

REPORT ON THE
AIRBORNE GEOPHYSICAL SURVEY
ON THE
GOLDHILL 1 & 2 MINERAL CLAIMS
MCGILLIVRAY CREEK AREA - BRALORNE, B.C.

Owner/Operator: GIGI OIL AND GAS LTD.

50° 40' N 122° 34³' W

N.T.S. 92 J/10E

LILLOOET MINING DIVISION

FILMED

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

14,866

J.T. WALKER
J.T. WALKER MINING GEOPHYSICS
APRIL 17, 1986

SUB-RECORDER
RECEIVED
MAY 8 1986
M.R. # _____ \$ _____
VANCOUVER, B.C.

TABLE OF CONTENTS

	<u>PAGE</u>
INTRODUCTION	1
SURVEY PERSONNEL	2
SURVEY PROCEDURE AND NAVIGATION	2
INSTRUMENTATION AND DATA RECORDING	2
(a) Proton Magnetometer	2
(b) Electromagnetic System (VLF-EM)	2
(c) Recording System	3
(d) Radar Altimeter	3
DATA REDUCTION AND PRESENTATION	3
(a) Aeromagnetic Data	4
(b) Electromagnetic Data	4
DISCUSSION OF RESULTS	5
CONCLUSIONS & RECOMMENDATIONS	6

<u>LIST OF MAPS</u>	<u>SCALE</u>	<u>DRAWING NO.</u>
Aeromagnetic Contour Map showing Airborne VLF-EM Anomalies (with Topographic Underlay & Location Map)	1:16,667	1

AIRBORNE GEOPHYSICAL SURVEY
ON THE
GOLDHILL 1 & 2 MINERAL CLAIMS
MCGILLIVRAY CREEK AREA, B.C.

INTRODUCTION

During the period March 25 and 29, 1986, J.T. Walker Mining Geophysics carried out an airborne geophysical survey in the McGillivray Creek Area. The survey area lies 20 kilometers southeast of Bralorne, B.C. The area flown is outlined on the Location Map, which depicts the N.T.S. sheet 92 J 10 at a scale of 1:250,000. This map is located at the top right of Drawing No. 1.

The purpose of the survey was to provide data for compiling a low level aeromagnetic contour map and to locate zones of conductivity at the VLF frequencies (21.4 kHz. - 24.8 kHz.).

Three measurements were recorded during the survey:

- (1) Total magnetic field intensity.
- (2) Relative Field Strength of the horizontal component of the VLF electromagnetic field, utilizing two transmitters simultaneously, located near:
 - (a) Seattle, Washington (24.8 kHz.)
 - (b) Annapolis, Maryland (24.4 kHz.)

A Bell 206 B Helicopter, chartered from Highland Helicopters, Williams Lake, B.C. was used to fly the survey. Twenty-five survey lines were flown in a south-southeast and north-northwest direction. A total of 81 line kilometers were flown covering an area of approximately 1620 hectares. Line spacing of 200 meters was maintained throughout the survey. Terrain clearance was 80 meters. Air speed of 100 kilometers per hour was maintained where possible.

Claim details are as follows:

<u>Claim Name</u>	<u>Record Number</u>
Goldhill 1	3140 (8 units)
Goldhill 2	3141 (20 units)

SURVEY PERSONNEL

Pilot: R. Bugg (Highland Helicopters)

Navigator: M. Gray

Operator: T. Walker (J.T. Walker Mining Geophysics)

Data reduction, compilation, drafting and interpretation: T. Walker

SURVEY PROCEDURE AND NAVIGATION

A flight line base map of the survey area was prepared by enlarging a 1:50,000 N.T.S. topographic map to a scale of 1:16,667. Proposed flight lines and topographically located control points were plotted and numbered prior to flying the survey. During the survey, flight line path deviations were noted and corrected on the flight line base map. Flight line and control point information was announced by the navigator and recorded on magnetic tape. During the course of the survey, this information was notated by the operator directly onto the magnetic and VLF-EM analog charts to provide correlation between the flight line control points and the recorded data.

