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021754

ASSESSMENT REPORT

GEOLOGY AND GEOCHEMISTRY

URSA 2 AND 3

OMINECA

NTS M93N/9E

FIELD COPY

BY

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AUGUST 26, 1988

## TABLE OF CONTENTS

Introduction.....	1
Location and Accesss.....	1
Claim Statistics.....	1
Fig. 1 B.C. Location Map.....	2
Fig. 2 Claim Map and Traverse Locations.....	3
Regional Geology.....	4
Detail Geology.....	5
Fig. 3 July 23/87 Traverse.....	6
Fig. 4 July 28/87 Traverse.....	7
Fig. 5 Laura Showing Geology.....	8.
Conclusion and Recommendation.....	9
List of Sample.....	11
List of Analysis.....	12
Statement of Expenditures.....	13
Certification of Qualifications.....	14
Bibliography.....	15

## INTRODUCTION:

The purpose of the Ursa project was to evaluate a highly accessible portion of the Wolverine Complex for rare earth potential. In part the project was funded by Prospectors Assistance Program Grant #10961-P78. This report describes the results of the initial prospecting on the Laura Showing.

Five days of prospecting and mapping were conducted.

## LOCATION AND ACCESS:

The Ursa Property is located in central British Columbia approximately 160 km. north of Fort St. James, on Mount Bisson within the Finlayson Mountain Range. Access to the area is via the Fort St. James Manson Creek road and the Munro Creek logging road.

## CLAIM STATISTICS

All claims were staked using the modified grid system. The claims Ursa #2 and #3 were grouped in the Ursa Group for the purpose of assessment.

Claim	Group	Record #	Units	Date
Ursa 2	Ursa	8420	16	June 4, 1987
Ursa 3	" "	8421	9	June 4, 1987
Ursa 9	" "	9117	20	Oct 20, 1987
Ursa 10	" "	9118	20	Oct 20, 1987
Ursa 11 Fr.	" "	9119	1	Oct 20, 1987

