6159

GOU'T

GEOLOGICAL

AND

GEOCHEMICAL SURVEY

on

EAGLE RIVER PROSPECT (SHREW CLAIM)

N.T.S. 92-G-9E

NEW WESTMINSTER MINING DIVISION

for

Chevron Standard Limited

C-452

December 19, 1976

R. G. Dales

C O N T E N T S

ILLUSTRATIONS:

APPENDIX:

EAGLE RIVER PROSPECT

C-452

INTRODUCTION

Previous geological work in the region, proximity to occurrences of economic interest, favourable general lithologies, and the recovery of of mineralized float from the newly staked area prompted more detailed work on the ground in the fall of 1976.

The new claim is recorded in the name of:

Chevron Canada Limited,
901-355 Burrard Street,
Vancouver, B. C.

and is described as follows:

SHREW 15250 staked September 24, 1976, and recorded 27 September, 1976

The field work was carried out by employees of Chevron Canada Ltd. from September 24 to October 1, 1976.

LOCATION

The property is located on GSC Map Sheet 1069A about 5 miles north of Chehalis Lake, some 24 miles north of Harrison Mills and 70 Miles east of Vancouver, B. C. Access is via highway #1 East and active logging roads from Harrison Mills.

GEOGRAPHY

Salient features can be summarized as follows:

Altitude: 2000' - 4500' ASL
Terrain: moderately steep and bush covered over much of the claims but locally precipitous.
Vegetation: fir, cedar, hemlock, assorted berry bushes, and thorn bushes of various types.
Climate: coastal, snow cover in some areas year round and in general from October to June.
Drainage: the claims are drained by several ephemeral streams feeding Eagle Creek and another creek to the west; generally well drained.

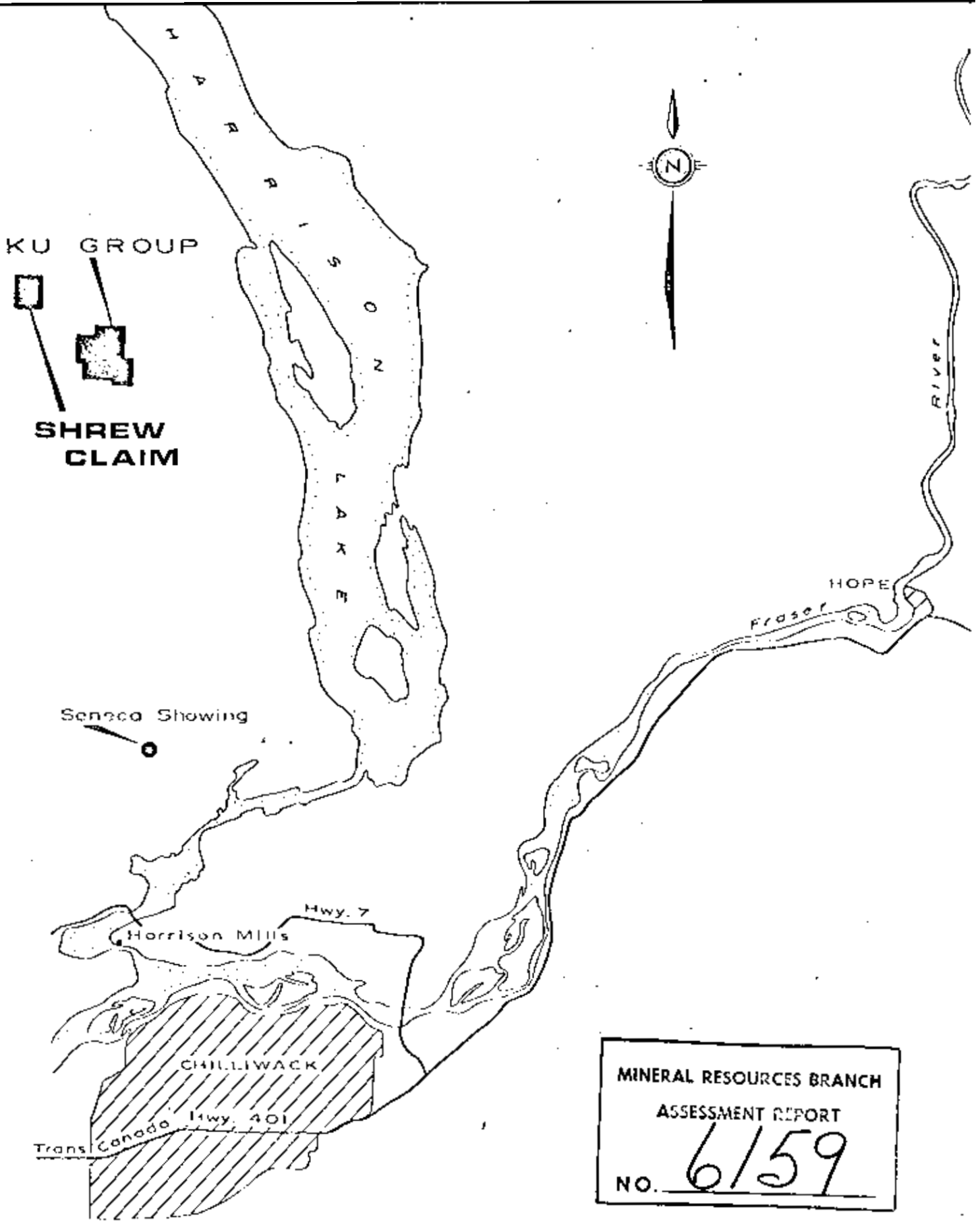

FIG. 2

PROPERTY LOCATION MAP

EAGLE CREEK

SCALE
1" = 4 Miles

AUG. 1973

HISTORY

Prospecting by various members of Chevron Canada's staff in recent years and detailed mapping of an adjacent claim group (KU) by D. Arscott led to the acquisition of the new claims. Cursory geological examination and a vertical field magnetometer survey (3 lines, 109 stations), were carried out by L. Dick in 1974. G. Laforme prospected for one day along a snow chute and collected chip samples and float showing varying amounts of pyrite, chalcopyrite, and sphalerite. In previous years, E. Dodson prospected the Chehalis Lake area.

Of significance is the proximity of these claims to the Seneca showings (operated by Cominco), both geographically and lithologically speaking.

REGIONAL GEOLOGY

The lithologies of consequence in the area are a sequence of Jurassic, shallow marine, volcanic rocks which have been locally distorted, metamorphosed and interrupted by Cretaceous intrusions. Associated with these are volcanically derived sedimentary rocks.

The volcanic belt occupies an area approximately 30 miles long by 8 miles wide bordered on the east Harrison Lake and the north, south, and west by intrusive rocks. Descriptions of the underlying Harrison Lake Formation (mainly pyroclastics) and the overlying Fire Lake Group (volcanic sediments) taken from GSC Memoir 335 appear in the appendix. The new claim covers a locally complex zone of predominantly Fire Lake rocks.

Roddick (GSC Mem.335) describes the area as being a west trending, gently plunging anticline truncated to the west by intrusions. Rice (1957) however, describes the area as a westerly plunging syncline. (see GSC Map 1069A)

DESCRIPTION OF WORK

A party of 2 to 3 men examined the area from September 14 to October 1, 1976. The work consisted of:

1) claim staking
2) geological mapping
3) prospecting
4) soil sampling

The mapping was done at 1:5000 scale but locally more detail was required. Samples of all unique lithologies were collected for laboratory study.

A precipitous snow chute terminating in a fan-like boulder accumulation against the western bank of Eagle Creek was prospected in hopes of tracing the occurrences of sulphide rich float rock. This met with some success, isolating at least one zone of sulphide mineralization in situ. The chute was mapped to an altitude of about 3500' ASL.

Soil samples of about 0.5 kg. each were collected from 'B' horizon(zone of accumulation) at 100' intervals on lines spaced at 400' and oriented NE-SW. The samples were analyzed by atomic absorption spectrometry after hot aqua regia treatment for Cu,Pb, Zn (results and contoured maps in appendix).The samples were collected over the southern extremity of the Shrew claim, an area largely logged off.

The soil cover appears in several places to be well stratified alluvium and mixed till of up to several metres thickness, the top 1 metre showing a fair A-B development. The C layer, at least in areas of extensive alluvium and till, is obscured. It is likely that these areas are "masked" geochemically from bedrock layers. The soils are well drained and aerated over the sampling grid.

LOCAL GEOLOGY

In general, the rocks mapped show successions from andesite flows to dacite and/or rhyolite tuffs, sometimes with minor chert and sediments or siliceous breccias being uppermost. Thickness of separate sequences is

most often indeterminate.

The character of the rocks changes from very fresh, essentially unaltered, to highly fractured rock showing rather intense chlorite, and epidote alteration and, in some cases, apparent Mg, Si enrichment and Fe depletion.

The metamorphic grade in the area is low; lower green-schist facies. Marginal contact effects are seen as one approaches the quartz diorite intrusion.

The overall attitude of bedding in the area indicates some macroscopic folding has occurred. Other structural features include joints of various orientations, shear zones and veins striking about 0° and dipping steeply, and a well developed foliation (see Fig. 4 for orientations). The foliation becomes more intense (i.e. planes more closely spaced) to the west and proximal to shear and fault zones. This may be due to foliation being compounded by shear.

Hand specimen and thin section examination revealed several distinct rock types:

1) fine grained, massive andesite flows, some showing intense epidote and chorite alteration. These are interpreted as being flows because of the lack of any pyroclastic features and their massive nature. Some of these rocks contain disseminated pyrite and pyrite accumulations along fractures. One sample in particular shows phenocrysts that have been altered almost entirely to epidote (see sample 1059).

2) tuffs ranging in composition from andesite to rhyolite, the latter being altered to sericite schist or brecciated. The fragment size varies from finely crystalline to lapilli size in general, but some agglomerates are present. Many of these tuffs contain disseminated pyrite.

Some evidence of at least minor reworking by water was noticed (cross-bedding, fining upwards sequences, load features). The tuffs are by far the most common rocks in the area.

3) minor occurrences of sediments (sandstone, greywacke) of little importance volumetrically. Some minor chert bands are also present.

4) heavily fractured and altered rocks carrying magnetite-pyrrhotite-sphalerite-pyrite-chalcopyrite mineralization. These are found in local shear zones and fractures and are ubiquitously gossaned. The mineralization has probably been remobilized along shear and other fracture planes.

