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GEOCHEMICAL COMPOSITIONS OF METAVOLCANIC AND METASEDIMENTARY ROCKS, WESTERN JURASSIC AND WESTERN PALEOZOIC AND TRIASSIC BELTS, KLAMATH MOUNTAINS, OREGON AND CALIFORNIA

by

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INTRODUCTION

Tectonostratigraphic terranes are generally defined on the basis of lithologic, structural, stratigraphic, geochronologic, and paleontologic data. Such data may be ambiguous or unavailable for terranes composed predominantly of metavolcanic, unfossiliferous, or stratigraphically mixed rocks (e.g., melanges). Many terranes in the Klamath Mountains province of northwestern California and southwestern Oregon fall in this category; they consist of lithologically similar metabasalt, meta-andesite, and metamorphosed volcanogenic metasedimentary rocks. Meaningful age determinations of such rocks by isotopic methods commonly is difficult because of the lack of appropriate minerals and/or metamorphic overprinting.

Recent studies in the Klamath Mountains province (e.g., Mortimer, 1984; Donato, 1987; Hacker and others, 1993) have demonstrated the utility of geochemical fingerprinting to distinguish rocks of separate terranes. These authors and others have also used trace element geochemical signatures to interpret and reconstruct tectonic settings of the area. Typically, a large number of analyses are necessary for significant conclusions to be drawn. In the case of the Klamath Mountains, many of these data previously were unpublished.

This report presents analyses of about 800 metavolcanic and metasedimentary rocks from terranes in the Western Jurassic and western Paleozoic and Triassic belts of the Klamath Mountains province. We hope to encourage use of these data by other workers by making the data available in a uniform format. Major and trace-element analyses are presented in Table 1. Rare-earth element (REE) analyses are available for about one-third of the samples and are presented in Table 2. The data have been compiled from a wide variety of sources, including unpublished theses and dissertations and our own data bases, compiled in the course of geologic studies in the region. Latitudes and longitudes of sample localities are given if they are available. References for previously-published analyses are given in footnotes to the tables. This report is available on 3.5" disk as Open-File Report 95-227-B (Microsoft Word v. 5.1 and Excel v. 4.0 formats for the Macintosh, and WK1 and Microsoft Word for DOS formats for IBM and compatibles) and may be obtained from USGS ESIC - Open-file Report Section, Box 25286, Mail Stop 517, Federal Center, Denver, CO 80225.

GEOLOGIC SETTING

The geologic and tectonic setting of the Klamath Mountains province have previously been addressed by many authors (e.g., Irwin, 1981; Burchfiel and Davis, 1981; Saleeby and others, 1982). The province consists of four major lithotectonic belts, from west to east: the western Jurassic belt, the western Paleozoic and Triassic belt, the central metamorphic belt, and the eastern Klamath belt (Fig. 1; Irwin, 1966; 1994). Data presented here are from units in the two western belts. Below we present brief descriptions of units represented in our database.

Western Jurassic Belt

In California, the western Jurassic belt (Fig. 1) consists of two units: a basal, late Middle Jurassic ophiolite called the Josephine ophiolite and an overlying late Middle to Late Jurassic metasedimentary unit named the Galice Formation (Fig. 2). Near the California-Oregon border, the Josephine ophiolite displays a complete ophiolite sequence (Harper, 1984), but to the south it is represented only by tectonic fragments (Wyld and Wright, 1988). The Galice Formation is predominantly metamorphosed flysch, but locally it contains metavolcanic rocks and volcaniclastic metasediments (Young, 1978).

The Josephine ophiolite-Galice Formation sequence can be traced into the Oregon Klamath Mountains, but near the latitude of Cave Junction, OR, the structural sequence becomes more complex. In this area, the western Jurassic belt consists of a composite basal unit that is intruded by the early Late Jurassic Illinois River plutonic complex (Hotz, 1971) and depositionally overlain by Late Jurassic metavolcanic and metasedimentary rocks of the Rogue Formation (Garcia, 1979). The composite basal unit consists of peridotite (Josephine, Pearsoll Peak and Chrome Ridge peridotites), amphibolite (the Briggs Creek Amphibolite of Coleman and Lanphere, 1991), crustal fragments of the Josephine ophiolite, and a deformed ophiolitic melange thought to be correlative with the Rattlesnake Creek terrane of the western Paleozoic and Triassic belt (see below, Fig. 2; Yule and others, 1994).

Western Paleozoic and Triassic Belt

This report uses the terrane nomenclature for the western Paleozoic and Triassic belt outlined by Irwin (1972) and modified by Wright (1982) and Hacker and others (1993). From west to east, structurally lowest to highest, the terranes are: Rattlesnake Creek, western Hayfork, Sawyers Bar, and Stuart Fork. They are separated by east-dipping thrust faults.

The Rattlesnake Creek terrane (Fig. 2) consists of a lower ophiolitic melange and an upper coherent sequence of arc-related metavolcanic and metasedimentary rocks (Wright and Wyld, 1994). Blocks in the melange range in age from Permian to Jurassic; the coherent sequence is Triassic (Wright and Wyld, 1994). The Marble Mountain terrane (Blake and others, 1982) is inferred to be the metamorphosed equivalent of the Rattlesnake Creek terrane, on the basis of similarities in lithology and structural position between the two units.

The Rattlesnake Creek terrane was probably the depositional basement for arc-related Middle Jurassic deposits of the western Hayfork terrane (Fig. 2). The western Hayfork terrane consists of metamorphosed intercalated arenite, conglomerate, argillite, and sparse volcanic rocks. The metamorphosed arenite is generally rich in mafic to intermediate volcanic detritus and the conglomerates contain abundant volcanic cobbles. Arkose and quartz arenite occur near the top of the unit in the southern Klamath Mountains (Fraticelli and others, 1987).

The Sawyers Bar terrane (Hacker and others, 1993) was divided into: the eastern Hayfork unit, a basal chert-argillite melange and broken formation; the Salmon River unit, an arc-related sequence of ultramafic rocks, mafic intrusive rocks, and metavolanic rocks (Hacker and others, 1993); the North Fork unit, a sequence of alkaline, mafic metavolcanic rocks; and the St. Clair Creek unit, a sequence of interbedded chert and argillite. Fossil and radiometric evidence for the age of the Sawyers Bar terrane was reviewed by Hacker and others (1993); it suggests deposition from middle Permian to Middle Jurassic time.

The structurally highest terrane of the western Paleozoic and Triassic belt is the Stuart Fork terrane (Goodge, 1990), which consists of blueschist- to greenschist- facies schists and mafic metavolcanic rocks. Radiometric dating indicates that metamorphism occurred in Late Triassic time (Hotz and others, 1977). We present analyses of samples of the Stuart Fork terrane from sites located in the southernmost part of the terrane, outside the boundary of the map shown in Fig. 2 (see Goodge, 1989 for a map of the entire terrane).

In Oregon, the western Paleozoic and Triassic belt was broadly termed the Applegate Group by Wells (1955). Later workers recognized a number of subunits within the Applegate Group (Smith and others, 1982). Amphibolite-facies metasedimentary and metaigneous rocks (amphibolite) of the May Creek terrane, once considered part of the Applegate Group, are now distinguished from it (Donato, 1991b). This report presents analyses of rocks from the amphibolite unit of the May Creek terrane, but none from the metasedimentary unit (Fig. 2).

Barnes and others (1993) and Donato (1992; 1993) demonstrated that the southern part of the Applegate Group can be correlated with the Rattlesnake Creek and western Hayfork terranes, and that the Rattlesnake Creek terrane may extend as far north as the White Rock pluton (Fig. 2). Correlation of the remainder of the Applegate Group and the May Creek terrane with western Paleozoic and Triassic belt terranes in California is an outstanding problem.

Condrey Mountain Schist

The Condrey Mountain Schist occupies a structural window through the western Paleozoic and Triassic belt in the central Klamath Mountains (Figs. 1 and 2). The peripheral, structurally higher unit consists of greenschist and sparse felsic orthogneiss; the central, structurally lower unit of the Schist consists of pelitic and mafic schists metamorphosed to transitional greenschist-blueschist facies (Helper, 1986). U-Pb dating of zircon from the orthogneiss and a metavolcanic schist indicates a Middle Jurassic age (Helper and others, 1989; Saleeby and Harper, 1993).

DATA SOURCES AND ANALYTICAL METHODS

Many of the data presented here were obtained as part of a study of terrane correlations between and among the western Jurassic and western Paleozoic and Triassic belts. These analyses were performed either at the U.S. Geological Survey (USGS) or in the Department of Geosciences at Texas Tech University (TTU). Data were also compiled from published sources and unpublished graduate theses, as cited in the accompanying table.

At the USGS, major elements were obtained by wavelength-dispersive x-ray fluorescence spectrometry. Trace elements other than the rare earth elements (REE) were obtained by energy-dispersive x-ray fluorescence spectrometry. We refer to both methods as "XRF" in Table 1. The REE were analyzed by instrumental neutron activation analysis (INAA in Table 2) or by inductively-coupled plasma mass spectroscopy (ICP-MS in Table 2).

At Texas Tech, samples were analyzed by inductively-coupled plasma atomic emission spectroscopy (ICP) and, for Rb, flame emission spectroscopy. The REE were analyzed by instrumental neutron activation analysis (INAA) at Oregon State University and Sul Ross State University. Methods are also listed for other published and unpublished data, if known. For analyses in which values for both Fe_2O_3 and FeO are given, FeO was determined by titration and the Fe_2O_3 value was calculated by subtracting the oxidized equivalent of the FeO value from total Fe as Fe_2O_3 . In all other cases, the total Fe content is given as either Fe_2O_3 (USGS and TTU data) or as FeO, according to the source of the data.

ORGANIZATION OF TABLES

As a guide for users of Tables 1 and 2, we provide below an outline of the tables' organization. We use **boldface**, UPPER- and lower case, <u>underlining</u>, and *italics* in the tables to designate levels of the heriarchy. The outline below gives only the first two levels of the heirarchy. Note that due to the width of Table 1, it was necessary for each row of data to cover two sheets. Pages are numbered "over, then down".

