DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

MISCELLANEOUS FIELD STUDIES
MAP MF-1495-C
SHEET 2 OF 2

INDEX MAP SHOWING LOCATION OF SELWAY-BITTERROOT WILDERNESS

Base from U.S. Geological Survey, 1:250,000, Hamilton, 1956, revised, 1969; Elk City, 1956, limited revision, 1963

Simplified geology from Toth (1983)

MAP B. DISTRIBUTION OF ANOMALOUS CONCENTRATIONS OF Mo IN THE LESS-THAN-170-MESH STREAM-SEDIMENT AND NONMAGNETIC STREAM-SEDIMENT CONCENTRATE SAMPLES

GEOCHEMICAL MAPS OF THE SELWAY-BITTERROOT WILDERNESS, IDAHO COUNTY, IDAHO, AND MISSOULA AND RAVALLI COUNTIES, MONTANA

By
Berton W. Coxe and Margo I. Toth
1983

CORRELATION OF MAP UNITS

Tg	Eocene	TERTIARY
TKg	Paleocene and(or) Upper Cretaceous	TERTIARY AND(OR) CRETACEOUS
TKg		CRETACEOUS
Kt		CRETACEOUS
Ym Ymi		PROTEROZOIC Y(?)

DESCRIPTION OF MAP UNITS

Tg EPIZONAL HORNBLENDE-BIOTITE GRANITIC PLUTONS (EOCENE)--Medium to coarse grained, massive

TKp PARADISE PLUTON OF THE BITTERROOT LOBE OF THE IDAHO BATHOLITH (PALEOCENE AND (OR) UPPER CRETACEOUS)--Mesozonal, chemically zoned, medium- to coarse-grained, hornblende-biotite tonalite to monzogranite

TKg GRANITIC PLUTONS OF THE BITTERROOT LOBE OF THE IDAHO BATHOLITH (PALEOCENE AND (OR) UPPER CRETACEOUS)--Mesozonal, medium-grained, foliated, muscovite-biotite granodiorite and monzogranite

Kt TONALITE AND QUARTZ DIORITE PLUTONS OF THE BITTERROOT LOBE OF THE IDAHO BATHOLITH (CRETACEOUS)--Mesozonal, fine- to medium-grained, foliated, biotite tonalite and quartz diorite

Ymi MIGMATITE (MIDDLE(?) PROTEROZOIC)--Consisting of Proterozoic metasedimentary rocks (?a) injected by granodiorite and monzogranite, and lesser tonalite and quartz diorite

Ym CALC-SILICATE GNEISS, QUARTZITE AND QUARTZOFELDSPATHIC SCHIST (MIDDLE(?) PROTEROZOIC)

CONTACT--Dashed where approximately located or inferred. Queried where uncertain

FAULT--Showing dip. U on upthrown side, D on downthrown side. Arrows indicate relative directions of accompanying strike-slip movement. Dashed where approximately located; dotted where concealed; queried where uncertain

APPROXIMATE BOUNDARY OF WILDERNESS

Table 1.--Detection limits for Ag, As, Bi, Cd, Zn, and Mo

Element	Detection limit in ppm: Fines fraction	Magnetic- and nonmagnetic-concentrate fraction
Ag	0.5	1.0
As	200	500
Bi	10	20
Cd	20	50
Zn	200	500
Mo	5	10

Table 2.--Summary of spectrographic data for rocks in the Selway-Bitterroot wilderness

[All minimum, maximum, and mode values are in parts per million except Fe, Mg, Ca, and Ti which are in units of percent. AR, all rocks sampled (total observations equal 3010); IB, Idaho batholith rocks (total observations equal 1310); TE, tertiary epizonal intrusive rocks. Includes Running Creek and Whistling Pig pluton samples (total observations equal 553); N, element not detected; L, element detected but less than the lower quantifiable limit; dashes (---) indicate not determined because of high amount of unqualified data]

