CCRMP
Canadian Certified Reference Materials Project

CANMET Mining and Mineral Sciences Laboratories
555 Booth Street, Ottawa, Ontario, Canada K1A 0G1
Tel.: (613) 995-4738, Fax: (613) 943-0573
E-mail: ccrmp@nrcan.gc.ca
www.ccrmp.ca

PCMRC
Projet canadien de matériaux de référence certifiés

Laboratoires des mines et sciences minérales de CANMET
555, rue Booth, Ottawa (Ontario) Canada K1A 0G1
Tél. : (613) 995-4738, Téléc. : (613) 943-0573
Courriel : pcmrc@rncan.gc.ca
www.pcmrc.ca

Stream Sediment Reference Materials STSD-1 to STSD-4

STSD-1 to STSD-4 were chosen to represent typical stream sediments from various geochemical environments in Canada. Efforts were made to incorporate a range of concentrations for a substantial number of elements. Collection was carried out by the Geological Survey of Canada using shovels and by hand. The samples were prepared, blended and bottled at CANMET. Information on each sample follows. The National Topographic System (NTS) for identifying maps in Canada is used.

STSD-1: This sample is a single lot from Lavant Creek (31F) in Ontario.

STSD-2: This sample is a mixture of a lot from Hirok Stream (104P) and a composite lot from 93A and 93B; both lots are from British Columbia. Composites were produced by mixing unused portions of regional survey samples collected in the corresponding NTS sheets.

STSD-3: This sample is made from the same lots as STSD-2 with the addition of a lot from Lavant Creek (31F) in Ontario.

STSD-4: This sample is made from a mixture of a lot which is a composite sample from 31F in Ontario and a lot from the same composite from British Columbia used for STSD-2.

Thirty-five laboratories provided analytical data and provisionally recommended values are given for 65 elements. Besides "total" values, the samples were also characterized for values relating to specific types of partial extraction wherein the sample is not totally dissolved, particularly the silicate components. Geochemists and environmental scientists frequently perform this type of analysis, and these reference samples should prove useful to them.

A publication giving complete details on these stream sediment reference materials is available on request to:

Coordinator, CCRMP
CANMET (NRCan)
555 Booth Street
Ottawa, Ontario, Canada
K1A 0G1

Telephone: (613) 995-4738
Fax: (613) 943-0573
E-mail: ccrmp@nrcan.gc.ca

Stream Sediments STSD-1 to STSD-4

Provisional Values for
Major and Minor Elements
Expressed as Per Cent Oxides

Constituent	STSD-1	STSD-2	STSD-3	STSD-4
SiO_2	42.5	53.7	48.6	58.9
Al_2O_3	9	16.1	10.9	12.1
Fe_2O_3	6.5	7.5	6.2	5.7
MgO	2.2	3.1	2.2	2.1
CaO	3.6	4	3.3	4
Na_2O	1.8	1.7	1.5	2.7
K_2O	1.2	2.1	1.8	1.6
MnO	0.5	0.1	0.3	0.2
TiO_2	0.8	0.8	0.7	0.8
P_2O_5	0.4	0.3	0.4	0.2
LOI (1000°C)	31.6	10.3	23.6	11.6
Sum	100.1	99.7	99.5	99.9

Provisional Values for
Partial Extraction Elements
Concentrated HNO_3 - Concentrated HCl
µg/g (except where noted)

Constituent	STSD-1	STSD-2	STSD-3	STSD-4
Ag	0.3	0.5	0.4	0.3
As	17	32	22	11
Cd	0.8	0.8	1	0.6
Co	14	17	14	11
Cr	28	50	34	30
Cu	36	43	38	66
Fe (%)	3.5	4.1	3.4	2.6
Hg (ng/g)	110	46	90	930
Mn	3740	720	2630	1200
Mo	2	13	7	2
Ni	18	47	25	23
Pb	34	66	39	13
Sb	2	2.6	2.4	3.6
V	47	58	61	51
Zn	165	216	192	82

Stream Sediments STSD-1 to STSD-4

Provisional Values for "Total" Elements

µg/g (except where noted)

Constituent	STSD-1	STSD-2	STSD-3	STSD-4
Ag	<0.5	0.5	<0.5	<0.5
As	23	42	28	15
Au (ng/g)	8	3	7	4
B	89	42	82	46
Ba	630	540	1490	2000
Be	1.6	5.2	2.6	1.7
Br	40	4	24	13
C (%)	12.3	1.6	8.4	4.1
Ce	51	93	63	44
Co	17	19	16	13
Cr	67	116	80	93
Cs	1.8	12	5.2	1.9
Cu	36	47	39	65
Dy	5.6	6.5	5.4	3.8
Eu	1.6	2	1.3	1.2
F	950	940	850	380
Fe (%)	4.7	5.2	4.4	4.1
H_2O- (%)	4.46	2.43	3.47	1.73
Hf	6.1	5	5.1	5.5
La	30	59	39	24
Li	11	65	23	14
LOI (500°C)(%)	29.7	8.7	21.6	10.2
Lu	0.8	0.7	0.8	0.5
Mn	3950	1060	2730	1520
Mo	<5	13	6	<5
Nb	5	20	12	9
Nd	28	43	33	21
Ni	24	53	30	30
Pb	35	66	40	16
Rb	30	104	68	39
S (%)	0.18	0.06	0.14	0.09
Sb	3.3	4.8	4	7.3
Sc	14	16	13	14
Sm	6	8	7	5
Sn	4	5	4	2
Sr	170	400	230	350
Ta	0.4	1.6	0.9	0.6
Tb	1.2	1.3	1.1	0.8
Th	3.7	17.2	8.5	4.3
Ti	4600	4870	4400	4530
U	8	18.6	10.5	3
V	98	101	134	106
W	<4	7	<4	<4
Y	42	37	36	24
Yb	4	3.7	3.4	2.6
Zn	178	246	204	107
Zr	218	185	196	190