83-#473 - 11497

ASSESSMENT REPORT

GEOLOGICAL AND GEOCHEMICAL SURVEY

VEIN CLAIMS

ATLIN MINING DIVISION

TATSAMENIE LAKE AREA, B. C.

N.T.S. 104K/TULSEQUAH MAP SHEET

58°30'N
132°15'W

OWNER: CHEVRON CANADA LIMITED

OPERATOR: CHEVRON CANADA RESOURCES LIMITED

AUTHOR: Derek Brown
Godfrey Walton

October, 1983

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INTRODUCTION

Work on the claims commenced in July 31st and was completed by August 10, 1983. A crew of four Chevron employees completed the majority of work with the help of three people for a couple of days. The work was comprised of geological mapping and prospecting in combination with 100 meter soil sampling. The samples were located in the field by altimeter readings, compass and hip chain measurements. The stations were then plotted on both airphotos and topogaphic base maps. The base maps have been prepared by Pacific Survey of Vancouver.

LOCATION AND ACCESS

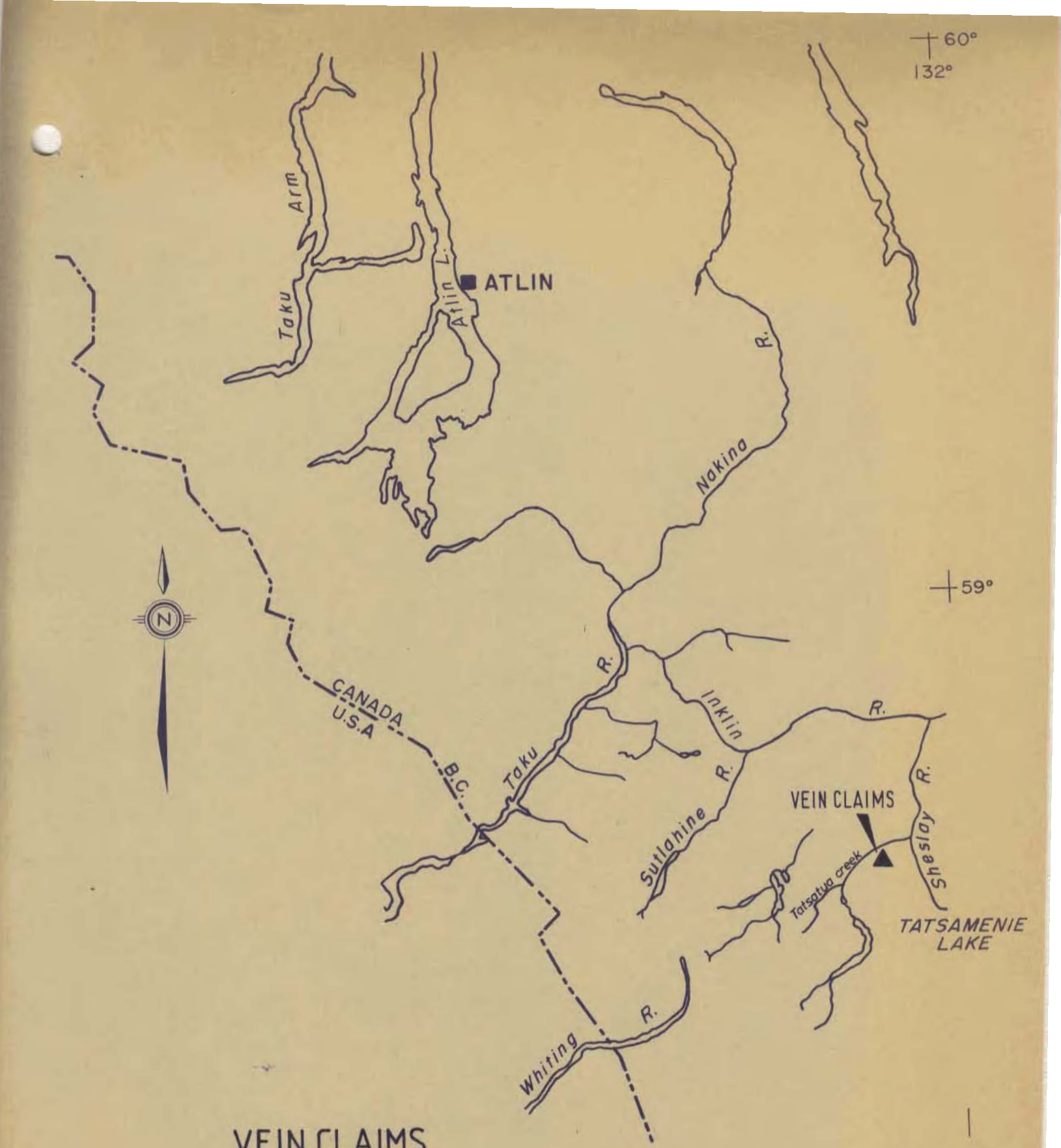
The VEIN claims are situated at approximately 58°30'N and 132°15'W, 12 kilometers northeast of Tatsamenie Lake (Figure 1). The claims are 140 km south of Atlin, B. C. A helicopter provided access to the property from a base camp situated at Trapper Lake, 15 km to the west.

