



Report On  
Geology and Mineralization  
FLUNK 1-140 MINERAL CLAIMS  
Mayo Mining Division - Yukon Territory

located at

Lat. 65°09'

Long. 134°52'

NTS 106E/2

Alan R. Archer, P.Eng.

May, 1975

This report has been examined by the Geological Evaluation Unit and is recommended to the Commission to be considered as representation work in the amount of \$ 33,100

*D.B. Craig*

Resident Geologist or  
~~Resident Mining Engineer~~

Considered as representation work under Section 53 (4) Yukon Quartz Mining Act.

*[Signature]*  
Commissioner of Yukon Territory



ARCHER, CATHRO  
AND ASSOCIATES LTD.  
CONSULTING GEOLOGICAL ENGINEERS

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Alan R. Archer

Consulting Engineer

TABLE OF CONTENTS

<u>In Text</u>	<u>Page</u>
Introduction .....	1
Property, Location and Access .....	1
Geology .....	2
Mineralization .....	3
Geochemistry .....	7
Surveys .....	7
Summary and Recommendations .....	8

Figures in Pockets

Pocket A

- Figure 16 - Claim Location, Regional Geology and Geochemistry  
Scale 1"= 1/2 mile
- Figure F1 - Geology, Geochemistry and Assays of Showings 1,  
2 and 3, Flunk Claims, Scale 1"= 400', 1"= 50'

Pocket B

- Figure F2 - Stratigraphic Section, Flunk Claims -  
Scale 1"= 400' vertical
- Figure F3 - Survey Plan, Flunk Property , Scale 1"= 400'

## INTRODUCTION

The Flunk zinc-lead showing was found in late May, 1974, during regional exploration funded by the Ogilvie Joint Venture (Chevron Standard Limited, Aquitaine Co. of Canada Ltd., Marietta Resources International Limited, L. & H. Clay) and managed by Archer, Cathro & Assoc. Ltd. The main area of mineralization was explored by grid soil sampling, geological mapping and chip channel sampling. This work was conducted by field geologists C. Forster, T. Bremner, T. McLeod and D. Hendry under the supervision of M.P. Phillips and the writer. A surveyed grid was established over the mineralized area by Hosford, Impey and Welter Ltd. of Whitehorse. Photo control points were set out at the start of the survey and aerial photography was flown in late August by Northwest Survey Corp. Ltd. of Edmonton, at scales of 1" to 1000' and 1" to 2000'. The ground control and airphotos were obtained in order to allow preparation of an accurate topographic base for control of future work, including diamond drilling.

## PROPERTY, LOCATION AND ACCESS

The Flunk property consists of 164 contiguous mineral claims recorded in the Mayo Mining District as follows:

<u>Claim Names</u>	<u>Grant Numbers</u>	<u>Expiry Date</u>
Flunk 1-32	Y88687-Y88718	10 June, 1975
Flunk 33-140	Y88757-Y88864	21 June, 1975
Flunk 141-164	Y95335-Y95358	8 August, 1975

The property is located near the headwaters of Illtyd Creek at approximately Latitude 65°09' North and Longitude 134°52' West. Access was by helicopter from a camp situated at Kiwi Lake some 8 miles to the northeast. The Kiwi Lake camp was supplied by float plane from Mayo which is 120 airmiles to the south. The claim outline and general location is illustrated on Figure 16.

GEOLOGY

The geology of the general area is illustrated on Figure 16 and the stratigraphic section on Figure F2. The Flunk claims cover a sequence of Cambrian carbonates, shales and clastics that lie unconformably on Proterozoic quartzites, shales and cherty dolomite. The Cambrian units are weakly folded along axis that strike northeast and plunge shallowly to the southwest. A strong northeast-striking joint system, probably related to regional folding, is seen in brittle carbonate members. The Cambrian sequences are cut by a series of northeast-trending, steep-dipping faults which have more vertical than lateral movement and appear to die out in overlying Ordovician-Silurian carbonates south of the property.

Description of the Cambrian units on the property, as illustrated in section on Figure F2 and in plan on Figure 16, are as follows:

Unit 1C1s (250') - is the base of the section lying unconformably on the Proterozoic. It is composed of thin, wavy bedded, dark grey, silty limestone that is thought to represent a muddy, carbonate shelf in a sub tidal environment.

Unit 1Ccl (600') - carbonate deposition was abruptly terminated with influx of fine to coarse grits and conglomerates from the west. Conglomerate cobbles consist mainly of Proterozoic quartzites and chert. The grits contain moderately abundant trilobite (*Olenellus?*) and cephalopod fossils.

Unit 1C1d (800') - clastic deposition was followed by a stable intertidal shelf, allowing formation of algal mounds with associated fore and back reef facies. The lack of high energy reefal brecciation and fore reef oolites and oncolites suggests a subdued energy environment. Transgression of algal mounds has created this extensive unit of shallow, but subtidal, clean shelf carbonates.

Unit 1Cfd (200') - is a dolomitized shelf carbonate forming a recrystallized, sugary, vuggy dolomite with areas of strong pseudobrecciation that weathers distinctively yellow to red brown. This is the main mineralized unit, and is referred to as the Flunk Dolomite.

Unit 1Cfs (20' to 400') - is a green to purple, limy shale marking the end of the lower Cambrian and is referred to as the Flunk Shale. The variable thickness suggests an irregular depositional surface and areas of reddish oxidation with mud cracks indicates occasional subaerial exposure.

Unit mCxd - (1200') - this middle Cambrian unit marks a return to shelf carbonate deposition with algal mounds. Fluctuation in sea level has caused transgression and regression resulting in a complex series of fore and back reef facies. Contains several small areas of lead-zinc mineralization in pseudobrecciated dolomite.

#### MINERALIZATION

The main area of mineralization in the Flunk Dolomite is illustrated in plan on Figure F1 along with three minor areas of mineralization in overlying middle Cambrian dolomite. The minor mineralization consists of yellow to yellow grey sphalerite and galena in local areas of brecciation. These areas were not chip sampled and are visually estimated to grade less than 2 per cent combined lead-zinc over a maximum dimension of 100 feet

by 100 feet. Grab samples of best grade mineralization assay in the 10 per cent combined lead-zinc range.

The mineralized Flunk Dolomite is exposed on both sides of the northerly flowing Flunk Creek and dips south up the creek beneath overlying middle Cambrian carbonates. Mineralization outcrops in only three places, designated Showings 1 to 3, and the extent of the mineralized area on the property is defined largely by mineralized float in talus. Showing 1 is exposed on the south bank of a small tributary drainage on the west side of Flunk Creek. Mineralized float is found in talus from 200 feet north of Showing 1 to some 2000 feet south for a total length of 2200 feet. Showings 2 and 3 are found on the east side of Flunk Creek and these, plus mineralized float in talus, define a 3200 foot length of mineralization. A brief description of each showing, as illustrated on Figure F1, follows:

Showing 1 - is a zone of brecciated dolomite mineralized with pale yellow and yellow grey sphalerite, galena and minor marcasite. The brecciation appears to be caused by intense tertiary dolomitization accompanied by solution channeling. Four lines of samples were taken across the outcrop. Each line was divided into panels five feet wide and five feet high which were randomly chip sampled. The grade of each panel is more or less proportional to the degree of brecciation. There is some doubt as to whether this outcrop represents a diagonal section across a mineralized zone parallel to the stratigraphy or if it is simply a fortuitous exposure of a lens or pipe of mineralization that trends across the bedding. Assuming that the mineralization has a stratigraphic orientation, the assays indicate a 30 foot true width grading 4.03 per cent zinc, 0.35 per cent lead and 0.5 oz/ton silver at the base, above which is 29 feet grading 12.49 per cent zinc, 0.58 per cent lead and 1.84 oz/ton silver, 30 feet grading 3.77 per cent zinc,

0.5 per cent lead and 0.61 oz/ton silver, and a 33 foot lower grade zone assaying 0.16 per cent zinc, 0.01 per cent lead and trace silver. Combining the assays of the samples from the bottom of the section indicates a 59 foot width averaging 8.19 per cent zinc, 0.46 per cent lead and 1.16 oz/ton silver. An examination of Figure F1 will show that this is the best possible interpretation of the assay data and any other interpretation will reduce the width or limit the down dip extension.

Showing 2 - this is the largest area of outcrop exposure across the mineralized portion of the Flunk Dolomite. Also exposed is the Flunk Shale and a section of overlying middle Cambrian dolomite. The Flunk Dolomite is best exposed on the south side of a steep creek cut. Mineralization consists of moderately abundant marcasite with lesser amounts of pale yellow sphalerite and minor galena and appears to be controlled by pseudobrecciation somewhat similar, but less intense, to that in Showing 1. A series of ten chip channel samples along the creek outcrop, representing a stratigraphic section of about 135 feet averaged 1.11 per cent zinc, 0.14 per cent lead and 0.12 oz/ton silver with the best individual assay returning 2.46 per cent zinc, 0.5 per cent lead and 0.35 oz/ton silver across 10 feet. The dolomite exposure is strongly fractured by northeast trending joints that dip steeply west and do not have an obvious mineral control. This joint system continues up into the middle Devonian dolomite but is not seen in (and does not effect) the intervening Flunk Shale.

A portion of the middle Cambrian dolomite contains areas of pseudo-brecciation mineralized with marcasite, yellow sphalerite and galena. The mineralization tends to occur as small patchy zones of good grade mineralization separated by weakly mineralized dolomite. Two lines of chip channel samples were taken across the best overall area of mineralization. The first line

averaged 1.86 per cent zinc, 0.11 per cent lead and 0.23 oz/ton silver over a sampled length of 80 feet and the second line averaged 1.45 per cent zinc, 0.18 per cent lead and 0.21 oz/ton silver across 100 feet. The best individual sample graded 3.9 per cent zinc, 0.13 per cent lead and 0.38 oz/ton silver over 10 feet.

Showing 3 - is a small outcrop of Flunk Dolomite breccia with strong white tertiary dolomite veining. The breccia is variously mineralized with yellow sphalerite, galena and minor marcasite . Five chip channel samples across the best areas of mineralization in the outcrop averaged 2.22 per cent zinc, 0.16 per cent lead and 0.18 oz/ton silver with the best grade individual sample assaying 3.18 per cent zinc, 0.13 per cent lead, and 0.24 oz/ton silver across 10 feet.

As mentioned previously, mineralized float found in talus along strike from the showings suggests that the Flunk Dolomite is variously mineralized for a length of 3200 feet on the east side of Flunk Creek and for 2200 feet on the west side. The most abundant and best grade float is found on the west side, south of Showing 1. Here, mineralized float makes up a maximum of 5 per cent of the talus and is most abundant where the talus occurs as small fragments. Mineralization in individual fragments varies from finely disseminated sphalerite and galena in unfractured dolomite to patches of sphalerite and galena exhibiting "snow on the roof" texture in weakly pseudobrecciated dolomite. Grades vary from traces to about 12 per cent combined lead and zinc. No float similar to the strongly brecciated, well mineralized dolomite exposed in Showing 1 was found in the talus, either because such zones are not present or because this type of material breaks into fine fragments.

Spectrographic analyses of samples from Showings 1 and 2 indicate that the sphalerite contains minor cadmium (in the range of 0.6 per cent Cd from pure sphalerite) and traces of bismuth.

#### GEOCHEMISTRY

The main area of mineralized Flunk Dolomite was soil sampled at 200 foot centres on lines 800 feet apart as illustrated on Figure F1. There is no true soil on the property and these samples are really of fine talus. Samples were collected in individual prenumbered kraft soil bags and shipped air freight to Chemex Labs Ltd, North Vancouver, B.C. Here, samples were dried, screened to a minus 80 mesh fraction and digested in nitric-perchloric acid and analysed for lead and zinc by atomic absorption spectrometry. The purpose of sampling was mainly to define areas of interest that might have been missed by prospecting and partially to define the upper (uphill) limit of mineralization in the Flunk Dolomite unit. In retrospect, the sampling has not provided any information that was not obtained by direct prospecting observations. What is interesting is the magnitude of the lead and zinc values (compared to background of 50 ppm lead and 150 ppm zinc) peripheral to areas of known mineralization suggesting a strong metal rich halo in the carbonates both along strike and through the section. From a regional exploration point of view this suggests that similar mineralization elsewhere would be difficult to miss with the geochemical exploration approach used by the project.

#### SURVEYS

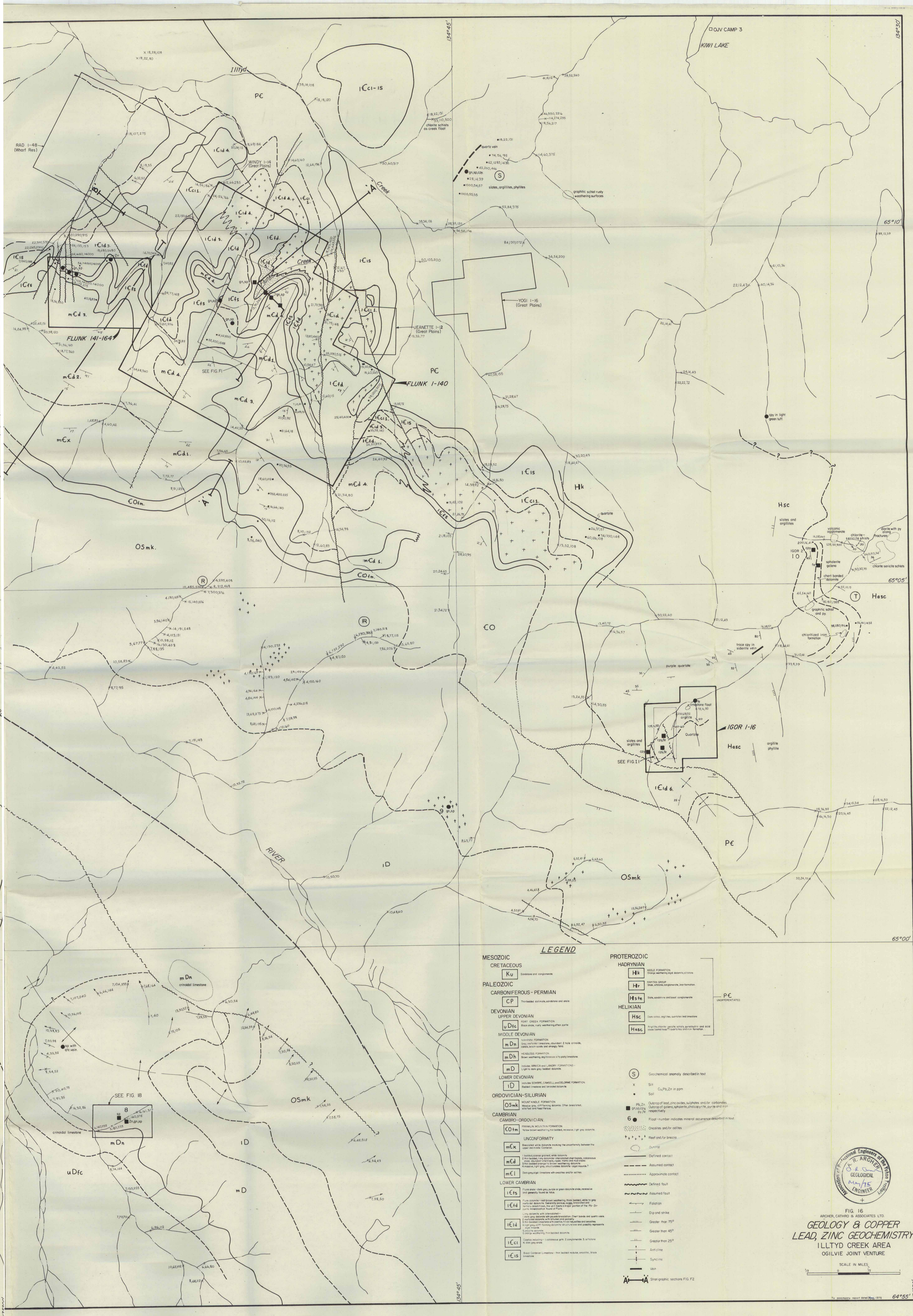
Figure F3 illustrates ground control surveys conducted by Hosford, Impey and Welter Ltd. The grid co-ordinates used on Figure F2 are those defined by the baseline surveyed between the Flunk 17, 19 and Flunk 18, 20 claims.

SUMMARY AND RECOMMENDATIONS

The Flunk claims cover an area of lead-zinc mineralization in a 200 foot thick pseudobrecciated lower Cambrian dolomite poorly exposed on both sides of a north flowing creek. Chip channel sampling of a small outcrop on the east side of the creek indicates a maximum grade of 1 to 2 per cent combined lead-zinc, and mineralized float was traced for a length of 3200 feet. Sampling of the only outcrop on the west side of the creek returned 9.19 per cent zinc, 0.46 per cent lead and 1.16 oz/ton silver over an apparent stratigraphic thickness of 59 feet and float in talus suggests a possible surface length of 2200 feet. Further exploration should consist of a series of short drill holes to determine the extent of the best grade area.

