P.A.P - 1990 release in 1995

James S. Dodge

SUMMARY

STEWART LAKE

Principal objective was to evaluate the eclogite body 4km north of the west end of Stewart Lake as a possible source of commercial garnet. This possibility was suggested from an examination of eclogite samples provided by Professor Philippe Erdmer of the University of Alberta who had described the several eclogite occurrences of the area in Journal of Earth Sciences, v. 24,1987.

Camp was established at the western end of Stewart Lake by float plane operated by Watson Lake Flying Services. Day prospecting was conducted north to the low hills underlain by miogeosynclinal sediments overridden by Anvil allochthon ophiolitic rocks. The latter was a succession of gabbros and serpentinite of which the eclogite was the uppermost? unit. "Crowded" euhedral orange garnet made up 25%-30% of the eclogite in discontinuous zones within the northwest inclined (35°) unit. None of these zones could be considered as economically competitive sources of garnet; particularly with the need to construct a 20 km road extension from the Mt. Hunderer area, and to compete with placer garnet from Idaho or even in-situ sources in contact metamorphic settings in southern British Columbia. Also, contacts with the Vancouver office of Mitsui & Co. pointed out the relatively small off-shore Pacific Rim market for garnet and that the truck haul costs from mine to tidewater would make the Yukon source noncompetitive.

As part of the examination of the eclogite from which Erdmer's sample 85-17 (see map) was collected, I noted an interesting contact zone between the eclogite and underlying? serpentinite. There appeared to be a chilled border in the eclogite with anhedral garnet and omphacite - possibly both intensely chloritized. A very thin (5cm) chlorite schist zone marked the actual boundary below which for a 3-4 meter width the serpentinite outcrop displayed a very "flashy" appearance of euhedral medium-sized (5mm) chlorite flakes. Altogether it gave a strong appearance that the eclogite was intrusive into the ophiolite, rather than having been tectonically emplaced. I have described this with reference to several rock specimens sent to Erdmer for his comments. I keep wondering if all the eclogites in ophiolitic terrane are of Coleman's Class "C" - or are they possibly from greater depths?

Of particular interest were two football sized-shaped monomineralic masses of a bladed green mineral within the eclogite about 1 meter from its contact with serpentinite. The petrographic description indicated that this was dominantly (90%) tremolite. It appears likely, therefore, that these are meta-xenoliths of serpentinite. So, did the eclogite perhaps originate at an upper mantle elevation like the peridotite parent of serpentinite? An E-W fault zone with loosely healed, weakly pyritic breccia was unmineralized (#A9021890).

CANOL CREEK(112 km, South Canol Road)

The ophiolitic construction seen on earlier visits to the area took on a renewed interest from several perspectives, namely, nephrite stream boulders, garnet hornblendite, and eclogite float, together with a prominent shear zone near the metasomatic reaction zone (listwaenite) underlying a serpentinite body.

a) Two (3-4 kg) nephrite cobbles found in 1989 were tested by the writer over last winter and found to be flawless, i.e. with respect to loose fractures which could make carving impractical. Although the matrix nephrite is of good color (grass green) there are black (pyroxene) splotches throughout, but in such a para-equidistant, yet random, distribution that the material could possibly be of unique interest in carving. It may offer a pleasing alternative to the common glass-like, uniformly green jade usually seen in curio shops on Robson Street. Several more cobbles were recovered from the creek and one large UFO-shaped slab (est. 80kg) remains undisturbed under 70cm of water. Perhaps in future I may be able to retrieve it with a winch. Much nephritic serpentine was found, but it is too soft to be of commercial use.

b) Garnet hornblendite layers in the ophiolitic succession seemed at first enigmatic, but careful inspection invites the hypothesis that these may be meta-peridotites which were intrusive into the ophiolite (like eclogites/). The high titanium content (as sphene) points to a peridotite or basalt? as a parent rather than an eclogite in which the omphacite has retrograded to hornblende.

   Again, the economics of producing garnet from these rocks appears remote in spite of being only 3 km from the South Canol Road.

c) The presence of pyrrhotite as disseminations and accompanying stringers of quartz and calcite in the hornblendite - especially noticeable in a 3-4 meter wide zone bordering a prominent, near vertical E-W shear zone - again drew my attention. As this area was also close (5-10 meters) to the southerly inclined metasomatic reaction zone (calcite, quartz, talc) underlying a serpentinite body, a few samples were collected to test for gold/or its epithermal path-finder elements. No anomalous values were obtained (#A9022732).

d) A small exposure of mafic breccia was exposed at waterline near the garnet hornblendite area. A thin section description was provided by Vancouver Petrographics which indicated that originally the rock may have been a mafic pyroclastic, based on composition of clasts and matrix. It's importance as a possible host for ? appears very low.

STEWART CROSSING

Two unsuccessful attempts were made to drive (4x4) or walk to Airstrip Creek situated about 8km west of Stewart Crossing and south of the Stewart River, to investigate the syenite body reported to be exposed in the area near the Tintina Fault zone. This was to be a reconnaissance to locate mafic facies in syenite which possibly could be REE-bearing. In both attempts, exceptionally high water at Crooked Creek ford frustrated getting across safely. Plans are being made to have sufficient funding in 1991 to carry out helicopter assisted examinations of syenite bodies in this area and, as well, farther to the southwest.

MONEY CREEK

During the period 19 July-13 August, the Prospecting Program and the SLEEPER Project were intertwined both in time and expenditures. The SLEEPER Project took precedence in both categories, but after the 5th day of successful delineation of poly-metallic sulfide bedrock and float, it became apparent that stay in the area should ne extended to allow for prospecting of the perimeter of the SLEEPER and LADY LEE claim groups, i.e., for additional indications of volcanogenic sulfides.

Thereupon, as to sharing of respective costs, it was decided that the Prospecting Program would take up the vehicle costs (Whitehorse to Watson Lake and return) and the time (4 days) for mobilization-demobilization of the combined programs. While returning from one prospecting day trip to the east of the SLEEPER claims, a pyritic, quartz-calcite healed breccia zone was found just inside the existing claim blocks. A number of samples were taken and, in some specimens of float in the slide rock above the breccia zone, fine grained arsenopyrite was noted. This epithermal-type mineralization contrasted markedly to the volcanogenic sulfide horizon and it was decided that a fair distribution of expenses would be to assign all the in-out air charter costs to the SLEEPER Project (as originally proposed) and then the assay charges for precious metal suite to the Prospector Program - since these would be over and above the budgeted base-metal assay allowance proposed in the SLEEPER Project. Moreover, there was no guarantee that the highly anomalous gold/arsenic values subsequently reported out would have been found; it was a prospecting risk/judgement call to go for assaying all 13 samples found in the course of "outside" prospecting. I trust this decision meets with Department approval.

The checkerboard calendar total of 8 OEX days concentrated on two objectives, namely: 1) some indication of the relative lithologic horizon within the Nisutlin allochthon in which mineralization similar to the SLEEPER might be expected to occur in the surrounding area, 2) what was the nature of the sole of the Nisutlin plate in its contact with the underlying Simpson allochthon of meta-igneous terrane.