CLAIMS

The VEIN claims were staked during the 1982 field season as follows:

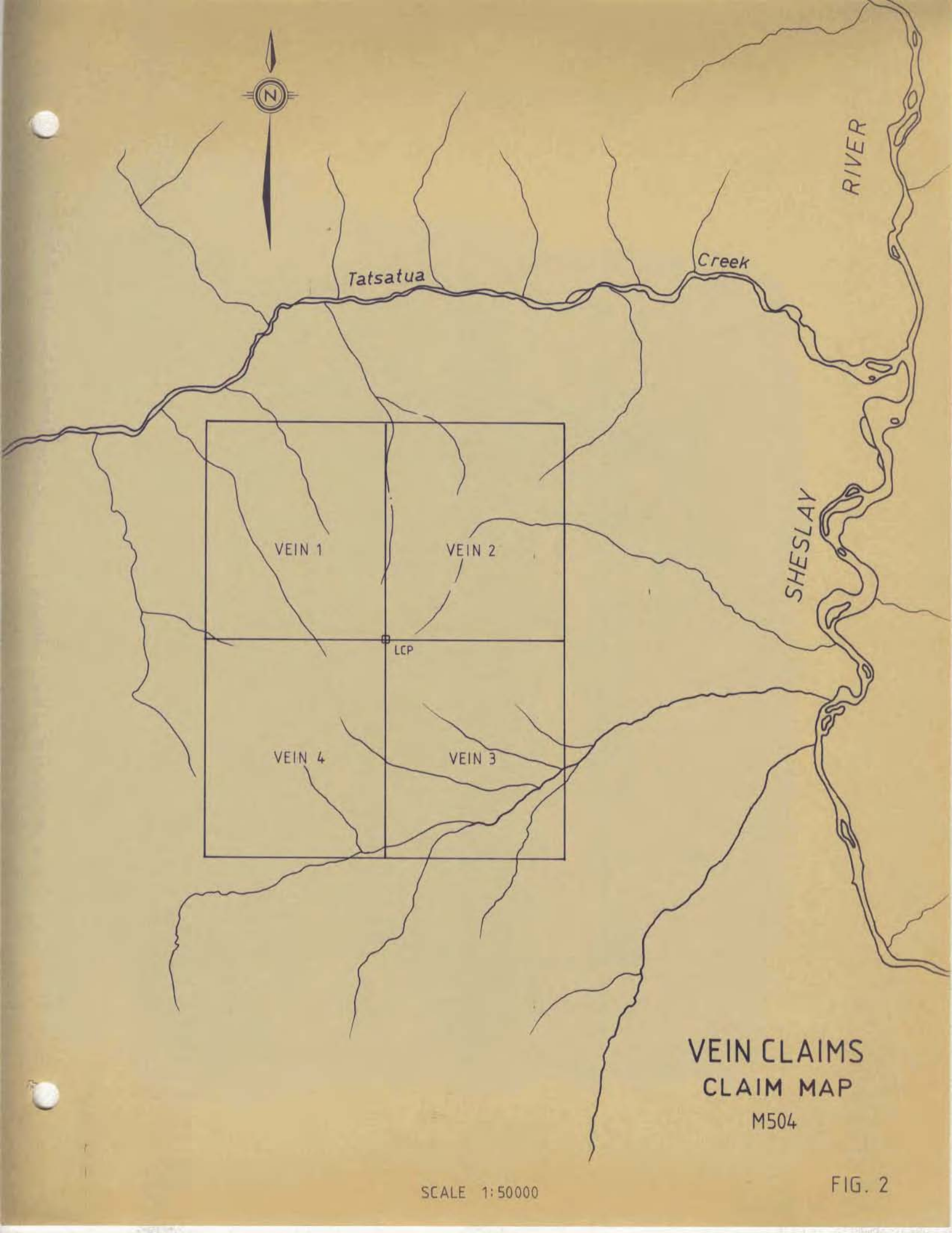
Claim	Record No.	Record Date	No. of Units
VEIN 1	1720	August 26, 1982	20
VEIN 2	1721	"	20
VEIN 3	1722	"	20
VEIN 4	1723	"	20

These claims covered previously unstaked ground.



VEIN CLAIMS
LOCATION MAP
M504

FIG. 1



VEIN CLAIMS
CLAIM MAP
M504

SCALE 1:50000

FIG. 2

GEOLOGY

The VEIN claims are centered over a Jurassic to Cretaceous aged hornblende diorite which has intruded sediments of the Takwahoni group. The sedimentary rocks have also been intruded by a series of dykes and sills that are probably Tertiary in age.

South of the claims a Cretaceous to Tertiary aged hornblende quartz monzonite is exposed and has some porphyry copper mineralization associated with it. North of the claims Stuhini group volcanics of Upper Triassic age have been mapped by Souther, 1971.

The rock types and their relationship to each other are described below:

Takwohoni Group::

The Takwahoni group is a Jurassic assemblage of siltstones, sandstones, greywackes and conglomerates. The siltstones, sandstones and greywackes tend to be thinly bedded (bedding typically 3 to 10 centimeters) while the conglomerates are very massive with no apparent bedding visible on the claim block. Souther (1971) suggests bedding in the conglomerate is commonly 100 feet thick but can reach 900 feet thick.

