

ARIS SUMMARY SHEET

District Geologist, Victoria

Off Confidential: 89.08.22

ASSESSMENT REPORT 18038

MINING DIVISION: Nanaimo

PROPERTY: Kost

LOCATION: LAT 50 27 00 LONG 127 50 00  
UTM 09 5589097 582830  
NTS 092L05W

CLAIM(S): Kost 1

OPERATOR(S): Wilson, J.

AUTHOR(S): Zastavnikovich, S.

REPORT YEAR: 1988, 19 Pages

GEOLOGICAL

SUMMARY: The property is underlain by a northwest striking contact zone between early Jurassic Bonanza Formation to the west and Late Triassic Parson Bay sediments to the east. No known mineralization occurs on the claim.

WORK

DONE: Geochemical

ROCK 8 sample(s) ;ME  
SILT 16 sample(s) ;ME  
SOIL 13 sample(s) ;ME  
Map(s) - 1; Scale(s) - 1:12 000

GEOCHEMICAL REPORT

on the

KOST I MINERAL CLAIM

FILED

Nanaimo M.D.

Lat. 50° 27' N

Long. 127° 50' W

NTS 92L/5W

August 25, 1987 - May 26, 1988

For Owner

Electrum Resource Corporation

SEARCHED	INDEXED
SERIALIZED	FILED
NOV 24 1988	
M.R. #	\$
VANCOUVER, B.C.	

August, 1988  
Delta, B.C.

S. Zastavnikovich  
Geochemical Consultant

**G E O L O G I C A L   B R A N C H**  
**A S S E S S M E N T   R E P O R T**

**12,038**

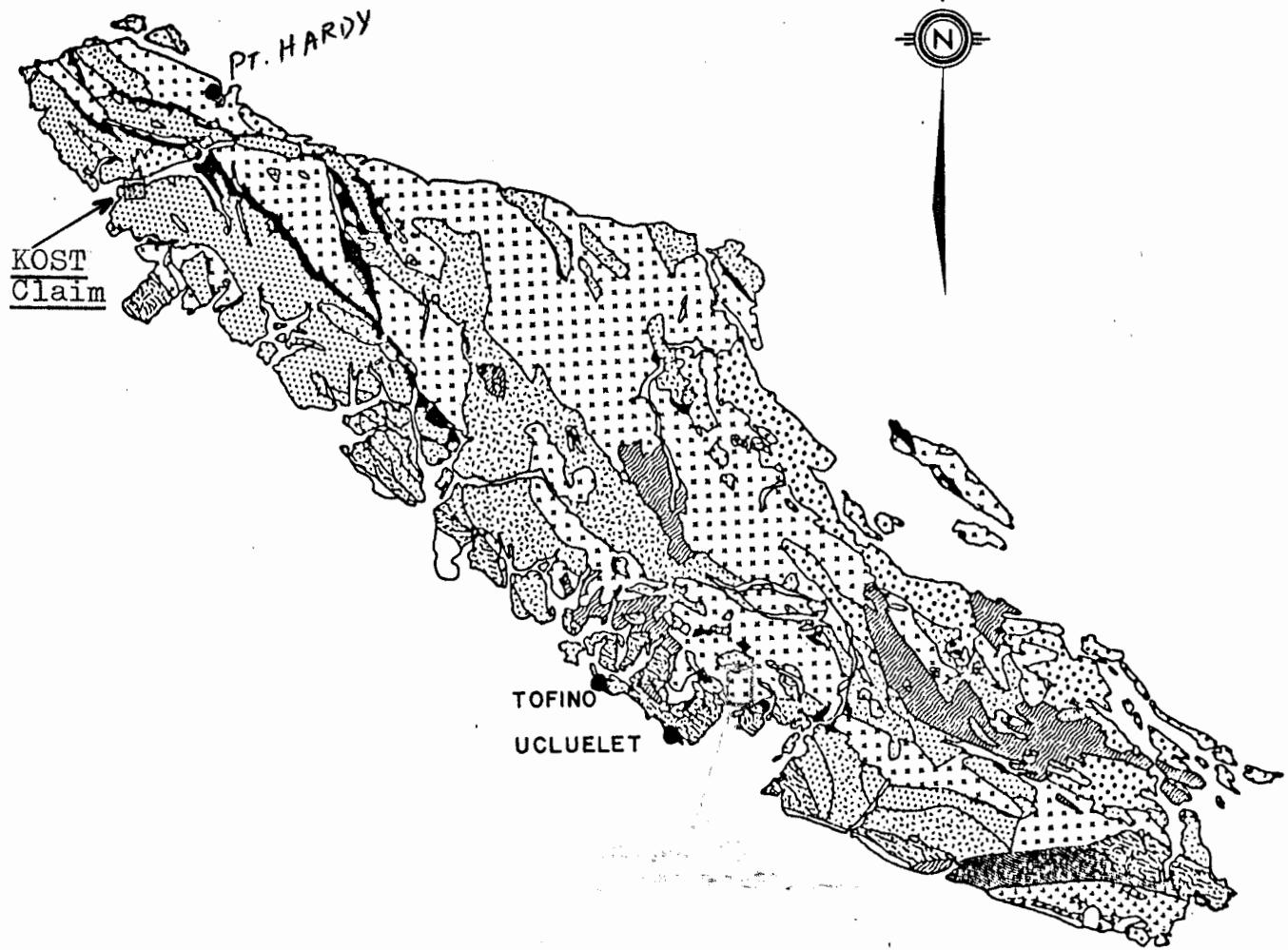
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Fig. 2, Regional Geology Map, scale 1:250,000	1
Fig. 3, Aeromagnetic Map, scale 1:63,000	1
Fig. 4, Claim and Sample Location, Topography Map, scale 1:12,000	in pocket