Respectfully submitted,  
A. R. ARCHER, CATHER  
ASSOCIATES LTD.  
A. R. Archer, B.A.Sc., P.Eng.  
ENGINEER  
Association of Professional Engineers of the Yukon Territory

ARA:st



**LEGEND**

<b>MESOZOIC</b>	<b>CRETACEOUS</b>	<b>HAHERYAN</b>	<b>Hk</b>	Hard and for bracco
<b>PALEOZOIC</b>	<b>CARBONIFEROUS - PERMIAN</b>	<b>HELIXIAN</b>	<b>Hs</b>	Hard and for bracco
	<b>DEVONIAN</b>		<b>Hs1</b>	Hard and for bracco
	<b>UPPER DEVONIAN</b>		<b>Hs2</b>	Hard and for bracco
	<b>MIDDLE DEVONIAN</b>		<b>Hs3</b>	Hard and for bracco
	<b>LOWER DEVONIAN</b>		<b>Hs4</b>	Hard and for bracco
	<b>OROVICIAN-SILURIAN</b>		<b>Hs5</b>	Hard and for bracco
	<b>CAMBRIAN</b>		<b>Hs6</b>	Hard and for bracco
	<b>CAMBRIAN - OROVICIAN</b>		<b>Hs7</b>	Hard and for bracco
	<b>UNCONFORMITY</b>		<b>Hs8</b>	Hard and for bracco
	<b>LOWER CAMBRIAN</b>		<b>Hs9</b>	Hard and for bracco
			<b>Hs10</b>	Hard and for bracco
			<b>Hs11</b>	Hard and for bracco
			<b>Hs12</b>	Hard and for bracco
			<b>Hs13</b>	Hard and for bracco
			<b>Hs14</b>	Hard and for bracco
			<b>Hs15</b>	Hard and for bracco
			<b>Hs16</b>	Hard and for bracco
			<b>Hs17</b>	Hard and for bracco
			<b>Hs18</b>	Hard and for bracco
			<b>Hs19</b>	Hard and for bracco
			<b>Hs20</b>	Hard and for bracco
			<b>Hs21</b>	Hard and for bracco
			<b>Hs22</b>	Hard and for bracco
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			<b>Hs26</b>	Hard and for bracco
			<b>Hs27</b>	Hard and for bracco
			<b>Hs28</b>	Hard and for bracco
			<b>Hs29</b>	Hard and for bracco
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			<b>Hs51</b>	Hard and for bracco
			<b>Hs52</b>	Hard and for bracco
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			<b>Hs63</b>	Hard and for bracco
			<b>Hs64</b>	Hard and for bracco
			<b>Hs65</b>	Hard and for bracco
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			<b>Hs89</b>	Hard and for bracco
			<b>Hs90</b>	Hard and for bracco
			<b>Hs91</b>	Hard and for bracco
			<b>Hs92</b>	Hard and for bracco
			<b>Hs93</b>	Hard and for bracco
			<b>Hs94</b>	Hard and for bracco
			<b>Hs95</b>	Hard and for bracco
			<b>Hs96</b>	Hard and for bracco
			<b>Hs97</b>	Hard and for bracco
			<b>Hs98</b>	Hard and for bracco
			<b>Hs99</b>	Hard and for bracco
			<b>Hs100</b>	Hard and for bracco

FIG. 16  
 GEOLGY & COPPER  
 LEAD, ZINC GEOCHEMISTRY  
 ILLTYD CREEK AREA  
 OGLVIE JOINT VENTURE  
 SCALE IN MILES



# GEOLOGY

## PALEOZOIC

### ORDOVICIAN - SILURIAN

**OSmk** MOUNT KINDLE FORMATION  
Massive grey, cliff forming dolomite. Often brecciated, silicified and fossiliferous.

### CAMBRIAN

#### CAMBRO-ORDOVICIAN

**COfm** FRANKLIN MOUNTAIN FORMATION  
Yellow-brown weathering, thin bedded, recessive, light grey dolomite.

#### UNCONFORMITY

**mCx** Brecciated white dolomite marking the unconformity between the upper and middle Cambrian.

**mCd**

1. bedded, coarse grained, white dolomite  
2. thin bedded, vuggy dolomite-intercalated chert bands, calcareous shale abundant, interbeds the pipe marks and mud cracks.

**mC1**

3. thin bedded orange to brown weathering dolomite  
4. massive, light grey, structureless dolomite-algal mounds?  
5. dark grey, argill limestone with oolites and/or oolites.

#### LOWER CAMBRIAN

**ICfs** Flunk shale - dark grey, purple or green dolomite shale, recessive and generally found as 'isles'

**ICfd**

Flunk dolomite - red-brown weathering, thick bedded, white to grey reefal dolomite. Generally porous, vuggy, brecciated and heavily dolomitized. The unit hosts a major portion of the Pb-Zn-pyrite mineralization found at Flunk.

**ICid**

1. very dolomite with intercalated -  
1. dark grey dolomite with pseudobrecciation chert bands and quartz veins  
2. reefal dolomite with brown and porous  
3. thin bedded limestone with chert nodules, oolites and oolites  
4. light grey, cliff-forming dolomite structureless and possibly represents algal mounds  
5. oolitic dolomite  
6. orange weathering, thin bedded dolomite.

**ICci**

Classics including - 1. calcareous grits 2. conglomerate 3. siltstone  
4. dark grey shale

**ICis**

Basal Cambrian Limestone - thin bedded nodular, oolitic, block limestone

## PROTEROZOIC

### HADRYNIAN

#### KEELE FORMATION

**Hk** Orange weathering algal dolomite, siltstone

## SYMBOLS

- Bedded dolomite
- Bedded limestone
- Shale
- Siltstone and shaly grits
- Conglomerate
- Reefal dolomite (algal mounds)
- Vuggy dolomite
- Breccia

FLUNK SHOWINGS:  
pseudo brecciation due to intense dolomitization

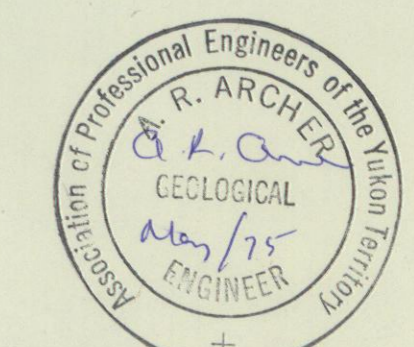
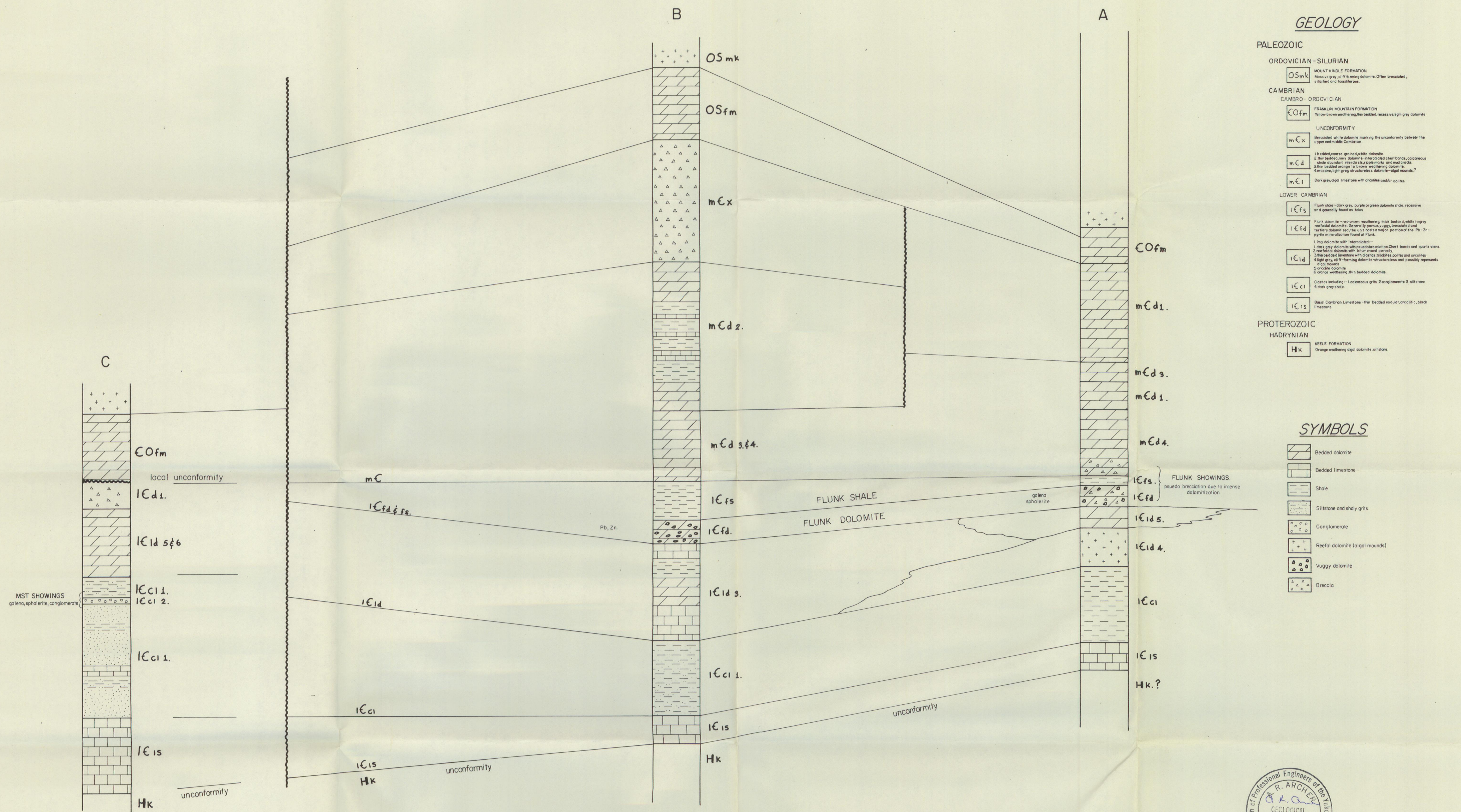
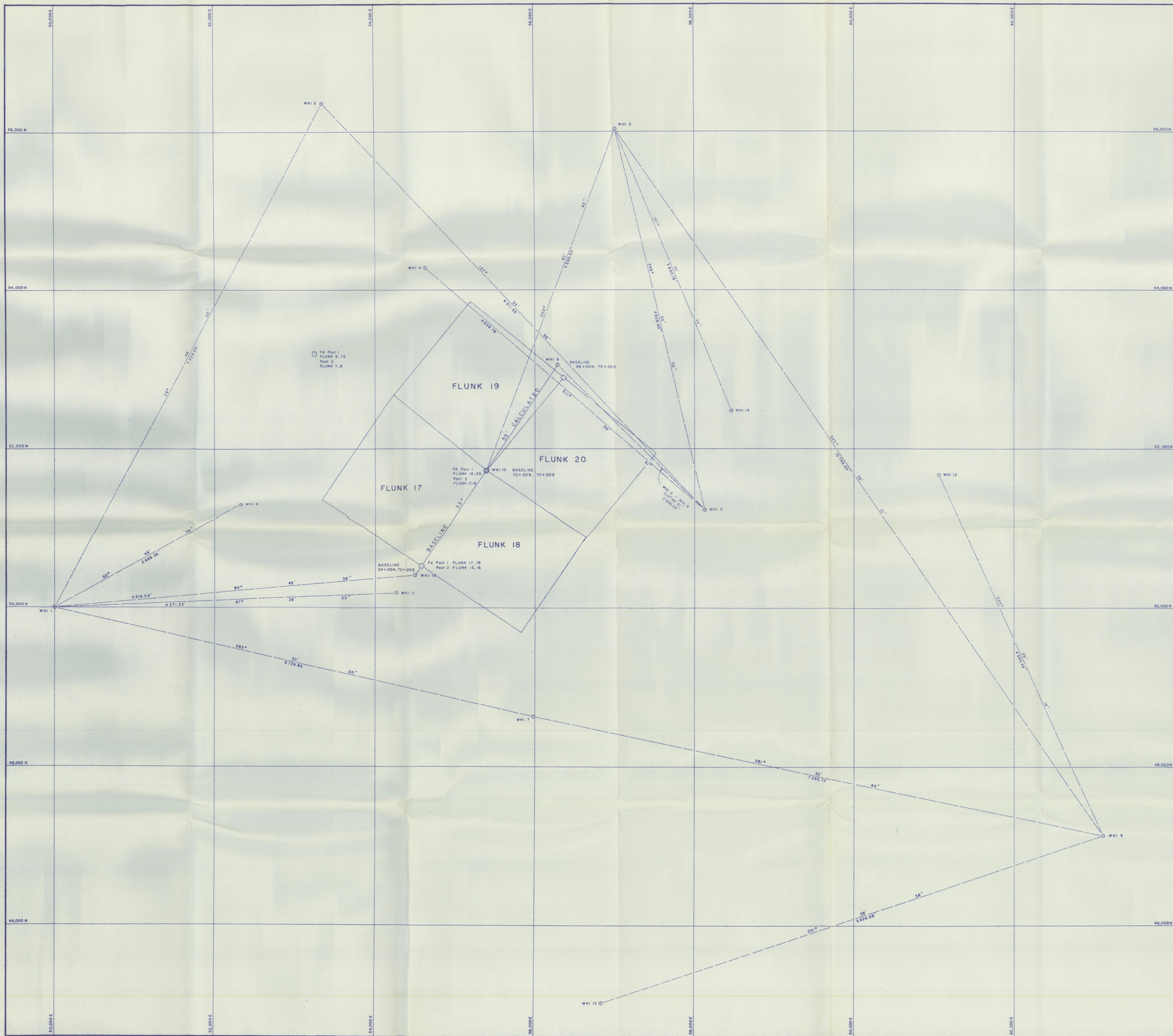


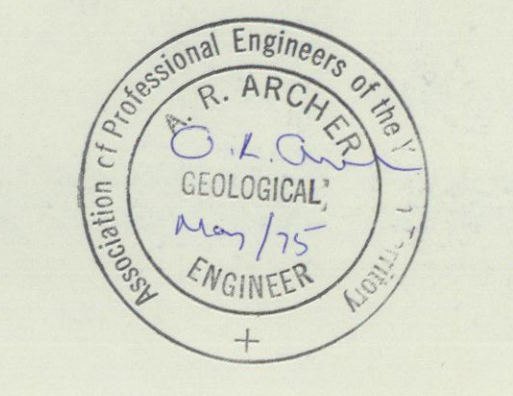
FIG. F2  
ARCHER, CATHRO & ASSOCIATES LTD.  
**STRATIGRAPHIC CROSS-SECTIONS OF FLUNK & MST CLAIM AREAS**  
SEE FIG. I6 FOR LOCATIONS  
VERTICAL SCALE 1" = 400'  
HORIZONTAL SCALE  
A-C = approx. 30,000 feet



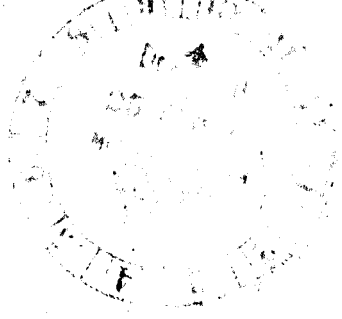
**FIG. F3**  
 PLAN SHOWING CONTROL MONUMENTS AND COORDINATES FOR  
**ARCHER CATHRO & ASSOCIATES LTD.**  
**FLUNK CLAIM PROJECT**  
 65°08' LATITUDE ; 134°53' LONGITUDE (APPROX.)  
 MAP SHEET 106 E - 2  
 YUKON TERRITORY  
 AUGUST, 1974  
 SCALE 1" = 400'  
 TO ACCOMPANY REPORT DATED MAY, 1975

Bearings are astronomic, derived from the bearing 102°50'00" from sun observations between WHI 1 and WHI 7 and are referred to the meridian through WHI 1.  
 Coordinates are arbitrary, with WHI 1 being given coordinates of 50,000 north and 50,000 east.  
 Distances, bearings and coordinates shown are balanced by the compass rule and have not been corrected for scale factor or reduced to sea level.  
 Elevations are on appropriate sea level datum and derived from barometric observations at WHI 11 which is given an elevation of 3200.0 feet.  
 Control stations placed in this survey consist of an iron bar 5/8" x 30" driven vertically into the ground with the top 6" protruding. The station is monumented with a 4" x 4" x 4" red wooden post erected vertically over the bar with an aluminum tag stamped with the respective station number affixed to the post.

COORDINATE TABLE			
STATION	NORTHINGS	EASTINGS	ELEVATIONS
WHI 1	50,000.0	50,000.0	4817.1
WHI 2	56,162.0	53,454.2	4389.6
WHI 3	56,035.1	57,010.6	4210.1
WHI 4	54,281.3	54,628.7	3459.3
WHI 5	51,234.6	58,128.0	4211.7
WHI 6	47,134.5	63,125.9	4100.9
WHI 7	48,636.2	55,986.4	4265.4
WHI 8	51,300.7	52,329.9	3526.3
WHI 9	53,066.0	56,282.2	2940.0
WHI 10	51,740.4	55,389.6	3089.6
WHI 11	50,188.1	54,267.4	3200.0
WHI 12	51,681.2	61,068.7	2747.1
WHI 13	45,029.8	56,842.1	3070.6
WHI 14	52,480.7	58,464.3	3504.7
WHI 15	50,412.5	54,497.7	3202.5



White, Hoarford & Impay Ltd.  
 Box 448  
 Whitehorse, Y.T.