5) heavily mineralized float rocks recovered from the banks of Eagle Creek and along the length of a snow chute near the northern Shrew claim boundary. The assemblage is pyrrhotite-pyrite-sphalerite-chalcopyrite but the magnetite is lacking.

There are 4 modes of occurrence of metallic minerals in the area:

1) fracture concentrations of pyrrhotite-magnetite-pyrite-sphalerite-chalcopyrite of limited extent and grade. These occur in the shear zones of the snow chute.

2) accumulations of pyrite-sphalerite-chalcopyrite in siliceous breccias. The sulphides occur interstitially (see sample 1067).

3) heavy accumulations of massive and disseminated pyrite in discrete, concordant pods, in concentrically zoned "bombs", and over a wide, heavily pyritized zone of varying rock types. In one locality, a fairly well defined bedding plane (crystal size gradation) was noticed to continue without interruption through one of these "bombs". For this

reason, and the concentric banding, I prefer a concretionary origin, either from magma residue or loosely compacted tuffaceous material (i.e. iron concretions). No disruptive effects were noticed around any of the "bombs".

4) float containing assemblages of pyrrhotite-chalcopyrite-sphalerite-pyrite some with remnant crystal tuff attached (see sample 1068). There are vein sections in the float containing veinlets of chalcopyrite. The relative amounts of pyrrhotite-pyrite-chalcopyrite-sphalerite change markedly but pyrrhotite is overall the most abundant. Associated with all float are gossan and MnO_2 coatings.

Especially, rocks collected from the snow chute show heavy chlorite alteration and, in many places, veinlets of epidote.

Polished section examination of samples 1044, 1056 (from shear), 1068, 1069, and 2000 confirmed the basic mineralogical difference to be the presence or absence of magnetite. Samples taken from the shear zones show cataclastic deformation of both host rocks and sulphides whereas the other samples showed much more normal textures.

In thin section, the rocks are composed of varying amounts of quartz-K-feldspar-plagioclase (andesine to labradorite)-mafics, principally hornblende and chlorite. The feldspars are almost always altering to clay minerals, and epidote is common. Several of the thin sections show grain size variations assumed to represent bedding, micro folds, micro-faults, veining and foliation.

Ordinarily, Fe rich, green pleochroic chlorite is the predominant phase at any distance from sulphide accumulations. Closer to sulphides, the Si rich, $Fe^{+2} + Fe^{+3}$ poor, low $Fe^{+2} + Fe^{+3}/Fe^{+2} + Fe^{+3} + Mg$ form pennine becomes predominant.

This could represent either Mg metasomatism or apparent Mg, Si enrichment due to leaching in the vicinity of a feeder pipe system. The predominantly Po mineralization is compatible with this.

The modes of mineralization may have a common origin. The magnetite-pyrrhotite-pyrite-sphalerite-chalcopyrite assemblage has probably been remobilized along fracture systems by the quartz diorite intrusion, the oxide developing en route. All other occurrences show fairly typical massive sulphide characteristics:

1) siliceous volcanic host rocks
2) expected mineralogy (pyrrhotite-pyrite-sphalerite-chalcopyrite)
3) stratiform in geometry
4) alteration of host rocks to epidote, chlorite and various clay minerals
5) apparent Mg, Si enrichment

CONCLUSIONS

It is my feeling that both the Harrison Lake and Fire Lake formations are represented on the staked area. To the east of Eagle Creek and stratigraphically higher than the staked ground, upper Fire Lake, identified by a coarse greywacke and conglomerate series with some fossils, outcrops. The southern extremity of the mapping represents middle or lower Fire Lake rocks; tuffs and intercalated sediments. The northern wall of the snow chute represents the best choice for Harrison Lake rocks, being an up-faulted block. This conclusion is based on:

1) rock types do not match across the snow chute
2) mineralization is present on the north wall but notably absent on the south wall (except pyrite)

3) mineralized float is accumulated on the north side of the chute and the upper north fork but absent on the upper south fork.

4) physical expression of faulting (matching chutes across the Eagle Creek valley)

5) all other structural elements become more intense in the vicinity of the chute.

Soil values were treated numerically and, although the absolute values are considered low, there are interesting anomalous trends in all three elements. Keeping in mind that the soil survey was not conducted under the most favourable conditions or over the most favourable ground, the overlapping anomalies for Pb, Cu, Zn warrant closer examination.

The mapping coverage is less than adequate for the area, due primarily to a lack of accessible outcrop. Much more basic information can be gathered with increased map coverage.

RECOMMENDATIONS

On the basis of mapping, laboratory examination of some specimens, and the soil survey, my recommendations are as follows:

1) To establish a helicopter-assisted fly camp for 5 to 10 days above the cliffs barring access to much of the outcrop of the area and complete mapping the newly-staked ground.

2) To extend the mapping and prospecting to the northwest and, of lesser importance, to the west to the intrusive contact.

3) To extend the soil sampling grid if suitable areas are located.

4) To attempt to locate the source of mineralized float.

SIGNED: _____

R. GRAEME DALES, B.Sc. B.A.

SIGNED: David Arscott

DAVID ARSCOTT, P.Eng.

FORMATION DESCRIPTIONS

Fire Lake Group

The group consists of three parts, the oldest of which is chiefly fine-grained, thinly bedded granulite, with minor andesite, limestone, and conglomerate. The middle part is composed chiefly of dark slate and argillite, with minor greywacke. The upper part consists chiefly of a thick greenstone formation made up of medium-grained plagioclase fragments in a very fine-grained, tuffaceous(?) matrix, chlorite schist, and minor conglomerate, quartzite, and greywacke. Only the middle and upper parts appear in the Livingston Creek pendant, and only the upper part was observed in the body on the west side of Harrison Lake in the vicinity of Bremner Creek. Some rhyolite is present in the Bremner Creek body but absent elsewhere.

Harrison Lake Formation

The characteristic rocks of this formation are metamorphosed, porphyritic andesite and dacite, containing phenocrysts of plagioclase and commonly of quartz. Most of these rocks fall near the dividing line between andesite and dacite. These, for convenience, are hereafter referred to as andesites. East of Pitt Lake map-area the formation contains coarse agglomerate and breccia which was not observed farther west. The Deroche pendant contains a minor amount of arkose, the only sedimentary rock observed in this formation. The volcanic rocks are so metamorphosed that in most places the matrix has recrystallized but the phenocrysts are little affected.

From G.S.C.Memoir 335.

THE UNIVERSITY OF TORONTO

DEPARTMENT OF GEOLOGY

PETROGRAPHIC REPORT

No. 1003

Collected by ..... Date 6/7/68/76 .. Locality ..... C-952 .....

Field Relations ..... HF. ios. (Adelaide) .....

Macroscopic Description ..... light grey, f.g. homog. fine fragmental .....

MICROSCOPIC DESCRIPTION:

Minerals arranged in order of abundance. Origin of each mineral checked in the proper column. Sketch of significant textures and relationships included in space provided where desirable.

		Percentage	Primary: Essential	Primary: Accessory	Secondary: Deuteric	Secondary: Hydrothermal	Metamor: Recrystallization	Metamor: Neomineralization	Introduced	Weathering	Paragenesis (1st, 2nd, etc.)
1	Plagioclase (Andesine - labradorite)										
2	K. Fel										
3	Qtz										
4	chlorite										
5	Epidote										
6	some chl in matrix										
7	glass										
8	clay minerals										
9											
10											
11											
12											
13											

Textures, Structures, General Remarks:

fine grained, generally subparallel flow.

Probable Origin and History:

Name and Classification: Dacite crystal tuff.

Examined by ..... D.L.S. ..... Date ..... Oct. 21/76 .....

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DEPARTMENT OF GEOLOGY

PETROGRAPHIC REPORT

No. 1006

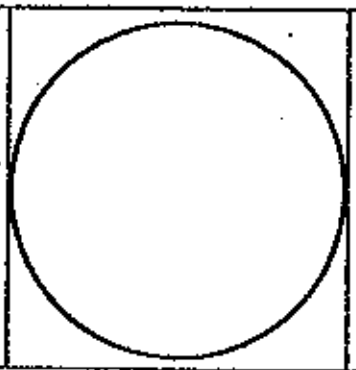
Collected by... Dalrymple ..... Date Sept 28th/76.. Locality ...C-452.....

Field Relations .....

Macroscopic Description ...fine...coarse...fragmental,...weathering...buff.....

MICROSCOPIC DESCRIPTION:

Minerals arranged in order of abundance. Origin of each mineral checked in the proper column. Sketch of significant textures and relationships included in space provided where desirable.



		Percentage	Primary		Secondary		Metamor				
			Essential	Accessory	Deuteric	Hydrothermal	Recrystallization	Neomineralization	Introduced	Weathering	Paragenesis (1st, 2nd, etc.)
1	Plagioclase (Andesine)										
2	K fd										
3	opaques										
4	clay minerals										
5	epidote										
6	chlorite										
7	sericite										
8	qtz (in matrix)										
9	silicified ~~matrix~~										
10											
11	matrix (mostly silicified)	40									
12											
13											

Textures, Structures, General Remarks:

Some fragments completely epidotized, silicified.

Probable Origin and History:

Name and Classification: ~~Andesite~~ Dacite crystal/lapilli tuff.

Examined by .....Dalrymple..... Date ...Oct Nov 76.....

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DEPARTMENT OF GEOLOGY

PETROGRAPHIC REPORT

No. 1009

Collected by Dales Date Sept 8th/76 Locality C-952

Field Relations in place in quartz chute

Macroscopic Description green porphyritic epidotized rx

MICROSCOPIC DESCRIPTION:

Minerals arranged in order of abundance. Origin of each mineral checked in the proper column. Sketch of significant textures and relationships included in space provided where desirable.

		Percentage	Primary		Secondary		Metamor				
			Essential	Accessory	Deuteric	Hydrothermal	Recrystallization	Neomineralization	Introduced	Weathering	Paragenesis (1st, 2nd, etc.)
1	Plagioclase (Andesine)										
2	Kfd										
3	Hbl										
4	chlorite										
5	Epidote										
6	clay minerals										
7	fine grained unidentifiable matrix										
8											
9											
10											
11											
12											
13											

Textures, Structures, General Remarks:

various alterations of Hbl (Actinolite, talc etc in small quantities)

Probable Origin and History: Fel → clay

Name and Classification: Andesite flow

Examined by Dales Date 21 Nov/76

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DEPARTMENT OF GEOLOGY

PETROGRAPHIC REPORT

No. 1016

Collected by Dalla Date Sept. Oct./76 Locality C-153

Field Relations ~~[illegible]~~ Same locality as 1017. Crosscutting vein proximal.