Element	Minimum AR	Minimum IB	Maximum AR	Maximum IB	Maximum TE	Mode AR	Mode IB	Mode TE	Percent N AR	Percent N IB	Percent N TE	Percent L AR	Percent L IB	Percent L TE
Fe	0.05 L		>20	1	1	1			0	0	0	0.1	0	0
Mg	.02 L	7	7	0.3	0.3	0.1			0	0	0	1.0	0	3.4
Ca	.05 L	20	1	1	[1]0.2/0.5				0	0	0	2.8	0.7	2.2
Ti	.002	.1	1	.1	.1				0	0	0	0	0	0
Mn	10 N	>3000	200	200	200	0.07			0	0	0	.07	0	.2
Ag	.5 L	50	---	---	---	98.7	99.2	97.7	.3	.2	.4			
B	10 N	1500	---	---	---	39.1	25.1	64.9	33.8	38.4	23.6			
Ba	20 N	>5000	1000	1000	500	1.4	0	3.6	.1	0	.5			
Be	1 N	15	1	1	2	15.9	16.2	2.5	8.1	10.2	3.1			
Bi	10 N	30	---	---	---	99.8	100.0	99.3	.1	0	.4			
Co	5 N	70	---	---	---	60.0	78.6	84.3	3.2	3.0	6.7			
Cr	1 N	1500	---	---	---	51.7	65.9	62.9	7.4	6.9	11.9			
Cu	5 N	500	---	---	---	52.4	66.5	40.5	19.5	15.5	33.6			
La	20 N	500	70	70	50	24.6	24.6	11.8	.2	.08	.4			
Mo	5 N	150	---	---	---	93.1	91.9	92.8	2.2	2.6	2.0			
Nb	20 N	70	---	---	20	77.5	96.0	28.2	9.5	2.8	25.3			
Ni	5 N	200	---	---	---	53.3	64.3	61.3	5.0	5.6	8.7			
Pb	10 N	150	30	30	20	5.9	1.6	.5	4.5	1.1	1.3			
Sc	5 N	50	---	---	---	57.0	70.4	66.7	9.3	10.1	14.3			
Sn	10 N	70	---	---	---	86.5	91.3	71.1	9.3	6.8	20.4			
Sr	100 N	2000	500	500	100	14.3	1.5	39.2	4.3	.5	12.7			
Y	10 N	1000	20	15	10	11.7	2.3	33.1	6.3	6.3	16.3			
Y	10 N	1500	20		50	29.7	48.6	3.4	7.0	10.9	1.8			
Zn	200 N	1000	---	---	---	98.7	99.7	98.4	.6	.08	1.3			
Zr	10 N	>1000	100	100	100	.08	.3	.4	.07	.08	0			

[1]Element distinctly bimodal, both modes given.

Table 3.--Rock Samples containing anomalous concentrations of certain elements within the Selway-Bitterroot wilderness

[L, detected, but at an amount less than the given lower quantifiable limit; N, not detected, lower quantifiable limit is given. Tertiary Epizonal Rocks--TCG, coarse-grained granite; TMG, TPMG, medium-grained equigranular and porphyritic granites; TFG, TPFG, fine-grained equigranular and porphyritic granite; TCGY, TSY, coarse-grained syenite and syenite; TPY, porphyritic rhyolite; TA, TPA, andesite and porphyritic andesite; TAP, aplite; TGOS, gossan; TKNZBX, quartz vein/breccia dike. Cretaceous/Tertiary Mesozonal Rocks--Idaho batholith related--KMG, KPMG, medium-grained granites, equigranular and porphyritic; KFG, KPFG, fine-grained granites, equigranular and porphyritic; KFO, KMO, diorites, fine and medium grained; KFQD, KQDGR, fine-grained quartz diorite and quartz diorite granite; KMQD, medium-grained granodiorite, equigranular and porphyritic; KPMGD, porphyritic granodiorite; KMT, tonalite; KGL, leucogranite; KPGS, porphyritic quartz and feldspar phenocrysts in aphanitic rocks--YQ, tonalite; KPG, porphyritic granite; KPGG, pegmatite; KGNS, quartz and feldspar phenocrysts in metamorphic rocks--YQ, tonalite; KGS, gneiss; KCS, calc-silicate; YAM, amphibolite; YBGA, biotite gneiss; YBGQA, biotite-quartzite gneiss; YMi, migmatite]