Report On Diamond Drilling Program  
Flunk 1 to 164 Claims  
Mayo Mining Division, Y.T.  
Lat. 65°09'N Long. 134°52'W  
Claim Sheet 106E/2  
3 February, 1976

A.R. Archer Consulting Geological Engineer

**ARCHER, CATHRO**  
AND ASSOCIATES LTD.  
CONSULTING GEOLOGICAL ENGINEERS

Box 4127, WHITEHORSE, Y.T. Y1A 3S9 667-4415

STANDARD BUILDING, VANCOUVER, B.C. 688-2568

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1016 STANDARD BUILDING  
510 WEST HASTINGS STREET  
VANCOUVER, B.C.  
V6B 1L8

Report On  
Diamond Drilling Program  
Flunk 1 to 164 Claims  
Mayo Mining Division  
Yukon Territory

Latitude 65°09' North

Longitude 134°52' West

Claim Sheet 106E/2

3 February, 1976

A.R. Archer

Consulting Geological Engineer

TABLE OF CONTENTS

<u>In Text</u>	<u>Page</u>
Introduction .....	1
Property, Location and Access .....	1
Geology and Mineralization .....	2
Diamond Drilling	
Logistics .....	3
Discussion and Assay Results .....	4
Conclusions .....	7

<u>Tables In Text</u>	<u>Following Page</u>
Flunk Drill Core Assays (3 pages) .....	4

Appendix

Legend Used In Flunk Core Logging  
Detail Core Logs Flunk Holes F1 to F4

In Pocket

- Figure F3- Plan & Sections of Diamond Drill Holes F1, F2, F3, & F4  
Flunk Property, Scale 1"= 200 feet
- Figure F4- Assays and Sections of Diamond Drill Holes F1, F2, F3 & F4  
Flunk Property, Scale 1"= 40 feet

## INTRODUCTION

The Flunk zinc-lead showings were found in May, 1974 by Ogilvie Joint Venture (Chevron Standard Limited, Aquitaine Co. of Canada Ltd., Marietta Resources International Ltd., and L. & H. Clay) managed by Archer, Cathro and Associated Ltd. The claims were explored in 1974 by grid soil sampling, geological mapping, channel sampling and aerial photography. The 1975 work, described in this report, consisted of preparation of a topographic base map by Northwest Survey Corporation Ltd. and 1328 feet of diamond drilling in four holes under contract to Arctic Diamond Drilling Ltd.

The drilling was performed from a camp established on the Flunk claims which was supplied and supervised from a Jetranger helicopter supported exploration field camp located at Kiwi Lake, eight miles to the northeast. The drill camp was managed by field man M. Buttle while direct supervision and core logging was performed by geologist U. Schmidt and the writer.

The work was conducted under land use permit Y75J217 issued by the Regional Director, Forest and Lands Division, Department of Indian Affairs and Northern Development.

## PROPERTY, LOCATION AND ACCESS

The Flunk property consists of 164 contiguous mineral claims recorded in the Mayo Mining District as follows:

<u>Property</u>	<u>Claim Names</u>	<u>No.</u>	<u>Grant Numbers</u>	<u>Expiry Date</u>
FLUNK	Flunk 1-32		Y88687-Y88718	10 March, 1980
	33-34		Y88757-Y88758	10 March, 1980
	35-37		Y88759-Y88761	10 March, 1977
	38-46		Y88762-Y88770	10 March, 1976
	47-65		Y88771-Y88789	10 March, 1977
	66-71		Y88790-Y88795	10 March, 1976
	72		Y88796	10 March, 1980
	73-74		Y88797-Y88798	10 March, 1977
	75		Y88799	10 March, 1976
	76		Y88800	10 March, 1977
	77		Y88801	10 March, 1976
	78-81		Y88802-Y88805	10 March, 1977
	82		Y88806	10 March, 1976
	83		Y88807	10 March, 1977
	84		Y88808	10 March, 1976
	85		Y88809	10 March, 1977
	86-104		Y88810-Y88828	10 March, 1976
	105-112		Y88829-Y88836	10 March, 1977
	113-114		Y88837-Y88838	10 March, 1976
	115-139		Y88839-Y88863	10 March, 1977
140		Y88864	10 March, 1980	
141-164		164	Y95335-Y95358	10 March, 1976

The property is located at the headwaters of Illtyd Creek (see insert on Figure F3 in pocket) on NTS claim sheet 106E/2 at approximately Latitude 65°09' North and Longitude 134°52' West, eight miles southwest of Kiwi Lake. The Kiwi Lake camp was supplied by float equipped fixed wing aircraft from Mayo, 120 airmiles to the southwest.

#### GEOLOGY AND MINERALIZATION

The general geological setting is a sequence of Cambrian clastics, shales and carbonates lying unconformably over Proterozoic quartzites and shales. The main unit of economic interest is a 200 foot thick, vuggy, lower Cambrian dolomite, called the Flunk dolomite, which is underlain by thin bedded limestone and shaley dolomite and overlain by a thin horizon (about 20 feet) of purple shaley dolomite and, in turn, by a thick sequence of vuggy middle Cambrian dolomite. The Cambrian units are broadly folded along axes that strike northeast and plunge at shallow dips to the southwest.

The Flunk dolomite is best mineralized over a length of slightly more than 2000 feet of surface trace along both sides of northeast flowing Flunk Creek, as illustrated on Figure F3. Only three outcrops, called Showings 1 to 3, occur within the mineralized horizon and the extent of the mineralization is mainly defined by float in talus. Chip channel sampling in 1974 returned grades of 8.10 per cent zinc, 0.46 per cent lead and 1.16 oz/ton silver across a stratigraphic thickness of 59 feet at Showing 1 : 1.11 per cent zinc, 0.14 per cent lead and 0.12 oz/ton silver across a stratigraphic thickness of 135 feet at Showing 2 and; 2.22 per cent zinc, 0.16 per cent lead and 0.18 oz/ton silver over 25 feet stratigraphically at Showing 3. The best mineralized float in talus was found southwest of Showing 1. Sphalerite and minor galena occur as disseminations and open space fillings in pseudo-breccia, and less commonly as linings of vugs. Vugs in the mineralized area are more commonly filled with marcasite with minor associated sphalerite and galena. The best mineralization is found in areas of most intense pseudo-brecciation.

#### DIAMOND DRILLING

##### Logistics

Diamond drillings was contracted to Arctic Diamond Drilling Ltd., Whitehorse and the camp, cook and radio communications were provided by Ogilvie Joint Venture (OJV). The drill and accessory equipment were mobilized to Kiwi Lake by fixed wing aircraft and from there to the drill sites by Jet Ranger helicopter. All holes were drilled with BQ wireline equipment, with excellent core recovery and no requirement for sludge samples. Hole collars were located by chain and compass from the survey grid established in 1974. Drill sites

were prepared by hand and the drill was moved with the Kiwi Lake based helicopter. Drill mobilization started on 11 July, 1975, and 1328 feet in four holes (3 drill sites) was completed by 14 August. The drill and accessory equipment were demobilized to Kiwi Lake by helicopter and from there to Mayo by fixed wing aircraft. Drill core was logged at the Kiwi Lake basecamp and is permanently stored there in covered wood boxes. Mineralized core was split and examined microscopically by the writer prior to assay at Whitehorse Assay Office Ltd. All samples were assayed for zinc and those containing galena were assayed for lead and silver.

No unusual drill problems were encountered. Permafrost forced drilling to continue twenty-four hours but was not cold enough to require water additives. Bedrock is unfractured and no cementing was required.

#### Discussion and Assay Results

The location of the drill holes relative to surface geology and topography is illustrated on Figure F3 in the pocket, together with sections of each drill hole with assay summaries, and a longitudinal section through three vertical holes. Detailed core sampling for each hole is illustrated sectionally on Figure F4 in the pocket. Core logs are included as Appendix I of this report and a table of core assays is given on the following three pages.

The type of carbonate hosted mineralization at the Flunk property characteristically occur in good grade but discontinuous zones. At similar properties in this district, such as Goz and Gayna, the exploration technique consists of close spaced drill sampling of individual surface showings, requiring substantial expenditures to establish tonnage and grade of each showing. This approach is based on the assumption that a number of 1/2 to 2 million ton deposits aggregating 10 to 20 million tons constitutes an

FLUNK DRILL CORE ASSAYS  
OJV FINAL REPORT - 1975

<u>Hole No.</u>	<u>Assay Tag</u>	<u>Footage</u>	<u>Ag(oz/ton)</u>	<u>Pb(%)</u>	<u>Zn(%)</u>
Hole F1  (Flunk 17 M.C.)	01201	170-175	NA*	NA	.82
	01202	175-180	NA	NA	.94
	01203	180-185	NA	NA	2.10
	01204	185-190	NA	NA	1.06
	01205	190-195	NA	NA	1.10
	01206	195-200	NA	NA	.58
	01207	200-205	NA	NA	.22
	01208	205-210	.26	.08	.82
	01209	210-215	NA	NA	.54
Hole F2  (Flunk 8 M.C.)	01210	30-35	NA	NA	.50
	01211	35-40	NA	NA	1.56
	01212	40-45	NA	NA	1.76
	01213	45-50	NA	NA	.52
	01214	50-55	NA	NA	.62
	01215	55-60	NA	NA	.62
	01216	60-65	NA	NA	1.40
	01217	65-70	NA	NA	.54
	01218	70-75	NA	NA	.14
	01219	75-80	NA	NA	.19
	01220	80-85	NA	NA	.19
	01221	85-90	NA	NA	.18
	01222	125-130	.77	2.23	4.92
	01223	130-135	1.06	1.53	9.25
	01224	135-140	.47	1.53	3.78
	01225	140-145	.44	.55	6.20
	01301	145-150	NA	NA	2.76
	01302	150-155	NA	NA	1.50
	01303	155-160	NA	NA	2.04
	01304	160-165	NA	NA	1.62
	01305	165-170	NA	NA	2.76
01306	170-175	NA	NA	2.28	
01307	175-180	NA	NA	4.92	
01308	180-185	NA	NA	.80	
01309	185-190	NA	NA	.62	
01310	190-195	NA	NA	2.22	
01311	195-200	NA	NA	.42	
01312	200-205	NA	NA	.16	
01313	205-210	NA	NA	1.18	
01314	210-215	NA	NA	.66	
01315	215-220	NA	NA	1.82	
01316	220-225	NA	NA	.26	
01317	225-230	NA	NA	.38	
01318	230-235	NA	NA	1.94	
01319	235-240	NA	NA	.70	
01320	240-245	NA	NA	.16	

\* NA - Not Assayed

<u>Hole No.</u>	<u>Assay Tag</u>	<u>Footage</u>	<u>Ag(oz/ton)</u>	<u>Pb(%)</u>	<u>Zn(%)</u>
Hole F2 (Flunk 8 M.C.)	01321	245-250	NA	NA	.36
	01322	250-255	NA	NA	.22
	01323	255-260	NA	NA	.10
	01323A	260-265	NA	NA	.46
	01324	265-270	NA	NA	.28
	01325	270-275	NA	NA	.68
	01326	275-280	NA	NA	.34
	01327	280-285	NA	NA	.12
	01328	285-290	.06	.13	.40
	01329	290-295	.18	.15	.72
	01330	295-300	.21	.08	.82
	01331	300-305	.38	.25	1.28
	01332	305-310	.62	.38	2.58
	01333	310-315	.68	.38	2.00
	01334	315-320	.35	.20	1.80
Hole F3 (Flunk 8 M.C.)	01335	10-15	NA	NA	1.28
	01336	15-20	NA	NA	.18
	01337	20-25	NA	NA	.60
	01338	25-30	NA	NA	.70
	01339	30-35	NA	NA	.72
	01340	35-40	NA	NA	.48
	01341	40-45	NA	NA	.74
	01342	45-50	NA	NA	1.60
	01343	50-55	NA	NA	.94
	01344	55-60	NA	NA	.37
	01345	60-65	NA	NA	.28
	01346	65-70	NA	NA	.15
	01347	140-145	NA	NA	.34
	01348	145-150	NA	NA	.02
	01349	150-155	NA	NA	.23
	01350	155-160	NA	NA	1.96
	01351	195-200	NA	NA	.84
	01352	200-205	NA	NA	.06
	01353	205-210	NA	NA	.11
01354	210-215	NA	NA	.10	
01355	215-220	.32	1.15	1.46	
01356	220-225	.59	2.08	2.40	
01357	225-230	.18	.48	1.22	
01358	230-235	NA	NA	.13	
01359	235-240	NA	NA	.45	
01360	240-245	.29	.16	1.40	
01361	245-250	.15	.05	.32	
01362	250-255	.38	.28	2.10	
01363	255-260	.12	.04	.43	

<u>Hole No.</u>	<u>Assay Tag</u>	<u>Footage</u>	<u>Ag(oz/ton)</u>	<u>Pb(%)</u>	<u>Zn(%)</u>
Hole F3 (Flunk 8 M.C.)	01364	260-265	NA	NA	2.10
	01365	265-270	NA	NA	.86
	01366	270-275	NA	NA	.88
	01367	275-280	NA	NA	1.07
	01368	280-285	NA	NA	1.10
	01369	285-290	NA	NA	1.10
	01370	290-295	NA	NA	3.12
	01371	295-300	NA	NA	.94
	01372	300-305	NA	NA	.01
	01373	305-310	NA	NA	.01
	01374	310-315	NA	NA	.11
	01375	315-320	NA	NA	.11
	01376	320-325	NA	NA	.43
	01377	325-330	NA	NA	.11
	01378	330-335	NA	NA	.10
	01379	335-340	NA	NA	.28
	01380	340-345	NA	NA	.15
	01381	345-350	.15	.11	.15
01382	350-355	NA	NA	.01	
01383	355-360	NA	NA	.01	
01384	360-365	NA	NA	.02	
01385	365-370	NA	NA	.55	
Hole F4 (Flunk 9 M.C.)	01386	85-90	.24	.04	1.46
	01387	90-95	.18	.04	.59
	01388	95-100	.18	.04	.79
	01389	100-105	.21	.04	.45
	01390	105-110	.27	.08	.15
	01391	110-115	.24	.04	.53
	01392	115-120	.41	.18	1.74
	01393	120-125	.44	.31	3.42
	01394	125-130	.50	.11	1.82
	01395	130-135	.32	.26	1.66
	01396	135-140	.47	.14	1.14
	01397	140-145	.35	.04	1.30
01398	145-150	.29	.06	.88	

economic target . The OJV exploration approach was to drill widely spaced holes through the favourable dolomite to determine the overall grade potential of a large tonnage of rock under the assumption that the economics of lead-zinc deposits in this district depend on very large tonnages and that a few holes are sufficient to indicate average mineral content. A short description of each hole follows:

Hole F1 was collared on Flunk 17 mineral claim 1400 feet south of the No. 1 Showing, or about 600 feet north of the southern limit of mineralized float in talus. Weak disseminated sphalerite mineralization was intersected in the bottom 45 feet of the Flunk dolomite. The best 5 foot sample in the mineralized section assayed 2.1 per cent zinc. The contact between the Flunk dolomite and the underlying thin bedded shaley dolomite is strongly brecciated and mineralized (up to 60 per cent) with marcasite.

Hole F2 was collared on Flunk 8 mineral claim 700 feet north of Hole F1 and 700 feet south of the No. 1 Showing. This hole was drilled slightly higher in the geological column to take advantage of a bench on the hillside which allowed an easier drill site. Weakly disseminated sphalerite was cut in the upper dolomite with the best assay returned 1.76 per cent zinc across 5 feet. A well mineralized zone of sphalerite and galena surrounding pseudo-breccia fragments was cut in the Flunk dolomite immediately below the shale contact while the remainder of the Flunk dolomite is weakly mineralized with disseminated sphalerite. The upper 20 feet averaged 6.04 per cent zinc, 1.46 per cent lead and 0.69 oz/ton silver and was followed by 35 feet grading 2.55 per cent zinc. A 20 foot section above the contact with the underlying shaley dolomite assayed 1.92 per cent zinc. The entire 195 foot section of Flunk dolomite averaged 1.68 per cent zinc.

Hole F3 was drilled at an angle of 60 degrees into the hill from the same set-up on Flunk 8 mineral claim to examine the continuity of mineralization intersected in Hole F2. Minor disseminated sphalerite was intersected in the upper dolomite and through the Flunk dolomite. The best mineralized section averaged 1.69 per cent zinc, 1.27 per cent lead and 0.36 oz/ton silver over a length of 15 feet in the upper central portion of the Flunk dolomite, with no continuity of better grade zones between Holes F2 and F3.

Hole F4 was drilled on Flunk 9 mineral claim 700 feet north of Hole F3 and about 400 feet west of the No. 1 Showing. Traces of sphalerite were found throughout the hole with the best mineralization immediately above the lower shaley dolomite. The best section, which is approximately in the same stratigraphic position as the No. 1 Showing, averaged 1.70 per cent zinc, 0.16 per cent lead and 0.40 oz/ton silver over a length of 35 feet.

There are several characteristics common to all holes. Marcasite content, including minor pyrite, varies from a few percent to about 10 per cent, usually filling vugs in the dolomite and occasionally occurring as thin fracture fillings. Sphalerite occurs throughout the Flunk dolomite as disseminated, translucent, honey yellow or light grey crystals 1 to 2 mm across. It also surrounds pseudo-breccia fragments but is seldom seen in fracture fillings, vugs or in association with the marcasite. When sphalerite and marcasite occur together they are banded but not intermixed. Sphalerite rarely fills dolomite vugs and in many instances dolomite with abundant disseminated sphalerite exhibits up to 10 per cent open vugs. Finally, there is no obvious relationship between silver assays and lead or zinc content.

