1992 REGIONAL GEOCHEMICAL SURVEY PROGRAM: REVIEW OF ACTIVITIES

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KEYWORDS: Regional Geochemical Survey, reconnaissance, multi-element, stream sediment, stream water, Mount Waddington, Taseko Lakes, Bonaparte Lake, Skagway, Yakutat, Tatshenshini, Hope, Ashcroft, Pemberton.

INTRODUCTION

During the past twelve months, the British Columbia Regional Geochemical Survey Program (RGS) has continued to develop, maintain and disseminate a comprehensive geochemical database. Additions to the RGS database have included results from reconnaissance-scale stream-sediment and water programs conducted in areas not previously surveyed and, as part of the RGS Archive Program, new analytical data for sediment pulps saved from RGS programs conducted prior to 1986. Currently, the database contains multi-element determinations for stream-sediment and water samples, field observations and sample location information for 39 000 sample site locations covering over 65 per cent of the province (Figure 4-1-1 and Table 4-1-1). The data are used in the exploration and development of the province's mineral resources, resource management and land-use planning, and environmental assessments.

Activities conducted during 1992 include:

- Publication of results from the 1991 RGS program conducted in the Mount Waddington (NTS 92N) map area.
- Publication of new analytical results from joint federal-provincial surveys originally conducted on map sheets Taseko Lakes (NTS 92O) and Bonaparte Lake (NTS 92P) during 1979.
- Completion of RGS programs conducted on map sheets Skagway (NTS 104M), Yakutat (NTS 114O) and Tatshenshini (NTS 114P).
- Preparation of RGS data packages presenting new analytical results from joint federal-provincial surveys previously conducted on map sheets Hope (NTS 92H), Ashcroft (NTS 92I) and Pemberton (NTS 92J).

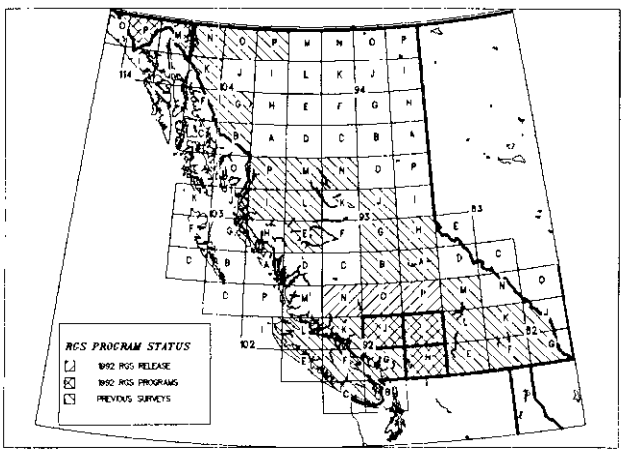

Figure 4-1-1. Current status of RGS program.

1992 RGS RELEASE – CENTRAL B.C. (92N, 92O, 92P)

Despite a recent decline in mineral exploration activity in British Columbia, the July 7 release of RGS Open File 34 – Mount Waddington (NTS 92N), RGS Open File 35 – Taseko Lakes (NTS 92O) and RGS Open File 36 – Bonaparte Lake (NTS 92P) received a positive response. Over 75 data packages have been distributed and several companies have actively pursued identified RGS anomalies.

The data packages present multi-element determinations for stream sediments and waters, field observations, sample location information, bedrock associations, statistics and data analyses for 2568 sample sites covering 15 000 square kilometres in central British Columbia. Results identified 38 sample sites with gold values exceeding 100 ppb and 57 sample sites listing copper values greater than 100 ppm (Jackaman *et al.*, 1992a, b, c).

A review of staking activity during the period of July to August found that 65 per cent of the 831 claim units recorded are directly associated with RGS anomalies. Table 4-1-2 lists the claim status of the top ten single-element gold anomalies, top ten single-element copper anomalies and the top ten multi-element base and precious metal anomalies located in the survey areas. Although RGS anomalies were staked immediately following the release, numerous areas with anomalous concentrations for both precious and base metal values remain open as of September 1. Field site visits have resulted in the discovery of mineralization in bedrock in several drainage basins with RGS anomalies (Sibbick and Delaney, 1993, this volume).

1992 RGS – NORTHWEST B.C. (104M, 114O, 114P)

As part of the Ministry of Energy, Mines and Petroleum Resources contribution to the Corporate Resource Inventory Initiative (CRII), a reconnaissance-scale stream-sediment and water survey was conducted in northwestern British Columbia. The objective of the 1992 RGS program is to provide a geochemical database which will assist in the evaluation of the mineral potential of this relatively unexplored region.