The thinly bedded siltstones, sandstones and greywackes vary in colour from dark green to grey in fresh outcrop. This colouring would tend to suggest a volcanic source as is interpreted by Souther (1971). The finer grained assemblage tend to have up to 10% pyrite. The pyrite is typically fine grained euhedral and pale yellow in colour. The beds have been folded and dissected by numerous small scale faults. The folding is probably associated with

the intrusion of the hornblende diorite since the beds now all seem to dip away from the diorite. It means many of the slopes have the bedding dips parallel to the slope. The faults seem to have produced movements of up to half a meter.

The coarse grained sedimentary rock (boulder conglomerate) shows very few of the finer structures. The relationship between the conglomerate and the siltstones is not clear since the contact area is obscured by rubble and talus. Souther (1971) suggests two possible scenarios, one that there is a facies change between the finer and coarse sediments and the other is that the coarser beds are overlain by the finer sediments. The cobbles range in size up to 20 centimeters and are primarily made up of granite cobbles.

The siltstones, sandstones and greywackes have obviously been hornfelsed and are very flinty when hit with a hammer. The beds can be followed away from the intrusion and become less indurated within a kilometer. The conglomerate is poorly indurated even within 500 meters of the intrusion.

Jurassic diorite

The diorite is a medium grained, equigranular intrusive rock believed by Souther to be Jurassic to Cretaceous in age. It is very similar to the other Jurassic intrusions on the Tulsequah map sheet. They appear very fresh, totally unaltered with a black and white colour.

Some dykes of the diorite were seen to actually cut the sedimentary rock outcrops but the actual contact with the major body was not visible. The diorite is primarily found in the central portion of the claim.

Tertiary rhyolite dykes and sills

These dykes and sills are only seen to dissect the Tahwahoni group sedimentary package on the claims. No dykes were seen to cut the diorite. The dykes and sills can be divided into three groups:

(1) white feldspar porphyry

(2) quartz eye feldspar porphyry

(3) quartz eye porphyry

These three types do not intrude one another and, therefore, it is difficult to establish field relationships. They are, however, very distinctive in the field. The feldspar porphyry is a very bleached looking rock that is almost 90 - 95% feldspar, with no visible quartz and nearly no mafics. The quartz eye feldspar porphyry has small 3 millimeter quartz eyes in a matrix feldspar and mafic (biotite?) minerals. The quartz eye porphyry has large quartz eyes up to 1.5 centimetersin a matrix of feldspar and 3 - 5 millimeter biotite crystals. The white feldspar porphyry is the only one that occurs on both dykes and sills.

MINERALIZATION

The mineralization consists of veins of massive arsenopyrite, stibnite, quartz, chalcopyrite, galena and sphalerite. The veins vary from 2 centimeters to 50 centimeters in width, and are easily traceable over one hundred and

fifty meters. In most cases they disappear under talus cover. Some veins are very consistent in width with limited changes while others have a lensoid shape. The strike of the veins is a consistent 080° with a steep variable dip.

An apparent zoning has been established both along and across strike. Along strike, going from east to west, the vein mineral assemblage changes from arsenopyrite-stibnite-quartz to galena-chalcopyrite-sphalerite-quartz. Across the strike of the veins, the mineralogy of the veins is consistent but once outside the zone that contains the vein the same orientation of fractures have been infilled with black calcite. This black calcite is very indicative of approaching or moving away from the mineralization.

In one case a vein was seen to cut the quartz eye porphyry which suggests the mineralization is very late and probably Tertiary in age. The rocks surrounding the veins are basically unaltered although there are local zones of alteration. These local zones are mainly clay alteration of some feldspar grains or crystals in the case of some of the dykes.

Assays from the rock samples taken of the veins have been plotted in the geological map. They indicate some very high grades (.5 oz/ton range) are quite possible. The veins are primarily located in the sedimentary rocks but do cut directly through the diorite. The zone in which the veins occur is approximately 400 meters wide.

GEOCHEMISTRY

A total of 549 soil samples and 71 rock samples have been taken from the property in 1983. These samples were all analyzed by Chemex Labs in North Vancouver for gold, arsenic, antimony, silver, and copper. Some of the samples have also been analyzed for lead and zinc (Analytical Procedure in Appendix A). Since many samples have been taken, a separate plot of each element has been made. The soil sampling was taken on a 100 meter basis to provide total coverage of the claim and possibly pick up some areas that may warrant further detailed sampling. Since the veins strike straight up and over the hill the geochemical dispersion from the zone will be very small unless you are directly over an individed vein. For this reason most of the anomalies are spot type or at the most three to four stations.

The soil sampling has helped to confirm the presence of the veins but on the spacing used it has not really provided truly valuable information. Much more detailed soil sampling would be warranted if veins were to be detected in covered areas.

CONCLUSIONS

A gold bearing arsenopyrite-stibnite±quartz-chalcopyrite-sphalerite-galena vein system has been located and cuts the Takwahoni group and Jurassic stock. The veins appear to be small and do not show up well in the soil samples.

More detailed work will be required to further outline the veins and their potential.

RECOMMENDATION

More detailed geological mapping and prospecting should be carried out in the vicinity of the currently known vein areas. The objective should be to locate further veins and greater widths.

REFERENCES

Souther J.C. (1971). Geology and mineral deposits of Tulsequah map area, British Columbia. Geological Survey of Canada, Memoir 362, 84 p.

1983 EXPLORATION PROGRAM

VEIN GROUP CLAIMS

COST STATEMENT

PERIOD: July 31 to August 10, 1983.

