

87-196-15836
5/88

**ASSESSMENT WORK REPORT
ON THE
KELLY 1 - 5 AND TRISH 1 - 2
MINERAL CLAIMS**

**Located on Lang Creek, in the
Vancouver Mining Division
NTS 92F/16W
British Columbia
at
49° 48' N. Latitude
124° 25' W. Longitude
23.5'**

FILMED

**Owned by
Fargo Resources Limited**

**Operated by
Fargo Resources Limited
American Cyanamid Company
and
Clayburn Refractories Ltd.**

**G. R. Hilchey. P.Eng
Gordon Hilchey and Associates Ltd.**

May 1, 1987

15,836

GEOLOGICAL BRANCH
ASSESSMENT REPORT

FARGO RESOURCES LIMITED

**ASSESSMENT WORK REPORT
LANG BAY PROPERTY, BRITISH COLUMBIA**

INDEX

	<u>Page</u>
1 Introduction	1
2 Claims	2
3 Location	2
4 Access	3
5. Climate, Topography and Local Resources	3
6 History	4
7 Geology	4
8 1986 Analytical Work of American Cyanamid	5
9 Kaolin Clay Testwork	6
10 Seismic Reflection Survey	7
11 Conclusions	8
Itemized Statement of Costs	9

ILLUSTRATIONS

Property Claim Location Map	Follows page 1
Claim Map	Follows page 1

APPENDICES

APPENDIX I	Analytical Report of American Cyanamid Company
APPENDIX II	Analytical Report of Dr. A.C.D. Chaklader
APPENDIX III	Report of Clayburn Refractories Ltd.
APPENDIX IV	Seismic Survey Report of Foundex Geophysics Inc.

FARGO RESOURCES LIMITED

ASSESSMENT WORK REPORT
LANG BAY PROPERTY, BRITISH COLUMBIA

1. **INTRODUCTION**

In 1981, Fargo Resources Limited acquired a group of claims near Lang Bay, British Columbia. These claims encompass a sedimentary basin known to contain high values of germanium and gallium. Past analytical and metallurgical research has focused mainly on germanium.

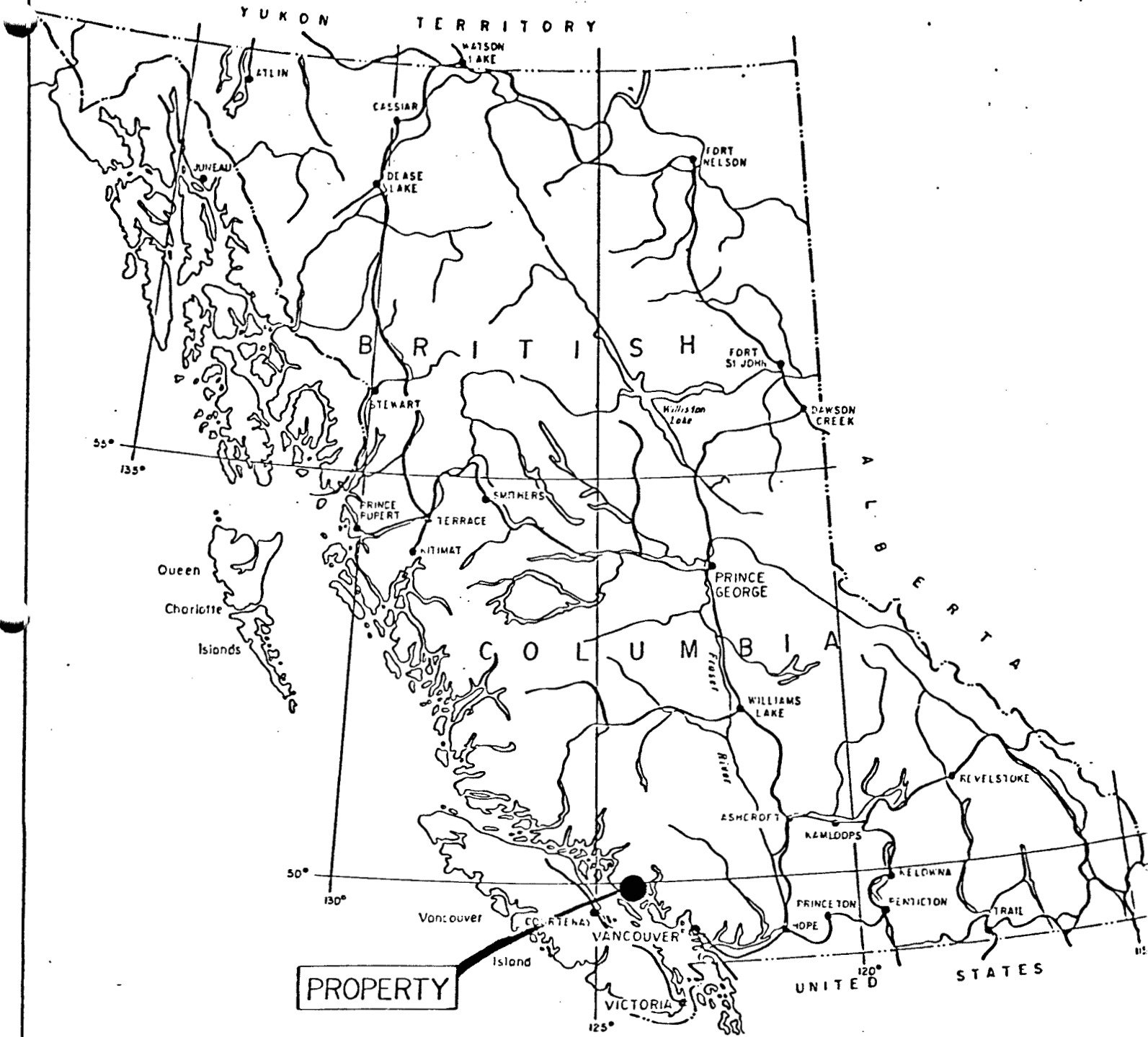
American Cyanamid Company who have been involved in the Lang Bay project since 1983, successfully produced a germanium-rich concentrate from Lang Bay material with the use of proprietary reagents developed for coal flotation.

In April 1986, a nine hole drill program was conducted to explore the region immediately to the west of Lang Creek and to supply new samples for American Cyanamid in order to continue with analysis and beneficiation procedures.

In the fall of 1986, testwork commenced on the clay minerals which are intimately associated with the germanium bearing arkosic sandstone formation at Lang Bay. Tests carried out at the University of British Columbia as well as by American Cyanamid, identified the clay as high quality kaolin. Further testwork by Clayburn Refractories Ltd. of Abbotsford, British Columbia, indicated that the clay was also top refractory grade kaolin.

In January 1987, a seismic reflection test survey was carried out over the same area covered by the 1986 drill program. The survey indicated that reflection seismic surveys will be a useful tool for mapping structural detail of the formation.