WESTERN JURASSIC BELT
- <u>JOSEPHINE OPHIOLITE</u>
- <u>ROGUE FORMATION, AND CHETCO INTRUSIVE COMPLEX</u>
- <u>GALICE FORMATION</u>
- <u>BRIGGS CREEK AMPHIBOLITE</u>
- <u>TECTONIC FRAGMENTS AND DIKES OF JOSEPHINE OPHIOLITE METABASALT</u>
- <u>146-151 Ma DIKES THAT CUT THE SMITH RIVER SUBTERRANE</u>

WESTERN PALEOZOIC AND TRIASSIC BELT
- <u>RATTLESNAKE CREEK TERRANE</u>
- <u>HIGH-GRADE METAMORPHIC EQUIVALENT OF RATTLESNAKE CREEK TERRANE (MARBLE MOUNTAIN TERRANE)</u>
- <u>WESTERN HAYFORK TERRANE</u>
- <u>AMPHIBOLITES OF THE MAY CREEK AREA</u>
- <u>SAWYERS BAR TERRANE OF HACKER AND OTHERS, 1993</u>
- <u>STUART FORK TERRANE</u>
- <u>CONDREY MOUNTAIN SCHIST</u>

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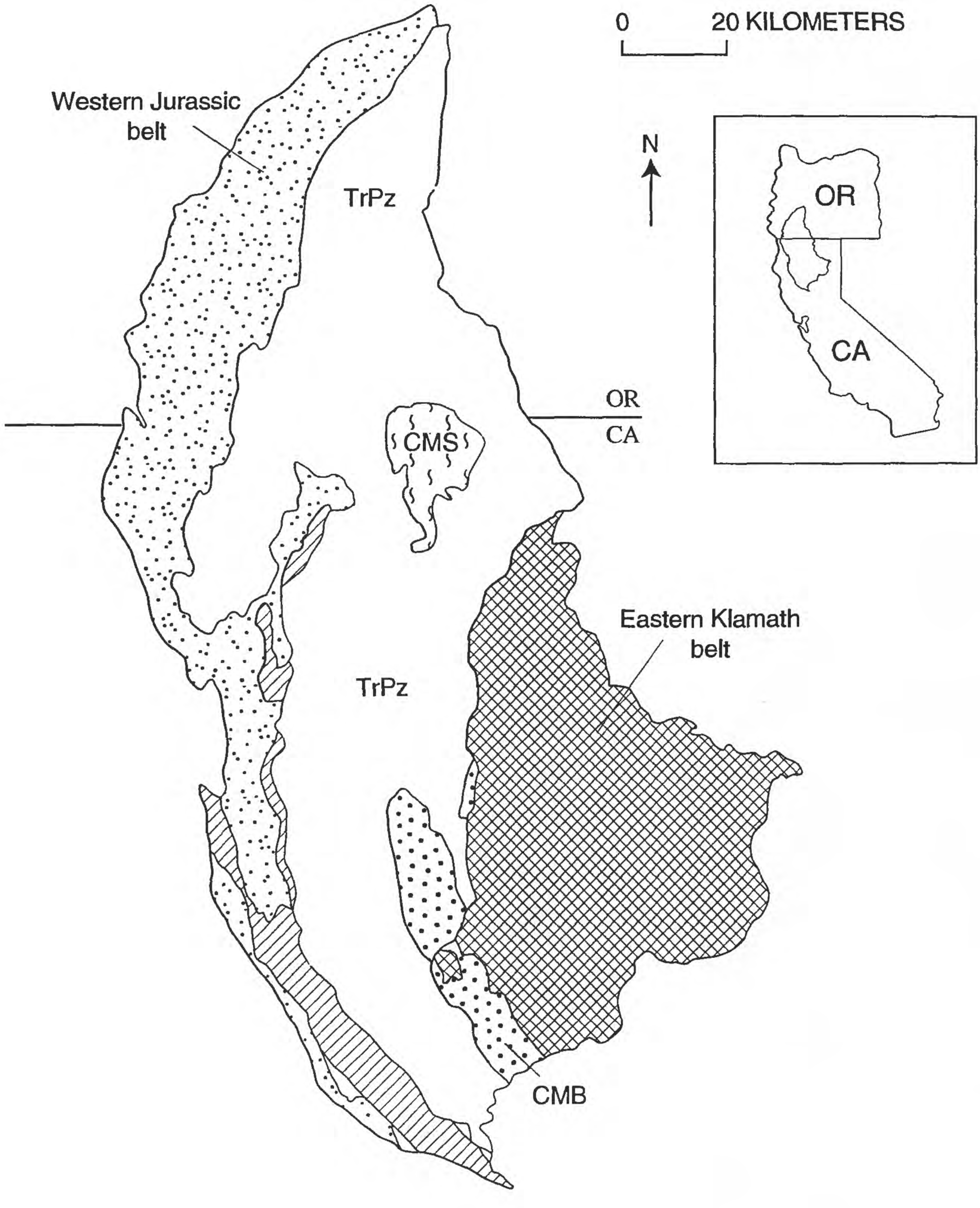

Fig. 1. Map of the distribution of lithotectonic belts in the Klamath Mountains. CMB = Central metamorphic belt; CMS = Condrey Mountain Shist; TrPz = Western Paleozoic and Triassic belt.

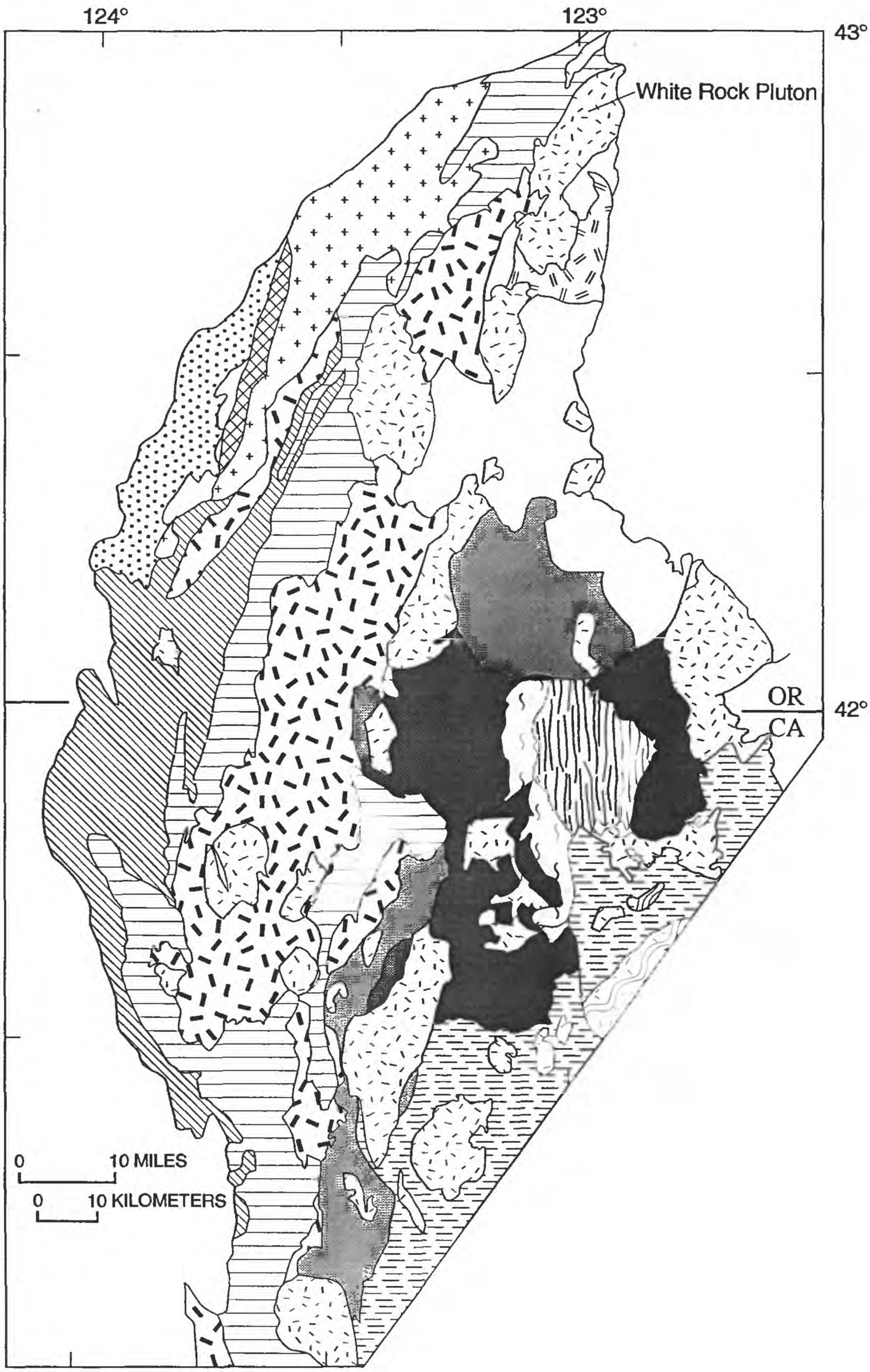

Fig. 2. Simplified geologic map of the northern Klamath Mountains (after Irwin, 1994), showing units represented in Tables 1 and 2.

Explanation

Jurassic and Cretaceous intrusive rocks

Western Jurassic belt

Josephine ophiolite

Rogue Formation

Chetco intrusive complex

Galice Formation

Briggs Creek Amphibolite

Western Paleozoic and Triassic belt

Rattlesnake Creek Terrane

Marble Mountain terrane

Western Hayfork terrane

Amphibolite of the May Creek area

Sawyers Bar Terrane of Hacker and others, 1993 (includes Eastern Hayfork, Salmon River, and North Fork terranes)

Stuart Fork Formation

Condrey Mountain Schist

Peripheral greenschist belt

Central window

Fig. 2, continued

Table 1. Major- and trace-element compositions of metavolcanic and metasedimentary rocks, Klamath Mountains, Oregon and California.

