REPORT ON NASS RIVER RECONNAISSANCE PROGRAMME

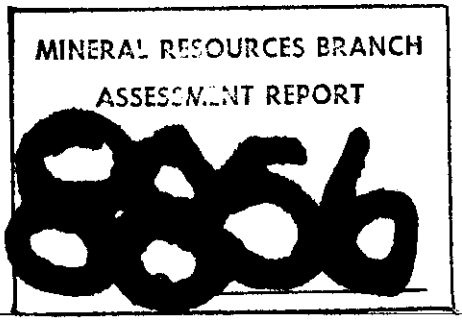
Skeena Mining Division

N.T.S. 103-I-14, 103-P-3

55° 05'N, 129° 15'W

January 1981

D.B. Petersen



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1. SUMMARY

In June 1980, Riocanex conducted a reconnaissance stream sediment sampling programme in the Northern part of the Ponder pluton, North of Terrace. The area contains several molybdenite occurrences, and returned some above-average Mo and W results in the 1978 Accelerated Geochemical Survey.

The Riocanex programme covered an area of approximately 900 km^2, and resulted in a 6-man crew taking 340 samples in 8 major creeks and their tributaries. The samples were analysed for Cu, F, Mo, Pb, and Zn.

The results showed that three areas are characterised by above-average Mo and Zn values. A three-man crew conducted a follow-up geological investigation of these areas and found that the areas were fresh, unaffected by hydrothermal alteration, and were unmineralised. The creeks were noted to be high in humus content.

As a result of the reconnaissance stream sediment sampling and the ensuing follow-up geological investigation, it is concluded that the area does not contain potential for porphyry-type Mo, or Cu-Mo mineralisation.

It is recommended that no further work, at this stage, be done in the area.

2. INTRODUCTION

This report describes the reconnaissance stream sediment sampling that was performed under the direction of the writer in June 1980, and the follow-up geological investigation that was performed under the direction of L. Haynes in September 1980.

3. LOCATION AND ACCESS

The area that was explored covers approximately 900 km^2 and is centered some 70 air km North-Northwest of Terrace at geographic coordinates 55^{o} 05'N, 129^{o} 15'W. See location map, drawing L-6690. N.T.S. is 103-I-14, and 103-P-3.

Access is by a main logging road from Terrace that leads Northwards to the village of Aiyansh and then Westwards along the South bank of the Nass River. Branch logging roads that run Southwards provide access to the upper reaches of Kwinyarh, and Ansedagan Creeks, and the lower reaches of Kwinhak Creek. The areas that are not served by logging roads are accessible by helicopter from Terrace.

4. TOPOGRAPHY

The area is of moderate relief, consisting of fairly broad, conifer-covered valleys that are flanked by moderately steep side slopes. Tree line is at the approximately 1,000m elevation.

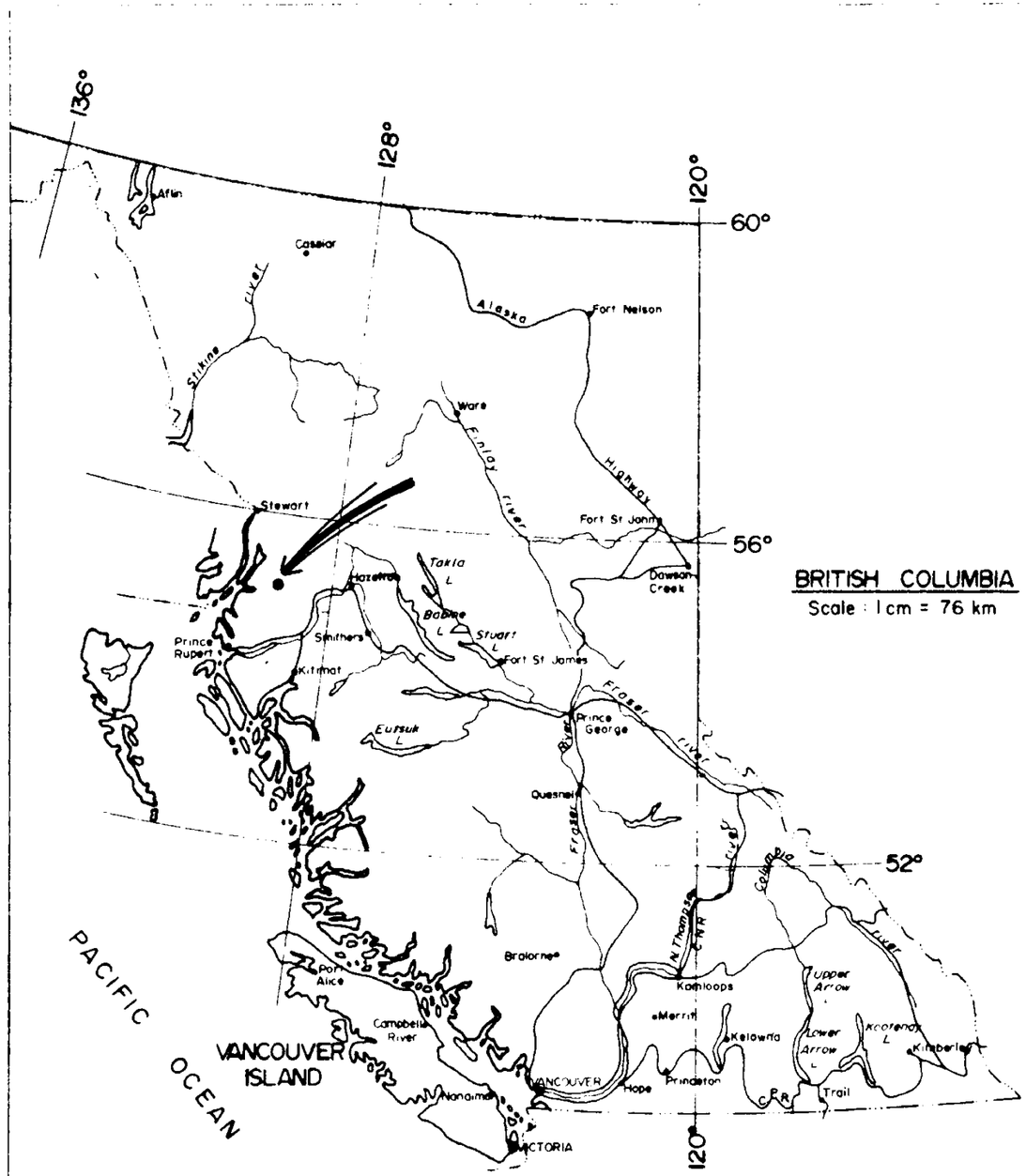
5. REGIONAL GEOLOGY

The area that was explored is located in the Eastern part of a belt of rocks that is known as the Coast Crystalline Belt. This belt is flanked by the Intermontane Belt to the East and the Insular Belt to the west. According to Roddick (1966), it is a metamorphic and plutonic complex that extends from the pennisular of Baja California in the south, with some interruptions, to the Aleutian peninsular in Southwestern Alaska in the north. In British Columbia the belt varies in width from 80 to 200km and has a general northwesterly trend.