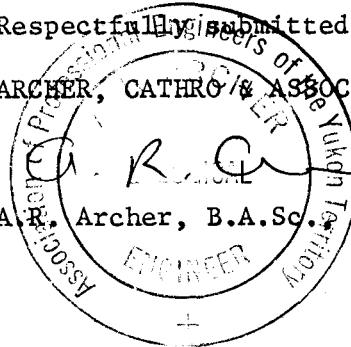
CONCLUSIONS

Drilling has shown that the 200 foot section of Flunk dolomite is weakly mineralized with sphalerite over a length of at least 1400 feet. Good grade sections are present but are not sufficiently abundant to bring the average assay up to grades of commercial interest. Detailed drilling to determine the tonnage and grade of individual good grade sections is not warranted in this remote location.

Respectfully submitted,

ARCHER, CATHRO & ASSOCIATES LTD.

A. R. Archer, B.A.Sc. P.Eng.



# DRILL HOLE LOG

## LEGEND

HOLE No. \_\_\_\_\_  
PAGE OF

COORDINATES  
ELEVATION  
DIP  
AZIMUTH  
SCALE

CORE SIZE  
HOLE STARTED  
HOLE COMPLETED  
LOGGED BY

FOOTAGE	DESCRIPTION
	<u>GEOLOGY</u>
	MIDDLE CAMBRIAN    mEd <sub>4</sub> UPPER DOLOMITE
	LOWER CAMBRIAN    Lefs    FLUNK SHALE
	Lefd    FLUNK DOLOMITE
	LEld    LIMY DOLOMITE
	<u>LEGEND</u>
	- OPEN FRACTURE, APPROXIMATE ANGLE TO CORE SHOWN
	- CLOSED FRACTURE, APPROXIMATE ANGLE TO CORE SHOWN
	--- FAULT
	▲▲▲ BRECCIA
	_____ FORMATIONAL CONTACT
	_____ LITHOLOGICAL CHANGE
	DOLOMITE
	BRECCIATED DOLOMITE
	PSEUDO BRECCIA TEXTURE IN DOLOMITE RESULTING FROM DOLOMITIZATION
	LIMESTONE
	DOLOMITIC SHALE
	SHALE
	<u>MINERALIZATION</u>
	DISSEMINATED
	LOCALIZED HI-GRADE

x  
x  
x

# DRILL HOLE LOG

OJV - FLUNK CLAIM GROUP

HOLE No. F1

PAGE 1 OF 6

COORDINATES 60+25N, 60+25E

ELEVATION 3500'

DIP VERTICAL

AZIMUTH

SCALE 1.5" = 10'

CORE SIZE BQ

HOLE STARTED

JULY 26/75

HOLE COMPLETED

AUG 1/75

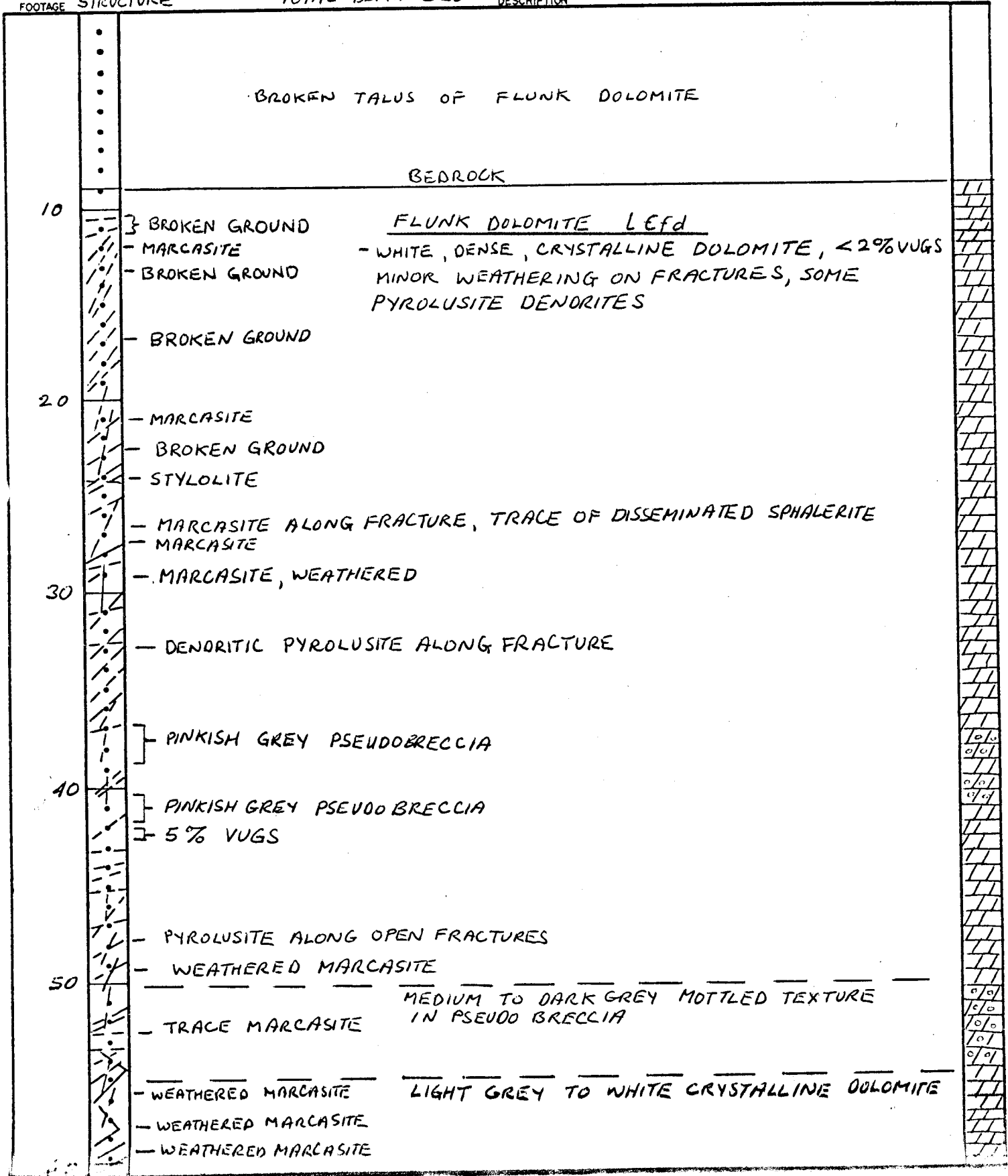
LOGGED BY W. SCHMIDT

GEOLOGY

FOOTAGE STRUCTURE

TOTAL DEPTH 320'

DESCRIPTION



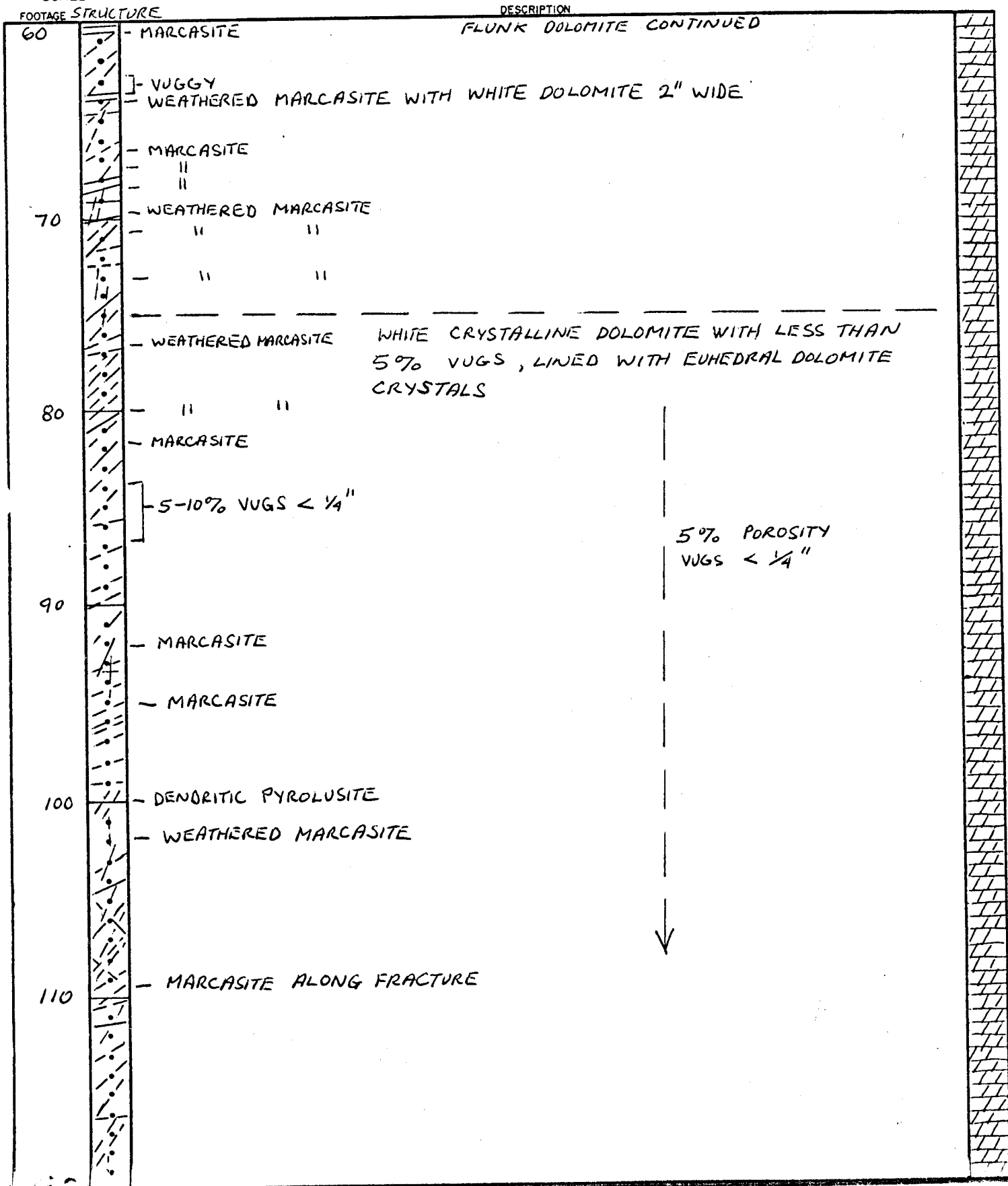
# DRILL HOLE LOG

HOLE No. F1  
PAGE 2 OF 6

COORDINATES 60+25N, 60+25E  
ELEVATION 3500  
DIP VERTICAL  
AZIMUTH \_\_\_\_\_  
SCALE 1.5" = 10'

CORE SIZE BQ  
HOLE STARTED JULY 26, 75  
HOLE COMPLETED AUG 1, 75  
LOGGED BY U. SCHMIDT

GEOLOGY



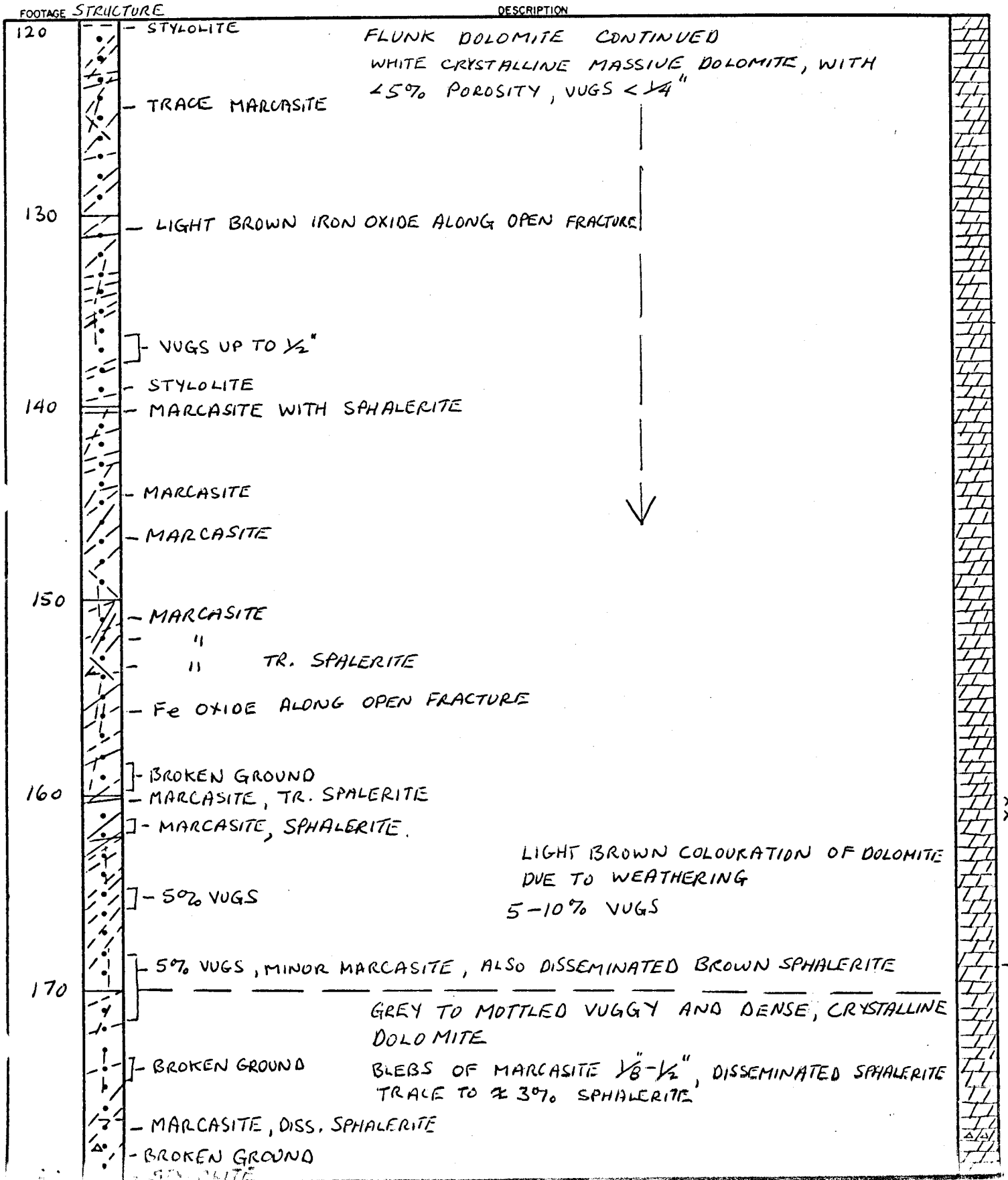
# DRILL HOLE LOG

HOLE No. F1  
PAGE 3 OF 6

COORDINATES 60+25N, 60+25E  
ELEVATION 3500'  
DIP VERTICAL  
AZIMUTH —  
SCALE 1.5" = 10'

CORE SIZE BQ  
HOLE STARTED JULY 26, 75  
HOLE COMPLETED AUG 1, 75  
LOGGED BY U. SCHMIOT

GEOLOGY



# DRILL HOLE LOG

HOLE No. F1  
PAGE 4 OF 6

COORDINATES 60+25N, 60+25E  
ELEVATION 3500'  
DIP VERTICAL  
AZIMUTH  
SCALE 1.5" = 10'

CORE SIZE BQ  
HOLE STARTED JULY 26, 75  
HOLE COMPLETED AUG 1, 75  
LOGGED BY U. SCHMIDT

GEOLOGY

FOOTAGE	STRUCTURE	DESCRIPTION
180		FLUNK DOLOMITE CONTINUED 15% MARCASITE 1/4-1/2" WITH TRACE TO 10% SPHALERITE MEDIUM GREY TO MOTTLED GREY CRYSTALLINE DOLOMITE 5-10% MARCASITE, TRACE TO 1% DISSEMINATED GREY TO HONEY YELLOW SPHALERITE
190		MARCASITE, TR. GALENA WHITE AND GREY DOLOMITE PSEUDOISRECCIA WITH DISSEMINATED SPHALERITE AND 5% MARCASITE ≈ 1% SPHALERITE ON AVERAGE
200		STYLOLITE 5% PATCHY MARCASITE, AND ≈ 1% SPHALERITE 1/4-1/2" VUGS 10-15% MARCASITE, TRACE DISS. SPHALERITE CALCITE IN FRACTURE ≈ 1% DISSEMINATED PATCHY SPHALERITE, TRACE GALENA
210		<u>LIMY DOLOMITE Lfld</u> 40-60% MARCASITE, DISS. SPHALERITE THINLY LAMINATED TO WAVY BANDED, DENSE BLACK FRAGMENTAL DOLOMITE TO ARGILLACEOUS DOLOMITE
220		ROUNDED FRAGMENTS LAMINAE ≈ 80-85° TO CORE AXIS
230		ANGULAR BRECCIA FRAGMENTS, AND ROUNDED FRAGMENTS TRACE MARCASITE IN BLEBS

# DRILL HOLE LOG

HOLE No. F1  
PAGE 5 OF 6

COORDINATES 60+25N, 60+25E  
ELEVATION 3500'  
DIP VERTICAL  
AZIMUTH  
SCALE 1.5" = 10'

CORE SIZE BQ  
HOLE STARTED JULY 26, 75  
HOLE COMPLETED AUG 1, 75  
LOGGED BY U. SCHMIOT

GEOLOGY

FOOTAGE	STRUCTURE	DESCRIPTION	
240	•	LIMY DOLOMITE CONTINUED	/ /
	•	INTRAFORMATIONAL BRECCIA, ROTATED FRAGMENTS UP TO 1"	/ /
	•	USUALLY 1/4" → 1/2", MATRIX IS THINLY LAMINATED BLACK AND GREY	/ /
	•	- MARCASITE IN CLOSED FRACTURES AND RIMMING FRAGMENTS	/ /
	•	10% MARCASITE OVER 1 FT.	/ /
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# DRILL HOLE LOG