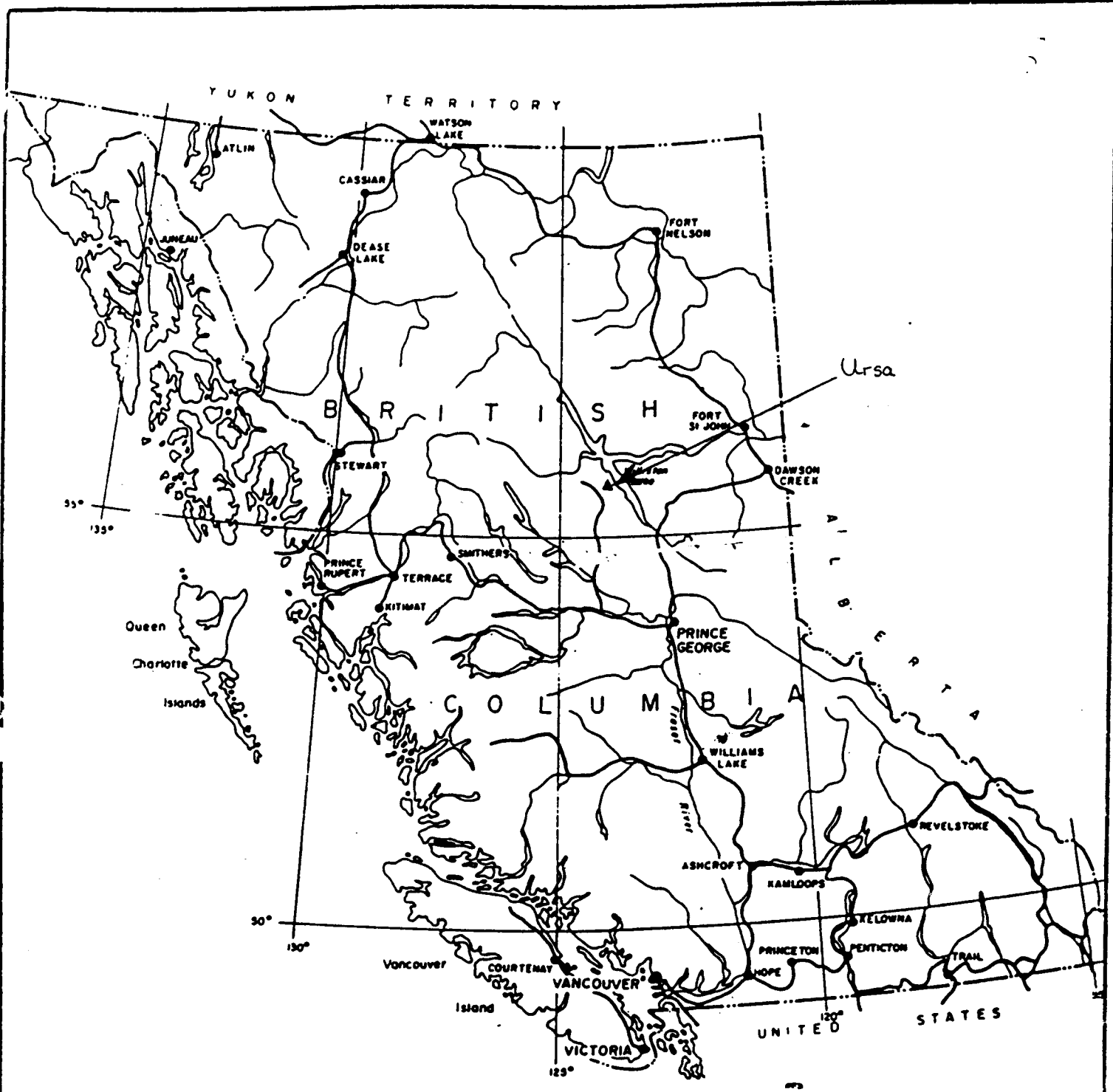


Fig. 1

Laura 1	"	"	8790	1	Aug 14, 1987
Laura 2	"	"	8791	1	Aug 14, 1987
Laura 3	"	"	8801	20	Sept 8, 1987
Laura 4	"	"	8802	12	Sept 8, 1987

## REGIONAL GEOLOGY

The Laura Showing is hosted by the Wolverine Metamorphic Complex, mainly mica schists, micaceous quartzite, gneisses, augen gneisses and crystalline limestone. Just to the west across the Munro Creek Valley the Cache Creek Group outcrops.

The main unit within the area of study is the Wolverine Metamorphic Complex. The eastern edge of the complex is a thrust sheet (Muller 1961) while the western contact between the Manson Creek belt of the Cache Creek Group and Wolverine Metamorphic Complex is a fault (Armstrong 1949) travelling up the Munro Creek Valley.

The Wolverine Complex is divided into three mappable units trending northwest across the area. The three units starting at the northern core are:

- 1) A sequence of granitic gneiss, augen gneisses, granodiorite, minor biotite schists, quartz-mica schists, and pegmatites. The pegmatites are coarse-grained and contain quartz, plagioclase, orthoclase, muscovite, biotite, garnet (Armstrong 1949) and some trace tourmaline and beryl (Domage 1927). It is within this unit that the Laura Showing occurs.
- 2) There is a central belt of mainly crystalline limestone ranging from coarse biotite calcite to graphitic grey

calcite. The limestone is also in places blue-grey to creamy in color, coarsely crystalline, poorly bedded and commonly containing much sericite. There are areas of calcsilicate mineralization with diopside, epidote, and some garnet. Minor gneiss and schists are present.

3) The southernmost unit is mainly biotite, muscovite, garnet schist with minor gneiss.

