



Legend

Stratified Rocks

Devonian and (?) Older

Layered Gneiss, Quartzite,
Metasiltstone, Mafic to Felsic
Metavolcanics

Igneous Rocks

Early Tertiary

Granodiorite

Late Cretaceous to Paleocene

Quartz Diorite

Mid-Cretaceous

Quartz Diorite to
Granodiorite

Quartz Diorite to Quartz
Monzonite

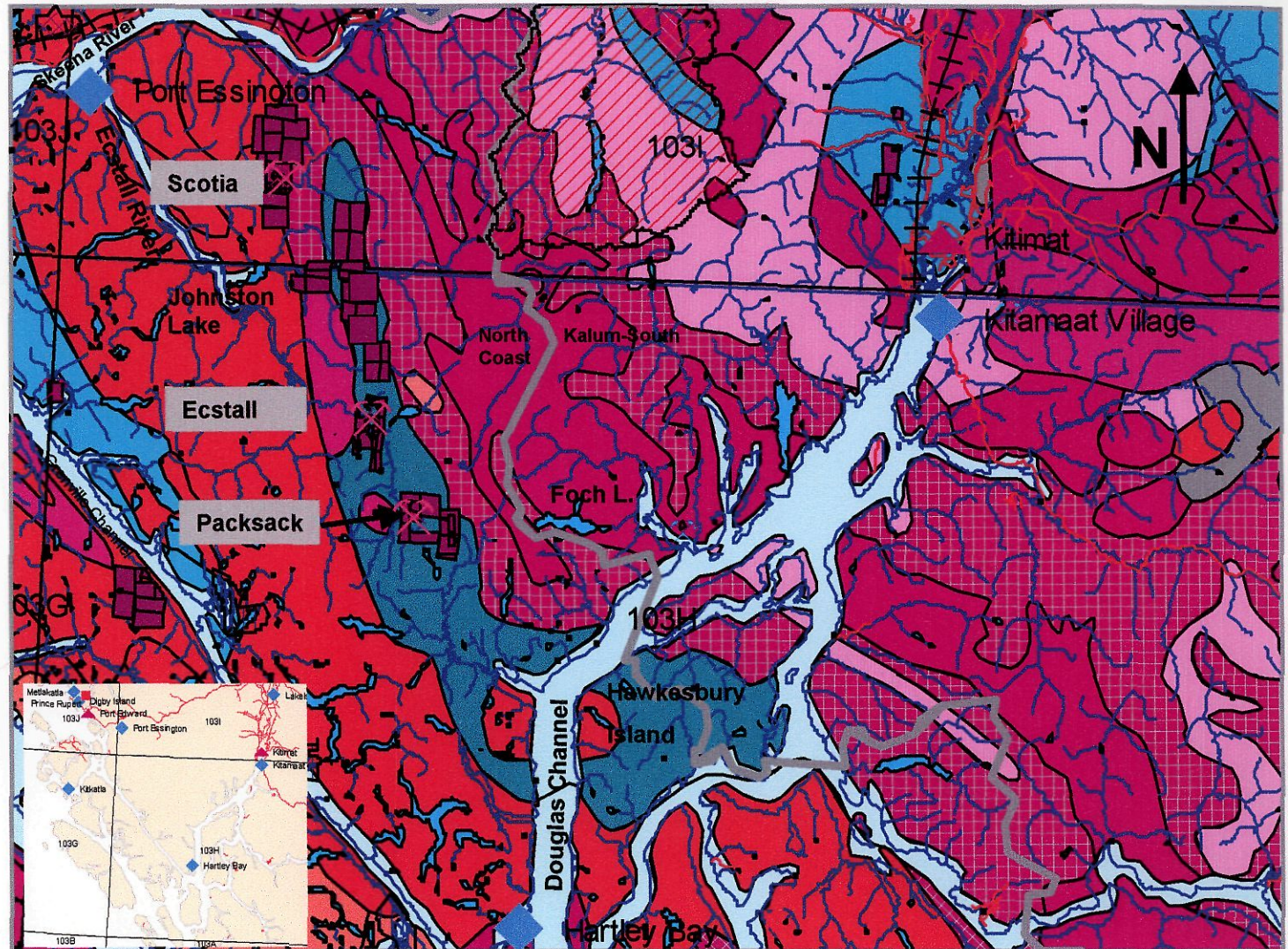
Symbols

- Developed Prospect
- Showings
- LRMP Outline
- Park
- Railroad
- Roads
- Mineral Claims

Selected Sources of Information

- GSB Open File 2001-13 (01/06/01)
- - RGS (103H & I): Ecstall Greenstone Belt
- Alldrick and Gallagher, Geo. Fldwk 1999
- Alldrick, Geo. Fldwk 2000
- Gareau, PhD. Thesis, Carleton U. (1991)
- The MapPlace [<http://www.em.gov.bc.ca/Mining/Geosurv/MapPlace/>]
- Vancouver Mineral Development Office

ECSTALL GREENSTONE BELT



0 8 Km

May 29, 2001
MD/TS

Cattermole, Christy EM:EX

From: Grant, Brian EM:EX
Sent: Tuesday, April 24, 2001 3:36 PM
To: Grant, Brian EM:EX
Subject: FW: NEW Releases of BC geochem data for Quesnel and Ecstall Greenstone Belt

Release to be posted April 25, 2001

*British Columbia Ministry of Energy & Mines
Geological Survey Branch
Release Notification 2001-6
April 24, 2001*

Release Date: May 24 at 1:30 pm

**NEW Geochemical Data - Quesnel (NTS 93B)
BC RGS 54**

Price: \$50.00 - hardcopy \$10.00 - digital data package

New analytical data for gold and 25 other metals in stream sediments will be published and released on May 24th, 2001. This previously unavailable INAA data plus original field and analytical results has been compiled into hardcopy and digital data packages. Conducted in 1980, the Quesnel (NTS 93B) reconnaissance-scale stream sediment and water survey included a total of 757 sediment samples and 750 water samples collected from 715 sites over a 14 000 square kilometre area.

TIME: May 24, 2001 at 1:30 p.m.

PLACE: Gov't Agent Office, Quesnel
Ministry Office, Vancouver
Crown Publications, Victoria

Release Date: June 1 at 12:00 pm

Stream Sediment and Water Geochemistry of the Ecstall Greenstone Belt

Open File 2001-13

Price \$25.00

Results of a new stream sediment and water survey conducted over the Ecstall Greenstone Belt between the Skeena River and Douglas Channel (parts of NTS 103H and I) will be released June 1st, 2001. Samples were collected from 228 sites covering over 1800 square kilometres. Sediment samples were analysed by INAA and ICP for base and precious metals, pathfinder and rare earth elements. Water samples were analysed for pH, uranium, fluoride and sulphate. This belt has high potential for the discovery of new VMS mineralization

TIME: June 1, 2001 at 12:00 p.m.

PLACE: Minerals North, Terrace
Ministry Office, Vancouver
Crown Publications, Victoria

For Pre-orders or more information on these products contact:

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Ministry of Energy and Mines
Energy and Minerals Division
Geological Survey Branch

Stream Sediment and Water Geochemistry of the Ecstall Greenstone Belt

NTS 103H/103I

Wayne Jackaman



Open File 2001-13

Release Date: June 1/01 Noon

INTRODUCTION

Open File 2001-13 presents new field and analytical data from a reconnaissance-scale stream sediment and water geochemical survey (Figure 1) conducted by the British Columbia Geological Survey Branch in the Ecstall Greenstone Belt during 2000. Results for **over 48 different metals** in stream sediments and pH, uranium, fluoride and sulphate in stream waters are included in this report. The survey covers parts of **eight 1:50,000 NTS map sheets** in the **Douglas Channel (NTS 103H)** and the **Terrace (NTS 103I)** areas. A total of **228 sites** were sampled over a combined area of approximately 1800 square kilometres at an average density of **1 site per 7 square kilometres**. Details on the geology and mineral potential of the Ecstall Greenstone Belt are described by Alldrick (2001).

Sample collection, preparation and analytical procedures conform to standards established by the National Geochemical Reconnaissance (NGR) as described by Ballantyne (1991). Analytical results and field observations compiled by the RGS program in British Columbia are used in the development of a high-quality geochemical database suitable for mineral exploration, resource assessment, geological mapping and environmental studies. Funded under the government's Corporate Resource Inventory Initiative (CRII), this survey is part of the Ministry of Energy and Mines' contribution to the North Coast Land Resource Planning process.

REPORT FORMAT

This report is divided into the following sections:

- Introduction and survey methodology.
- Listings of field observations and analytical data (Appendix A).
- Summary statistics (Appendix B).
- Sample location, geology and element maps (Appendix C).
- Analytical and field data are included on diskette in comma-delimited format.