1. LABOUR:

	Position	Field Days	Office Days
G. Walton	Geologist	11	3
K. Shannon	"	1	-
M. Thicke	"	1	-
J. Frank	Sampler	10	-
M. Woods	"	7	-
J. Armstrong	"	10	-
D. Hodge	"	4	-
	Total man days	44	3

Average cost per field man day - 44 @$100.	$ 4,400.00
Average cost per office man day - 3 @$150.	450.00

2. ANALYSES:

Rock: 71 samples @$20.00 each	1,420.00
Soil: 549 samples @$17.50 each	9,607.50

3. CAMP COSTS:

Total man days - 44 @$60.00	2,640.00

4. HELICOPTER:

8 hrs. @$550. per hr. including fuel	4,400.00

5. DRAFTING:

4 man days @$100. per day	400.00

6. TOPOGRAPHICAL MAP (PACIFIC SURVEY CORP.)	1,750.00
TOTAL	$25,067.50

STATEMENT OF QUALIFICATIONS

I, Godfrey Walton, have worked as a geologist in British Columbia, Yukon, Northwest Territories, Alberta and Ontario since 1973. A B.Sc. (Hons. Geology) was received in 1974 from the University of Alberta and followed by a M.Sc. degree in geology from Queen's University in 1978. I am currently employed as a geologist with Chevron Canada Resources Limited of Vancouver, B. C.

I am a member of the Canadian Institute of Mining and Metallurgy, Exploration Geochemists and Mineralogical Association of Canada.

The work on the VEIN claims was carried out by me and under my supervision.

Godfrey Walton

GODFREY WALTON

STATEMENT OF QUALIFICATIONS

I, Derek Brown, graduated in May, 1981 with a B.Sc. (Hons. Geology) from Carleton University, Ontario. I have worked as a geologist since graduation and am presently employed on a temporary basis by Chevron Canada Resources Limited of Vancouver, B. C.

Derek Brown

Derek Brown

APPENDIX A

ANALYTICAL PROCEDURES

GEOCHEMICAL PREPARATION
AND
ANALYTICAL PROCEDURES

1. Geochemical samples (soils, silts) are dried at 50°C for a period of 12 to 24 hours. The dried sample is sieved to -80 mesh fraction through a nylon and stainless steel sieve. Rock geochemical materials are crushed, dried and pulverized to -100 mesh.

2. A 1.00 gram portion of the sample is weighed into a calibrated test tube. The sample is digested using hot 70% $HClO_4$ and concentrated HNO_3. Digestion time = 2 hours.

3. Sample volume is adjusted to 25 mls. using demineralized water. Sample solutions are homogenized and allowed to settle before being analyzed by atomic absorption procedures.

4. Detection limits using Techtron A.A.5 atomic absorption unit.

Copper	1 ppm
Molybdenum	1 ppm
Zinc	1 ppm
*Silver	0.2 ppm
*Lead	1 ppm
*Nickel	1 ppm
Chromium	5 ppm

*Ag, Pb & Ni are corrected for background absorption.

5. Elements present in concentrations below the detection limits are reported as one half the detection limit, ie. Ag - 0.1 ppm

PPM Antimony:

A 2.0 gm sample digested with conc. HCl in hot water bath. The iron is reduced to Fe^{+2} state and the Sb complexed with I^-. The complex is extracted with TOPO-MIBK and analyzed via A.A. Correcting for background absorption 0.2 ppm $\pm$ 0.2

Detection limit: 0.2 ppm

PPM Arsenic:

A 1.0 gram sample is digested with a mixture of perchloric and nitric acid to strong fumes of perchloric acid. The digested solution is diluted to volume and mixed. An aliquot of the digest is acidified, reduced with KI and mixed. A portion of the reduced solution is converted to arsine with $NaBH_4$ and the arsenic content determined using flameless atomic absorption.

Detection limit: 1 ppm

PPM Tungsten:

0.50 gm sample is fused with potassium bisulfate and leached with hydrochloric acid. The reduced form of tungsten is complexed with toluene 3,4 dithiol and extracted into an organic phase. The resulting color is visually compared to similarly prepared standards.