0 20 40 60 KILOMETERS

## LEGEND

[Tertiary Sediments]	MIDDLE TERTIARY	[Bonanza Subgroup]	EARLY JURASSIC
[Tertiary Intrusions]	EARLY TO MIDDLE TERTIARY	[Quatsino, Parson Bay Formations]	LATE TRIASSIC
[Tertiary Volcanics]	EARLY TERTIARY	[Karmutsen Formation]	TRIASSIC
[Late Mesozoic Sediments]	LATE JURASSIC TO CRETACEOUS	[Sicker Group]	LATE PALEOZOIC
[Leech River Schist]	JURA-CRETACEOUS?	[Metamorphic Complex]	JURASSIC OR OLDER
[Island Intrusions]	JURASSIC		

INDEX MAP  
FIGURE I LOCATION  
(GEOLOGY BY MULLER)

## PROPERTY AND OWNERSHIP

The KOST I mineral property consists of one twenty-unit mineral claim, KOST I (4x5), recorded by J.R. Wilson on August 34th 1987, Record #2770. The claim is located on Quatsino Sound, immediately east of Koskimo Bay and 1.5km due west of the logging community of Mahatta River, on northwestern Vancouver Island, on NTS Map 92L/5W in the Nanaimo Mining Division (Fig. 1).

## LOCATION, ACCESS & PHYSIOGRAPHY

The Kost I claim is located 25km southwesterly from the Island Copper Mine at Coal Harbour, and 40km from the town of Port Hardy. All weather logging road from Port Alice on Nerotous Inlet provides good access to Mahatta River camp, from where an old logging road provides truck access directly onto the property (Fig. 2). The northern portion of the claim lies along the shore of Quatsino Sound and is accessible by boat.

The claim extends from sea level to 500m (1,500') elevation, and the topography is moderate throughout most of the property (Fig. 4).

