

A Geophysical Report 82F/6W  
on  
A Ground Magnetic Survey  
on  
The Mammoth Claim Group

Claims Surveyed: TNT L-14695 &  
Fr L 14880, Mammoth 1 & 2 -  
L 14693 & 94, Mammoth L 14692  
and Fr 15034

by  
Peter E. Walcott, P.Eng.

4034

4034

A REPORT

ON

A GROUND MAGNETIC SURVEY

Nelson Area,  
British Columbia

FOR

WELLAND CONSOLIDATED MINING LTD., N.P.L.

Vancouver, British Columbia

BY

Department of Mines and Petroleum Resources	
ASSESSMENT REPORT	
NO. 4034	MAP

PETER E. WALCOTT & ASSOCIATES LIMITED

Vancouver, British Columbia

OCTOBER 1972

TABLE OF CONTENTS

	<u>Page.</u>
INTRODUCTION .....	1
PROPERTY, LOCATION AND ACCESS .....	2
PURPOSE .....	3
PREVIOUS WORK .....	4
GEOLOGY .....	5
SURVEY SPECIFICATIONS .....	6
DISCUSSION OF RESULTS .....	7
SUMMARY, CONCLUSIONS & RECOMMENDATIONS .....	8

APPENDIX

COST OF SURVEY .....	i
PERSONNEL EMPLOYED ON SURVEY .....	ii
CERTIFICATION .....	iii

ACCOMPANYING MAPS

MAP POCKET

#1 MAGNETOMETER SURVEY - Scale 1" = 200 ft.

W-162-1

#2 Claim location map

## INTRODUCTION

Between September 29th and October 16th, 1972, Peter E. Walcott & Associates Limited carried out a ground magnetic survey over a property, located in the Nelson area of British Columbia, held by Welland Consolidated Mining Limited.

The survey was carried out over picket lines, handcut by Western Associates of Vancouver, which were turned off at 200 foot intervals from a N 20° E baseline and which were chained and picketed at 100 foot intervals.

Readings of relative vertical intensity of the earth's field in gammas were taken every 100 feet along the picket lines using a McPhar M 700 fluxgate magnetometer.

Measurements with a Crone C.E.M. unit operating at frequencies of 1830 and 5010 Hz. respectively using the horizontal shoot-back technique were also made along Line 0 and over other parts of the showings.

The data are presented in contour form on Map W-162-1 that accompanies this report.

Considerable difficulty was encountered during the line-cutting phase due to the snow cover in the initial stages and to icy rock surfaces after the snow had melted. Most of the lines had to be re-cleaned after the snow had melted as the underbrush was too high.

No claim lines or claim posts, other than an old tree stump located by the client's representative at the start of the linecutting, were observed.

PROPERTY, LOCATION AND ACCESS

The property is located in the Nelson Mining Division of British Columbia and consists of the following:

Mineral Lease #112  
Mammoth Mineral Claim L 14692  
Mammoth Mineral Claims #1 & 2 - L 14693 & 94  
" " " #3 & 4 - L 15036 & 35  
Mammoth (Fr) Mineral Claim L 15034  
T.N.T. Mineral Claim L 14695  
T.N.T. (Fr) Mineral Claim L 14880

The property is situated on the summit between Hall and Barrett Creeks, ten miles south of Nelson, B.C.

Access is obtained by means of a four wheel drive vehicle along logging roads that branch off the Nelson - Seimo Highway.

PURPOSE

The purpose of the survey was to

- (a) try and locate by the electromagnetic method the presence of sulphide bodies on the property as indicated by the favourable mineralization occurring in outcroppings, adits and shafts on the property.
- (b) locate by the magnetic method bodies of pyrrhotite and/or magnetite that could be associated with economic sulphide mineralization.

PREVIOUS WORK

Previous work on the property consisted for the most of exploration by rock pits and shaft sinking as well as random diamond drilling, with some geological mapping and geophysical surveying in the vicinity of the main showing.

GEOLOGY

The reader is referred to a report by D.C. Malcolm, P.Eng.  
dated August 1972.



