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REPORT ON
THE BAMFIELD PROJECT
N.T.S. 92-C-10, 11, 14 & 15

Vanc. B.C.
April 1970

A.H. Dawson

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INTRODUCTION AND HISTORY

General and detailed geochemical stream sediment sampling was carried out during the summers of 1968 and 1969 in the area bounded by Alberni Inlet, Coleman Creek, and Nitinat Lake under the supervision of D.H. Helgesen. This field work indicated five areas anomalous in copper and/or molybdenum. From March 24 to April 1, 1970 D. Skidmore and myself prospected on Pachena Cone, Mt. Blenheim, Somerset Range, Sam Lake and Marshall Creek. A detailed geochemical stream sediment reconnaissance was carried out on the Sam Lake and the Somerset Range area.

LOCATION AND ACCESS

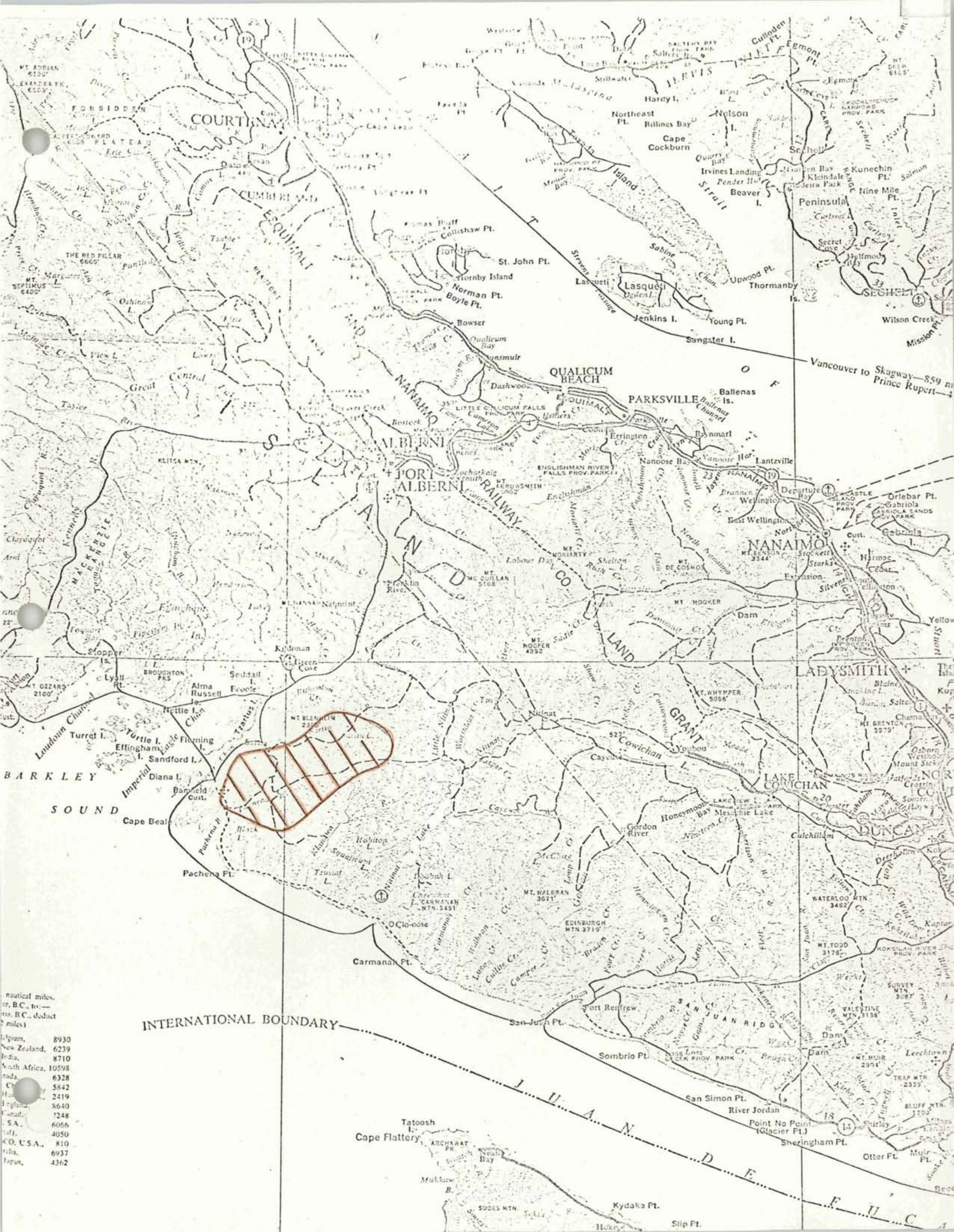
Bamfield is located on the west coast of Vancouver Island at the southern entrance to Alberni Inlet.