In answering these two questions, four days were engaged in examining a prominent outcrop area where granodiorite and migmatites (involving beds of limestone and shale which locally had been skarnized to hedenbergite and epidote) and its limonite-stained contact with the overlying thrust plate

of Nisutlin cataclastic meta-(felsic) volcanics. This was located about 4 km northeast of the SLEEPER lake at a low elevation on the east side of Money Creek valley. Some zones in the Simpson meta-igneous rocks were migmatitic and pegmatitiic (see photo) with localized coarsely crystalline tourmalinized zones. Three traverses were made from the sole of the Nisutlin plate up-section to the top of the prominent rounded mountain at 2000m altitude which revealed a surprisingly uniform succession of undeformed, gently SE-inclined, meta-felsic volcanics. Because of the virtually pervasive, but sparsely distributed pyrite, these exhibit light brown limonite coated fractures. The pyrite may have been a product of greenschist facies metamorphism during the cataclastic emplacement of the felsic to intermediate composition volcanics (tuffs?) common to the Nisutlin allochthon in the Money Klippe. In any event, no marker horizon (e.g. sericite alteration) common to the SLEEPER sulfide unit was observed.

Thus, it has not yet been possible to determine the "most favored" horizon within the Nisutlin. This was not unexpected, given the typical scattered distribution of kuroko-type sulfide bodies which have been localized by clusters of ocean floor hydrothermal vents along syntectonic fault zones (commonly parallel). Nevertheless, four other long day-reconnoiters east and then southwest (up to 3 km from the SLEEPER claim block) also failed to detect float or bedrock signifying the presence of a volcanogenic mineralizing environment.

In spite of this, when one looks at the spatial distribution of Fyre Lake, North Lakes, Wolverine Lake, and now SLEEPER, step-out prospecting is clearly warranted northeast and east of the Money Klippe still in the Nisutlin terrane during 1991.

MT. GOLDEN HORN

Several days were spent examining outcrops of Tertiary basalt flows beginning in Miles Canyon then the outcrops north of the road to Whitehorse Copper mine, and finally to the south southwest at the 1,000 meter elevation 2 km east of the Whitehorse Metro area boundary.

Purpose of the field examinations was to determine the composition of zenoliths (if any) such as eclogite, peridotite, etc. in the basalt.

No confirmed zenoliths were observed. It appeared, however, that a further search to the southwest for the basalt vent may be productive.

JAMES S. DODGE

P.A.P. 1990

EXPENDITURES

TRANSPORTATION

Aircraft Charter (Cessna 185)
Watson Lake to Stewart Lake & return
17 August and 24 August — $ 320.10

Vehicle (4x4) Pickup

		(Km)
29-06	Porter Creek-Rose River	260
13-07	Canol Road-Porter Creek	275
19-07	Porter Creek-Watson Lk. Airport	488
13-08	Watson Lk. Airport-Porter Creek	488
15-08	Porter Creek-Stewart Crossing	369
16-08	Stewart Crossing-Porter Creek	369
16-08	Porter Creek-Swift River	320
17-08	Swift River-Watson Lk. Airport	168
25-08	Watson Lk. Airport-Porter Creek	490
01-09	Porter Creek-Canol Road	262
06-09	Canol Road-Porter Creek	262
12-09	Porter Creek-Stewart Crossing	372
13-09	Stewart Crossing-Porter Creek	369
13-09	Porter Creek-South Canol 14Km	168
17-09	South Canol-Porter Creek	168
(20-23)-09	Porter Creek-Golden Horn Mtn, 4 trips @ 42km each	168
		4,996

4,996 km @ 26¢/km — 1,298.96

ASSAYS/PETROGRAPHIC LAB

Chemex Labs

31-07	Iron Creek	69.00
21-08	Money Creek	299.00
06-09	Stewart Lake	69.00
20-09	Canol Creek	69.00

Vancouver Petrographics
Two thin sections, offcuts, K-spar stains, photos, reports (excluding SLEEPER share of work) — 180.00

686.00

FIELD SUPPLIES

Note books		8.91
Flagging		2.96
		11.87

OFFICE

Telephone	Vancouver Petrographics	4.97
Postage	Chemex rock samples on 16-07, 13-08, 25-08, 07-09, 07-09 and 28-08	38.70
	Sample mailing envelopes and tape, map, xerox	13.68
		57.35

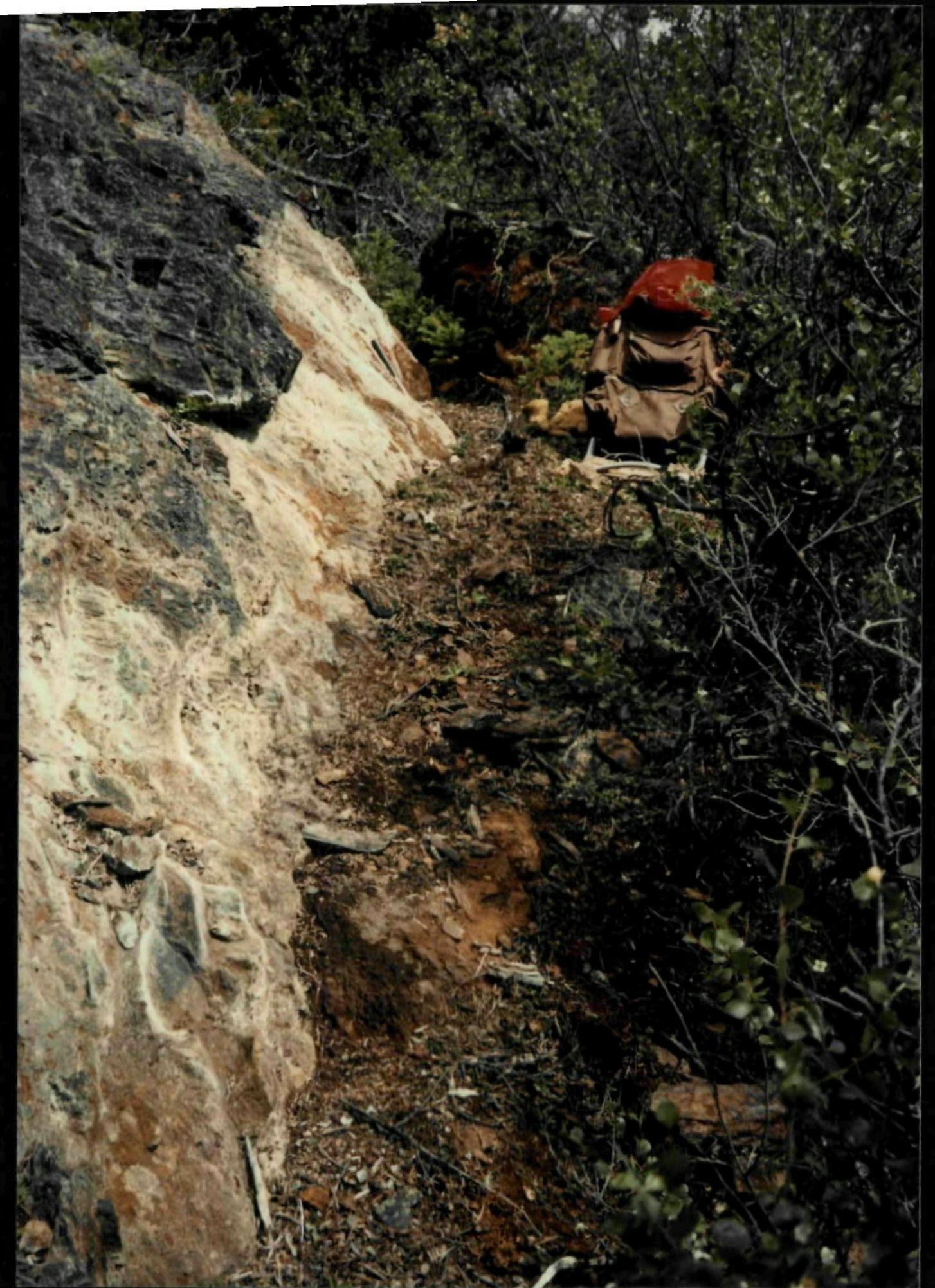
FIELD SUBSISTENCE

55 days @ $38/day — 2,090.00

Total Expenditures	4,464.28
Less Advance	2,500.00
REMAINING REIMBURSEABLES	$ 1,964.28

PROFESSIONAL ENGINEER YUKON TERRITORY JAMES S. DODGE

James S. Dodge, P. Eng.