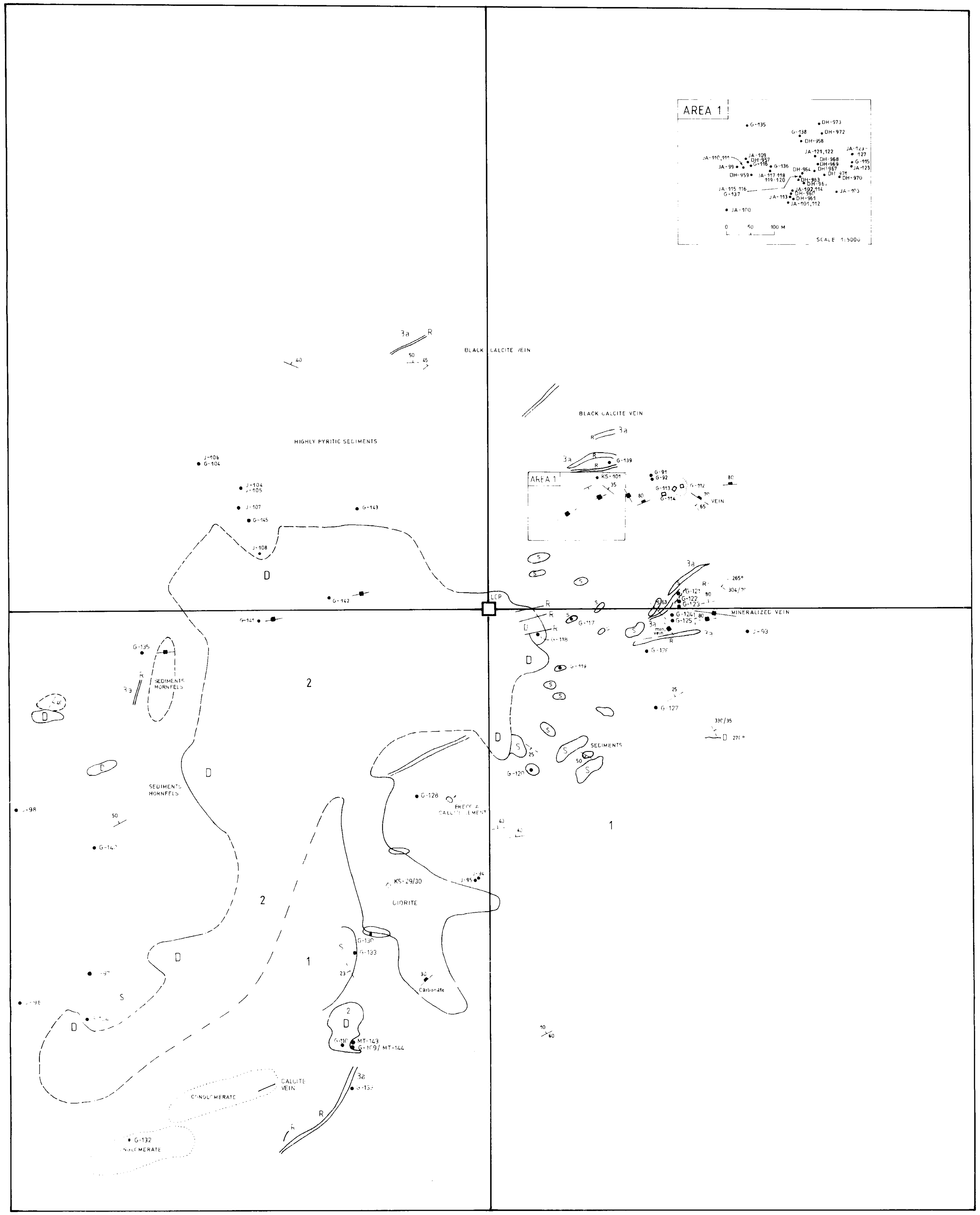
Detection limit: 2 ppm W

F.A. - A.A. GOLD COMBO METHOD

For low grade samples and geochemical materials 10 gram samples are fused with the addition of 10 mg of Au-free Ag metal and cupelled. The silver bead is parted with dilute HNO_3 and then treated with aqua regia. The salts are dissolved in dilute HCl and analyzed for Au on an atomic absorption spectrophotometer to a detection of 5 ppb.