### SURVEY SPECIFICATIONS

The basic principle of any electromagnetic survey is that when conductors are subjected to primary alternating fields secondary magnetic fields are induced in them. Measurements of these secondary fields give indications as to the size, shape and conductivity of conductors. In the absence of conductors no secondary fields are obtained.

The electromagnetic survey was carried out using a Crone C.E.M. unit. This system utilizes the "shoot back" technique which requires a receiver and transmitter in each unit.

In this case the horizontal shootback technique was employed whereby each unit measures the direction of the total magnetic field (in degrees from the vertical) while the other unit acts as the transmitter (held horizontally). On addition of the two measured angles the resultant reading obtained is independent of substantial differences in elevation, and is plotted midway between the two coils.

A second measurement, the minimum field strength (a measure of the magnitude of the quadrature component) was also obtained at one of the coils and plotted at that location (the coils having been previously set up for 100% field strength in the horizontal position over neutral level ground).

Readings on the E.M. survey were taken every 100 feet along the picket lines using a coil separation of 200 feet and frequencies of 1830 and 5010 Hz. respectively along Line 0 and over other parts of the exposed mineralization.

The magnetic survey was carried out using a McPhar M 700 fluxgate magnetometer. This instrument measures variations in the vertical component of the earth's magnetic field to an accuracy of  $\pm 10$  gammas. Corrections for diurnal variations were made by tying-in to previously established base stations at intervals not exceeding two hours.

12.2 miles of linecutting and some magnetic surveying were undertaken on the property. However the client refused to pay for more than 10 miles of each with the result that some 2 miles of magnetic coverage has been deleted from the map.

DISCUSSION OF RESULTS

The C.E.M. test survey, as performed with a 200 foot coil separation and frequencies of 1830 and 5010 Hz. (not plotted), over Line O, which passes just to the north of the main shaft and showings, and over other parts of exposed mineralization gave negative results, as was expected by the writer from an examination of the mineralization, with nulls less than 2° wide and minimum field strengths of the order of 1 and 2%.

The magnetic survey showed most of the property surveyed to exhibit fairly low magnetic relief above which several small high intensity magnetic features, indicative of shallow causative sources, are readily discernible.

These are mostly associated with the known mineralization and are believed by the writer to be caused by small bodies of pyrrhotite and/or magnetite.

Higher magnetic values were obtained to the west indicating a change in the magnetic rock unit, possibly corresponding to the main intrusive.

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Between September 29th and October 16th, 1972, Peter E. Walcott & Associates Limited carried out a ground magnetic survey and an electromagnetic test survey over a property held by Welland Consolidated Mining Ltd.

The property is located some ten miles south of the town of Nelson in the Nelson Mining Division of British Columbia.

The E.M. test survey over the main and other showings failed to suggest the presence of any continuous body of massive sulphide mineralization.

The magnetic survey showed that part of the property surveyed to be underlain by two magnetically different rock types with several small high intensity magnetic highs readily discernible.

These highs are thought by the writer to be attributable to small bodies of pyrrhotite and/or magnetite.

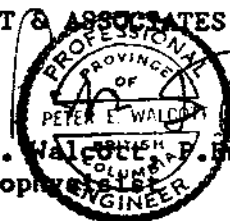
As a result he recommends that

- (1) the geology and the previous diamond drilling be tied to the established grid so that the association of the known mineralization and the indicated pyrrhotite and/or magnetite mineralization can be studied.
- (2) Should the results of this be favourable, as expected, the rest of the property be covered with magnetic surveying with magnetic highs detailed on 25 x 100 foot centres prior to investigation by diamond drilling.