Gossan in qtz-hbl-gneiss
2 km NW of Iron Creek
Camp.

YEIP
90-009

Gossan in qtz-hbl-gneiss
2½ Km NW of
Iron Creek camp.

YEIP
90-009

Watson Lake Flying Services Ltd.

Phones 536-2231 — 536-7462

CHARTER AND CONTRACT TICKET

Date AUG 24 19 90 A/C Type C-185 CF YIG

Pilot D. DRINNAN Base QH

Charge to JAMES DODGE or Cash

Address phone

Charge to Project

For Passage From WATSON LAKE To: STEWART LK

To: WATSON LAKE To:

To: To:

To: To:

Fare: 2 MIN Mile/Hr. @ $ 80.00		$ 160.00
Fuel Mile/Hr. @ $		$
Total Fare & Fuel Mile/Hr. $		$
Cargo P/U JIM DODGE		$
+ GEAR.		$
		$
		$
Total Charge		$ 160.00

This ticket is expressly subject to the conditions printed on the reverse side of ticket and which are hereby accepted.

Authorized by

№ 4516

Watson Lake Flying Services Ltd.

Phones 536-2231 — 536-7462

CHARTER AND CONTRACT TICKET

Date AUG 17 19 90 A/C Type DHC-2 CF IBP

Pilot Bill Base QH

Charge to Jim Dodge or Cash

Address phone

Charge to Project

For Passage From QH To: Stewart

To: QH To:

To: To:

To: To:

Fare: Mile/Hr. @ $		$
Fuel Mile/Hr. @ $		$
Total Fare & Fuel Mile/Hr. $ 2 min 180.00		$ 160.00
Cargo		$
SUB FOR C-185		$
		$
		$
Total Charge		$ 160.00

This ticket is expressly subject to the conditions printed on the reverse side of ticket and which are hereby accepted.

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CHARTER AND CONTRACT TICKET

Date AUG 24 19 90 A/C Type C-185 CF YIG

Pilot D. DRINNAN Base QH

Charge to JAMES DODGE or Cash

Address phone

Charge to Project

For Passage From WATSON LAKE To: STEWART LK

To: WATSON LAKE To:

To: To:

To: To:

Fare: 2 MIN Mile/Hr. @	$ 80.00	$ 160.00
Fuel Mile/Hr. @	$	$
Total Fare & Fuel Mile/Hr.	$	$
Cargo P/U JIM DODGE		$
+ GEAR.		$
		$
		$
Total Charge		$ 160.00

This ticket is expressly subject to the conditions printed on the reverse side of ticket and which are hereby accepted.

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Watson Lake Flying Services Ltd.

Phones 536-2231 — 536-7462

CHARTER AND CONTRACT TICKET

Date AUG 17 19 90 A/C Type DHC-2 CF LBP

Pilot Bill Base QH

Charge to Jim Dodge or Cash

Address phone

Charge to Project

For Passage From QH To: Stewart

To: QH To:

To: To:

To: To:

Fare: Mile/Hr. @	$	$
Fuel Mile/Hr. @	$	$
Total Fare & Fuel Mile/Hr.	$ 2 min x 80.00	$ 160.00
Cargo		$
Sub For C-185		$
		$
		$
Total Charge		$ 160.00

This ticket is expressly subject to the conditions printed on the reverse side of ticket and which are hereby accepted.

Authorized by

№ 4428

Chemex Labs

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- *Geochemists*
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Mississauga, Ontario
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Sparks, Nevada
Elko, Nevada
Butte, Montana
Boise, Idaho
Anchorage, Alaska

Chemex Labs

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DODGE, JAMES S. *

14 MACDONALD RD.
WHITEHORSE, YUKON
Y1A 4L2

DAY	MO.	YR.
31	AUG	90

CODE	PAGE
BKY	1

PLEASE REMIT TO:
Chemex Labs Ltd.
212 Brooksbank Avenue
North Vancouver B.C.
Canada, V7J 2C1

DAY	MO.	YR.
31	AUG	90

CODE	PAGE
BKY	1

STATEMENT OF ACCOUNT

DAY	MO.	YR.	TRANSACTION	INVOICE NUMBER	DEBIT	CREDIT	BALANCE
01	AUG	90	BALANCE FWRD				59.00
21	AUG	90	INVOICE	I9021085	299.00		358.00
31	AUG	90	PAYMENT			200.00	158.00

CHECK INVOICES BEING PAID

DAY	MO.	YR.	INVOICE NUMBER	AMOUNT
01	AUG	90	BALANCE	59.00
21	AUG	90	I9021085	299.00

DUPLICATE OF CHEQUE

NO. 278

JAMES DODGE
YUKON Y0B 1X0
PHONE 979-2289

Whitehorse 31 Aug 90

Chemex LABS LTD

Two hundred twenty-five and 00/100

BAL. FORD 225.00
THIS CHEQUE
BALANCE
DEPOSIT
BAL. FORD

CANADIAN IMPERIAL BANK OF COMMERCE
WHITEHORSE, YUKON

P.A.P.K/PAP

NOT NEGOTIABLE

CURRENT	31-60 DAYS	61-90 DAYS	OVER 90 DAYS
99.00	59.00	.00	.00

BALANCE DUE $ 158.00

CDN DOLLAR ACCOUNT

BALANCE DUE $ 158.00

CDN DOLLAR ACCOUNT

PLEASE ENCLOSE THIS PART OF YOUR STATEMENT WITH YOUR REMITTANCE.

