

921/10E

GEOLOGICAL, GEOCHEMICAL, & ELECTRO-
MAGNETIC SURVEYS

MINERAL CLAIMS - HARD 1 - 6 FRACTIONS

HARD 11 - 23 CLAIMS

LATITUDE 50° 44'

LONGITUDE 120° 43'

ENGINEER M. G. TIMMINS P. ENG.

WORK DATES: MAY 5, 1972 TO JUNE 5, 1972.

3715

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT

NO. **3715** MAP

CONSOLIDATED CLEVELAND RESOURCES LIMITED (N.P.L.)

GEOLOGICAL - Surface Prospecting
GEOCHEMICAL Soil Sampling and
ELECTRO-MAGNETIC Surveys

Kamloops Mining Division, British Columbia

3715

W. G. Timmins, P. Eng.

Vancouver, B.C

June 9th. 1972.

Mineral Claims - Hard 1 - 6 Fractions
Hard 11 - 23 Claims

Lat. 50° 44'
Long. 120° 43'

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- #1 Location Map
- #2 Geological Plan
- #3 Geochemical Survey
- #4 Electromagnetic Survey

Consolidated Cleveland Resources
Limited,
#615 - 850 West Hastings Street,
Vancouver, British Columbia.

Gentlemen:

The following report describes results obtained from geological and surface prospecting, geochemical soil sampling programs and electro-magnetic surveys recently completed on your property located near Kamloops, British Columbia.

Assessment is made of such results and recommendations are provided for further exploration.

The property is located in a currently active exploration region with known copper deposits, sparked recently by encouraging results announced by Afton Mines and Leemac Mines Limited.

PROPERTY, LOCATION, ACCESS

The Consolidated Cleveland holdings are located

southeast
~~west~~

approximately 5 miles ~~southeast~~ of the village of Savona, central British Columbia, about 20 miles west of the city of Kamloops.

The city of Kamloops is serviced by the Trans Canada Highway, Canadian National Railway, Canadian Pacific Railway, and daily service by Pacific Western Airlines from Vancouver or Calgary.

The property consists of a total of 19 contiguous mineral claims and fractions as listed below:

<u>Claim Name</u>	<u>Tag Number</u>
Hard 11 - 20 inclusive	321039M - 321048M
Hard 21 - 23 inclusive	256745M - 256747M
Hard 1 fraction	629736M
Hard 2 fraction	256744M
Hard 3 fraction	256748M
Hard 4, 5, 6, fractions	256749M - 256769M - 770M

Access to the property is by means of the Trans - Canada Highway.

The topography is rolling with some steep slopes and gorges, climate is semi - arid and the elevation is approximately 2500 feet A.S.L. to 3500 feet A.S.L.

HISTORY

There is no known history of work on the property.

REGIONAL GEOLOGY

The geology is well described and mapped in Geological Survey of Canada memoir 249 by W. E. Cockfield.

In general, the region surrounding the Consolidated Cleveland Resources holdings is underlain by the Triassic Nicola Group volcanics. This sequence of rocks is overlain by Kamloops Group volcanics. The Nicola Group is intruded by Coast intrusives consisting mainly of granodiorite, and quartz-diorite, and by the Iron Mask Batholith consisting of syenite, monzonite, diorite and gabbro.

GEOLOGY OF THE PROPERTY

The property is underlain by rocks of the Nicola Group, which consist of andesite, basalt, agglomerate, tuff, minor argillite, limestone and

conglomerate. The Nicola rocks vary from fine grained to very coarsely porphyritic rocks, with green or greenish grey colour predominating.

MINERALIZATION IN THE AREA

Various types of mineral deposits have been discovered in the area, including gold and silver, lead and zinc, copper, mercury, tungsten and iron.

Numerous veins and disseminations of copper minerals have been found in the rocks of the Nicola Group in widely scattered locations.

GEOLOGICAL - SURFACE PROSPECTING PROGRAM

Control was established through a north east - southwest oriented grid at 200 foot separations. The surveyed line mileage is 34.5 miles, plus an additional 3.6 miles made up from baseline and tie lines.

Field Procedure - All grid lines were walked using professional assistance and examination made of rock outcrop.

Results - Outcrop is abundant on the property with exposure occurring over about 50% of the surveyed area.

Mapping has revealed that the property is almost entirely underlain by andesitic volcanics probably of the Nicola Group Volcanics of Upper Triassic Age. A horizon consisting of conglomerates trends northwesterly in the area of and parallel to the baseline. The andesites strike in a general northwest direction, parallel to the baseline and the conglomerates appear to lie within the trough of a synclinal structure. An anticlinal structure occurs to the northeast. Although no copper mineralization was observed, two electro-magnetic conductors and several soil anomalies occur on the property.

GEOCHEMICAL SURVEY

Field Control - Control for location of soil samples taken was established through utilization of grid cut for electro-magnetic geological and surface prospecting programs.

Field Procedure - Employing normal soil auger equipment, samples of soil were taken each 100 feet from the "B" horizon located directly below the topmost or humus horizon for a total of 1705 samples.

Laboratory Procedure - All samples were dried then passed through a -80 mesh nylon screen to eliminate possible humus contamination. Half gram portions were then subject to a hot aqua regia bath. Copper extraction was through use of hot Hcl acid. Copper determinations were by atomic absorption expressed in Parts Per Million (PPM) in the Vancouver Laboratories of Bondar Clegg & Co. Limited.

