Office of the Supervising Mining Recorder
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Yukon Territory

REPORT ON

FAIRCHILD COBALT PROJECT

1979

090 621

November, 1979

Report No. 24-79

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This report has been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered as representation work in the amount of $ 600

Resident Geologist or
Resident Mining Engineer

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

B. R. BAXTER
Supervising Mining Recorder

Commissioner of Yukon Territory

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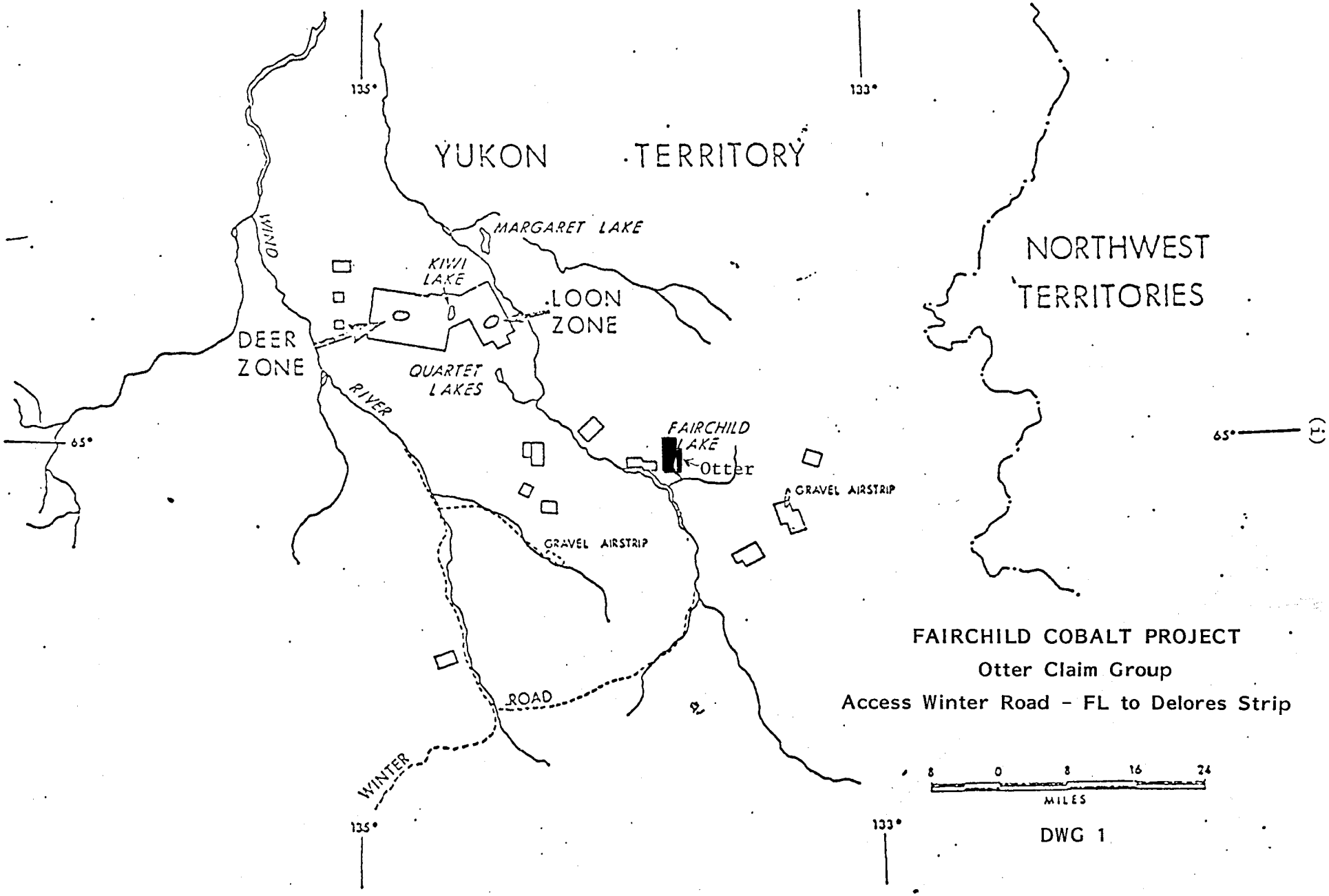

FAIRCHILD COBALT PROJECT

Otter Claim Group

Access Winter Road – FL to Delores Strip

DWG 1

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1. SUMMARY, CONLCUSIONS AND RECOMMENDATIONS

INTRODUCTION

During a uranium reconnaissance program in 1977, in the Wernecke Mountains, Yukon Territory, exploration crews of Pamicon Developments, working for the Pan Ocean-Mountaineer joint venture, located carbonate veins carrying cobaltite and chalcopyrite mineralization on a cliff side at Fairchild Lake. Four claims were staked to protect the showing (hereinafter called Otter Main Showing). In 1978 reconnaissance geological mapping was carried out, and additional ground was acquired. In mid 1979 season, a program including detailed evaluation of the Otter Main Showing and regional prospecting of the surrounding areas was undertaken by Pan Ocean staff and exploration crews of Pamicon Developments.

LOCATION AND ACCESSIBILITY

The property located at Fairchild Lake in the Wernecke Mountains lies approximately 120 air miles northeast of the town of Mayo. A winter road exists from Elsa to Dolores Creek and Fairchild Lake via Braine Pass.

PHYSIOGRAPHY

Topographically the property occupies the cliffs along the north shore of Fairchild Lake. The majority of the property lies above the treeline.

The Fairchild area lies south of the area affected by the Pleistocene glaciation (Laurentide ice sheet).

PROPERTY

The Otter claim group presently consists of 124 claims. In the 1979 season an additional 88 claims were staked to protect new mineral showings.

GEOLOGY

The Otter property covers a series of layered metasediments of the Helikian (M. Proterozoic) Fairchild and Quartet groups. The Fairchild group largely consists of siltstones overlain by limestones and dolomites. The latter are transitional into black shales of the Quartet group. The metasediments are oriented with northerly strike and moderate to steep westerly dip.

A large regional fault "Fairchild Fault" with NNW strike extends from Fairchild Lake along the cliffs on the north shore. It forms a prominent topographical lineament which, broadly speaking, follows an intensely deformed calcareous siltstone unit. This fault is cut off to the north by a succession of black shales of the Quartet group.

The metasediments are intruded by diatreme breccia pipes of supposed Hadrynian age. The intrusives are surrounded by large contact alteration halos.

The Fairchild fault is probably associated with the emplacement tectonics of the breccia diatremes, but there are no detailed data on hand.

HYDROTHERMAL VEIN MINERALIZATION

Prospecting and geological surveys to date have uncovered

significant vein mineralization of the Co, Ni, As, Cu, Ag, U paragenesis or type associated with late stage, post tectonic carbonate veining. The mineralization is likely of igneous hydrothermal origin related to the breccia diatremes and/or the Fairchild fault.

The vein mineralization has been observed in massive, disseminated and veinlike form, predominantly sulphides and arsenides such as cobaltite, chalcopyrite, pyrite and unidentified nickel-cobalt arsenides.

Three major clusters of showings listed in order of priority Otter North A, Otter North B, and Otter Main have been outlined. In addition, several float and vein in outcrop occurrences have been identified between the above-mentioned areas. The showings have been traced in discontinuous occurrences for a distance of 2-1/2 miles.

FIELD PROGRAM

Work carried out July 25 - September 20th, 1979, focused heavily on the Otter Main showing being the most accessible. It included:

1. Detailed prospecting of the cirque and surroundings.
2. Topographical surveying and establishing a 40 x 20 m grid.
3. Detailed geological mapping at a scale of 1:1,000 and 1:200.
4. Diamond drilling (HQ) for a total footage of 1,995 ft. Three holes were drilled on the SW showing, one hole abandoned and one hole was completed on the NE showing.

5. Downhole probing.
6. Detailed sampling and assaying.
7. Metallurgical test work, on drill core intersection 18-49' O-79-5 (in progress).

The regional program included:

1. Reconnaissance stream sediment sampling program.
2. Helicopter borne prospecting traverses in areas north of the Main Otter showing.

RESULTS

The Otter Main showing consists of a NE and SW outcrop which is complexly folded in a synformal structure with an axis oriented $^{\circ}\diagdown^{25}_{327}$. This fold structure is cut by two major axial plane shears, one of which coincides with the NNW striking Fairchild fault.

Cobalt-copper vein mineralization follows a system of carbonate veins oriented N-48E/dip 30°NW which transects both outcrop areas. The carbonate vein systems are present in the above-mentioned axial plane shears but are unmineralized. Because of inaccessibility of the outcrops and time problems, no trenching was carried out. Drilling to test the downdip projection of the vein systems located all the ones traced on surface outcrops. In addition to the above, it appears that vein systems other than the N48E/30NW are present. Hole O-79-5 intersected the Dallas vein, a 15-ft. thick mineralized structure with steep dip and subconcordant with the siltstone bedding planes. The surface expression of this vein is covered by rubble.

ASSAYS

The Dallas vein (hole O-79-5) returned a significant intersection from 18-47' grading 0.236% Co, 0.528% Cu/29 ft. and containing a high grade section from 22-33 ft. averaging 0.644% Co, 1.05% Cu/11 ft. Best assays from the latter were 3.23% Co/1 ft. and 3.6% Cu/1 ft. from two different samples. True thickness of the Dallas vein is estimated at 15 ft. but is pending verification by further drilling and/or trenching. Estimates as to tonnage potential are premature.

The N48/30°E dipping veins on both the NE and SW showing returned low grade copper and cobalt assays, none of which were of ore grade.

Regional prospecting carried out along contours within an area of steep cliffs uncovered high-grade showings north of the Otter Main occurence as follows.

Otter North A Showing:

The showing consists of several vein occurrences distributed on a 45° slope at the foot of a steep cliff side for an area 800 ft. long, 75 ft. wide. The mineralization as appears from sketch mapping is distributed within three zones oriented N25E/dip 45 NW and consists of: hang wall, footwall - massive zone, footwall - disseminated zone. The hang wall and footwall zones are separated by a 75 ft. section of unmineralized siltstones.

Chip samples from the above returned: massive veins, assayed from 8-13.4% Co, over widths up to 15 cm with significant amounts of Cu, Ag, Ni and minor values of Au and U. The disseminated

zone assayed from 1-5% Co with low values of Cu, Ni, Ag and Au. The showing is open in both strike extensions.

The Otter North B showing is located 3/4 miles north and along strike of the Otter North A showing in a similar topographical setting. The mineralization appears controlled by shear zones subconcordant to siltstone bedding planes. Both semimassive and disseminated mineralization occur. Assays from chip and grab samples returned values ranging from 0.20-12.40% Co with significant values of Cu, Ag.

The above showings were visited and sampled by R. J. Mazur. A cobalt vein occurrence exists between Otter North A and B.

A third group of showings were located north of Otter North B and consist of cobaltite stringers in a calcite flooded zone.

Metallurgical Test Work

Preliminary test work on drill core from the Dallas vein intersection has been complicated by the existence of cobalt and copper oxides and hydroxide minerals in the sulphide arsenide mineral assemblages.

The core samples represent near surface material possibly affected by supergene alteration processes of pre-Pleistocene age.

CONCLUSIONS

The Otter property holds significant potential for high grade

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Footnote: A detailed report is in progress and is anticipated by December 31st.

vein mineralization of the cobalt-nickel-silver-copper arsenide type. Mineral showings were found along a 2-1/2 mile strike length mostly within the east side of the Fairchild fault.

The prospecting finds are a results of first time traverses within a very difficult terrain, and it is highly conceivable that additional showings will be found during a full season's work.

Otter Main Showing:

The Dallas vein intersection is encouraging and further exploration to test for Co-Cu mineralization in steeply dipping veins is warranted.

The SW showing is of limited potential but the NE showing to date has only been tested on one section.

Otter North A and B showings have yielded assays ranging from:

1. 8-13.5% Co, up to 2.5% Cu, 0.79 oz. Ag, and 1% Ni, and minor values in Au from massive veins 15 cm thick.
2. 0.17-5% Co and low values in the other base and precious metals.

The vein systems are arranged subparallel to the dominant NNW fracture direction and dip moderately to the west, into the mountain. The strike potential of these high grade showings is in excess of one mile and is considered excellent.

This vein situation is amenable to diamond drill testing and detailed surface exploration work pending preparation of drill and helicopter landing pads.

The Otter North A and B vein showings warrant:

1. A detailed surface program of geological mapping, trenching and sampling in order to trace out the mineralized veins.
2. A follow-up diamond drill program to test the mineralization to depth, and along strike, in particular define the tonnage potential between surface outcrops and the Fairchild fault (see Figure 1).
3. A thorough metallurgical test program to establish recovery data from the various metals in this complex ore.

RECOMMENDATIONS

Data on hand, most of which were received after the September 1980 budget submission, warrants revision of the proposed 1980 program.

A revised budget and program are presented in Table 1, and are summarized as follows:

Preparatory Studies

A detailed photogeological interpretation of the Fairchild area, in particular the Fairchild fault system should be carried out prior to 1980 season's field work.

Map Preparation

It is essential for execution of the detailed 1980 program that a topographical base map be on hand. An orthophotomosaic at a scale of 1:10,000 for an area 12 x 8 square miles should be constructed from air photos.

During the 1980 field program, it is planned to have a full-time

surveyors team carry out 1:10,000 scale topographical mapping of the Fairchild property with 1:1,000 scale detailed mapping of selected areas, mineralized zones and drill sites.

Mobilization

It is planned to mobilize fuel and materials out of Mayo, using a large aircraft. It is envisaged that the D-7 Caterpillar left on site at Kiwi Lake, 30 miles north of Fairchild will be used for preparation of an ice strip.

Crew

It is planned to use field crews and camp management of Pamicon Developments similar to the 1979 program.

A Pan Ocean staff member will be project manager.

PROSPECT EVALUATION

The Otter North A and B showings are "raw" prospects with high grade potential and favorable tonnage possibilities. It is proposed: 1) to launch a crash program of 1:200 scale grid surveys including geological mapping, prospecting, trenching and channel sampling to prepare these for drill testing. 2) A drilling program to be staged in three phases of an initial 2,500 ft. of profile drilling (Figure 1) including a fence of three holes across strike, and testing of strike extensions 100 ft. away using wedging techniques.

Contingent on the Phase I drill testing of 200 ft. strike length, Phase II will consist of a similar pattern drilling on 300 ft. spaced centers. Total strike length tested under this phase will be 800 ft.

TABLE 1

FLOW SHEET FAIRCHILD COBALT PROJECT

	1979 Nov.-Dec.	1980 May 1-15	May 15-31	June 1-15	June 15-30	July 1-15	July 15-31	Aug.1-15	Aug.15-31	Sept.1-15	Sept.15-30	Oct.1-15	Oct.15-31	Nov. 1-Dec. 31
Report 1979	Nov. 15	Photogeological interpretation of area												
Map Preparation	Orthophotomosaic 1:10,000 to be prepared from air photo for an area 12 x 8 square miles													
1980 Program Mobilization	Apr. 20	Mobilize D7 Caterpillar from Kiwi Lake												
Camp Building														
Surveying	Project: Prepare base map 1:10,000 for general area, detailed on 1:1,000 scale. Otter General	Otter North A 1:1,000		Otter North B 1:1,000				Otter General						
Prospect Evaluation Trenching Sampling Geological Mapping				Otter North A			Otter North B			New showings & Otter main showing				
Drilling			Drill pad prep.		Contingent on results			Contingent on results						
				Phase 1, Profile drilling Otter North A 2,500 ft.		Phase 2, Step our drilling, 5,000 ft. Mobilize 2nd drill from Mayo		Phase 3, Step out drilling, 5,000 ft.		O p e n				
Metallurgical Test Work	Core samples 0-79-5													
	Metallurgical test work on drill core grouped samples with preceding ore microscopy studies of grade intersections. Detailed test program to be directed by consultant.													
Engineering	Consultation with Mining Engineer to prepare base case for viable cobalt underground mine at Fairchild Loc. Test S.A.M.P.L. program.						Evaluation of project: potential ore reserves, metallurgical recovery, rock stability aspects. Consulting Mining Engineer to visit site.					Preliminary appraisal of viability of Fairchild cobalt project, or decision on underground exploration phase for 1981.		
Infrastructure	Preliminary talks with Yukon Govt. re possible future development of project. Land use implications of airstrip, access roads, hydropower						If above engineering evaluation is favourable, obtain ball park estimates on intrastructure development required to support an underground operation. Also continued talks with land use and power commissions							
Marketing	Preliminary talks with smelter companies capable of handling cobalt concentrates.							Continued talks						

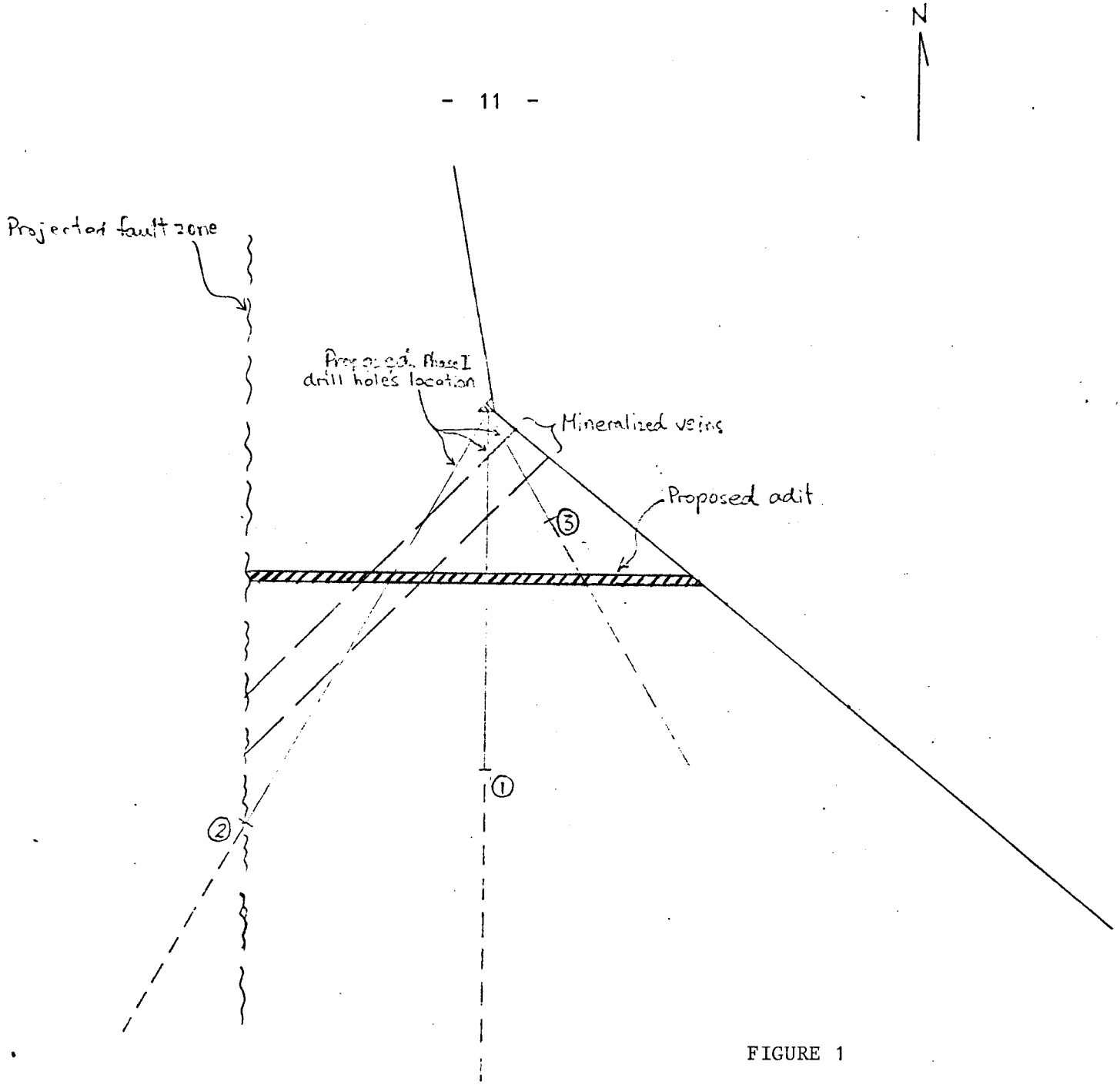


FIGURE 1

FAIRCHILD LAKE PROJECT

OTTER NORTH A SHOWING

Plan for Proposed Phase I Drilling & Adit

0 250

Scale : 1" = 250'

Date : Oct. 30/87

Dr. by : A. Gilman

It is envisaged that if the program moves into Phase II, a second drill will be mobilized from Mayo.

Contingent on results of Phase II, and prospect evaluation work of Otter North B and areas between these showings, an additional 5,000 ft. of drilling is planned according to the guidelines established from the above.

Engineering Studies

Currently engineering studies are under way for the purpose of establishing economic guidelines as to minimum target size and grade of a viable cobalt underground mine operation at Fairchild location. It is envisaged to update this evaluation study with incoming results using a mining consultant.

Metallurgical Test Work

In view of the complexity of the "ore", it is proposed that systematic ore microscopy work with identification of mineral assemblages and textures be undertaken concurrent with the drill core and trench assaying program.

This work would be an invaluable aid for later metallurgical test work where drill core intersections would be grouped together.

It is planned to use a metallurgical consultant to supervise this work.

The test work should get under way by the end of Phase I drilling, but it is expected to last into the third quarter of 1980.

Preliminary Appraisal

A preliminary appraisal of:

1) potential ore reserves

2) metallurgical recovery

3) marketing of products

4) infrastructure

will be carried out starting at the end of the 1980 field season. This will be the basis for a decision as to further commitment of funds.

In the event of a positive decision, a follow-up exploration phase would consist of an underground program of tunneling, underground drillling and bulk sampling including some preparation of infrastructure facilities such as airstrip, camp and access roads.

This program is in the order of $1.5 million minimum.

In this context it should be noted that:

1) The current metal markets for cobalt, silver, nickel and copper are good. However, consultation should be made with smelters capable of handling potential concentrates of these metals at an early stage.

2) With respect to infrastructure the Fairchild region is favorably located as follows:

   a) A winter road exists from Elsa to Fairchild. This road could be upgraded to an all-weather access road.

   b) The north banks of Bonnet Plume River offer sites (gravel beds) suitable for a large low cost airstrip.

   c) There are potential hydropower sites in the immediate vicinity of the property (less than two miles).

   d) The Yukon Governmnet Assistance Act offers up to 40% participation in infrastructure costs.

It is important that early consultation be made with governmental agencies, land use, and power commissions as to the future implications of development in the area.

Furthermore, in the course of the field season, preliminary, e.g. ball park estimates of development costs for infrastructure facilities should be obtained.

The marketing and infrastructure aspects are vital in the preliminary appraisal of the Fairchild cobalt project.

2.1 PROJECT LOCATION AND ACCESS

The property (see DWG's 1 and 2) is located on NTS sheets 106C/13 and 106F/4, latitude 65°00N, longitude 133°47'W.

Geographically it is centered around Fairchild Lake in the Wernecke Mountains. It lies between Rapitan Creek to the north and Bonnet Plume River to the south. To the west, it is bounded by Fairchild cirque.

The property is accessible by fixed wing aircraft from Mayo, approximately 120 miles away. Furthermore, it can be reached by a winter road which extends from Elsa to Delores Creek through Braine Pass.

2.2 PROPERTY

The Otter Property, see DWG 2, presently consists of 124 contiguous claims (see Table 2) for a total of 5,800 acres. These claims were located under the Yukon Quartz Mining Act and were acquired as follows. An initial four claims were recorded in August 1977 to protect the original cobalt copper showings.

TABLE 2

LIST OF CLAIMS - OTTER CLAIM GROUP

Claims	Staking Date	Recording Date	Grant Number
Otter 1-4	July 14/77	Aug. 1/77	YA15886-15889 (incl.)
Otter 5-36	Aug. 17/78	Sept. 11/78	YA38210-38241 (incl.)
Otter 37-88	July 24/79	Aug. 10/79	YA40567-40618 (incl.)
Otter 89-124	Sept. 15/79	Oct. 9/79	YA41306-41341 (incl.)

Claims 5-36 were acquired in September 1978. In the 1979 season, claims 37-88 and 89-124 were recorded in August and October, respectively, in order to secure the land position.

The Otter property is bounded to the south by the Fair claim group held by Energex Minerals.

2.3 PHYSIOGRAPHY

The property (DWG 10) is characterized by steep cliffs with elevations ranging from 2,500 to 5,000 ft. A.S.L. Along the north shore of Fairchild Lake, the cliffs are dissected by canyons with small creeks which drain into Fairchild Lake.

The majority of the property lies above the timberline (approximately 3,000 ft. A.S.L.). Below this, the ground is covered with moderate size coniferous trees.

Pleistocene History:

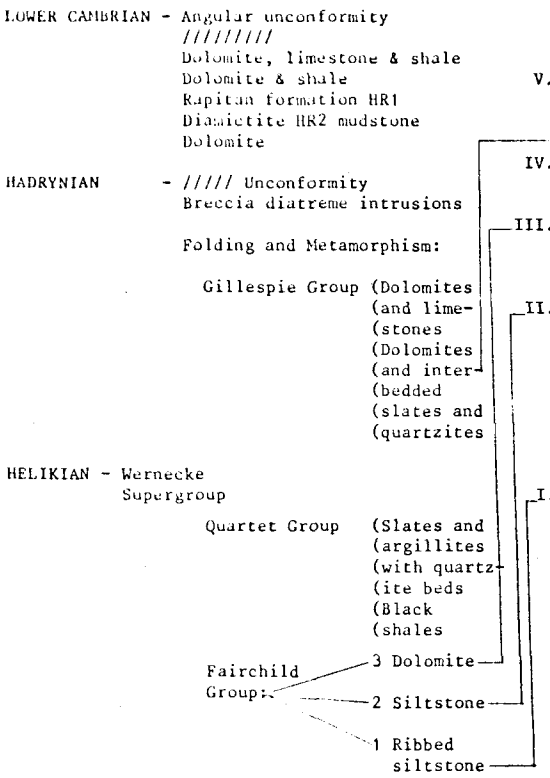
The Fairchild Mountains escaped the Pleistocene glaciation with the continental Laurentide ice sheet extending to the edge of the Wernecke Mountains, 50 miles north of Fairchild Lake. The valleys in the Fairchild area however were covered with valley glaciers.

3. REGIONAL GEOLOGY

In the Fairchild Lake region (DWG's 3, 10, and Table 3), Helikian rocks are exposed over an area of some 1,500 square miles in a roughly circular fashion centered near longitude 134°00'W and latitude 65°00'N.

TABLE 3

STRATIGRAPHIC COMPILATION



Source: S. Blusson, GSC pers. com.

FAIRCHILD AREA GENERAL/REGIONAL

V. Intrusive Breccia
Rich in angular clasts
Quartz feldspar matrix

IV. Black shale series
Often pyritiferous

III. Dolomite series
Massive bedded calcareous rocks with orange weathering

II. Siltstone series consisting of uniform, grey-green fine grained sediments. Variably magnetic, variably calcareous with slaty to phyllitic sections.

The series are generally undisturbed but adjacent to the Fairchild fault, there is extensive small scale folding.

I. Ribbed siltstone/dolomite series of interbedded grey siltstone and chocolate brown weathering dolomite forms gently westerly dipping cliffs along Fairchild Lake.

Source: 1) S. Blusson, GSC
2) G. F. McArthur, Pan Ocean
3) From geological mapping

FAIRCHILD AREA/OTTER MAIN SHOWING

(1) Siltstone characterized by grey to green colour, fine lamination slaty sections, noncalcareous, variably magnetic.

(2) Calcareous siltstone characterized by grey to green colour, nonmagnetic, interlaminated noncalcareous and calcareous siltstone.

(3) Altered siltstone characterized by buff colouring, silicification and feldspathization due to metasomatic alteration processes.

(4) Magnetic calcareous siltstone characterized by disseminations of magnetite, grey to green brownish weathering, interlaminated noncalcareous and calcareous siltstone.

(5) Magnetic siltstone - noncalcareous and characterized by disseminations of magnetite, grey to green brownish weathering and absence of calcareous laminae.

Note: Stratigraphic order of succession is 5-4-3-2-1.

Source: Detailed mapping 1979.

FAIRCHILD AREA/OTTER MAIN SHOWING

Additional Information from Drill Logs

Holes O-79-1, 2, 3, 4, 5

(2) Microfolded calcareous siltstone, possibly in a large scale recumbent isoclinal fold (tectonic repetition).

Dark green chloritized siltstone characterized by pervasive chloritization of calcareous siltstone and magnetic silts.

The Helikian rocks collectively named the Wernecke terrane, consist of (see Table 3) sedimentary rocks subdivided into the Fairchild, Quartet and Gillespie groups. The Helikian rocks, part of which may be Late Aphebian in age, are unconformably overlain by Hadrynian rocks of the Rapitan Group.

The Helikian rocks underwent periods of folding and low-to-medium-grade metamorphism; during Hadrynian time, these rocks were intruded by a large number of breccia diatreme bodies. In conjunction with this intrusive phase, the area was subjected to large scale wrench faulting along WNW trending planes with a complimentary set of fault planes oriented NNE.

Although no detailed data are on hand, it appears that these faults were the principal controls in the emplacement of the breccia diatremes.

The breccia bodies (at least 86 separate intrusions have been located to date in the general district) occur in sheet or dykelike zones from a few meters to more than 100 meters' width, and as diatremelike pipes ranging from 100 to 800 m or more in diameter.

The breccias have irregular boundaries with numerous offshoots and are characterized by having a large number of inclusions. Furthermore, they are usually surrounded by wide alteration halos.

These intrusives are most frequently found in the Fairchild and Quartet group of rocks.

Mineralization associated with the breccia bodies include vein fillings carrying hematite, sulphides of copper, uranium as uraninite or pitchblende and brannerite, cobaltite, arsenopyrite.

4. PROPERTY GEOLOGY

4.1 Fairchild Area General

The geology of the area around Fairchild Lake features (DWG 10 and Table 3) a series of ribbed siltstones Unit (1) overlain by calcareous siltstones (2) and arranged with NNW strike and uniform westerly dip.

Unit (2) is overlain by calcareous limestones and dolomites of Unit (3). The latter are in fault contact with a series of black shales of Unit (4).

A major fault structure hereafter called Fairchild fault extends with NNW strike from Fairchild Lake through the Otter Main showing to the property boundary where it is lost under a series of black shales of the Quartet Group.

The Fairchild fault stays within the calcareous siltstones which exhibit strong folding both on small and large scale, in contrast to the surrounding stratigraphic units. This fault structure is currently regarded as a thrust fault.

WNW of the Otter Main showing a breccia diatreme body has been found. Furthermore, the Fair group off the south tip of Fairchild Lake hosts a breccia diatreme.

4.2 Otter Main Showing

The Otter Main showing (DWG's 4 and 5) is located around a cirque on the cliffs along the north shore of Fairchild Lake. The showing consists of a northeast and a southwest outcrop area separated by a talus covered canyon, trending N320W.

A program of detailed geological mapping and prospecting was carried out at a scale of 1:1,000 and 1:200 using a 40 x 20 m picket grid established by a surveyors' team. The detailed bedrock stratigraphy within the siltstone series going from bottom to top is summarized in Table 3.

Structure:

The Otter Main showing has a complex structure due to multiple deformation phases, as follows. (See Table 4.)

The detailed 1:1,000 and 1:200 scale maps reveal:

a) The NE showing is characterized by a tight synclinorial structure with numerous drag folds.

b) The SW showing features a more uniformly oriented sequence with shallow dipping siltstone beds.

c) The structure patterns in the above outcrop areas appear truncated by the central canyon and a smaller one to the NE.

d) From diamond drill information, hole 0-79-3 (see Appendix 2C) it is known that the central canyon is a fault structure in which considerable shearing and gouging has occurred.

Wulff net diagram (Table 5) of poles to bedding surfaces and all observed lineations and microfolds reveal a cluster of axis orientations with WNW-NW trend 10-30° plunge.

Regarding the D_1 deformation, very little is known about this phase. The D_2 folds contain refolded microfolds suggesting an earlier phase of deformation.

TABLE 4

Structural History Otter Main Showing

D_4 - Jointing along N30E/vertical oriented planes.

D_3 - Dilational phase: emplacement of calcite vein systems carrying cobalt and copper sulphide and arsenide mineralization. Predominant vein orientation: N48E/30°NW.

D_2 - Compressional folding associated with the Fairchild regional NNW fault. Synclinal folding on N320 plunging axes. Axial plane shearing along main fault and satellite fault plane.

D_1 - Recumbent isoclinal folding evidenced by microfolds, refolded by D_2 folds.

Furthermore, there is evidence of isoclinal repetition of siltstone units on both the NE and SW showings, as seen in drill holes O-79-1, 2, 3, and O-79-5 respectively.

However, there is no quantitative data on axial directions and furthermore, the outcrop conditions away from the outcrop areas are poor.

From the data on hand, it is assumed that the D_2 synclinal fold, the axial plane shearing and gouging are structural deformations related to the Fairchild fault.

Vein Mineralization:

The Otter Main showing with its steep cliffs and deeply weathered and leached outcrops made detailed studies of the surface vein mineralization next to impossible.

For various reasons a trenching program could not be carried out. Instead, a drill program consisting of five holes from two setups was carried out to test the N48E/30°NW oriented vein systems.

In the following description, heavy emphasis is placed on drill log information.

The Otter vein mineralization is zoned on a large scale and features from top to bottom over a vertical distance of 500 ft.

1. A diffuse Cu zone of disseminated malachite in grey-green siltstone.
2. A U zone 30 meters long, consisting of highly radioactive soils and boulders of metasomatized siltstone with disseminations of brannerite along bedding planes. The source,

although not identified because of deep talus, is assumed to be close by.

3. Below the U zone and within microfolded, calcareous, and dark green chloritized siltstone, a cobalt-copper zone occurs, associated with carbonate bearing vein systems oriented N48E/30°NW. This zone is contained within a block 150 m long and 150 m thick.

Mineralogical and structural characteristics include: Carbonate veins which are generally mineralized with sulphides and arsenides such as cobaltite, chalcopyrite, pyrite and arsenopyrite. The latter are generally enveloped in a halo of disseminated and/or stringer mineralization of sulphides and arsenides as above.

Furthermore, there is a ubiquitous distribution of fine grained sulphide mineralization largely pyrite, arsenopyrite, chalcopyrite and some carbonate veining within the entire cobalt-copper zone. Because of the fine grained nature of the latter, a thorough cobalt assaying program was undertaken (see Appendix 3A-E, and 5).

Vein Characteristics:

The vein systems (see Wulff net diagrams, Table 5) appear unrelated to the D_1 and D_2 fold systems in terms of orientation. Furthermore, the carbonate veins are absent from the central canyon or Fairchild fault zone as seen from hole O-79-3 drill log, Appendix 2C.

