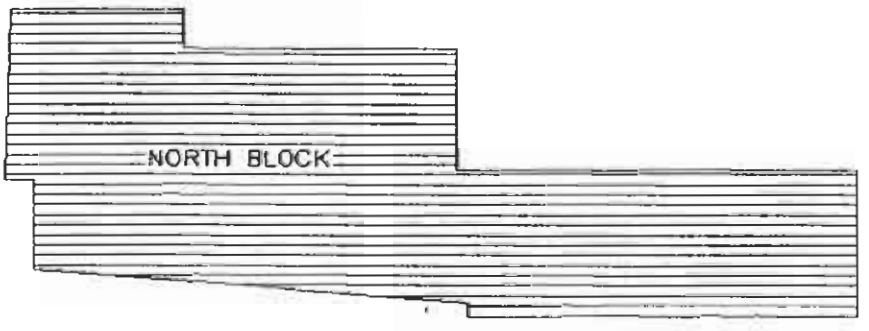
Corner No.	Easting (m)	Northing (m)
1	449900	6222400
2	451450	6222400
3	451450	6222000
4	453900	6222000
5	453900	6220800
6	457500	6220600
7	457500	6219550
8	450100	6220000
9	450100	6220900
10	449850	6220900

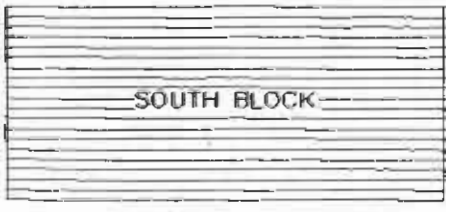
South Block *(STH) - approx. 40km north-east of Stewart, British Columbia*

Corner No.	Easting (m)	Northing (m)
1	456250	6218500
2	456250	6216900
3	452300	6216850
4	452300	6218450

Location Map: Bear Pass Survey Blocks - British Columbia







3. AIRCRAFT AND EQUIPMENT

3.1 Aircraft

The aircraft used was a Bell 206B Jet Ranger helicopter (C-FBER), owned and operated by Vancouver Island Helicopters, Stewart, British Columbia. Installed equipment is detailed below.

3.2 Airborne Geophysical System

3.2.1 Magnetometer

A Scintrex H8 Optically Pumped Cesium Split Beam Sensor was mounted in a towed 'bird'. The Larmor frequency output was processed by a High-Sense magnetometer counter board that provides a resolution, without filtering, of 10 ppb ten times per second (in a magnetic field of 50,000 nT this resolution is equivalent to 0.005 nT).

3.2.2 GPS Navigation

A Novatel 751 ten channel GPS receiver, which is an integral component of the HS-GFCS-II flight control system, provided precise positioning information. The GPS antenna was mounted on the top tail-fin of the towed bird, ensuring accurate reported positioning of the magnetic sensor at all times.

3.2.3 Altimeter

A Terra Model TRA 3500 radar altimeter was used. The 'low-profile' transmitting and receiving antennae were mounted on the underside of the towed bird's lateral tail fins. This instrument operates over a range of 0 to 765m (2500') with a precision of 0.3m (1').

3.2.4 Geophysical Flight Control System

The High-Sense GFCS-II geophysical flight control system monitored and recorded magnetometer, spectrometer, altimeter and GPS equipment. Input from the various sensors were monitored and time stamped every 0.005 seconds for precise coordination of geophysical and position measurements.

GPS position coordinates and terrain clearance were presented to the pilot by means of LCD touch screen display. The magnetometer response, 4th difference and altimeter profile were also shown on the LCD touch screen display for real time monitoring of equipment performance.

3.2.5 Digital Recording

The output of the magnetometer and altimeter as well as uncorrected GPS coordinates were recorded digitally on disk at a sample rate of ten times per second by the HS-GFCS-II system. Line number, GPS time and system time were also recorded for use during subsequent differential GPS correction.

3.3 Ground Monitoring System

3.3.1 Magnetometer

A GEM Systems Overhauser magnetometer (GSM19W) was operated as a base station to record diurnal variations of the earth's magnetic field. Readings with a resolution of 0.1 nT were recorded digitally every second, and synchronized with GPS time ('time stamped') for accurate correction of the airborne data.

3.3.2 GPS Monitor

A Novatel 751 ten channel receiver with a fixed antenna was also active at the base of operations. Raw satellite data was digitally recorded to enable differential correction of the corresponding airborne data.

3.3.3 Recording

The output of the magnetic and GPS monitors was recorded digitally on a dedicated 486 'LunchBox' computer. A visual record of the last forty minutes of activity is graphically maintained on the computer screen to provide an up to date appraisal of significant activity. At the conclusion of each production flight raw GPS and magnetic data were transferred to the main compilation computer.

3.4 Field Compilation System

A 586 ('Pentium') PC computer and a Hewlett Packard colour printer/plotter were used for field data processing and presentation. Processing software and procedures were developed by High-Sense Geophysics Limited, and include the Geopak RTICAD imaging system. Profile plots, contours and colour/shadow images were generated on-site as required.

All digital data was verified at the project site to confirm that data recording took place within survey specifications. All digital data was duplicated on-site to help prevent loss.

4. PERSONNEL

4.1 Field Operations

High-Sense geophysicist	: Allen Duffy
Pilot, Vancouver Island Heli.	: Trevor Devine

4.2 Project Management

Transworld Trading Corp.	: John De Leen
High-Sense, Toronto office	: Zbynek Dvorak

5. SURVEY PARAMETERS

Traverse Line spacing	: 100 meters *(see Appendix A)*
Control Line spacing	: minimum 2 per block (*see Appendix A)*
Nominal Terrain clearance : bird	: 73 metres (240 feet)
Nominal Terrain clearance : heli.	: 90 metres (300 feet)
Navigation	: Global Positioning System
Traverse Line direction	: east-west
Measurement interval	: 0.1 second magnetics
Airspeed (nominal)	: 80 km/hr
Measurement spacing (nominal)	: 2.5 meters
Airborne Digital Record	: Radar Altimeter Total Field Magnetics Time (Local and GPS) Raw Global Positioning System (GPS) data
Base Station Record	: Ambient Total Field Magnetics Raw Global Positioning System (GPS) data Time (Local and GPS)

6. OPERATIONS AND PROCEDURES

6.1 Flight Planning

Outline of the survey blocks was specified by Transworld Trading Corporation (section 2.0), and the coordinates used to generate pre-calculated navigation files. These, in turn, were used by the airborne data acquisition system to plan and execute flights at the designated line spacing and orientation.

Total combined flying for all blocks was 249 km. Within the limits imposed by the severe terrain typical of the survey area, areal coverage and data collection are both considered to be of good quality and within standard survey specifications. Line kilometers for individual blocks are summarized in Appendix A.

6.2 Base Station

A geophysical base station was established at the Department of Environment Weather Station located in Stewart, B.C. GPS and magnetic diurnal records were recorded covering all airborne production data, and time synchronised with the remote data based on GPS time.

Ideally the base station GPS antenna should be located at an accurately surveyed position point, since position errors are carried through to the differentially corrected data. Because no control point was available, the location of the GPS antenna was determined by recording several hours of GPS data and averaging the resulting antenna coordinates (the assumption being that deliberate errors introduced by military 'selective availability' satellite signal distortion will average to zero over an extended period of time). The position fixes determined for the base station site were:

Weather Station, Stewart (set up : July 24, 1996)

55° 56' 06.5235" N	**0.0 m asl**
129° 59' 03.4093" W	**(WGS 84 spheroid)**

6.3 Data Compilation

Data recorded by the airborne and base station systems was transferred to the field compilation system. As each flight was completed, the following compilation operations were carried out.

6.3.1 Flight Path Correction

GPS data was differentially corrected to remove errors introduced by 'selective availability', an intentional accuracy degradation method used by the military. The correction process uses the known fixed location of the base station to calculate the error associated with each satellite. These errors are then removed from the survey GPS data enabling a position to be calculated with an accuracy in the order of three meters, with four or more satellites in view. **Satellite visibility and coverage was problematic throughout the survey**. The airborne reception, especially, was adversely affected by screening and reflection effects due to the severe terrain. Survey lines located in areas prone to these effects were repeatedly re-flown at different times of the day in an attempt to acquire data with an optimum satellite constellation. The resulting final data set is composed of data considered to be accurately positioned.

The navigational correction process yields a flight path expressed in WGS 84 Latitude-Longitude coordinates. Transformation to local Clarke 1866 (NAD 27) UTM coordinates used the following projection parameters :

	Semi-major axis (a)	Semi-minor axis(b)
WGS 84	6378216.4	6356752.3142
Clarke 1866	6378206.4	6356583.8000

Local datum shift applied :

Delta X	:	7
Delta Y	:	-162
Delta Z	:	-188

UTM central meridian = 129° W (Zone 9)

False Easting	:	500,000
False Northing	:	0

6.3.2 Magnetic Corrections

Diurnal variations recorded by the base station were subtracted directly from the aeromagnetic measurements to provide a first order diurnal correction. When the magnetic variations are noted to occur due to man-made causes, such as equipment passing by the sensor, they are edited out prior to applying the diurnal correction

Optically pumped magnetic sensors have an inherent heading error, typically several nanoTeslas peak-to-peak, as the sensor is rotated through 360 degrees. On reciprocal flight line directions the heading error is reasonably predictable; corresponding correction was made on the basis of aircraft heading.

Control line intersection leveling was not employed since terrain clearance differences between the control and traverse lines at the intersections were excessive (again, as a result of the mountainous terrain).

6.3.3 Map Products and Digital Data

Following processing of all survey data in the Toronto office, two(2) copies of the final map products (see below), plus digital data (CD-ROM), extraction software and this logistics report were delivered to Transworld Trading Corporation, Vancouver, Canada.

Plotted at a scale of 1 : 10 000 :

1. Colour image of total field magnetics with contours, flight path and Lat-Long/UTM reference grid - **NORTH BLOCK**

2. Colour image of total field magnetics with contours, flight path and Lat-Long/UTM reference grid - **SOUTH BLOCK**

3. Colour image of calculated first vertical magnetic derivative with contours, flight path and Lat-Long/UTM reference grid - **NORTH BLOCK**

4. Colour image of calculated first vertical magnetic derivative with contours, flight path and Lat-Long/UTM reference grid - **SOUTH BLOCK**

Respectfully submitted,

Allen Duffy, BSc.
High-Sense Geophysics Limited
September 10, 1996

Allen R. DUFFY

Software Specialist - Special Projects
Senior Geophysicist

Al is a software development specialist with a wide variety of experience in system installation, design and graphics applications. His system familiarity includes 0S2, VAX/VMS and PC/MS DOS. He has been a project geophysicist for both airborne and ground surveys, involved in the planning, supervision, data aquisition, compilation and interpretation. Al has also had extensive experience in the training of geotechnical personnel from countries including Egypt, Vietnam, China, Mexico, Argentina and Brazil.

PROFESSIONAL EXPERIENCE:

Software Specialist
High-Sense Geophysics Limited and Urquhart Dvorak Limited
Toronto, Ontario
(1990-present)

Responsible for interfacing, management and interpretation.

Chief Geophysicist
Dataplotting Services Inc.
Toronto, Ontario
(1988-1989)

Primarily responsible for the management and successful completion of a radiometric data compilation for the entire Kingdom of Thailand. Designed Dataplotting's 'ESPS', a PC-based geoscience data processing package. General consulting on geophysical/technical and software design issues. Provided training in geophysical data reduction techniques.

Geophysical/Computer Consultant
Toronto, Ontario
(1984-1988)

Activities included in-field geophysical supervision of ground surveys (IP/magnetics), interpretation and reporting. Design and implementation of PC and VAX based geotechnical computer graphics software. Provided training in geophysical data reduction techniques. Consulting services in hardware aquisition, implementation and training in custom and commercially available software. Clients included JVX, Scintrex and Dataplotting Services. Responsible for on-going software design and hardware interfacing. Consultation on survey planning and management, data processing and geophysical interpretation.

Senior Geophysicist
Scintrex Ltd.
Toronto, Ontario
(1982-1984)

Responsible for computer applications including the design, writing and implementation of Scintrex software for handling time domain IP data and computing IP spectral parameters. Involved in the testing of the Luminex, IPR1 and IGS systems. Installed a major airborne and computer system in Vietnam under the auspices of the UN. Engaged as training consultant for airborne data reduction techniques.

Project Geophysicist
Questor Surveys Limited
Mississauga, Ontario
(1980-1982)

Field supervision of a large airborne survey (magnetics/radiometrics/VLF) in Mexico and the management of in-office data compilation. Involved with the development of sophisticated VAX-VMS based software for processing airborne geophysical data.

Geophysicist/Programmer
Northway Surveys Limited
Toronto, Ontario
(1978-1980)

Project geophysicist reponsible for data compilation on standard surveys and special projects (eg. Federal Snow Water Project). Designed, tested and installed Northway's Upward Looking Crystal Radiometric processing software in Argentina.

Geophysicist
Paterson, Grant and Watson
Toronto, Ontario
(1977)

Compilation and interpretation of geophysical data for ground and airborne geophysical surveys.

EDUCATION:

Honours B.Sc. Geophysics, York University, Toronto (1977)

OTHER SKILLS AND ASSETS:

LANGUAGES: English

PROFESSIONALAFFILIATIONS:

Canadian Exploration Geophysical Society
Society of Exploration Geophysicists

APPENDIX A: BEAR PASS PROPERTY SURVEY BLOCK SUMMARY

TRANSWORLD TRADING CORPORATION
M.L. DRILLING INCORPORATED

BEAR PASS PROPERTY
STEWART, BRITISH COLUMBIA

Survey Block	*Abbrev. Name*	*Operations Base*	*Flights*	*Traverse Lines*			*Control Lines*			*Total Kms*
				Line Range	*Orient.*	*Spacing*	*Line Range*	*Orient.*	*Spacing*	
North	NTH	Stewart	1,2,3,4,5	100 - 400	E-W	100m	2010-2070	N-S	4 lines	164.964
South	STH	Stewart	3,4,5	1000 - 1192	E-W	100m	3000-3031	N-S	2 lines	84.169
									Total kilometres	249.133

* Due to the extremely rugged, mountainous terrain typical of the survey area, control line data was not used in the data compilation process.

Summary of Operations
Magnetic Survey

APPENDIX B : Digital Data Archives

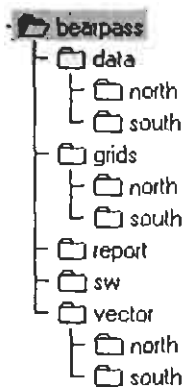
DIGITAL DATA ARCHIVES

1. Summary

The raw and processed digital data, together with the final data grids, are delivered on CD-ROM (two copies). The digital data is archived in GEOPAK Binary Database Format (.BDB); the gridded data is also archived in GEOPAK grid format (.GRD). Software and documentation are supplied on the CD-ROM to extract any combination of data channels from the binary databases into an ASCII 'flat file' format (program **DBEX**) - allowing the creation of custom data file formats as per the user's needs.

2. CD-ROM Directory Structure and Contents

Delivery data is stored on the CD-ROM under the following directory structure :



The following sections detail the contents of each sub-directory.

2.1 \BEARPASS\DATA\NORTH
\BEARPASS\DATA\SOUTH

Digital profile data is stored in GEOPAK binary database (.BDB) format. GEOPAK databases are structured as a series of direct access multi-channel binary records accessed by the original survey line number. A description of the database record contents is appended to this section.

In the ...**NORTH** sub-directory : **NORTH.BDB**

The survey line numbering scheme for the North block is as follows :

Line numbers : 100 - 400 : traverse lines
Line numbers : 2010-2070 : control lines

In the **...\SOUTH** sub-directory : **SOUTH.BDB**

The survey line numbering scheme for the South block is as follows :

Line numbers : 1000- 1192	: traverse lines
Line numbers : 3000-3031	: control lines

Data extraction software (DBEX.EXE) is resident in the \BEARPASS\SW sub-directory - see section 2.4. User documentation is appended to this section, following the database record description.

2.2 \BEARPASS\GRIDS\NORTH
\BEARPASS\GRIDS\SOUTH

The final, processed data grids are stored in **GEOPAK** grid format.

In the **...\NORTH** sub-directory, grids for the North block survey :

NTH_MAG.GRD	: total field magnetic grid
NTH_VDV.GRD	: magnetic first vertical derivative grid

In the **...\SOUTH** sub-directory, grids for the South block survey :

STH_MAG.GRD	: total field magnetic grid
STH_VDV.GRD	: magnetic first vertical derivative grid

2.3 \BEARPASS\REPORT

This sub-directory contains the various components of the final logistics report. Files are in either **Microsoft Word (.DOC)** or **Microsoft Excel (.XLS)** format, as listed below :

TRANSWLD.DOC	: text for main body of logistics report
SUMMARY.XLS	: survey block summary (Appendix 'A')
ARCHIVE.DOC	: text for data archive and CD-ROM description (Appendix 'B')
DBX_MAG.XLS	: Magnetic database record description
DBEX.DOC	: text for DBEX (Database Extraction Utility) User's manual

2.4 \BEARPASS\SW

This sub-directory contains a copy of the database data extraction software **(DBEX.EXE).** Use this software to extract any or all of the geophysical data channels from the magnetic and radiometric databases and write to an output ASCII file. Additional file copies of the user documentation (DBEX.DOC - Microsoft Word format) and the magnetic database record description (DBX_MAG.XLS - Microsoft Excel format) are also included here.

2.5 \BEARPASS\VECTOR\NORTH
\BEARPASS\VECTOR\SOUTH

This directory contains the various graphics files used in the final map presentations. Primarily included for the convenience of those with access to GEOPAK software, these files are all in GEOPAK vector (.VEC) format and may be directly used by **GEOPAK RTICAD :**

In the **...\NORTH** sub-directory, the following vector files used in map presentation for the North block survey :

BNTH.VEC	: map surround with UTM and LAT/LONG reference grids
NTH_FP.VEC	: flight path
CNTH_MAG.VEC	: magnetic contours
CNTH_VDV.VEC	: first vertical derivative contours
TTL_MAG.VEC	: title block - magnetics
TTL_VDV.VEC	: title block - first vertical derivative

In the **...\SOUTH** sub-directory, the following vector files used in map presentation for the South block survey :

BSTH.VEC	: map surround with UTM and LAT/LONG reference grids
STH_FP.VEC	: flight path
CSTH_MAG.VEC	: magnetic contours
CSTH_VDV.VEC	: first vertical derivative contours
TTL_MAG.VEC	: title block - magnetics
TTL_VDV.VEC	: title block - first vertical derivative

3.0 ATTACHMENTS

The following documents are attached to this appendix :

(1) Magnetic .BDB database structure summary (information to be used in conjunction with program DBEX, the data base extraction utility)

(2) DBEX user documentation.

High-Sense Geophysics Limited

Archive Record MAG

Client name:	TRANSWORLD TRADING CORPORATION	
Survey location:	BEAR PASS, STEWART, B.C.	
Date flown:	JUL, 1996	
Date processed:	AUG, 1996	
Name of BDB:	\BEARPASS\DATA\NORTH\NORTH.BDB	[NO. CHANNELS = 16]
	\BEARPASS\DATA\SOUTH\SOUTH.BDB	[NO. CHANNELS = 16]
Final Geopak grid names, plus corresponding channel number (list all included on this media)	\BEARPASS\GRIDS\NORTH\NTH_MAG.GRD	[9]
	\BEARPASS\GRIDS\NORTH\NTH_VDV.GRD	
	\BEARPASS\GRIDS\SOUTH\STH_MAG.GRD	[9]
	\BEARPASS\GRIDS\SOUTH\STH_VDV.GRD	

Channel #	Channel name	Description	Fortran format for DBEX (eg F12.2)
1	X	UTM EASTING	F12.1
2	Y	UTM NORTHING	F12.1
3	FID	COUNTER (1/10 SEC)	F8.0
4	TIME	GPS WEEK SECOND	F10.1
5	RAD ALT	RADAR ALTIMETER (feet)	F8.1
6	GPS HGHT	GPS ELEVATION (metres)	F8.1
7	RAW MAG	RAW MAGNETICS (nT)	F8.1
8	DIURNAL	DIURNAL MONITOR (nT)	F8.1
9	FNL MAG	FINAL MAGNETICS (nT)	F8.1
10	GPS LAT	RAW GPS LAT. (degrees, WGS84)	F9.4
11	GPS LONG	RAW GPS LONG. (degrees, WGS84)	F9.4
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PROGRAM "DBEX" - DATABASE EXTRACT

The database extract program function is to copy data to a ASCII or BINARY file.

/ EXIT

Exit may be selected whenever the main menu options list is displayed. All open files are closed, the program terminates and control returns to DOS.

1 OPEN DATABASE

This function is required to open a database for read/write activity. If a database is already open and OPEN DATABASE is selected, an error message is displayed and the main menu select list is re-displayed.

If there is no database open, the routine prompts for the filename of the database file to open. Once entered, the file is opened. If an error occurs during the open sequence, an error is displayed and the file is not opened. The open database function is also the first step taken to create a new database.

2 CLOSE DATABASE

Closes the currently open database. If no database is open, an error is displayed and the main menu select list is re-displayed.

3 GENERATE LINE:FID:X:Y:Z1:Z2... FILE

This function generates a LINE,FID,X,Y,Z1,Z2,Z3... file from the lines in a database. The output LFXYZZ file may be generated in an ASCII or BINARY format. The LFXYZZ file is compatible for input to GEOPAK ground survey programs.
The run parameters are:

Line:fid:fid filename [/=none] :

The entire database may be examined and each line which is NOT marked deleted will be output to the LFXYZ file if a slash is entered to the above prompt. If a filename is entered, the file must exist and contain one line entries consisting of:

- Line number
- Fid start
- Fid end

This file is called a Line Fid Fid file or "LFF" file. The LFF file contains one LFF entry for each line to be processed. The file is read using a FORTRAN free format read. An EOF in the LFF file terminates processing of lines into the LFXYZ file.

Enter next line range [/=END] :

This prompt appears only if a slash "/" is input in response to the LFF filename request. A list of line ranges to process is required. Up to 20 line ranges may be input. At least one range must be input. A line range may not have a range end line number which is smaller than the range start line number.

LFXYZ filename :

A DOS filename must be entered. This file receives either the ASCII or BINARY output.

ASCII or BINARY output file [A/B] :

An "A" or "B" must be entered to the above prompt. If an "A" is entered, the output file will be generated in a standard ASCII format. If a "B" is entered, BINARY is selected. The BINARY file format is FORM=UNFORMATTED (Microsoft FORTRAN compatible).

Parameter input filename [/=NONE] :

Program parameters may be read from a file on disk instead of through the keyboard. If a file contains the answers to the channel selection parameters, the filename may be entered and the parameters will be read from the file and no input is required from the keyboard. The parameters that are read from the file are marked with a "(P)" indicator.

Parameter output filename [/=NONE] :

The program can build an answer file from the answers to the prompts that are input via the keyboard. The answers written to the file are flagged with a "(P)". If a slash "/" is input, no output parameter file is generated.

(P) **The line number is automatically inserted in front of each record. Each channel following the line number must be specified, including FID, X and Y.**

Do you want the line number [Y/N] [Def=Y] :

The above information and prompt is displayed. If "N" is entered to the query, the line number information will not be written to the output file.

The Line number is extracted from the line headers in the database.

(P) **Do you want the flight number [Y/N] [Def=Y] :**

If "N" is entered to the query, the flight number information will not be written to the output file.

The Flight number is extracted from the line headers in the database.

(P) **Do you want the date [Y/N] [Def=Y] :**

If "N" is entered to the query, the date flown will not be written to the output file.

The Date is extracted from the line headers in the database.

The X and Y data come from channels 1 and 2 in each data record. The Z channel(s) are selected when the following prompt appears.

(P) **Enter Z channel numbers [/ on end] :**

A list of at least one channel number must be entered. The entry is FORTRAN free format. The channel number(s) entered must be in the range of 1 to the number of channels in the database record. The list of channel numbers must be terminated with a slash.

(P) **Data records may be extracted from the database using one of the following selection criteria:**

1 = on a record basis
2 = on a distance basis
3 = on a time basis

Enter the extraction code :

Enter one of the codes (1,2 or 3) to select how the data is to be extracted from the database. The normal method is 1, on a record mode. Distance and time modes cause records to be interpolated at fixed increments along the line in either distance or time increments.

(P) **Extract & write every Nth record [/=1] :**

This question is asked only if the extraction code is 1 (record basis). If "1" or a slash is entered, each database record will be copied. If a number greater than 1 is input, i.e. "N", only every "N"th record will be copied from the database to the output file.

(P) **Enter the sampling distance (metres) :**

This question is asked only if the extraction code is 2 (distance basis). The distance in metres along the flight lines that data samples are to be extracted at is entered.

(P) **Enter the time sampling interval (seconds) :**

This question is asked only if the extraction code is 3 (time basis). Data records are extracted on a time basis in a manner similar to the distance extraction of data records.

(P) **Output records that have defaults [Y/N] (Def=Y) :**

If "Y" is input in response to the above question, each output record is examined for defaults. If there are any, the record is not written to the output file.

(P) **A format specifier must be built for each Z channel being output to the XYZ file. Standard FORTRAN notation is used. All Z channels are written using floating point instead of integer, i.e. Fnn.n not Inn. Entering "F10.2" (quotes not included) specifies 10 characters with 2 decimal places.**

Enter channel nn format :

The above prompt appears only when the output file is ASCII. It is asked for each of the Z channels being output to the file. The LINE, FID, X and Y portion of each output line is written using the FORTRAN (I8,F9.2,2F12.2) format. This format must be entered by the user. The remainder of the format (for the Z data) is defined by the user.

At this point, the parameter input and/or output files are closed if they were being used. The program begins creating the LFXYZ file. The output will contain the data in the LINE,FID,FID ranges specified in the LFF file if one was present. Otherwise, the entire

database within the line range(s) specified will be output to the LFXYZ file using the selected extraction method.

An activity line is displayed on the video screen for each line being processed.

Processing line : nnnnnnnnn

Program control reverts back to the main DBT options display when the processing completes.

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ADDENDUM

as at April 21, 1997

TO

ASSESSMENT REPORT # 24708

For

B.C. Ministry of Employment and Investment
Geological Survey Branch

File No. 24500-03-AME

Properties owned by

International Tournigan Corporation
1407 - 700 West Pender Street
Vancouver, BC V6C 1G8

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Figures Listed with Relevant Sections

ADDENDUM TO ASSESSMENT REPORT # 24708
as per
Letter of March 10, 1997, File No. 24500-03-AME
Amendments to Report
"Interpretation and Evaluation of Results"

for

Logistics Report
for a
Helicopter Magnetic Survey
of the
Bear Pass Properties, British Columbia
carried out on behalf of
Transworld Trading Corporation
by
High-Sense Geophysics Limited
960703-2
Allen Duffy, September 10, 1996

by

E. R. Rockel
S. J. Geophysics Ltd.
11762 94th Avenue
Delta, B.C. V4C 3R7
April 10, 1997

AMENDMENTS TO "INTREPRETATION AND EVALUATION OF RESULTS" REPORT #24708

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Figure at End of Section

1. INTRODUCTION

All logistical details of the survey program are described in the original report (ref. #1) and will not be repeated here. The survey was a typical low level helicopter airborne magnetic survey used for mining exploration. Magnetic data was corrected for diurnal variations using a magnetic base station, although no tie line leveling was carried out because "terrain clearance differences between the control and traverse lines at the intersections were excessive" (ref. #1) due to rugged mountainous terrain. Flight path for the survey was controlled by an on-board GPS navigation system. Post differential corrections were applied to produce final flight track for the survey.

2. Discussion of Results

No additional processing was carried out on the data for this report. Total magnetic field maps and "calculated first vertical magnetic derivative" maps were examined and an interpretation map, Figure # A1 (Amendment1), Geophysical Interpretation Map, was created to accompany this report. Magnetic data quality was good and did not appear to show leveling problems from the inability to level the data using tie lines. The rugged topography and resulting large terrain clearance differences have probably introduced some terrain clearance dependent magnetic features. Since flight path was mostly along the slope, rather than against the slope, these effects should not be excessive and will not be considered. The dynamic range of magnetic values was about 700 nT suggesting that the entire survey was within a single rock type, in this case mainly volcanic rocks as mapped previously (ref. #2).

3. Conclusions

Conclusions from geophysical data were made with reference to "Geology of Bear Pass Claims" from reference #2. Although the entire mapped region was not covered by the airborne survey, it appears, from the two areas flown, that the more magnetic regions correspond roughly to the "upper volcanic unit". Broad magnetic lows probably reflect the "lower volcanic unit" and linear magnetic lows are believed, in many cases, to represent structure as shown on the interpretation map.