## GEOLOGY

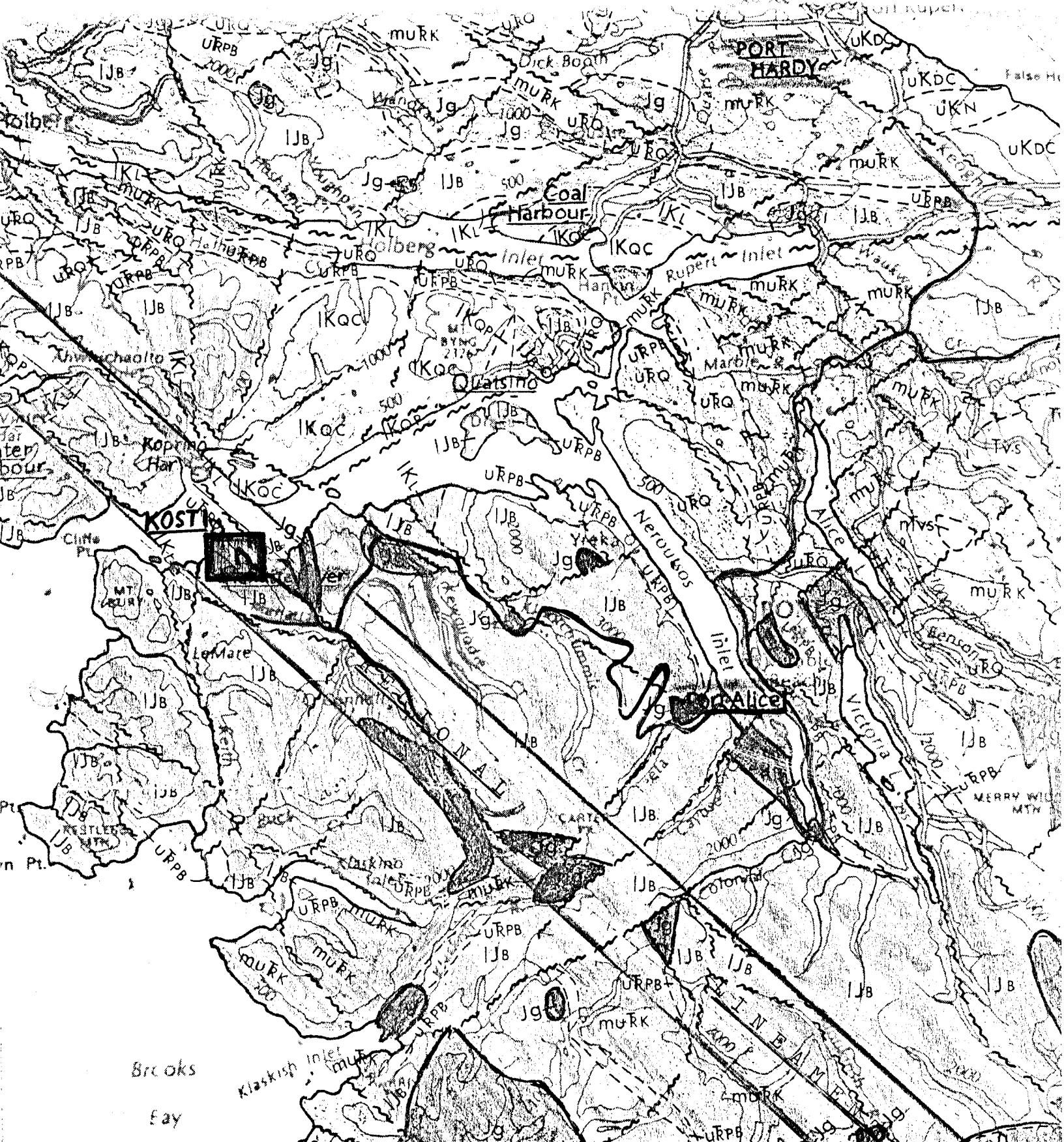
### Regional Geology

The claim lies at the northwestern end of a 50km long regional lineament with Kashutl Inlet at its southeastern point (Fig. 2). The lineament is defined by faults, prominent creeks and rivers, Jurassic Island Intrusions and, at the Kahutl Inlet end, extensive propylitic alteration, where in 1983 Falconbridge Ltd. is known to have drilled for gold, as has another major exploration company, BP Minerals, to the northwest, along the trend.

According to the latest available GSC regional 1:250,000 scale geology map by J.E. Muller (O.F. 463, 1977), the Jurassic Bonanza Group volcanics and the late Triassic Parson Bay Formation sediments comprise most of the remaining regional geological units (Fig. 2).

### Local Geology

The regional mapping by J.E. Muller indicates over 2km long contact zone, between the Bonanza to the west and Parson Bay units to the east, on the claim (Fig. 2), which is located in an area of reportedly high mercury geochemical values (Barakso & tarnocai, in CMM Bulletin, April 1970).