Respectfully submitted,

PETER E. WALCOTT & ASSOCIATES LIMITED

Peter E. Walcott, P. Eng.  
Geophysicist



Vancouver,  
British Columbia

October 1972

A P P E N D I X

COST OF SURVEY

Peter E. Walcott & Associates Limited originally undertook the planned linecutting and E.M. survey on a linemileage basis with mobilization cost extra. However due to misrepresentation of the facts, namely that minimal linecutting was involved and that old lines existed on the property, as well as to the fact that the E.M. survey failed to detect the mineralization, and a magnetic survey was undertaken instead, they were forced to raise the linecutting costs and bill the E.M. survey on a cost basis as follows.

a.)	Linecutting by Western Associates, 12.2 miles at \$150.00 per mile plus expenses including truck rental	\$2,851.56
b.)	E.M. test survey at cost	1,023.08
c.)	Magnetic surveying - 12.2 miles at \$100.00 per mile including mobilization	<u>1,220.00</u>
		<u>\$5,095.44</u> *****

The client refused to pay for more than 10 miles of linecutting and magnetic surveying as well as for more than a maximum figure of \$3,600.00 for the combined survey.

As a result 2.2 miles of magnetic data were deleted from the magnetic coverage.

Declared before me at the  
**VANCOUVER, B. C.**  
 of \_\_\_\_\_, in the  
**DEC 14 1972**  
 Province of British Columbia, this  
 Day of \_\_\_\_\_  
*[Signature]*  
 Sub - Mining Recorder

*[Signature]*  
 President

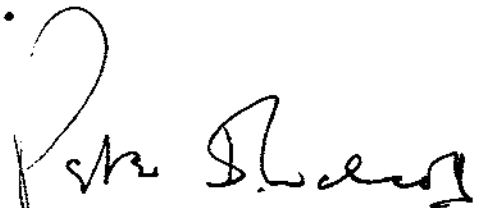
PERSONNEL EMPLOYED ON SURVEY

<u>Name</u>	<u>Occupation</u>	<u>Address</u>	<u>Dates</u>
L. Roy	Linecutter	Western Associates, 2770 Coleridge Ave., Vancouver, B.C.	Sept. 29th - Oct. 16th, 1972
A. Cote	"	"	"
P. Walcott	Geophysicist	Peter E. Walcott & Assoc. 605 Rutland Court, Coquitlam, B.C.	Oct. 2nd - 5th, & Oct. 30th, 1972
S. Scurvey	Helper	"	Oct. 2nd - 5th, 1972
V. Pashniak	Geophysical Operator	"	Oct. 13th - 17th, 1972
J. Walcott	Typing	"	October 31st, 72

CERTIFICATION

I, Peter E. Walcott of the Municipality of Coquitlam, British Columbia, hereby certify that:

1. I am a Graduate of the University of Toronto in 1962 with a B.A.Sc. in Engineering Physics, Geophysics Option.
2. I have been practising my profession for the last ten years.
3. I am a member of the Association of Professional Engineers of British Columbia, Ontario and the Yukon Territory.
4. I hold no interest, direct or indirect, in the securities or properties of Welland Consolidated Mining Limited, nor do I expect to receive any.



Peter E. Walcott, P.Eng.

