83-908A – 11564

COMINCO LTD.

EXPLORATION

NTS 92C16E
92B13W

WESTERN DISTRICT

ASSESSMENT REPORT

GEOLOGY AND GEOCHEMISTRY

OF THE

HART 1, 2 (92C16E), ~~Hart 3, 4, 5 (92B13W)~~

MINERAL CLAIMS

VICTORIA MINING DIVISION

CHEMAINUS RIVER AREA, B.C.

Hart 1,2 Latitude: 48°56.5'N
Longitude: 124°05'W

~~Hart 3,4,5 Latitude: 48°56.5'N~~
Longitude: 123°59'W

OWNER: COMINCO LTD.

WORK PERFORMED MAY 24 - SEPTEMBER 1, 1983

Filmed

December 15, 1983

A.C. FREEZE

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COMINCO LTD.

EXPLORATION

WESTERN DISTRICT

NTS 92C16E
92B13W

15 December 1983

ASSESSMENT REPORT

Geology and Geochemistry of the Hart 1, 2 and Hart 3, 4, 5 Mineral Claims

Victoria Mining Division
Chemainus River Area, B.C.

INTRODUCTION

The Hart 1, 2 and Hart 3, 4, 5 mineral claims (100% owned by Cominco Ltd.) are located north of the Chemainus River and 13.5 kilometers and 9.0 kilometers northwest of Mt. Brenton respectively. Access to the property is by the Chemainus hauling road leading to Highway No. 1, north of Duncan, B.C.

During the period May 24 to September 1, a total of 20 man-days and 30 man-days was devoted to Hart 1, 2 and Hart 3, 4, 5 claim groups respectively. During those time periods, geological mapping was carried out, accompanied by silt and rock geochemical sampling. The work was conducted by the author and J.P. Sorbara, both Cominco geologists.

GEOCHEMICAL SURVEY

A. General

Stream silt plus whole rock grab and chip samples were collected at locations that reflected drainage or a variety of rock units containing sulfide mineralization.

For gold analysis, samples are sieved to -100 mesh and a 5 gram (rock) or 10 gram (silt, soil) sample is roasted prior to extraction in hot aqua regia. The residue is taken up in HCl and centrifuged to separate the insoluble material. The solution is shaken with DIBK and gold content is determined by atomic absorption.

For copper, lead, zinc and silver, samples are sieved to -80 mesh and a 5 gram sample is digested with hot 20% HNO_3. Analysis is then run using the atomic absorption method.

B. Hart West (1, 2 claims)

On and peripheral to the claims, stream silt and whole rock samples were collected in an attempt to outline anomalies. In total 10 silt and 13 rock samples were collected. Sample locations are plotted on Plate 3.

Rock samples were collected in areas containing sulfide mineralization and in two cases, anomalous copper values reflect visible chalcopyrite.

Results were discouraging and no followup was undertaken. Geochemical results follow, with rock sample descriptions contained in Appendix A.

Silts

		Cu ppm	Pb ppm	Zn ppm	Ag ppm	Au ppb
HW Silt	1	104	4	56	.4	10
	2	73	4	59	.5	10
	3	83	4	73	.4	10
	4	121	4	113	1.4	10
	5	96	10	111	.75	20
	6	43	8	49	.8	10
	7	102	8	106	.8	10
	8	64	9	115	.5	10
	9	80	4	76	.4	50
	10	50	8	76	.8	50

Rock Samples

		Cu ppm	Pb ppm	Zn ppm	Ag ppm	Au ppb
HWR	1	47	4	100	.4	10
	2	24	4	82	.4	10
	3	30	4	33	.4	10
	4	932	4	64	.4	10
	5	46	4	140	.4	10
	6	63	4	98	.4	10
	7	41	4	77	.4	10
	8	53	16	106	.4	10
	9	2	4	42	.4	10
	10	35	106	124	.4	10
	11	670	110	44	.4	24
	12	4	16	22	.4	10
	13	38	15	83	.4	10

C. Hart East (3, 4, 5 Claims)

On and peripheral to the claims, stream silt and whole rock samples were collected in an attempt to define anomalous drainage or more specifically, anomalous rock units. In total, 8 silt and 13 rock samples were collected with locations plotted on Plate 4.

Rock samples were selected on a lithological basis with preference to sulfide content.

Results were discouraging and no followup was undertaken. Geochemical results follow. Rock sample descriptions are contained in Appendix A.