ASSAYS

SAMPLE Nº	Cu ppm	Pb ppm	Zn ppm	Ag ppm	As ppm	Sb ppm	Au ppb
G-109	8	19	23	0.1	32	67.0	[illegible]
G-110	13	1	26	0.1	11	> 1000.0	[illegible]
G-112	180	14	24	0.1	48	680.0	[illegible]
G-113	340	7	37	0.1	29	75.0	[illegible]
G-114	102	152	9	16	> 10000	380.0	[illegible]
G-115	750	9	39	0.5	200	11.0	[illegible]
G-116	5600	5600	700	51.0	> 10000	> 1000.0	[illegible]
G-117	200	76	78	1.6	900	88.0	[illegible]
G-118	170	34	540	1.1	390	43.0	[illegible]
G-119	146	7	102	0.1	85	10.0	[illegible]
G-120	162	10	90	0.1	60	8.0	[illegible]
G-121	330	–	–	0.1	[illegible]	1.6	
G-122	225	–	–	0.1	59	11.8	[illegible]
G-123	270	–	–	5.9	> 10000	600.0	[illegible]
G-124	165	–	–	0.1	450	[illegible]	[illegible]
G-125	130	–	–	12.9	> 10000	190.0	> [illegible]
G-126	110	–	–	0.1	370	4.6	[illegible]
G-127	110	–	–	[illegible]	350	2.4	[illegible]
G-128	140	–	–	0.1	[illegible]	0.6	[illegible]
G-129	> 10000	–	–	64.0	4400	220.0	[illegible]
G-130	180	–	–	1.3	300	5.6	5
G-131	225	–	–	[illegible]	190	6.2	[illegible]
G-132	85			0.1	20	1.1	5
G-133	18	–	–	0.1	170	600.0	
G-134	100	–	–	0.1	41	14.2	5
G-135	150	–	–	0.2	32	7.4	5
				g/ton			g/ton
G-135		–	–	1.4	–	–	< 0.1
G-136	–	–	–	25.0	–	–	[illegible]
G-137	–	–	–	10.1	–		[illegible]
G-138	–	–	–	19.9	–	–	[illegible]
G-139		–	–	14.4	–	–	[illegible]
				ppm			ppb
G-140	[illegible]	–	–	0.1	110	7.0	5
G-141	4500	–	–	38.0	[illegible]	750.0	1950
G-142	> 10000	–		> 100.0	1300	560.0	395
G-143	250	–	–	19.6	4200	330.0	750
G-144	6500	–		[illegible]	> 10000	[illegible]	[illegible]
G-145	2300	–	–	> 100.0	> 10000	> 1000.0	[illegible]
JA-091	1500	5	24	[illegible]	> 10000	[illegible]	[illegible]
JA-092	[illegible]	[illegible]	60	1.4	420	[illegible]	[illegible]
JA-093	8400	500	189	[illegible]	> 10000	[illegible]	[illegible]
JA-094	[illegible]	–	–	0.1	19	1.6	[illegible]
JA-095	[illegible]	–	–	0.1	16	0.7	
JA-096	80	–		0.1	12	2.0	[illegible]
JA-097	[illegible]	–	–	0.1	9	3.8	[illegible]
JA-098	50		–	0.1	[illegible]	2.0	[illegible]
JA-099	–		–	1.7 g/ton	–	–	< [illegible] g/ton
JA-100	–	–	–	11.0		–	[illegible]
JA-101	–	–	–	14.4	–		[illegible]
JA-102	–	–	–	6.9	–		[illegible]
JA-103		–	–	2.4	–	–	
JA-104	480		–	1.4 ppm	115	[illegible]	700
JA-105	3000	–	–	37.0	> 10000	> 1000.0	> [illegible] oz/ton
JA-106	> 10000	–	–	> 100.0	7200	[illegible]	[illegible]
JA-107	345	–	–	1.9	170	[illegible]	[illegible]
JA-108	> 10000			4.8	> 10000	[illegible]	[illegible]
JA-109	273	–	–	0.1	75	14.4	[illegible]
JA-110	6800	–	–	> 100.0	> 10000	> 1000.0	[illegible]
JA-111	246	–	–	1.9	1500	[illegible]	[illegible]
JA-112	292	–	–	1.0	1100	7.4	[illegible]
JA-113	147	–	–	0.1	51	[illegible]	[illegible] ppb
JA-114	402	–	–	0.4	160	6.6	[illegible]
JA-115	245	–	–	0.2	24	4.4	[illegible]
JA-116	183	–	–	0.4	280	[illegible]	[illegible]
JA-117	162	–	–	0.1	43	9.2	[illegible]
JA-118	234	–	–	0.1	41	[illegible]	
JA-119	129	–	–	[illegible]	67	10.8	[illegible]
JA-120	124	–	–	0.1	19	6.6	[illegible]
JA-121	700	–	–	1.2	400	[illegible]	
JA-122	154	–	–	0.1	22	1.8	[illegible]
JA-123	164	–	–	0.1	19	28.0	[illegible]
JA-124	205	–	–	0.1	15	7.8	[illegible]
JA-125	30	–	–	0.1	77	41.0	[illegible]
JA-126	1800	–	–	1.9	8100	9.0	[illegible]
JA-127	1650	–	–	1.5	46	[illegible]	[illegible]
DH-957	160	–	–	0.1	17	[illegible]	[illegible]
DH-958	163	–	–	0.1	25	6.0	[illegible]
DH-959	172	–	–	0.1	15	2.4	[illegible]
DH-960	950	–	–	1.7	4300	8.4	[illegible]
DH-961	220	–	–	0.1	65	[illegible]	10
DH-962	147	–	–	0.1	32	3.2	
DH-963	128	–	–	0.1	19	[illegible]	[illegible]
DH-964	170	–	–	0.1	12	1.5	[illegible]
DH-965	140		–	[illegible]	9	1.6	< [illegible]
DH-966	135	–	–	[illegible]	10	[illegible]	< [illegible]
DH-967	92		–	0.2	9	[illegible]	
DH-968	320		–	2.5	> 10000	[illegible]	[illegible]
DH-969	150	–	–	0.1	> 10000	8.6	[illegible]
DH-970	190		–	0.4	4400	8.6	[illegible]
DH-971	[illegible]	–	–	0.4	180	61.0	[illegible]
DH-972	150	–	–	0.2	81	9.4	< [illegible]
DH-973	138	–	–	0.2	[illegible]	4.8	[illegible]
DH-974	60	–	–	0.1	19	[illegible]	< [illegible]
DH-975	> 10000			14.8	150	[illegible]	[illegible]
DH-976	440	–	–	0.1	14	[illegible]	
DH-985	365	–	–	0.1	105	2.6	[illegible]
DH-986	111	–	–	0.1	48	11.4	[illegible]
KS-029	690	1450	> 10000 (7.44%)	18.3	3600	1000.0	[illegible]
KS-030	275	500	> 10000 (1.54%)	[illegible]	[illegible]	650.0	135



11,497

GEOLOGICAL BRANCH
ASSESSMENT REPORT

LEGEND

TERTIARY

3a FELDSPAR PORPHYRY DYKE SILL
3b QUARTZ-FELDSPAR PORPHYRY
3c QUARTZ-EYE PORPHYRY

JURASSIC

2 HORNBLENDE DIORITE

1 TAKWAHONI GROUP : SILTSTONE, SANDSTONE, GREYWACKE CONGLOMERATE

SYMBOLS

● ROCK SAMPLE (Au, oz/ton or ppb)
BEDDING
VEIN / DYKE ON ORIENTATION
GEOLOGICAL CONTACT : KNOWN, ASSUMED

SCALE 1:10000 (0 – 500 – 1000 M)

S - SEDIMENTS
R - RHYOLITE
D - DIORITE
B - BASALT

G-139 IS G311-139
J-106 IS JA311-106

Chevron Canada Resources Limited
Minerals Staff

VEIN CLAIMS
GEOLOGY

FIGURE No 3		PROJECT No M-504	
DATE OCT. 1983	REVISIONS		SCALE 1:10000
NTS No 104/K9			FILE No G-15
COMPILED BY G.W.			