CLAIM LOCATION & REGIONAL GEOLOGY

scale 1:250,000

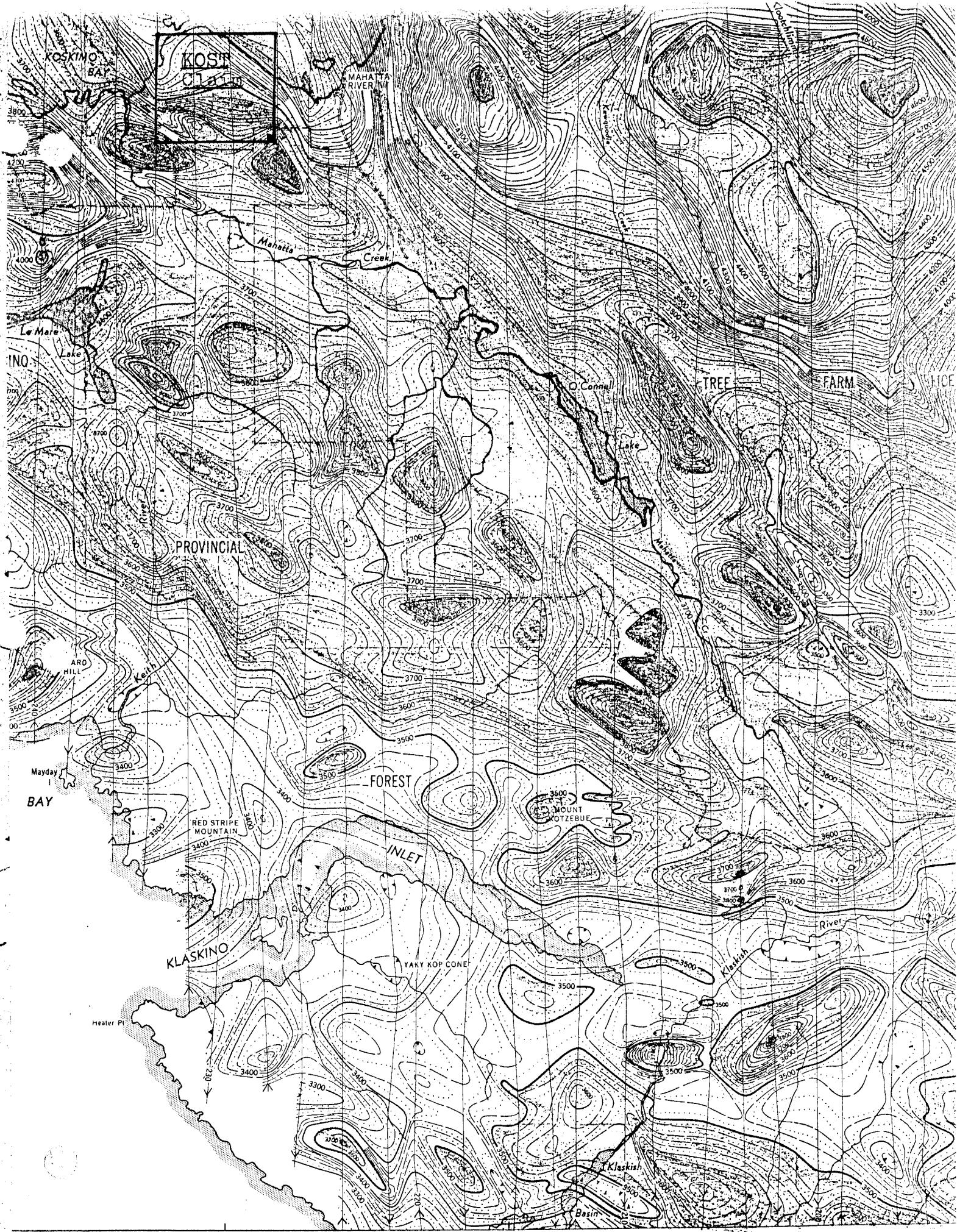
- Jg - Island Intrusions
- IJB - Bonanza volcanics
- uTRPB - Parson Bay sediments
- muTRK - Karmutsen volcanics
- Regional lineaments

Fig. 2

Cape Cook

PMNH

DAIS



Louis Map 1732G "Brooks Peninsula"  
AEROMAGNETIC MAP

scale 1:63,000 Fig. 3

Very limited prospecting following staking by J. Wilson who collected eight rock samples along the contact zone, revealed several widely-spaced quartz veins and patches of disseminated and veinlet pyrite. Occasionally abundant epidote on the veinlets was also found in this region (Fig. 4 + Appendix I).

It is envisaged that an intrusion similar to those found along the regional lineament may be responsible for the quartz veining and anomalous geochemistry.

#### GEOCHEMISTRY

During a brief visit to the property at end of August 1987, the writer collected a handful of high-quality field-sieved stream sediment samples over a small portion of the claim area. As well, a dozen B-horizon soil samples were collected using a grubhoe at depths of 10-25cm, at 50m intervals along the upper logging road on the claim, for comparison study. To enhance the detectability of gold values, the 5 sediment, 13 soil, and 8 rock samples collected were processed for heavy minerals (H.M.) fraction and analyzed at Min-En Laboratories of N. Vancouver for 30 trace elements by ICP, fire-geochemical gold, and mercury, using standard geochemical methods as described in Appendix III.