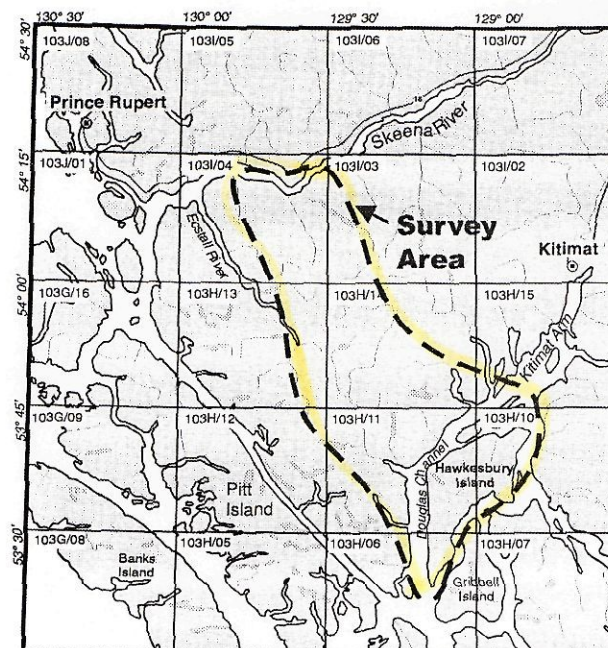


Figure 1. Location map of the Ecstall Greenstone Belt survey area

SURVEY METHODOLOGY

SAMPLE COLLECTION

Helicopter and boat supported sample collection was carried out during the period August 20 to August 26, 2000. A total of 242 drainage sediment and 241 stream water samples were systematically collected from 228 sites. Average sample site density was 1 site per 7 square kilometres over the 1,800 square kilometre survey area. Field duplicate samples (14 total pairs) were routinely collected in each analytical block of twenty samples.

Stream sediment samples weighing 1 to 2 kilograms were obtained from the active (subject to annual flooding) stream channel and placed in kraft paper bags. Samples were primarily composed of fine-grained sediment mixed with

Fluoride was determined by ion selective electrode (ION). A 20 millilitre aliquot of the sample was mixed with 20 millilitres of TISAB II (total ionic strength adjustment buffer) buffer solution. Fluoride was determined with an Orion fluoride electrode in conjunction with a Corning ion meter.

Sulphate was determined by a turbidimetric method (TURB). A 50 millilitre aliquot was mixed with barium chloride and an isopropyl alcohol-HCl-NaCl reagent, and turbidity of the resulting barium sulphate solution measured with a spectrophotometer at 420 nanometres.

PRELIMINARY DATA INTERPRETATION

The following data interpretation is of a preliminary nature only and should not be considered exhaustive. Discussions on the distribution and abundance of copper, lead, zinc, silver and gold are intended to highlight geochemical anomalies that may be of interest to mineral explorationists targeting VMS mineralization as described by Höy (1995). The geology and mineral deposits of the Ecstall Greenstone Belt mentioned in this open file are described in detail by Alldrick (2001).

The Ecstall Belt currently hosts a total of 36 sulphide mineral occurrences (Map 2). Developed prospects Scotia (MINFILE 1031 007), Ecstall (MINFILE 103H 011) and Packsack (MINFILE 103H 013) are the main sulphide deposits located in the belt and have combined reserves of 10,818,539 tonnes grading 0.5% Cu, 0.05% Pb, 2.1% Zn, 20.8 g/T Ag and 0.4 g/T Au.

Table 2. Geochemical signature for sediment samples collected downstream of known mineral occurrences.

MINFILE				Cu (ppm)	Pb (ppm)	Zn (ppm)	Ag (ppb)	Au (ppb)
Name	Map	ID	Rep	ICP	ICP	ICP	ICP	ICP
Ecstall	103H13	9106	10	125.99	14.07	139.8	304	10
Ecstall	103H13	9107	20	125.00	11.30	158.1	240	7
Strike	103H11	9145	00	74.96	11.88	88.7	99	5
Horsefly	103H14	9150	00	70.88	6.61	69.0	102	92
Ravine	103H14	9174	00	54.31	6.00	104.4	141	2
Steelhead	103H11	9179	00	90.71	3.98	117.2	167	22
Scotia	103I04	9038	00	21.33	9.57	80.1	48	2

The geochemical signature for sediment samples collected downstream from a selection of known mineral occurrences are listed in Table 2. For comparison, summary statistics for the total Ecstall Belt data set and the total RGS data set for copper, lead, zinc, silver and gold in stream sediments are provided in Table 3.

Results show that the samples collected downstream of known occurrences are anomalous in one or more of the listed metals relative to the Ecstall data set and in some cases the total RGS database. Samples 9106/07 collected downstream of the Ecstall deposit are characterized by enhanced concentrations (greater than the 98th percentile) for copper, lead, zinc and silver. Downstream from the Strike occurrence, sample 9145 lists a lead value greater than the 98th percentile and copper and zinc values above the 90th percentile. Sample 9150, collected below the Horsefly (MINFILE 103H 014) showing produced the survey's highest gold value of 92 ppb.

Table 3. Summary statistics for total Ecstall Belt stream sediment data set and the total provincial RGS data set.

	Ecstall Data Set					RGS Data Set				
	Cu ppm ICP	Pb ppm ICP	Zn ppm ICP	Ag ppb ICP	Au ppb INA	Cu ppm AAS	Pb ppm AAS	Zn ppm AAS	Ag ppm AAS	Au ppb INA
N	228	228	228	228	228	41845	41842	41845	41840	27821
Mean	33.93	3.66	51.85	73.0	5.1	36.1	9.3	80.1	0.16	9.4
Med	27.49	2.94	45.70	48.0	2.0	25.0	5.0	61.0	0.10	2.0
SD	28.52	3.19	27.84	117.13	11.04	63.92	105.82	451.58	0.36	46.85
Min	2.12	0.76	12.4	10	2	1	1	1	0.1	2
90 th %	71.01	6.15	83.8	132	7	68	16	126	0.2	14
95 th %	85.13	8.68	103.2	218	26	95	23	165	0.3	26
98 th %	104.92	11.88	139.8	287	37	138	39	250	0.6	64
Max	226.26	27.18	187.9	1563	92	7100	20000	88000	39.0	3530

Table 4 provides the mean and median concentrations calculated for samples underlain by the various stratified and igneous rocks found in the Ecstall Belt (Alldrick, 2001). As expected, element concentrations for samples underlain by the Ecstall Batholith (KEG), Big Falls Tonalite (DBO) and the Johnston Lake-Foch Lake Tonalite (JFO) are generally lower for the listed metals. Samples underlain by metavolcanic rocks of the Big Falls Igneous Complex (PV), layered gneiss (PN) and metasedimentary rocks of the Big Falls Igneous Complex (PQ) tend to have higher concentrations.

Summary Statistics

Variable	Al	Sb	As	Ba	Bi	B	Cd	Ca	Cr	Co	Cu	Ga	Au	Fe	La	Pb	Mg	Mn	Hg
Units	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppb	%	ppm	ppm	%	ppm	ppb
D.L.	0.01	0.02	0.1	0.5	0.02	1	0.01	0.01	0.5	0.1	0.01	0.2	0.2	0.01	0.5	0.01	0.01	1	5
Anal Mth	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP
N	228	228	228	228	228	228	228	228	228	228	228	228	228	228	228	228	228	228	228
N > DL	228	148	210	228	174	58	228	228	228	228	228	228	198	228	228	228	228	228	217
Missing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mean	1.16	0.05	1.41	137.01	0.06	1.4	0.14	0.52	24.75	10.16	33.93	4.27	2.17	2.06	3.77	3.66	0.71	379.6	22.1
Median	1.06	0.03	0.80	115.60	0.04	1.0	0.07	0.51	22.10	9.00	27.49	4.10	0.90	1.98	3.00	2.94	0.66	338.0	17.0
Mode	0.97	0.02	0.60	48.80	0.02	1.0	0.03	0.57	25.20	7.50	28.36	2.80	0.20	2.10	1.50	1.57	0.52	176.0	13.0
Range	3.29	1.65	18.7	463.0	0.63	5	1.98	2.12	114.5	143.6	224.14	8.4	74.9	5.20	14.6	26.42	2.16	4701	201
St Dev	0.46	0.12	2.03	85.38	0.08	0.80	0.20	0.26	16.14	10.07	28.52	1.39	6.46	0.74	2.53	3.19	0.31	341.56	19.51
Coef Var	0.398	2.170	1.444	0.623	1.303	0.581	1.481	0.490	0.652	0.991	0.840	0.325	2.977	0.360	0.671	0.870	0.431	0.900	0.865
Log Mean	0.031	-1.426	-0.105	2.056	-1.355	0.095	-1.091	-0.332	1.304	0.934	1.394	0.608	-0.023	0.287	0.488	0.470	-0.190	2.512	1.246
Geo Mean	1.07	0.04	0.79	113.71	0.04	1.2	0.08	0.47	20.13	8.60	24.76	4.06	0.95	1.94	3.08	2.95	0.65	325.0	17.6
Log StDv	0.171	0.290	0.467	0.274	0.302	0.175	0.403	0.211	0.295	0.237	0.366	0.139	0.466	0.158	0.281	0.266	0.196	0.225	0.277
Log CVar	5.709	-0.204	-4.488	0.134	-0.223	1.861	-0.370	-0.636	0.226	0.254	0.262	0.229	-20.267	0.550	0.575	0.567	-1.036	0.090	0.222
Percentls																			
Minimum	0.36	0.02	0.1	12.5	0.02	1	0.02	0.10	1.7	1.7	2.12	1.7	0.2	0.49	0.6	0.76	0.14	92	5
10th	0.63	0.02	0.2	50.4	0.02	1	0.03	0.25	7.9	4.2	6.94	2.7	0.2	1.21	1.4	1.36	0.38	163	8
20th	0.78	0.02	0.3	69.9	0.02	1	0.04	0.31	12.2	5.9	12.68	3.1	0.4	1.51	1.7	1.72	0.46	213	10
30th	0.90	0.02	0.5	80.6	0.03	1	0.04	0.36	15.4	7.0	18.40	3.4	0.5	1.65	2.1	2.14	0.52	248	13
40th	0.98	0.03	0.6	99.2	0.03	1	0.05	0.42	19.0	7.8	22.44	3.7	0.7	1.81	2.7	2.56	0.60	296	15
50th	1.06	0.03	0.8	115.6	0.04	1	0.07	0.51	22.1	9.0	27.49	4.1	0.9	1.98	3.0	2.94	0.66	338	17
60th	1.21	0.04	1.0	140.5	0.05	1	0.09	0.56	24.7	10.0	32.49	4.5	1.2	2.14	3.8	3.24	0.74	381	20
70th	1.35	0.05	1.4	160.5	0.06	1	0.12	0.61	28.2	11.2	38.95	4.8	1.6	2.37	4.5	3.88	0.85	418	23
80th	1.49	0.06	1.8	191.8	0.07	2	0.18	0.69	31.8	12.8	46.92	5.3	2.0	2.51	5.4	4.57	0.94	488	29
85th	1.55	0.08	2.2	212.0	0.08	2	0.24	0.74	40.1	14.2	54.46	5.8	2.4	2.69	6.2	5.05	1.00	520	33
90th	1.74	0.09	2.9	236.8	0.10	2	0.31	0.80	47.4	15.5	71.01	6.1	3.2	2.93	6.9	6.15	1.08	584	39
95th	1.95	0.11	4.8	315.8	0.15	3	0.41	0.92	58.0	17.8	85.13	6.6	6.1	3.31	8.6	8.68	1.24	707	53
98th	2.22	0.18	6.3	358.8	0.25	4	0.57	1.12	64.4	21.9	104.92	7.4	8.7	3.95	10.8	11.88	1.43	780	67
99th	2.40	0.28	11.1	438.5	0.45	5	1.05	1.26	71.4	25.3	125.99	9.0	35.8	4.37	13.0	20.64	1.57	1033	78
Maximum	3.65	1.67	18.8	475.5	0.65	6	2.00	2.22	116.2	145.3	226.26	10.1	75.1	5.69	15.2	27.18	2.30	4793	206

