

ASSESSMENT REPORT

PAUL - MIKE CLAIMS

LEWIS CREEK

FILMED

FORT STEELE MINING DIVISION

82G/12E & 82G/13E

LATITUDE 49° ^{45'} ~~46'~~ N

LONGITUDE 115° 41. ^{7'} ~~5'~~ N

GEOLOGICAL BRANCH
ASSESSMENT REPORT

14,835

for
Owner: Dia Met Minerals Ltd.

Operator(s): DIA MET MINERALS LTD.
Beareat Explorations Ltd. (Lumberton Mines)

for period

FEBRUARY 18, 1985 to FEBRUARY 17, 1986

By: C.E. Fipke

TABLE OF CONTENTS

Introduction	1
Location & Access	1
Topography & Vegetation	1
Geology	2
Methodology - Rotary Drilling	3
Results - 1. Prospecting	4
2. Rotary Drilling	5
Conclusions	6
Recommendations	7

APPENDICES:

- A. Statement of Expenditures
- B. Statement of Qualifications

PLATES

- 1. PAUL-MIKE Claims
- 2. Drill Hole Log Results
- 3. Drill Hole Location & Glacial Landform Map
- 4. X-ray Diffraction data - Drill hole W-85-2
- 5. X-Ray Diffraction data - Clays, drill hole W-85-2
- 6. Schematic Section through the Paul-Mike claims

INTRODUCTION

In the fall of 1985 two areas of geophysical I.P. resistivity anomalies with associated base and precious metal anomalous geochemical responses were rotary drilled. The drilling was completed on behalf of Lumberton Mines, a wholly owned subsidiary of Bear Cat Exploration of Calgary, by way of an option agreement with the claim owners, Dia Met Minerals. Dia Met provided funding to collect bags of samples of the overburden penetrated, case the holes with 5½ inch plastic pipe, and transport about 6 tons of the samples to Kelowna. As the 6" casing was lost in two of the holes, it proved to be unnecessary to use the plastic pipe which was therefore subsequently returned.

Geologist Maia Pudifin of Bear Cat Exploration, Calgary, analysed results to date, prospected the claims area, spotted the drill holes, and logged the drill holes.

LOCATION AND ACCESS

The Paul-Mike group of claims are situated between Wasa and Sowerby Lakes 29 km northeast of Cranbrook at latitude 49°46' N and longitude 115°41½' W.

The claims are accessible by driving 2 km east on the good gravel Lewis Creek road which intersects the Wasa-Fort Steele-Jaffray Highway 1 km south of Wasa. Highway 93/95, the CPR railroad and major powerlines pass within 1 km of the claims.

TOPOGRAPHY AND VEGETATION

The claims occur in a flat, lightly conifer wooded area of the Rocky Mountain trench between the Kootenay River and the

Hughes Range of the Rocky Mountain belt. Elevations range between 800 and 1100 metres above sea level. The claims partly cover cultivated land and partly cover crown land.

GEOLOGY

The claims are predominantly underlain by unconsolidated Pleistocene glacial deposits which may be deep on the western and central two thirds of the claims. The glacial deposits cover the position of the N.N.W. Kootenay River fault and the N.E. Lewis Creek fault believed to project through the claims as indicated on Dr. K.E. Northcote's geologic map (1983 assessment report). The locations of the glacial fluvial covered faults are consistent with airborne magnetic-E.P. data. The Kootenay River fault is in addition consistent with results of a seismic survey completed over the claims by Dunken Oil of Denver, Colorado in 1984. The latter survey which only obtained data greater than 500 meters from the surface, established that the Kootenay River fault dips about 65° W at 500 meter depth. Based on his stratigraphic measurements west of the fault and a rough geological reconstruction, Dr. Trygve Hoy of the B. C. Department of Mines estimated that the west side of the Kootenay River fault was down thrown roughly 1700 m (5000 ft.). This prediction would indicate that Middle Aldridge units directly above the Lower - Middle Aldridge (Sullivan horizon) contact should underlay the glacial fluvial sediments present at the surface of the deposit west of the fault (plate 6).