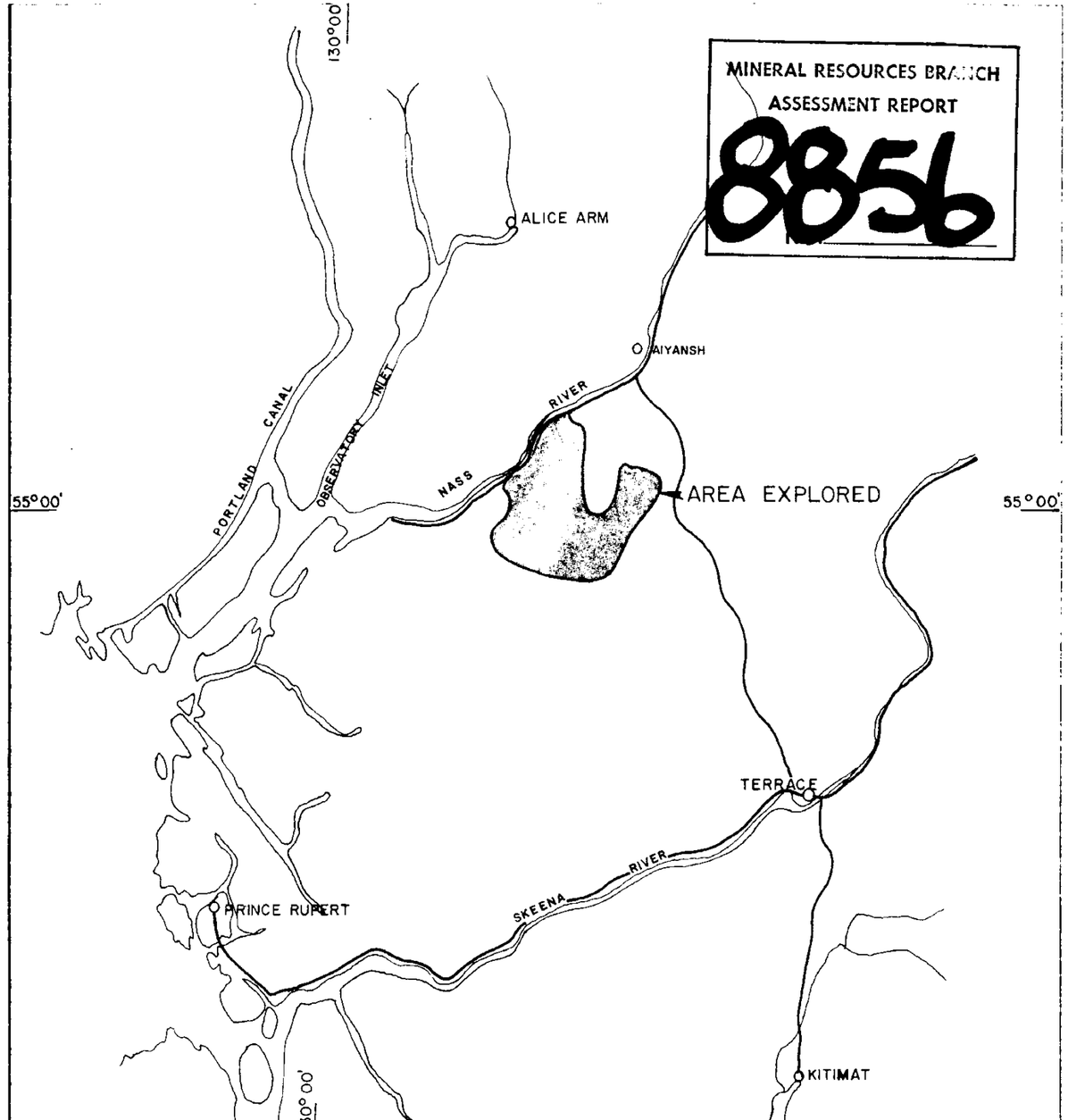
In age, the rocks cover a span from the Ordovician through the Miocene, though age-dating has shown that in British Columbia the majority of the plutonic rocks are of Upper Cretaceous Age.

The main mass of the rocks that constitute the Coast Crystalline Belt are known to be of plutonic origin. Though information on their composition is limited, classification on the basis of dominant mafic minerals and orthoclase-plagioclase ratios shows that biotite-bearing granodiorite and quartz monzonite predominate in the Eastern part of the belt, and diorite and quartz diorite in the West.

Economically, the Coast Crystalline Belt has proved to be of moderate importance compared with the surrounding Intermontaine and Insular Belts. Mineral producers include the Britannia Mine, a kuroko-type massive sulphide deposit that occurs in Creataceous volcanics, and the Giant Mascot nickel mine near Hope that occurs in an ultrabasic roof pendant that is surrounded by granitic Coast Intrusives.