Macroscopic Description green & white fine grained fractured rock

MICROSCOPIC DESCRIPTION: Minerals arranged in order of abundance. Origin of each mineral checked in the proper column. Sketch of significant textures and relationships included in space provided where desirable.

	Mineral	Percentage	Primary: Essential	Primary: Accessory	Secondary: Deuteric	Secondary: Hydrothermal	Metamor: Recrystallization	Metamor: Neomineralization	Introduced	Weathering	Paragenesis (1st, 2nd, etc.)
1	Plagioclase	20									
2	K-fd	10									
3	chlorite	5									
4	Epidote (mostly in vein)	20									
5	Opaques	5									
6	Clay minerals	20									
7	chert	5									
8	Fragments	5									
9	~~indistinguishable fd (clay alt.)~~										
10	Quartz	10									
11											
12											
13											

Textures, Structures, General Remarks:
Many of the fd indistinguishable due to clay alteration.

Probable Origin and History:

Name and Classification: Andesite/dacite tuff

Examined by Dales Date Oct. Nov./76

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DEPARTMENT OF GEOLOGY

PETROGRAPHIC REPORT

No. 1017

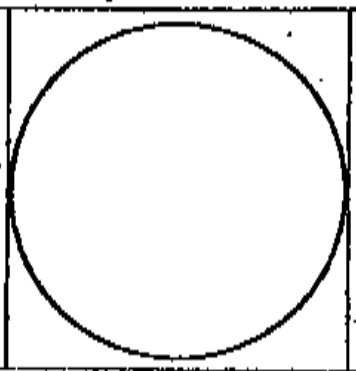
Collected by ...Dales..... Date Sept. Oct./76. Locality ...C-452.....

Field Relations ...Tuff sequence...showing...some water working.....

Macroscopic Description ...porphyritic, well banded, porphyritic tuffs.....

MICROSCOPIC DESCRIPTION:

Minerals arranged in order of abundance. Origin of each mineral checked in the proper column. Sketch of significant textures and relationships included in space provided where desirable.



		Percentage	Primary: Essential	Primary: Accessory	Secondary: Deuteric	Secondary: Hydrothermal	Metamor: Recrystallization	Metamor: Neomineralization	Introduced	Weathering	Paragenesis (1st, 2nd, etc.)
1	Plagioclase (Labradorite - Andesine)	20									
2	(some K-intergrowths in plag)										
3	K-fel	10									
4	Qtz (few phenocrysts)	10									
5	Hornblend (Hematized)	15									
6	Epidote	10									
7	chlorite	15									
8	glass ?	5									
9	clay minerals	10									
10	Cummingtonite ?	5									
11	Sericite	15									
12	opaques	5									
13											

Textures, Structures, General Remarks:

Some reworking by water but still classed as tuff (crystal shapes still well preserved). Some fragments. Good bedding

Probable Origin and History:

Name and Classification: Dacite crystal tuff

Examined by .....Dales..... Date ...Oct./Nov./76.....

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PETROGRAPHIC REPORT

No. 1012

Collected by Dalco Date Sept. 21/76. Locality C-152

Field Relations sand sequence m. 1044

Macroscopic Description white porphyritic, poorly banded

MICROSCOPIC DESCRIPTION:

Minerals arranged in order of abundance. Origin of each mineral checked in the proper column. Sketch of significant textures and relationships included in space provided where desirable.

		Percentage	Primary: Essential	Primary: Accessory	Secondary: Deuteric	Secondary: Hydrothermal	Metamor: Recrystallization	Metamor: Neomineralization	Introduced	Weathering	Paragenesis (1st, 2nd, etc.)
1	Kfd } phenocrysts	5									
2	qtz }	5									
3	plag (labradorite)	5									
4	epidote	5									
5	carbonate	65									
6	fragmental	10									
7	fine grained matrix of chert, Kfd, qtz	70									
8											
9											
10											
11											
12											
13											

Textures, Structures, General Remarks:

foliated rock, few phenos, probably an ash

Probable Origin and History:

Name and Classification: ash

Examined by Dalco Date Oct. 4th/76

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PETROGRAPHIC REPORT

No. 1029

Collected by ..... Dales ..... Date Sept. 08/76. Locality ..... C-952 .....

Field Relations ..S.E. portion of mapped area ... tuff: subaerial intermediate

Macroscopic Description ..light. grey porphyritic (lapilli mud.) .....

MICROSCOPIC DESCRIPTION:

Minerals arranged in order of abundance. Origin of each mineral checked in the proper column. Sketch of significant textures and relationships included in space provided where desirable.

		Percentage	Primary: Essential	Primary: Accessory	Secondary: Deuteric	Secondary: Hydrothermal	Metamor: Recrystallization	Metamor: Neomineralization	Introduced	Weathering	Paragenesis (1st, 2nd, etc.)
1	Plagioclase (labradorite	10	✓								
2	K-fd	20	✓								
3	Qtz	20	✓								
4	glass	5		✓							
5	chert + rhyolite fragments	35	✓			✓			✓	✓	
6	Epidote	<5						✓			
7	opaques	<5							✓		
8	chlorite (recrystallized)	<5						✓			
9											
10											
11											
12											
13											

Textures, Structures, General Remarks:

large number of rhyolite fragments in a silicified matrix (chert-rich) stag. K-fd, qtz phenocrysts.

Probable Origin and History:

Name and Classification: rhyodacite crystal/lapilli tuff.

Examined by .... Dales ..... Date 6th Nov. /76 .....

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DEPARTMENT OF GEOLOGY

PETROGRAPHIC REPORT

No. 1094

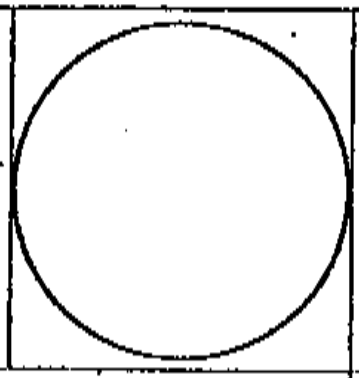
Collected by Dates Date Sept 20/76 Locality C-452

Field Relations Sheet

Macroscopic Description

MICROSCOPIC DESCRIPTION:

Minerals arranged in order of abundance. Origin of each mineral checked in the proper column. Sketch of significant textures and relationships included in space provided where desirable.



		Percentage	Primary		Secondary		Metamor				
			Essential	Accessory	Deuteric	Hydrothermal	Recrystallization	Neomineralization	Introduced	Weathering	Paragenesis (1st, 2nd, etc.)
1	Po	2-5									
2	Py	2-5									
3	Sphal	1-2									
4	Mag	7									
5	Gangue	85									
6											
7											
8											
9											
10											
11											
12											
13											

Textures, Structures, General Remarks:

Fragmented, cataclastic grains of Py, Mag — Sphal along fractures/veins.

Probable Origin and History:

Name and Classification:

Examined by Dates Date Oct 1/76

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DEPARTMENT OF GEOLOGY

PETROGRAPHIC REPORT

No. 1049

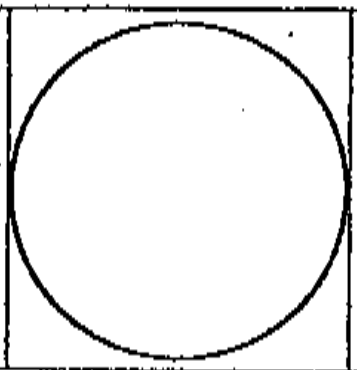
Collected by Dalla Date Sept. 21, 74 Locality C-452

Field Relations Host rock

Macroscopic Description dark green, weathered, faulted, fractured rock

MICROSCOPIC DESCRIPTION:

Minerals arranged in order of abundance. Origin of each mineral checked in the proper column. Sketch of significant textures and relationships included in space provided where desirable.



		Percentage	Primary		Secondary		Metamor				
			Essential	Accessory	Deuteric	Hydrothermal	Recrystallization	Neomineralization	Introduced	Weathering	Paragenesis (1st, 2nd, etc.)
1	plagioclase	45	✓	✓							
2	K-fd.	15	✓								
3	qtz	15	✓								
4	chlorite	10						✓			
5	epidote	10						✓			
6	clay	10								✓	
7	indeterminate fine grained matrix	90									
8	opaques	45							✓		
9											
10											
11											
12											
13											

Textures, Structures, General Remarks:

Numerous faults, folds, deformation features, highly altered.

Probable Origin and History:

Name and Classification:

Examined by Dalla Date Oct. 21st 74

THE UNIVERSITY OF TORONTO

No. 1051

DEPARTMENT OF GEOLOGY

PETROGRAPHIC REPORT

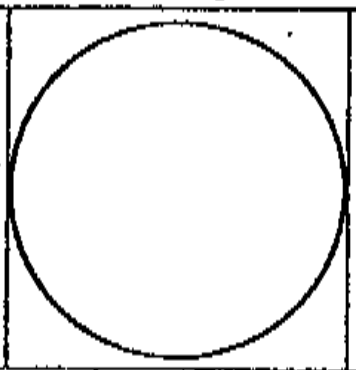
Collected by... Dalco ..... Date 4-7-Oct. 76... Locality ...C.152.....

Field Relations ...Shear zone.....

Macroscopic Description .green rock,..rusty..weathering..zone..calc.veinlets..

MICROSCOPIC DESCRIPTION:

Minerals arranged in order of abundance. Origin of each mineral checked in the proper column. Sketch of significant textures and relationships included in space provided where desirable.



		Percentage	Primary: Essential	Primary: Accessory	Secondary: Deuteric	Secondary: Hydrothermal	Metamor: Recrystallization	Metamor: Neomineralization	Introduced	Weathering	Paragenesis (1st, 2nd, etc.)
1	plagioclase (labradorite)	40	✓								
2	K-fsd.	10									
3	qtz	12									
4	chlorite	20									
5	epidote	10									
6	opaques	5									
7	clay minerals	5									
8											
9											
10											
11											
12											
13											

Textures, Structures, General Remarks:

relicts altered to chlorite, epidote, opaques

Probable Origin and History:

Name and Classification: Fine crystal tuff.

Examined by .... Dalco ..... Date 12th Nov. 76.....

THE UNIVERSITY OF TORONTO

DEPARTMENT OF GEOLOGY

PETROGRAPHIC REPORT

No. 1052...

