

**PERMIT TO PRACTICE**  
Dahrouge Geological Consulting Ltd. (762137 Alberta Ltd.)  
Signature \_\_\_\_\_  
Date May 11/01  
**PERMIT NUMBER: P 6793**  
The Association of Professional Engineers,  
Geologists and Geophysicists of Alberta

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COMMERCE RESOURCES CORP.

**2000 GEOLOGIC MAPPING AND SAMPLING  
ON THE FIR PROPERTY**

NORTH OF BLUE RIVER, BRITISH COLUMBIA  
(KAMLOOPS MINING DIVISION)

CLAIMS: FIR 1 to 9

Geographic Coordinates

52° 18' N  
119° 10' W

NTS Sheets 83 D/6

Owner/Operator: Commerce Resources Corp.  
600, 789 West Pender Street  
Vancouver, B.C. V6C 1H2

Consultant: Dahrouge Geological Consulting Ltd.  
18, 10509 - 81 Avenue  
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Date Submitted: 2001 05 11

**GEOLOGICAL SURVEY BRANCH  
ASSESSMENT REPORT**

26,549

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# 1.

## INTRODUCTION

Throughout this report the term Fir Property refers to those mineral claims which encompass the Tantalum-Niobium-Phosphate bearing Fir and Bone Creek carbonatites, about 26 km northeasterly of Blue River, British Columbia. The claims which encompass these occurrences were acquired by Commerce Resources Corp. during February, 2000.

Between August 14 and 16, 2000 Commerce Resources Corp. conducted geologic mapping and collected 2 rock samples from the Fir Property, and one from just north of the property boundary. In addition, digital topographic information encompassing the property was acquired.

Throughout this report attitudes of bedding and other planar features are given as  $A^{\circ}/B^{\circ}$  SW, where  $A^{\circ}$  is the azimuth of the strike and  $B^{\circ}$  is the amount of dip in the direction indicated. A magnetic declination of  $23\frac{1}{2}^{\circ}$  east was used.

### 1.1 GEOGRAPHIC SETTING

#### 1.1.1 Location and Access

The Fir Property, which includes the Bone Creek and Fir carbonatites, is located in the North Thompson River valley of east-central B.C. (Fig. 1.1), within NTS map area 83 D/6. The Fir Carbonatite is centred at about  $52^{\circ} 19'$  north latitude and  $119^{\circ} 10'$  longitude. The Bone Creek Carbonatite is about 2 km southeast of the Fir showing.

The property is accessible from B.C. Highway 5 (Yellowhead South Highway) and is approximately 68 km south of Valemount, British Columbia and about 26 km north of Blue River. Limited supplies and accommodations are available at both locations. The main line of the Canadian National Railway passes through the western part of the property. The Fir Carbonatite is accessible from a logging road which branches from Highway 5 about 23 km north of Blue River.

#### 1.1.2 Topography, Vegetation, Climate, and Geographic Names

The Fir Carbonatite is at about 800 m elevation above sea level. It is located along the steep, west-facing slope of the Monashee Mountains. At the Fir Property elevations range from about 720 m to 1,240 m. Mount Cheadle, one of the highest points in the region, reaches a maximum elevation of about 2,445 m about 3 km to the northeast of the Fir Carbonatite.

The steep slopes at the Fir Property are typically covered by thick undergrowth consisting of buckbrush, devils club, and huckleberry. Areas not affected by recent logging are covered by dense stands of hemlock, cedar, fir, and white pine. Timber line is about 2,000 m elevation. Precipitation averages about 50 inches per year, and snowfall is generally heavy.

## 1.2 PROPERTY

The property is held under 9 contiguous 2-post mineral claims (Fir 1 to 9) which encompass an area of about 2¼ km<sup>2</sup>, within Kamloops Mining Division. The claims are held 100 per cent by Commerce Resources Corp.

**TABLE 1.1 LIST OF MINERAL CLAIMS**

Claim Name	Tenure Number	Units/Claim	Record Date	Actual or Expected Expiry Date
FIR 1	374663	1	2000-02-15	2007-02-15
FIR 2	374664	1	2000-02-15	2007-02-15
FIR 3	374665	1	2000-02-15	2007-02-15
FIR 4	374666	1	2000-02-15	2007-02-15
FIR 5	374667	1	2000-02-15	2007-02-15
FIR 6	374668	1	2000-02-15	2007-02-15
FIR 7	374669	1	2000-02-15	2007-02-15
FIR 8	374670	1	2000-02-15	2007-02-15
FIR 9	374671	1	2000-02-15	2007-02-15
	Totals	9		

## 1.3 HISTORY AND PREVIOUS INVESTIGATIONS

According to Knox (2000)

"The Blue River Property was originally staked for its vermiculite potential in 1950, by Mr. O.E. French (McCammon, 1950). Several trenches were completed, these showed that the vermiculite occurs in association with interbedded layers of coarse limestone (carbonatite) and gneiss (Table 4.1). In 1952, following the discovery of pyrochlore-bearing dolomitized limestone (carbonatite), St. Eugene Mining Corporation Ltd. optioned the property (McCammon, 1952). They abandoned the property in about 1955, after conducting geologic mapping, prospecting, stripping and trenching, and sampling.

In 1976, the area was re-staked by John Kruszewski as the Verity and AR claims, who conducted additional stripping and trenching, and ground geophysical surveys (Jackson et al., 1978 and Ahroon, 1980).

In 1980 Anschutz (Canada) Mining Ltd. optioned the property from John Kruszewski, primarily for its tantalum and niobium potential. An aggressive exploration program was initiated in 1980, it resulted in the discovery of the Fir and Bone Creek carbonatites which were in addition to the Verity and Mill carbonatites. Exploration work included drilling 13 holes totalling 571.5 m at the Verity Carbonatite, 7 holes totalling 183.5 m at the Mill Carbonatite, and 11 holes totalling 311.8 m at Bone Creek ...