BRITISH COLUMBIA
Scale : 1 cm = 76 km



SCALE 1:1,000,000

20 0 20 40 60 80km

RIO TINTO CANADIAN EXPLORATION LTD

NASS RIVER RECONNAISSANCE

LOCATION MAP

JAN 1981 D.B.P. DWG L-6690

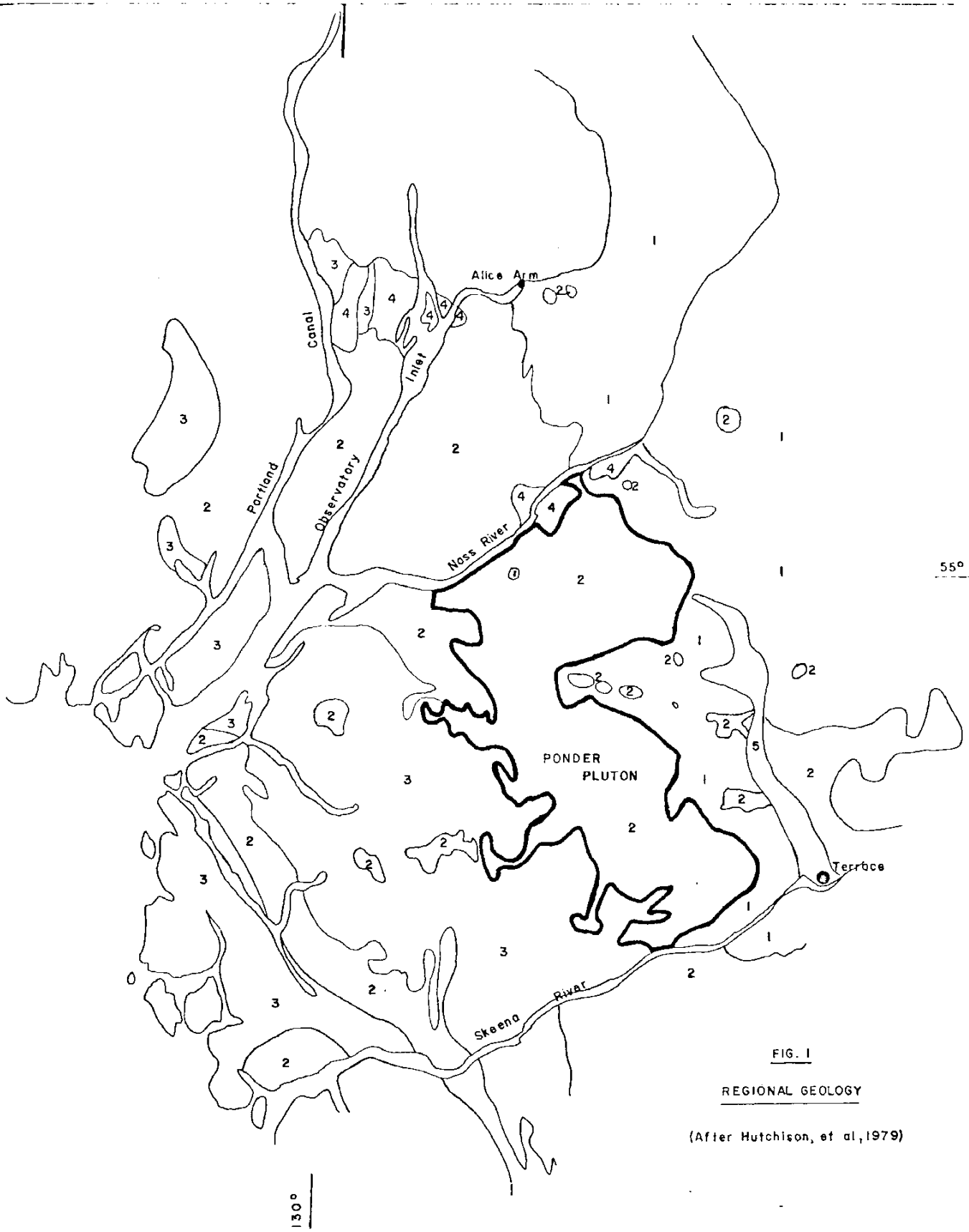


FIG. 1

REGIONAL GEOLOGY

(After Hutchison, et al, 1979)

Legend

1 Sediments
2 Granites
3 Gneisses
4 Volcanics
5 Glacial Till

Scale 1:1,000,000

0 20 40 60 km

Further North, the Bridge River gold camp, that included that Bralorne and Pioneer mines is related to an ultra-basic intrusive. The Salal Creek and O.K. properties are two examples of porphyry type Mo and Cu occurrences while the Anyox mine, near Stewart, is contained in Jurrassic volcanics. In the Alaska pan-handle the Quartz Hill molybdenite deposit is situated in the centre of this belt, approximately 80km northwest of the area that was sampled. The Canam prospect, southeast of Hope, is an Andean type Cu-Mo breccia pipe.

6. LOCAL GEOLOGY

The area that was explored covered the Northern part of the Ponder Pluton. According to Hutchison (1973), this is a bulbous-shaped intrusive mass of granodioritic composition that is bounded on the North and South by the Nass and Skeena Rivers respectively, in contact with granitic rocks of the Coast plutonic complex, and to the East and West by Cretaceous sediments of the Bower Basin and Paleozoic gneisses respectively. See Fig. 1, "Regional Geology".

The plutonic trends Northwesterly, with an 80km long major axis, and a width of approximately 20km. At its Northern end, a Northeasterly trending protusion some 25km by 25km gives it a bulb like shape.

Several small stocks, that are possibly slightly younger in age, and are quartz monzonitic in composition, occur to the immediate East of the pluton and appear to be "satallitic" to it.

The pluton has no record of mineral production. Several small, scattered showings of molybdenum, and copper-molybdenum occur principally on the Eastern and Northern margins of the Batholith. These, on occasion, may be accompanied by minor amounts of scheelite.

The molybdenum deposits that occur on the northern margin of the pluton have received more attention than the other occurrences. These are the Snafu, Valley, Ridge, Kay, and Guias prospects. The Valley and Ridge prospects appear to be broadly similar to the "Alice Arm" type of molybdenum deposits, which are characterised by small granitic stocks that have intruded and have caused hornfelsing of the surrounding sediments.

7. HISTORY

Exploration interest in the area began in 1965 when four molybdenum, and copper-molybdenum showings were exposed during the course of logging-road construction. These showings were staked by Gabriel Helday and Harold Smith. Helday then formed the Helday Syndicate that consisted of:

Madsen Red Lake	50%
Canadian Nickel Company	25%
Union Carbide Exploration	15%
Noranda Exploration	5%
Newconex Canadian Exploration	2½%
Rio Tinto Canadian Exploration	2½%

This syndicate explored the Valley and Ridge deposits that the Zolzap claim currently covers (see drawings GC-8836, -7, -8, and -9), as well as the Snafu deposit 6km to the East and the Kay and Guias deposits to the Southwest.