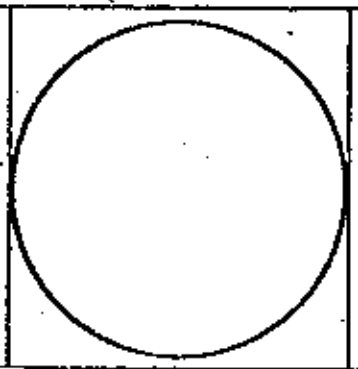
Collected by... Dales..... Date Sept-Oct./76... Locality ...C-152.....

Fluid Relations ..Shear..zone.....

Macroscopic Description .medium.grey,.slightly.porphyritic.,.mdy.weathering

MICROSCOPIC DESCRIPTION:

Minerals arranged in order of abundance. Origin of each mineral checked in the proper column. Sketch of significant textures and relationships included in space provided where desirable.



		Percentage	Primary: Essential	Primary: Accessory	Secondary: Deuteric	Secondary: Hydrothermal	Metamor: Recrystallization	Metamor: Neomineralization	Introduced	Weathering	Paragenesis (1st, 2nd, etc.)
1	plagioclase (andesine-labradorite)	40	✓								
2	K-Fd	20	✓								
3	Qtz (some phenocrysts)	15	✓								
4	Chlorite	10						✓			
5	Epidote	10						✓			
6	Opaques	5		✓							
7	clay minerals (altered Fd)										
8											
9											
10											
11											
12											
13											

Textures, Structures, General Remarks:

Zoned, Feldspars, highly altered

Probable Origin and History:

Name and Classification: Dacite crystal tuff.

Examined by .....Dodge..... Date ..Nov./76.....

THE UNIVERSITY OF TORONTO

DEPARTMENT OF GEOLOGY

PETROGRAPHIC REPORT

No. 105.3..

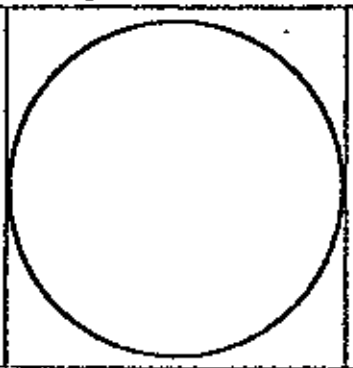
Collected by.....Dales..... Date Sept-Oct 1976 Locality ..C-452.....

Field Relations ...Shear zone.....

Macroscopic Description ..lgt.D. grey..fragmental..,.moderately.banded.....

MICROSCOPIC DESCRIPTION:

Minerals arranged in order of abundance. Origin of each mineral checked in the proper column. Sketch of significant textures and relationships included in space provided where desirable.



		Percentage	Primary: Essential	Primary: Accessory	Secondary: Deuteric	Secondary: Hydrothermal	Metamor: Recrystallization	Metamor: Neomineralization	Introduced	Weathering	Paragenesis (1st, 2nd, etc.)
1	plagioclase (andesine ± labradorite)	50	✓								
2	K-fd	20	✓								
3	qtz (some phenocrysts)	10	✓								
4	epidote	15						✓			
5	chlorite	5						✓			
6	opaques	45		✓							
7	clay										
8											
9											
10											
11											
12											
13											

Textures, Structures, General Remarks:

Some relict mafic phenocrysts altered entirely to epidote-chlorite

Probable Origin and History:

Name and Classification: Dacite crystal tuff.

Examined by .....Dales..... Date .Oct.-Nov..1976.....

THE UNIVERSITY OF TORONTO

DEPARTMENT OF GEOLOGY

PETROGRAPHIC REPORT

No. 1959

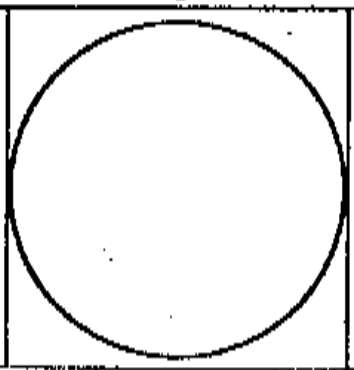
Collected by ..... Date 7 Sept 1976 Locality ..C-952.....

Field Relations ..from shear zone.....

Macroscopic Description medium grey, massive, porphyritic.....

MICROSCOPIC DESCRIPTION:

Minerals arranged in order of abundance. Origin of each mineral checked in the proper column. Sketch of significant textures and relationships included in space provided where desirable.



		Percentage	Primary: Essential	Primary: Accessory	Secondary: Deuteric	Secondary: Hydrothermal	Metamor: Recrystallization	Metamor: Neomineralization	Introduced	Weathering	Paragenesis (1st, 2nd, etc.)
1	plagioclase (Andesine - Labradorite)	30	✓								
2	K-fd	10	✓								
3	Qtz	10	✓								
4	chlorite	20						✓			
5	Epidote	5						✓			
6	Opaques	15							✓		
7	clay	5				✓	?	✓			
8	clay minerals	tr								✓	
9	Biotite	tr		✓							
10											
11											
12											
13											

Textures, Structures, General Remarks: original mafics → chlorite, epidote with still rimmed with magnetite (ilmenite?) ~70% matrix

Probable Origin and History:

Name and Classification: Dacite crystal tuff

Examined by ..... Date 8th Nov. 1976.....

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DEPARTMENT OF GEOLOGY

PETROGRAPHIC REPORT

No. 1055...

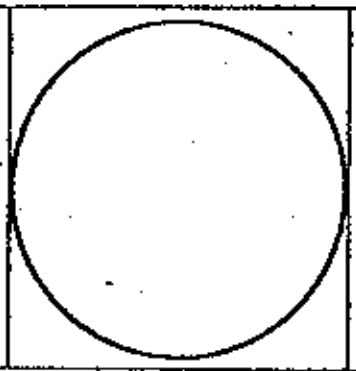
Collected by ..... Dales ..... Date Sept. 08. 1976. Locality ..C-152.....

Field Relations ..Shear Zone...(see..1056-1049).....

Macroscopic Description altered..fractured..fine grained..dark..slightly porphyritic

MICROSCOPIC DESCRIPTION:

Minerals arranged in order of abundance. Origin of each mineral checked in the proper column. Sketch of significant textures and relationships included in space provided where desirable.



		Percentage	Primary: Essential	Primary: Accessory	Secondary: Deuteric	Secondary: Hydrothermal	Metamor: Recrystallization	Metamor: Neomineralization	Introduced	Weathering	Paragenesis (1st, 2nd, etc.)
1	plagioclase (andesine) 2 zoned altered cores	35	✓								
2	epidote (veins)	10				✓					
3	qtz (matrix) + some phenos	10	✓								
4	K-fd	15	✓								
5	opaques	45							✓		
6	clay minerals (from fd)	10									
7	chlorite (altering from	15									
8	original mafic phenos)										
9	(mostly penninite)										
10											
11											
12											
13											

Textures, Structures, General Remarks:

Veined (epidote filled) sulphides ~~could be~~ concentrated along shear planes

Probable Origin and History: Volcanic

Name and Classification: Dacite crystal tuff

Examined by ..... Dales ..... Date ..08..Nov...19.76.....

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PETROGRAPHIC REPORT

No. 105.6...

Collected by...Dales..... Date Sept. 20. 1976 Locality ...G-452.....

Field Relations ..from shear zone.....

Macroscopic Description .Sheared, Mafic rock, sulphide rich...rock.....

MICROSCOPIC DESCRIPTION:

Minerals arranged in order of abundance. Origin of each mineral checked in the proper column. Sketch of significant textures and relationships included in space provided where desirable.

		Percentage	Primary: Essential	Primary: Accessory	Secondary: Deuteric	Secondary: Hydrothermal	Metamor: Recrystallization	Metamor: Neomineralization	Introduced	Weathering	Paragenesis (1st, 2nd, etc.)
1	epidote	40							✓		
2	chlorite — pennine (Berlin Blue)	30						✓			
3	epidote	25						✓			
4	very minor relict fd, chl	5								✓	
5											
6											
7											
8											
9											
10											
11											
12											
13											

Textures, Structures, General Remarks:

obvious alteration of original mineralogy

Probable Origin and History:

Remobilized Po-Py-Cpy-Mag deposited in shear zone.

Name and Classification: sulphide rich rock.

Examined by .....Dales..... Date .October..1976.....

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PETROGRAPHIC REPORT

No. 1056

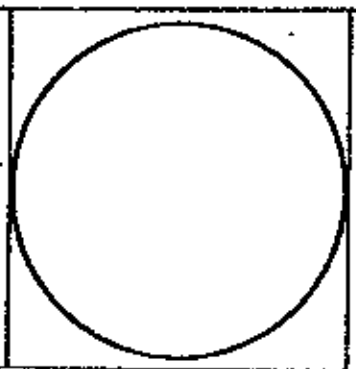
Collected by... D. Lee ..... Date Sept. Oct./76 Locality ... C-45-7 .....

Field Relations ..Shear...Zone...(sulphide..rich..sample).....

Macroscopic Description .....

MICROSCOPIC DESCRIPTION:

Minerals arranged in order of abundance. Origin of each mineral checked in the proper column. Sketch of significant textures and relationships included in space provided where desirable.



		Percentage	Primary		Secondary		Metamor				
			Essential	Accessory	Deuteric	Hydrothermal	Recrystallization	Neomineralization	Introduced	Weathering	Paragenesis (1st, 2nd, etc.)
1	Pyrite	82									
2	Magnetite	10									
3	Pyrrhotite	6									
4	Sphalerite	2									
5	Gangue	80									
6											
7											
8											
9											
10											
11											
12											
13											

Textures, Structures, General Remarks:

Py shows cataclasis, angular sul frags. Sphal in small veinlets

Probable Origin and History:

Tectonized Po

remobilized along shear

Name and Classification:

Examined by .....Dahn..... Date ..Oct. Nov./76.....

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PETROGRAPHIC REPORT

No. 1062

Collected by ...Dales..... Date Sept.-Oct. 1976. Locality ...C-452.....

Field Relations ..Dyke..cross cutting...qtz. diorite..intrusion.....

Macroscopic Description .dark.green..fine.grained..porphyritic...rock....

MICROSCOPIC DESCRIPTION:

Minerals arranged in order of abundance. Origin of each mineral checked in the proper column. Sketch of significant textures and relationships included in space provided where desirable.