Sample No.	Rock type code	Latitude N.	Longitude W.	Ag	Pb	Zn	Bi	Cu	Mo	Sn	Nb	Be
BOHGO33A	TCG	45°45'14"	114°22'19"	0.5 N	150	200 N	10 N	15	20	10	20	3
BOHHO24A	KMO	45°54'14"	114°28'16"	.5 N	15	200	10 N	15	5 N	20	20 N	1
BOHHO25H	KMO	45°54'18"	114°28'16"	.5 N	10	200 L	10 N	30	5 N	10	20 N	1
BOHHO43A	KPMG	45°54'32"	114°28'15"	.5 N	30	200	10 N	5 L	5 N	10 N	20 N	1
BOHHO48A	KVNQ	45°54'38"	114°27'22"	3.0	30	200 N	10 N	5 L	5 N	10 N	20 N	1
BOHHO64A	KPMG	45°53'11"	114°24'32"	.5 N	50	200 N	10 N	5 N	10	10 L	20 N	1 N
BOHHO66A	KFQD	45°56'53"	114°25'01"	.7	15	200	10 N	5 N	10	10	20 N	1 N
BOEBO22A2	KMG	46°18'54"	114°33'29"	.5 N	20	200 N	10 N	5 N	10	10 N	20 N	1.5
BOEB102E	TG	46°19'52"	114°30'54"	.5 N	15	200	10 N	5 N	30	10 N	20 N	2
BOEB110A	KPMG	46°22'16"	114°23'47"	.5 N	30	200 N	10 N	5 N	10	10 N	20 N	1 N
BOHMO41A	TMG	46°57'07"	113°50'23"	.5 N	15	200 N	10 N	5 N	10	10 N	20 N	3
BOHMO62A	YMi	46°06'58"	114°53'13"	.5 N	10	200 N	10 N	30	10	10 N	20 N	1.5
BOHMO68A	TMG	46°56'24"	114°53'13"	.5 N	15	200	10 N	5 N	10	10 N	20 N	2
BOLGO38A	KGN	45°48'07"	114°18'56"	.5 N	10	200 N	10 N	15	10	10 N	20 L	2
BOLGO41C	TGY	45°47'06"	114°20'13"	.5 N	30	200 N	10 N	5 L	10	10 L	20	2
BOLGO62A	YMi	46°02'20"	114°13'11"	.5 N	10 L	200 N	10 N	5 N	10 N	10 N	20 N	1 N
BOLGO79A	YMi	45°50'05"	114°13'01"	.5 N	30	200 N	10 N	5 N	10	10 N	20 N	1 L
BOLGO95A	TMG	45°53'50"	114°12'47"	1.0	10	200 N	10 N	5 N	5 N	10 N	20 N	1
BOLGI10A2	KPMG	45°50'05"	114°12'47"	.5	10	200 N	10 N	5 N	10 N	10 N	20 N	1
BOLGJ20A	KPMG	45°53'31"	114°20'38"	.5 N	20	200 N	10 N	5 N	10	10 N	20 N	1
BOLGJ21A2	KPMG	45°53'28"	114°20'38"	.5 N	20	200 N	10 N	5 N	10	10 N	20 N	1.5
BOMGI1E	YG	46°53'18"	114°12'06"	.5 N	10	200 N	10 N	150	5 N	10 N	20 N	1 N
BOMGI24E	KMG	46°32'02"	114°22'19"	.5 N	50	200 N	10 N	5	15	10 N	20 N	1
BOMGI33A	YCS	46°29'35"	114°26'43"	.5 N	10 N	200 N	10 N	5	15	10 N	20 N	1 N
BOMGI20A2	KPMGD	46°27'54"	114°19'59"	.5 N	50	200 N	10 N	5	15	10 N	20 N	2
BOMGI3A	KPMGD	46°30'50"	114°16'03"	.5 N	50	200 N	10 N	5	15	10 N	20 N	2
BOMGI05A2	KPMGD	46°34'26"	114°16'12"	.5 N	30	200 N	10 N	30	15	10 N	20 N	1.5
BOMTI39A	KPMGD	46°50'47"	114°23'17"	.5 N	20	200 N	10 N	300	5 N	10 N	20 L	3
BOMTI80A	KPMGD	46°56'38"	114°20'42"	.5 N	30	200 N	10 N	5 N	10	10 N	20 N	1 N