Summary Statistics

Variable	Mo	Ni	P	K	Sc	Se	Ag	Na	Sr	S	Te	Tl	Th	Ti	W	U	V	Zn
Units	ppm	ppm	%	%	ppm	ppm	ppb	%	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
D.L.	0.01	0.1	.001	0.01	0.1	0.1	2	.001	0.5	0.02	0.02	0.02	0.1	.001	0.2	0.1	2	0.1
Anal Mth	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP
N	228	228	228	228	228	228	228	228	228	228	228	228	228	228	228	228	228	228
N > DL	228	228	228	228	228	205	228	228	228	132	113	215	220	228	55	220	228	228
Missing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mean	1.28	14.06	0.13	0.27	1.94	0.72	73.0	0.02	25.99	0.05	0.03	0.09	1.17	0.12	0.34	0.73	53.5	51.85
Median	0.82	11.80	0.12	0.25	1.70	0.50	48.0	0.02	21.00	0.03	0.02	0.08	0.80	0.12	0.20	0.50	50.0	45.70
Mode	0.17	10.30	0.09	0.17	1.60	0.40	19.0	0.02	12.60	0.02	0.02	0.08	0.50	0.15	0.20	0.40	36.0	30.30
Range	28.40	62.7	0.436	0.79	8.1	18.2	1553	0.157	153.1	0.31	0.17	0.52	27.7	0.263	4.6	18.1	123	175.5
St Dev	2.63	9.83	0.07	0.15	0.98	1.32	117.13	0.01	19.52	0.04	0.02	0.05	2.03	0.04	0.42	1.36	20.76	27.87
Coef Var	2.064	0.699	0.543	0.567	0.505	1.830	1.604	0.680	0.751	0.961	0.651	0.643	1.727	0.351	1.247	1.869	0.388	0.537
Log Mean	-0.107	1.046	-0.943	-0.645	0.239	-0.318	1.700	-1.770	1.330	-1.453	-1.521	-1.143	-0.109	-0.938	-0.583	-0.297	1.697	1.664
Geo Mean	0.78	11.11	0.11	0.23	1.74	0.48	50.2	0.02	21.38	0.04	0.03	0.07	0.78	0.12	0.26	0.50	49.7	46.12
Log StDv	0.389	0.312	0.259	0.266	0.203	0.360	0.335	0.232	0.261	0.280	0.215	0.257	0.368	0.148	0.245	0.313	0.167	0.208
Log CVar	-3.640	0.298	-0.274	-0.412	0.848	-1.133	0.197	-0.131	0.196	-0.193	-0.141	-0.225	-3.408	-0.158	-0.420	-1.053	0.990	0.125
Percntls																		
Minimum	0.07	1.1	0.017	0.04	0.6	0.1	10	0.003	4.5	0.02	0.02	0.02	0.1	0.040	0.2	0.1	13	12.4
10th	0.24	4.2	0.049	0.09	0.9	0.1	20	0.009	10.5	0.02	0.02	0.03	0.3	0.076	0.2	0.2	30	25.3
20th	0.41	6.4	0.068	0.14	1.2	0.3	26	0.011	12.6	0.02	0.02	0.04	0.4	0.084	0.2	0.3	35	31.1
30th	0.55	8.0	0.088	0.17	1.4	0.4	33	0.013	14.9	0.02	0.02	0.06	0.5	0.097	0.2	0.4	41	36.9
40th	0.69	9.7	0.102	0.20	1.6	0.4	39	0.016	17.5	0.02	0.02	0.07	0.6	0.106	0.2	0.4	46	41.4
50th	0.82	11.8	0.122	0.25	1.7	0.5	48	0.018	21.0	0.03	0.02	0.08	0.8	0.116	0.2	0.5	50	45.7
60th	0.95	14.1	0.142	0.29	2.0	0.6	56	0.020	23.3	0.04	0.03	0.09	1.0	0.126	0.2	0.6	54	52.3
70th	1.18	16.4	0.165	0.33	2.2	0.7	69	0.022	27.3	0.04	0.04	0.10	1.2	0.138	0.2	0.7	60	55.9
80th	1.42	21.1	0.188	0.38	2.6	0.9	86	0.026	32.7	0.05	0.05	0.11	1.4	0.150	0.3	0.8	68	64.5
85th	1.59	22.8	0.214	0.41	2.8	1.0	100	0.028	41.2	0.06	0.05	0.13	1.7	0.162	0.4	0.9	74	72.1
90th	2.02	26.8	0.229	0.46	3.1	1.1	132	0.029	46.3	0.09	0.06	0.14	2.0	0.176	0.7	1.1	81	83.8
95th	3.06	31.1	0.262	0.57	3.7	1.7	218	0.035	66.7	0.14	0.07	0.17	2.8	0.208	1.0	1.6	92	103.2
98th	3.78	43.0	0.279	0.66	4.2	2.4	287	0.039	82.7	0.18	0.09	0.21	3.9	0.225	1.4	2.6	101	139.8
99th	7.62	48.3	0.350	0.73	4.4	3.2	319	0.051	96.4	0.21	0.11	0.24	5.7	0.266	1.7	3.9	120	159.8
Maximum	28.47	63.8	0.453	0.83	8.7	18.3	1563	0.160	157.6	0.33	0.19	0.54	27.8	0.303	4.8	18.2	136	187.9