Sample	SiO2	TiO2	Al2O3	Fe2O3	FeO	MnO	MgO	CaO	Na2O	K2O	P2O5	LOI	Total	Mg#	Rb	Sr	Zr	Y
WESTERN JURASSIC BELT																		
JOSEPHINE OPHIOLITE																		
Extrusive Rocks																		
CJ18	52.60	1.04	16.40	n.d.	8.00	0.16	9.30	6.09	3.31	0.96	0.18	3.24	101.28	0.62	16	202	82	25
82M-380	52.10	1.23	15.20	n.d.	9.75	0.15	7.80	8.70	2.50	0.10	0.16	3.75	101.44	0.53	<5	253	76	23
82m-387	49.20	1.14	13.70	n.d.	8.64	0.12	6.10	14.73	0.89	0.01	0.20	5.17	99.90	0.49	10	49	81	24
TAB36-132	53.40	1.25	15.10	n.d.	9.23	0.18	6.50	9.43	1.94	0.22	0.19	3.67	101.11	0.49	<5	220	98	31
TAB38-361	49.20	1.24	14.80	n.d.	8.64	0.17	7.54	10.22	2.95	0.01	0.18	4.85	99.80	0.55	<5	66	81	24
L31	50.28	1.67	15.64	n.d.	7.35	0.22	4.46	11.88	4.80	0.52	0.17		96.99	0.46	12.8	373	110	33
L10	44.67	0.40	14.60	n.d.	7.54	0.22	8.67	10.79	3.38	0.80	0.02	7.76	98.85	0.61	20	32	35	18
R14-87	57.49	0.82	15.91	4.16	3.91	0.09	4.02	5.32	4.46	0.39	0.14	3.36	100.07	0.50	13	235	87	20
R20	47.87	0.31	11.55	n.d.	9.33	0.29	16.09	6.70	2.73	0.15	0.07	4.40	99.49	0.70	2.3	14	34	11
Y33	55.80	0.96	15.40	n.d.	7.97	0.17	6.10	7.04	3.94	0.01	0.16	3.15	100.70	0.51	<5	136	83	23
Y29c	57.60	0.40	12.60	n.d.	5.99	0.15	5.61	9.66	2.94	0.16	0.02	3.67	98.80	0.56	<5	135	38	12
S17	47.77	0.90	15.57	n.d.	8.60	0.18	6.83	10.06	0.08	4.52	0.12	4.79	99.42	0.52	5	98	67	20
D74.5	51.20	1.18	16.60	n.d.	10.19	0.23	6.60	5.49	4.33	0.82	0.11	3.54	100.29	0.47	13	318	71	28
Q1p	49.80	2.59	14.40	3.42	8.67	0.20	5.43	5.14	4.51	0.62	0.21	5.94	100.92	0.43	10.1	115	110	42
D24d	52.00	2.35	14.60	n.d.	12.00	0.33	5.10	7.07	3.62	1.15	0.24	2.74	101.20	0.37	19	134	115	37
ljc6fa	49.18	2.29	13.99	1.38	10.46	0.23	4.05	9.55	3.73	0.14	0.19	4.89	100.08	0.34	5	69	104	42
ljc91a	42.99	3.29	12.85	5.82	11.99	0.30	6.83	8.52	2.49	0.06	0.25	5.31	100.70	0.40	3	81	135	53
R2c	50.00	1.76	16.20	n.d.	11.01	0.18	6.10	6.75	2.94	0.98	0.18	3.43	99.53	0.43	17	272	97	35
R3d	50.54	2.40	14.41	1.65	9.92	0.18	3.84	7.98	4.36	0.18	0.21	2.57	98.24	0.33	n.d.	124	126	49
D91	51.30	2.20	14.20	n.d.	13.08	0.20	5.40	7.98	1.85	0.21	0.23	3.33	99.98	0.36	7	152	128	38
D91a	48.58	2.30	12.75	2.05	11.04	0.20	6.11	8.26	1.17	1.29	0.21	5.48	99.44	0.42	18	339	123	47
R5b	51.30	1.58	14.50	n.d.	10.78	0.20	5.50	6.98	3.58	0.84	0.18	4.25	99.69	0.41	13	179	111	37
R6b	49.50	1.25	17.10	n.d.	10.65	0.18	7.10	7.42	2.63	0.12	0.15	4.16	100.26	0.48	19.5	127	94	30
D92b	53.80	1.09	18.30	n.d.	7.10	0.13	5.10	4.47	3.61	4.08	0.08	3.06	100.82	0.50	6	139	87	22
Y5	50.92	0.23	13.28	n.d.	6.08	0.21	11.77	8.14	2.94	1.61	0.06	4.68	99.92	0.73	32.3	67	28	9
PC5b3	47.56	1.54	14.95	n.d.	9.48	0.20	6.00	11.07	3.10	2.35	0.16	n.d.	96.40	0.47	27.9	216	107	36
R8	51.30	1.39	16.20	n.d.	8.15	0.28	6.90	7.52	2.07	0.54	0.16	3.05	97.56	0.54	14	262	118	30
R9b	57.10	0.56	15.80	2.99	4.43	0.11	5.12	5.77	5.35	0.14	0.08	2.90	100.35	0.56	3	85	49	13
R10b	48.30	1.09	14.45	5.23	5.01	0.17	5.02	9.83	3.15	0.73	0.15	6.32	99.45	0.49	18	187	74	25
D93b	51.70	1.13	18.50	2.82	6.01	0.13	7.30	2.93	4.55	0.77	0.17	4.67	100.68	0.59	16	171	93	32
R11c	53.30	1.00	16.60	n.d.	8.10	0.13	5.20	8.01	2.49	0.38	0.18	3.90	99.29	0.47	7	231	80	26
D71	49.50	1.24	17.70	n.d.	10.15	0.15	6.80	6.13	4.32	1.33	0.19	3.57	101.08	0.48	0	225	94	31
D69	49.60	0.79	16.90	n.d.	7.88	0.20	9.00	7.48	1.35	2.34	0.09	3.92	99.55	0.61	38	189	57	20
R12r	43.90	1.30	19.30	8.51	4.43	0.18	9.25	5.33	3.34	0.07	0.20	3.79	99.60	0.62	<5	110	94	30
F88c	62.40	0.45	13.70	n.d.	5.85	0.09	4.00	4.66	5.97	0.09	0.02	1.27	98.50	0.49	<5	103	38	15
G25	52.70	0.33	13.70	n.d.	6.45	0.18	11.32	6.52	2.34	2.90	0.02	3.10	99.56	0.71	49	37	28	14
G54	52.20	2.21	15.30	n.d.	12.49	0.25	4.50	6.03	4.40	0.42	0.23	2.33	100.36	0.33	<5	98	175	49
Z85	47.34	0.52	12.45	n.d.	9.63	0.19	14.97	8.04	2.45	0.53	0.10	3.44	99.66	0.68	45	34	41	12
Z91a	59.32	0.35	15.70	n.d.	7.69	0.06	4.17	3.06	8.26	0.11	0.06	0.81	99.59	0.43	6	36	29	11
Z91b	56.70	0.26	12.09	n.d.	6.80	0.11	11.28	7.14	1.95	0.67	0.04	2.57	99.61	0.70	15	98	30	5
Z94	57.54	0.22	15.22	n.d.	7.12	0.13	6.42	3.82	6.19	0.48	0.01	2.24	99.39	0.55	12	109	40	<5

Table 1. Major- and trace-element compositions...continued

Sample	Nb	Ba	Sc	V	Cr	Ni	Cu	Zn	REE data in Table 2	Method, lab, if available	Rock type	Latitude	Longitude
WESTERN JURASSIC BELT													
<u>JOSEPHINE OPHIOLITE</u>													
Extrusive Rocks													
CJ18	<5	73	45	255	242	62	45	n.d.	+	1	meta-basalt pillow	42° 10' 16"	123° 42' 11"
82M-380	<5	42	42	278	172	58	98	78		2	meta-basalt pillow	42° 00' 01"	123° 45' 24"
82m-387	<5	25	39	266	128	47	54	64		2	meta-basalt pillow	42° 00' 01"	123° 45' 24"
TAB36-132	5	54	40	297	49	27	66	77		2	meta-basalt pillow	42° 00' 01"	123° 45' 24"
TAB38-361	<5	30	46	260	131	52	78	57		2	meta-basalt pillow	42° 00' 01"	123° 45' 24"
L31	4.1	178	46	373	81	103	82	135	+	3	meta-basalt pillow	41° 57' 21"	123° 49' 04"
L10	n.d.	66	31	264	707	194	15	n.d.	+	5	meta-basalt pillow	41° 56' 27"	123° 49' 35"
R14-87	n.d.	156	n.d.	239	29	48	7	60		4‡	meta-basalt pillow	41° 53' 51"	123° 46' 16"
R20	0.6	34	34	212	926	338	8	283	+	4‡	meta-basalt pillow	41° 51' 17"	123° 46' 20"
Y33	<5	n.d.	n.d.	243	<10	32	n.d.	n.d.		1	meta-basalt pillow	41° 53' 14"	123° 46' 34"
Y29c	n.d.	28	30	192	376	135	15	n.d.	+	5	meta-basalt pillow	41° 52' 28"	123° 46' 38"
S17	n.d.	44	32	209	158	101	n.d.	n.d.	+	4	meta-basalt pillow	41° 51' 56"	123° 46' 27"
D74.5	<5	n.d.	42	310	100	46	n.d.	n.d.	+	1	meta-basalt pillow	41° 52' 46"	123° 48' 58"
Q1p	4.5	688	40	476	18	13	30	104	+	6	meta-basalt pillow	41° 52' 41"	123° 49' 34"
D24d	6	1,762	37	516	<10	49	33	110	+	2	meta-basalt pillow	41° 52' 07"	123° 49' 52"
ljc6fa	4	90	35	478	16	22	36	126	+	6	meta-basalt pillow	41° 52' 07"	123° 49' 52"
ljc91a	<5	36	53	563	19	19	74	160		6	meta-basalt pillow	41° 51' 06"	123° 49' 52"
R2c	n.d.	n.d.	n.d.	376	71	34	75	99	+	1	meta-basalt pillow	41° 52' 05"	123° 49' 53"
R3d	<5	109	40	503	13	<10	11	108		6	meta-basalt pillow	41° 52' 05"	123° 49' 54"
D91	8	n.d.	n.d.	500	22	25	108	11		1	meta-basalt massive	41° 52' 05"	123° 49' 54"
D91a	4	367	36	437	21	21	61	118	+	6	meta-basalt massive	41° 52' 04"	123° 49' 55"
R5b	4.19	217	n.d.	343	34	24	55	80	+	1	meta-basalt pillow	41° 52' 04"	123° 49' 56"
R6b	3.5	202	36	307	62	41	82	95	+	2	meta-basalt pillow	41° 52' 04"	123° 49' 57"
D92b	6	n.d.	n.d.	272	42	30	n.d.	n.d.		1	meta-basalt pillow	41° 52' 03"	123° 49' 58"
Y5	1.2	109	30	158	834	352	72	55	+	4‡	meta-basalt pillow	41° 52' 03"	123° 49' 58"
PC5b3	4.76	525	42	294	162	33	29	73	+	3	meta-basalt pillow	41° 52' 03"	123° 50' 01"
R8	3.6	53	47	268	70	49	120	78	+	2	meta-basalt massive	41° 52' 04"	123° 50' 02'
R9b	<5	23	34	222	33	38	23	61		6	meta-basalt massive	41° 52' 04"	123° 50' 03"
R10b	<5	32	31	284	14	23	64	72		6	meta-basalt pillow	41° 52' 04"	123° 50' 04"
D93b	<5	53	33	367	12	14	60	102	+	2	meta-basalt pillow	41° 52' 04"	123° 50' 04"
R11c	<5	n.d.	n.d.	259	13	31	380	51		1	meta-basalt pillow	41° 52' 05"	123° 50' 07"
D71	<5	56	40	335	23	27	n.d.	n.d.	+	2	meta-basalt pillow	41° 52' 05"	123° 50' 07"
D69	1.4	204	46	216	153	56	12	71	+	1	meta-basalt pillow	41° 52' 06"	123° 50' 12"
R12r	n.d.	30	n.d.	234	15	15	420	137		4	meta-basalt pillow	41° 52' 06"	123° 50' 12"
F88c	n.d.	13	n.d.	278	278	72	46	n.d.		5	meta-basalt pillow	41° 48' 30"	123° 57' 32"
G25	n.d.	60	n.d.	190	444	84	163	n.d.		5	meta-basalt pillow	41° 47' 31"	123° 57' 10"
G54	<5	208	34	386	15	15	n.d.	n.d.	+	1	meta-basalt pillow	41° 46' 05"	123° 55' 42"
Z85	1.2	225	37	203	1134	337	n.d.	n.d.	+	4	meta-basalt pillow	41° 31' 13"	123° 51' 43"
Z91a	n.d.	n.d.	35	168	276	73	n.d.	n.d.	+	4	meta-basalt pillow	41° 29' 54"	123° 52' 37"
Z91b	n.d.	79	32	169	490	157	n.d.	n.d.	+	4	meta-basalt pillow	41° 29' 54"	123° 52' 37"
Z94	n.d.	274	37	109	551	92	n.d.	n.d.	+	4	meta-basalt pillow	41° 33' 18"	123° 52' 32"