Silts

		Cu ppm	Pb ppm	Zn ppm	Ag ppm	Au ppb
HE Silts	1	35	20	20	2	10
	2	31	4	52	.7	10
	3	35	4	67	.7	20
	4	42	4	60	.4	10
	5	73	4	69	.4	50
	6	55	4	63	.5	20
	7	58	8	86	.8	10
	8	38	18	122	1.0	50

Rock Samples

		Cu ppm	Pb ppm	Zn ppm	Ag ppm	Au ppb
HER	1	48	4	83	.4	10
	2	34	4	79	.4	10
	3	55	21	191	.4	10
	4	33	4	34	.4	10
	5	77	6	29	.4	10
	6	51	4	58	.4	10
	7	102	4	95	.4	10
	8	31	4	110	.4	10
	9	1150	4	90	.4	10
	10	33	26	117	.4	10
	11	100	7	23	.4	10
	12	72	4	84	.4	10
	13	22	4	35	.4	10

GEOLOGICAL SURVEY

Geological mapping conducted on the claim groups (Plates 3 and 4) was restricted mainly to areas accessible by logging road. Recent colour air photos were utilized for mapping control.

While spatially separate, rock units underlying both claim groups are similar. Specific features pertaining to these units are as follows:

(A) Rock Units

Units 2, 3: These rock units comprise sericite-chlorite schists and rhyolite fragmentals. They are locally cherty and/or pyritic. These rocks are correlated with the Sicker Group and are possibly stratigraphic equivalents of those rocks hosting the polymetallic deposits in the Twin J camp east of the Chemainus River.

Unit 4: These rock units comprise clastic sediments, cherts and cherty tuffites and are interpreted as being the youngest units in the Sicker Group. On the properties, the predominant rock unit placed in the category is an andesite tuff to cherty andesitic tuffite. The andesite is essentially devoid of sulfide mineralization.

Unit 5: Rock types in this category are mapped as a variety of sediments; (cherty quartzite, argillite, siltstone) that are Middle Triassic in age. These rock types represent the oldest units in the Vancouver Group and are intruded by sills of basaltic (gabbroic) composition. The sediments are variously pyritized and are locally altered in proximity to the sills.

Unit 6: This unit has been mapped exclusively as gabbro and likely is genetically related to those basaltic (gabbroic) sills in Unit 5. The age of intrusions of gabbroic composition ranges as young as Lower Jurassic.

(B) Mineralization

No base or precious metal mineralization of significance was found on the claim groups. Trace chalcopyrite mineralization was found in chert, sandstone, andesite and quartz veins. Pyrite with quartz carbonate alteration was found in numerous localities within sediments adjacent to basaltic (gabbroic) sills.

APPENDIX A

Hart West Rock Samples

HWR 1 - Argillaceous siltstone
- 6 meter chip

HWR 2 - Quartz carbonate alteration adjacent to a basaltic sill
- Grab

HWR 3 - Black cherty siltstone adjacent to a basaltic-gabbroic sill
- Grab

HWR 4 - Light coloured chert with fracture controlled pyrite and chalcopyrite
- 1/3 meter chip

HWR 5 - Argillaceous siltstone in contact with dark chloritic schist Trace pyrite
- 1/2 meter chip

HWR 6 - Buff chert - quartzite, some disseminated pyrite
- 1/2 meter chip

HWR 7 - Schistose basalt, some quartz epidote veins
- Minor malachite stain
- Grab

HWR 8 - Quartz carbonate altered rock
- 1-2% fractured ± disseminated pyrite
- Grab

HWR 9 - Rhyolite? White, cherty
- Grab

HWR 10 - Foliated chlorite sericite schist, occasional quartz lenses
- Grab

HWR 11 - Quartz vein with chalcopyrite and specular hematite
- 1/3 metre chip

HWR 12 - Rhyolitic fragmental
- Grab

HWR 13 - Sericite schist with quartz carbonate veins
- 13 meter rough chip

Hart East Rock Samples

HER 1 - Gritty mudstone with 7-8% disseminated pyrite and trace chalcopyrite
- Grab

HER 2 - Sericite, chlorite schist
- Grab

HER 3 - Dark gritty siltstone with 3-5% disseminated pyrite, blue quartz fragments, argillaceous matrix
- Grab