Subsequently, in May 1988, additional moss-mat and pan-sieved sediment samples were collected in the central portion of the main northwesterly drainage on the KOST I claim, and their regular -80 Mesh fraction was likewise analyzed for 30-element ICP, gold, and mercury.

All the geochemical sample locations are shown on Map Fig. 4, in pocket, and complete analytical results are inscribed on Fig. 4, and also enclosed as Appendix III.

#### Stream Sediment Geochemistry

As illustrated in Fig. 4, in pocket, of the five heavy minerals stream sediment samples collected, #SZ1-SZ5, two are anomalous in gold in the H.M. fraction, SZ2 with 240 ppb Au, and particularly SZ5 with 1,625 ppb Au. These two samples also have the highest mercury and zinc contents, 325 and 200 ppb Hg and 170 ppm and 278 ppm Zn respectively, and while SZ2 has the highest copper value of 103 ppm Cu, sample number SZ5 has the highest cadmium value of 3.4 ppm Cd.

No other trace elements can likely be considered anomalous in the stream sediments H.M. fraction.

The regular -80 Mesh fraction of the K-1 to K-9 sediment samples in both the moss-mat and pan-sieved materials (Fig. 4) indicates that the eastern drainage, proximal to the Bonanza/Parsons Bay Contact is relatively anomalous in K-10 and K-11 samples in arsenic, cadmium, copper, potassium, molybdenum, lead, vanadium, zinc, and mercury, though gold values are mostly at or below the detection limit in this fraction for all sediment samples. The comparison of gold and trace element geochemical values in the H.M. and the regular -80 Mesh fractions suggests that the presence of precious metals mineralization in the area sampled is likely to increase with depth.

#### Soil Geochemistry

The road cut soil samples no. 73781-793 indicate enrichment in the H.M. fraction of copper, iron, zinc and mercury, in the northern third of the sampled line (Fig. 4), while geochemical gold values of up to 153 ppb Au are present in the H.M. fraction in the same area as well. Detailed soil sampling is needed to determine mineralization-related vs. lithological trace element enrichment in the soils.

#### Rock Geochemistry

As indicated in Appendix I, rock samples W2 & W3 are float, with the rest being samples of outcrops. In the H.M. fraction most of the pyrite-bearing quartz-vein samples are enriched in silver, arsenic, barium, berillium, cadmium, potassium, phosphorus, zinc and mercury, while the epidote-rich rocks are highly anomalous in strontium and vanadium.

The siliceous rocks carry up to 125 ppb Au in the H.M. fraction, indicating the close association between gold values and silicification on the KOST property.

CONCLUSIONS

1. Supported by anomalous trace element geochemistry, strong gold values of up to 1,625 ppb Au in the H.M. fraction have been obtained from limited reconnaissance stream sediment sampling on the KOST I claim.
2. The additional presence of detectable geochemical gold values in soil and rock samples on the property indicates that the source of the gold is bedrock, rather than placer, related.
3. The presence of anomalous geochemical gold values in the H.M. fraction, but not in the regular -80 Mesh fraction, combined with strong anomalies in the latter in cadmium, molybdenum, lead, zinc, and mercury, suggest that precious metals potential should increase with depth on the KOST I property.

RECOMMENDATIONS

1. For proper initial geochemical interpretation, detailed high-quality field-sieved stream sediment sampling coverage over the whole property and its immediate vicinity is required. Prospecting should be integrated with the drainage sampling survey.
2. Anomalous areas thus isolated should be investigated with detailed soil sampling grids and outcrop sampling combined with analysis of the heavy mineral fraction to identify detectable concentrations of the precious metals values.
3. Magnetometer and E.M. geophysical surveys along the anomalous rock and soil grids should be utilized to help assess the depth dimension.
4. Detailed air photo identification of topographic features would assist in the overall interpretation of any geochemical/geophysical anomalies found on the property.

STATEMENT OF QUALIFICATIONS

I, Sam Zastavnikovich, do hereby certify that:

1. I am a graduate of the University of Alberta with the Degree of B.Ed. in Physical Sciences, 1969.
2. I have been a practicing exploration geochemist, in continuous employ for thirteen years, with Falconbridge Nickel Mines Ltd. of Toronto and Vancouver as:  
1969-'75, Field geochemist, international.  
'75-'79, Project geologist-geochemist, B.C.  
'79-'82, Exploration geochemist, world-wide, where I was engaged in all aspects of geochemical exploration, including the development of improved sampling techniques and advanced geochemical interpretation, as well as the writing of final, budget, and assessment reports.
3. I am a voting member of the Association of Exploration Geochemists.
4. All the fieldwork was done by myself and/or under my direct supervision.
5. I am a consulting geochemist with offices at 5063-56th St., Delta, B.C.