BOMTI83A2	KPMGD	46°56'33"	114°16'53"	.5 N	10	200 N	10 N	15	10 N	10 N	20 N	1
BORGO20A	KPMG	45°48'11"	114°33'36"	.5 N	30	200 N	10 N	5 L	5	10 L	30	3
BORGO25A1	YPG	45°46'15"	114°31'05"	.5 N	20	200	10 N	5 N	5	10 N	20 N	1.5
BORGI32A	KMG	46°22'31"	114°42'50"	.5 N	10	1000	10 N	5 N	5 N	10 N	20 N	1 N
BORGI66A	YG	46°12'25"	114°24'50"	.5 N	10	200	10 N	30	10 N	10 N	20 N	1
BORR221A	YAM	46°12'24"	114°59'49"	.5 N	10 N	200 N	10 N	100	5 N	10 N	20 N	1.5
BORR260A	KMG	46°11'48"	114°40'02"	.5 N	30	200	10 N	5 N	10	10 N	20 N	1
BORR290A	KMG	46°19'01"	114°27'14"	2.0	50	200 N	10 N	5 N	5 N	10 N	20 N	1.5
BORR32E	KMT	46°11'06"	114°25'52"	.5 N	50	200 N	10 N	5 N	5 N	10 N	20 N	1.5
BORR346A	KMQD	46°10'48"	114°22'44"	.5 N	30	200 N	10 N	5 N	10	10 N	20 N	1 N
BIMG081A	KPMGD	46°04'14"	114°23'37"	1.0	20	200 N	10 N	5 N	10	10 N	20	2
[1]81ME503A	TGOS	46°09'14"	114°51'14"	.5 N	30	200 L	10 N	5 L	5 N	10 N	20 N	7
[1]81ME504B	TVNQBX	46°07'40"	114°51'55"	.5 N	15	200 N	10 N	5	5	10 N	20 L	2
[1]81ME507A	KVNQ	45°40'08"	114°51'44"	.7	10 L	200	10 N	5	5	10 N	20 N	1.5
[1]81ME506A	KVNQ	45°40'08"	114°31'44"	2.0	10	200 N	10 N	20	5 N	10 N	20 N	2
78EB019A	KPFG	46°05'31"	114°09'49"	.5 N	30	200 N	10 N	5 L	7	10 N	50	2
78EB197A	KPFG	46°14'06"	115°11'10"	.5 N	20	200 N	10 N	5 N	5	10 N	20 N	1.5
78EB323A	TA	46°04'36"	115°09'15"	.5 N	15	200 N	10 N	10	5 N	10	50	2
78EB235A	TPMG	46°10'37"	115°07'16"	1.0	20	200 N	10 N	30	5 N	10 L	20 N	1.5
[1]78LLG73B	TMG	46°05'07"	114°01'02"	.5 N	10	200 N	10 N	5	150	10 N	50	2
78LLL01A	TPFG	46°08'38"	115°00'14"	.5 N	30	200	10 N	7	5 N	10	20	5
78LLL16A	TPMG	46°09'01"	114°56'06"	.5 N	10	200 N	10 N	5	10	10 N	20	1.5
78LLL11A	YG	46°13'08"	114°57'50"	5.0	10 L	200 N	10	500	5 N	10 N	20 N	1
78LLL18E	TMG	46°08'03"	114°56'13"	.5 N	20	200 N	10 N	5 L	5 N	10 N	20	1.5
78LLL70AZ	TMG	46°07'34"	114°51'43"	.5 N	20	200 N	10 N	5 L	5	10 N	30	1
78LLL73A1	KPMGD	46°06'34"	114°51'34"	.5 N	20	200 N	10 N	5	5	10 N	20 N	1.5
78BR064E	KQDGR	46°11'53"	115°21'43"	.5 N	15	200 L	10 N	5 N	5 N	10 N	20 L	1 N
78BR130B	YAM	46°09'18"	115°11'35"	.5 N	30	200 N	10 N	100	5 N	10 N	20 N	1.5
78BR179AL	TMG	46°13'08"	115°11'17"	.5 N	30	200 L	10 N	100	5 N	10	20 N	1.5