However, there are examples of subconcordant veins as seen

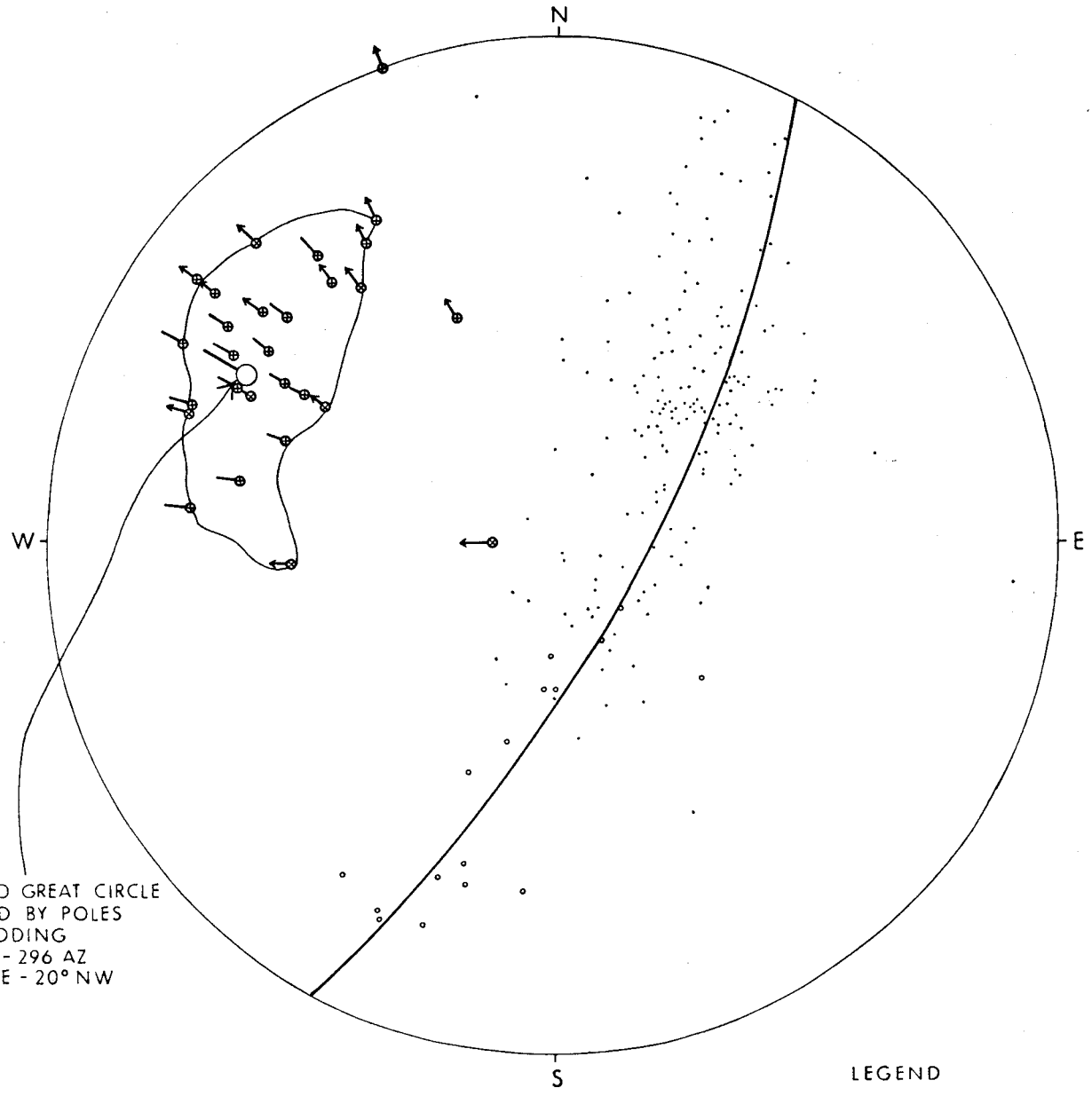


Table 5

TO ACCOMPANY REPORT NO 24-79 BY JFT, RJM, AKC

PAN OCEAN OIL LTD.
CALGARY ALBERTA

OTTER MAIN SHOWING AREA
WULFF NET
POLES TO PLANES OF BEDDING
LINEATION AND FOLD AXIS

DATE	SCALE	NTS	DRAWING NO.
DEC. 1979	—	—	A-0780

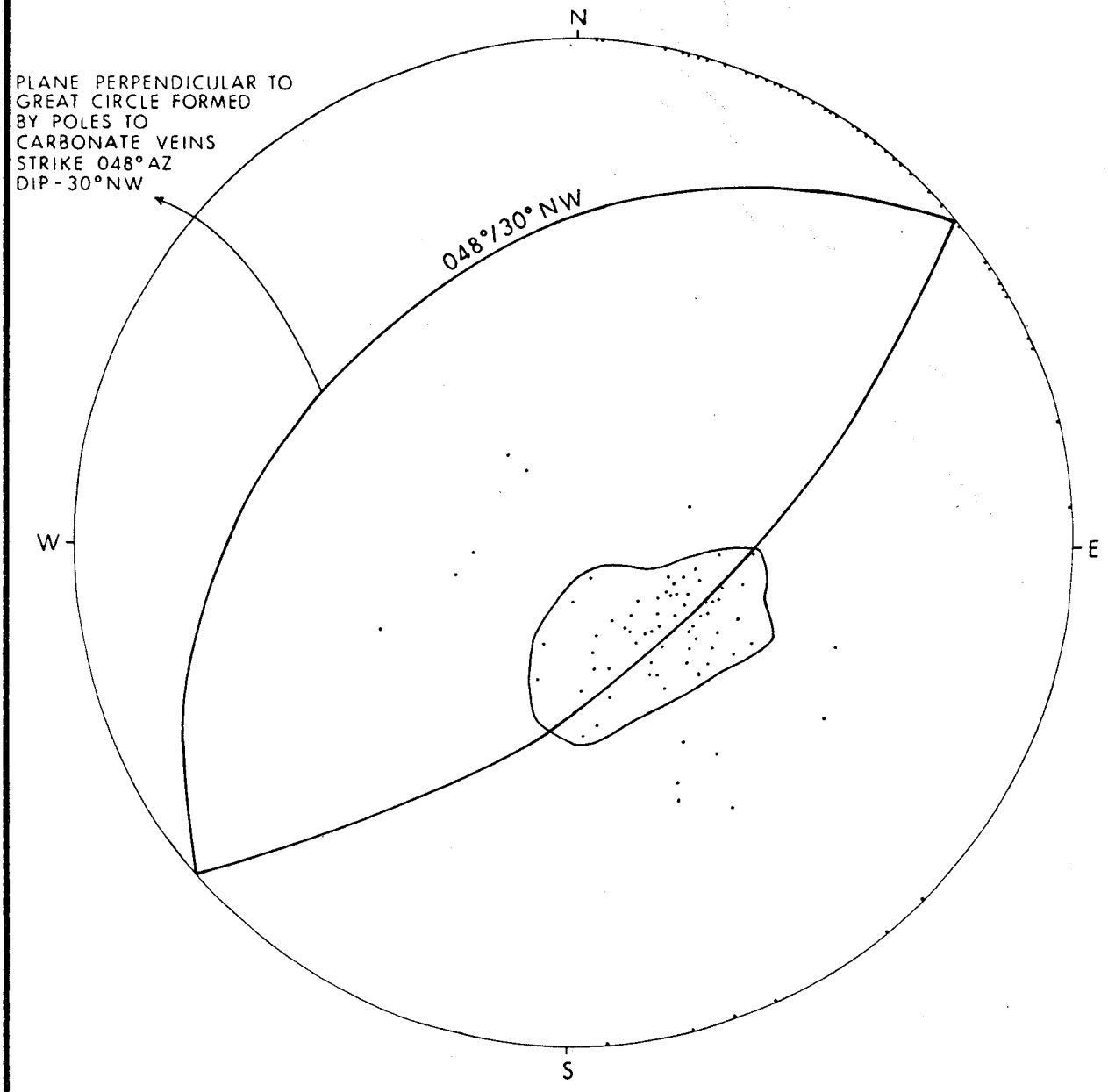


Table 5

TO ACCOMPANY REPORT NO 24-79 BY JFT, RJM, AKC

PAN OCEAN OIL LTD.
CALGARY ALBERTA

OTTER MAIN SHOWING AREA
WULFF NET
POLES TO PLANES OF CARBONATE VEINS
Co AND NON-Co BEARING

DATE	SCALE	NTS	DRAWING NO.
DEC 1979			0779

at: a) the SW showing, b) the NE showing near the Eagle's Nest-Cowie vein, and c) the Dallas vein, DWG's 4, 5.

The vein systems, as seen on surface display offset, and pinch and swell structures, vein thickness varies from 3-15 cm, and maximum observed strike length was 20 m.

The Cu (1) and U (2) zones have no economic interest and no detailed work was undertaken.

The SW Showing

The SW showing (DWG 4) contains subconcordant carbonate veins. Holes O-79-1, 2, 3 were drilled to test the downdip projection of the surface veins (DWG's 6, 7, Appendices 3A, B, C). This was verified, but the assays returned only low grade values for Co and Cu.

Details of the vein mineralization highlighting assays, as seen in drill core, are summarized in Table 6.

The NE Showing

The NE showing contains several vein systems carrying abundant erythrite-cobaltite mineralization.

Hole O-79-4, Appendix 3D and DWG 8, was abandoned due to mechanical problems. Hole O-79-5, Appendix 3E, drilled down axis of the showing intersected. See Table 7.

Dallas vein from 18-47 ft.: this vein which is subconcordant to bedding was not observed on surface because of deep rubble and talus. In drill core, it features, DWG 9, a high grade section from 22-33 ft. enveloped in a lower grade zone.

TABLE 6

DRILLING SUMMARY - SOUTHWEST SHOWING

DDH #	Az	Dip	TD	Intersections	Assays
0-79-1	105°	-65°	430.5'	1) 177-185', 5% of this interval is flooded with calcite veins - cpy, minor cobaltite mineralization - correlates w/#1 SW vein	178-181' (0.10% Co)
				2) 198.66' - 2.5 cm calcite vein with three bands of cobaltite along a) upper contact b) middle of vein c) lower contact correlates w/#2 SW vein	197-199' (0.18% Co)
0-79-2	000°	-90°	259'	1) 195-203' - zone of calcite veins w/cpy, cobaltite mineralization @ 196.5' - 5 mm orange calcite vein @ 3 cm thick calcite vein - 5 mm fine grained band of cobaltite along lower contact -correlates w/#1 SW vein	194-201' (0.119% Co)
				2) 1.5 cm - yellow calcite fine grained cobaltite in band within vein and along lower contact -correlates w/#2 SW vein	223-224' (0.14% Co)
0-79-3	105°	-65°	640'	1) 187.5' - 5.5 cm calcite vein - fine grained cobaltite stringers within vein and along upper contact - correlates with #1 SW vein	187-190' (0.107% Co)
				2) 211' - 7 cm calcite vein with 2 bands of medium grained cobaltite, 1-3 mm thick - correlates with #2 SW vein	209-214' (0.104% Co)

TABLE 7

NE SHOWING AREA - LIST OF SIGNIFICANT ASSAYS

1.	18-47	0.236% Co 0.528% Cu	22-32	0.644% Co 1.052% Cu 1.092% As 0.055% Ni	
2.	55-65	0.091% Co 0.451% Cu			
3.	205-211	0.025% Co			
4.	232-237	0.005% Co 1.182% Cu			
5.	470-492	0.002% Co 0.256% Cu	470-477	0.017% Co 0.634% Cu	
6.	564-582	0.007% Co 0.091% Cu	564-576	0.005% Co 0.125% Cu	]]
			575-582	0.018% Co 0.093% Cu	]]
7.	591-599	0.004% Co 0.203% Cu			]]

In the high grade zone, there are two carbonate veins 22-25 ft. and 29-30.5 ft., with short sections of heavily disseminated cobaltite and or chalcopyrite.

In the lower grade, disseminated zone there are fine stringers of cobaltite and chalcopyrite within a bleached light grey siltstone. The sulphide-arsenide mineralization appears subconcordant with the siltstone bedding.

The Harris vein from 55-65 ft. is contained within an altered siltstone characterized by intense calcite veinlet flooding. Co and Cu mineralization appear antipathic as seen in short Cu-bearing sections of 1/2-1 ft., followed by barren yellow calcite, in turn followed by 1/2 ft. of Co bearing siltstone.

There are short sections of minor disseminated cobaltite in a calcareous nonmagnetic siltstone at 205-211 ft. In this section there are abundant orange brown calcite and chalcopyrite bearing veinlets.

From 232-237 ft. minor chalcopyrite mineralization associated with calcite, assayed 0.005% Co and 1.182% Cu.

The Debock zone from 289-325 ft. features a zone of buff coloured altered siltstones, dissected by quartz feldspar veins. There is a general absence of sulphides.

This observation contrasts with the surface exposures of four carbonate veins 3-15 cm thick with strong erythrite mineralization.

The cliff zone from 391-427 ft. contains a zone of altered siltstones with quartz feldspar veins and minor specks of chalcopyrite. The bottom section 415.5-420.5 ft. contains a carbonate vein with minor sulphides.

On surface this zone, 2.5 m thick, contains three calcite veins up to 15 cm and carrying minor chalcopyrite.

The Cowie vein, from 470-492 ft., contains altered light grey to buff coloured siltstone with three calcite veins, 3/4 to 1-1/2 ft. wide. Assays are as follows:

	Co	Cu		
470-477 ft.	0.017%	0.634%	) 0.002% Co)	) 470-492' (22)
487-492 ft.	0.002%	0.190%	) 0.256% Cu)	

The vein mineralization seen on surface is dominated by cobaltite-erythrite.

Below the Cowie vein a series of low grade Cu bearing zones were found (see Table 7). To date, the surface expression of these is not known.

Discussion

The Dallas vein returned significant grades, and a follow-up program of trenching and additional diamond drill testing is warranted.

The controls of the Co-Cu mineralization within the N48E/30NW dipping veins are imperfectly understood, and trenching is warranted.

5. PROSPECTS NORTH OF THE OTTER MAIN SHOWING

A Helicopter-borne prospecting program was carried out in areas north of the Otter Main showing. Because of the extreme

ruggedness and difficult topography, prospecting was initially carried out down canyons and creeks. Later on, contour traverses were made.

Very encouraging results were obtained, and clusters of showings listed from south to north (see DWG's 11, 12, 13).

1. FDR 107, 106, 108 — Chalcopyrite veins in dolomite in hang wall section of Fairchild fault.

   There are no details and no assays from this prospect.

2. FDR 116, 115, 114 — A bornite vein showing in carbonate rocks in the hang wall section of Fairchild fault.

Otter North A Showing

Details of this showing are given in DWG 12 which lists the detailed observations, sample procedure and results.

FDR 145: A cobalt vein showing approximately 400 ft. north of Otter North A. This prospect was not examined in detail.

Otter North B showing lies 3/4 mile north of the Otter North A showing. Details of this occurrence are given in DWG 13.

Otter Third Group of showings is a cluster of disseminated and stringer cobaltite in a calcite flooded zone.

Assays of prospectors' hand samples returned Co assays in the order of 0.17% and 0.42% with low values for Cu and Ag.

APPENDICES 3A TO 3E

DRILL LOGS

PAN OCEAN OIL LTD.
MINING DIVISION

DIAMOND DRILL HOLE GEOLOGICAL LOG AND ASSAY RECORD

DDH: No 0-79-1 P 1 OF 6
PROJECT FAIRCHILD

LOCATION FAIRCHILD LAKE AREA, YUKON - OTTER 3
BEARING 150° DIP -65° ELEVATION 3,259'(933 m)
LENGTH 430.5' PROPOSED LENGTH
CORE SIZE HQ, 16'HW OVERALL RECOVERY 88%

START August 18, 1979 FINISH August 24, 1979
CONTRACTOR E. CARON DIAMOND DRILLING
TESTS Radiometric Borehole Log - Mt. Sopris Model 1000C (total Count - Gamma Ray)
Anomaly - 101-115' (60-72 cps over 30 cps bgd).
LOGGED BY R. J. Mazur DATE LOGGED Aug. 20-24/79

ASSAY BY CHEMEX LABS, VANCOUVER
DIP TEST AT 430.5' Reading 72° Correct 66°
MUD USED - 73 gal. liq. Poly Drill 325
- 43.5 gal. pwdr. Poly Drill 357
SEE CALCULATION SHEET NO.

PURPOSE: To intersect #1 & #2 SW cobalt veins and stratigraphy normal to their strike and dip.

GEOLOGICAL LOG

FOOTAGE (m)	DESCRIPTION
0 - 23 (0) (7.01)	Magnetite bearing slate - dark greenish grey magnetite, speckled on bedding planes - very fine laminations - noncalcareous - casing - 22' 23° So 80°
23 - 91 (7.01) (27.74)	Nonmagnetic slate - very finely laminated - noncalcareous - few calcite veins discordant to bedding, some concordant 32' - malachite stain on fractures 35-37' - 4" of chalcopyrite and dendritic pyrolusite in hairline thin fractures which have been microfolded. Malachite stain along fractures, host slate has been bleached to a light grey. - then 4" of rusty calcite veining - then 1' of chalcopyrite mineralization similar to above 42' - 5 mm calcite vein contains chalcopyrite along both contacts with wall rock - disseminated, core axis 70° 43.5' - 5 cm clay gouge 50-53' - caved rock, poor recovery 58-58.5' - numerous calcite veinlets contain chalcopyrite-malachite; vein 5 mm thick, at core axis 40° 63' - chalcopyrite bearing calcite veins 73' - microfolding developing and increased calcite veining, chalcopyrite disseminated in calcite veins 73-91' - calcite veinlets abundant with ubiquitous chalcopyrite mineralization

Ft.	So	Ft.	So
29	80°	67	90°
34	75°	72	80°
40	80°	77	85°
45	85°	79	70°
54	85°	85	90°
60	80°	90	90°

(Continued)

Sample NO.	Footage FROM	TO	(ft) Length	ASSAYS % Co	% Cu		RECOVERY From	To	Recovery %	COMPOSITE
001	0	22	22	<0.01			0	21	4.00	23.5
002	22	24	2	<0.01			21	22	0.75	75
003	24	26	2	<0.01			22	25	3.00	100
004	26	28	2	<0.01			25	29	3.50	86.5
005	28	30	2	<0.01			29	32	3.00	100
006	30	32	2	<0.01			32	35	3.00	100
007	32	34	2	<0.01			35	37	2.00	100
008	34	35	1	<0.01			37	39	1.75	87.5
009	35	36	1	0.02	1.74		39	42	3.00	100
010	36	37	1	<0.01			42	47	5.00	100
011	37	39	2	<0.01			47	50	3.00	100
012	39	41	2	<0.01			50	53	0.50	16.6
013	41	43	2	<0.01			53	56	3.00	100
014	43	45	2	<0.01			56	60	4.00	100
015	45	47	2	<0.01			60	65	4.00	80
016	47	49	2	<0101			65	67	2.00	100
017	49	51	2	<0.01			67	68	1.00	100
018	51	53	2	<0.01			68	72	4.00	100
019	53	55	2	<0.01			72	77	4.75	95
020	55	57	2	<0.01			77	82	5.00	100
021	57	59	2	<0.01			82	85.5	3.00	85.7
022	59	61	2	<0.01			85.5	89	3.00	85.7
023	61	63	2	<0.01			89	92	2.50	83.3
024	63	65	2	<0.01			92	97	5.00	100
025	65	67	2	<0.01			97	102	3.00	60
026	67	69	2	<0.01			102	107	4.75	95
027	69	71	2	<0.01			107	112	4.75	95
028	71	73	2	<0.01			112	117	5.00	100
029	73	75	2	<0.01			117	122	5.00	100
030	75	77	2	<0.01			122	127	4.75	95
031	77	79	2	<0.01			127	132	4.50	90
032	79	81	2	<0.01			132	137	4.75	95
033	81	83	2	<0.01			137	142	4.25	85
034	83	85	2	<0.01			142	147	4.50	90
035	85	87	2	<0.01			147	152	5.00	100
036	87	89	2	<0.01			152	157	5.0	100
037	89	91	2	<0.01			157	162	4.81	96.2
							162	167	4.25	85
							167	171	4.00	100
							171	172	1.00	100
							172	177	5.00	100
							177	182	5.00	100
							182	187	4.33	86.6
							187	190	3.00	100
							190	192	2.00	100
							192	197	4.33	86.6

(continued)

3A

GEOLOGICAL LOG

FOOTAGE (m)	G LOG	DESCRIPTION
91 - 92 (27.74)(28.04) 92 - 185 (28.04)(56.39)		Fault - clay fault gouge Folded calcareous siltstone - grey and black laminated - both noncalcareous - strongly microfolded - isoclinal recumbent - pervasive calcite flooding of unit 92-104' - laminae weak 93' - 1 cm pyritic, white calcite veinlet 101' - 3 cm clay gouge 104' - light grey and black, intensely folded laminae become prevalent 105' - 2 cm rusty gouge 108' - 2 cm gouge 115-118' intense calcite veining - predominantly white with rusty borders - some cream coloured calcite no metallics 120-124' - intense white calcite flooding, no metallics 125' - dark brown and white folded calcite vein 5 cm 129' - 2.5 cm white and cream calcite vein - minor chalcopyrite disseminated, core axis 20° 132-137' - rusty weathering on fractures 137-138' - ground rusty core 139-142' - white calcite flooding with rusty borders - pyritic - good examples of carbonate fractures offsetting folds up to 5 mm thick 143-157' - very intense white calcite veining occurs - some distinct crosscutting white and rusty and cream coloured veins are abundant - chalcopyrite, pyrite, cobaltite? disseminated in calcite veins <1% 161' - cobaltite speck? 162' - pinkish metallic 166' - 15 cm clay gouge 157-169' - calcite veining abundant, but poor in metallics 169' - chalcopyrite and cobaltite - few disseminations - dark grey almost black veinlets, sectile, but some appear bright silver speckled 177' - pyrite veinlets 1-2 mm thick, rusty, core axis 70° 177-185' - two veinlets of chalcopyrite and steel grey sectile mineral - metallic scratches black - numerous cream coloured calcite veins, 5% of rock - 5% of vein contains chalcopyrite - minor cobaltite - chalcopyrite and steel grey sectile metallic mineral along borders of vein - 5 mm average thickness of veinlets core axis 50°, 80°, 60° appears random. Ft. S_o F_1 - core axis of axial plane of folds. 103 80° 107 90° 112 90° 85°

(continued)

Sample NO.	Footage FROM	TO	Length (ft)	ASSAYS % Co	% Cu		RECOVERY From	To	Recovery %	COMPOSITE
							197	202	5.00	100	
038	91	96	5	<0.01			202	207	5.00	100	
039	96	101	5	<0.01			207	212	5.00	100	
040	101	106	5	<0.01			212	217	5.00	100	
041	106	111	5	<0.01			217	222	5.00	100	
042	111	116	5	<0.01			222	227	5.00	100	
043	116	121	5	<0.01			227	230	3.00	100	
044	121	126	5	<0.02			230	235	4.66	93.2	
045	126	128	2	<0.01			235	240	4.50	90	
046	128	130	2	<0.01			240	242	2.00	100	
047	130	132	2	<0.01			242	247	4.66	93.2	
048	132	134	2	<0.01			247	249	2.00	100	
049	134	136	2	<0.01			249	252	3.00	100	
050	136	138	2	<0.01			252	257	4.33	86.6	
051	138	140	2	<0.01			257	261	3.25	81.2	
052	140	142	2	<0.01			261	266	3.75	75	
053	142	144	2	<0.01			266	270	3.00	75	
054	144	146	2	<0.01			270	273	2.50	83.3	
055	146	148	2	<0.01			273	278	5.00	100	
056	148	150	2	<0.01			278	280	1.75	87.5	
057	150	152	2	<0.01			280	285	4.00	80	
058	152	154	2	<0.01			285	287	1.50	75	
059	154	156	2	<0.01			287	292	4.75	95	
060	156	158	2	<0.01			292	295	2.00	66.6	
061	158	160	2	<0.01			295	300	3.00	60	
062	160	162	2	0.02			300	307	5.00	71.4	
063	162	164	2	<0.01			307	312	5.00	100	
064	164	166	2	<0.01			312	317	5.00	100	
065	166	168	2	<0.01			317	322	4.33	86.6	
066	168	170	2	<0.01			322	327	4.50	90	
067	170	172	2	<0.01			327	332	5.00	100	
068	172	174	2	<0.01			332	337	4.75	95	
069	174	175	1	<0.01			337	342	5.00	100	
070	175	176	1	<0.01			342	345	2.00	66.6	
071	176	177	1	<0.01			345	347	2.00	100	
072	177	178	1	<0.01			347	352	4.00	80	
073	178	179	1	0.07			352	355	2.33	77.6	178-181 (3 ft) 0.1% Co
074	179	180	1	0.10			355	359	3.00	75	
075	180	181	1	0.14			359	364	4.75	95	
076	181	182	1	<0.01			364	366	2.00	100	
077	182	183	1	<0.01			366	369	3.00	100	
078	183	184	1	<0.01			369	374	4.75	95	
079	184	185	1	<0.01			374	379	5.00	100	
							379	384	5.00	100	
							384	389	5.00	100	
							389	392	3.00	100	
							392	397	4.50	90	
							397	402	4.66	93.2	
							402	404	1.50	75	
							404	408	3.50	87.5	
							408	412	3.00	75	
							412	415	3.00	100	
							415	419	3.50	87.5	
							419	423.5	4.50	100	
							423.5	426.5	2.50	83.3	
							426.5	429	2.00	80	
							429	430.5	1.00	66.6	

GEOLOGICAL LOG

Ft.	S_o	F_1
115		85°
117	90°	
118	85°	
119		0°
120	90°	
126	70°	
128	30°	
129	70°	20°
130	20°	
131	70°	
132	45°	45°
133	75°	80°
137	90°	
139	87°	87°
142	75°	85°
144	80°	75°
146	75°	75°
150		70°
153	85°	85°
157	85°	85°
162	90°	75°
164		70°
167	85°	
171		80°
172	90°	85°
179	80°	
182	90°	
185	80°	

F_1 - core axis of axial plane of folds

F_2 - perpendicular to S_o and F_1

$\frac{F_2}{45°}$

FOOTAGE: 185 - 209 (56.39)(63.70)

G LOG:

DESCRIPTION:

Massive dark green siltstone
- dark green, massive, laminae not obvious or masked by chloritization
- not folded or calcite flooded
- calcite veins discordant - occur in 2% of this section

185' - 5 cm clay gouge
189' - sugary cream coloured calcite, some reddish coloration, metallic along borders of vein - 1 cm true thickness core axis 10°
190' - 2 mm veinlet chalcopyrite
191' - sugary cream coloured calcite, core axis 10°
192' - sugary cream coloured - chalcopyrite disseminations 1% of vein
192-193' - ground core - some gouge
193-195' - 1% calcite veins (2 mm) with minor disseminated chalcopyrite
195-209' - darker green siltstone - calcite veinlets more abundant - mildly folded

(continued)

Sample NO.	Footage FROM	TO	Length (Ft)	ASSAYS % Co	% Cu		RECOVERY From	To	Recovery %	COMPOSITE
080	185	186	1	0.02						
081	186	187	1	<0.01						
159	187	188	1	0.01						
082	188	189	1	<0.01						
083	189	190	1	0.02						
084	190	191	1	0.01						
085	191	192	1	0.01						
086	192	193	1	0.01						
087	193	194	1	0.02						
088	194	195	1	0.01						
089	195	196	1	0.01						
090	196	197	1	<0.01						
091	197	198	1	0.01						197-199 (2 ft.) 0.18% Co
092	198	199	1	0.35						
093	199	200	1	<0.01						
094	200	201	1	<0.01						
095	201	202	1	<0.01						
096	202	203	1	<0.01						
097	203	204	1	0.01						
098	204	205	1	<0.01						
099	205	206	1	<0.01						
100	206	207	1	0.01						
101	207	208	1	0.01						
102	208	209	1	<0.01						
103	209	214	5	0.01						
104	214	219	5	<0.01						

GEOLOGICAL LOG

FOOTAGE	G LOG	DESCRIPTION
*		198.66' - 2.5 cm sugary white calcite vein - 10% cobaltite within vein in three bands: 1) along upper contact 2) middle of vein 3) along lower contact - cobaltite occurs as reddish grey metallic with white specks glistening core axis 80° concordant to bedding. 199' - 1% chalcopyrite disseminated in calcite vein 1 cm thick 204' - two thin hairline fractures cobaltite? - coarse cubes in white calcite 1 mm size
		Ft. S_o F_1 185 80° 190 80° 195 90° 201 90° 90° 209 85° 85°
209 - 337 (63.70)(102.71)		Calcareous, magnetite bearing siltstone - black (noncalcareous) and white (calcareous) laminated siltstone-laminae up to 5 mm thick - from 219' on, magnetite is ubiquitous 227' - quartz calcite vein 1 cm thick, no metallics 245' - magnetite bearing calcite 1 cm thick, core axis 45° 248' - magnetite bearing calcite 1 cm thick, core axis 60° 249' - magnetite bearing calcite 1 cm thick, core axis 60° 248-249' - broken core 258' - ground core 258-261' - leached and weathered siltstone 261-262' - clay gouge 262' - leached and weathered siltstone
		Ft. S_o Ft. S_o 212 90° 245 90° 217 90° 249 75° 222 85° 250 80° 227 90° 252 85° 232 90° 256 85° 237 90° 261 85° 240 90° 266 85°
		266-268' - ground and broken core 272' - quartz carbonate-magnetite vein, 2.5 cm thick, boudined calcite magnetite vein 5 mm thick, core axis 90° this vein type common to 301' 288' - calcite magnetite 299' - boudined calcite - 1 speck disseminated chalcopyrite - black metallic in hairline fractures above vein - cobaltite? 301' - minor calcite-magnetite 300-315' - only a few magnetic intervals

(continued)

Sample NO.	Footage FROM	TO	Length (FT)	ROCK GEOCHEM Co ppm	Cu ppm	Co %	RECOVERY From	To	Recovery %	COMPOSITE
105	219	224	5	12	4					
106	224	229	5	14	82					
107	229	234	5	38	112					
108	234	239	5	26	6					
109	239	244	5	12	4					
110	244	249	5	12	4					
111	249	254	5	18	2					
112	254	259	5	16	2					
113	259	264	5	18	4					
114	264	269	5	12	4					
115	269	274	5	16	26					
116	274	279	5	10	4					
117	279	284	5	14	6					
118	284	289	5	20	4					
119	289	294	5	38	38					
120	294	299	5	12	30					
121	299	301	2			<0.01				
122	301	303	2			<0.01				
123	303	305	2			<0.01				
124	305	307	2			<0.01				
125	307	309	2			<0.01				
126	309	311	2			<0.01				
127	311	313	2			<0.01				
128	313	315	2			<0.01				
129	315	317	2			<0.01				
130	317	319	2			<0.01				
131	319	321	2			<0.01				
132	321	323	2			<0.01				
133	323	325	2			<0.01				
134	325	327	2			<0.01				
135	327	329	2			<0.01				
136	329	331	2			<0.01				
137	331	333	2			<0.01				
138	333	335	2			<0.01				
139	335	337	2			<0.01				
140	337	339	2			<0.01				

GEOLOGICAL LOG

FOOTAGE	G LOG	DESCRIPTION
		306' - boudined calcite - minor disseminated chalcopyrite - concordant with bedding 315.5' - minor disseminated chalcopyrite in calcareous laminae 327-337' - magnetite predominantly in calcareous beds as black specks 332' - within and around crystalline calcite vein (2.5 cm thick) - hard grey metallic with silver scratch - cobaltite? yellowish tinge to calcite - split reveals rhombic crystals of slightly harder mineral - yellow brown - non-calcareous-ankerite or feldspar core axis 90° discordant to S_o

Ft.	S_o	Ft.	S_o	
270	90°	313	75°	
273	85°	315	85°	
278	85°	317	80°	
285	78°	322	75°	kink banded
287	72°	327	80°	" "
292	75°	329	80°	" "
297	78°	332	60°	" "
300	80°	337	70°	" "
304	80°	338	80°	
308	85°			

337 - 430.5
(102.71) (131.22)

Magnetite bearing slate
- noncalcareous, dark grey
337.5' - quartz and noncalcareous yellow carbonate vein contains minor disseminated steel grey, hard, scratches silver mineral cobaltite?, core axis 70° 2.5 cm thick
338' - boudined pyrite quartz-carbonate (yellow) 1 cm thick core axis 70°
- these veins abundant to 354'
348-350' - ground, broken core
350' - 8cm clay gouge
354' - two quartz carbonate (yellow) veins, barren of metallics core axis at (1) 75° (2) 70°
369.5' - quartz vein concordant with S_o
- magnetite along borders
374-387' - kink folded Z folds

Ft.	S_o	Ft.	S_o	
347	85°	364	85°	
351	80°	369	85°	
352	80°	374	85°	
357	80°	379	80°	
362	80°	384	80°	- F_1-Z folds - 70°

(continued)

Sample NO.	Footage FROM	TO	Length (ft)	ROCK GEOCHEM Co ppm	Cu ppm		RECOVERY From	To	Recovery %	COMPOSITE
141	339	344	5	10	2					
142	344	349	5	12	4					
143	349	354	5	12	4					
144	354	359	5	8	4					
145	359	364	5	10	2					
146	364	369	5	12	4					
147	369	374	5	24	4					
148	374	379	5	8	4					
149	379	384	5	8	4					
150	384	389	5	8	4					
151	389	394	5	10	2					
152	394	399	5	8	4					
153	399	404	5	8	2					
154	404	409	5	10	2					
155	409	414	5	10	2					
156	414	419	5	8	2					
157	419	424	5	10	2					
158	424	430.5	7	6	4					

GEOLOGICAL LOG

FOOTAGE	G LOG	DESCRIPTION
		- light greenish grey, noncalcareous, magnetic 396.5' - quartz - yellow carbonate magnetite bearing 7 cm thick, core axis 70° 399-430.5' - ground, broken, gougy rock gouge at 399' - 1 cm 408' - 6 cm 415' - 1 cm 419' - 1 cm 419' - quartz yellow carbonate - slightly calcareous, magnetic 421' - 1 cm quartz yellow carbonate - magnetite (disseminated) - massive black hard (not scratched by a knife blade) mineral - seems less magnetic in massive bleb than disseminated magnetite, core axis 80°, Ilmenite
		Ft. So Ft. So 389 80° 415 80° 397 85 420 70° 400 80° 423 80° 405 75° 426 85° 410 75°
430.5 (131.22)		END OF HOLE.

Sample NO.	Footage FROM	TO	Length				RECOVERY From	To	Recovery %	COMPOSITE

D.D.H. Nº 0-79-1 PAGE 6 OF 6

PAN OCEAN OIL LTD.
MINING DIVISION

DIAMOND DRILL HOLE GEOLOGICAL LOG AND ASSAY RECORD

DDH: No 0-79-2 P: 1 OF 7
PROJECT FAIRCHILD

LOCATION FAIRCHILD LAKE AREA, YUKON - OTTER 3
BEARING 000° DIP -90° ELEVATION 3259' 993 m
LENGTH 259' PROPOSED LENGTH
CORE SIZE HQ-12' HW OVERALL RECOVERY 81%

START August 24, 1979 FINISH August 26, 1979
CONTRACTOR E. CARON DIAMOND DRILLING CO.
TESTS No dip test; no radiometric log.
LOGGED BY R.J. Mazur DATE LOGGED Aug. 25-27/79

ASSAY BY CHEMEX LABS, VANCOUVER
Mud used: 36 gal. liq. PolyDrill - 325
17.5 gal pwdr. PolyDrill - 357
SEE CALCULATION SHEET NO.

PURPOSE: TO INTERSECT MINERALIZED ZONES IN O-79-1 DOWN DIP

GEOLOGICAL LOG

FOOTAGE (M)	DESCRIPTION
0 - 32 (0) (9.75)	Magnetite Bearing Slate: - Light to dark green-speckled with magnetite. - Non calcareous. - 0 - 17 broken rock-casing. Feet / S_o 17 / 63° 21 / 65° 26 / 60° 31 / 65°
32.0 - 102 (9.75) (31.09)	Nonmagnetic; noncalcareous, Siltstone. - Greenish-grey - minor calcite veining, 1 mm thickness. 40' - 5 mm calcite-pyrite-chalcopyrite vein. Core axis - 30°. 40 - 47' - Thin calcite veinlets along bedding: Numerous micro-fractures are calcite filled. 47 - 49' - Bleached (light-grey - white) altered siltstone-chalcopyrite and pyrolusite filled hairline fractures, some malachite. 49.5' - 2 cm clay gouge. 51 - 52' - Malachite stain on fractures. 55' - 4 cm gouge and broken rock - concordant to bedding. 58.5' - Malachite stain on fractures. 59.5' - Chalcopyrite disseminated in calcite vein. Core axis 20° normal to S_o. 61.5 - 62.5' - 15 cm clay gouge. 65' - 2-2 mm chalcopyrite calcite veinlets. Core axis at 1. 10°. 2. 40°. 66 - 67' - Malachite stain on bedding plane.

ASSAY RECORD

NO.	FROM	TO	Length	Co %	Cu %	As%	From	To	Recovery %	COMPOSITE
							0	17	1.5	9
160	17	22	5	<0.01			17	21	2.5	62.5
161	22	27	5	<0.01			21	22.5	1.33	9
162	27	32	5	<0.01			22.5	26.5	2.00	50
163	32	37	5	<0.01			26.5	28	1.50	100
164	37	42	5	<0.01			28	32	3.00	75
165	42	47	5	<0.01			32	37	3.00	100
166	47	48	1	<0.01			37	39	1.50	75
167	48	49	1	<0.01			39	42	2.50	83
168	49	54	5	<0.01			42	47	5.00	100
169	54	59	5	<0.01			47	52	5.00	100
170	59	64	5	<0.01			52	57	4.00	80
171	64	69	5	<0.01			57	60	2.50	83
172	69	74	5	<0.01			60	63	2.50	83
173	74	79	5	<0.01			63	68	4.50	90
174	79	84	5	<0.01			68	72	4.00	100
175	84	89	5	<0.01			72	75	2.33	78
176	89	93	4	<0.01			75	80	4.75	95
177	93	95	2	<0.01			80	82	1.50	75
178	95	97	2	<0.01			82	86	3.50	88
179	97	99	2	<0.01			86	90	3.50	88
180	99	101	2	<0.01			90	95	4.33	87
181	101	103	2	<0.01			95	97	1.00	50
							97	102	4.75	95
							102	104	1.81	91
							104	109	4.50	90
							109	112	2.50	83
							112	117	5.00	100
							117	122	3.50	70
							122	127	5.00	100
							127	129	0.81	41
							129	132	2.00	67
							132	137	4.75	95
							137	142	4.50	90
							142	143	0.75	75
							143	148	4.50	90
							148	151	1.00	90
							151	155	4.00	100
							155	159	3.75	94
							159	164	4.75	95
							164	168	4.00	100
							168	172	3.50	88
							172	174	1.81	91
							174	178	4.00	100

3B

GEOLOGICAL LOG

FOOTAGE | G LOG | DESCRIPTION

68' - Yellow and brown calcite vein-1 cm - core axis 45°, no metallics.

69.5 - 72' - Abundant calcite veins - 1 mm thickness.
-Chalcopyrite disseminated in veins- yellow and brown.

73' - 2 mm calcite vein-chalcopyrite disseminated,
- Core axis 45°-yellow and brown.

73-76' - 1% of rock contains calcite veins-major orientation,
- Core axis at 45°.
- Chalcopyrite mineralization ubiquitous-dissemination in veins.
-Veins discordant to bedding.

80-82.5' - Calcite-flooded-brecciated

81.5 - 82 - Most intensely brecciated, contains 5% visible chalcopyrite in quartz vein.
-Dendritic pyrolusite common.
-Rusty on fractures.

83 - 95 - Abundant conformable calcite veins, core axis 50°-unmineralized.
- Reddish-grey discoloration of calcite at intersection of hairline fractures.
- Cross cutting vein at 87ft.

90 - 5 mm clay gouge

93.5 Intensely calcite flooded-- dark brown and white, some rusty fractures-specks of disseminated white matallic-cobaltite?

95 - 97 - 2 cm clay gouge and broken rock.

97 - 102 - Rusty weathering on bedding planes-rusty lenticular spots developing along bedding-pyritic.
-100.5-1 cm clay gouge.