The interpreted "upper volcanic" regions are shown as cross hatched with the more dense cross hatched areas indicating thicker sections of upper volcanic material. The abrupt changes from "thick" to "thin" are believed to be due to faulting and relative uplift or down-drop of the volcanic rocks before glacial erosion created a more uniform topography. This faulting and subsequent intrusion of mineralizing fluids into favorable rock units, such as the "argillaceous tuff horizon", and into structural traps may have largely contributed to the widespread mineralization seen in the area.

Target zones were interpreted with the benefit of mapped mineralized occurrences. In many cases known mineralization corresponded with structural intersections interpreted from the magnetic contour maps. Some mineralization seems to correlate with small magnetic perturbations such as local steep gradients, cusps, highs and lows. Using these "signatures" additional target zones, not shown on the geology map as mineralized, were identified on the interpretation map.

4. Recommendations

According to the geophysical "signatures" recognized for some mineralized areas, the target zones interpreted and shown on the interpretation map, should be investigated on the ground. The highest priority targets are those which correspond with the "argillaceous tuff horizon" because much of the known mineralization is associated with this rock type.

To compliment the airborne magnetic survey detailed ground magnetic surveys over the target zones should be considered in order to more accurately define the magnetic anomalies picked as targets. A VLF-EM survey, combined with the magnetic survey, is suggested to test for any conductivity that may be associated with mineralization. Additional geochemical surveys, along with geological examination, are also recommended to check for economic mineralization.

Respectfully Submitted

Edwin R. Rockel, P. Geo.

S J Geophysics Ltd.

April 10, 1997

REFERENCES

Ref. #1 Duffy, A. (1996), "Logistics Report for a Helicopter Magnetic Survey of the Bear Pass Properties, British Columbia" a survey report by High-Sense Geophysics Limited for Transworld Trading Corporation

Ref. #2 DeLeen, J. (1996), "Summary & Compilation of Work Completed Between 1907 & 1993 on the Mineral Claims of ITC in the Bear Pass Area - Stewart, B.C." an in-house report.

STATEMENT OF QUALIFICATIONS

I Edwin Ross Rockel, Geophysicist of Surrey, British Columbia, Canada, hereby certify that:

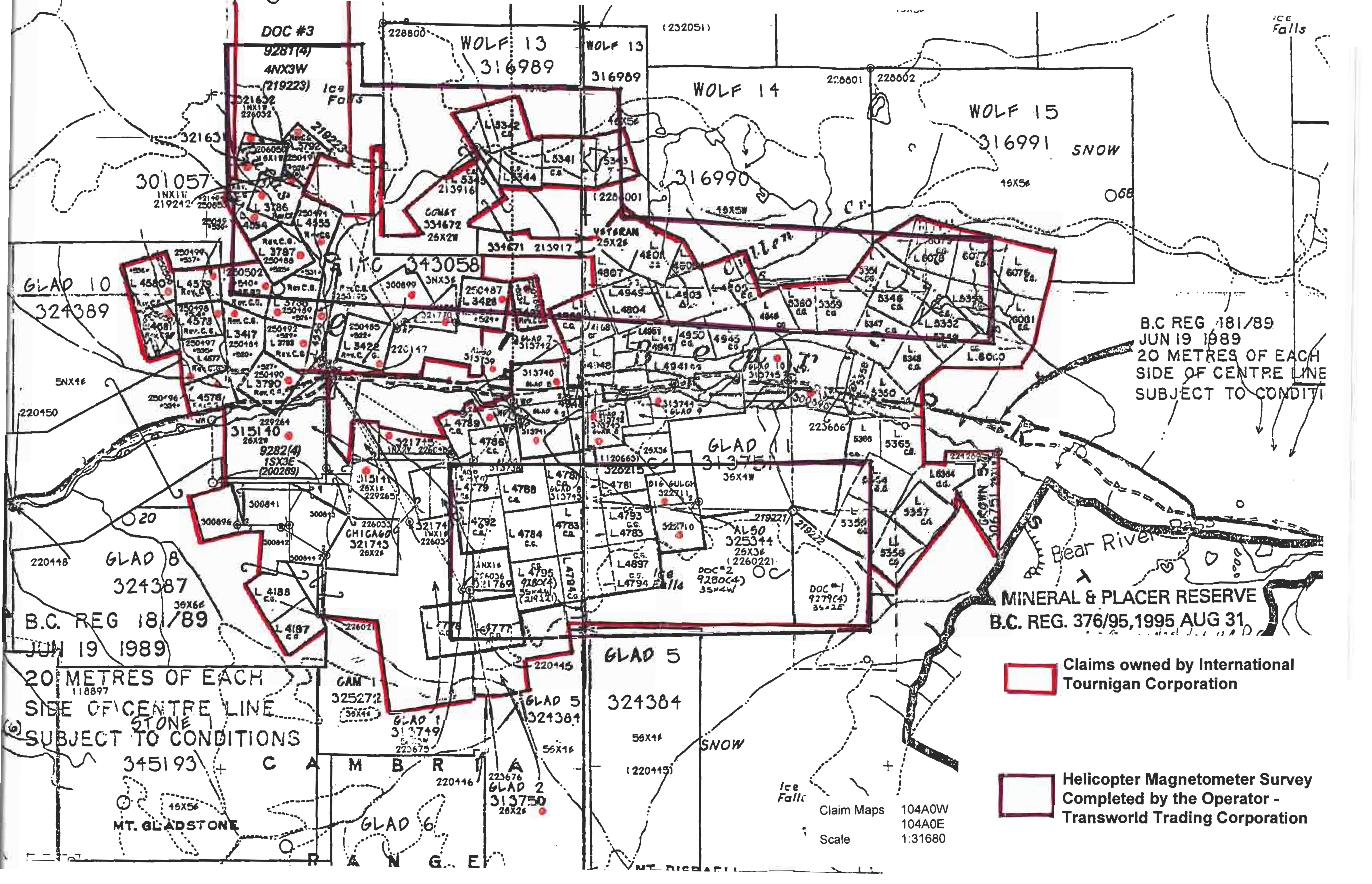
1. I received a B.Sc. degree in Geophysics from the University of British Columbia in 1966.
2. I currently reside at 13000 54A Avenue, in the Municipality of Surrey, in the Province of British Columbia.
3. I have been practicing my profession since graduation.
4. I am a Professional Geoscientist registered in the Province of British Columbia.
5. I am a Professional Geoscientist registered in the Province of Newfound Land.
6. I am a Professional Geoscientist registered in the Northwest Territories.
7. I hold no direct or indirect interest in, nor expect to receive any benefits from, the mineral property or properties described in this report.
8. This report may be used for the development of the property, provided that no portion will be used out of context in such a manner as to convey meanings different from that set out in the whole.
9. Consent is hereby given to the company for which this report was prepared to reproduce the report or any part of it for the purposes of development of the property, or facts relating to the raising of funds by way of a prospectus and/or statement of material facts.

Dated: April 10, 1997

Surrey, British Columbia

Signed: _____

Edwin Ross Rockel
B.S.c., P. Geo.


DOC #3
9281(4)
4NX3W
(219223)
WOLF 13
316989
WOLF 14
316990
WOLF 15
316991
SNOW
301057
GLAD 10
324389
343058
GLAD 11
313751
GLAD 8
324387
B.C. REG 181/89
JUN 19 1989
20 METRES OF EACH
SIDE OF CENTRE LINE
SUBJECT TO CONDITIONS
345193
CAMBRIA RANGE
MT. GLADSTONE
GLAD 6
GLAD 2
313750
GLAD 5
324384
CAM 1
325272
CHICAGO
321743
ALSO
325344
DOC #2
9280(4)
DOC #1
9279(4)
Bear River
MINERAL & PLACER RESERVE
B.C. REG. 376/95,1995 AUG 31
Claims owned by International Tournigan Corporation
Helicopter Magnetometer Survey Completed by the Operator - Transworld Trading Corporation
Claim Maps 104A0W 104A0E
Scale 1:31680

● Claim on which assessm work was recorded

Crown Grant Name	Lot No.		
Red Bird No. 1	4794		
Red Bird Fraction	4795		
Red Top	4803		
Red Top No.1	4804		
Red Top Fraction	4807		
Red Top No. 2 Fraction	4949		
Skyscraper	4897		
Some Fraction	5364		
Superior	4801		
Superior No.1	4802		
Superior No.2 Fraction	4806		
Waterfall No.1	4789		
Whistler	4786		
Foothill Fraction	4941	Taxes	$1,231
*Grey Copper	4187		
*Grey Copper No.1	4188	Taxes	$ 42.66

● In the name of: Estate of Arthur Liening

Total: 61 claims

Reverted Crown Grant	Lot No.	Tenure No.	Expiry Date
Argyle Fraction ●	3417	250484	March 1, 1999
Comet No.4 ●	3422	250485	March 1, 1999
Veteran ●	3423	250486	March 1, 1999
Veteran No.3 ●	3426	250487	March 1, 1999
Rufus No.1 ●	3787	250488	March 1, 1999
Rufus No.2 ●	3788	250489	March 1, 1999
Rufus No.4 ●	3790	250490	March 1, 1999
Rufus No.6 ●	3792	250491	March 1, 1999
Baby Rufus Fraction ●	3793	250492	March 1, 1999
Wide Fraction ●	4554	250493	March 1, 1999
Silver Fraction ●	4555	250494	March 1, 1999
Long Fraction ●	4556	250495	March 1, 1999
Argyle No.1 ●	4576	250496	March 1, 1999
Argyle No.2 ●	4577	250497	March 1, 1999
Argyle No.3 ●	4578	250498	March 1, 1999
Argyle No.4 ●	4579	250499	March 1, 1999
Argyle No.5 ●	4580	250500	March 1, 1999
Argyle No.6 ●	4581	250501	March 1, 1999
Duke Fraction ●	4582	250502	March 1, 1999
Rufus ●	3786	250853	March 14, 1999
Rufus No. 3 (Restaked-1993) ●		321631	Oct. 18, 1998

20 Reverted Crown Grants
2% Net Smelter Return
1 (Restaked - 1993)

● Claim on which assessmer work was recorded

Reverted Crown Grants (staked)	Tenure No:	Expiry Date
New York	300896	June 3, 2004
Atlas No.1	300841	June 3, 2004
Atlas No.2	300842	June 3, 2004
Atlas No.3	300843	June 3, 2004
Atlas No.4	300844	June 3, 2004
Gypsy Fr ●	300898	June 3, 1999
Slide Fr ●	301057	June 5, 2000
Comet no.3 FR ●	300899	June 5, 1999
Chicago (4 units)	321743	Oct.18, 2004
Doctor ●	321632	Oct.18, 1997
Big Slide	321744	Oct.18, 1997
Slide	321769	Oct.23, 2004
Mars ●	321770	Oct.23, 1999
Slipery Canyon ●	322710	Nov.8, 1998
Big Gulch ●	322711	Nov.8, 1998
It #1 (4 units) ●	315140	Dec. 2, 1997
It #2 (2 ") ●	315141	Dec. 2, 1997
It #3 (2 ") ●	321745	Oct.22, 1997
Crown No.5 (2 units)	306751	Dec.14, 1998
Glad #1 (15 units)	313749	Oct. 4, 2004
Glad #2 (4 ") ●	313750	Oct. 4, 1997
Glad #3 ●	313738	Oct. 4, 1997
Glad #4 ●	313739	Oct. 4, 1997
Glad #5 ●	313740	Oct. 4, 1997
Glad #6 ●	313741	Oct. 4, 1997
Glad #7 ●	313742	Oct. 4, 1997
Glad #8 ●	313743	Oct. 4, 1997
Glad #9 ●	313744	Oct. 4, 1997
Glad #10 ●	313745	Oct. 5, 1998
Glad #11 (12 units)	313751	Oct. 5, 1998
Doc 1 (6 units)	254484	April 9,2000
Doc 2 (12 units)	254485	April 9,2000
Doc 3 (12 units)	254486	Apr. 10,2001
Dave #1 (3 units)	254487	Apr. 24,2004
Comet (4 units)	334672	March 23,1999
Veteran (4 units)	334671	March 23,1999
ITC (9 units)	343058	Jan. 08,1997

Total: 119 claims (199 Units)

/9

Claim on which assessn work was recorded

BEAR PASS PROPERTY

STEWART AREA, B.C.
Skeena Mining Division NTS 104 A/4W & 104 A/4E

Mineral Claim List

Crown Grant Name	Lot No.	Record No.
Amazon	4945	N/A
Amazon No.1	4946	
Amazon No.2	4968	
Amazon No.3	4947	
Amazon No.4	4948	
Amazon Fraction	4950	
Amazon No.2 Fraction	4951	
Barite	5341	
Barite No.1	5342	
Barite No.2	5344	
Barite Fraction	5345	
Castle Rock	4784	
Copper Queen	4781	
Copper Queen No.1	4788	
Copper Queen No.2	4792	
Enterprise	5345	
Enterprise No.1	5347	
Enterprise No.2	5348	
Enterprise No.3	5349	
Enterprise No.4	5350	
Enterprise No.5	5351	
Enterprise No.6 Fraction	5352	
Enterprise No.7	5353	
Enterprise No.6	5359	
Enterprise Fraction	5360	
Enterprise Fr.	6079	
Gold Crown	4779	
Grandview	4793	
Green Lake	6081	
Green Lake No.2	6076	
Green Lake No.3	6077	
Green Lake No.4	6078	
Green Lake Fraction	6080	
Heather	5354	
Heather No.1	5355	
Heather No.2	5356	
Heather No.3	5357	
Heather No.4	5365	
Heather Fraction	5366	
Hector No.1	4805	
Helena	4783	
Hub	5343	
Pat Fraction	5358	
Bessie	4777	
Mamie	4778	

Cont'd

LEGEND
Interpreted structure (fault)
Interpreted contact between Upper and Lower Volcanic Units
Thin (interpreted) Upper Volcanic Unit
Interpreted boundary between thin and thick sequences of Upper Volcanic Unit
Thick Upper Volcanic Unit
Interpreted targets
1 Undifferentiated
2 Upper volcanic unit
3 Argillaceous tuff horizon (Iron Formation)
4 Lower volcanic unit
5 Monzonite stock
6 Granitic dyke
Vein
Geological contact (approx.)
Breccia outcrop
Limit of inferred zone of brecciation
Workings &/or Cu and precious metal mineralization
Adit
Trench
Lead mineralization
Zinc mineralization
Silver mineralization
* Assessment applied to these claims
Area of airborne magnetometer survey
Contour interval = 100m.
N
Snow field
COMET
BARITE
ARGENTA
ARGENTA (VETERAN or ERICKSON VEIN)
RUFUS
RED TOP
Red Top Main Copper Showing
ENTERPRISE
LIMITS OF 1996 AIRBORNE MAG SURVEY (NORTH BLOCK)
LIMITS OF 1996 AIRBORNE MAG SURVEY (SOUTH BLOCK)
NEW YORK
Magnetic & conductive zones
GREY COPPER
GEORGE GOLD-COPPER
Adit Zone
BLUE VEIN
WHITE VEIN
HEATHER
Chalcopyrite in breccia float from the above breccia
BEAR
RIVER

ITC
INTERNATIONAL TOURNIGAN CORPORATION
WORK BY J.D.
DATE APRIL 1997
N.T.S # 104A/4E
BEAR PASS PROPERTY
GEOPHYSICAL INTERPRETATION
0 100 200 300 400 500m
SCALE 1 : 10 000
CLAIMS OPTIONED TO TRANSWORLD TRADING CORPORATION
FIGURE A1

ADDENDUM TO ASSESSMENT REPORT #24708

as per
Letter of March 10, 1997, File No. 24500-03-AME

Amendments to Report
"EXPENDITURES AND GEOLOGY/ MINERAL OCCURENCES"

for

LOGISTICS REPORT

for
Helicopter Magnetic Survey
of the
Bear Pass Properties, British Columbia
carried out on behalf of
TRANSWORLD TRADING CORPORATION

by

HIGH-SENSE GEOPHYSICS LIMITED
960703-2
Allen Duff, September 10, 1996

by

JOHN L. DELEEN
DeLeen Consulting Geologists Ltd
#43 - 6000 Barnard Drive
Richmond, BC V7C 5P7

SUMMARY OF EXPENDITURES FOR HELICOPTER MAGNETIC SURVEY AND GEOLOGY / MINERAL OCCURENCES OF THE BEAR PASS PROPERTY

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Figures at End of Section

Introduction

This report summarizes the results of the interpretation completed by S.J. Geophysics; the expenditures for the Helicopter Magnetic Survey; and the geology and mineral occurences located on the Bear Pass claims.

Location and Access

The Bear Pass property is located approximately 25 kilometres north of Stewart, BC (Figure 1). The main highway access to Stewart from Meziadin junction bisects the property alongside the Bear River. Both the highway and the river are at an elevation of about 1400 feet ASL. The topography rises steeply from the valley floor to over 6,500 feet on the claims.

Most of the known showings on the property (199 claims or claim units) are at or above the treeline meaning helicopter access is required for work (see Figure 2).

Targets Outlined in Figure A1 of "Interpretation and Evaluation of Results" of Helicopter Magnetic Survey by S.J. Geophysics

The results of the helicopter magnetic survey are on Figures 20 to 23 inclusive, found at the end of this section.

Seven priority targets, located on fault structures, are on the south side of the Bear Pass. Two of these targets, in the western part of the survey, are located in the area of the George Gold-Copper mineralization; two in the north-central part of the survey are located over the iron formation; and in the south-eastern part of the survey, three targets are located in the Heather claim area which contains areas of disseminated silver-lead-zinc-copper mineralization and is partially covered by the glacier.

Twelve targets, located on the northern side of the Bear Pass, are also related to fault structures. Eight of these targets are located on or near the iron formation exposed on the Red Top and the Argenta claims near the southern boundary of the area surveyed. The other four targets, in the northwestern part of the survey, are located on faults in the Comet Vein area.

No magnetic targets are located on the Enterprise or Rufus claims. This is attributed to the fact the mineralization on the two groups is mainly silver-lead-zinc which does not contain magnetic minerals.

EXPENDITURES FOR SURVEY

The total expenditures for the Helicopter Magnetic Survey were $23,774.00 for High Sense Geophysics and $ 848.75 for the interpretation by S.J. Geophysics. Copies of the statements are contained in Appendix A.

General Geology

The Bear Pass area lies along the east side of the Stewart Complex, which is a belt of deformed volcanic, sedimentary and metamorphic rocks lying between the Coast Crystalline Belt to the west and the Bowser Basin to the east (Groves, Dept. of Mines Bull. 57, 1971). The complex, measuring

20 x 100 miles, extends from Alice Arm at its southern end through Stewart to the Iskut River at its northern end.

The units of this belt form the host-rocks for over 200 mineral deposits in the Stewart-Eskay Creek area. This rock sequence, of Jurassic age, is described in Bulletin 63, (Groves) as follows:

MIDDLE JURASSIC
Salmon River Formation

16	Siltstone, greywacke, sandstone, some calcarenite, minor limestone, argillite, conglomerate, littoral deposits.
15	Rhyolite, rhyolite breccia, crystal and lithic tuff.

Betty Creek formation

14	Pillow lava, broken pillow breccia (a); Andesitic and basaltic flows (b).
13	Green, red, purple, and black volcanic breccia, conglomerate, sandstone, and siltstone (a); Crystal and lithic tuff (b); Sandstone (c) ; Minor chert and limestone (includes some lava {+14}) (d).

LOWER JURASSIC
Unuk River Formation

12	Green, red and purple volcanic breccia, conglomerate, sandstone and siltstone (a); Crystal and Lithic tuff (b); Sandstone (c); Conglomerate (d); Limestone (e); Chert (f); Minor coal (g).
11	Pillow lava (a); Volcanic flows (b).

Geology of the Bear Pass Area

The name "Betty Creek Formation" has only been used since the publication of Bulletin 63, in 1986 and has not been used as a formation name in this summary.

The geology of a portion of the Bear Pass area was mapped by Dr. William G. Smitheringale in 1976 (Figure 3) and the following information is quoted from his December 1976 report:

> "The Rufus Creek - Bear River Pass area is underlain by volcanic and volcaniclastic rocks belonging to the Unuk River Formation of Lower Jurassic age (Grove, personal communication). This is the same formation which contains the Granduc Mine 38km (24 miles) to the northwest. Near the ridge-crests on both sides of the valley, at approximately 5,500 feet elevation, the Unuk River Formation is overlain by Middle Jurassic clastic and volcanoclastic sediments. A monzonite stock, about one kilometer across, outcrops on both sides of the valley floor in the vicinity of Cullen Creek. Apart from its intrusive relationship with the Unuk River Formation, the age of the stock is unknown. It is probably one of the younger outlying components of the Coast Crystalline Belt, and is likely Tertiary in age.

In general, the bedding strikes easterly, subparallel to the valley sides. On the south side of the valley, the dip is gentle southwards and on the north side, it is moderate northwards. In places however, sharp folding has produced steep dips and strikes which are divergent from the general trend.

Several steeply dipping feldspar porphyry dykes trend west to northwest across the area. They belong to a regional swarm which is Tertiary in age.

Regional metamorphism in the Bear River Pass area is low grade. The rocks belong to sub-greenschist or low greenschist facies, except for local contact metamorphism of amphibolite facies.

Along the south side of the valley, the Unuk River Formation can be divided into three units. On the George Gold-Copper claims, the lower unit consists of generally massive flow and volcanic fragmental rocks of andesitic composition. The middle unit is composed of argillite, tuff and cherty iron formation. It outcrops at the 3,200 foot elevation and varies in thickness from about 6 to 30m (20 to 100 feet). The upper unit consists of andesitic tuff and breccia and is more distinctly fragmental than the lower unit.

The argillite-tuff-iron formation unit is important because it contains stratabound showings of copper mineralization. On the south side of the valley it can be traced from the Heather claims westward for 7.5km. A similar, if not the same, unit can be traced on the north side of the valley from the Red Top property westward for 4.5km or more (Figure 3 in the pocket, & Figure 4)."

Mineral Occurences in the Bear Pass Area

The deposits in the Bear Pass, owned by International Tournigan Corporation, are located in the Unuk River and Betty Creek formations - the same volcanic rocks hosting the Red Mountain gold deposit.

Tournigan has acquired ten properties in the Bear Pass area since 1969, containing both base and precious metals, as follows (see also Figure 4):

1	George Gold-Copper	Open Reserve of 500,000 tons @ 2.5%Cu, 0.07oz Au, 0.5oz Ag per ton
2	Enterprise	Cu, Pb, Zn, Ag, Au
3	Red Top	Cu, Pb, Zn, Ag, Au
4	Heather	Cu, Pb, Zn, Ag
5	Barite	Pb, Ag,
6	Rufus	Cu, Pb, Zn, Ag, Au
7	Argenta (Erickson or Veteran)	Cu, Pb, Zn, Ag, Au
8	New York *	Cu, Ag, Au
9	Grey Copper *	Cu, Pb, Zn, Ag, Au
10	Comet	Cu, Pb, Zn, Ag, Au

* Detailed mapping and drilling was completed in 1996, and is not described in this report.

The following quote is from Dr. W.G. Smitheringale's December 1976 report:

"Three types of sulphide deposits are found in the Bear River Pass area: vein deposits, stratabound deposits and disseminated-stringer deposits. All three types occur in the Unuk River Formation.

VEINS

On the Red Top, Argenta, Comet, Rufus and Grey Copper claims, there are iron-copper-zinc-silver-and-gold veins containing quartz, calcite, barite, jasper, pyrite and arsenopyrite as gangue minerals. The veins generally are up to 2m wide and 1,000m long. However the Comet vein is reported to have a width up to 13m. Most strike oblique to the regional strike of bedding and dip steeply. They occur in the upper part of the Unuk River Formation, above the argillite-tuff-iron formation unit or its projection.

STRATABOUND DEPOSITS

Base metal showings occur in the argillite-tuff-iron formation unit (or units) on both sides of the valley. Pyrite and/or pyrrhotite, chalcopyrite, sphalerite and galena are the main sulphides. Quartz (often chert), jasper, hematite, chloritic tuff or volcanic breccia and argillite form the gangue. In places the sulphides are massive to semi-massive, however they generally occur as laminae, lenses, stringers and disseminations. Examples on the south side of the Bear Pass are the showing at the George Gold-Copper adit and the "Cliff Vein" on the New York-London claims. On the north side of the Bear Pass are the Argenta "Erickson Vein" and the lower showing on the Red Top property. Some of these showings have been described as replacement or bedded replacement deposits and others, where bedding dips steeply, have been described as veins. Their true nature apparently has not been appreciated.

DISSEMINATED-STRINGER DEPOSITS

On the Enterprise, Heather and Rufus claim groups, there are zones containing disseminations and stringer of pyrite and chalcopyrite. Gold and silver are present in some areas. Host rocks to these zones have been weakly to strongly altered by silicification, chloritization, pyritization or the addition of quartz veins. There are also a number of highly silicified pyritic zones which are barren of economic minerals. These showings occur both below and above the argillite-tuff-iron formation unit. Many of the gossans exposed in the cliffs in the Bear River Pass area are zones of disseminated or stringer pyrite."

Description of Mineral Occurences

The descriptions of the occurences (Figure 4) located within the helicopter magnetic survey are in Section 2 to 6 inclusive of this report and are described under five different headings. The compilation of information has been assembled from the writer's work in the Bear Pass and the references listed in the Bibliography of this section.

Conclusion

The helicopter magneitc survey has indicated 19 areas for examination. Also, there are two areas of mineralization, the Rufus and the Enterprise, which contain silver-lead-zinc and do not appear to be located on major structures. However the magnetic signature on the Rufus and Enterprise areas indicate the mineral occurences are located in areas of the Betty Creek Formation, which is the host rock for most of the deposits in the Stewart area. The magnetic survey has also indicated fault structures which had not been mapped.

An initial program of geological mapping and sampling is warranted on the Bear pass claims to outline drilling targets.

John L. DeLeen, P.Eng

* * * * * *

Statement of Qualifications

John L. DeLeen, of the City of Richmond, in the Province of British Columbia, hereby certify that:

1. I reside at #43 -6000 Barnard Drive, Richmond, BC V7G 5P7.

2. I received in 1943 a BA Sc. and in 1946 an MA Sc. in Geological Engineering from the University of British Columbia, and in 1950 an E.M. in Mining Engineering from the University of California.

3. I am a registered Professional Engineer with the Association of Professional Engineers for the Province of British Columbia.

4. I have practised geology in Mexico, the United States, Canada and Australia for both the government and the private sectors since 1943.

5. I was involved in the supervision of both the geological mapping in 1979 and the compilation of the data for this report on the Bear Pass properties.

Dated this 22nd day of April, 1997 at Vancouver, British Columbia.

John De Leen

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
JOHN L. DeLEEN

John L. DeLeen, P.Eng.

