3635

GEOLOGICAL, GEOCHEMICAL, GEOPHYSICAL REPORT

COG CLAIM GROUP

NORTH OF COGBURN CREEK AT HARRISON LAKE

NEW WESTMINSTER MINING DIVISION

BRITISH COLUMBIA

N49°/W121° NW

92H/12E, 12W

BY

THOMAS HASEK, P. ENG.

FOR

HELICON EXPLORATIONS LTD.

Project Started: 2 Jun. 1971

Project Completed: 8 Sep. 1971

CHAPMAN WOOD & GRISWOLD LTD

LIST OF CONTENTS

INTRODUCTION

The COG property east of Harrison Lake was staked in June 1971 for Helicon Explorations Ltd. to cover an open area of indicated ultra-basic exposures in the vicinity of the nickel mineralization of the Giant Mascot Mine. Work, consisting of geologic mapping, soil and sediment geochemistry, and magnetometer survey, was carried out on the property intermittently through June, July and August 1971. The altitude and steepness of the terrain made access to some of the northern claims virtually impossible, consequently most of the work was very slow and arduous.

SUMMARY AND CONCLUSIONS

1. The COG property covers a small ultrabasic plug which appears to be closely related to the ultrabasic host of the Giant Mascot orebodies which lie 13 miles to the southeast.

2. The ultrabasic plug contrasts sharply with the metamorphic country rocks geophysically and geochemically as well as visually and is therefore readily delineated.

3. Disseminated sulphides were observed in much of the ultrabasic terrain, but in very low concentrations.

4. Nickel values associated with the sparsely disseminated sulphides are in the trace to 0.1% range and geochemical soil and silt values are correspondingly elevated.

5. Ground magnetic survey may be used to indicate the presence of ultrabasics under overburden cover, but the effect is not sharp enough to be used as a definitive mapping tool.

6. Two zones of geochemically anomalous nickel values in soils and silts were located on claims COG 3 and 4. One may be due to organic concentration, but both appear to warrant further investigation.

7. The westernmost row of claims, COG 16, 18, 20 and 22, appear to be overstaked on previously held ground. Since they are in an area of dominant metamorphics their validity should not be contested and they should be allowed to lapse.

8. Claims COG 11-14 are underlain by non-intrusive rocks and should be allowed to lapse.

9. The rest of the group should be retained and further work in the form of trenching, if possible, and pack-sack drilling, should be done in the vicinity of the two geochemical anomalies.

Respectfully submitted,

CHAPMAN, WOOD & GRISWOLD LTD.

Thomas Hasek, P.Eng.

May 17, 1972

CERTIFICATE

I, Thomas Hasek, of North Vancouver, British Columbia, do hereby certify:

1. That I am a Geological Engineer and Photogeologist residing at 3010 St. George's Avenue, North Vancouver, B.C.

2. That I am employed by Chapman, Wood & Griswold Ltd., Consulting Mining Engineers and Geologists, with offices at 145 East 15th Street, North Vancouver, B.C.

3. That I am a registered Professional Engineer in the Province of British Columbia.

4. That I have practised my profession for more than seven years.

5. That I personally visited and examined the COG property of Helicon Explorations Ltd. at Harrison Lake, B.C. in June, July and August of 1971.

Thomas Hasek, P. Eng.

May 17, 1972

PROPERTY

The thirty-two claims of the COG property at Harrison Lake, British Columbia, were staked in June and August of 1971 for Helicon Explorations Ltd. Of the claims staked in August, notice was received in January 1972 from the Gold Commissioner at New Westminster that claims COG 16, 18, 20, 22 (Record Nos. 26815, 17, 19, 21 K) were overstaked on claims staked earlier in the same month by another person. Therefore applications for certificates of work are not being filed on the above claims. Claims COG 11, 12, 13, 14 (Record Nos. 26167, 8, 9, 10) are also being allowed to lapse since they appear to fall on geologically unfavourable ground. Applications for certificates of work are being filed on claims COG 1-10, 15, 17, 19, 21, 23-32 (Record Nos. 25990-93, 26808-13, 26814, 16, 18, 20, 26822-31).