TERMS
1.5 % PER MONTH (18.0 % PER ANNUM)
CHARGED ON OVERDUE ACCOUNTS

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North Vancouver, Mississauga, Ontario
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Elko, Nevada
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Boise, Idaho
Anchorage, Alaska

DODGE, JAMES S. *

14 MACDONALD RD.
WHITEHORSE, YUKON
Y1A 4L2

DAY	MO.	YR.
31	JUL	90

CODE	PAGE
BKY	1

STATEMENT OF ACCOUNT

DAY	MO.	YR.	TRANSACTION	INVOICE NUMBER	DEBIT	CREDIT	BALANCE
01	JUL	90	BALANCE FWRD				10.00CR
31	JUL	90	INVOICE	I9019070	69.00		59.00

CURRENT	31-60 DAYS	61-90 DAYS	OVER 90 DAYS
59.00	.00	.00	.00

BALANCE DUE $ 59.00

CDN DOLLAR ACCOUNT

TERMS
1.5 % PER MONTH (18.0 % PER ANNUM)
CHARGED ON OVERDUE ACCOUNTS

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212 Brooksbank Avenue
North Vancouver B.C.
Canada, V7J 2C1

DAY	MO.	YR.
31	JUL	90

CODE	PAGE
BKY	1

CHECK INVOICES BEING PAID

DAY	MO.	YR.	INVOICE NUMBER	AMOUNT
01	JUL	90	BALANCE	10.00CR
31	JUL	90	I9019070	69.00

BALANCE DUE $ 59.00

CDN DOLLAR ACCOUNT

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Butte, Montana
Boise, Idaho
Anchorage, Alaska

DODGE, JAMES S. *

14 MACDONALD RD.
WHITEHORSE, YUKON
Y1A 4L2

DAY	MO.	YR.
30	JUN	90

CODE	PAGE
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- *Registered Assayers*

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Chemex Labs Ltd.
212 Brooksbank Avenue
North Vancouver B.C.
Canada, V7J 2C1

DAY	MO.	YR.
30	JUN	90

CODE	PAGE
BKY	1

STATEMENT OF ACCOUNT

DAY	MO.	YR.	TRANSACTION	INVOICE NUMBER	DEBIT	CREDIT	BALANCE
01	JUN	90	BALANCE FWRD				10.00CR

PAYMENTS RECEIVED AFTER JUN.30 WILL APPEAR ON NEXT STATEMENT

CURRENT	31-60 DAYS	61-90 DAYS	OVER 90 DAYS
-10.00	.00	.00	.00

BALANCE DUE $ 10.00CR

CDN DOLLAR ACCOUNT

TERMS
1.5 % PER MONTH (18.0 % PER ANNUM)
CHARGED ON OVERDUE ACCOUNTS

CHECK INVOICES BEING PAID

DAY	MO.	YR.	INVOICE NUMBER	AMOUNT
01	JUN	90	BALANCE	10.00CR

BALANCE DUE $ 10.00CR
CDN DOLLAR ACCOUNT

PLEASE ENCLOSE THIS PART OF YOUR STATEMENT WITH YOUR REMITTANCE.

Vancouver Petrographics Ltd.
8080 Glover Road, P.O. Box 39
FORT LANGLEY, B.C. V0X 1J0

(604) 888-1323 Fax (604) 888-3642

INVOICE

№ 338

SALESPERSON | DATE OF INVOICE: Sep 21,90

TO:

James A Dodge
14 MacDonald Road
Whitehorse, Yukon
Y1A 4L2

SHIP TO

Attn; James A Dodge

ACCOUNT NO.	DATE SHIPPED	SHIPPED VIA	COL	P.P.	F.O.B. POINT	TERMS	YOUR ORDER NUMBER
	Sept	Mail		x	Ft. Langley	Net 30 days	J Dodge

QUANTITY	DESCRIPTION	UNIT PRICE	AMOUNT
1	thin section	8.00	8.00
1	pol thin section	20.00	20.00
2	off cuts	0.75	1.50
2	k spar stains	1.50	3.00
	Report by C leitch		195.00
	reflected light exam		10.00
	Photos		80.00
	Postage		6.55
	CHEQUE REC'D		— 200.00

Thank You

TOTAL Bal 124.05 ~~324.05~~

DUPLICATE OF CHEQUE

Whitehorse 07 Sept. 90

Vancouver Petrographics Ltd

One-hundred and 00/100

BAL. FOR'D 100.00
THIS CHEQUE
BALANCE
DEPOSIT
BAL. FOR'D

CANADIAN IMPERIAL BANK OF COMMERCE
WHITEHORSE, YUKON

NOT NEGOTIABLE

on account

NW-411

NorthwesTel

PAP Van Petroglyphs

CUSTOMER COPY

TO

PLACE

COUNTRY _____ CODE _____

CITY _____ CODE _____

TEL. NO. 604 668 1323

☐ STATION CALL

☐ PERSON TO PERSON

NAME

REMARKS

FROM

NORTHWESTEL OFFICE

CLG. PTY.

DEPOSIT $ 20.00

☐ CANADIAN ☐ AMERICAN

CONN TIME 10:05 am DISC TIME

TOTAL TIME 2 min

T&C $ 4.48

TAX .49

TOTAL 4.97

TELEPHONE NUMBER 668-3629

CHECK DIGIT

DATE — YEAR 90 MONTH 09 DAY 07

AMOUNT 4.97

Sample mailing envelopes + marker pen

Field Notebook

PAP Rock Petroglyphs envelope

WHITEHORSE PUBLIC LIBRARY

PAP Share = $4.50

94 .15

PHOTOCOPY 14.10

SUBTOTAL 14.10

CASH 14.10

CHANGE .00

94 3

17:04R

08-27-90

1* 16-33

6 3.29

0 0.33

2.96 ◇

5.00 CA

2.04 CG

*01.123

THANK YOU

MERCI

Tape re Sample Yearbook

PAP ✓

MAIN STREET POSTAL OUTLET
203 MAIN STREET
WHITEHORSE, YUKON Y1A 2C0
90/08/13 11:37 720313 OPER1
PS 015 000010

S	10 @	.43	4.30
S	10 @	.06	.60
TOTAL COST/COUT TOTAL			4.90
AMT PAID /MONTANT PAYE			
CASH/COMPTANT			5.00
CHANGE/MONNAIE			0.10

CHEMEX - samples

MAIN STREET POSTAL OUTLET
203 MAIN STREET
WHITEHORSE, YUKON Y1A 2C0
90/07/16 08:18 720313 OPER1
PR 004 000005

# OF ITEMS/# D'ITEMS	1
UNIT WEIGHT/POIDS UNIT.	0.976KG
UNIT COST/COUT UNITAIRE	5.60
TOTAL COST/COUT TOTAL	5.60
AMT PAID /MONTANT PAYE	
CASH/COMPTANT	10.00
CHANGE/MONNAIE ✓	4.40

Postage 2 samples to Retrographics PAP

MAIN STREET POSTAL OUTLET
203 MAIN STREET
WHITEHORSE, YUKON Y1A 2C0
90/08/28 14:13 720313 OPER3
PR 004 000005

# OF ITEMS/# D'ITEMS	1
UNIT WEIGHT/POIDS UNIT.	0.600KG
UNIT COST/COUT UNITAIRE	5.60

002 000005

TOTAL COST/COUT TOTAL	5.60
AMT PAID /MONTANT PAYE	
CASH/COMPTANT	5.60
CHANGE/MONNAIE	0.00

Postage - Chemex samples ✓

MAIN STREET POSTAL OUTLET
203 MAIN STREET
WHITEHORSE, YUKON Y1A 2C0
90/08/25 13:47 720313 OPER1
PR 004 000022

# OF ITEMS/# D'ITEMS	1
UNIT WEIGHT/POIDS UNIT.	1.844KG
UNIT COST/COUT UNITAIRE	6.55
TOTAL COST/COUT TOTAL	6.55
AMT PAID /MONTANT PAYE	
CASH/COMPTANT	20.00
CHANGE/MONNAIE	13.45