The age of the Wolverine Complex in this particular area was determined as Late Proterozoic and Lower Cambrian by Armstrong (1949). It should be noted that potassium-argon dating of Wolverine metamorphic rocks in the study area gave 69 to 43 million years (Tipper et al 1974) while an intrusive just south of the area was determined to be 78 million years old (Tipper et al 1974).

#### DETAIL GEOLOGY:

Laura showing

(rocks analyzed for rare earth metal group, REE)

The Laura occurrence has two coarse crystalline pegmatites, a syenite pegmatite and a monzonite pegmatite, with abundant rare earth minerals. The pegmatites are surrounded by a fine to medium crystalline amphibole/pyroxene layered syenite-like rock that also contains visible monazite. The layering is caused by alternating bands of amphibole/pyroxene and alkalic feldspars. The syenite rocks are interfingered with biotite gneiss and biotite amphibole? schists over a length of 400 meters.

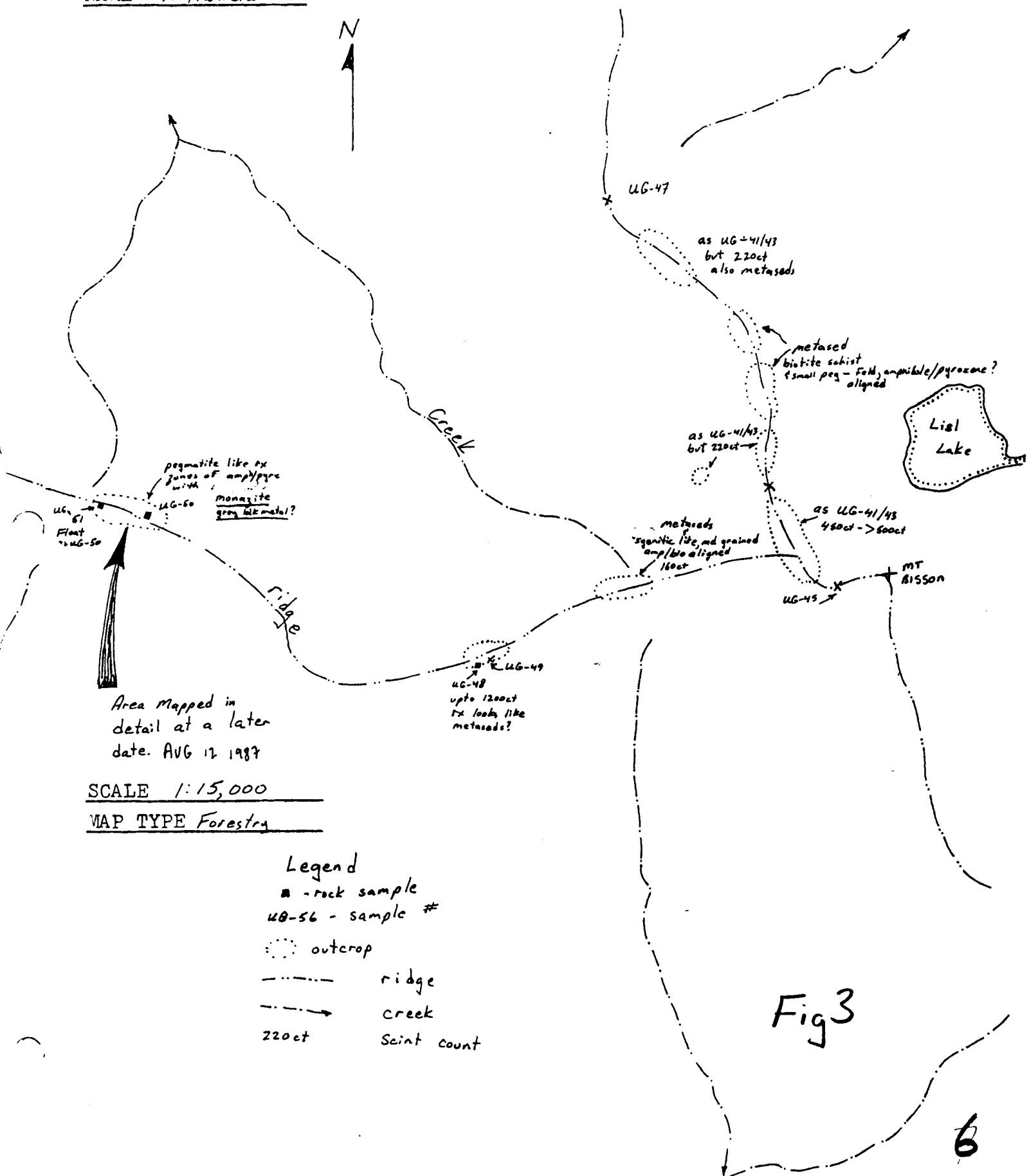
TRAVERSE SHEET - 37 FAME

DATE JULY 23 1987

MAP SHEET 93012W NTS

NAME A. Halleran

N



Area mapped in detail at a later date. AUG 12 1987

SCALE 1:15,000

MAP TYPE Forestry

- Legend
- - rock sample
  - UG-56 - sample #
  - - outcrop
  - ridge
  - - - - - creek
  - 22oct - Saint count

Fig 3

6







The monzonite pegmatite, is 1 to 1.5 meters wide and 30 meters long. It has up to 50% amphibole/pyroxene crystals, 1-2% nepheline, 1-3% monazite, 3% sphene and the rest feldspar. Monazite is disseminated throughout the pegmatite, .2% rare earth metals (REM 87-EDR-1) but is more concentrated near the country rock contact of the pegmatite, 7.5% REE (UG-50). A chip sample which was a mixture of biotite gneiss and monzonite pegmatite (disseminated monazite) returned .2% REE (87-EDR-2) over a 2 meter width some 30 meters northeast of 87-EDR-1.