During 1981, Anschutz (Canada) Mining Ltd., completed an additional 2,964.9 m of drilling (Aquist, 1982a ...). Based primarily upon the 1980 and 1981 drilling Aquist (1982a, p.1) concluded that

The carbonatite occurrences at Blue River, British Columbia have the highest tantalum concentrations of any carbonatite in the world."

#### 1.4 PURPOSE OF SURVEY

The work described in this report was undertaken to provide information on the mineralogy, and major- and trace-element composition of the Bone Creek and Fir carbonatites. Prior documented exploration by Anschutz (Canada) Mining Ltd. provided few details on the trace-element composition of the Blue River area carbonatites.

#### 1.5 SUMMARY OF WORK

Between August 14 and 16, 2000, Jody Dahrouge, B.Sc., P.Geol., Todd Faragher, B.Sc., and Dinu Pana, Ph.D., conducted reconnaissance-scale examinations of the known carbonatite occurrences. They collected 3 rock samples (Fig. 3.1). Geological observations and measurements of structural elements accompanied the sampling. To assist in the field examinations and interpretation of results, digital topographic data was acquired and a detailed topographic map was produced at a scale of 1:10,000 (Fig. 3.1).

#### 1.6 FIELD OPERATIONS

Field work was conducted by a three-man crew between August 14 and 16, 2000. Personnel were based in a motel in Valemount with transportation to the property by either two- or four-wheel-drive vehicles.

### 2. REGIONAL GEOLOGY

The Blue River Property is within the Omineca Crystalline Belt of the Canadian Cordillera. The eastern flank of the Cordillera has previously been recognized as a locus of alkaline igneous activity (Currie, 1976). Pell (1987) has subdivided the Omineca Alkaline Province, within British Columbia, into three northwest trending belts:

- a) an eastern belt, east of the Rocky Mountain Trench and encompassing most of the Main and Western Ranges of the Rocky Mountains;
- b) a central carbonatite belt, which predominately encompasses the Rocky Mountain Trench and eastern part of the Omineca; and
- c) a western belt.

The central carbonatite belt generally hosts multiple deformed and metamorphosed, sill-like bodies hosted by Late Precambrian to Early Cambrian metasedimentary rocks (Pell, 1987). This belt

includes the Blue River area carbonatites: Fir, Verity and Paradise Lake; Howard Creek; and Mud Lake-Blue River.

### 3. PROPERTY GEOLOGY

#### 3.1 STRATIGRAPHY, STRUCTURE AND LITHOLOGY

The Fir Property is underlain by metasedimentary rocks and derived gneisses of the Proterozoic Horsethief Creek Group (Fig. 5.1). At Fir, the gneisses have a general strike of  $360^{\circ}$  and dip  $11^{\circ}$  to  $26^{\circ}$  east (Aaquist, 1982b). They are locally folded and cut by later faults. The Horsethief Creek rocks are intruded by sills of carbonatite. The carbonatite is either sovite (calcite-dominated) or beforsite (dolomite-dominated). Aaquist (1982a) indicates that the most significant tantalum-niobium mineralization is confined to the beforsites. The carbonatite sills discovered which were composed of sovite are generally thin and universally barren. Both rock types are medium- to coarse-crystalline. Most exposures display layering defined by varying quantities of accessory minerals.

The carbonatites contain accessory minerals including Na-amphibole, pyroxene, phyllogopite, olivine, magnetite, pyrite/pyrrhotite and apatite, as well as the niobium and tantalum bearing minerals.

Amphibolite and glimmerite (biotite rock) are closely associated with the carbonatite bodies. Nepheline syenite has been found in the area (Aaquist 1982b).

#### 3.2 MINERALIZATION

The host rocks to the mineral occurrences on the Fir Property are carbonatites, which are igneous rock bodies composed of more than 50% carbonate minerals. They are typically relatively rich in alkali elements and occur with other under-saturated alkaline rocks (feldspathoidal syenites and rocks of the ijolite suite).

Deposits of tantalum and niobium within carbonate bodies were formed by primary magmatic concentration. The non-carbonate mineralogy in a carbonatite tends to segregate into bands thus a diffuse igneous layering is formed with bands richer and poorer in non-carbonate minerals. This process is enhanced by the relatively low viscosity of the carbonatite magma. If a magma pulse rich in tantalum and niobium is intruded, the minerals may segregate into non-carbonate mineral rich layers, and thus form potentially economic concentrations.

According to Knox (2000)

"At the Blue River Property, the tantalum and niobium are found in three minerals, pyrochlore  $(Ca,Na)_2Nb_2O_8(OH,F)$ , columbite  $(FeNb_2O_6)$  and fersmite  $(Ca,Na)Nb_2(O,OH,F)_6$ , which occur exclusively in the carbonatite. Tantalum may substitute for niobium in any of these minerals. Mineralogical study (Aaquist 1982a) suggests that virtually all the tantalum is found in the pyrochlore. The variable Nb/Ta ratios found in the analytical data from this property probably reflect different mineralogical ratios. The pyrochlore in samples the author examined from this property is typically dark red, although, Mariano (2000; Aaquist 1982a) recognizes black and yellowish coloured pyrochlore as well. The pyrochlore seems to occur in two habits, as euhedral to subhedral octahedrons and as anhedral porous masses. The pyrochlore is between 0.2 and 2 mm in diameter and should present no concentration problems."

The main carbonatite body on the Fir claims was intersected by four 1981 drill holes and a near vertically orientated surface outcrop. This sill has the highest background niobium and tantalum values of any of the carbonatites discovered to date in the area (Aaquist 1982a). Incidentally, this outcrop was only exposed by a recent landslide (Ahroon 1980). Ahroon (1980) indicates that the FIR carbonatite would not have been discovered if not for this fortunate occurrence.