Sample Collection

McElhanney Engineering Services Limited (Surrey) was selected by competitive bid to collect stream-sediment samples, stream-water samples and field observations in the

TABLE 4-1-1
SUMMARY OF RGS DATABASE

MAP	RGS OF	GSC OF	COLLECTION YEAR	SITES	ROUTINE SUITE	ADDITIONAL ANALYSES	RELEASE YEAR	INAA	RELEASE YEAR
82E	RGS 29	OF 409	1976	1545	•		1977	•	1991
82F	RGS 30	OF 514	1977	1318	•	Sn,Hg	1978	•	1991
82G	RGS 27		1990	924	•	Sn,W,Hg,As,Sb,Cd,V,LOI,F,Bi,Cr	1991	•	1991
82J	RGS 28		1990	588	•	Sn,W,Hg,As,Sb,Cd,V,LOI,F,Bi,Cr	1991	•	1991
82K	RGS 31	OF 515	1977	1225	•	Sn,W,Hg	1978	•	1991
82L	RGS 32	OF 410	1976	1309	•		1977	•	1991
82M	RGS 33	OF 516	1977	1151	•	Hg	1978	•	1991
92B/C	RGS 24	OF 2182	1989	599	•	Sn,W,Hg,As,Sb,Cd,V,LOI,F,Bi,Cr,Au	1990		
92E	RGS 21	OF 2038	1988	386	•	Sn,W,Hg,As,Sb,Ba,Cd,V,LOI,F,Bi,Cr,Au	1989		
92F	RGS 25	OF 2183	1989	909	•	Sn,W,Hg,As,Sb,Cd,V,LOI,F,Bi,Cr,Au	1990		
92G	RGS 26	OF 2184	1989	855	•	Sn,W,Hg,As,Sb,Cd,V,LOI,F,Bi,Cr,Au	1990		
92H	RGS 07	OF 865	1981	941	•	Hg,W,As,Sb	1982	•	1993
92I	RGS 08	OF 866	1981	572	•	Hg,W,As,Sb	1982	•	1993
92J	RGS 09	OF 867	1981	805	•	Hg,W,As,Sb	1982	•	1993
92K	RGS 22	OF 2039	1988	1216	•	Sn,W,Hg,As,Sb,Ba,Cd,V,LOI,F,Bi,Cr,Au	1989		
92L/102I	RGS 23	OF 2040	1988	1144	•	Sn,Hg,W,As,Sb,Ba,Cd,V,LOI,F,Bi,Cr,Au	1989		
92N	RGS 34		1991	868	•	Sn,W,Hg,As,Sb,Cd,V,LOI,F,Bi,Cr,SO4	1992	•	1992
92O	RGS 35		1979	935	•	Hg,W,As	1980	•	1992
92P	RGS 36		1979	913	•	Hg,W,As	1980	•	1992
93A	RGS 05	OF 776	1980	1226	•	Hg,W,As,Sb	1980	•	FUTURE
93B	RGS 06	OF 777	1980	715	•	Hg,W,As,Sb	1980	•	FUTURE
93E	RGS 16	OF 1360	1986	1112	•	Hg,W,As,Sb,Ba,Cd,LOI,Au	1987		
93G	RGS 13	OF 1214	1984/85	1095	•	Sn,W,Hg,As,Sb,Ba,Cd,V,LOI	1986	•	FUTURE
93H	RGS 14	OF 1215	1984/85	1119	•	Sn,W,Hg,As,Sb,Ba,Cd,V,LOI	1986	•	FUTURE
93J	RGS 15	OF 1216	1985	1088	•	Sn,W,Hg,As,Sb,Ba,Cd,V,LOI	1986	•	FUTURE
93L	RGS 17	OF 1361	1986	1093	•	Sn,W,Hg,As,Sb,Ba,Cd,V,LOI,F,Au	1987		
93M	RGS 10	OF 1000	1983	1035	•	Hg,W,As,Sb	1984	•	FUTURE
93N	RGS 11	OF 1001	1983	1061	•	Hg,W,As,Sb	1984	•	FUTURE
103I/J	RGS 01	OF 772	1978	2216	•	Hg,W,AS	1979	•	FUTURE
103O/P	RGS 02	OF 773	1978	1784	•	Hg,W,AS	1979	•	FUTURE
104B	RGS 18	OF 1645	1987	661	•	Sn,W,Hg,As,Sb,Ba,Cd,V,LOI,F,Bi,Cr,Au	1988		
104F/G	RGS 19	OF 1646	1987	1218	•	Sn,W,Hg,As,Sb,Ba,Cd,V,LOI,F,Bi,Cr,Au	1988		
104K	RGS 20	OF 1647	1987	847	•	Sn,W,Hg,As,Sb,Ba,Cd,V,LOI,F,Bi,Cr,Au	1988		
104M			1992	748	•	Hg,As,Sb,Cd,V,LOI,F,Bi,SO4	1993	•	1993
104N	NGR 28	OF 517	1977	885	•	Sn,W,Hg	1978	•	FUTURE
104O	NGR 41	OF 561	1978	892	•		1979	•	FUTURE
104P	NGR 42	OF 562	1978	802	•		1979		FUTURE
104M	NGR 42	OF 562	1978	802	•		1979	•	FUTURE
114O/P			1992	1069	•	Hg,As,Sb,Cd,V,LOI,F,Bi,SO4	1993	•	1993