The nepheline syenite pegmatite is 2 meters wide and is only exposed for 5 meters. Monazite crystals > 1cm are found.

The amphibole/pyroxene layered syenite rock has fine and coarse monazite crystals disseminated in the dark amphibole/pyroxene layers; .64% REE, .26% REE and .30% REE, (UG-56, 87-EDR-4, 87-EDR-5). In some areas the layered rock almost becomes pegmatite like.

The regional prospecting traverses indicated that the mica quartzite schists and biotite schists have minor amounts of monazite. Other pegmatites and syenite intrusions were found but no work was done on them.

#### CONCLUSIONS AND RECOMENDATIONS:

The initial geological work partly funded by the fame grant has outlined an area that has rare earth potential. The rare earths occur in economic amounts as monazite in

pegmatite and a layered syenite rock.

It is recommended that detail geology be conducted on the Laura showing along with a soil geochemical survey. A scint survey should also be conducted on the Laura showing along with further prospecting of the property. This program will commence July 1988.

LIST OF SAMPLES

UG-43 Mount Bisson Monzodiorite  
UG-50 Monzodiorite Pegmatite  
UG-51 Monzodiorite Pegmatite  
UG-56 Amphibole/pyroxene layered syenite  
UG-58 Boulder of quartz pegmatite  
87-EDR-1 Monzodiorite Pegmatite  
87-EDR-2 Amphibole/pyroxene layered syenite  
87-EDR-3 Mount Bisson Monzodiorite  
87-EDR-4 Amphibole/pyroxene layered syenite  
87-EDR-5 Amphibole/pyroxene layered syenite

## BIBLIOGRAPHY

- Armstrong J.E. (1949) Fort St. James Map Area, Cassiar and Coast Districts, British Columbia; GSC Memoir 252, 210 p. Map 907A.
- Domage V. (1927) Finlay River District, B.C.; Summary Report 1927 Part A, pp. 19-41.
- Tipper H.W., Campbell R.B., Taylor G.C., Stott D.F. (1974) Parsnip River, B.C., Map 142A, Sheet 93, GSC 1974.