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APPENDIX II

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July 7, 1978

Proposed Exploration Program: George-Gold Copper, Bear Pass Area, Stewart, B.C.
John DeLeen, P. Eng.
August 13, 1980

Summary Report and Exploration Proposal: Bear Pass Property, Stewart, B.C.
Donald G. Allen, P. Eng.
May 15, 1981

Exploration Proposal: A Review and Exploration Proposal for the Bear River Properties, Stewart, B.C.
John S. Vincent, P. Eng.
March, 1982

B.C. Dept. of Mines: Reports 1913, 1919, 1920, 1923, 1924, 1925, 1927, 1928, 1929, 1930, 1917
Bulletin 58 - Geology and Mineral Deposits of the Stewart Area.
E. W. Groves 1971

Summary and Brief Description: Mining Properties, Located in the Bear Pass Area, Stewart, B.C.
John DeLeen, P. Eng.
July 10, 1990

Geological Report: Big Missouri Precious - Base Metal Deposit Northwestern, British Columbia, S. M. Dykes, J. Payne and W. Gisson, September, 1988

Geological Report: Rufus-Argyle Claim Group Reverted Crown Grant Mineral Claims
Donald W. Tulley, P. Eng.
March 15, 1980

Geological Report: Rufus Claim Bear River
Stewart, B.C.
C. R. Harris, P. Eng.
May 20, 1984

Bulletin 63: Geology and Mineral Deposits of the Unuk River - Salmon River - Anyox Area
E. W. Groves 1986

Assessment Report: No. 1109 and Geological Report on Mineral Lease No. 150: Bear River Area, Stewart, B.C., Skeena Mining Division
D. W. Heddle, P. Eng.
November, 1968

Field Reports: The Atlas Gold and Copper Mining Co. Ltd., covering work completed on the London claims.
W. G. Smitheringale
Sept. 14 and Oct. 25, 1929

Field Reports: Argenta Mines, Upper Bear River
Alfred J. Gaul, July 27, 1925

Field Report: Argenta Mines Limited
A. R. Morton, August 1925

Field Report: Volcanic Centres in the Stewart Complex
D. J. Alldrick, B.C. Department of Mines - Geological Fieldwork 1988

Field Report: Red Top and Barite Groups
Harry Quickstad, 1938

Report and Compilation: George Enterprise Property, Stewart, B.C.
Stokes Exploration Management Co. Ltd.
April 11, 1974

Geological Report: Bear Pass Propety, Stewart, B.C.
Geoffrey Keyth, Geologist
December 19, 1978

Geological Report: Rufus Argenta Property
Stewart, B.C.
C. B. Gunn - April 1973

Summary Report: Bear Pass Project / Iskut - Sulphurettes - Stewart Area
Skeena Mining Division
George Cavey, I.W. Raven - Orequest Consultants Ltd.
November 1991

Bulletin 85: Geology and Metallogeny of the Stewart Mining Camp
Northwestern British Columbia (104 B, 104 O)
D. J. Alldrick, 1993

Assessment Reports: a) Heather Group of Mineral Claims
b) George Copper Group of Mineral Claims
c) Prospecting Report on the Bear Pass Group of Claims - David Javorsky , November 1993

Statements of Expenditures for Helicopter Geophysical Survey

The expenditures for the Helicopter Geophysical Survey by High-Sense Geophysics are as follows:

Account	839	$5350.00
	844	$10,700.00
	873	$7,490.00
	856	$234.00
Subtotal		**$23,774.00**

Interpretation of the data by S.J. Geophysics	$625.95
Drafting by F.Y. Chung	$222.80
Subtotal	**$848.75**

TOTAL EXPENDITURES	**$24,622.75**

In account with:

Appendix A

High-Sense
Geophysics Limited FAX: (416) 588-9789
47 Jefferson Avenue PHONE: (416) 588-7075
Toronto, Ontario
M6K 1Y3

INVOICE

M.L.Drilling Inc.
C/O Transworld Trading &
International Tournigan
Suite 1407 - 700 West Pender St.
Vancouver, BC
V6C 2G8
Tel: 604 681-7281
Fax: 604 681-8313

No: 839

Date: July 24/96

Description	**Amount**
Attn: Mr. John de Leen	
Re: Helicopter Geophysical Airborne Survey Agreement 960703-2	
Location: Stewart, BC	
As per paragraph 13	
Initial Payment due on signing	$ 5,000.00
Plus GST	$ 350.00
Payment Received	$ (5,000.00)
PLEASE PAY THIS AMOUNT	**$ 350.00**

Payment terms: Net, 1.5% interest on overdue accounts per month
High-Sense Geophysics Limited G.S.T. No: R135381556

for Raymond

In account with:

High-Sense

Appendix A

Geophysics Limited FAX: (416) 588-9789
47 Jefferson Avenue PHONE: (416) 588-7075
Toronto, Ontario
M6K 1Y3

INVOICE

M.L.Drilling Inc.
C/O Transworld Trading &
International Tournigan
Suite 1407 - 700 West Pender St.
Vancouver, BC
V6C 2G8
Tel: 604 681-7281
Fax: 604 681-8313

No: 844

Date: July 26/96

Description	**Amount**
Attn: Mr. John de Leen	
Re: Helicopter Geophysical Airborne Survey Agreement 960703-2	
Location: Stewart, BC	
As per paragraph 13	
Due on commencement of survey flying	$ 10,000.00
Plus GST	$ 700.00

Month _____ Source _____
Ref CK 23 Date Aug 27/96
Acct. 5070 66 Dept. _____
Approved By _____

POSTED
P0 6366

CK #23 J #47 FT
5070 10,000.
2200 1,050.

PLEASE PAY THIS AMOUNT $ 10,700.00

Payment terms: Net, 1.5% interest on overdue accounts per month
High-Sense Geophysics Limited G.S.T. No: R135381556

Appendix A

In account with:

High-Sense

Geophysics Limited FAX: (416) 588-9789
47 Jefferson Avenue PHONE: (416) 588-7075
Toronto, Ontario
M6K 1Y3

INVOICE

Transworld Trading
c/o International Tournigan Corp.
Suite 1407
700 West Pender St.
Vancouver, BC
V6C 1G8
Tel: 604 681-7281
Fax: 604 681-8313

No: 856

Date: Aug 22/96

Description	Amount
Attn: John De Leen	
4 mylars @ $50.00 each of magnetic total field and calculated VDV for north and south block	$ 200.00
GST	$ 14.00
Shipping	$ 20.00
	$ 234.00

Month ____ Source J265
Ref CK018 Date Nov 5/96
Acct. 5130 Dept. FT
Approved By [signature]

Source ____
Date ____
Dept. ____

PLEASE PAY THIS AMOUNT **$ 234.00**

Payment terms: Net, 1.5% interest on overdue accounts per month
High-Sense Geophysics Limited G.S.T. No: R135381556

In account with:

Appendix A

High-Sense
Geophysics Limited
47 Jefferson Avenue
Toronto, Ontario
M6K 1Y3
FAX: (416) 588-9789
PHONE: (416) 588-7075

INVOICE

Transworld Trading Corporation
C/O International Tournigan Corp.
Suite 1407
700 West Pender St.
Vancouver, BC
V6C 1G8
Tel: 604 681-7281
Fax: 604 681-8313

No: 873

Date: Sept. 13/96

Description	**Amount**
Re: Helicopter Airborne Geophysical Survey Agreement 960703-2	
Location: Stewart, BC	
Mobilization/Demobilization, Survey and Map production	$ 22,000.00
Plus GST	$ 1,540.00
	$ 23,540.00
Less previously invoiced:	
INV 839 July 24 5,000.00 + GST 350.00 = 5,350.00	
844 July 26 10,000.00 + GST 700.00 = 10,700.00	
15,000.00 1,050.00 16,050.00	($ 16,050.00)
	$ 7,490.00

200 490.00

J121 5070 FT 7,000.00

Month ____ Source ____
Ref CR054 Date Sept 25/96
Acct. 7606 Dept. 2
Approved By ____

PLEASE PAY THIS AMOUNT | **$ 7,490.00**

Payment terms: Net, 1.5% interest on overdue accounts per month
High-Sense Geophysics Limited G.S.T. No: R135381556

John DeKoe
all data received

Appendix A

SJ GEOPHYSICS LTD.

11762-94th Avenue
Delta, B.C., Canada V4C 3R7
(604)582-1100 fax (604)589-7466

Invoice No. 32997

INVOICE

Customer

Name International Tournigan Corp.
Address 1407-700 West Pender Street
City Vancouver **State** BC **ZIP** V6C 1G8
Phone
Attention John DeLeen

Date 14/04/97
Project Name Bear Pass Property

Qty	Description	Unit Price	Discount	TOTAL
9	Airborne magnetic survey interpretation	$65.00		$585.00

		SubTotal	$585.00
		Shipping & Handling	
Taxes	R119313468	GST	$40.95
		PST	
		TOTAL	$625.95

Payment Details

● Payable upon receipt

Please make cheque payable to SJ Geophysics Ltd.

Office Use Only

Interest calculated at 1.5% per month on overdue accounts.

Thank you

Appendix A

F. Y. CHONG
~~DRAUGHTING SERVICES~~
-GEOLOGICAL,GEOPHYSICAL,GEOCHEMICAL
-EXPLORATION,MINING

Payable to:
F. CHONG
5990 Nelson Ave.
Burnaby, B.C.
V5H-3H9
Tel. (604)430-1956
Fax (604)430-1956

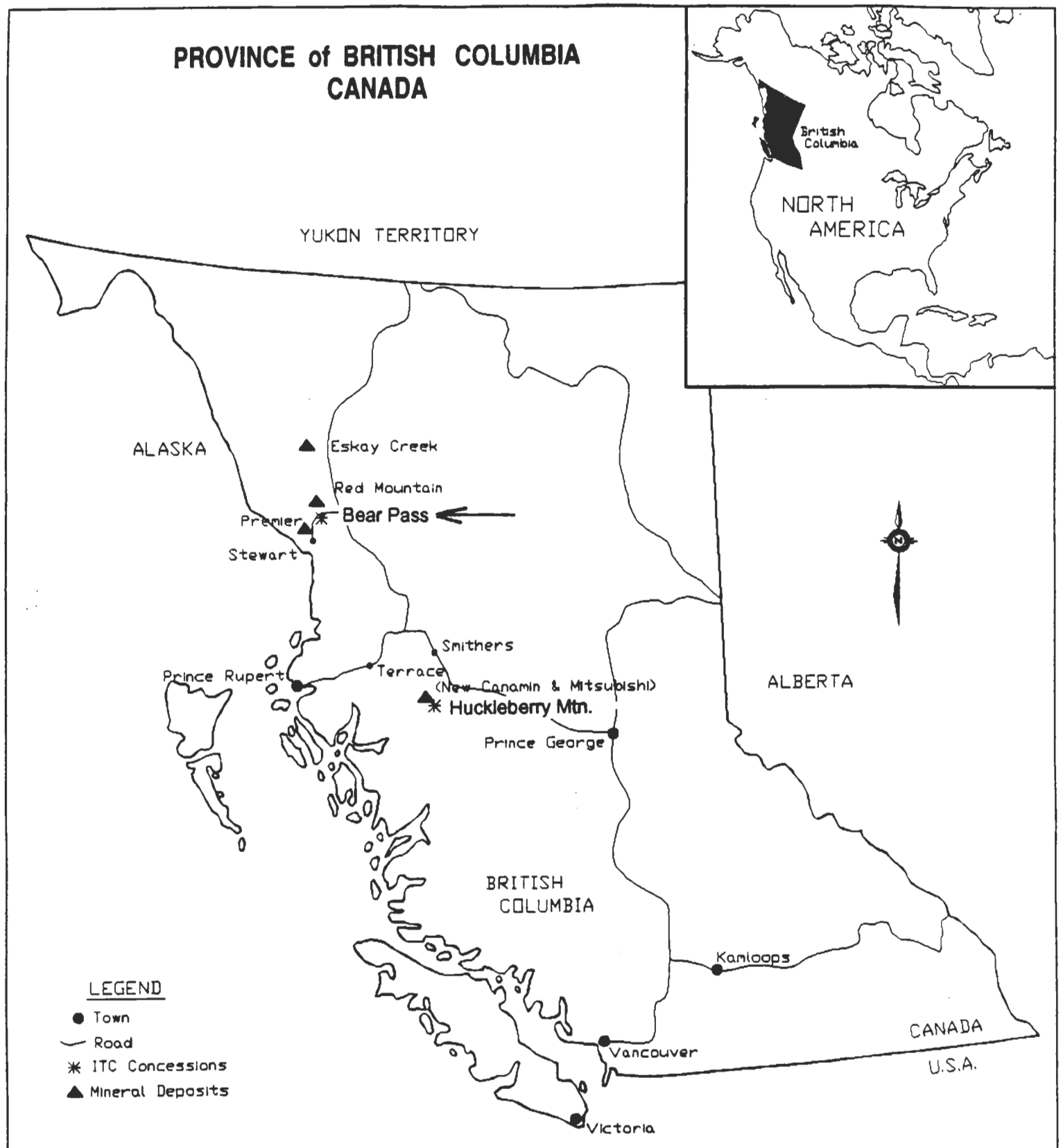
G.S.T. Nº. R111187449
Invoice # 97-031
DATE April 14/97.

To: International Tournagem Corp.
Vancouver, B.C

Bear Pass Property.
1. Geophysical Interpretation
2. Additions on 4 geophysical maps
$190.00
3. 1 Sepia mylar $17.10
7% PST 1.20
7% GST 14.50
$222.80

F. Chong

Bear Pass
Approved for payment
J. Dufresne



INTERNATIONAL TOURNIGAN CORPORATION
Mineral Property Location Map
British Columbia - Canada
April 1995

Figure 1

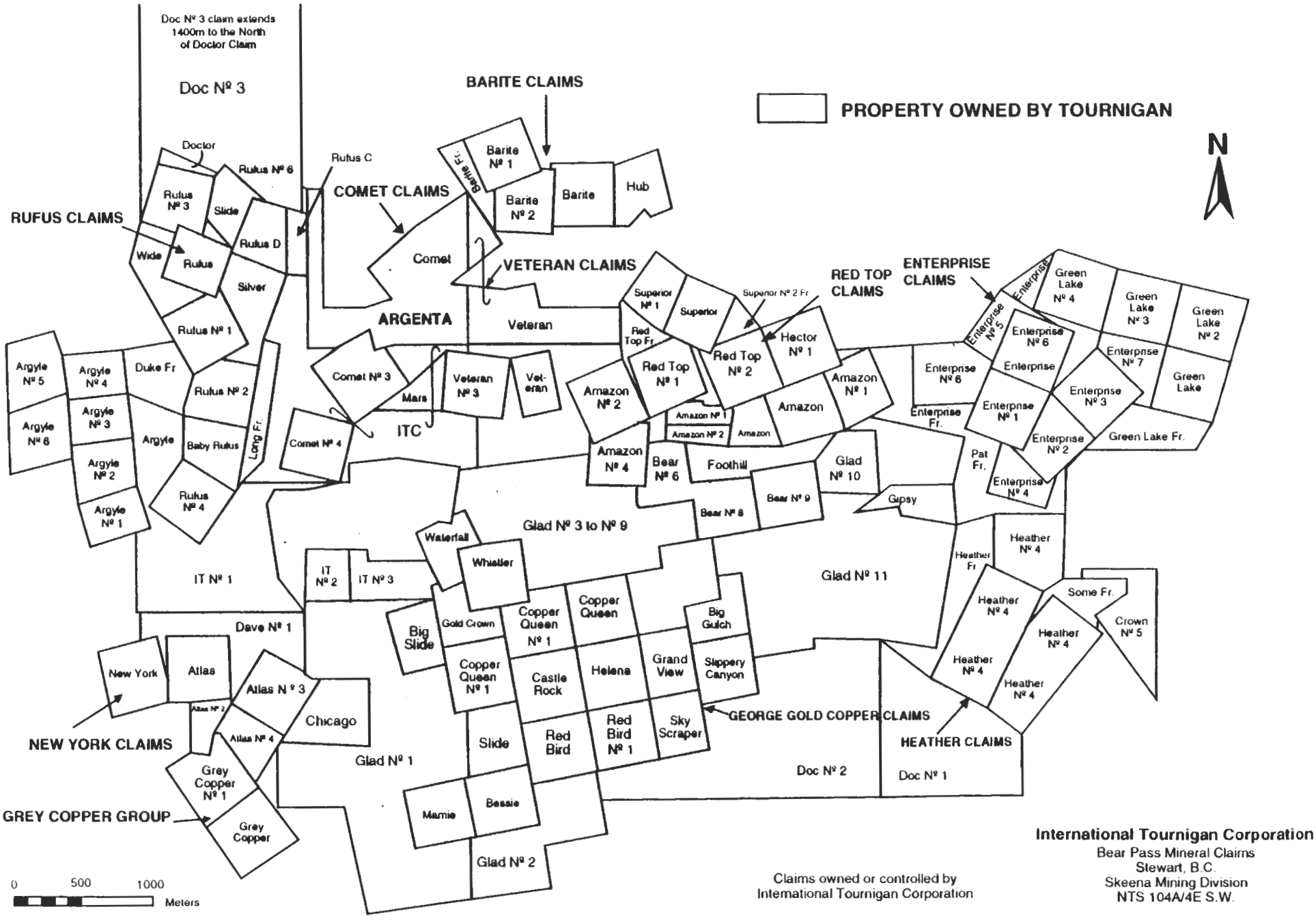

Doc Nº 3 claim extends 1400m to the North of Doctor Claim
Doc Nº 3
BARITE CLAIMS
PROPERTY OWNED BY TOURNIGAN
N
Doctor
Rufus Nº 6
Rufus C
COMET CLAIMS
Barite Fr.
Barite Nº 1
Barite Nº 2
Barite
Hub
RUFUS CLAIMS
Rufus Nº 3
Slide
Rufus D
Wide
Rufus
Silver
Rufus Nº 1
Comet
VETERAN CLAIMS
ARGENTA
Veteran
Superior Nº 1
Superior
Superior Nº 2 Fr
Red Top Fr.
Hector Nº 1
RED TOP CLAIMS
ENTERPRISE CLAIMS
Enterprise
Green Lake Nº 4
Green Lake Nº 3
Green Lake Nº 2
Enterprise Nº 5
Enterprise Nº 6
Enterprise
Enterprise Nº 7
Green Lake
Argyle Nº 5
Argyle Nº 4
Duke Fr
Rufus Nº 2
Comet Nº 3
Mars
Veteran Nº 3
Vet-eran
Red Top Nº 1
Red Top Nº 2
Amazon Nº 2
Amazon Nº 1
Amazon
Enterprise Nº 6
Enterprise Fr.
Enterprise Nº 1
Enterprise Nº 3
Argyle Nº 6
Argyle Nº 3
Argyle
Baby Rufus
Long Fr.
Comet Nº 4
ITC
Amazon Nº 1
Amazon Nº 2
Amazon
Enterprise Nº 2
Green Lake Fr.
Argyle Nº 2
Amazon Nº 4
Bear Nº 6
Foothill
Glad Nº 10
Pat Fr.
Argyle Nº 1
Rufus Nº 4
Bear Nº 8
Bear Nº 9
Gipsy
Enterprise Nº 4
Glad Nº 3 to Nº 9
Waterfall
Whistler
Heather Nº 4
Heather Fr
IT Nº 1
IT Nº 2
IT Nº 3
Glad Nº 11
Some Fr.
Crown Nº 5
Dave Nº 1
Big Slide
Gold Crown
Copper Queen Nº 1
Copper Queen
Big Gulch
Heather Nº 4
Heather Nº 4
Heather Nº 4
Heather Nº 4
New York
Atlas
Atlas Nº 3
Atlas Nº 2
Atlas Nº 4
Chicago
Copper Queen Nº 1
Castle Rock
Helena
Grand View
Slippery Canyon
NEW YORK CLAIMS
GEORGE GOLD COPPER CLAIMS
HEATHER CLAIMS
Slide
Red Bird
Red Bird Nº 1
Sky Scraper
Glad Nº 1
Doc Nº 2
Doc Nº 1
Grey Copper Nº 1
GREY COPPER GROUP
Grey Copper
Mamie
Bessie
Glad Nº 2
0
500
1000
Meters
Contour interval 500 feet.
Claims owned or controlled by International Tournigan Corporation
International Tournigan Corporation
Bear Pass Mineral Claims
Stewart, B.C.
Skeena Mining Division
NTS 104A/4E S.W.
Complete to January 1997
Figure 2

Figure 2

L E G E N D

- 1 Undifferentiated
- 2 Upper volcanic unit
- 3 Argillaceous tuff horizon (Iron Formation)
- 4 Lower volcanic unit
- 5 Monzonite stock
- 6 Granitic dyke

- Lead mineralization
- Zinc mineralization
- Silver mineralization
- * Assessment applied to these claims
- Area of airborne magnetometer survey
- Vein
- Geological contact (approx.)
- Breccia outcrop
- Limit of inferred zone of brecciation
- workings B/or Cu and precious metal mineralization
- Adit
- Trench

Contour interval = 100 M.

N

450,000E 451,000E 452,000E 453,000E 454,000E 455,000E 456,000E 457,000E

6,222,000N 6,221,000N 6,220,000N 6,219,000N 6,218,000N 6,217,000N

DOC No. 3 claim extends to the north 550m.

DOC No. 3

Snow field

BCMM 1923
Three wide zones of altered silicified country rock containing traces of chalcocite on fracture planes

BARITE
3 parallel veins, spaced 4 & 10 ft. apart, contain lead & precious metals in barite gangue. The veins have widths that vary from 4 to 18 ft. & have been traced for a distance of 1800 ft.

Reported high grade gold showing

RUFUS

COMET

COMET VEIN

BCMM 1923
Vein up to 40 ft. in width & vertical contains arsenopyrite sphalerite & precious metals in a quartz calcite gangue

VETERAN

ARGENTA (VETERAN or ERICKSON VEIN)

ARGENTA

Tunnel is 950 ft. in length (results are unknown)

LIMITS OF 1996 AIRBORNE MAG SURVEY (NORTH BLOCK)

SUPERIOR VEIN

RED TOP

Red Top Main Cooper Showing

ENTERPRISE

Frenchman's Tunnel

Creek

RIVER

BEAR

Glacier

NEW YORK

Magnetic & conductive zones

GREY COPPER

Chalcopyrite in breccia float from the above breccia

Adit Zone

COPPER QUEEN

GEORGE GOLD-COPPER

BLUE VEIN

WHITE VEIN

Breccia Zone from Assessment Report No. 1105

SKY SCRAPER

HEATHER

DOC No.2 (12 UNITS) 254488

LIMITS OF 1996 AIRBORNE MAG SURVEY (SOUTH BLOCK)

DOC No.1 (9 UNITS) 254484

ITC INTERNATIONAL TOURNIGAN CORPORATION

WORK BY JD

DATE MARCH 1997

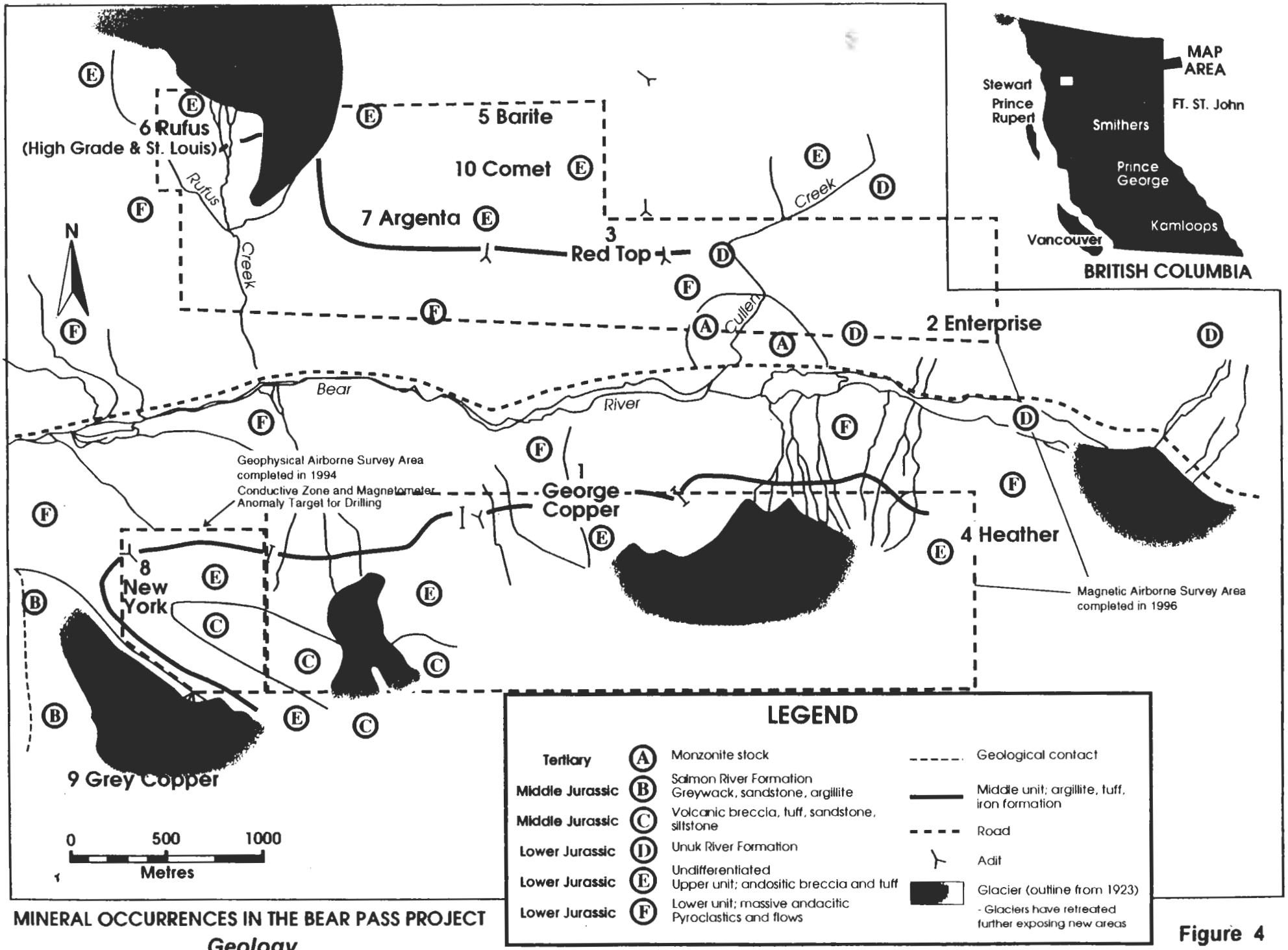
N.T.S # 104A/4E

BEAR PASS PROPERTY
GEOLOGY

0 100 200 300 400 600m
SCALE 1 : 10 000

CLAIMS OPTIONED TO TRANSWORLD TRADING CORPORATION

FIGURE 3



MINERAL OCCURRENCES IN THE BEAR PASS PROJECT
Geology

Figure 4

Figure 4

GEORGE GOLD-COPPER

Table of Contents

Figures at End of Section

Introduction

The 12 Crown-granted and the 12 claim units of the Doc No. 2 claims are located on the southern slope of the Bear Pass (Figures 1, 4 & 5). The surrounding claims were staked in the period 1991 to 1993.

The copper-bearing veins of the George Gold-Copper were sampled and mapped by many engineers during the period 1924 to 1927. The results of these samples have been compiled (see Figure 5).

The following chapters are quotes from the writer's report (John Deleen, P.Eng, August 1980).

Summary of the Drilling Completed to Date

"Cominco completed six holes in the years 1927 to 1929 and Tournigan Mining Explorations Ltd completed two holes in 1976. The locations of these holes are given in Figure 6. The two Tournigan holes are described as being drilled in the "disseminated copper mineralization".

The six Cominco holes were flat holes directed to test the copper-gold bearing quartz veins and jasper zones which outcrop approximately 1,000 feet above the drill sites. The footage completed during the period 1927 to 1929 was as follows:

DDH	Elevation	Depth
1	3,575	1,174
2	3,575	1,361
3	3,519	1,232
4	3,254	1,498
5	3,519	416
6	3,254	1,015
		6,696 feet

Holes No. 4 and 6 intercepted disseminated copper mineralization in the iron formation. The intercepts are located at a distance of about 1,000 feet from the collar. This zone of copper mineralization lacks the gold content of the veins found in the trenches. It is therefore thought this mineralization represents the type of copper mineralization found in the iron formation.

In summary, the drilling completed by Cominco (under difficult dircumstances) failed to test the downward extension of the Blue, Jasper, Green and White veins. The drillings did, however, point out the fact the iron formation contained copper, gold and silver values and that it continues and has values at least 1,000 feet to the south of the portal of the drift."

Geology

The rocks on the George Gold-Copper claims, from the road (elevation of 1,100 feet) to the adit (3,250 feet), are a series of fine-grained flows of andesite composition (see Figure 6):

"At the adit level this flow unit is overlain by the iron formation which is composed of tuff and argillite. The iron formation has a thickness which varies from 20 to 100 feet. It derives its name from the fact this band is continuous in the area and contains variable amounts of iron and copper sulphides. The sulphides of the formation have oxidized to limonite and now the iron formation forms a marker which is readily visible in the Bear Pass area. Above the iron

formation, there is a series of andesites, breccias and tuffs. The Cu-Au-Ag bearing veins occur in the upper series of andesitic breccias and tuffs."

Mineralization

VEINS

"The veins which are located between an elevation of 4,200 and 4,700 feet have been developed with a series of trenches. The Blue Vein and Jasper Vein have a general strike of S. 80° E. and a dip of S. 65° W. The veins vary in width from 4 to 10 feet and have an average width of 6.7 feet. Dr. Wm. V. Smitheringale reports the Blue Vein has continuous mineralization over a length of 480 feet which consists of pyrite, pyrrhotite, hematite, arsenopyrite and chalcopyrite. The Blue's structure appears to have a length in excess of 1,100 feet. The central portion of the vein system is called the Jasper Vein and the eastern portion is called the Green Vein. The White Vein is located about 200 feet to the north of the Green Vein. The readily accessible portion of the White Vein has a length of about 400 feet. The ore in this vein has a width of about 10 feet. This vein appears to continue to the east beyond two inaccessible canyons. The eastern portion of the White was surveyed by tape and compass. The total length of the White zone appears to be about 2,400 feet.