  
S. Zastavnikovich, Expl. Geochemist

## KOST I Mineral Claim

STATEMENT OF EXPENDITURESFieldwork -

Salaries, S. Zastavnikovich, Geochemist 2 days @ 250/day	500.00
Food & lodging, 2 days @ 30/day	60.00
Travel, 4x4 truck, 2 days @ 40/day Gas, mileage, ferries	80.00 140.00
Field Expenses, supplies, maps, delivery	60.00
	<hr/>
	840.00

Analysis -

20 rock, soil, sed. samples for 30 element ICP, fire geochem. Au, Hg, prep. @ 19.25	385.00
20 samples H.M. prep. @ 25.00	500.00
	<hr/>
	885.00

Total Expenditures \$1,725.00

APPENDIX I.

KOST Claim ROCK SAMPLE NOTES

Sample #

- W1 - quartz vein, 5 mm wide, in pyritic dacite outcrop
- W2 - float, quartz vein in dark gray aphanitic volcanic rock
- W3 - float, 15 - 20 % pyrite as oxidized specks in dark gray aphanitic volcanic
- W4 - quartz vein with minor pyrite in outcrop
- W5 - siliceous rhyolite? outcrop with minor pyrite, minor rusty stain
- W6 - open quartz-epidote vein
- W7 & W8- quartz-epidote veins, minor rust

## APPENDIX II

***MIN-EN Laboratories Ltd.****Specialists in Mineral Environments*

Corner 15th Street and Bewicke  
705 WEST 15TH STREET  
NORTH VANCOUVER, B.C.  
CANADA V7M 1T2

**FIRE GOLD GEOCHEMICAL ANALYSIS BY MIN-EN**  
**LABORATORIES LTD.**

Geochemical samples for Fire Gold processed by Min-En Laboratories Ltd., at 705 W. 15th St., North Vancouver Laboratory employing the following procedures.

After drying the samples at 95° C soil and stream sediment samples are screened by 80 mesh sieve to obtain the minus 80 mesh fraction for analysis. The rock samples are crushed and pulverized by ceramic plated pulverizer.

A suitable sample weight 15.00 or 30.00 grams are fire assay preconcentrated.

After pretreatments the samples are digested with Aqua Regia solution, and after digestion the samples are taken up with 25% HCl to suitable volume.

Further oxidation and treatment of at least 75% of the original sample solutions are made suitable for extraction of gold with Methyl Iso-Butyl Ketone.

With a set of suitable standard solution gold is analysed by Atomic Absorption instruments. The obtained detection limit is 1 ppb.

## APPENDIX II

Analytical Procedure - The samples were analyzed by Min-En Laboratories Ltd. of 705 West 15th St., N.Vanc, as follows:

The stream sediments were oven-dried in their original water-resistant kraft paper bags at 95°C and screened to obtain the minus 80 mesh fraction for analysis. The rock samples were crushed and pulverized in a ceramic-plated pulverizer.

A suitable weight of 5.0 or 10.0 grams is pretreated with  $\text{HNO}_3$  and  $\text{HClO}_4$  mixture.

After pretreatment the samples are digested with Aqua Regia solution, then taken up with 25% HCl to suitable volume and aliquot used for the 26 element ICP trace element analysis.

From the major remaining portion of the sample, Gold is preconcentrated by standard fire assay methods, then extracted with Methyl Iso-Butyl Ketone and analyzed by Atomic Absorption.

For Mercury analysis, 1 gram of sieved material is sintered at 90°C for 4 hours, then digested in  $\text{HNO}_3$  and HCl acids mixture, and analyzed by the Hatch and Ott flameless AA method.