Access is via McMillan Bloedel logging roads from either Alberni or Cowichan Lake. Travel on the roads is restricted during week days and a permit should be obtained from the McMillan Bloedel office at Franklin Camp located halfway between Alberni and Bamfield.

The area is readily accessible by 4-wheel drive equiped trucks on the well developed network of logging roads.

GEOLOGY

The Vancouver Group is the largest major rock group in the map area, of which the Karmutsen Formation is the most widespread formation. Karmutsen basalt occurs in pillowed, brecciated or massive flows. The rocks are dark grey to black and weather dark reddish


COURTENAY
CUMBERLAND
FORBIDDEN PLATEAU
ESQUIMALT
NANAIMO
ISLAND
RAILWAY CO.
LAND GRANT
ALBERNI
PORT ALBERNI
QUALICUM BEACH
PARKSVILLE
Ballenas Is.
Lantzville
Departure Bay
Wellington
East Wellington
Gabriola I.
Orlebar Pt.
LADYSMITH
LAKE COWICHAN
DUNCAN
Cowichan L.
Youbou
Honeymoon Bay
Mesachie Lake
Gordon River
Nitinat
Bamfield
Cust.
Cape Beale
Pachena Pt.
Carmanah Pt.
Port Renfrew
San Juan Pt.
SAN JUAN RIDGE
Sombrio Pt.
San Simon Pt.
River Jordan
Point No Point (Glacier Pt.)
Sheringham Pt.
Otter Pt.
Shirley
BARKLEY SOUND
Kildonan
Green Cove
Sechart
Alma Russell Is.
Turret I.
Turtle I.
Effingham I.
Sandford I.
Diana I.
Imperial Eagle Chan.
Loudoun Channel
Lyall Pt.
Stopper Is.
INTERNATIONAL BOUNDARY
JUAN DE FUCA
Tatoosh I.
Cape Flattery
Neah Bay
Kydaka Pt.
Slip Pt.
Hornby Island
St. John Pt.
Norman Pt.
Boyle Pt.
Bowser
Qualicum Bay
Dashwood
Errington
Nanoose Bay
Lasqueti
Jenkins I.
Sangster I.
Young Pt.
Upwood Pt.
Thormanby Is.
SECHELT
Wilson Creek
Mission Pt.
Egmont Pt.
Hardy I.
Nelson I.
Northeast Pt.
Billings Bay
Cape Cockburn
Irvines Landing
Beaver I.
Peninsula
Kunechin Pt.
Nine Mile Pt.
Secret Cove
Halfmoon Bay
Vancouver to Skagway—859 n
Prince Rupert—
MT. WHYMPER 5056'
MT. BRENTON 3379'
WATERLOO MTN. 3462'
MT. TODD 3176'
MT. WALBRAN 3671'
EDINBURGH MTN 3719'
MT. HOOPER 4392
MT. MC QUILLAN 5108
MT. OZZARD 2100'
Cape Flattery
Clo-oose
Chemainus
Duncan
nautical miles.
Belgium, 8930
New Zealand, 6239
India, 8710
South Africa, 10598
Canada, 6328
4050
U.S.A., 810
6937
Japan, 4362

brown to brownish grey.

Island Intrusives are fairly extensive, particularly south and southeast of Sarita Lake. The rock type consist of biotite-hornblende granodiorite and quartz diorite.

On Pachena Cone the "Tofino Inlet Pluton" is quite extensive, the main rock type being hornblende-biotite quartz diorite with minor amounts of granodiorite. This pluton contains traces of chalcopyrite and pyrite as noted on the map and has a northeast strike, dipping 60^{o} to the southeast. The Karmutsen Formation as shown on the map is generally barren of sulphides, except in the southeast where a trace amount of pyrite occurs. A zone of gabbro rock with traces of pyrite exists inside the Tofino Inlet Pluton. A zone of monzonite is found to the south. The dominant rock type in the Island Intrusive at the north east part of Pachena Cone is quartz diorite. Both the Island Intrusive and the Tertiary monzonite mass lack sulphide mineralization.