ROUTINE SEDIMENT ANALYTICAL SUITE : Zn, Cu, Pb, Ni, Co, Ag, Mn, Fe, Mo, U
ROUTINE WATER ANALYTICAL SUITE : U, F, pH
INAA SEDIMENT ANALYTICAL SUITE : Au, Sb, As, Ba, Br, Ce, Cs, Cr, Co, Hf, Fe, La, Lu, Mo, Ni, Rb, Sm, Sc, Na, Ta, Tb, Th, W, U, Yb, Zr

areas surveyed. Base camps and sample processing facilities were set up in Atlin, British Columbia and at the Government of Yukon highways maintenance camp located on the Haines Highway. Crews, stationed at each camp included a pilot, two samplers and a camp manager responsible for cataloguing and field processing of the samples. Helicopter support was provided by Trans North Air Limited and Vancouver Island Helicopters Limited. The program commenced on July 27 with the mobilization of crews to the base camps and was completed on August 22 with the delivery of the samples to a laboratory in Burnaby. Ministry representation by the author was maintained throughout the program to ensure all aspects of the sample collection, data recording, sample drying, packing and shipping were in accordance with standards set by the National Geochemical Reconnaissance Program.

A total of 1924 stream-sediment and stream-water samples were systematically collected from 1817 sample sites. Field-site duplicate samples were routinely collected at 107 sites. The survey covered an area of approximately 16 500 square kilometres at an average density of one sample site every 9.5 square kilometres. The program also included the