LOCATION AND ACCESS

The COG property lies on the east side of Harrison Lake half a mile north of the junction of Cogburn and Talc creeks. The southern part of the property straddles a logging road which connects to the dirt road along the east side of Harrison Lake. These roads are open year-round for vehicles with good ground clearance.

TOPOGRAPHY AND CLIMATE

The property covers a steep mountain slope and elevations range from 200 feet above sea level at Cogburn Creek to 4000 feet at the north end. The average slope of the property is about 30 degrees, with numerous shear cliffs, talus slopes and no level ground. Precipitation in the area is heavy in winter and the upper reaches are snowbound from November to June.

GEOLOGY

The lower parts of the property are well covered with overburden, with 10% or less bedrock exposure below the 1500-foot elevation. Exposure improves upward as the slope steepens; much of claims COG 5 and 6 and upslope from them being an area of rugged outcrop and talus. The ground levels off somewhat on claims COG 21 and 22 and overburden cover increases correspondingly. Much of the area of COG 23-32 proved very difficult to reach and consequently was not examined.

The youngest unit in the area is the ultramafic underlying much of claims COG 5, 6 and 7 and extending through COG 26 and 28. It is a uniform dense fine grained peridotite, moderately serpentinized, made up of 90%+ fine pyroxene and serpentine, and minor amounts of olivine talc and actinolite varying considerably in their proportions at different locations. Finely disseminated pyrrhotite is common, but very sparse. An apparently related intrusive found south of the ultrabasics in small discrete exposures is a medium to coarsely crystalline hornblendite diorite which appears to vary in composition from 95% hornblende with almost no plagioclase to a diorite with 60% white plagioclase and less than 40% hornblende. Finely disseminated pyrrhotite was observed in the hornblendite on the Cogburn Creek road; none was seen in the diorite. Both the hornblendite and diorite contain better than 1% magnetite, the diorite only contains traces of magnetite.

A well foliated amphibolite made up of 90% fine grained hornblende lies between the peridotite and diorite and could be related to the intrusive. However a pervasive foliation indicates it is more likely a metavolcanic related to the surrounding metasediments.

The most widespread rocks in the area are green slates and pyllites of the late Palaeozoic Chilliwack group. These are mutually distinguishable only by the fissile slab-forming nature of the slates which the phyllites lack. They are both aphanitic with a greenish micaceous sheen and a strong fine foliation. With minor variations all bedding and foliation attitudes observed are northwesterly with steep easterly dips.

GEOCHEMISTRY

A total of 123 samples was collected for analysis. Of these, only about six were true stream sediments. About 15 were taken from intermittent streams and were probably silts, being from the finest fraction within six inches of the surface in the stream gulleys. The rest of the samples were soils, taken from the "B_1" horizon where possible, otherwise from the "A" horizon. Analyses were by standard geochemical techniques using aqua regia digestion and atomic absorption spectrophotometry.

Two peridotite rock samples were assayed for nickel, copper and iron and one was analyzed by emission spectrograph for 19 elements. Nickel values were trace, 0.03, 0.07, respectively, and no significant metal concentrations were indicated.

Background ranges for nickel and copper were 100-300 and 50-150 ppm respectively. Silts are not considered separately since there are so few clearly distinguished silt samples and the values do fall within the range of nearby soils. Distinctly anomalous values in both nickel and copper, some over five times background, were located in an intermittent stream bed flowing southeasterly through claims COG 4 and 3. A less pronounced nickel anomaly was noted about 700 feet west of the head of this streambed on claim COG 4.

The stronger of the two anomalies appears to originate in an area of highly organic materials and could be a strictly secondary concentration, but it is confirmed downstream and its persistence suggests that it may have a primary origin. The smaller anomaly is from "B" horizon soils and merits further investigation.

GEOPHYSICS

A rudimentary magnetic survey, using a McPhar M500A magnetometer was made on 11 June 1971. The survey consisted of readings spaced at 100 foot intervals over about 12,000 feet of line to determine magnetic contrasts in the local lithology. Readings were taken along the claim line of claims COG 1-6 and four cross lines were paced out at 00N, 04N, 30N and 35N. Magnetic closures on the survey were good and magnetic relief high, so closure corrections were not made.

