G023.DOC

FILE 023 - Heavy mineral data Operation Bathurst

Project 570022

Note for complete text see file 021***

A total of 170 heavy mineral concentrates was collected by panning sediment samples to a ratio of 30 to 1. The samples were treated with methylene iodide of specific gravity 3.3 and the heavy residue magnetically separated by a Sepor automagnet. Magnetic and non-magnetic fractions were ground to minus 150 mesh for analysis (Lavergne, 1965).

This file contains data for 166 analyzed magnetic fractions and 170 non-magnetic fractions.

The sample fractions were analyzed on a Jarrell-Ash 1.5 meter grating emission spectrograph for a total of 26 elements. The element list and detection limits follows:

ELEMENT	DETECT. LIMIT (PPM)	ELEMENT	DETECT. LIMIT (PPM)
AG	0.5	B	30
TI	2	MO	30
BA	5	CD	50
CU	5	V	50
BE	5	SN	70
CO	7	MN	100
CR	10	W	100
SR	10	NB	100
NI	10	ZN	100
PB	20	PT	30
BI	20	AU	30
ZR	20	U	1000
LA	50	CE	200

The analytical file information follows***

This file contains results for Cu, Pb, Zn, Ag, Ba, Ni, Co, Cr, Sn, W, Mo, Nb, Bi, Cd and Pt (see also maps 12-1967, 13-1967, Boyle et al, 1968). Be, Au, U La and Ce were analyzed for but not detected in any samples. Sb was not positively identified because of chromium interference. Results for B, Ti, V, Mn, Sr and Zr are also contained in this file but are not included in the published data of Boyle et al, 1968.

***Note that a blank in an element column means that the element was not found.

Each sample requires five cards for complete data. The first card is the field card, coded as for stream sediment and water cards. Cards 2 and 3 list results for magnetic fractions of

samples. Cards 4 and 5 list results for non-magnetic fractions. The card coding format follows:

Card 1 Field Card, coded as follows:

Column	Information
1- 6	sample number; col. 3-6 is a four-digit number; col. 2 is is zero; col. 1 is the field party number.
7- 9	stream width in feet.
10-12	stream depth in feet.
13	flow rate 0=not flowing 1=slow 2=moderate 3=fast
14	water level 0=dry 1=low 2=average 3=high
15	colour of turbid material in water or water colour (1) 1=clear 2=red 3=brown 4=grey 5=black 6=white 7=orange 8=yellow
16	colour of precipitate or stain on boulders of stream bottom Code is as col. 15 except for 1 which means green
17	environment of sediment sample 0=dry stream bed 1=active, below water level 2=active, at water level 3=active, above water level 4=bank
18	sample location in stream profile 1=right bank 2=mid stream 3=left bank
19	colour of sediment. Code as colour of precipitate (col. 16)
20-24	sediment size analysis. Estimated from 1 to 9 for each component category of gravel, sand, silt, clay and organic material. Totals to 10.

Example	Component	Percent	Code
	gravel	10	1
	sand	20	2
	silt	50	5
	clay	10	1
	organic	10	1

25-28	rock type of local drainage area. See mnemonic code ff.
29-32	eH of water given in range -600 to +600 millivolts
33-34	pH of water given as 0 to 9.9
35-36	temperature of water in degrees C.
37	sample map reference number. coded as follows: 2 - 21 P/13 3 - 21 O/16 4 - 21 O/9 5 - 21 P/12
38-40	total cold-extractable metal in ppm. Samples titrated to 20 ppm only. For values greater than titration limit (20 ppm) the notation -20 is used.
41-42	UTM zone
43-56	UTM co-ordinates. Cols. 43-49 is easting, cols. 50-56 is northing.
57-58	materials classification 00=igneous rock 10=metamorphic rock 20=sedimentary rock 30=mineral 50=unconsolidated material 59=combined stream water and sediment 60=water