TABLE 4-1-2
TOP RGS ANOMALIES FOR MAP SHEETS 92N, 92O AND 92P

		Au	STATUS				Cu	STATUS				Au-Sb-As-Hg-Ag	STATUS				Cu-Pb-Zn-Ag	STATUS	
MAP	ID	(ppb)	June	Sept	MAP	ID	(ppm)	June	Sept	MAP	ID	(anomaly rating*)	June	Sept	MAP	ID	(anomaly rating*)	June	Sept
92N14	917034	3130	staked	staked	92N11	915315	471	open	open	92N05	915125	9	open	staked	92N12	911229	9	open	staked
92N13	915220	557	open	staked	92N14	913100	330	open	staked	92N10	915307	9	open	open	92N05	915125	9	open	staked
92N10	913024	407	open	open	92N06	911157	325	staked	staked	92N01	913028	8	open	open	92N12	915253	9	open	staked
92N08	913190	375	open	open	92N10	817133	289	open	open	92N14	913085	7	staked	staked	92N10	913008	8	open	open
92N08	913137	353	open	open	92N05	915133	285	open	open	92N08	913137	7	open	open	92N14	913100	8	open	staked
92N10	913057	296	staked	staked	92N10	913008	236	open	open	92N15	911279	7	open	open	92N10	917133	8	staked	staked
92N16	917018	164	open	open	92N14	913085	225	staked	staked	92N01	913026	7	open	open	92N11	915315	8	open	open
92N05	911078	164	open	open	92N11	911244	176	open	open	92N08	913130	6	staked	staked	92N11	915280	7	open	staked
92N10	911014	130	staked	staked	92N14	917038	170	open	open	92N10	917025	6	open	open	92N05	915124	6	open	staked
92N05	915122	120	open	open	92N14	917036	146	staked	staked	92N14	917034	6	staked	staked	92N08	913131	6	open	open
92O02	795362	588	staked	staked	92O03	793134	1100	staked	staked	92O03	793135	15	staked	staked	92O03	793136	9	staked	staked
92O02	795400	484	open	open	92O03	795297	675	staked	staked	92O03	793137	14	staked	staked	92O03	795194	9	staked	staked
92O16	795414	369	open	open	92O02	793054	400	staked	staked	92O01	795695	12	staked	staked	92O03	793135	8	staked	staked
92O13	795024	357	staked	staked	92O02	793055	390	staked	staked	92O06	795305	12	staked	staked	92O03	793137	8	staked	staked
92O07	795311	337	open	staked	92O03	795287	310	staked	staked	92O03	793136	11	staked	staked	92O03	795288	8	staked	staked
92O15	795430	319	open	open	92O03	795464	240	staked	staked	92O01	791008	10	open	open	92O03	795502	8	staked	staked
92O05	795071	293	open	open	92O03	795285	240	staked	staked	92O11	795045	10	staked	staked	92O06	795306	8	staked	staked
92O15	795431	277	open	open	92O03	795465	230	staked	staked	92O02	793055	10	staked	staked	92O03	795499	8	staked	staked
92O05	795135	276	open	open	92O01	795695	210	staked	staked	92O07	795395	9	open	open	92O03	795388	7	staked	staked
92O05	793147	269	staked	staked	92O01	795696	210	staked	staked	92O01	795646	9	staked	staked	92O03	795389	7	staked	staked
92P01	795319	251	staked	staked	92P08	793300	200	open	open	92P08	795278	10	staked	staked	92P01	795310	11	reserve	reserve
92P08	791189	247	staked	staked	92P09	791132	182	staked	staked	92P09	795111	10	staked	staked	92P08	795291	10	open	open
92P01	791212	222	staked	staked	92P08	795278	178	staked	staked	92P07	791119	9	open	open	92P01	791234	9	staked	staked
92P01	795318	200	staked	staked	92P09	791131	174	staked	staked	92P09	791132	9	staked	staked	92P08	795278	9	staked	staked
92P01	791214	190	staked	staked	92P09	795111	166	staked	staked	92P08	795333	9	staked	staked	92P16	793192	9	staked	staked
92P08	791148	140	open	open	92P09	795118	166	staked	staked	92P08	791148	9	open	open	92P08	795296	9	open	open
92P09	795111	130	staked	staked	92P09	795269	156	open	open	92P08	795283	9	staked	staked	92P16	793216	9	open	open
92P08	791166	130	open	open	92P01	791213	154	staked	staked	92P08	791120	8	open	open	92P09	795118	9	staked	staked
92P14	795013	120	open	open	92P01	795318	146	staked	staked	92P01	791234	8	staked	staked	92P09	791132	8	staked	staked
92P08	791126	120	open	staked	92P06	795084	144	staked	staked	92P09	791154	8	staked	staked	92P16	793128	8	park	park

(*after Jackaman *et al.*, 1992a,b,c)

collection of 40 stream-sediment and water samples in Atlin Provincial Park and Recreation Area. Ninty-eight per cent of the sample sites were accessed by helicopter and the remaining 2 per cent by truck.

The majority of primary and secondary drainage basins having catchment areas of less than 10 square kilometres were sampled. At each site samples weighing 1 to 2 kilograms were collected within the active (subject to flooding) stream channel and placed in kraft-paper bags. Unfiltered water samples free of suspended material were collected in 250-millilitre bottles. Field observations regarding sample media, sample site and local terrain were recorded and, to assist follow-up, aluminum tags inscribed with a unique RGS sample identification number were fixed to permanent objects, when available, at each site.

Stream-sediment samples were primarily composed of fine-grained material mixed with varying amounts of coarse sand and gravel, glacial sediments and organic material. Changes in sample composition often reflected physiographic variations in the survey area. Primary physiographic zones in northwest British Columbia include the St. Elias Mountains, the Coast Mountains and the Tagish Highlands (Holland, 1976). Most of the survey area is characterized by extremely rugged mountains largely covered with glaciers and snowfields. Creeks in these areas tend to be fast flowing and are often charged with sediments from melting glaciers. To minimize the glacial flour component of samples collected from glacial streams the coarser grained material below the surface layer was sampled. In contrast, the Tagish Highland is a relatively smooth, gently sloping upland. Creeks in this region flow much slower and samples contain a slightly higher amount of organic material.