Results of Survey - Base level of copper in soils throughout surveyed area is numerically 35 PPM through means of inspection. Numerically 100 PPM or about three times background is considered anomalous threshold.

Nine zones representing areas of significant geochemical increment indicating concentration of copper were detected and are labelled "A", "B", "C", "D", "E", "F", "G", "H" and "I".

All geochemically anomalous zones contain responses of between 100 - 170 PPM copper and by means of geological mapping are proved to be underlain by andesitic volcanics, in which no significant mineralization has been observed.

Minor significance is attached to individual anomalies, however there does appear to be a trend roughly parallel to the general strike of the volcanics, which may be suggestive of sulphide mineralization along fracturing.

GEOPHYSICAL COVERAGE

A) Electro-magnetic

Survey Method - Employing grid established for soil geochemical survey, a 200 foot coil separation was utilized between transmitter - receiver stations. The "parallel line method" was used in the field where the transmitter operator moves simultaneously with the receiver operator more or less parallel to rock strike for each station reading along parallel lines. Stations were established each 100 feet, and transmitter location was always 200 feet north of receiver location.

The recordings of the dip angle of the primary field are plotted in profile at their respective stations. Conductive zones occur at crossovers where the profile records a change from positive to negative angles, i.e. from north to south of the line in a direction westward. Crossovers opposite to the above are termed "reverse

crossovers" and are indicative of iron formation.

A Sharpe SE-200, Mk 11 electro-magnetic unit was employed in the vertical loop reconnaissance survey using a frequency of 1250 C.P.S.

ELECTRO-MAGNETIC RESULTS AND INTERPRETATIONS

Two major anomalous electro-magnetic conditions were recorded in the surveyed area.

Anomaly "A" located in the southwest portion of the claim group, lines 12-24 north, is 1200 feet in length. This zone is ranked as "high intensity" with crossovers on lines 12N, 16N and 22N attaining as much as 10° of tilt.

Volcanic type rocks underlie "A" anomaly. It is likely this conductive zone is caused by sulphide concentrations with which base metals are regularly associated.

Anomaly "B", an electro-magnetic conductive zone some 1,000 feet west of anomaly "A", is 1200 feet in length and possesses "medium intensity" except on lines 24N and 26N which possess "high intensity" being

10° of tilt and above this amount. Geology underlying this zone is of the volcanic type. Sulphide concentrations are probable source.

It may be suggested that a relatively flat - lying zone may be source of both anomalies, the anomalies themselves being the edges of a conductive zone occurring between the two anomalous zones.

B) GEOMAGNETIC CHECK SURVEY

Control, Survey Method and Field Procedure - In order to help determine source of electro-magnetic conductors on the Cleveland Resources Limited, Kamloops area property geomagnetic recordings were taken in an area covering the two conductors employing established grid.

Enclosure method was employed where the instrument operator records readings along a crossline returning on adjacent crossline to original recording, the latter being tied-in geomagnetically to other "circuits" in order to compensate for diurnal variations. A Sharpe MF-1 Fluxgate magnetometer was employed.

Results - Electro-magnetic conductor "A" occurs along the

west flank of a magnetic "low" in the order of minus 200 gammas. A magnetic high anomaly immediately to the west attains a peak value of 2800 gammas.

Conductor "B" occurs on the east side of a magnetic "low" also in the order of minus 200 gammas.

This configuration perhaps indicative of repetition, appears to support the hypothesis of a synclinal structure, thus providing further strength to the theory of a fairly flat-lying zone that may be the source of both electro-magnetic conductors.

The magnetic anomalies may also be indicative of pyrrhotite often associated with other types of sulphide mineralization.

CONCLUSIONS AND RECOMMENDATIONS

Reconnaissance exploration programs consisting of geological - surface prospecting, geochemical soil sampling, electro-magnetic coverage, and detailed magnetometer surveys were recently completed on the 19 contiguous mineral claims of Consolidated Cleveland Resources Limited. The Consolidated Cleveland holdings are located in the Kamloops Mining Division about 10 miles northwest of the

much publicized Afton and Leemac claim groups on which current drilling is increasing copper tonnages.

Rock outcrop is common on the property, and the two main rock types have been mapped. The property is underlain by the Nicola Group volcanics and conglomerate. The conglomerate appears to lie within a synclinal trough the axis striking parallel to the general strike of the andesites, in a northwest direction.

Nine geochemical zones indicate an anomalous trend parallel to the strike of the volcanics possibly indicating sulphide concentration in fractures.

Two electro-magnetic conductors indicate the presence of sulphides in a relatively flat lying body, and the magnetic representation supports this in line with the synclinal postulation.

In view of the prominent structural conditions and associated positive geophysical results with related, probable sulphide mineralization, further work is warranted to test the area of the conductive zones for copper and other base metals as well as possible precious metal content.

A program of 2,000 feet of diamond drilling

is recommended at an estimated cost of \$22,000.00 including contingency.

The initial drilling program should consist of at least three drill holes positioned such that conductors "A" and "B" are cross-sectioned. At least one vertical hole should be drilled between the two conductors in order to test the theory of a flat lying mineralized horizon.

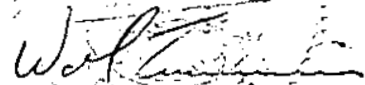
Proposed initial drill hole locations are as follows:

<u>Drill Hole</u>	<u>Location</u>	<u>Direction</u>	<u>Inclination</u>	<u>Proposed Vein Depth</u>
D. H. #1	L16N 2+00E	grid east	+45°	300 ft.
D. H. #2	L24N 2+75W	grid west	-45°	30 ft.
D. H. #3	L22N 1+00E		Vertical	30 ft.