		Percentage	Primary: Essential	Primary: Accessory	Secondary: Deuteric	Secondary: Hydrothermal	Metamor: Recrystallization	Metamor: Neomineralization	Introduced	Weathering	Paragenesis (1st, 2nd, etc.)
1	plagioclase (andesine)	40	✓								
2	K-feldspar	10	✓								
3	epidote	15						✓			
4	sericite	10						✓			
5	opaques	5		✓							
6	chlorite	10						✓			
7	clay minerals	5								✓	
8	chert	5				✓					
9											
10											
11											
12											
13											

Textures, Structures, General Remarks:

Vein filled with epidote, chlorite, Fd altering to clay.

Probable Origin and History:

Andesite dyke, probably melted volcanics during intrusion

Name and Classification:

Examined by ...Dales..... Date ..October-November, 1976

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PETROGRAPHIC REPORT

No. 1068

Collected by Dales Date Sept Oct 76 Locality C-954

Field Relations [illegible] from ~~[illegible]~~ [illegible] chute

Macroscopic Description

MICROSCOPIC DESCRIPTION:

Minerals arranged in order of abundance. Origin of each mineral checked in the proper column. Sketch of significant textures and relationships included in space provided where desirable.

	Mineral	Percentage	Primary: Essential	Primary: Accessory	Secondary: Deuteric	Secondary: Hydrothermal	Metamor: Recrystallization	Metamor: Neomineralization	Introduced	Weathering	Paragenesis (1st, 2nd, etc.)
1	Po	60									
2	Mag	10									
3	Py	5									
4	Sphal (in veins)	5%									
5											
6	Gangue	20									
7											
8											
9	Po showing [illegible] [illegible]										
10	of edges, Sphal in veins or										
11	brecciated [illegible] zones.										
12											
13											

Textures, Structures, General Remarks:

Probable Origin and History:

Name and Classification:

Examined by Dales Date Oct. Nov. /76

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PETROGRAPHIC REPORT

No. 1069...

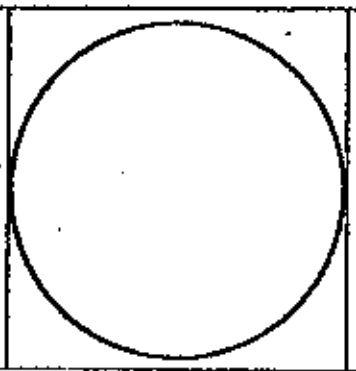
Collected by.....Dales..... Date 4th Oct/76... Locality ..G-952.....

Field Relations ..Float from..source..about.....

Macroscopic Description .....

MICROSCOPIC DESCRIPTION:

Minerals arranged in order of abundance. Origin of each mineral checked in the proper column. Sketch of significant textures and relationships included in space provided where desirable.



		Percentage	Primary		Secondary		Metamor				
			Essential	Accessory	Deuteric	Hydrothermal	Recrystallization	Neomineralization	Introduced	Weathering	Paragenesis (1st, 2nd, etc.)
1	Po	55									
2	Py	5									
3	Gangue	40									
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											

Textures, Structures, General Remarks:

Primarily good hinterland Po with some Py blebs and veins to wallrocks

Probable Origin and History:

Name and Classification:

Examined by .....Dales..... Date ..8th Nov. 76.....

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DEPARTMENT OF GEOLOGY

PETROGRAPHIC REPORT

No. 2000

Collected by ..... Date ..... Locality .....

Field Relations .....

Macroscopic Description .....

MICROSCOPIC DESCRIPTION:

Minerals arranged in order of abundance. Origin of each mineral checked in the proper column. Sketch of significant textures and relationships included in space provided where desirable.

		Percentage	Primary		Secondary		Metamor				
			Essential	Accessory	Deuteric	Hydrothermal	Recrystallization	Neomineralization	Introduced	Weathering	Paragenesis (1st, 2nd, etc.)
1	Po	50									
2	Py	2									
3	Gangue	40									
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											

Textures, Structures, General Remarks:

Mineralization both disseminated and massive.

Probable Origin and History:

Name and Classification:

Examined by ..... Date .....

BONDAR-CLEGG & COMPANY LTD.

1500 PEMBERTON AVE., NORTH VANCOUVER, B.C. PHONE: 985-0681 TELEX: 04-54554

Geochemical Lab Report

Extraction: Hot Aqua Regia

Method: Atomic Absorption

Fraction Used:

Report No. 26 - 1114 PROJECT: C 452

From: Chevron Standard Ltd.

Date: October 6 19 76

SAMPLE NO.	Cu ppm	Pb ppm	Zn ppm		SAMPLE NO.	Cu ppm	Pb ppm	Zn ppm	
OW ON 1	50	31	71		OW 30S 31	15	10	36	
4W ON 2	38	33	52		31S 32	23	14	42	
8W ON 3	38	17	44		33S 33	30	16	46	
12W ON 4	7	12	17		34S 34	26	19	55	
16W ON 5	20	19	35		35S 35	18	14	60	
20W ON 6	12	14	26		37S 36	29	16	54	
24W ON 7	13	11	17		38S 37	26	16	57	
32W ON 8	52	18	25		39S 38	28	16	57	
4W IN 9	54	30	52		40S 39	25	16	43	
3N 10	29	23	49		41S 40	60	23	68	
4N 11	35	24	56		42S 41	39	14	36	
OW 1S 12	71	50	78		43S 42	24	13	34	
2S 13	55	23	65		4W 6N 43	30	24	44	
3S 14	27	15	41		7N 44	27	24	41	
6S 15	1	2	2		4W 1S 45	49	16	24	
7S 16	20	16	44		3S 46	28	18	25	
8S 17	27	16	42		5S 47	28	16	22	
10S 18	6	18	30		6S 48	25	12	24	
11S 19	21	13	24		9S 49	29	12	15	
12S 20	44	14	19		11S 50	35	10	14	
13S 21	40	16	0		14S 51	37	12	17	
16S 22	38	11	17		21S 52	15	12	30	
17S 23	35	15	31		22S 53	20	12	30	
20S 24	6	16	35		23S 54	27	13	43	
23S 25	16	16	32		24S 55	30	16	56	
24S 26	26	15	42		26S 56	35	12	27	
25S 27	32	16	52		28S 57	22	14	76	
26S 28	33	16	57		29S 58	21	14	38	
27S 29	19	12	48		30S 59	20	13	34	
29S 30	24	12	45		31S 60	24	15	60	

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Geochemical Lab Report

Report No. 26 - 1114

SAMPLE NO.	Cu ppm	Pb ppm	Zn ppm		SAMPLE NO.	Cu ppm	Pb ppm	Zn ppm	
4W 35S 61	34	16	11		4E-0N 97	20	14	20	
36S 62	22	16	46		4E 14S 98	23	14	32	
37S 63	16	14	27		15S 99	22	14	32	
39S 64	58	20	58		17S 100	10	10	18	
41S 65	20	14	32		18S 101	7	12	32	
43S 66	20	16	45		22S 102	40	16	44	
45S 67	41	20	51		23S 103	19	12	45	
46S 68	33	16	44		24S 104	22	17	48	
47S 69	30	18	46		26S 105	23	12	22	
49S 70	21	14	37		28S 106	35	14	35	
50S 71	8	10	20		29S 107	22	13	39	
51S 72	8	10	29		32S 108	11	10	24	
52S 73	13	10	21		33S 109	30	14	38	
53S 74	48	12	8		35S 110	40	16	52	
55S 75	52	16	45		36S 111	40	14	46	
57S 76	47	16	42		37S 112	68	16	55	
58S 77	59	17	42		39S 113	45	16	37	
59S 78	23	15	31		40S 114	23	10	36	
60S 79	12	13	25		41S 115	28	14	41	
61S 80	30	13	29		42S 116	51	16	40	
62S 81	10	12	21		43S 117	5	8	15	
64S 82	28	15	33		44S 118	8	6	15	
65S 83	38	17	37		45S 119	29	12	34	
66S 84	25	14	37		46S 120	26	14	45	
67S 85	10	12	21		47S 121	18	11	29	
68S 86	14	12	42		49S 122	11	12	22	
69S 87	6	10	17		51S 123	40	16	39	
70S 88	13	18	32		52S 124	45	14	39	
71S 89	18	12	14		55S 125	7	10	15	
72S 90	31	17	34		57S 126	2	5	7	
73S 91	15	11	16		OW4S 127	53	16	46	
74S 92	33	16	42		5S 128	23	15	41	
75S 93	16	15	22		6S 129	12	6	20	
76S 94	17	14	15		7S 130	24	12	34	
77S 95	30	14	26		OW 48S 131	35	15	40	

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Geochemical Lab Report

Report No. 26 - 1114 Page No. 3

SAMPLE NO.	Cu ppm	Pb ppm	Zn ppm		SAMPLE NO.	Cu ppm	Pb ppm	Zn ppm	
0W 50S 132	26	15	31		8W 4S 520	7	6	11	
52S 133	40	16	45		5S 521	22	10	18	
53S 134	7	7	13		6S 522	73	13	16	
54S 135	17	16	23		7S 523	56	17	17	
56S 136	22	14	27		8S 524	10	29	43	
58S 137	11	8	[illegible]		9S 525	18	13	27	
60S 138	25	15	20		10S 526	25	12	19	
61S 139	22	12	27		14S 527	28	8	16	
62S 140	32	16	46		15S 528	14	9	18	
64S 141	21	12	42		16S 529	69	13	16	
67S 142	38	17	36		17S 530	35	11	21	
68S 143	27	12	28		18S 531	58	13	54	
69S 144	20	13	27		20S 532	18	8	37	
4E 62S 145	15	20	66		21S 533	39	12	5[illegible]	
64S 146	28	16	34		22S 534	37	12	43	
28W 2N 500	30	15	19		23S 535	34	10	50	
3N 501	18	13	14		24S 536	41	9	60	
4N 502	2[illegible]	11	35		26S 537	39	14	47	
24W 3N 503	51	27	55		27S 538	35	14	64	
2N 504	39	14	19		28S 539	36	18	111	
28W 2S 505	34	12	25		29S 540	23	15	45	
3S 506	17	15	17		30S 541	25	13	99	
4S 507	22	13	19		31S 542	25	13	36	
5S 508	18	8	19		32S 543	3	4	16	
7S 509	15	11	14		33S 544	25	18	58	
8S 510	19	12	19		4W 9N 545	19	18	20	
10S 511	27	15	16		10N 546	28	20	28	
11S 512	19	20	13		11N 547	31	26	56	
12S 513	4	13	18		13N 548	14	20	25	
13S 514	9	9	19		14N 549	83	52	130	
14S 515	8	13	29		15N 550	43	30	64	
15S 516	5	12	[illegible]		17N 551	17	20	36	
17S 517	4	10	14		18N 552	61	40	61	
8W 2S 518	48	14	29		22N 553	23	24	47	
3S 519	56	12	26		8W 22N 554	48	17	47	