Geological mapping, a limited amount of geophysical work (I.P.) and x-ray and B-Q diamond drilling were used to explore the deposit from 1965 through 1968, by which time the Helday Syndicate had been re-organized as Nass River Mines.

The claims were abandoned and restaked in 1977 as the Zolzap Claims (2 units) by Granby Mining Corporation who conducted a geochemical soil sampling survey (Wilkinson, 1977).

In 1978, the B.C. Department of Mines initiated a government-funded Accelerated Geochemical Survey that included N.T.S. sheets 103-I and -P. The Northern part of the Ponder pluton returned some moderately interesting, above average Mo and W values.

Because of the interesting results of this survey, and the knowledge that molybdenum prospects occur around the Northern margin of the pluton, it was decided to proceed with a reconnaissance-type stream sediment sampling programme in the Northern part of the pluton.

8. WORK DONE IN 1980

The following work was done in 1980:

8.1 GEOLOGICAL RECONNAISSANCE

In June, immediately prior to embarking on the stream sediment sampling programme, the writer made a helicopter-borne geological reconnaissance of the area to be sampled. The object was to search for gossan zones and pyrite staining that might be related to porphyry type mineralisation.

8.2 GEOCHEMICAL STREAM SEDIMENT SAMPLING

In June, a 6-man crew, under the direction of the writer, spent 12 days taking 340 samples from 8 major creeks and their tributaries. Each sample consisted of approximately 250gm of silt which was placed in a numbered brown kraft paper bag and sent to the Rio Tinto Canadian Exploration Laboratory in North Vancouver for analysis.

At the laboratory, the samples were dried, sieved to -80 mesh; 0.6 grams of this material was placed in a test tube and 2 millilitres of nitric acid and 1 millilitre of perchloric acid added to the test tube. After diluting the contents to 12 millilitres by adding water, the resultant sample was analysed for Cu, Mo, Pb, and Zn on a Techtron AA5 atomic absorption spectrophotometer. Ed Paski, Jr. was the analyst. The samples were sent to Chemex Labs Ltd., for analysis for F.

The sample locations and the results are shown on drawings GC-8836, -7, -8, and -9.

8.3 GEOLOGICAL FOLLOW-UP

In September, a 2-man crew, under the supervision of L.R. Haynes spent 4 days investigating 3 areas where above average Mo and Zn stream sediment values were evident. The areas were the head of May Creek, the fork towards the head of Kwinhak Creek, and the Westerly-flowing tributary of Kwinhak Creek immediately West of Alder Peak. See drawings GC-8839, areas 1, 2, and 3, respectively.

9. RESULTS OF WORK DONE IN 1980

The following are the results of the work that was done in 1980:

9.1 GEOLOGICAL RECONNAISSANCE

The airborne geological reconnaissance proved negative. No gossanous zones or areas of pyrite staining were noted.

9.2 STREAM SEDIMENT SAMPLING

The analyses show that the silts contain background values of approximately 20-30ppm Cu, 300-400ppm F, 2-4ppm Mo, 5-10ppm Pb, and 60-80ppm Zn.

Area 1, (May Creek), displays anomalous Mo values of between 11 and 49ppm, and Zn values between 85 and 119ppm.

Area 2, (Kwinhak Creek North) contains Mo values as high as 67ppm and 191ppm Zn.

Area 3, (Kwinhak Creek South) displays two Mo values of between 30 and 40ppm.

9.3 GEOLOGICAL FOLLOW-UP

Geological follow-up by L. Haynes of areas 1, 2, and 3 proved that the rocks in these areas were unaffected by hydrothermal alteration and were unmineralised.

He found that the anomalous creeks were rich in humus and concluded that this caused the above-average Mo and Zn values.

10. CONCLUSIONS

As a result of the stream sediment sampling programme and the geological follow-up, it is concluded that the area does not contain potential for Mo, or Cu-Mo deposits.

11. RECOMMENDATIONS

At this stage, it is recommended that no further work be done in the area.

D.B. Peterson

12. REFERENCES

B.C. Dept. Of Mines, 1978, Accelerated Geochemical Survey, N.T.S. Map 103-I.

B.C. Dept. of Mines, 1978, Accelerated Geochemical Survey, N.T.S. Map 103-P.

CHARLTON, F., 1966, Geological Report on Ridge Group Claims 4 and 5, 7 miles S.W. of Aiyansh, British Columbia- B.C. Dept. of Mines Assessment Report #913.

GEISTERFER, P.K., 1965, Report on the Helday-Valley and Ridge Claim Groups, Nass River Area, Skeena Mining Division, B.C.; B.C. Dept. of Mines Assessment Report #914.

HALLOF, P.G., 1966, Report on the Induced Polarization and Resistivity Test Survey on the Valley-Ridge-Snafu Claim Groups. Nass River Area, B.C.; B.C. Dept. of Mines Assessment Report #794.

HUTCHISON, W.W., BERGE, H.C., OKULITCH, A.V., 1979, Skeena River, B.C. Alaska; G.S.C. Map 1385A.

McBRIDE, D., 1968, Report on the Geology and Geochemistry of the Nass River Area, B.C.; Rio Tinto Bound Rpt. #202.

RODDICK, J.A., 1966, Coast Crystalline Belt of B.C.; Tectonic History and Mineral Deposits of the Western Cordillera; C.I.M. Spec. Vol No. 8.

WILKINSON, W.J., 1977, Geochemical Report on Zolzap Claim, B.C. Dept. of Mines Assessment Rpt. #6232.