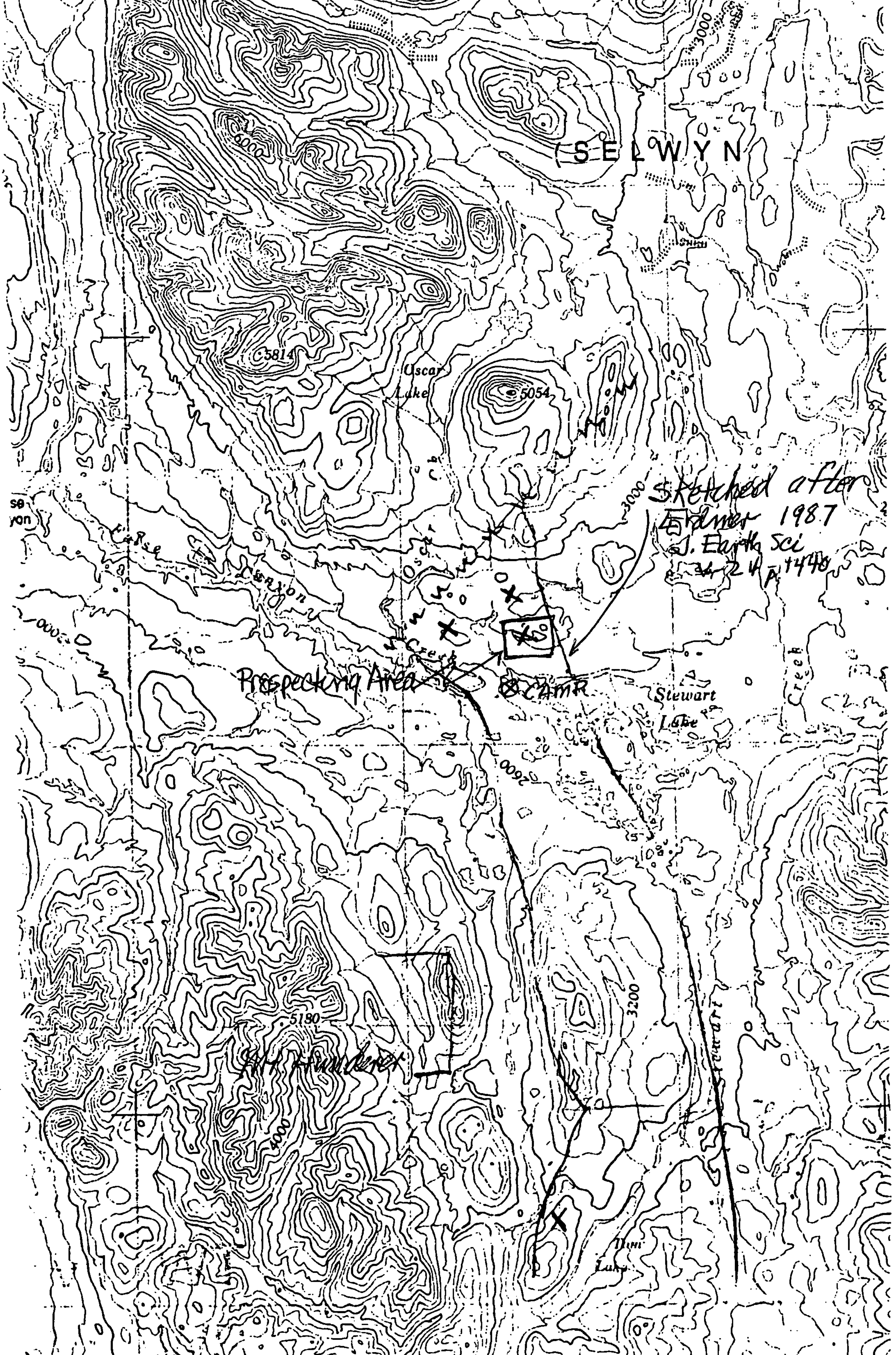
P.A.P.

MAIN STREET POSTAL OUTLET
203 MAIN STREET
WHITEHORSE, YUKON Y1A 2C0
90/09/07 11:42 720313 OPER1
PR 004 000041

# OF ITEMS/# D'ITEMS	1
UNIT WEIGHT/POIDS UNIT.	0.337KG
UNIT COST/COUT UNITAIRE ✓	4.75

PR 004 000041

# OF ITEMS/# D'ITEMS	1
UNIT WEIGHT/POIDS UNIT. ✓	1.084KG
UNIT COST/COUT UNITAIRE	6.55
TOTAL COST/COUT TOTAL	11.30
AMT PAID /MONTANT PAYE	
CASH/COMPTANT	15.00
CHANGE/MONNAIE	3.70


SELWYN
6000
5814
Oscar Lake
5054
3000
Sketched after
Erdmer 1987
J. Earth Sci
Canyon
Creek
Prospecting Area
CAMP
Stewart
Lake
2600
3200
5180
Mt. Hundere
4000
Stewart

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221

DODGE, JAMES S.

14 MACDONALD RD.
WHITEHORSE, YUKON
Y1A 4L2

Project : STEWART LAKE
Comments:

Invoice Date: 6-SEP-90
Invoice No. : I-9021890
P.O. Number :

CERTIFICATE OF ANALYSIS A9021890

SAMPLE DESCRIPTION	PREP CODE	Au ppb FA+AA	Ag ppm Aqua R	As ppm	Hg ppb	Sb ppm					
420722	205 294	< 5	< 0.2	1	30	0.2					
420723	205 294	< 5	< 0.2	< 1	20	0.2					
420724	205 294	< 5	< 0.2	< 1	10	0.2					

CERTIFICATION: Hartt Bichler

B: COARSE, BLADED TREMOLITE ROCK

Light green, apparently monominerallic rock composed of an aggregate of bladed 3 mm laths. Described as being from a large pod in an eclogite within a few meters of its contact with serpenitinite. Suspected of being actinolite, but considering the sodium-rich character of the omphacite of the eclogite and a hardness of 6.5, the presence of jadeite considered possible. In thin section, however, the rock appears to be monominerallic tremolite -actinolite:

Tremolite-actinolite	90%
Quartz	3%
Fibrous tremolite (?nephrite)	2%
Jadeite(?)	2%
Opaque (Fe-Ti oxides?)	2%
Chlorite	1%

The major mineral is coarse, bladed tremolite-actinolite as subhedral to euhedral laths up to 7 mm long. It has too small an extinction angle (maximum c^Z' of 26 degrees) to be jadeite. Although tremolite is listed as having an extinction angle of 10-20 degrees and jadeite has an extinction angle of 30 to 44 degrees, and the measured angle falls between these, in my opinion it is not large enough to be a pyroxene. This is reinforced by the birefringence, which is about 0.025 (higher than jadeite at 0.012-0.023, but in the middle of the range for tremolite (0.022-0.027). Also, I do not see any 90 degree cleavage expected of a pyroxene on cross-sections. There is no colour or pleochroism in thin section, so the name tremolite seems to be appropriate.