Location of other holes is contingent upon results of the above holes.

Further work would be contingent upon results of the above preliminary diamond drill programs.

Respectfully submitted,



W. G. Timmins, P. Eng.

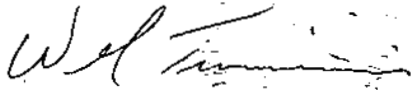
CERTIFICATE

I, WILLIAM G. TIMMINS, of the Province of British Columbia, do certify that:

1. I am a geologist having been practising my profession continuously for eleven years and maintain an office at Ste. 214 - 475 Howe Street, Vancouver, British Columbia.
2. I am a graduate of the Provincial Institute of Mining, Haileybury, Ontario and have attended Michigan Technological University, Houghton, Michigan.
3. I am a member of the Association of Professional Engineers of British Columbia.
4. I have no interest, direct or indirect in the property or securities of Consolidated Cleveland Resources Limited (N.P.L.) nor do I expected to receive any such interest.
5. Report herein has been prepared by myself and is based upon supervision of the exploration program.

This report may be used in the prospectus of the Company and amendments thereto.

DATED at Vancouver, British Columbia this 9th day of June, 1972.


W. G. Timmins, P. Eng.

SHARPE VERTICAL INTENSITY FLUXGATE MAGNETOMETER MF-1

S P E C I F I C A T I O N S

MODEL MF-1 Standard surveying and prospecting magnetometer with self-leveling sensor.

<u>Ranges:</u>	Plus or minus --	Sensitivity:
1,000	gammas f. sc.	20 gammas per div.
3,000	" "	50 " "
10,000	" "	200 " "
30,000	" "	500 " "
100,000	" "	2,000 " "

Meter: Taut-band suspension. 1,000 gamma scale: 1 7/8" long
- 50 div. 3,000 " " 1 12/16" long
- 60 div.

Accuracy: 1,000 to 10,000 gamma ranges \pm 0.5% of full scale
30,000 to 100,000 " " \pm 1% of full scale

Operating Temperature: - 40° C to 40° C
- 40° F to 100° F

Temperature Stability: Less than 2 gammas per °C (1 gamma/°F)

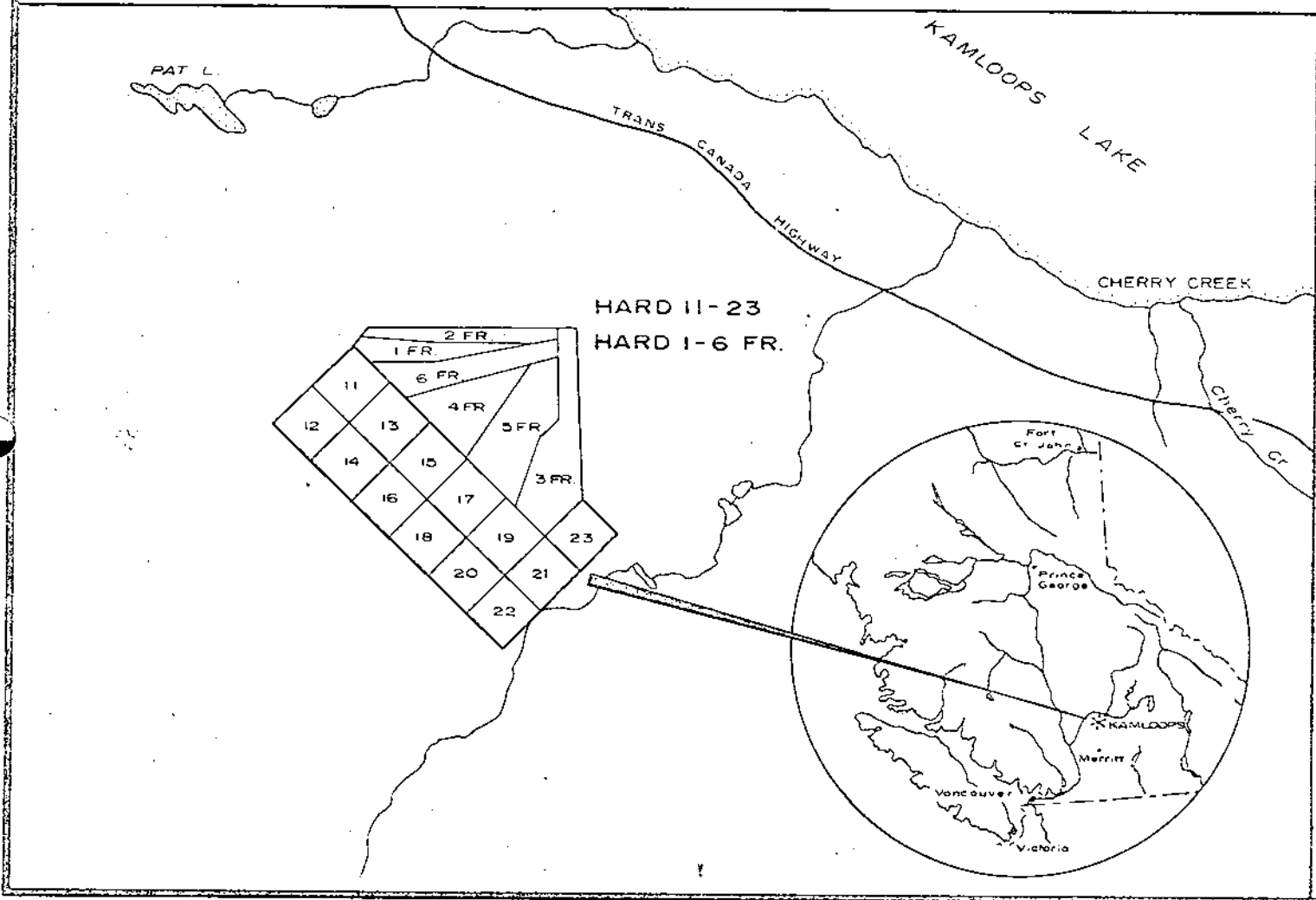
Bucking Adjustments: 10,000 to 75,000 gammas by 9 steps of approximately 8,000 gammas and fine control by 10-turn potentiometer. Convertible for Southern hemisphere or \pm 30,000 gammas equatorial.