Table 1. Major- and trace-element compositions...continued

Sample	SiO2	TiO2	Al2O3	Fe2O3	FeO	MnO	MgO	CaO	Na2O	K2O	P2O5	LOI	Total	Mg#	Rb	Sr	Zr	Y
Sheeted Dike Complex																		
R18a	51.26	0.96	18.45	n.d.	7.72	0.20	8.49	2.24	6.28	0.07	0.13	4.16	99.96	0.60	<5	66	83	23
R19a	52.40	1.24	15.90	3.73	5.25	0.18	8.05	5.64	2.89	0.05	0.16	4.78	100.27	0.62	5	179	102	31
Y18a	62.30	1.19	12.89	n.d.	7.27	0.17	5.27	4.21	3.02	0.04	0.17	3.19	99.72	0.50	<5	104	87	27
R22	50.40	1.23	17.00	n.d.	10.40	0.19	6.48	6.69	3.07	0.58	0.22	3.02	99.28	0.46	6	257	97	32
R23a	59.96	0.88	15.40	1.21	5.70	0.12	5.90	2.12	5.09	0.07	0.13	3.84	100.42	0.57	<5	62	86	21
X17	55.90	0.71	14.40	n.d.	8.38	0.24	8.00	6.99	3.31	0.02	0.11	2.52	100.58	0.57	<5	133	57	22
R25b	52.60	0.74	15.90	2.16	5.83	0.15	4.90	8.11	4.02	0.07	0.10	6.11	100.69	0.50	5	141	64	18
R27	52.78	1.12	16.69	n.d.	10.23	0.13	6.19	3.75	5.70	0.24	0.13	2.68	99.64	0.46	<5	119	87	24
R28	56.80	0.91	16.40	n.d.	5.56	0.13	6.40	6.27	3.78	0.82	0.14	2.13	99.34	0.61	6	180	86	25
R31	59.02	0.95	15.11	n.d.	8.87	0.12	4.79	3.10	5.50	0.14	0.15	2.09	99.84	0.43	<5	88	77	21
R32a	51.98	0.87	15.60	0.70	8.50	0.11	5.50	5.88	3.63	0.21	0.12	7.66	100.76	0.46	<5	90	87	26
Y15b	51.70	0.62	16.30	n.d.	7.68	0.11	5.80	10.70	3.41	0.01	0.13	3.07	99.53	0.51	<5	238	54	20
Y15c	52.50	1.07	15.90	n.d.	9.10	0.08	5.90	7.76	2.26	0.01	0.17	4.79	99.54	0.47	<5	229	100	26
R34b	53.20	0.88	16.60	n.d.	8.29	0.12	7.10	4.93	5.91	0.01	0.08	3.27	100.39	0.54	<5	135	75	28
R37	50.52	1.11	16.09	n.d.	8.78	0.15	6.77	7.14	4.57	0.43	0.12	3.50	99.18	0.52	<5	173	79	23
R38b	55.47	0.85	16.64	n.d.	8.78	0.17	5.29	7.26	2.98	0.61	0.14	1.64	99.83	0.45	10	197	78	19
G31	55.80	0.91	15.80	n.d.	7.32	0.13	6.60	6.00	4.99	0.45	0.13	2.71	100.84	0.55	9	182	65	22
CC5	51.60	1.04	16.10	n.d.	9.31	0.16	9.20	4.76	5.06	0.08	0.12	3.78	101.21	0.58	<5	136	75	22
A20	49.90	0.36	11.60	n.d.	7.91	0.18	15.50	8.07	1.76	0.19	0.08	4.54	100.09	0.73	4.9	71	24	12
A23	55.70	0.87	15.40	n.d.	8.64	0.19	6.10	6.20	2.34	0.01	0.13	3.73	99.31	0.49	<5	175	82	24
A24	54.90	0.94	15.70	n.d.	8.29	0.16	6.60	5.85	4.63	0.18	0.14	2.57	99.96	0.52	<5	146	77	23
E14	50.30	0.90	18.50	n.d.	9.05	0.14	3.40	11.86	3.73	0.01	0.18	2.36	100.43	0.34	<5	409	74	25
E16	53.40	0.97	16.00	n.d.	8.99	0.21	7.00	6.98	4.18	0.04	0.15	2.93	100.85	0.52	<5	159	74	21
H5	52.80	1.25	15.20	n.d.	8.72	0.15	7.60	9.46	2.42	0.43	0.17	2.68	100.88	0.55	7	302	102	29
Z31	55.10	0.94	15.90	n.d.	8.24	0.13	5.90	5.78	3.21	0.26	0.15	3.36	98.97	0.50	<5	195	89	25
Z83a	46.48	1.71	14.19	n.d.	12.18	0.20	8.80	9.89	2.22	0.17	0.15	3.21	99.20	0.50	n.d.	598	84	25
Z96	52.06	0.83	16.18	n.d.	7.77	0.16	8.87	5.36	4.26	1.52	0.09	2.92	100.02	0.61	n.d.	121	50	18
Z103	51.63	0.87	16.25	n.d.	9.17	0.24	6.45	5.54	4.49	0.12	0.10	4.62	99.48	0.49	n.d.	172	54	19
Sheeted Dike/Gabbro Transition																		
CJ19	52.40	1.10	17.60	n.d.	6.83	0.07	4.90	10.55	3.33	0.01	0.20	3.09	100.08	0.50	<5	76	96	25
E41b	56.10	0.64	16.10	n.d.	8.18	0.06	5.50	7.92	0.01	3.45	0.12	2.60	100.68	0.48	<5	187	51	18
E41c	51.60	1.31	16.80	n.d.	9.30	0.10	6.30	7.94	3.81	0.29	0.17	2.23	99.85	0.48	n.d.	219	87	27
A14-92	52.12	0.91	16.56	2.49	6.35	0.11	5.30	7.39	4.56	0.12	0.12	3.39	99.42	0.50	<5	166	72	21
A34b	50.70	1.94	14.50	n.d.	12.59	0.20	5.00	7.47	3.84	0.01	0.18	2.73	99.16	0.35	<5	125	101	32
A89	53.20	1.09	16.60	n.d.	8.78	0.10	6.30	7.56	3.80	0.20	0.17	2.21	100.01	0.50	<5	248	83	26
RA-A5	54.03	0.73	15.08	n.d.	8.06	0.14	8.38	8.86	2.18	0.12	0.10	1.98	99.66	0.59	5	160	55	16
RA-A6	52.07	1.09	16.37	n.d.	9.40	0.12	5.36	8.25	3.99	0.43	0.15	2.16	99.39	0.44	8	229	77	20
R47-87	57.11	0.62	16.61	n.d.	6.41	0.07	4.97	6.83	5.10	0.08	0.09	1.98	99.87	0.52	<5	162	52	17
RA-B1	52.40	0.47	14.62	2.54	5.50	0.13	9.57	10.52	2.48	0.16	0.06	2.27	100.72	0.67	3.3	172	24	13
R42d	52.20	1.00	16.00	n.d.	8.00	0.09	6.78	8.74	3.94	0.15	0.11	2.41	99.42	0.54	n.d.	231	84	24
A90	47.93	0.38	11.07	n.d.	8.12	0.15	18.15	8.77	1.33	0.21	0.05	3.18	99.34	0.76	4.2	94	34	12

Table 1. Major- and trace-element compositions...continued

Sample	Nb	Ba	Sc	V	Cr	Ni	Cu	Zn	REE data in Table 2	Method, lab, if available	Rock type	Latitude	Longitude
Sheeted Dike Complex													
R18a	<5	27	31	188	76	42	107	30	+	7	meta-diabase	41° 51' 17"	123° 46' 19"
R19a	5	53	40	203	75	43	100	8		7	meta-diabase	41° 51' 17"	123° 46' 19"
Y18a	<5	11	29	221	14	24	n.d.	n.d.		6	meta-diabase	41° 51' 16"	123° 46' 48"
R22	n.d.	172	35	288	98	63	103	107		5	meta-diabase	41° 51' 11"	123° 46' 32"
R23a	<5	13	28	171	<10	18	n.d.	n.d.		7	meta-diabase	41° 51' 10"	123° 46' 31"
X17	<5	38	35	325	132	59	<5	90		8	meta-diabase	41° 51' 09"	123° 46' 36"
R25b	n.d.	28	34	287	36	16	62	185		7	meta-diabase	41° 51' 08"	123° 46' 42"
R27	n.d.	94	n.d.	309	13	<10	6	21		4	meta-diabase	41° 51' 05"	123° 46' 54"
R28	<5	157	35	236	61	47	36	50		8	meta-diabase	41° 51' 05"	123° 46' 55"
R31	<5	42	n.d.	265	<10	<10	42	26	+	4	meta-diabase	41° 51' 05"	123° 46' 56"
R32a	<5	12	n.d.	254	32	20	11	30		4‡	meta-diabase	41° 51' 08"	123° 47' 02'
Y15b	<5	23	31	274	75	43	4	45		8	meta-diabase	41° 51' 10"	123° 47' 07"
Y15c	5	n.d.	n.d.	240	18	41	n.d.	n.d.		1	meta-diabase	41° 51' 10"	123° 47' 07"
R34b	7	n.d.	n.d.	209	90	40	n.d.	n.d.		8	meta-diabase	41° 51' 09"	123° 47' 08"
R37	n.d.	77	n.d.	238	153	59	4	17		4‡	meta-diabase	41° 51' 07"	123° 47' 16"
R38b	n.d.	66	n.d.	254	44	19	100	n.d.		4	meta-diabase	41° 51' 03"	123° 47' 18"
G31	<5	n.d.	34	258	47	41	n.d.	n.d.		4	meta-diabase	41° 47' 43"	123° 56' 52"
CC5	<5	n.d.	39	256	170	72	n.d.	n.d.	+	1	meta-diabase	41° 46' 55"	123° 54' 56"
A20	0.79	37	33	191	959	283	6	82	+	4‡	meta-diabase	41° 48' 08"	124' 03' 07"
A23	<5	n.d.	n.d.	263	50	58	n.d.	n.d.		1	meta-diabase	41° 48' 13"	124' 03' 04"
A24	<5	n.d.	n.d.	259	49	42	n.d.	n.d.		1	meta-diabase	41° 48' 23"	124' 02' 59"
E14	<5	n.d.	n.d.	410	16	21	n.d.	n.d.		1	meta-diabase	41° 47' 53"	124' 03' 01"
E16	<5	n.d.	n.d.	289	25	48	n.d.	n.d.		1	meta-diabase	41° 47' 45"	124' 02' 51"
H5	<5	92	36	266	194	71	n.d.	n.d.	+	1	meta-diabase	41° 43' 03"	123° 56' 18"
Z31	n.d.	n.d.	n.d.	254	37	30	n.d.	n.d.		1	meta-diabase	41° 35' 00"	123° 54' 50"
Z83a	n.d.	<40	73	416	254	43	n.d.	n.d.	+	4	meta-diabase	41° 31' 01"	123° 52' 14"
Z96	0.5	274	n.d.	230	113	48	n.d.	n.d.		4	meta-diabase	41° 32' 42"	123° 54' 52"
Z103	n.d.	n.d.	n.d.	258	31	16	n.d.	n.d.		4	meta-diabase	41° 34' 02"	123° 54' 29"
Sheeted Dike/Gabbro Transition													
CJ19	<5	n.d.	n.d.	304	17	73	n.d.	n.d.	+	1	meta-diabase	42° 10' 10"	123° 42' 11"
E41b	<5	17	42	281	52	44	98	78		2	meta-diabase	41° 50' 46"	124' 01' 37"
E41c	<5	97	n.d.	268	83	40	<5	6		4	meta-diabase	41° 50' 46"	124' 01' 37"
A14-92	<5	35	31	276	27	n.d.	13	6		6	meta-diabase	41° 50' 17"	124' 02' 04"
A34b	<5	31	37	512	11	22	59	101	+	2	meta-diabase	41° 50' 17"	124' 02' 04"
A89	<5	174	41	278	104	82	10	64		2	meta-diabase	41° 50' 22"	124' 01' 54"
RA-A5	n.d.	56	n.d.	233	337	185	n.d.	n.d.		4	meta-diabase	41° 50' 17"	124' 02' 04"
RA-A6	n.d.	51	n.d.	298	22	25	n.d.	n.d.		4	meta-diabase	41° 50' 17"	124' 02' 04"
R47-87	n.d.	21	n.d.	239	39	36	50	8		4	meta-diabase	41° 50' 16"	124' 02' 04"
RA-B1	<5	30	40	225	519	157	<5	13		6	meta-diabase	41° 50' 17"	124' 02' 04"
R42d	n.d.	41	39	261	139	57	<5	7	+	1	meta-diabase	41° 49' 20"	124' 01' 53"
A90	0.62	39	29	169	1224	503	3	32	+	4	meta-diabase	41° 50' 08"	124' 02' 04"