DISSEMINATED COPPER MINERALIZATION

"Little attention was paid by the early geologists to the disseminated or stratabound copper mineralization located at the adit of the tunnel in the argillite-tuff-iron formation. The tunnel was re-opened in 1976 and Dr. W.G.Smitheringale reported a moiled sample representing 115 feet along both walls of the drift assaying at 0.89% copper. Two of the Cominco drill holes No.4 and 6 were completed from the portal of the drift (see Figure 6). These holes were flat holes and intersected a portion of the copper bearing iron formation. The best intersections were as follows:

			Cu %	Ag Oz/T	Au Oz/T
DDH No. 4	110.0 - 130.0	20.0'	1.86	0.42	Tr
S5° W	222.5 - 232.0	9.5'	1.60	0.26	Tr
Horizontal	242.0 - 263.0	21.0'	1.02	0.09	Tr
	275.0 - 284.5	9.5'	0.62	0.33	Tr
	1235.0 - 1256.0	21.0'	0.55	0.19	Tr

"Pyrite and chalcopyrite are irregularly distributed throughout the copper zone in the form of disseminations. The sulphide-rich portion of the iron formation appears to have a length of about 360 feet and a thickness of about 100 feet. The width of the zone is unknown. However, drill hole No. 4 intersected copper mineralization 1,000 feet due south of the collar of the hole. The low precious metal content of this copper mineralization suggests it is a part of the iron formation. The 21-foot portion of drill hole No.4 from 1,235 to 1,256 intersected copper mineralization which did not contain gold values. Since all of the trenches on the veins contained gold it is thought therefore the 21-foot intersection is in the southern extension of the iron formation.

			Cu %	Ag Oz/T	Au Oz/T
DDH No. 6	127.0-142.0	15.0'	1.84	0.017	Tr
S32° W. Horizontal	174.0 - 185.0	11.0'	0.36	0.05	Tr

"During his 1976 exploration, Dr. W.G. Smitheringale mapped the adit area and completed two vertical drill holes for Tournigan, Nos. 102 and 103, on the disseminated copper zone. He noted the main zone of disseminated mineralization had the form of a stratabound lens lying within the argillite-tuff-iron formation. The copper zone is composed of iron formation containing pyrite, hematite, magnetite, chlorite, epidote, chert and massive mafic tuff. The two holes also contained disseminations of chalcopyrite. Assays from the holes were as follows:

DDH		Feet	Cu %	Pb %	Zn %	Ag Oz/T	Au Oz/T
No.102	37.1 - 55.1	18.0	1.09	0.01	0.05	0.06	0.003
Length 70'-70°	62.7 - 64.3	1.6	0.01	0.01	0.05	0.02	0.003
No.103	85.3 - 89.2	3.9	0.04	0.03	0.02	0.17	0.007
Length 98'-71°	89.2 - 91.2	2.0	0.82	0.05	0.04	0.58	0.010
	91.2 - 92.2	1.0	not mineralized				
	92.1 - 94.8	2.7	1.05	0.03	0.04	0.18	0.005
		9.6	0.62	0.02	0.03	0.24	0.006

Tonnage and Grade of the Vein Systems

The pits on the veins were sampled by various engineers between 1924 and 1927. The results of the samples have been compiled in Figure 5. Various estimates of the tonnage and grade have been made. The Cominco engineers have estimated there exists, indicated or inferred, a potential ore reserve of 500,000 tons grading Cu - 2.0 to 2.9 %, Au - 0.05 to 0.08 oz and Ag - 0.37 to 0.50 oz per ton.

The limits of the disseminated copper zone in the iron formation are not defined. Consequently a calculation of the disseminated copper was not completed.

Potential Tonnage

The George Gold-Copper area was examined by W. Raven of Orequest Consultants Ltd in 1991. Raven's examination was conducted at a time when there was a minimum amount of snow in the Bear Pass. Raven's conclusions were as follows:

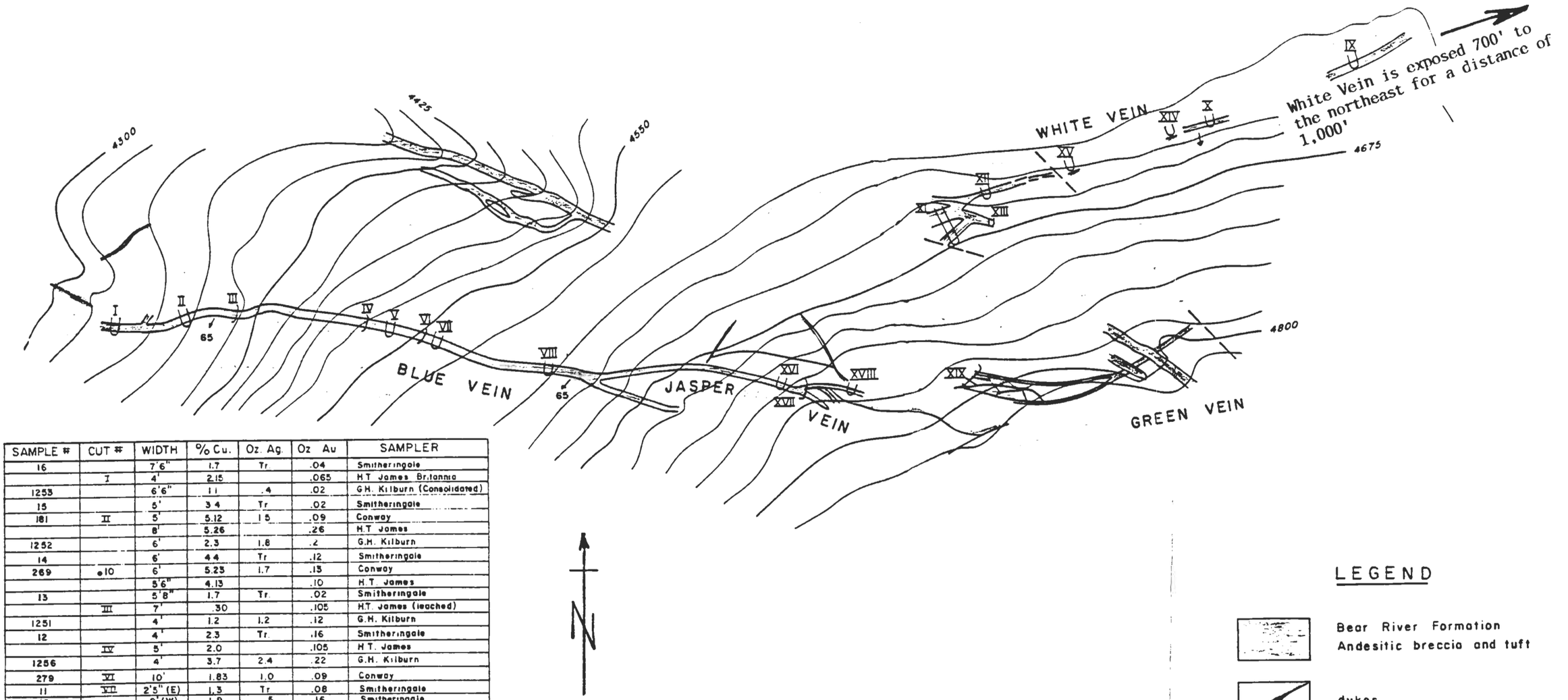
"The zone of greatest potential for a large tonnage deposit is the stratabound copper mineralization seen in the George Gold-Copper adit. The host unit for this mineralization has

been described as an argillaceous-tuff band or cherty "Iron Formation". This iron formation contains variable quantities of pyrite, hematite, magnetite, chlorite, epidote, chert, massive mafic tuff and chalcopyrite. Pyrite and chalcopyrite are found as disseminations, bedding parallel laminae, cross stringers and occasionally as massive pods. This argillaceous tuff-cherty iron formation is defined for a strike length of nearly 5km on the south side of the valley and for over 3km on the north side of the valley. Two other showings of interest are located in this unit, the New York and the Red Top, possibly the Comet and the Rufus-Argenta. The unit has a variable thickness of 6 to 30 meters and most likely represents a volcanic exhalative facies. The greatest implications of a volcanic exhalative horizon is its potential for a large tonnage deposit of overall lower grade which also may contain local high grade pods."

Recommended Exploration
(Smitheringale Report, December 1976)

"The showing at the adit warrants further exploration by diamond drilling to determine if the grade of mineralization improves southward. It is recommended six holes be drilled for this purpose, three from the end of the adit and three from the base of the cliffs approximately 140m higher in elevation and approximately 160m south of the adit."

* * * * * * *



SAMPLE #	CUT #	WIDTH	% Cu.	Oz. Ag.	Oz Au	SAMPLER
16		7'6"	1.7	Tr.	.04	Smitheringale
	I	4'	2.15		.065	H.T. James Britannia
1253		6'6"	11	.4	.02	G.H. Kilburn (Consolidated)
15		5'	3.4	Tr	.02	Smitheringale
181	II	5'	5.12	1.5	.09	Conway
		8'	5.26		.26	H.T. James
1252		6'	2.3	1.8	.2	G.H. Kilburn
14		6'	4.4	Tr	.12	Smitheringale
269	●10	6'	5.23	1.7	.15	Conway
		5'6"	4.13		.10	H.T. James
13		5'8"	1.7	Tr.	.02	Smitheringale
	III	7'	.30		.105	H.T. James (leached)
1251		4'	1.2	1.2	.12	G.H. Kilburn
12		4'	2.3	Tr.	.16	Smitheringale
	IV	5'	2.0		.105	H.T. James
1256		4'	3.7	2.4	.22	G.H. Kilburn
279	VI	10'	1.83	1.0	.09	Conway
11	VII	2'5" (E)	1.3	Tr	.08	Smitheringale
10		9'(W)	1.9	.5	.16	Smitheringale
		10'	.84		.11	H.T. James
1249		12'	L.O	.6	.02	G.H. Kilburn
9		3'	2.4	.4	.12	Smitheringale
261	VIII	4'	6.56	2.7	.15	Conway
		4'6"	1.94		.11	H.T. James
1248		3'	1.2	.1		G.H. Kilburn
8	XVI	6'5p	4.3	Tr.	.12	Smitheringale
7	XVI	6'	2.3	Tr.	.02	Smitheringale
2		10'2"	2.4	Tr.	.06	Smitheringale
239		9'	8.22	.6	.05	Conway
237	IX	5p	7.70	.7	.12	
1241		10'	5.4	.3	.02	G.H. Kilburn
3	X	2'4"	2.6	Tr	.04	Smitheringale
1242		5'	.6			G.H. Kilburn
4		10' (N)	2.7	.2	.06	Smitheringale
5		2'8"(S)	1.5	1.8	.2	Smitheringale
234		7'(N)	7.64	.73	.15	Conway
238	XI	5p	31.81	.9	.04	Conway
		3'(N)	2.0	.5	.02	G.H Kilburn
		7'(N)	2.5	.5	.02	G.H. Kilburn
		3'(S)	1.2	.4	.02	G.H. Kilburn
6		4'6"	2.4	.2	.08	Smitheringale
	XII	5'	.8	.1	.02	G.H Kilburn
242	56A	3'	2.84	.6	.15	Conway
246	56A	5'	5.14	2.2	.18	Conway
1243	XIII	3'	1.0	.5	.02	G.H. Kilburn
	XVI	2'	1.62		.045	H.T. James

From Smitheringale 1926 Report

100 0 100 200

SCALE IN FEET

1" : 100'

LEGEND

- Bear River Formation Andesitic breccia and tuft
- dykes
- veins
- fault
- C I X — cut

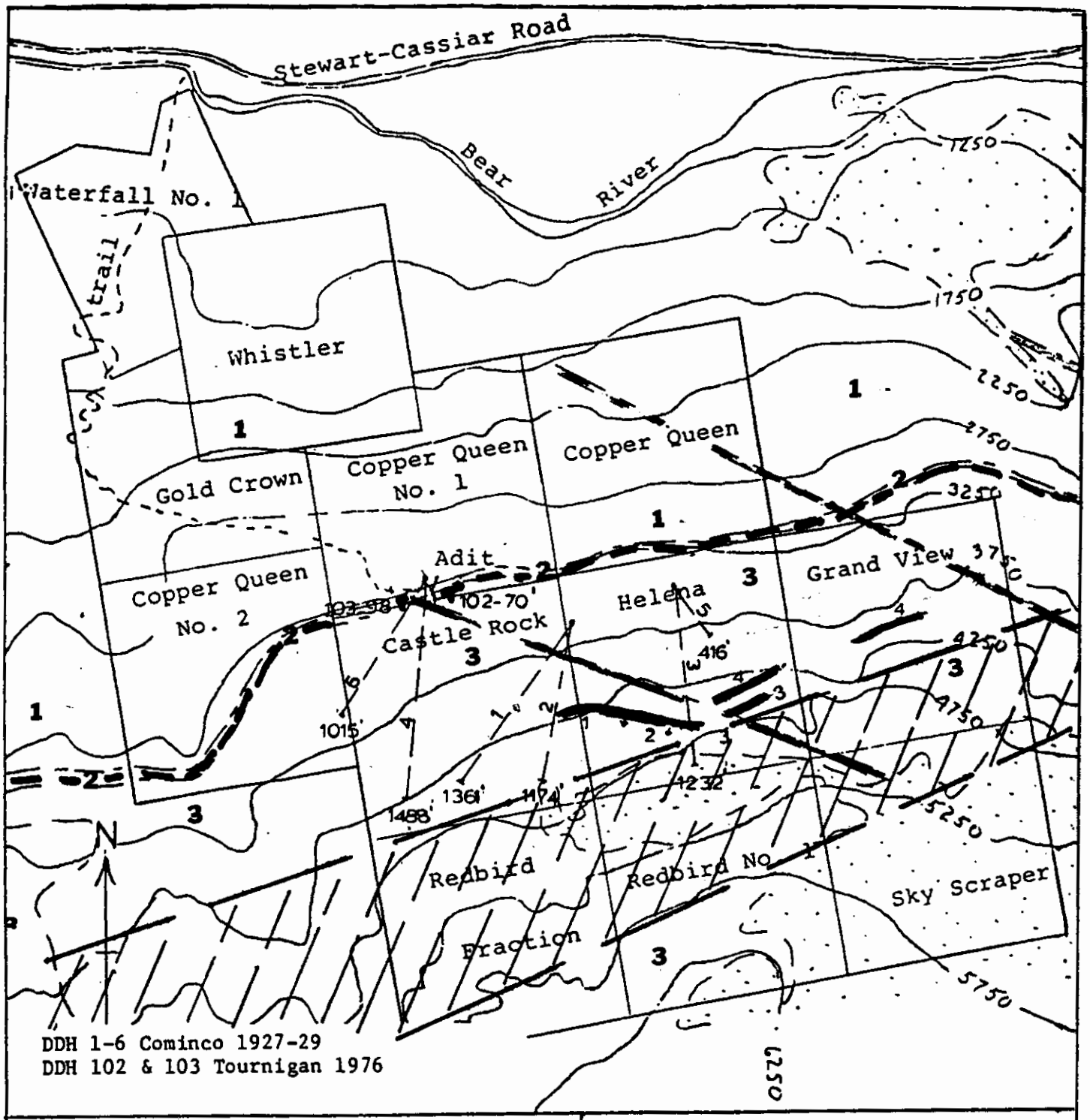
GEOLOGY and ASSAYS

TOURNIGAN MINING EXPLORATIONS LTD.

GEORGE GOLD-COPPER PROPERTY

STEWART B.C.

Figure 5



LEGEND

- Ice cover
- Veins 1 - Blue, 2-Jasper 3 - Green, 4 - White
- Dyke
- 1 Andesitic volcanic fragmentals
- 2 Iron formation-tuff-argillite
- 3 Massive andesitic volcanics
- Geological contact(approximate)

FIGURE 6

TOURNIGAN MINING EXPLORATIONS LTD

GEORGE GOLD-COPPER PROPERTY

CLAIM MAP AND GENERAL GEOLOGY
(after Cominco Ltd., 1968)

Scale 1" = 1000'

W.G. Smitheringale, November/76

Inferred Zone of Brecciation (D. Heddle - 1968)

Figure 6

ENTERPRISE

Table of Contents

Figures at End of Report

Introduction

The Enterprise claims and workings are located in the northeastern portion of the Bear Pass claims (Figure 4). The work completed on the group in 1928 and 1929 by Dr. Wm.V. Smitheringale was trenching, tunneling and sampling. The work completed in 1976 by Dr. W.G. Smitheringale was geological mapping and check sampling. The work completed in 1978 by G. Keytes was prospecting and geological mapping.

A summary of the property development in 1928-1929, compiled by Stokes Exploration Management Co. Ltd. in April 1974, is as follows:

Property Development

"There are three rusty cliff bands (Figure 7) within the Enterprise claims, and each of these has been explored by tunneling. The lowest cliff line cuts across the southwest corner of Enterprise No. 1 claim and is the location of Tunnel A (Figures 4 & 8), which is described by Dr. Wm.V. Smitheringale in 1928 as follows:

> 'In the trail above Tunnel A, there is two and one half to three feet of chalcopyrite ore exposed. Tunnel A was driven to intersect this mineralization at a shallow depth, but was not continued far enough to cut the downward extension of the surface showing. The tunnel is in about twenty feet and exposes a volcanic rock considerably altered, cut by veinlets of quartz and calcite, and generally impregnated with pyrite. Chalcopyrite is also present, both along stringers and disseminated through the rock. The amount present does not form an economic grade of ore considering the tunnel as a whole. A specimen taken from these workings by P.M. Linklater gave 16% copper with some silver and gold. This represents the better grade of mineralization and is not to be mistaken for the average tenor at this place.'

"In 1929, Tunnel A was extended 10 - 15 feet and the last 5 feet showed a "decided improvement in the copper content of the rock". More work was recommended and an average chip sample of the whole face of the tunnel gave 0.7% copper across 65 inches, but only a trace of gold and silver. In view of the description of disseminated chalcopyrite along the sides of Tunnel A, further assaying should be carried out there."

The area of main interest on the Enterprise claims has been along the central line of rusty bluffs, the vicinity of the original Tunnel B or Frenchman's Tunnel (Figure 7 & 8). A description of this area from Smitheringale's report of 1928 follows (note the observations of areas which were marked by disseminated and veined chalcopyrite, of only marginal interest at that time):

"The mineralization about Tunnel B is quite encouraging. In cut 7 (Figure 8), 95 feet above B there is a vein striking N. 15° W. dip 89° E. The mineralization is pyrite, chalcopyrite and bunches of galena containing gold and silver values. This mineralization extends over five to six feet. The ground here is badly broken up, but the vein zone can be traced with a fair degree of certainty southward to cuts 2 and 1, about the same elevation as B. Northward from 7, the vein goes under heavy overburden.

In Tunnel B, thirty-one feet from the portal, there is mineralization of pyrite and chalcopyrite which very probably belongs to this vein. After crossing faults at nine and thirteen feet respectfully from C, there was no vein material present. The drift north shows a general dissemination of pyrite with some chalcopyrite. The end of the "west-crosscut" is in a

greenstone cut by interlacing stringers of quartz and calcite with pyrite and chalcopyrite. The crosscut may be entering the vein zone.

Chalcopyrite may be found here and there throughout Tunnel B. At the face of the adit there is a fault and under this, the greenstone is cut by veinlets of quartz, with some calcite. A little chalcopyrite is present.

On the surface near Tunnel B, veinlets of chalcopyrite may be found.

Cut 8 exposes a fault or slip striking N. 82° E. dip 44° SE. Pyrite and chalcopyrite are found adjoining this slip on either wall, and extend over a width of two feet as seen from the bottom of the cut up. There is a little galena present and perhaps grey copper.

Just south of cut 8, there is a sheared zone striking N. 30° W. dip 77° NE which contains stringers of chalcopyrite through it. This zone is of considerable width but the amount of mineral, as seen on the surface, is small.

Along the trail, north and west of cut 8 (Figure 8), there is a zone some fifteen feet wide which is cut by ramifying veinlets of quartz and when broken into, many of these veinlets contain a heavy mineralization of chalcopyrite. Some forty feet west of these quartz stringers there is a sheared area along the upper side of the trail which contains galena, sphalerite, chalcopyrite, and pyrite in small quantities.

Only in these two latter places has sufficient work been done to show there is a mineralization of economic minerals. More work is required before the quantities of these minerals present can be determined.

The area about Tunnel B (Frenchman's and Enterprise Tunnel) holds forth promising possibilities of ore minerals occurring in sufficient quantity and quality to form an economic grade of ore. During the work of 1929, the neighbouring Enterprise Tunnel (Figure 7 & 8) was driven in this area, and passages of the Frenchman's Tunnel extended. It appeared a mineralization of chalcopyrite and pyrite occurred along a zone striking generally N. 20° W. and dipping steeply about 80° NE to vertical. The mineralization is not defined by any definite quartz vein but occurs as a replacement of sheared or crushed volcanic rock by sulphides along with some quartz. Such a type of mineralization is inherently variable or irregular from place to place.

In the Frenchman's Tunnel (Figures 7 & 8), it appeared the mineralization, if following a N. 20° W direction, was faulted about eight feet north of the tunnel. Further exploration last year did not expose the northern continuation of the ore. This year, the Enterprise Tunnel was driven as a crosscut to intersect this possible N. 20° W zone. At present, it cannot be definitely stated this zone was intersected, but there is a zone from 200 to 230 feet from the portal which contains a small more or less uniform percentage of copper with one five-foot section running Cu 1.2%. The eastern limit of this zone is marked by a mineralized slip striking N. 25° W dipping 82° NE. It is possible this zone may correspond to the one found in the Frenchman's Tunnel 25 to 40 feet from the portal, but this is not definite.

In the Enterprise Tunnel (Figure 7 & 8), there are two other mineralized zones. One occurs at 109 feet from the portal and the other 5 feet from the present face. The former zone strikes N. 17° E dips 45° SE and resembles in some degree the zone found in Tunnel 15. The mineralization is pyrite and chalcopyrite. The second zone strikes N. 50° E and dips vertical to steeply SE. In this there are disseminated pyrite and irregular bunches and disseminations of chalcopyrite."

The highest of the three rusty cliff bands (Figure 7) runs largely through the Enterprise and Enterprise 3 claims (Figure 7), and involves a more distinct vein system than the others. The silver values there are much better than in the lower prospects, keeping with the regional rule that silver values increase with altitude. Copper values in assays are also promising, although there is less indication the copper is widely disseminated. Smitheringale's description of 1928 follows:

> "The rocks in this zone are, in general, impregnated with pyrite, which in places shows a considerable concentration. These latter places stand out as red or yellow oxidized outcrops. This, the most promising mineralization so far discovered in this zone, lies along the foot of the bluffs some three hundred feet north of Tunnel B.
>
> There is here a vein which strikes N. 78° W dip 33° N. In cut 9 (Figure 8), this vein is approximately eighteen inches to two feet wide. It is in a brecciated zone in a volcanic breccia which is intensely altered below the vein, but above the vein the rock shows little apparent alteration. The original metallic minerals present in the vein were pyrite, chalcopyrite, tetrahedrite (grey copper), galena and sphalerite. These minerals occur in the interstices of the breccia and the cracks in the adjoining rock, but there is also some dissemination through the rock. The gangue is calcite and quartz, and the metallic minerals appear at present to follow the veinlets of calcite with some quartz. The metallic minerals in cut 9 are now leached, their presence being indicated by masses of limonite in the vein material.
>
> Westward of cut 9, the vein proper narrows so in cuts 10 and 11 (Figure 8) it is only three or four inches wide. In cut 10, below the narrow seam of gouge, there are three to four feet of rock which contains a considerable amount of the metallic minerals along the cracks in the rock. Cuts 12 and 13 (Figure 8) expose a narrow sheared zone which is believed to represent the westward extension of the vein as shown in cuts 9 to 11. In cut 12, the rock is altered and shows a dissemination of very fine pyrite through the rock as exposed.
>
> To the northwest of cut 13, cuts 15 and 16 (Figures 8 & 9) and Tunnel C expose a vein striking N. 20° E. dip 30° S. This vein is very similar to the one in cuts 9 to 11 but is wider. In Tunnel C, there is a badly crushed area of varying width up to two feet and below this, for another two to three feet, mineral occurs in the joints of the rock. At present there is not much mineral showing in Tunnel C. From the jog to the face, the rock freshens up and metallic minerals are found in small amounts here and there in the small calcite-quartz veinlets.
>
> In cut 15 (Figure 8 & 9), the broken zone varies from eleven inches to eighteen inches and is well-mineralized with galena, tetrahedrite, chalcopyrite, pyrite and sphalerite. Below this, stringers of calcite and quartz containing the same minerals are found over a width of two to three feet. This cut shows a very favourable type of mineralization and it is in fair quantity.
>
> Cut 16 (Figures 8 & 9) shows the shear to be about one foot in width. Beneath this the rock is impregnated with fine pyrite. Oxidation is prevalent throughout the cut.
>
> The rock beneath the sheared area in this vein is intensely altered, but that above the vein passes abruptly into apparently little altered rock. There has been post-mineral movement along this vein which has crushed and broken the ore minerals together with the containing rock."

The intersection of the two veins just described is believed to be about cuts 12 and 13.

> "Northward from cut 16, the N. 20° E vein may be traced along the foot of the perpendicular cliffs at this section. Cuts 17 and 18 (Figure 9) expose shearing but not mineralization. About thirty feet west of cut 18, part of the rock knob has slid away and the vein is exposed here.

There is mostly chalcopyrite along with the other minerals. The mineralization here, as far as the present work shows, appears to be narrow, not over one foot, and along the footwall. At the foot of the cliffs, the sheared zone is upwards of thirty inches wide, and work done under the cliffs and along the right shear may show up a wider mineralized area.

Northwest from cut 18, three cuts were put in near the top of the steeply sloping rock. These expose a mineralization chiefly of pyrite, but small specks of galena may be seen here and there. The oxidized zone has not been investigated so the primary mineralization is not definitely known.

On the "flats" above (Figure 9), heavy pyrite mineralization may be found in a number of places. Two of such places are marked on Figure 9 - 1057 and "pyrite veins". The former shows massive pyrite in a dense silicified rock. A specimen from here ran Cu 1.4%. The "pyrite vein" is heavily oxidized and its values are not known. These pyrite areas should be carefully studied and some work done on them to correlate the various showings if possible and to determine their possible value. Only a small amount of work was carried out there in 1929.

The zone containing the high grade silver mineralization was explored by three short tunnels and a number of open cuts. The main development was Tunnel #15 (Figure 9) along the vein. This was advanced 45 feet and on the whole the mineralized area widened, and showed some improvement. A short length of the drift exposed values approaching economic proportions but the quantity is too small at present. It is thought as opportunity presents itself more work can be done here.

A report regarding a small amount of work in 1930 mentions a shear structure with encouraging chalcopyrite across 6 feet and well-mineralized parallel stringers located west of the upper workings on Figure 9. In 1946, a small amount of work was done by a crew of two men in this vicinity. The following is quoted from the BC Department of Mines Report of that year (pg.A79):

> 'A persistent fault-zone which strikes N 16° E and dips 30° eastward marks the base of the cliff. It contains from 3 to 12 inches of gouge, and on the footwall side, the rock is somewhat silicified and mineralized with disseminated pyrite and occasional grains of chalcopyrite, galena and sphalerite. The zone was sampled in a short adit at 3,750 feet elevation, known as Tunnel #15 (Figure 8& 9). A seven-inch sample of gouge assayed Au - 0.01 oz/t; Ag - 20.8 oz/t; Cu - 0.9%; and Pb - 0.8%. A channel sample 44 inches wide across the silicified zone below the gouge assayed Au - tr; Ag - 0.4 oz/t; Cu - 0.2%; and Pb - 0.7%.'

"From time to time high-grade silver float has been found on the slide west of the cliff. One small piece found south-westerly from Tunnel #15, consisting of weathered drusy quartz with interstitial masses of tetrahedrite, assayed Au - 0.30 oz/t;. Ag - 149.8 oz/t. The source of this float has not been found.

About 200 feet north-westerly from Tunnel #15 at 3,900 feet elevation, several mineralized fractures occur in a small rock hummock 50 feet west of the base of the cliff. These strike N 20° E and dip 45° eastward, and apparently approach the main fault-zone at a small angle from the footwall side. The mineralization in these fractures consists of silicified rock and quartz stringers with disseminated pyrite and chalcopyrite, and occasional grains of tetrahedrite, galena and sphalerite.