In general magnetic contrast between the areas of metamorphics and ultrabasics is pronounced; magnetic relief in the former being of the order of 1000 gammas and in the latter in excess of 3000 gammas. However, the changes in magnetic relief do not correspond with observed changes in lithology closely enough to provide an accurate mapping guide in areas of overburden cover. This inconsitency may be explained by subsurface lithologic changes of greater significance than what is exposed, but until subsurface work provides confirmation, it can only be hypothesized.

COSTS OF SURVEY

PERSONNEL

J. P. Cook, Technician	27-30 July, 24-26 Aug., '71	7 days @ $40.00	$280.00	
T.M. Hasek, Geologist	2-4, 7-11 June, 27-30 July, '71	11 days @ $87.50	962.50	
R. H. Janes, Geologist	24-26 Aug., 31 Aug., 1-3, 9, 10 Sep., '71	9 days @ $87.50	787.50	
D. W. Philip, Technician	31 Aug., 1-3 Sep., '71	4 days @ $55.00	220.00	
V. W. Shuttleworth, Geologist	2-4 June, 7-11 June, '71	7 days @ $75.00	525.00	$2,775.00

EXPENSES

Room and board in field	36 man days @ $8.00/man day	$288.00	
Vehicle mileage	500 miles @ 10¢/mile	50.00	
Geochemical analyses, assays, emission spectrographic analysis		223.60	561.60
	TOTAL		$3,336.00

Declared before me at the City of Vancouver, in the Province of British Columbia, this 23 day of May 1972.

A Commissioner for taking Affidavits within British Columbia or A Notary Public in and for the Province of British Columbia.

Sub-mining Recorder

CHAPMAN WOOD & GRISWOLD LTD.

APPENDIX

Lab Results	- Warnock Hersey	9 Jul. 1971
	- " "	10 Aug. 1971
	- Vancouver Geochemical	8 Sep. 1971

#1-3 Magnetic Profiles

Notice to Group

Affidavit on Application for Certificates of Work

WARNOCK HERSEY
INTERNATIONAL LIMITED

COAST ELDRIDGE
PROFESSIONAL SERVICES DIVISION

125 East 4th Ave., Vancouver 10, B.C. Phone 876-4111 — Telex 04-50353

REPORT OF: Geochemical Analysis

AT Vancouver Laboratory

PROJECT: Rock Samples

REPORTED TO: Chapman Wood & Griswold
145 East 15th St.
North Vancouver, B. C.

FILE NO. 461 - 14469

DATE July 9, 1971

REPORT NO.

ORDER NO.

We have tested the rock samples submitted to us on June 29, 1971 and report as hereunder:

TEST RESULTS

Sample Identification	Copper (ppm)	Lead (ppm)	Zinc(ppm)	Nickel(ppm)
160	55.0	14.5	155.0	45.0
161	58.0	10.0	74.0	85.0
162	64.0	10.0	94.0	175.0
163	33.0	8.5	59.0	43.0
164	41.0	17.0	83.0	137.0
165	325.0	7.5	74.0	1800.0

WARNOCK HERSEY

B. Singh
MANAGER, CHEMICAL DEPARTMENT

TO:

Chapman Wood & Griswold

145 East 15th St.

North Vancouver, B. C

COAST ELDRIDGE

PROFESSIONAL SERVICES DIVISION

WARNOCK HERSEY INTERNATIONAL LIMITED

125 EAST 4TH AVE. VANCOUVER 10, B.C., CANADA

PHONE (604) 876-4111
TELEX 04-50353
CABLE ADDRESS
ELDRICO

FILE NO. 461 - 14469

DATE July 9, 1971

SEMI QUANTITATIVE SPECTROGRAPHIC ANALYSES

We Hereby Certify *that the following are the results of semi quantitative spectrographic analyses made on* ORE *samples submitted.*

SAMPLE IDENTIFICATION	Al	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co	Cu	Ga	Au	Fe
33 N	0.5	<0.1	ND	<0.01	ND	ND	0.001	ND	0.5	*	0.005	0.005	ND	ND	Major

SAMPLE IDENTIFICATION	Pb	Mg	Mn	Mo	Nb	Ni	Si	Ag	Sr	Ta-Na	Sn	Ti	W	V	Zn
33 N	ND	Major	0.1	<0.001	ND	0.07	Major	<0.001	ND	ND	<0.01	0.01	ND	0.005	<0.1