A 15 m thick exposure of the carbonatite was sampled in the slide area in 1982. It averaged 0.32%  $Nb_2O_5$  and 250 ppm  $Ta_2O_5$ . Two surface samples from the FIR area taken in 2000 returned 0.22% and 0.30%  $Nb_2O_5$  and 250 and 240 ppm  $Ta_2O_5$  respectively. The best intersection obtained during the drilling of the FIR property was Hole BC-19: 7.9 m of 0.037 per cent  $Ta_2O_5$ , 0.064 per cent  $Nb_2O_5$ , and 3.25 per cent  $P_2O_5$ , which is probably the same horizon of carbonatite as the surface exposure. At least ten intersections grading greater than 200 ppm  $Ta_2O_5$  over potentially mineable widths were cut in the four holes. The striking thing about the analytical results from the FIR carbonatite is the much higher tantalum concentrations when compared with other carbonatites from the Blue River area: values below 100 ppm  $Ta_2O_5$  are rare.

#### 4. SAMPLING AND ANALYTICAL PROCEDURES

The carbonatite samples (Samples 11836 and 37) collected during 2000 consisted of grab samples of talus material derived from outcrops further upslope (Fir Carbonatite). The samples were sent to Acme Analytical Laboratories Ltd. in Vancouver, B.C. for preparation and analyses for both whole rock and trace element constituents by standard ICP techniques and LOI. Alex Knox, P.Geol. of Calgary, AB provided mineralogical descriptions for the samples. The analytical report from Acme Analytical Laboratories Ltd. is in Appendix 2 and a description of the samples is in Appendix 3.

5.

**DISCUSSION AND CONCLUSIONS**

Sampling and mapping during 2000, confirmed that those samples derived from the Fir Carbonatite are highly anomalous in Nb (up to 2082 ppm), Ta (up to 205 ppm), P, and Rare Earth Elements. Given the style of mineralization, U (< 10 ppm) and Th (< 15 ppm) values were surprisingly, very low (Appendix 2).

Furthermore, the textures, mineralogy and analytical chemistry confirm that these rocks are carbonatites. The mineral pyrochlore is present in the samples, with two distinct habits; as euhedral to subhedral octahedrons, and as porous, anhedral masses.