INSTRUMENTATION

The following instruments were installed in the helicopter for measuring and recording the geophysical data:

(a) Proton Magnetometer (Elsco - Type 595)

Manufactured by the Littlemore Scientific Engineering Co., Oxford, U.K., the magnetometer measures the total magnetic field at a one-second cycle rate. The measurement is displayed digitally to one gamma and has an analog output of 100, 1000, or 10,000 gammas full scale. The 1000 gamma full scale output was used for the survey. The Toroidal wound detector was installed in a fibre-glass "bird", towed beneath the helicopter on a 12 meter cable.

(b) Electromagnetic Receiver (VLF-EM)

The two-frequency VLF-EM receiver was manufactured by

Sabre Electronic Instruments Ltd., Burnaby, B.C.

Two omni-directional antenna arrays, (mounted in the fiberglass "bird", which also carries the magnetometer detector) are used. The antenna arrays are designed to detect the total horizontal magnetic component of the VLF fields.

VLF signals originating from U.S. Navy transmitters near Seattle, Washington (24.8 kHz.), and Annapolis, Maryland (21.4 kHz.) were utilized for this survey. Two signals are measured simultaneously. The amplitudes of the horizontal component of the fields are measured continuously and displayed as relative field strengths.

(c) Recording System

Two chart recorders and a magnetic tape Frequency Modulated system are employed simultaneously during the survey.

(1) A one-pen chart recorder, (Hewlett Packard - Model 7155B) is used to record the aeromagnetic data in profile. The recorder is calibrated to provide a full scale deflection of 1000 gammas.

(2) A two pen chart recorder (Soltec - Model VP6723S) is used to record the VLF-EM field strength data from two transmitters.

(d) Radar Altimeter

A radar altimeter (Mark 10 - Bonzer Inc.) was installed to measure and display the helicopter terrain clearance during the survey. The visual meter display assists the pilot in maintaining a constant aircraft-ground clearance.

DATA REDUCTION AND PRESENTATION

All survey data is presented on one plan map at a scale of 1:16,667. Corrected flight lines and control points are plotted and numbered. Flight line direction is indicated by an arrow at the beginning of each line.

(a) Aeromagnetic Data (Drawing No. 1)

The aeromagnetic data is presented as an aeromagnetic Contour Map (Drawing No. 1). The contour values are referenced to a base of 56,000 gammas total magnetic field. The results were not corrected for diurnal variation. The magnetic data was transferred manually from the strip charts to the flight lines using a standard graphic method whereby magnetic contour interval points are transcribed to the plan map on the appropriate flight line. Contour lines were drawn through points of equal magnetic intensity. Contour intervals of 500 gammas and 100 gammas were used.

(b) Electromagnetic Data (VLF-EM)

The VLF-EM data is recorded as a continuous profile of the Relative Field Strength. A significant anomaly is a definitive increase in the Relative Field Strength. The VLF-EM anomalies are shown on Drawing No. 1 by an anomaly symbol and bar along the flight lines. The length of the bar corresponds to the anomalous profile width at the half height. The number enclosed within the anomaly symbol represents the percent increase of the field strength at the maximum profile height. The anomalous locations are transcribed to the flight lines using the graphic method described under Aeromagnetic Data. Anomalous responses from the Transmitter near Seattle are plotted with the anomaly symbol above the flight line. Responses from the Transmitter near Annapolis are plotted below the flight line. The location of the flight lines is shown by the screened topographic contour map printed as an underlay on the drawing. Also, a location map, with the survey area outlined, is located at the top of the drawing. The Location Map covers the 92 J 15 map area at a scale of 1:250,000.

DISCUSSION OF RESULTS

The results of the Airborne Magnetometer Survey are plotted as an Aeromagnetic Contour Map using a 50 gamma contour interval. Heavier line widths accentuate the 100 gamma and 500 gamma intervals. The magnetic contour values are referenced to a total magnetic field value of 56,000 gammas.