Northeast of Sarita Lake in the Mt. Blenheim section the Karmutsen basalt is the most prominant formation. For the most part the basalt is massive except at the headwaters of Little Sob Creek where it is amygdaloidal. This area was intruded by the Island Intrusive as depicted on the map. Traces of sulphides, consisting mainly of pyrite, are common in both formations. In addition there are many felsitic dykes in these formations, not indicated on the map.

The "Westcoast Diorites" are prominant in the Marshall Creek area. The rock type consist of brecciated diorite and altered quartz diorite. Trace amounts of pyrite, molybdenum and to a lesser extent chalcopyrite are present. South of this section exists a felsite body, which according to S.N. Charteris is simply a fine grain-

ed quartz monzonite with greater excess silica. North of the "Westcoast Diorites", quartz monzonite with mineralization similar to above is found. At the mouth of this creek the Island Intrusive is apparent. Three fault zones were noted in the Marshall Creek area as shown on the map.

The Island Intrusive is the dominant formation in the creek just northeast of Rousseau Lake. Quartz diorite is the rock type which contains about 10 percent pyrite. A rock sample was taken and it assayed 260 p.p.m. for copper. To the north a prominant cliff composed of felsite was located. Two claims JH-1 to J.H.-2 were staked on August 10, 1966 by Mr. Cotton for D.C. Chapman.

There was no visible mineralization noted in the Somerset Range area. The Karmutsen basalt is the most widespread formation except west and northwest of this section where the Island Intrusive was found.

North of Sam Lake the "Westcoast Diorites", the Karmutsen and the Island Intrusive are located (see map). At the northeast part of the "Westcoast Diorites" the beds strike at 110^{o} Asi with a northerly dip of 81^{o}. No visible mineralization was spotted, but in quartz diorite and green basalt in the central part of this section silver spects were noted, however, not identified. North of the "Westcoast Diorites" some blue fine grained siltstone with calcite cementation were detected and labeled number 2 on the map.

SAMPLING PROCEDURE

A detailed geochemical stream sediment reconnaissance was carried out north of Sam Lake and in the Somerset Range area. 97 silt samples were taken at 200 foot intervals: 51 at Somerset Range and 46 north of Sam Lake.

RESULTS

In the Sam Lake area the molybdenum values were enhanced by resampling. Sam Creek had values up to 8 p.p.m. for Mo. Dot and Tod Creeks had Mo. values up to 6 p.p.m. The copper values were low at about 20 p.p.m.

Moly Creek in the Somerset Range area showed an anomalous reading for molybdenum at 4 p.p.m.

CONCLUSION

During this reconnaissance no deposit of economical importance was located. However, the results of the geochemical stream sediment survey for molybdenum in the area north of Sam Lake were quite interesting, in that the results were more favourable than that obtained during the 1968 and 1969 field seasons. At the present time active logging is being carried on in this section, however, some more prospecting is recommended later on in the season when the logging is completed.

REFERENCES

1. G.S.C. Paper 68-50, Map 17 - 1968.
2. Report on the Bamfield Project - 92-C-10, 11, 14 & 15, by D.H. Helgesen.
3. Report on the Marshall Creek Molybdenite Property - 92-C-15 by S.N. Charteris.

Vancouver, B. C.

April 1970

A.H. Dawson

MAP REF. No.: 4

N.T.S.: 92-C-15 W

FALCONBRIDGE NICKEL MINES LTD.

PROPERTY: BAMFIELD

LOCATION: SAM LAKE AREA

TYPE OF MAP: GEOCHEM. SAMPLE LOCATION

BASED ON:

DATE OF WORK: MARCH 1970

DATE: 14-4-70

DRAWN BY: A. H. D.

SCALE: 1 INCH TO 16,300 feet

MAP REF. No.: 3

N.T.S.: 92-C-15 W

SPECK CR AREA

FALCONBRIDGE NICKEL MINES LTD.