Batteries: 12 X 1.5 V-flashlight batteries ("C" cell type)
(AC Power supply available)

Consumption: 50 milliamperes

Dimensions: Instrument: 6 1/2" X 3 1/2" X 12 1/2" - 165 X 90 X 320 mm
Battery pack: 4" X 2" X 7" - 100 X 50 X 180 mm
Shipping Container: 10" diam. X 16" - 255 mm diam. X 410 mm

Weights: Instrument: 5 lbs. 12 oz. - 1.6 kg.
Battery Pack: 2 lbs. 4 oz. - 1 kg.
Shipping Container: 13 lbs.



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 NO. 3715 MAP #1



3715 M-2

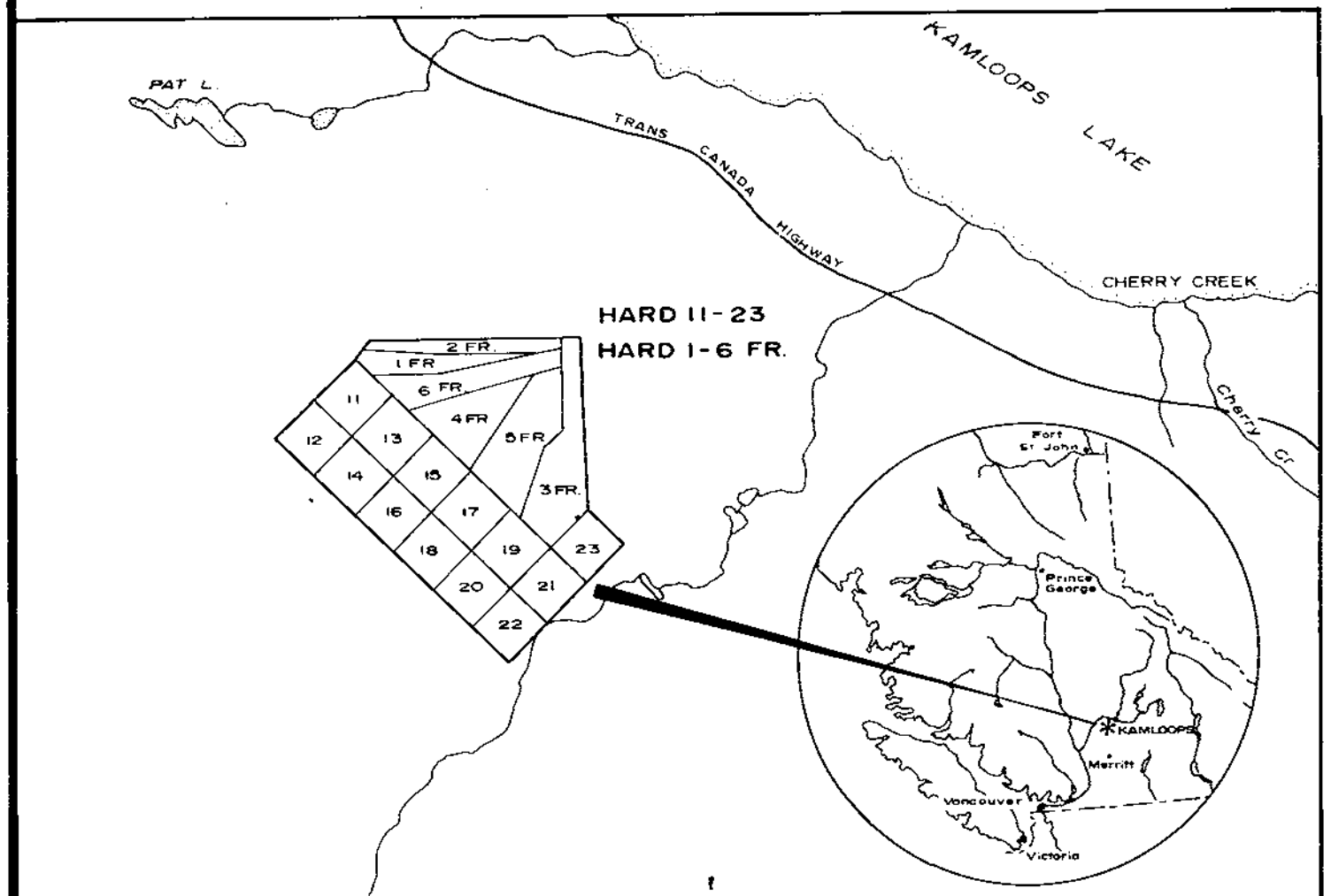
Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 3715 MAP #2