Edmonton, Alberta  
2001 05 11

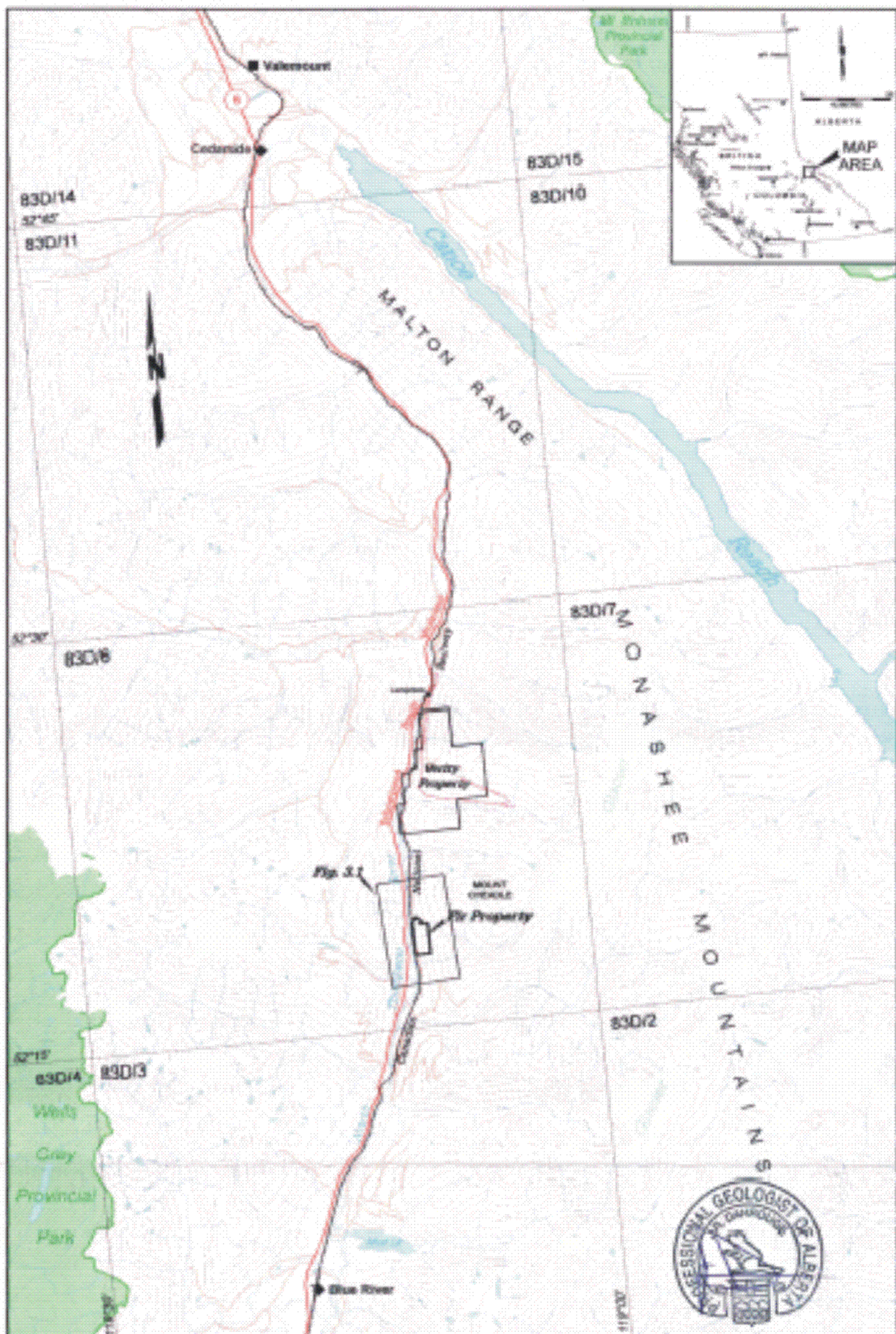




## 6.

## REFERENCES

- Aaquist, B. (1982a) Blue River Carbonatites, British Columbia, Final Report; B.C. Min. Energy, Mines Petr. Res. Ass. Rept. 10,274, 30 p.
- Aaquist, B. (1982b) Assessment Report Blue River Carbonatites, British Columbia,; B.C. Min. Energy, Mines Petr. Res. Ass. Rept. 11,130, 15 p.
- Ahroon, T.A. (1980) Geologic Report on the Blue River Project, British Columbia; B.C. Min. Energy, Mines Petr. Res. Ass. Rept. 9566, 13 p.
- Currie, K.L. (1976) The Alkaline Rocks of Canada; Geol. Surv. Can., Bull. 239., 228 p.
- Jackson, E.V., James, G.L., and Forester, J.E. (eds.) (1978) Canoe River 83D: Verity; B.C. Min. Mines Petr. Res., Exploration In B.C. 1978, p. 117.
- Knox, A. (2000) Summary Report on the Blue River Carbonatite Property, East-Central British Columbia; Private Report for Commerce Resources Corp.; 21 p.
- Mariano, A.N. Tony (2000) Personal Communication.
- McCammon, J.W. (1950) Vermiculite: Verity B.C. Min. Mines Petr. Res., Ann. Rept. 1950, p. 229-230.
- McCammon, J.W. (1952) Uranium: Verity, Paradise, etc.; B.C. Min. Mines Petr. Res., Ann. Rept. 1952, p. 115-119.
- Pell, J. (1987) Alkaline Ultrabasic Rocks in British Columbia: Carbonatites, Nepheline Syenites, Kimberlites and Related Rocks; B.C. Min. Energy, Mines Petr. Res.; Open File 1987-17, 109 p.



**SYMBOLS**

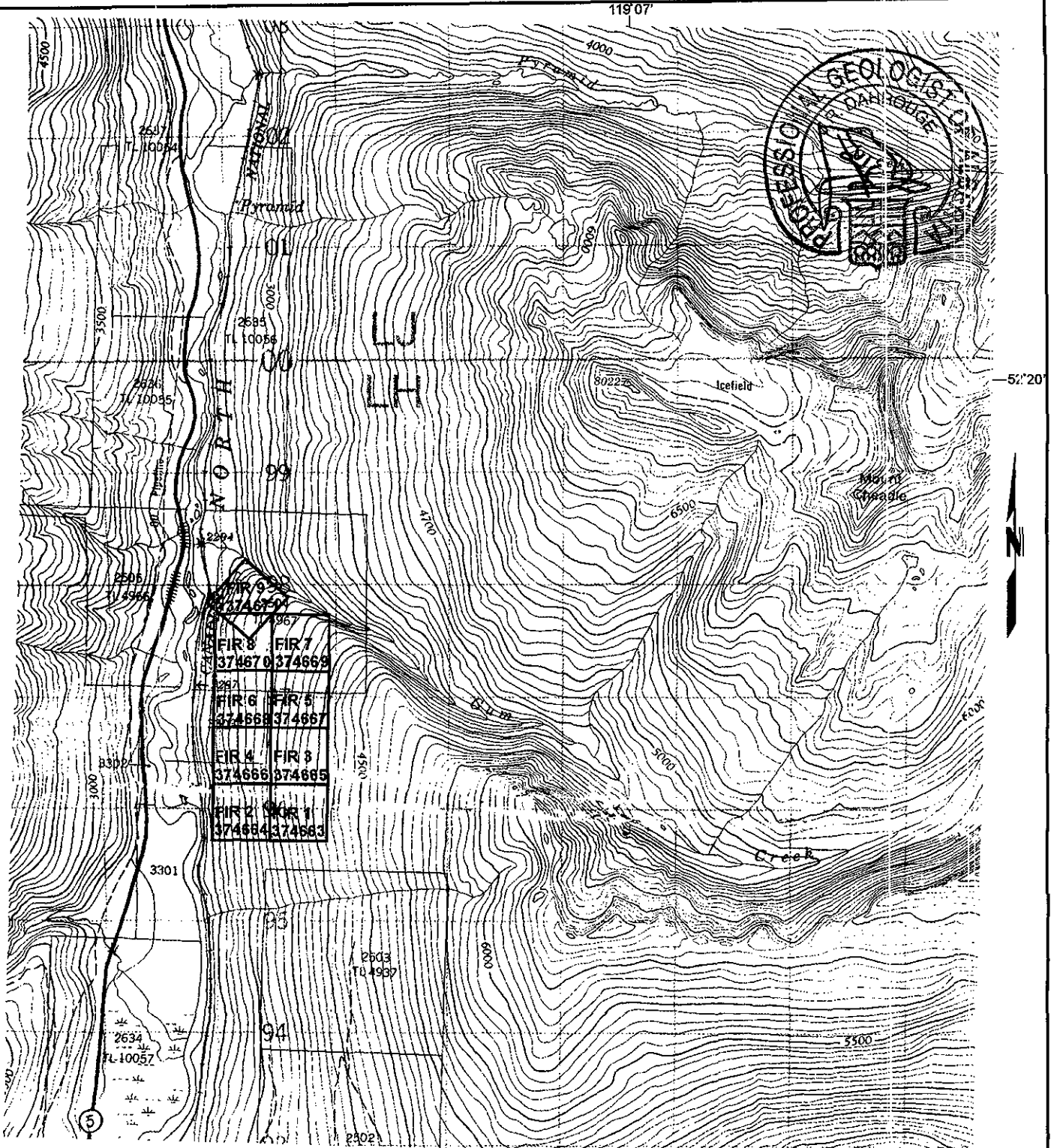
- CN Rail Line
- Access Road
- Secondary Road or Trail
- Major Highway
- Provincial Parks




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 DARRUDE GEOLOGICAL CONSULTING LTD.  
 Edmonton, Alberta