A channel sample 11 inches wide from an open-cut on one of these fractures near the lower end of the rock hummock assayed Au - 0.03 oz/t; Ag - 4.3 oz/t; and Cu - 1.8%. Another cut,

being put in about 20 feet from the cliff, exposed similar mineralization. A specimen of the best mineralized material from this cut assayed Au - nil; Ag - 1.1 oz/t; Cu - 1.7 %; and Pb - 0.2%. A specimen of the best mineralization from another fracture incompletely exposed in an old cut about 60 feet farther to the north-west assayed Au-0.01 oz/t; Ag - 15.2 oz/t; and Cu - 2.5% (cut 52, Figure 9).

An old cut and short adit at 3,750 feet elevation in the base of the line of bluffs, some 200 feet southwesterly from these showings, shows dark-green volcanic rock sparsely mineralized with pyrite and sulphides disseminated in irregular stringers. A sample 7 inches wide representing the best mineralization assayed Au - tr; Ag - 1.1 oz/t; and Cu 7.6% (cut 18, Figure 9).

An area of interest on the Enterprise claim is float from a large talus slide (Figure 7 & 8). This was assayed in the mid-1920's by Smitheringale and contained silver values in excess of 600 ounces per ton. The top of the slide is at 1200 meters (3,900 feet). In the summer of 1974, J. Hembling observed a vein of tetrahedrite above the top of the slide with an apparent 40° southerly dip approximately a meter in width. Hembling also sampled pyrite gossans from the flats above the cliffs at 1300 meters (4,200 feet). Assays of over an ounce of silver occured over very large widths from the upper claims of the Empire group. These findings merit a program of detailed examination and sampling."

Work Recommended

A work program of geological mapping and sampling is warranted. The widespread silver content of the volcanic rocks, located in the northern portion of the claims, should be investigated. The iron formation was mapped by Dr. Smitheringale on portions of the Enterprise claim group and it should be examined to determine if chalcopyrite is present as noted in the iron formation located on the Red Top and George Gold-Copper claims.

* * * * * * *

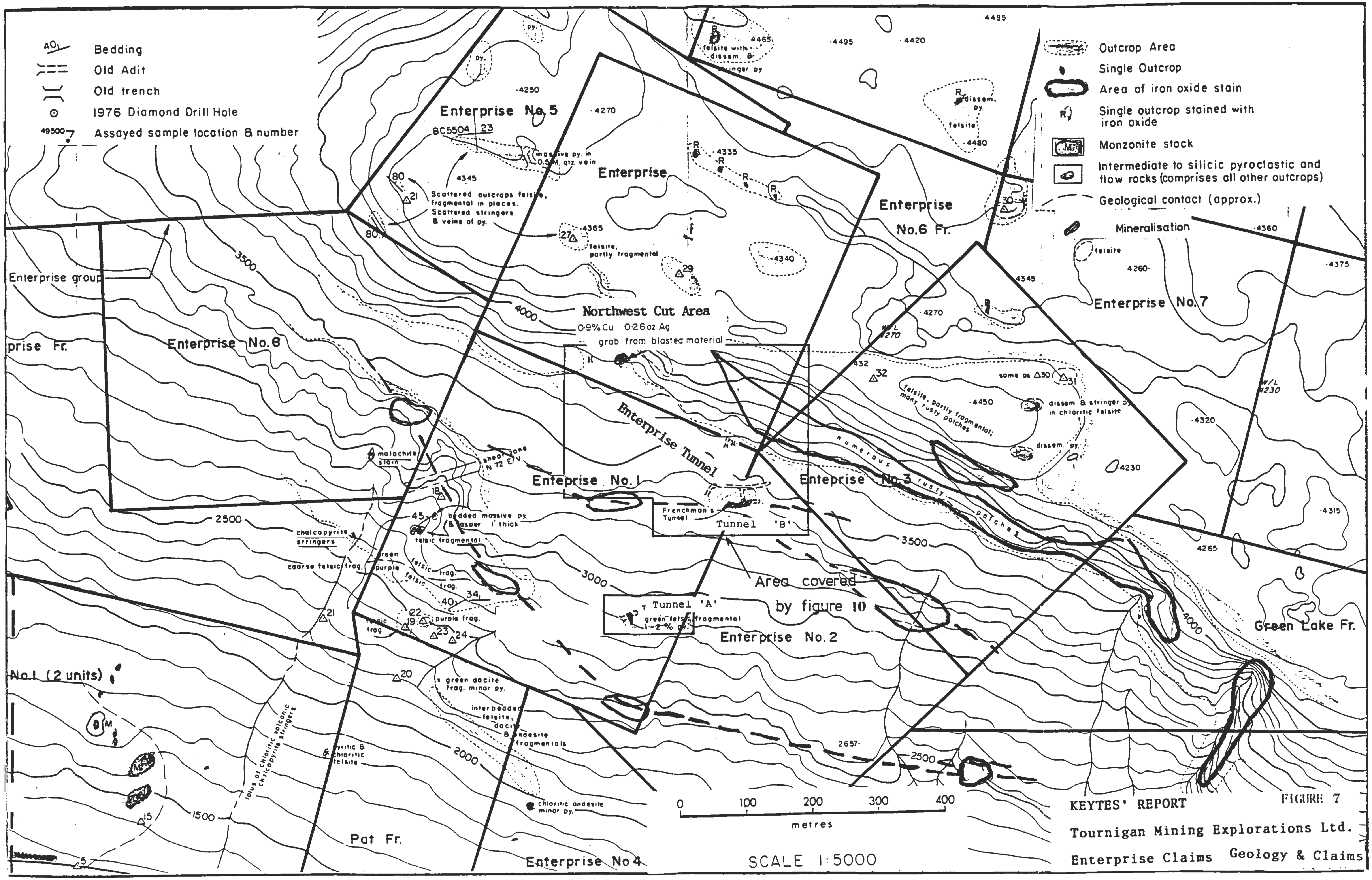

Bedding
Old Adit
Old trench
1976 Diamond Drill Hole
Assayed sample location & number
Outcrop Area
Single Outcrop
Area of iron oxide stain
Single outcrop stained with iron oxide
Monzonite stock
Intermediate to silicic pyroclastic and flow rocks (comprises all other outcrops)
Geological contact (approx.)
Mineralisation
Enterprise No.5
Enterprise
Enterprise No.6 Fr.
Enterprise No.7
Enterprise group
Enterprise No.8
Northwest Cut Area
0.9% Cu 0.26 oz Ag
grab from blasted material
Enterprise Tunnel
Enteprise No.1
Enteprise No.3
Enterprise No.2
Enterprise No 4
Pat Fr.
Green Lake Fr.
No.1 (2 units)
Frenchman's Tunnel
Tunnel 'B'
Tunnel 'A'
Area covered by figure 10
numerous rusty patches
0 100 200 300 400
metres
SCALE 1:5000
KEYTES' REPORT
FIGURE 7
Tournigan Mining Explorations Ltd.
Enterprise Claims Geology & Claims

Figure 7

ASSAY PLAN
OF
GEORGE ENTERPRISE MINING COMPANY
STEWART, BRITISH COLUMBIA

50 0 50 100
SCALE IN FEET

(WORK DONE IN 1929)

	Au	Ag	Cu
13"	Tr	1.0	-

Cut 16

Tunnel 15

TUNNEL C—Tunnel 14

	Au	Ag	Cu
1-2'3"	Tr	1.4	-
2 - 4"	Tr	1.0	0.6

Overlap of FIGURE 9

Cut 13 1' - 0.02 - 0.5

Cut 12

Cut 11

ENTERPRISE CLAIM

Tunnel 32

CUT 9

Cut 10
4" - Tr - 3.4 - 0.8
2.6" -0.02- 6.4 - 0.5

Tunnel 'G'

Cut 21

Cut 8

ENTERPRISE no. 6 FR. CLAIM

Cut 30

Enterprise Tunnel

Cut 7

ENTERPRISE No. 1 CLAIM

CUT 7
40 " Shear Zone
Au=0.14, Ag=3.4
Cu=2.8%

TUNNEL 'B' or
Frenchmans' Tunnel

	Au	Ag	Cu
#1 4'	- 0.02	- 1.0	- 0.8
2 4'	- 0.02	- 1.0	- 0.5
3 4'10"	- 0.80	- 2.0	- 2.3
4 3'	- Tr	- 0.5	- 1.2
5 4'	- 0.08	- 1.0	- 0.7
6 3'6"	- 0.02	- 0.2	- 0.3
7 4'	- Tr	- 0.8	- 0.4
8 3'6"	- 0.02	- 0.2	- 0.4
9 4'6"	- Tr	- Tr	- Tr
10 4'	- Tr	- 3.6	- 3.9
11 4'	- 0.16	- 0.5	- 2.1

A

B

C

D

2-5% Cu "HIGHGRADE ZONE"

Sections

ENTERPRISE no. 3 CLAIM

ENTERPRISE no. 2 CLAIM

800'

Width	Au	Ag	Cu %
?	.16	3.0	16.0

Tunnel A

Southeastern Portion of the Assay Plan covering assays taken from cuts on the Enterprise Claim in Period 1928 - 1929 by Smitheringale for the GEORGE ENTERPRISE MINING COMPANY

To accompany report by W. V. Smitheringale, Jan 15, 1930

Figure 8

FIGURE 8

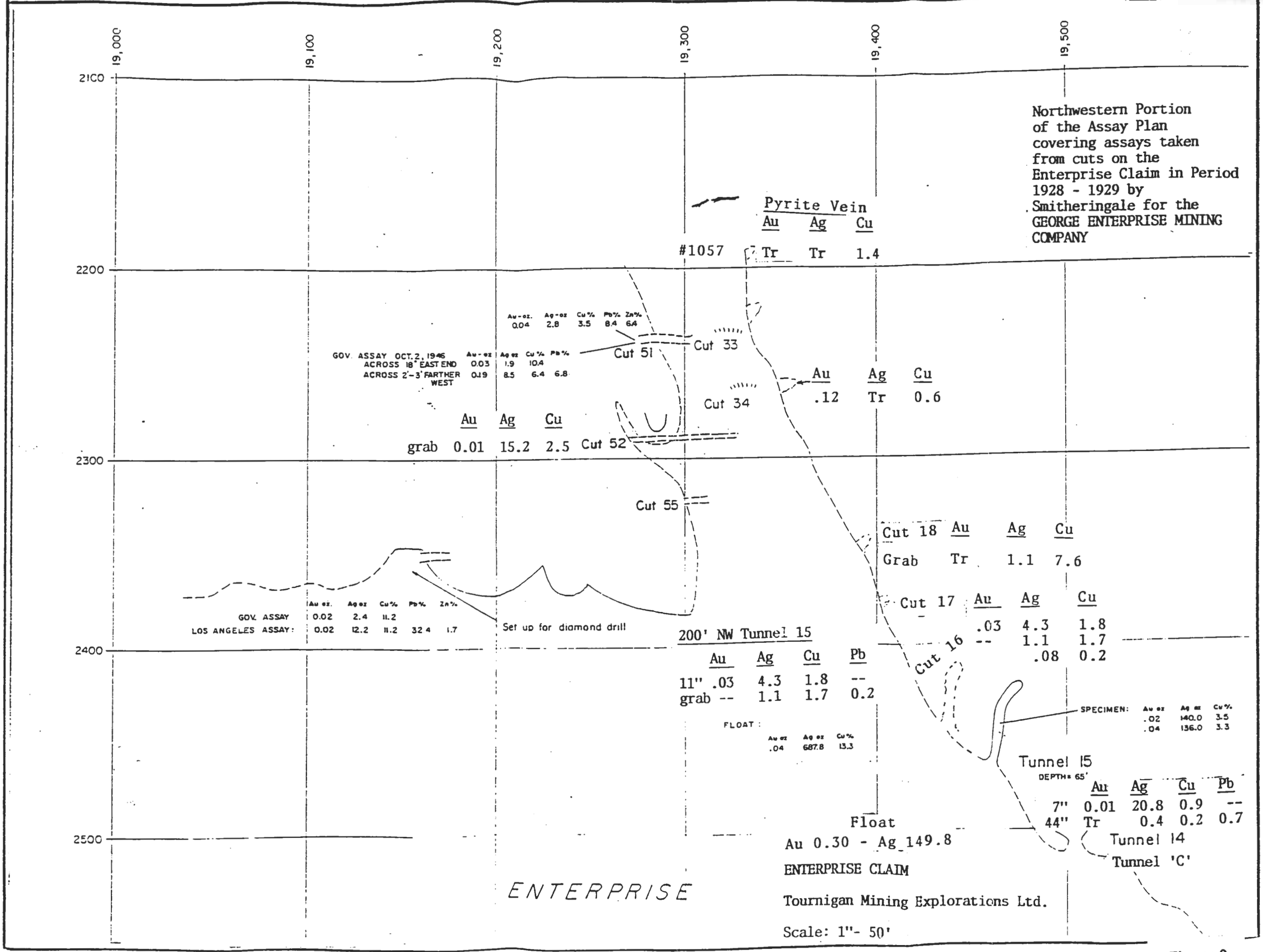
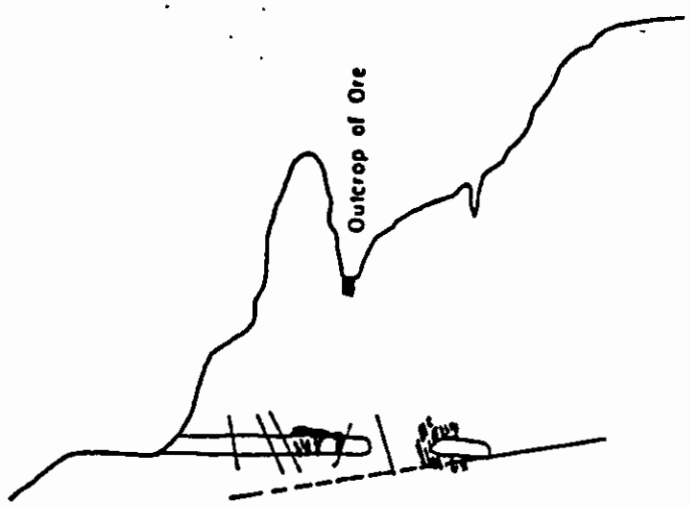
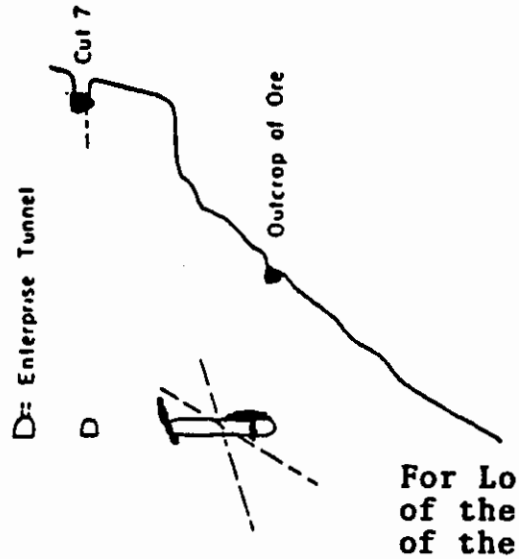

19,000
19,100
19,200
19,300
19,400
19,500
2100
2200
2300
2400
2500
Northwestern Portion of the Assay Plan covering assays taken from cuts on the Enterprise Claim in Period 1928 - 1929 by Smitheringale for the GEORGE ENTERPRISE MINING COMPANY
Pyrite Vein
Au Ag Cu
#1057 Tr Tr 1.4
Au-oz. Ag-oz Cu% Pb% Zn%
0.04 2.8 3.5 8.4 6.4
GOV. ASSAY OCT. 2, 1946 Au-oz Ag oz Cu % Pb %
ACROSS 18' EAST END 0.03 1.9 10.4
ACROSS 2'-3' FARTHER WEST 0.19 8.5 6.4 6.8
Cut 51
Cut 33
Cut 34
Au Ag Cu
.12 Tr 0.6
Au Ag Cu
grab 0.01 15.2 2.5
Cut 52
Cut 55
Cut 18 Au Ag Cu
Grab Tr 1.1 7.6
Cut 17 Au Ag Cu
.03 4.3 1.8
-- 1.1 1.7
.08 0.2
Cut 16
GOV. ASSAY Au oz. Ag oz Cu% Pb% Zn%
LOS ANGELES ASSAY: 0.02 2.4 11.2
0.02 12.2 11.2 32.4 1.7
Set up for diamond drill
200' NW Tunnel 15
Au Ag Cu Pb
11" .03 4.3 1.8 --
grab -- 1.1 1.7 0.2
FLOAT :
Au oz Ag oz Cu%
.04 687.8 13.3
SPECIMEN: Au oz Ag oz Cu%
.02 140.0 3.5
.04 136.0 3.3
Tunnel 15
DEPTH= 65'
Au Ag Cu Pb
7" 0.01 20.8 0.9 --
44" Tr 0.4 0.2 0.7
Float
Au 0.30 - Ag 149.8
Tunnel 14
Tunnel 'C'
ENTERPRISE
ENTERPRISE CLAIM
Tournigan Mining Explorations Ltd.
Scale: 1"- 50'

Figure 9



SECTION A-B

Horizontal and Vertical Scale 1" = 50'
Surface of ground approx



For Locations
of the Cross Sections
of the Enterprise Tunnel

See FIGURE 8

SECTION C-D

Horizontal and Vertical Scale 1" = 50'
Surface of ground approx

[MY] – Mineralization

ENTERPRISE TUNNEL

Figure 10

To accompany report by W. V. Smitheringale, Jan 15, 1930

RED TOP CLAIMS

Table of Contents

Figures at End of Report

Introduction

The 16 Crown-granted mineral claims of the Red Top group are located on the northern slope of the Bear Pass (Figures 2 & 4). These claims were purchased by Tournigan in 1977.

The exploration work completed on the claim group prior to 1950 was the blasting of trenches or cuts and the completion of two crosscuts, one on the main copper showing (Figures 11 & 12) and one on the Galena Vein (Figure 13). Diamond drilling (1,925.5 feet) was completed on the claim group in 1968 by United Asbestos (United Asbestos Report, 1968). Seven holes were started and only three holes were completed to the necessary depth to investigate the zone of copper mineralization found in the main showing - copper area. The plan of the holes and a section of the seven holes (Figures 14 & 15) are included in this report.

The property was investigated by Dr. W. G. Smitheringale in 1976 and by G. Keytes in 1978. The figures and text are taken from these reports.

Examination of Showing
(Keytes, December 1978)

RED TOP CLAIM

"Forty meters of trenching was completed on the Red Top claim in 1978 with thirty meters at the base of the cliffs at the main showing and 10 meters across the chert argillite unit further to the west. The area was mapped at 1:500, although the cliffs proved unclimbable. All mineralization which could be reached was sampled. The adit was also mapped.

The dominant rock types at Red Top are, as elsewhere in the Bear Pass, volcanic and although they vary greatly in type, all present a monotonous grey-green appearance. No continuity of individual units could be discovered at Red Top; the volcanic rocks are described under the section on general geology.

The cliffs at Red Top are broken up by conspicuous patches of irregularly shaped rusty chert and argillite beds. This thin (5-10 meter) unit stands out quite clearly from the background and despite this the structure is undecipherable. The beds are convoluted, faulting is definitely present and isoclinal folding is suggested but the true nature of the structure is unknown.

A further complication is revealed by trenching at the main showing. Excellent mineralization is present between the two faults but the rock type is not a chert although its weathered, rusty appearance is very similar to the chert, which the rest of the trench exposes and which is almost barren.

The rock type between the faults is strongly chloritized which together with the chalcopyrite and minor pyrite make it impossible to identify with certainty. However it is most probably a tuff. With the help of the exposures in the trench, it is possible to recognize a slight difference in appearance between the tuff and the chert unit, the tuff being a little more rusty. It can also be deduced from this observation the tuff in fact sits on the top of the chert unit to the west of the faults. This part of the tuff can be reached in two places and it is well-mineralized at both places.

The known length of the Red Top showing has been extended from 11 meters to 50 meters by these observations. A further piece of information, revealed by the trenching, is the chert

beds, although convoluted, have a moderate dip of 35° to the south. Previously, it was supposed dips at Red Top were northerly. However, it cannot be assumed the beds are the right way up; it is just as possible they are locally overturned.

The assays which are shown on the plan (Figure 13) vary from 0.4 to 4.9 % CU with 0.16 to 0.96 oz Ag and 0.005 to 0.014 oz Au for the chalcopyrite bearing tuff.

Mineralization also occurs along the faults and in the adit (Figure 12). The chalcopyrite in the adit is present in a uniformly dipping chert bed 5 meters thick with dips south at 30°. The best metal values, assaying 0.8% Cu with 0.20 oz Ag and 0.012 oz Au, are in the top 1.6 meters of the unit. This is the part of the bed closest to the fault.

The relationship between the volcanic rocks in the adit and those at surface is at present unknown; further work might clarify this problem.

The association of chalcopyrite, pyrite and chlorite closely associated with chert beds in a volcanic terrain is characteristic of volcanogenic mineralization. The absence of massive sulphides however, makes this showing not typical. This showing is therefore likely to be distal from the origin of mineralization."

SUPERIOR CLAIM (RED TOP GROUP)

"Two days were spent prospecting for the showings described in old reports on the Superior mining claim (Figures 11 & 13). Almost all of the major showings were identified but some minor showings were not found. The showings were then surveyed in at 1:500 and described in detail and sampled (Figure 13). Much trenching has been done in the past on the Superior claim. No further trenching was done at this time as the geological relationships are very clear. The position of the adit was surveyed in but was not mapped as no mineralization had been reported from it.

The country rock at the showings is monotonously similar everywhere. It is a medium green, very fine grained andesite. It is largely featureless but with a few tiny feldspar phenocrysts. It is difficult to identify such fine grained rocks as lava with certainty because the extreme compaction has left both lavas and tuffs very hard and similar in appearance.

The mineralization on the Superior claim is in the form of veins which occur irregularly along fractures as infilling. The maximum width of the veins is 2.0 meters; in many places the fractures are closed with no infilling.

The entire system of veins appears to occur along two parallel fractures (115/60SW) with one small curved cross fracture joining them.

The fracture infilling consists of broken volcanic material, quartz, calcite, barite, galena, sphalerite,chalcopyrite and pyrite. The proportions vary greatly from place to place.

The assays (see Figure 13) show consistently good values in silver (1.3 oz to 15.9 oz). Other metals are variable, lead being the most promising (1.4% to 50.0%) followed by zinc (0.7% to 15.5%) and copper (trace to 1.0%)."

Conclusion (Smitheringale, July 1978)

"The Red Top is underlain by volcanic fragmental and flow rocks containing a partially-mineralized argillite bed about 8m thick in which copper mineralization has been traced for a strike length of 500m. Hanson (1929) described the sequence as follows:

> 'The country rocks at this deposit are approximately horizontal volcanic fragmental and possibly lava flows, and an interbed of argillite. The mineralization consists of chalcopyrite disseminated through the argillite and to a lesser extent through immediately overlying volcanic rocks.'

"The argillite member generally dips 25° to 45° northward into the hillside. Exploration in the 1920's and 1930's indicated in places the argillite contains up to 5% Cu. This included a 9m zone averaging 4.5% Cu intersected by the "copper adit". The true widths of these samples are not known. Four diamond drill holes drilled near the adit in 1968 intersected the argillite member within a strike length interval of about 100m. They indicated the mineralized zone is 6m thick, averages about 0.5% Cu and in places contains beds of massive pyrite.

The 1968 drilling on the Red Top property indicates the mineralization in the immediate vicinity of the copper adit does not constitute an economic deposit. However, the drilling supports the conclusion the argillite-tuff-iron formation unit is a promising unit in which to explore for massive sulphide deposits. The unit should therefore be explored beyond the immediate vicinity of the adit."

OREQUEST CONSULTANTS REPORT, 1991

New areas of copper mineralization on the Red Top became exposed between property examinations completed between 1978 and 1991. Notes from the 1991 Orequest examinations are quoted in the following paragraphs:

"Orequest spent one day in the area of the adit, sampling the highly altered cliff face above the portal on the level of the main copper showing, and received highly favourable results. Continuous 2m chip samples were collected along a portion of the face and returned up to 1.76% copper over 12m including 6m of 2.53% copper.

The chip line is along strike of the iron formation as the exposed cliff face representing the width of the unit was unaccessible without ropes. The unit appears to be at least 15m thick and is heavily altered by silica and clay with obvious malachite staining (Figure 16). Futher detailed rope-assisted systematic rock sampling is warranted."

Recommendation

Exploration on the Red Top claims is warranted along the iron formation which contains widespread copper-bearing volcanogenic sulphide mineralization. A small portion of the iron formation was investigated by the crosscuts and trenching completed by Dr. Wm.V. Smitheringale during the period 1925 to 1930, and by the United Asbestos drilling in 1968. The location of the iron formation on the north side of the Bear Pass is indicated on Dr. Smitheringale's "Geology of the Bear Pass Area" (Figure 3 in Section 1). Exploration should also be completed in the northwestern portion of the Superior No. 1 claim for the continuation of the Galena Vein. It is possible this vein continues to the northwest onto the Barite claim. The new area of the copper mineralization located above the adit must be mapped and sampled.

* * * * * * *

andesite, dacite

rhyolite

tuff, welded tuff, grain size in brackets

chert

argillite

granite dykes

mineralisation

FIGURE 7-1

Northwestern Portion of the Galena Vein

Area covered by figure 7

KEY

survey lines

outcrop

geological contact

fault

100°/15°n dip and strike of bedding

lead silver vein

crystal tuff

Superior Galena Vein and Cross Cut

Superior No.1

quartz porphyry dyke

chalcopyrite 2mm. along margin

andesite, featureless or with feldspar phenocrysts

Superior No.2 Fr.

Red Top Fr.

andesitic dyke

andesite

andesite, specular ematite

Red Top No.2 Fr.

Hector No.1

Area drilled by United Asbestos 1968

andesite

green and purple andesite with quartz, feldspar and hornblende phenocrysts

pyritised rhyolite

pyritised andesite

quartz porphyry dyke

Red Top No.1

featureless andesite

andesite pyrite

tuff, chert, andesite

ash tuff

rhyolite

rhyolite, andesite

dacite

rhyolite

dacite tuff

main showing

34°/24°w

65°/35°s

113°/30°s(adit)

Main Copper Showing-Crosscut

Area covered by figures 5,6

glassy rhyolite

coarse grey feldspar and lithic tuff(5mm)

coarse grey lithic ash tuff(3cm.)

56°/60°s

rhyolite

dacite

Red Top

pyritised andesite

featureless andesite

rusty pyrite bearing black chert and argillite

andesitic lithic tuff indurated with hematite

glassy rhyolite with iron carbonate

brecciated dacite with hematite

Amazon No.2

brecciated rhyolite heavily pyritised

Amazon No.1

KEYTES REPORT FIGURE 2.

SCALE 1 : 5000

100m. 200m. 300m. 400m.

VERTICAL SCALE IN FEET

RED TOP CLAIMS

Geology

TOURNIGAN MINING EXPLORATIONS LTD.

Amazon Fr.

Amazon No.3

Amazon No.2 Fr.

Figure 11

CHERT BEDS
black minor argillite
very little rust

DACITE
light green very fine grained
featureless or with tiny feldspar phenocrysts

CHERT BEDS
rusty 1-2% pyrite

34°/24°w

58°/90° contact
nature of contact unknown

RHYOLITE
glassy some quarts crystals

See FIGURE 2
Keytes Report for Location

TUFF
chloritised, very rusty
1-15% chalcopyrite
1-10% pyrite

CHERT
rusty
extreme buckling of beds

CONGLOMERATE
0·2m bed

RHYOLITE
glassy 1-2% pyrite

CHERT

65°/35°s

0·4% Cu 0·36 oz.Ag 0·005 oz.Au

0·6% Cu 0·44 oz.Ag 0·010 oz.Au

avr. 2·0% Cu
0·43 oz.Ag 0·010 oz.Au
fault zone

1·5% Cu 0·30 oz.Ag 0·010 oz.Au
4·9% Cu 0·96 oz.Ag 0·014 oz.Au
1·0% Cu 0·16 oz.Ag 0·010 oz.Au
0·7% Cu 0·30 oz.Ag 0·005 oz.Au
0·6% Cu 1·2 oz.Ag 0·005 oz.Au 1·9% Pb 2·5% Zn

0·1% Cu

fractures 65°/90° calcite, azurite staining

0·5% Cu 0·24 oz Ag — fault zone - 0·3m.