78SL007A	YG	45°58'01"	115°04'41"	.5 N	20	200	10 N	5 L	5	10	20 N	1.5
78SL008A	KPFG	45°58'02"	115°04'12"	.5	30	200 N	30	50	5 L	20	20 L	10
78SL031AR	TCSY	45°42'05"	114°41'56"	.5	20	200 N	10 N	5 L	5 N	10	20 N	1.5
78WMB04A	TPA	45°51'34"	114°49'59"	.5 N	15	200	10 N	20	10 N	20 N	20 N	1.5
78WM110A1	TPA	45°52'11"	114°52'08"	.5 N	20	200 N	10 N	5	10	10 N	30	3
79KC107A	TMG	45°54'54"	114°47'18"	.5 N	20	200 N	10 N	5 N	5 N	10 N	20 L	1.5
79EB023A	TMG	45°54'56"	114°44'10"	3.0	50	200 N	10 N	5	5 N	10 N	20 N	1
79EB024A1	TMG	45°54'44"	114°44'20"	1.0	30	200 N	10 N	5	5 N	10 N	20 N	1.5
79EB114A	YG	46°12'43"	115°07'08"	.5 N	10	200 N	10 N	100	5 N	10 N	20 N	1.5
79EB136B	YG	46°12'11"	115°10'14"	.5 N	15	200	10 N	10	5 N	10 N	20 N	1.5
79EB142A	TMG	46°10'13"	114°47'06"	.5 N	10	200L	10 N	50	5 N	10 N	20 N	3
79EB144A	KFO	45°56'-	114°47'17"	.5 N	10	200 N	10 N	50	5 N	10 N	20 N	3
79EB145A	KFG	45°55'56"	114°47'35"	1.0	30	200 N	10 N	5	5 N	10 N	20 N	2
79EB205A	TFG	45°46'54"	114°47'56"	.5 N	30	200 N	10 N	5 N	5 N	10 N	20 N	3
79EB227A1	TPA	45°51'52"	114°48'25"	.5 N	30	200	10 N	20	5 N	10 N	20	3
79MED50	YMi	46°06'-	114°46'03"	.5 N	20	200 N	10 N	15	5 N	10 N	20 N	15
79MED88	YA	46°06'06"	114°49'23"	.5 N	20	200 L	10 N	7	5 N	10 N	20	5
79MED98A	YMi	45°48'04"	114°21'06"	.5 N	20	200	10 N	7	5 N	10 N	20 N	2
79ME116A	KPMGD	45°50'03"	114°03'40"	.5 N	20	200	10 N	20	5 N	10 N	20 N	3
79MT216A1	TMG	46°10'30"	114°54'11"	.5 N	70	200 L	10 N	5 L	5 N	70	70	10
79MT222A1	TMG	45°57'05"	114°56'11"	.5 N	30	200	10 N	5	5 N	10 L	15	15
79MT225A1	TFG	45°57'40"	114°56'20"	.5 N	30	200	10 N	5	5 N	10	20	15
79MT226A	TFG	45°53'40"	114°56'26"	.5 N	50	200 N	10 N	7	5 N	10 L	20	15
79MT230A	TCG	45°52'05"	114°53'17"	.5	30	200 N	10 N	7	5 N	10 N	20 N	2
79MT232A1	TCG	45°48'50"	114°47'56"	.5 N	70	200 N	10 N	10	5 N	10 N	50	7
79MT233A	TFG	45°41'18"	114°47'52"	3.0	30	200 N	10 N	5 N	5 N	10 N	20 N	1
79RB108A	YMi	46°16'12"	114°51'32"	1.0	30	200	10 N	15	5 N	10 N	20 N	1
79RB141B	YG	45°59'10"	114°11'46"	.5 N	10 N	200 N	10 N	150	5 N	10 N	20 N	1
79RB164A	YS	45°59'20"	115°09'11"	.5 N	10	200 N	10 N	5	5 N	10 N	20 N	1
79RB246E	YMi	46°20'10"	115°20'42"	3.0	30	200 N	10 N	5 N	5 N	10 N	20 N	1