COAST ELDRIDGE PROFESSIONAL SERVICES DIVISION

B B Leigh

CHEMIST

RECEIVED AUG 11 1971

file

WARNOCK HERSEY INTERNATIONAL LIMITED • COAST ELDRIDGE PROFESSIONAL SERVICES DIVISION
125 East 4th Ave., Vancouver 10, B.C. Phone 876-4111

REPORT OF: Geochemical Analysis

AT Vancouver Laboratory

PROJECT: Soil Samples

REPORTED TO: Chapman Wood & Griswold Ltd.,
145 East 15th Street
North Vancouver, B.C.

FILE NO. 468 - 14626

DATE August 10, 1971

REPORT NO.

ORDER NO. 1313-7

We have tested the samples of soil submitted to us on August 2, 1971 and report as hereunder:

TEST RESULTS

Sample No.	Nickel (ppm)	Copper (ppm)	Lead (ppm)	Zinc (ppm)	Molybdenum (ppm)
C - 1	1,480	780	-	-	-
C - 2	410	62	-	-	-
C - 3	755	97	-	-	-
C - 4	1,330	97	-	-	-
C - 5	625	110	-	-	-
C - 6	430	72	-	-	-
C - 7	385	72	-	-	-
C - 8	60	64	-	-	-
C - 9	30	32	-	-	-
C - 10	22	14	-	-	-
C - 11	440	185	-	-	-
C - 12	377	37	-	-	-
C - 13	425	9	-	-	-
C - 14	67	50	-	-	-
C - 15	37	38	-	-	-
C - 16	30	36	-	-	-
H - 1	345	38	-	-	-
H - 2	87	60	-	-	-
H - 3	69	59	-	-	-
H - 4	60	50	-	-	-
H - 5	525	43	-	-	-
H - 6	400	39	-	-	-

.....2

TO:

Chapman Wood & Giswold

145 East 15th St.

North Vancouver, B. C.

Certificate of Assay

WARNOCK HERSEY INTERNATIONAL LIMITED

COAST ELDRIDGE PROFESSIONAL SERVICES DIVISION

125 EAST 4TH AVE. VANCOUVER 10, B.C., CANADA

PHONE (604) 876-4111
TELEX 04-50353
CABLE ADDRESS
ELDRICO

FILE NO. 461 - 14469

DATE July 9, 1971

We Hereby Certify *that the following are the results of assays made by us upon submitted* ORE *samples*

MARKED	GOLD		SILVER	Nickel(Ni)	Copper (Cu)	Iron (Fe)			
	OUNCES PER TON	VALUE PER TON	OUNCES PER TON	PER CENT.	PER CENT	PER CENT	PER CENT	PER CENT	PER CENT
		$							
8 S				.03	Trace	5.97			
14 N				Trace	Trace	1.16			

Note. Rejects retained one week.
Pulps retained one month.
Pulps and rejects may be stored for a maximum of one year by special arrangement.

Unless it is specifically stated otherwise, gold and silver values reported on these sheets have not been adjusted to compensate for losses and gain inherent in the fire assay process.

Gold calculated at $ ..... *per ounce*

..... *Provincial Assayer*

WARNOCK HERSEY INTERNATIONAL LIMITED
PROFESSIONAL SERVICES DIVISION

TEST RESULTS - Cont'd

Sample No.	Nickel (ppm)	Copper (ppm)	Lead (ppm)	Zinc (ppm)	Molybdenum (ppm)
H - 7	287	34	-	-	-
H - 8	412	43	-	-	-
H - 9	387	36	-	-	-
H - 10	87	46	-	-	-
165 - R	950	297	-	-	-
P - 1	-	22	13	51	Less than 1
P - 2	-	12	12	34	Less than 1
P - 3	-	22	11	46	Less than 1
P - 4	-	91	18	52	Less than 1
P - 5	-	36	13	43	Less than 1

W A R N O C K H E R S E Y

B.B. Singh
MANAGER, CHEMICAL DEPARTMENT

Vancouver Geochemical Laboratories Ltd.