13. STATEMENT OF COST

Stream Sediment Sampling 16-27 June = 12 days
Geological Follow-up 14-18 September = 5 days

Office Geology (Preparatory Work)			
10 days @ $88 (April 7-16 = 10 days)		880	
Benefits 25%		220	1,100
Transportation			
Jimmy 14 days @ $33.73	June	472	
Pickup 14 days @ $33.73	June	472	
Pickup 5 days @ $33.73	September	169	
Fuel		217	1,330
Helicopter			
Nth Mountain (June) 26.6 hrs @$380		10,107	
Okanagan (September) 4.1 hrs @$408.60		2,000	12,107
Salaries and Wages			
94 man days @ $68.30	79 man days June	6,418	
Benefits 25%		1,604	8,022
Food and Accommodation			
94 man days @ $30.40			2,760
Equipement Rental			
Riocanex equipment 94 man days @ $3			282
Geochemistry			
340 Samples @ $14.34 (5 elements - Cu, F, Mo, Pb, Zn)			4,876
Travel			
10 men @ $103.80			1,038

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Report Preparation		
8 days @ $88 (5-12 Jan. 1981)	704	
Benefits 25%	176	880
TOTAL		$32,395

A B Peterson

/mp

A B Peterson

APPENDIX I

Memorandum by L. Haynes

INTER-OFFICE MEMORANDUM

File No. 103-I/P

To: D. Petersen

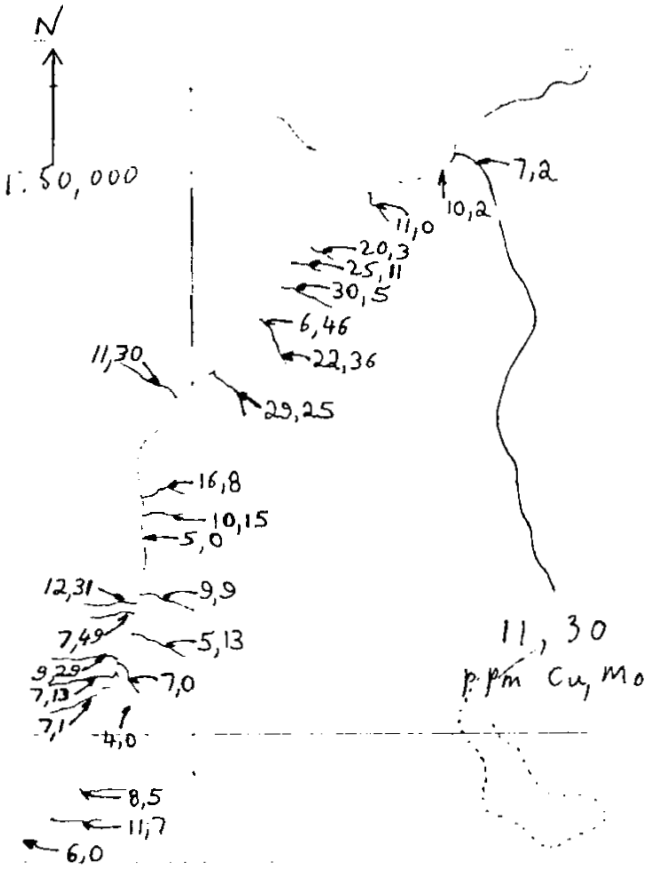
Date October 6, 1980

From: L. Haynes

Subject: Nass River Reconnaissance Follow Up.

Results of the 1980 Nass River reconnaissance outlined three areas with anomalous molybdenum in silts. These anomalous areas were investigated in September and are discussed below.

Area I May Creek.



A large anomalous zone, almost 5 km, is defined by ten silt samples ranging from 11 to 49 ppm Mo. In the area of anomalous molybdenum values May Creek cuts a narrow steep valley. Outcrop is abundant and consists of fresh, medium to fine grained granodiorite. No evidence of alteration or mineralization was seen in

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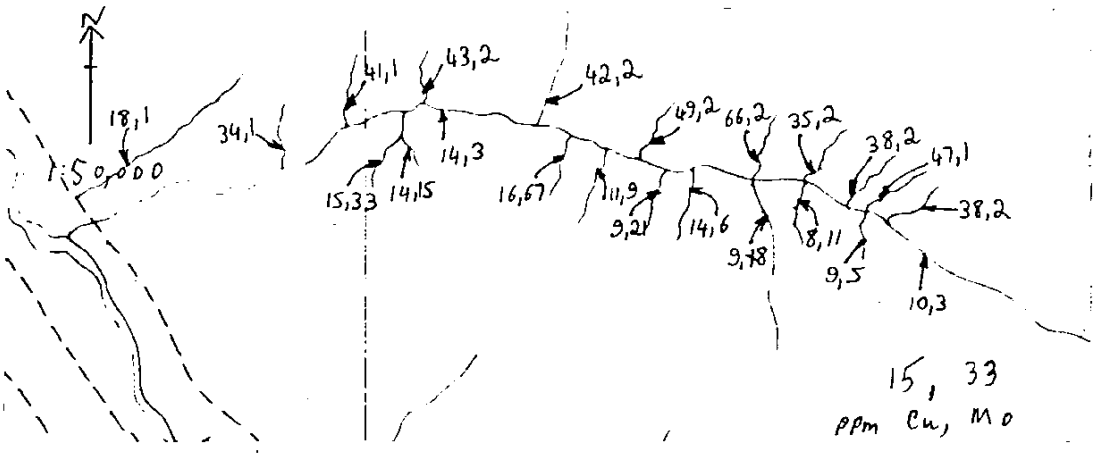
outcrop or float. Several of the anomalous creeks drain areas of barren granodiorte and it is believed that the anomalous zones are related to organic rich samples.

Area II Kwinhak Creek North



A large anomalous zone is defined by several anomalous creeks of a west flowing tributary of the Kwinhak Creek. The anomalous samples are restricted to the south side of the valley. Outcropping fresh granodiorte is exposed along ridges and in creek beds draining the south side of the valley. Float samples of fresh quartz porphyry were found near the western boundary of the anomaly. Where the quartz porphyry is in contact with the granodiorte it shows a chilled margin. From its distribution in float I expect the quartz porphyry is a dike rather than a separate intrusive. No mineralization or alteration was seen in these rocks. Some very wide spaced flat lying, narrow aplite dykes and quartz veins were noted.