CONSOLIDATED CLEVELAND RESOURCES LTD.
HARD MINERAL CLAIMS

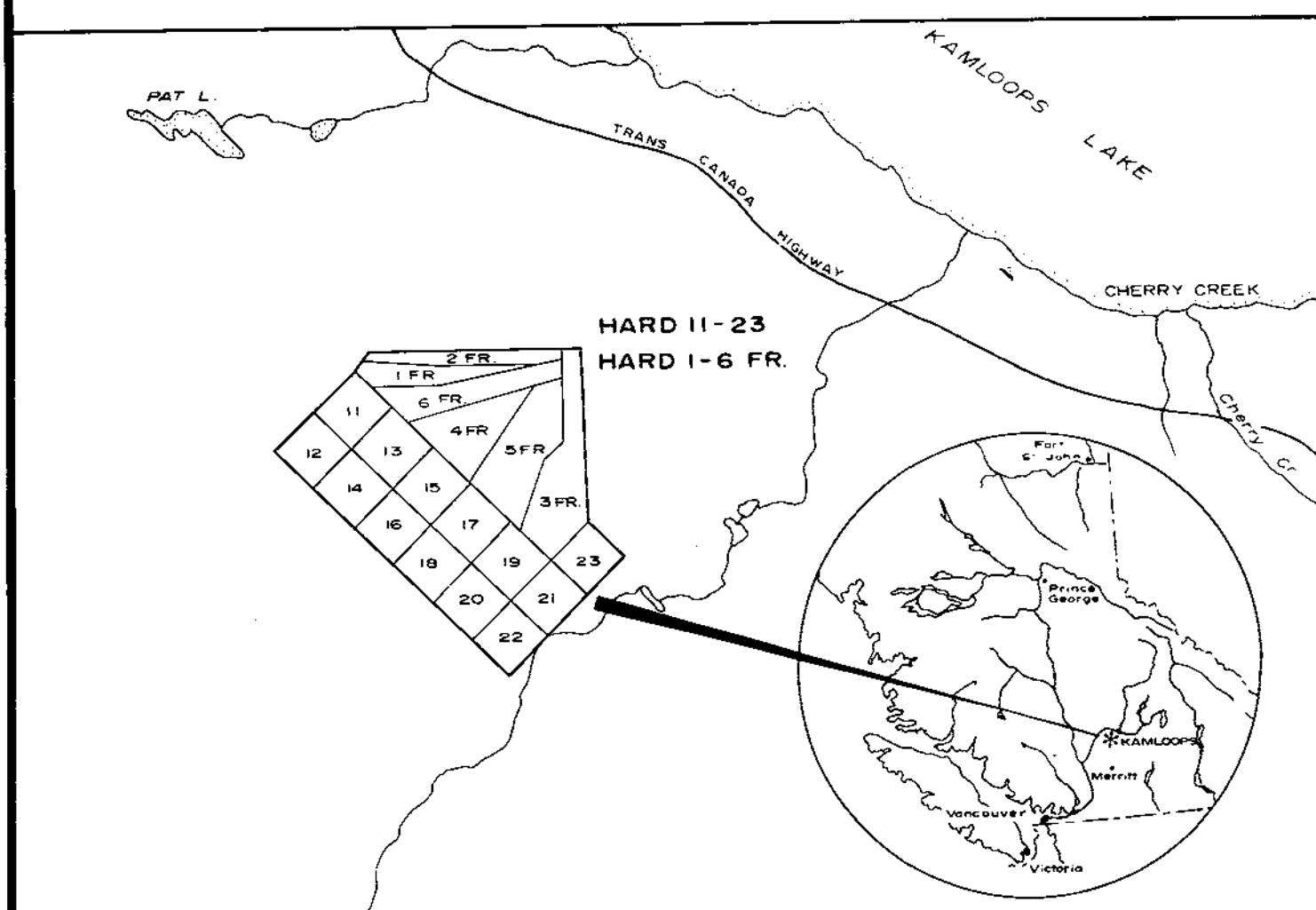
