

TABLE OF CONTENTS

#1

No. 1 Preliminary Reconnaissance Type Mapping

#2

No. 2 Soil Geochem. Survey for Copper and Mercury

GEOCHEMICAL SURVEY

HEATH COPPER NS CLAIMS

CREST LABORATORIES LTD.

2799

November 2, 1970

Senate Mining Co. Ltd.
355 - Burrard Street
VANCOUVER, B.C.

REPORT AND FIELD OBSERVATIONS:

Soil geochemical survey for copper and mercury on the N.S. Claim Group. Location - approximately 125° West 55° 25' North. Mt. Nation - Chentlo Lake Area, 60 miles N.W. of Fort St. James.

During the period of July 13 - July 24, 1970, a soil geochemical survey was done on the N.S. Mineral Claims. The purpose of the survey was to determine the northern extent of a previously known copper anomaly, as well as uncovering any new areas of interest. To this end, a sample grid was layed out to coincide with the previous geochemical survey. The grid was tied into the property by using a known topographical feature (the south end of the small lake near the top of Mt. Nation corresponds to line 44 North 5,600 feet West). All lines were put in using chain and compass on a true bearing. Cross lines ran 400 feet apart in an east-west direction with sample intervals being 200 feet. The sample number was marked on a piece of orange flagging tape and hung at each sample location. Orange flagging tape was also used to mark the lines for future location. A total of 10.6 line miles were cut and 273 samples were taken. In addition to this, two reconnaissance lines were put in on a lower part of the property (see map) by pace and compass. The lines were called R1 and R2 and were run in a south westerly direction. The lines were 500 feet apart with 100 foot sample intervals. The samples were run for copper and mercury and some interesting mercury results were obtained.

METHOD OF SOIL COLLECTION AND CLASSIFICATION:

At each sample location a pit or hole was dug to a depth of 4 to 6 inches using a grub hoe. The sample was then placed in a kraft sample bag and it's grid position was marked on the outside along with a notation of the soil type.

The soil development was very poor being basically a glacial till with some A₁ or organic type soils.

ANALYTICAL TREATMENT OF SOIL SAMPLES:

The samples were analyzed by Crest Laboratories (B.C.) Ltd., under the supervision of Bruce Graham, Chemist. Samples were dried in their respective sample bags at a temperature of 150° F. then sieved to -80 mesh through a stainless steel screen. One half gram portions of these screened soils were placed in 25 x 200 millimeter culture tubes and then digested in a mixture of perchloric and nitric acids at 425° F. for a period of three hours. The resulting residues were then made up to 25 milliliter volume in 10 percent perchloric acid. The respective sample solutions were then aspirated into a Techtron Atomic Absorption Spectrophotometer Model 5 and absorption readings were recorded for copper and mercury. The absorption readings were then calculated into parts per million for copper and parts per billion for mercury.

CONCLUSIONS:

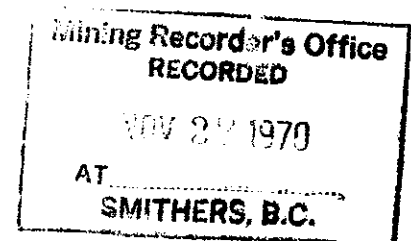
The purpose of the survey, that is to discover the extent of the previously known copper anomaly, was fulfilled and it appears that it does not extend northward to any great extent. Also no significant new anomalies were found in this northern section. Reconnaissance Lines R1 and R2, however, appear to have some interesting mercury values and might perhaps warrant future work such as a more detailed and larger geochemical program to determine the extent of this area.

Respectfully submitted,
CREST LABORATORIES (B.C.) LTD.

W.L. Inglis, P. Eng. (Alberta)

B.C. Re-registration Applied for, and Pending.

E. Lingard P. ENG



CREST LABORATORIES (B.C.) LTD.B.C. REGISTERED ASSAYERS
GEOCHEMISTS1068 HOMER STREET,
VANCOUVER 3, B.C.