Within the survey area the magnetic field ranges from less than 400 gammas to greater than 1900 gammas. A low relief background covers four-fifths of the area, with values varying between 700 and 1000 gammas above the 56,000 gamma reference level.

Three prominent magnetic features are evident, a "high" located in the northeast corner of the survey area, a "low" (line No. 12) and a magnetic dipole located in the southwest corner (lines 1 to 3). A 200 gamma narrow magnetic ridge parallels McGillivray Creek in the southeast corner of the survey area.

The results of the airborne VLF-EM survey are plotted on the Aeromagnetic Contour Map using anomaly symbols. The percent increase of the Relative Field Strength is shown within the anomaly symbol. Areas having higher than background values of Relative Field Strength that do not exhibit a distinct anomalous profile, are shown as shaded areas. These areas are not given a % R.F.S. value. These broad zones should be considered to indicate areas of lower resistivity.

Two zones of lower resistivity are indicated on lines 17, 18, 19 and 20. The two zones, cutting the flight lines at an acute angle, may be one continuous zone. It is interesting to note that the zone cuts through the former Crown Granted mineral claim L 8446. In addition, four VLF-EM anomalies are indicated:

- | | | | |
|-----|-----------------------------|------------|----------|
| (1) | Line 16 (Control Point 1) | R.F.S. 20% | Moderate |
| (2) | Line 16 (Control Point 3.5) | R.F.S. 15% | Weak |
| (3) | Line 21 (Control Point 2.4) | R.F.S. 20% | Moderate |
| (4) | Line 21 (Control Point 2.5) | R.F.S. 16% | Weak |

The responses of anomalies (1), (3) and (4) are very narrow with a very steep leading edge, suggesting either a narrow near surface target or a response due to a spheric or static discharge in the atmosphere.

CONCLUSIONS AND RECOMMENDATIONS

The Airborne Geophysical Survey has provided data for the compilation of a low level Aeromagnetic Contour Map. Four moderate to weak anomalies and two zones of moderate conductivity are indicated by the VLF-EM survey.

The results of the Airborne Geophysical Survey, together with geological and geochemical information available, should be utilized in developing a program to further investigate the property.

APRIL 17, 1986



J. T. WALKER MINING GEOPHYSICS

GIGI OIL AND GAS LTD.

Goldhill 1 and 2 Claims

STATEMENT OF EXPENDITURES

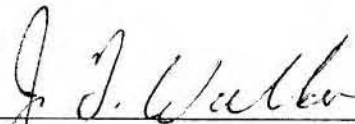
Salaries

J.P. Sorbara	2 days @ \$350.00/day	\$ 700.00
M. Grey	3 days @ \$250.00/day	750.00
Meals and Accomodation (3 man days @ \$60.00/day)		180.00
Car rental		85.00
Helicopter		1,119.37
Geophysical Subcontractor		1,786.00
Administration		<u>1,000.00</u>
	Total:	\$5,620.37

STATEMENT OF QUALIFICATIONS

I, James T. Walker of the Municipality of Richmond,
Province of British Columbia do certify that:

1. I have been engaged in Mining Geophysics since
June, 1965.
2. I have been engaged in Airborne Geophysical surveying
since April, 1973.
3. I am a member of the Canadian Institute of Mining
and Metallurgy.
4. I am a member of the British Columbia Geophysical
Society.
5. I am a member of the Society of Exploration
Geophysicists.