Fort Steele Formation (graded quartzites, siltstones and argillites) outcrop west of the fault on the east edge of the

claims area.

Large blocks of light dark, finely interbedded fine-grained impure malachite stained quartz sandstones, that appear to be Lower Aldridge glacial erratics are present at the surface of the claims just south of drill hole site W-85-1 (plate 3).

METHODOLOGY

ROTARY DRILLING

Geologist, Maia Pudifin, of Bear Cat Exploration, Calgary, studied the geological, geochemical and geophysical information to October, 1985, prospected the claims area, spotted the drill hole sites, logged the drill hole cuttings and completed third shifts of drill sample acquisitions.

Ed Phillips of Lumberton Mines, utilizing a TD15 cat, cut and cleared the access roads to the spotted drill hole sites, and towed the drill and compressor and casing trucks to the sites.

Owen's Drilling of Cranbrook, B.C. completed a total of 546 meters of 20 cm. (8 inch) and 15 cm. (6 inch) drilling using a Barber Air Rotary Truck-mounted (water well) drill.

Ed. Fipke using a three ton truck hauled plastic pipe and sample bags from Kelowna to Cranbrook. Under the direction of geologist C. Fipke, Ed Fipke completed double shifts of splitting of the drill cuttings, bagging ± 25 kg. samples in polyethylene tight woven appropriately labelled bags. A sample splitter was used to complete the acquisition of a $\frac{1}{4}$ split of dry cutting for each 3 meter (10 foot) or 1.5 meter (5 foot) interval drilled. A 5 gallon pail set to collect about $\frac{1}{4}$ to $\frac{1}{2}$ sample discharge was used to collect the damp and wet samples. Excess water and clay rich sample was allowed to overflow the pail. The remaining

water and sample in the 5 gallon pail was dumped into an appropriately labelled bag after each 3 meter (10 foot) interval drilled. The sample splitter or pail was then cleaned prior to the acquisition of each successive sample. Ed Fipke returned the plastic pipe and about 5 tons of samples to Kelowna using the three ton truck. The samples are stored on behalf of Dia Met Minerals for possible future use.

Miss Maia Pudifin of Bear Cat Explorations Ltd. completed day shifts of drill sample acquisitions and drill logging. She sent a sample of overburden clay from W-85-2 to the University of Calgary for X-ray diffraction to determine the exact mineralogy present. She also compiled Map 1 (plate 3) illustrating the drill hole locations and glacial landforms of the claims area.

Geologist C. Fipke compiled the assessment report on the basis of the currently available results.

RESULTS

1. PROSPECTING BY GEOLOGIST MAIA PUDIFIN

According to Miss Pudifin the following four important observations were made as a result of her prospecting endeavors:

1. Disseminated pyrite and pyrrhotite (to 1%) was found in float composed of Fort Steele quartzite? and chert-like rocks of unknown stratigraphy. These boulders were found on the northeast corner of the Sultoo "D" and southeast corner of Mike 5 claims.
2. In the same area, abundant diorite blocks were seen and appeared to follow the trend of the airborne EM conductor providing a plausible explanation for the

anomaly.

2. Copper staining was observed on a large angular erratic (interbedded argillite and impure quartzite which could be of Aldridge stratigraphy) approximately 125 m. east of the first drill site on Line "C". No copper sulfides were identified.
4. Elongated mounds forming topographic highs that are common to the eastern half of the project area are considered to be drumlins, indicating the direction of ice movement to the south. Road cuts reveal shallow-dipping stratified fluvio-glacial unconsolidated drift.

In addition Miss Pudifin states "certain areas are dominated by scattered to abundant concentrations of float. The float varies from rounded boulders to large, angular erratics which closely resemble subcrop. Green copper staining was observed in two locations, within micaceous quartzites and argillite erratics. Minor pyrite, pyrrhotite, and specular hematite occurrences were found in quartzite float in the northeast corner of Sultoo "D". While a majority of the float appears to be shallow-water pure quartzites, most likely of Fort Steele stratigraphy, diorite, dolomite, and possibly Aldridge quartzites were also common."