Field Sample Preparation

Field sample preparation involved the drying and processing of sediment samples at facilities established at each of the field camps. Sediment samples were dried at a temperature range of 30°C to 50°C. All sediment material finer than 1 millimetre was recovered by sieving each of the dried samples through a -18 mesh ASTM screen. Assessment of sediment samples for quality and content of fine-grained sediment resulted in a total of 10 sediment-samples being rejected due to insufficient quantity of fine-grained material or unacceptable sample composition.

Laboratory Sample Preparation

Field-processed sediment and water samples were shipped to Rossbacher Laboratory Limited (Burnaby) for final preparation for analysis. Sediment samples were further sieved to -80 mesh ASTM fraction and analytical

TABLE 4-1-3
SUMMARY OF ANALYTICAL DETERMINATION METHODS

ELEMENT	DETECTION LIMITS	SAMPLE WEIGHT	DIGESTION TECHNIQUE	DETERMINATION METHOD
Gold (Au)	1 ppb	10 g	fire assay fusion	atomic absorption spectrophotometry after degestion of doré bead by aqua regia
Cadmium (Cd)	0.2 ppm	1 g	3 mL HNO_3 let sit overnight, add 1 mL HCl in 90°C water bath, for 2 hrs. cool, add 2 mL H_2O, wait 2 hrs.	atomic absorption spectrophotometry using air-acetylene burner and standard solutions for calibration, background corrections made for Pb, Ni, Co, Ag, Cd
Cobalt (Co)	2 ppm			
Copper (Cu)	2 ppm			
Iron (Fe)	0.02 %			
Lead (Pb)	2 ppm			
Manganese (Mn)	5 ppm			
Nickel (Ni)	2 ppm			
Silver (Ag)	0.2 ppm			
Zinc (Zn)	2 ppm			
Molybdenum (Mo)	1 ppm	0.5 g	Al added to above solution	
Barium (Ba)	10 ppm	1 g	HNO_3 - HCl - HF taken to dryness, hot HCl added to leach residue	
Vanadium (V)	5 ppm			
Chromium (Cr)	5 ppm			
Bismuth (Bi)	0.2 ppm	2 g	HCl - $KClO_2$ digestion, KI added to reduce Fe, MIBK and TOPO for extraction	organic layer analyzed by atomic absorption spectrophotometry with background correction
Antimony (Sb)	0.2 ppm			
Tin (Sn)	1 ppm	1 g	sintered with NH_4I, HCl and ascorbic acid leach	atomic absorption spectrophotometry
Arsenic (As)	1 ppm	0.5 g	add 2 mL KI and dilute HCl to 0.8M HNO_3 and 0.2M HCl	2 mL borohydride solution added to produce AsH_3 gas which is passed through heated quartz tube in the light path of atomic absorption spectrophotometer
Mercury (Hg)	10 ppb	0.5 g	20 mL HNO_3 and 1 mL HCl	10% stannous sulphate added to evolve mercury vapour, determined by atomic absorption spectrometry
Tungsten (W)	1 ppm	0.5 g	K_2SO_4 fusion, HCl leach	colorimetric: reduced tungsten complexed with toluene 3, 4 dithiol
Fluorine (F)	40 ppm	0.25 g	$NaCO_3$ - KNO_3 fusion, H_2O leach	citric acid added and diluted with water, fluorine determined with specific ion electrode
Uranium (U)	0.5 ppm	1 g	nil	neutron activation with delayed neutron counting
LOI	0.1 %	0.5 g	ash sample at 500°C	weight difference measured
pH - water	0.1	25 mL	nil	glass - calomel electrode system
Uranium - water	0.05 ppb	5 mL	add 0.5 mL Fluran solution	place in Scintrex UA-3
Fluoride - water	20 ppb	25 mL	nil	fluorine measured by an ion spedific electrode
Sulphate - water	1 ppm	50 mL	add 0.3 mL of Sulfaver reagent	turbididty measured by spectrometer absorption cell

duplicate samples and control reference materials were inserted into each analytical block of 20 sediment samples. In addition, a quantity of −80 mesh material and a representative sample of the +80 to −18 mesh fraction was archived for future studies. Control reference water standards were inserted into each analytical block of 20 water samples.

ANALYTICAL PROCEDURES

Sediment samples will be analyzed for cadmium, cobalt, copper, iron, lead, manganese, nickel, silver, zinc, molybdenum, vanadium, bismuth, antimony, arsenic, mercury, fluorine and loss on ignition. Water samples will be analyzed for pH, uranium, fluoride and sulphate. Table 4-1-3 details the determination methods and detection limits for the 1992 analytical suite of elements as well as element determinations utilized during previous RGS analytical programs. A 10-gram subsample will also be analyzed by instrumental neutron activation analysis (INAA). Elements determined by INAA are listed in Table 4-1-4.