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Geochemical Lab Report

Report No. 26 - 1114 Page No. 4

SAMPLE NO.	Cu ppm	Pb ppm	Zn ppm		SAMPLE NO.	Cu ppm	Pb ppm	Zn ppm	
8W 21N 555	56	20	47		8E 38S 590	9	12	22	
19N 556	110	82	95		39S 591	17	14	31	
18N 557	27	20	37		41S 592	5	10	25	
17N 558	51	19	45		42S 593	10	10	24	
16N 559	13	15	28		43S 594	24	10	29	
15N 560	28	22	42		44S 595	20	16	33	
14N 561	27	26	53		45S 596	11	10	18	
13N 562	49	31	116		46S 597	9	12	19	
11N 563	60	34	115		47S 598	24	13	34	
10N 564	29	26	44		48S 599	34	16	45	
9N 565	38	30	64		49S 600	76	21	50	
8N 566	27	22	43		50S 601	32	20	40	
6N 567	33	22	57		51S 602	27	16	31	
5N 568	29	22	47		52S 603	13	13	30	
4N 569	32	23	41		54S 604	25	17	43	
3N 570	38	31	42		55S 605	23	14	29	
2N 571	42	18	51		56S 606	11	14	22	
1N 572	36	20	45		57S 607	22	12	22	
8E 18S 573	19	14	43		58S 608	6	8	17	
21S 574	22	14	53		59S 609	12	12	30	
22S 575	12	14	30		60S 610	22	13	34	
24S 576	15	22	54		61S 611	26	16	30	
25S 577	14	13	24		62S 612	27	15	29	
26S 578	24	16	56						
27S 579	40	15	38						
28S 580	23	15	33						
29S 581	8	12	21						
30S 582	15	15	32						
31S 583	8	16	22						
32S 584	14	18	44						
33S 585	19	14	53						
34S 586	15	14	44						
35S 587	13	15	22						
36S 588	24	18	48						
37S 589	15	13	30						