2. ROTARY DRILLING

According to Miss Pudifin:

The first hole, W-85-1, on line C, 682 m. E reached a total depth of 128 m, (420 ft.) using 15 cm. (6 inch) casing. The hole was not completed to bedrock due to drilling problems caused by expanding clay and water.

Drill hole W-85-2, on line D, 666 m. E. reached a total depth of 179 m. (588 ft.). Sixty-one meters, (200 ft.) of 20 cm. (8 inch) casing was followed by 116 m., (380 ft.) of 15 cm. (6 inch) casing when the drill encountered problems similar to W-85-1.

The drill returned to the first site for a second attempt to attain bedrock. Seventy-nine meters, (260 ft.) of 20 cm. (8 inch) casing was followed by 140 m., (460 ft.) of 15 cm. (6 inch) casing, ending with an additional 18 m. (60 ft.) of open hole. Once again, at a total depth of 238 m. (780 ft.), the overburden prevented any further continuation of hole W-85-3.

Miss Pudifin's drill hole log results are given as plate 2. Her drill hole locations and glacial landform map that indicates "a southerly transport direction of the glacier" is given as plate 3. The X-ray Diffraction plates, (plates 4 & 5) completed by the University of Calgary, indicate that the clay rich till from drill hole W-85-2 between 163 and 167 m. (490 - 500 ft.) is composed of the following constituents:

26% kaolinite
20% illite
20% calcite
17% quartz
11% dolomite
4% feldspar
2% chlorite

CONCLUSIONS

Rotary drilling was completed in all holes entirely in glacial overburden to the maximum capability that the drill used could penetrate (238 m. for drill hole W-85-3). Thus the bedrock is definitely locally in excess of 238 m. (780 ft.).

A geological reconstruction (plate 6) based on Dr. Trygve Hoy's rough estimates of the Kootenay River fault displacement of 1700 meters (500 ft.) along a 65° W dip slope indicated by deep seismic results, indicates that the Lower-Middle Aldridge (Sullivan ore zone) contact would be about an additional 400 m.

deeper than drilled in W-85-3. As 15 cm. (6 inch) casing has been left in the deepest and shallowest holes, it would be possible to extend the depth of the deep hole using economical mud rotary or reverse circulation drilling to within the bed-rock interface. A combination rotary or reverse and diamond drill rig could finish the hole to the target contact.

RECOMMENDATIONS

The high calcite and dolomite component XRD results of the till suggests that any base or precious mineral sulfides glacially eroded from a vicinity deposit, could be preserved rather than oxidized in the till. The tills, at least from the bottom of the deepest hole, should be heavy mineral processed and geochem analysed to establish if in fact base and/or precious metals are present. Additional encouraging geochemical findings would enhance the favourable geological findings, perhaps giving sufficient justification for extending the hole.

APPENDIX "A"

STATEMENT OF EXPENDITURES

	\$
Geologist (Maia Pudifin) salaries	5,190.00
Total drilling, casing, & mobilization cost	49,649.00
Road access cost	1,250.00
Hotel, meals & all expenses of Maia Pudifin and Ed Phillips	2,100.00
Total salary of sampler Ed Fipke 60.00/shift x 43 shifts	2,580.00
Three ton truck rental	863.88
Sample splitter rental	100.00
Bags, freight & supplies	293.20
Total hotel, meals, gas, airfare of Ed Fipke & C. Fipke	2,505.53
Field supervision including travelling (3 days) and report preparation (1 day) by geologist C. Fipke @ 350.00/day	1,400.00
Drafting, proof reading and typing of report	250.00
TOTAL	<hr/> 66,181.61