FW PROPERTY, EAST-CENTRAL BRITISH COLUMBIA

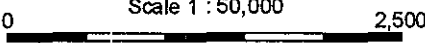
Figure 1.1  
 Location and Index Map



**SYMBOLS**

Fir 1  Claim; identifier

 Contour interval 100 feet

0  2,500  
Scale 1 : 50,000  
METRES

**COMMERCE RESOURCES CORP.**

DAHROUGE GEOLOGICAL CONSULTING LTD.  
EDMONTON, ALBERTA

Part of Map Sheet 83 D/6  
BRITISH COLUMBIA

**Figure 1.2**  
**Claim Map**

JD 2001.04



LEGEND

- 13 Recent: alluvium and glacial deposits
- 2 Proterozoic: quartzite, phyllite, schist, gneiss; minor marble and amphibolite

SYMBOLS

- Fir property
- 11836 ★ Sample; identifier
- ★ Carbonatite occurrence
- ~ Contour interval 100 feet
- S S S S Fault



<b>COMMERCE RESOURCES CORP.</b>	
DAHROUGE GEOLOGICAL CONSULTING LTD. EDMONTON, ALBERTA	
Part of Map Sheet 83 D/6 BRITISH COLUMBIA	
<b>Figure 2.1 Property Geology</b>	
TF	2000.10

## APPENDIX 1: ITEMIZED COST STATEMENT

**a) Personnel**

J. Dahrouge, geologist

1.75 days field work and travel August 14-16

1.00 ship samples, report preparation

2.75 days @ \$ 428.00

\$ 1,177.00

D. Pana, geologist

2.0 days field work and travel between August 14-20

2.0 days @ \$ 428.00

\$ 856.00

T. Faragher, geologist

2.0 days field work and travel between August 14-20

1.0 days field preparation, ordering digital data, and data compilation

3.0 days @ \$ 374.50

\$ 1,123.50

W. McGuire, draftsman

3.0 days compiling field data, preparing base and final maps

3.0 days @ \$ 374.50

\$ 1,123.50

---

\$ 4,280.00**b) Food and Accommodation**

6 man-days @ \$ 79.05 accommodations

\$ 474.29

9 man-days @ \$ 42.61 groceries, meals and other

\$ 383.51

\$ 857.80

**c) Transportation**

Vehicles: 4x4 sports utility truck 314 km @ 0.41 (BC Portion Only)

\$ 128.74

4x4 sports utility truck 443 km @ 0.38½ (BC Portion Only)

\$ 170.56

\$ 299.30

**d) Instrument Rental - Subcontractors**

n/a

**e) Drilling**

n/a

**f) Analyses**

3 samples @ \$ 40.37 ICP analyses and whole rock analyses (Acme)

\$ 121.10

3 samples @ \$ 31.78 Analytical services (Loring mineralogy)

\$ 95.34

\$ 216.44

**g) Report**

Reproduction and assembly

\$ 58.85

\$ 58.85

**h) Other**

Courier and Shipping

\$ 27.20

Digital Base Maps (1 at 1:20,000)

\$ 470.80

Long distance telephone

\$ 6.61

Map reproductions

\$ 107.00

\$ 611.61

**Total**

---

\$ 6,323.99



WHOLE ROCK ICP ANALYSIS



Dahrouge Geological Consulting File # A003197

18 - 10509 - 81 Ave, Edmonton, AB T6E 1T7 Submitted by: Todd Faragher

SAMPLE#	SiO2	Al2O3	Fe2O3	MgO	CaO	Na2O	K2O	TiO2	P2O5	MnO	Cr2O3	Ba	Ni	Sc	LOI	TOT/C	TOT/S	SUM
	%	%	%	%	%	%	%	%	%	%	%	ppm	ppm	ppm	%	%	%	%
*11826	74.39	14.86	1.50	.59	2.93	4.25	1.18	.16	.02	.03	.001	182	<20	2	.4	.03	<.01	100.33
11827	3.46	.20	10.82	16.34	27.20	.24	.19	.12	1.77	.35	.004	120	<20	22	38.8	10.86	.08	99.51
11828	3.19	.03	11.80	15.40	27.35	.18	.17	.24	3.20	.33	.003	115	<20	23	37.1	10.03	.02	99.01
11829	3.37	.20	5.84	17.12	29.09	.16	.27	.04	1.72	.37	.002	151	<20	24	41.3	11.50	.10	99.50
11830	2.88	<.03	5.55	16.75	29.83	.26	.17	.03	3.10	.34	.001	109	<20	27	40.6	11.50	.07	99.54
11831	1.10	<.03	5.65	18.14	30.25	.13	.09	.01	1.45	.37	.001	113	<20	14	42.4	12.33	.22	99.63
11832	8.49	.08	5.60	16.53	28.98	.15	.08	.02	2.65	.33	.001	125	<20	18	36.7	10.40	<.01	99.63
11833	17.51	.56	6.65	12.67	30.86	.22	.18	.40	3.12	.24	.005	145	22	19	27.4	7.43	<.01	99.84
11834	4.91	.41	8.11	10.76	35.00	.10	<.04	3.02	1.36	.20	.013	284	62	20	35.9	9.84	.01	99.86
RE 11834	4.84	.38	7.91	10.77	35.17	.09	<.04	3.02	1.38	.20	.016	280	68	20	35.9	9.84	<.01	99.74
11835	.69	.15	3.14	16.78	33.44	.05	<.04	.03	3.72	.44	.002	52	<20	8	41.0	11.50	<.01	99.45
*11836	2.60	.06	6.85	14.23	32.07	.15	<.04	.03	5.06	.80	.005	43	<20	4	37.3	10.58	.05	99.18
*11837	3.24	.08	9.74	14.12	29.98	.41	<.04	.04	3.34	1.02	.001	70	28	6	37.1	10.67	.32	99.11
11838	2.95	<.03	6.43	16.16	29.38	.24	.16	.04	3.23	.36	.003	137	<20	23	39.9	11.13	.02	98.89
STANDARD SO-15/CSB	50.01	12.40	7.18	7.14	6.06	2.37	1.74	1.81	2.65	1.37	1.042	1981	64	13	5.9	2.39	5.30	99.90

GROUP 4A - 0.200 GM SAMPLE BY LIBO2 FUSION, ANALYSIS BY ICP-ES. LOI BY LOSS ON IGNITION.  
TOTAL C & S BY LECO. (NOT INCLUDED IN THE SUM)  
- SAMPLE TYPE: ROCK R150 60C  
Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

DATE RECEIVED: AUG 24 2000

DATE REPORT MAILED: *Sept 8/w*

SIGNED BY: *C. Leong* D. TOYE, C. LEONG, J. WANG; CERTIFIED B.C. ASSAYERS

All results are considered the confidential property of the client. Acme assumes the liabilities for actual cost of the analysis only.