PROPERTY: BAMFIELD

LOCATION: SOMERSET RANGE

TYPE OF MAP: GEOCHEM. SAMPLE LOCATION

BASED ON:

DATE OF WORK: MARCH 1970

DATE: 10-4-1970

DRAWN BY: A. H. D.

SCALE: 1 INCH TO 16,300 feet

MAP REF. No.: 5

N.T.S.: 92-C-15 W

SPECK CR AREA

FALCONBRIDGE NICKEL MINES LTD.

PROPERTY: BAMFIELD

LOCATION: SOMERSET RANGE

TYPE OF MAP: GEOCHEM. ASSAY

BASED ON: FOR Cu & Mo

DATE OF WORK: MARCH 1970

DATE: 17-4-1970

DRAWN BY: A. H. D.

SCALE: 1 INCH TO 16,300 feet

MAP REF. No.: 6

N.T.S.: 92-C-15 W

FALCONBRIDGE NICKEL MINES LTD.

PROPERTY: BAMFIELD

LOCATION: SAM LAKE AREA

TYPE OF MAP: GEOCHEM. ASSAY FOR Cu & Mo

BASED ON:

DATE OF WORK: MARCH 1970

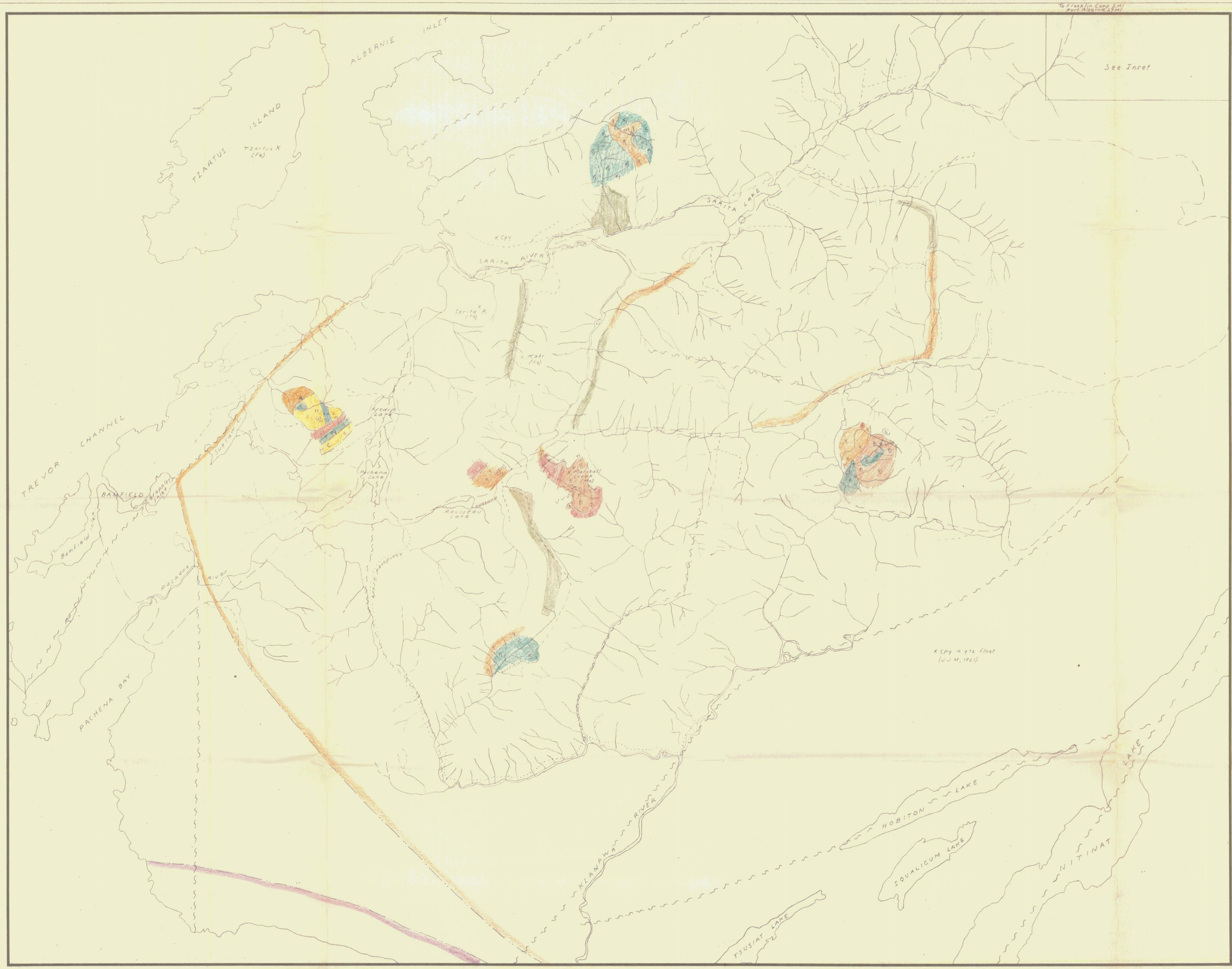
DATE: 14-4-70

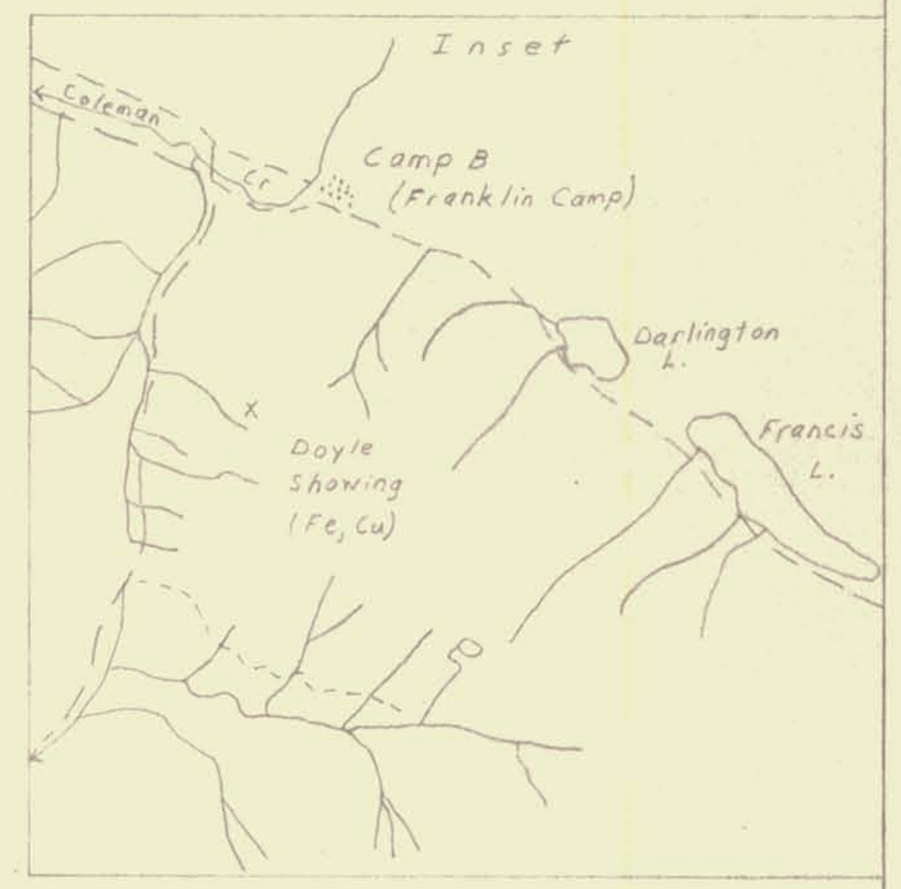
DRAWN BY: A.H.D.

SCALE: 1 INCH TO 16,300 feet

MAP REF. NO.: 2

NTS 92 C-10, 11, 14/15





GEOLOGY

Tertiary

20-22	Volcanics and clastic sediments
21	Leucoquartz monzonite, felsite (f. grained qtz. monz.)

Middle To Upper Jurassic

9	Island Intrusions: biotite-hornblende granodiorite, quartz diorite

Triassic And Jurassic

5	Karmutsen Formation: pillow-basalt and pillow-breccia, basalt; minor tuff volcanic breccia. Jasperoid tuff, breccia and conglomerate at base
5-8	Vancouver Group: basic volcanics

Triassic or Permian

4	Gabbro, peridotite, diabase

Pennsylvanian And Older

1	Argillite, dykes and sills of andesite-porphyry

"Tofino Inlet Pluton"

C	Hornblende-biotite quartz diorite, granodiorite

"Westcoast Diorites"

B	Hybrid hornblende diorite, quartz diorite, agmatite; includes masses of hornfelsic rock

Contact - approximate, assumed

Logging road

Abandoned road

Creek

Fault

SCALE: 1 INCH TO 50,000 FEET

COMPANY .. FALCONBRIDGE NICKEL MINES LTD

PROPERTY .. BAMFIELD

LOCATION ..