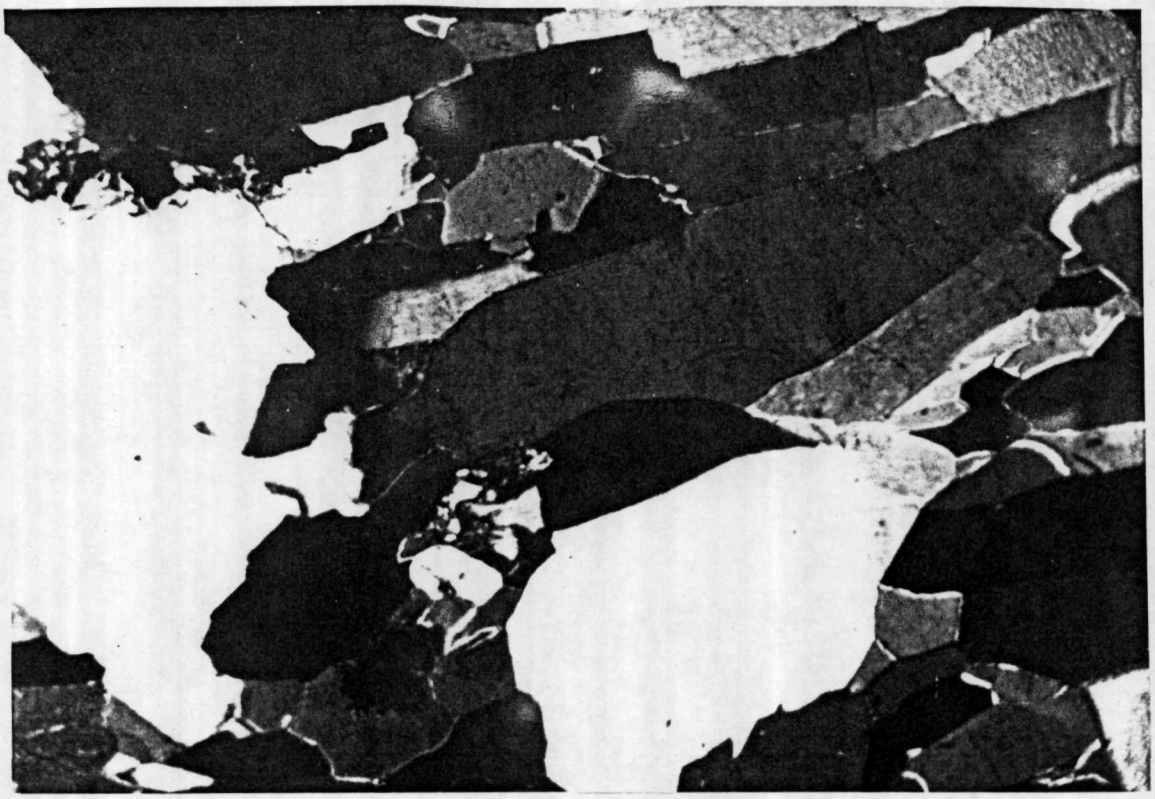
Occasional patches of fine-grained quartz are scattered through the rock. The quartz is anhedral and about 0.03 mm in diameter.

There are small patches where the tremolite appears to be altered (?retrograded) to a fibrous mineral that is similar to the tremolite (but much finer grained). This could be termed "nephrite", a compact fibrous variety of tremolite-actinolite that forms the bulk of lower-grade jade. It has simila optical properties to the tremolite.

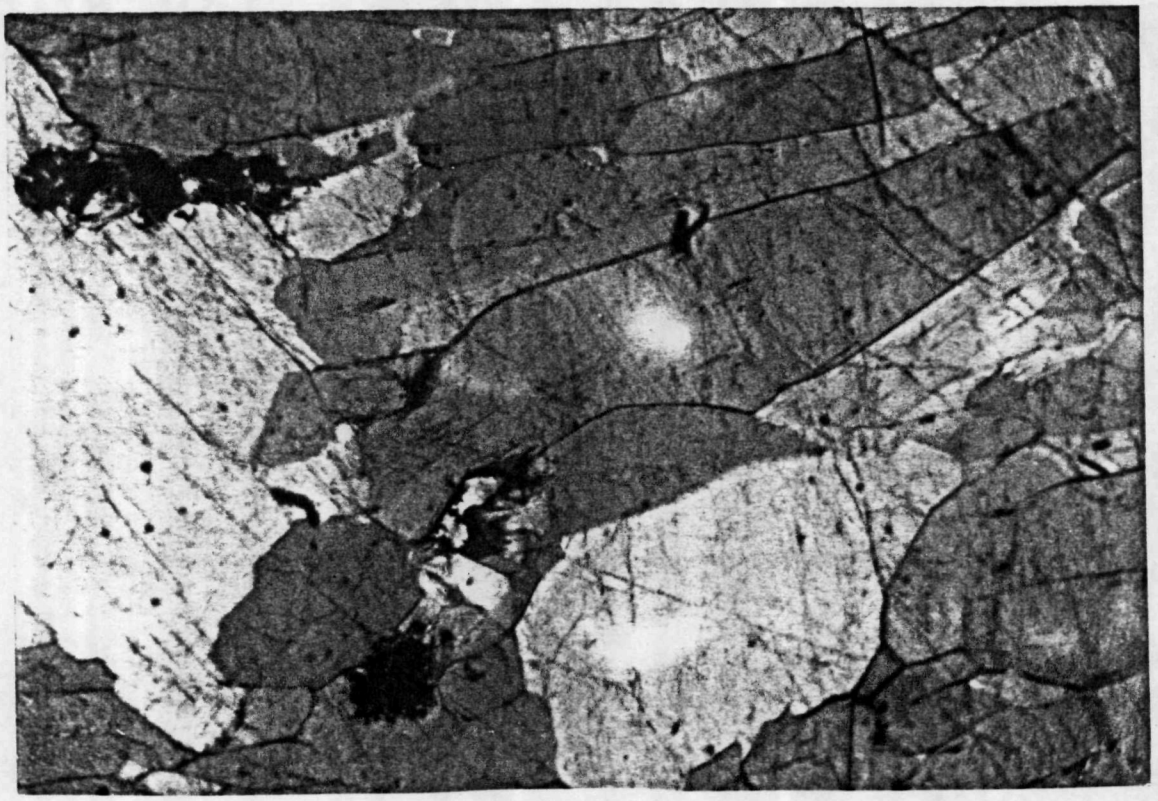
In other patches, commonly with fine (0.2 mm dfiameter) anhedral opaques at their center, the tremolite appears to be altered to pale green ?chlorite as fine 0.025 mm diameter flakes. The identity of the opaque is not certain without a polished surface to examine.

Rare grains of higher relief, euhedral grains up to 0.05 mm long have a higher extinction angle and may be ?jadeite. They do not have any colour or pleochroism.

Craig H.B. Leitch, Ph.D, P.Eng.
(604) 921-8780 or 666-4902



Sample B: Thin section views (transmitted light, 3 mm wide) of coarse bladed tremolite with small patches of opaque oxides, fibrous ?nephrite and quartz (strong relief). Above: crossed polars, below: plane polarized light.



Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
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British Columbia, Canada V7J 2C1
PHONE: 604-984-0221

To: DODGE, JAMES S.