Data *h* FA

APPENDIX 2: ANALYTICAL REPORTS FROM ACME ANALYTICAL LABORATORIES LTD.  
FOR SAMPLES COLLECTED IN 2000

GEOCHEMICAL ANALYSIS CERTIFICATE

Dalhrouge Geological Consulting File # A003197 (a)  
 18 - 10509 - 81 Ave, Edmonton AB T6E 1T7 Submitted by: Todd Faragher

SAMPLE#	Co	Cs	Ga	Hf	Nb	Rb	Sn	Sr	Ta	Th	Tl	U	V	W	Zr	Y	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
*11826	2.1	2.8	14.2	<.5	5.0	45.0	5	407.7	.7	4.6	.7	1.0	10	2	7.6	2.1	14.5	26.3	2.75	9.8	1.9	2.43	1.18	.15	.64	.10	.18	<.05	.12	.01
11827	39.0	.1	4.0	<.5	1350.1	4.7	<1	3685.2	153.5	5.0	.1	72.7	138	<1	3.9	15.8	140.4	283.3	30.53	107.7	18.0	5.41	10.41	1.13	4.52	.69	1.27	.14	.73	.08
11828	32.1	.2	7.0	.6	3582.8	6.6	<1	3742.4	402.7	16.6	.4	182.5	197	<1	7.7	22.5	208.1	421.5	44.24	153.5	28.2	8.61	15.82	1.62	6.87	1.01	1.96	.21	1.20	.09
11829	20.9	2.0	3.6	<.5	1029.0	17.7	<1	3866.1	89.7	4.5	.1	17.4	17	<1	4.8	17.6	138.1	279.5	29.49	105.4	17.3	5.31	9.95	1.13	4.55	.69	1.33	.14	.98	.09
11830	18.1	<.1	2.2	<.5	683.3	1.9	<1	3507.2	116.0	3.0	.2	40.9	12	<1	2.4	21.0	175.3	355.0	37.75	134.3	24.5	7.03	12.74	1.41	6.19	.91	1.61	.17	1.02	.09
11831	22.2	<.1	.9	<.5	127.6	1.2	<1	3522.5	38.8	.9	.1	16.9	5	<1	2.1	12.5	102.0	206.3	22.00	86.9	14.3	4.26	7.95	.82	3.50	.54	.97	.12	.65	.07
11832	14.6	<.1	1.8	<.5	324.8	1.5	2	3257.9	122.8	2.3	.2	61.3	16	<1	2.1	17.8	147.0	295.2	32.66	115.1	20.7	6.01	11.57	1.26	5.07	.80	1.43	.15	.94	.08
11833	21.9	1.2	5.3	14.6	163.3	7.9	4	1580.8	28.2	.4	.6	22.7	89	<1	539.1	22.1	108.5	224.7	25.21	98.7	18.3	5.41	10.84	1.20	5.50	.87	1.81	.20	1.23	.14
11834	35.0	.3	5.5	11.0	240.5	1.7	3	1384.8	49.6	.3	.1	.4	158	<1	387.7	28.8	117.5	233.0	25.13	96.8	17.6	5.71	11.34	1.35	6.55	1.08	2.39	.27	1.55	.21
RE 11834	35.9	.3	5.6	9.7	243.0	1.4	7	1316.6	48.8	.3	.2	.3	158	<1	344.9	28.3	118.0	230.6	25.22	100.1	18.4	5.91	11.98	1.38	6.53	1.09	2.42	.26	1.53	.18
11835	4.3	<.1	.7	.8	544.6	<.5	3	3519.5	144.5	10.8	.1	79.9	7	<1	19.1	28.7	136.6	325.0	37.87	139.8	28.3	8.44	15.96	1.85	7.84	1.26	2.42	.26	1.60	.14
*11836	9.7	<.1	.8	<.5	1538.1	<.5	2	3824.0	201.9	9.1	.1	8.0	<5	<1	4.5	42.3	194.1	421.2	45.60	159.9	31.9	9.80	19.92	2.32	11.06	1.72	3.81	.39	2.73	.27
*11837	21.9	<.1	.7	.5	2082.4	.6	<1	3966.4	204.6	13.9	.1	4.1	<5	<1	17.7	31.2	154.8	336.3	36.49	127.3	23.4	7.57	14.01	1.73	8.04	1.23	2.72	.29	1.86	.20
11838	18.0	<.1	1.3	<.5	1687.5	3.8	<1	3403.3	192.7	6.3	.1	421.6	7	<1	5.1	18.4	159.5	333.7	35.59	131.5	22.2	6.73	12.29	1.28	5.70	.81	1.41	.14	.86	.07
STANDARD SO-15	21.7	2.7	17.4	26.9	33.3	66.9	19	394.2	2.0	23.7	.7	21.0	159	22	1076.8	23.8	30.8	59.5	6.19	23.8	4.6	1.02	3.94	.61	3.77	.80	2.42	.38	2.49	.41

GROUP 48 - REE - LIBO2 FUSION, ICP/MS FINISHED.  
 - SAMPLE TYPE: ROCK R150 60C  
 Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

DATE RECEIVED: AUG 24 2000 DATE REPORT MAILED: *Sept 8/00* SIGNED BY: *C.T.* .D. TOYE, C.LEONG, J. WANG; CERTIFIED B.C. ASSAYERS

All results are considered the confidential property of the client. Acme assumes the liabilities for actual cost of the analysis only.