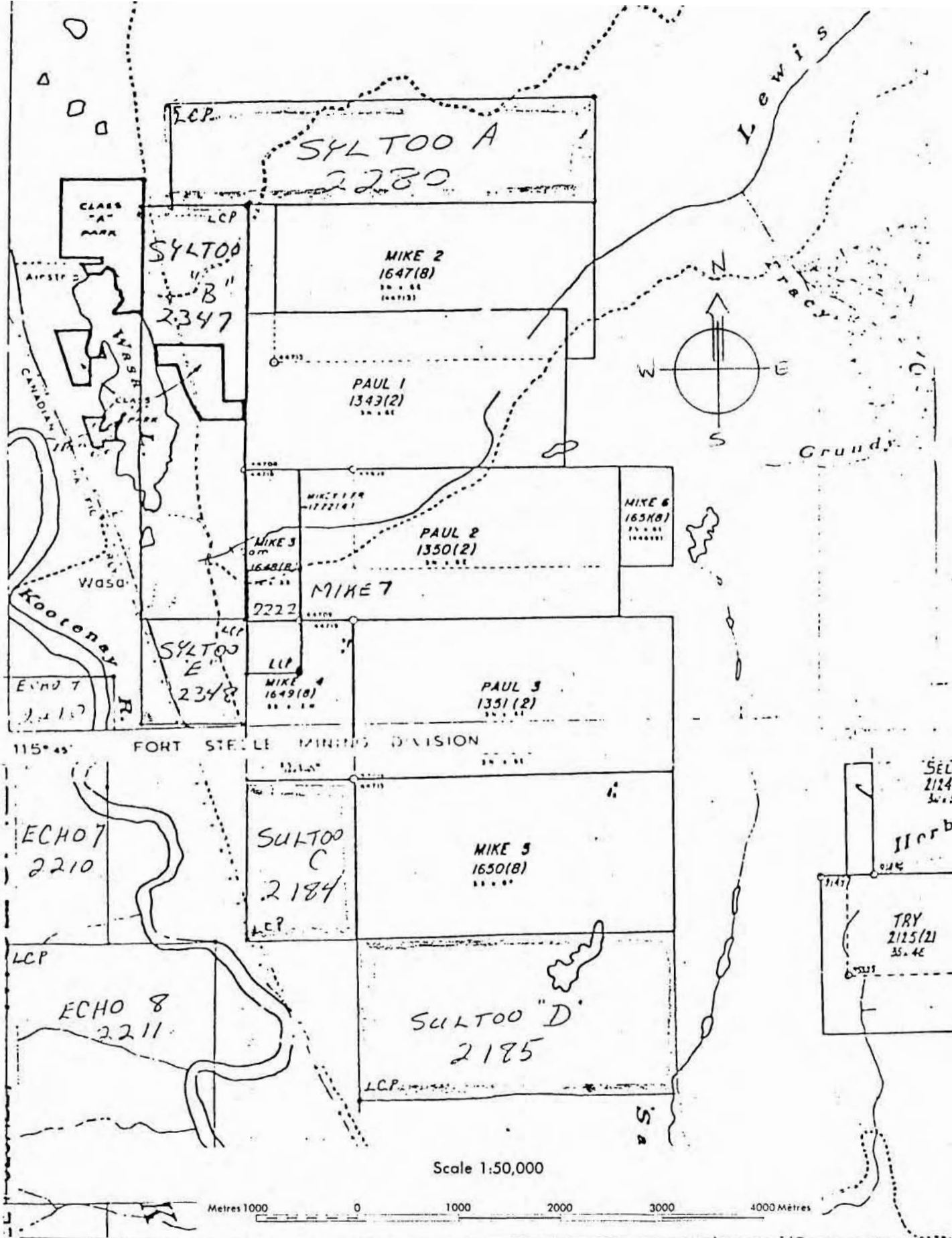
Please apply any excess expenditures approved
to the PAC account of Dia Met Minerals Ltd.