This report summarizes the work outlined above and recommends an exploration drilling program.

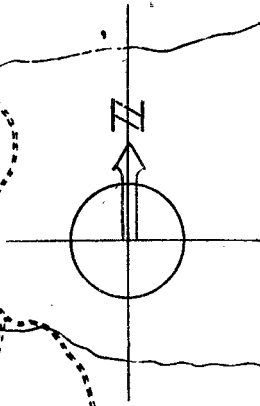


PROPERTY LOCATION MAP

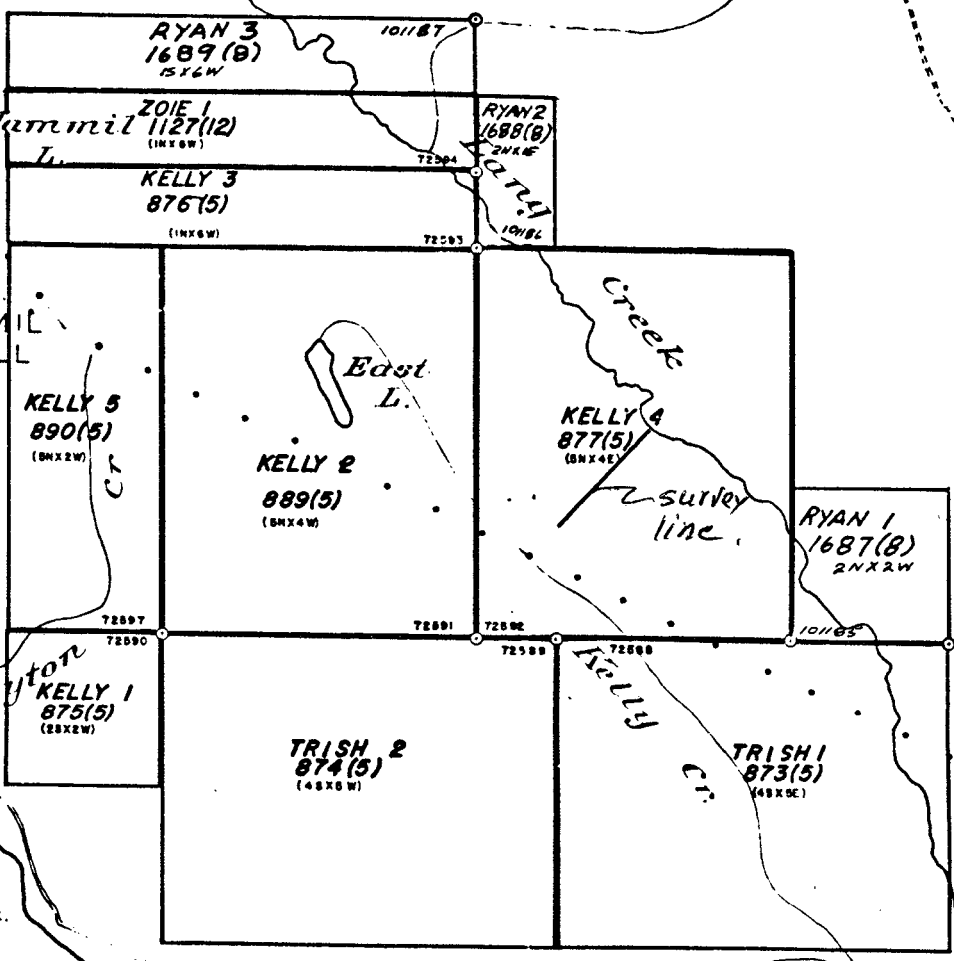
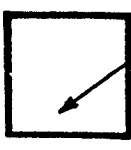
0 100 200 MILES
0 100 200 400 KILOMETRES

1:250,000 Scale
S. 23.17. 40
SUBJECT TO CON...

CELL RIVER



MINERAL & PLACER RESERVE
O/C 3645 ,14-11-74
NO STAKING



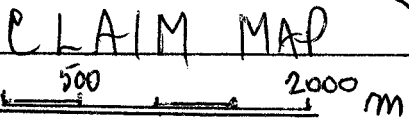
Myrtle

HAMMIL HILL

Myrtle Point

Myrtle Pt.

RES. MIN. PLACER
7220, S. JAN. 73
NO STAKING



Malaspina

Brew Bay

Lang Bay

Albion Pt.

Strait

VANCOUVER M.D.
VANAIMO M.D.

2. **CLAIMS**

An examination of mineral titles at the British Columbia Ministry of Energy, Mines and Petroleum Resources shows the registered holder of the following mineral claims to be Fargo Resources Limited, 900 - 850 West Hastings Street, Vancouver, British Columbia, V6C 1E1.

Claim Name	Record Number	Number of Units	Expiry Date
Kelly: Trish 1	873	20	May 4, 1987
Trish 2	874	20	May 4, 1987
Kelly 1	875	4	May 4, 1987
Kelly 2	889	20	May 8, 1987
Kelly 3	876	6	May 4, 1987
Kelly 4	877	20	May 4, 1987
Kelly 5	890	<u>10</u>	May 8, 1988
		<u>100</u>	
Zoie: Zoie 1	1127	6	Dec. 15, 1987
Ryan 2	1688	2	Aug. 20, 1987
Ryan 3	1689	<u>6</u>	Aug. 20, 1987
		<u>14</u>	
Ryan: Ryan 1	1687	<u>4</u>	Aug. 20, 1987
	Total	<u>118</u>	

In summary, there are 11 claims consisting of 118 units all owned by Fargo Resources Limited. This report pertains to the Trish 1-2 and Kelly 1-5 mineral claims, known as the Kelly group.

3. **LOCATION**

The claim group lies 15 km southeast of the town of Powell River, British Columbia and centered on Lang Creek. General physiographic boundaries are Malaspina Strait between Lang Bay and Myrtle Point to the south, Myrtle Creek and Hammil Lake to

the west and northwest, Lang Creek to the north, and Whittall Creek to the east. The approximate coordinates are 49° 48' N and 124° 25' W. The NTS map reference for the area is 92F/16W.

4. **ACCESS**

Highway 101 follows the coast from Saltery Bay to Powell River and passes very near to the southern border of the Kelly claim group. A good paved secondary road connecting to Highway 101 between Lang Creek and Kelly Creek extends north and then west where a tote road in fairly good condition gives access to the area where the sampling was undertaken.

5. **CLIMATE, TOPOGRAPHY AND LOCAL RESOURCES**

The moderately undulating terrain has a maximum elevation of approximately two hundred and fifty metres above sea level near the northeast corner of the property. The ground slopes gently to the southeast. Lang Creek has cut its valley about fifteen to thirty metres below the general level of the surrounding area.

The area is covered with a mixed second growth forest consisting mainly of fir, hemlock, cedar and alder.

The water supply is plentiful due to the many streams and creeks on the property, the main ones being centrally located Lang creek and Kelly creek, both flowing southeasterly and to the west, Deighton Creek flowing southerly into Malaspina strait.