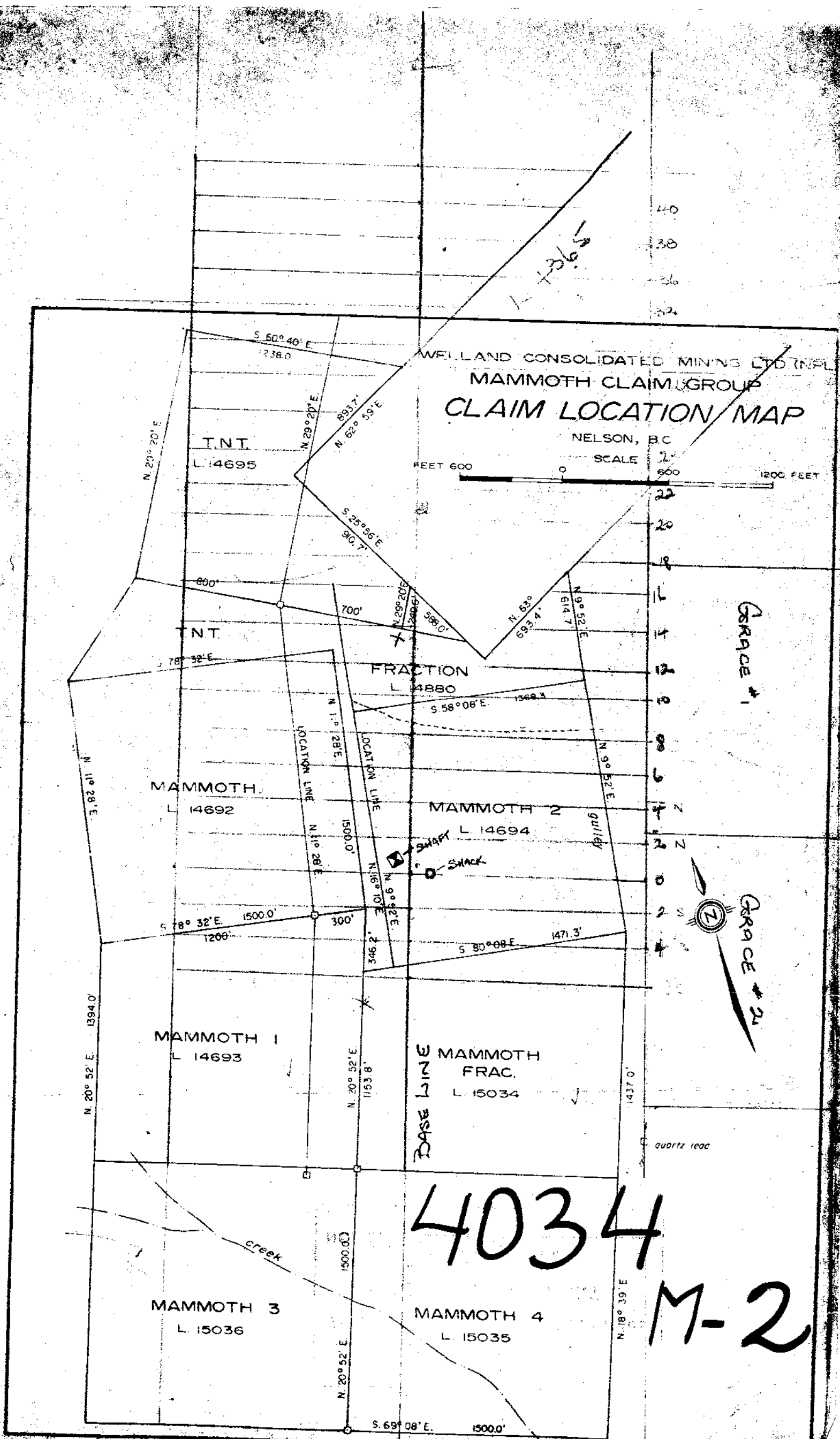
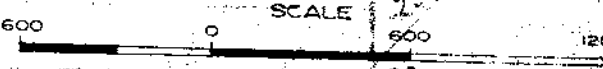
Vancouver,  
British Columbia

October 1972

WELLAND CONSOLIDATED MINING LTD (INCL)  
MAMMOTH CLAIM GROUP  
CLAIM LOCATION MAP

NELSON, B.C.