August 3, 1970

Senate Mining Co. Ltd.
355 - Burrard Street
VANCOUVER, B.C.Attention: Mr. E. Livegard:

Dear Sir:

Cost of Geochemical Soil Survey for Copper and Mercury on the N.S. Mineral Claims, July 13 - 24, 1970. Analytical work completed July 27 - 30, 1970 and Plotting of results July 27 - 30.

Field Time:

Soil Samplers Needham & Blakey, 12 days @ \$60.00 per man per day.	1,440.00
--	----------

Analytical:

32 Samples for Copper and Mercury	102.40
278 Samples for Copper	333.60

Office Time:

Needham, drafting, 4 days @ \$60.00 per day.	240.00
--	--------

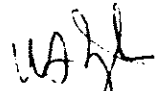
Disbursements:

Air Fare to Pr. George return for two men	156.00	
Motel in Pr. George for 2 men, 1 night	12.00	
Meals in Transit	22.95	
Air Freight (equipment)	83.94	
Taxi to and from Airport	16.05	
Flagging Tape	15.00	
Sepias and Prints	2.25	
	<u>308.19</u>	
10% Disbursements	30.81	
Total Costs	339.00	<u>339.00</u>


\$2,455.00

Yours truly,

CREST LABORATORIES (B.C.) LTD.


W.L. Inglis, P. Eng.

WLI/seb

OK 

LIVGARD CONSULTANTS LTD.

1331 MARINE BUILDING
VANCOUVER 1, B.C.

EGIL LIVGARD, B.Sc., P.ENG.

CERTIFICATE

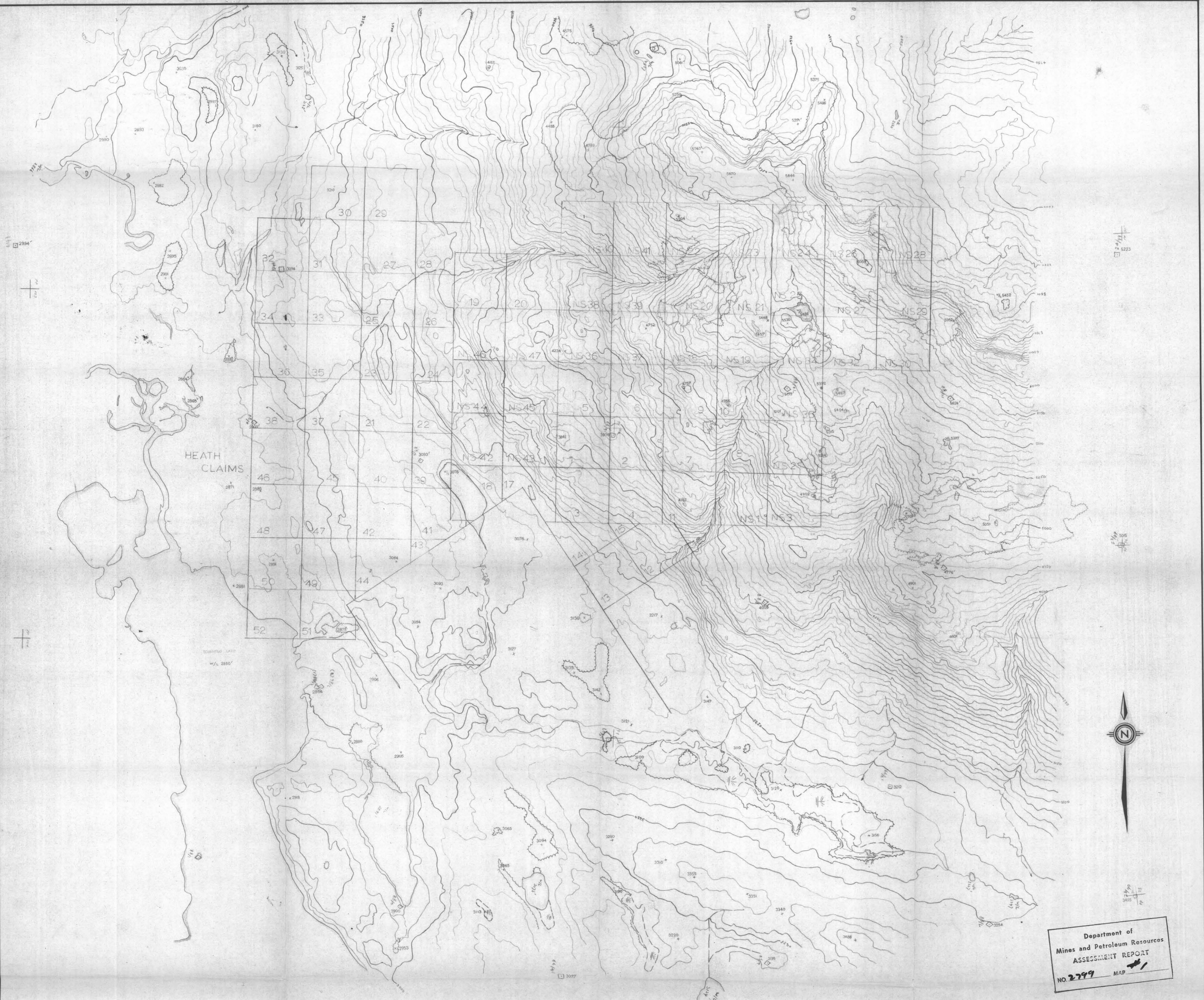
I, EGIL LIVGARD, with business and residential addresses in Vancouver, British Columbia, do hereby certify that:

1. I am a consulting geological engineer.
2. I am a graduate of the University of British Columbia, B. Sc., 1960, Geological Sciences.
3. I am a Member of the Association of Professional Engineers of the Province of British Columbia.
4. From 1960 to 1970 I was engaged in mining and exploration geology in Canada and Norway.
5. I was on the Heath claim group and supervised the initiation of the geochemical survey described in this report.

DATED at Vancouver, British Columbia, this 14th day of
January 1971.

*To accompany geochemical survey report
on Heath and NS claim group No 24 1970
by Crest Laboratories Ltd.*

Egil Livgard
Egil Livgard, B. Sc., P. Eng.
Vancouver, B. C.



Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 2799 MAP #1

SENATE MINING & EXPLORATION LTD. (NPL)				
TOCHTNTLO LAKE AREA				
PRELIMINARY RECONNAISSANCE TYPE MAPPING				
Compiled by McELHANNAY SURVEYING & ENGINEERING LTD. 1200 West Pender St. Vancouver, B.C.				
SCALE	CONTOUR INTERVAL	DATE	JOB NO.	SHEET NO.
1" = 1000'	50'	Feb. 19, 1990	05464-0	1 of 1

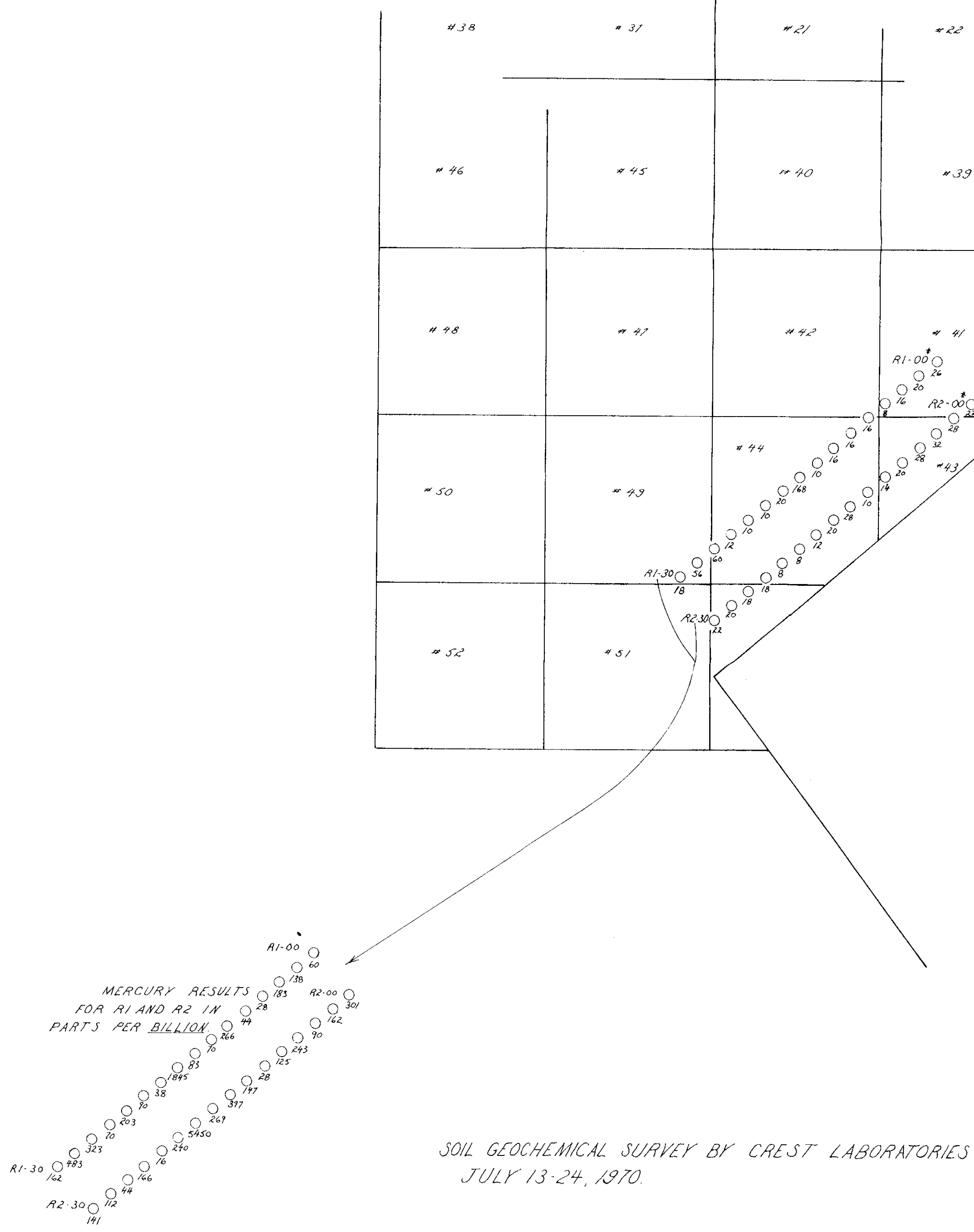
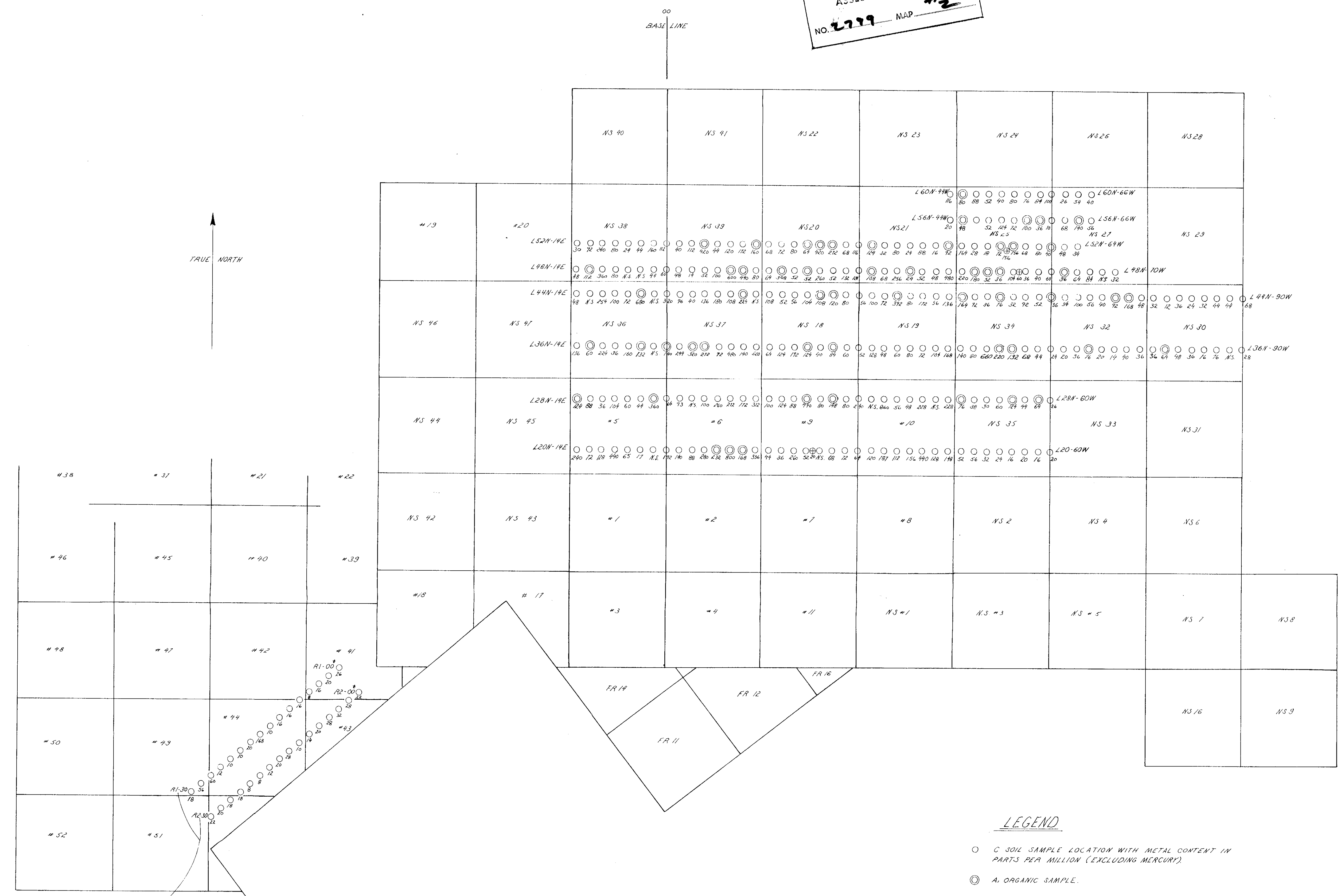
2799 M-1