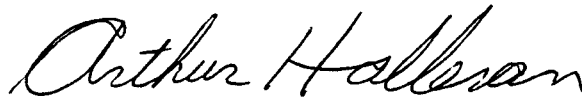
CERTIFICATION OF QUALIFICATIONS

I, Arthur Halleran, of 7183 Bridgewood Dr. Burnable B.C. do hereby declare:

1) I am a 1980 graduate of the University of British Columbia with a Honours B.Sc. degree in Geology

2) I have practiced my profession continuously since graduation, in the Yukon, B.C., and Alberta.

3) This report is based on my field examination of the property and available government reports.

A handwritten signature in cursive script that reads "Arthur Halleran".

Arthur Halleran

STATEMENT OF EXPENDITURE

FIELD COSTS

1) LABOUR

A. Halleran (Geologist) July 23, 27, Aug. 12  
3 days at \$250/day.....\$750.00

D. Halleran (Prospector) July 27, Aug. 12  
2 days at \$150/day.....\$300.00

L. Halleran (Field Assistant) July 23  
1 days at \$150/day.....\$150.00

\$1200.00

2) ROOM & BOARD

6 days at \$40/day.....\$240.00

3) TRANSPORTATION

ATV 3 days at \$45/day.....\$135.00

4X4 truck 3 days at \$55/day.....\$165.00

4) GAS.....\$120.00

5) RENTAL

Scint. 2 at \$10/day each for 3 days.....\$60.00

6) GEOCHEMISTRY

10 rocks at \$23.00/rock.....\$230.00

7) Maps and repo.....\$15.00

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TOTAL

\$2665.00

WHOLE ROCK ICP-MS ANALYSIS

.100 GRAM SAMPLE FUSED WITH .6 GM LIBO2 AND IS DISSOLVED AND DILUTED TO 30 ML WITH 5% HNO3.  
ANALYSIS BY ICP MASS SPECTROMETER  
- SAMPLE TYPE: S/SL/ROCK