SCALE 1" = 600 FEET



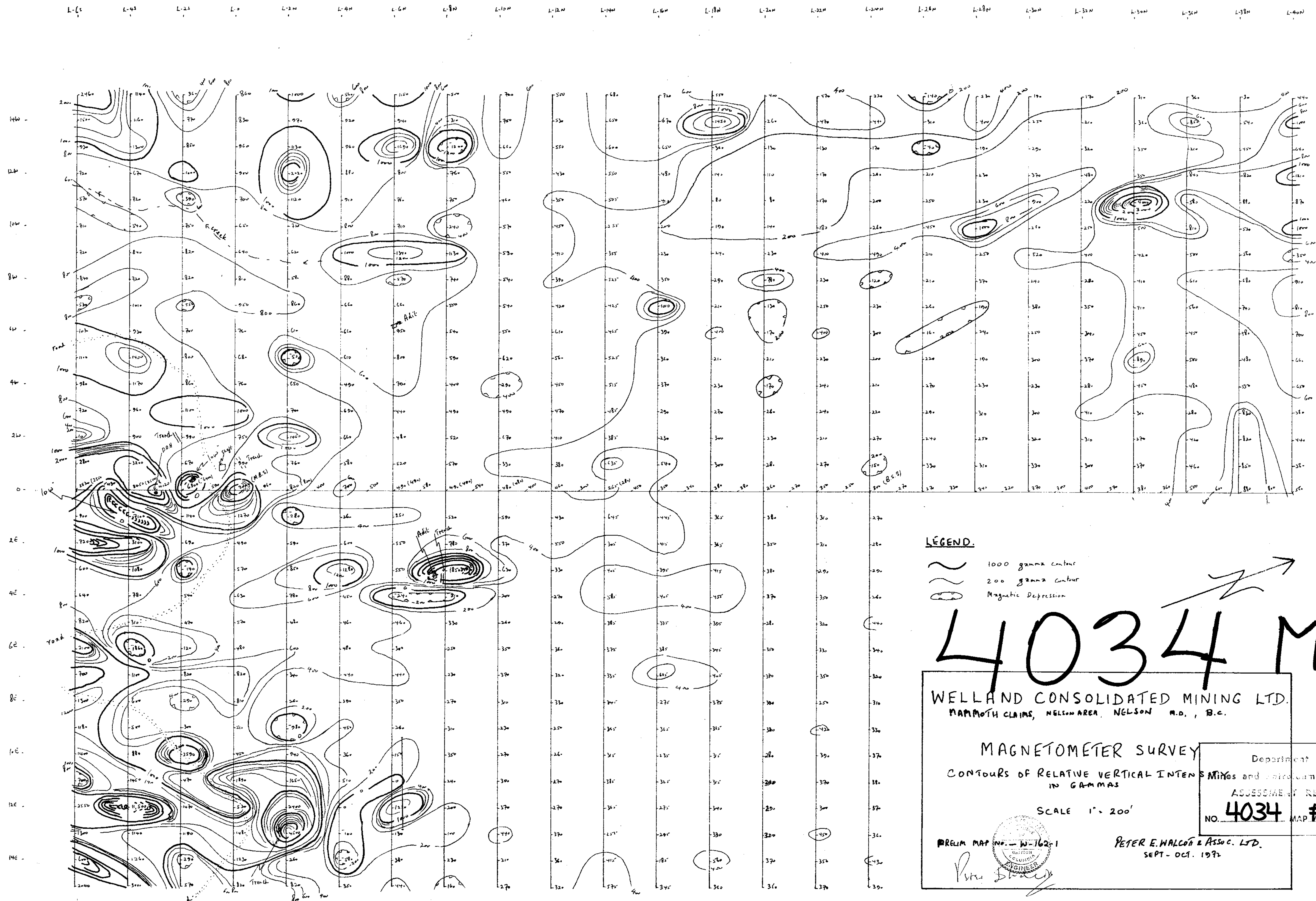
GRACE #1

GRACE #2


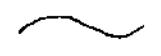
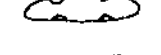
4034

M-2





**LEGEND.**

-  1000 gamma contour
-  200 gamma contour
-  Magnetic Depression

4034 M-1

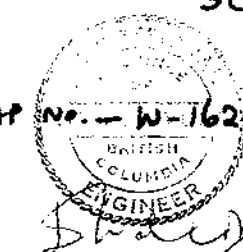
WELLAND CONSOLIDATED MINING LTD.  
MAMMOTH CLAIMS, NELSON AREA, NELSON N.D., B.C.

MAGNETOMETER SURVEY  
CONTOURS OF RELATIVE VERTICAL INTENSITIES  
IN GAMMAS

SCALE 1" = 200'

PRELIM MAP NO. - W-162-1

*Peter E. Walcott*



PETER E. WALCOTT & ASSOC. LTD.  
SEPT - OCT. 1972

Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT  
NO. **4034** MAP #1