Analytical results for field-site duplicates, analytical duplicates and control reference materials within each analytical block of 20 samples are closely monitored and evaluated. Blocks of 20 samples containing quality control samples which fail to satisfy established guidelines for precision and accuracy are re-analyzed.

TABLE 4-1-4
ELEMENTS ANALYZED BY INAA

ELEMENT	DETECTION LIMIT	ELEMENT	DETECTION LIMIT
Gold (Au)	2 ppb	Molybdenum (Mo)	1 ppm
Antimony (Sb)	0.1 ppm	Nickel (Ni)	10 ppm
Arsenic (As)	0.5 ppm	Rubidium (Rb)	5 ppm
Barium (Ba)	100 ppm	Samarium (Sm)	0.5 ppm
Bromine (Br)	0.5 ppm	Scandium (Sc)	0.5 ppm
Cerium (Ce)	10 ppm	Sodium (Na)	0.1 %
Cesium (Cs)	0.5 ppm	Tantalum (Ta)	0.5 ppm
Chromium (Cr)	5 ppm	Terbium (Tb)	0.5 ppm
Cobalt (Co)	5 ppm	Thorium (Th)	0.5 ppm
Hafnium (Hf)	1 ppm	Tungsten (W)	2 ppm
Iron (Fe)	0.2 %	Uranium (U)	0.2 ppm
Lanthanum (La)	5 ppm	Ytterbium (Yb)	2 ppm
Lutetium (Lu)	0.2 ppm	Zirconium (Zr)	200 ppm

RGS ARCHIVE PROGRAM – SOUTHERN B.C. (92H, 92I, 92J)

The RGS Archive Program involved the analysis by INAA of stream-sediment samples collected during joint federal-provincial surveys conducted prior to 1986. Samples weighing an average of 20 grams were analyzed for gold and other previously undetermined elements (Table 4-1-4). To date, 24 000 samples from nineteen 1:250 000-scale map sheet areas have been analyzed. The publication of this important data was initiated in 1991 with the release of five RGS data packages covering southeastern British Columbia. During 1992, results for map sheets 92O and 92P were published. Map sheets 92H, 92I and 92J are now scheduled for release in the spring of 1993. Future release areas are listed in Table 4-1-1. Data packages published as part of the RGS Archive Program include the new analytical data as determined by INAA, together with the original sample-site information and analytical results. The publication of these packages supersedes all previous reports.

RGS OPEN FILE FORMAT

RGS Open File data packages include a data booklet and a 1:500 000-scale map booklet. The data booklet presents survey details, data listings, summary statistics and data interpretations. The map booklet contains sample location maps, bedrock and surficial geology maps, symbol and value maps for each element, and multi-element anomaly maps. Also included in each package are 1:500 000-scale sample location maps and 1:500 000-scale clear overlays showing sample locations and bedrock geology. Raw data are provided as ASCII files on 5.25-inch high-density diskettes.

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REFERENCES

Holland, S.S. (1976): Landforms of British Columbia, A Physiographic Outline; *B.C. Ministry of Energy, Mines and Petroleum Resources*, Bulletin 48.

Jackaman, W., Matysek, P.F. and Cook, S.J. (1992a): British Columbia Regional Geochemical Survey – Mount Waddington (NTS 92N); *B.C. Ministry of Energy, Mines and Petroleum Resources*, BC RGS 34.

Jackaman, W., Matysek, P.F. and Cook, S.J. (1992b): British Columbia Regional Geochemical Survey – Taseko Lakes (NTS 92O); *B.C. Ministry of Energy, Mines and Petroleum Resources*, BC RGS 35.

Jackaman, W., Matysek, P.F. and Cook, S.J. (1992c): British Columbia Regional Geochemical Survey – Bonaparte Lake (NTS 92P); *B.C. Ministry of Energy, Mines and Petroleum Resources*, BC RGS 36.

Sibbick, S.J. and Delaney, T.A. (1993): Investigation of RGS Anomalies in South-central British Columbia (92N, O, P); *in* Geological Fieldwork 1992, Grant, B. and Newell, J.M., Editors, *B.C. Ministry of Energy, Mines and Petroleum Resources*, Paper 1993-1, this volume.

NOTES