Feet	So
37	50°
41	60°
45	70° kink banded
52	70° kink banded
57	65°
60	65°
65	60°
76	65°
80	65°
85	70°
90	60°
95	65°
100	65°

ASSAY RECORD

NO.	FROM	TO	Length	Co %	Cu %	As %	From	To	Recovery	%	COMPOSITE
							178	182	3.50	58	
							182	187	5.00	100	
							187	192	4.50	90	
							192	197	4.50	90	
							197	202	4.50	90	
							202	207	4.50	90	
							207	212	5.00	100	
							212	217	4.50	90	
							217	221	5.00	125	
							221	226	4.81	96	
							226	230	3.50	88	
							230	235	4.33	87	
							235	237	2.00	100	
							237	241	3.75	94	
							241	244	2.00	67	
							244	248	3.25	81	
							248	252	3.00	75	
							252	257	4.00	90	
							257	259	1.33	67	

GEOLOGICAL LOG

FOOTAGE	G LOG	DESCRIPTION
102.0 - 202.0 (31.08) (61.57)		Microfolded calcareous siltstone: -light grey and black microfolded. Laminated siltstone: - Calcareous bands and flooding. - Rusty weathering of fractures. - Disseminated chalcopyrite and cobaltite common. 103 - 105' - gouge, broken rock. 112' - 2 cm gouge 114' - 4 cm clay gouge. 117' - 8 cm clay gouge. 121' - 15 cm clay gouge. 123' - 4 cm clay gouge. 112-123 broken core & gouge fault. Feet / S_o / F_1 106 / 65° 111 / 45 115 / 65 123 / 65 / 45° 126 / 67 / 65 127.5 - 129 - Ground core and gouge. 132 - 134' - Calcite flooded and brecciation of folded beds. Feet / S_o / F_1 128 / 70° 135 / 70° 136 / 70° / 60° Fracture filled with pyrite. Core angle same as axis of fold. 142'-- 2 mm calcite vein conformable to bedding, 1 speck of white metallic - cobaltite(?) 137 - 148' - Rusty weathered. - Intense at 143-144'. 148 - 151' - Ground core. - Recovered only 15 cm clay gouge. - Change in core angles.

ASSAY RECORD

NO.	FROM	TO	Lenght	Co %	Cu %	As %	From	To	Recovery %	COMPOSITE
182	103	108	5	<0.01						
183	108	113	5	<0.01						
184	113	118	5	<0.01						
185	118	123	5	<0.01						
186	123	128	5	<0.01						
187	128	133	5	<0.01						
188	133	134	1	<0.01						
189	134	135	1	<0.01						
190	135	136	1	<0.01						
191	136	137	1	<0.01						
192	137	138	1	<0.01						
193	138	139	1	0.01						
194	139	140	1	<0.001						
195	140	141	1	<0.001						
196	141	142	1	<0.001						
197	142	143	1	<0.001						
198	143	144	1	0.01						
199	144	145	1	<0.01						
200	145	146	1	0.006						
201	146	147	1	0.005						
202	147	148	1	0.003						
203	148	149	1	0.008						
204	149	150	1	0.006						
205	150	151	1	0.012						
206	151	152	1	0.003						
207	152	153	1	0.003						
208	153	154	1	0.042						
209	154	155	1	0.039						
210	155	156	1	0.003						
211	156	157	1	0.004						
212	157	158	1	0.003						
213	158	159	1	0.002						
214	159	160	1	0.002						
215	160	161	1	0.004						
216	161	162	1	0.002						
217	162	163	1	0.002						
218	163	164	1	0.003						
219	164	165	1	0.002						
220	165	166	1	0.001						
221	166	167	1	0.001						
222	167	168	1	0.002						
223	168	169	1	0.002						
224	169	170	1	0.001						
225	170	171	1	0.003						
226	171	172	1	0.021						
227	172	173	1	0.085						
228	173	174	1	missing						
229	174	175	1	0.010						
230	175	176	1	0.004						
231	176	177	1	0.002						
232	177	178	1	0.003						
233	178	179	1	0.003						
234	179	180	1	0.003						
235	180	181	1	0.007						
236	181	182	1	0.005						
237	182	183	1	0.004						

GEOLOGICAL LOG

FOOTAGE	G LOG	DESCRIPTION

Feet	S_o	F_1
137.5	0°	
138.5	30°	
141.0	70°°	
145	70°	70°
151	40°	

154 - 155' - 3 veinlets
- Pyrolusite and chalcopyrite disseminated.
- Cream coloured.
- Core angle 40° discordant.
- Others concordant to So.

155' - Intense white calcite veinlets flooding microfolded beds.
- Minor dissemination of chalcopyrite in calcite veins.
- -.

Feet	S_o	F_1
153	35°	
155	40°	
159	70°	35°
164	80°	

-Intensely microfolded and flooded with white calcite to 184'.
-Cobaltite and chalcopyrite disseminated in calcite veins and as discontinuous 1 mm thick bands along borders of calcite veins concordant to S_o and along crests of folds.
-Mineralization strongly apparent from 168-202'.

152 - 166' - Minor disseminations.

171.5 - 172.5' - A number of 5 mm calcite veins with fine grained cobaltite bands approximately 1 mm thick at contact of calcite vein with wall-rock.
- Core angle - 70°.

173.5' - 2 cm quartz carbonate vein with 5% visible chalcopyrite.

184' - Clay gouge

187' - 5 mm-1 cm calcite vein chalcopyrite.

ASSAY RECORD

NO.	FROM	TO	Length	Co %	Cu %.	As%	From	To	Recovery %	COMPOSITE
238	183	184	1	0.003						
239	184	185	1	0.003						
240	185	186	1	0.002						
241	186	187	1	0.006						
242	187	188	1	0.011						
243	188	189	1	0.003						
244	189	190	1	0.005						
245	190	191	1	0.004						
246	191	192	1	0.004						
247	192	193	1	0.003						
248	193	194	1	0.005						
249	194	195	1	0.017						194 - 201 (7ft.) 0.119% Co
250	195	196	1	0.041						
251	196	197	1	0.195						
252	197	198	1	0.006						
253	198	199	1	0.007						
254	199	200	1	0.555						
255	200	201	1	0.012						
256	201	202	1	0.008						

GEOLOGICAL LOG			ASSAY RECORD										
FOOTAGE	G LOG	DESCRIPTION	NO.	FROM	TO	Lenght	Co %	Cu %	As %	From	To	Recovery	% COMPOSITE

190' - 2 5 cm quartz calcite veins.
- Cobaltite disseminated along borders.
- Core angle - 60°.

192' - 5 cm, 50° core angle
- Quartz calcite, chalcopyrite hard, black non magnetic; sectile; cobaltite? along borders.
- Very thin stringers.

Feet	S_o	Fl
167	60°	65°
171	70°	70°
177	70°	
182	65°	65°
187	50° calcite vein pyrite cobaltite?	
	80°	
191	80°	

195 - 203' - Zone of chalcopyrite
- Cobaltite mineralization.

195' - 2 2 mm orange-brown carbonate veinlets..
- Chalcopyrite 5% of veins.
- Core angle 55°

196.5' - Boudined orange-brown carbonate.
- 5% chalcopyrite-cobaltite.
- Core angle 55°.

197' - Clay gouge

198' - Orange-brown carbonate.
- chalcopyrite 2%.

199' - Core angle - 60°.
- White and yellow carbonate.
- 3 cm thick
- 5 mm fine grain band of cobaltite along lower contact.
- 5 cm below above vein .1 cm carbonate vein with disseminated black, sectile metallic. Core angle 60°.

201-202' - Boudined orange-brown carbonate with minor disseminated chalcopyrite.
- Core angle 70° and 60°.

GEOLOGICAL LOG

FOOTAGE	G LOG	DESCRIPTION
202.0 - 230.0 (61.57) (70.10)		Dark green siltstone - minor microfolding. - Laminated - characterized by dark green colour - chloritized. 202' - 1.5 cm band of medium grained cobaltite disseminated as a band with minor calcite gangue. - Massive cobaltite occurrence. 207' - White calcite vein. - Core angle - 55°. - 1 bleb disseminated carbonate. - Abundant calcite veining 2% of unit with minor disseminated pyrite and cobaltite in some veins. 218.5' - Yellow calcite. - Core angle - 60°. - No mineralization. 222.5' - Orange-brown - carbonate boudined - 3 mm thickness. 222.75' - Yellow calcite. -Core angle 65°. - No mineralization. 223' - 1.5 cm yellow carbonate. - 5% cobaltite in fine grained bands within vein and along lower contact. 225' - Yellow calcite. - Core angle 60°. - Chalcopyrite 2%. - Intersects white calcite which is flooding bedding. - Chalcopyrite 5% visual. 227' - Yellow calcite. - Core angle 55°. - No mineralization: Feet / So / F1 195 / 75° 200 / 70° 205 / 75° 210 / 70° 215 / 75° 220 / 70° 225 / 75° / 65° 229 / 55° Clay Fault gouge - major fault.
230.0 - 232.0 (70.10) (70.71)		

ASSAY RECORD

NO.	FROM	TO	Lenght	Co %	Cu %	As %	From	To	Recovery %	COMPOSITE
257	202	203	1	0.089						
258	203	204	1	0.007						
259	204	205	1	0.008						
260	205	206	1	0.007						
261	206	207	1	0.006						
262	207	208	1	0.004						
263	208	209	1	0.005						
264	209	210	1	0.020						
265	210	211	1	0.006						
266	211	212	1	0.005						
267	212	213	1	0.002						
268	213	214	1	0.003						
269	214	215	1	0.006						
270	215	216	1	0.004						
271	216	217	1	0.005						
272	217	218	1	0.003						
273	218	219	1	0.004						
274	219	220	1	0.003						
275	220	221	1	0.004						
276	221	222	1	0.005						
277	222	223	1	0.003						
278	223	224	1	0.140						
279	224	225	1	0.005						
280	225	226	1	0.005						
281	226	227	1	0.003						
282	227	228	1	0.004						
283	228	229	1	0.002						
284	229	230	1	0.002						
285	230	235	5	0.002						

GEOLOGICAL LOG

FOOTAGE	G LOG	DESCRIPTION
232.0 - 259.0 (70.71) (78.94)		Calcareous Magnetic siltstone: - White and light grey laminations. - Odd kink fold. - Some calcite bands - pyritic. 239.5' - Calcite vein - pyritic. - 1 cm core angle - 60°. - Concordant to S_o. 242' - 7 cm quartz, yellow carbonate - - Chloritized brecciated weathered carbonate. - Pyritic. - Core angle 30°. Discordant to S_o. 247' - Yellow, brown carbonate. - Minor chalcopyrite. 249 - 251' - Clay fault gouge. Feet — S_o 235 — 70° 240 — 75° 245 — 75° 253 — 70° 257 — 80° END OF HOLE

ASSAY RECORD

NO.	FROM	TO	Lengh	Co %	Cu %.	As %	From	To	Recovery %	COMPOSITE
286	235	240	5	0.005						
287	240	245	5	0.004						
288	245	250	5	0.003						
289	250	255	5	0.005						
290	255	259	4	0.003						

D.D.H. Nº 0-79-2 PAGE 7 OF 7

PAN OCEAN OIL LTD.
MINING DIVISION

DIAMOND DRILL HOLE GEOLOGICAL LOG AND ASSAY RECORD

DDH: No 0-79-3 PAGE 1 OF 7
PROJECT FAIRCHILD

LOCATION FAIRCHILD LAKE AREA, YUKON TERRITORY - OTTER 3
BEARING 105° DIP -65° ELEVATION 3259' (993m)
LENGTH 640' 22' HW casing PROPOSED LENGTH
CORE SIZE HQ OVERALL RECOVERY From 231-640 47.7% From 0 - 231, 79.6% Overall -58.5%
PURPOSE: 1) TO INTERSECT AXIAL PLAINE FRACTURES OR FAULT IN DRAW BETWEEN SW & NE SHOWING.
2) TO INTERSECT MINERALIZATION IN HOLES 1 & 2 ALONG STRIKE.

START August 27, 1979 FINISH September 6, 1979
CONTRACTOR E. CARON DIAMOND DRILLING
TESTS Radometric Borehole Log Mt. Sopris Model 1000C
Anomalies: 1) 30 - 34.5 m - 70 cps.
2) 40 m - 60 cps. 3) 169 - 173 m - 80 cps.
LOGGED BY R.J. MAZUR DATE LOGGED

ASSAY BY CHEMEX LABS, VANCOUVER
Dip test at 634' READING 70° CORRECT 63.5°
MUD USED 67.5 gallon lig. Polydrill 325
36 gallon. pwdr Polydrill 357.
SEE CALCULATION SHEET NO.

GEOLOGICAL LOG

FOOTAGE	DESCRIPTION
0 - 22	Casing.
22 - 99 (6.70) (30.17)	Nonmagnetic; noncalcareous siltstone. - Light grey. - Very minor calcite veins.
	41 - 43' - Buff coloured, bleached, altered silstone -feldspathized & silicified. - Pyrolusite-dendritic along fractures. - Chalcopyrite along hairline fractures.
	48' - Boudined quartz-felspar vein, .5-2.5 cm thick. - No mineralization. - Black, hard, nonmagnetic mineral disseminated in vein.
	48 - 54' - Lost core, caved zone. - Ground core.
	56' - 5 cm clay gouge.
	60 - 61' - Quartz-feldspar flooding. - Malachite stain on hairline fractures.
	75 - 99' - Microfolding developing calcite veining increasing.
	79' - Calcite veining intense. - 1 speck of possible cobaltite.
	85' - 2 cm clay gouge.
	86 - 87' - Ground core gouge.
	91 - 93' Clay gouge and broken core. Some ground core.

ASSAY RECORD

NO.	FROM	TO	FT.	Co %			From	To	Feet	COMPOSITE Recovery%
							0	22	.75	3.4%
							22	27	3.00	60
							27	28.5	1.50	100
							28.5	30	1.50	100
							30	32	1.00	50
291	22	27	5	0.002			32	36	2.00	50
292	27	32	5	0.001			36	37	1.00	100
293	32	37	4	0.001			37	42	4.75	95
294	37	41	4	0.002			42	43	1.00	100
295	41	42	1	0.002			43	48	4.33	87
296	42	43	1	0.010			48	54	.50	83
297	43	48	5	0.002			54	58	3.50	87.5
298	48	54	6	0.002			58	63.5	5.00	90
299	54	58	4	0.002			63.5	69	4.75	73
300	58	63	5	0.004			69	73	3.00	75
301	63	68	5	0.004			73	77	3.75	94
302	68	73	5	0.003			77	82	4.50	90
303	73	78	5	0.004			82	87	5.00	100
304	78	83	5	0.002			87	92	4.50	90
305	83	88	5	0.003			92	97	5.00	100
306	88	93	5	0.003			97	102	5.00	100
307	93	98	5	0.003			102	107	4.75	95
308	98	103	5	0.003			107	109	2.00	100
309	103	108	5	0.003			109	110	1.00	100
310	108	113	5	0.004			110	116	5.00	83
311	113	118	5	0.005			116	119	3.00	100
312	118	123	5	0.003			119	122	2.50	83
313	123	128	5	0.003			122	125	2.00	67
314	128	132	4	0.003			125	128	3.00	100
							128	132	2.25	56
							132	137	4.75	95
							137	141	3.66	92
							141	147	4.00	67
							147	152	5.00	100
							152	157	5.00	100
							157	165	8.00	100
							165	170	4.50	90

3C

GEOLOGICAL LOG

FOOTAGE	G LOG	DESCRIPTION
99 - 100 (30.17) (30.48)		Fault: Clay gouge 15 cm. Broken and ground core.

Feet	S_o	F_1		
23	85°		)	
30	85		)	
37	85		)	
44	85		)	
55	85		)	
59	90		)	
64	90		)	Kink folded
71	85		)	
75	85		)	
79	75	70°	)	
85	90		)	
90	80		)	
97	70		)	

100 - 162 (30.48) (49.37)

Microfolded Calcareous Siltstone.
- Light grey and black laminated (noncalcareous).
- White calcareous flooding common in unit.

108 - 109' - Fault zone.)
- Clay gouge 20 cm.)
)
109' - Quartz-calcite vein.)
)
110' - Fractures - pyritic.)
- Core angle 60° offsets folds.) Fault zone.
)
111' - 3 cm clay gouge.)
115' - 4 cm clay gouge.)
119' - ground core.)
121' - 4 cm clay gouge.)
125 - 126' - Clay gouge.)
128' - ground core.)
129' - 132' - ground core.)

Feet	So	F_1
100	80°	
105	75	70°
110	75	
115	75	
120	75	
128	80	

ASSAY RECORD

NO.	FROM	TO	FT/m	Co %						COMPOSITE
							170	174	4.50	112.5%
							174	178	2.00	50
							178	180	3.50	117
							180	185	5.00	100
							185	190	4.00	80
							190	195	5.00	100
							195	200	5.00	100
							200	203	2.50	83
							203	208	5.00	100
							208	212	4.66	117
							212	217	5.00	100
							217	222	4.50	90
							222	227	5.00	100
							227	231.5	3.66	81
							231.5	237	4.33	79
							237	242	2.25	45
							242	247	2.50	50
							247	252	2.00	40
							252	257	2.50	50
							257	262	1.50	30
							262	267	1.00	100
							267	270	1.00	33
							270	272	2.00	100
							272	277	5.00	100
							277	280	3.00	100
							280	283	0.75	25
							283	285	1.33	67
							285	290	4.33	87
							290	295	4.33	87
							295	297	2.00	40
							297	302	3.00	60
							302	304	1.58	79
							304	307	2.33	78
							307	310	2.50	83
							310	314	3.00	75
							314	317	1.50	50
							317	322	4.00	80
							322	327	1.50	30
							327	332	3.50	70
							332	337	4.00	80
							337	342	2.50	50
							342	347	1.25	25
							347	352	1.75	35
							352	357	1.33	27
							357	362	2.00	40
							362	367	1.50	30
							367	372	3.00	60
							372	377	2.50	50
							377	382	1.50	30
							382	402	3.00	15
							402	407	0.66	13
							407	412	0.00	0
							412	417	1.33	27
							417	427	0.00	0

GEOLOGICAL LOG

FOOTAGE	G LOG	DESCRIPTION
		132' - Cobaltite disseminated in siltstone.
		132 - 141' - Rusty weathering on fractures.
		141' - 6 cm clay gouge.
		142' - 2.5 cm
		147' - Calcite flooding, strong cobaltite disseminated finely in calcareous zones.

Feet	S_o	F1
132	90°	85°
137	70	70
142	65	
146	75	
150	65	65
156	70	70

		160' - 3 cm calcite vein. - Minor disseminated cobaltite. - Core angle 50°.
162 - 228 (49.37) (69.49)		Dark green chloritized siltstone. - Pyrolusite weather on fractures common.
		163' - Boudined calcite, 1 cm. - Core angle - 70°
		165' - Orange-brown chalcopyrite-cobalitite veins at core angle - 65°.
		168' - 1 cm calcite. - Boudined. - Core angle 70°. - Stringers of fine grained disseminated cobaltite.
		170' - Stringer of fine grain cobaltite within calcite flooded zone.
		174' - 2 mm stringer within 1 cm calcite vein. - Core angle 70°.
		175' - Calcite flooded. - disseminated cobaltite <1%.

ASSAY RECORD

NO.	FROM	TO	FT/m	Co %			From	To	Feet	Recovery	COMPOSITE
							427	432	0.50	10%	
315	132	133	1	0.004			432	437	2.00	40	
316	133	134	1	0.007			437	442	1.50	30	
317	134	135	1	0.007			442	449	5.00	100	
318	135	136	1	0.006			449	454	3.00	60	
319	136	137	1	0.006			454	458	3.00	75	
320	137	138	1	0.005			458	462	1.00	25	
321	138	139	1	0.002			462	467	5.00	100	
322	139	140	1	0.011			467	471	2.50	63	
323	140	141	1	0.010			471	476	5.00	100	
324	141	142	1	0.008			476	478.5	1.50	60	
325	142	143	1	0.008			478.5	484	5.00	91	
326	143	144	1	0.010			484	487	2.00	67	
327	144	145	1	0.005			487	492	4.00	80	
328	145	146	1	0.005			492	496	1.66	42	
329	146	147	1	0.006			496	502	3.00	60	
330	147	148	1	0.004			502	512	1.33	13	
331	148	149	1	0.003			512	516	1.33	33	
332	149	150	1	0.003			516	519	1.50	50	
333	150	151	1	0.003			519	522	0.75	25	
334	151	152	1	0.003			522	524	1.33	67	
335	152	153	1	0.003			524	525	0.75	75	
336	153	154	1	0.002			525	527	1.00	50	
337	154	155	1	0.002			527	530	1.00	33	
338	155	156	1	0.004			530	532	1.33	67	
339	156	157	1	0.004			532	537	.75	15	
340	157	158	1	0.003			537	542	4.50	90	
341	158	159	1	0.002			542	545	1.50	50	
342	159	160	1	0.002			545	548	2.50	83	
343	160	161	1	0.002			548	552	2.00	50	
344	161	162	1	0.003			552	557	4.50	90	
345	162	163	1	0.190			557	562	1.55	31	
346	163	164	1	0.011			562	567	0.00	0	
347	164	165	1	0.006			567	572	0.75	15	
348	165	166	1	0.045			572	577	0.33		.07
349	166	167	1	0.007			577	582	0.00	0	
350	167	168	1	0.023			582	587	0.50	10	
351	168	169	1	0.002			587	592	1.00	20	
352	169	170	1	0.005			592	597	3.50	70	
353	170	171	1	0.006			597	602	2.50	50	
354	171	172	1	0.004			602	607	4.50	90	
355	172	173	1	0.003			607	612	2.50	50	
356	173	174	1	0.017			612	617	3.00	60	
357	174	175	1	0.005			617	622	0.00	0	
358	175	176	1	0.001			622	627	1.00	20	
							627	630	2.00	67	
							630	633	1.25	42	
							633	638	4.50	90	
							638	640	1.50	75	

GEOLOGICAL LOG

FOOTAGE	G LOG	DESCRIPTION
		176' - 3 thin 1 mm calcite veinlets with disseminated chalcopyrite and cobaltite. - Core angle - 65°. 180' - 5 mm calcite vein. - disseminated cobaltite. - Core angle - 45°. 181' - 3.5 mm calcite veins with disseminated pyrite, black sectile mineral, chalcopyrite. - Cobaltite. - Core angle 60°. 183' - Orange-brown carbonate. - Core angle 40°. - Chalcopyrite. 184.75' - Cobaltite vein 1.5 cm. - Core angle 85°. - Stringers in calcite. Feet / So / F1 162 / 70° / 50° 168 / 70 172 / 80 179 / 179 / 70 180 / 50 184 / 80 185' - Orange-brown chalcopyrite veins predominate. - core angle - 60°. 187.5- 5.5 cm white calcite vein. - Core angle - 60°. - Cobaltite fine grain stringers within vein and along upper contact. - Footwall erythrite in hairline fractures up to 10 cm from vein. - 1 band 7 mm thick of massive fine grain cobaltite. - : 188 - 189' - Ground core. - Chloritic, rusty, erythrite on fractures and bedding planes. 189 - 190' - 2 orange-brown calcite veins with chalcopyrite. - Cobaltite mineralization disseminated in vein. - Core angle - 70°. - 2 mm boudined to 5 mm.

ASSAY RECORD

NO.	FROM	TO	FT / m	Co %	COMPOSITE
359	176	177	1	0.002	
360	177	178	1	0.004	
361	178	179	1	0.003	
362	179	180	1	0.003	
363	180	181	1	0.002	
364	181	182	1	0.003	
365	182	183	1	0.003	
366	183	184	1	0.013	
367	184	185	1	0.006	
368	185	186	1	0.005	
369	186	187	1	0.007	
370	187	188	1	0.255	
371	188	189	1	0,047	
372	189	190	1	0.018	
373	190	191	1	0.005	

GEOLOGICAL LOG

FOOTAGE	G LOG	DESCRIPTION
		190.5' - 2 white and orange-brown calcite veins. - Chalcopyrite, pyrite. - Minor cobaltite and magnetite or ilmenite weakly magnetic. 194' - White calcite vein. - Core angle - 70°. - No apparent mineralization. 198' - Cobaltite blebs disseminated in chloritized siltstone. 199' - 1.5 cm calcite vein. - No apparent mineralization. - Core angle - 70°. 201' - Boudin orange calcite vein. - Core angle 70°. - Chalcopyrite, cobaltite mineralization disseminated as 1 mm blebs. 204' - Core angle - 60°. - Orange calcite 5 mm. - Chalcopyrite mineralization. 207' - 5 mm calcite. - Disseminated cobaltite in blebs. - Folded. - Core angle 70°. 208 - 228' - Black, chloritized with white calcite laminae. - Disseminated sulphides, - Chalcopyrite, pyrite, cobaltite ubiquitous in calcite alminae, some magnetite as well. 211' - 7 cm, white calcite vein with 2 major bands of - Medium grained cobaltite. - 1-3 mm thick. - Core angle - 80°. 213' - 5 mm calcite vein. - Pyrite disseminated - Core angle 80°. - These calcite veins are pinched out due to folding and are succinct from creamy white laminated calcite. 225' - Core angle 45° lower contact. - Core angle 80° upper contact. - Yellow quartz-carbonate vein, 8 cm thick with chalcopyrite mineralization. - 1% visual.

ASSAY RECORD

NO.	FROM	TO	FT / m	Co %						COMPOSITE
374	191	192	1	0.008						
375	192	193	1	0.006						
376	193	194	1	0.006						
377	194	195	1	0.005						
378	195	196	1	0.006						
379	196	197	1	0.004						
380	197	198	1	0.009						
381	198	199	1	0.007						
382	199	200	1	0.006						
383	200	201	1	0.049						
384	201	202	1	0.012						
385	202	203	1	0.004						
386	203	204	1	0.005						
387	204	205	1	0.006						
388	205	206	1	0.005						
389	206	207	1	0.004						
390	207	208	1	0.004						
391	208	209	1	0.004						
392	209	210	1	0.007						
393	210	211	1	0.007						
294	211	212	1	0.460						
295	212	213	1	0.039						
396	213	214	1	0.007						
397	214	215	1	0.008						
398	215	216	1	0.006						
399	216	217	1	0.003						
400	217	218	1	0.004						
401	218	219	1	0.004						
402	219	220	1	0.004						
403	220	221	1	0.004						
404	221	222	1	0.007						
405	222	223	1	0.005						
406	223	224	1	0.008						
407	224	225	1	0.003						
408	225	226	1	0.005						
409	226	227	1	0.005						
410	227	228	1	0.005						

GEOLOGICAL LOG

FOOTAGE	G LOG	DESCRIPTION
228 - 231 (69.49) (70.40)		Magnetic Calcareous Siltstone.
231 - 640 (70.40) (195.07)		Fault zone.
		231 - 270' - Clay gouge.
		270 - 273' - Broken magnetic calcareous siltstone.
		273' - 275' - Gouge.
		275 - 283' - Broken core.
		283' - 382' - Gouge and broken core.
		255' - Yellow calcite quartz vein, 4 cm thick.
		301' - 3 cm yellow calcite quartz. - Core angle 40°. - Chalcopyrite mineralization 1%.
		316' - Broken yellow calcite-quartz.
		321' - Broken yellow calcite-quartz.
		362' - 5 cm quartz-calcite sand

Feet	S_o	F1
190	82°	
195	70	
200	80	
205	80	
210	85	
215	80	
220	75	
225	80	55°
227	80	65
280	80	
297	40	
302	15	
317	50	
329	87	
335	90	

382 - 402' - Ground core.

402' - Quartz.
- Yellow carbonate.
- malachite stained, broken.

ASSAY RECORD

NO.	FROM	TO	FT / m	Co %	Co ppm					COMPOSITE
411	228	229	1	0.003						
412	229	230	1	0.005						
413	240	245	5		48					
414	252	257	5		180					
415	267	272	5		18					
416	283	288	5		30					
417	298	303	5		12					
418	313	318	5		12					
419	328	333	5		34					
420	347	352	5		8					
421	362	267	5		12					
422	382	402	20		34					
423	412	417	5		38					
424	437	442	5		10					
425	462	467	5		10					
426	487	492	5		6					
427	512	517	5		8					
428	527	532	5		24					
429	542	547	5		22					
430	557	562	5		20					
431	592	597	5		68					
432	607	612	5		30					
433	622	627	5		28					
434	635	640	5		28					

GEOLOGICAL LOG

FOOTAGE	G LOG	DESCRIPTION

402 - 407' - Ground core magnetic.

407 - 412' - Cave zone, no recovery.

412 - 417' - Ground core,
- magnetic.

417 - 427' - Cave zone, no recovery

427 - 437' - Ground core.

437 - 443' - Grey clay gouge.

443 - 458' - Broken magnetic siltstone
- Some solid pieces.
- Core angle 444' - 70°
" " 450' - 90
" " 457' - 70

458 - 525' - Predominatly caly gouge with broken core and some semi-solid core.
- Magnetic siltstone.

Feet	S_o
465	80°
472	80
480	70
487	80
519	80

525 - 640' - Groundrock, broken core and abundant gouge.
- Magnetic to 540'.
- Dark grey-green chloritized.
- Chloritized 525 - 555'
" " 560 - 562'

Feet	S_o
534	90°
540	85
543	75
548	80
561	90
605	80
635	75

End of hole.

ASSAY RECORD

NO.	FROM	TO	FT / m							COMPOSITE

PAN OCEAN OIL LTD.
MINING DIVISION

DIAMOND DRILL HOLE GEOLOGICAL LOG AND ASSAY RECORD

DDH: No 0-79-4 PAGE 1 OF 2
PROJECT FAIRCHILD

LOCATION FAIRCHILD LAKE, YUKON TERRITORY - OTTER 3
BEARING 000° DIP -90° ELEVATION (1036 4) 3400.2'
LENGTH 37' 14 casing PROPOSED LENGTH
CORE SIZE HQ OVERALL RECOVERY 64.2%

START September 8, 1979 FINISH September 9, 1979
CONTRACTOR E. CARON DIAMOND DRILLING
TESTS No dip test or Radiometric Log.
LOGGED BY R. J. MAZUR DATE LOGGED Sept. 11, 1979

ASSAY BY CHEMEX LABS, VANCOUVER
Materials consumed: Bit, Shell barrel, tube.
Mud used: 7 gal. liq. Polydrill 325
3 gal. pwdr. Polydrill 357
SEE CALCULATION SHEET NO.

PURPOSE: TO INTERSECT COBALT VEINS DOWN DIP IN NE SHOWING AREA.

GEOLOGICAL LOG

FOOTAGE	DESCRIPTION
	Hole abandoned at 37' - core barrel broke off - casing down to it got tight and could not tap it out.
0 - 37 (9) (11.28)	Calcareous Siltstone. - Dark greenish-grey silstone. - Noncalcareous, nonmagnetic. - Finely laiminated. - Zones of white calcite flooding. - White calcite discordant veins. - Orange-brown chalcopyrite bearing discordant veins. - Buff metasomatized laminae and discordant patches - chalcopyrite in these zones as well. 0 - 14' Casing - intense flooding. 0 - 9' Finely disseminated sulphides. 9 - 24' - Pyrolusite coating fractures predominate. 12 - 14' - Metasomatic alternation. -Buff colour due to feldspathization. - Minor disseminated sulphides. 16' - 5 mm white calcite. - Chalcopyrite 2% visual estimated disseminated blebs. - Core angle - 40° discordant to S_o. 16.5' - 3 mm yellow carbonate. - Some chalcopyrite disseminated 1%. - Condordant to S_o but pinching. 17.5' - 2-3 mm buff bands concordant to S_o. - Pyrite disseminations; pyrolusite along borders. 20.25' - Orange-brown, 1 cm carbonate vein. - 2% minor cobaltite?; pyrite chalcopyrite blebs disseminated. - Discordant to S_o. - Folded, core angle - 50°.

ASSAY RECORD

NO.	FROM	TO	FT	Co %	Cu %	COMPOSITE
435	4	6.5	2.5	0.004	0.01	
436	6.5	9	2.5	0.004	<0.01	
437	9	10.5	1.5	0.003	<0.01	
438	10.5	12	1.5	0.005	0.08	
439	12	13	1.0	0.018	0.05	
440	13	14	1.0	0.008	0.16	
441	14	15	1	0.006	0.18	
442	15	16	1	0.008	0.05	
443	16	17	1	0.005	0.01	
444	17	18	1	0.007	0.11	
445	18	19	1	0.006	0.11	
446	19	20	1	0.005	0.11	
447	20	21	1	0.007	0.25	
448	21	22	1	0.006	0.41	
449	22	23	1	0.002	0.01	
450	23	24	1	0.007	0.29	
451	24	25	1	0.005	0.02	
452	25	26	1	0.004	0.09	
453	26	27	1	0.003	<0.01	
454	27	28	1	0.002	<0.01	
456	28	29	1	0.004	0.18	
457	29	30	1	0.003	<0.01	
458	30	31	1	0.003	<0.01	
459	31	32	1	0.004	<0.01	
460	32	33	1	0.003	<0.01	
461	33	34	1	0.004	<0.01	
462	34	35	1	0.004	<0.01	
463	35	36	1	0.008	<0.01	
464	36	37	1	0.003	<0.01	

12 - 29
(17ft)
0.006% Co
0.119% Cu

3D

GEOLOGICAL LOG

FOOTAGE	G LOG	DESCRIPTION
		21' - 5 mm orange-brown calcite. - 1% disseminated chalcopyrite blebs. - Core angle - 45° discordant to S_o. 24' - Buff metasomatic band with <1% chalcopyrite in disseminated blebs. 30' - 5 mm calcite yellow with 1% disseminated chalcopyrite blebs. - Core angle 45° discordant to S_o. 31.5 - 33.5' - White calcite flooding abundant. Feet / S_o / F_1 17 / 40° 21 / 40 26 / 45 33 / 50 36 / 45

ASSAY RECORD

NO.	FROM	TO	FT/m

RECOVERY

From	To	Feet	%	COMPOSITE
0	4	.10	2.5	
4	9	2.50	50.0	
9	12	2.00	66.6	
12	14	1.33	66.5	
14	16.5	1.50	60.0	
16.5	19	2.50	100.0	
19	20.5	1.00	66.6	
20.5	22.5	2.00	100.0	
22.5	25.5	3.00	100.0	
25.5	27.5	1.00	50.0	
27.5	30	1.50	60.0	
30	31.5	1.33	88.6	
31.5	37	4.00	72.7	

PAN OCEAN OIL LTD.
MINING DIVISION

DIAMOND DRILL HOLE GEOLOGICAL LOG AND ASSAY RECORD

DDH: No 0-79-5 PAGE 1 OF 23
PROJECT FAIRCHILD

LOCATION FAIRCHILD LAKE, YUKON - OTTER - 3
BEARING 168° DIP -65° ELEVATION 1036.4 m 3400.2'
LENGTH 628' PROPOSED LENGTH
CORE SIZE HQ OVERALL RECOVERY 93.7%

START September 9, 1979 FINISH September 19, 1979
CONTRACTOR E. CARON DIAMOND DRILLING CO.
TESTS Radiometric Borehole Log-Mt. Sopris Model 1000C Total count, Gamma Ray Log - No radiometric Anomalies.
LOGGED BY R.J. Mazur DATE LOGGED Sept 11-19, 79

ASSAY BY CHEMEX LABS, VANCOUVER
Sperry-Sun test 623' 159° Az -82 Dip
SEE CALCULATION SHEET NO.

PURPOSE: TO INTERSECT COBALT VEINS IN THE NORTHEAST-SHOWING DOWN DIP.

GEOLOGICAL LOG

FOOTAGE	DESCRIPTION
	Rather than shift rig over and complete a -90° hole, the degree was changed on this setup at this azimuth, which was the second hole planned from this setup.
0.0 - 12.0 (0) (3.66)	Casing: Intensely flooded with yellow calcite.
12.0 - 21 (3.65) (6.40)	Calcareous Siltstone: -Bleached-altered light-grey, finely laminated. -Deformed by intensive flooding of calcite concordant and discordant to bedding: Majority are concordant or subconcordant. -Sulphides, chalcopyrite cobaltite? disseminated along hairline fractures. -Erythrite seen on hairline fractures at 12.5' but cobaltite has not obviously been identified. -Dendritic pyrolusite growths on fractures. -Very fine grained black specks, possible metallic in calcite. -Black manganese coatings on fractures. At 19' - Very fine grain disseminated cobaltite along border of folded calcite vein. 19 - 21' - 1% minor chalcopyrite disseminated in calcite. Feet / S_o 13 / 25° 19 / 35 21 / 30
21.0 - 33.0 (6.40) (10.05)	Zone of intense calcite veining and cobalt--copper mineralization. Manganese stain ubiquitous. 21-22' - 1% chalcopyrite: minor cobalt mineralization in veinlets above main vein.