WORKING PLACE ..

TYPE OF MAP .. GEOLOGY

BASED ON .. SILT SAMPLING

DATE .. 3 APRIL 70

DRAWN BY .. A.H.D

DATE OF WORK .. MARCH 1970

MAP REF. No.: 4

N.T.S.: 92-C-15 W

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PROPERTY: BAMFIELD

LOCATION: SAM LAKE AREA

TYPE OF MAP: GEOCHEM. SAMPLE LOCATION

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DATE: 14-4-70

DRAWN BY: A.H.D.

SCALE: 1 INCH TO 16300 ft

MAP REF. No.: 5

N.T.S.: 92-C-15 W

SPECK CR AREA

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PROPERTY: BAMFIELD

LOCATION: SOMERSET RANGE

TYPE OF MAP: GEOCHEM. ASSAY

BASED ON: FOR Cu & Mo

DATE OF WORK: MARCH 1970

DATE: 17-4-1970

DRAWN BY: A.H.D.

SCALE: 1 INCH TO 16,300 feet

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N.T.S.: 92-C-15 W

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PROPERTY: BAMFIELD

LOCATION: SOMERSET RANGE

TYPE OF MAP: GEOCHEM. SAMPLE LOCATION

BASED ON:

DATE OF WORK: MARCH 1970

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DRAWN BY: A.H.D.

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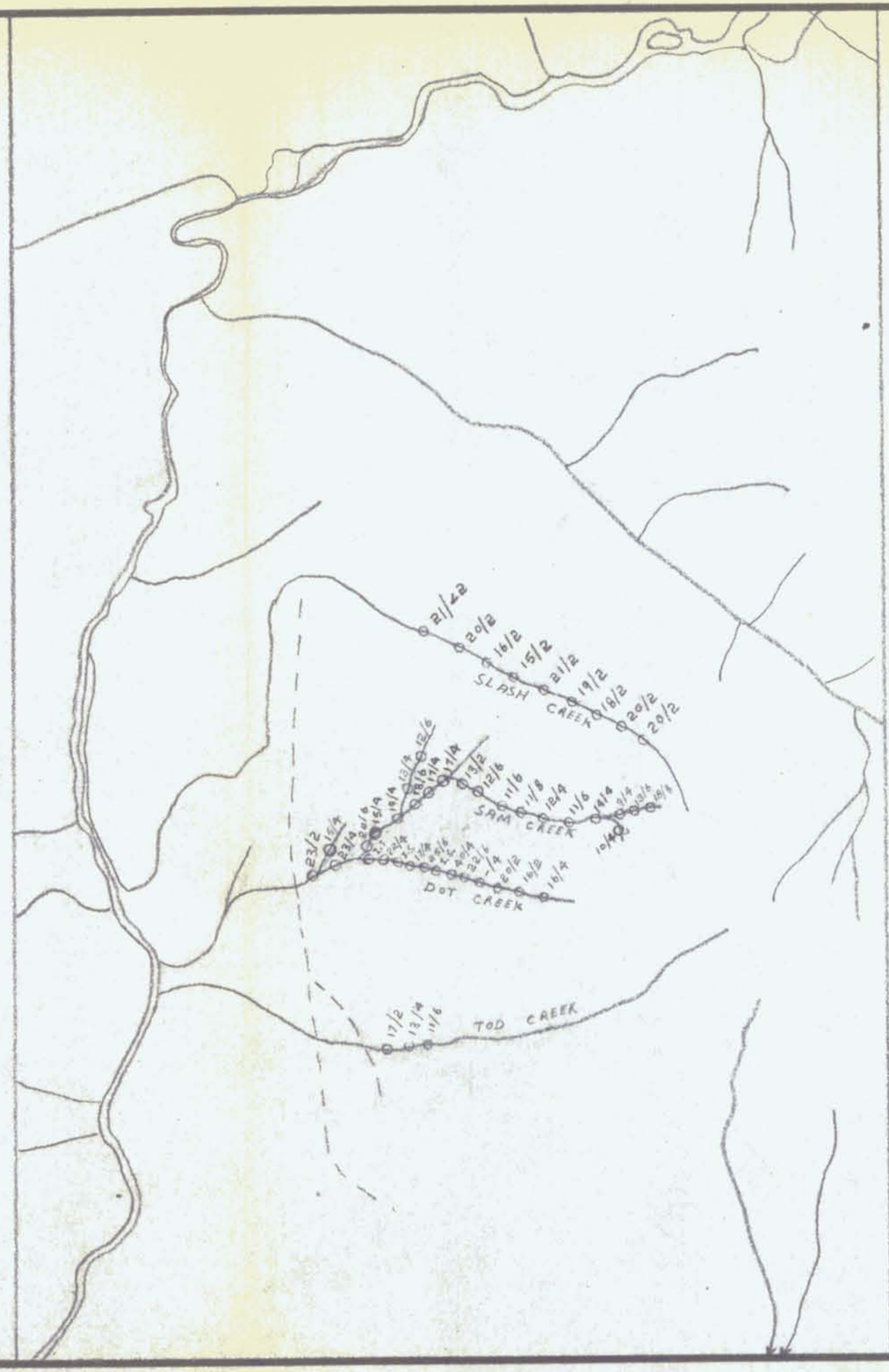