79RB253B	KMO	46°20'35"	115°04'55"	.5 N	20	200 L	10 N	5 N	5 N	10 L	50	1 N
79RB257A	YG	46°18'29"	115°08'24"	.5 N	10	200 N	10 N	5 N	5 N	10 L	50	2
[1]79RB269AZ	KPMG	46°18'29"	115°10'41"	.5	30	200 N	10 N	5 N	5 N	10 N	20 N	1
79RB270A	YMi	46°14'26"	115°15'11"	3.0	20	200 N	10 N	5 N	5 N	10 N	20	1
79RB279A	YMi	46°13'20"	115°17'49"	.5 N	30	200 L	10 N	15	5 N	10 N	20	1
[1]79RB290A1	KPMG	46°18'53"	115°03'26"	.5 N	30	200 N	10 N	5	5 N	10 N	20 N	1
79RB298A	KPMG	46°15'25"	115°01'22"	.5	30	200 N	10 N	5	5 N	10 N	20 N	1
[1]79RB299A1	KPMG	46°20'49"	114°58'46"	1.0	30	200 N	10 N	5 N	5 N	10 N	20 N	1
[1]79RB301A1	YBQGR	46°01'55"	115°10'59"	.5 N	30	200 N	10 N	5 N	5 N	10 N	20 N	1.5
79RB329A	KMG	46°20'20"	115°08'56"	.5 N	20	200 N	10 N	5 N	5 N	10 N	20 N	1.5
79RB330B	KMG	46°20'20"	115°09'00"	.5 N	50	200 N	10 N	5 N	5 N	10 N	20 N	1
79WM021A1	YPR	45°58'12"	114°49'44"	.5 N	30	200 L	10 N	5 L	5 N	10 L	20 L	2
79WM073A	TMG	45°43'02"	114°35'28"	7.0	70	200 N	10 N	30	5 N	10 N	50	3
79WM092E	TAP	45°55'08"	114°56'24"	.5 N	150	200 N	10 N	15	5 N	10 L	70	15
79WM119A	TA	46°56'38"	115°02'31"	.5 N	20	200	10 N	5	5 N	10 N	10	2
79WM127A	TFG	45°53'29"	115°04'48"	.5 L	30	200 N	10 N	5	5 N	10 L	20 L	5
79WM148A	TMG	45°59'46"	115°03'54"	.5	30	200 N	10 N	10	5 N	10 N	20 N	5
[1]7GO005G	KVNQ	45°49'26"	114°32'02"	50.0	10 L	200 N	10 N	10	5	10 N	20 N	1 N
[1]7GO006G	YCS	45°49'30"	114°32'06"	.5 L	10 N	200 N	10 N	10	5	10 N	20 N	1.5
[1]7GO007G	YBGA	45°49'34"	114°32'10"	.5 L	10	200 N	10 N	30	5 L	10 N	20 N	1 N
7GO111G	YBGA	45°49'23"	114°31'34"	.5 N	10 N	200 N	10 N	100	5 L	10 N	20 N	2
7GO114G	YG	45°50'12"	114°34'44"	.5 N	20	200 N	10 N	5 L	5 L	10 N	20 N	1
7GO123G	YPR	45°45'22"	114°36'43"	.5 N	20	200 N	10 N	5 L	5 L	10 N	30	3
7GO171G	KVNQ	45°49'41"	114°27'20"	.5 N	15	200 N	10 N	70	15	10 N	20 N	1 N
7GO231G	YMi	45°52'08"	114°43'30"	.5 N	10	200 N	10 N	150	5 N	10 N	20 N	1
7GO235G	YPR	45°51'07"	114°38'36"	.5 N	10	300	10 N	50	5 N	10 N	20 N	1.5
7LO003G	YMi	46°09'04"	114°28'30"	.5 N	10	200 N	10 N	100	5 L	10 N	20 N	1 L
7LO063G	TPMG	46°08'07"	114°32'06"	.5 N	20	200 N	10 N	15	5	10 N	30	2
7LO162G	TPFG	45°57'50"	114°13'30"	.5 N	50	200 N	10 N	20	5 L	10 N	30	3
7LO199G	TFG	45°48'37"	114°16'01"	.7	50	200 N	10 L	5 L	5 N	10 N	20 N	1 L