Chevron

VEIN CLAIM

Au ppb

PROJECT Nº

FIGURE : 4

DATE: OCT. '83

REVISIONS

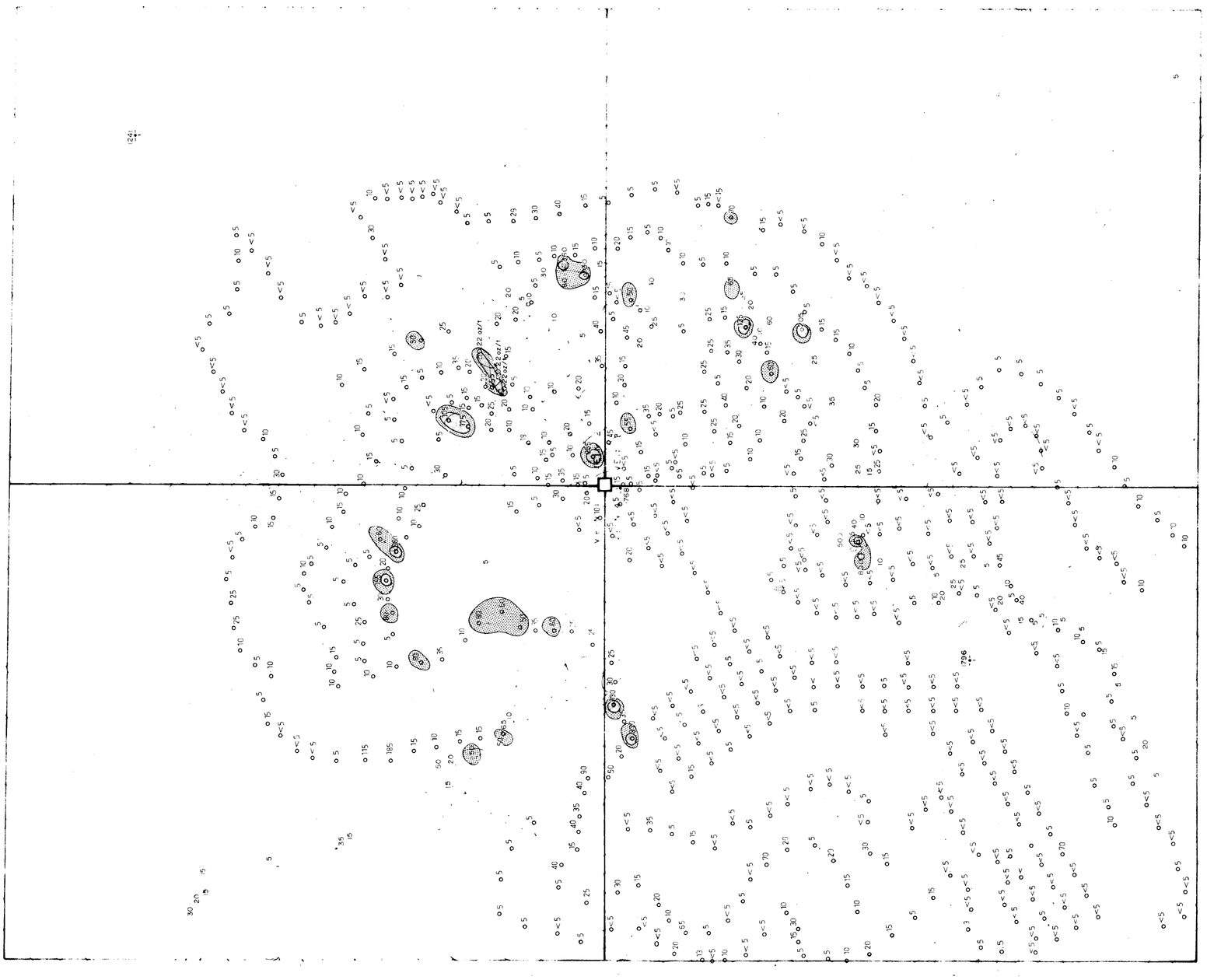
NTS Nº 104/K9

SCALE 1:10

FILE No. C-159

> 100 ppm Au

> 50 ppm Au



LEGEND

□ [illegible]

○ [illegible]

△ [illegible]

> 1 ppm Ag

N

Chevron [illegible]

VEIN CLAIMS
Ag ppm.