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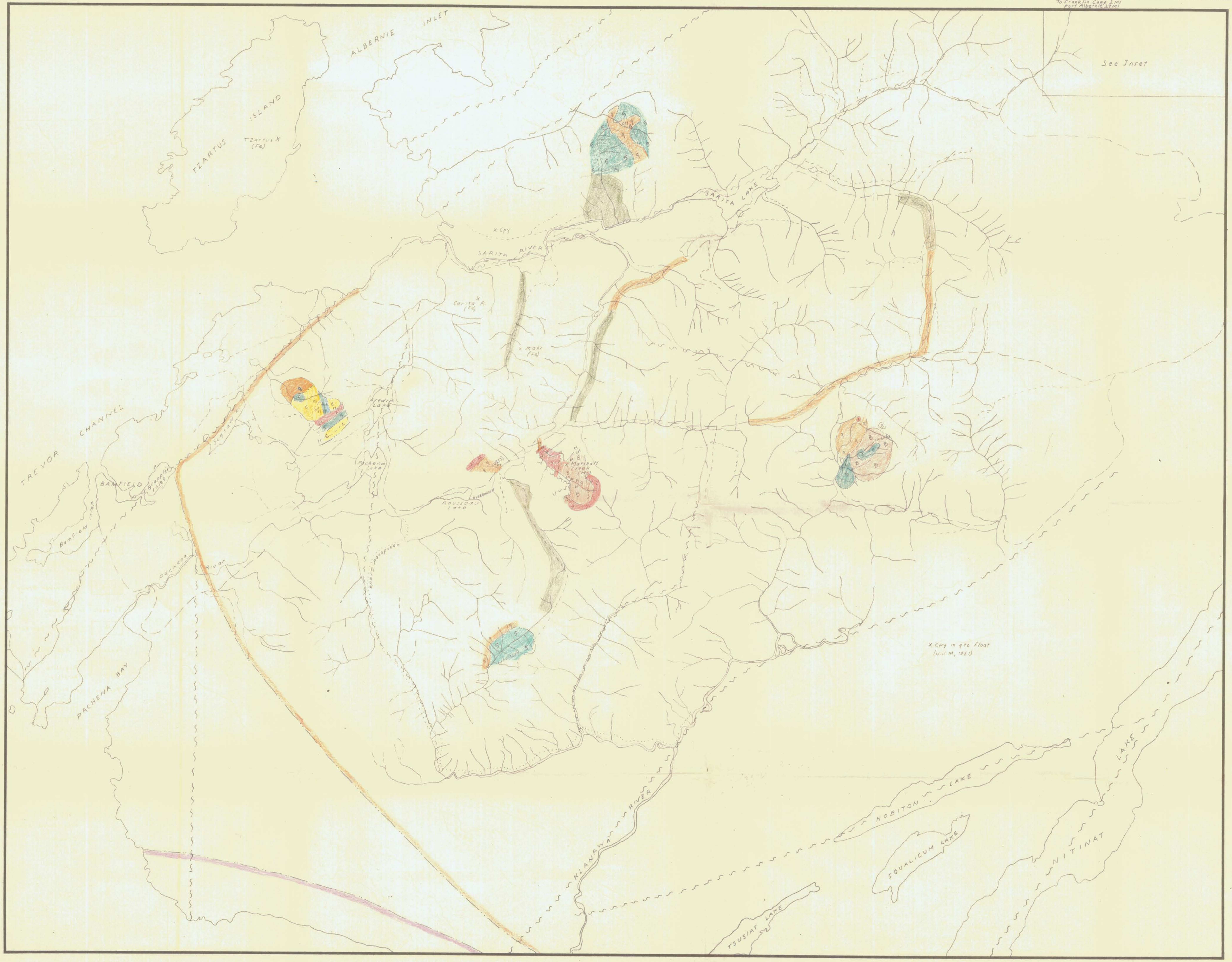
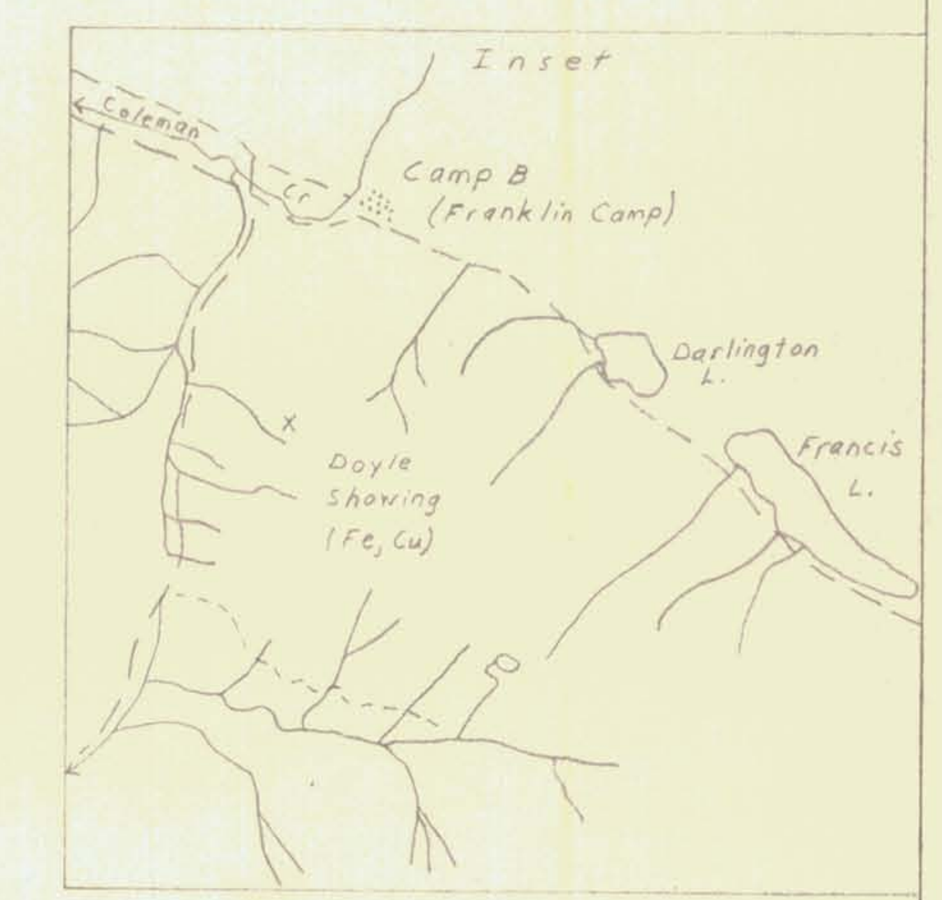
NTS 92 C-10, 11, 14/15





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"Westcoast Diorites"

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—…— Contact - approximate, assumed
– – – Logging road
.... Abandoned road
——— Creek
∽∽∽ Fault

SCALE: 1 INCH TO 50,000 FEET

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PROPERTY . . BAMFIELD
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