HOLE No. *F1*  
PAGE 6 OF 6

COORDINATES *60+25N, 60+25E*  
ELEVATION *3500'*  
DIP *VERTICAL*  
AZIMUTH  
SCALE *1.5" = 10'*

CORE SIZE *BQ*  
HOLE STARTED *JULY 26, 75*  
HOLE COMPLETED *AUG 1, 75*  
LOGGED BY *U. SCHMIDT*

GEOLOGY

FOOTAGE	STRUCTURE	DESCRIPTION
300	[ Broken Ground ]	LIMY DOLOMITE CONTINUED BLACK ONCOLITIC DOLOMITE, THINLY LAMINATED AND FLOW BANDED MATRIX.
310		<u>GRADATIONAL</u> BLACK ONCOLITIC LIMESTONE MINOR THIN LAMINATIONS BETWEEN FRAGMENTS FRAGMENTS $\frac{1}{2}$ - $\frac{3}{4}$ " DIAM.
320		END OF HOLE

# DRILL HOLE LOG OJY-FLUNK CLAIM GROUP

HOLE No. F2  
PAGE 1 OF 8

COORDINATES 65+40N, 55+40E  
ELEVATION 3620'  
DIP VERTICAL  
AZIMUTH —  
SCALE 1.5" = 10'

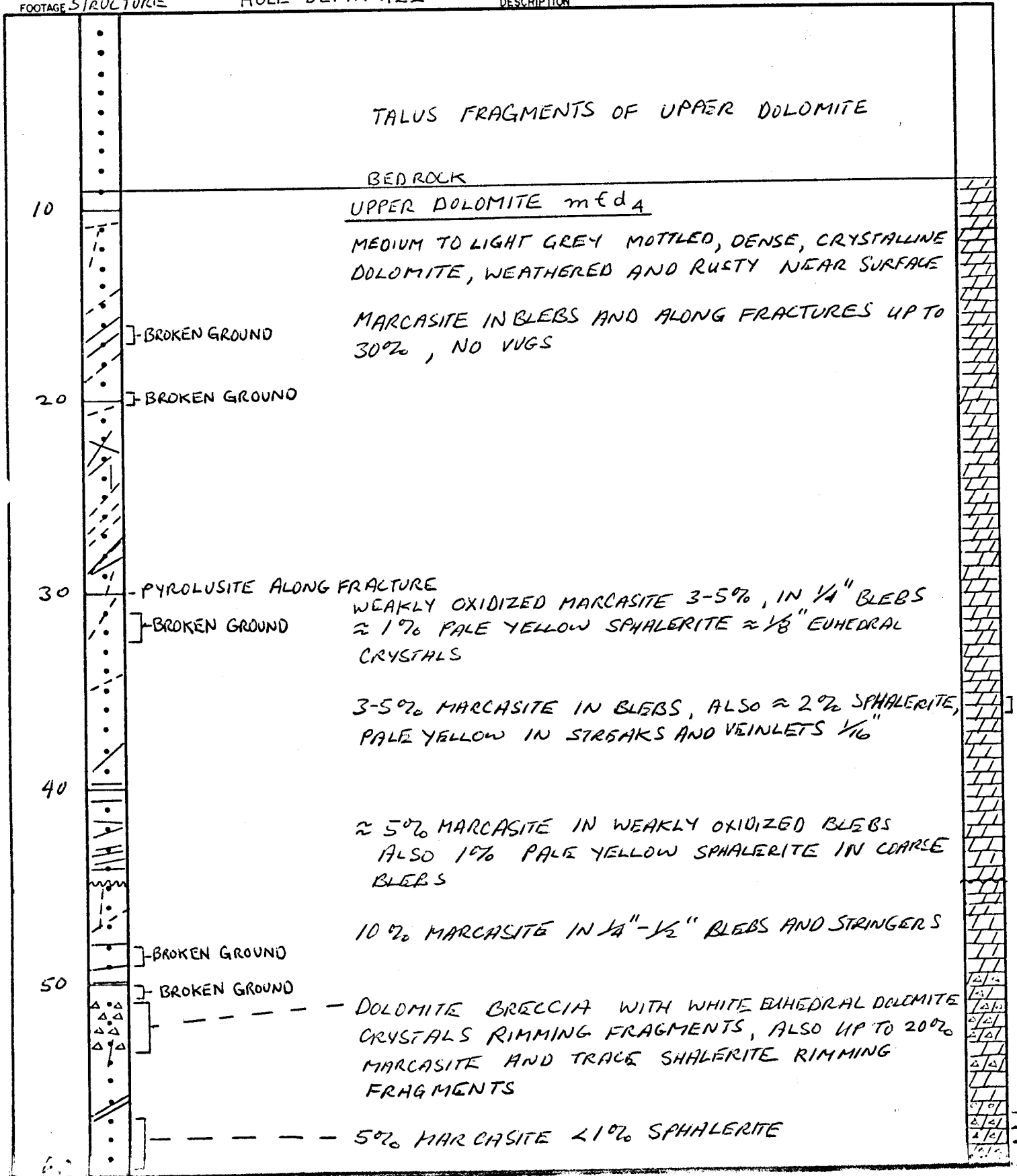
CORE SIZE BQ  
HOLE STARTED AUG 4, 75  
HOLE COMPLETED AUG 6, 75  
LOGGED BY U. SCHMIDT

GEOLOGY

FOOTAGE STRUCTURE

HOLE DEPTH 422'

DESCRIPTION













































# DRILL HOLE LOG

HOLE No. F2  
PAGE 2 OF 8

COORDINATES 65+40N, 55+40E  
ELEVATION 3620'  
DIP VERTICAL  
AZIMUTH  
SCALE 1.5" = 10'

CORE SIZE BQ  
HOLE STARTED AUG. 4, 75  
HOLE COMPLETED AUG. 6, 75  
LOGGED BY U. SCHMIDT

GEOLOGY

FOOTAGE	STRUCTURE	DESCRIPTION
60	                                         	<p>UPPER DOLOMITE CONTINUED</p> <p>- DISSEMINATED, SPHALERITE AND PYRITE 5% MARCASITE, 1% YELLOW SPHALERITE</p> <p>5-10% WEAKLY OXIDIZED MARCASITE IN FRACTURES AND VUGS &lt;1% SPHALERITE</p> <p>10% MARCASITE &lt;1% SPHALERITE</p> <p>- SIDERITE IN CLOSED FRACTURE</p> <p>5-10% MARCASITE, TRACE SPHALERITE DOLOMITE WEATHERED PINK TO RED BROWN WHERE INTENSELY BRECCIATED</p> <p>MOTTLED DOLOMITE PSEUDO BRECCIA PINKISH GREY TONES, TERTIARY DOLOMITIZATION &lt;1% SULPHIDES, &lt;5% VOIDS</p> <p>MASSIVE PYRITE</p> <p>GREY CRYSTALLINE DOLOMITE TO MOTTLED GREY AND WHITE DOLOMITE PSEUDO BRECCIA</p> <p>5% VOIDS</p> <p>- STYLOLITE Fe OXIDES</p> <p>- GYPSUM</p> <p>LIGHT AND MEDIUM GREY MOTTLED LIMESTONE BRECCIA ANGULAR PINKISH FRAGMENTS IN A GREY GREEN LIMY MATRIX</p> <p>GREY MOTTLED CRYSTALLINE DOLOMITE</p> <p>- STYLOLITE</p> <p>FLUNK SHALE LEFS RED BROWN TO PURPLE BROWN SHALE</p> <p>GREY SHALE TO VERY FINE GRAINED SHALY DOLOMITE WITH TRACE DISSEMINATED EUBAERIAL PYRITE</p> <p>BROKEN GROUND</p>
70		
80		
90		
100		
110		

# DRILL HOLE LOG

HOLE No. F2  
PAGE 3 OF 8

COORDINATES 65+40N, 55+40E  
ELEVATION 3620'  
DIP VERTICAL  
AZIMUTH  
SCALE 1.5" = 10'

CORE SIZE BQ  
HOLE STARTED AUG 4, 75  
HOLE COMPLETED AUG 6, 75  
LOGGED BY W. SCHMIDT

GEOLOGY

FOOTAGE STRUCTURE	DESCRIPTION
120	<p>END OF FLUNK SHALE      GREY SHALE TO SHALY DOLOMITE</p> <p><u>FLUNK DOLOMITE Lfd</u></p> <p>BROKEN GROUND</p> <p>GREY MOTTLED CRYSTALLINE DOLOMITE GREY AND LIGHT BROWN SPHALERITE RIM MARCASITE</p> <p>-30% MARCASITE UP TO 1" WIDE BANDS WITH 1/2-1% COARSE GALENA</p> <p>GALENA AND SPHALERITE IN FRACTURES OR VEINLETS UP TO 1/2" WIDE, DENSITY UP TO 10 PER FOOT</p> <p>WELL MINERALIZED DOLOMITE, &gt;5% SPHALERITE 2-5% GALENA</p> <p>MOST OF THE MINERALIZED VOID SPACE IS A PRODUCT OF DOLOMITIZATION</p>
130	
140	<p>10% MARCASITE 2-3% DISSEMINATED SPHALERITE</p> <p>3-5% MARCASITE IN SMALL BLEBS AND STRINGERS UP TO 1/4" 1-2% SPHALERITE</p>
150	<p>BROKEN GROUND</p> <p>GREY CRYSTALLINE DOLOMITE CLOSED FRACTURES WITH PYRITE COMMON UP TO 168', PYRITE UP TO 20%, WITH TRACE TO MINOR DISSEMINATED SPHALERITE</p>
160	<p>2-4% VUGS, 1-2% MARCASITE IN STRINGERS AND BLEBS 1/8" - 3/4", WITH 1/2% SPHALERITE</p>
170	<p>2% VUGS ≈ 2% MARCASITE</p> <p>GREY MOTTLED DENSE, CRYSTALLINE DOLOMITE</p> <p>MASSIVE MARCASITE GREY SPHALERITE</p> <p>-30% MARCASITE</p> <p>MARCASITE AND SPHALERITE FILL DOLOMITIZATION PRODUCED VOIDS, HONEY COLOURED SPHALERITE AS DISSEMINATED 1/8" CRYSTALS</p>

# DRILL HOLE LOG

HOLE No. F2  
PAGE 4 OF 8

COORDINATES 65+40N, 55+40E  
ELEVATION 3620'  
DIP VERTICAL  
AZIMUTH  
SCALE 1.5" = 10'

CORE SIZE BQ  
HOLE STARTED AUG. 4, 75  
HOLE COMPLETED AUG 6, 75  
LOGGED BY U. SCHMIOT

GEOLOGY

FOOTAGE	STRUCTURE	DESCRIPTION
180	STYLOLITE - MARCASITE, GALENA	LIGHT GREY MOTTLED DENSE CRYSTALLINE DOLOMITE WITH VUGS UPTO 10% OVER NARROW WIDTHS 5% MARCASITE, 1/2-1% SPHALERITE
	GALENA, MARCASITE, SPHALERITE	TRACE SPHALERITE
190		≈ 5% VUGS WITH TRACE AMOUNTS OF SPHALERITE
	1/4"-1/2" MARCASITE VEIN	
200		1% MARCASITE ALONG VEINLETS, ALSO DISSEMINATED SPHALERITE
		3-5% VUGS WITH ≈ 2% MARCASITE WITH GREY SPHALERITE, IN GREY MOTTLED PSEUDO BRECCIA
210		10% MARCASITE WITH GREY SPHALERITE FILLING VOIDS IN PSEUDO BRECCIA
220		5% SMALL VUGS, GREY YELLOW SPHALERITE
	- SPHALERITE, MARCASITE	MEDIUM GREY DENSE MASSIVE DOLOMITE TO SHALY DOLOMITE
230	- STYLOLITE	GREY MOTTLED VUGGY PSEUDO BRECCIA 10-20% VUGS LINED WITH WHITE DOLOMITE CRYSTALS, 10-15% MARCASITE, 5% BROWN AND HONEY COLOURED SPHALERITE
	- STYLOLITE	LIGHT GREY CRYSTALLINE VUGGY DOLOMITE 15% VUGS & 3% MARCASITE AND 1% YELLOW BROWN SPHALERITE

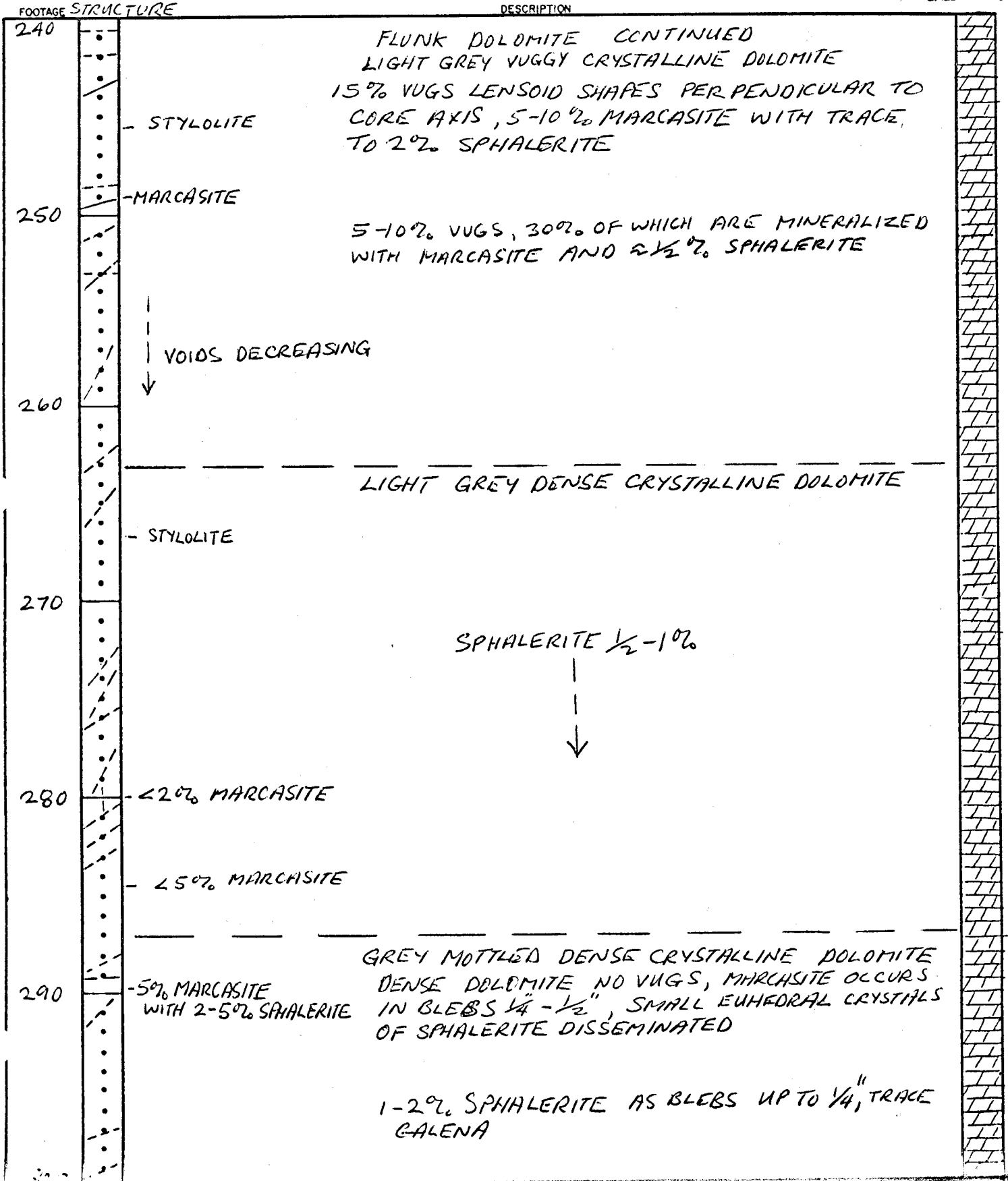
# DRILL HOLE LOG

HOLE No. F2  
PAGE 5 OF 8

COORDINATES 65+40N, 55+40E  
ELEVATION 3620'  
DIP VERTICAL  
AZIMUTH  
SCALE 1.5" = 10'

CORE SIZE 39  
HOLE STARTED AUG 4, 75  
HOLE COMPLETED AUG 6, 75  
LOGGED BY U. SCHMIDT

GEOLOGY



# DRILL HOLE LOG

HOLE No. F 2  
PAGE 6 OF 8

COORDINATES 65+40N, 55+40E  
ELEVATION 3620'  
DIP VERTICAL  
AZIMUTH  
SCALE 1.5" = 10'

CORE SIZE BQ  
HOLE STARTED AUG 4, 75  
HOLE COMPLETED AUG 6, 75  
LOGGED BY U. SCHMIIDT

GEL-1

FOOTAGE	STRUCTURE	DESCRIPTION
300		FLUNK DOLOMITE CONTINUED
	- TRACE GALENA - STYLOLITE	10% MARCASITE, 1-2% YELLOW SPHALERITE
310	TRACE GALENA	MARCASITE 15% UP TO 1" ACROSS, DOLOMITE GETTING DARK GREY & SULPHIDE RICH TOWARDS CONTACT
		BLEBS OF MARCASITE AND 4% DISSEMINATED YELLOW SPHALERITE
320		<u>DARK GREY TO BLACK MASSIVE LIMY DOLOMITE</u> (old) WAVY BANDED FRAGMENTAL LIMESTONE, CALCITE INFRACTURES, MINOR PYRITE IN FRACTURES
330	- PYRITE	ONCOLITES AND LIMY FRAGMENTS IN WAVY BANDED MATRIX PERPENDICULAR TO CORE AXIS
340		ONCOLITES AND ANGULAR LIMY FRAGMENTS
	- WHITE CALCITE IN CLOSED FRACTURES	
350		THINLY LAMINATED LIMESTONE WITH WHITE ANGULAR CLASTS UP TO 1/4"