0·8% Cu 0·20 oz Ag 0·012 oz Au

0·2% Cu 0·12 oz Ag 0·003 oz Au

0·1% Cu

each assay represents
1·6 m. true width

fractured grey
ANDESITE

CHERT, TUFF
minor chalcopyrite

155°/60°e

DACITE
variable grain size

139°/72°e

fracturing, limonite

DACITE
minor chalcopyrite

CHERT
minor chalcopyrite

grey ANDESITE

94°/90°

survey lines

outcrop

geological contact

139°/72°e fault with dip and strike

65°/35°s dip and strike of bedding

trench

adit

TOURNIGAN MINING EXPLORATIONS LTD.

BEAR PASS PROPERTY

MAIN COPPER SHOWING AREA

RED TOP PLAN OF SHOWINGS

G.Keyte Dec. 78

KEYTES REPORT

SCALE 1 : 500

0m. 10m. 20m. 30m. 40m.

Figure 12

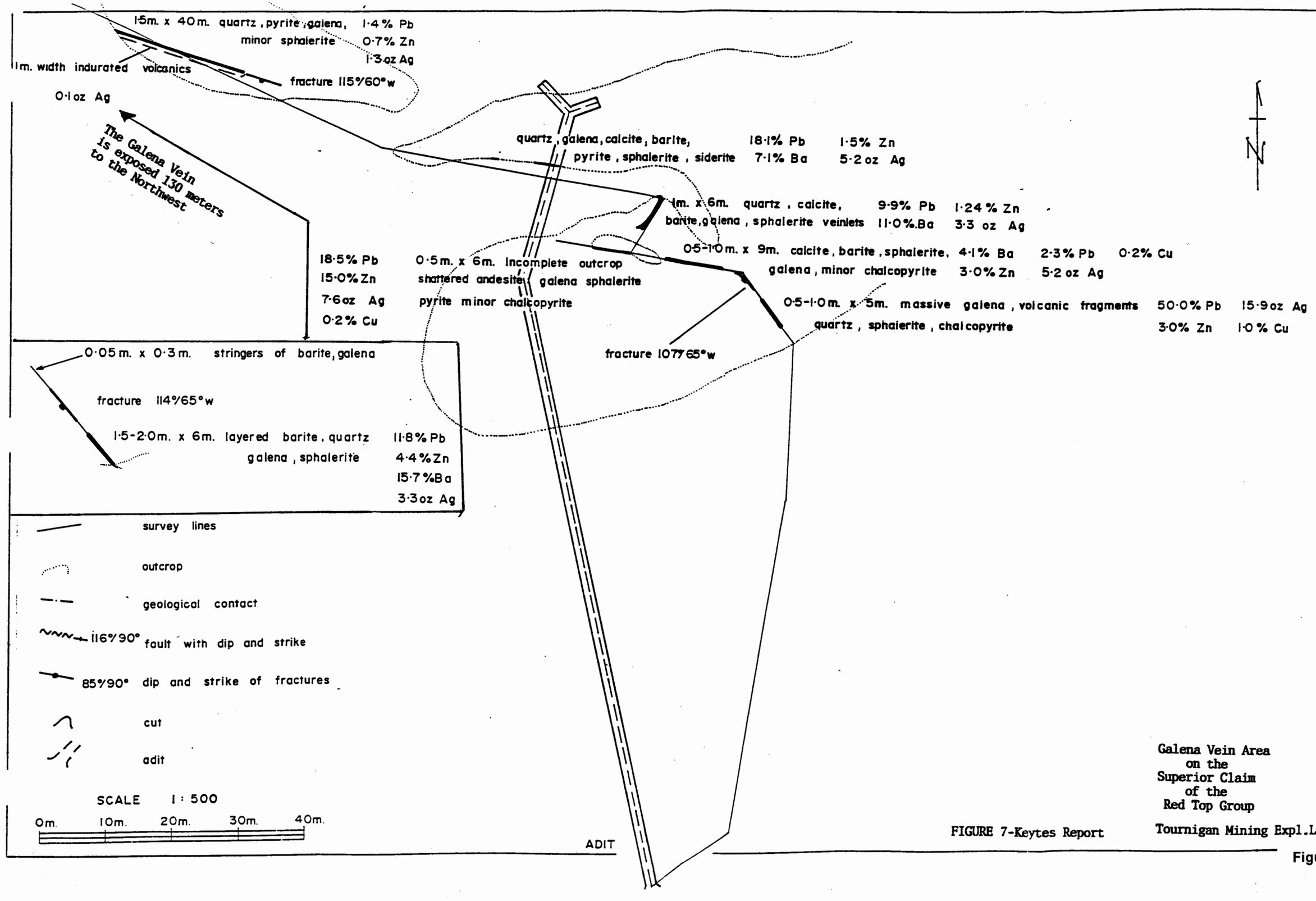


FIGURE 7-Keytes Report

Galena Vein Area
on the
Superior Claim
of the
Red Top Group

Tournigan Mining Expl.Ltd.

Figure 13

RED TOP CLAIMS

TOURNIGAN MINING EXPLORATIONS LTD.

BEAR PASS PROPERTY

SCALE 1"=300'

FROM UNITED ASBESTOS REPORT 1968

FIGURE 1.

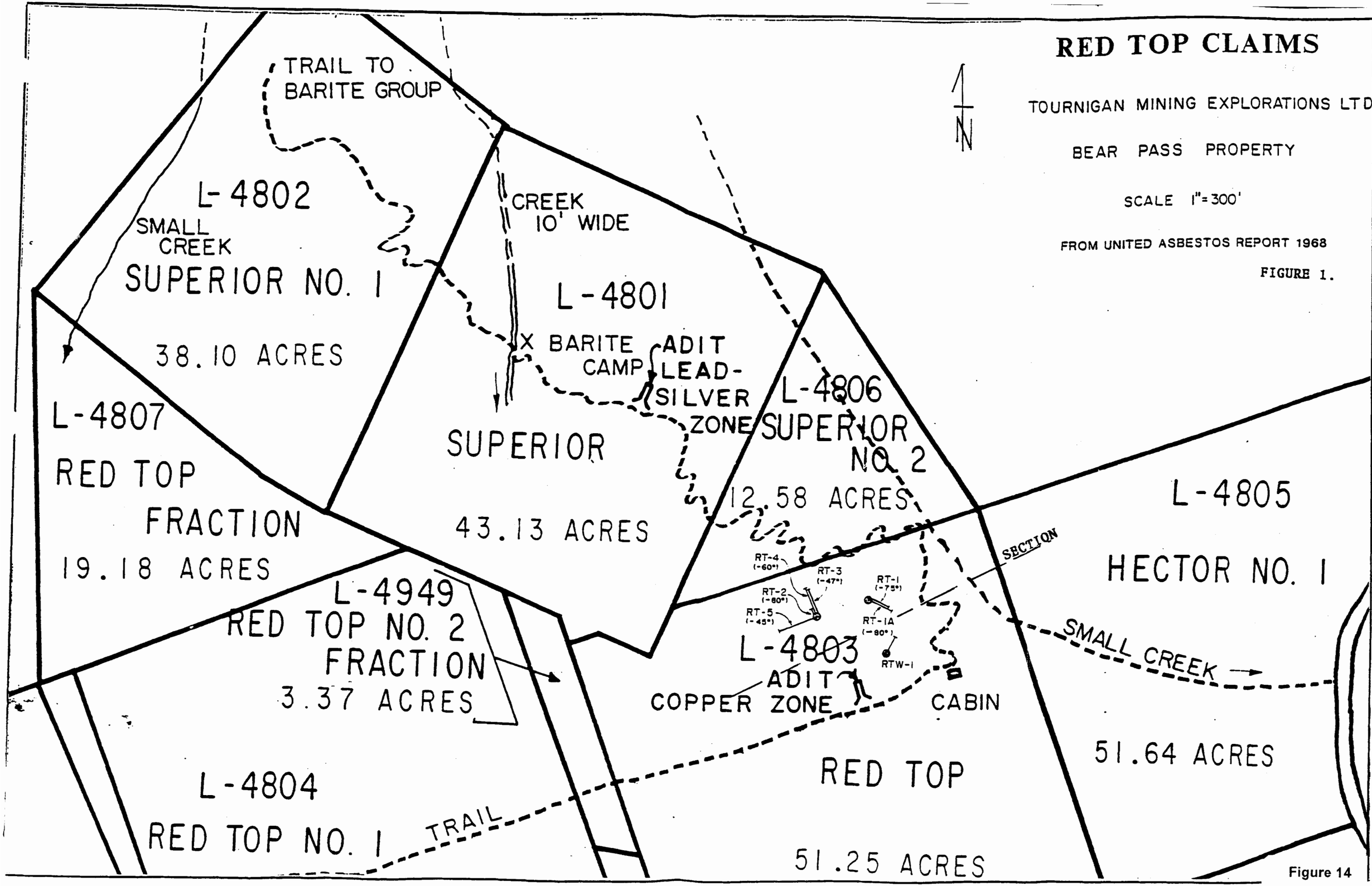
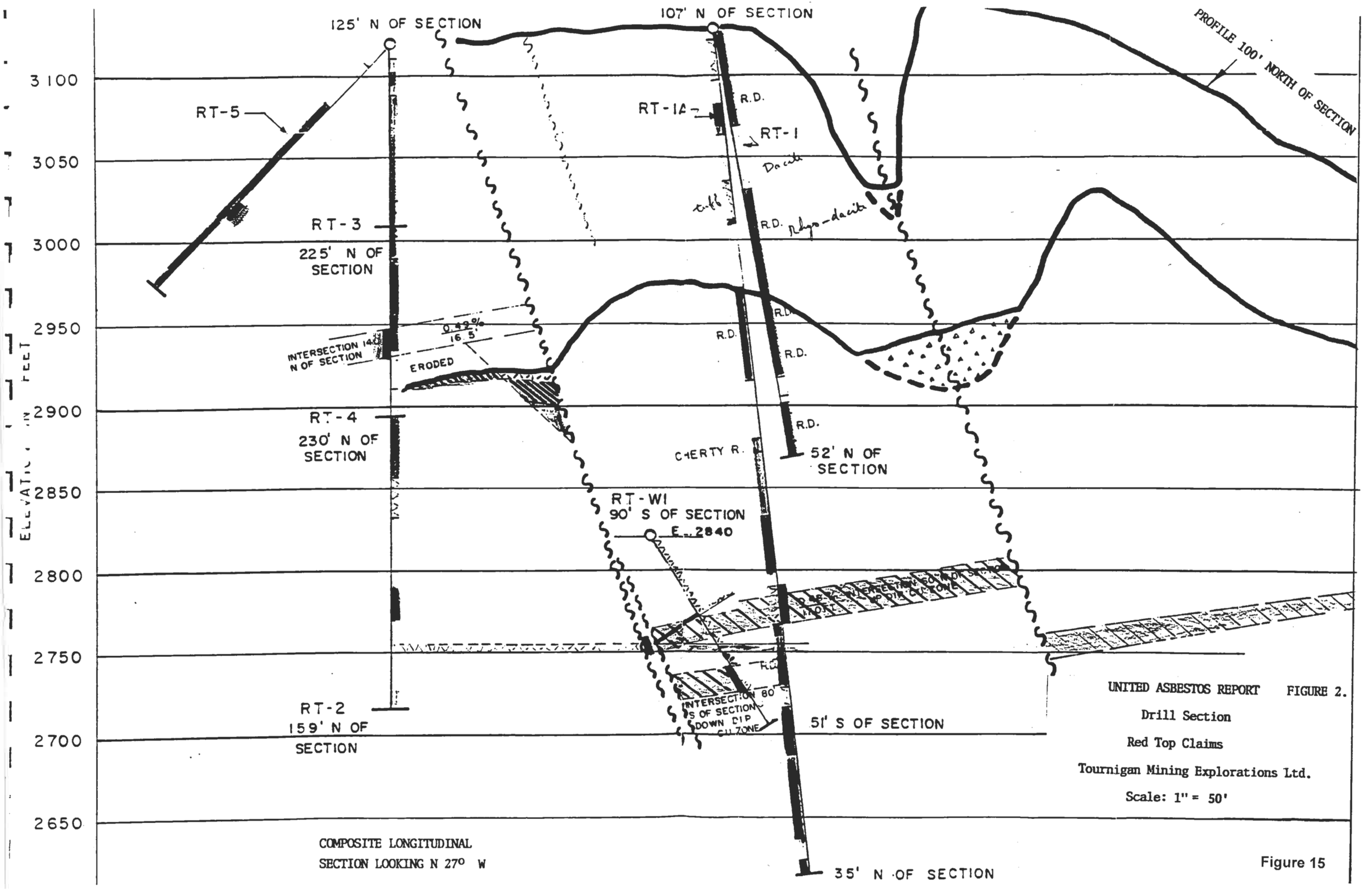


Figure 14



UNITED ASBESTOS REPORT FIGURE 2.

Drill Section

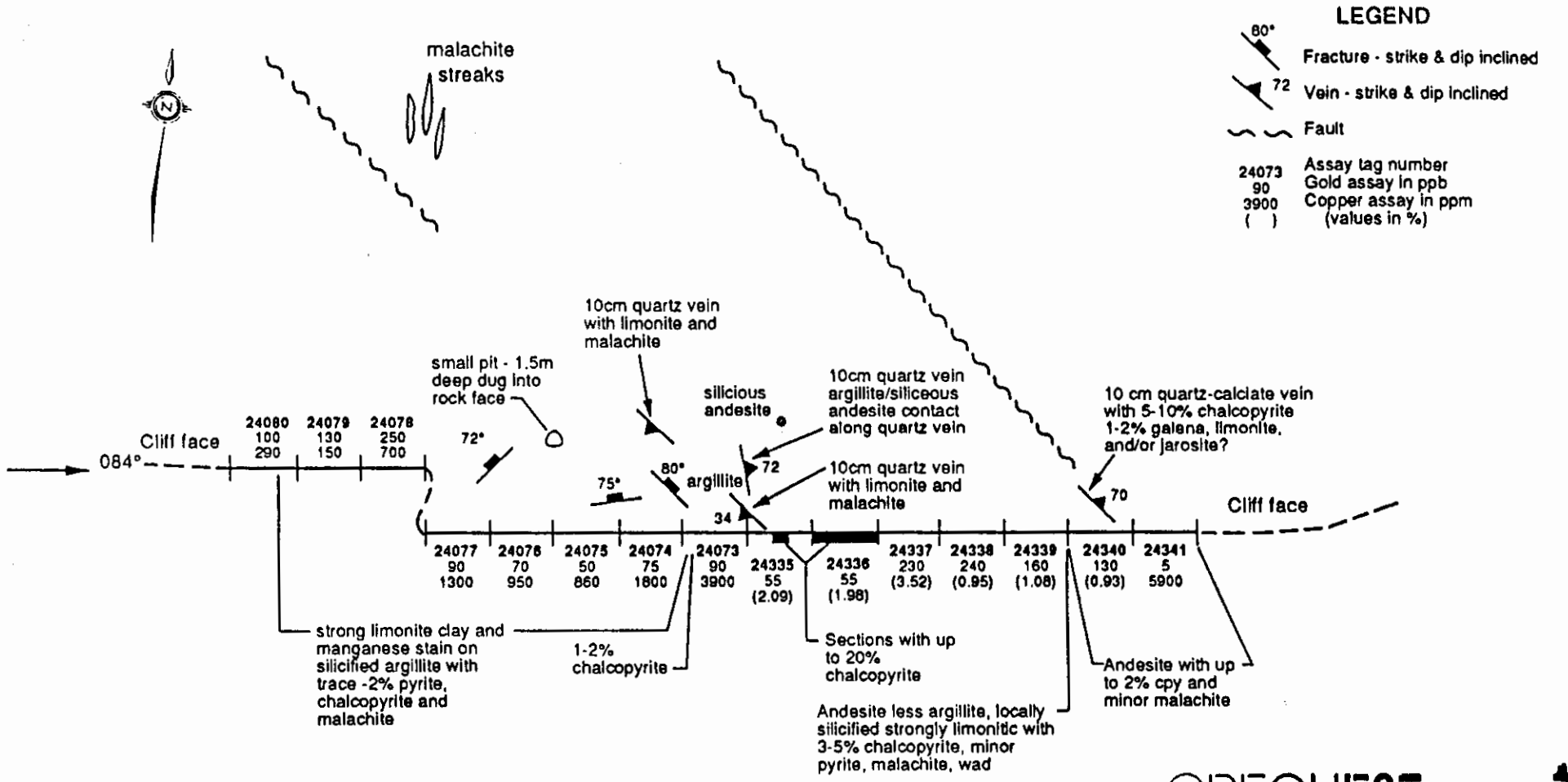
Red Top Claims

Tournigan Mining Explorations Ltd.

Scale: 1" = 50'

COMPOSITE LONGITUDINAL SECTION LOOKING N 27° W

Figure 15



OREQUEST

TOURNIGAN MINING EXPLORATIONS LTD

Figure 16
BEAR PASS PROJECT
RED TOP SHOWING
GEOLOGY & CHIP SAMPLE LOCATIONS
Skeena Mining Division
British Columbia
NTS 104A/4

November 1991 XY3

W. R.

Figure 16

HEATHER

Table of Contents

Figures At End of Report

Introduction

The seven Heather Crown-granted and six staked claim units of the Doc 1 (Figures 1, 2, & 3) are located on the southern slope of the Bear Pass approximately 6,000 feet due east of the George Gold-Copper claims (Figures 2 & 4).

Geology
(Dr. W.G. Smitheringale, December 1976 Report)

> "The Heather Claims were not examined below elevation 3,000 feet. The topographic break which marks the location of the argillite-tuff-iron formation unit extends intermittently from the George Gold-Copper claims to the western margin of the Heather Fraction. East of this point it cannot be distinguished with any degree of certainly because the south slope of the valley becomes less steep with fewer cliffs. Flows, flow breccias and coarse pyroclastic rocks of basaltic and andesitic composition occur between elevations 3,500 feet and 3,900 feet on Heather No. 2 claim. These rocks resemble those in the upper unit on the George Gold-Copper claims."

Mineralization

The mineralization was sampled by Dr. Wm. V. Smitheringale in 1928 and 1929 and the following quotations are from his field reports:

1928 FIELD REPORT

> "Extending along the south shore of Snow Lake, there is a mineralized zone which disappears eastward under talus and underbrush before reaching the Enterprise ground. Along the southern boundary of the Summit No. 4 M.C., there is heavy mineralization exposed in the bluffs. This may be the continuation of the zone just mentioned, but it is open to question.
>
> On the Heather Fraction (Figure 2), east of the SE corner of the Copper King No. 2, there are oxidized bluffs which appear to be in another zone of mineralization. This zone is covered by talus in the eastern part of the Heather M.C., but the bluffs appear again westward and extend along the hillside a short distance south of the trail and again disappear under the talus in the neighbourhood of the NE corner of the Heather No. 3 M.C. There is a heavy mineralization of pyrite in the parts of this zone examined, along with a small amount of chalcopyrite.
>
> North and slightly west of the SW corner of the Heather No. 3 M.C., there is a large silicified area which trends up and down the hill. Within this area the rock is intensely silicified, with occasional sparsely disseminated pyrite. Where there are bodies of greenstone within this quartz zone, these are mineralized with pyrite. So far as observed there did not appear to be any important mineralization within this zone, but it was only examined in a few places.
>
> Just south of the SW corner of the Heather No. 3 M.C., there is an area of rock which is very heavily impregnated with pyrite along with small amounts of chalcopyrite here and there. In places, the chalcopyrite is present in fair amounts, but these areas are of limited extent and on the whole there is not sufficient chalcopyrite present to be of value in 1928.
>
> About 300 feet west of this latter place, there are stringers of chalcopyrite up to six inches in width, striking generally NW. On the surface, these stringers extend over a width of three feet

or slightly more, but do not appear to form any definite vein. Work should be done here in order to determine the extent of the exhalative mineralization.

A considerable amount of work was done about the middle of the Heather No. 1 M.C., a short distance below the glacier which overhangs the top in this section. The work exposed what appears to be two shear zones striking about N. 85° E. and of almost vertical dip. These zones vary in width from a foot to eight feet or more and, in the cuts, show a somewhat sparse mineralization of pyrite and chalcopyrite with occasional spots of galena. The gangue is quartz with some calcite, altered country rock and some hematite. In the vicinity of these shears, stringers of almost pure chalcopyrite, several inches wide, may be found. As yet, an economic grade of mineralization is not exposed, but more work can well be done in this vicinity.

Near the centre of the western boundary of the Heather No. 2. M.C. there are bluffs which are heavily oxidized. The principal mineralization is pyrite, but careful observation reveals areas of green staining, suggesting the alteration of a copper mineral, maybe chalcopyrite. These bluffs are very precipitous and were not carefully examined. They should be prospected. Mr. F.C. Green reports a galena vein striking into the Wedge Fraction about the middle of its southern boundary."

1929 FIELD REPORT

"On the Heather group, work was continued in the vicinity of the showings found last year. The old showings are approximately shown on Figure 17, at A,B,C and D. This year considerable open cutting was done near D. In one place, three open cuts were made along a fracture carrying chalcopyrite. The mineralization varied in width from two inches to ten inches and in places was of quite good grade. It was traced for about fifty feet in an east-west direction. This mineralization is too narrow to be of importance.

A little to the northwest of this place a number of cuts were made. At one time, one of these exposed some thirty inches of good grade copper but futher work showed this to be local in occurrence and the net result showed the chalcopyrite was irregularly and sparsely disseminated in a volcanic rock.

About location Z (Figure 17), cuts were made with similar results.

Some cuts were made in heavily oxidized material about the centre of the Heather No. 1 M.C. at L. These exposed disseminated pyrite with little or no copper minerals present.

Last year, in the vicinity of C, two shears containing chalcopyrite were exposed. At the close of operations last year, a cut in one of the shears had exposed a low grade but encouraging showing of chalcopyrite. More work on this showing and on either side of it did not improve the possibilities.

A number of cuts were also made on several small showings in this vicinity but no satisfactory results were obtained.

The best showing of last year was found at D. More work was done on this and the following information obtained. The shear is filled with calcite, quartz, pyrite and chalcopyrite. In the narrower sections, up to twelve inches, the chalcopyrite content is good, but where the shear widens, the sulphide content decreases and the values become too low to be of importance.

To the west of D and adjacent to the glacier, there are a number of veinlets of chalcopyrite but these are too small to be of importance.

Some work was done west of the camp near the northwest boundary of the Heather M.C. but no favourable results were obtained.

A zone was found containing sphalerite and a little galena and chalcopyrite. The location of the work is approximately as shown at Y, Figure 17, on the Heather No. 4 M.C. This showing is about 200 feet above the valley floor. The strike is variable ranging from NS to N 20° W; it dips 70° E. Along the footwall there is a stringer, 1" to 10' wide containing a considerable amount of sphalerite with some galena and through the rest of the zone, there are irregular veinlets of sulphides.

Three cuts were made on the zone exposing it for a length of about fifty feet. A sample of the better sulphides from the stringer along the footwall gave Au-Tr; Ag-1.0; Cu-0.20%; Pb-Tr; Zn-24%."

1946 TO 1950 AND 1976 FIELD REPORTS

Dr. W.G. Smitheringale reported in his December 1976 report the following information on a tunnel driven in 1946 on the Heather No. 4 and his observations on the mineralization located above the tunnel:

"At about elevation 1,450 feet on Heather No. 4 claim, a 15m (50 feet) tunnel was driven on a zone containing a stringer of semi-massive sulphides up to 25cm (10 inches) wide. The zone strikes N to 20° W and dips 70° E. A set of samples taken in 1949 and 1952 from this tunnel gave the following assays (from George Enterprise Mining Co. records):

	Ag Oz.	Pb %	Zn %	Comments
1	2.7	21.1	13.2	4 handfuls from sorted ore
2	1.4	6.2	19.5	fines from sorted, broken ore
3	0.7	1.1	36.7	3 lb specimen 35' fromportal
4	1.3	10.6	11.5	4 handfuls from sorted ore
5	1.1	5.7	19.3	fines from sorted, broken ore
6	1.7	13.4	16.5	bulk sample of 2 sacks ore analyzed by C.M. & S.

"Several other assays from this zone indicate Au and Cu values are low. Above elevation 2,800 feet, oxidized zones are exposed in bluffs in a number of places. Most of these zones are heavily silicified and contain disseminated pyrite. Some contain minor quantities of chalcopyrite.

Stringers of massive chalcopyrite up to 15cm (6 feet) wide are reported in one place (Smitheringale, 1928). There are also small zones of chalcopyrite and pyrite sparsely disseminated through volcanic rocks which have not been heavily silicified. Several small veins or stringers running high in Pb and Ag have been reported.

Several of the highly silicified pyritic zones were sampled during the 1976 program and these have proved to be almost barren of Pb, Zn, Cu, Au and Ag."

Recommendation

The Heather claims warrant an initial exploration program of geological mapping and geochemical rock sampling. The claims cover an area of cliff faces and the initial examination should also determine if geophysical surveys can be completed in the area. Particular attention must be given to the sampling and assaying of the silicified and pyritized zones for gold. Prospecting is recommended on the area recently exposed by the retreating glaciers (Figure 17) and the area covered by the Doc No. 1 claim (Figure 2).

* * * * * * *

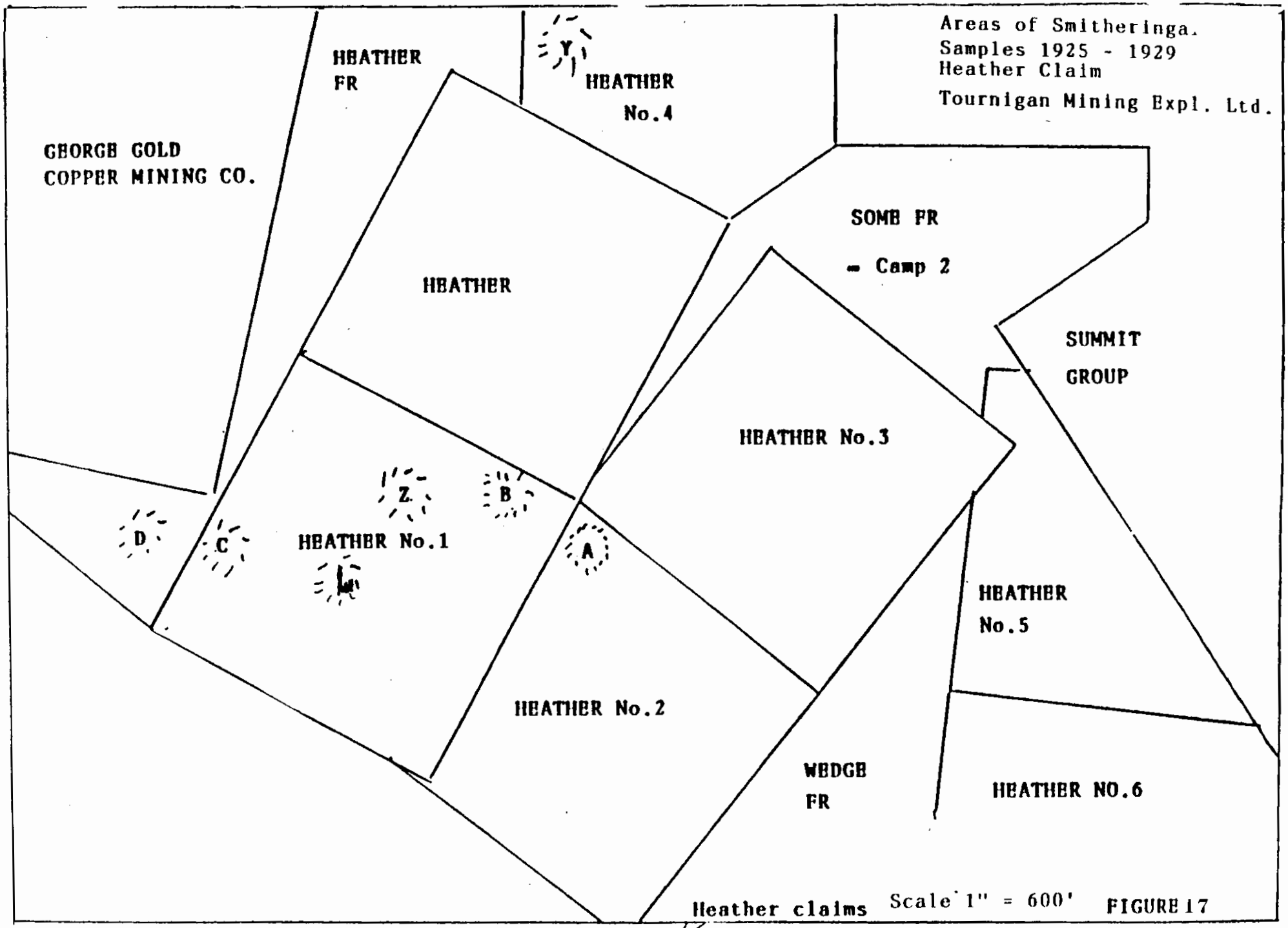

Areas of Smitheringa.
Samples 1925 - 1929
Heather Claim
Tournigan Mining Expl. Ltd.
HEATHER FR
Y
HEATHER No.4
GEORGE GOLD COPPER MINING CO.
HEATHER
SOMB FR
- Camp 2
SUMMIT GROUP
HEATHER No.3
Z
B
D
C
HEATHER No.1
A
HEATHER No.5
HEATHER No.2
WEDGE FR
HEATHER NO.6
Heather claims Scale 1" = 600' FIGURE 17
A Area prospected.
To accompany report by Wm. V. Smitheringale Jan.15, 1930.