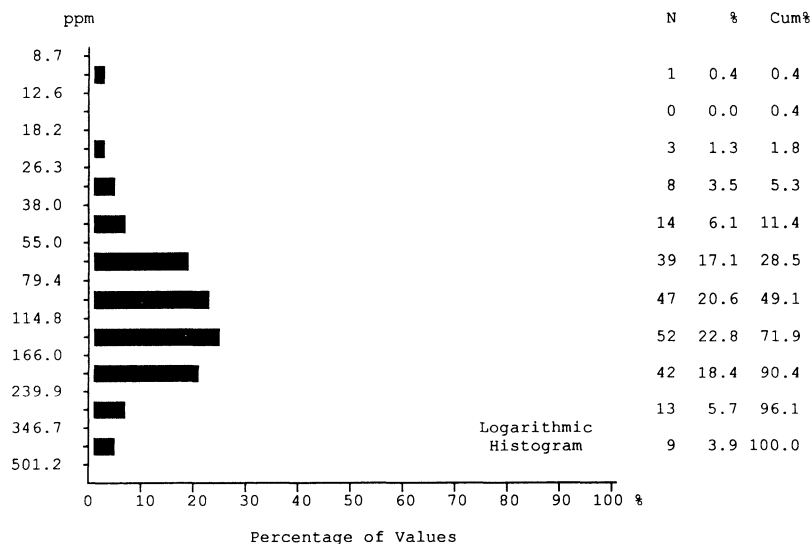
Summary Statistics

Variable	Sb	As	Ba	Br	Ca	Ce	Cs	Cr	Co	Eu	Au	Hf	Fe	La	Lu	Nd	Rb	Sm
Units	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppb	ppm	%	ppm	ppm	ppm	ppm	ppm
D.L.	0.1	0.5	50	0.5	1	3	1	5	1	0.2	2	1	0.01	0.5	0.05	5	15	0.1
Anal Mth	INA	INA	INA	INA	INA	INA	INA	INA	INA	INA	INA	INA	INA	INA	INA	INA	INA	INA
N	228	228	228	228	228	228	228	228	228	228	228	228	228	228	228	228	228	228
N > DL	107	138	228	211	223	228	51	228	228	228	36	225	228	228	228	223	105	228
Missing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mean	0.23	1.70	591.8	10.89	4.4	52.4	1.3	76.0	18.6	1.64	5.1	6.5	5.40	28.70	0.51	24.3	24.6	6.17
Median	0.10	1.10	550.0	7.10	4.0	47.0	1.0	68.0	18.0	1.50	2.0	5.0	5.38	24.70	0.44	22.0	15.0	5.50
Mode	0.10	0.50	460.0	0.50	4.0	37.0	1.0	70.0	18.0	1.30	2.0	3.0	4.87	20.50	0.41	20.0	15.0	4.90
Range	2.0	19.1	1900	84.1	7	233	3	263	156	5.1	90	36	7.03	142.4	2.80	93	74	21.5
St Dev	0.23	2.10	246.82	12.09	1.31	28.07	0.57	46.36	11.03	0.61	11.04	5.08	1.11	16.05	0.28	12.30	13.38	2.63
Coef Var	1.007	1.241	0.417	1.110	0.297	0.536	0.446	0.610	0.592	0.372	2.170	0.783	0.207	0.559	0.550	0.507	0.543	0.426
Log Mean	-0.762	0.053	2.738	0.836	0.620	1.678	0.077	1.804	1.236	0.193	0.433	0.716	0.723	1.414	-0.328	1.340	1.340	0.762
Geo Mean	0.17	1.13	546.6	6.86	4.2	47.6	1.2	63.7	17.2	1.56	2.7	5.2	5.28	25.96	0.47	21.9	21.9	5.79
Log StDv	0.296	0.360	0.176	0.453	0.159	0.180	0.149	0.266	0.162	0.134	0.348	0.280	0.091	0.183	0.161	0.200	0.202	0.148
Log CVar	-0.388	6.796	0.064	0.542	0.256	0.107	1.936	0.148	0.131	0.699	0.803	0.391	0.127	0.129	-0.491	0.149	0.151	0.194
Percntls																		
Minimum	0.1	0.5	100	0.5	1	13	1	8	4	0.7	2	1	2.70	8.6	0.21	5	15	2.0
10th	0.1	0.5	320	2.4	3	30	1	29	11	1.1	2	2	3.98	16.0	0.31	13	15	3.9
20th	0.1	0.5	420	3.5	3	33	1	39	13	1.3	2	3	4.46	18.0	0.36	16	15	4.5
30th	0.1	0.5	460	4.8	4	37	1	50	14	1.3	2	4	4.87	20.6	0.39	18	15	4.8
40th	0.1	0.6	500	6.0	4	42	1	58	16	1.4	2	4	5.14	22.8	0.41	20	15	5.1
50th	0.1	1.1	550	7.1	4	47	1	68	18	1.5	2	5	5.38	24.7	0.44	22	15	5.5
60th	0.2	1.3	590	9.0	5	51	1	76	19	1.6	2	6	5.60	27.3	0.46	24	23	6.1
70th	0.2	1.8	650	11.2	5	57	1	84	21	1.7	2	7	5.83	31.5	0.52	27	29	6.6
80th	0.3	2.3	730	14.2	5	65	2	101	22	2.0	2	9	6.24	35.7	0.60	30	35	7.3
85th	0.4	2.6	820	18.1	6	70	2	118	24	2.2	4	11	6.47	38.1	0.69	33	40	8.0
90th	0.5	3.4	920	22.3	6	77	2	139	26	2.3	7	12	6.73	42.1	0.76	35	45	8.6
95th	0.6	5.2	1000	32.5	6	93	3	182	30	2.6	26	14	7.15	52.5	0.90	47	54	10.5
98th	0.8	8.2	1200	54.3	7	108	3	206	31	2.9	37	20	7.90	61.6	1.04	55	56	12.8
99th	1.1	10.0	1400	64.2	7	200	3	215	33	3.6	64	29	8.32	96.8	1.47	73	60	16.5
Maximum	2.1	19.6	2000	84.6	8	246	4	271	160	5.8	92	37	9.73	151.0	3.01	98	89	23.5

Summary Statistics

Variable	Sc	Se	Na	Sr	Ta	Tb	Th	W	U	Yb	Zn	F	LOI	FW	SO4	UW	PH
Units	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppb	ppm	ppb	
D.L.	0.1	3	0.01	0.05	0.5	0.5	0.2	1	0.5	0.2	50	10	0.1	20	1	0.05	0.1
Anal Mth	INA	INA	INA	INA	INA	INA	INA	INA	INA	INA	INA	ION	GRAV	ION	TURB	LIF	GCE
N	228	228	228	228	228	228	228	228	228	228	228	228	228	227	227	227	227
N > DL	228	2	228	41	61	128	228	7	210	228	181	228	228	56	95	78	227
Missing	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
Mean	24.40	3.1	2.22	0.05	0.74	0.80	5.69	1.1	2.86	3.34	99.3	442.4	6.49	21.1	1.9	0.06	6.28
Median	23.60	3.0	2.24	0.05	0.50	0.60	4.60	1.0	2.40	2.80	96.0	420.0	5.00	20.0	1.0	0.05	6.30
Mode	18.60	3.0	2.41	0.05	0.50	0.50	3.50	1.0	0.50	2.50	50.0	420.0	3.40	20.0	1.0	0.05	6.40
Range	68.4	12	2.55	0.06	4.7	4.4	74.2	6	22.4	19.1	181	1170	37.8	32	9	0.33	2.9
St Dev	7.72	0.80	0.40	0.01	0.54	0.52	5.38	0.56	2.24	1.89	40.86	188.19	5.38	3.12	1.36	0.03	0.55
Coef Var	0.317	0.261	0.182	0.190	0.733	0.649	0.944	0.519	0.783	0.567	0.411	0.425	0.830	0.148	0.733	0.453	0.088
Log Mean	1.368	0.481	0.338	-1.273	-0.192	-0.150	0.689	0.017	0.366	0.485	1.960	2.607	0.715	1.320	0.188	-1.233	0.797
Geo Mean	23.33	3.0	2.18	0.05	0.64	0.71	4.88	1.0	2.32	3.06	91.3	404.4	5.19	20.9	1.5	0.06	6.26
Log StDv	0.130	0.047	0.088	0.067	0.201	0.190	0.217	0.100	0.284	0.164	0.181	0.190	0.277	0.049	0.245	0.120	0.039
Log CVar	0.095	0.980	0.259	-0.053	-1.052	-1.265	0.315	5.886	0.775	0.339	0.092	0.073	0.388	0.037	1.305	-0.097	0.049
Percntls																	
Minimum	7.0	3	0.81	0.05	0.5	0.5	1.6	1	0.5	1.4	50	80	0.9	20	1	0.05	4.8
10th	16.0	3	1.71	0.05	0.5	0.5	2.7	1	1.2	2.1	50	240	2.4	20	1	0.05	5.6
20th	18.6	3	1.94	0.05	0.5	0.5	3.2	1	1.6	2.3	50	280	3.2	20	1	0.05	5.8
30th	20.3	3	2.03	0.05	0.5	0.5	3.5	1	1.8	2.5	72	320	3.7	20	1	0.05	6.0
40th	21.7	3	2.15	0.05	0.5	0.5	4.1	1	2.1	2.7	84	370	4.3	20	1	0.05	6.2
50th	23.6	3	2.24	0.05	0.5	0.6	4.6	1	2.4	2.8	96	420	5.0	20	1	0.05	6.3
60th	25.5	3	2.32	0.05	0.5	0.7	5.3	1	2.7	3.0	109	470	5.6	20	2	0.05	6.5
70th	27.0	3	2.42	0.05	0.5	0.8	6.3	1	3.2	3.4	116	510	6.6	20	2	0.06	6.6
80th	29.4	3	2.54	0.05	1.0	0.9	7.6	1	3.7	3.8	131	560	8.3	22	3	0.07	6.7
85th	30.9	3	2.61	0.06	1.2	1.1	8.3	1	4.2	4.4	143	620	9.6	22	3	0.08	6.8
90th	32.8	3	2.69	0.07	1.3	1.4	9.2	1	4.8	5.2	150	680	12.1	22	3	0.09	6.9
95th	36.6	3	2.89	0.08	1.7	1.7	10.5	1	6.0	6.1	166	780	16.5	26	4	0.10	7.1
98th	40.4	3	2.98	0.09	2.0	2.2	11.9	3	7.1	7.0	202	890	23.5	32	6	0.12	7.3
99th	49.5	3	3.05	0.09	3.1	3.0	16.4	4	9.2	9.8	225	1070	31.5	34	7	0.13	7.5
Maximum	75.4	15	3.36	0.11	5.2	4.9	75.8	7	22.9	20.5	231	1250	38.7	52	10	0.38	7.7