Date: *11* FA

\* Fir Property

APPENDIX 2: CONTINUED

A3

GEOCHEMICAL ANALYSIS CERTIFICATE

Dahrouge Geological Consulting File # A003197 (b)  
 18 - 10509 - 81 Ave, Edmonton AB T6E 1T7 Submitted by: Todd Faragher



SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	As ppm	Cd ppm	Sb ppm	Bi ppm
*11826	2	5	12	29	4	12	<.2	<.5	<.5
11827	1	<1	<3	29	1	<2	.3	1.9	<.5
11828	<1	<1	3	35	<1	<2	.4	<.5	1.6
11829	<1	<1	6	19	<1	<2	.2	<.5	1.5
11830	<1	<1	<3	16	<1	<2	<.2	<.5	.7
11831	<1	<1	<3	19	<1	<2	.2	<.5	<.5
11832	<1	<1	4	18	<1	<2	<.2	1.5	1.3
11833	<1	14	3	17	14	<2	<.2	<.5	.8
11834	<1	77	<3	19	49	<2	<.2	<.5	<.5
RE 11834	<1	81	<3	21	49	<2	<.2	.8	.8
11835	1	<1	4	21	<1	<2	.3	<.5	1.3
*11836	<1	<1	4	26	7	<2	.4	1.2	1.7
*11837	1	<1	<3	32	1	<2	.5	<.5	1.7
11838	<1	<1	3	18	<1	<2	<.2	<.5	2.0
STANDARD C3	26	62	34	161	34	58	25.0	14.0	23.0
STANDARD G-2	1	2	<3	43	7	<2	<.2	<.5	<.5

GROUP 1D - 0.50 GM SAMPLE LEACHED WITH 3 ML 2-2-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR, DILUTED TO 10 ML, ANALYSED BY ICP-ES.  
 UPPER LIMITS - AG, AU, HG, W = 100 PPM; MO, CO, CD, SB, BI, TH, U & B = 2,000 PPM; CU, PB, ZN, NI, MN, AS, V, LA, CR = 10,000 PPM.  
 ASSAY RECOMMENDED FOR ROCK AND CORE SAMPLES IF CU PB ZN AS > 1%, AG > 30 PPM & AU > 1000 PPB  
 - SAMPLE TYPE: ROCK R150 60C Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

DATE RECEIVED: AUG 24 2000

DATE REPORT MAILED: Sept 8/00

SIGNED BY: *C. Toy* D. TOYE, C. LEONG, J. WANG; CERTIFIED B.C. ASSAYERS

All results are considered the confidential property of the client. Acme assumes the liabilities for actual cost of the analysis only.

Date *8/24* FA

APPENDIX 2: CONTINUED

A4



## APPENDIX 3:

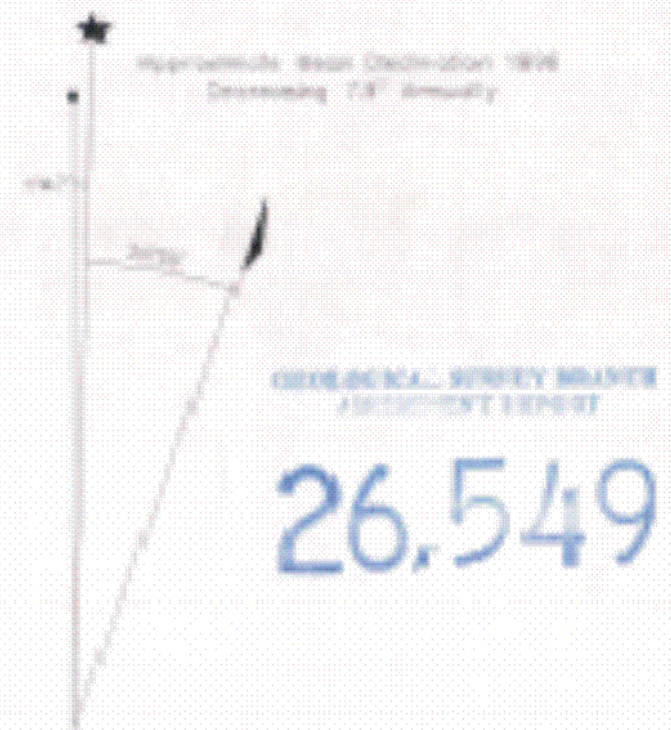
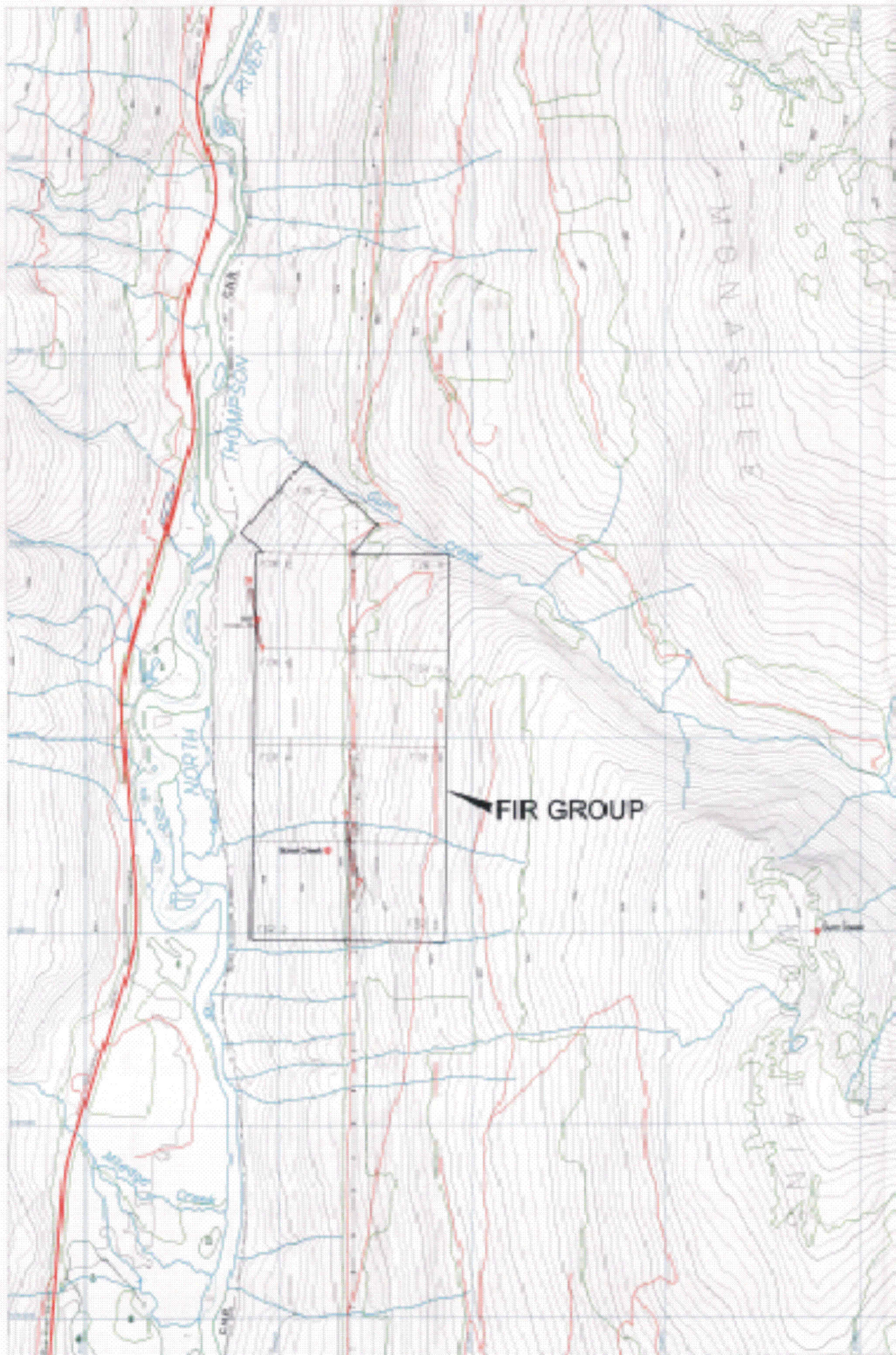
DESCRIPTIONS AND COMPOSITIONS OF SAMPLES COLLECTED IN 2000  
FROM THE FIR PROPERTY