Table 1. Major- and trace-element compositions...continued

Sample	SiO2	TiO2	Al2O3	Fe2O3	FeO	MnO	MgO	CaO	Na2O	K2O	P2O5	LOI	Total	Mg#	Rb	Sr	Zr	Y
F24	51.45	1.32	16.10	n.d.	8.95	0.17	6.74	10.51	2.44	0.01	0.19	2.23	100.11	0.51	<5	241	95	27
F30	47.96	0.38	13.27	n.d.	7.10	0.13	15.16	10.95	0.96	0.10	0.05	3.22	99.28	0.75	2.7	114	24	12
F42b	51.71	0.99	16.33	n.d.	8.27	0.15	7.18	7.39	4.44	0.33	0.11	2.49	99.39	0.55	<5	161	69	20
Z58	51.70	1.21	16.40	n.d.	8.77	0.15	6.30	8.88	2.27	0.17	0.17	2.87	98.89	0.50	<5	229	98	27
Z30	53.20	0.77	16.80	n.d.	6.99	0.13	6.70	10.78	3.14	0.28	0.13	1.85	100.77	0.57	6	189	62	22
Z97	51.05	0.87	17.07	n.d.	8.50	0.09	7.11	5.42	4.31	0.04	0.10	5.01	99.57	0.54	5	171	66	19
Z104	47.94	1.42	17.08	n.d.	11.61	0.20	5.52	10.27	4.19	0.10	0.03	2.13	100.49	0.40	5	409	126	28
Plagiogranites																		
R38a	69.71	0.60	13.65	n.d.	4.40	0.04	0.96	3.83	4.71	0.15	0.13	1.19	99.37	0.23	8	192	118	37
KH2b	75.63	0.32	13.43	n.d.	0.63	0.01	0.38	2.34	6.02	0.01	0.05	0.93	99.75	0.45	7	64	98	15
E17b	64.80	1.11	15.40	n.d.	5.43	0.06	2.50	4.45	4.60	0.28	0.19	2.02	100.84	0.39	<5	215	157	42
R46b	59.40	1.19	16.10	n.d.	8.18	0.05	3.20	6.52	3.24	0.18	0.22	1.42	99.70	0.35	<5	242	135	36
R42a	58.50	1.31	15.90	3.67	5.07	0.08	3.10	7.71	3.76	0.18	0.17	1.28	100.73	0.40	6	259	128	31
A88z	66.10	0.90	15.20	n.d.	5.46	0.04	1.80	4.90	3.61	0.19	0.20	1.68	100.08	0.31	<5	263	186	47
A45z	67.90	0.80	14.30	n.d.	4.38	0.05	1.90	5.30	4.76	0.20	0.21	2.01	101.81	0.37	<5	192	159	43
Z59b	66.00	1.13	15.50	n.d.	2.65	0.04	1.60	5.18	5.25	0.06	0.34	0.90	98.65	0.46	<5	184	259	66
High-level gabbro																		
RA-B5	52.47	0.42	7.44	n.d.	7.28	0.15	14.09	14.42	1.11	0.15	0.04	1.28	98.85	0.73	<5	80	28	13
R49	54.80	0.46	14.40	n.d.	6.34	0.11	8.70	9.00	2.85	0.39	0.06	2.49	99.60	0.65	5	219	65	19
R50	52.10	0.39	16.20	n.d.	6.43	0.12	7.60	10.93	2.44	0.20	0.06	2.29	98.76	0.62	5	219	28	15
R51	52.50	1.21	15.10	n.d.	8.09	0.15	9.70	10.10	1.88	0.19	0.20	1.71	100.83	0.62	5	237	39	21
F13	53.80	0.53	15.50	n.d.	6.82	0.13	10.00	10.61	1.65	0.14	0.13	1.81	101.12	0.67	<5	115	52	15
F13c	51.70	0.41	17.50	n.d.	5.03	0.10	10.10	10.71	1.04	0.16	0.10	2.71	99.56	0.74	5	196	36	15
Ophiolitic Dikes Cutting Serpentinite																		
93acvp5	48.62	1.35	14.89	n.d.	9.42	0.17	6.62	13.21	5.07	0.53	0.13	n.d.	100.01	0.49	9.2	197	91	30
93acvp9	49.81	1.47	15.19	n.d.	9.99	0.17	6.60	11.15	4.99	0.21	0.14	n.d.	99.71	0.48	3.5	160	92	32
jc17	58.14	0.69	19.53	n.d.	6.30	0.18	2.29	6.96	4.41	1.26	0.23	n.d.	100.00	0.33	24.6	552	118	24
jc23	52.43	1.96	14.54	n.d.	11.60	0.19	5.81	7.97	5.21	0.13	0.16	n.d.	100.00	0.41	2.0	222	108	34
il1b	45.70	0.96	15.99	n.d.	8.69	0.22	5.39	20.22	2.44	0.25	0.13	n.d.	99.99	0.46	2.3	443	71	20
il6	51.83	2.19	14.25	n.d.	11.96	0.20	4.79	9.16	5.08	0.35	0.19	n.d.	100.00	0.36	13.5	256	119	38
dp6b	n.d.	n.d.	n.d.	n.d.	11.11	n.d.	n.d.	n.d.	4.37	n.d.	n.d.	n.d.		n.d.	n.d.	328	n.d.	n.d.
TRL	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		n.d.	1.31	n.d.	n.d.	31
f86	45.20	1.54	15.04	4.52	7.99	0.19	6.42	6.75	6.13	0.49	0.19	4.93	99.39	0.47	n.d.	66	112	41
k17	47.30	1.71	11.59	n.d.	13.67	0.23	9.23	8.99	4.32	0.30	0.19	2.25	99.78	0.48	n.d.	96	116	41
CM15	40.18	2.43	10.93	9.10	8.81	0.34	8.35	12.63	3.92	0.27	0.19	3.13	100.28	0.48	5	45	133	62
CM-15(WSU)	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.			1.7	n.d.	n.d.	46
G89	46.49	2.17	13.97	4.28	9.17	0.23	4.24	7.09	7.46	0.27	0.19	3.92	99.48	0.35	3	78	105	40
RM90	46.86	0.96	11.98	n.d.	10.68	0.24	10.95	14.12	3.03	0.37	0.15		99.34	0.59	3.5	535	73	18
kg7104b	40.96	1.41	20.59	n.d.	10.95	0.20	8.44	9.45	2.77	0.24	0.27	3.65	98.93	0.52	n.d.	950	109	31