ASSAY RECORD

NO.	FROM	TO	FT	Co %	Cu %	As %	Ni %	Ag ppm	Repeat As%	COMPOSITE
465	0	5.5	5.5	0.005	<0.01					
466	5.5	11	5.5	0.003	<0.01					
467	11.0	12	1	0.007	<0.01					
468	12	13	1	0.018	<0.01					
469	13	14	1	0.019	<0.01					
470	14	15	1	0.009	0.08					
471	15	16	1	0.008	<0.01					
472	16	17	1	0.006	<0.01					
473	17	18	1	0.007	<0.01					
474	18	19	1	0.011	<0.01				0.010	
475	19	20	1	0.018	0.17				0.030	
476	20	21	1	0.014	0.04				0.020	
477	21	22	1	0.046	0.25	0.08	<0.01	1.5		
478	22	23	1	0.600	0.43	1.06	0.04	2.0		22-32 (10ft)
479	23	24	1	0.720	1.07	1.32	0.05	3.0		0.644% Co
480	24	25	1	0.020	0.13	0.04	<0.01	1.0		1.052% Cu
481	25	26	1	0.015	0.09	0.08	<0.01	1.0		1.092% As
482	26	27	1	0.028	0.40	0.08	0.01	1.0		0.055% Ni
483	27	28	1	0.160	3.60	0.44	0.02	4.0		
484	28	29	1	0.360	3.48	0.88	0.05	5.0		
485	29	30	1	3.230	0.70	4.90	0.26	3.0		
486	30	31	1	1.240	0.55	1.92	0.12	3.0		
487	31	32	1	0.073	0.07	0.20	<0.01	1.0		
488	32	33	1	0.020	0.01	0.12			0.020	18-47 (29ft)
489	33	34	1	0.016	<0.01	0.14			0.015	0.236%
490	34	35	1	0.017	0.01	0.10			0.025	0.528%
491	35	36	1	0.031	0.08	0.10			0.040	
492	36	37	1	0.060	1.15	0.30			0.225	
493	37	38	1	0.015	0.03	0.02			0.005	
494	38	39	1	0.018	0.12	0.04			0.010	
495	39	40	1	0.045	0.72	0.06			0.045	
496	40	41	1	0.019	0.08	0.02			0.010	
497	41	42	1	0.015	0.09	0.04			0.020	
498	42	43	1	0.008	0.02	0.02			0.005	
499	43	46	3	0.015	0.20	0.10			0.010	
500	46	47	1	0.031	1.42	0.08			0.050	
501	47	48	1	0.007	0.14				0.005	
502	48	49	1	0.005	0.17					
503	49	50	1	0.003	0.01					
504	50	51	1	0.004	0.01					
505	51	52	1	0.004	0.01					
506	52	53	1	0.011	0.01					
507	53	54	1	0.009	<0.001					

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GEOLOGICAL LOG

FOOTAGE	G LOG	DESCRIPTION
21.0 - 33.0 (6.40) (10.05)		22 - 25' - Calcite vein: Cobalt and chalcopyrite disseminated throughout and stringers on borders of xenoliths within vein, erythrite forms on fractures - visual estimate 1% chalcopyrite, 0.5% cobalt; subconcordant to S_o. 25 - 27' - Minor chalcopyrite mineralization <1% in yellow calcite flooded zone. 27 - 29' - Calcite vein, concordant to S_o. 5% chalcopyrite visual estimate. 29 - 30.5' - 2% chalcopyrite, 5% cobaltite as massive blebs. - Concordant to S_o. - Stringers and bands of cobaltite (very fine grain) within calcite. - Rings of cobaltite around coarse chalcopyrite and rings in wallrock with no particular core of any different material. 30.5 - 33' - <1% disseminated chalcopyrite in calcite. Feet — S_o 26 — 40° 32 — 40°
33.0 - 43.0 (10.05) (13.11)		Siltstone: Minor calcite flooding; bleached, light-grey 2' below vein; Siltstone dark-green, noncalcareous; nonmagnetic to 43'. 35' - 1 cm chalcopyrite - cobaltite vein disseminated blebs in orange calcite; fine grained cobaltite forms rings around coarse grain blebs of pyrite. Lenticular calcite pods with pyrolusite common, dark-green chlorite rims around them.
43.0 - 46.0 (13.11) (14.02)		Fault gouge and broken core. Feet — S_o 35 — 30° 40 — 20°
46.0 - 55.0		Siltstone: Noncalcareous. Nonmagnetic. Light greenish-grey. Calcite veins discordant to S_o, concordant to bedding and as irregular pods. 47' - ~2.5 cm calcite vein, brownish-white. - 1% chalcopyrite dissemination.

ASSAY RECORD

NO.	FROM	TO	FT / m	Co%	Cu %	COMPOSITE
508	54	55	1	0.009	<0.001	
509	55	56	1	0.020	0.01	
510	56	57	1	0.040	0.32	
511	57	58	1	0.064	1.44	
512	58	59	1	0.17	0.03	55-65 (10ft) 0.091% Co 0.451% Cu
513	59	60	1	0.020	0.13	
514	60	61	1	0.011	2.00	
515	61	62	1	0.540	0.13	
516	62	63	1	0.016	0.22	
517	63	64	1	0.011	0.06	
518	64	65	1	0.022	0.17	
519	65	66	1	0.014	0.06	
520	66	67	1	0.015	0.23	
521	67	68	1	0.009	0.13	
522	68	69	1	0.009	0.06	
523	69	70	1	0.006	0.01	
524	70	71	1	0.004	0.01	
525	71	72	1	0.005	0.02	

GEOLOGICAL LOG			ASSAY RECORD					RECOVERY			
FOOTAGE	G LOG	DESCRIPTION	NO.	FROM	TO	Feet	Co %	Cu %	From	To	Feet	COMPOSITE
									0	12	3.00	25%
									12	19	6.00	86
									19	26	7.00	100
									26	32	6.00	100
									32	37	4.75	95
									37	42	5.00	100
									42	45	2.50	83
									45	50	4.00	80
									50	52	2.00	100
									52	54.5	2.00	80
									54.5	59.5	4.25	77
									59.5	65	5.33	97
									65	70	5.00	100
									70	75.5	5.00	91
									75.5	80	5.33	118
									80	85	4.50	90
									85	90	5.00	100
									90	95	5.00	100
		47.5' - Brown-White calcite. - 5 mm-2 cm. - Core axis - 20° - 1% chalcopyrite. 48.5' - Discontinuous, fractured white calcite, 5 mm-2 cm. -Core axis - 15°. -1% chalcopyrite disseminated. 49.25' - Boudined white calcite. - 5 mm - 1 cm. -Core axis - 40°. - No sulphides. 51.0' - 1 cm-irregular pod for 7 cm in core-white calcite. - No Sulphides. 50-52' - Concordant greenish-white calcite contains disseminated chalcopyrite 1%. 52.25' - 5 mm - 1 cm white calcite. - Core axis - 50°. - 4% chalcopyrite dissemination. - Along both borders 1 mm zone of chalcopyrite (malachite stained) and cobalt, both sulphides very fine grain. Feet — S_o 49 — 30o 52 — 1 20° 55 — 30°										
55.0 - 65.0 (16.76) (19.81)		Altered siltstone and intense calcite veining with cobalt-copper mineralization. Siltstone altered to a buff colour-often selective laminae above and below major calcite vein at 60.25-62'. Manganese stain on fractures ubiquitous. 57' - 2 cm white calcite veins discordant to S_o. - Core axis - 50°. - 5% chalcopyrite dissemination. - Upper border 1 cm X 2 cm blotch of cobaltite and fluorite? 56.33 - 57.5' - 1% chalcopyrite dissemination in altered siltstone. 59' - 1 cm white calcite with pyrolusite on borders. - Core axis - 50°. 59.5' - 60' - Intensely calcite flooded with 1% chalcopyrite dissemination. 60 - 60.25' - Upper contact of calcite vein, 5%.										

GEOLOGICAL LOG			ASSAY RECORD									
FOOTAGE	G LOG	DESCRIPTION	NO.	FROM	TO	Feet	Co %	Cu %	As %	Ni %	Ag %	COMPOSITE
		disseminated chalcopyrite. 60.25 - 62' - Major sulphide bearing calcite vein. - Core axis upper contact - 45°, discordant. to So. 60.25 - 61 - Yellow calcite barren of sulphides. 61 -62 - White calcite with brecciated fragment of altered siltstone. Core axis at lower contact- 45°. 61 - 61.5 - Section of white calcite contains 5% cobaltite as coarse grain stringers within calcite gangue, 1% blebs.of chalcopyrite disseminated. 61.5 - 65' - Calcite flooded, yellow-brown silstone altered with minor chalcopyrite disseminated <1%. 64.5' - Orange-brown calcite 5 mm thick. -2% chalcopyrite disseminated. - Core axis - 60°, disconcordant to So. Feet — So 56 — 15° 57 — 15 59 — 25 62 — 30 65 — 35									
65.0 - 121.0 (19.81) (36.88)		Dark green chloritized siltstone -Laminated, dark-green-grey, black and white; noncalcareous, nonmagnetic. -Abundant 5 mm-3 cm, white calcite veins discordant to S_o occur. -Concordant calcite flooded laminae common and contain <1% chalcopyrite commonly. 65.5 - 5 mm - 1cm orange-brown calcite. - Core axis - 85°. - 1% chalcopyrite disseminated along borders. 66.75' - 1 cm white calcite . - Core axis - 20°. - 1% disseminated chalcopyrite. 68' - 1 cm white calcite vein. - Core axis - 40°. - No sulphides.									

GEOLOGICAL LOG

FOOTAGE	G LOG	DESCRIPTION
		67.5 - 75' - Concordant calcite flooded laminae, contains 1% sulphides, chalcopyrite. 69.5' - 1 cm white calcite vein. - Core axis - 50°. - <1% disseminated chalcopyrite. 71' - 1-2 cm white calcite vein. - Core axis -45°. - No sulphides. 71.5' - 1 cm white calcite. - Core axis - 60°. - No sulphides. 72.5' - 1 cm white calcite. - Core axis - 45°. - No sulphides. 73.75' - 2.5 cm white calcite vein. - Core axis - 45°. - No sulphides. 75.5' - 5 mm white calcite vein. - Core axis - 25°. - 1 speck chalcopyrite. 76.75' - 3 cm white calcite vein. - Core axis 10°. - <1% disseminated chalcopyrite. 78' - 1 cm discontinuous white calcite with black metallic border (?) 78.33' - 1-3 cm white calcite vein. - Core axis - 40°. - No sulphides. - Black metallic border. 80' - 1 cm white calcite vein. - Core axis - 70°. - No sulphides. - Black metallic borders. 80 - 81' - Concordant calcite, - Flooded laminae. - 1% chalcopyrite.

ASSAY RECORD

NO.	FROM	TO	Feet	Co %	Cu %	As %	Ni %	Ag %	%COMPOSITE
526	72	73	1	0.003					
527	73	74	1	0.003					
528	74	75	1	0.003					
529	75	76	1	0.004					
530	76	77	1	0.010					
531	77	78	1	0.004					
532	78	79	1	0.008					
533	79	80	1	0.004					
534	80	81	1	0.001					

GEOLOGICAL LOG

FOOTAGE	G LOG	DESCRIPTION
		81, 81, 82.5' - 1-2 cm white calcite vein with black borderrs. - Core axis - 55°, 45°, 70° respectively. - No sulphides. 85' - 1 cm white calcite vein. - Core angle - 80°. - No sulphides. 86 - 1 cm white calcite.) - Core angle - 50°.) - No sulphides.))) 86.5' - 1 cm white calcite) - Core angle - 60°) - No sulphides.)) Black border 87.5' - 1 cm white calcite.) - Core angle - 50°.) - 1 bleb chalcopyrite.)) 88.5' - 1 cm white calcite.) - Core angle - 60°.)) 89' - 1.5 cm white calcite) - Core angle - 60°.) - Yellow tinge, metallic along borders.) 90.5' - 1 cm calcite, yellow tinge.) - Core angle - 60°.) metallics on border) 91' - 1.8 cm calcite, yellow tinge.) - Core angle - 50°) 91.33' - 1.5 cm white calcite vein. - Core angle - 50°. - <1% chalcopyrite disseminated.. 92.5' - 5 mm orange calcite - Core angle - 70°. - 1% chalcopyrite disseminated. 94' - 1.5 cm white calcite - Core angle - 70°. - <1% pyrite. 94.5' - 3 cm orange-brown calcite - Core angle - 40°, 1% chalcopyrite blebs disseminated.

ASSAY RECORD

NO.	FROM	TO	Feet	Co %	Cu %	As %	Ni %	Ag %	COMPOSITE
535	81	82	1	0.001					
536	82	83	1	0.001					
537	83	84	1	0.001					
538	84	85	1	0.002					
539	85	86	1	0.002					
540	86	87	1	0.002					
541	87	88	1	0.001					
542	88	89	1	0.002					
543	89	90	1	0.001					
544	90	91	1	0.001					
545	91	92	1	0.001					
546	92	93	1	0.003					
547	93	94	1	0.004					
548	94	95	1	0.003					

GEOLOGICAL LOG

FOOTAGE	G LOG	DESCRIPTION
		96' - 2 cm orange brown calcite. - Core angle - 40°. - < 1% chalcopyrite. - Black borders.
		97.33' - 1 cm orange brown carbonate - Core angle - 30°. - -
		Feet / S_o 70 / 30° 75 / 20 80 / 25 85 / 35 90 / 25 95 / 35
65.0 - 121.0 (19.81) (36.88)		100.33' - 101.75' - Yellow and white quartz calcite vein. - Chloritized brecciated fragment discordant to S_o at core angle - 45°. - <1% blebs coarse grain chalcopyrite.
		104.5' - 1 cm yellow quartz-calcite vein. - Core angle 50°. - <1% disseminated chalcopyrite.
		105' - 1 cm vuggy calcite vein. - Core angle 20°. - disseminated pyrite (limonitic stain).
		108.75 - White calcite vein.- 1 cm. - Core angle 70°. - 1 cm - <1% chalcopyrite. - Black border.
		109.5' - 2 cm white calcite vein. - No disseminated sulphides. - Cross cuts concordant calcite flooded band with 1% chalcopyrite. - Black border.
		110.33 - 1 cm white calcite vein. - core angle 70°. - No sulphides. - Black border, metallic.

ASSAY RECORD

NO.	FROM	TO	FT / m	Co %	Cu %		Recovery % From	To	Feet	COMPOSITE
							95	100	4.50	90%
549	95	96	1	0.001			100	102	2.50	125
550	96	97	1	0.002			102	107	5.00	100
551	97	98	1	0.001			107	112	5.00	100
552	98	99	1	0.001			112	115	2.58	86
553	99	100	1	0.001			115	119	3.75	94
554	100	101	1	0.001			119	124	5.50	110
555	101	102	1	0.001			124	128	3.81	95
556	102	103	1	0.002			128	134	5.50	92
557	103	104	1	0.001			134	137	3.00	100
558	104	105	1	0.002			137	139	2.00	100
559	105	106	1	0.001			139	142	3.00	100
560	106	107	1	0.001			142	±47	4.74	95
561	107	108	1	0.001						
562	108	109	1	0.002						
563	109	110	1	0.003						
564	110	111	1	0.004						

GEOLOGICAL LOG			ASSAY RECORD										
FOOTAGE	G LOG	DESCRIPTION	NO.	FROM	TO	FT / m_n	Co%	Cu %	As %	Ag %	Ni %		COMPOSITE
			565	111	112	1	0.002						
		110.66' - 1 cm white calcite vein.	566	112	113	1	0.004						
		- Core angle 70°.	567	113	114	1	0.003						
		- No sulphides.	568	114	115	1	0.002						
		- Black border, metallic.	569	115	116	1	0.002						
			570	116	117	1	0.002						
		112.25 - 1-2 cm white and yellow calcite vein.	571	117	118	1	0.002						
		- Core angle 70°.	572	118	119	1	0.002						
		- No sulphides.	573	119	120	1	0.004						
			574	120	121	1	0.003						
		113.33' - 1-2 cm yellow calcite vein.											
		- Core angle 70°.											
		- No sulphides.											
		- Black metallic borders.											
		115.75' - 8 mm white calcite vein.											
		- Core angle 60°.											
		- No sulphides.											
		- Metallic black borders.											
		116' - 8 mm white calcite vein.											
		- Core angle 60°.											
		- No sulphides.											
		- Black metallic borders.											
		116.5' - 5 mm white calcite vein.											
		- Core angle.											
		- <1% disseminated sulphides.											
		- Black metallic borders.											
		117.5' - 1.5 cm white calcite.											
		- Core angle. -50°.											
		- No sulphides.											
		118 - 118.5' - Calcite swarm of veinlets - folded.											
		- No sulphides.											
		119.33' - 1.5 cm - calcite vein.											
		- Core angle - 55°.											
		- No sulphides.											
		120.25' - 2 cm white calcite vein.											
		- Core angle - 60°.											
		- No sulphides.											
		- Black metallic borders.											
121.0 - 176.0 (36.88) (53.6)		Dark green chloritized siltstone.											
		- Magnetic horizons.											
		- Predominantly magnetic from 142' on.											

GEOLOGICAL LOG			ASSAY RECORD									
FOOTAGE	G LOG	DESCRIPTION	NO.	FROM	TO	FT / m	Co%	Cu %	As %	Ag %	Ni %	COMPOSITE
121.0 - 176.0 cont'd (36.88) (53.6)		121 - 121.5' - 3 1cm white calcite vein. - Black metallic borders. - No sulphides. - Core angle - 65°. 122.66' - 1 cm white calcite vein. - Core angle 65°. - No sulphides. - Black metallic border. 124' - 2 cm white calcite vein. - Core angle - 70°. - 1 minor chalcopyrite speck. - Black metallic borders. 126.75' - 5 mm - 2 cm white calcite vein. - Core angle - 70°. - No sulphides. 128' - 2 cm white calcite vein. - Core angle 60°. - disseminated magnetite. - No sulphides. - Black metallic borders. 129' - 3 cm white calcite vein. - Core angle 65°. - No sulphides. - Black metallic borders. 130.66' - Core angle 65°. - white calcite vein 2.5 cm. - No sulphides. 131.75' - 1.5 cm white calcite vein. - Core angle - 65°. - No sulphides. 133.2' - 2 cm white calcite vein. - Core angle 70°. - No sulphides. 134.58' - 1 cm white calcite vein. - Core angle 60°. - No sulphides. - Some limonite stain. 136.84' - 1 cm white calcite vein. - Core angle - 60°. - No sulphides.	575	121	122	1	0.004						
			576	122	123	1	0.003					
			577	123	124	1	0.002					
			578	124	125	1	0.003					
			579	125	126	1	0.003					
			580	126	127	1	0.002					
			581	127	128	1	0.003					
			582	128	129	1	0.002					
			583	129	130	1	0.002					
			584	130	135	5	0.002					

GEOLOGICAL LOG			ASSAY RECORD										
FOOTAGE	G LOG	DESCRIPTION	NO.	FROM	TO	FT / m	Co %	Cu %	As %	Ag %	Ni %		COMPOSITE
121.0 - 176.0 cont'd (36.88) (53.6)		133.2' - 2 cm white calcite vein. - Core angle - 70°. - No sulphides. 134.58' - 1 cm white calcite vein. - Core angle 60°. - No sulphides. - Some limonite stain 136.84' - 1 cm white calcite vein. - Core angle - 60°. - No sulphides. 137' - Abrupt change in core angle. 137.8' - 1.5 cm on brecciated calcite vein. - Core angle - 55°. - Limonitic stain. - No sulphides. 141.66' - 1 cm white calcite vein. - Core angle 50°. - No sulphides. 142' - 3 cm white calcite vein. - Core angle - 50°. - No sulphides. 144' - 3-6 cm white calcite vein. - Core angle 20°. - No sulphides. 145.33' - 2 cm white calcite vein. - Core angle 45°. - Some disseminated magnetite. - No sulphides. 147 - 149' - Series of thin calcite veins at core angle - 50°. - Offset laminae; veins from 5 mm to 2 cm. - No sulphides. 150.5' - 1.5 cm white calcite vein. - Core angle - 50°. - No sulphides.	586	140	145	5	0.003						
			587	145	150	5	0.002						
			588	150	155	5	0.002						

GEOLOGICAL LOG

FOOTAGE	G LOG	DESCRIPTION
121.0 - 176.0 (36.88) (53.6)	cont'd	

Feet	S_o
100	40°
105	20
110	30
115	35
120	20
125	35
130	40
135	40
140	35
145	20
150	25

142' - Light grey and dark grey laminae.
- Magnetite disseminations are pervasive.

151.5' - 1.5 cm white calcite vein.
- Core angle 40°.
- No sulphides.

153' - 2 cm white calcite core angle - 50°.
- No sulphides.

154.33' - 1-2 cm white calcite vein.
- Core angle - 50°.
- disseminated magnetite.
- No sulphides.

155.5' - 1-3 cm white calcite vein.
- Core angle 60°.
- disseminated magnetite.
- No sulphides.

156.33' - 2 cm white calcite vein.
- Core angle 40°.
- No sulphides.

157.75' - 2.5 cm white calcite vein.
- Core angle - 50°.
- disseminated magnetite.
- No sulphides.

158.75' - 1.5 cm white calcite vein.
- Core angle 50°.
- No sulphides

162.33' - 2.5 cm white calcite vein.
- Core angle 50°.
- No sulphides.

166.75' - 1 cm white calcite vein.
- Core angle - 55°.
- disseminated magnetite.
- No sulphides.

ASSAY RECORD

NO.	FROM	TO	FT / m	Co %	Cu %		Recovery % From	To	Feet	COMPOSITE
							147	152	5.00	100
589	155	160	5	0.001			152	157	4.66	93
590	160	165	5	0.004			157	162	5.50	110
591	165	170	5	0.002			162	167	5.50	110
							167	172	4.66	93
							172	177	5.25	105

GEOLOGICAL LOG

FOOTAGE	G LOG	DESCRIPTION
121 - 196 cont'd		170.5' - 1.5 cm white calcite vein. - Core angle 40°. - No sulphides. 171.75' - 1 cm white calcite vein. - Core angle 50°. - No sulphides. Feet / S_o 155 / 30° 160 / 25 165 / 40 170 / 30 175 / 40
176 - 190 (53.6) (57.9)		Magnetic bearing siltstone. - Magnetite disseminated on bands of light grey, dark grey and white (calcite flooded laminae. 178.16' - 1 cm pinkish white calcite vein. - Core angle 60°. - No sulphides. 181.5' - 2 cm white calcite vein. - Core angle 70°. - No sulphides.
190 - 220 (57.9) - (67.05)		Calcareous Siltstone. - Nonmagnetic. 190.25' - 1 cm orange-brown calcite vein. - Core angle 50°. - pyritic - Limnonitic stain. 199' - Minor folding. 202' - 1 cm orange brown calcite vein. - Core angle 75°. - pyritic. Feet / S_o 180 / 10° 185 / 20 190 / 45 195 / 30 200 / 40 205 / 0 210 / 10

ASSAY RECORD

Recovery %

NO.	FROM	TO	FT / m	Co %	Cu %		From	To	Feet	COMPOSITE
592	170	175	5	0.002			177	182	5.00	100
593	175	180	5	0.003			182	187	5.00	100
594	180	185	5	0.002			187	189	2.00	100
595	185	190	5	0.003			189	192	1.00	33
596	190	191	1	0.002			192	194	1.50	75
597	191	192	1	0.002			194	199	5.00	100
598	192	193	1	0.002			199	202	2.00	67
599	193	194	1	0.002			202	204	2.00	100
600	194	195	1	0.003			204	206	2.00	100
601	195	196	1	0.002			206	211	5.00	100
602	196	197	1	0.002			211	216	4.50	90
603	197	198	1	0.002						
604	198	199	1	0.003						
605	199	200	1	0.003						
606	200	201	1	0.003						
607	201	202	1	0.005						
608	202	203	1	0.005						

GEOLOGICAL LOG

FOOTAGE	G LOG	DESCRIPTION
		205 - 208' - Zone of abundant orange brown calcite veins. - Core angle 50°. - malachite staining on fractures over whole zone. - Pale green chlorization. - <1% chalcopyrite dissemination in veins.
		205 - 211' - Strong manganese stain on fractures.
		209 - 220' - Calcite flooded and altered to a light grey and buff colour. - Microfolding developed. - <1% pyrite disseminated in veins and altered siltstone.
220 - 224 (67.05) (68.27)		Magnetite bearing siltstone. - Magnetite disseminated in siltstone. - White calcite flooding.
224 - 236 (68.27) (71.93)		Nonmagnetic siltstone. 225' - 2 cm of white calcite - yellow tinge. - Core angle 50° - <1% black nonmagnetic mineral. 227.5' - Core angle 25°. - 2 cm yellow calcite. - Black mineral desseminated 1% nonmagnetic. 231.5' - 234' - 5% chalcopyrite disseminated as coarse grain blebs in calcite flooded; brecciated zone. 234.5 - 236' - Quartz-yellow calcite vein. - No sulphides
236 - 246 (71.93) (74.98)		Magnetic siltstone. 239.5' - 1 cm yellow calcite vein. - Core angle 45°. - Magnetitic bands of medium grained crystals. - Pyrite disseminated in vein. - Calcite vein. 242' - Pyrite, magnetite calcite vein.

Feet	S_o
214	10°
219	20 microfolded
224	0
228	0
238	20

ASSAY RECORD

NO.	FROM	TO	FT/m	Co%	Cu %					COMPOSITE
609	203	204	1	0.008						
610	204	205	1	0.006						
611	205	206	1	0.010						205-211 (6ft) 0.025% Co.
612	206	207	1	0.045						
613	207	208	1	0.003						
614	208	209	1	0.036						
615	209	210	1	0.015						
616	210	211	1	0.013						
617	211	212	1	0.003						
618	212	213	1	0.002						
619	213	214	1	0.003						
620	214	215	1	0.003						
621	215	216	1	0.020						
622	216	217	1	0.003						
623	217	218	1	0.003						
624	218	219	1	0.001						
625	219	220	1	0.002						
626	220	221	1	0.003						
627	221	222	1	0.002						
628	222	223	1	0.002						
629	223	224	1	0.002						
630	224	225	1	0.001						
631	225	226	1	0.002	<0.01					
632	226	227	1	0.002	<0.01					
633	227	228	1	0.004	<0.01					
634	228	229	1	0.002	<0.01					
635	229	230	1	0.003	<0.01					
636	230	231	1	0.005	<0.01					
637	231	232	1	0.011	<0.01					
638	232	233	1	0.006	2.01					232-237 (5ft.) 0.005% Co 1.182% Cu
639	233	234	1	0.010	2.92					
640	234	235	1	0.008	0.89					
641	235	236	1	0.002	0.06					
642	236	237	1	0.002	0.03					
643	237	238	1	0.002	<0.01					
644	238	239	1	0.002	<0.01					
645	239	240	1	0.003	<0.01					
646	240	241	1	0.003						
647	241	242	1	0.005						
648	242	243	1	0.003						

FOOTAGE	G LOG	GEOLOGICAL LOG — DESCRIPTION
		242 cont'd 238 20° 242 30 246 5
246 - 263 (74.98) (80.16)		Fault zone - Calcite flooded and brecciated. - brown and white calcite.
263 - 272 (80.16) (82.90)		Altered siltstone. - Buff coloured; nonmagnetic. - Quartz-feldspar metasomatism. - Fractures filled with calcite - Brown pyrolusite forms dendritic texture along fractures.
		Feet S_o F_1 264 20° 266 45 268 80 70° 273 0 277 0 281 20
281 - 285 (85.65) (86.86)		Weakly magnetic siltstone. 282' - 1 cm white calcite. - Core angle 70° - No sulphides. - Disseminated magnetite.
285 - 289.5 (86.86) (88.24)		Altered siltstone - buff; slightly calcareous. - disseminated hematite.
289.5 - 295 (88.24) (89.92)		Calcite-Quartz vein. - Yellow calcite, white quartz. - No sulphides.
295 - 298.5 (89.92) (90.98)		Altered siltstone - buff - noncalcareous. - Feldspathic.
298.5 - 302 (90.98) (92.05)		Nonmagnetic siltstone. - Light grey.
302 - 306. (92.05) (92.20)		Quartz - feldspar vein. - Yellow feldspar; white quartz. - No sulphides. - Red minerals as patches in vein.
306 - 306.75 (93.27) (93.50)		Altered siltstone.

ASSAY RECORD

NO.	FROM	TO	FT / m	Co %			Recovery % From	To	Feet	COMPOSITE
649	243	244	1	0.003			216	219	3.00	100
650	244	245	1	0.002			219	224	5.00	100
651	245	246	1	0.001			224	228	4.00	100
652	246	247	1	0.001			228	230	1.50	75
653	247	248	1	0.001			230	234	3.50	88
654	248	249	1	0.003			234	238	4.00	100
655	249	250	1	0.006			238	242	4.00	100
656	250	251	1	0.004			242	247	5.00	100
657	251	252	1	0.003			247	255	4.00	50
658	252	253	1	0.002			255	257	2.00	100
659	253	254	1	0.003			257	260	2.00	67
660	254	255	1	0.002			260	263	3.00	100
661	255	256	1	0.003			263	268	5.00	100
662	256	257	1	0.003			268	277	9.00	100
663	257	258	1	0.002			277	278	1.00	100
664	258	259	1	0.003			278	282	3.66	92
665	259	260	1	0.004			282	287	5.00	100
666	260	261	1	0.004			287	292	4.75	95
667	261	262	1	0.003			292	297	5.00	100
668	262	263	1	0.005			297	302	5.00	100
669	263	264	1	0.002			302	307	5.00	100
670	264	265	1	0.002			307	311	4.00	100
671	265	266	1	0.003						
672	266	267	1	0.002						
673	267	268	1	0.003						
674	268	269	1	0.002						
675	269	270	1	0.003						
676	270	271	1	0.003						
677	271	272	1	0.002						
678	272	273	1	0.002						
679	273	274	1	0.001						
680	274	275	1	0.001						
681	275	276	1	0.001						
682	276	277	1	0.001						
683	277	278	1	0.002						
684	278	279	1	0.001						
685	279	280	1	0.001						
686	280	281	1	0.002						
687	281	282	1	0.001						
688	282	283	1	0.002						
689	283	284	1	0.002						
690	284	285	1	0.002						
691	285	286	1	0.002						
692	286	287	1	0.002						
693	287	288	1	0.002						
694	288	289	1	0.003						
695	289	290	1	0.002						
696	290	291	1	0.003						
697	291	292	1	0.002						
698	292	293	1	0.003						
699	293	294	1	0.003						
700	294	295	1	0.003						
701	295	296	1	0.001						
702	296	297	1	0.001						
703	297	298	1	0.001						
704	298	299	1	0.001						

GEOLOGICAL LOG

FOOTAGE	G LOG	DESCRIPTION
306.75- 307 (93.50) (93.57)		Quartz-feldspar vein.
307 - 307.25 (93.57) (93.65)		Altered siltstone.
307.25- 307.66 (93.65) (93.77)		Quartz feldspar vein.
307.66-308.33 (93.77) (93.98)		Altered siltstone.
308.33- 313.5 (93.98) (95.55)		Light grey, nonmagnetic siltstone.
313.5 - 314.5 (05.55) (95.86)		Altered siltstone.
314.5 - 314.8 (95.86) (95.95)		Quartz feldspar vein.
314.8 - 315.2 (95.95) (96.07)		Altered siltstone.

Feet	S_o
283	0°
286	50
290	35
296	20
300	20
306	20
311	5
315	10

315.2 - 374 (96.07) (113.99)

Siltstone with magnetic horizons - interbedded.
- Light grey, dark grey, nonmagnetic.
- Strongly magnetic.

318.2' - 7 cm yellow quartz-feldspar.
- Slightly calcareous.
- discordant to S_o.
- Core angle 85°
- No sulphides.

320.2' - 12 cm yellow quartz-feldspar vein.
- Core angle 85°.
- discordant to S_o.
- No sulphides.

326' - 2 cm yellow quartz-feldspar slightly calcareous.
- Core angle 85°.
- Specular hematite.

ASSAY RECORD

NO.	FROM	TO	FT / m	Co%	COMPOSITE
705	299	300	1	0.001	
706	300	301	1	0.002	
707	301	302	1	0.001	
708	302	303	1	0.001	
709	303	304	1	0.002	
710	304	305	1	0.002	
711	305	306	1	0.001	
712	306	307	1	0.001	
713	307	308	1	0.002	
714	308	309	1	0.001	
715	309	310	1	0.001	
716	310	311	1	0.003	
717	311	312	1	<0.011	
718	312	313	1	<0.001	
719	313	314	1	<0.001	
720	314	315	1	<0.001	
721	315	316	1	<0.001	
722	316	317	1	<0.001	
723	317	318	1	<0.001	
724	318	319	1	0.001	
725	319	320	1	<0.001	
726	320	321	1	<0.001	
727	321	322	1	<0.001	
728	322	323	1	<0.001	
729	323	324	1	<0.001	
730	324	325	1	<0.001	
731	325	326	1	<0.001	
732	326	327	1	<0.001	
733	327	328	1	<0.001	
734	328	329	1	<0.001	
735	329	330	1	0.001	
736	330	331	1	0.001	
737	331	332	1	0.001	
738	332	333	1	<0.001	
739	333	334	1	0.001	
740	334	335	1	0.001	
741	335	336	1	<0.001	
742	336	337	1	<0.001	
743	337	338	1	<0.001	
744	338	339	1	<0.001	
745	339	340	1	<0.001	
746	340	341	1	<0.001	
747	341	342	1	<0.001	
748	342	343	1	<0.001	
749	343	344	1	<0.001	
750	344	345	1	<0.001	

GEOLOGICAL LOG

FOOTAGE	G LOG	DESCRIPTION
		Feet / S_o 318 / 15° 322 / 15 326 / 35 330 / 45 335 / 10 340 / 20 342.5 / 20 357 - 361' - Magnetic. 343.5' - 10 cm buff coloured altered siltstone. 344.66 - 345' - 9 cm quartz-feldspar. - Core angle 50°. - No sulphides. 345 - 345.5' - Buff colour, altered siltsone. 346 - 353' - Hematitic. - Clay gouge along core axis. 366' - 7 cm quartz-feldsapr. - Brown fractures are calcite filled. - Core angle 75°. - No sulphides. Feet / S_o 344 / 25° 348 / 0 351 / 15 353 / 40 356 / 0 358 / 25 362 / 35 365 / 25
374 - 415.5 (113.99) (126.64)		Altered siltstone. - Light grey, dark grey siltstone intermittant buff coloured altered siltstone. - Nonmagnetic.

ASSAY RECORD Recovery %

NO.	FROM	TO	FT / m	Co %			From	To	Feet	COMPOSITE
751										
752	345	350	5	<0.001			311	313	1.50	75
753	350	355	5	<0.001			313	318	4.75	95
754	355	3601	5	<0.001			318	322	4.00	100
755	360	365	5	<0.001			322	325.5	3.00	86
756	365	370	5	<0.001			325.5	329.5	3.66	92
757	370	375	5	<0.001			329.5	332	2.50	100
758	375	380	5	<0.001			332	334	1.50	75
759	380	385	5	<0.001			334	340	6.00	100
760	385	390	5	<0.001			340	341	1.00	100
761	390	395	5	<0.001			341	345	5.00	125
762	395	400	5	<0.001			345	348	2.50	83
763	400	403	3	<0.001			348	352	3.66	92
764	403	405.5	2.5	<0.001			352	355	2.50	83
765	405.5	406.5	1	<0.001			355	358	3.50	88
766	406.5	408.5	2	<0.001			358	362	3.50	88
767	408.5	409	0.5	<0.001			362	367	5.00	100
768	409	412.6	3.6	<0.001			367	369	2.00	100
769	412.6	414	1.3	<0.002			369	375	5.00	83
	414	415	1	<0.001						

GEOLOGICAL LOG			ASSAY RECORD									
FOOTAGE	G LOG	DESCRIPTION	NO.	FROM	TO	FT / m						COMPOSITE

374 - 376' - Altered

379 - 385' - Altered

388 - 398' - Altered

388' - Hematitic alteration.
- Halos around black metallic mineral.
- <1% dissemination in altered siltstone.

Feet	S_o
368	35°
375	20
380	10
384	15
387	10
389	5

394' - 15 cm quartz-feldspar vein .
- Manganese-pyrolusite fills fractures.
- No sulphides.
- Discordant to S_o.

397' - 3 cm quartz-feldspar vein.
- Discordant to S_o.

398 - 403' - Grey unaltered siltstone.

403 - 407' - Altered.

404' - 5 cm quartz-feldspar vein discordant to S_o.
- Pyrolusite.
- calcite fracture fillings.

406' - 19 cm quartz-calcite vein discordant to S_o.
- No sulphides.

407 - 415.5' - Unaltered grey siltstone.

409' - 7 cm quartz-feldspar
- Pyrolusite-calcite fractured filling.

413' - 3 cm quartz-feldspar vein discordant to S_o.
- No sulphides.

Feet	S_o
395	25°
398	15
400	10
405	5

GEOLOGICAL LOG

FOOTAGE	G LOG	DESCRIPTION
		413 cont'd Feet — So 407 — 0° 411 — 10 412 — 25
415.5 - 420.5 (126.64) (128.17)		Barren calcite vein-yellowish white. - Discordant to So. - No sulphides.
420.5 - 421 (128.17) (128.32)		Altered siltstone. Feet — S_o 421 — 35° 423 — 40 425 — 40 430 — 35 435 — 35 438 — 30
421 - 437 (128.32) (133.20)		Nonmagnetic siltstone. - Light grey and white laminae. 426 - 427' - 21 cm quartz-feldspar vein. - No sulphides. - Core angle 80°. = Specular hematite blades, 427' - Ground core. 430.5' - 8 cm quartz-feldspar vein. - specular hematite. - discordant to S_o. - No sulphides.
437 - 470 (133.20) (143.25)		Magnetic siltstone. - Light grey-more massive, not as distinctly laminated - More massive. - Almost argillite conchoidal fracture. - 439' - 3 mm quartz-feldspar vein. - Core angle 80°. - Disseminated magnetite. 449.5' - 7 cm quartz-feldspar vein. - Discordant to S_o. - 1 speck possible cobaltite? 453' - 1 cm quartz-feldspar vein. - Core angle 70°.