The climate is mild with an annual rainfall from 40 to 50 inches (100 - 125 mm) and minimal snowfall in the winter.

Dissecting the property in a northwest to southeast line is a high voltage power line.

6. HISTORY

In 1948 a spectrographic research study on the coals of British Columbia discovered high values of germanium in the carbonaceous material found in the Lang Creek area. In 1957 the mineral rights to the area were acquired by the now defunct Taiga Mines Ltd. who carried out a bulldozer trenching and a churn and diamond drilling program throughout 1958 and 1959.

In 1981 the property was acquired by the current owner, Fargo Resources Limited (previously known as Fargo Oil Corporation), who have conducted a total of 11 trenching and sampling programs between August 1981 and April 1984. The 1985 work consisted of research on methods of recovering germanium from the arkosic sandstone formation. Much of the research was done by American Cyanamid Company, Stamford, Connecticut, who have conducted flotation tests, and CSIRO, Melbourne, Australia, who have conducted pyro-metallurgical research. In 1986, a 9 hole drill program was carried out in order to supply samples for further research.

7. GEOLOGY

The property is underlain by a basin of thin-bedded Eocene sedimentary rocks composed of poorly to well consolidated shale, sandstone, arkose and conglomerate. The basin is about six km long and about four km wide. Observed dips are gentle (up to about 15° or 20°) towards the axis of the basin which trends northwest. The total thickness of the formation in the center of the basin is estimated to be about 450 metres. The sedimentary series is underlain by pre-Tertiary granitic rocks of the Coast Range and possibly other Mesozoic or earlier formations. The Eocene rocks are covered by glacial overburden except for narrow outcrops along Lang Creek.

Arkosic rocks near the base of the formation and the underlying granitic rocks have been subject to weathering which has altered the feldspars to clay minerals and deposited small amounts of carbonate (mainly calcite) and pyrite. The weathering process was probably accomplished by ground waters under mainly reducing conditions although a few lenses of sandy sediments with red oxides of iron have been observed. Neither the time of the alteration or its relationship to the germanium mineralization, if any, is known.

Thin, discontinuous lenses of coal occur throughout the formation in both sandstone and shale members. The coal is probably the result of coalification of logs, branches and twigs scattered in the formation. This coal has always yielded significant germanium values whenever it has been assayed. Where observed, however, the percentage of coal in this type of occurrence has always been very low.

Near the base of the formation along the northern rim of the basin, coal has been found in a dark brown horizon locally called a brown bed. The brown bed has an observed thickness of one-half metre to five metres. Most of the coal in the brown bed occurs as discontinuous lenses two to 10 mm thick with an aggregate content of two to three percent coal.

On the basis of the best data available the germanium content of the brown bed is expected to average 70 grams per tonne or better. The brown bed has been observed in four apparently distinct deposits but the lateral extent is not known. While most of the brown beds observed to date occur within a few metres of the weathered basement rocks, they are also known to occur higher in the formation.

In 1959 the brown bed was exposed for 60 metres along the south side of Lang creek in the central part of the property. It pinched out to the southeast but the limit was not found along strike to the northwest or down dip to the southwest.

Two or three of the shale horizons overlying the brown bed have been recently analysed and were found to consist mainly of kaolin. Kaolin is of considerable economic interest as a possible by-product to germanium production. Further field and laboratory work will be necessary.

8. 1986 ANALYTICAL WORK OF AMERICAN CYANAMID

In April 1986, nine reverse circulation air-rotary holes were drilled totalling 853 ft (260 m). Sampling of the drill cuttings was done on 2 foot (0.6 m) intervals. The remainder or reject portion of the cuttings for each interval was bagged and saved for assay checks. Selected but continuous samples were sent for assay to American Cyanamid Company in Stamford, Connecticut. All remaining samples are stored at the company's warehouse in Vancouver, British Columbia.

The assay results are summarized as follows:

	<u>Germanium</u> <u>Grams/Tonne</u>	<u>Width</u>	<u>Gallium</u> <u>Grams/Tonne</u>	<u>Width</u>
Hole No. 1	48 grams	6'	16 grams	6'
No. 2	16 grams	6'	13 grams	6'
No. 3	46 grams	6'	16 grams	6'
No. 4	124 grams	6'	27 grams	12'
No. 5	53 grams	8'	28 grams	16'
No. 6	50 grams	4'	27 grams	18'
No. 7	No 'brown bed' encountered			
No. 8	23 grams	8'	24 grams	14'
No. 9	82 grams	6'	11 grams	10'

Complete sample analyses are included in Cyanamid's report dated November 11, 1986, and attached as Appendix I.

9. KAOLIN CLAY TESTWORK

In November 1986, two samples from the April 1986 drilling program were delivered to Dr. A.C.D. Chaklader, University of British Columbia, Department of Metallurgical Engineering, to determine the identity of the clay minerals present at Lang Bay.

X-ray analysis by Dr. Chaklader showed the clay to be composed of well crystallized high quality kaolinite. The results of Dr. Chaklader's testwork are detailed in his report dated November 21, 1986, and attached as Appendix II.

In order to test the refractory qualities of the kaolin clay, three samples were prepared by Dr. Chaklader and forwarded to Clayburn Refractories Ltd. in January 1987. Clayburn is a manufacturer of refractories and uses kaolin in products which require resistance to high temperatures.

Positive results were received from Clayburn's testwork where two of the samples were classified as super duty and the third sample as high duty. Collectively, the three samples were classified as super duty, the top classification for refractory grade kaolin. A letter summarizing Clayburn's testwork is attached as Appendix III.

In December 1986, American Cyanamid conducted a flotation test on a clay mineral fraction from a drill core sample. The clay fraction was produced at the laboratories of Bacon Donaldson in Vancouver and represented approximately fifty percent of the drill core sample by weight. The flotation test produced an off-white kaolin. Cyanamid concluded that further testwork would be required to beneficiate the kaolin to the proper brightness required by the paper industry.

There was a significant loss of clay material during the recovery of samples from the 1986 drill program as the program was designed to recover material for germanium analysis.

10. **SEISMIC REFLECTION SURVEY**

In January 1987, approximately 950 m (3100 feet) of seismic reflection test survey work was carried out by Foundex Geophysics Inc. over a portion of the 1986 drill program area and extending to the west on the Kelly 4 claim. A Bison Instruments 12 channel, digital signal enhancement seismograph was used.

This seismic work showed that a number of reflecting horizons in the formation may be mappable by reflection seismic methods. It is the belief of the seismic operator that these results can be improved upon through such items as deeper shotholes and geophone holes and various instrument adjustments.

The report prepared by Foundex Geophysics is attached as Appendix IV.