COMPANY: SAM ZASTAVNIKOVICH

## MIN-EN LABS ICP REPORT

(ACT:F31) PAGE 3 OF 3

PROJECT NO: MAHATTA RIVER

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2

FILE NO: 7-974R

ATTENTION: SAM ZASTAVNIKOVICH

(604)980-5814 OR (604)988-4524

\* TYPE HM CONC \* DATE: JAN 18, 1988

(VALUES IN PPM)	U	V	ZN	GA	SN	W	CR	AU-PPB	HG-PPB	BA-TOT	HM%
W-1-HM	1	20.7	100	1	1	2	1936	100	2350	NES	.11
W-2-HM	1	20.1	60	1	1	2	1439	125	1700	NES	.07
W-3-HM	1	27.8	527	1	1	2	443	5	505	10	.96
W-4-HM	1	58.8	215	1	1	8	13795	10	1325	NES	.11
W-5-HM	1	12.1	49	1	1	1	1140	80	490	NES	.48
W-6-HM	1	61.9	20	1	1	1	652	2	285	5	5.05
W-7-HM	1	48.4	14	1	1	1	557	2	405	5	5.66
W-8-HM	1	80.0	23	1	1	1	213	1	165	10	9.69
73781-HM	1	297.9	81	1	1	2	58	5	480	NES	1.08
73782-HM	1	240.6	69	1	1	2	37	153	315	NES	.92
73783-HM	1	338.9	73	1	3	2	47	4	870	5	3.79
73784-HM	1	327.5	71	1	2	2	49	25	410	NES	.76
73785-HM	1	474.0	113	1	1	3	89	40	4800	NES	1.00
73786-HM	1	266.8	97	1	1	2	76	69	3475	NES	.84
73787-HM	N/S										
73788-HM	1	404.1	64	1	2	2	56	5	230	10	2.08
73789-HM	1	452.9	65	1	2	2	71	10	11250	2200	2.43
73790-HM	1	99.9	48	1	1	1	19	5	1890	NES	1.50
73791-HM	1	349.0	62	1	3	2	42	5	255	5	2.63
73792-HM	1	380.5	55	1	5	2	53	5	520	1200	2.02
73793-HM	1	497.8	66	1	1	2	62	10	175	NES	1.38

ATTENTION: S.ZASTAVNIKOVICH

(604)980-5814 OR (604)988-4524

\* TYPE HEAVY MINERAL \*

(VALUES IN PPM)	LI	MG	MN	MO	NA	NI	P	PB	SB	SR	TH	U	V
SZ-1	7	6440	409	1	50	5	340	8	1	68	1	1	102.3
SZ-2	5	4400	442	2	50	1	270	7	2	49	1	1	85.5
SZ-3	6	4870	361	1	140	4	300	7	1	69	1	1	107.3
SZ-4	5	5250	421	1	160	6	260	6	2	73	1	1	96.9
SZ-5	5	5000	472	1	150	6	280	11	3	77	1	1	119.2

COMPANY: S.ZASTAVNIKOVICH

## MIN-EN LABS ICP REPORT

(ACT:G31) PAGE 3 OF 3

PROJECT NO: KOST

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2

FILE NO: 7-974

ATTENTION: S.ZASTAVNIKOVICH

(604)980-5814 OR (604)988-4524

\* TYPE HEAVY MINERAL \*

(VALUES IN PPM)	ZN	GA	SN	W	CR	HG-PPB	AU-PPB	F	HM%
SZ-1	66	1	1	2	15	135	10	260	9.63
SZ-2	170	1	4	1	15	325	240	230	13.07
SZ-3	139	1	1	1	17	70	3	180	5.92
SZ-4	131	1	2	1	17	135	2	250	9.74
SZ-5	278	1	3	2	19	200	1625	215	8.85

## \* TYPE MOSS GEOCHEM \*

(VALUES IN PPM )	AG	AL	AS	B	BA	BE	BI	CA	CD	CO	CU	FE
K01	.7	16290	46	4	50	.9	8	3590	.9	21	6	35680
K02	.8	12190	38	3	26	.8	9	5110	.5	15	9	33720
K03	.7	13010	6	4	23	.8	9	5130	.6	16	11	35990
K04	.6	12520	20	6	22	.7	8	5730	.5	15	7	36680
K05	.3	13650	4	2	26	.8	10	6040	.7	16	9	40030
K06	.6	16630	17	9	83	1.0	6	5420	.5	18	15	48900
K07	.6	14350	9	1	26	.6	8	5740	.6	16	8	38070
K08	.5	16610	24	12	60	.7	8	6950	1.0	18	10	26070
K09	.5	14190	31	1	32	.5	8	6070	.6	16	7	43960
K10	.6	20670	44	4	68	1.0	1	10840	6.9	14	23	21040
K11	.5	16580	46	7	56	.8	4	8590	4.1	18	30	35870