ASSAY RECORD

NO.	FROM	TO	FT / m	Co %	Cu %		Recovery % From	To	Feet	COMPOSITE
770	415	420.5	5.5	0.002			375	380	5.00	100
771	420.5	426	5.5	<0.001			380	385	5.00	100
772	426	427	1.	0.001			385	390	5.00	100
773	427	429.5	2.5	0.002			390	394	4.00	100
774	429.5	432	2.5	0.003			394	397	2.50	83
775	432	436	4.0	0.002			397	402	4.00	100
776	436	440	4.0	0.001	<0.01		402	406	4.00	100
777	440	445	5.0	0.001	<0.01		406	412	6.00	100
778	445	448	3.0	<0.001	<0.01		412	415	3.00	100
779	448	449	1.0	<0.001	<0.01		415	420.5	5.00	91
780	449	454	5.0	<0.001	<0.01		420.5	422	1.50	100
							422	424	2.00	100
							424	427	3.00	100
							427	432	3.33	67
							432	437	4.50	90
							437	445	6.50	81
							445	450	3.33	67
							450	455	5.00	100
							455	460	5.00	100
							460	465	5.00	100
							465	467	2.00	100
							467	477	10.00	100
							477	482	5.00	100
							482	487	5.00	100
							487	492	5.00	100
							492	497	5.00	100
							497	502	5.00	100

GEOLOGICAL LOG

FOOTAGE	G LOG	DESCRIPTION
		453' cont'd -Coarse grain magnetite disseminated on borders. - No sulphides. 454 - -15 cm quartz-feldspar vein. -Discordant to S_o. -No sulphides. Feet / S_o 440 / 25° 445 / 20 450 / 0 454 / 0 459 / 10 463 / 5
470 - 470.75 (143.25) (143.48)		Copper-Cobalt bearing calcite vein. - 19 cm thick. - Core angle 60°. - 5% chalcopyrite as stringers and dissemination in calcite. - <1% cobaltite as disseminated pyritohedrons.
470.75-473.75 (143.48) (144.40)		Altered siltstone. - Light grey and buff laminae chloritized. - Some blebs of chalcopyrite just above vein.
473.75-474.75 (144.40) (144.70)		Copper bearing calcite vein. - Core angle 50°. - Yellow calcite, sugary. - <1% disseminated chalcopyrite through. - 2 cm band of chalcopyrite along bottom contact.
474.74 - 475.25 (144.70) (144.85)		Altered siltstone. - 1 % stringers chalcopyrite.
475.25 - 476.75 (144.85) (145.31)		Copper bearing calcite vein. - Core angle 60°. - White and yellow coarse grain calcite. - 2 % chalcopyrite, bornite? (peacock blue).
476.75 - 478 (145.31) (145.69)		Altered siltstone. - Light grey. - Disseminated stringers of chalcopyrite and cobaltite? (pyritized ?) <1%.
478 - 481 (145.69) (146.61)		Nonmagnetic siltstone. - Light grey.

ASSAY RECORD

NO.	FROM	TO	FT / m	Co %	Cu %					COMPOSITE
781	454	455	1	0.002	<0.01					
782	455	460	5	<0.001	<0.01					
783	460	465	5	<0.001	<0.01					
784	465	470	5	0.001	<0.01					
785	470	471	1	0.002	0.84					470-477 (7ft.) 0.017% Co 0.634% Cu
786	471	472.5	1.5	0.001	0.03					
787	472.5	477	4.5	0.003	0.79					
788	477	482	5	0.003	0.05					
789	482	487	5	0.001	<0.01					
790	487	492	5	0.002	0.19					
791	492	497	5	0.001	<0.01					
492	497	502	5	0.001	<0.01					
793	502	507	5	0.001						
794	507	512	5	0.003						
795	512	517	5	0.001						
796	517	522	5	0.004						
797	522	527	5	0.002						
798	527	532	5	0.002						

470-492 (22ft.) 0.002% Co 0.256% Cu

GEOLOGICAL LOG			ASSAY RECORD									
FOOTAGE	G LOG	DESCRIPTION	NO.	FROM	TO	FT/m						COMPOSITE
480 - 485 (146.61) (147.83)		Magnetic siltstone.										
485 - 487 (147.83) (148.43)		Nonmagnetic siltstone.										
487 - 487.25 (148.43) (148.51)		Copper bearing calcite vein. - Orange brown. - Core angle 65°. - 5 cm thick. - 5% stringers of chalcopyrite.										
487.25 - 491 (148.51) (149.65)		Nonmagnetic siltstone. 487.25' - 7 mm calcite vein. - Core angle 70°. - 2% disseminated pyritohedrons of pyrite and/or cobaltite?										
491 - 498 (149.65) (151.79)		Magnetic siltstone. - 496' - 5 mm calcite disseminated magnetite. - Core angle 50°.										
498 - 502 (151.79) (153.00)		Nonmagnetic siltstone. 499' - Core angle 55°. - 6 cm quartz-feldspar vein. - Stringer of magnetite and specular hematite within vein.										
502 - 531.5 (153.00) (162.00)		Slaty siltstone. - Light green - chlorite weakly magnetized in places. Kink banded, slaty. - Rusty weathering. - Phyllitic in places.										

Feet	S_o	
467	15°	
472	5	
477	65	
480	45	
485	0	)
488	5	) folding
492	5	)
496	25	
500	30	

GEOLOGICAL LOG

FOOTAGE	G LOG	DESCRIPTION
		520' - 12 cm quartz-feldspar vein. - Magnetite pyrite dissemination. - Core angle 70°.
		Feet / S_o 504 / 20° 507 / 40 513 / 40 517 / 50 522 / 40 527 / 40
531.5 - 532.5 (162,00) (162.30)		Fault - clay gouge. - Core angle 0°. - Brecciated.
532.5 - 540 (162.30) (164.59)		Dark green chloritized siltstone. 536' - malachite stain on fractures.
540 - 574 (164.59) (174.95)		Nonmagnetic siltstone. - Light grey. 547' - 14 cm quartz-feldspar. - Core angle 70°. - <1% chalcopyrite malachite stain on fractures below vein in siltstone to 550'.
		Nonmagnetic siltstone. - Light grey. - Argillite.
		Feet / S_o 528 / 50° 531 / 30 533 / 50 537 / 45 540 / 45 544 / 45 546 / 30
		- Malachite stain throughout this unit. 551.5' - 5 cm quartz-feldspar vein. - Core angle 65°. - Discordant to S_o. - <1% chalcopyrite. 554' - 5 cm quartz-feldspar calcite vein. - Core angle 65°. - Discordant to S_o. - No sulphides.

ASSAY RECORD

Recovery %

NO.	FROM	TO	FT / m	Co %	Cu %		From	To	Feet	COMPOSITE
							502	507	5.00	100
799	532	537	5.0	0.001	<0.01		507	511	4.00	100
800	537	542	5.0	0.001	<0.01		511	515	3.50	88
801	542	547	5.0	<0.001	<0.01		515	517	2.00	100
802	547	547.5	0.5	0.001	0.04		517	522	4.00	100
803	547.5	551.25	3.75	0.002	0.08		522	527	5.00	100
804	551.25	552.25	1.0	0.001	0.02		527	532	5.00	100
805	552.25	553.25	1	<0.001	0.09		532	537	5.0	100
806	553.25	554.25	1	0.001	0.02		537	540	3.0	100
							540	544	4.00	100
							544	546	2.00	100
							546	551	5.00	100
							551	556	5.00	100
							556	562	5.00	100
							562	565	3.00	100
							565	572	7.00	100
							572	575	2.00	67

GEOLOGICAL LOG

FOOTAGE	G LOG	DESCRIPTION
		562.25' - 7 cm quartz-feldspar calcite vein. - Core angle 70°. - Bleached and altered for 15 cm below vein. Feet / So 551 / 15° 556 / 60 562 / 45 565 / 50 570 / 40 544 / 60
		565' - Orange-brown chalcopyrite bearing calcite veins 1 cm thick.
574 - 575 (174.95) (175.26)		Fault - rust clay gouge and broken core.
575 - 607 (175.26) (185.01)		Nonmagnetic siltstone.
		To 599' - Altered bands. - Buff coloured. - Rusty fractures through this zone.
		591.5 - 591.75' - 5.5 cm quartz-feldspar calcite vein. - Core angle 80° concordant to So. - 5% chalcopyrite stringers and dissemination.
		592 - 592.5' - 17 cm calcite vein, yellow. - Core angle 70° discordant to So. - Green chlorite stringers with minor disseminated cobaltite? along them. ~1%.
		595' - Feldspar altered band with needles of chlorite and finely disseminated chalcopyrite.
		592 - 599' - <1% disseminated chalcopyrite along feldspar altered bands. 599' - <1% disseminated cobaltite? pyrite? to 607'.
		603' - Medium grained cobaltite? (pyrite?) disseminated in Siltstone. 603.5' - Feldspar vein. - Core angle 90°. - No sulphides.

ASSAY RECORD

NO.	FROM	TO	FT / m	Co %	Cu %	COMPOSITE
807	554.25	555	(.075)	0.001	<0.01	
808	555	556	1	0.001	0.03	
809	556	557	1	0.001	<0.01	
810	557	562	5	0.001	0.02	
811	562	563	1	0.001	<0.01	
812	563	564	1	0.001	0.01	
813	564	564.6	0.6	0.002	0.12	564-576 (12ft.) 0.005% Co 0.125% Cu
814	564.6	565.3	0.7	0.001	0.02	
815	565.3	566.3	1	0.002	0.08	
816	566.3	567	0.7	0.004	0.18	
817	567	572.25	5.25	0.005	0.05	
818	572.25	572.75	0.5	0.012	0.13	
819	572.75	575	2.25	0.003	0.20	
820	575	576	1	0.042	0.44	575-582 (7ft.) 0.018% Co 0.093% Cu
821	576	577	1	0.023	0.07	
822	577	578	1	0.022	0.06	
823	578	579	1	0.010	0.01	
824	579	580	1	0.007	0.01	
825	580	581	1	0.013	0.04	
826	581	582	1	0.011	0.03	
827	582	583	1	0.009	0.03	
828	583	584	1	0.009	<0.01	
829	584	585	1	0.009	<0.01	
830	585	586	1	0.004	0.02	
831	586	587	1	0.019	0.11	
832	587	588	1	0.042	0.03	
833	588	589	1	0.014	0.01	
834	589	590	1	0.003	0.02	
835	590	591	1	0.003	0.01	
836	591	592	1	0.004	0.39	591-599 (8ft.) 0.004% Co 0.203% Cu
837	592	593	1	0.002	<0.01	
838	593	594	1	0.002	0.05	
839	594	595	1	0.002	0.25	
840	595	596	1	0.009	0.43	
841	596	597	1	0.007	0.22	
842	597	598	1	0.004	0.17	
843	598	599	1	0.003	0.12	
844	599	600	1	0.002	0.04	
845	600	601	1	0.002	0.02	
846	601	602	1	0.002	<0.01	
847	602	603	1	0.003	<0.01	
848	603	604	1	0.002	<0.01	

GEOLOGICAL LOG

FOOTAGE	G LOG	DESCRIPTION
		Feet / S_o 576 — 50 581 — 60 586 — 45 590 — 50 597 — 50 602 — 50 607 — 50
607 - 626 (185.01) (190.80)		Magnetic siltstone.
626 - 628 (190.80) (191.41)		Fault Breccia. Feet / S_o 612 — 40° 617 — 65 622 — 60 625 — 50

ASSAY RECORD

NO.	FROM	TO	FT / m	Co %	Cu %		Recovery % From	To	Feet	COMPOSITE
849	604	605	1	0.004	<0.01		575	578	2.5	83
850	605	606	1	0.005	<0.01		578	582	4.0	100
851	606	607	1	0.005	0.01		582	586.5	4.5	100
852	607	612	5	0.004			586.5	592	5.0	91
853	612	617	5	0.003			592	597	5.0	100
854	617	622	5	0.003			597	602	5.0	100
855	622	626	4	0.007			602	607	5.0	100
856	626	628	2	0.014			607	612	5.0	100
							612	617	5.0	100
							617	622	5.0	100
							622	627	5.0	100
							627	628	1.0	100

APPENDICES 4A TO 4C

RADIOMETRIC LOGS

Pan Ocean

PAN OCEAN OIL LTD.

CALGARY ALBERTA

PROJECT:	FAIRCHILD LAKE - OTTER
HOLE:	O-79-1
COMPANY:	
DATE:	AUGUST 24, 1979
COUNTY:	STATE: YUKON
SEC:	TWP: RANGE:

DRILL HOLE DATA

DEPTH DRILLED	430.5'	COLLAR ELEV.	
DEPTH LOGGED	421'	BIT SIZE	HQ
CASING DEPTH	16'	CASING WALL THICK	
TIME SINCE CIRC.		DRILL PIPE THICK	
TYPE FLUID	POLY DRILL	FLUID LEVEL	
OPEN HOLE	THRU PIPE ✓	THRU CASING ✓	
PROBE NO.	361	UNIT NO.	28
K-FACTOR		DEAD TIME	
TIME ON		TIME OFF	
CALIBRATOR NO.		CALIBRATION VALUE	
PIPE CORR. FACTOR		WATER FACTOR	
CASING CORR. FACTOR			
OPERATOR	R.J. MAZUR		
WITNESS	LOUIE SMOLKA		

GAMMA RAY		INIT	1	2	3	4	5	6
DEPTH	FROM							
	TO	10 cps/div.						
	NO. OF FT.							
FULL SCALE CPS								
TIME CONST.								
CHART RATIO								
LOGGING SPEED								

DENSITY								
DEPTH	FROM							
	TO							
	NO. OF FT.							
FULL SCALE CPS								
TIME CONST.								
CHART RATIO								
LOGGING SPEED								

RESISTANCE								
DEPTH	FROM							
	TO							
	NO. OF FT.							
LOGGING SPEED								
RATIO								
BIAS								
SPONTANEOUS POTENTIAL								
DEPTH	FROM							
	TO							
	NO. OF FT.							
LOGGING SPEED								
RATIO								
BIAS								

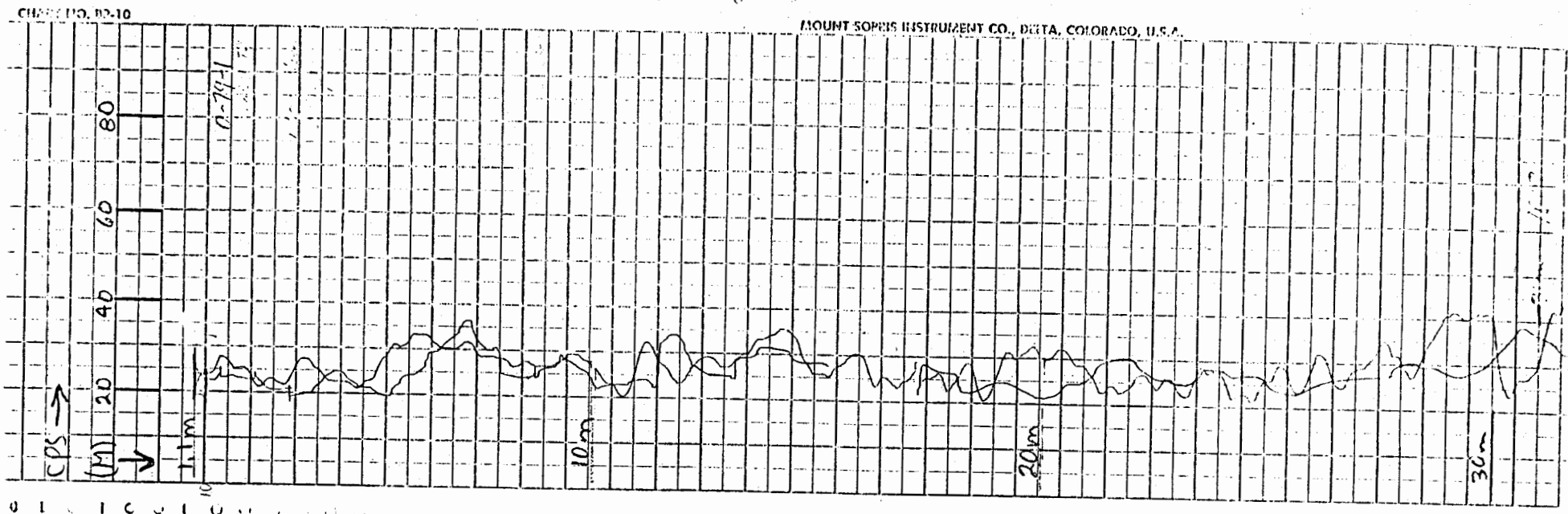
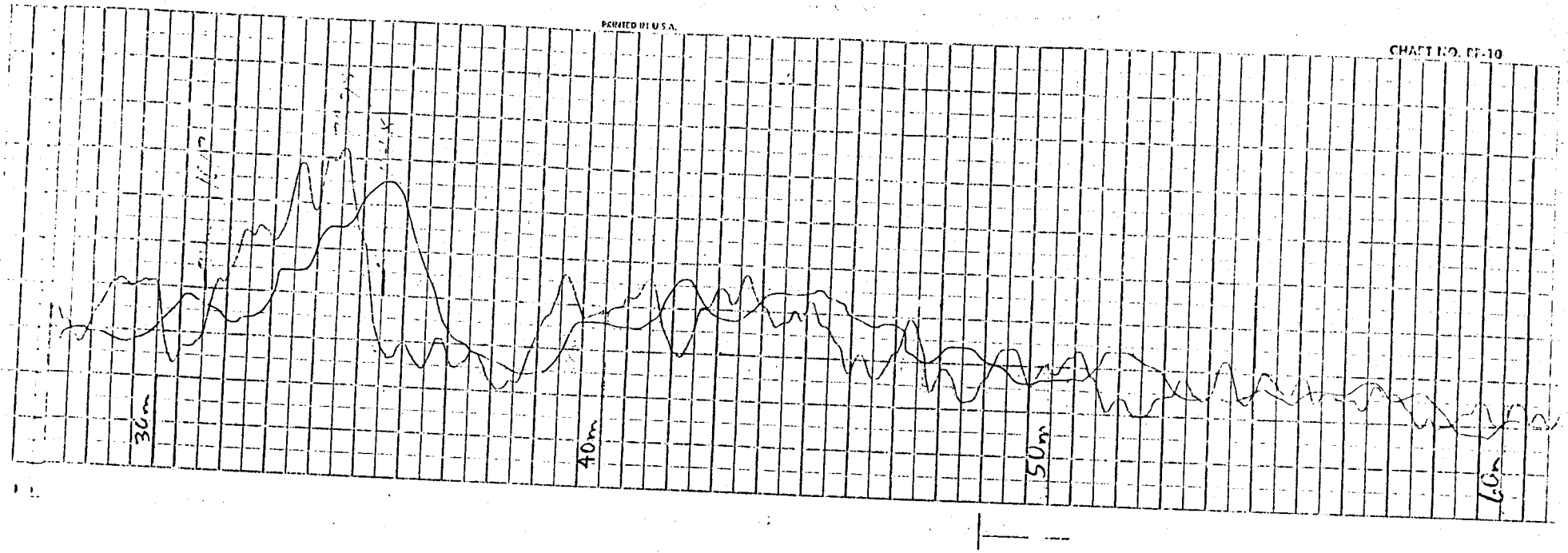
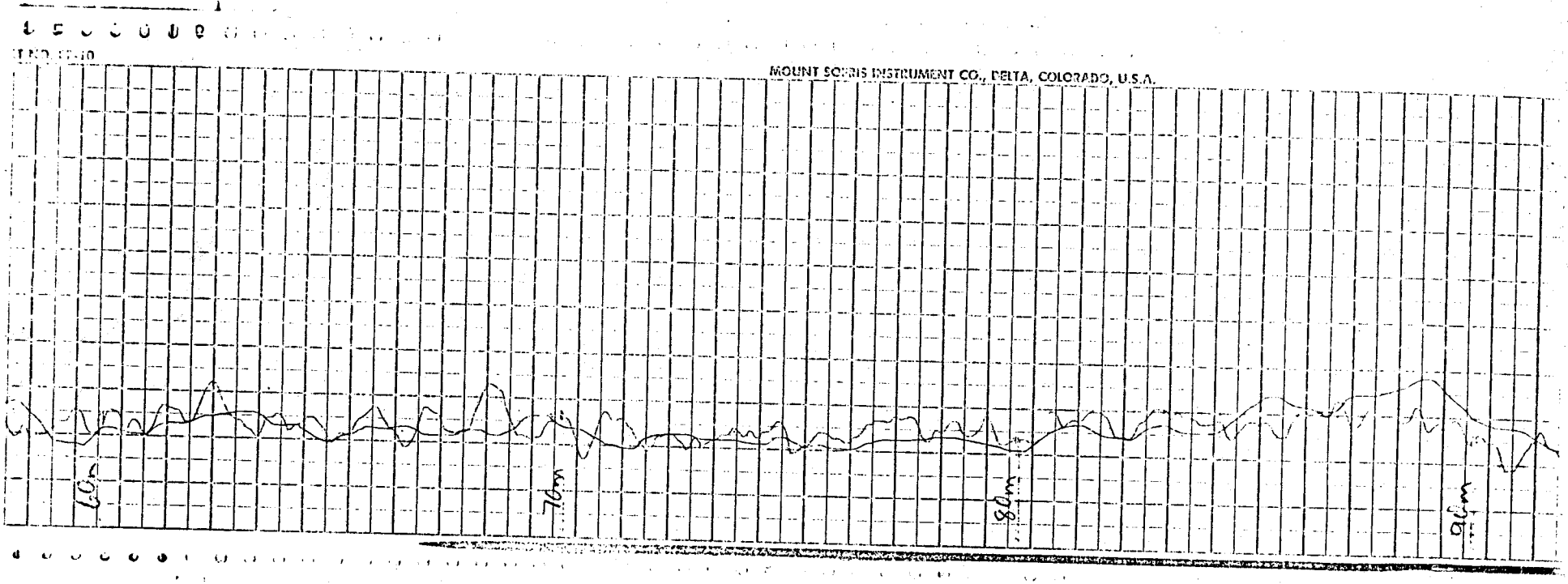
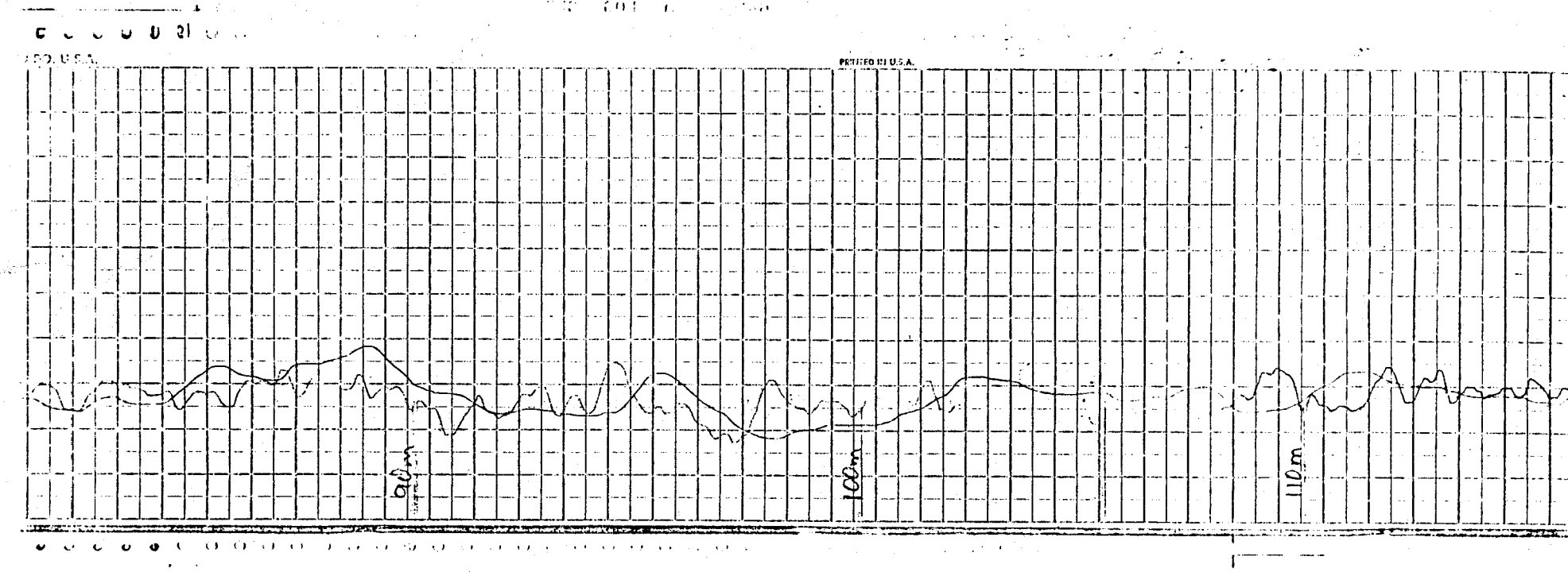


CHART NO. RS-10
MOUNT SOPRIS INSTRUMENT CO., DELTA, COLORADO, U.S.A.
80
60
40
20
(M)
1 MM
10
20
30


PRINTED IN U.S.A.
CHART NO. RF-10
36m
40m
50m
60m


MOUNT SOPRIS INSTRUMENT CO., DELTA, COLORADO, U.S.A.
60m
70m
80m
90m


90m
100m
110m

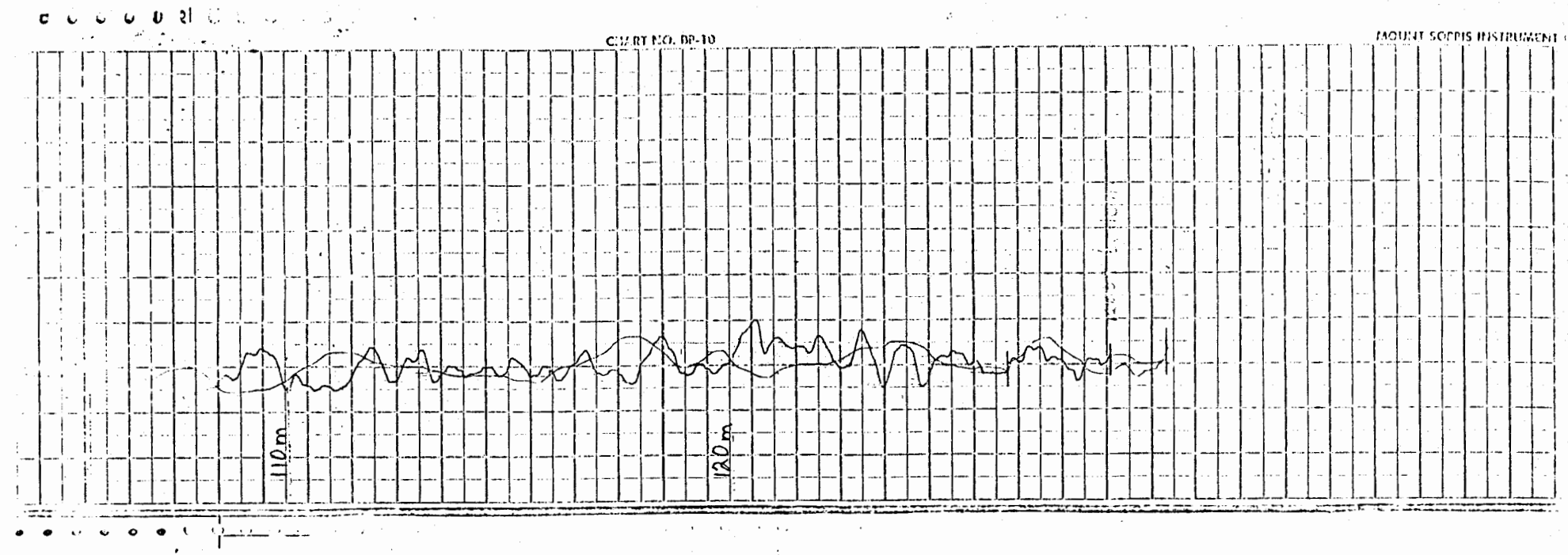


CHART NO. DP-10
110m
120m

PAN OCEAN OIL LTD.

CALGARY ALBERTA

PROJECT:	FAIRCHILD LAKE - OTTER
HOLE:	0-79-3
COMPANY:	
DATE:	September 6, 1979
COUNTY:	STATE: YUKON
SEC:	TWP: RANGE:

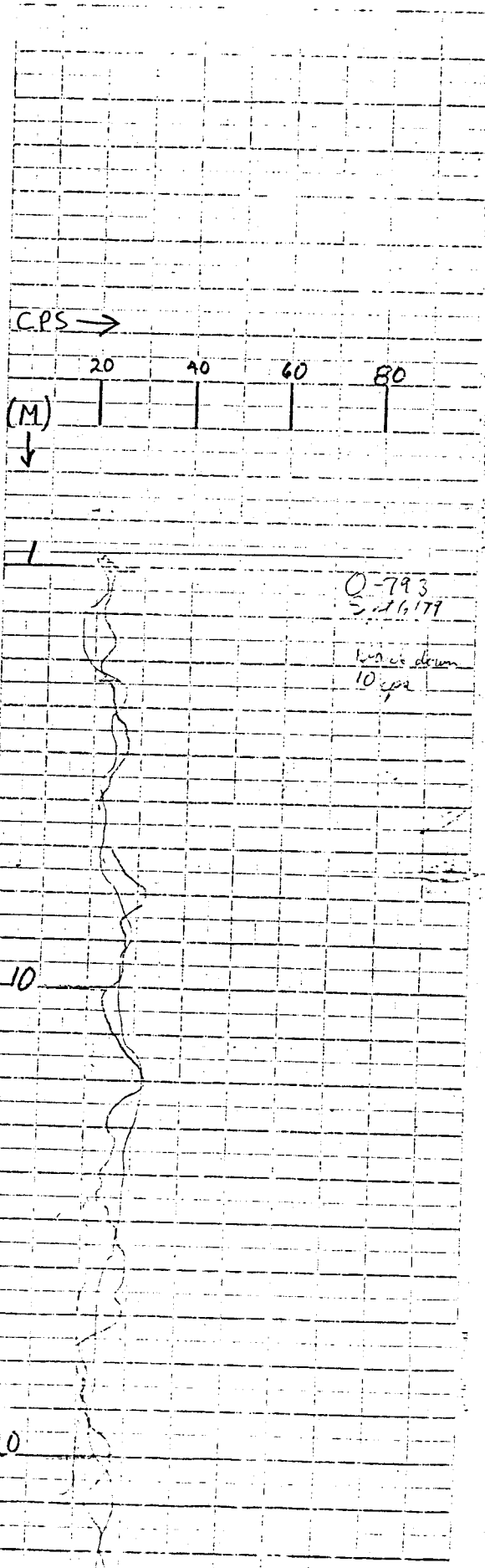
DRILL HOLE DATA

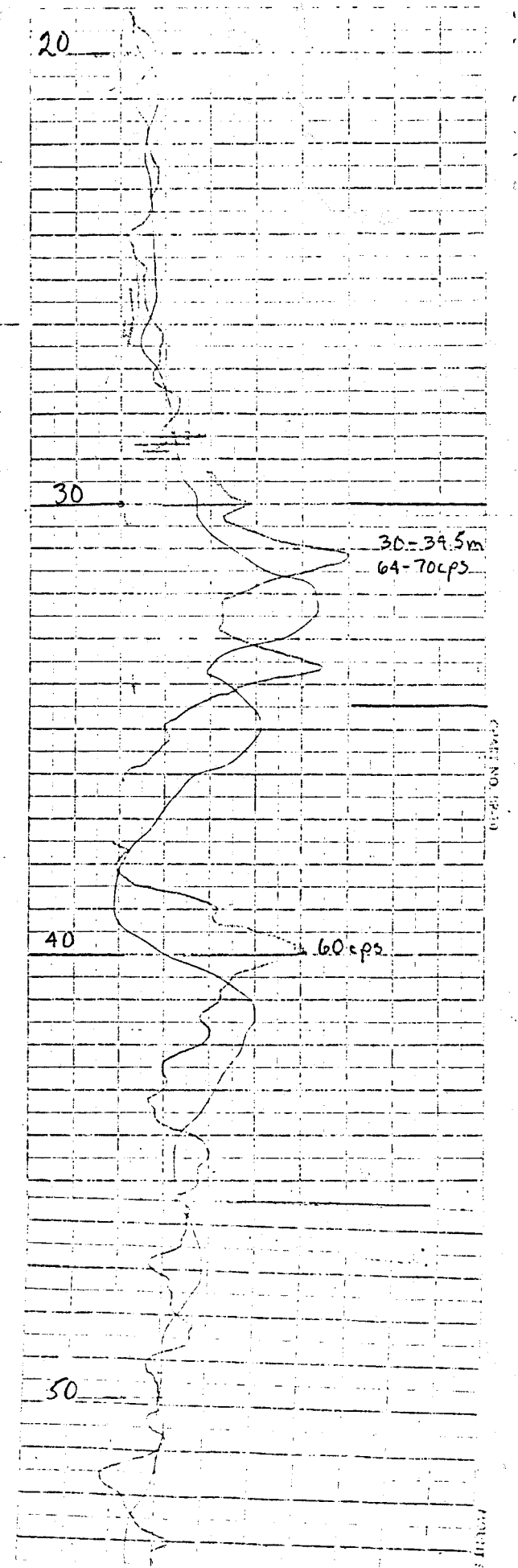
DEPTH DRILLED	640'	COLLAR ELEV.	
DEPTH LOGGED	627'	BIT SIZE	HQ
CASING DEPTH	22'	CASING WALL THICK	
TIME SINCE CIRC.		DRILL PIPE THICK	
TYPE FLUID	POLY DRILL	FLUID LEVEL	
OPEN HOLE	THRU PIPE ✓	THRU CASING ✓	
PROBE NO.	361	UNIT NO.	
K-FACTOR		DEAD TIME	
TIME ON		TIME OFF	
CALIBRATOR NO.		CALIBRATION VALUE	
PIPE CORR. FACTOR		WATER FACTOR	
CASING CORR. FACTOR			
OPERATOR	R.J. MAZUR		
WITNESS	LOUIE SMOLKA		

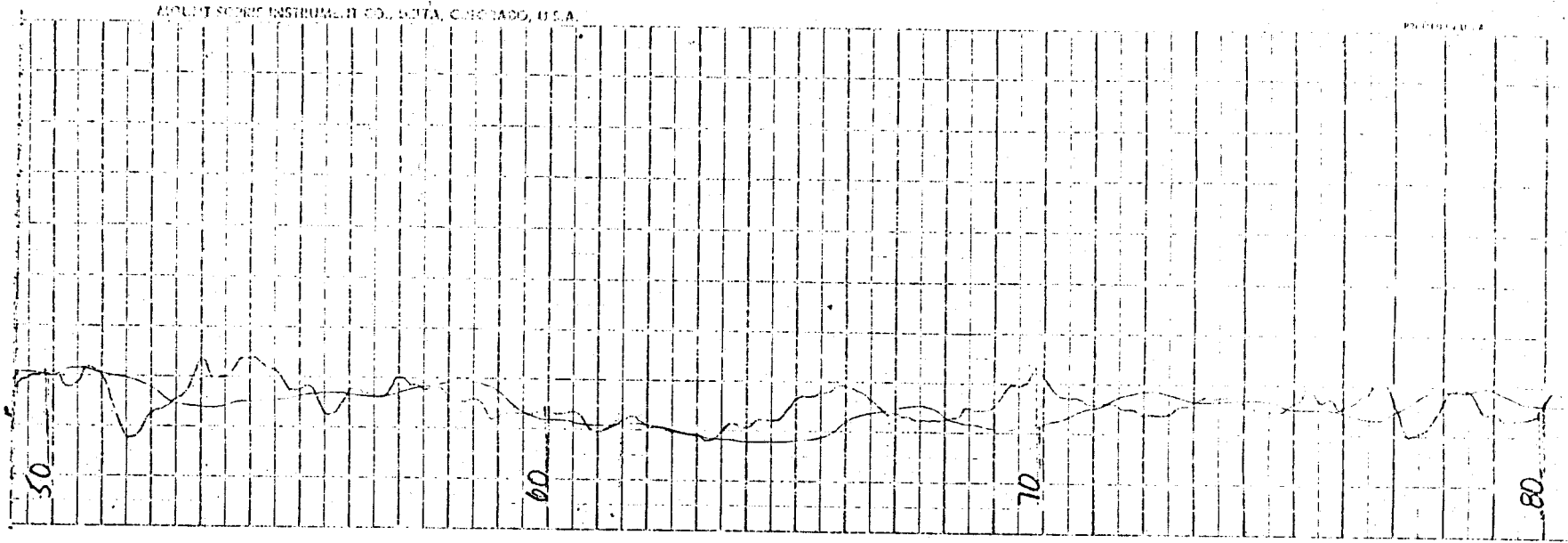
GAMMA RAY		INIT	1	2	3	4	5	6
DEPTH	FROM							
	TO	10 cps/div.						
	NO. OF FT.							
FULL SCALE CPS								
TIME CONST.								
CHART RATIO								
LOGGING SPEED								