# DRILL HOLE LOG

HOLE No. F3

COORDINATES G5+40N 55+37E  
 ELEVATION 36 20'  
 DIP -60°  
 AZIMUTH 315°  
 SCALE 1.5"=10'

OJV FLUNK CLAIM GROUP PAGE 1 OF 8  
 CORE SIZE BQ  
 HOLE STARTED AUG 7, 75  
 HOLE COMPLETED AUG 10, 75  
 LOGGED BY U. SCHMIDT

HOLE DEPTH 428'

GEOLOGY

FOOTAGE	STRUCTURE	DESCRIPTION
0		TALUS FRAGMENTS OF UPPER DOLOMITE
10		BEDROCK UPPER DOLOMITE mEd <sub>4</sub>
	BROKEN GROUND	GREY FINELY CRYSTALLINE DENSE DOLOMITE WITH DISSEMINATED EUHEDRAL PYRITE, UP TO 1/8" DIAMETER, USUALLY OXIDIZED
	BROKEN GROUND	TRACE TO 1% SPHALERITE
20		
	BROKEN GROUND	BLACK, RED BROWN AND YELLOW OXIDES IN BROKEN GROUND, AFTER MARCASITE
30		MARCASITE IN FRACTURES
		2-3% MARCASITE, OXIDIZED OPEN FRACTURES
40		OXIDIZED FRACTURE ZONE
	BROKEN GROUND	UP TO 30% WEATHERED MARCASITE
	BROKEN GROUND	UP TO 2-3% MARCASITE
50		5% MARCASITE
	BROKEN GROUND	
	BROKEN GROUND	1-2% MARCASITE PARTIALLY FILLING VUGS
		TR. DISSEMINATED PYRITE

# DRILL HOLE LOG

HOLE No. F3  
PAGE 2 OF 8

COORDINATES  
ELEVATION  
DIP  
AZIMUTH  
SCALE

CORE SIZE  
HOLE STARTED  
HOLE COMPLETED  
LOGGED BY

GEOLOGY

FOOTAGE	STRUCTURE	DESCRIPTION	GEOLOGY
60	<ul style="list-style-type: none"> <li>- MINOR DISSEMINATED PYRITE</li> <li>- STYLOLITES</li> </ul>	<p>UPPER DOLOMITE CONTINUED</p> <p>GREY, DENSE, CRYSTALLINE</p> <p>2% MARCASITE IN BLEBS, WEAKLY OXIDIZED</p> <p>SPHALERITE 1/2 - 1%</p> <p>DENDRITIC PYROLUSITE ON OPEN FRACTURE SURFACES</p> <p>&lt; 2% MARCASITE</p>	
70		<p>GRADATION INTO GREY MOTTLED DOLOMITE</p> <p>TRACES OF PYRITE OR MARCASITE</p>	
80	<ul style="list-style-type: none"> <li>- STYLOLITE</li> <li>- STYLOLITE <math>\approx 60^\circ</math> TO CORE AXIS</li> </ul>	<p>MEDIUM GREY TO DARK GREY DOLOMITE BRECCIA</p> <p>- VERY DENSE, NO VOIDS, LIGHT GREY ANGULAR FRAGMENTS IN DARK GREY ARGILLACEOUS DOLOMITE MATRIX - SUSPENDED BRECCIA FRAGMENTS</p>	
90			
100	<ul style="list-style-type: none"> <li>- LIGHT BROWN WEATHERED ZONES AROUND FRACTURES</li> </ul>	<p><u>FLUNK SHALE L&amp;fs</u></p> <p>DARK GREY DENSE ARGILLACEOUS DOLOMITE</p> <p>THINLY LAMINATED IN PLACES <math>\approx 40^\circ</math> CORE AXIS</p>	
110		<p>GRADATIONAL COLOUR CHANGE</p> <p>- GREY GREEN ARGILLACEOUS DOLOMITE</p> <p>MASSIVE TO FAINTLY LAMINATED</p>	
120			

# DRILL HOLE LOG

HOLE No. F3  
PAGE 3 OF 8

COORDINATES  
ELEVATION  
DIP  
AZIMUTH  
SCALE

CORE SIZE  
HOLE STARTED  
HOLE COMPLETED  
LOGGED BY

GEOLOGY

FOOTAGE	STRUCTURE	DESCRIPTION	GEOLOGY
120		FLUNK SHALE CONTINUED	
		GREY GREEN ARGILLACEOUS DOLOMITE, VERY FAINT THINLY LAMINATED, $\approx 60^\circ$ TO CORE AXIS	
130			
140		GRADING TO BROWN OXIDIZED COLOUR	
	BROKEN GROUND	<u>FLUNK DOLOMITE</u> LEF d	
	OXIDE AFTER MARCASITE	GREY MOTTLED VUGGY DOLOMITE, VOIDS LINED WITH EUMERAL DOLOMITE CRYSTALS	
		3-4% EMPTY VUGS, MARCASITE $\approx 1\%$	
150			
	TRACE PIRITE	LIGHT GREY TO WHITE CRYSTALLINE DOLOMITE, VOIDS DUE TO DOLOMITIZATION 5% OR LESS	
	BROKEN GROUND	$\frac{1}{2}\%$ MARCASITE	
	MARCASITE SPHALERITE		
160			
	HIGH DENSITY OF FRACTURES	VUGS SLIGHTLY LARGER MARCASITE INCREASES TO 2-3% TRACE TO $\frac{1}{2}\%$ SPHALERITE IN COARSE BLEBS	
	BROKEN GROUND		
	MARCASITE	SMALL VUGS UP TO 5% $\frac{1}{4}$ " LINED WITH EUMERAL DOLOMITE CRYSTALS	
170			
		4 TO 5 FRACTURES PER FOOT WITH LIGHT BROWN OXIDE ALONG FRACTURES	
		SMALL VUGS UP TO 10%	

# DRILL HOLE LOG

HOLE No. F3  
PAGE 4 OF 8

COORDINATES  
ELEVATION  
DIP  
AZIMUTH  
SCALE

CORE SIZE  
HOLE STARTED  
HOLE COMPLETED  
LOGGED BY

GEOLOGY

FOOTAGE	STRUCTURE	DESCRIPTION	GEOLOGY
180	-MARCASITE -MARCASITE -MARCASITE -MARCASITE TRACE GALENA SPHALERITE	FLUNK DOLOMITE CONTINUED LIGHT GREY CRYSTALLINE DOLOMITE WITH VUGS 5% OR LESS, < 1/4" DIAMETER, SULPHIDES OCCUR ALONG FRACTURES	
190	HIGH DENSITY OF OPEN FRACTURES -MARCASITE AND TRACE SPHALERITE	VUGS UP TO 5%	
	HIGH DENSITY OF OPEN FRACTURES	5% MARCASITE, AND ≈ 1% FINE GRAINED YELLOW AND GREY SPHALERITE	
200	-PYRITE WITH TRACE GREY SPHALERITE	VUGS UP TO 10% OVER 4 FT. 1/4" DIAMETER, ELONGATE ⊥ CORE AXIS, 1-2% MARCASITE	
	-PYRITE, MARCASITE -PYRITE		
210	-MARCASITE WITH TRACE SPHALERITE -MARCASITE -PYRITE GALENA SPHALERITE	DENSE LIGHT GREY CRYSTALLINE DOLOMITE WITHOUT VUGS 5-10% MARCASITE IN PATCHES & VEINLETS 1/4" ≈ 2% GREY TO GREY BROWN SPHALERITE	
220	MARCASITE, SPHALERITE, GALENA WITH CALCITE GANGUE	4-5% DISSEMINATED SPHALERITE, 1% GALENA IN FRACTURES	
230	-STYCHOLITE -MARCASITE SPHALERITE CALCITE	2% MARCASITE IN 1/8" VEINLETS, WITH TRACE OF SPHALERITE	
240			





# DRILL HOLE LOG

HOLE No. F3  
PAGE 7 OF 8

COORDINATES  
ELEVATION  
DIP  
AZIMUTH  
SCALE

CORE SIZE  
HOLE STARTED  
HOLE COMPLETED  
LOGGED BY

GEOLOGY

FOOTAGE	STRUCTURE	DESCRIPTION	GEOLOGY
360	- MARCASITE TRACE SPHALERITE	≈ 5% COARSE MARCASITE IN BLEBS	X X X X
	- MARCASITE	LOWER LIMY DOLOMITE L&Ld	
	- MARCASITE, SPHALERITE	GREY TO BLACK WAVY LAMINATED FRAGMENTAL LIMY DOLOMITE, LAMINAE ≈ 60° TO 80° CORE AXIS	X X
370	- MARCASITE, SPHALERITE		
	- MARCASITE		
	- BROKEN GROUND, MINOR FAULT		
380			
390	- CALCITE IN FRACTURES	DARK GREY TO BLACK FRAGMENTAL LIMESTONE - WAVY LAMINAE AND ONCOLITES	
	↓		
	CALCITE FRAGMENTS AND IN MATRIX	GREY TO BLACK FRAGMENTAL LIMY DOLOMITE	
400			
410		THINLY LAMINATED BLACK DOLOMITE	
		DOLOMITE GETTING LIMIER	
		↓	
		CALCITE FRAGMENTS UP TO 5%	
420			



# DRILL HOLE LOG

OJV - FLUNK CLAIM GROUP HOLE No. FA  
PAGE 1 OF 3

COORDINATES 70+90N 50+85E  
ELEVATION 3540'  
DIP VERTICAL  
AZIMUTH  
SCALE 1.5 = 10'

CORE SIZE BQ  
HOLE STARTED AUG. 13, 75  
HOLE COMPLETED AUG 14, 75  
LOGGED BY U. SCHMIDT

GEOLOGY

HOLE DEPTH 158' DESCRIPTION

FOOTAGE	STRUCTURE	DESCRIPTION	GEOLOGY
0			
		BED ROCK	
10	BROKEN GROUND	<u>FLUNK DOLOMITE LcfD</u> LIGHT TO MEDIUM GREY DENSE CRYSTALLINE DOLOMITE, MOTTLED GREY COLOURS IN PART	
		MARCASITE, SPHALERITE, TRACE GALENA IN VEIN	
20	BROKEN GROUND	MARCASITE CALCITE ON OPEN FRACTURE SURFACES	
	BROKEN GROUND		
		MARCASITE, CALCITE ALONG FRACTURES	
30	BROKEN GROUND	TRACE OF DISSEMINATED HONEY COLOURED SPHALERITE	
		MARCASITE, TRACE SPHALERITE, GALENA	
	BROKEN GROUND		
40	STYLOLITE		
		MARCASITE	
		WHITE DOLOMITE IN FRACTURES	
50		<u>MARCASITE AND SPHALERITE IN PSEUDO BRECCIA</u> LIGHT GREY TO WHITE CRYSTALLINE DOLOMITE UP TO 5% CRYSTAL LINED VUGS	
		STYLOLITE	
		MARCASITE	
60			

# DRILL HOLE LOG

HOLE No. F4  
PAGE 2 OF 3

COORDINATES  
ELEVATION  
DIP  
AZIMUTH  
SCALE

CORE SIZE  
HOLE STARTED  
HOLE COMPLETED  
LOGGED BY

GEOLOGY

FOOTAGE	STRUCTURE	DESCRIPTION	GEOLOGY
60	MARCASITE BLEBS TRACE DISSEMINATED SPHALERITE STYLOLITE	FLUNK DOLOMITE CONTINUED LIGHT GREY TO WHITE CRYSTALLINE VUGGY DOLOMITE, 1/4" DIAMETER VUGS UP TO 5%	
70	WEATHERED MARCASITE BLEBS		
		DENSE WHITE CRYSTALLINE DOLOMITE	
	MINOR BLEBS OF MARCASITE		
	BROKEN GROUND		
80	MARCASITE	MOTTLED LIMY DOLOMITE WITH PSEUDO BRECCIA TEXTURE	
	MARCASITE	MINOR WEATHERED BLEBS OF MARCASITE 5% VUGS UP TO 1/2" x 1/4"	
		MOTTLED GREY & WHITE DOLOMITE, PSEUDO BRECCIA TEXTURE, DENSE, CRYSTALLINE 5% OXIDIZED MARCASITE, 2-4% DISSEMINATED SPHALERITE	
90	OXIDE ALONG FRACTURES		
		5% MARCASITE 1% DISSEMINATED SPHALERITE	
		10-15% MEDIUM TO FINE GRAINED BLEBS OF MARCASITE, 1% DISSEMINATED SPHALERITE	
100	MARCASITE, SPHALERITE DOLOMITE	DISSEMINATED HONEY COLOURED SPHALERITE 1/4-1/2% MARCASITE 15-20%	
		GREY MOTTLED DENSE CRYSTALLINE LIMY DOLOMITE MARCASITE 10-20%, DISSEMINATED SPHALERITE 2-5% TRACE GALENA	
		710% MARCASITE, WITH GREY SPHALERITE, IN BLEBS AND ALONG FRACTURES	
110	MARCASITE, SPHALERITE		
		5-10% MEDIUM TO FINE GRAINED BLEBS OF MARCASITE	
	SPHALERITE, MARCASITE		
		5% MARCASITE, 5% SPHALERITE, MEDIUM TO FINE GRAINED DISSEMINATED, TRACE GALENA	