11. CONCLUSIONS

The intention of the April 1986 drill program was to initiate more detailed exploration of the germanium bearing brown beds and to optimize analytical and metallurgical procedures already in place for the recovery of germanium. The results of American Cyanamid's analyses were consistent with previous assays of brown bed material. While the germanium is concentrated in the brown bed, the gallium appears to be located in a much wider zone both above and below the brown beds.

Testwork on the clay/shale horizons overlying the brown bed has shown that they contain high quality kaolin suitable for high temperature refractories (super duty grade). Some testwork has been carried out and more is in progress to determine if the kaolin can be beneficiated to paper filler grade.

Further exploration will be required to prove up reserves of both germanium bearing material and marketable clay. Large-hole diamond core drilling supported by seismic reflection and refraction surveys is recommended.

Testwork on samples from the drilling program should also include studies on the recovery of gallium and the identification, quality and distribution of other industrial minerals in the formation.

GORDON HILCHEY AND ASSOCIATES LTD.



G.R. HILCHEY, P.ENG.

May 1, 1987.

**ITEMIZED STATEMENT OF COST INCURRED BY
FARGO RESOURCES LIMITED
AMERICAN CYANAMID COMPANY
AND CLAYBURN REFRACTORIES LTD.**

Fargo Resources Limited

1.	Professional fees and services: Dr. A.C.D. Chaklader		\$ 360	
2.	Foundex Geophysics Inc. Seismic Reflection Test Survey	\$2,140		
	Seismic Refraction Survey	<u>608</u>	\$2,748	
3.	Freight: Davidson & Sons	\$ 552		
	Sunshine Transport	<u>135</u>	\$ 687	
4.	Mineralogical Analysis: Bondar Clegg	\$ 108		
	Chemex Labs	<u>96</u>	\$ 204	
5.	Sample Preparation: Bacon Donaldson		<u>\$ 280</u>	
				\$ 4,279

American Cyanamid Company

(US Funds)

1.	Sample Preparation	\$2,400		
2.	Sample Analysis	8,500		
3.	Flotation Testing	<u>1,800</u>		
			\$12,700	
	Exchange rate (\$US = 1.3894 (average rate for 1986))			\$17,645

Clayburn Refractories Ltd.

\$ 1,087

TOTAL

\$23,011

J.P.H.

APPENDIX I

ANALYTICAL REPORT OF AMERICAN CYANAMID COMPANY



NOV 19 1986

American Cyanamid Company
Stamford Research Laboratories
1937 West Main Street
P.O. Box 60
Stamford, Conn. 06904 - 0060
Tel. (203) 348-7331

November 11, 1986

Mr. Lauch Farris
Fargo Resources Limited
9th Floor
850 W. Hastings Street
Vancouver, B.C. V6C 1E1

Dear Lauch:

A complete list of all of our reliable analyses on Ge and Ga in Lang Bay samples is attached. For some of the samples, the two numbers for Ge represent analyses done on different occasions (each number in the table is, in turn, the average of duplicate analyses).

The additional data sheet represents the elemental scans on seven different samples. Two of these samples were analyzed in both the "raw" form (original sample was wet ground, slurried, sampled, and dried at 80°C) and in the "calcined" form (an additional step of calcination at 750°C for 1.5 hours). Calcination seemed to make no significant difference, except for a weight loss of about 10%. No attempt was made to account for all of the elements; most of the balance would be oxygen and water, and sodium, potassium, carbon, sulfur, etc. Note also the comment that calcium, etc. could be low because of insoluble fluorides. Although the data from the scans are only semi-quantitative, there are clearly no valuable elements in significant abundance, other than the Ge (and possibly Ga, which was not repeated here).

Note that the iron level is relatively high in all of the samples, especially in holes 5-8. The Ca level is only marginally higher in #5 and #6 than it is in #4. The problems with earlier analyses of #5 and #6 therefore appear to be more directly related to the high iron rather than the slightly higher Ca. It is actually an iron spectral line that is broadened and interferes with the Ge analyses.



Mr. Lauch Farris

- 2 -

November 11, 1986

Good luck in your further explorations. As you mentioned, the samples we have analyzed represent only a very small portion of the 8000 acre claim, and the likelihood of higher mineral values is still good.

Sincerely,

A handwritten signature in cursive script that reads 'Don'.

Donald P. Spitzer
Principal Research Chemist
Mining Chemicals R&D

/vdm
Attachment
1.33



Ge and Ga Analyses of Lang Bay Samples

<u>Sample</u>	<u>Footage</u>	<u>Ge g/T</u>	<u>Ga g/T</u>
86-1	68-70	36	18
86-1	70-72	34	15
86-1	72-74	73	16
86-1	74-76	4	8
86-1	76-78	3	12
86-2	72-74	4	16
86-2	74-76	40	17
86-2	76-78	3	7
86-3	85-87	18	13
86-3	87-89	112	15
86-3	89-91	8	19
86-4	62-64	8, 16	--
86-4	64-66	17	33
86-4	66-68	12	32
86-4	68-70	4, 5	19
86-4	70-72	129	28
86-4	72-74	196, 210	26
86-4	74-76	48	23
86-4	76-78	9, 13	--
86-4	78-80	<3	--
86-5	64-66	15	8
86-5	66-68	2, 6	15
86-5	68-70	5	19
86-5	70-72	21	39
86-5	72-74	27	39
86-5	74-76	28	29
86-5	76-78	137	40
86-5	78-80	17, 19	32
86-6	66-68	12	25
86-6	68-70	11, 14	32
86-6	70-72	12	33
86-6	72-74	10	11
86-6	74-76	5	23
86-6	76-78	13	17
86-6	78-80	12	35
86-6	80-82	63, 66	34
86-6	82-84	36	36

Ge and Ga Analyses of Lang Bay Samples (Continued)

<u>Sample</u>	<u>Footage</u>	<u>Ge g/T</u>	<u>Ga g/T</u>
86-7	72-74	<3	20
86-7	74-76	<3	10
86-7	76-78	<3	20
86-7	78-80	<3	25
86-7	80-82	<3	25
86-7	82-84	<3	20
86-7	84-86	<3, 3	30
86-7	86-88	<3	20
86-7	88-90	<3	30
86-7	90-92	4, 7	30
86-7	92-94	<3	30
86-7	94-96	<3	25
86-8	57-59	17	30
86-8	59-61	<3, 2	10
86-8	61-63	9	25
86-8	63-65	28, 37	20
86-8	65-67	26	20
86-8	67-69	8, 12	35
86-8	69-71	30	30
86-9	73-75	8	10
86-9	75-77	115, 114	20
86-9	77-79	88	10
86-9	79-81	44, 40	10
86-9	81-83	<3	<5

The following data represent semiquantitative analyses of raw and calcined coal ores, previously prepared for Germanium and Gallium analyses. The sample dissolution process is effective for dissolving Ge and Ga but may not be sufficient for all other elements present in these materials. Care should be exercised when evaluating this data since it is semiquantitative. Some precipitated species existed in most of the samples. These species are assumed to be fluoride salts of calcium, magnesium, aluminum and possibly silicon.