APPENDIX "B"

STATEMENT OF QUALIFICATIONS

C. Fipke is a BSc Honors Geology graduate of the University of British Columbia. Between 1970 and 1977, C. Fipke worked as a geologist involved to a large extent in heavy mineral exploration and research for Kennecott Copper in New Guinea, Samedan Oil in Australia, Johannesburg Consolidated Investments in Southern Africa and Cominco Ltd. in Brazil and British Columbia. C. Fipke and L.M. Fipke organized C. F. Mineral Research Ltd. in 1977. Currently the C. F. Mineral Research heavy mineral laboratory which employes 25 to 35 people is involved in heavy mineral exploration and processing on behalf of many international companies.

X



DIA MET MINERALS LTD

PAUL AND MIKE CLAIMS

PLATE 1

82G/12E & 82G/13E	49° 46' N 115° 41.5' W
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W-85-2

1st sign of water

send → gravel with increasing amount of fines at depth
poorly sorted

clay with gradational silt horizons

179.0m T.D.
LINE D 666m E

W-85-3-1

- no sampling

send, gravel, boulders; poorly sorted

send; well sorted

send; poorly sorted

gravel → send, ± clay

clay (mud)

180.0m T.D.
LINE C 602m E

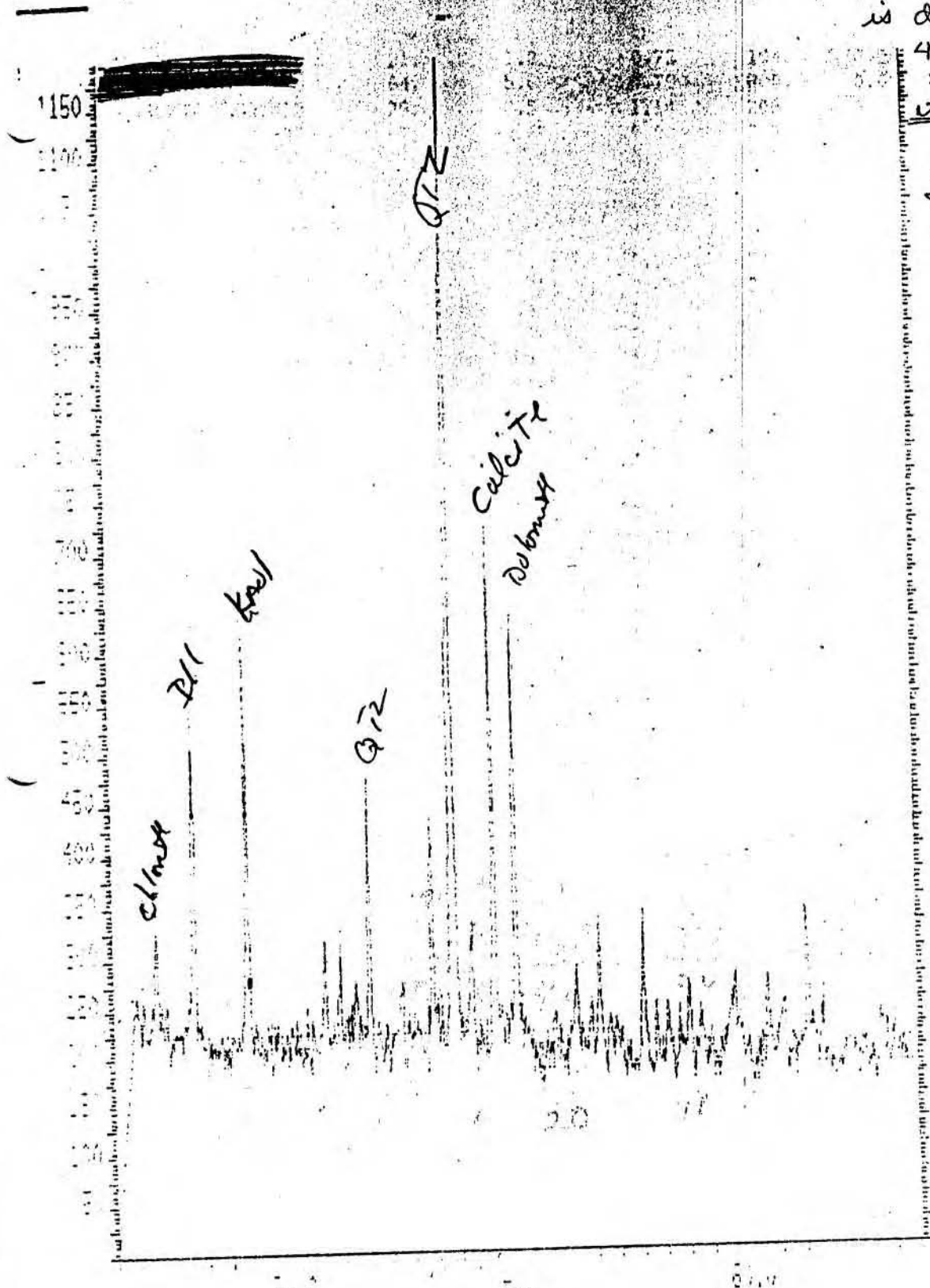
- clay with gradational intervals of silt