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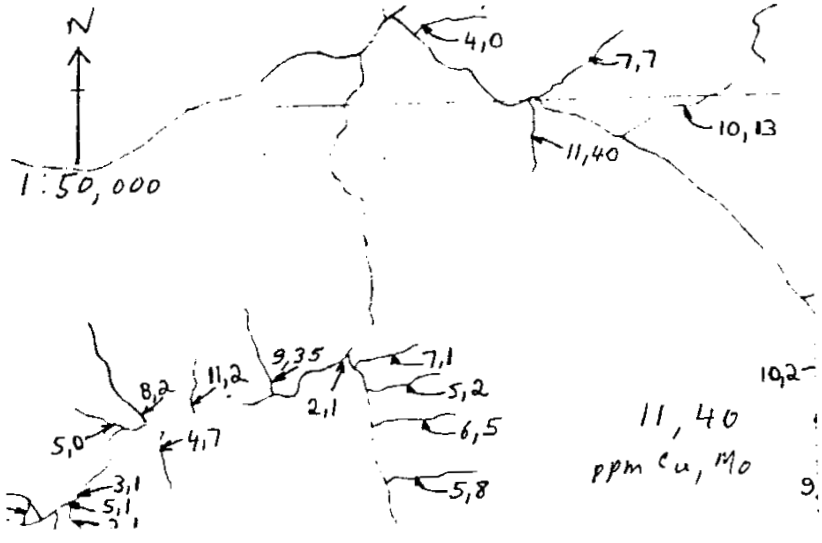
In most cases where the north flowing creeks enter the tributary of Kwinhak creek they drain low, marshy ground. As with May Creek, I expect the anomalous molybdenum is related to organic rich samples.

The north side of the valley is not anomalous for molybdenum and in places drains a brown-black shale.

Area III Kwinhak Creek South



Two weak molybdenum anomalies were found in the southern part of Kwinhak Creek. A single sample anomaly and a two sample anomaly flow through zones of fresh granodiorite. The grandiorite is unmineralized and unaltered. As with the other two areas it is believed the high molybdenum values are related to

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organic rich samples. A broad zone lying between the two weak anomalies covers an area of flat lying overburden covered ground with poor drainage.

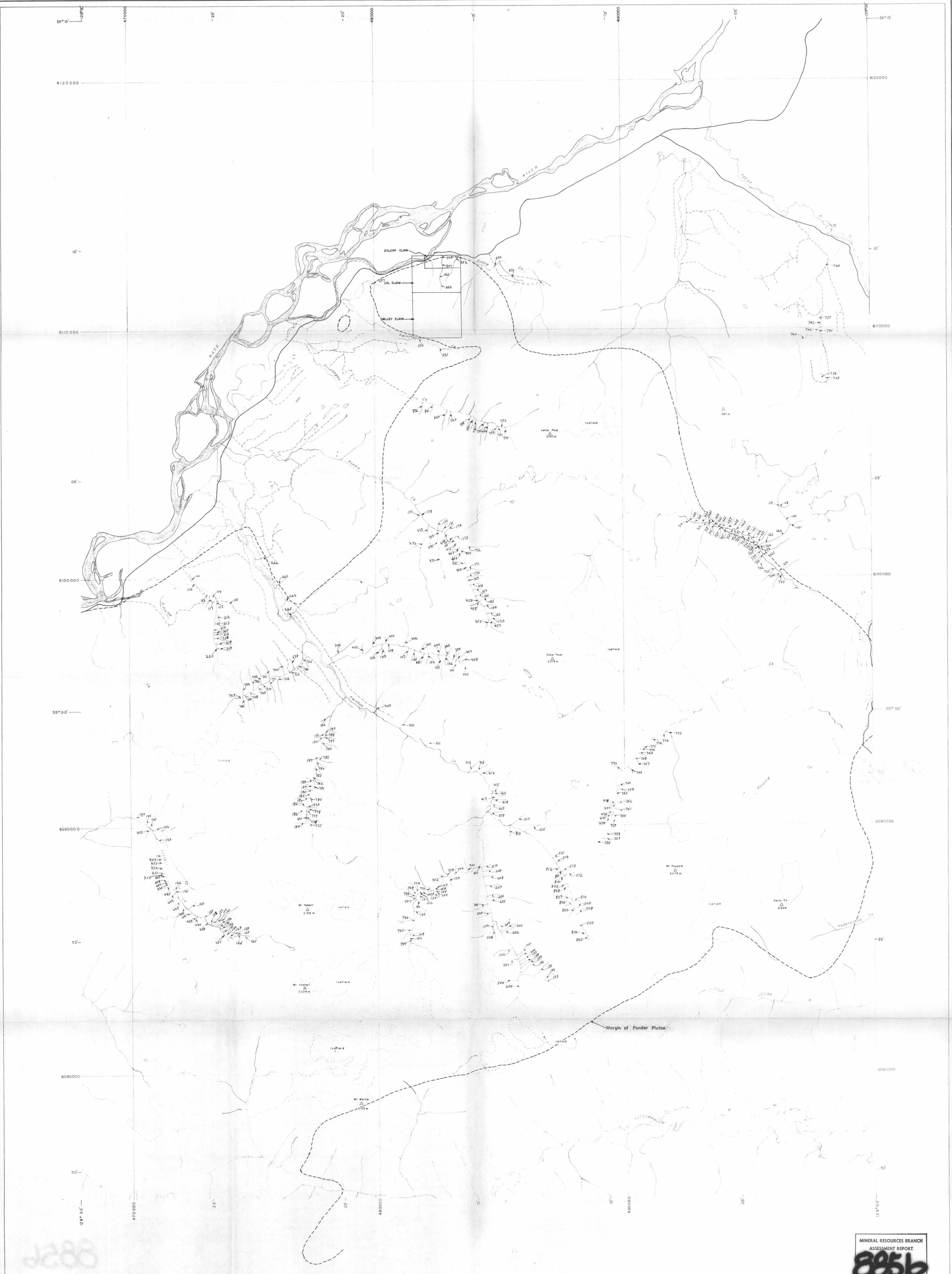
In summary, most of the anomalous area is near outcrops of fresh granodiorte (Ponder pluton) and no alteration or mineralization was seen.

It is believed that the anomalous molybdenum values are related to organic rich samples. In all cases the high molybdenum values are coincident with the higher zinc values.