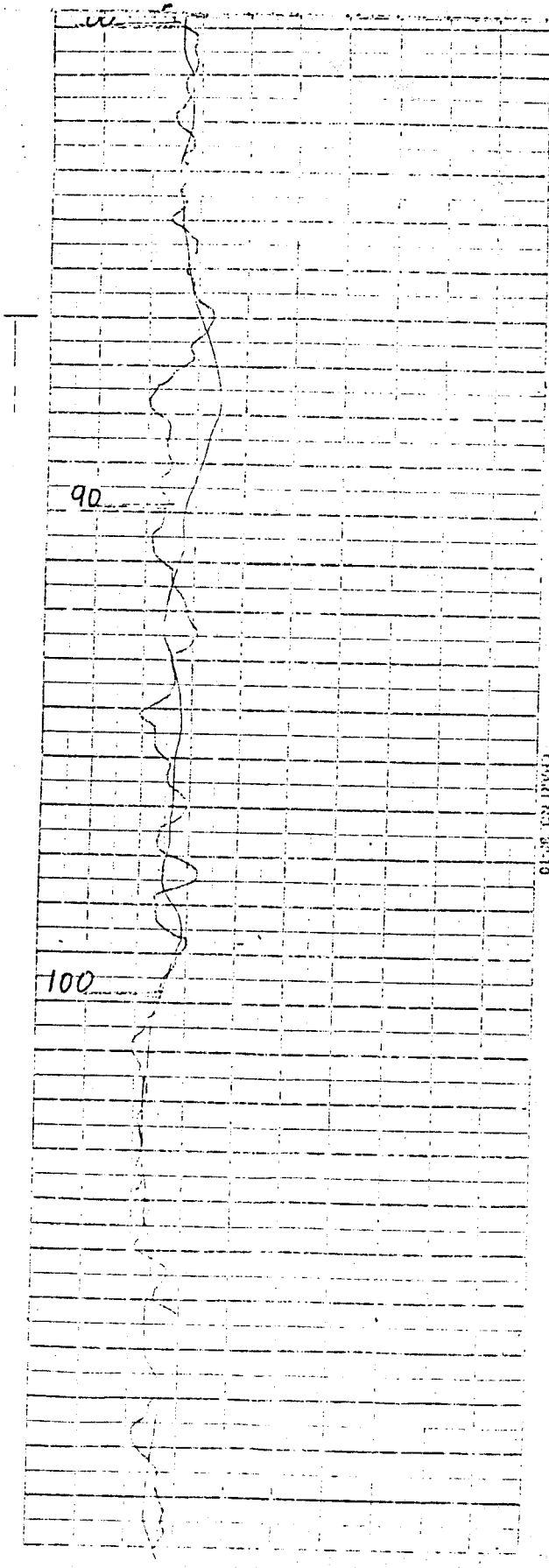
DENSITY								
DEPTH	FROM							
	TO							
	NO. OF FT.							
FULL SCALE CPS								
TIME CONST.								
CHART RATIO								
LOGGING SPEED								

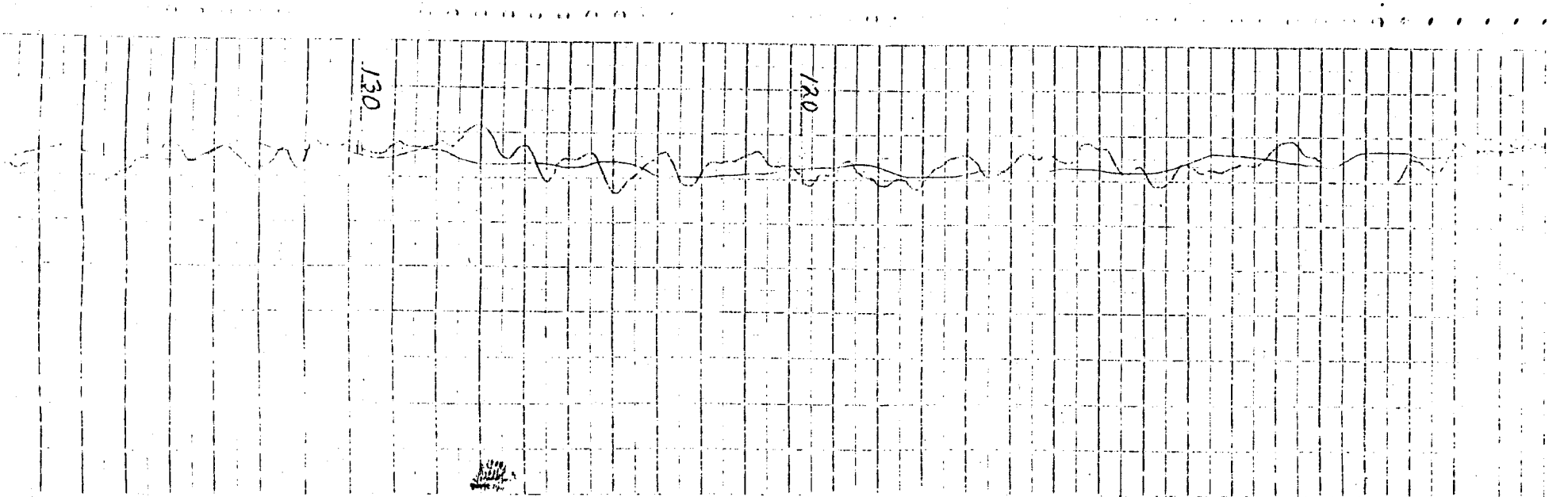
RESISTANCE								
DEPTH	FROM							
	TO							
	NO. OF FT.							
LOGGING SPEED								
RATIO								
BIAS								
SPONTANEOUS POTENTIAL								
DEPTH	FROM							
	TO							
	NO. OF FT.							
LOGGING SPEED								
RATIO								
BIAS								


CPS
20
40
60
80
(M)
1
10
20
Q-793
Log 179
Iron is down
10 cps


20
30
30-39.5m
64-70cps
40
60cps
50


ASHCROFT SCIENTIFIC INSTRUMENT CO., SUTTA, COLORADO, U.S.A.
50
60
70
80


90
100


130
120

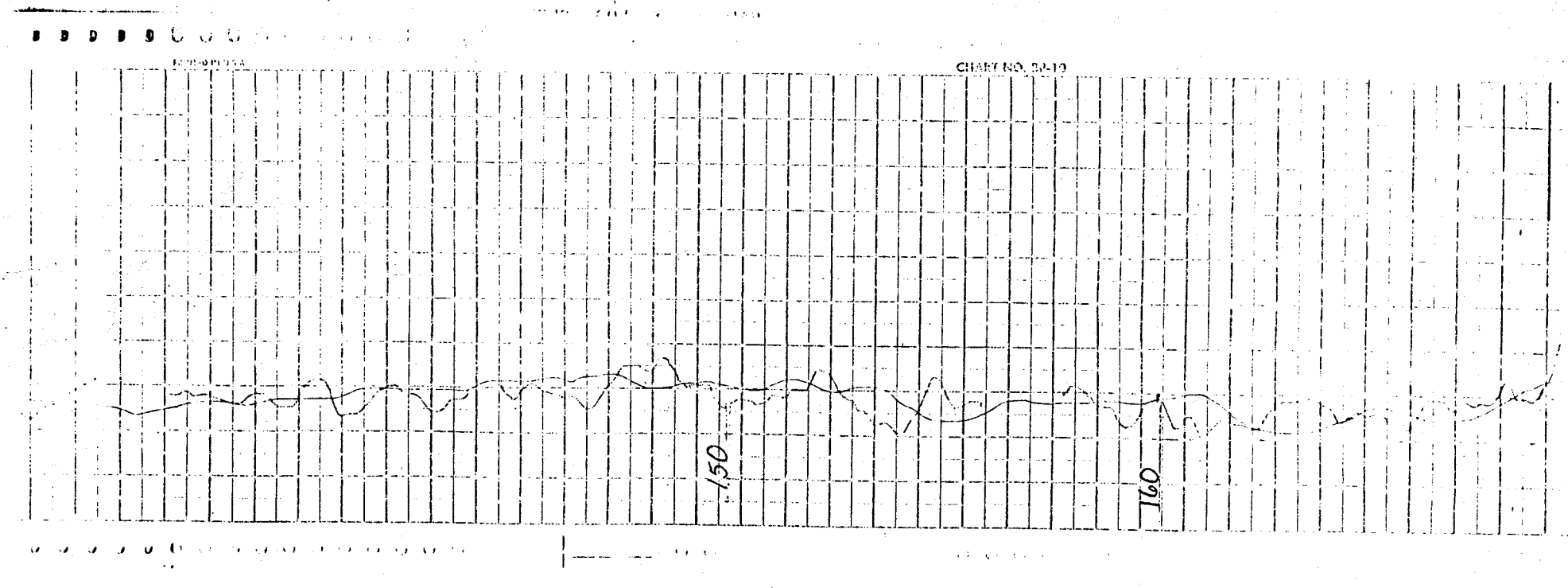


CHART NO. 50-10
150
091

PAN OCEAN OIL LTD.

CALGARY ALBERTA

PROJECT:	FAIRCHILD LAKE - OTTER
HOLE:	O-79-5
COMPANY:	
DATE:	SEPTEMBER 19, 1979
COUNTY:	STATE: YUKON
SEC:	TWP: RANGE:

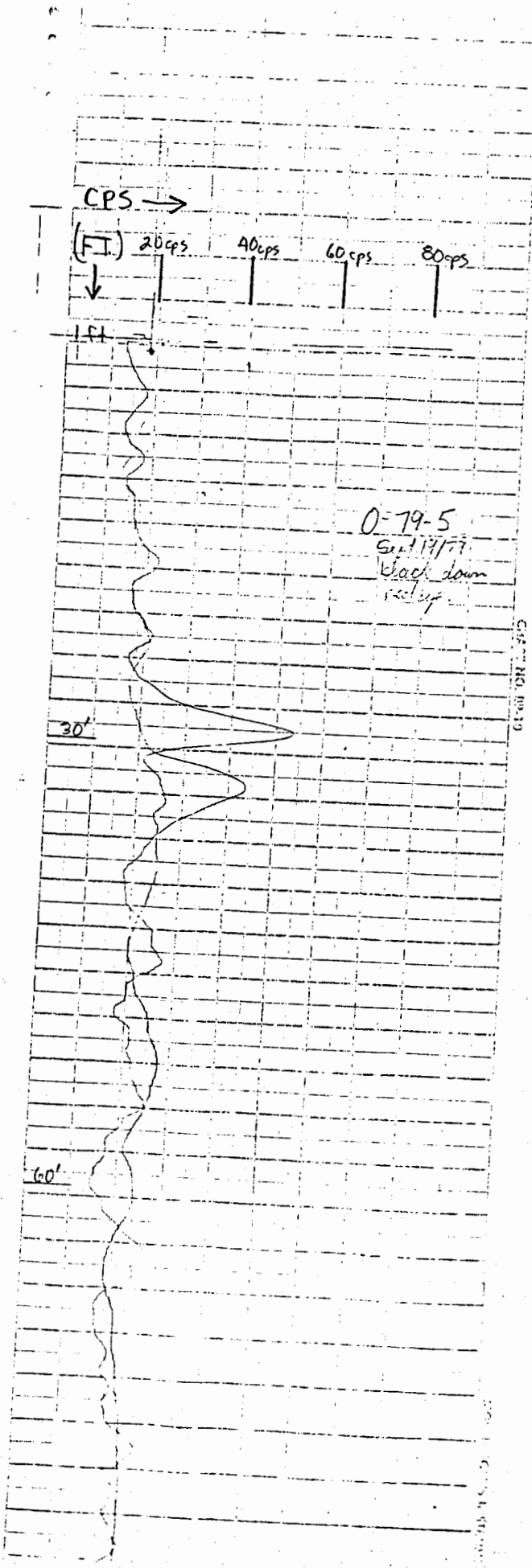
DRILL HOLE DATA

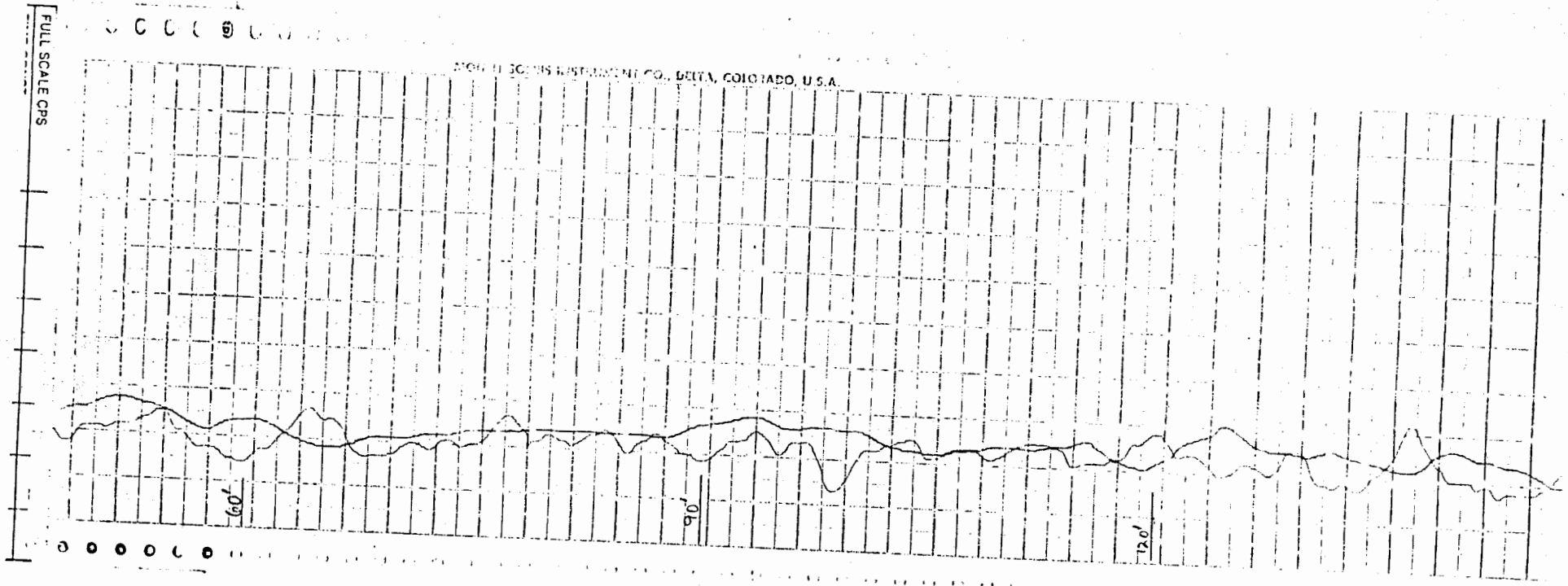
DEPTH DRILLED	628'	COLLAR ELEV.	
DEPTH LOGGED	633.5'?	BIT SIZE	HQ
CASING DEPTH	12'	CASING WALL THICK	
TIME SINCE CIRC.		DRILL PIPE THICK	
TYPE FLUID	POLY DRILL	FLUID LEVEL	
OPEN HOLE	THRU PIPE ✓	THRU CASING ✓	
PROBE NO.		UNIT NO.	
K-FACTOR		DEAD TIME	
TIME ON		TIME OFF	
CALIBRATOR NO.		CALIBRATION VALUE	
PIPE CORR. FACTOR		WATER FACTOR	
CASING CORR. FACTOR			
OPERATOR	R.J. MAZUR		
WITNESS	LOUIE SMOLKA		

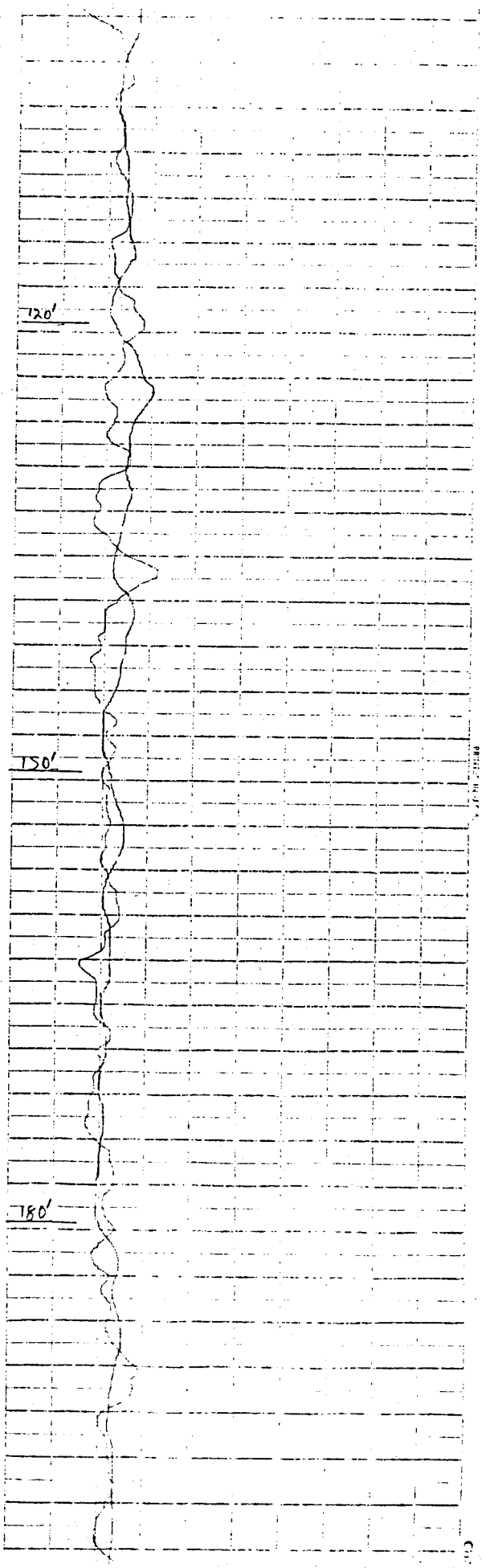
GAMMA RAY		INIT	1	2	3	4	5	6
DEPTH	FROM							
	TO		10 cps/div.					
	NO. OF FT.							
FULL SCALE CPS								
TIME CONST.								
CHART RATIO								
LOGGING SPEED								

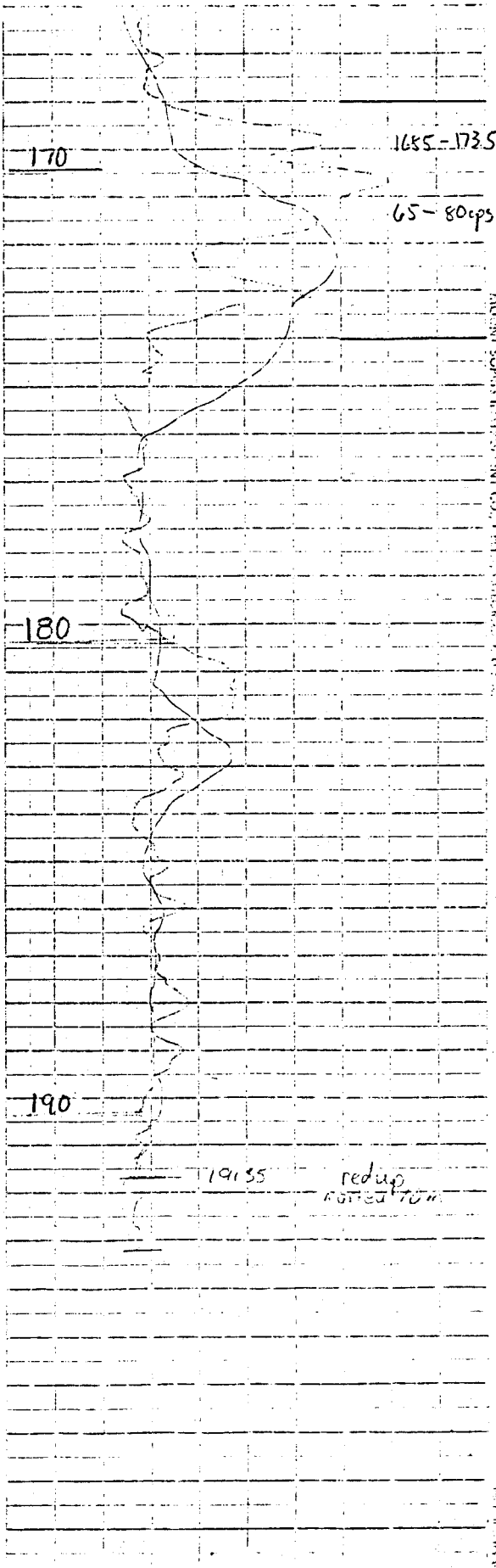
DENSITY								
DEPTH	FROM							
	TO							
	NO. OF FT.							
FULL SCALE CPS								
TIME CONST.								
CHART RATIO								
LOGGING SPEED								

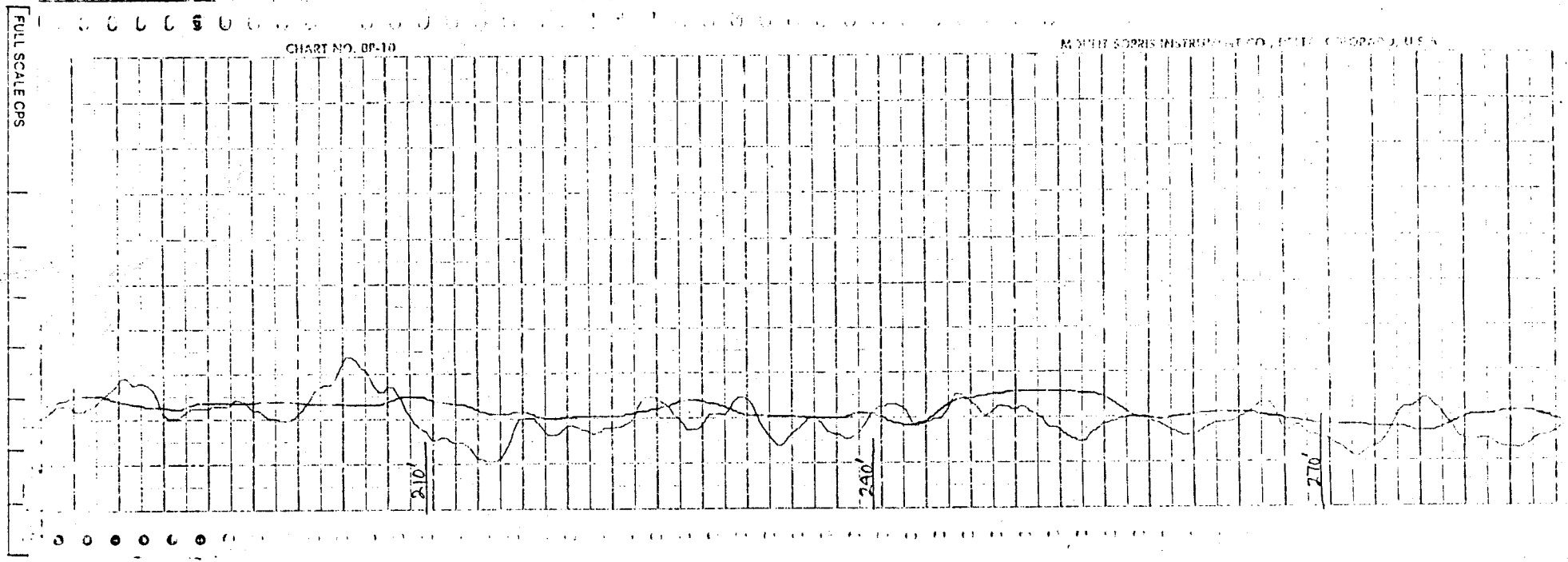
RESISTANCE								
DEPTH	FROM							
	TO							
	NO. OF FT.							
LOGGING SPEED								
RATIO								
BIAS								
SPONTANEOUS POTENTIAL								
DEPTH	FROM							
	TO							
	NO. OF FT.							
LOGGING SPEED								
RATIO								
BIAS								

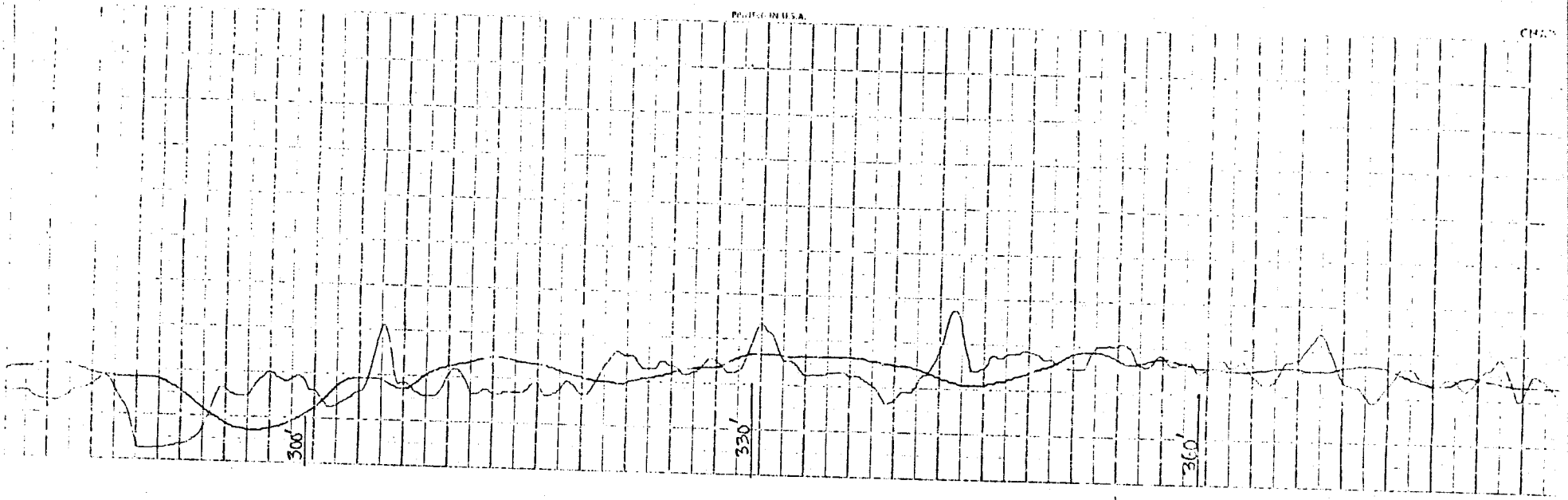

CPS →
(FI.)
20cps
40cps
60cps
80cps
1 Ft
0-79-5
5-11-77
back down
pick up
30'
60'


FULL SCALE CPS
60'
90'
120'


120'
150'
180'


170
180
190
1655-1735
65-80cps
19135
redup


FULL SCALE CPS
CHART NO. BP-10
210'
240'
270'


300'
330'
360'

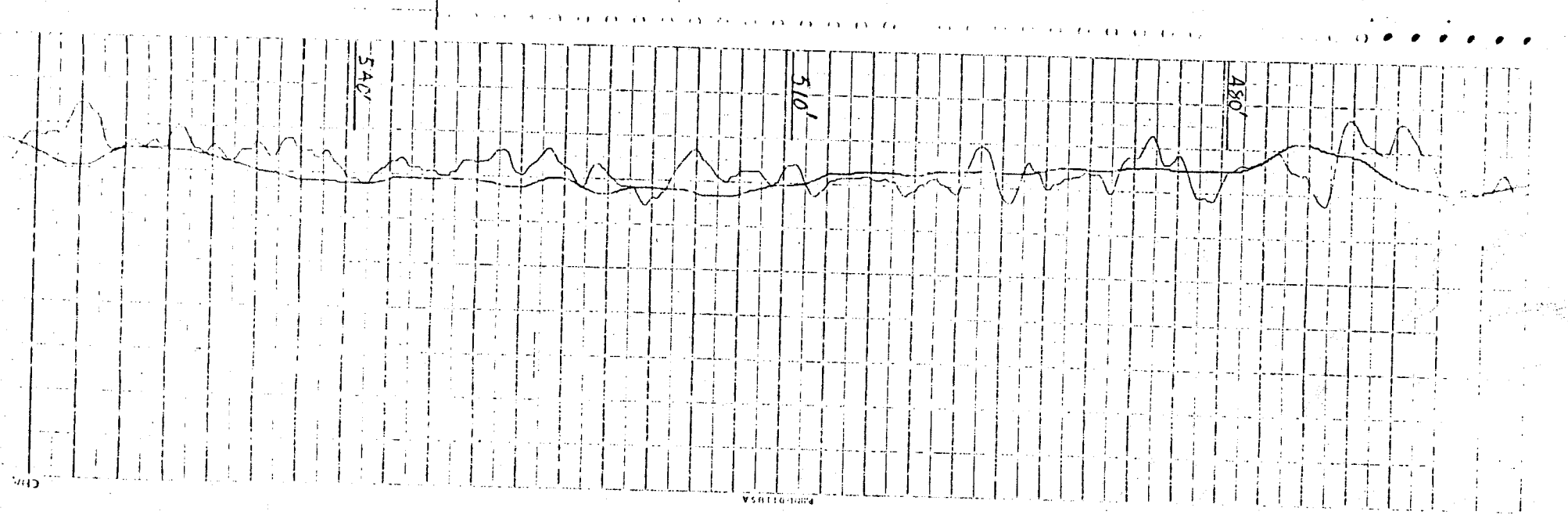
LOGGING SPEED

CHART RATIO

390'

420'

450'


540'
510'
480'

540'

570'

600'

630'

6335

CHART NO. C-10

SOUTHERN CALIFORNIA GAS COMPANY

APPENDIX 5

ASSAY CERTIFICATES

CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: [redacted] 984-0221
AREA CODE: 604
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ASSAY

CERTIFICATE NO. 66180

INVOICE NO. 32502

RECEIVED Sept. 6/79

ANALYSED Sept. 12/79

TO: Pamicon Developments Ltd.,
208 - 850 W. Hastings Street,
Vancouver, B.C. V6B 1P1

ATTN: Mr. R.V. Foster

SAMPLE NO. :	% Cu	% Co	Also on Sp #1210
C-001		<0.01	
002		<0.01	
003		<0.01	
004		<0.01	
005		<0.01	
006		<0.01	
007		<0.01	
008		<0.01	
009	1.74	0.02	
010		<0.01	
011		<0.01	
012		<0.01	
013		<0.01	
014		<0.01	
015		<0.01	
016		<0.01	
017		<0.01	
018		<0.01	
019		<0.01	
020		<0.01	
021		<0.01	
022		<0.01	
023		<0.01	
024		<0.01	
025		<0.01	
026		<0.01	
027		<0.01	
028		<0.01	
029		<0.01	
030		<0.01	
031		<0.01	
032		<0.01	
033		<0.01	
034		<0.01	
035		<0.01	
036		<0.01	
037		<0.01	
038		<0.01	
039		<0.01	
C-040		<0.01	

CTA MEMBER CANADIAN TESTING ASSOCIATION

REGISTERED ASSAYER, PROVINCE OF BRITISH COLUMBIA

CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: [redacted] 984-0221
AREA CODE: 604
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ASSAY

CERTIFICATE NO. 66181

INVOICE NO. 32544

RECEIVED Sept. 6/79

ANALYSED Sept. 12/79

TO: Pamicon Developments Ltd.,
208 - 850 W. Hastings Street,
Vancouver, B.C. V6B 1P1

ATTN: Mr. R.V. Foster

SAMPLE NO. :	% Co	Also on Sp #1210
0-041	< 0.01	
042	< 0.01	
043	< 0.01	
044	0.02	
045	< 0.01	
046	<0.01	
047	<0.01	
048	< 0.01	
049	< 0.01	
050	< 0.01	
051	<0.01	
052	< 0.01	
053	< 0.01	
054	< 0.01	
121	< 0.01	
122	< 0.01	
123	< 0.01	
124	< 0.01	
125	< 0101	
126	< 0.01	
127	<0.01	
128	< 0.01	
129	< 0.01	
130	< 0.01	
131	<0.01	
132	< 0.01	
133	< 0.01	
134	< 0.01	
135	<0.01	
136	< 0.01	
137	< 0.01	
138	< 0.01	
139	< 0.01	
140	< 0.01	
0-159	< 0.01	

CTA MEMBER CANADIAN TESTING ASSOCIATION

REGISTERED ASSAYER, PROVINCE OF BRITISH COLUMBIA

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: [redacted] 984-0221
AREA CODE: 604
TELEX: 043-52597

CHEMEX LABS LTD.

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ASSAY

CERTIFICATE NO. 66178

TO: Pamicon Developments Ltd.,
208 - 850 W. Hastings St.,
Vancouver, B.C.
V6B 1P1

ATTN:

INVOICE NO. 32446

RECEIVED September 6, 1979

ANALYSED September 7, 1979

SAMPLE NO. :	% Co
0 055	<0.01
056	<0.01
057	<0.01
058	<0.01
059	<0.01
060	<0.01
061	<0.01
062	0.02
063	<0.01
064	<0.01
065	<0.01
066	<0.01
067	<0.01
068	<0.01
069	<0.01
070	<0.01
071	<0.01
072	0.01
073	0.07
074	0.10
075	0.14
076	<0.01
077	<0.01
078	<0.01
079	<0.01
080	0.02
081	<0.01
082	<0.01
083	0.02
084	0.01
085	0.01
086	0.01
087	0.02
088	0.01
089	0.01
090	<0.01
091	0.01
092	0.35
093	<0.01
0 094	<0.01

CTA MEMBER CANADIAN TESTING ASSOCIATION

REGISTERED ASSAYER, PROVINCE OF BRITISH COLUMBIA

CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: [redacted] 984-0221
AREA CODE: 604
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ASSAY

CERTIFICATE NO. 66179

TO: Pamicon Developments Ltd.,
208 - 850 W. Hastings St.,
Vancouver, B.C.
ATTN: V6B 1P1

INVOICE NO. 32446

RECEIVED September 5, 1979

ANALYSED September 7, 1979

SAMPLE NO. :	% Co
0 095	<0.01
096	<0.01
097	0.01
098	<0.01
099	<0.01
100	0.01
101	0.01
102	<0.01
103	0.01
0 104	<0.01

CTA MEMBER CANADIAN TESTING ASSOCIATION

REGISTERED ASSAYER, PROVINCE OF BRITISH COLUMBIA

CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J2C1
TELEPHONE: 984-0221
AREA CODE: 604
TELEX: 04-352597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 50457

TO: Pamicon Developments Ltd.,
208 - 850 W. Hastings Street,
Vancouver, B.C. V6B 1P1

INVOICE NO. 32599

RECEIVED Sept. 6/79

ATTN: (rocks)

ANALYSED Sept. 14/79

SAMPLE NO. :	PPM Cu	PPM Co
105	4	12
106	82	14
107	112	38
108	6	26
109	4	12
110	4	12
111	2	18
112	2	16
113 *	4	18
115	4	12
115	26	16
116	4	10
117	6	14
118	4	20
119	38	38
120	30	12
141	2	10
142	4	12
143	4	12
144	4	8
145	2	10
146	4	12
147	4	24
148	4	8
149	4	8
150	4	8
151	2	10
152	4	8
153	2	8
154	2	10
155	2	10
156	2	8
157	2	10
158	4	6
114	4	12

CTA MEMBER CANADIAN TESTING ASSOCIATION

CERTIFIED BY: Hart Biddle

CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: [redacted] 984-0221
AREA CODE: 604
TELEX: 043-52597

› ANALYTICAL CHEMISTS › GEOCHEMISTS › REGISTERED ASSAYERS

CERTIFICATE OF ASSAY

CERTIFICATE NO. 66333
INVOICE NO. 32788
RECEIVED Sept. 15/79
ANALYSED Sept. 24/79

TO: Pamicon Developments Ltd.,
203 - 850 W. Hastings St.,
Vancouver, B.C.
V6B 1P1

ATTN:

CC. Pan Ocean Oil, Cgy.
CC. Mayo, Y.T.

SAMPLE NO. :	% Co
0 - 160	< 0.01
161	< 0.01
162	< 0.01
163	< 0.01
164	< 0.01
165	< 0.01
166	< 0.01
167	< 0.01
168	< 0.01
169	< 0.01
170	< 0.01
171	< 0.01
172	< 0.01
173	< 0.01
174	< 0.01
175	< 0.01
176	< 0.01
177	< 0.01
178	< 0.01
179	< 0.01
180	< 0.01
181	< 0.01
182	< 0.01
183	< 0.01
184	< 0.01
185	< 0.01
186	< 0.01
187	< 0.01
188	< 0.01
189	< 0.01
190	< 0.01
191	< 0.01
192	< 0.01
193	0.01
194	< 0.01
195	< 0.01
196	< 0.01
197	< 0.01
198	0.01
0 - 199	< 0.01

CTA MEMBER CANADIAN TESTING ASSOCIATION

REGISTERED ASSAYER, PROVINCE OF BRITISH COLUMBIA

CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: [redacted] 984-0221
AREA CODE: 604
TELEX: 043-52597

· ANALYTICAL CHEMISTS · GEOCHEMISTS · REGISTERED ASSAYERS

CERTIFICATE OF ASSAY

CERTIFICATE NO. 66334
INVOICE NO. 32880
RECEIVED Sept. 15/79
ANALYSED Sept. 26/79

TO: Pamicon Developments Ltd.
208 - 850 W. Hastings Street
Vancouver, B.C. V6B 1P1

ATTN: CC: Calgary-Mayo

SAMPLE NO. :	% Co
0 - 200	0.006
201	0.005
202	0.003
203	0.008
204	0.006
205	0.012
206	0.003
207	0.003
208	0.042
209	0.039
210	0.003
211	0.004
212	0.003
213	0.002
214	0.002
215	0.004
216	0.002
217	0.002
218	0.003
219	0.002
220	0.001
221	0.001
222	0.002
223	0.002
224	0.001
225	0.003
226	0.021
227	0.085
228	NSS
229	0.010
230	0.004
231	0.002
232	0.003
233	0.003
234	0.003
235	0.007
236	0.005
237	0.004
238	0.003
0 - 239	0.003

CTA MEMBER CANADIAN TESTING ASSOCIATION

REGISTERED ASSAYER, PROVINCE OF BRITISH COLUMBIA

CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: [redacted] 984-0221
AREA CODE: 604
TELEX: 043-52597

· ANALYTICAL CHEMISTS · GEOCHEMISTS · REGISTERED ASSAYERS

CERTIFICATE OF ASSAY

CERTIFICATE NO. 66333

INVOICE NO. 32851

RECEIVED Sept. 15/79

ANALYSED Sept. 25/79

TO: Pamicon Developments Ltd.,
208 - 850 W.Hastings St.,
Vancouver, B.C.
V6B 1P1

ATTN:

CC. Pan Ocean Oil, Cgy
CC. Mayo, Y.T.

SAMPLE NO. :	% Co
0 - 240	0.002
241	0.006
242	0.011
243	0.003
244	0.005
245	0.004
246	0.004
247	0.003
248	0.005
249	0.017
250	0.041
251	0.195
252	0.006
253	0.007
254	0.555
255	0.012
256	0.008
257	0.089
258	0.007
259	0.008
260	0.007
261	0.006
262	0.004
263	0.005
264	0.020
265	0.006
266	0.005
267	0.002
268	0.003
269	0.006
270	0.004
271	0.005
272	0.003
273	0.004
274	0.003
275	0.004
276	0.005
277	0.003
278	0.140
0 - 279	0.005

CTA MEMBER CANADIAN TESTING ASSOCIATION

REGISTERED ASSAYER, PROVINCE OF BRITISH COLUMBIA

CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: [redacted] 984-0221
AREA CODE: 604
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ASSAY

CERTIFICATE NO. 66336
INVOICE NO. 32921
RECEIVED Sept. 15/79
ANALYSED Sept. 27/79

TO: Pamicon Developments Ltd.
208 - 850 W. Hastings Street
Vancouver, B.C. V6B 1P1

ATTN:

CC: Mayo-Calgary

SAMPLE NO. :	% Co
0 - 280	0.005
281	0.003
282	0.004
283	0.002
284	0.002
285	0.002
286	0.005
287	0.004
288	0.003
289	0.005
290	0.003
291	0.002
292	0.001
293	0.002
294	0.002
295	0.002
296	0.010
297	0.002
298	0.002
299	0.002
300	0.004
301	0.004
302	0.003
303	0.004
304	0.002
205	0.003
306	0.003
307	0.003
308	0.003
309	0.003
310	0.004
311	0.005
312	0.003
313	0.003
314	0.003
315	0.004
316	0.007
317	0.007
318	0.006
0 - 319	0.006

CTA MEMBER CANADIAN TESTING ASSOCIATION

REGISTERED ASSAYER, PROVINCE OF BRITISH COLUMBIA

CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: [redacted] 984-0221
AREA CODE: 604
TELEX: 043-52597

› ANALYTICAL CHEMISTS › GEOCHEMISTS › REGISTERED ASSAYERS

CERTIFICATE OF ASSAY

CERTIFICATE NO. 66337
INVOICE NO. 32933
RECEIVED Sept. 15/79
ANALYSED Oct. 1/79

TO: Pamicon Developments Ltd.
208 - 850 W. Hastings Street
Vancouver, B.C. V6B 1P1

ATTN:

CC: Mayo-Calgary

SAMPLE NO. :	% Co
0 - 320	0.005
321	0.022
322	0.011
323	0.010
324	0.008
325	0.008
326	0.010
327	0.005
328	0.005
329	0.006
330	0.004
331	0.003
332	0.003
333	0.003
334	0.003
335	0.003
336	0.002
337	0.002
338	0.004
339	0.004
340	0.003
341	0.002
342	0.002
343	0.002
344	0.003
345	0.190
346	0.011
347	0.006
348	0.045
349	0.007
350	0.023
351	0.002
352	0.005
353 *	0.006
355	0.003
356	0.017
357	0.005
358	0.001
0 - 359	0.002
354	0.004

CTA MEMBER CANADIAN TESTING ASSOCIATION

REGISTERED ASSAYER, PROVINCE OF BRITISH COLUMBIA

CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: [redacted] 984-0221
AREA CODE: 604
TELEX: 043-52597

· ANALYTICAL CHEMISTS · GEOCHEMISTS · REGISTERED ASSAYERS

CERTIFICATE OF ASSAY

CERTIFICATE NO. 66338

INVOICE NO. 32921

RECEIVED Sept. 15/79

ANALYSED Sept. 27/79

TO: Pamicon Developments Ltd.
208 - 850 W. Hastings Street
Vancouver, B.C. V6B 1P1

ATTN:

CC: Mayo-Calgary

SAMPLE NO. :	% Co
0 - 360	0.004
361	0.003
362	0.003
363	0.002
364	0.003
365	0.003
366	0.013
367	0.006
368	0.005
369	0.007
370	0.255
371	0.047
372	0.018
373	0.005
374	0.008
375	0.006
376	0.006
377	0.005
378	0.006
379	0.004
380	0.009
381	0.007
382	0.006
383	0.049
384	0.012
385	0.004
386	0.005
387	0.006
388	0.005
389	0.004
390	0.004
391	0.004
392	0.007
393	0.007
394	0.460
395	0.039
396	0.007
397	0.008
398	0.006
0 - 399	0.003

CTA MEMBER CANADIAN TESTING ASSOCIATION

REGISTERED ASSAYER, PROVINCE OF BRITISH COLUMBIA

CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: [redacted] 984-0221
AREA CODE: 604
TELEX: 043-52597

› ANALYTICAL CHEMISTS · GEOCHEMISTS ◦ REGISTERED ASSAYERS

CERTIFICATE OF ASSAY

CERTIFICATE NO. 66339

INVOICE NO. 33122

RECEIVED September 15, 1979

ANALYSED October 12, 1979

TO: Pamicon Developments Ltd.,
208 - 850 W. Hastings St.,
Vancouver, B.C.
V6B 1P1

ATTN: C.C. Calgary, C.C. Mayo

SAMPLE NO. :	% Co
0 - 400	0.004
401	0.004
402	0.004
403	0.004
404	0.007
405	0.005
406	0.008
407	0.003
408	0.005
409	0.005
410	0.005
411	0.003
0 - 412	0.003

CTA MEMBER CANADIAN TESTING ASSOCIATION

REGISTERED ASSAYER, PROVINCE OF BRITISH COLUMBIA

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: [redacted] 984-0221
AREA CODE: 604
TELEX: 043-52597

CHEMEX LABS LTD.

· ANALYTICAL CHEMISTS · GEOCHEMISTS · REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 50620

TO: Pamicon Developments Ltd.
208 - 850 W. Hastings Street
Vancouver, B.C. V6B 1P1

INVOICE NO. 32818

RECEIVED Sept. 15/79

ANALYSED Sept. 26/79

ATTN: CC: Calgary-Mayo (ROCKS)

SAMPLE NO. :	PPM Co
0 - 413	48
414	180
415	13
416	30
417	12
418	12
419	34
420	3
421	12
422	34
423	38
424	10
425	10
426	6
0 - 427	8

CTA MEMBER CANADIAN TESTING ASSOCIATION

CERTIFIED BY: Hawk Biddle

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: [redacted] 984-0221
AREA CODE: 604
TELEX: 043-52597

CHEMEX LABS LTD.

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 50759

TO: Pamicon Developments Ltd.,
200 - 850 W. Hastings St.,
Vancouver, B.C.
V6B 1P1

INVOICE NO. 32984

RECEIVED Sept. 18/79

ANALYSED Oct. 2/79

ATTN: ROCKS CC. Pan Ocean, Cgy.

SAMPLE NO. :	PPM Co
428	24
429	22
430	20
431	68
432	30
433	28
434	28

CTA MEMBER CANADIAN TESTING ASSOCIATION

CERTIFIED BY: Hart Biddle

CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: [redacted] 984-0221
AREA CODE: 604
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ASSAY

CERTIFICATE NO. 66428

INVOICE NO. 33096

RECEIVED Sept. 18/79

ANALYSED Oct. 9/79

TO: Pamicon Developments Ltd.
208 - 850 W. Hastings St.
Vancouver, B.C.
ATTN: V6B 1P1

SAMPLE NO. :	% Co
435	0.004
436	0.004
437	0.003
438	0.005
439	0.018
440	0.008
441	0.006
442	0.008
443	0.005
444	0.007
445	0.006
446	0.005
447	0.007
448	0.006
449	0.002
450	0.007
451	0.005
452	0.004
453	0.003
454	0.002
456	0.004
457	0.003
458	0.003
459	0.004
460	0.003
461	0.004
462	0.004
463	0.008
464	0.003
526	0.003
527	0.003
528	0.003
529	0.004
530	0.010
531	0.004
532	0.008
533	0.004
534	0.001
535	0.001
536	0.001

CTA MEMBER CANADIAN TESTING ASSOCIATION

REGISTERED ASSAYER, PROVINCE OF BRITISH COLUMBIA

CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: 985-0648
AREA CODE: 604
TELEX: 043-52597

ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ASSAY

CERTIFICATE NO. 66882

INVOICE NO. 33779

RECEIVED November 6, 1979

ANALYSED November 9, 1979

TO: Pamicon Developments Ltd.,
208 - 850 W. Hastings Street,
Vancouver, B.C.
ATTN: V6B 1P1

SAMPLE NO. :	% Cu	
435	0.01	
436	< 0.01	
437	< 0.01	
438	0.08	
439	0.05	
440	0.16	
441	0.18	
442	0.05	
443	0.01	
444	0.11	
445	0.11	
446	0.11	
447	0.25	
448	0.41	
449	0.01	
450	0.29	
451	0.02	From Assay #66428
452	0.09	
453	< 0.01	
454	< 0.01	
456	0.18	
457	< 0.01	
458	< 0.01	
459	< 0.01	
460	< 0.01	
461	< 0.01	
462	< 0.01	
463	< 0.01	
464	< 0.01	

CTA MEMBER CANADIAN TESTING ASSOCIATION

REGISTERED ASSAYER, PROVINCE OF BRITISH COLUMBIA

CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: [redacted] 984-0221
AREA CODE: 604
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ASSAY

CERTIFICATE NO. 66379

INVOICE NO. 32380

RECEIVED Sept. 18/79

ANALYSED Sept. 26/79

TO: Pamicon Developments Ltd.
203 - 850 W. Hastings Street
Vancouver, B.C. V6B 1P1

ATTN: CC: Calgary

SAMPLE NO. :	% Co	% Cu	% Ni	% As
0 - 465	0.005	<0.01		
466	0.003	<0.01		
467	0.007	<0.01		
468	0.018	<0.01		
469	0.019	<0.01		
470	0.009	0.08		
471	0.008	<0.01		
472	0.006	<0.01		
473	0.007	<0.01		
474	0.011	<0.01		
475	0.017	0.17		
476	0.014	0.04		
477	0.046	0.25	<0.01	0.08
478	0.600	0.43	0.04	1.06
479	0.720	1.07	0.05	1.32
480	0.020	0.13	<0.01	0.04
481	0.015	0.09	<0.01	0.08
482	0.028	0.40	<0.01	0.08
483	0.160	3.60	0.02	0.44
484	0.360	3.48	0.05	0.88
485	3.23	0.70	0.26	4.90
486	1.24	0.55	0.12	1.92
487	0.073	0.07	<0.01	0.20
488	0.020	0.01		0.12
489	0.016	<0.01		0.14
490	0.017	0.01		0.10
491	0.031	0.08		0.10
492	0.060	1.15		0.30
493	0.015	0.03		0.02
494	0.018	0.12		0.04
495	0.045	0.72		0.06
496	0.019	0.08		0.02
497	0.015	0.09		0.04
498	0.008	0.02		0.02
499	0.015	0.20		0.10
500	0.031	1.42		0.08
501	0.007	0.14		
502	0.005	0.17		
503	0.003	0.01		
0 - 504	0.004	0.01		

CTA MEMBER CANADIAN TESTING ASSOCIATION

REGISTERED ASSAYER, PROVINCE OF BRITISH COLUMBIA

CHEMEX LABS LTD.
212 BROOKSBANK AVENUE
NORTH VANCOUVER B.C. CANADA

CLIENT : PAMICON

ATTN. :

SAMPLES RECEIVED : 19-OCT-79
ANALYSIS COMPLETED : 25-OCT-79
NOVATRACK CERT. NO. : B90140.
CHEMEX CERT. NO. : ASSAY 665
INVOICE NO. :

SAMPLE ID	AS PERCENT
0-474	0.010
0-475	0.030
0-476	0.020
0-488	0.020
0-489	0.015
0-490	0.025
0-491	0.040
0-492	0.225
0-493	0.005
0-494	0.010
0-495	0.045
0-496	0.010
0-497	0.020
0-498	0.005
0-499	0.010
-500	0.050
-501	0.005

CERTIFIED BY .....

ANALYSIS PERFORMED BY NOVATRACK ANALYSTS LTD.
A SUBSIDARY COMPANY OF CHEMEX LABS LTD.
SPECIALIZING IN NEUTRON ACTIVATION ANALYSIS

CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: [redacted] 984-0221
AREA CODE: 604
TELEX: 043-52597

ANALYTICAL CHEMISTS · GEOCHEMISTS · REGISTERED ASSAYERS

CERTIFICATE OF ASSAY

CERTIFICATE NO. 56330

INVOICE NO. 32880

RECEIVED Sept. 18/79

ANALYSED Sept. 26/79

TO: Pamicon Developments Ltd.
200 - 550 W. Hastings Street
Vancouver, B.C. V6B 1P1

ATTN:

CC: Calgary

SAMPLE NO. :	% Co	% Cu
0 - 505	0.004	0.01
506	0.011	0.01
507	0.009	<0.01
508	0.009	<0.01
509	0.020	0.01
510	0.040	0.32
511	0.064	1.48
512	0.017	0.03
513	0.020	0.13
514	0.011	2.00
515	0.540	0.13
516	0.016	0.22
517	0.011	0.06
518	0.022	0.17
519	0.014	0.06
520	0.015	0.23
521	0.009	0.13
522	0.009	0.06
523	0.006	0.01
524	0.004	0.01
0 -525	0.005	0.02

CTA MEMBER CANADIAN TESTING ASSOCIATION

REGISTERED ASSAYER, PROVINCE OF BRITISH COLUMBIA

CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: [redacted] 984-0221
AREA CODE: 604
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ASSAY

CERTIFICATE NO. 66429

INVOICE NO. 33125

RECEIVED September 18, 1979

ANALYSED October 12, 1979

TO: Pamicon Developments Ltd.,
208 - 850 W. HastingssSt.,
Vancouver, B.C.
V6B 1P1

ATTN: 1- Pan Ocean - Calgary

SAMPLE NO. :	% Co
537	0.001
538	0.002
539	0.002
540	0.002
541	0.001
542	0.002
543	0.001
544	0.001
545	0.001
546	0.003
547	0.004
548	0.003
549	0.001
550	0.002
551	0.001
552	< 0.001
553	< 0.001
554	0.001
555	< 0.001
556	0.002
557	0.001
558	0.002
559	0.001
560	0.001
561	0.001
562	0.002
563	0.003
564	0.004
565	0.002
566	0.004
567	0.003
568	0.002
569	0.002
570	0.002
571	0.002
572	0.002
573	0.004
574	0.003
575	0.004
576	0.003

CTA MEMBER CANADIAN TESTING ASSOCIATION

REGISTERED ASSAYER, PROVINCE OF BRITISH COLUMBIA

CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: [redacted] 984-0221
AREA CODE: 604
TELEX: 043-52597

› ANALYTICAL CHEMISTS › GEOCHEMISTS › REGISTERED ASSAYERS

CERTIFICATE OF ASSAY

CERTIFICATE NO. 66430

INVOICE NO. 33027

RECEIVED Sept. 18/79

ANALYSED Oct. 4/79

TO: Pamicon Developments Ltd.
208 - 850 W. Hastings Street
Vancouver, B.C. V6B 1P1

ATTN:

CC: Calgary

SAMPLE NO. :	% Co
577	0.002
578	0.003
579	0.003
580	0.002
581	0.003
582	0.002
583	0.002

CTA MEMBER CANADIAN TESTING ASSOCIATION

REGISTERED ASSAYER, PROVINCE OF BRITISH COLUMBIA

CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: [redacted] 984-0221
AREA CODE: 604
TELEX: 043-52597

› ANALYTICAL CHEMISTS › GEOCHEMISTS › REGISTERED ASSAYERS

CERTIFICATE OF ASSAY

CERTIFICATE NO. 66502

INVOICE NO. 33128

RECEIVED Sept. 24/79

ANALYSED Oct. 11/79

TO: Pamicon Developments Ltd.,
208 - 850 W. Hastings St.,
Vancouver, B.C.
ATTN: V6B 1P1

CC. Pan Ocean - Calgary

SAMPLE NO. :	% Co
584	0.002
585	0.003
586	0.003
587	0.002
588	0.002
589	0.001
590	0.004
591	0.002
592	0.002
593	0.003
594	0.002
595	0.003
596	0.002
597	0.002
598	0.002
599	0.002
600	0.003
601	0.002
602	0.002
603	0.002
604	0.003
605	0.003
606	0.003
607	0.005
608	0.005
609	0.008
610	0.006
611	0.010
612	0.045
613	0.030
614	0.036
615	0.015
616	0.013
617	0.003
618	0.002
619	0.003
620	0.003
621	0.020
622	0.003
623	0.003

CTA MEMBER CANADIAN TESTING ASSOCIATION

REGISTERED ASSAYER, PROVINCE OF BRITISH COLUMBIA

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: [redacted] 984-0221
AREA CODE: 604
TELEX: 043-52597

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ANALYTICAL CHEMISTS · GEOCHEMISTS · REGISTERED ASSAYERS

CERTIFICATE OF ASSAY

CERTIFICATE NO. 66503

TO: Pamicon Developments Ltd.
208-850 W. Hastings Street
Vancouver, B. C.
V6B 1P1

ATTN: cc: Pan Ocean-Calgary

INVOICE NO. 33356

RECEIVED September 24,1979

ANALYSED October 22, 1979

SAMPLE NO. :	% Co
0624	0.001
0625	0.002
0626	0.003
0627	0.002
0628	0.002
0629	0.002
0630	0.001
0631	0.002
0632	0.002
0633	0.004
0634	0.002
0635	0.003
0636	0.005
0637	0.011
0638	0.006
0639	0.010
0640	0.008
0641	0.002
0642	0.002
0643	0.002
0644	0.002
0645	0.003
0646	0.003
0647	0.005
0648	0.003
0649	0.003
0650	0.002
0651	0.001
0652	<0.001
0653	0.001
0654	0.003
0655	0.006
0656	0.004
0657	0.003
0658	0.002
0659	0.003
0660	0.002
0661	0.003
0662	0.003
0663	0.002

CTA MEMBER CANADIAN TESTING ASSOCIATION

REGISTERED ASSAYER, PROVINCE OF BRITISH COLUMBIA

CHEMEX LABS LTD.

2(BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: [redacted] 904-0221
AREA CODE: 604
TELEX: 043-52597

ANALYTICAL CHEMISTS · GEOCHEMISTS · REGISTERED ASSAYERS

CERTIFICATE OF ASSAY

CERTIFICATE NO. 66970

INVOICE NO. 33895

RECEIVED Oct. 15/79

ANALYSED Oct. 16/79

TO: Pamicon Developments Ltd.,
208 - 850 W. Hastings St.,
Vancouver, B.C.
V6B 1P1

ATTN: C.C.1. PanOcean Calgary

SAMPLE NO. :	% Cu	
631	< 0.01	
632	< 0.01	
633	< 0.01	
634	< 0.01	
635	< 0.01	
636	< 0.01	
637	< 0.01	
638	2.01	Also on #66503 & #66566
639	2.92	
640	0.89	
641	0.06	
642	0.03	
643	< 0.01	
644	< 0.01	
645	< 0.01	
799	< 0.01	
800	< 0.01	
801	0.01	
802	0.04	
803	0.08	
804	0.02	
805	0.09	
806	0.02	
807	< 0.01	
808	0.03	
809	< 0.01	
810	0.02	
811	< 0.01	
812	0.01	
813	0.12	
814	0.02	
815	0.08	
816	0.18	
817	0.05	
818	0.13	
819	0.20	

CTA MEMBER CANADIAN TESTING ASSOCIATION

REGISTERED ASSAYER, PROVINCE OF BRITISH COLUMBIA

CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: [redacted] 984-0221
AREA CODE: 604
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ASSAY

CERTIFICATE NO. 66504

INVOICE NO. 33337

RECEIVED September 24, 197

ANALYSED October 22, 1979

TO: Pamicon Developments Ltd.,
208 - 850 W. Hastings Street,
Vancouver, B.C.
V6B 1P1

ATTN: C.C. 1 Pan Ocean Calgary

SAMPLE NO. :	% Co
0664	0.003
0665	0.004
0666	0.004
0667	0.003
0668	0.005
0669	0.002
0670	0.002
0671	0.003
0672	0.002
0673	0.003
0674	0.002
0675	0.003
0676	0.003
0677	0.002
0678	0.002
0679	0.001
0680	0.001
0681	0.001
0682	0.001
0683	0.002
0684	0.001
0685	0.001
0686	0.002
0687	0.001
0688	0.002
0689	0.002
0690	0.002
0691	0.002
0692	0.002
0693	0.002
0694	0.003
0695	0.002
0696	0.003
0697	0.002
0698	0.003
0699	0.003
0700	0.003

Telexed October 19, 1979

R. Stewart

REGISTERED ASSAYER, PROVINCE OF BRITISH COLUMBIA

CTA MEMBER CANADIAN TESTING ASSOCIATION

CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: [redacted] 984-0221
AREA CODE: 604
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ASSAY

CERTIFICATE NO. 66552

TO: Pamicon Developments Ltd.,
208 - 850 W. Hastings St.,
Vancouver, B.C.
V6B 1P1

INVOICE NO. 33358

RECEIVED Sept. 28/79

ATTN: R. J. Mazur CC. Pan Ocean Oil

ANALYSED Oct. 22/79

SAMPLE NO. :	% Co
0-701	0.001
702	< 0.001
703	0.001
704	< 0.001
705	0.001
706	0.002
707	0.001
708	0.001
709	0.002
710	0.001
711	0.001
712	0.001
713	0.001
714	0.001
715	0.001
716	0.001
717	< 0.001
718	< 0.001
719	< 0.001
720	< 0.001
721	< 0.001
722	< 0.001
723	< 0.001
724	0.001
725	< 0.001
726	< 0.001
727	< 0.001
728	< 0.001
729	< 0.001
730	< 0.001
731	< 0.001
732	< 0.001
733	< 0.001
734	< 0.001
735	0.001
736	0.001
737	0.001
738	< 0.001
739	0.001
0-740	0.001

CTA MEMBER CANADIAN TESTING ASSOCIATION

REGISTERED ASSAYER, PROVINCE OF BRITISH COLUMBIA

CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: [redacted] 984-0221
AREA CODE: 604
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ASSAY

CERTIFICATE NO. 66553
INVOICE NO. 33437
RECEIVED Sept.28/79
ANALYSED Oct.25/79

TO: Pamicon Developments Ltd.
208-850 W. Hastings St.
Vancouver, B. C.
V6B 1P1

ATTN: R. J. Mazur

cc: Pan Ocean Oil

SAMPLE NO. :	% Co	% Cu
0 - 741	< 0.001	
742	< 0.001	
743	< 0.001	
744	< 0.001	
745	< 0.001	
746	< 0.001	
747	< 0.001	
748	< 0.001	
749	< 0.001	
750	0.001	
751	< 0.001	
752	< 0.001	
753	< 0.001	
754	< 0.001	
755	< 0.001	
756	< 0.001	
757	< 0.001	
758	< 0.001	
759	< 0.001	
760	< 0.001	
761	< 0.001	
762	< 0.001	
763	< 0.001	
764	0.001	
765	< 0.001	
766	0.001	
767	< 0.001	
768	0.002	
769	< 0.001	
770	0.002	
771	< 0.001	
772	0.001	
773	0.002	
774	0.003	
775	0.002	
776	0.001	< 0.01
777	0.001	< 0.01
778	< 0.001	< 0.01
779	0.001	< 0.01
0 - 780	0.001	< 0.01

CTA MEMBER CANADIAN TESTING ASSOCIATION

REGISTERED ASSAYER, PROVINCE OF BRITISH COLUMBIA

CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA - V7J 2C1
TELEPHONE: [redacted] 984-0221
AREA CODE: 604
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ASSAY

CERTIFICATE NO. 66554
INVOICE NO. 33291
RECEIVED Sept. 28/79
ANALYSED Oct. 19/79

TO: Pamicon Developments Ltd.,
208 - 850 W. Hastings St.,
Vancouver, B.C.
V6B 1P1

ATTN: R. J. Mazur CC. Pan Ocean Oil

SAMPLE NO. :	% Co	% Cu
0-781	0.002	< 0.01
782	< 0.001	< 0.01
783	< 0.001	< 0.01
784	0.001	< 0.01
785	0.002	0.84
786	0.001	0.03
0-787	0.003	0.79

CTA MEMBER CANADIAN TESTING ASSOCIATION

REGISTERED ASSAYER, PROVINCE OF BRITISH COLUMBIA

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA - V7J 2C1
TELEPHONE: [redacted] 984-0221
AREA CODE: 604
TELEX: 043-52597

CHEMEX LABS LTD.

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ASSAY

CERTIFICATE NO. 66566

INVOICE NO. 33360

RECEIVED September 28, 1979

ANALYSED October 22, 1979

TO: Pamicon Developments Ltd.,
208 - 850 W. Hastings St.,
Vancouver, B.C.
V6B 1P1

ATTN: C.C. 1 Calgary

SAMPLE NO. :	% Co	% Cu
0 - 788	0.003	0.05
789	0.001	< 0.01
790	0.002	0.19
791	0.001	< 0.01
792	0.001	< 0.01
793	0.001	
794	0.003	
795	0.001	
796	0.004	
797	0.002	
798	0.002	
799	0.001	
800	0.001	
801	< 0.001	
802	0.001	
803	0.002	
804	0.001	
805	< 0.001	
806	0.001	
807	< 0.001	
808	0.001	
809	< 0.001	
810	< 0.001	
811	< 0.001	
812	< 0.001	
813	0.002	
814	0.001	
815	0.002	
816	0.004	
817	0.005	
818	0.012	
819	0.023	
820	0.042	0.44
821	0.023	0.07
822	0.022	0.06
823	0.010	0.01
824	0.007	< 0.01
825	0.013	0.04
826	0.011	0.03
0 - 827	0.009	0.03

CTA MEMBER CANADIAN TESTING ASSOCIATION

REGISTERED ASSAYER, PROVINCE OF BRITISH COLUMBIA

CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: [redacted] 984-0221
AREA CODE: 604
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ASSAY

CERTIFICATE NO. 66567

INVOICE NO. 33341

RECEIVED September 28, 1979

ANALYSED October 19, 1979

TO: Pamicon Developments Ltd.,
208 - 850 W. Hastings Street,
Vancouver, B.C.
ATTN: V6B 1P1

SAMPLE NO. :	% Co	% Cu
0-828	0.009	< 0.01
829	0.009	< 0.01
830	0.004	0.02
831	0.019	0.11
832	0.042	0.03
833	0.014	0.01
834	0.003	0.02
835	0.003	0.01
836	0.004	0.39
837	0.002	< 0.01
838	0.002	0.05
839	0.002	0.05
840	0.009	0.43'
841	0.007	0.22
842	0.004	0.17
843	0.003	0.12
844	0.002	0.04
845	0.002	0.02
846	0.002	< 0.01
847	0.003	< 0.01
848	0.002	< 0.01
849	0.004	< 0.01
850	0.005	< 0.01
851	0.005	0.01
852	0.004	
853	0.003	
854	0.003	
855	0.007	
0-856	0.014	

CTA MEMBER CANADIAN TESTING ASSOCIATION

REGISTERED ASSAYER, PROVINCE OF BRITISH COLUMBIA

APPENDIX 6

PHOTOGRAPHIC ILLUSTRATIONS

APPENDIX 6

PHOTOGRAPHIC ILLUSTRATIONS

6.1 - Otter Property

Illustrates:
1) Southwest Showing Area
2) Northeast Showing Area
3) Fairchild Fault Zone - Unit 2b
4) Drill Camp
5) Fairchild Cirque
6) Unit 4 - Quartet Black Shale
7) Unit 2a - Siltstone
   Unit 3 - Dolomite
   White limestone marker horizon in
   Upper Fairchild Group
8) Unit 1 - Siltstone/Dolomite
9) Breccia

6.2 - Mountainside north of the Otter Main Showing. Cliffs up to 500 feet high characterize the rugged topography in the area.

1) Fairchild Fault Zone
2) Otter North A Showing Area
3) Otter North B Showing Area

6.3 - Otter Main Showing Area

Illustrates:
1) Fairchild Fault - forming a major draw
2) Southwest Showing
3) Northeast Showing
4) Drill Site #1 - DDH O-79-1 to 3
5) Drill Site #2 - DDH O-79-4 and 5
6) Breccia

6.4 - Fairchild Fault Zone

Steep cliffs and intense deformation characterize this zone as shown by this large fold structure.

1) Bedding dips downslope
2) Bedding dips into mountain

6.5 - Otter North A Showing Area - Otter North 2 Showing

1) One centimetre calcite vein, with cobaltite, erythrite and chalcopyrite, occupies fracture dipping into photo at 025° AZ strike; 42° NW dip. Footwall siltstone stained with erythrite up to 30 cm from fracture.
   Hammer is 13" long.

6.6 - Otter North A Showing Area - Otter North 2 Showing

Further along strike to the north:

1) 1 cm calcite vein is stained with erythrite
2) Barren calcite vein swarm below this vein.

Flagging is approximately 18" long.

6.7 - Otter North A Showing Area - Otter North 3 Showing

This occurrence is approximately 100 vertical feet above Otter North 2.

1) 3-15 cm thick calcite vein with cobaltite and erythrite occupy a fracture 170° AZ strike, 39°W dip.

2) Medium scale fold in hanging wall is crosscut by mineralized fracture.
3) Footwall siltstone is subconcordant to mineralized fracture.

Hammer is 13" long.

6.8 - Otter North A Showing Area - Otter North 4 Showing

Illustrates:
1) Microfolded siltstones stained with erythrite
2) 1 cm quartz vein stained with erythrite at 155° AZ strike, 45°SW dip
3) Barren quartz vein in fracture crosscutting mineralized quartz vein.

Lens cap is approximately 5 cm long.

6.9 - Otter North B Showing Area - Otter North 5 Showing

Illustrates:
1) 20 cm zone where calcite floods bedding and contains cobaltite disseminations and erythrite on hairline fractures. Zone is concordant to bedding at 155° AZ strike, 40°SW dip.

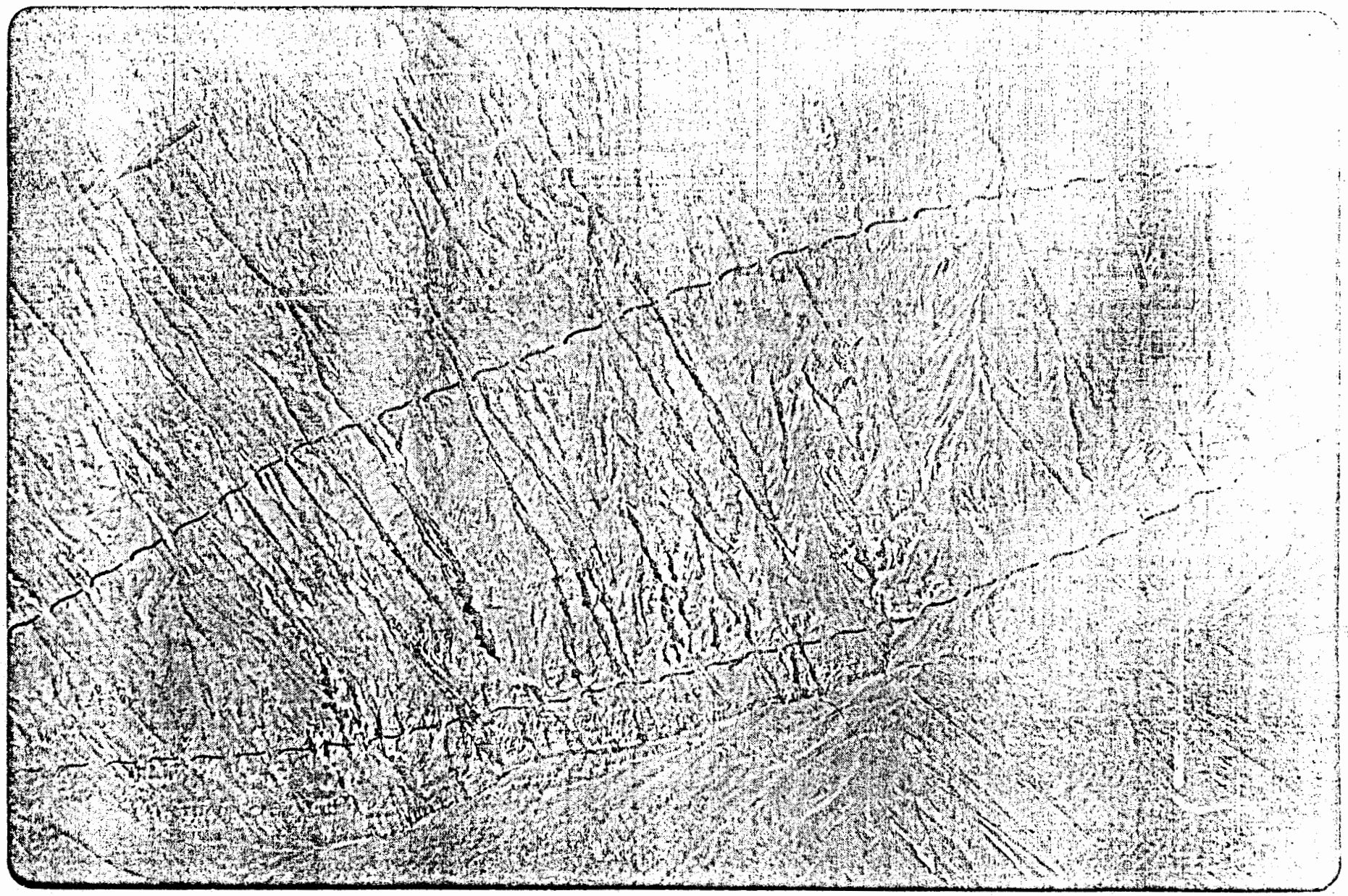
Hammer is 13" long.

6.10 - Otter North B Showing Area - Otter North 6 Showing

Illustrates:
1) Erythrite stained fracture at 095° AZ strike, 47°S dip.
2) Siltstone bedding at 155° AZ strike, 52° dip.

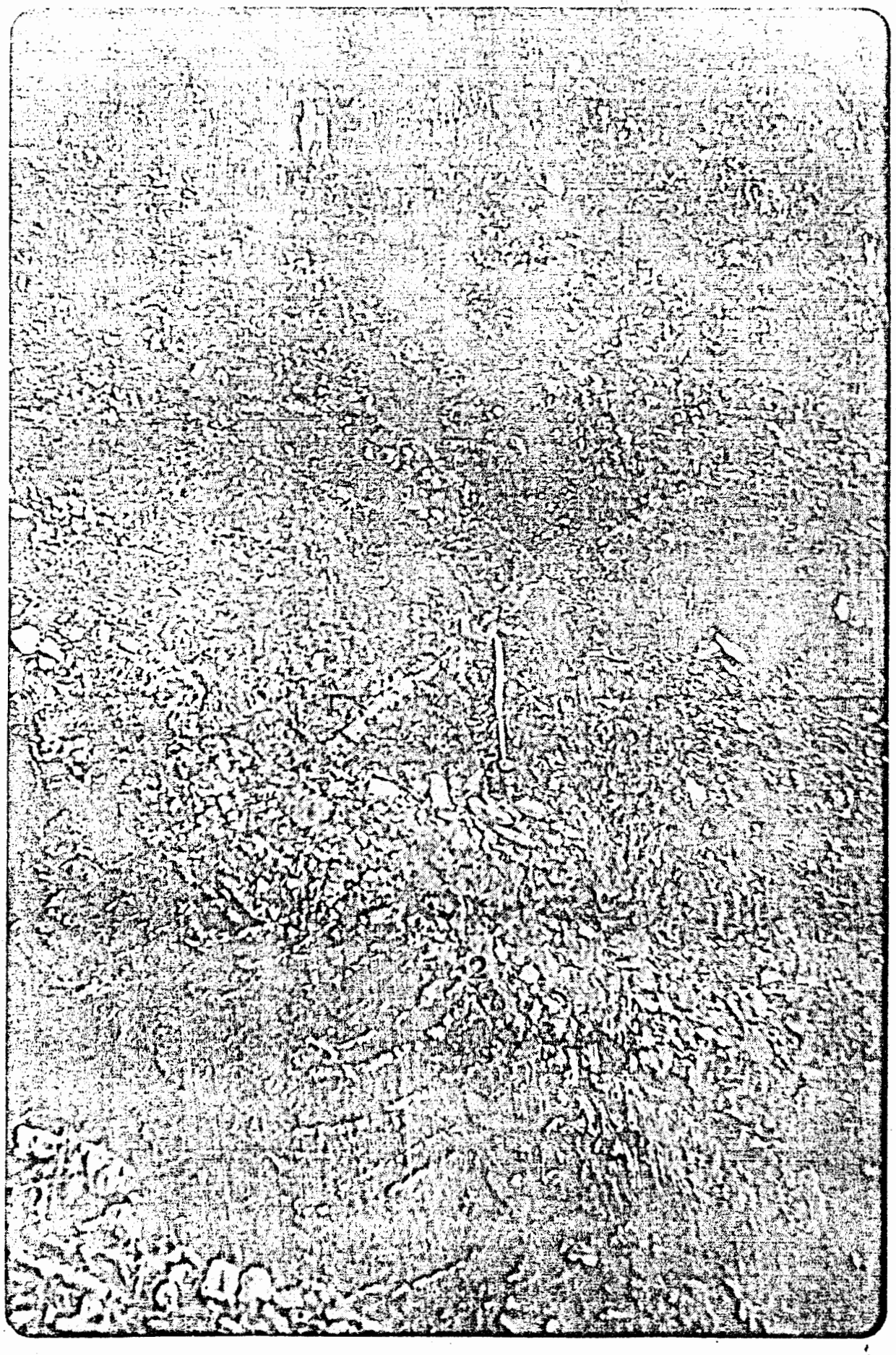
Hammer is 13" long.