285.0m T.D.
LINE C 622m E

WASA - Drill hole summary
1:2500

DRILLHOLE LOG RESULTS SUPPLIED BY MAIA PUDIFIN

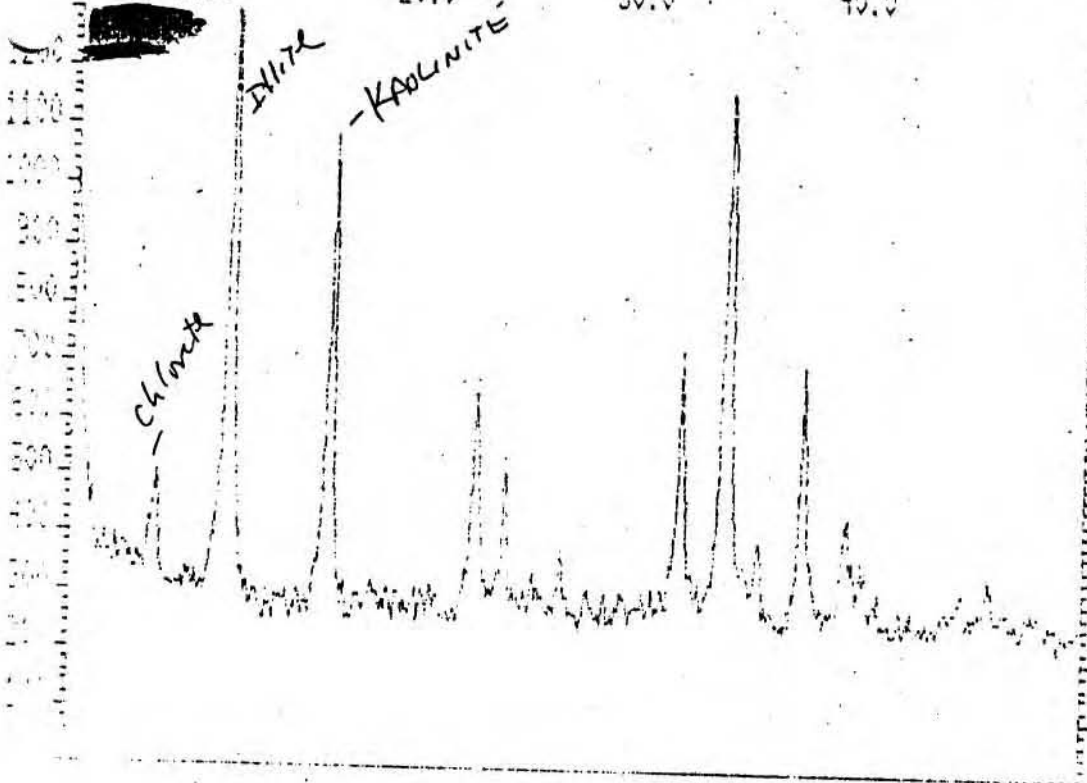
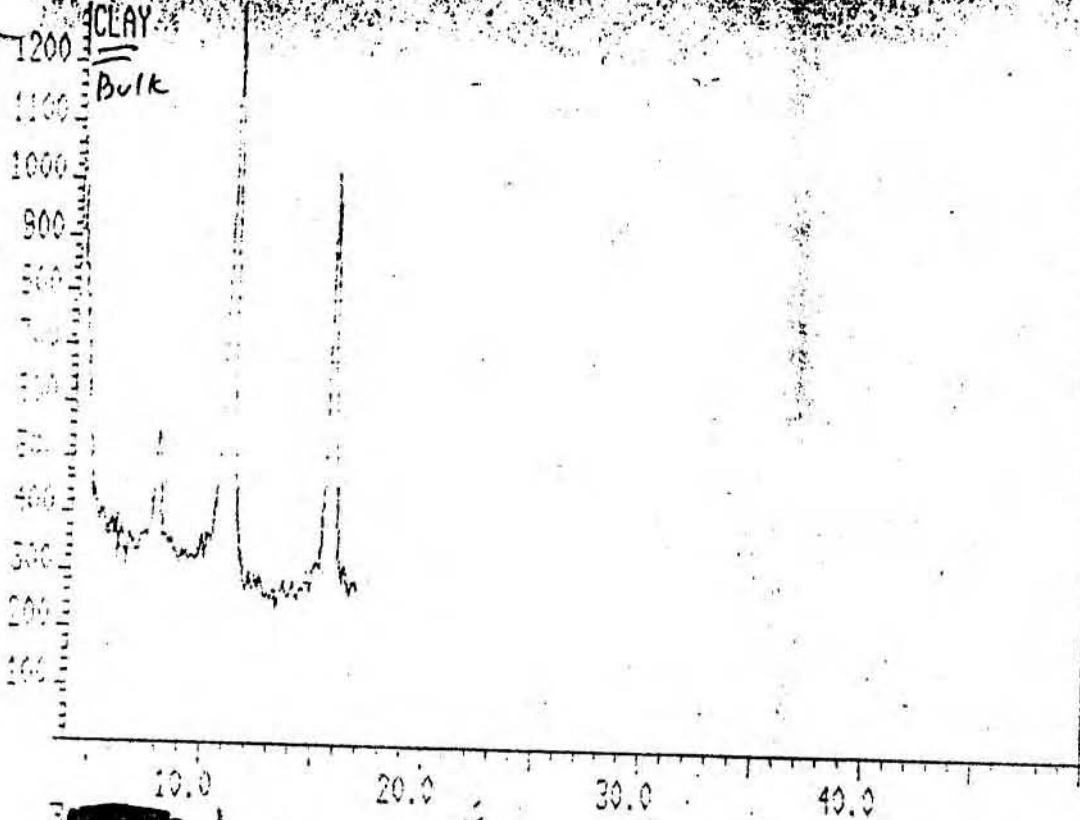
The following information
 is data from W-85-2
 490-500' clay
 sample.
 X-ray analyses were
 performed at UofC.
 I apologize for the
 quality of copies.
 M.P.