	As	Au
81ME506A	700	0.05
81ME507A	200 N	.05 L
78EB197A	W = 50	

[1]Anomalous rock discussed in text.

Table 4.--Major element means and standard deviations for four plutons within the Selway-Bitterroot Wilderness

[Total iron reported as Fe_2O_3. LOI, loss on ignition at 900°C for 20 minutes. Major elements analyzed by automated X-ray fluorescence. U.S. Geological Survey laboratories in Menlo Park, Calif., and Denver, Colo. The analyses are tabulated in U.S. Geological Survey Open-File Report by Koesterer and others (1982). B, number of samples for which that quantity was not determined because it was less than the lower quantifiable limit (qualified data). Qualified data excluded from mean and standard deviation computation; therefore, the means for elements having qualified data are probably artificially high, and standard deviations are probably artificially small]

Weight percent	Running Creek pluton: Mean	Deviation	Valid Obs.	B	L	Whistling Pig pluton: Mean	Deviation	Valid Obs.	B	L
SiO_2	75.2	2.4	52	0	0	72.7	3.0	9	0	0
Al_2O_3	12.9	1.1	52	0	0	13.5	1.2	9	0	0
$T-Fe_2O_3$	1.55	.59	52	0	0	2.08	.84	9	0	0
MgO	.20	.59	39	0	13	.21	.20	7	0	2
CaO	.55	.37	52	0	0	.74	.51	9	0	0
Na_2O	3.34	.31	52	0	0	2.95	1.06	9	0	0
K_2O	5.02	.45	52	0	0	4.78	.63	9	0	0
TiO_2	.14	.07	52	0	0	.26	.10	9	0	0
P_2O_5	.10		5	0	47	.044	.033	9	0	0
MnO	.023	.008	12	0	40	.076	.13	9	0	0
LOI	.57	.28	52	0	0			9	0	0

Weight percent	Main phase-Idaho Batholith: Mean	Deviation	Valid Obs.	B	L	Paradise pluton: Mean	Deviation	Valid Obs.	B	L
SiO_2	72.0	1.6	69	0	0	67.8	2.3	18	0	0
Al_2O_3	15.3	.6	69	0	0	16.0	.8	18	0	0
$T-Fe_2O_3$	1.35	.34	69	0	0	2.78	.71	18	0	0
MgO	.43	.23	69	0	0	1.59	.56	18	0	0
CaO	1.80	.33	69	0	0	2.75	.57	18	0	0
Na_2O	4.01	.31	69	0	0	4.12	.40	18	0	0
K_2O	3.80	.55	69	0	0	3.41	.54	18	0	0
TiO_2	.17	.06	69	0	0	.45	.11	18	0	0
P_2O_5	.08	.06	32	0	37	.15	.05	17	0	1
MnO	.03	.01	22	0	47	.05	.02	12	0	6
LOI	.49	.19	49	20	0	.63	.26	15	3	0

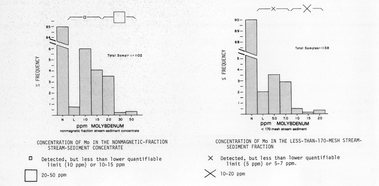

Figure 4.--Map showing contours of Mo concentration and histogram of Mo concentration in the magnetic fractions of stream-sediment-concentrate samples. Contours at 15, 20, 30, 50, and 70 parts per million(ppm).

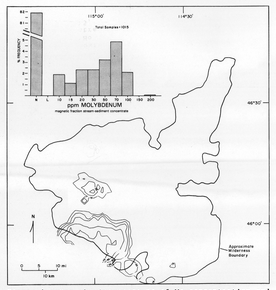

Figure 5.--Map showing contours of Sn concentration and histogram of Sn concentration in the magnetic fraction of stream-sediment-concentrate samples. Contours at 30, 50, 70, 100, 150, 200, and 300 parts per million(ppm).

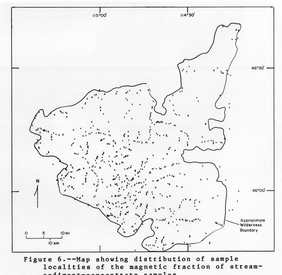

Figure 6.--Map showing distribution of sample localities of the magnetic fraction of stream-sediment-concentrate samples.

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