ST-S15683 p 170,172

Element	Raw		Calcined	Raw		Calcined	Raw		Raw
	86-4 72-74	86-4 70-72	86-5 76-78	86-5 76-78	86-6 80-82	86-6 80-82	86-7 72-74	86-8 69-71	86-9 75-77
Si	18%	14%	18%	17%	15%	16%	18%	17%	16%
Al	7"	9"	10"	10"	9"	11"	6"	8"	10"
Fe	1.3"	1.2"	2.7"	2.5"	2.0"	2.5"	2.6"	3.3"	1.5"
Ca	.2"	.1"	.2"	.2"	.3"	.2"	.2"	.2"	.2"
Mg	.6"	.3"	.1"	.1"	.2"	.2"	.2"	.4"	.1"
Ti	.3"	.4"	.4"	.4"	.4"	.2"	.3"	.3"	.4"
Mn	.01"	.01"	.03"	.03"	.02"	.02"	.04"	.05"	.02"
Ba	.01"	.01"	.01"	.01"	<.01"	<.01"	.01"	.01"	.01"
Zn	60ppm	90ppm	90ppm	80ppm	30ppm	50ppm	100ppm	100ppm	100ppm
B	100 "	200 "	200 "	200 "	100 "	100 "	100 "	200 "	200 "
Cy	20 "	20 "	20 "	20 "	30 "	20 "	20 "	30 "	20 "
Cu	40 "	40 "	70 "	70 "	50 "	60 "	40 "	60 "	50 "
Ni	10 "	10 "	10 "	10 "	10 "	10 "	10 "	10 "	10 "
Sr	50 "	40 "	60 "	70 "	70 "	60 "	40 "	50 "	90 "
Mo	<50 "	<50 "	<50 "	<50 "	<50 "	<50 "	<50 "	<50 "	<50 "
Co	<10 "	<10 "	<10 "	<10 "	<10 "	<10 "	<10 "	<10 "	<10 "
Sn	<100"	<100"	<100"	<100"	<100"	<100"	<100"	<100"	<100"
V	<10 "	<10 "	<10 "	<10 "	<10 "	<10 "	<10 "	<10 "	<10 "
Be	<1 "	<1 "	<1 "	<1 "	<1 "	<1 "	<1 "	<1 "	<1 "
Au	<1 "	<1 "	<1 "	<1 "	<1 "	<1 "	<1 "	<1 "	<1 "
In	<3 "	<3 "	<3 "	<3 "	<3 "	<3 "	<3 "	<3 "	<3 "
Ir	<2 "	<2 "	<2 "	<2 "	<2 "	<2 "	<2 "	<2 "	<2 "
Pd	<3 "	<3 "	<3 "	<3 "	<3 "	<3 "	<3 "	<3 "	<3 "
Pt	<3 "	<3 "	<3 "	<3 "	<3 "	<3 "	<3 "	<3 "	<3 "
Ag	<1 "	<1 "	<1 "	<1 "	<1 "	<1 "	<1 "	<1 "	<1 "
Y	10 "	<10 "	10 "	<10 "	10 "	<10 "	<10 "	<10 "	<10 "
Ge	200 "	140 "	160 "	160 "	60 "	160 "	<3 "	30 "	120 "

John H. ...



American Cyanamid Company
Stamford Research Laboratories
Chemical Products Division
1937 West Main Street
P.O. Box 60
Stamford, Conn. 06904 - 0060
Tel. (203) 348-7331

MAR 11 1987

March 4, 1987

Mr. Lauch F. Farris
President
Fargo Resources Limited
9th Floor, 850 West Hastings St.
Vancouver, B.C. V6C 1E1

Dear Mr. Farris:

This letter serves to indicate the extent of work accomplished by American Cyanamid on evaluation of the Lang Bay deposit in 1986. There were 3 types of activities: (1) sample preparation, (2) sample analysis for germanium, and (3) preliminary separations work. Our costs to accomplish these were as follows:

(1) Sample preparation	40 hrs. x \$60/hr.	= \$2,400
(2) Germanium analysis (2 sets)	100 hrs. x \$85/hr.	= \$8,500
(3) Flotation testing	30 hrs. x \$60/hr.	= \$1,800
	TOTAL	<hr/> \$12,700

We believe that this effort has been helpful to the project and hope to see its fruition in the near future.

Sincerely,

Peter V. Avotins
Director of Research
Chemical Products Division

lsm

APPENDIX II

ANALYTICAL REPORT OF DR. A.C.D. CHAKLADER

THE UNIVERSITY OF BRITISH COLUMBIA
309 - 6350 Stores Road
VANCOUVER, B.C., CANADA
V6T 1W5

DEPARTMENT OF METALLURGICAL ENGINEERING
Telephone: (604) 228-2676

November 21, 1986

Mr. Lauch Farris,
Fargo Resources,
850 W. Hastings Street,
9th Floor,
Vancouver, B.C.,
V6C 1E1

Dear Mr. Farris:

Re: Two Clay Samples Identified as
"86-5 72-74"
and "86-7 92-94"

This is to let you know that the above 2 clay samples were left with me by Mr. Gordon R. Hilchey for identification of the clay components.

The specimens were full of grits and other coarse particles. In order to separate the clay fractions, the specimens were mixed with a litre of water and sodium silicate as a defloculant agent. All coarse particles were allowed to settle and all fine particles $<10\mu\text{m}$ (smaller than ten micrometers) were decanted off and dried. Several X-ray diffraction plots were made (using the $\text{Cu } k\alpha$ radiation). The X-ray data are tabulated in Table I (attached herewith). The d-spacings were compared with kaolinite, illite and montmorillonite. You will note from the Table, all peaks correspond with kaolinite peaks. From the relative intensities of the diffraction peaks, it can be concluded that the clay minerals present are of a very good quality kaolinite mineral. The clay fractions are off-white colour; of these two 86-7 (92-94) is whiter. Another mineral in trace quantity (less than 3%) was found to be present in the 86-7 (92-94) sample but no effort was made to identify it.

I hope this is the information you require.

Yours sincerely,



A.C.D. Chaklader,
(Professor of Ceramics)

ACDC: jk
Encl.

TABLE I

Matching Kaolinite Peaks

Kaolinite Peaks ASTM CARD 5-0143	Sample 86-5 (72-74 ft)		Sample 86-7 (92-94 ft)	
	d Spacing	% Intensity	d Spacing	% Intensity
7.15	7.19	90	7.13	85
4.45	4.46	8	4.46	10
4.35	4.33	8	4.35	10
	4.25	7		
4.17	4.15	8		
4.12			4.13	8
3.84			3.83	3-4
3.57	3.57	100	3.57	100
3.37	3.34	8	3.34	4
3.14			3.18	1-2
2.55	2.55	5	2.55	10
2.52	2.53	3	2.53	8
2.49	2.49	5	2.49	10
2.37	2.38	9	2.38	15
2.33	2.33	9	2.34	18
2.28	2.28	4	2.29	6
1.98	1.98	2	1.99	5
1.89			1.90	3
1.78	1.78	3	1.79	7
1.66	1.66	5	1.66	8
1.62			1.62	3
1.54			1.54	4
1.49	1.49	6	1.49	6

STATEMENT OF EXPENSES

Two samples of clay and other minerals.