Amphibolites in Serpentinite Mylonite

Table 1. Major- and trace-element compositions...continued

Sample	Nb	Ba	Sc	V	Cr	Ni	Cu	Zn	REE data in Table 2	Method, lab, if available	Rock type	Latitude	Longitude
F24	<5	n.d.	37	269	65	36	69	27	+	1‡	meta-diabase	41° 50' 08"	124' 01' 19"
F30	0.63	19	185	161	848	348	47	48	+	4	meta-diabase	41° 47' 24"	124' 00' 38"
F42b	n.d.	<10	n.d.	252	119	63	n.d.	n.d.		4‡	meta-diabase	41° 47' 56"	123° 59' 37"
Z58	<5	40	37	261	60	45	128	33	+	2	meta-diabase	41° 36' 14"	123° 55' 10"
Z30	<5	n.d.	33	219	120	74	n.d.	n.d.	+	1	meta-diabase	41° 34' 52"	123° 55' 04"
Z97	n.d.	n.d.	n.d.	253	22	38	n.d.	n.d.		4	meta-diabase	41° 32' 37"	123° 54' 08"
Z104	n.d.	n.d.	n.d.	239	<10	18	n.d.	n.d.		4	meta-diabase	41° 34' 15"	123° 54' 45"
Plagiogranites													
R38a	n.d.	68	n.d.	30	<10	<10	n.d.	n.d.		4	meta-qtz microdiorite	41° 50' 03"	123° 47' 18"
KH2b	n.d.	12	n.d.	28	20	<10	n.d.	n.d.		4	meta-microtonalite	41° 52' 18"	124' 01' 24"
E17b	5	n.d.	21	98	<10	<10	n.d.	n.d.	+	1	meta-qtz microdiorite	41° 49' 12"	124' 01' 31"
R46b	6	n.d.	n.d.	274	<10	22	n.d.	n.d.		1	meta-microdiorite	41° 50' 17"	124' 02' 05"
R42a	n.d.	54	28	291	17	<10	4	9		2	meta-microdiorite	41° 49' 20"	124' 01' 53"
A88z	5	n.d.	n.d.	113	<10	13	<5	4		4	meta-qtz microdiorite	41° 50' 16"	124' 02' 04"
A45z	6	n.d.	n.d.	68	<10	11	n.d.	n.d.		1	meta-qtz diorite	41° 49' 20"	124' 01' 53"
Z59b	11	n.d.	14	69	<10	<10	n.d.	n.d.	+	1	meta-qtz diorite	41° 36' 16"	123° 55' 26"
High-level gabbro													
RA-B5	<5	20	n.d.	231	1943	193	n.d.	n.d.		4	meta-gabbro	41° 50' 18"	124' 01' 54"
R49	<5	n.d.	n.d.	168	213	107	14	10		1‡	meta-gabbro	41° 50' 08"	124' 02' 04"
R50	<5	n.d.	n.d.	234	189	80	15	14		1‡	meta-gabbro	41° 50' 04"	124' 02' 04"
R51	6	n.d.	n.d.	242	462	114	44	14		1‡	meta-gabbro	41° 50' 04"	124' 01' 56"
F13	<5	n.d.	n.d.	201	339	144	20	9		1	meta-gabbro	41° 50' 18"	124' 04' 54"
F13c	<5	n.d.	n.d.	142	247	121	<5	10		1	meta-gabbro	41° 50' 18"	124' 01' 54"
Ophiolitic Dikes Cutting Serpentinite													
93acvp5	3.62	31	39	294	148	46	64	77	+	3	metadiabase	42° 10' 10"	123° 59' 05"
93acvp9	3.82	38	41	314	126	38	53	71	+	3	metadiabase	41° 10' 10"	123° 59' 05"
jc17	3.5	214	17	102	<10	<10	<10	81	+	3	metadiabase	42° 11' 52"	123° 43' 28"
jc23	3.9	54	43	438	105	40	56	85	+	3	metadiabase	42° 11' 52"	123° 43' 28"
il1b	1.4	79	30	288	14	,10	<10	62	+	3	metadiabase	42° 14' 36"	123° 40' 59"
il6	4.2	58	40	475	36	8	62	102	+	3	metadiabase	42° 14' 36"	123° 40' 59"
dp6b	n.d.	n.d.	37	n.d.	44	79	n.d.	n.d.	+		metadiabase	41° 51' 11"	123° 54' 01"
TRL	2.85	96	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	+		metadiabase	41° 52' 25"	123° 52' 09"
f86	n.d.	n.d.	n.d.	348	50	298	n.d.	n.d.		9	metadiabase	41° 49' 42"	123° 53' 24"
k17	n.d.	n.d.	n.d.	381	62	70	n.d.	n.d.	+	9	metadiabase	41° 49' 50"	123° 53' 11"
CM15	4	232	57	505	47	405	234	140	+	6	metadiabase	41° 47' 15"	123° 54' 53"
CM-15(WSU)	5.24	338	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.			metadiabase		
G89	7	37	36.2	496	7	11	25	105		6	metadiabase	41° 48' 56"	123° 55' 06"
RM90	2.27	1278	57	318	495	96	<10	106	+	3	metadiabase	41° 30' 40"	123° 51' 48"
kg7104b	0.0	379	0	323	45	206	n.d.	n.d.		4	metadiabase	41° 30' 50"	123° 53' 40"
Amphibolites in Serpentinite Mylonite													

Table 1. Major- and trace-element compositions...continued

Sample	SiO2	TiO2	Al2O3	Fe2O3	FeO	MnO	MgO	CaO	Na2O	K2O	P2O5	LOI	Total	Mg#	Rb	Sr	Zr	Y
gq33	48.82	3.44	13.95	n.d.	13.35	0.21	4.74	9.34	4.18	0.34	0.20	0.54	99.11	0.33	8	144	110	31
gq57	49.64	1.89	14.62	n.d.	11.15	0.19	6.30	11.03	3.67	0.37	0.17	0.77	99.80	0.44	8	164	116	32
K793j2	46.84	1.63	17.59	n.d.	10.95	0.21	4.92	10.34	4.74	0.68	0.30	0.54	98.74	0.38	12	428	110	27
ACRMBP	50.07	0.66	15.40	n.d.	7.00	0.13	7.56	12.31	4.05	0.26	0.10	1.81	99.35	0.60	3	314	94	19
<u>ROGUE FORMATION, AND CHETCO INTRUSIVE COMPLEX</u>																		
Garcia (1979)																		
47A-75	48.80	0.86	16.75	5.61	n.d.	0.16	2.56	11.11	2.88	2.12	0.78	7.84	99.47	0.47	31	560	141	n.d.
47B-74	53.00	1.05	17.50	7.50	n.d.	0.14	3.30	7.90	4.00	2.05	0.59	3.46	100.49	0.47	35	630	150	n.d.
45B-74	58.30	0.75	16.25	5.20	n.d.	n.d.	1.80	7.70	6.00	0.69	0.29	2.70	99.68	0.41	15	415	165	25
21-74	62.25	0.51	14.48	5.83	n.d.	0.20	4.72	6.07	2.24	1.43	0.42	2.10	100.25	0.62	35	295	130	n.d.
Yule and Barnes (unpub. data)																		
89-DY-PP-6	51.96	0.97	16.25	8.91	n.d.	0.18	6.31	8.66	3.79	0.55	0.24	3.71	101.52	0.58	16	512	66	27.2
89-DYS-18	50.71	0.64	13.60	7.56	n.d.	0.13	6.52	9.15	2.70	1.63	0.15	7.71	100.49	0.63	27	370	35	18.5
90-2.5-6MiRd	49.50	0.90	16.33	9.63	n.d.	0.19	9.13	7.06	3.33	0.61	0.17	3.40	100.24	0.65	15	512	55	23.9
91-DY-EDM-48C	47.08	0.73	15.75	8.25	n.d.	0.19	6.02	14.15	0.34	0.05	0.13	7.64	100.33	0.59	4	553	45	22.3
91-DY-EDM-49	47.55	0.81	14.34	9.97	n.d.	0.19	9.75	10.09	2.10	1.22	0.16	3.24	99.42	0.66	36	439	46	23.3
91-DY-EDM-51A	46.79	0.93	16.59	10.90	n.d.	0.18	5.06	9.57	2.76	0.49	0.18	6.74	100.19	0.48	14	345	54	23.4
91-DY-EDM-51B	47.55	0.63	16.17	8.44	n.d.	0.16	7.11	11.46	2.97	0.38	0.12	5.85	100.84	0.63	11	323	34	18.3
91-DY-EDM-59	52.88	1.06	21.16	8.54	n.d.	0.24	2.95	7.86	4.30	0.62	0.33	2.46	102.40	0.41	14	671	94	35.0
92-DY-G-9	52.34	1.18	18.40	9.80	n.d.	0.16	4.36	8.09	3.24	0.85	0.26	2.92	101.60	0.47	20	485	99	29.9
92-DY-S-38	55.99	0.33	12.51	8.85	n.d.	0.23	10.87	5.80	3.17	0.71	0.04	3.83	102.34	0.71	11	183	27	15.3
Chetco River plutonic suite and dikes, Yule and Barnes (unpub. data)																		
89DYPP14	40.27	1.03	14.47	18.29	n.d.	0.19	10.65	10.96	1.54	0.47	0.01	1.94	99.82	0.54	41	217	5	15.0
89DYPP17	67.37	0.24	16.85	3.69	n.d.	0.14	1.43	5.80	3.27	0.74	0.13	1.08	100.76	0.44	18	467	57	15.9
90DYPP48	74.15	0.08	15.35	1.15	n.d.	0.09	0.52	3.37	4.04	0.75	0.06	1.17	100.73	0.47	17	496	75	8.1
92DYPP69	71.46	0.15	15.50	1.98	n.d.	0.15	0.72	3.57	3.75	1.05	0.14	1.67	100.13	0.42	26	767	77	9.8
90DYJM11 §	76.63	0.22	13.33	1.12	n.d.	0.02	0.53	2.27	4.68	1.06	0.03	0.68	100.57	0.48	22	121	105	10.9
<u>GALICE FORMATION</u>																		
Orleans area, CA																		
Foliated greenstone and related metavolcaniclastic rocks (unpub. data)																		
OMB1388	53.07	0.78	17.36	10.53	n.d.	0.16	4.39	6.31	3.75	0.73	0.20	3.52	100.79	0.45	15	275	75	19.7
OMB1488	53.69	0.93	15.65	5.85	n.d.	0.10	3.35	6.97	6.46	0.10	0.34	5.91	99.35	0.53	3	560	162	13.6
OMB2088A	57.55	0.57	15.27	10.98	n.d.	0.10	4.14	5.00	2.06	0.86	0.04	3.05	99.62	0.43	19	568	54	9.6
OMB2088B	57.40	0.68	16.92	10.84	n.d.	0.10	2.81	6.32	2.27	0.86	0.07	2.77	101.04	0.34	20	103	60	14.0
KM11A	51.36	0.66	17.96	11.90	n.d.	0.06	3.74	7.24	2.11	0.66	0.03	3.29	99.01	0.38	15	411	65	10.1
KM11B	72.43	0.43	12.69	4.66	n.d.	0.03	1.47	2.96	2.30	0.43	0.18	1.80	99.38	0.38	31	157	36	25.4
KM13	52.89	0.30	12.68	8.85	n.d.	0.11	12.32	6.12	1.40	0.30	0.03	4.58	99.57	0.73	11	138	22	9.4
KM16A	53.87	0.63	14.00	7.77	n.d.	0.19	2.57	9.15	4.34	0.63	0.14	6.35	99.64	0.40	8	140	57	17.7