Summary Statistics



	All	PV	KEG	PN	TQT	PQ	PS	DBO	JFO
N	228	65	48	30	27	17	16	15	10
N > DL	228	65	48	30	27	17	16	15	10
Missing	0	0	0	0	0	0	0	0	0
Mean	137.01	118.66	79.87	154.48	242.23	174.14	124.89	135.55	152.48
Median	115.60	105.90	72.70	147.50	212.00	173.00	112.60	119.40	106.80
Mode	48.80	12.50	77.30	23.10	150.50	32.00	48.80	52.10	30.70
Range	463.0	316.4	142.6	332.4	438.8	320.9	173.5	213.5	407.8
St Dev	85.38	66.02	34.62	73.74	108.66	86.38	51.32	63.75	117.47
Coef Var	0.623	0.556	0.433	0.477	0.449	0.496	0.411	0.470	0.770
Log Mean	2.056	2.002	1.861	2.136	2.334	2.179	2.060	2.088	2.082
Geo Mean	113.71	100.52	72.66	136.72	215.83	150.96	114.73	122.54	120.65
Log StDv	0.274	0.269	0.196	0.235	0.232	0.261	0.189	0.203	0.316
Log CVar	0.134	0.134	0.105	0.110	0.100	0.120	0.092	0.097	0.152
Percentls									
Minimum	12.5	12.5	22.7	23.1	36.7	32.0	48.8	52.1	30.7
10th	50.4	48.9	38.7	68.9	117.8	66.6	72.9	71.5	30.7
20th	69.9	59.5	50.1	84.5	150.5	99.2	73.5	80.5	71.4
30th	80.6	78.1	58.7	115.6	196.4	106.1	80.3	91.5	84.4
40th	99.2	93.6	66.1	124.4	207.0	146.5	82.8	97.4	85.6
50th	115.6	105.9	72.7	147.5	212.0	173.0	112.6	119.4	106.8
60th	140.5	120.5	77.3	157.6	225.5	189.1	133.6	121.0	142.3
70th	160.5	139.2	87.3	179.9	237.9	210.0	159.1	158.5	154.5
80th	191.8	170.4	104.1	184.8	351.9	220.7	163.7	191.2	160.0
85th	212.0	183.7	122.3	226.1	358.8	220.7	188.9	191.8	250.6
90th	236.8	208.0	132.7	248.5	366.2	277.9	188.9	244.8	250.6
95th	315.8	233.9	148.0	315.8	440.7	310.3	190.6	244.8	438.5
98th	358.8	301.3	154.3	315.8	440.7	352.9	222.3	265.6	438.5
99th	438.5	301.3	165.3	355.5	475.5	352.9	222.3	265.6	438.5
Maximum	475.5	328.9	165.3	355.5	475.5	352.9	222.3	265.6	438.5

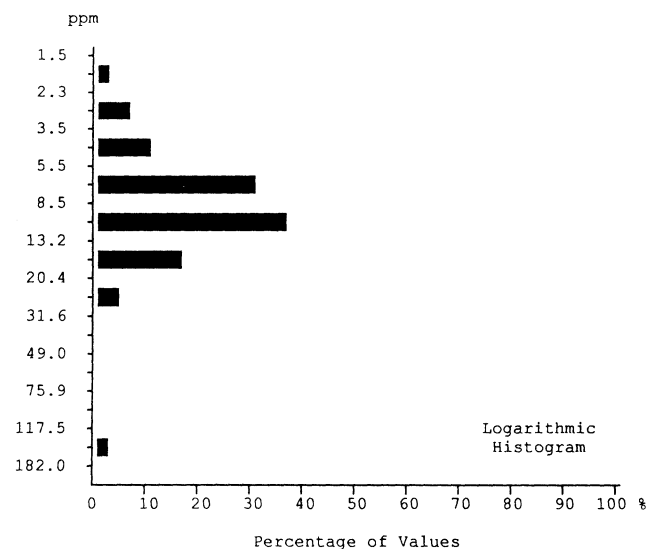
Barium (Ba)

Stream Sediment

number of values : 228
 units : ppm
 detection limit : 0.5
 analytical method : ICP

Barium by ICP

Summary Statistics



ppm	N	%	Cum%
1.5	3	1.3	1.3
2.3	12	5.3	6.6
3.5	23	10.1	16.7
5.5	67	29.4	46.1
8.5	81	35.5	81.6
13.2	33	14.5	96.1
20.4	8	3.5	99.6
31.6	0	0.0	99.6
49.0	0	0.0	99.6
75.9	0	0.0	99.6
117.5	1	0.4	100.0
182.0			

	All	PV	KEG	PN	TQT	PQ	PS	DBO	JFO
N	228	65	48	30	27	17	16	15	10
N > DL	228	65	48	30	27	17	16	15	10
Missing	0	0	0	0	0	0	0	0	0
Mean	10.16	11.71	8.53	11.30	10.29	8.93	9.02	10.23	8.00
Median	9.00	10.90	4.90	10.70	9.90	7.90	9.50	10.00	7.10
Mode	7.50	6.40	2.40	11.20	7.30	7.90	10.10	10.80	3.10
Range	143.6	23.0	143.5	18.4	11.7	18.4	11.1	6.1	10.4
St Dev	10.07	5.25	20.36	4.29	3.13	4.27	2.95	2.06	2.89
Coef Var	0.991	0.448	2.386	0.380	0.304	0.478	0.327	0.202	0.362
Log Mean	0.934	1.025	0.728	1.023	0.993	0.908	0.920	1.002	0.874
Geo Mean	8.60	10.60	5.35	10.55	9.84	8.10	8.31	10.04	7.48
Log StDv	0.237	0.200	0.301	0.167	0.134	0.200	0.212	0.088	0.175
Log CVar	0.254	0.195	0.413	0.163	0.135	0.220	0.230	0.088	0.201
Percentls									
Minimum	1.7	3.7	1.8	4.3	4.9	2.6	1.7	7.4	3.1
10th	4.2	6.1	2.4	6.8	6.6	5.6	5.8	7.5	3.1
20th	5.9	7.0	3.1	7.7	7.3	6.0	6.8	8.2	5.6
30th	7.0	8.4	3.9	8.9	8.0	6.4	7.3	8.6	6.5
40th	7.8	9.5	4.4	9.9	9.5	7.0	7.5	9.0	7.0
50th	9.0	10.9	4.9	10.7	9.9	7.9	9.5	10.0	7.1
60th	10.0	12.1	5.8	11.4	10.5	7.9	10.1	10.8	8.1
70th	11.2	14.0	6.8	12.2	11.5	9.5	10.1	11.9	8.4
80th	12.8	15.9	7.5	14.2	12.1	10.1	11.9	12.2	10.2
85th	14.2	16.3	8.6	15.5	14.5	10.1	12.3	12.8	10.5
90th	15.5	18.0	9.0	15.7	15.3	13.3	12.3	12.9	10.5
95th	17.8	20.8	12.9	21.9	15.8	15.0	12.5	12.9	13.5
98th	21.9	25.3	14.5	21.9	15.8	21.0	12.8	13.5	13.5
99th	25.3	25.3	145.3	22.7	16.6	21.0	12.8	13.5	13.5
Maximum	145.3	26.7	145.3	22.7	16.6	21.0	12.8	13.5	13.5

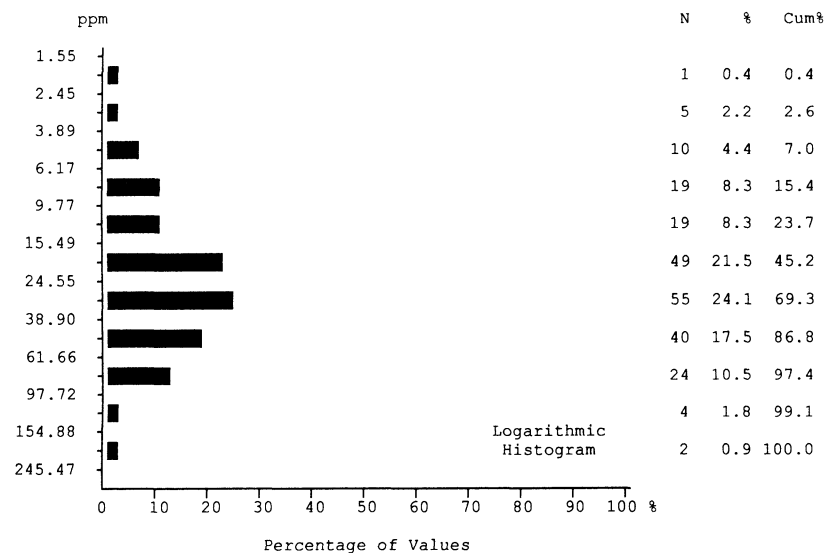
Cobalt (Co)