L. H

L. Haynes

LH/mp



421 Sample Numbers (Preceded by 8,019,)

———	Main Roads
– – –	Logging Roads
	Creeks
	Lakes
	Swamps

N.T.S. 103-I-14, -P-3

SCALE 1:50,000

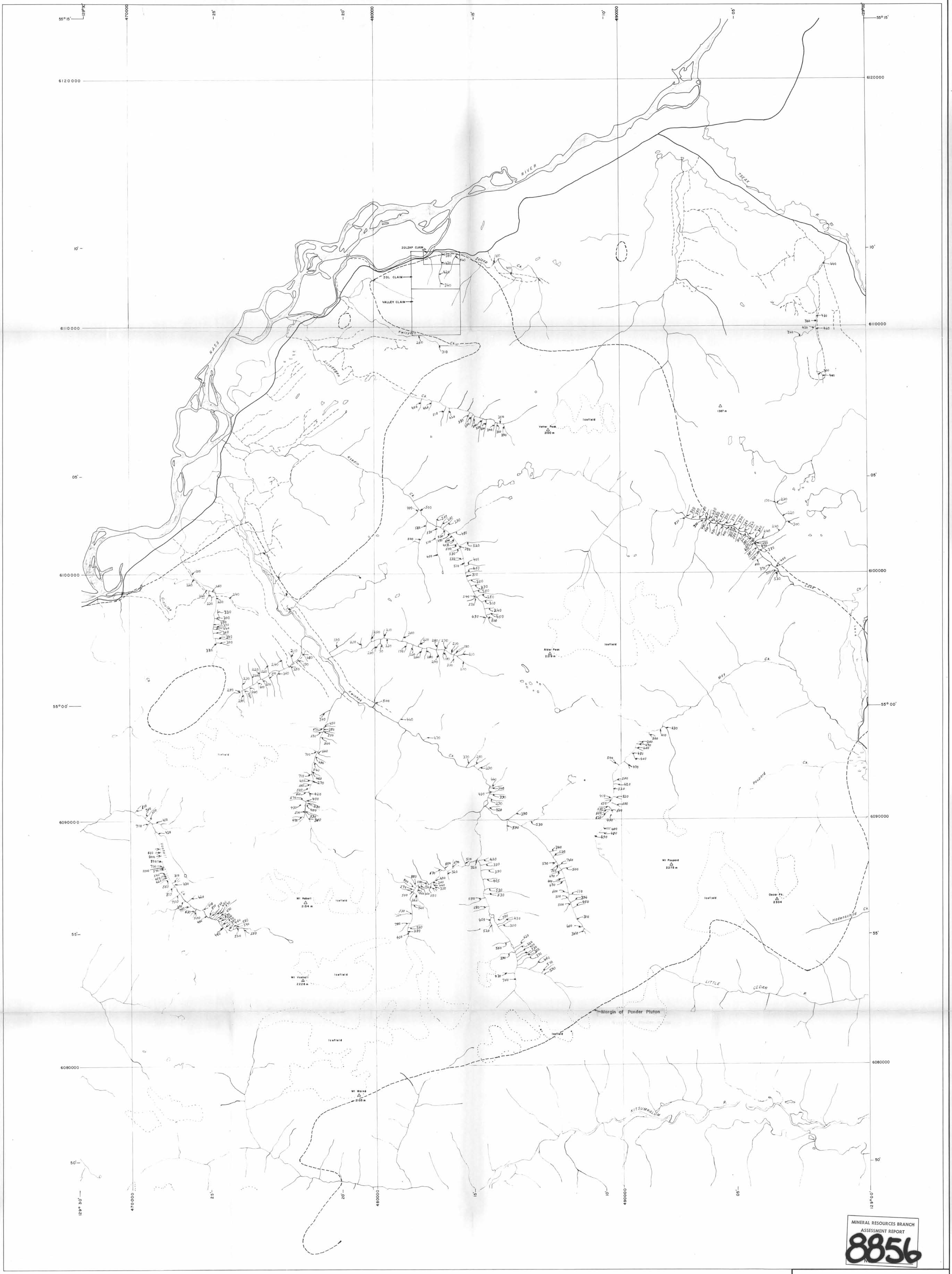
1000 500 0 1000 2000 3000 4000 Metres

RIO TINTO CANADIAN EXPLORATION LTD.

NASS RIVER RECONNAISSANCE

STREAM SEDIMENT SAMPLE LOCATIONS

DATE	DRAWN BY	DWG.
JAN 1981	DBP/dbp	GC-8836



Main Roads
Logging Roads
Creeks
Lakes
Swamps

N.T.S. 103-I-14, -P-3.