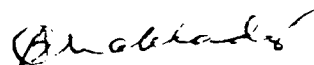
Tests carried out:

- i) Fractionation <10 μ m
- ii) X-ray diffractions.
- iii) Data Analysis and interpretation

Total Cost for 2 samples = \$100.00

Please make cheque payable to:

Dr. A.C.D. Chaklader,
Metallurgical Engineering Dept.,
The University of British Columbia,
309-6350 Stores Road,
Vancouver, B.C., V6T 1W5



A.C.D. Chaklader,
(Professor of Ceramics)

THE UNIVERSITY OF BRITISH COLUMBIA
309 - 6350 Stores Road
VANCOUVER, B.C., CANADA
V6T 1W5

FEB - 2 1987

DEPARTMENT OF METALLURGICAL ENGINEERING
Telephone: (604) 228-2676

January 30, 1987

Mr. Lauch F. Farris, President,
Fargo Resources Limited,
9th Floor,
850 West Hastings Street,
Vancouver, B.C., V6C 1E1

Dear Mr. Farris:

Thank you very much for a copy of the circular you sent to shareholders. I am very happy to note that the Kaolin I extracted from the materials you supplied is such high quality. It did not surprise me as the chemical analysis of the Kaolin itself indicated that this clay belongs to superduty clay.

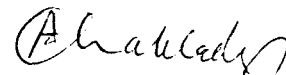
After I received your note I phoned Mr. Derek Albon, Director of Research of Clayburn Refractories Ltd. at Abbotsford, B.C. He told me that two of the clays I supplied have P.C.E. values above 33 and the other has 32, which made two of these clays as superduty and the other as high duty. In any case, these are the best B.C. clays I have tested so far.

Enclosed please find an invoice for the cost of preparing the samples (for Clayburn) calculating the approx. melting point from chemical analysis and other efforts made on this project.

I hope you will keep me informed of any new developments on the clay materials.

Thanking you.

Yours sincerely,



A.C.D. Chaklader,
Professor of Ceramics

ACDC:jk
Encl.

STATEMENT OF EXPENSES

Three sample preparations (les than 10 μ m size Kaolin fractions)	\$200.00
Melting temperature estimate from chemical analysis	
University Overheat (@30%)	<u>\$ 60.00</u>
TOTAL	<u>\$260.00</u>
Already paid in advance by a cheque dated December 9, 1986	<u>\$100.00</u>
TOTAL DUE	<u>\$160.00</u>

Please make cheque payable to:

Dr. A.C.D. Chaklader,
Dept. Metals & Materials Engineering,
The University of British Columbia,
309-6350 Stores Road,
Vancouver, B.C., V6T 1W5

APPENDIX III

REPORT OF CLAYBURN REFRACTORIES LTD.



RECEIVED

CLAYBURN REFRACTORIES LTD.

Research Laboratory

33765 PINE STREET, ABBOTSFORD, B.C., CANADA V2S5C1

TITLE: Samples of Kaolinitic Clay
From FARGO RESOURCES

FILE Ex.S.

PROJECT No. S.S.

AUTHOR: D. Albon

DATE April 15, 1987

Introduction

Three samples of fractionated clay, reportedly Kaolinitic, were forwarded to the Clayburn laboratory for Pyrometric Cone Equivalent determinations. The samples had been fractionated by Dr. Chaklader Department Metallurgy University of British Columbia. Test cones were prepared in the Clayburn laboratory and the tests determined in accordance with the procedures detailed in ASTM C24.

Results

Sample	Drill Core Footage	P.C.E.	Temperature°F
86-5	72-74 ft.	Cone 33+	3169
86-5	80-82 ft.	Cone 33+	3169
86-7	92-94 ft.	Cone 32	3123

Expenses Incurred In Testing Procedures

Travelling time to collect samples 3 hours x \$14.92	=	44.76
3 P.E.C. Determinations		
Labour 8 hours x 3 x \$14.24/hour	=	341.76
Gas Furnace & Equipment Costs 3 x \$150	=	450.00
Overhead Fringe 30%	=	250.96
TOTAL		\$1087.48

D. Albon
Director of Research

APPENDIX IV

SEISMIC SURVEY REPORT OF FOUNDEX GEOPHYSICS INC.



FOUNDEX GEOPHYSICS INC.

13315 Comber Way, Surrey, B.C., Canada V3W 5V8 • Phone (604) 594-5559 • Telex 04-507542

RECEIVED FEB 16 1987

February 12, 1987

Fargo Resources Ltd.
900 - 850 West Hastings St.
Vancouver, B.C.
V6C 1E1

ATTENTION: Mr. L. Farris, President

RE: Seismic Reflection Trial Program
Lang Creek Area, B.C.

A seismic reflection trial survey was carried out in the Lang Creek area on January 17 and 18, 1987. The work was undertaken along the extension of drillhole line A-A' to the west and extended approximately 800 m. into the centre of the basin. Three separate seismic reflection profiles were surveyed along this line to determine the feasibility of detecting reflections from geological contacts at the site.

The survey was carried out using a Bison Instruments 12 channel, digital, signal enhancement seismograph. Special 50 cycle geophones were spaced at either 3 or 5 metres. Energy was supplied by a 12 guage or 8 guage shotgun.

For each spread, the seismic cable was stretched out in a straight line and the geophones implanted. Several off-the-end shots were then detonated to determine the optimum distance for reflection profiling. Once this distance was established, a constant geophone-shotgun source distance was maintained. Individual shots were then recorded for each geophone until a 12 trace, "common offset" record was produced.

The results of the limited reflection seismic work at the site are shown in the accompanying figure. This computer printout stacks the traces side by side with the ground surface to the left and depth increasing with the time scale to the right.

The first pseudo-section annotated with an (a) is comprised of two adjacent 12 channel reflection sections recorded approximately 300 m. west of drillhole line A-A'. Due to poor static corrections used for aligning reflectors, the reflector marked in pink is not apparently continuous from trace to trace. Initially believed to be the unwanted air wave, we believe this event is the contact between the granite basement and the overlying

sedimentary rocks. Depth calculations indicate the basement to be approximately 30 m. at the top of the record which agrees well with seismic refraction depth to bedrock results. The dip of this reflector is approximately 35 degrees into the centre of the deposit.