DATE RECEIVED: JUL 30 1987

DATE REPORT MAILED: *Aug 11/87*

ASSAYER: *D. Toyne* DEAN TOYE. CERTIFIED B.C. ASSAYER

A.D. HALLERAN

File # 87-2646

SAMPLE#	Be	Rb	Y	Zr	Nb	Sn	Cs	La	Ce	Pr	Nd	Sa	Eu	Gd	Tb	Dv	Hc	Er	Tm	Yb	Lu	Hf	Ta	W	Th	U
	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
U6-3 <i>Soil</i>	10	104	48	289	12	2	4	74	83	9	56	64	2	5	1	5	1	4	1	6	1	9	1	2	30	5
U6-36 <i>Slit</i>	10	68	42	578	33	2	2	143	164	17	92	112	2	5	1	6	1	4	1	8	1	15	1	2	44	7
87-R-2 <i>FX</i>	10	101	25	84	6	2	2	569	643	66	418	400	4	12	3	8	1	1	1	1	1	2	1	2	355	10
87-R-3 <i>FX</i>	10	171	90	434	11	2	2	2033	2406	263	1648	1548	9	49	11	29	3	6	1	3	1	14	1	2	827	32
87-R-4 <i>FX</i>	10	123	59	66	3	2	2	547	671	81	474	514	3	19	4	14	2	5	1	2	1	3	1	2	251	21
U6-1 <i>FX</i>	10	47	193	112	2	2	2	5929	6529	708	4369	3643	10	97	24	58	6	8	1	4	1	3	1	2	2486	68
U6-9 <i>FX</i>	10	27	86	1731	2	2	2	2659	3175	314	1941	1681	5	44	10	27	3	6	1	6	1	63	1	2	1714	39
U6-10 <i>FX</i>	10	159	30	261	33	2	3	173	202	21	141	136	1	7	2	7	1	2	1	2	1	8	1	2	92	9
U6-11 <i>FX</i>	10	113	20	416	8	2	2	162	192	19	120	160	2	5	1	5	1	1	1	1	1	13	1	2	91	6
U6-12 <i>FX</i>	10	121	13	176	4	2	2	101	112	12	71	61	1	2	1	3	1	1	1	1	1	5	1	2	52	3
U6-13 <i>FX</i>	10	76	16	110	10	2	3	68	77	7	46	23	1	1	1	2	1	1	1	1	1	5	1	2	32	7
U6-14 <i>FX</i>	10	128	6	74	4	2	2	54	67	7	47	55	1	2	1	1	1	1	1	1	1	3	1	2	36	3
U6-17 <i>FX</i>	14	226	29	26	42	2	4	7	8	1	6	15	1	2	1	5	1	2	1	2	1	1	18	2	2	12
U6-19 <i>FX</i>	10	37	141	177	24	2	5	64	95	14	113	243	8	20	5	23	4	12	2	12	1	4	1	2	627	12
U6-23 <i>FX</i>	10	184	13	236	13	2	3	56	76	8	41	53	1	1	1	2	1	1	1	3	1	7	1	2	49	20
U6-24 <i>FX</i>	10	26	193	92	59	2	2	13142	15707	1574	8207	3929	78	1	17	37	6	15	2	16	2	4	1	2	1080	36
U6-25 <i>FX</i>	10	35	403	316	63	2	2	311	461	49	371	847	32	84	19	93	15	30	3	18	1	7	1	2	38809	99
U6-29 <i>FX</i>	10	137	12	204	17	2	2	265	293	24	136	102	2	1	1	2	1	1	1	1	1	6	1	2	607	30
U6-30 <i>FX</i>	10	6	41	166	20	2	2	41	57	7	51	77	1	5	1	8	1	4	1	5	1	5	1	2	243	162
U6-31 <i>FX</i>	10	29	16	74	7	2	2	40	46	5	34	30	1	2	1	3	1	1	1	1	1	2	1	2	41	2
DETECTION	10	2	2	2	2	2	2	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1



WHOLE ROCK ICP-MS ANALYSIS

.100 GRAM SAMPLE FUSED WITH .6 GM LiBO2 AND IS DISSOLVED AND DILUTED TO 50 ML WITH 5% HNO3.  
ANALYSIS BY ICP MASS SPECTROMETER  
- SAMPLE TYPE: S/SL/ROCK