Stream Sediment

number of values : 228
 units : ppm
 detection limit : 0.1
 analytical method : ICP

Cobalt by ICP

Summary Statistics



	All	PV	KEG	PN	TQT	PQ	PS	DBO	JFO
N	228	65	48	30	27	17	16	15	10
N > DL	228	65	48	30	27	17	16	15	10
Missing	0	0	0	0	0	0	0	0	0
Mean	33.93	38.46	15.24	46.54	26.03	48.07	41.42	43.48	27.46
Median	27.49	31.59	9.76	34.26	24.75	41.33	23.99	43.82	14.42
Mode	28.36	6.70	2.12	5.19	5.18	6.94	3.58	11.57	6.66
Range	224.14	119.29	53.06	221.07	57.76	169.50	101.34	73.35	78.47
St Dev	28.52	25.42	12.63	41.07	12.93	40.03	30.62	19.93	27.03
Coef Var	0.840	0.661	0.829	0.883	0.497	0.833	0.739	0.458	0.985
Log Mean	1.394	1.497	1.040	1.562	1.358	1.573	1.484	1.588	1.270
Geo Mean	24.76	31.43	10.96	36.45	22.82	37.43	30.50	38.71	18.64
Log StDv	0.366	0.282	0.362	0.301	0.241	0.317	0.386	0.232	0.394
Log CVar	0.262	0.188	0.348	0.193	0.177	0.202	0.260	0.146	0.311
Percentls									
Minimum	2.12	6.70	2.12	5.19	5.18	6.94	3.58	11.57	6.66
10th	6.94	13.34	3.88	17.98	11.11	18.04	9.12	18.69	6.66
20th	12.68	17.05	5.22	20.51	12.76	18.86	19.53	20.76	7.18
30th	18.40	22.31	6.31	25.69	20.41	26.97	20.52	33.03	7.82
40th	22.44	26.63	7.24	30.82	22.65	33.24	22.59	38.65	10.10
50th	27.49	31.59	9.76	34.26	24.75	41.33	23.99	43.82	14.42
60th	32.49	36.48	14.28	40.29	27.84	41.85	36.52	46.18	21.27
70th	38.95	42.57	19.58	45.79	29.72	49.93	38.95	51.23	27.34
80th	46.92	54.31	23.06	47.29	34.58	54.46	74.51	51.92	28.32
85th	54.46	63.96	28.36	78.87	34.60	54.46	80.12	55.64	66.32
90th	71.01	80.30	36.01	83.05	36.78	62.30	80.12	74.96	66.32
95th	85.13	88.09	39.31	105.36	47.48	106.63	86.57	74.96	85.13
98th	104.92	95.15	40.26	105.36	47.48	176.44	104.92	84.92	85.13
99th	125.99	95.15	55.18	226.26	62.94	176.44	104.92	84.92	85.13
Maximum	226.26	125.99	55.18	226.26	62.94	176.44	104.92	84.92	85.13

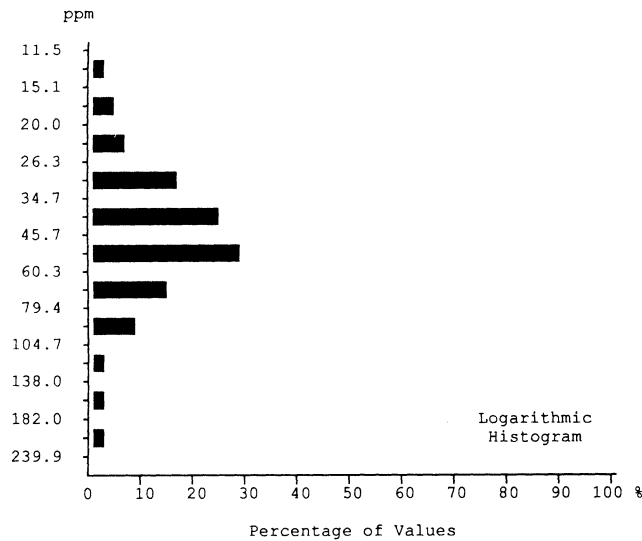
Copper (Cu)

Stream Sediment

number of values : 228
 units : ppm
 detection limit : 0.01
 analytical method : ICP

Copper by ICP

Summary Statistics



N	%	Cum%
2	0.9	0.9
9	3.9	4.8
13	5.7	10.5
35	15.4	25.9
55	24.1	50.0
60	26.3	76.3
28	12.3	88.6
17	7.5	96.1
3	1.3	97.4
4	1.8	99.1
2	0.9	100.0

	All	PV	KEG	PN	TQT	PQ	PS	DBO	JFO
N	228	65	48	30	27	17	16	15	10
N > DL	228	65	48	30	27	17	16	15	10
Missing	0	0	0	0	0	0	0	0	0
Mean	51.85	56.17	39.02	58.68	53.43	60.84	55.53	45.73	48.72
Median	45.70	53.40	31.60	47.00	47.60	52.00	49.80	46.10	44.40
Mode	30.30	44.00	44.10	17.40	46.00	22.00	12.40	52.20	18.00
Range	175.5	133.6	90.9	142.4	103.3	165.9	175.4	64.9	81.9
St Dev	27.87	26.47	21.33	32.11	21.02	38.96	39.76	16.13	21.65
Coef Var	0.537	0.471	0.547	0.547	0.393	0.640	0.716	0.353	0.444
Log Mean	1.664	1.705	1.540	1.718	1.703	1.725	1.669	1.637	1.650
Geo Mean	46.12	50.75	34.66	52.26	50.42	53.14	46.63	43.35	44.68
Log StDv	0.208	0.199	0.207	0.207	0.144	0.219	0.260	0.146	0.195
Log CVar	0.125	0.117	0.134	0.120	0.085	0.127	0.156	0.089	0.118
Percentls									
Minimum	12.4	17.6	13.1	17.4	28.9	22.0	12.4	23.8	18.0
10th	25.3	27.2	19.5	29.3	36.8	30.3	24.5	28.1	18.0
20th	31.1	34.6	22.7	38.5	37.4	33.1	28.0	31.1	30.4
30th	36.9	41.2	27.5	41.1	40.2	40.8	35.1	36.5	36.9
40th	41.4	45.1	30.3	45.3	46.0	43.3	39.3	37.3	41.7
50th	45.7	53.4	31.6	47.0	47.6	52.0	49.8	46.1	44.4
60th	52.3	57.0	35.5	54.7	49.9	52.6	52.4	49.5	53.1
70th	55.9	63.6	43.4	58.8	58.3	55.8	54.6	52.2	53.5
80th	64.5	68.6	46.0	72.9	68.0	78.0	63.9	52.2	54.0
85th	72.1	73.6	53.4	77.4	69.0	78.0	69.8	53.3	55.3
90th	83.8	91.2	58.0	92.8	69.1	86.5	69.8	62.0	55.3
95th	103.2	104.4	95.0	150.5	87.0	107.1	86.1	62.0	99.9
98th	139.8	139.8	96.2	150.5	87.0	187.9	187.8	88.7	99.9
99th	159.8	139.8	104.0	159.8	132.2	187.9	187.8	88.7	99.9
Maximum	187.9	151.2	104.0	159.8	132.2	187.9	187.8	88.7	99.9

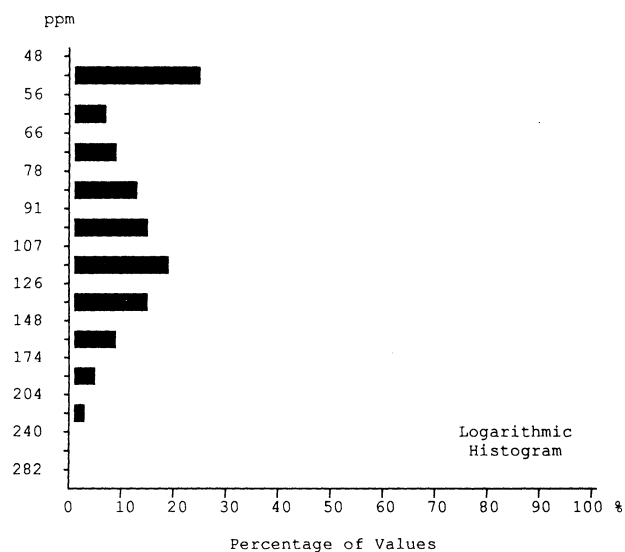
Zinc (Zn)

Stream Sediment

number of values : 228
 units : ppm
 detection limit : 0.1
 analytical method : ICP