1521 PEMBERTON AVENUE NORTH VANCOUVER, B.C., CANADA TELEPHONE 604-988-2172

GEOCHEMICAL ANALYTICAL REPORT

REPORT No. 71-31-001 DATE Sept. 8, 1971

SAMPLES SUBMITTED BY Mr. R. Janes COMPANY Chapman, Wood& Griswold Ltd.

SHIPPED VIA delivered FROM ----

REPORT ON 91 geochem samples for Ni DATE SAMPLES ARRIVED Sept.4, 1971

* * *

COPIES OF THIS REPORT SENT TO: **TRANSMITTED BY:**

(1) all copies of results to Mr. R. Janes

(2) C,W & G delivered

(3)

SAMPLES SIFTED OR GROUND TO -80 MESH WEIGHT USED 0.50 g

FINAL VOLUME 10 ml ALIQUOT USED n/a

* * *

METHOD OF ANALYSIS: Instrumental : Atomic Absorption

EXTRACTION: Hot $HClO_4$ - HNO_3 digestion

DETECTION: Techtron AA 5

SAMPLES ASSIGNMENT: (a) PREPARED SAMPLES: filed

(b) REJECTS: discarded

* * *

ANALYST(S) ja TYPIST hi

SUPERVISING CHEMIST L. Nicol CHECKED BY C.C Hall

COSTS:

SHIPPING CHARGE	$ ------
SAMPLE PREPARATION	$ 18.20
ANALYSIS	$ 91.00
OTHER	$ -------
TOTAL	$ 109.20

SPECIALIZING IN TRACE ELEMENT ANALYSIS

Vancouver Geochemical Laboratories Ltd.

1521 PEMBERTON AVENUE NORTH VANCOUVER, B.C. CANADA TELEPHONE 604-988-2172

71-31--001

COMPANY Chapman,Wood& Griswold REPORT No. PAGE 3 OF 3

MARKING	Ni				MARKING				
J - 1098	85								
99	105								
100	107								
101	355								
2	212								
3	285								
4	175								
5	50								
6	143								
7	95								
8	95								
9	137								
J - 1110	295								

REMARKS

Vancouver Geochemical Laboratories Ltd.

1521 PEMBERTON AVENUE NORTH VANCOUVER, B.C. CANADA TELEPHONE 604-988-2172

71-31-001

COMPANY Chapman, Wood& Griswold REPORT No. PAGE 2 OF 3

MARKING	Ni				MARKING	Ni			
J - 1055	540				J - 1079	208			
56	81				80	85			
57	90				81	133			
58	115				82	125			
59	125				83	430			
60	106				84	114			
61	124				85	142			
62	132				86	85			
63	134				87	90			
64	204				88	84			
65	65				89	154			
70	61				90	195			
71	63				91	69			
72	27				92	180			
73	41				93	167			
74	47				94	275			
75	49				95	67			
76	44				96	73			
77	345				J -1097	112			
J - 1078	170								

REMARKS

Vancouver Geochemical Laboratories Ltd.