SCALE 1:50,000

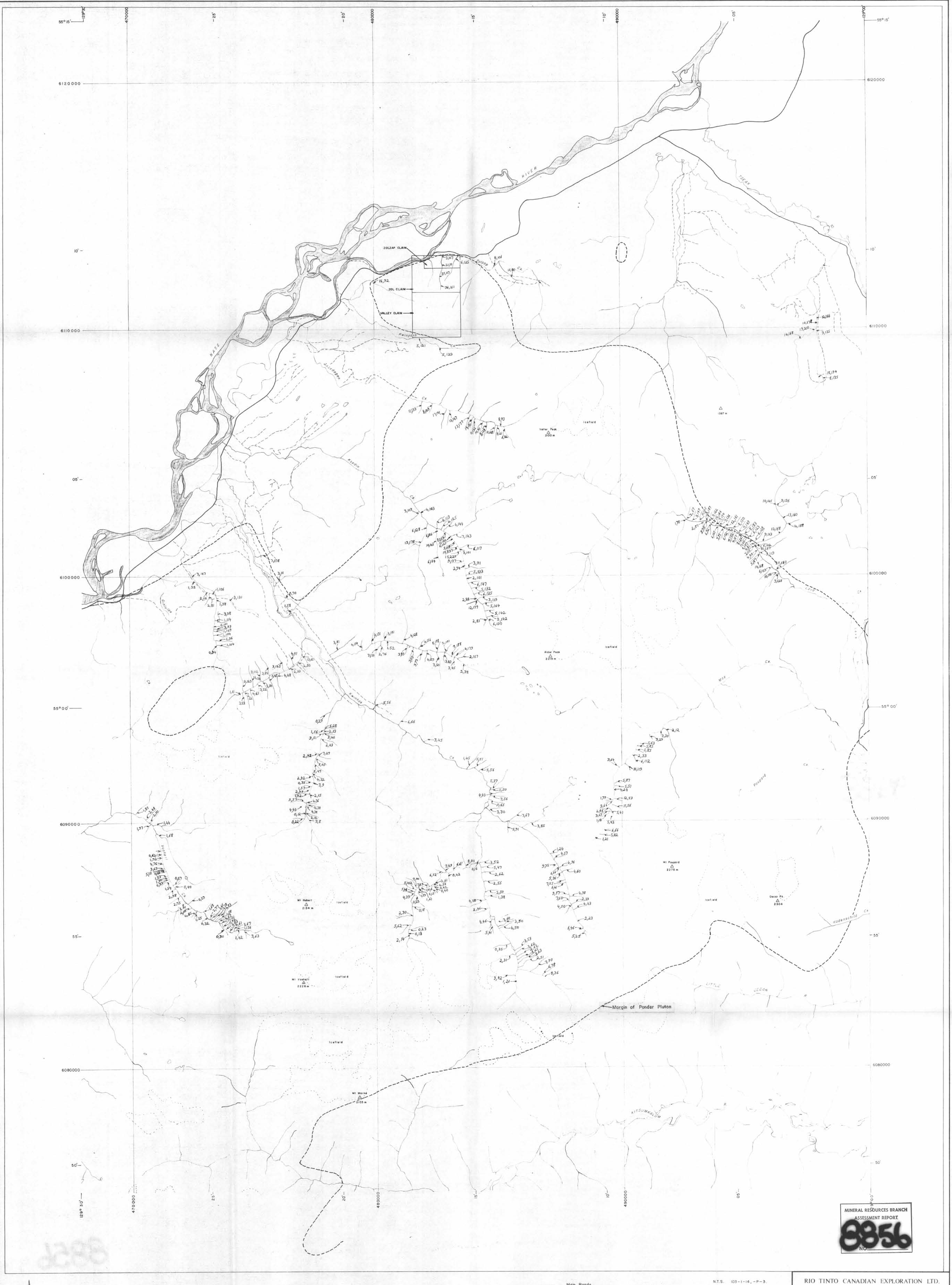
1000 500 0 1000 2000 3000 4000 Metres

RIO TINTO CANADIAN EXPLORATION LTD.

NASS RIVER RECONNAISSANCE

ppm F

DATE	DRAWN BY	DWG.
JAN 1981	DBP/dbp	GC-8837



Main Roads
Logging Roads
Creeks
Lakes
Swamps

20,90 ppm Pb,Zn

N.T.S. 103-I-14, -P-3.

SCALE 1:50,000

1000 500 0 1000 2000 3000 4000 Metres

RIO TINTO CANADIAN EXPLORATION LTD.

NASS RIVER RECONNAISSANCE

ppm Pb, Zn

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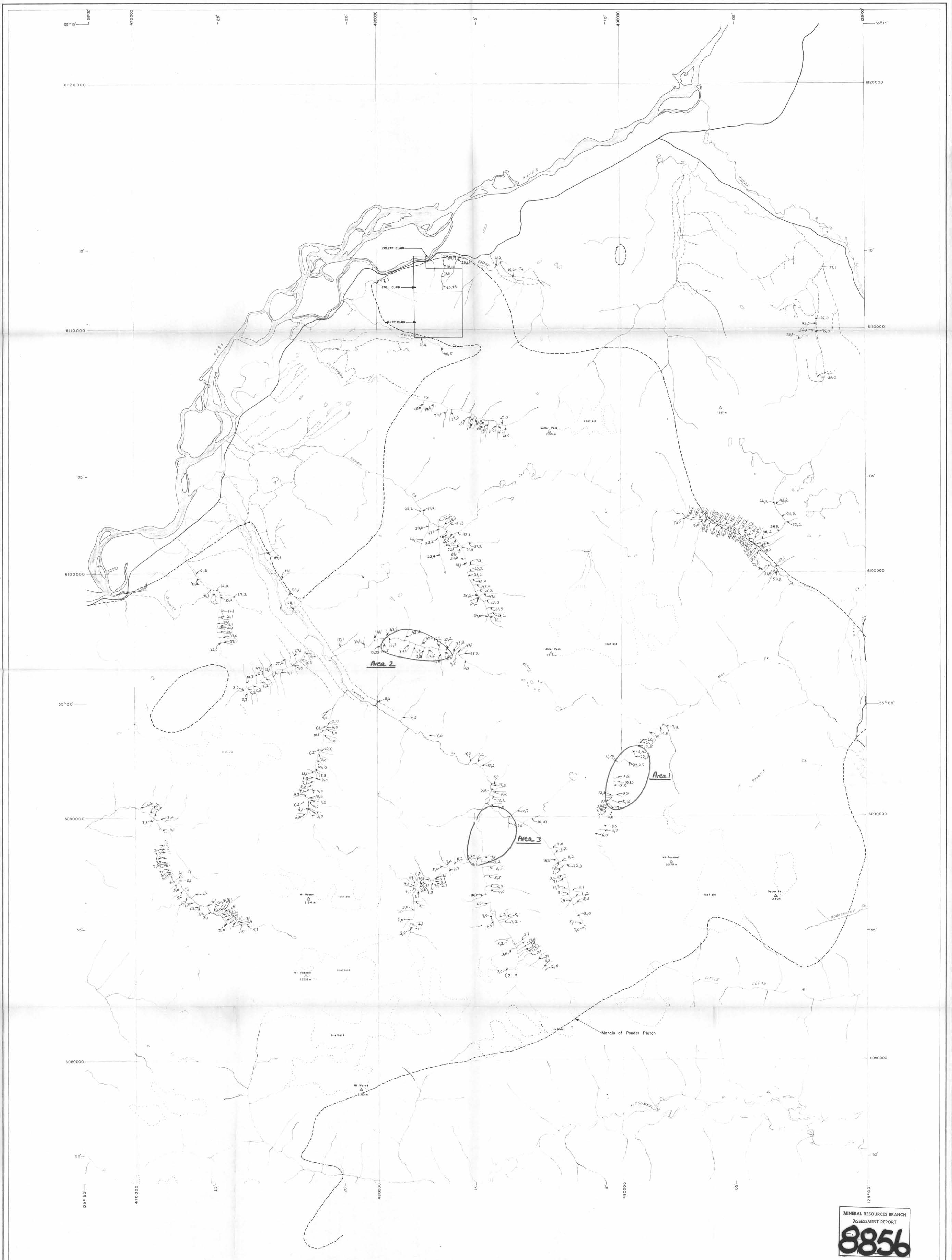

Main Roads
Logging Roads
Creeks
Lakes
Swamps

N.T.S. 103-I-14, -P-3.

SCALE 1:50,000

1000 500 0 1000 2000 3000 4000 Metres

RIO TINTO CANADIAN EXPLORATION LTD.

NASS RIVER RECONNAISSANCE

ppm Cu, Mo

DATE	DRAWN BY	DWG
JAN 1981	DBP/dbp	GC-8839