Figure 17

RUFUS-ARGENTA

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Figures at End of Report

Introduction

Four groups of claims, the Rufus, Comet, Argenta (Veteran and Erickson) and Barite comprise the Rufus-Argenta group and are located on the northern slopes of the Bear Pass (Figure 18).

General Geology

The geology of the district has been summarized by Harris in his 1984 report as follows:

> "The geology of the district has been well described by Grove (BCDM) following earlier work by Hanson (1935, GSC). In the immediate claim area, the rocks are a complex of red and green fragmental Hazelton volcanics which form the eastern limb of the north-trending American Creek Anticline. A peculiarity of the Hazelton volcanics of this anticline is the abundance of iron minerals as pyrite disseminations and as pyrite-pyrrhotite lenses or pods. These high iron zones account for the "red-bluffs" in Rufus Creek which first directed attention to the area."

Description of the Property

The mineralization described by D. Tully, P.Eng. in 1980 is as follows:

> "The Rufus-Argenta group is marked by a reddish brown gossan over a large portion of the claim group and appears to be the result of the oxidation of finely disseminated and pervasive pyrite through most of the rock types in this area. The vein zones on the Rufus-Argenta group are a combination of fissure-filling and wallrock replacement types. Quartz in veins and veinlets occupy the fissure-fracture openings and the sulphide minerals replace openings in the quartz and wallrock. Metals characteristic of the claim area are gold, silver, copper, lead and zinc. Recently, tungsten has been noted. The suphide minerals are pyrite, pyrrhotite, sphalerite, galena, chalcopyrite, tetrahedrite and often arsenopyrite when gold is present.

RUFUS AREA (D. TULLY)

> "On the Rufus claims, a small adit which is now caved in showed mineralized vein material in a brown oxidized host rock of apparent sedimentary origin. A selected grab sample of the mineralized vein material on the dump area below the adit assayed Au - 0.118 oz/t; Ag - 0.29 oz/t; and Tungsten 0.05% (sample #26200).
>
> "Tulley's grab sample contained pyrite and pyrrhotite in quartz vein material. Mr. Walter L. Fowler, recorded owner of the claims, showed D. Tulley the results of a sample which he submitted for analysis from the Rufus claim area in February 1980, which assayed Au - 0.330 oz/t; Ag - 5.06 oz/t; Cu - 0.07%; Pb - 0.63% ; and Zn - 4.13%."

The two gold-bearing samples indicate gold is present with the base metals in some of the veins. The assay data, compiled on the silver-bearing veins by Harris in 1984 (Table 1), reveal low gold values but high values in silver, lead, zinc and copper.

> "The Rufus area is characterized by a complex system of veins, dykes and shears of various attitudes but generally with a northerly strike as shown on Figure 18. On the Rufus, Rufus 3 and 6, Rufus C and D, and the Slide Fraction, 12 veins have been named. These are the

Erickson, Clarke, Elliott, Harrison, High Grade, St. Louis, Whitworth, Calcite, Leach Cap, Forrest, Ahrens and Pete's veins. Other veins are also marked on old maps and several small veins not previously shown were located in 1982. Several dykes have also been given names. An old map shows most of these features and was used as the basis for Figure 18, but the accuracy is suspect as some discrepancies were noted during 1982 fieldwork.

Most of the development was concentrated on the Erickson on Rufus D, the High Grade and St. Louis veins, as these were easiest to access and showed promising surface assays. Numerous cuts were made and two short adits are known just above the slide area but debris from the icefield above has filled or obscured most of the old workings.

The Erickson Vein, on the Rufus D, has been traced for about 700 feet and consists of a 5 to 10 foot jasper-hematite vein with disseminated chalcopyrite and occasional galena veinlets along the valls. At its lowest point, it joins a breccia zone in a creek bed which may be the southern portion of the High Grade vein. A large pit at this juntion shows a 4 foot wide zone of massive pyrite-chalcopyrite but the zone was not traced. Silver values varied from 0.10 oz/t to 36.0 oz/t and lead from 0.6% to 31.3 %. See Table A.

The High Grade vein is up to 2.5 feet wide and consists of a quartz-calcite gangue with spotty but often high silver-lead values. A strike length of over 1000 feet is shown on old maps. Alfred Gual (1925) reported the samples taken from the junction of the Erickson (Rufus D) claim and the High Grade vein contained lead values which varied from 5 to 46% and silver values from 20 to 154 oz/t. The minerals observed were a native silver galena, hematite and zinc blend. The St. Louis, Forrest and Harrison veins are of similar widths and composition.

Two short adits have been seen from the air and are possibly on the St. Louis and Whitworth veins. A long adit to intersect the Erickson vein in Rufus D was planned in 1925 and is referred to in later reports, but a search in 1981 found no evidence of the adit.

A brief stop at the ice-edge in 1982 showed that a considerable area above the cliffs north of the slide has become ice-free since the 1920's and as far as is known has never been systematically prospected. During this short visit, several narrow sulphide viens were observed as well as considerable float but they were not sampled."

Sampling (Harris Report, 1984)

> "Accurate maps or plans for the various areas and veins are not available nor are descriptions or sample locations for the assays given on Table 1. However, they do show the variety and tenor of mineralization reported in the references."

The various reports on the Rufus claims note the presence of widespread zones of pyrite mineralization which have formed gossan zones. Also noted are the quartz veins and the vein stockwork. Tulley, in his 1980 report, notes there is a possibility of developing an open-pit in the stockwork area. The various claims of the Rufus have been superficially examined by a few trenches and/or crosscuts. A helicopter magnetic survey was completed in 1996. This survey indicated the trends of the formation and faults and outlined an anomalous magnetic zone extending approximately 4500 meters to the northwest of the known veins.

COMET AREA (HARRIS REPORT, 1984)

"This area lies just to the east of the steep cliffs along East Rufus Creek (Figure 18). The known workings and most of the mineral occurences are located on Comet claim units acquired in 1995. The original workings on the Comet claim, consisting of trenches and shallow shafts, opened up a wide shear with three silver-lead veins at about 4,750' elevation. Assays of arsenopyrite ore from the Comet Vein gave up to $32.00 gold/ton (1920). Hanson (1935, GSC) quotes assays from the same vein of gold up to 1.6 oz/t, and from the Blue Vein of silver up to 100 oz/t over 18" widths. An old sketch shows the original location of the Comet claims 1 to 4 and F (Figure 19), the Comet vein extending south of the Comet 2 claim onto the Comet 3. Several other veins are reported to have been discovered by Argenta Mines but no locations or descriptions given."

ARGENTA AREA - ERICKSON & VETERAN VEIN (HARRIS REPORT, 1984)

"This area is located along the eastern boundary of the claim group just south and east of the Comet veins. The main showing, the Erickson Vein, is a quartz-jasper-hematite vein up to 10 feet wide, well-mineralized with pyrite and chalcopyrite. The Erickson Vein in the Argenta area is reported (A.J. Gaul, 1925) to be the extension of the Erickson Vein on the Rufus claim. Location maps are not available and detailed mapping will have to be used to verify the two Erickson veins are one structure. The 1925 samples from the Argenta (Erickson) contained unusually high values of copper, lead and silver. Felsite dykes cut the vein at steep angles but do not displace it. Two similar veins have also been located, one about 400 feet north of the Erickson Vein and the other on the northwest corner of the Veteran 2 claim extending onto the ITC claim.

An adit, 1,250 feet long, was driven 650 feet below the Erickson Vein but apparently did not reach the vein. This adit is now caved at about 450 feet. Assays from the Erickson Vein are shown on Table 1. One reference (D. Tulley) quotes assays from the weathered capping of up to $50.00 in gold, silver and copper per ton (1922). Three surface samples gave the following assays:

	Cu %	Pb %	Zn %
5 '	3.02	0.15	Tr
5 '	0.29	0.23	0.05
5 '	1.86	0.43	0.05

BARITE AREA

The five Barite claims are located at an elevation of 5,000' approximately 1,500 feet northwest of the Red Top group (Figure 18). There is little information on this claim group as the claims were not mapped by International Tournigan Corporation. The following notes are taken from a 1926 field report of Wm. Tompkins, the 1935 memoir 175 of the Geological Survey of Canada and a 1939 field report of Harry Quickstad.

"Three parallel veins, striking northwesterly and spaced 4 to 10 feet apart, are located on the Barite claims. The veins have been traced for a distance of 1,500 feet. The centre vein has been investigated by stripping and open cuts for a distance of 400 feet. This vein has a width of 4 to 18 feet and the ore minerals are silver-bearing galena and gold. The gangue mineral is barite. A porphyry dyke is located on the western side of the 3 veins. The northwestern portion of the three veins and the porphyry were reported, in 1938, to extend under a glacier.

It is not known if the galena-bearing veins on the Barite claims are located on the same structure as the Galena Vein on the Superior claim of the Red Top group.

Geological mapping, prospecting and sampling are recommended for the first phase of the exploration of the Barite Claims, as barite is one of the gangue minerals associated with silver-lead-zine deposits in the Stewart area."

Conclusions (E.R. Harris)

A large number of mineral occurrences are known on the Rufus-Argenta claim group, particularly those of the Rufus, Comet and Veteran areas. Although references are often vague as to exact locations and some confusion exists because of the naming of veins and the compleixity of old ownerships, there is ample evidence valuable orebodies may exist. Also, the possibility of finding high-grade silver veins for direct shipment is quite distinct.

Two types of veins have been identified, lead-zinc veins with appreciable silver and gold values, and iron-copper veins with low but significant gold and silver. Although the lead-zinc-silver veins are considered the most economically important at this time, all mineral occurrences should be prospected and mapped to inventory the total resource of the area and to aid in determining structure and generis which might lead to new discoveries.

On the Rufus claim area (Figure 18), twelve veins were given names in the past and several other veins have since been located. The Erickson Vein (Rufus D) is from 4 to 8 feet wide and has been traced for some 700 feet. Mineralization consists of jasper-hematite gangue with disseminated chalcopyrite and occasional high-grade copper-lead zones or pods. The High-Grade and St.Lous Veins were the prime targets of exploration during the 1920's but little remains of the old work and only limited underground work was attempted. These veins appear to have been the source of high grade silver mineralization noted in old reports where assays of up to 154 oz/t Ag are quoted. The veins of the Rufus area form a very complex surface pattern but may have a common origin at moderate depth.

The Comet area, Comet 3, 4 & ITC claims, may cover extensions of at least silver-gold bearing veins originally prospected on the Comet claim at the northeast. The area therefore warrants propecting for these possible extensions as well as a westward extension of veins on the Veterans claims.

The Veteran area, Veteran 3, Veteran & ITC claims, covers portions of the very strong East Erickson Vein and should be prospected for parallel and other veins as well as possible extensions of known veins.

Because of the retreat of the icefield, a large surface area has become open since the 1920's. These areas must also be traversed particularly in the vicinity of the head of West Rufus Creek.

In summary, the possibility of developing a small high-grade operation on known veins is considered very good and the potential for new discoveries is rated high.

Recommendations

It is recommended the known and suspected mineralized areas of the claim group to be thoroughly prospected, mapped and sampled in order to inventory the known resources and assess the potential for new discoveries.

SECTION 6 - RUFUS-ARGENTA

For convenience, the claim group is divided into four areas, the Rufus, Argenta, Comet and Barite, each of which because of natural barriers, must be prospected separately. Three or four camp location are planned with helicopter support for moves and provisioning. Only conventional soil surveys may be useful below timberline. No diamond drilling is anticipated during this preliminary stage but may be recommended for a later or follow-up stage.

* * * * * * *

SECTION 6 - TABLE 1

Vein	Location		Au oz/t	Ag oz/t	Pb %	Zn %	Cu %
High Grade	Rufus D, 6	(9)		1.2	6.59	8.71	0.10
				2.2	2.58	0.72	0.05
				0.58	1.09	0.10	0.04
				0.64	0.56	3.07	0.04
		(5)	0.02	135.2	36.80		
			0.01	20.56	5.50		
			0.02	48.80	13.60		
			0.01	54.50	19.80		
			0.01	154.00	46.90		
			0.03	3.30			
Erickson	Rufus D	(10)	0.007	0.16			
			0.010	0.42			
			0.004	0.13			0.28
			0.003	0.50			0.95
			0.006	0.31			0.79
		(5)	0.01	0.10	0.60		
			0.01	1.70			1.88
			0.01	36.00	22.60		
			0.01	14.68	31.30		
			0.01	14.50			10.88
			0.01	8.80	7.50		
			0.01	0.10			
			0.01	11.40	5.60		
			0.01	0.10			25.40
Harrison	Rufus 6	(10)	0.003	0.69	8.83	4.43	
				0.008	0.29		
Forrest	Rufus 3	(5)	0.01	3.20	3.80		
St.Louis	Rufus 6	(5)	0.01	0.75	15.60		
			0.01	0.60	8.40		
Erickson	Veteran	(9)			0.15	tr	3.02
					0.23	0.05	0.29
					0.45	0.05	1.86
		(8)	0.01				4.25
			0.005				12.97
			tr				3.82
Morton (Blue?)	Comet	(8)		3.7	31.0	8.5	
				2.1	13.6	14.3	
B Vein (Calcite?)	Comet	(8)	0.005	18.2	28.5		1.7
			tr	9.31	4.0		1.8
Comet	Comet	(8)	tr	1.7	8.5		

1. Hanson, G.; Bear River and Stewart Map Areas; G.S.C. Mem. 159, 1929.

2. Hanson, G.; Portland Canal Area; G.S.C. Mem. F175, 1935.

3. Annual Reports

4. Grove, E. W.; Geology and Mineral Deposits of the Stewart Area; B.C.D.M. Bull. 58, 1971.

5. Report of Directors, Rufus Silver-Lead Mines, Jan. 1, 1925.

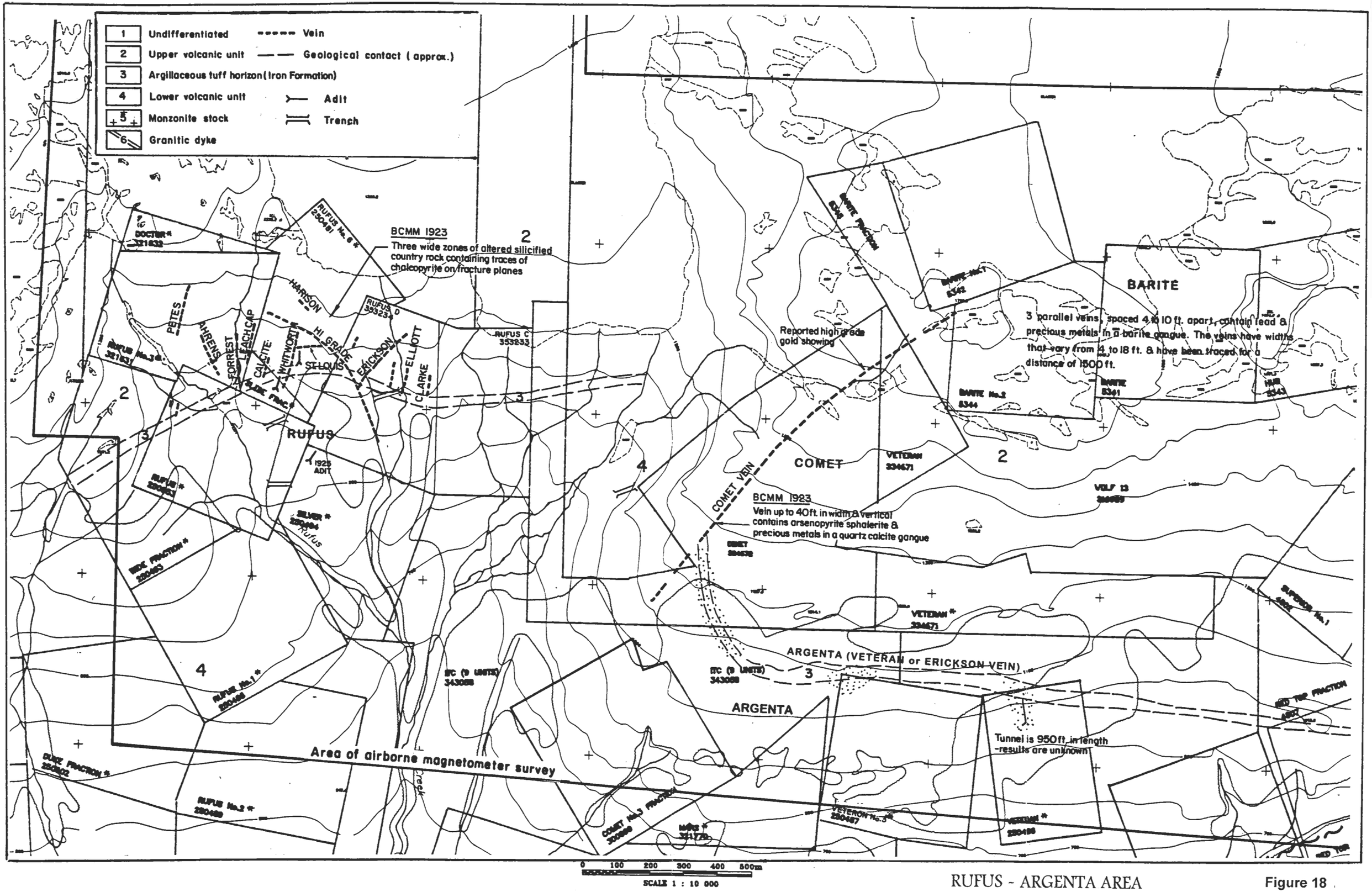
6. Tulley, D.W., P.Eng.; Report on the Rufus-Argyle Group; Mar. 15, 1980.

7. Renshaw, R.E., P.Eng.; Geological Report on the Rufus-Argenta Property; Oct. 6, 1962.

8. Timmins, W.C.; Crest Ventures Ltd; Summary of Work 1996.

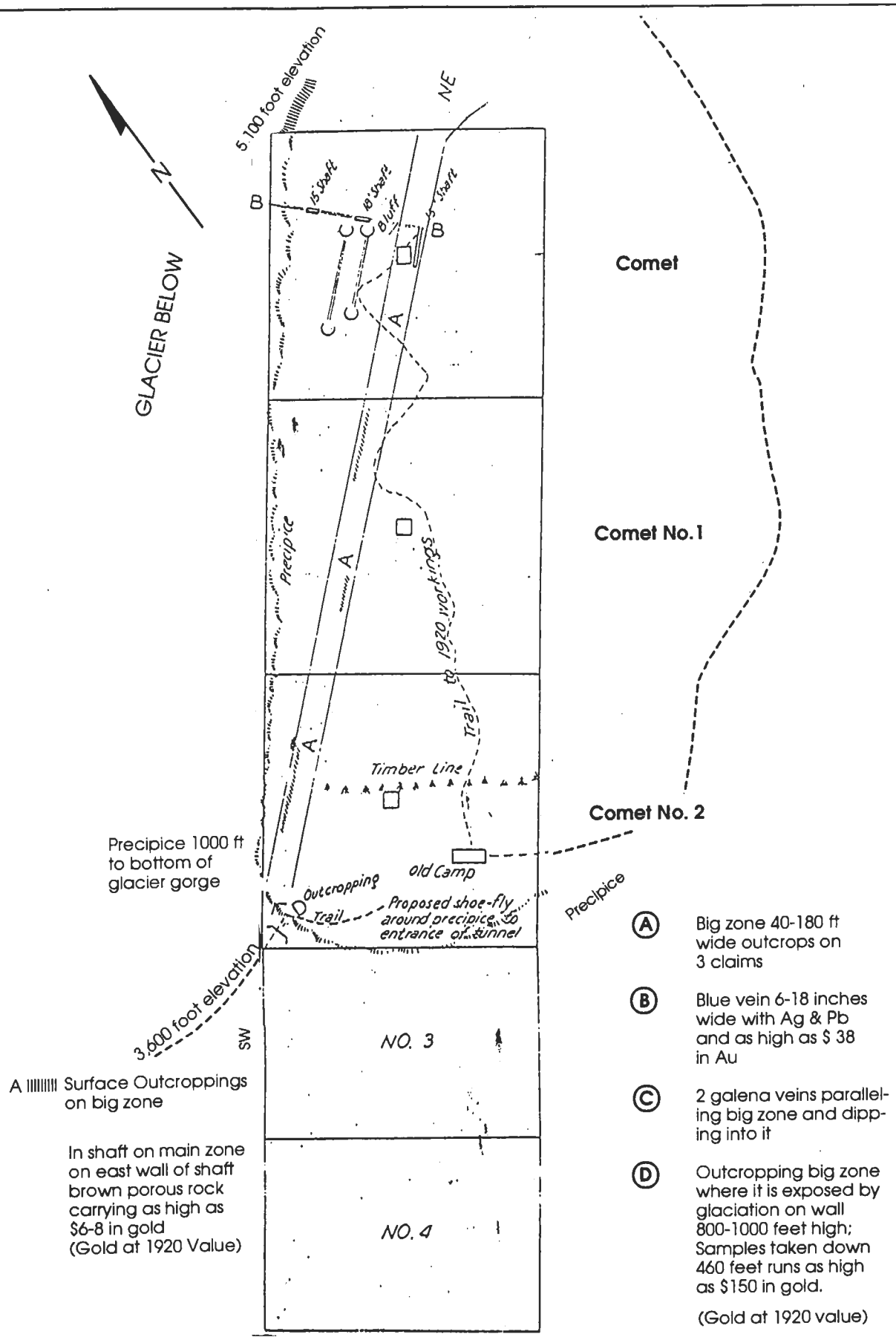
9. Harris, C.R., P.Eng.; 1982 Prospecting Report, Buck 87 Claim, Rufus Group; Aug. 15, 1982.

10. Harris, C.R., P.Eng.; 1983 Geochemical Report, Rufus Claim Group; 1983.



RUFUS - ARGENTA AREA

Figure 18



THIS SKETCH MAP WAS COPIED INTACT FROM AN ORIGINAL PROSPECTOR'S MAP NOT GOOD ENOUGH TO REPRODUCE

International Tournigan Corporation

Comet Vein

Figure 19

metres

SURVEY SPECIFICATIONS

Nominal Terrain Clearance (Helicopter) :	300 ft (90 m)
Nominal Terrain Clearance (Bird) :	240 ft (73 m)
Line Spacings :	100 m

EQUIPMENT

Aircraft Type	Bell 206 "Jet Ranger"
Configuration	Towed Bird
Digital Acquisition System	High Sense HS-GFCS-II
GPS Navigation	Novatel 751 10 channel
Radar Altimeter	Terra 3500
Magnetometer	Scintrex H8 Cesium

COMPILATION

FLIGHT PATH:

GPS data recorded during the flight has been differentially corrected and transformed to correspond to the NAD 27 (Clarke 1866) UTM coordinate system

MAGNETICS:

The magnetic data has been corrected for diurnal variation and heading error

Grid interval :	25 metres
Contour intervals :	10,50,250 nT

TRANSWORLD TRADING CORP.

BEAR PASS PROJECT (NORTH)

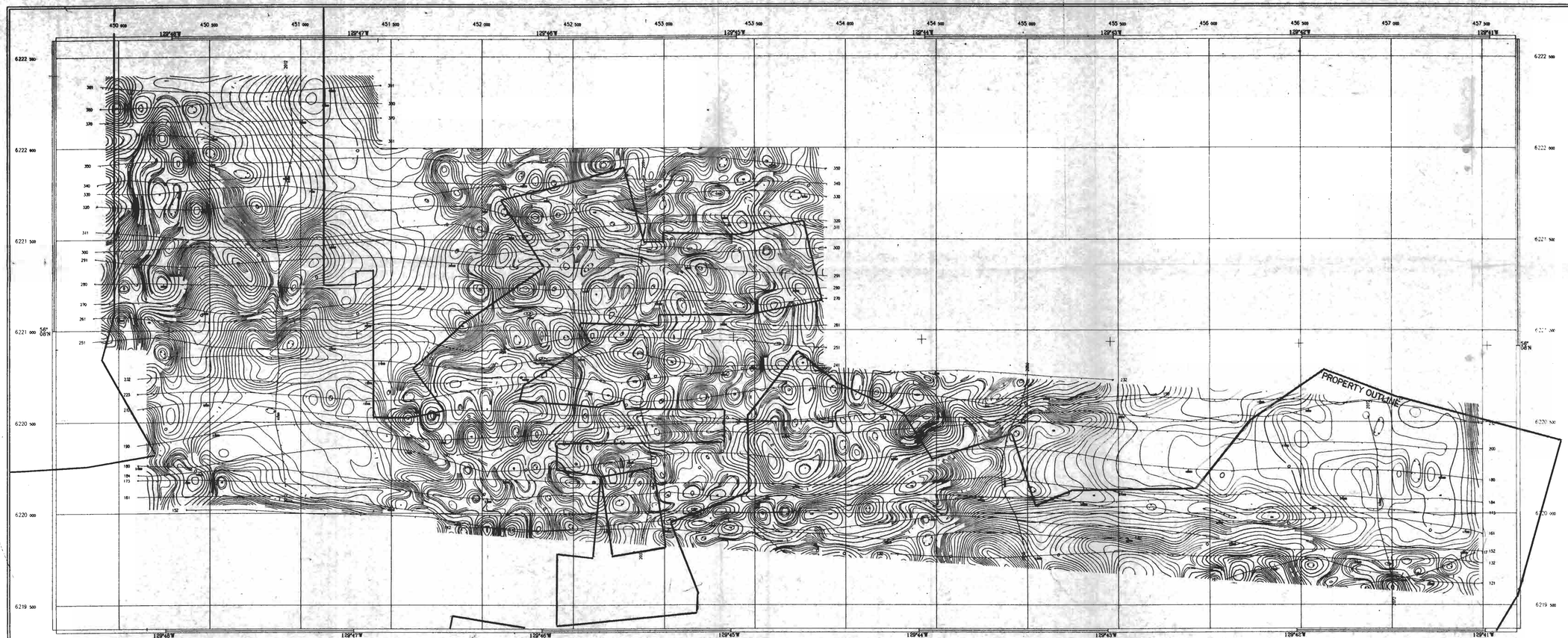
TOTAL FIELD MAGNETICS

MAP SCALE	1:10,000	PROJECT REF #	960703-2
MAP SHEET		DATE FLOWN	JULY, 1996
MAP PROJECTION	NAD 27	DATE COMPILED	AUG. 1996

SURVEY FLOWN AND COMPILED BY High-Sense GEOPHYSICS LIMITED FIELD COMPILATION SYSTEM

CLAIMS COVERED BY TOTAL FIELD MAGNETICS ON NORTH SIDE OF ROAD

FIGURE 20



Scale 1:10,000

100 0 100 200 300

SURVEY SPECIFICATIONS

Nominal Terrain Clearance (Helicopter)	300 ft (90 m)
Nominal Terrain Clearance (Bird)	240 ft (73 m)
Line Spacings	100 m

EQUIPMENT

Aircraft Type	Bell 206 Jet Ranger
Configuration	Towed Bird
Data Acquisition System	High Sense MS-GFCS-II
GPS Navigation	Navstar 731 10 channel
Radar Altimeter	Terra 3500
Magnetometer	Scintrex MS Cesium

COMPILATION

FLIGHT PATH

GPS data recorded during the flight has been differentially corrected and transformed to correspond to the NAD 27 (Clarke 1866) UTM coordinate system.

MAGNETICS

The magnetic data has been corrected for diurnal variation and heading error.

Grid interval: 25 metres
Contour intervals: 05, 25, 1.0 nT/m

TRANSWORLD TRADING CORP.