14 MACDONALD RD.
WHITEHORSE, YUKON
Y1A 4L2

Project : Canol Creek
Comments:

Invoice Date: 20-SEP-90
Invoice No. : I-9022732
P.O. Number :

CERTIFICATE OF ANALYSIS A9022732

SAMPLE DESCRIPTION	PREP CODE		Au ppb FA+AA	Ag ppm Aqua R	As ppm	Hg ppb	Sb ppm
420764	205	294	< 5	1.1	14	120	< 0.2
420765	205	294	< 5	< 0.2	3	60	< 0.2
420766	205	294	< 5	0.4	7	60	< 0.2

CERTIFICATION: Stewart Bichler

Sample C: MAFIC TO ULTRAMAFIC VOLCANIC BRECCIA, ALTERED TO CHLORITE-EPIDOTE-ALBITE-SERICITE-CARBONATE-K-FELDSPAR-QUARTZ

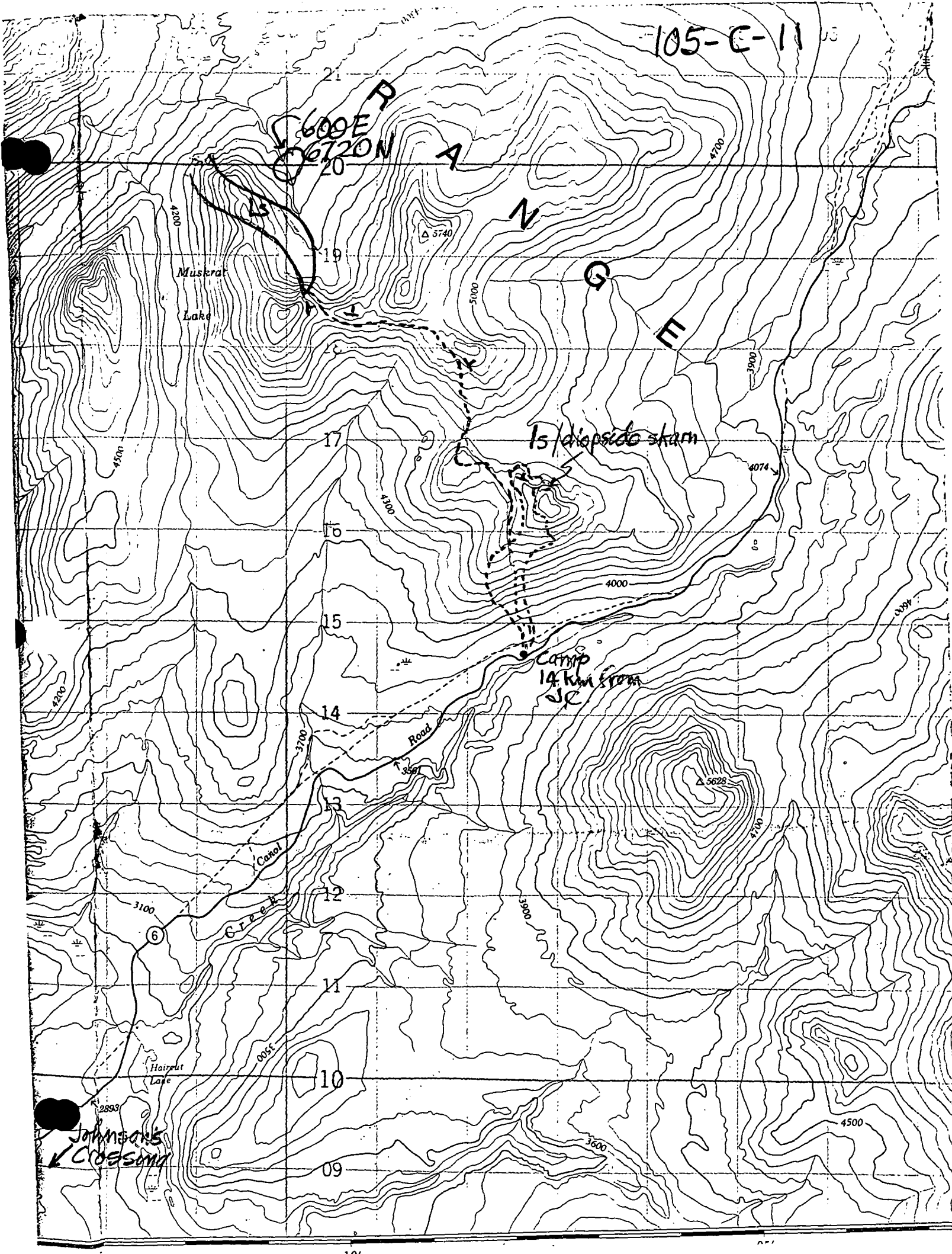
Described as a "healed mafic breccia", this is a dark green highly mafic rock with a distinctly fragmental appearance in the sawn surface. However, it shows a moderate reaction for K-feldspar in the etched slab, implying an alkalic mafic composition. It is not magnetic, but some of the mafic phenocrysts react slightly to cold dilute HCl. In thin section, the mineralogy is approximately:

Clinopyroxene	30%
Relict plagioclase	15%
Chlorite	15%
Epidote	10%
Carbonate (magnesite, minor calcite, dolomite)	10%
K-feldspar (secondary)	5%
Quartz (secondary)	5%
Sericite (muscovite)	5%
Secondary amphibole	3%
Opaque (Fe-Ti oxides)	2%

There are several prominent clast types present in this rock, but all are of highly mafic composition dominated by clinopyroxene. The most abundant clast, up to 2 cm across, is composed of major clinopyroxene and lesser plagioclase phenocrysts snf microlites in a very fine, brown matrix that may be devitrified glass. The clinopyroxene phenocrysts are euhedral and up to 5 mm across. They are cracked but generally only lightly altered to chlorite, carbonate and clay. Plagioclase forms subhedral crystals up to 2 mm long that are strongly altered to albite and flecked by sericite. A few rounded patches of chlorite (Fe-rich: strong Berlin blue birefringence, pale green pleochroism) with minor epidote may be ?amygdules or relict altered mafic phenocrysts. There are scattered opaque microphenocrysts to 0.5 mm diameter.

Other clasts with a more highly altered nature and disrupted structure may have been of similar composition (clinopyroxene and plagioclase phenocrysts in a matrix of microlites and devitrified ?glass) before extensive alteration to fine grained (0.1 to 0.5 mm) carbonate, quartz, sericite, chlorite and epidote and minor secondary amphibole (in parallel position on clinopyroxene). The K-feldspar cannot be recognized in the section. The carbonate probably includes mainly magnesite (which does not react ot cold dilute HCl) and thin veins of later calcite (that does react).

There are also fragments of ?welded mafic tuff which have a strongly foliated texture defined by wispy laminae of chlorite up to 2 mm long that look like flattened fragments. Similar phenocrysts composition to the other fragments suggests a related composition, which is almost ultramfic on the basis of the originally 65-70% mafic minerals (before alteration). The alteration appears to have healed this brecciated rock quite thoroughly.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WHITEHORSE, YUKON
Y1A 4L2