90=unclassified.
59-60 sample type identified more specifically than cols. 57-58
1=water and sediment 2=water only 3=sediment only
4=spring water and sediment 5=spring water sample
6=spring sediment
7=heavy mineral, water, and sediment sample.
61-62 stratigraphic age, all coded 44 (Quaternary)
63-73 Geological Survey of Canada sample number
74-80 total metal-zinc equivalent in water, in ppm

Rock Type (mnemonic) code (cols. 25-28) follows:

ALLUV	alluvia	MDSN	mudstone
ANDS	andesite	PCSC	pelitic schist
ARGL	argillite	PHLT	phyllite
BRCC	breccia	QRTZ	quartzite
BSLT	basalt	RYLT	rhyolite
CGLM	conglomerate	SCST	schist
DIBS	diabase	SHLE	shale
DIRT (DORT)	diorite	SLSN	siltstone
GBBR	gabbro	SLTE	slate
GRNT	granite	SNDS	sandstone
GRSC	greenschist	TRCT	trachyte
IRFM	iron formation	TUFF	tuff
LMSN	limestone	WCKE	wacke

Card 2
Column Item
1- 6 sample number
7 analytical sample card number for magnetic fraction, coded as 1
8-11 contains hmsp indicating that the sample is a heavy mineral separate
12-14 contains 207 indicating the material analyzed was 2 mm or less in size, ground to minus 150 mesh.
15 indicates sample fraction analyzed
0=magnetic fraction 1=non-magnetic fraction.
16-70 eleven fields of F5.0 giving results in ppm. for Cu, Pb, Zn, Mn, Ba, Co, Ni, Cr, Sb, Mo, W
71-75 one field of F5.1 giving results in ppm. for Ag.

Card 3
1-16 as for card 2, except that col. 7 is coded 2
16-65 ten fields of F5.0 giving results for Sn, Nb, Bi, Cd, Pt, B, Ti, V, Sr and Zr.

Card 4
Coded as for card 2, except for 1 in col. 15 meaning the sample is non-magnetic fraction.

Card 5
Coded as for card 3, except for 1 in col. 15

***Note that although Sb was not positively identified in any

sample due to chromium interference, a column is included for this element in the event that future re-analyses are done.

***Note that Pt was only detected in one sample (620024, non-magnetic).

***Note that values for Mn, Ti, and less commonly Cr, were reported as greater that 1 % in many samples. For recording these values in ppm in the data file the convention used is as follows:

	1% - 10,000 ppm.
greater than	1% - 20,000
greater than	+1% - 30,000
greater than	++1% - 40,000
greater than	+++1% - 50,000

GAS file header records:

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23    3  169  171   78    0
 WIDTH DEPTHRAFLOWWATLEVTURBID PPTE   ENVIRSAMLOCCOLOURSICOMPROKTYP
 EH     PH TEMWAT   MAP    CXM   UTMZ   UTME   UTMN   CLASSTYPSAM   AGE
GSCSAM   TMZ   CARD2 HMSP    MAT FRACT1  CU1    PB1    ZN1    MN1    BA1
  CO1    NI1    CR1    SB1    MO1    W1    AG1   CARD3FRACT2  SN1    NB1
 BI1    CD1    PT1     B1    TI1    V1     SR1    ZR1   CARD4FRACT3  CU2
 PB2    ZN2    MN2    BA2    CO2    NI2    CR2    SB2    MO2    W2    AG2
CARD5FRACT4   SN2    NB2    BI2    CD2    PT2     B2    TI2    V2     SR2
 ZR2
(A6,F3.0,F3.1,7F1.0,F5.0,A4,F4.0,2F2.1,F1.0,F3.0,F2.0,2F7.0,3F2.0,
A11,F7.0/6X,
F1.0,A4,F3.0,F1.0,11F5.0,F5.1,5X/6X,F1.0,7X,F1.0,10F5.0,15X/6X,F1.
0,7X,F1.0, 11F5.0,F5.1,5X/6X,F1.0,7X,F1.0,10F5.0,15X)
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Digital Data:

file location:	w:\adcock\archives\gas
file name:	g023.gas
file type:	80 character fixed record length, ASCII
file size:	82,720 bytes