HER 4 - Altered pyritized gritty sandstone
- Grab

HER 5 - Feldspar rich metamorphic rock near granodiorite contact
- Grab

HER 6 - Siliceous meta sediment, some limonite
- 2 meter rough chip

HER 7 - Fine grained ash - cherty sediment
- Grab

HER 8 - Altered siltstone; some chloritic spots
- 3-5% pyrite
- Grab

HER 9 - Gabbro with disseminated chalcopyrite, pyrite, magnetite
- Grab

HER 10 - Chlorite sericite schist transitional to argillite
- 4 meter rough chip

HER 11 - Chert with quartz, ankerite seams, some chalcopyrite
- Grab

HER 12 - Sericite schist
- Rough chip over 30 meters

HER 13 - Sericite schist with cherty bands
- Trace sulfides
- Rough chip over 20 meters

INTERPRETATION

The geological survey outlined a suite of volcanic rocks, sediments and intrusive rocks ranging between Permian and Jurassic age. Part of this suite includes units favourable to host polymetallic deposits similar to those in the Twin J (Mt. Sicker) camp and Westmin's Buttle Lake deposits. The geological and geochemical surveys did not outline areas warranting followup.

Report By:

A.C. Freeze
Geologist

Endorsed By:

F.D. Gill
Assistant Manager, Exploration

Approved for
Release By:

G. Harden
Manager, Exploration
Western District

ACF/sav

Distribution:
Mining Recorder (2)
W.D. Files (1)

APPENDIX B

STATEMENT OF EXPENDITURES

FOR

HART 1, 2 (24 UNITS)

Salaries		
J.P. Sorbara	10 days @ $156.00/day	$1,560.00
A.C. Freeze	10 days @ $182.00/day	1,820.00
Geochemistry		
22 samples @ $11.00/sample		242.00
Truck Rental		
8 days @ $32.50/day		260.00
Food and Lodging		
8 days @ $45.50/day		364.00
	TOTAL EXPENDITURES	$4,246.00

Signed: _____

A.C. Freeze
Geologist

APPENDIX B

STATEMENT OF EXPENDITURES

FOR

HART 3, 4, 5 (38 UNITS)

Salaries		
J.P. Sorbara	15 days @ $156.00/day	$2,340.00
A.C. Freeze	15 days @ $182.00/day	2,730.00
Geochemistry		
21 samples @ $11.00/sample		231.00
Truck Rental		
12 days @ $32.50/day		390.00
Food and Lodging		
12 days @ $45.50/day		546.00
	TOTAL EXPENDITURES	$6,237.00

Signed: _____

A.C. Freeze
Geologist

APPENDIX C

STATEMENT OF QUALIFICATIONS

I, Arthur C. Freeze of the City of Vancouver, in the Province of British Columbia, hereby certify:

1. THAT I am a geologist residing at 2891 West 14th Avenue, Vancouver, British Columbia with a business address at 409 Granville Street, Vancouver, British Columbia.