COPPER IN SOIL

MAXIMUM VALUE OF SAMPLE = 110.00000

MINIMUM VALUE OF SAMPLE = 1.00000

RANGE OF SAMPLE = 109.00000

MEAN OF SAMPLE = 27.39146

VARIANCE OF SAMPLE = 251.27510

STANDARD DEVIATION OF SAMPLE = 15.85166

VARIANCE OF POPULATION (UNBIASED ESTIMATE) = 252.25270

STANDARD DEVIATION OF POPULATION (UNBIASED ESTIMATE) = 15.88247

COEFFICIENT OF VARIATION = 57.86326%

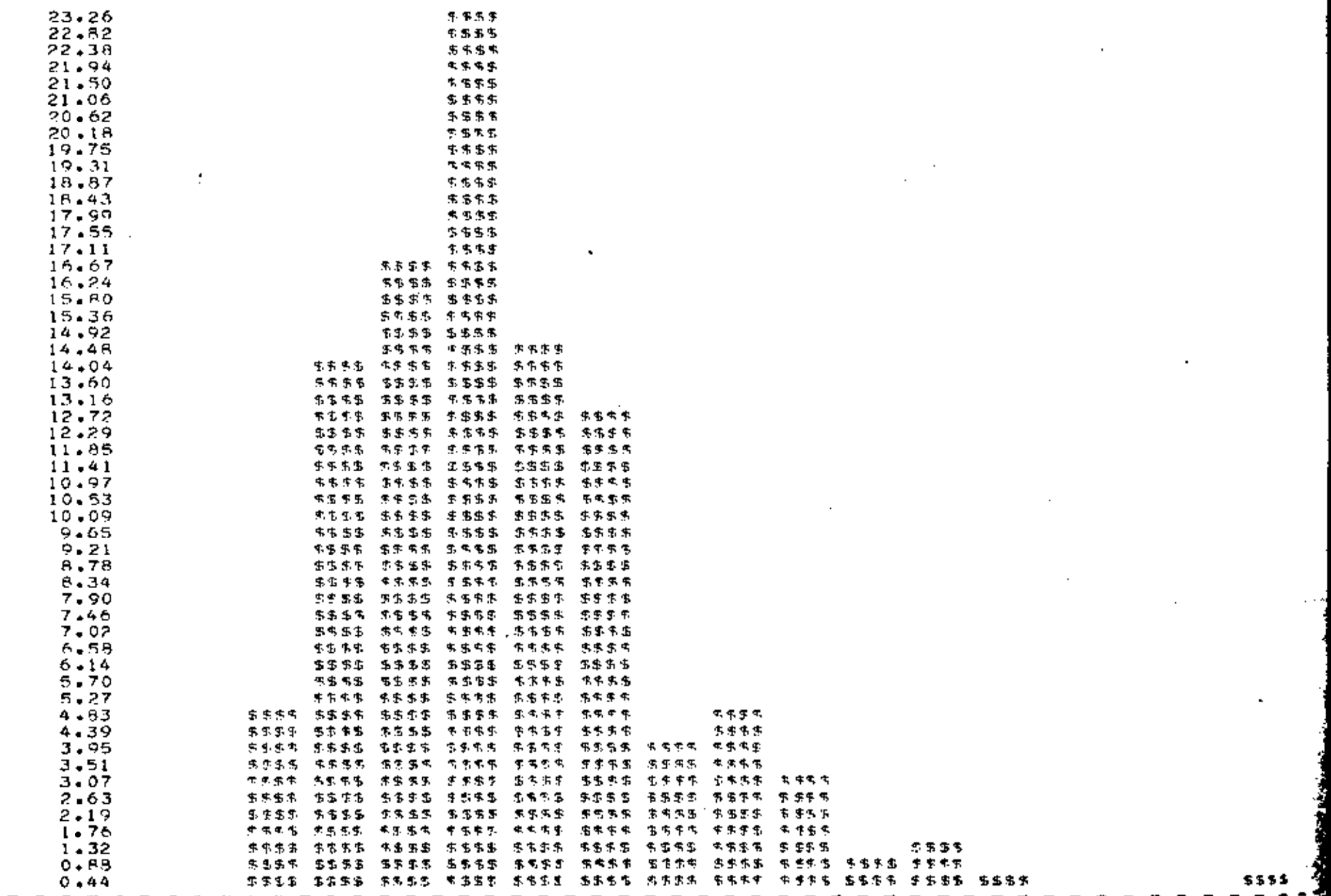
STANDARD ERROR OF MEAN = 0.98880

95% CONFIDENCE LIMITS OF POPULATION MEAN = MEAN OF SAMPLE + OR - 1.93805

99% CONFIDENCE LIMITS OF POPULATION MEAN = MEAN OF SAMPLE + OR - 2.55110

MEDIAN OF SAMPLE = 25.00000

HISTOGRAM FOR COPPER IN SOIL



LEAD IN SOIL

MAXIMUM VALUE OF SAMPLE = 82.00000

MINIMUM VALUE OF SAMPLE = 2.00000

RANGE OF SAMPLE = 80.00000

MEAN OF SAMPLE = 15.99225

VARIANCE OF SAMPLE = 69.34035

STANDARD DEVIATION OF SAMPLE = 8.32709

VARIANCE OF POPULATION (UNBIASED ESTIMATE) = 69.61057

STANDARD DEVIATION OF POPULATION (UNBIASED ESTIMATE) = 8.34330

COEFFICIENT OF VARIATION = 52.17085%

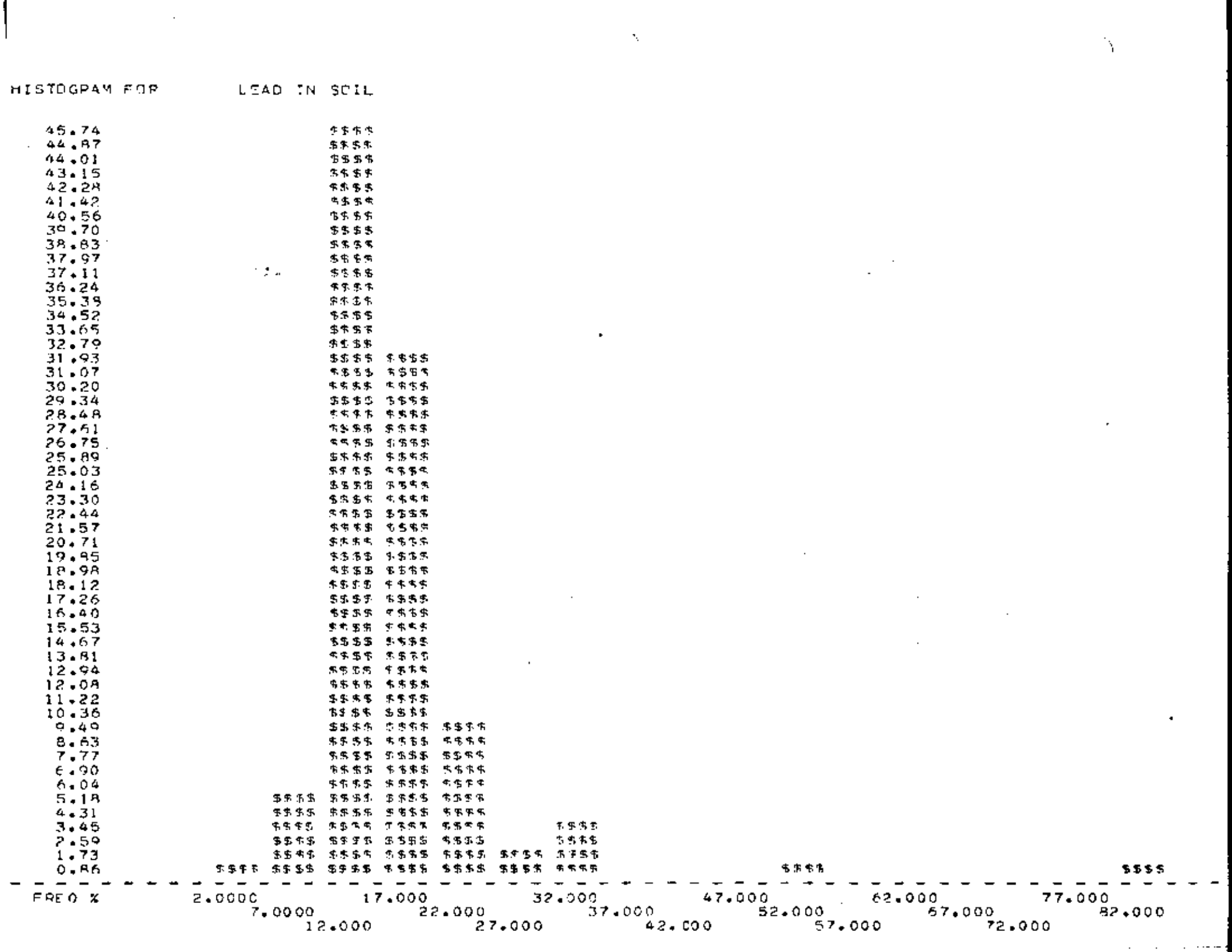
STANDARD ERROR OF MEAN = 0.51943

95% CONFIDENCE LIMITS OF POPULATION MEAN = MEAN OF SAMPLE + OR - 1.01908

99% CONFIDENCE LIMITS OF POPULATION MEAN = MEAN OF SAMPLE + OR - 1.34013

MEDIAN OF SAMPLE = 14.00000

HISTOGRAM FOR LEAD IN SOIL



ZINC IN SOIL

MAXIMUM VALUE OF SAMPLE = 138.00000

MINIMUM VALUE OF SAMPLE = 2.00000

RANGE OF SAMPLE = 136.00000

MEAN OF SAMPLE = 36.80620

VARIANCE OF SAMPLE = 356.58830

STANDARD DEVIATION OF SAMPLE = 18.88354

VARIANCE OF POPULATION (UNBIASED ESTIMATE) = 357.98290

STANDARD DEVIATION OF POPULATION (UNBIASED ESTIMATE) = 18.92044

COEFFICIENT OF VARIATION = 51.40558%

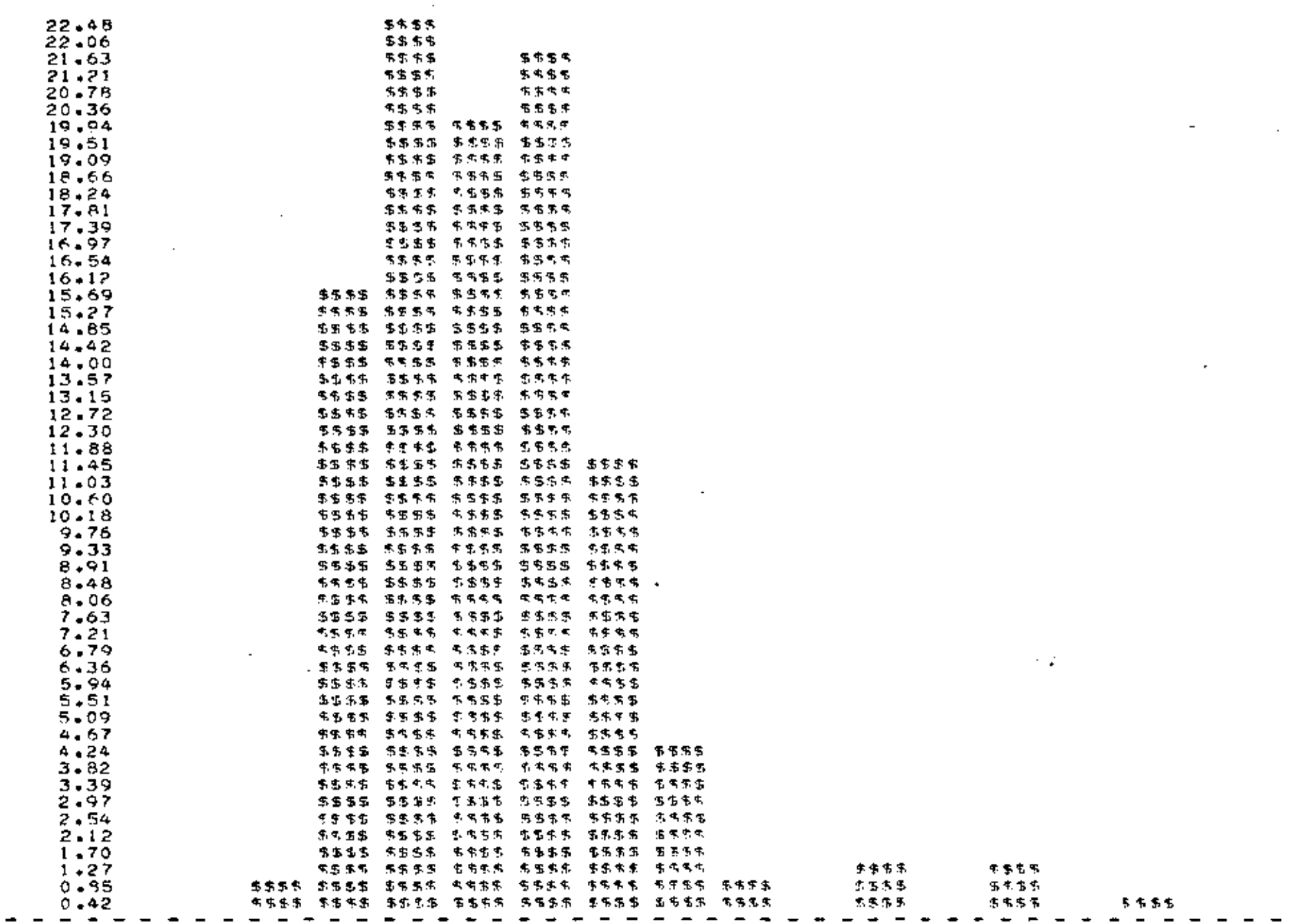
STANDARD ERROR OF MEAN = 1.17793

95% CONFIDENCE LIMITS OF POPULATION MEAN = MEAN OF SAMPLE + OR - 2.30875

99% CONFIDENCE LIMITS OF POPULATION MEAN = MEAN OF SAMPLE + OR - 3.03907

MEDIAN OF SAMPLE = 34.00000

HISTOGRAM FOR ZINC IN SOIL



1976 EAGLE CREEK PROGRAM

LABOUR COSTS

Employee	Position	No. days worked			
		Field[1]	Travel	Office	Total
D. Arscott	Geologist	-	-	2	2
R. Dales	Party Chief	4	1	5	10
J. Gajda	Field Assistant	4	1	1	6
H. Johnson	Field Assistant	4	1	1	6
		Total man days			24
		Average cost per man day			$55.02
		Total Cost[2]			$1,320.48

Notes: 1 - Includes only time after staking of ground

2 - Computed by dividing monthly pay rates by 25 and adding 26% for employee benefits

David Arscott

D. Arscott, P.Eng.

1976 EAGLE CREEK PROGRAM

OVERALL COSTS BREAKDOWN

Labour (See other sheet)			$1,320.48
Assays			696.60
Travel:	Lodging	16.80	
	Vehicle	100.55	
	Meals	34.65	
		152.00	152.00
Camp Provisions			90.22
Field supplies, camp equipment			50.00*
Drafting and reproduction			50.00*
TOTAL PROGRAM COST			$2,359.30

Notes:

All costs are post-staking date

*Arbitrary estimates

I hereby certify that these costs represent the true value of work undertaken

David Arscott

D. Arscott, P. Eng.

STATEMENT OF QUALIFICATIONS

I, RICHARD GRAEME DALES, personally supervised the 1976 field program and compiled the report on the Shrew mineral claim near Chehalis Lake, British Columbia.

I am a graduate Economist with six field seasons of geological experience mainly in British Columbia and Alberta.

I am currently fulfulling requirements for an M.Sc. degree in Geology at the University of Toronto.

SIGNED: _____

R. GRAEME DALES, B.A.

December 1976

C E R T I F I C A T E

I, David Philip Arscott, am a Professional Engineer, registered in British Columbia, and employed by Chevron Standard Limited at 901 - 355 Burrard Street, Vancouver, B. C., V6C 2G8.

The 1976 work on the SHREW claim in the New Westminster Mining Division was carried out by R. G. Dales under my direction.

David Arscott

David Arscott, P.Eng.
18 January 1976

SHREW CLAIM GROUP

LOGGING ROAD

Eagle River

20W

8W

2W

0W

2E

8E

GEOLOGY

JURASSIC	Fa	Andesite flow
	Td	Dacite tuff
	Tdr / Trd	Rhyodacite tuff
	Tr	Rhyolite tuff
	B	Breccia
	A	Agglomerate
	C	Conglomerate
CRETACEOUS	Q	Quartz diorite
	D	Dykes

LEGEND

Py	Pyrite occurrence
	Geological boundaries - defined, inferred
	Fracture with dip
	Bedding with dip
	Shear zone
	Outcrop boundary
	Rivers or creeks
	Logging road
	Claim post
	Sample location