Zinc by ICP

Summary Statistics



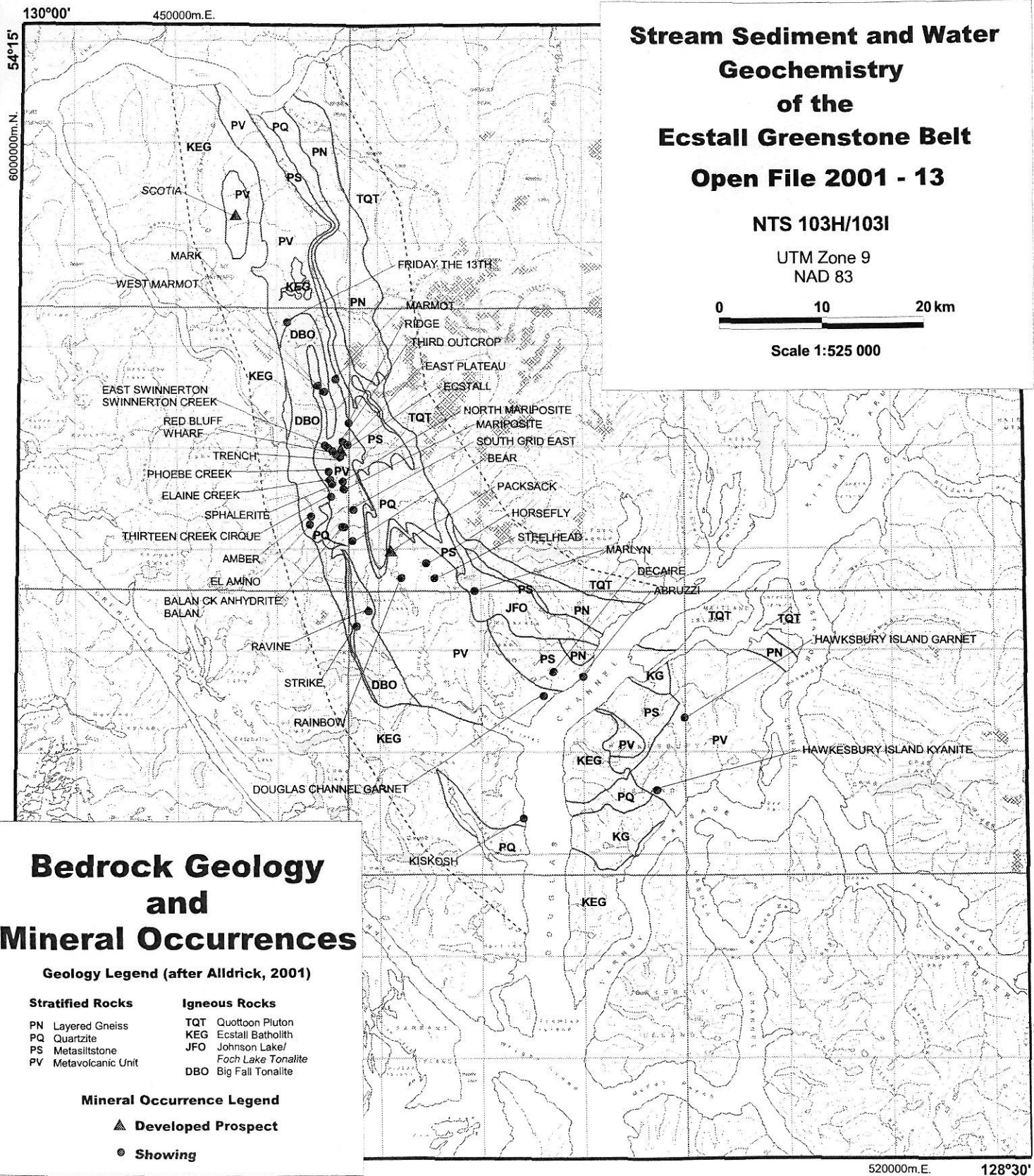
	N	%	Cum%	All	PV	KEG	PN	TQT	PQ	PS	DBO	JFO
N	228			228	65	48	30	27	17	16	15	10
N > DL	181			181	51	35	25	26	13	9	13	9
Missing	0			0	0	0	0	0	0	0	0	0
Mean	99.3	99.5	90.2	107.9	115.8	98.9	92.5	96.7	86.8			
Median	96.0	99.0	83.0	98.0	115.0	98.0	79.0	82.0	83.0			
Mode	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0			
Range	181	181	181	152	154	162	175	149	100			
St Dev	40.86	39.58	37.77	46.07	34.46	46.18	50.20	41.15	29.17			
Coef Var	0.411	0.398	0.419	0.427	0.298	0.467	0.543	0.426	0.336			
Log Mean	1.960	1.963	1.921	1.994	2.044	1.951	1.913	1.951	1.917			
Geo Mean	91.3	91.8	83.3	98.5	110.6	89.4	81.8	89.3	82.6			
Log StDv	0.181	0.180	0.175	0.191	0.138	0.202	0.219	0.178	0.144			
Log CVar	0.092	0.092	0.091	0.096	0.068	0.104	0.114	0.091	0.075			
Percentls												
Minimum	50	50	50	50	50	50	50	50	50			
10th	50	50	50	50	75	50	50	50	50			
20th	50	50	50	64	84	50	50	53	55			
30th	72	74	61	77	93	55	50	73	60			
40th	84	90	73	86	106	72	50	77	80			
50th	96	99	83	98	115	98	79	82	83			
60th	109	110	95	113	117	104	96	104	92			
70th	116	116	112	125	129	118	112	110	97			
80th	131	132	116	150	143	132	122	122	98			
85th	143	143	121	160	144	132	138	133	103			
90th	150	147	131	166	151	150	138	143	103			
95th	166	157	144	198	176	150	150	143	150			
98th	202	181	158	198	176	212	225	199	150			
99th	225	181	231	202	204	212	225	199	150			
Maximum	231	231	231	202	204	212	225	199	150			

Zinc (Zn)

Stream Sediment

number of values : 228
 units : ppm
 detection limit : 50
 analytical method : INA

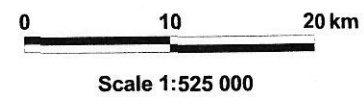
Zinc by INA



Stream Sediment and Water Geochemistry of the Ecstall Greenstone Belt

Open File 2001 - 13

NTS 103H/103I
 UTM Zone 9
 NAD 83



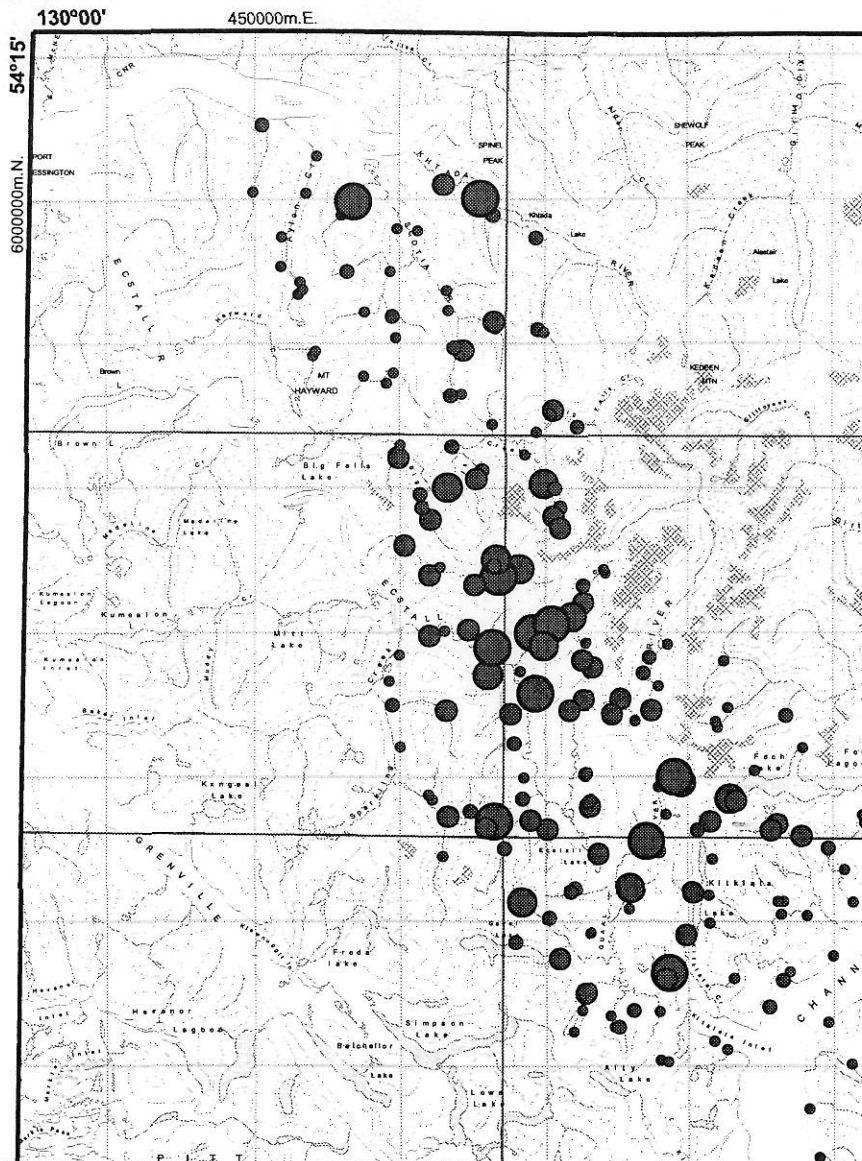
Bedrock Geology and Mineral Occurrences

Geology Legend (after Alldrick, 2001)