TABLE #1

1987

A.D. HALLERAN File # 87-2646

SAMPLE#	Be	Rb	Y	Zr	Nb	Sn	Cs	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta	W
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
U6-3	10	104	48	289	12	2	4	74	83	9	56	64	2	5	1	5	1	4	1	6	1	9	1	2
U6-36	10	68	42	578	33	2	2	143	164	17	92	112	2	5	1	6	1	4	1	6	1	15	1	2
87-R-2	10	101	25	84	6	2	2	569	643	66	418	400	4	12	3	8	1	1	1	1	1	2	1	2
87-R-3	10	171	90	434	11	2	2	2033	2406	263	1648	1548	9	49	11	29	3	6	1	3	1	14	1	2
87-R-4	10	123	59	66	3	2	2	547	671	81	474	514	3	19	4	14	2	5	1	2	1	3	1	2
U6-1	10	47	193	112	2	2	2	5929	6529	708	4369	3643	10	97	24	58	6	8	1	4	1	3	1	2
U6-9	10	27	86	1731	2	2	2	2659	3175	314	1941	1681	5	44	10	27	3	6	1	6	1	63	1	2
U6-10	10	159	30	261	33	2	3	173	202	21	141	136	1	7	2	7	1	2	1	2	1	8	1	2
U6-11	10	113	20	416	8	2	2	162	192	19	120	160	2	5	1	5	1	1	1	1	1	13	1	2
U6-12	10	121	13	176	4	2	2	101	112	12	71	61	1	2	1	3	1	1	1	1	1	5	1	2
U6-13	10	76	16	110	10	2	3	68	77	7	46	23	1	1	1	2	1	1	1	1	1	5	1	2
U6-14	10	128	6	74	4	2	2	54	67	7	47	55	1	2	1	1	1	1	1	1	1	3	1	2
U6-17	14	226	29	26	42	2	4	7	8	1	6	15	1	2	1	5	1	2	1	2	1	1	18	2
U6-19	10	37	141	177	24	2	5	64	95	14	113	243	8	20	5	23	4	12	2	12	1	4	1	2
U6-23	10	184	13	236	13	2	3	56	76	8	41	53	1	1	1	2	1	1	1	3	1	7	1	2
U6-24	10	26	193	92	59	2	2	13142	15707	1574	8207	3929	78	1	17	37	6	15	2	16	2	4	1	2
U6-25	10	35	403	316	63	2	2	311	461	49	371	847	32	84	19	93	15	30	3	18	1	7	1	2
U6-29	10	137	12	204	17	2	2	265	293	24	136	102	2	1	1	2	1	1	1	1	1	6	1	2
U6-30	10	6	41	166	20	2	2	41	57	7	51	77	1	5	1	8	1	4	1	5	1	5	1	2
U6-31	10	29	16	74	7	2	2	40	46	5	34	30	1	2	1	3	1	1	1	1	1	2	1	2
U643	10	211	10	260	18	2	2	261	379	20	90	67	2	3	1	2	1	1	1	1	1	7	1	2
U650	10	82	282	189	82	2	2	25050	36220	1675	7361	4674	63	193	30	77	11	26	3	18	2	4	4	2
U651	10	81	75	54	79	2	2	5806	9226	592	2760	1670	29	56	9	20	3	8	1	9	2	2	3	2
U656	10	211	64	417	75	2	2	2986	2869	160	774	545	11	19	4	13	2	7	1	7	1	9	3	2
U658	10	83	71	1059	4160	2	2	54410	68340	2904	12190	4773	76	209	27	33	4	10	1	10	2	28	17	2
DETECTION	10	2	2	2	2	2	2	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2
SAMPLE#	Be	Rb	Y	Zr	Nb	Sn	Cs	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta	W
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
87-EDR-1	10	122	53	115	78	2	2	638	1030	56	262	214	5	14	2	10	2	5	1	6	1	3	4	2
87-EDR-2	10	94	41	173	709	2	2	906	1215	68	357	300	10	17	2	9	1	4	1	4	1	6	6	2
87-EDR-3	10	159	6	225	16	2	3	146	219	12	61	53	1	3	1	1	1	1	1	1	1	8	1	2
87-EDR-4	10	38	19	177	755	2	2	548	792	48	256	187	6	12	1	4	1	2	1	2	1	6	3	2
87-EDR-5	10	170	12	153	22	2	2	612	1067	72	406	401	3	19	2	4	1	1	1	1	1	5	1	2
87-EDR-6	10	91	53	176	47	2	2	261	449	28	150	186		11	2	9	2	5	1	6	1	7	4	2
87-EDR-7	10	103	7	63	12	2	2	70	130	9	56	85	1	4	1	1	1	1	1	1	1	2	1	2

Test Soil → U6-3  
Test Silt → U6-36  
Pegmatite peg float { 87-R-2  
87-R-3  
87-R-4

Ursa #1 → U6-1  
Hot gneissic syenite peg U6-9  
U6-10  
U6-11  
U6-12  
look for right rock U6-13  
Type U6-14  
rock in other U6-17  
Crescent-Augite U6-19  
Well #2 → U6-23  
Small Hob → U6-24  
Floort → U6-25  
Syenite float → U6-29  
Graphite rx → U6-30  
Cal Cat-Silicate → U6-31

In this report on maps

- \* U643
- \* U650
- \* U651
- \* U656
- \* U658