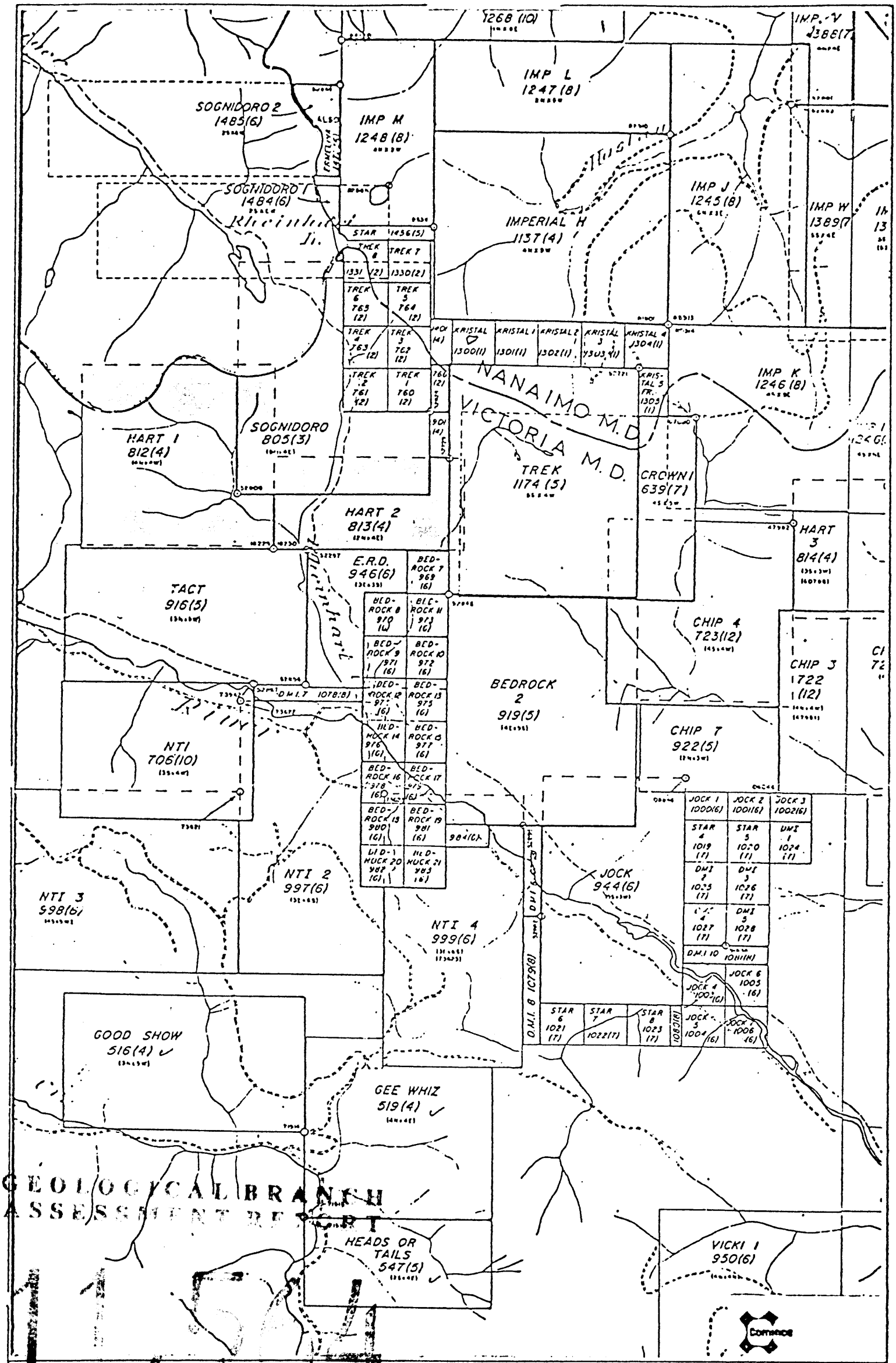
2. THAT I graduated with a B.Sc. in geology from the University of New Brunswick in 1971.

3. THAT I have practised geology with Cominco Ltd. from 1973 to 1983.

Signed: _____

A.C. Freeze
Geologist, Cominco Ltd.

15 December 1983



Drawn by:

Traced by:

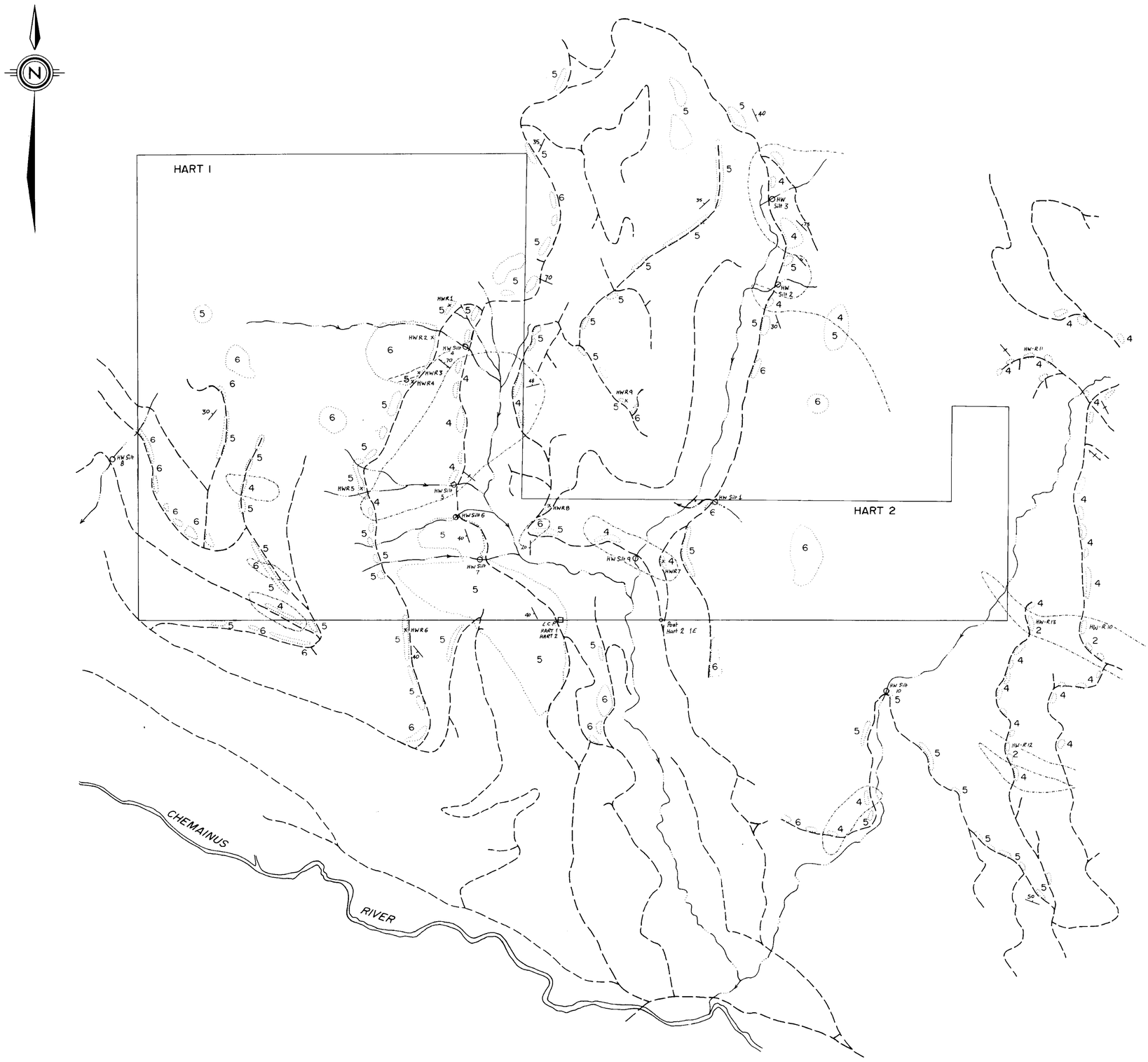
Revised by	Date	Revised by	Date

HART WEST

1,2 CLAIMS

INDEX AND CLAIM LOCATION

Scale: 1:50,000 Date: December 1983 Plate 1



LEGEND

UPPER TRIASSIC-LOWER JURASSIC

6	GABBRO, SOME ANDESITE AND BASALT SILTSTONE, LIMESTONE, CONGLOMERATE	VANCOUVER GROUP

MIDDLE TRIASSIC

5	BLACK LAMINATED SILICEOUS AND CALCAREOUS SHALES, PYRITIC SILICEOUS META-SEDIMENTS BETWEEN SUPERABUNDANT BASALTIC SILLS.	VANCOUVER GROUP

PERMIAN AND OLDER

4	CLASTIC SEDIMENTS, CHERTS, CHERTY TUFFITES	SICKER GROUP
3	RHYOLITIC FRAGMENTALS, SOMETIMES SERICITIC, PYRITIC. **(Absent on this sheet).**	SICKER GROUP
2	QUARTZ, CHLORITE SCHIST (CHLORITIC DACITE)	SICKER GROUP
1	ANDESITE FLOWS AND TUFFS. **(Absent on this sheet).**	SICKER GROUP

SYMBOLS

- SCHISTOSITY
- 30 BEDDING
- INFERRED CONTACT
- OUTCROP OUTLINE
- py PYRITE
- cpy CHALCOPYRITE
- mag MAGNETITE
- STREAM
- ROAD
- O HW Silt 9 SILT SAMPLE LOCATION
- × HW-R 7 ROCK SAMPLE LOCATION
- □ CLAIM POST

0 500 1000 Metres

HART WEST (1 and 2 Claims)

N.T.S. 92C/16E

Drawn by: M.J.D	Traced by:
Revised by: Date	Revised by: Date

GEOLOGY AND LOCATION OF GEOCHEMICAL SAMPLES

Scale: 1:10,000 Date: DEC 1983 Plate: 3