Stratified Rocks	Igneous Rocks
PN Layered Gneiss	TQT Quotoon Pluton
PQ Quartzite	KEG Ecstall Batholith
PS Metasiltstone	JFO Johnson Lake/ Foch Lake Tonalite
PV Metavolcanic Unit	DBO Big Fall Tonalite

Mineral Occurrence Legend

- ▲ **Developed Prospect**
- **Showing**

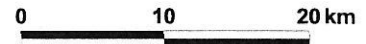


Stream Sediment and Water Geochemistry of the Ecstall Greenstone Belt

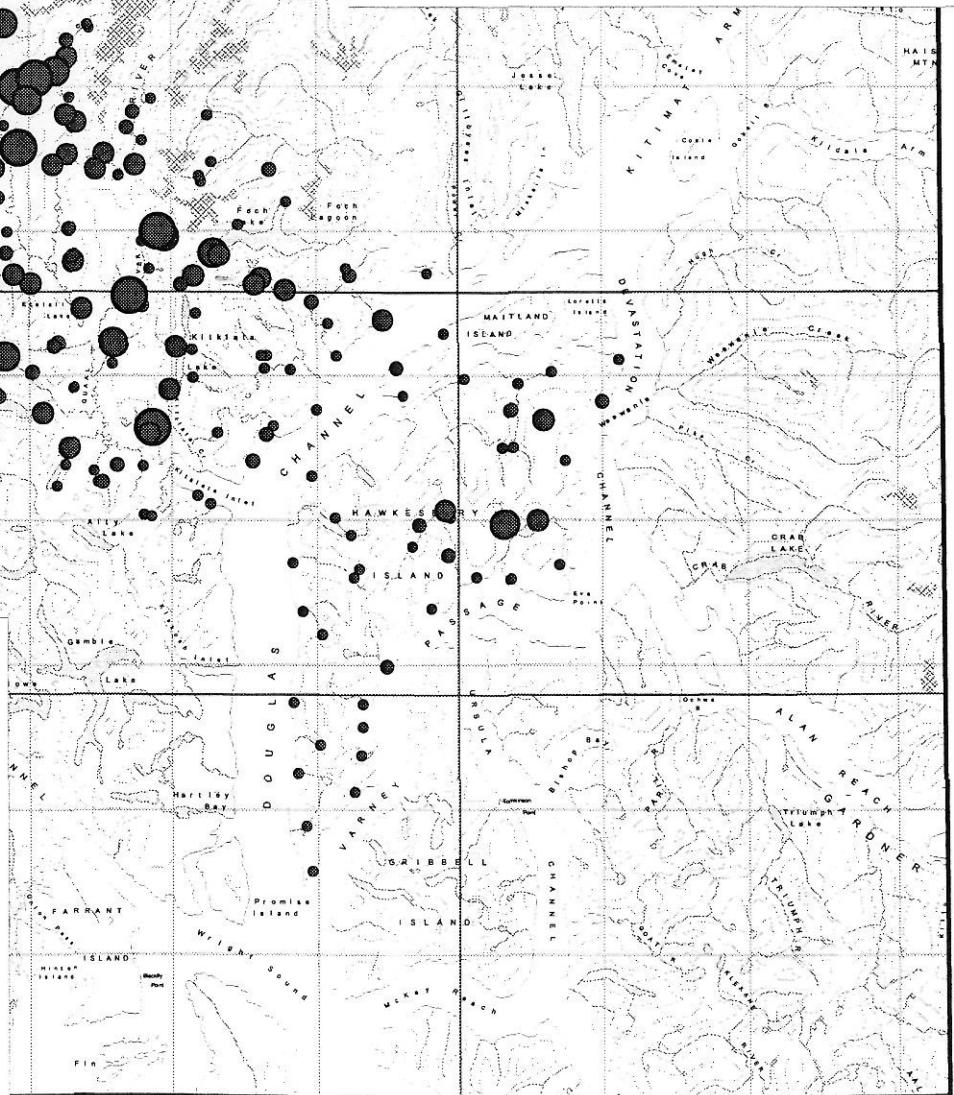
Open File 2001 - 13

NTS 103H/103I

UTM Zone 9
NAD 83



Scale 1:525 000



Copper (ppm) by ICP

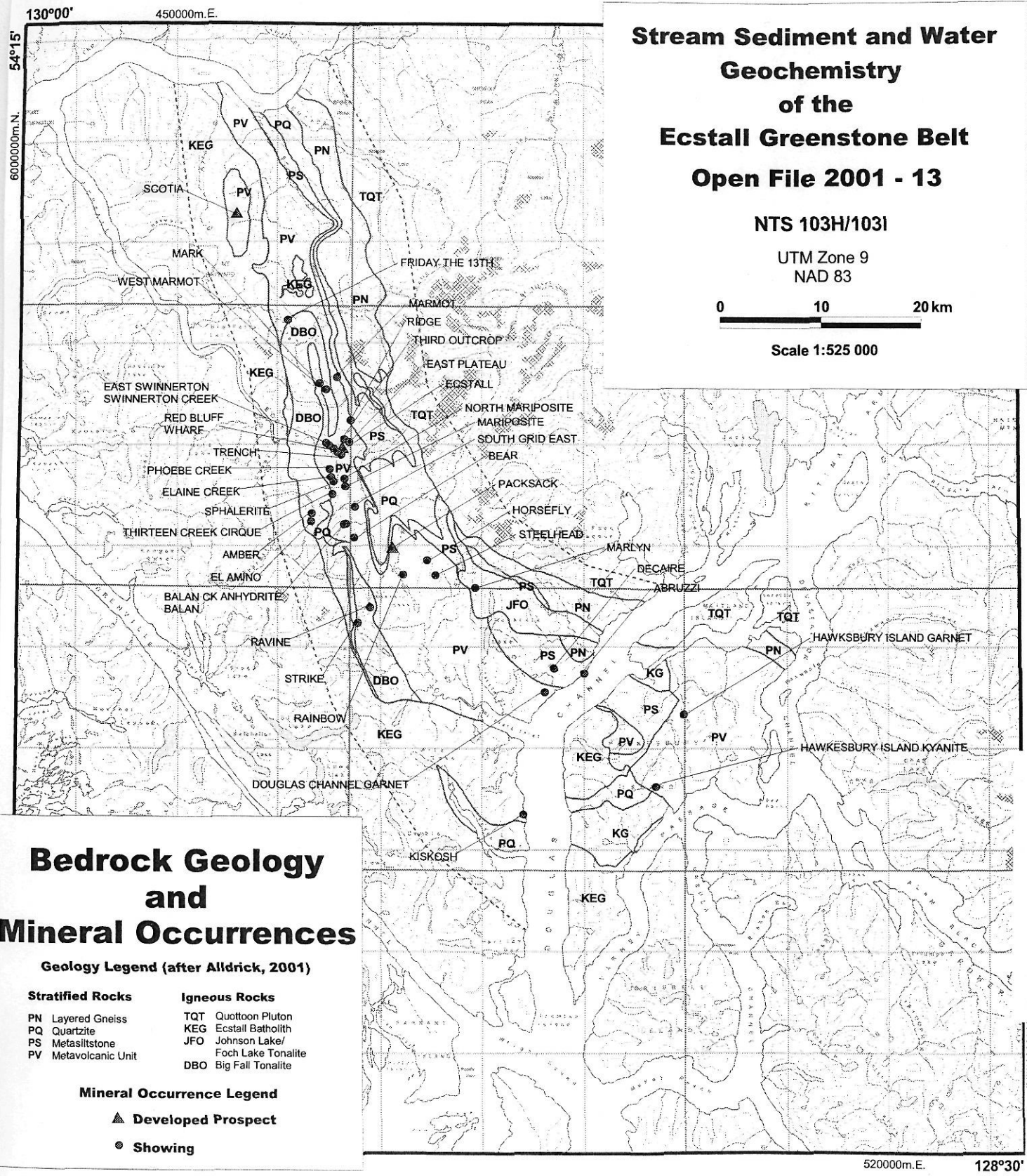
Stream Sediments

Concentration	Frequency
85.14 to 226.26	n = 11 (4.8%)
71.02 to 85.13	n = 12 (5.3%)
38.96 to 71.01	n = 45 (19.7%)
27.50 to 38.95	n = 46 (20.2%)
2.12 to 27.49	n = 114 (50.0%)

228 Sample Sites

520000m.E.

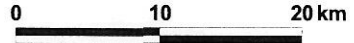
128°30'



**Stream Sediment and Water
Geochemistry
of the
Ecstall Greenstone Belt
Open File 2001 - 13**

NTS 103H/103I

UTM Zone 9
NAD 83



Scale 1:525 000

**Bedrock Geology
and
Mineral Occurrences**

Geology Legend (after Alldrick, 2001)

Stratified Rocks	Igneous Rocks
PN Layered Gneiss	TQT Quotoon Pluton
PQ Quartzite	KEG Ecstall Batholith
PS Metasiltstone	JFO Johnson Lake/
PV Metavolcanic Unit	Foch Lake Tonalite
	DBO Big Fall Tonalite

Mineral Occurrence Legend

- ▲ Developed Prospect
- Showing

'Aromalous'
Ba, As, Sb, Bi, Co, Cu, Au, Pb, Mg, Hg, Ag, Zn