1521 PEMBERTON AVENUE NORTH VANCOUVER, B.C. CANADA TELEPHONE 604-988-2172

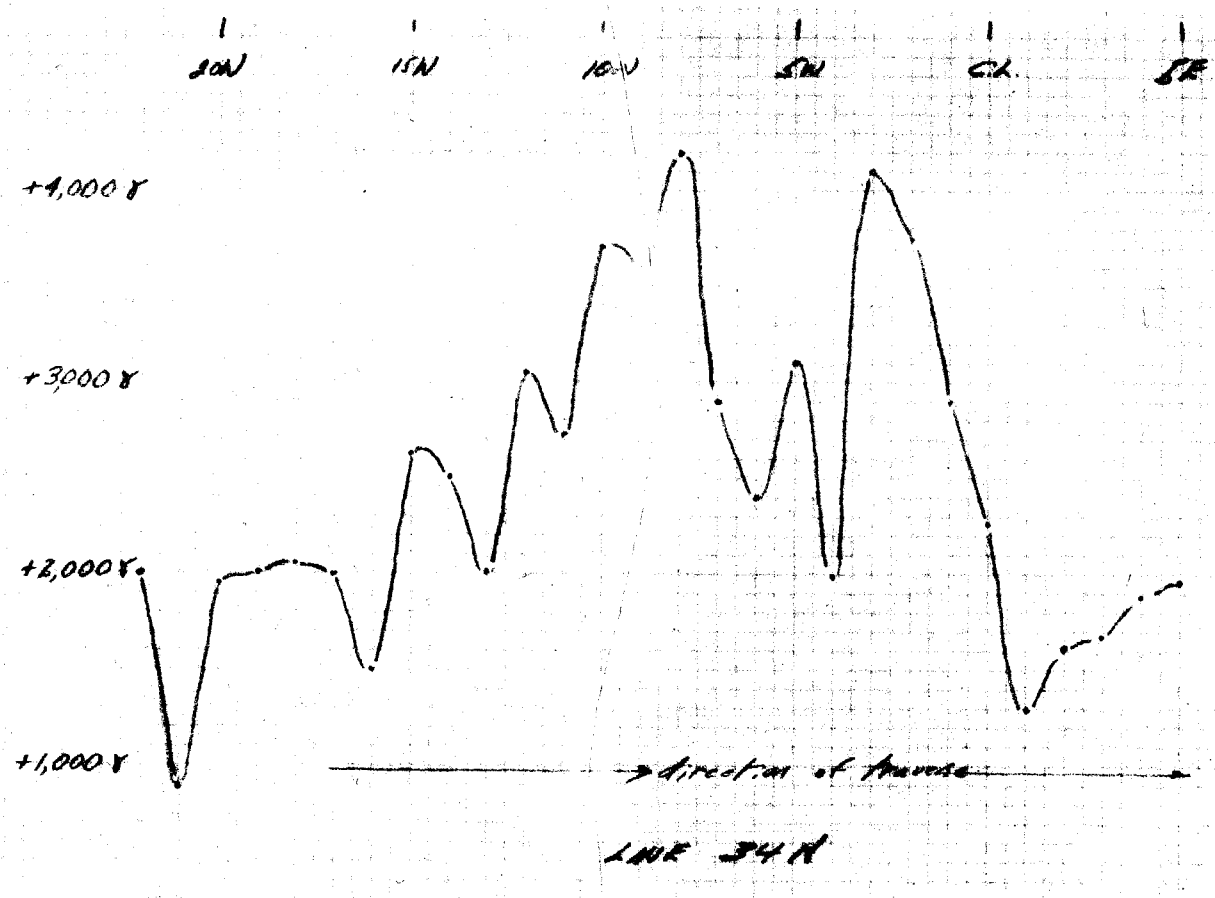
71-31-001

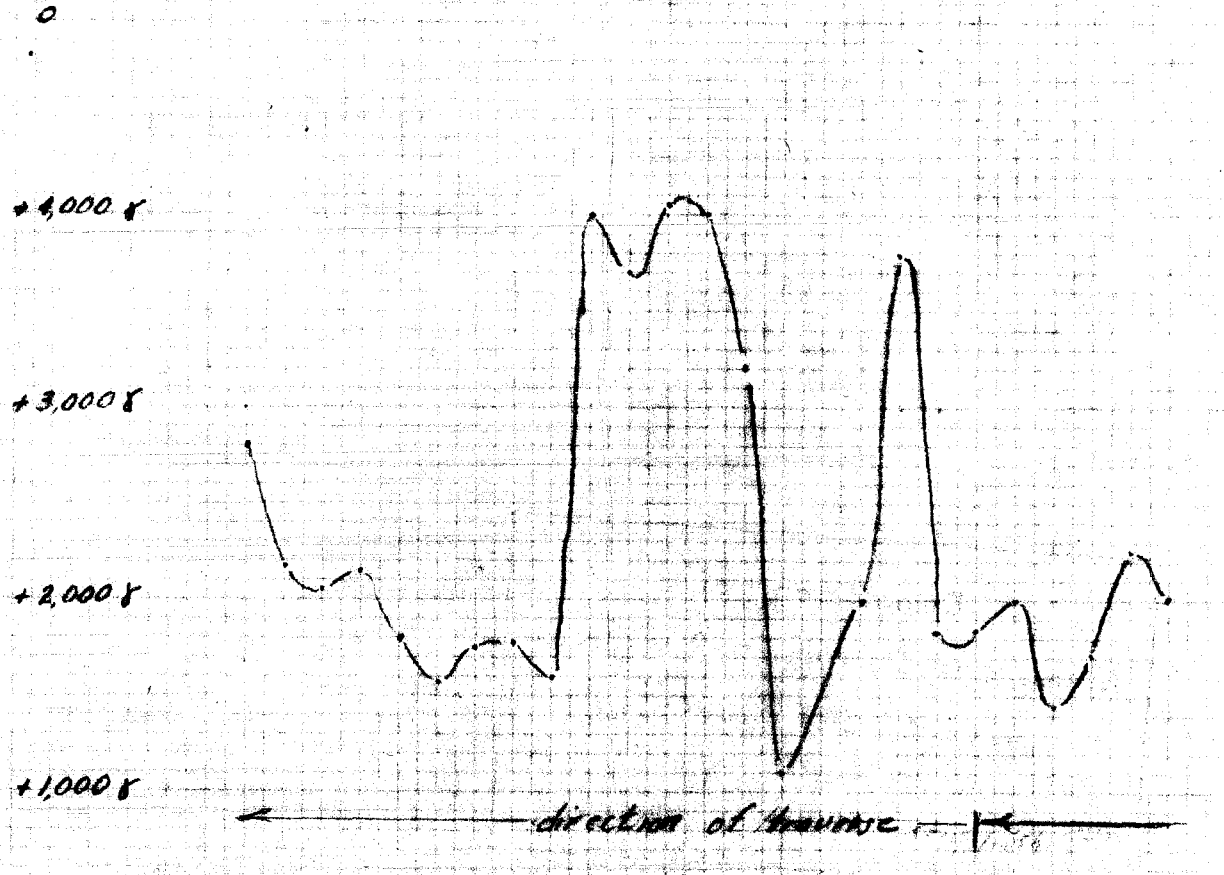
COMPANY Chapman, Wood & Griswold REPORT No. PAGE 1 OF 3

MARKING	Ni			
JJ 1001 L	495	silt		
2L	950	silt		
JJ 1005S	36			
J -1006	34			
7	61			
8	35			
9	37			
10	33			
24	94			
25	80			
26	118			
27	268			
28	162			
29	164			
30	175			
31	138			
32	147			
33	75			
34	73			
J -1035	67			