Notes: Coordinates are UTM NAD 27; see Appendix 2 for analytical results.

Sample	Coordinates		Sample		Description	Counts Per Second	Analysis	
	Easting	Northing	Type	Length (m)			Nb <sub>2</sub> O <sub>5</sub> (%)	Ta <sub>2</sub> O <sub>5</sub> (%)
11826	352643	5802833	grab outcrop	--	<b>Pegmatite</b> ; white weathered, white fresh, very coarse-grained interlocking quartz+feldspar crystals, massive, hard, abundant large muscovite books to 3 cm thick by 15 cm across	6,000	0.001	0.000
11836	351774	5797359	grab float	--	<b>Carbonatite</b> ; reddish-brown weathered, white fresh, massive calcite, aggressive HCl fizz, abundant oriented laths (hornblende?), rare small pyrrhotite and magnetite clots, abundant gemmy, clear brownish-grey, elongate, egg-shaped crystals to 2 mm, large angular boulders in washout along rail line.	7,500	0.220	0.025
--	--	--	--	--	The following microscopic descriptions were completed by Alex Knox (2000): (Most to least abundant minerals) Purple-black amphibole; water-clear apatite; and pyrochlore. In a matrix of very fine-grained calcite. No phylogopite at all. Amphibole show strong preferred orientation. <b>1)</b> The pyrochlore was the only potentially niobium-tantalum phase seen. It's colour (dark red) suggests, in my experience, that it should provide a concentrate grade of better than 50% Nb <sub>2</sub> O <sub>5</sub> , which should impact favorably on the economics. <b>2)</b> No clots or concentrations of mafic minerals were seen. These often are associated with high grades of niobium mineralization and should be looked for in the field. They are typically associated with partially assimilated xenoliths of wall rock or carbonatite-associated alkaline igneous rocks. <b>3)</b> The grain size of the rocks and their appearance closely resembles deep-crystallized carbonatite, as opposed to hypabyssal dykes. In my experience, this is a good sign.	--	--	--
11837	351774	5797359	grab float	--	<b>Carbonatite</b> ; as 11836	7,500	0.298	0.025

**APPENDIX 4: STATEMENT OF QUALIFICATIONS**

The field work described in this report was supervised by J.R. Dahrouge. J.R. Dahrouge is an independent geological consultant with Dahrouge Geological Consulting Ltd. based in Edmonton, Alberta. He obtained degrees in geology and computing science from the University of Alberta, Edmonton in 1988 and 1994, respectively. He has more than 10 years of experience in mineral exploration. He is a member of the Canadian Institute of Mining and Metallurgy and is registered as P. Geol. with the Association of Professional Engineers, Geologists, and Geophysicists of Alberta.



**SYMBOLS**

Mineral deposit or showing	
Caliche: scoria and belfiore	
Gneiss and/or Amphibolite Rocks	
Dike boundary	
Dike hole location, number	
Rock sample location, sample numbers	
Forest Highway	
Gravel Road or Trail	
Railway	
Mineral claim boundary, name	
Property boundary	
Claim post location	

**NOTES**

- 1) Topographic base map is part of Land Data British Columbia 1:20,000 scale TRM maps 630,025 and 630,036.
- 2) Dike shown is UTM (NAD83).
- 3) Contour interval is 20 metres.
- 4) Fe accompany assessment report dated 2001-05-11.

**COMMERCE RESOURCES CORP.**  
**DAIROUGE GEOLOGICAL CONSULTING LTD.**  
 Edmonton, Alberta  
 FIR PROPERTY, BLUE RIVER, BRITISH COLUMBIA

**Fig. 3.1**  
**Topography and**  
**Sample Locations**