# DRILL HOLE LOG

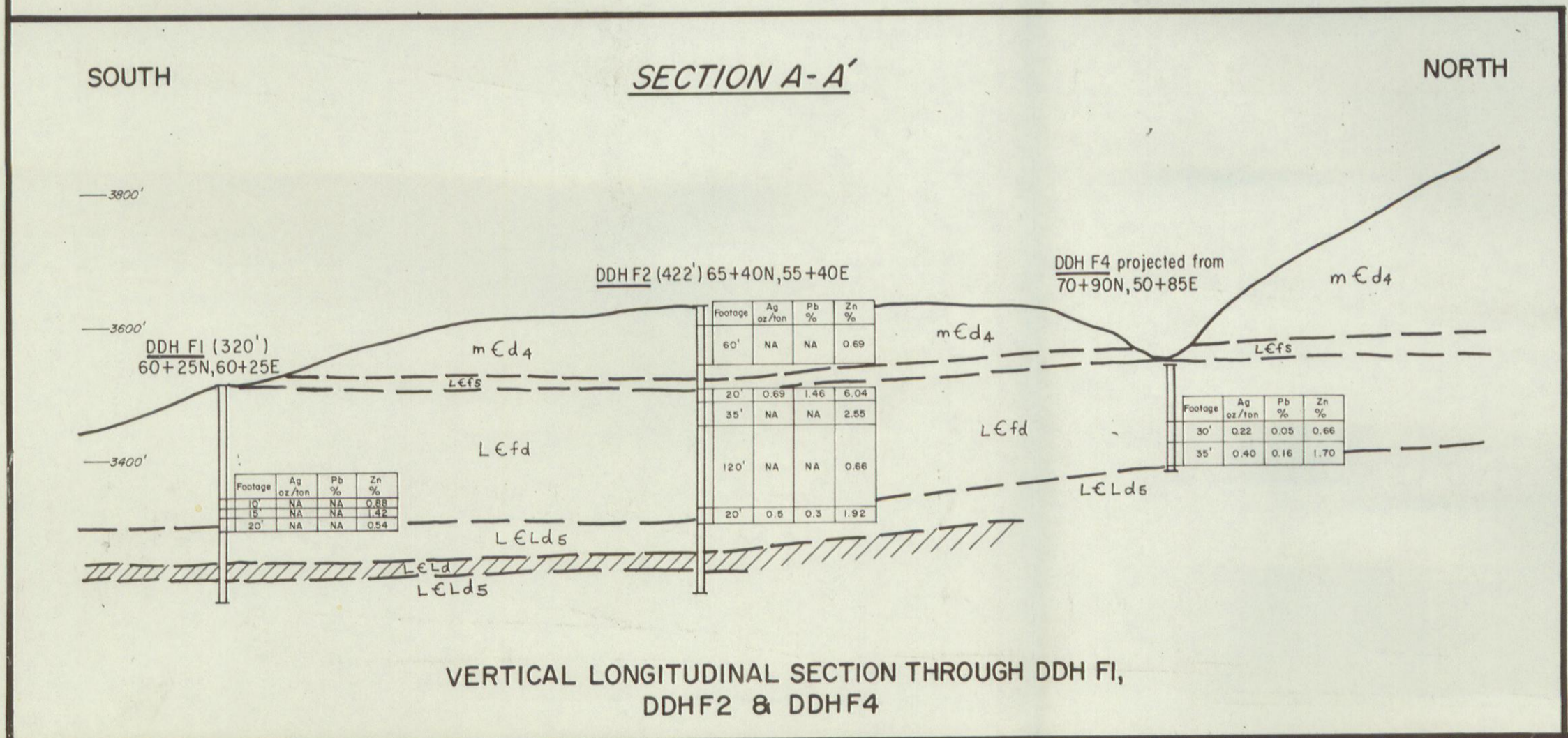
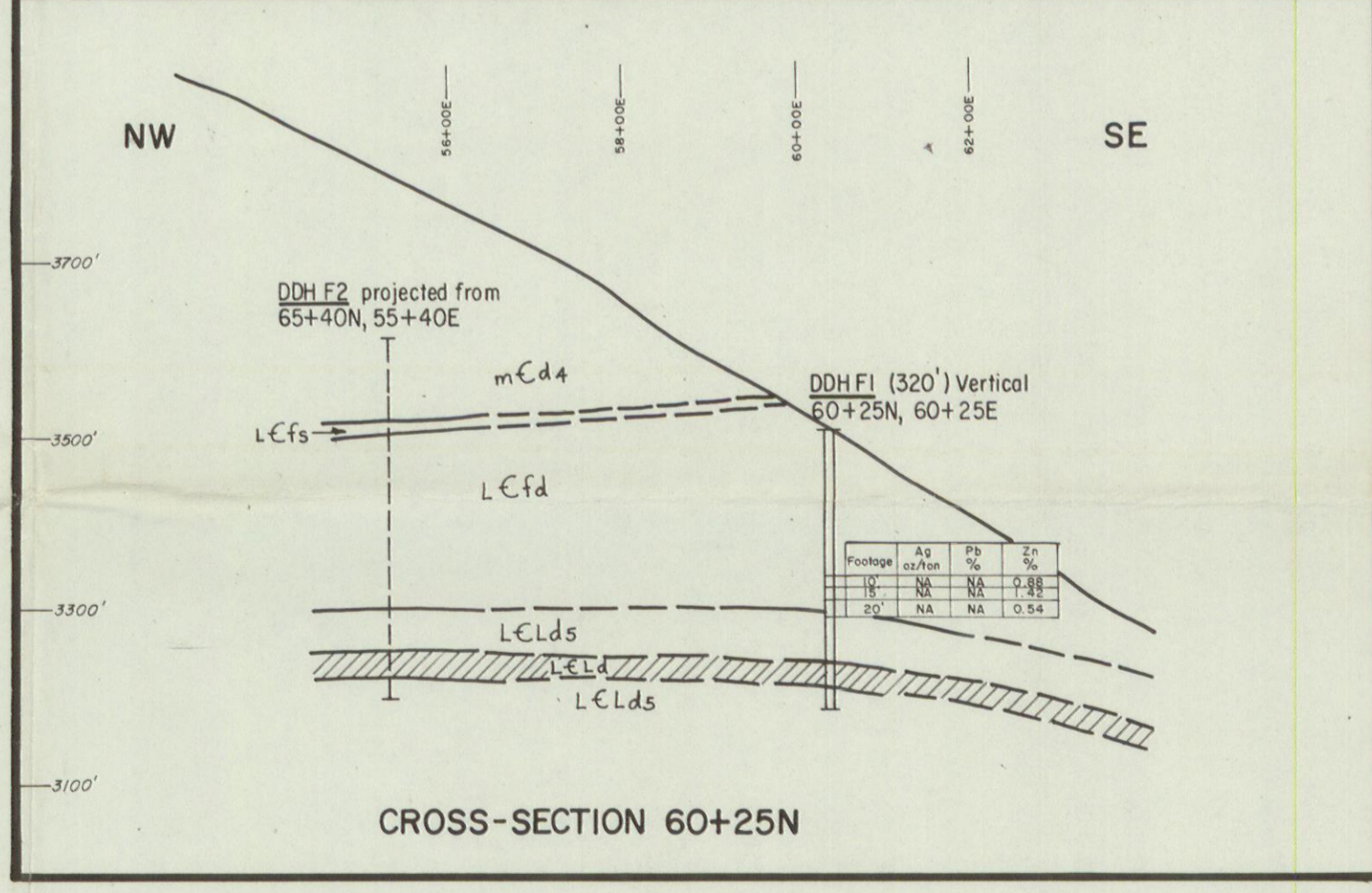
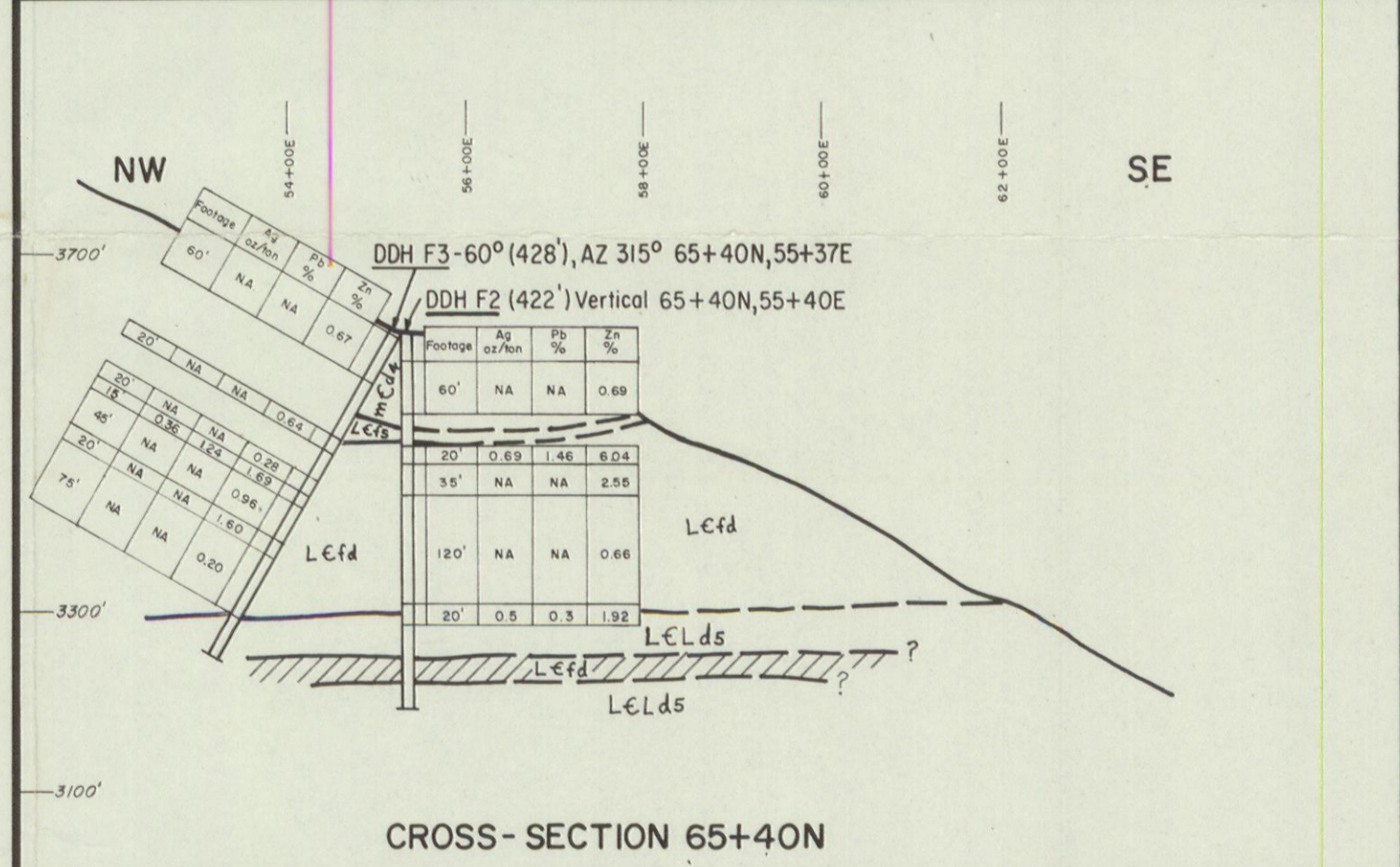
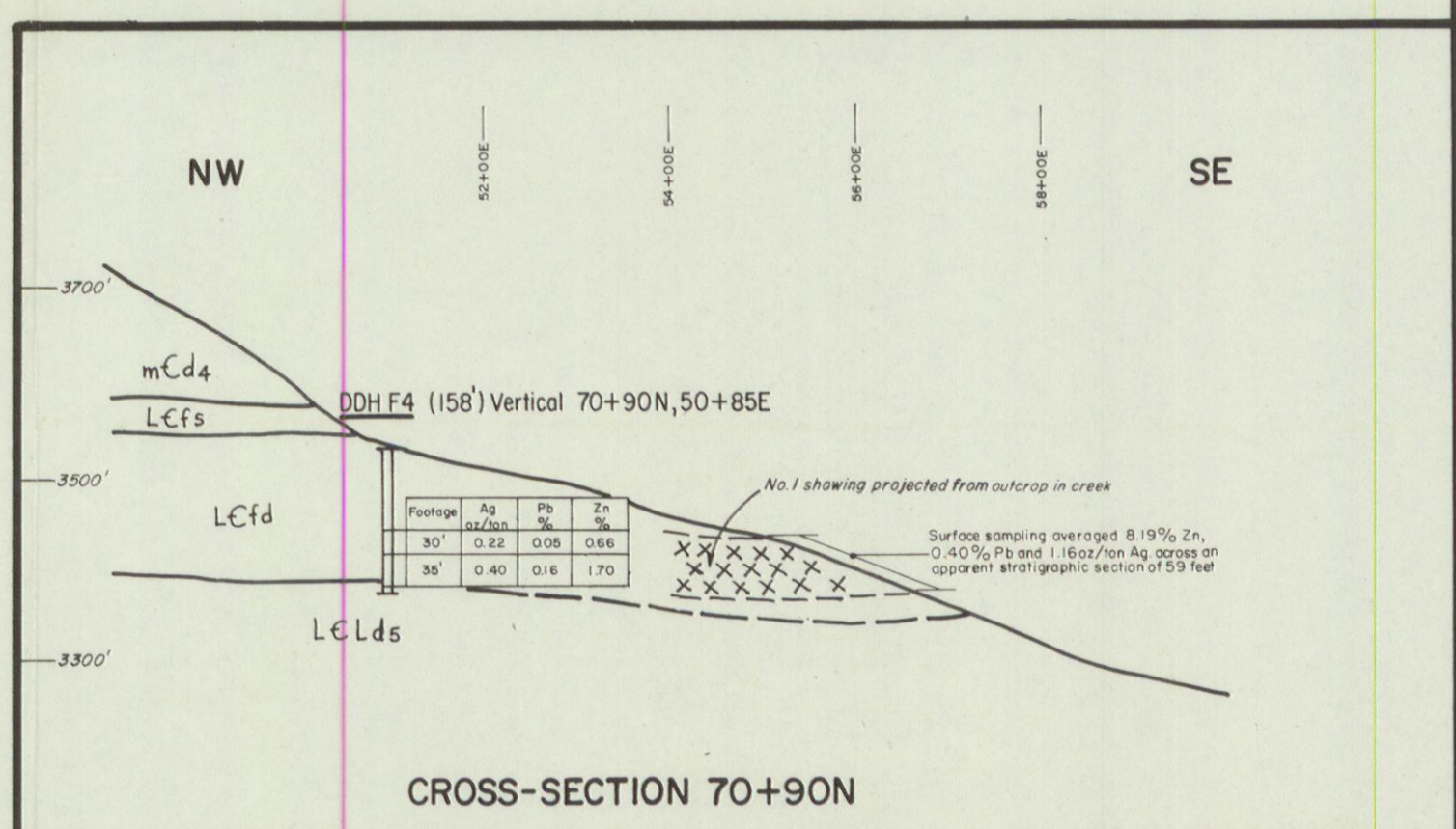
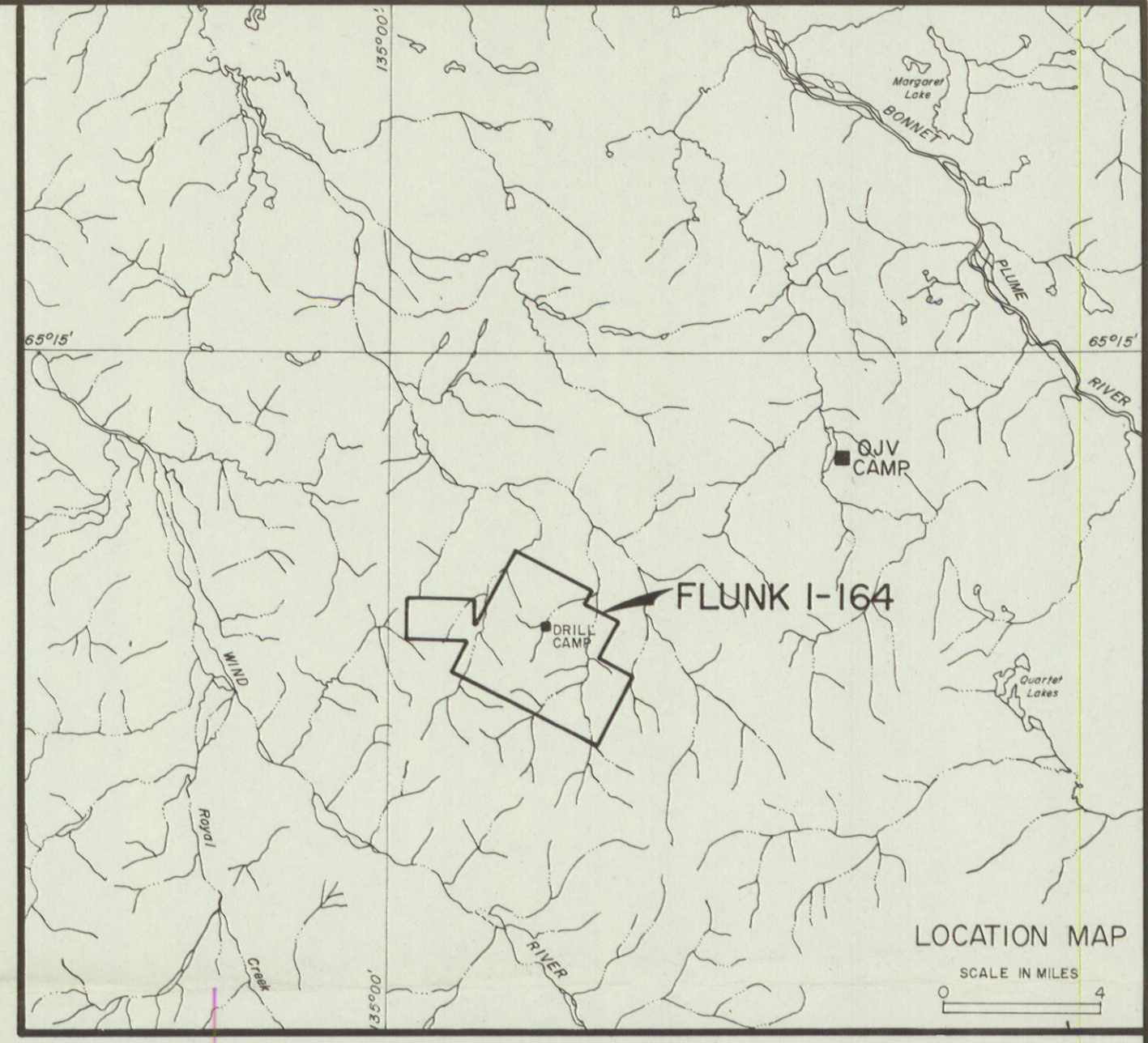
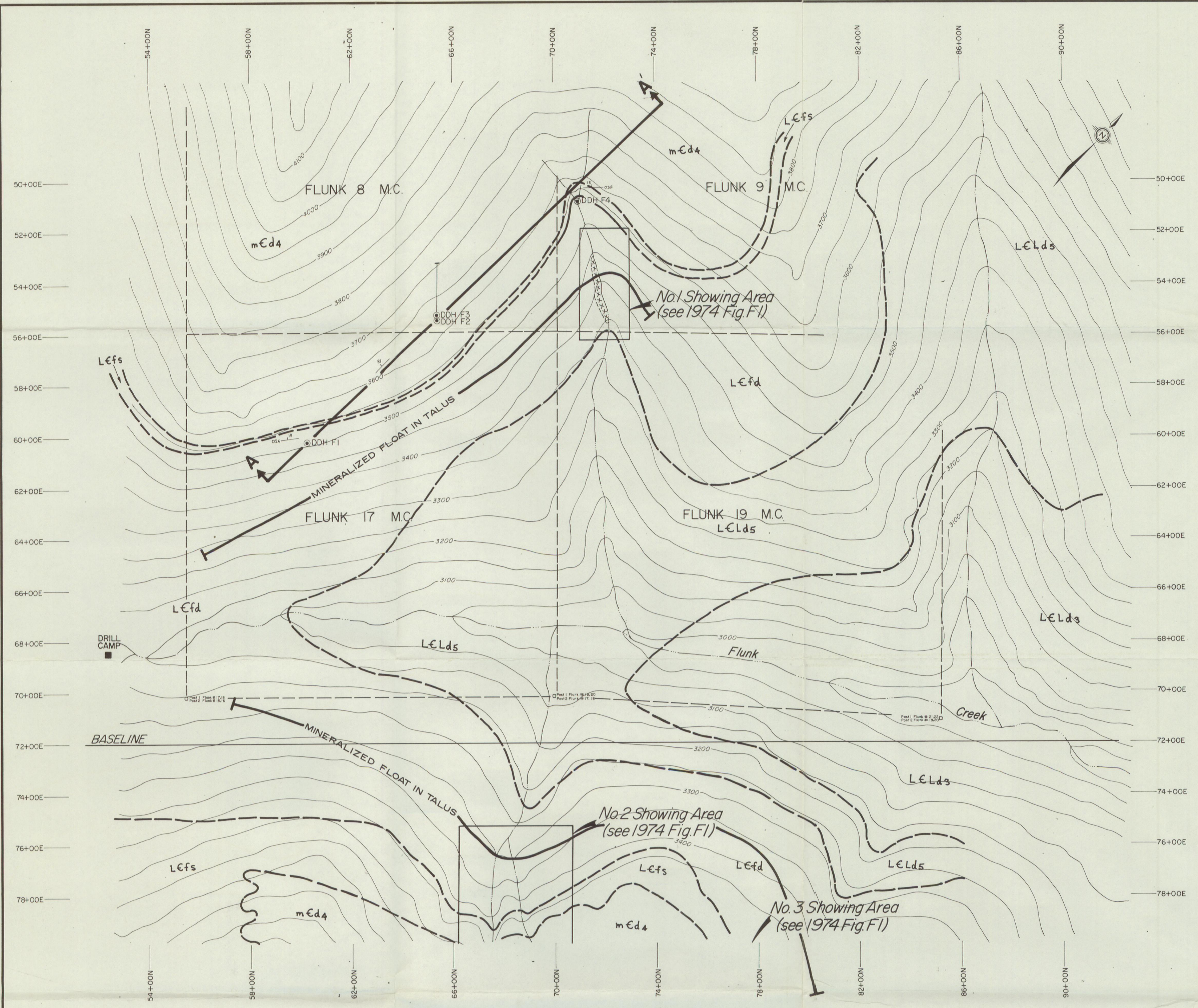
HOLE No. F4  
PAGE 3 OF 3