Table 1. Major- and trace-element compositions...continued

Sample	Nb	Ba	Sc	V	Cr	Ni	Cu	Zn	REE data in Table 2	Method, lab, if available	Rock type	Latitude	Longitude
gq33	n.d.	102	34	420	39	30	n.d.	n.d.	+	4	amphibolite	41° 49' 36"	123° 53' 42"
gq57	n.d.	130	34	339	132	158	n.d.	n.d.	+	4	amphibolite	41° 52' 23"	123° 53' 03"
k793j2	n.d.	204	24	316	24	10	n.d.	n.d.		4	amphibolite	41° 31' 26"	123° 54' 19"
ACRMBP	11.4	187	36	496	451	253	46	69	+	3	amphibolite	41° 32' 06"	123° 53' 56"
ROGUE FORMATION, AND CHETCO INTRUSIVE COMPLEX													
Garcia (1979)												n.a.	n.a.
47A-75	n.d.	n.d.	n.d.	n.d.	10	n.d.	n.d.	n.d.				n.a.	n.a.
47B-74	n.d.	n.d.	n.d.	n.d.	10	n.d.	n.d.	n.d.	+			n.a.	n.a.
45B-74	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.				n.a.	n.a.
21-74	n.d.	n.d.	n.d.	n.d.	60	n.d.	n.d.	n.d.	+			n.a.	n.a.
Yule and Barnes (unpub. data)													
89-DY-PP-6	3	75	34.4	270	211	89	57	82		ICP,TTU	metabasalt	42° 17' 42"	123° 45' 03"
89-DYS-18	3	366	34.6	214	316	92	71	49		ICP,TTU	tuffaceous metavolcanic	42° 17' 37"	123° 43' 12"
90-2.5-6MiRd	4	360	43.3	259	542	256	19	49		ICP,TTU	mafic sill	42° 18' 48"	123° 43' 12"
91-DY-EDM-48C	3	22	38.1	250	166	61	68	65		ICP,TTU	tuffaceous metavolcanic	42° 20' 51"	123° 40' 48"
91-DY-EDM-49	3	295	41.0	263	609	160	97	71		ICP,TTU	metabasalt	42° 20' 22"	123° 40' 55"
91-DY-EDM-51A	3	115	38.8	280	32	27	97	90		ICP,TTU	tuffaceous metavolcanic	42° 20' 37"	123° 41° 41"
91-DY-EDM-51B	2	130	38.5	215	432	95	73	60		ICP,TTU	metabasalt	42° 20' 37"	123° 41° 41"
91-DY-EDM-59	5	186	25.0	185	7	48	24	106		ICP,TTU	metabasalt	42° 21' 27"	123° 42° 52"
92-DY-G-9	2	241	26.3	266	70	133	47	89		ICP,TTU	metabasalt	42° 34' 14"	123° 32' 27"
92-DY-S-38	b.d.	168	39.5	221	974	304	86	51		ICP,TTU	metabasalt	42° 18' 14"	123° 43' 09"
Chetco River plutonic suite and dikes, Yule and Barnes (unpub. data)													
89DYPP14	0	111	184.0	1048	12	32	69	70		ICP,TTU	hornblende gabbro dike	42° 19' 23"	123° 46' 47"
89DYPP17	5	394	8.9	45	20	39	n.d.	53		ICP,TTU	biotite tonalite	42° 19' 40"	123° 46' 45"
90DYPP48	3	381	1.7	3	7	13	n.d.	37		ICP,TTU	garnet 2-mica trondhjemite	42° 19' 37"	123° 46' 45"
92DYPP69	6	673	3.4	7	16	35	n.d.	56		ICP,TTU	garnet 2-mica trondhjemite	42° 21' 47"	123° 47' 06"
90DYJM11 §	5	355	2.3	16	11	20	n.d.	9		ICP,TTU	plagiogranite dike	42° 14' 45"	123° 48' 35"
GALICE FORMATION													
Orleans area, CA													
Foliated greenstone and related metavolcaniclastic rocks (unpub. data)													
OMB1388	3	150	25.0	263	8	17	90	84	+	ICP,TTU	greenstone	41° 13' 48"	123° 39' 08"
OMB1488	41	34	7.0	111	50	22	140	61		ICP,TTU	meta-tuff	41° 13' 48"	123° 39' 08"
OMB2088A	3	296	30.5	194	16	16	103	83	+	ICP,TTU	greenstone	41° 16' 37"	123° 36' 21"
OMB2088B	b.d.	143	34.0	239	18	21	65	78		ICP,TTU	greenstone	41° 16' 37"	123° 36' 21"
KM11A	3	118	37.8	223	37	60	50	119		ICP,TTU	greenstone	41° 16' 37"	123° 36' 21"
KM11B	5	629	21.4	160	29	129	23	41		ICP,TTU	felsic metavolcanic	41° 16' 37"	123° 36' 21"
KM13	2	29.3	37.7	167	538	255	27	82	+	ICP,TTU	greenstone	41° 08' 36"	123° 40' 43"
KM16A	3	84.1	30.2	268	44	126	66	135		ICP,TTU	foliated metavolcanic	41° 06' 34"	123° 41° 06"

Table 1. Major- and trace-element compositions...continued

Sample	SiO2	TiO2	Al2O3	Fe2O3	FeO	MnO	MgO	CaO	Na2O	K2O	P2O5	LOI	Total	Mg#	Rb	Sr	Zr	Y
KM16B	59.09	0.80	14.80	8.55	n.d.	0.09	4.93	2.89	4.50	0.80	0.19	3.02	99.66	0.53	2	108	89.4	24.1
KM19	56.19	0.53	15.60	8.80	n.d.	0.32	7.60	5.35	0.80	0.53	0.13	2.93	98.79	0.63	143	78	80.5	15.4
KM20	57.39	0.33	14.89	6.91	n.d.	0.11	5.35	9.19	2.78	0.33	0.04	2.32	99.63	0.61	3	60.3	35.3	10.6
Metamorphosed clastic metasedimentary rocks																		
OMB188	74.67	0.60	11.84	5.22	n.d.	0.04	2.22	0.32	1.82	1.75	0.12	2.83	101.42	0.46	57	71	149	22
OMB288	71.82	0.58	12.82	4.28	n.d.	0.03	2.09	0.23	1.88	1.80	0.11	3.45	99.10	0.49	64	72	130	31
OMB488	72.05	0.59	13.42	5.01	n.d.	0.04	1.81	0.40	2.34	1.90	0.14	2.86	100.56	0.42	57	129	124	14
OMB688	70.77	0.56	12.60	4.97	n.d.	0.06	2.19	1.23	2.46	1.90	0.13	2.85	99.71	0.47	62	167	128	17
OMB988	70.04	0.60	11.28	7.81	n.d.	0.18	1.67	5.96	0.89	0.32	0.09	2.03	100.85	0.30	8	219	31	22
KM12	66.71	0.77	15.41	7.38	n.d.	0.08	4.10	0.80	2.85	0.77	0.22	3.61	102.69	0.52	54	50.6	132	21
KM22	63.38	0.80	16.36	6.13	n.d.	0.05	2.42	0.47	1.68	0.80	0.31	4.55	96.94	0.44	106	137	170	28.4
92KM11	64.68	0.80	16.24	6.18	n.d.	0.05	2.82	0.69	1.70	2.58	0.18	4.23	100.16	0.47	77	182	169	31.8
Type area near Galice, OR (Park-Jones, 1988)																		
PJ22	60.57	0.80	17.49	8.24	n.d.	0.16	2.49	0.76	2.18	2.23	0.30	5.32	100.54	0.37	70	147	157	31
PJ24	62.41	0.72	17.12	7.27	n.d.	0.06	2.70	0.70	2.00	2.32	0.30	5.07	100.67	0.42	71	135	152	27
PJ30	63.95	0.71	15.86	6.60	n.d.	0.07	3.03	0.64	2.21	2.80	0.12	4.26	100.25	0.48	86	172	145	24
PJ33	60.23	0.80	18.29	7.91	n.d.	0.07	2.60	0.14	0.84	2.49	0.14	6.75	100.26	0.39	83	86	178	34
PJ65	63.72	0.72	16.29	7.53	n.d.	0.03	2.41	0.29	1.59	2.01	0.20	5.47	100.26	0.39	61	117	143	27
PJ89	62.95	0.79	17.15	6.99	n.d.	0.08	2.82	0.33	1.78	2.56	0.19	4.72	100.36	0.44	84	171	173	36
PJ102	61.95	0.82	16.93	7.33	n.d.	0.02	2.87	0.33	2.24	2.47	0.21	5.26	100.43	0.44	71	105	176	28
PJ139	66.21	0.60	13.35	7.37	n.d.	0.09	2.71	1.66	1.26	1.84	0.61	4.13	99.83	0.42	54	116	131	30
PJ147	63.47	0.70	15.52	7.49	n.d.	0.04	3.29	0.54	1.99	1.85	0.36	5.05	100.30	0.47	53	114	144	25
PJ37G	65.77	0.71	16.75	5.80	n.d.	0.02	1.92	0.02	1.08	2.06	0.08	6.13	100.34	0.40	52	60	144	29
PJ38G	73.57	0.76	11.26	6.32	n.d.	0.02	2.13	0.02	0.37	1.29	0.12	4.47	100.33	0.40	39	42	174	12
Cave Junction area, OR (Park-Jones, 1988)																		
PJG1	62.21	0.77	17.17	5.02	n.d.	0.02	1.91	0.33	1.30	3.68	0.18	7.16	99.75	0.43	125	89	157	26
PJG2	61.30	0.77	15.90	8.01	n.d.	0.04	2.70	0.61	1.61	2.86	0.21	5.75	99.76	0.40	88	95	169	26
PJG3	63.24	0.84	18.52	5.11	n.d.	0.01	2.07	0.30	0.72	4.00	0.02	5.43	100.26	0.45	139	90	180	29
PJG4	62.22	0.94	19.23	5.86	n.d.	0.04	2.86	0.01	<.01	3.83	0.09	5.42	100.50	0.49	124	72	181	18
PJG5	66.01	0.76	15.29	7.99	n.d.	0.06	2.81	0.16	0.64	2.49	0.21	4.26	100.68	0.41	77	83	173	26
PJG6	62.12	0.77	16.06	7.99	n.d.	0.04	2.79	1.03	1.05	2.78	0.22	5.70	100.55	0.41	92	122	170	28
PJG7	61.58	0.87	17.49	6.49	n.d.	0.03	2.68	0.36	0.03	3.47	0.18	6.08	99.26	0.45	112	82	166	22
PJG8	68.76	0.62	14.05	6.17	n.d.	0.03	2.38	0.20	1.65	2.11	0.16	3.86	99.99	0.43	68	92	141	14
PJG9	67.42	0.59	14.16	6.95	n.d.	0.05	2.21	0.42	1.84	1.84	0.20	4.46	100.14	0.39	57	121	143	18
PJG10	61.06	0.87	18.55	5.75	n.d.	0.02	2.00	0.06	0.27	3.74	0.18	7.76	100.26	0.41	123	51	178	40
Garcia (1979)																		
101-74	47.50	1.10	17.35	10.20	n.d.	0.16	6.46	9.00	1.87	0.70	0.61	4.09	99.04	0.56	7	575	110	n.d.
BRIGGS CREEK AMPHIBOLITE (Coleman & Lanphere, 1991)																		
41-GA-73	52.8	1.4	14.4	4.2	7.6	0.20	5.4	8.8	3.2	0.47	0.18	0.94	99.59	0.46	14	128	99	36