The second section marked (b), was surveyed approximately 300 m. further into the deposit and was conducted for the purpose of recording shallower reflections and avoiding the erroneously identified air wave reflector. Once again, poor static corrections render the reflections apparently discontinuous, however, we believe the green and blue events to be reflecting horizons. The green event is interpreted as the contact between overburden and the underlying sedimentary rocks at a depth of approximately 11 metres. The deeper blue reflector is believed to be an intra-sedimentary boundary which is approximately 17 metres below the overburden/sedimentary rock contact.

The third section marked with a (c), was recorded approximately 800 m. away from line A-A'. The shallow reflector indicated in green is believed to again be the overburden/sedimentary rock contact.

The final results of the seismic reflection trial survey indicate that several reflecting horizons may be mappable at the site using this technique. In consultation with Geological Survey of Canada personnel, we believe simple improvements such as deeper, auger-excavated shotholes and geophone holes would reduce much of the noise present on the records and improve the frequencies transmitted into the subsurface. These steps, we believe, would enhance the data considerably and allow for reliable, easy recognition of reflecting horizons at the site. Additionally, some improvements may be realized by utilizing higher natural frequency geophones and different filter settings in the instrument.

Yours sincerely

FOUNDEX GEOPHYSICS INC.


Russell A. Hillman, P.Eng.

ljh

WINDOW BEFORE 100

WINDOW AFTER 100

AGC CONSTANT 10

INITIAL GAIN .12

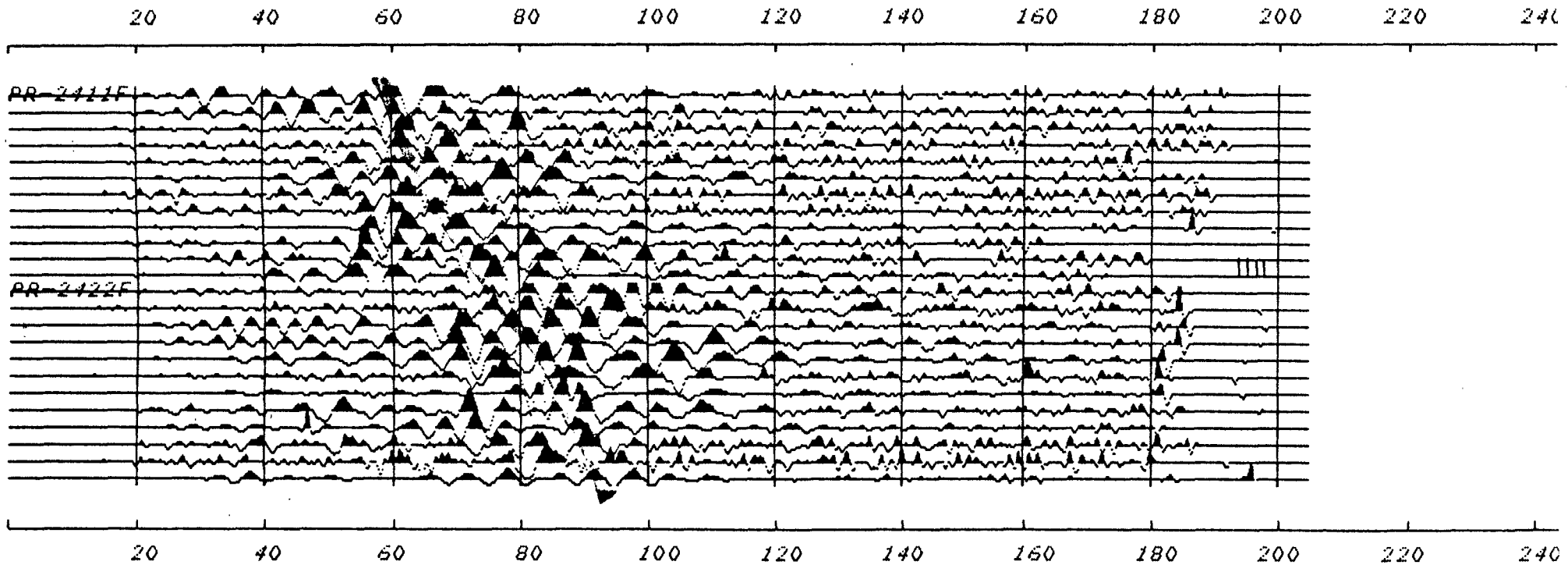
MUTE AT 12

TAP - 1 : 3 / 40

TAP - 2 : 1.5 / 60

TAP₁ - 3 : 1 / 200

(a)





FOUNDEX GEOPHYSICS INC.