COORDINATES  
ELEVATION  
DIP  
AZIMUTH  
SCALE

CORE SIZE  
HOLE STARTED  
HOLE COMPLETED  
LOGGED BY

GEOLOGY

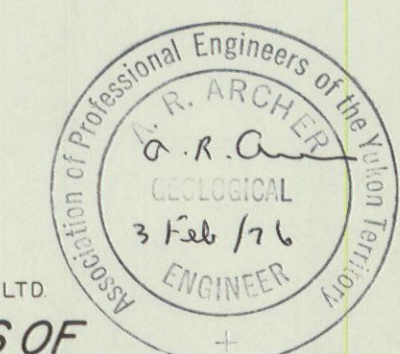
FOOTAGE	STRUCTURE	DESCRIPTION	GEOLOGY
120	- HONEY COLOURED SPHALERITE - TRACE GALENA	FLUNK DOLOMITE SPHALERITE, MARCASITE, RIMMING WHITE CRYSTALLINE DOLOMITE FRACTURE FILLINGS	X X X X
130	- TRACE GALENA - STYLOLITE - MARCASITE SPHALERITE	10-15% MARCASITE MARCASITE, GREY DISSEMINATED SPHALERITE	X X X X X X
140		FINE GRAINED LOW POROSITY DOLOMITE, WITH 4% SPHALERITE	X X X X X
150	- MARCASITE - TRACE SPHALERITE	GRADATIONAL MEDIUM TO GREY LIMY FRAGMENTAL DOLOMITE, MINERALIZED WITH BLEBS OF MARCASITE 3-5% SPHALERITE	X X X X X X X X
	- BROKEN GROUND - CALCITE IN FRACTURES ↓	<u>LOWER LIMY DOLOMITE L&amp;Ld</u> BLACK FRAGMENTAL LIMY DOLOMITE, ONCOLITIC TO THINLY LAMINATED	X X X X X X X X
160		END OF HOLE	



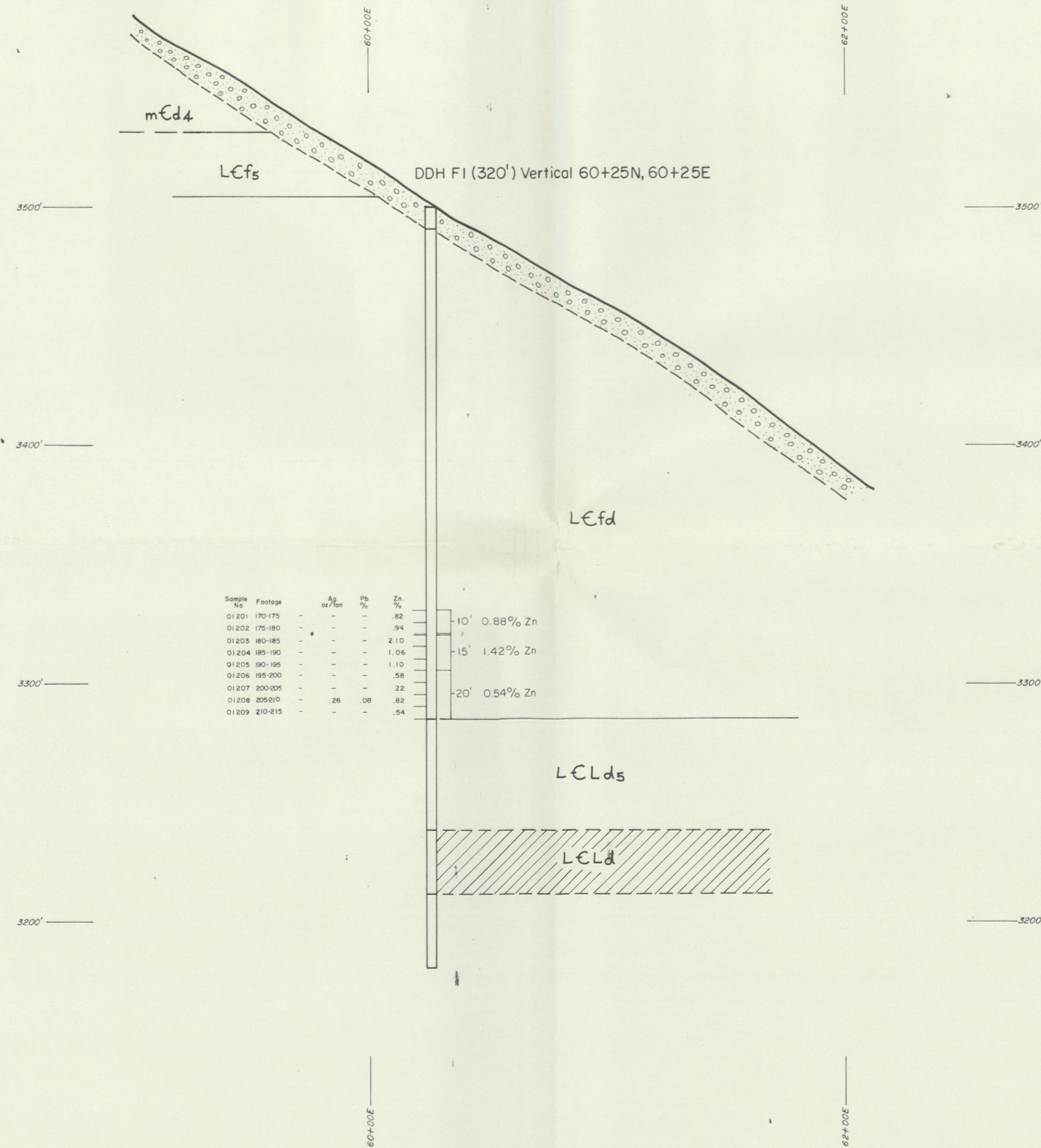
- GEOLOGY**
- MIDDLE CAMBRIAN
    - UPPER DOLOMITE (mCd4): Massive, light grey, structureless dolomite
  - LOWER CAMBRIAN
    - FLUNK SHALE (Lcfs): Dark grey, purple or green, recessive dolomitic shale
    - FLUNK DOLOMITE (Lcfd): Red-brown weathering thick bedded, reef-folded dolomite, generally porous, vuggy, brecciated with tertiary dolomite, host of Pb-Zn mineralization
    - LIMY DOLOMITE (Lcld): Thin bedded limestone with clastic trilobites, corals and oncolites
    - Lclds: Crinoidal, thin bedded, shaly dolomite
    - Lcldd: Light to medium grey brecciated and pseudo-brecciated dolomite

- LEGEND**
- Geological boundary - defined
  - Geological boundary - approximate
  - Bedding
  - Diamond drill hole - vertical
  - Diamond drill hole - inclined
  - Claim post
  - Pb-Zn mineralization in outcrop
  - NA - Not assayed

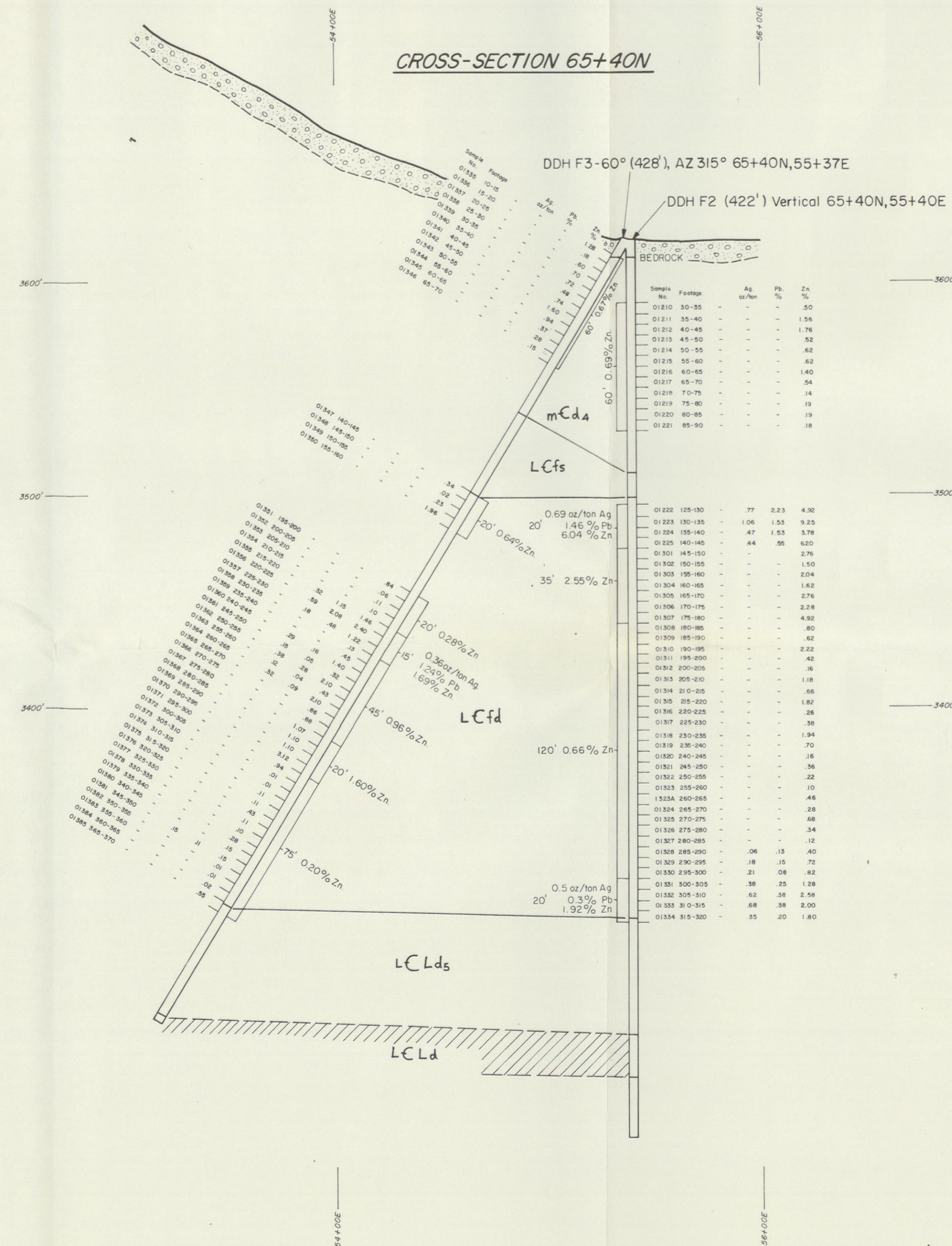
FIG F3  
 ARCHER, CATIRO & ASSOCIATES LTD  
**PLAN & SECTIONS OF**  
**DIAMOND DRILL HOLES F1, F2, F3 & F4**  
**FLUNK PROPERTY**  
 OGLVIE JOINT VENTURE  
 SCALE IN FEET  
 0 200 400 600  
 To accompany report dated 3 Feb, 1976



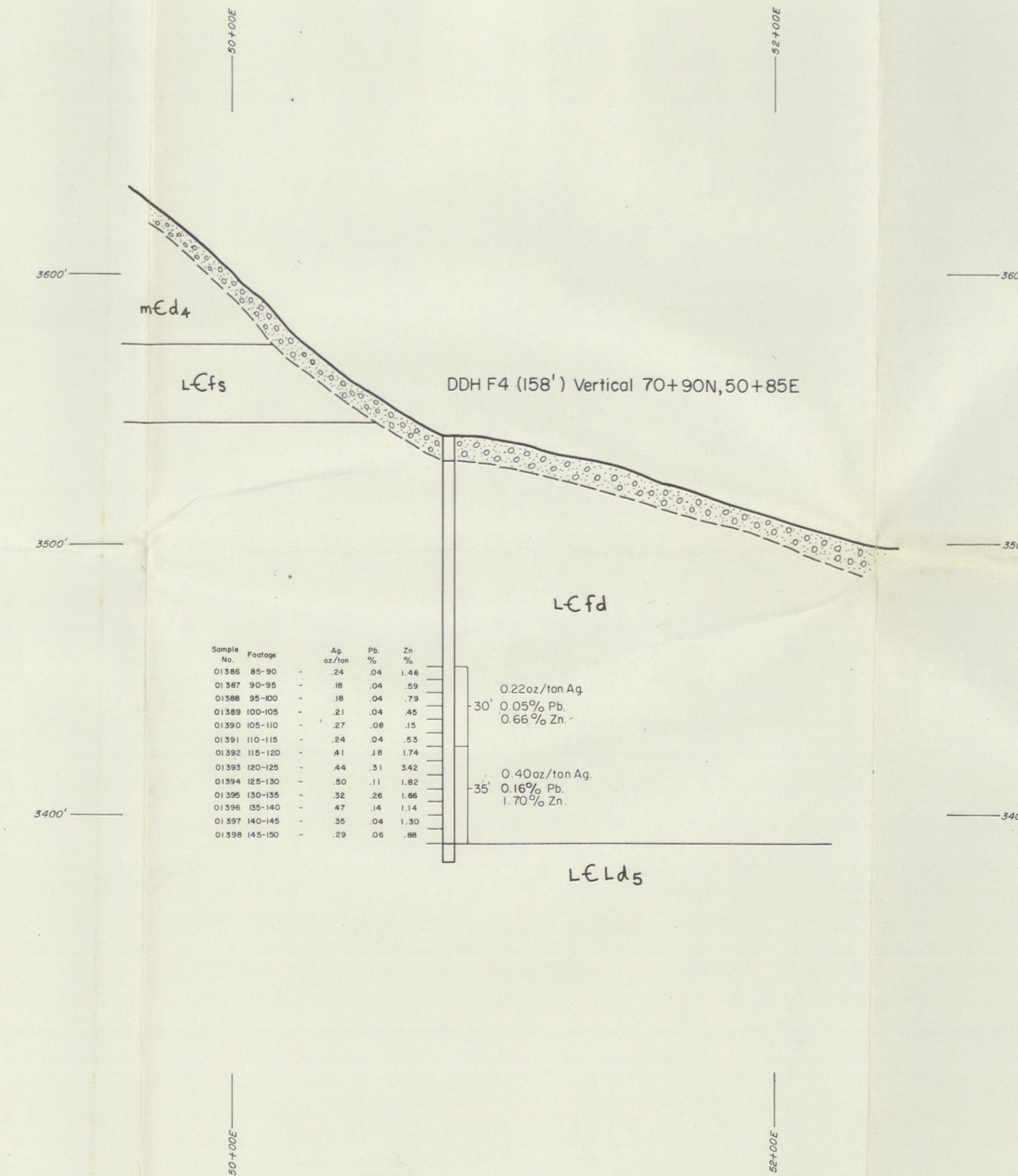
CROSS-SECTION 60+25N



CROSS-SECTION 65+40N



CROSS-SECTION 70+90N



GEOLOGY

- MIDDLE CAMBRIAN
  - UPPER DOLOMITE
  - Massive, light grey, structureless dolomite
- LOWER CAMBRIAN
  - FLUNK SHALE
  - Dark grey, purple or green, recessive dolomitic shale
  - FLUNK DOLOMITE
  - Red-brown weathering thick bedded, reefoidal dolomite, generally porous, vuggy, brecciated with tertiary dolomite, host of Pb-Zn mineralization
  - LIMY DOLOMITE
  - Oncolitic, thin bedded, shaly dolomite
  - LIGHT DOLOMITE
  - Light to medium grey brecciated and pseudo-brecciated dolomite

LEGEND

- Unit contact
- Lithological boundary

ALL ASSAYS BY WHITEHORSE ASSAY OFFICE LTD.

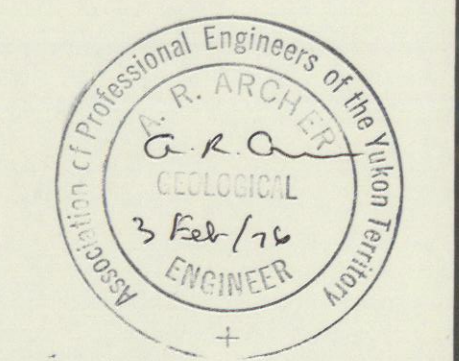


FIG F4  
ARCHER, CATHRO & ASSOCIATES LTD  
ASSAYS & SECTIONS OF  
DIAMOND DRILL HOLES F1, F2, F3 & F4  
FLUNK PROPERTY  
OGILVIE JOINT VENTURE