5
6
7
8



1
2
3
4
5
6

1
2



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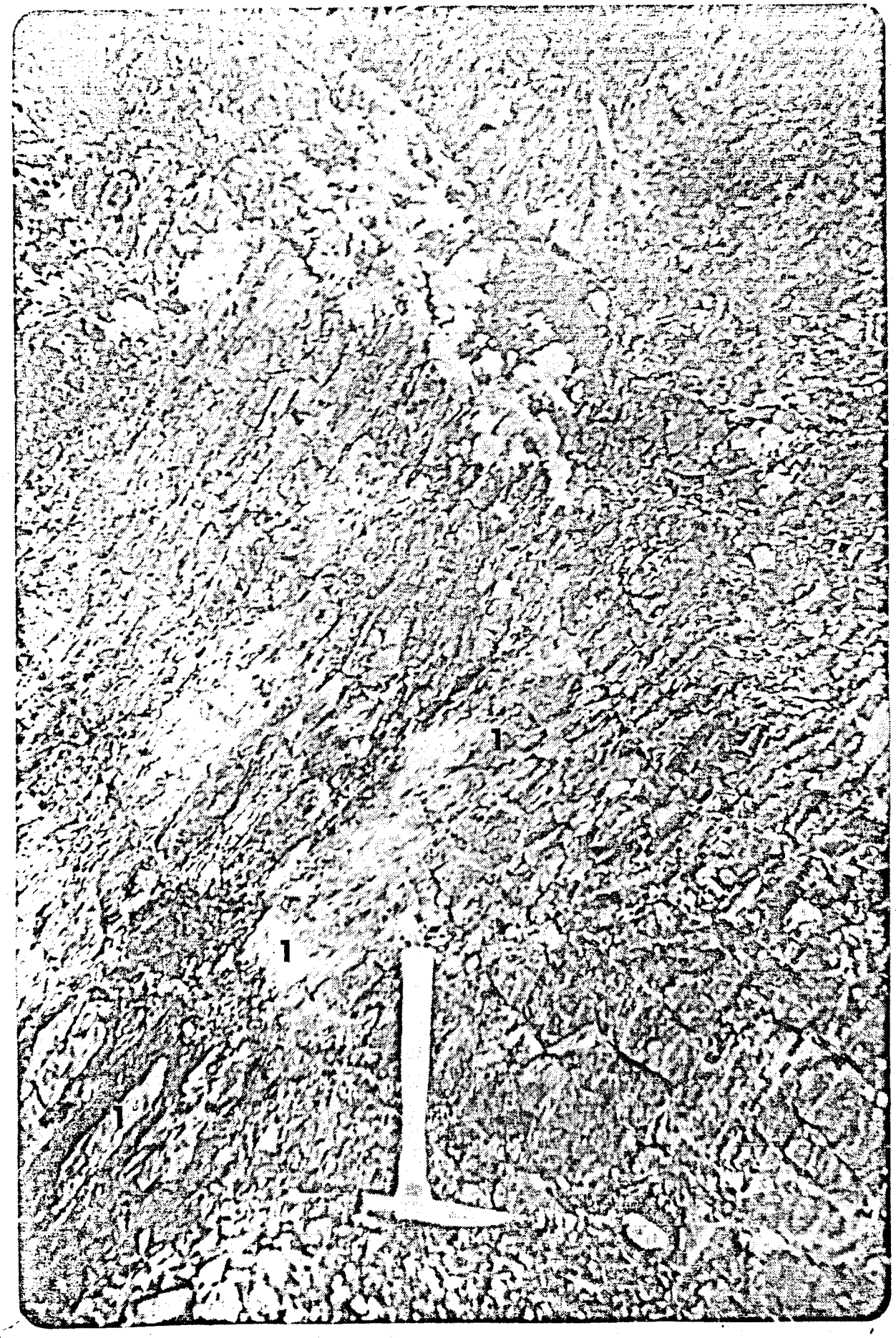
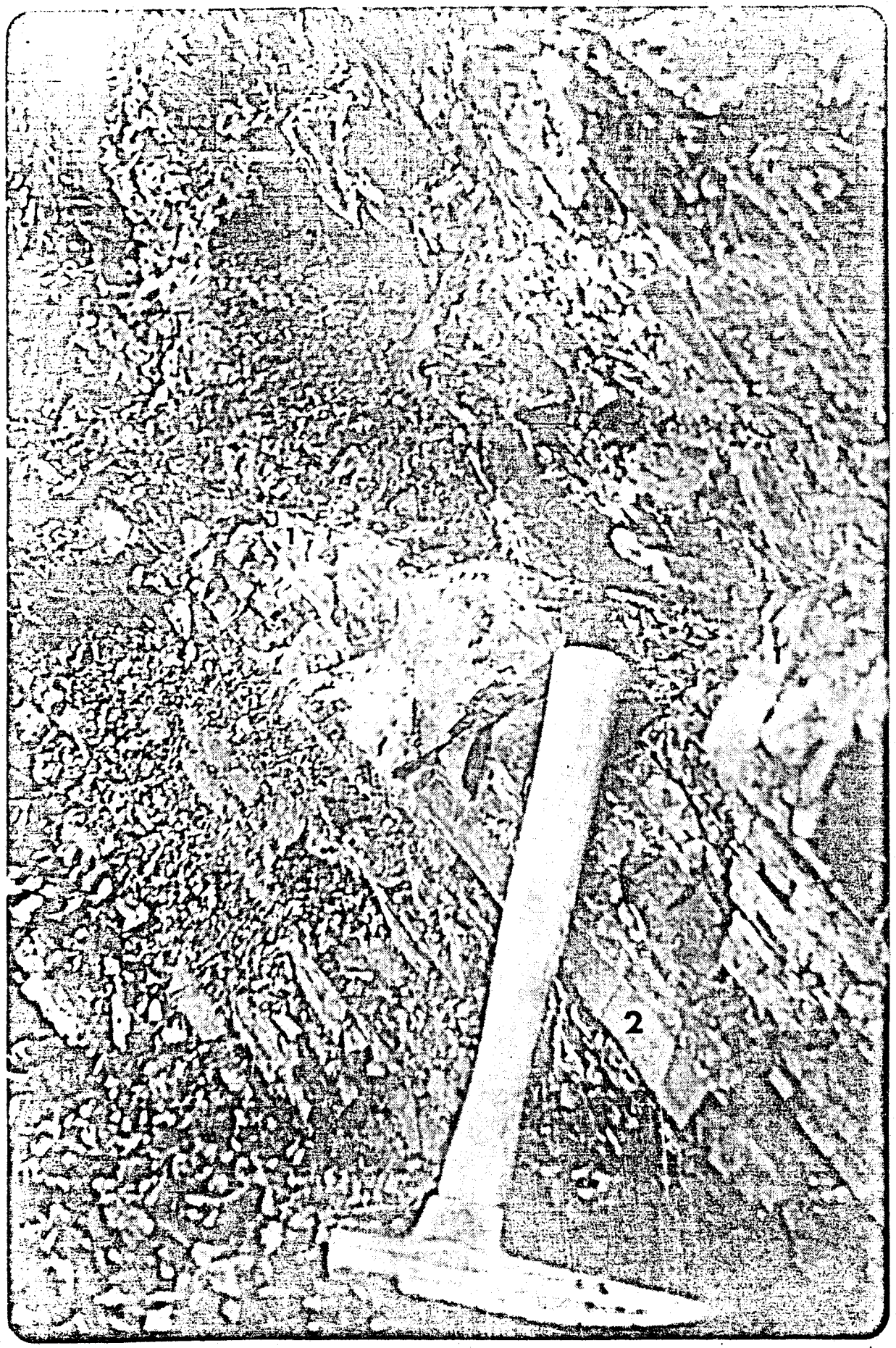

1
1
1


1
2

133°47' W

65°00' N

BLACK SHALE

OTTER
89-124
(OCT. 9, 79)

FAIRCHILD FAULT

△ OTTER NORTH B SHOWING

△ OTTER NORTH A SHOWING

OTTER
5-36
(SEPT. 11, 79)

OTTER
1-4
(AUG. 1, 77)

MAIN OTTER SHOWING
D.D.H. O-79-1 TO 5

OTTER
37-88
(AUG. 10, 79)

ENERGEX MINERALS
(FAIR GROUP)

BONNET PLUME RIVER

LW

N

mile ½ 0 ½ 1 mile

Drawing No. 2
TO ACCOMPANY REPORT NO. 24-79 BY J.F.T, R.J.M, A.K.C.

PAN OCEAN OIL LTD.
CALGARY ALBERTA

CLAIM STATUS MAP
OTTER COBALT SHOWING
FAIRCHILD LAKE PROJECT

DATE	SCALE	NTS	DRAWING NO.
DEC; 1979	1" = 1/2 MILE	106 C/13 106 F/4	C-0707

155° W

134° W

133° 30' W

65° 15' N

65° N

64° 45' N

FOX CREEK AREA (see note)

WOLF - DON

KIWI LAKE

QUARTET LAKES

KNORR CREEK

RAPITAN CREEK

BONNET PLUME RIVER

BEARS CREEK

ROYAL CREEK

WIND

BEAR

ANGELL LAKE

BLUE CREEK

HAWK

McCLUSKY LAKE

GILLESPIE CREEK

DELORES CREEK

BARE

BREAK

URSUS

LYNX

ELK

PIKA

Au

Bu

Bx

Bz

Bi

Az

Cu

Ci

Hp

D

Є

Kd

CROSS SECTION A-A'

(LOOKING NORTH)

A

A'

RAPITAN CK

BONNET PLUME RIVER

BEAR CK

BLUE CK

Baseline

LEGEND

	Kd/Kdi	Diabase, Kdi - Diorite
ORDOVICIAN DEVONIAN	D	Carbonates
CAMBRIAN	Є	Undivided clastics and Carbonates
		PINGUICULA GROUP
HADRYNIAN	Hp	Undivided clastics and Carbonates
	Bx	Breccia
		GILLESPIE GROUP
	Cu	Undivided orange weathering dolomite, grey-green weathering dolomite, stromatolitic dolomite, oolitic dolomite occasional shale
	Ci	Interbedded orange weathering dolomite and dark siltstone, Transition from Wernecke Group to Gillespie Group
		WERNECKE GROUP
	Bu	Undivided sandstone and shale, occasional massive quartzites
	Bz	Lightly pyritic quartzite. Minor thin shale
	Bi	Black shale, sandstone and shale interbeds
		FAIRCHILD GROUP
	Az	Interbedded brown weathering dolomite and black shale, white limestone marker bed, massively bedded rusty weathering pyritic shale,
	Au	Undivided grey weathering calcareous siltstone, interbedded siltstone and limestone, phyllite minor limestone and quartzite

HADRYNIAN

SYMBOLS

- Geological contact (defined, approx. assumed)
- Thrust Fault (defined, approx.)
- Fault (defined, assumed)
- Bedding attitude defined (G- gentle M- moderate S- steep)
- Bedding overturned
- Bedding tops unknown
- Anticlinal axis (arrow indicates plunge)
- Synclinal axis (arrow indicates plunge)
- Limits of unconsolidated glacial and alluvial deposits

TO ACCOMPANY REPORT NO. ____ BY ____

MOUNTAINEER - PAN OCEAN JOINT VENTURE

PROJECT AREA
YUKON TERRITORY

REGIONAL GEOLOGY

SCALE IN KILOMETRES
3 2 1 0 1 2 3 4 5

PAMICON DEVELOPMENTS LIMITED

DRAWN:	PROJECT:	DATE:	FIGURE:
ALTAIR.	QUARTET-FAIRCHILD	DEC. 1977.	3

Drawing No. 3

DRAWING NO. X-0708

133°47' W

64°59' N

RADIOACTIVE TALUS ZONE
BRANNERITE

DALLAS VEIN
(PROJECTED)

COBALT AND COPPER VEINS

N.E. SHOWING

S.W. SHOWING

O-79-1 (-65)
O-79-2 (-90)
O-79-3 (-65)

O-79-3
#1 VEIN

O-79-4 (-90)
O-79-5 (-65)

O-79-1
#2 VEIN

BASELINE

LEGEND

- OUTCROP
- SURVEY STATION
- DRILL SITE
- STRIKE AND DIP OF BEDDING; OVERTURNED BEDDING
- TREND AND PLUNGE OF FOLD
- TREND AND PLUNGE OF LINEATION
- STRIKE AND DIP OF JOINTING
- STRIKE AND DIP OF CARBONATE VEIN
- STRIKE AND DIP OF COBALT AND / OR COPPER MINERALIZED VEIN
- COBALT AND/OR COPPER MINERALIZED VEIN
- FOLD TREND
- AXIAL PLANE SHEAR
- xCu,U MINERAL SHOWING

1. VARIABLY MAGNETIC SLATE AND SILTSTONE - NON-CALCAREOUS
2. CALCAREOUS SILTSTONE - NON-MAGNETIC
3. ALTERED SILTSTONE - METASOMATIZED
4. MAGNETIC CALCAREOUS SILTSTONE
5. MAGNETIC SILTSTONE - NON-CALCAREOUS

METERS 20 0 20 40 60 80 100

TO ACCOMPANY REPORT NO. 24-79 BY J.F.T.R.I.M.A.K.C.

PAN OCEAN OIL LTD.
CALGARY ALBERTA

Drawing No. 4

OTTER MAIN SHOWING-GEOLOGY

FAIRCHILD COBALT PROJECT

DATE	SCALE	NTS	DRAWING NO.
OCTOBER, 1979	1:1000	106 C-13	X-0708

CBW
DP441B1P00

DRAWING NO. X-0709

LW

134°47' W

DRILL HOLE
0-79-4 (-90; ABANDONED AT 37')
0-79-5 (168°Az./-65°DIP; T.D.628')

DALLAS VEIN (PROJECTED)

HARRIS VEIN

DEBOCK VEIN

#30 VEIN

#33 VEIN

GIRLING VEIN

CLIFF VEINS

EAGLE'S NEST VEIN

COWIE VEIN

COWIE VEIN

KK VEIN

0-79-5

1+60 S

1+80 S

2+00 S

2+20 S

2+40 S

2+60 S

2+80 S

64°59' N

0+20 E

0+40 E

0+60 E

0+80 E

1+00 E

B3

B4

BASE LINE 0+00

LEGEND

- SS9 SURVEY STATION
- DRILL SITE
- GRID PICKET STATION

OUTCROP SHOWN IS UNIT 2 - CALCAREOUS SILTSTONE
(REFER TO DRAWING No. 4

4 0 4 8 12 16 20 metres

Drawing No. 5

TO ACCOMPANY REPORT NO. 24-79 BY J.F.T., R.J.M., A.K.C.

PAN OCEAN OIL LTD.
CALGARY ALBERTA

OTTER MAIN SHOWING NORTHEAST GEOLOGY AND STRUCTURE

FAIRCHILD COBALT PROJECT

DATE	SCALE	NTS	DRAWING NO.
OCT; 1979	1:200	106 C-13	X-0709

DRAWING NO. X-0710

150°

El 1000 m

O-79-2 (-90°)

O-79-1 (-65°)

El 990 m

El 980 m

ALTERED SILTSTONE, Cpy

El 970 m

DISS. Cpy

FAULT GOUGE

El 960 m

FAULT ZONE

Co. VEIN No. 1 S.W.

Co. VEIN No. 2 S.W.

El 950 m

MINOR DISS. Cpy, Co.

ABUNDANT DISS. Cpy MINOR Co.

ZONE OF DISSEMINATED SULPHIDES

El 940 m

DISS Cpy Co.

El 930 m

Co. VEIN

El 920 m

FAULT GOUGE

TD 78.94 m (259')

FAULT GOUGE

El 910 m

El 900 m

El 890 m

TD 131.22 m (430.5')

El 880 m

El 870 m

LEGEND

- (1) VARIABLY MAGNETIC SILTSTONE
- (2) SILTSTONE - CALCAREOUS, NON-MAGNETIC
  - a MICROFOLDED
  - b DARK GREEN CHLORITIZED
- (4) MAGNETIC, CALCAREOUS SILTSTONE
- (5) MAGNETIC, NON-CALCAREOUS SILTSTONE
- — — Co, Cpy VEIN
- ——— GEOLOGICAL CONTACT
- 0.1/3' % Co / WIDTH(ft) CHEMICAL ASSAY

meters 5 0 5 10

TO ACCOMPANY REPORT NO. 24-79 BY J.F.T., R.J.M., A.K.C.

PAN OCEAN OIL LTD.
CALGARY ALBERTA

Drawing No. 6

DDH O-79-1, O-79-2

OTTER SHOWING - SOUTHWEST

FAIRCHILD COBALT PROJECT

DATE	SCALE	NTS	DRAWING NO.
OCTOBER, 1979	1:200	106 C-13	X-0710

G.W.

DP441BP00

DRAWING NO. X-0711

105° →

O-79-2 (-90°) O-79-3 (-65°)

El 990 m

El 980 m — 10

ALTERED SILTSTONE, Cpy

① ① 20

El 970 m — 20

DISS. Cpy

FAULT GOUGE

El 960 m — 30

FAULT ZONE

② 40

Co. VEIN No. 1 S.W.

El 950 m — 40

Co. VEIN No. 2 S.W.

MINOR DISS. Cpy, Co.

2a

ABUNDANT DISS. Cpy, MINOR DISS. Co.

El 940 m — 50

0.101/2

0.107/3

2b 60

TALUS COVER

0.104/5

El 930 m — 60

0.091/4 0.103/9

Co. VEIN

DISS Cpy, Co

4

2b

0.14/1'

FAULT GOUGE

El 920 m — 70

FAULT 80

4

TD 78.94 m (259')

El 910 m

100

El 900 m

El 890 m

120

El 880 m

El 870 m

140

El 860 m

El 850 m

160

El 840 m

180

El 830 m

El 820 m

TD 195.12 m (640')

El 810 m

GW

LEGEND

① VARIABLY MAGNETIC SILTSTONE

② SILTSTONE-CALCAREOUS, NON-MAGNETIC
a MICROFOLDED
b DARK GREEN CHLORITIZED

④ MAGNETIC CALCAREOUS SILTSTONE

⑤ MAGNETIC NON-CALCAREOUS SILTSTONE

— — Co., Cpy. VEIN

——— GEOLOGICAL CONTACT

0.1/3' % Co / WIDTH(ft) CHEMICAL ASSAY

meters 5 0 5 10

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Drawing No. 7

DDH O-79-2, O-79-3

OTTER SHOWING - SOUTHWEST

FAIRCHILD COBALT PROJECT

DATE	SCALE	NTS	DRAWING NO.
OCTOBER, 1979	1:200	106 C-13	X-0711

DP41B1P00

DRAWING NO. X-0712

El. 1040 m

348°

168°

O-79-5

CASING

DALLAS VEIN

0.644 | 1.052
22-32 (10)

0.236 | 0.528
18-47 (29)

SS 24
SS 25
HARRIS VEIN STRIKE 018°
DIP 040°

FAULT

O-79-4

10m

20m

0.009 | 0.451
55-65 (10)

DISSEMINATED CHALCOPYRITE MINERALIZATION

1.5m TRUE THICKNESS CONCORDANT TO BEDDING @ 74° DIP

30m

O-79-4 ABANDONED HOLE
T.D. 11.27m AZ.000° DIP -90°

0.006 | 0.119
12-29 (17)

El. 1020 m

El. 1000 m

40m

50m

60m

0.025 | -
205-211 (6)

0.020 | -
215-216 (1)

70m

0.003 | 1.182
232-237 (5)

FAULT

80m

El. 980 m

El. 960 m

90m

100m

DEBOCK ZONE

DEBOCK VEIN
SS 11

No. 30 VEIN
SS 30

No. 33 VEIN
SS 33

GIRLING VEIN
SS 9

SS 38 THREE 15 cm CALCITE VEINS WITHIN 2.5m INTERVAL MINOR CPY. MINZN.

El. 940 m

110m

SS 17 15-30 cm CALCITE VEIN MINOR CPY MINZN

CLIFF ZONE

COWIE VEIN
SS 5

KK VEIN
SS 42

120m

El. 920 m

130m

140m

COWIE ZONE

0.017 | 0.634
470-477 (7)

0.002 | 0.256
470-492 (22)

El. 900 m

0.002 | 0.190
487-492 (5)

150m

160m

FAULT

El. 880 m

170m

FAULT

0.005 | 0.125
564-576 (12)

0.018 | 0.093
575-582 (7)

0.007 | 0.091
564-582 (19)

180m

0.004 | 0.203
591-599 (8)

El. 860 m

190m

FAULT

TD 191.4 m
AZ 168° (0m), 159° (189.9m)
DIP -65° (0m), -82° (189.9m)

LEGEND

① SILTSTONE - NONMAGNETIC CALCITE AND OR QUARTZ FELDSPAR VEINING
② ALTERED SILTSTONE - BUFF COLOURED, NONCALCACAREOUS QUARTZ FELDSPAR METASOMATISM
③ DARK GREEN CHLORITIZED SILTSTONE
④ DARK GREEN CHLORITIZED SILTSTONE (MAGNETIC)
⑤ MAGNETIC SILTSTONE
• SS 9 SURVEY STATION 9
Cu AND/OR Co INTERSECTION
CALCITE VEIN
SILTSTONE
BARREN CALCITE OR QUARTZ-FELDSPAR VEIN
Co% | Cu% / FEET WEIGHTED AVERAGE ASSAY

meters 5 0 5 10

PAN OCEAN OIL LTD.
CALGARY ALBERTA

Drawing No.8

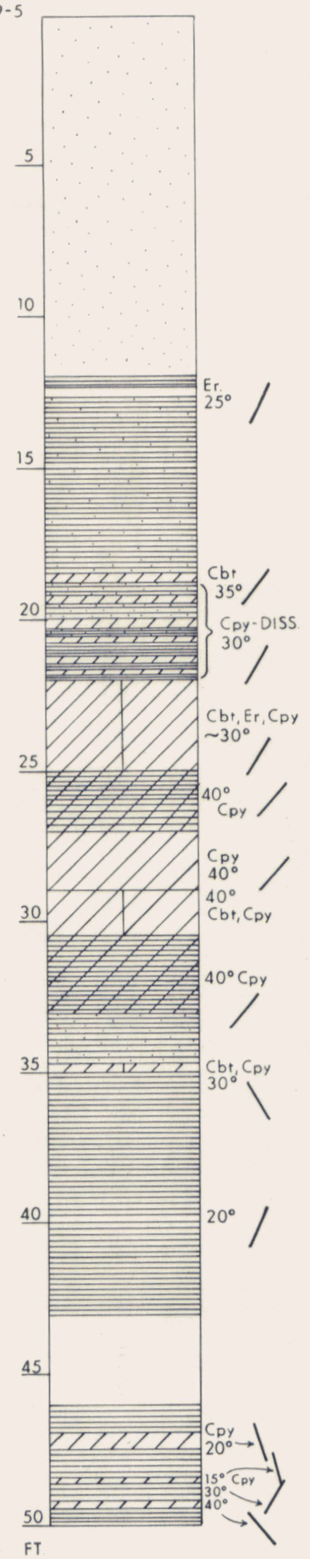
DDH O-79-4, O-79-5
OTTER SHOWING - NORTHEAST
FAIRCHILD COBALT PROJECT

DATE	SCALE	NTS	DRAWING NO.
OCTOBER, 1979	1:200	106C-13	X-0712

TO ACCOMPANY REPORT NO. 24-79 BY J.F.T., R.J.M., A.K.C.

GW

COLLAR 0-79-5
ELEV. 3400.2
AZ. 168°
DIP - 65°



ASSAY RECORD

	Co(%)	Cu(%)	As(%)	Ni(%)	Ag(ppm)	COMPOSITE
0	0.005	0.01				
5						
	0.003	0.01				
10						
	0.007	< 0.01				
	0.018	< 0.01				
	0.019	< 0.01				
15	0.009	0.08				
	0.008	< 0.01				
	0.006	< 0.01				
	0.007	< 0.01				
	0.011	< 0.01	0.010			
20	0.018	0.17	0.030			
	0.014	0.04	0.020			
	0.046	0.25	0.080	< 0.01	1.5	
	0.600	0.43	1.060	0.04	2.0	
	0.720	1.07	1.320	0.05	3.0	
25	0.020	0.13	0.040	< 0.01	1.0	
	0.015	0.09	0.080	< 0.01	1.0	0.644% Co
	0.028	0.40	0.080	0.01	1.0	1.052% Cu
	0.160	3.60	0.440	0.02	4.0	1.092% As
	0.360	3.48	0.880	0.05	5.0	0.055% Ni
30	3.230	0.70	4.900	0.26	3.0	
	1.240	0.55	1.920	0.12	3.0	
	0.073	0.07	0.200	< 0.01	1.0	
	0.020	0.01	0.020			0.236% Co
	0.016	< 0.01	0.015			0.528% Cu
35	0.017	0.01	0.025			
	0.031	0.08	0.040			
	0.060	1.15	0.225			
	0.015	0.03	0.005			
	0.018	0.12	0.010			
40	0.045	0.72	0.045			
	0.019	0.08	0.010			
	0.015	0.09	0.020			
	0.008	0.02	0.005			
45	0.015	0.20	0.010			
	0.031	1.42	0.050			
	0.007	0.14	0.005			
	0.005	0.17				
50	0.003	0.01				

FT.

LW

LEGEND

- CASING
- ALTERED SILTSTONE - LT. GREY - CALCITE FLOODED
- ALTERED SILTSTONE WITH INTENSE CALCITE FLOODING
- SILTSTONE - DK GREEN NON-CALCAREOUS, NON-MAGNETIC
- FAULT-GOUGE & BROKEN CORE
- CALCITE VEIN
- 25° CORE ANGLE

Er	ERYTHRITE
Cbt.	COBALTITE
Cpy	CHALCOPYRITE
DISS.	DISSEMINATIONS

Drawing No. 9

ft 5 0 5 10 ft

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DETAILED LOG 0-79-5

DALLAS VEIN

FAIRCHILD COBALT PROJECT

DATE	SCALE	NTS	DRAWING NO.
DEC., 1979	1" = 5'	106 C/13	B-0774

DP441B1PX0

DRAWING NO. X-0775

133°47' W

65°00' N

FAIRCHILD CIRQUE

FAIRCHILD GROUP UNDIVIDED

APPROXIMATE OUTLINE OF OTTER 1-124 COBALT CLAIMS

OTTER NORTH B SHOWING

OTTER NORTH A SHOWING

OTTER MAIN SHOWING

FAIRCHILD FAULT

TOP OF RIDGE

FAIRCHILD LAKE

FGT 35

FGT 34

0-79-1
0-79-2
0-79-3
0-79-4
0-79-5

BONNET PLUME RIVER

LEGEND

FAIRCHILD GROUP

1 RIBBED SILTSTONE / DOLOMITE

2 a) SILTSTONE - GREY, LIGHT TO DARK GREEN
- VARIABLY CALCAREOUS AND MAGNETIC
- VARIABLY SLATEY TO PHYLLITIC

b) SILTSTONE - STRONG DEFORMATION FOLDED, FAULTED

3 DOLOMITE - ORANGE WEATHERING

QUARTET GROUP

4 BLACK SHALE

INTRUSIVES

5 BRECCIA

- OUTCROP AREA
- x MAPPED OUTCROP
- GEOLOGICAL CONTACT (UNDEFINED)
- FAULT
- APPROXIMATE STRIKE AND DIP OF BEDDING
- DIAMOND DRILL HOLE LOCATION
- CREEK
- x^{Cu} MINERAL SHOWING
- BULK STREAM SEDIMENT SAMPLE

Drawing No. 10

mile $\frac{1}{4}$ 0 $\frac{1}{4}$ $\frac{1}{2}$ $\frac{3}{4}$ 1 mile

TO ACCOMPANY REPORT NO 24-79 BY J.F.T, R.J.M, A.K.C

PAN OCEAN OIL LTD.
CALGARY ALBERTA

GEOLOGICAL COMPILATION MAP OTTER CLAIM GROUP

FAIRCHILD COBALT PROJECT

DATE	SCALE	NTS	DRAWING NO.
DEC., 1979	1" = 1/4 MILE	106 C-13 106 F-4	X-0775

LW

DP441B1P00

DRAWING NO. X-0776

133°47'W

BLACK SHALE

OTTER NORTH B

OTTER NORTH A

FAIRCHILD FAULT

TOP OF RIDGE

FAIRCHILD CIRQUE

BRECCIA

0-79-4
0-79-5

0-79-1
0-79-2
0-79-3

OTTER MAIN SHOWING

FAIRCHILD LAKE

APPROXIMATE OUTLINE OF OTTER 1-124 COBALT CLAIMS

65°00'N

65°00'N

SAMPLE NO.	Co (%)	Cu (%)	Ni (%)	Ag (oz/ton)	Au (oz/ton)	U_3O_8 (%)	As (%)
64.13	0.17	0.030	0.015	0.00	0.001	0.000	0.26
64.12	0.42	0.050	0.03	0.00	0.001	0.000	0.66
64.10	8.36	0.005	0.23	0.01	0.002	0.003	12.20
64.09	3.40	0.045	0.04	0.16	0.003	0.001	6.30
64.11	0.20	0.015	0.01	0.01	0.000	0.002	0.25
64.08	12.40	0.025	1.66	0.30	0.018	0.024	22.70
64.07	6.40	0.125	0.67	0.38	0.003	0.021	9.01
64.04	3.45	0.025	0.38	0.12	0.007	0.005	4.95
64.16	0.95	0.005	0.028	0.00	0.001	0.002	1.07
64.06	3.90	0.015	0.28	0.02	0.003	0.003	5.86
64.05	11.35	0.28	1.16	0.06	0.035	0.028	17.20
64.03	10.15	0.06	0.90	0.04	0.010	0.016	16.30
64.02	10.05	1.08	1.15	0.37	0.042	0.055	16.90
64.01	8.53	2.59	0.74	0.57	0.026	0.500	13.85
64.15	13.42	0.036	1.07	0.06	0.010	0.123	20.45
64.14	3.18	0.03	0.32	0.00	0.011	0.000	5.30

CAMPSITE

1/4 0 1/4 1/2 3/4 1 miles

FAIR GROUP

ENERGEX MINERALS PROPERTY

URANIUM, COPPER

Drawing No. 11

TO ACCOMPANY REPORT NO. 24-79 BY J.F.T., R.J.M., A.K.C.

PAN OCEAN OIL LTD.
CALGARY ALBERTA

OTTER PROPERTY
COBALT SHOWINGS

FAIRCHILD COBALT PROJECT

DATE	SCALE	NTS	DRAWING NO.
OCT, 1979	1" = 1/4 MILE	106 C-13 106 F-4	X-0776

133°47'W

LW

MAIN OTTER SHOWING
1.5 MILES SOUTH

OTTER NORTH B SHOWING
3/4 MILES NORTH

2

ON4a - FLOAT OCCURRENCE
- COBALTITE IN 5mm THICK QUARTZ VEINS IN SILTSTONE

ON 4b - 1cm THICK QTZ VEIN WITH COBALTITE MINERALIZATION IN FOLDED SILTSTONE

175 20 45 155

ON 3 - 3-15cm CALCITE VEIN DISCORDANT TO FOLDED SILTSTONES

1

150 53 39 170

44 32

FLOAT OCCURRENCE OF COBALT -NOT ASSAYED

ON 1
5ft FRACTURE 3-15cm THICK COBALT IN VEINS AND DISSEMINATION IN FOOTWALL

140 140 0

137 50

ON 2

50 FT EXPOSURE
1cm COBALT-CALCITE VEIN WITH UP TO 20cm MASSIVE DISSEMINATIONS OF COBALTITE IN FOOTWALL

42 25

45 5

ON 2
APPROX 30 FT EXPOSURE OF A 15cm THICK SHEAR WITH MASSIVE DISSEMINATIONS OF COBALTITE

LEGEND

1 SILTSTONE - NON-CALCAREOUS
- NON-MAGNETIC
- DK GREY

2 SILTSTONE - NON-CALCAREOUS
- NON-MAGNETIC
- LT GREY
- MORE SILICEOUS THAN 1

10 20 STRIKE AND DIP OF BEDDING

10 20 STRIKE AND DIP OF COBALT VEIN

EXPOSED COBALT VEIN

POSSIBLE EXTENSION OF VEIN UNDER TALUS COVER

CREEK

STEEP CLIFF FACE

GEOLOGICAL BOUNDARY (UNDEFINED)

6415 - 13.42% Co, 1.07% Ni, 0.036% Cu, 20.45% As, 0.123% U_3O_8, 0.06oz/t Ag, 0.010 oz/t Au

6401 - 8.53% Co, 0.74% Ni, 2.59% Cu, 13.85% As, 0.50% U_3O_8, 0.57oz/t Ag, 0.026oz/t Au

6402 - 10.05% Co, 1.15% Ni, 1.08% Cu, 16.70% As, 0.055% U_3O_8, 0.37oz/t Ag, 0.042 oz/t Au

6405 - 11.35% Co, 1.16% Ni, 0.28% Cu, 17.20% As, 0.028% U_3O_8, 0.06 oz/t Ag, 0.035oz/t Au

6403 - 10.15% Co, 0.90% Ni, 0.06% Cu, 16.30% As, 0.016% U_3O_8, 0.09oz/t Ag, 0.010 oz/t Au

6406 - 3.90% Co, 0.28% Ni, 0.015% Cu, 5.86% As, 0.003% U_3O_8, 0.02 oz/t Ag, 0.003 oz/t Au

6416 - 0.95% Co, 0.028% Ni, 0.005% Cu, 1.07% As, 0.002% U_3O_8, 0.00oz/t Ag, 0.001oz/t Au

Drawing No. 12

m40 0 40 80m

TO ACCOMPANY REPORT NO. 24-79 BY JFT,RJM,AKC

SAMPLING PROCEDURE

EXCLUDING SAMPLE NUMBERS 6406-6411 INCLUSIVE WHICH WERE GRAB SAMPLES OF REPRESENTATIVE MINERALIZATION, ALL SAMPLES WERE TAKEN AS CHIP SAMPLES ACROSS THE MINERALIZED VEIN AT INTERVALS ALONG THEIR EXPOSED STRIKE.

LW

PAN OCEAN OIL LTD.
CALGARY ALBERTA

SKETCH MAP
OTTER NORTH A SHOWING
FAIRCHILD LAKE PROJECT

DATE	SCALE	NTS	DRAWING NO.
DEC.,1979	1:2000	106 C/13	B-0777

OTTER NORTH
A SHOWING
3/4 MILE SOUTH

NOT VISITED
BY GEOLOGIST

FDR 149
(6410)
MASSIVE DISSEMINATIONS
OF COBALITE IN SILTSTONE

FDR 147 (6409) MASSIVE DISSEMINATIONS OF FINE GRAINED COBALT
148 (6411) ERYTHRITE STAINED SILTSTONE

ON 5 - CONCORDANT TO BEDDING
- 20cm ZONE FLOODED WITH CALCITE CONTAINS COBALTITE IN VEINS AND AS MASSIVE DISSEMINATIONS IN FOOTWALL SILTSTONES

40 / 155

1

52 / 155

47 / 95

ON 6 - 3-15cm SHEAR DISCORDANT TO BEDDING TRENDS UPHILL TO ON-5
- SHEAR CALCITE FLOODED MINERALIZED WITH COBALTITE IN VEINS AND AS MASSIVE DISSEMINATIONS IN SHEARED SILTSTONE

6404 - 3.45% Co
0.35% Ni
0.0025% Cu
4.95% As
0.005% U_3O_8
0.12 oz/t Ag
0.007 oz/t Au

6407 - 6.40% Co
0.67% Ni
0.125% Cu
9.01% As
0.021% U_3O_8
0.30 oz/t Ag
0.003 oz/t Au

6408 - 12.40% Co
1.66% Ni
0.025% Cu
22.70% As
0.024% U_3O_8
0.30 oz/t Ag
0.018 oz/t Au

6410 - 8.36% Co
0.23% Ni
0.005% Cu
12.20% As
0.003% U_3O_8
0.01 oz/t Ag
0.002 oz/t Au

6409 - 3.40% Co
0.04% Ni
0.045% Cu
6.30% As
0.001% U_3O_8
0.16 oz/t Ag
0.003 oz/t Au

6411 - 0.20% Co
0.01% Ni
0.015% Cu
0.25% As
0.002% U_3O_8
0.01 oz/t Ag
0.000 oz/t Au

LEGEND

1 SILTSTONE - NON-CALCAREOUS
- NON-MAGNETIC
- DK GREY

10 / 20 STRIKE AND DIP OF BEDDING

10 / 20 STRIKE AND DIP OF COBALT VEIN

EXPOSED COBALT VEIN

POSSIBLE EXTENSION OF VEIN UNDER TALUS COVER

CREEK

STEEP CLIFF FACE

Drawing No. 13

m 40 0 40 80 m

TO ACCOMPANY REPORT NO. 24-79 BY JFT, RJM, AKC

SAMPLING PROCEDURE

EXCLUDING SAMPLE NUMBERS 6406-6411 INCLUSIVE WHICH WERE GRAB SAMPLES OF REPRESENTATIVE MINERALIZATION, ALL SAMPLES WERE TAKEN AS CHIP SAMPLES ACROSS THE MINERALIZED VEIN AT INTERVALS ALONG THEIR EXPOSED STRIKE

LW

PAN OCEAN OIL LTD.
CALGARY ALBERTA

SKETCH MAP
OTTER NORTH B SHOWING
FAIRCHILD LAKE PROJECT

DATE	SCALE	NTS	DRAWING NO.
DEC., 1979	1:2000	106 C/13	B-0778