IKON CREEK

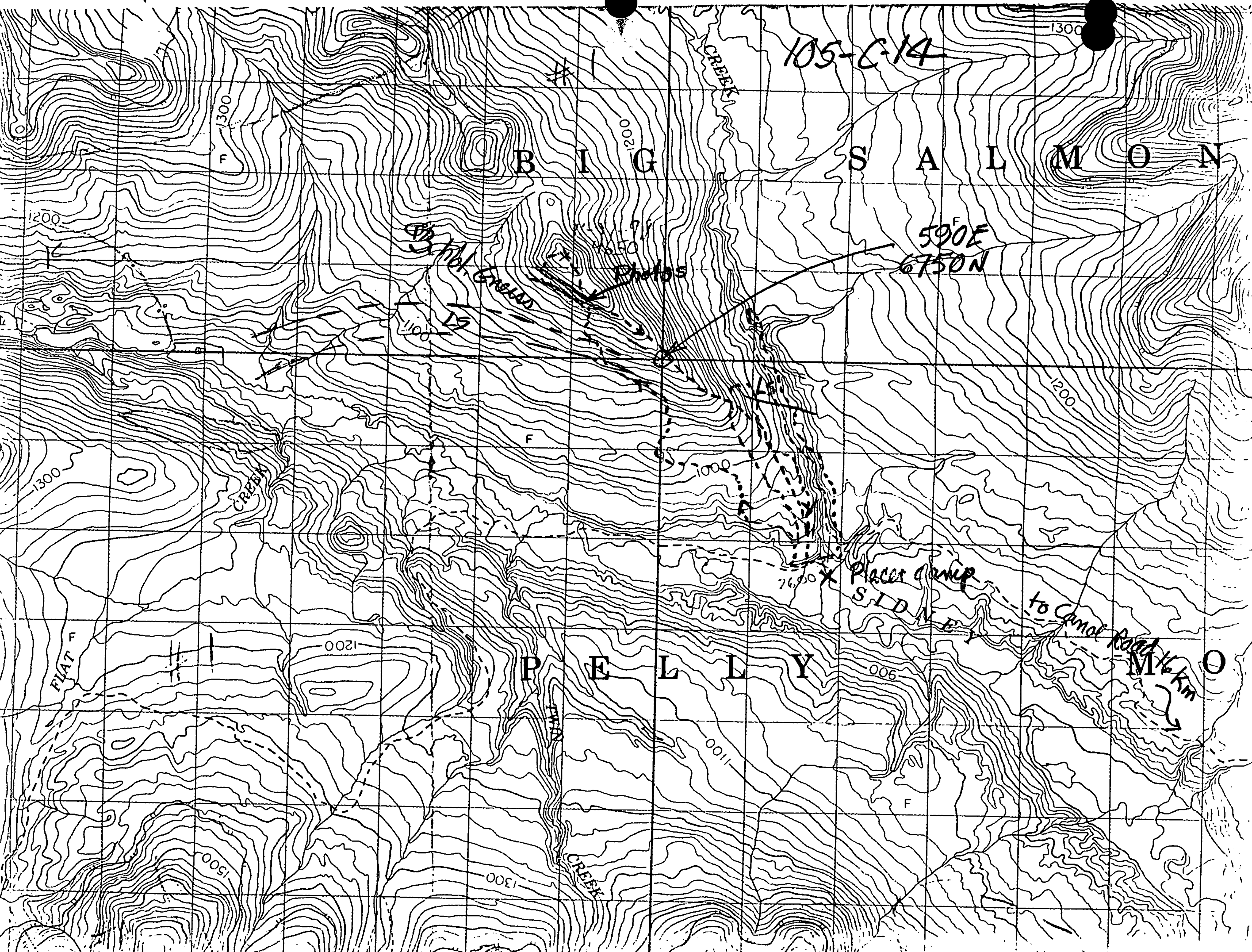
Project :
Comments: ATTN:JAMES S. DODGE

Invoice Date: 31-JUL-90
Invoice No. : I-9019070
P.O. Number :

CERTIFICATE OF ANALYSIS A9019070

SAMPLE DESCRIPTION	PREP CODE		Au ppb FA+AA	Ag ppm ICP	As ppm ICP	Bi ppm ICP	Hg ppm ICP	Sb ppm ICP	Tl ppm ICP			
420719	205	294	< 5	1.2	17	< 1	< 0.1	1.6	< 0.5			
420720	205	294	< 5	0.3	18	< 1	0.1	0.6	< 0.5			
420721	205	294	< 5	0.3	17	1	< 0.1	0.6	< 0.5			

CERTIFICATION: B. Caufield



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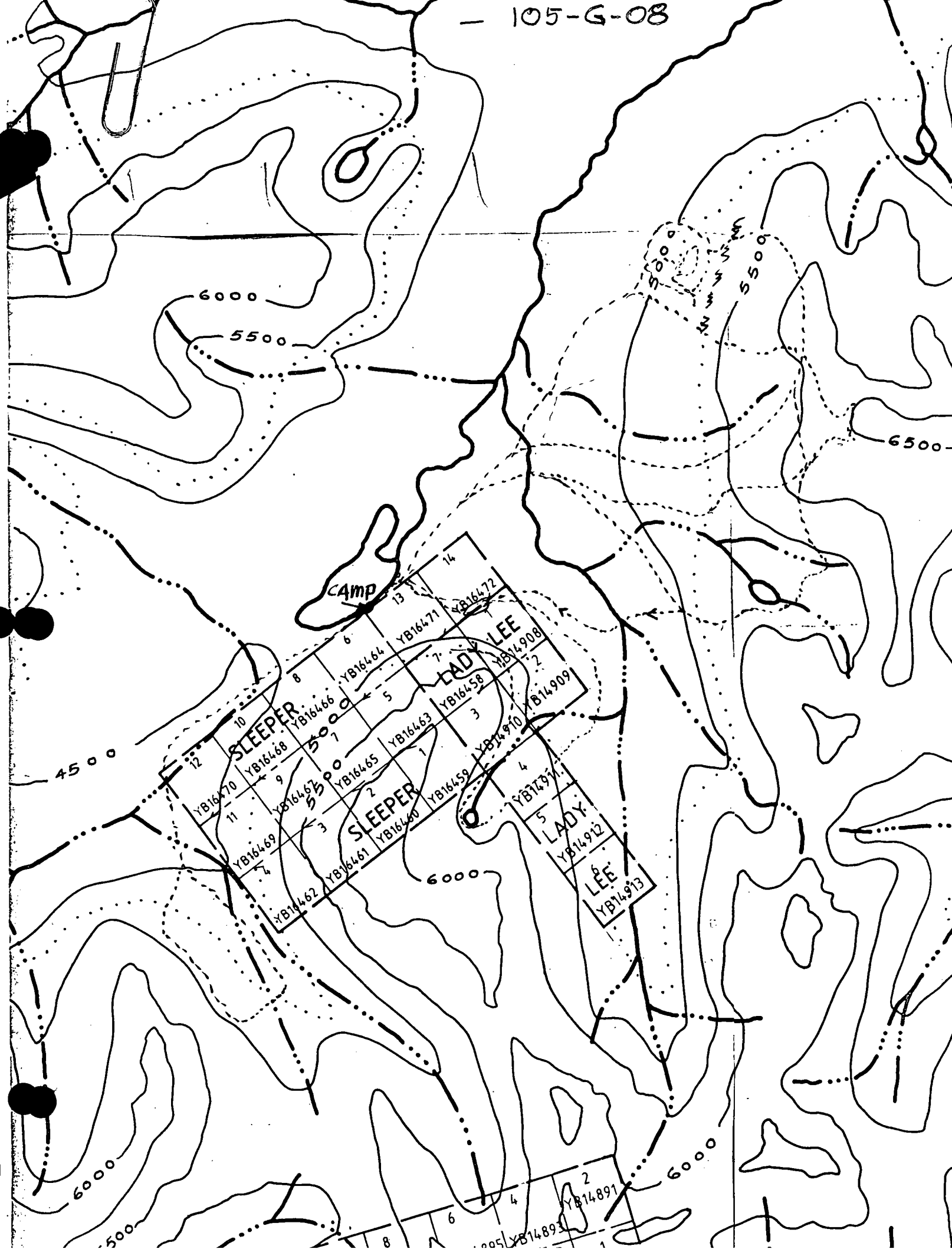
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CAMERON
BLACKIE
ANNE
SUSAN
PETER
ORO
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Basalt
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