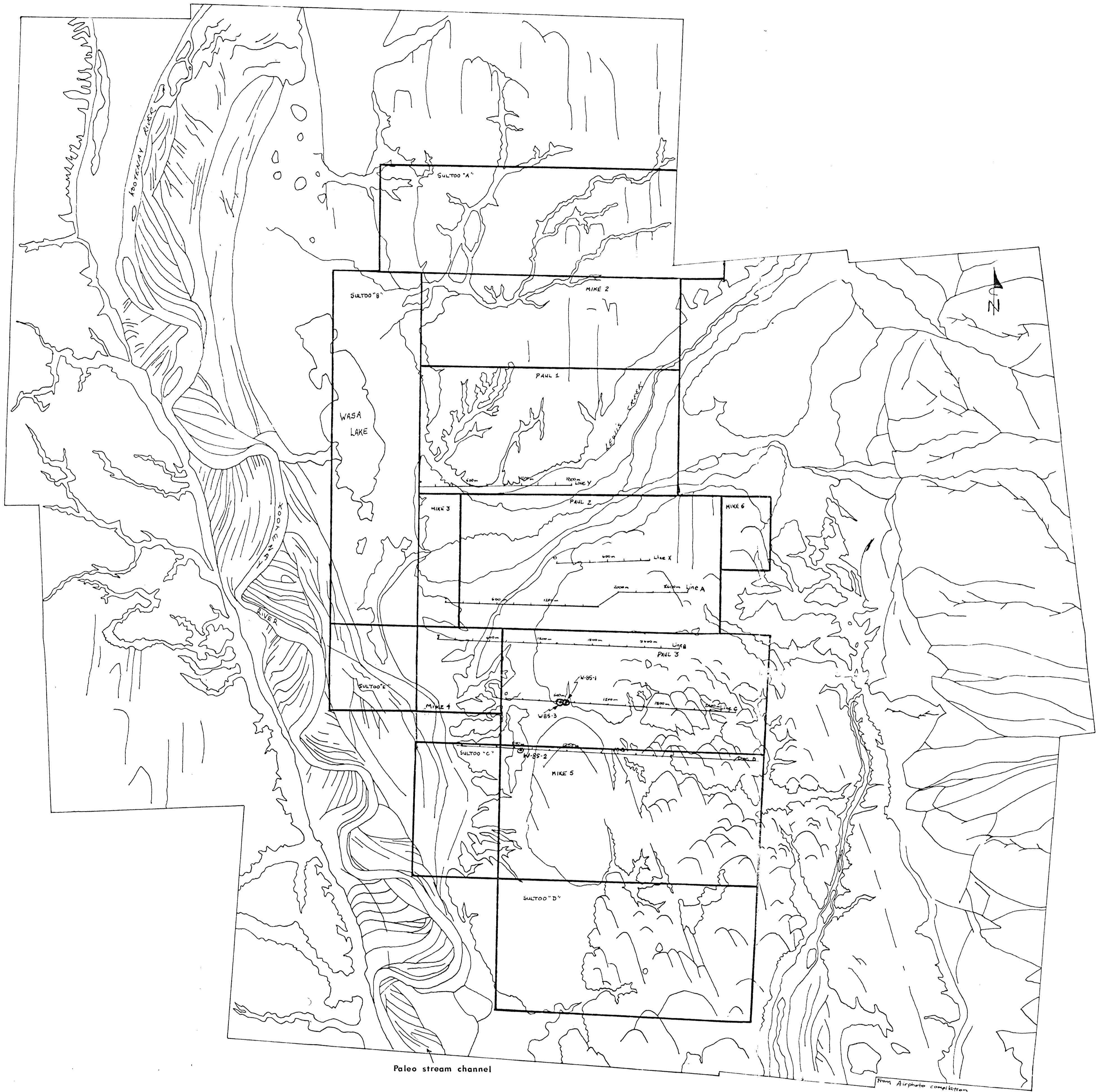


X-ray Diffraction Data - Drillhole W-85-2

CLAYS


INDICATES ALPHABETICALLY
AB PEAKS WRITTEN TO FILE





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MAP 1.
LUMBERTON MINES LTD.
 Paul and Mike Claim Group
 Fort Steele Mining Division, B.C.
 NTS 82 G 12 E/13 E
 Drill hole Location and Glacial Landform Map
 Scale: 1:50,000 
 M. Pudifin Dec 1985

○ Drill target
 ~ Eskers

SCHMATIC SECTION THROUGH THE PAUL-MIKE CLAIMS
 AND THE SULLIVAN AND ESTELLA Pb-Zn-Cu DEPOSITS
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 ASSESSMENT REPORT

14,835