SCALE AND ELEVATION DATUM BASED ON LIMITED GROUND CONTROL
RESULTING IN GOOD RELATIVE, BUT UNCERTAIN ABSOLUTE MAP ACCURACY
COMPILED FROM AERIAL PHOTOGRAPHY AT AN APPROXIMATE SCALE
OF 1 INCH EQUALS 500 FEET FLOWN IN 1972

SENATE MINING AND EXPLORATION LTD. (N.P.L.),
 TCHENTLO LAKE AREA,
 OMNICA MINING DISTRICT, B.C.
 SOIL GEOCHEMICAL SURVEY FOR COPPER AND MERCURY

SCALE
 0 200' 400' 600'

Department of
 Mines and Petroleum Resources
 ASSESSMENT REPORT
 NO. 2799 MAP



SOIL GEOCHEMICAL SURVEY BY CREST LABORATORIES (B.C.) LTD.
 JULY 13-24, 1970.

- LEGEND
- C SOIL SAMPLE LOCATION WITH METAL CONTENT IN PARTS PER MILLION (EXCLUDING MERCURY)
 - ⊙ A. ORGANIC SAMPLE.
 - L LINE
 - N NORTH
 - W WEST
 - E EAST
 - NS NO SAMPLE
 - ⊕ STREAM SEDIMENT

2799
 M-2

WAF

E. Livingston