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 6159
MAP NO. #1

CHEVRON STANDARD LIMITED

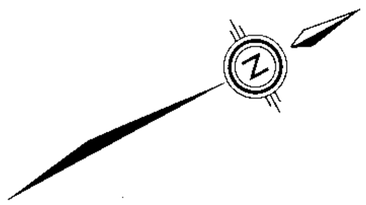
GEOLOGY

EAGLE CREEK PROJECT C452

SCALE 1:5000

6159

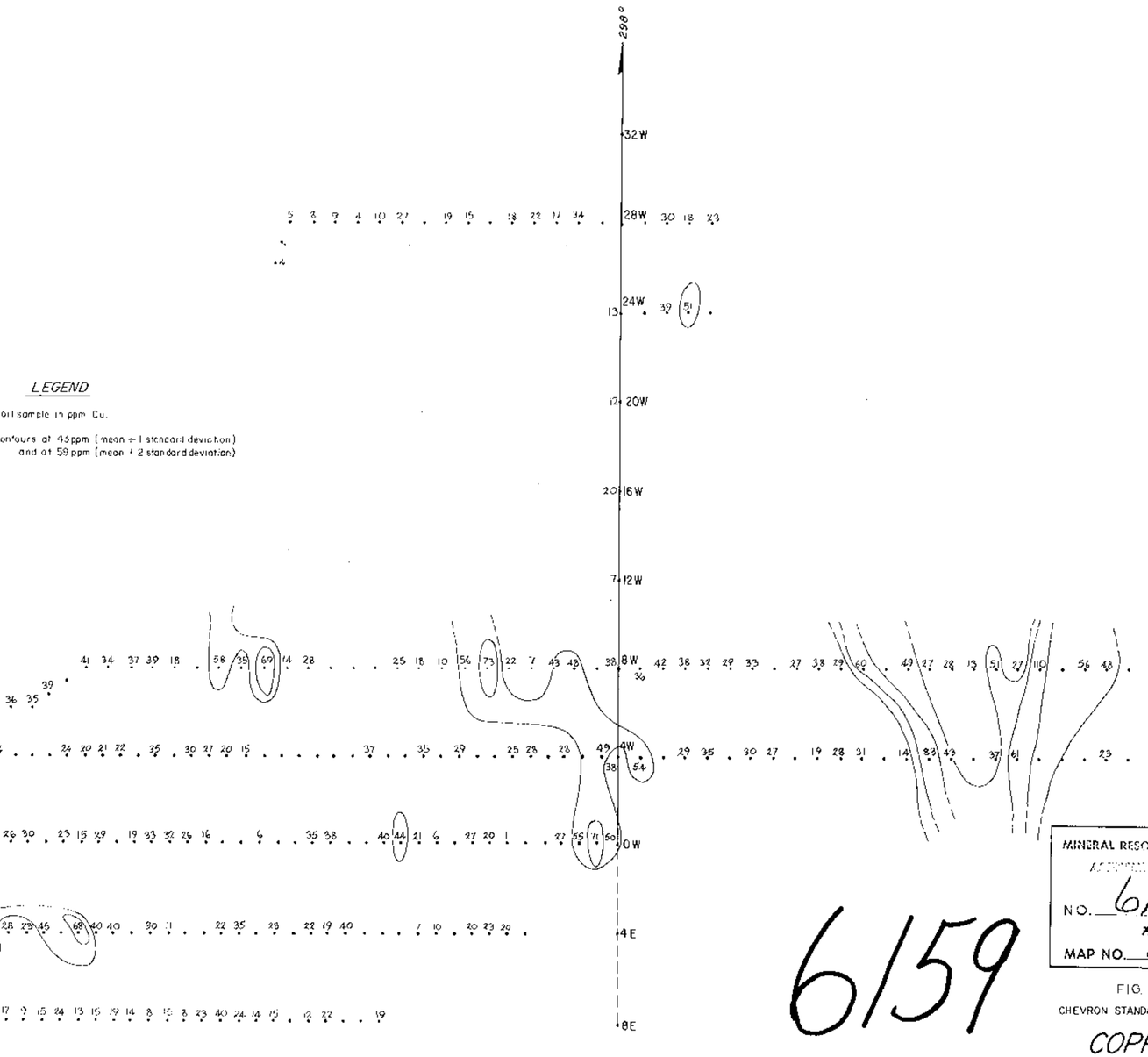
David Arscott



LEGEND

25 Soil sample in ppm Cu.

Contours at 43 ppm (mean + 1 standard deviation)
and at 59 ppm (mean + 2 standard deviation)



6159

David Ascott

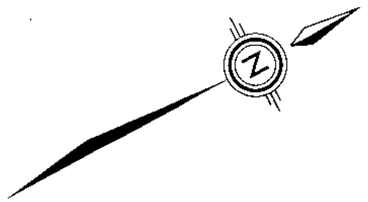
FIG. 3a

CHEVRON STANDARD LIMITED

COPPER SOIL GEOCHEMISTRY

EAGLE CREEK PROJECT-C452

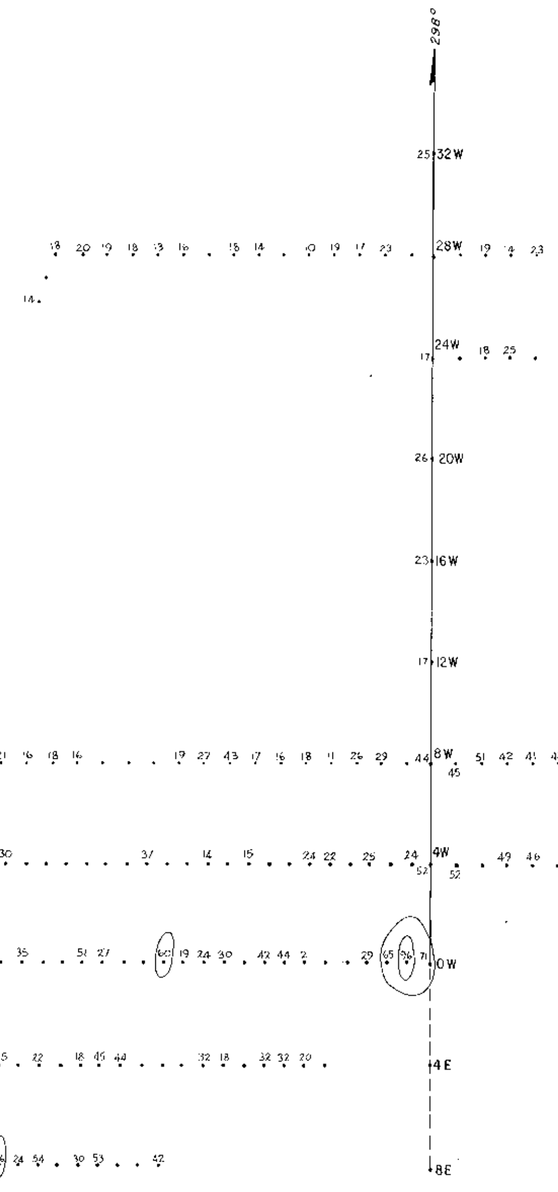
SCALE 1:5000



LEGEND

18 • Soil sample in ppm Zn

Contours at 56ppm (mean + 1 standard deviation)
and at 75ppm (mean + 2 standard deviation)



6159

FIG. 3b

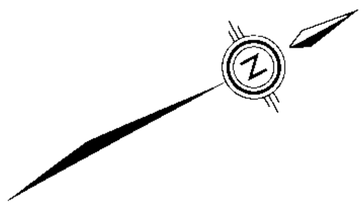
CHEVRON STANDARD LIMITED

ZINC SOIL GEOCHEMISTRY

EAGLE CREEK PROJECT: C452

David Arscott

SCALE 1:5000



LEGEND

Soil sample interval 100

Contours at 24ppm (mean + 1 standard deviation)
and at 38ppm (mean + 2 standard deviation)

298°

32W

28W

24W

20W

16W

12W

8W

4W

0

4E

8E

6159

David Arscott

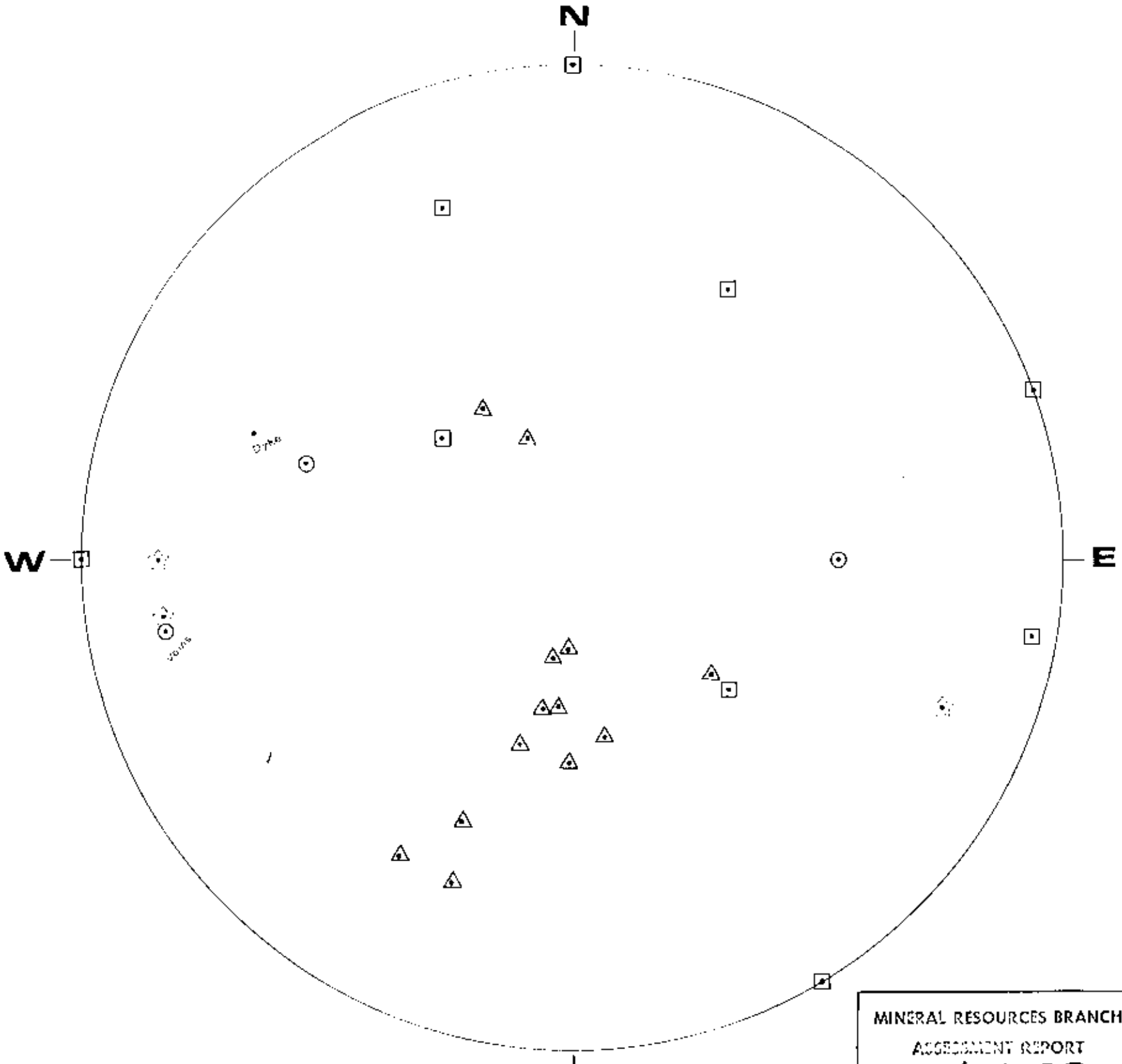
FIG. 3c

CHEVRON STANDARD LIMITED

LEAD SOIL GEOCHEMISTRY

EAGLE CREEK PROJECT-C452

SCALE 1:5000



POLES TO PLANES

- JOINTS
- SHEAR
- FOLIATION
- BEDDING
- VEINS

David Ascott

6159

FIG. 4

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EAGLE RIVER STRUCTURAL DATA

PROJECT 0452