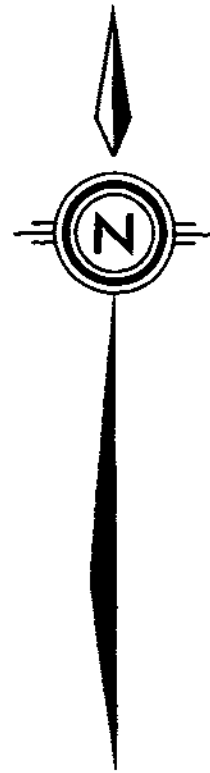
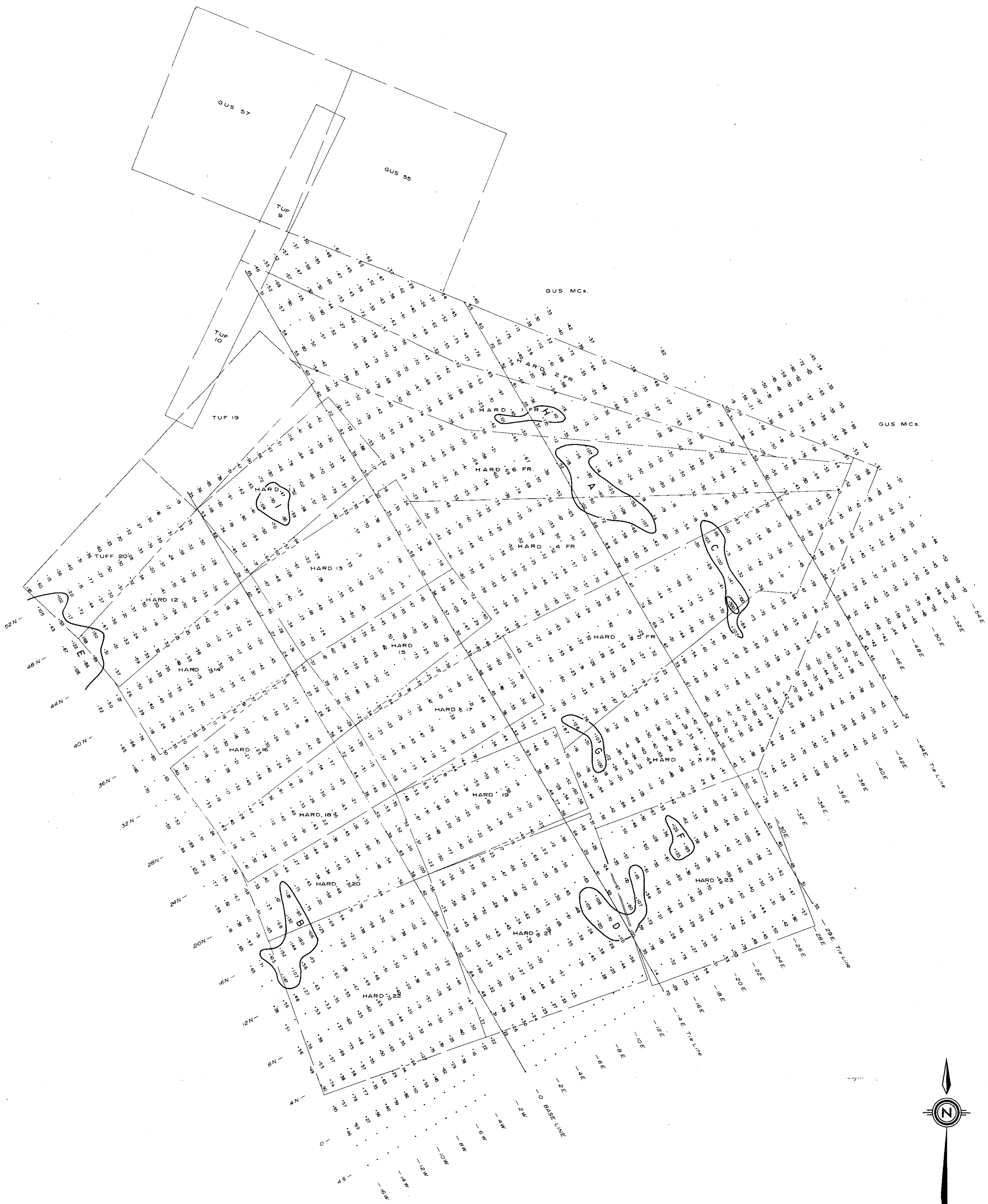
GEOLOGICAL PLAN