BEAR PASS PROJECT (NORTH)

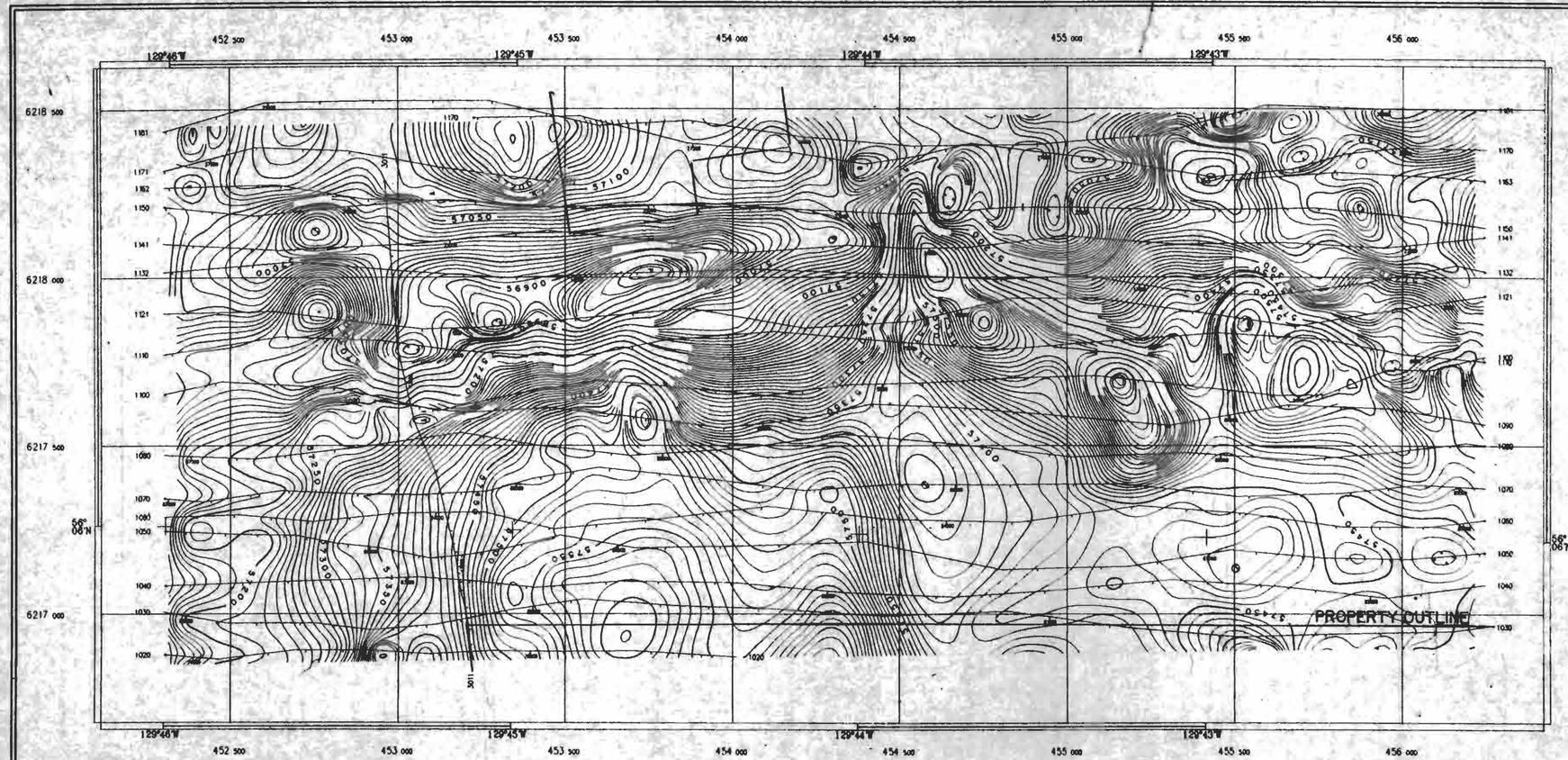
CALCULATED FIRST VERTICAL MAGNETIC DERIVATIVE

MAP SCALE	1:10,000	PROJECT REF #	960703-2
MAP SHEET		DATE FLOWN	JULY, 1996
MAP PROJECTION	NAD 27	DATE COMPILED	AUG, 1996

FLOWN, PLOTTED AND COMPILED BY: High-Sense GEOPHYSICS LIMITED FIELD COMPILATION SYSTEMS

CLAIMS COVERED BY CALCULATED FIRST VERTICAL MAGNETIC DERIVATIVE ON NORTH SIDE OF ROAD

FIGURE 21



Scale 1:10,000

100 0 100 200 300

metres

SURVEY SPECIFICATIONS

Nominal Terrain Clearance (Helicopter)	300 ft (90 m)
Nominal Terrain Clearance (Bird)	240 ft (73 m)
Line Spacings	100 m

EQUIPMENT

Aircraft Type	Bell 206 "Jet Ranger"
Configuration	Towed Bird
Digital Acquisition System	High Sense MS-GFCS-II
GPS Navigation	Novatel 751 10 channel
Radar Altimeter	Terra 3500
Magnetometer	Scintrex H8 Cesium

COMPILATION

FLIGHT PATH:

GPS data recorded during the flight has been differentially corrected and transformed to correspond to the NAD 27 (Clarke 1866) UTM coordinate system.

MAGNETICS:

The magnetic data has been corrected for diurnal variation and heading error

Grid interval	25 metres
Contour intervals	10,50,250 nT

TRANSWORLD TRADING CORP.

BEAR PASS PROJECT (SOUTH)

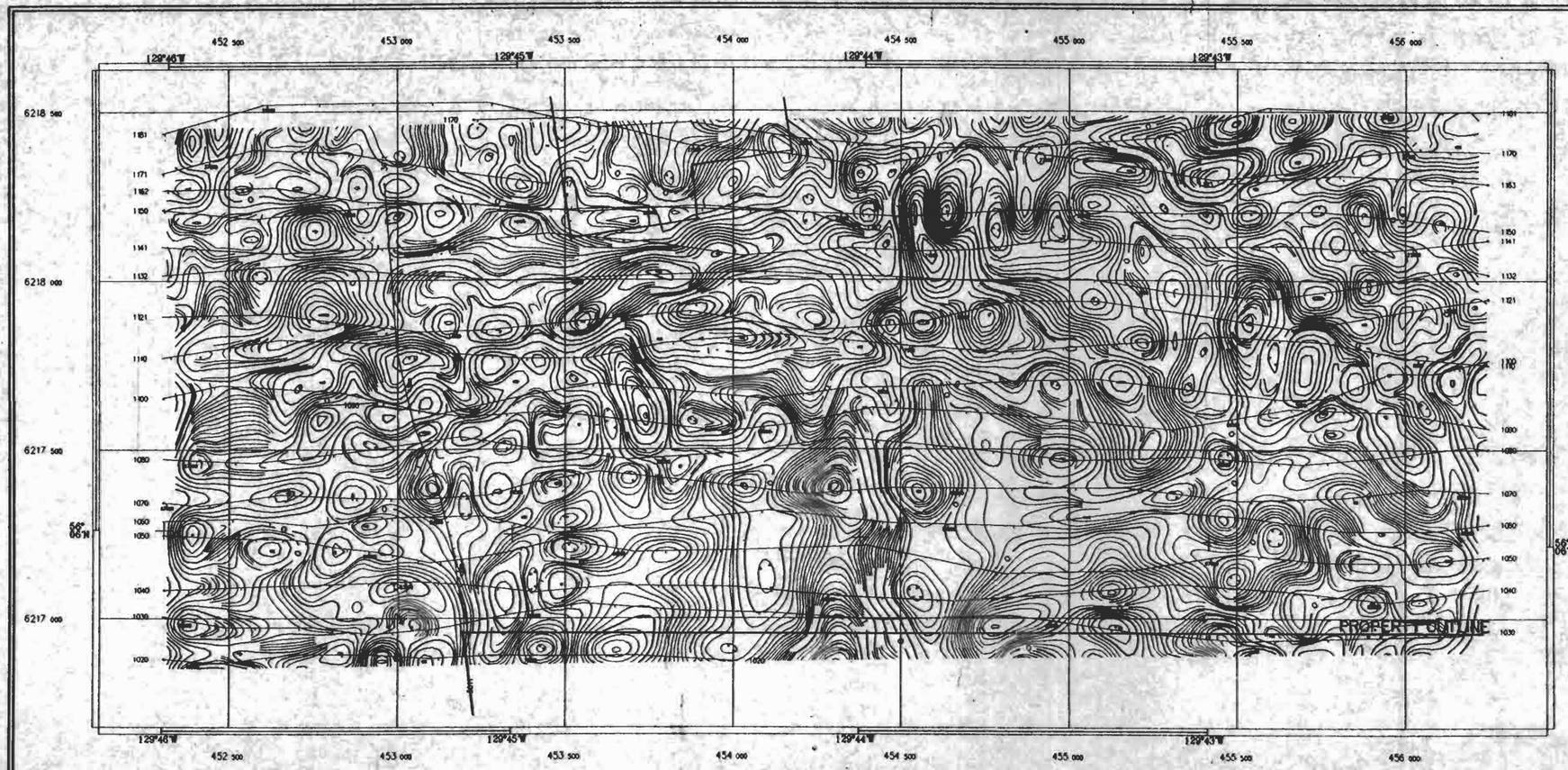
TOTAL FIELD MAGNETICS

MAP SCALE	1:10,000	PROJECT REF #	960703-2
MAP SHEET		DATE FLOWN	JULY, 1996
MAP PROJECTION	NAD 27	DATE COMPILED	AUG, 1996

SURVEY FLOWN AND COMPILED BY: High-Sense GEOPHYSICS LIMITED

CLAIMS COVERED BY TOTAL FIELD MAGNETICS ON SOUTH SIDE OF ROAD

FIGURE 22



Scale 10,000

100 0 100 200 300

metres

SURVEY SPECIFICATIONS

Nominal Terrain Clearance (Helicopter)	300 ft (90 m)
Nominal Terrain Clearance (Bird) :	240 ft (73 m)
Line Spacings	100 m

EQUIPMENT

Aircraft Type :	Bell 206 "Jet Ranger"
Configuration :	Towed Bird
Digital Acquisition System :	High Sense MS-GFCS-8
GPS Navigation :	Novatel 751 10 channel
Radar Altimeter :	Terra 3500
Magnetometer :	Scintrex MB Cesium

COMPILATION

FLIGHT PATH:

GPS data recorded during the flight has been differentially corrected and transformed to correspond to the NAD 27 (Clarke 1866) UTM coordinate system.

MAGNETICS:

The magnetic data has been corrected for diurnal variation and heading error.

Grid interval : 25 metres
Contour intervals : .05, .25, 1.0 nT/m

TRANSWORLD TRADING CORP.

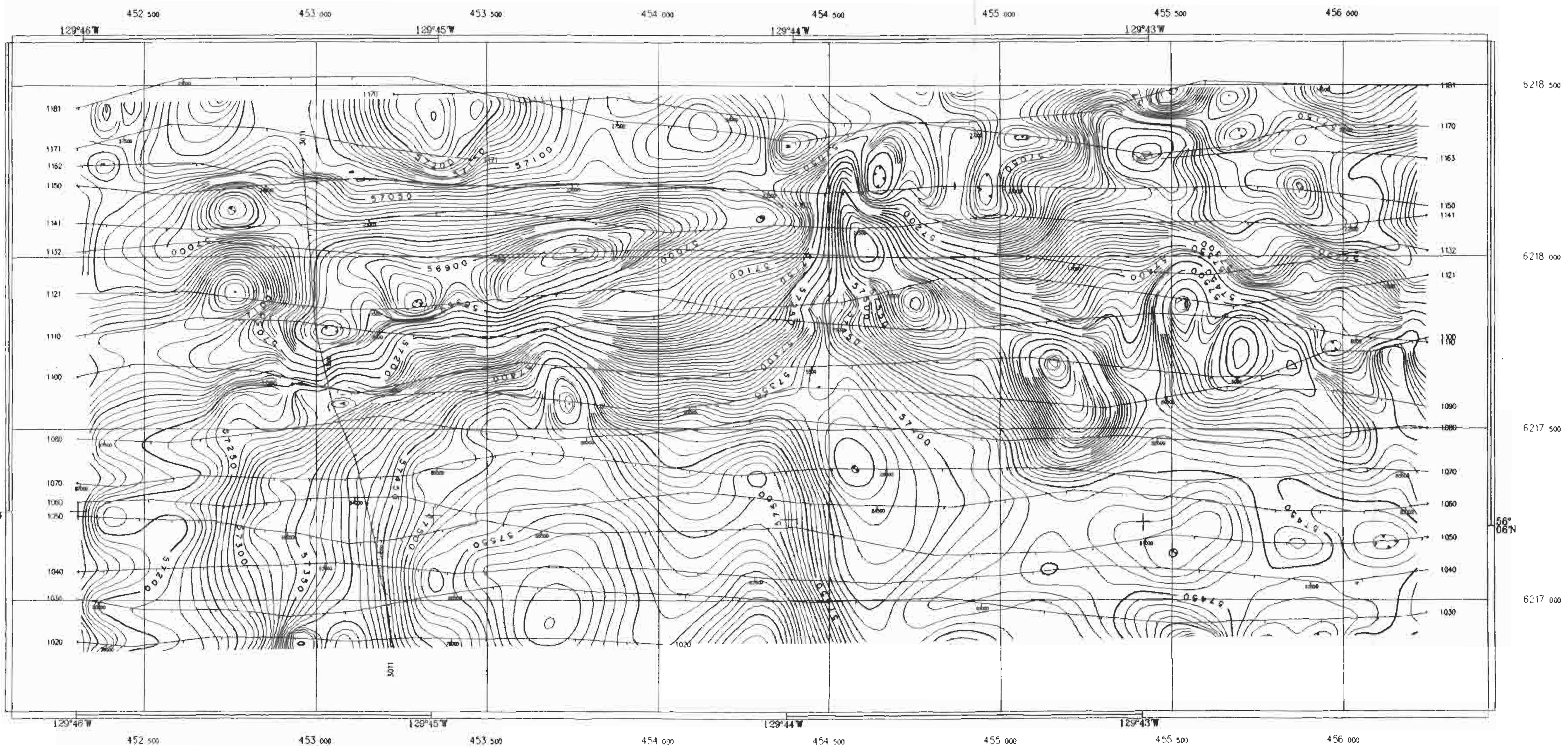
BEAR PASS PROJECT (SOUTH)

CALCULATED FIRST VERTICAL MAGNETIC DERIVATIVE

MAP SCALE	1: 10,000	PROJECT REF #	960703-2
MAP SHEET		DATE FLOWN	JULY, 1996
MAP PROJECTION	NAD 27	DATE COMPILED	AUG, 1996
SURVEY FLOWN AND COMPILED BY:	High-Sense	GEOPHYSICS LIMITED FIELD OPERATIONS DIVISION	

CLAIMS COVERED BY CALCULATED FIRST VERTICAL MAGNETIC DERIVATIVE ON SOUTH SIDE OF ROAD

FIGURE 23



Scale 1:10,000

metres

SURVEY SPECIFICATIONS	
Nominal Terrain Clearance (Helicopter) :	300 ft (90 m)
Nominal Terrain Clearance (Bird) :	240 ft (73 m)
Line Spacings :	100 m

EQUIPMENT	
Aircraft Type :	Bell 206 "Jet Ranger"
Configuration :	Towed Bird
Digital Acquisition System :	High Sense HS-GFCS-II
GPS Navigation :	Novatel 751 10 channel
Radar Altimeter :	Terra 3500
Magnetometer :	Scintrex H8 Cesium

COMPILATION

FLIGHT PATH.

GPS data recorded during the flight has been differentially corrected and transformed to correspond to the NAD 27 (Clarke 1866) UTM coordinate system.

MAGNETICS:

The magnetic data has been corrected for diurnal variation and heading error.

Grid interval : 25 metres
Contour intervals : 10,50,250 nT

TRANSWORLD TRADING CORP.

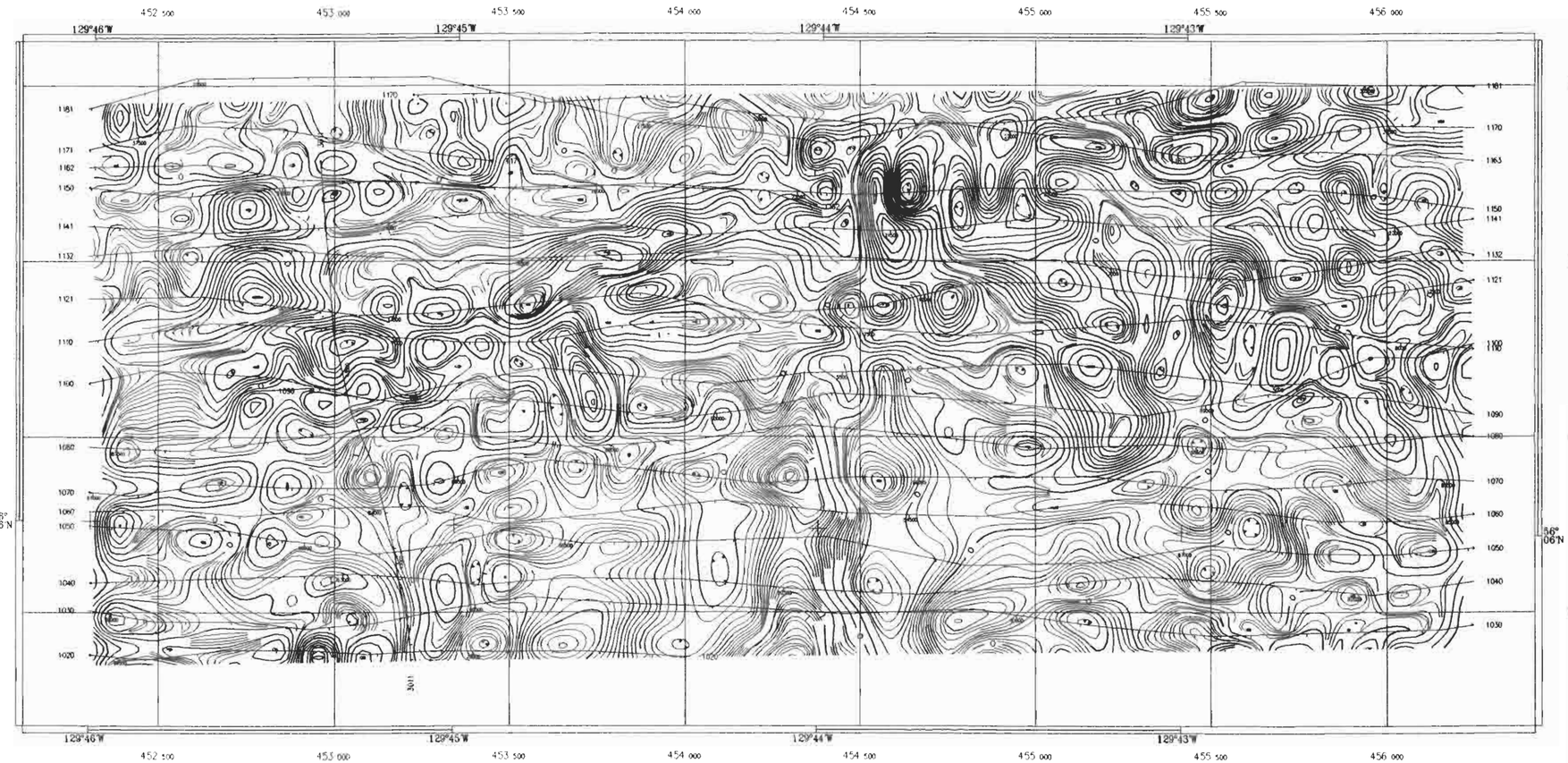
BEAR PASS PROJECT (SOUTH)

TOTAL FIELD MAGNETICS

MAP SCALE	1:10,000	PROJECT REF #	960703-2
MAP SHEET		DATE FLOWN	JULY, 1996
MAP PROJECTION	NAD 27	DATE COMPILED	AUG, 1996

SURVEY FLOWN AND COMPILED BY *High–Sense* GEOPHYSICS LIMITED FIELD COMPILATION SYSTEM

24,708



Scale 1:5000

200 0 200 400 600
metres

SURVEY SPECIFICATIONS

Nominal Terrain Clearance (Helicopter)	300 ft (90 m)
Nominal Terrain Clearance (Bird) :	240 ft (73 m)
Line Spacings	100 m

EQUIPMENT

Aircraft Type :	Bell 206 "Jet Ranger"
Configuration	Towed Bird
Digital Acquisition System :	High Sense MS-GPCS-II
GPS Navigation :	Navstar 291 10 channel
Radar Altimeter :	Terra 3500
Magnetometer :	Scintrex H8 Cesium

COMPILATION

FLIGHT PATH:

GPS data recorded during the flight was both differentially corrected and transformed to correspond to the NAD 27 (Clarke 1866) UTM coordinate system

MAGNETICS

The magnetic data has been corrected for diurnal variation and heading error.

Grid Interval :	25 Metres
Contour Intervals :	05, 25, 1.0 nT/m

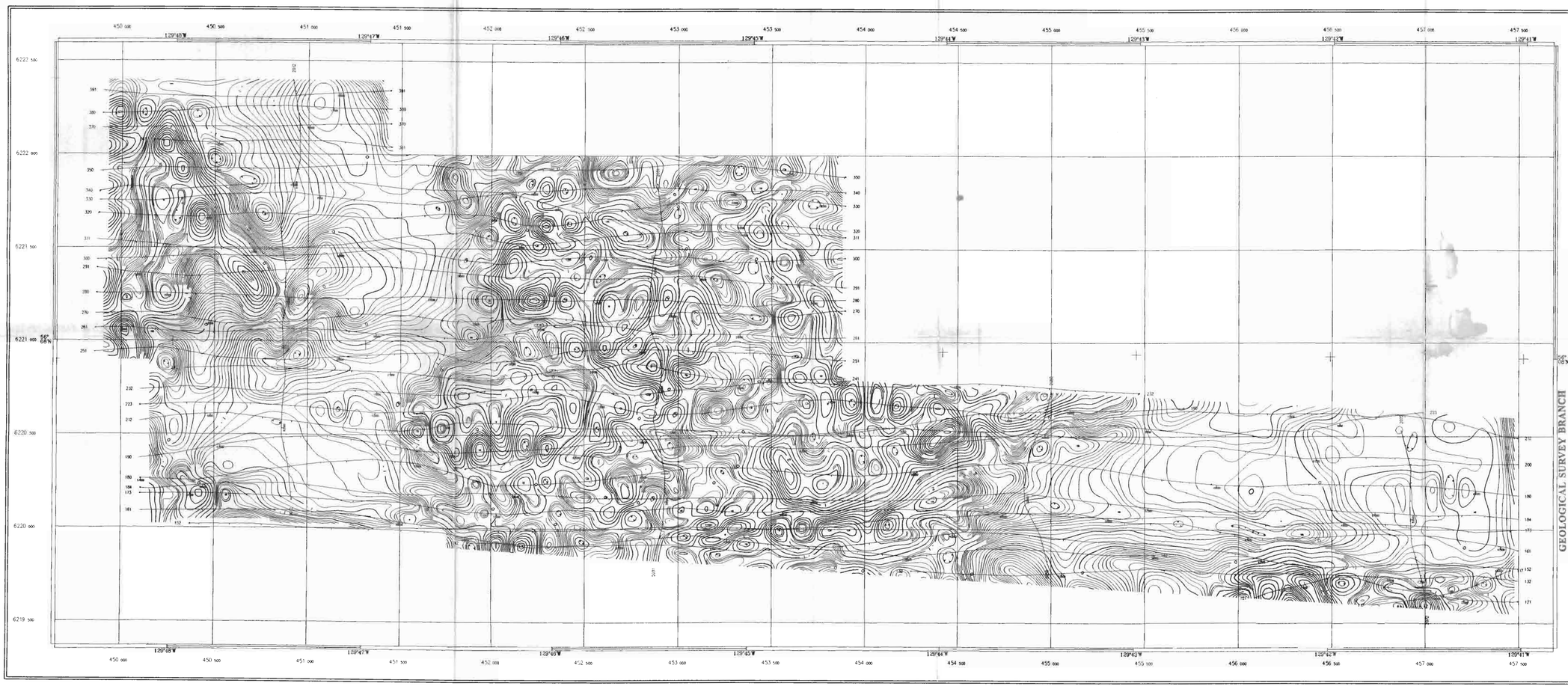
TRANSWORLD TRADING CORP.

BEAR PASS PROJECT (SOUTH)

CALCULATED FIRST VERTICAL MAGNETIC DERIVATIVE

MAP SCALE	1:10,000	PROJECT REF #	960703-2
MAP SHEET		DATE FLOWN	JULY, 1996
MAP PROJECTION	NAD 27	DATE COMPILED	AUG, 1996

SURVEY FLOWN AND COMPILED BY: High-Sense GEOPHYSICS LIMITED FIELD COMPILATION SYSTEM



Scale 1:5000

metres

SURVEY SPECIFICATIONS

Nominal Terrain Clearance (Helicopter) :	300 ft (90 m)
Nominal Terrain Clearance (Bird) :	240 ft (73 m)
Line Spacings :	100 m

EQUIPMENT

Aircraft Type :	Bell 206 "Jet Ranger"
Configuration :	Towed Bird
Digital Acquisition System :	High Sense HS-GFCS-II
GPS Navigation :	Novatel 751 10 channel
Radar Altimeter :	Terra 3500
Magnetometer :	Scintrex H8 Cesium

COMPILATION

FLIGHT PATH:

GPS data recorded during the flight has been differentially corrected and transformed to correspond to the NAD 27 (Clarke 1866) UTM coordinate system.

MAGNETICS:

The magnetic data has been corrected for diurnal variation and heading error.

Grid interval :	25 metres
Contour intervals :	05, 25, 1.0 nT/m

GEOLOGICAL SURVEY BRANCH
ASSESSMENT REPORT

24,708

TRANSWORLD TRADING CORP.

BEAR PASS PROJECT (NORTH)

CALCULATED FIRST VERTICAL MAGNETIC DERIVATIVE

MAP SCALE	1:10,000	PROJECT REF #	960703-2
MAP SHEET		DATE FLOWN	JULY, 1996
MAP PROJECTION	NAD 27	DATE COMPILED	AUG, 1996

FLOWN FLOWN AND COMPILED BY: High-Sense GEOPHYSICS LIMITED FIELD COMPILATION SYSTEM

Scale 1:5000

200 0 200 400 600 metres

SURVEY SPECIFICATIONS

Nominal Terrain Clearance (Helicopter) :	300 ft (90 m)
Nominal Terrain Clearance (Bird) :	240 ft (73 m)
Line Spacings :	100 m

EQUIPMENT

Aircraft Type :	Bell 206 "Jet Ranger"
Configuration :	Towed Bird
Digital Acquisition System :	High Sense HS-GFCS-II
GPS Navigation :	Novatel 751 10 channel
Radar Altimeter :	Terra 3500
Magnetometer :	Scintrex H8 Cesium

COMPILATION

FLIGHT PATH:

GPS data recorded during the flight has been differentially corrected and transformed to correspond to the NAD 27 (Clarke 1866) UTM coordinate system.

MAGNETICS:

The magnetic data has been corrected for diurnal variation and heading error.

Grid interval :	25 metres
Contour intervals :	10,50,250 nT

TRANSWORLD TRADING CORP.
BEAR PASS PROJECT (NORTH)
TOTAL FIELD MAGNETICS

MAP SCALE	1:10,000	PROJECT REF #	960703-2
MAP SHEET		DATE FLOWN	JULY, 1996
MAP PROJECTION	NAD 27	DATE COMPILED	AUG, 1996

SURVEY FLOWN AND COMPILED BY High-Sense GEOPHYSICS LIMITED FIELD COMPILATION SYSTEM

Erickson Glacier

Erickson Glacier

LIMITS OF 1996 AIRBORNE MAG SURVEY (NORTH BLOCK)

LIMITS OF 1996 AIRBORNE MAG SURVEY (SOUTH BLOCK)

UTM GRID NORTH

LEGEND

- INDEX CONTOUR
- INTERMEDIATE CONTOUR
- STREAM/RIVER
- INTERMITTENT STREAM
- TREES
- PAVED ROAD
- SNOW
- SAND/GRAVEL
- CLAIM LIMITS
- MAG SURVEY BLOCK
- SAMPLE LOCATION/NUMBER — X 312591
- DIAMOND DRILL HOLE
- ADIT
- TRENCH

GEOLOGICAL SURVEY BRANCH
ASSESSMENT REPORT

24,708

ITC INTERNATIONAL TOURNIGAN CORPORATION	
WORK BY	BEAR PASS PROPERTY
DATE NOVEMBER 20th 1996	CLAIM MAP
N.T.S # 104A/4E	0 100 200 300 400 500m SCALE 1 : 10 000

CLAIMS OPTIONED TO TRANSWORLD TRADING CORPORATION