13315 Comber Way, Surrey, B.C., Canada V3W 5V8 • Phone (604) 594-5559 • Telex 04-507542

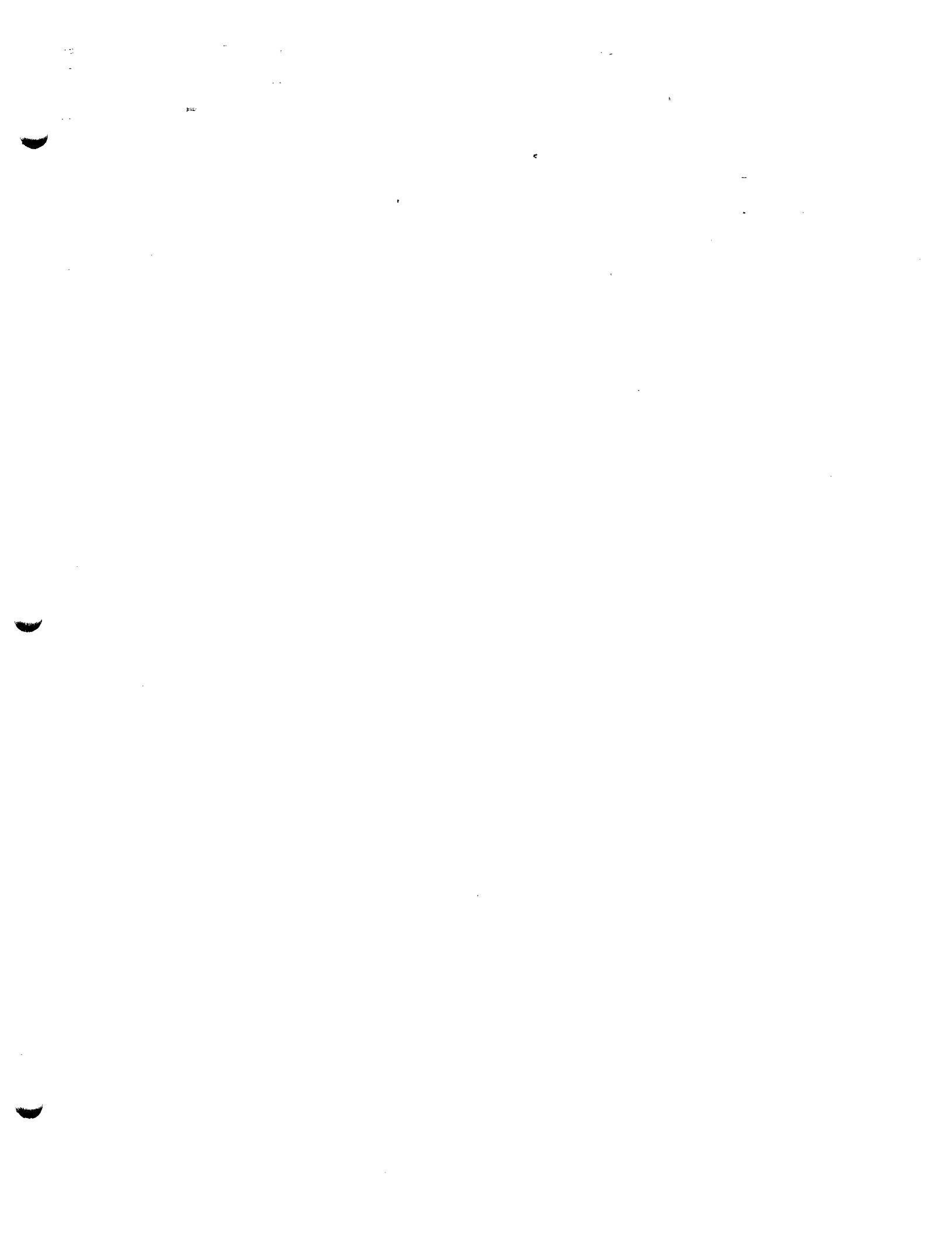
March 31, 1987

Fargo Resources Ltd.
900 - 850 W. Hastings St.
Vancouver, B.C.
V6C 1E1

ATTENTION: MR. LAUCH FARRIS, PRESIDENT

RE: SEISMIC REFLECTION TRIAL SURVEY
LANG BAY GERMANIUM-GALLIUM-CLAY PROSPECT
POWELL RIVER, B.C.
OUR PROJECT NO. FGI-024-1

Geophysical Engineer	\$ 375.00
Geophysical Assistant	487.50
Bison Seismograph Rental	350.00
Truck Rental	305.41
Expenses:	
Accommodation	308.16
Meals	209.37
Gas	41.00
Ferry Fares, Miscellaneous	55.50
Telephone	<u>8.80</u>
TOTAL	<u>\$2,140.74</u>





Chemex Labs Ltd.

Analytical Chemists • Geochemists • Registered Assayers

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

Phone: (604) 984-0221
Telex: 043-52597

CERTIFICATE OF ANALYSIS

TO : FARGO OIL CORPORATION

9th FLOOR - 850 W. HASTINGS STREET
VANCOUVER, B.C.
V6C 1E1

CERT. # : A8618762-001-A
INVOICE # : I8618762
DATE : 10-OCT-86
P.O. # : NONE

Sample description	Prep code	Ga ppm	Ge ppm				
86.4/68-70	205	12	5	--	--	--	--
86.4/72-74	205	15	90	--	--	--	--
86.5/66-68	205	6	5	--	--	--	--
86.5/70-72	205	16	5	--	--	--	--
86.5/76-78	205	20	70	--	--	--	--
86.6/68-70	205	22	5	--	--	--	--
86.6/80-82	205	20	20	--	--	--	--

Certified by *Hart Bichler*

Bondar-Clegg & Company Ltd.

130 Park Street, Ave
North Vancouver, B.C.
Canada V7E 2R5
Phone (604) 985-0681
Telex 04-332667



BONDAR-CLEGG

**Geochemical
Lab Report**

FARGO RESOURCES LIMITED
9TH FLOOR-850 W. HASTINGS
VANCOUVER, B.C.
V6C 1E1



REFCPT: 126-7118

PROJECT: NONE GIVEN

PAGE 1

SAMPLE NUMBER	ELEMENT UNITS	Al2O3 PCI	CaO PCI	Fe2O3A PCI	K2O PCI	LOI PCI	MgO PCI	MnO PCI	Na2O PCI	P2O5 PCI	SiO2 PCI	TiO2 PCI	Totals PCI
X2 86-5 72'-74'		34.37	0.40	2.08	0.30	16.40	0.35	0.01	0.29	0.11	43.14	0.94	98.36
X2 86-5 80'-82'		35.74	0.27	1.90	0.15	14.80	0.21	0.01	0.18	0.14	44.60	1.10	99.10
X2 86-7 92'-94'A		33.43	0.62	2.65	0.34	15.80	0.67	0.01	0.35	0.13	45.40	0.84	100.29
X2 86-7 92'-94'B		33.42	0.47	2.59	1.14	13.60	0.53	0.02	0.42	0.08	46.60	0.95	98.83



REPORT: 126-7118 (COMPLETE)

REFERENCE INFO:

CLIENT: FARGO RESOURCES LIMITED
 PROJECT: NONE GIVEN

SUBMITTED BY: UNKNOWN
 DATE PRINTED: 17-DEC-86

ORDER	ELEMENT	NUMBER OF ANALYSES	LOWER DETECTION LIMIT	EXTRACTION	METHOD
1	Al ₂ O ₃ Alumina (Al ₂ O ₃)	4	0.01 PCT	MULT ACID TOT DIG	D.C. Plasma
2	CaO Calcium (CaO)	4	0.01 PCT	MULT ACID TOT DIG	D.C. Plasma
3	Fe ₂ O ₃ * Total Iron (Fe ₂ O ₃)	4	0.01 PCT	MULT ACID TOT DIG	D.C. Plasma
4	K ₂ O Potassium (K ₂ O)	4	0.01 PCT	MULT ACID TOT DIG	D.C. Plasma
5	LOI Loss On Ignition	4	0.01 PCT		Gravimetric
6	MgO Magnesium (MgO)	4	0.01 PCT	MULT ACID TOT DIG	D.C. Plasma
7	MnO Manganese (MnO)	4	0.01 PCT	MULT ACID TOT DIG	D.C. Plasma
8	Na ₂ O Sodium (Na ₂ O)	4	0.01 PCT	MULT ACID TOT DIG	D.C. Plasma
9	P ₂ O ₅ Phosphorous (P ₂ O ₅)	4	0.01 PCT	MULT ACID TOT DIG	D.C. Plasma
10	SiO ₂ Silica	4	0.01 PCT	MULT ACID TOT DIG	D.C. Plasma
11	TiO ₂ Titanium (TiO ₂)	4	0.01 PCT	MULT ACID TOT DIG	D.C. Plasma
12	Totals Whole Rock Totals	0	0.01 PCT		

SAMPLE TYPES	NUMBER	SIZE FRACTIONS	NUMBER	SAMPLE PREPARATIONS	NUMBER
X OTHER	4	2 -150	4	OTHER SAMPLE PREP 1	4

REMARKS: * DENOTES TOTAL Fe EXPRESSED As. Fe₂O₃.

REPORT COPIES TO: FARGO RESOURCES LIMITED

INVOICE TO: FARGO RESOURCES LIMITED