FIGURE No. 5		PROJECT No.	M-504
DATE: OCT. '83	REVISIONS	SCALE 1:1,000	
NTS No. 104/K9		FILE No.	C-160

Chevron Canada Resources Limited

VEIN CLAIMS

Cu ppm

6		M-504	
DATE: OCT '83	REVISIONS	SCALE 1:10,000	FILE No. C-161
NTS No. 104/K9			

GEOLOGICAL BRANCH
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LEGEND

> 200 ppm Cu

> 500 ppm Cu

VEIN

VEIN CLAIM
As ppm

> 500 ppm As
> 1000 ppm As

Chevron

FIGURE No. 7 PROJECT No.
DATE: OCT '93 REVISIONS SCALE: 1:1
NTS № 104/K9
FILE № C-162

LEGEND

□ ROCK
○ SOIL
△ SILT

> 100 ppm Pb
> 50 ppm Pb

N

0 200 400m

Chevron Canada Resources Limited
Minerals Staff

VEIN CLAIMS
Pb ppm

M-504

1 in. = 200 ft.

DATE JUNE 83
NTS No. 104/K9

FILE No. C-163

VEIN 1
VEIN 4

Chevron Canada Resources Limited

VEIN CLAIMS
Zn ppm

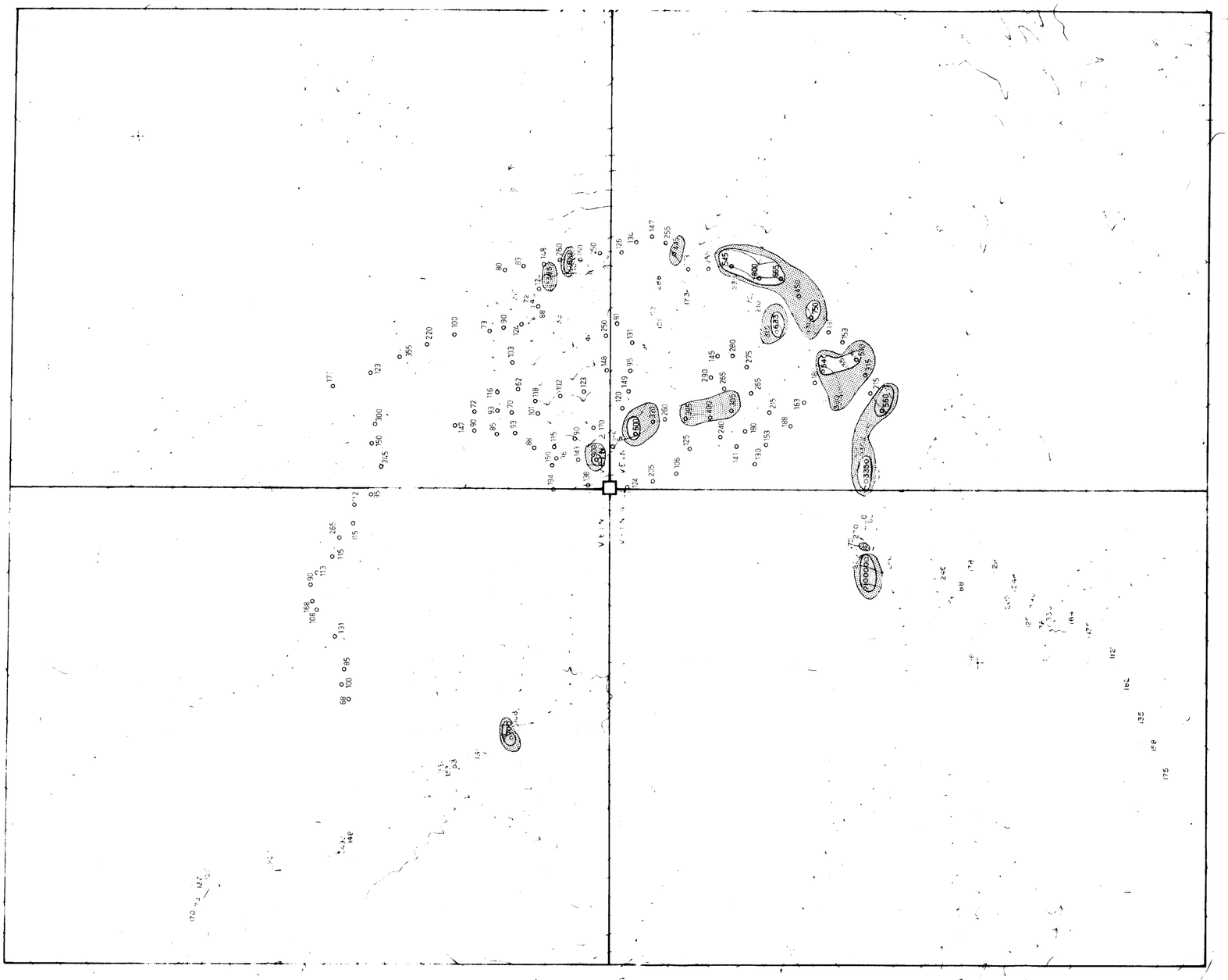
FIGURE No 9 | M-504
DATE OCT '83 | REVISIONS | SCALE 1" = 400'
NTS NE 104 K/9 | FILE No C-164

LEGEND

- □ ROCK
- ○ SOIL
- △ SILT
- > 500 ppm Zn
- > 300 ppm Zn

N

0 200 400 600 800 1000 FEET



GEOLOGICAL BRANCH
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> 100 ppm Sb

> 20 ppm Sb

Sb ppm

FIGURE No.

DATE: OCT. 83 REVISIONS

NTS No. 104/K9

SCALE 1

FILE No. C-165

VEIN 4

VEIN 2