KAMLOOPS B.C.
KAMLOOPS M.D.
SCALE
FEET 400 0 400 800 FEET
GEO-SURVEYS LIMITED,
VANCOUVER TORONTO

W. J. ...



- LEGEND
- ANDESITE
 - CONGLOMERATES
 - DIP & STRIKE
 - CONTACT (assumed)



• 27 COPPER IN PPM
 (A) GEOCHEMICAL ANOMALY (COPPER)

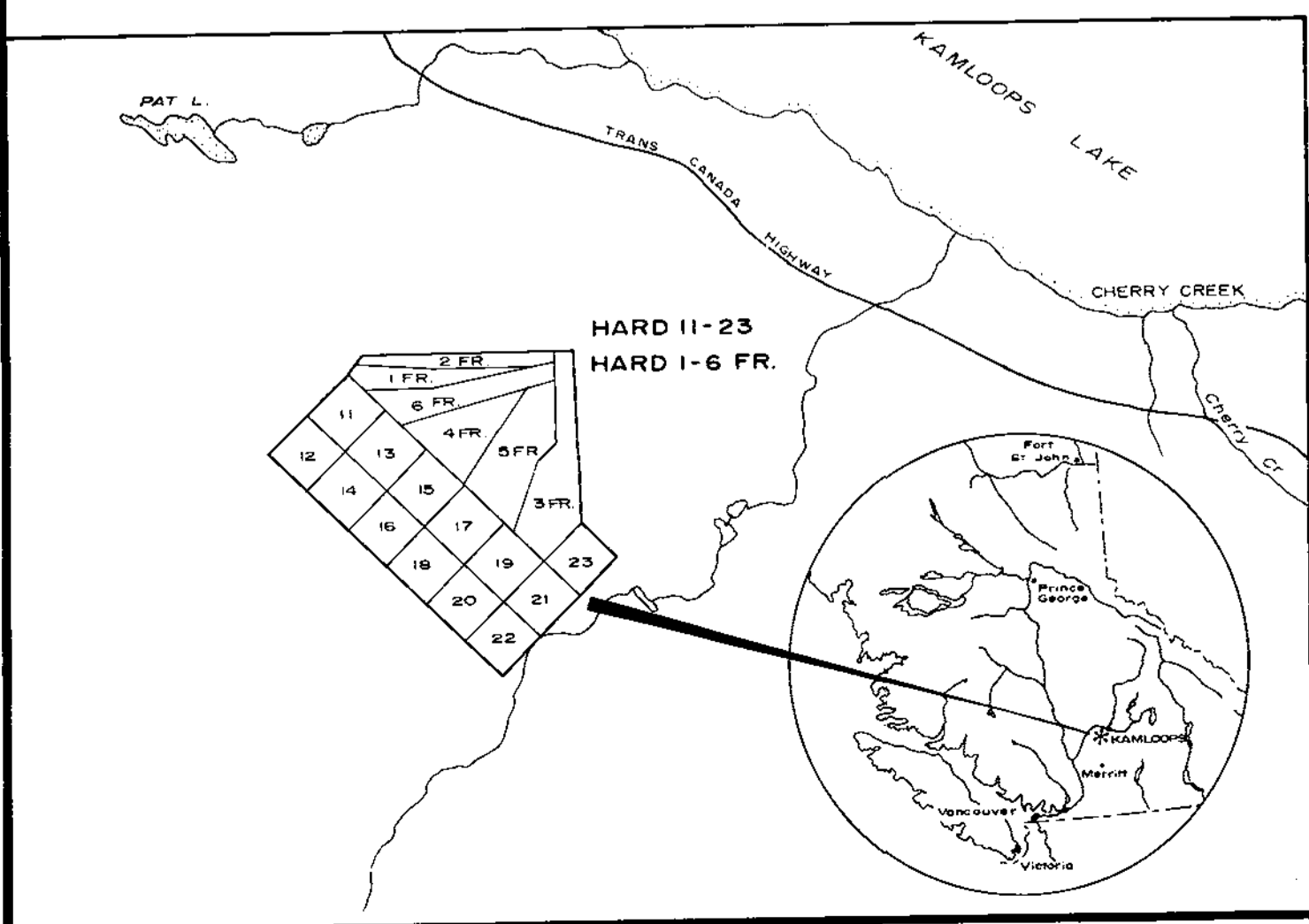
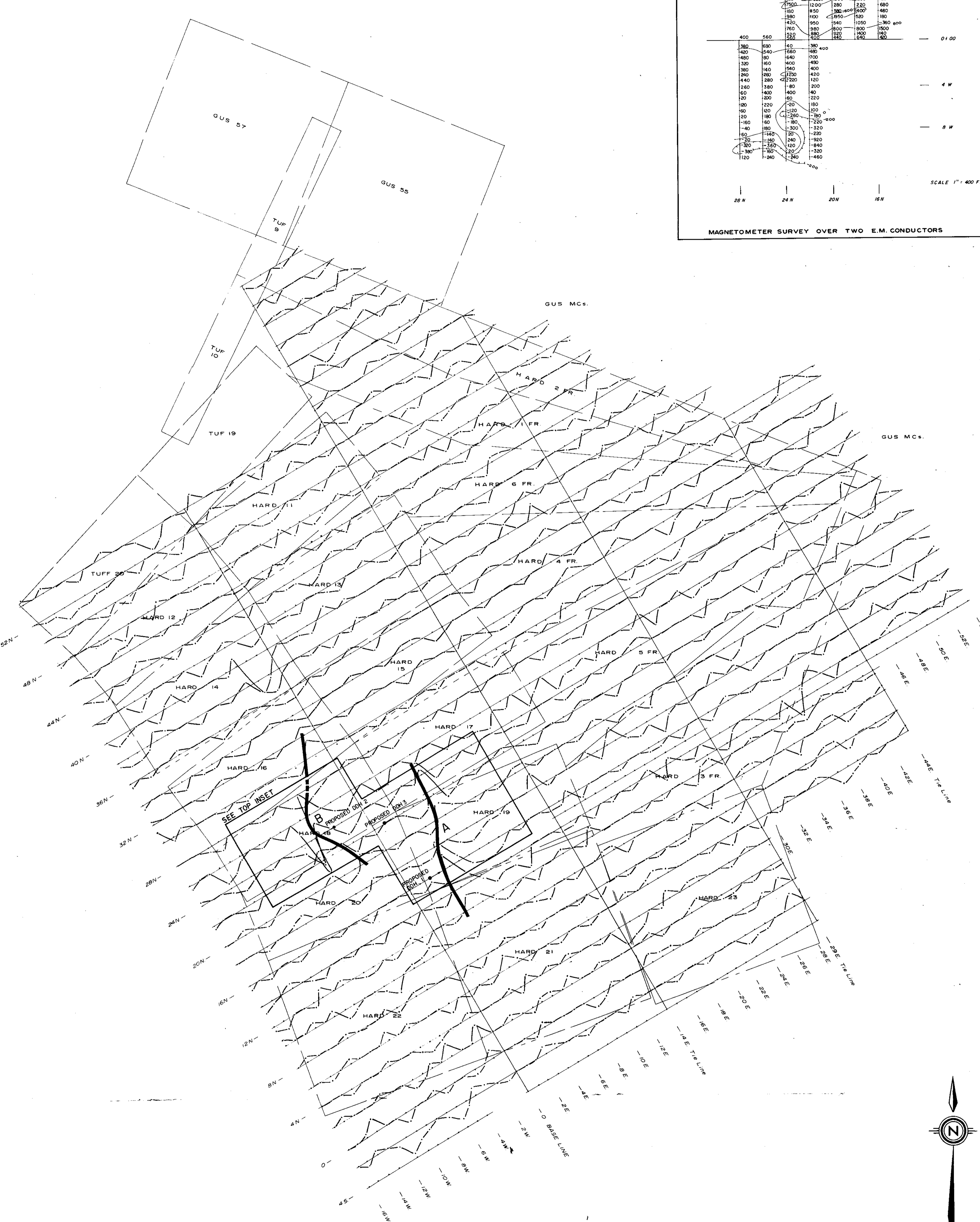
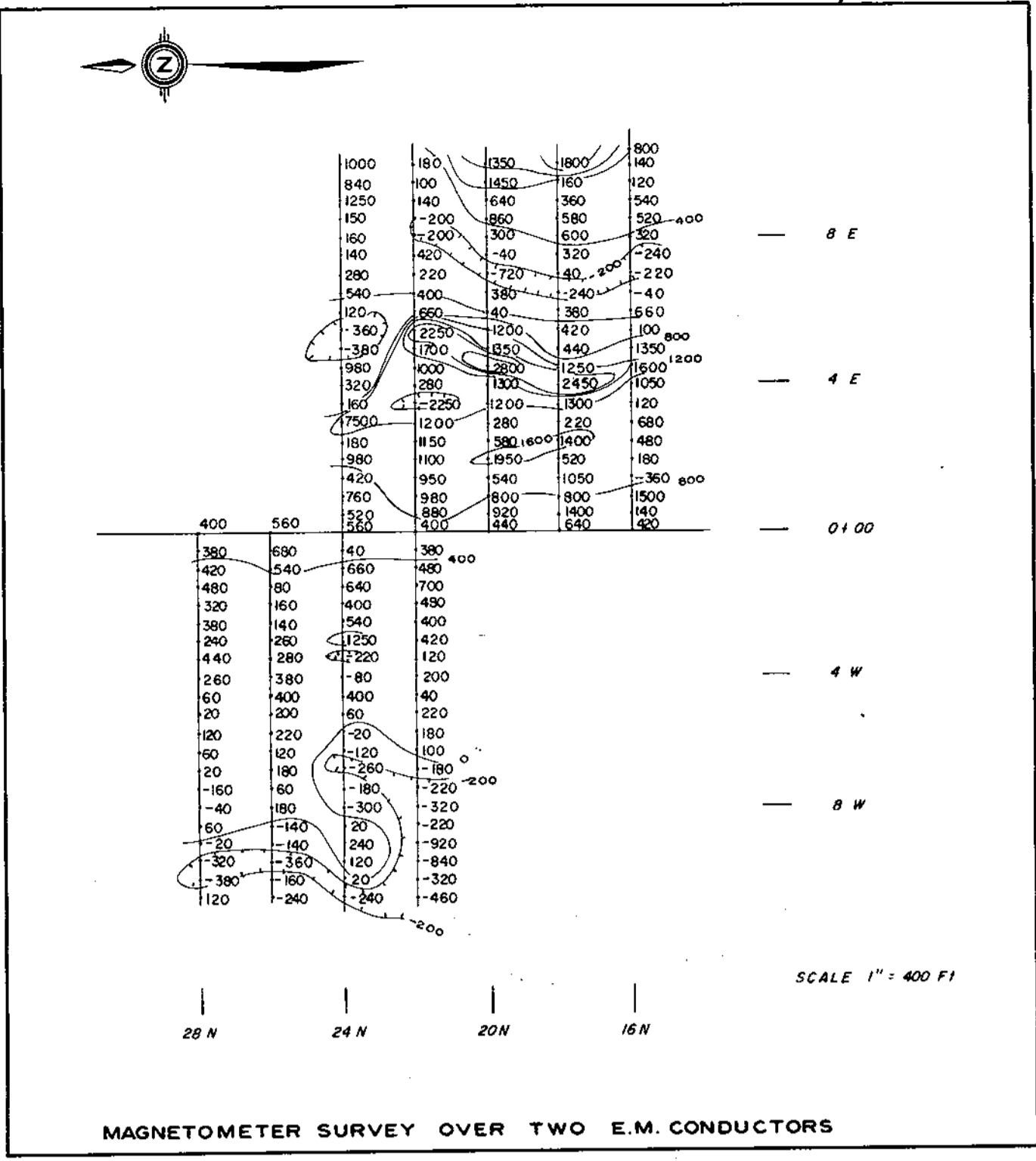
Department of
 Mines and Petroleum Resources
 ASSESSMENT REPORT
 NO. 3715 MAP #3

CONSOLIDATED CLEVELAND RESOURCES LTD.
 HARD MINERAL CLAIMS
 GEOCHEMICAL SURVEY
 (COPPER IN PPM.)

KAMLOOPS, B.C.
 KAMLOOPS M.D.

SCALE 400 0 400 800 FEET
 GEO - SURVEYS LIMITED.
 VANCOUVER TORONTO

W. J. ...



LEGEND

Measured station along picket line

NOTE: Left dips are plotted north of line
Right dips are plotted south of line

Dip Angle profile

Scale of profile 1" = 400' of hill

INSTRUMENT Sharp SE 200, Frequency 1250 c.p.s.
Parallel line method, vertical loop
conductor Axis, Anomalous Zone

TRANSMITTER LOCATION - 200 Ft. N. of Receiver Location

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CONSOLIDATED CLEVELAND RESOURCES LTD.
HARD MINERAL CLAIMS
ELECTROMAGNETIC SURVEY

KAMLOOPS B.C.
KAMLOOPS M.D.

SCALE 1" = 400 FT

GEO-SURVEYS LIMITED
VANCOUVER TORONTO