## \* TYPE MOSS GEOCHEM \*

(VALUES IN PPM )	K	LI	MG	MN	MO	NA	NI	P	PB	SB	SR	TH
K01	850	30	5860	4155	10	220	2	790	14	8	25	1
K02	760	28	6280	959	8	280	6	550	7	6	26	3
K03	680	28	6310	1282	8	280	4	580	7	5	25	1
K04	690	28	6800	907	8	280	4	540	5	4	26	2
K05	710	29	7090	1052	7	290	1	570	7	2	29	2
K06	860	31	7690	2664	8	210	4	930	7	10	34	2
K07	770	30	7730	1034	7	280	7	590	11	5	29	2
K08	1550	27	4320	4824	8	300	2	1180	21	9	32	1
K09	710	31	8210	1184	7	270	7	620	5	9	29	2
K10	1260	27	2630	6161	27	220	7	1480	67	8	23	1
K11	1130	32	6570	3328	21	290	6	870	233	1	19	1

## \* TYPE MOSS GEOCHEM \*

(VALUES IN PPM )	U	V	ZN	GA	SN	W	CR	HG-PPB	AU-PPB
K01	2	75.6	187	2	1	1	51	245	2
K02	2	94.8	116	4	1	1	46	1200	4
K03	2	100.3	117	2	1	1	48	280	3
K04	1	106.4	116	1	1	1	47	165	1
K05	2	115.0	119	4	1	1	49	295	1
K06	2	124.6	246	1	1	1	46	205	1
K07	1	106.6	125	4	1	1	47	255	2
K08	2	62.0	166	1	1	1	44	125	1
K09	2	130.6	149	1	1	1	48	155	3
K10	1	236.9	1574	4	1	1	46	560	1
K11	2	137.7	1766	4	1	1	49	510	1

## \* TYPE PAN CONC. \*

(VALUES IN PPM )	AG	AL	AS	B	BA	BE	BI	CA	CD	CO	CU	FE
K01	.3	21140	7	8	42	.8	7	4490	.6	20	5	43290
K02	1.0	14840	17	5	30	.6	8	5950	.9	15	12	31450
K03	.7	17940	18	7	33	.9	9	6970	.8	17	11	38020
K04	.5	15910	22	6	30	.7	8	6470	.7	16	11	34120
K05	.4	17460	21	6	36	.8	9	8480	.7	16	12	34610
K06	.8	23950	25	13	76	.9	5	6670	.1	18	13	53480
K07	.3	17830	26	8	40	.9	9	7460	.8	16	12	38550
K08	.5	26550	43	10	48	.8	7	5460	.2	18	1	48720
K09	.4	19360	19	8	47	.7	9	6970	.8	16	10	37030
K10	.6	30980	50	10	71	.9	1	6520	4.1	17	15	40990
K11	.8	25300	3	10	45	.8	5	6820	3.0	20	23	50300

## \* TYPE PAN CONC. \*

(VALUES IN PPM )	K	LI	MG	MN	MO	NA	NI	P	PB	SB	SR	TH
K01	1140	34	9580	1899	9	660	8	560	10	6	33	1
K02	1090	29	8130	788	8	970	5	470	3	7	32	1
K03	1150	32	10170	1019	9	880	7	530	8	5	33	2
K04	1020	30	8880	871	8	760	1	490	4	5	32	1
K05	1300	31	9830	841	8	1010	2	520	5	6	39	1
K06	1380	34	11350	1496	7	670	4	970	10	11	39	1
K07	1150	31	9860	879	9	820	5	570	5	7	38	1
K08	1060	38	10610	1620	8	780	7	590	7	4	38	1
K09	1320	34	10950	1073	8	1080	4	580	4	5	38	1
K10	2560	41	6620	4166	51	830	2	930	76	11	35	1
K11	980	37	11140	1639	18	1090	7	780	199	5	30	1

## \* TYPE PAN CONC. \*

(VALUES IN PPM )	U	V	ZN	GA	SN	W	CR	HG-PPB	AU-PPB
K01	1	100.5	213	1	1	2	142	310	1
K02	1	81.6	134	1	1	4	186	1675	6
K03	1	99.7	165	1	2	1	133	210	9
K04	1	90.9	141	1	1	2	123	190	1
K05	1	91.0	146	1	1	1	137	315	2
K06	1	143.3	231	1	1	2	106	205	5
K07	1	106.5	149	1	2	1	124	285	1
K08	1	125.4	232	1	1	2	140	145	1
K09	1	100.1	187	1	1	2	138	185	12
K10	2	535.4	1577	2	1	3	180	430	1
K11	1	189.2	2472	2	1	1	175	575	2