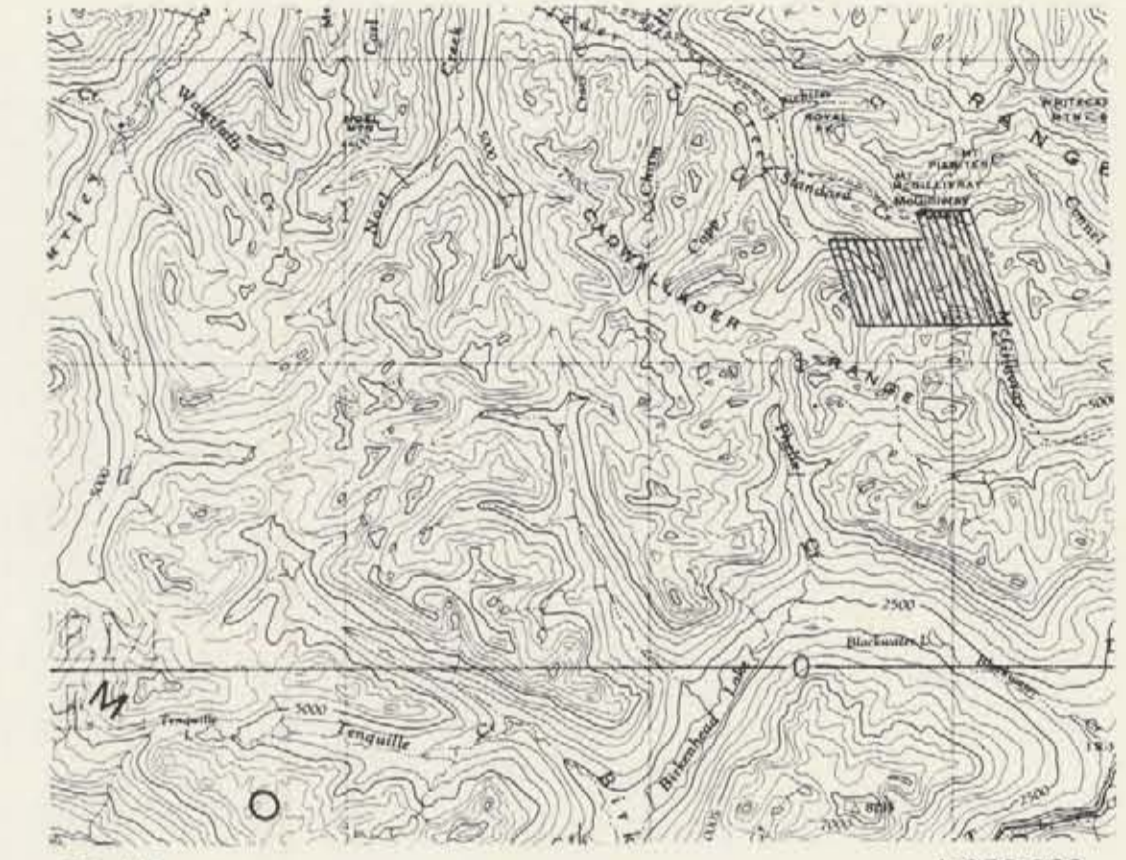
J.T. Walker

J.T. WALKER MINING GEOPHYSICS



AEROMAGNETIC CONTOUR MAP

SHOWING AIRBORNE VLF-EM ANOMALIES



92 J 10 LOCATION MAP 1:250,000

LEGEND

- L 12 Flight line number and direction, numbered control point.
- Magnetic measurement - Total Field.
- Reference Level - 56,000 gammas
- Contour Interval 500 gammas
100 gammas
50 gammas
- VLF-EM Measurement - Relative Field Strength (horizontal component)
- VLF-EM Transmitters - Seattle, Washington. (24.8 kHz.)
Annapolis, Maryland. (21.4 kHz.)
- VLF-EM Anomaly showing % increase in R.F.S.
bar indicates anomaly length along flight line.
- Area of above average Field Strength, indicating zones of lower resistivity or topographic highs.
- Helicopter-terrain clearance - 80 meters.
- Flight line spacing - 200 meters.

GEOLOGICAL BRANCH ASSESSMENT REPORT

14,866

AIRBORNE GEOPHYSICAL SURVEY	
GIGI OIL AND GAS LTD. GOLDHILL CLAIMS LILLOOET MINING DIVISION	
PROJ.No. _____ N.T.S. 92 J 10 DWG.No. 1	SURVEY BY T.Walker & M.Gray DATE April 1986 DRAWN BY T. Walker SCALE 1:16,667 J.T.WALKER MINING GEOPHYSICS