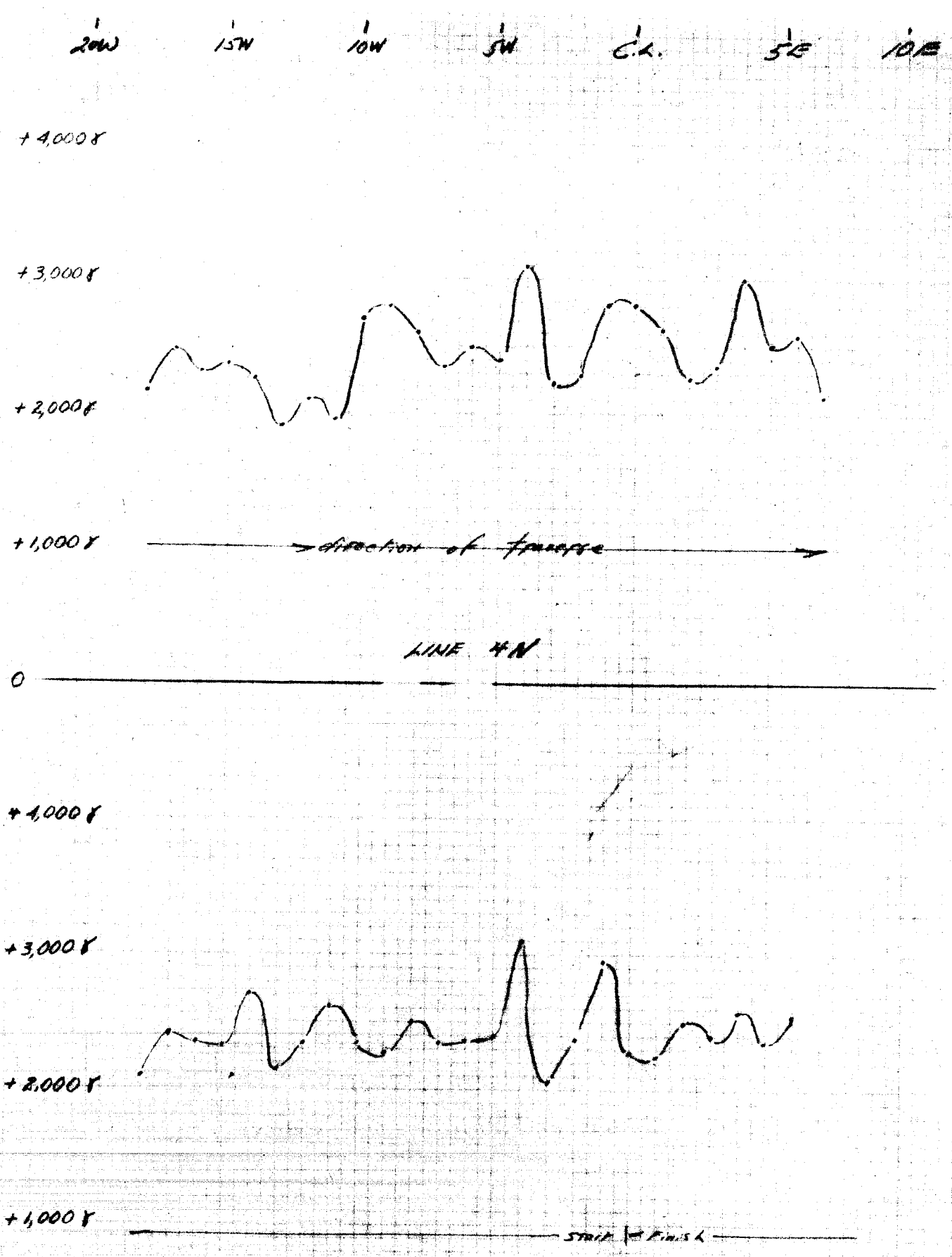
MARKING	Ni			
J - 1036	140			
37	175			
38	108			
39	100			
40	138			
41	225			
42	230			
43	135			
44	160			
45	130			
46	195			
47	63			
48	124			
49	93			
50	55			
51	67			
52	42			
53	47			
J - 1054	760			

REMARKS





COG GROUP
MAG SURVEY
11 JUNE 1971
W.S.



COG GROUP
MAG. SURVEY.
11 JUNE 1971
W.S

COG GROUP
NIKG SURVEY
11 JUNE 1971
20.5.

COG 32 COG 31 COG 29 COG 30 COG 27 COG 9 COG 28 COG 10 COG 25 COG 7 COG 21 COG 8 COG 26 COG 23 COG 22 COG 19 COG 5 COG 24 COG 20 COG 6 COG 3 COG 17 COG 4 COG 18 COG 15 COG 1 COG 16 COG 2 COG 12 COG 11 COG 14 COG 13

45+00N 30+00N 15+00N 0+00N

LINE 34 N LINE 30 N LINE 4 N LINE 0

Detail of Soil Sampling

2N 29N 2W 25N 1" = 250'

SILVER RIVER ROAD

Cogburn Creek

Talc Creek

BEAR CREEK CAMP

N

LOCATION MAP

HARRISON LAKE COG CLAIMS Cogburn C. HARRISON LAKE FRASER RIVER HOPE Harrison Hot Springs CHILLIWACK

LEGEND

- 6 PERIDOTITE
- 5 DIORITE
- 4 HORNBLENDITE
- 3 AMPHIBOLITE
- 2 PHYLLITE
- 1 GREEN SLATE
- Cu / Ni GEOCHEM SILT SAMPLE LOCATION (ppm)
- \+ MAGNETOMETER STN
- 77₀ SOIL SAMPLE LOCATION (Ni ppm)

3635 M.4

HELICON EXPLORATIONS LTD.

COG PROPERTY
HARRISON LAKE

0 500 1000 1500 2000 FEET

REVISED TO:

CHAPMAN, WOOD & GRISWOLD LTD
MINING ENGINEERS and GEOLOGISTS
145 EAST 15TH STREET,
NORTH VANCOUVER, BRITISH COLUMBIA

DATE AUGUST, 1971

DRAWING NUMBER 1313-7-1