Table 1. Major- and trace-element compositions...continued

Sample	Nb	Ba	Sc	V	Cr	Ni	Cu	Zn	REE data in Table 2	Method, lab, if available	Rock type	Latitude	Longitude
KM16B	1	30	27.6	132	7	20	181	151	+	ICP,TTU	foliated metavolcanic	41° 06' 34"	123° 41° 06"
KM19	3	3311	33.5	243	271	95	93	70	+	ICP,TTU	foliated metavolcanic	41° 07' 41"	123° 41° 01"
KM20	2	35	31.0	197	197	85	27	61	+	ICP,TTU	foliated metavolcanic	41° 08' 00"	123° 41° 06"
Metamorphosed clastic metasedimentary rocks													
OMB188	19	661	13.6	115	136	16	17	78		ICP,TTU	phyllite	41° 26' 32"	123° 37' 05"
OMB288	16	852	13.6	113	103	20	10	74		ICP,TTU	phyllite	41° 26' 32"	123° 37' 05"
OMB488	15	719	13.1	107	83	12	19	72		ICP,TTU	phyllite	41° 26' 32"	123° 37' 05"
OMB688	14	865	4.7	41	29	21	10	26		ICP,TTU	phyllite	41° 27' 26"	123° 37' 05"
OMB988	5	329	33.0	92	18	11	17	89		ICP,TTU	meta-arenite	41° 13' 26"	123° 38' 56"
KM12	11	698	19.4	183	219	102	44	117		ICP,TTU	schist	41° 11' 47"	123° 43' 16"
KM22	16	1366	19.7	187	126	29	15	108		ICP,TTU	phyllite	41° 08' 49"	123° 40' 39"
92KM11	11	1171	19.3	169	164	34	15	100		ICP,TTU	slate	41° 29' 12"	123° 37' 58"
Type area near Galice, OR (Park-Jones, 1988)													
PJ22	n.d.	638	n.d.	190	112	54	n.d.	n.d.		XRF	shale	n.a.	n.a.
PJ24	n.d.	584	n.d.	180	101	60	n.d.	n.d.		XRF	shale	n.a.	n.a.
PJ30	n.d.	856	n.d.	197	110	47	n.d.	n.d.		XRF	shale	n.a.	n.a.
PJ33	n.d.	756	n.d.	196	104	85	n.d.	n.d.		XRF	shale	n.a.	n.a.
PJ65	n.d.	439	n.d.	200	100	50	n.d.	n.d.		XRF	shale	n.a.	n.a.
PJ89	n.d.	726	n.d.	180	125	23	n.d.	n.d.		XRF	shale	n.a.	n.a.
PJ102	n.d.	674	n.d.	200	148	75	n.d.	n.d.		XRF	shale	n.a.	n.a.
PJ139	n.d.	494	n.d.	174	85	48	n.d.	n.d.		XRF	shale	n.a.	n.a.
PJ147	n.d.	597	n.d.	213	120	39	n.d.	n.d.		XRF	shale	n.a.	n.a.
PJ37G	n.d.	635	n.d.	142	198	50	n.d.	n.d.		XRF	meta-wacke	n.a.	n.a.
PJ38G	n.d.	385	n.d.	156	281	81	n.d.	n.d.		XRF	meta-wacke	n.a.	n.a.
Cave Junction area, OR (Park-Jones, 1988)													
PJG1	n.d.	1060	n.d.	177	145	67	n.d.	n.d.		XRF	shale	n.a.	n.a.
PJG2	n.d.	872	n.d.	159	161	60	n.d.	n.d.		XRF	shale	n.a.	n.a.
PJG3	n.d.	1376	n.d.	210	189	57	n.d.	n.d.		XRF	shale	n.a.	n.a.
PJG4	n.d.	1660	n.d.	252	252	60	n.d.	n.d.		XRF	shale	n.a.	n.a.
PJG5	n.d.	990	n.d.	157	181	81	n.d.	n.d.		XRF	shale	n.a.	n.a.
PJG6	n.d.	846	n.d.	170	164	77	n.d.	n.d.		XRF	shale	n.a.	n.a.
PJG7	n.d.	1031	n.d.	206	179	63	n.d.	n.d.		XRF	shale	n.a.	n.a.
PJG8	n.d.	835	n.d.	154	162	40	n.d.	n.d.		XRF	shale	n.a.	n.a.
PJG9	n.d.	660	n.d.	106	161	66	n.d.	n.d.		XRF	shale	n.a.	n.a.
PJG10	n.d.	1370	n.d.	220	222	53	n.d.	n.d.		XRF	shale	n.a.	n.a.
Garcia (1979)													
101-74	n.d.	n.d.	n.d.	n.d.	90	n.d.	n.d.	n.d.	+			n.a.	n.a.
BRIGGS CREEK AMPHIBOLITE (Coleman & Lanphere, 1991)													
41-GA-73	n.d.	98	n.d.	315	62	61	59	122	+		amphibolite	n.a.	n.a.

Table 1. Major- and trace-element compositions...continued

Sample	SiO2	TiO2	Al2O3	Fe2O3	FeO	MnO	MgO	CaO	Na2O	K2O	P2O5	LOI	Total	Mg#	Rb	Sr	Zr	Y
65-GA-72	49.3	2.3	16.5	3.2	7.0	0.13	6.0	9.8	4.0	0.48	0.34	1.04	100.09	0.52	14	455	164	21
136-GA-75	51.9	1.3	14.8	2.9	8.2	0.16	7.0	9.7	3.1	0.43	0.134	1.04	100.66	0.54	11	125	89	28
178-GA-75	46.1	2.2	16.0	4.4	5.9	0.17	6.7	11.8	3.0	0.82	0.43	1.47	98.99	0.55	20	820	168	31
163-GA-75	50.8	0.98	17.3	2.7	5.1	0.13	6.0	8.5	4.9	0.23	0.16	1.89	98.69	0.59	13	590	119	26
215-GA-75	48.7	2.6	16.2	2.6	7.2	0.14	5.8	9.5	4.1	0.97	0.52	1.52	99.85	0.52	18	450	215	24
216-GA-75	47.0	3.3	15.3	2.9	9.6	0.18	5.6	8.9	2.0	1.9	0.41	2.31	99.40	0.45	45	265	235	34
TECTONIC FRAGMENTS AND DIKES OF JOSEPHINE OPHIOLITE METABASALT																		
Klamath River at Aitken Creek, CA (this report)																		
OMB888	47.06	0.97	15.51	10.15	n.d.	0.22	2.83	16.23	0.13	0.08	0.11	6.62	99.90	0.36	2	148	42	22.2
OMB1088	53.67	1.49	14.61	10.89	n.d.	0.17	3.38	6.01	4.18	0.33	0.17	4.38	99.28	0.38	8	85	79	42.3
OMB1188	55.84	1.38	13.85	6.28	n.d.	0.21	1.54	9.64	4.78	0.61	0.13	6.33	100.58	0.33	15	156	68	27.0
OMB1288	58.23	1.55	15.03	8.05	n.d.	0.16	2.64	6.03	4.50	0.54	0.13	3.57	100.42	0.39	14	121	73	25.9
Dike of Josephine ophiolite type west of Cave Junction, OR (D.Yule, unpub. data)																		
90DYJM6	56.33	0.74	14.34	7.95	n.d.	0.19	6.54	6.84	3.66	0.38	0.11	3.52	100.60	0.62	7	175	56	21.3
146-151 Ma DIKES THAT CUT THE SMITH RIVER SUBTERRANE																		
il5	58.70	0.63	17.42	n.d.	5.90	0.16	2.65	5.65	8.31	0.36	0.21	n.d.	99.98	0.38	15	575	121	21
HP	50.80	0.45	16.63	1.65	3.02	0.22	1.66	6.85	8.73	3.67	0.17	4.93	98.78	0.38	16	546	84	18
C10L	61.05	0.55	17.40	n.d.	4.09	0.30	1.23	4.64	3.81	1.92	0.19	n.d.	95.18	0.29	48	541	152	35
D19C	50.30	0.96	18.23	n.d.	7.73	0.21	3.20	9.70	3.01	0.04	0.25	n.d.	93.63	0.36	n.d.	654	115	33
D74h	51.90	0.94	17.56	n.d.	8.96	0.19	4.35	6.97	3.30	0.99	0.27	n.d.	95.43	0.40	13	530	117	32
Q1h	51.20	0.76	16.15	n.d.	7.83	0.19	3.19	6.34	2.84	4.50	0.24	n.d.	93.24	0.36	59	333	111	27
D42c	67.50	0.12	14.66	n.d.	1.83	0.10	0.69	2.80	4.59	1.45	0.09	n.d.	93.83	0.34	41	278	75	14
D24h	46.90	1.54	16.08	n.d.	10.84	0.23	5.82	7.93	3.03	1.88	0.22	n.d.	94.47	0.43	27	467	105	27
D26	54.00	0.90	17.97	n.d.	9.32	0.16	4.42	4.30	3.54	1.30	0.28	n.d.	96.19	0.40	21	513	119	31
D91hb1	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	3.46	n.d.	n.d.	n.d.		n.d.	70	n.d.	n.d.	n.d.
D91hb2	n.d.	n.d.	n.d.	n.d.	7.17	n.d.	n.d.	n.d.	3.18	n.d.	n.d.	n.d.		n.d.	31	n.d.	n.d.	n.d.
pc1	56.75	0.64	18.30	n.d.	5.79	0.16	4.62	6.29	6.54	0.64	0.27	n.d.	100.00	0.52	14	323	123	19
GT2b	38.53	1.20	13.81	n.d.	11.46	0.25	11.58	18.04	0.91	0.25	0.18	n.d.	96.21	0.58	2	1086	102	22
Y35	64.10	0.32	15.78	0.92	1.89	0.09	1.42	2.68	10.18	0.89	0.10	0.93	99.30	0.46	8.8	145	83	9
Y36b	51.90	0.95	15.98	n.d.	8.40	0.15	4.72	6.37	5.17	0.76	0.21	n.d.	94.61	0.44	13.4	208	103	17
K40	45.40	1.37	17.86	n.d.	12.51	0.20	5.68	9.66	2.46	0.83	0.17	n.d.	96.14	0.39	17	332	79	30
J6	45.90	1.19	14.42	n.d.	10.37	0.19	7.83	12.43	2.14	0.44	0.20	n.d.	95.11	0.51	n.d.	484	90	27
J19	59.80	0.54	18.02	n.d.	4.19	0.17	1.34	5.01	4.92	1.23	0.23	n.d.	95.45	0.31	14	584	185	30
J79c	49.90	1.59	16.55	n.d.	10.58	0.18	5.41	6.36	3.58	1.50	0.26	n.d.	95.91	0.41	14	317	121	35
C29b	57.20	0.40	17.04	n.d.	3.28	0.16	1.29	4.44	9.14	0.13	0.20	n.d.	93.28	0.35	n.d.	357	142	30
C23	65.50	0.25	15.38	n.d.	2.11	0.11	0.76	3.78	4.63	1.91	0.21	n.d.	94.64	0.33	26	448	151	26
C19	49.90	1.07	16.66	n.d.	8.76	0.19	5.73	7.57	4.82	0.20	0.31	n.d.	95.21	0.47	n.d.	460	132	30
LR1	n.d.	n.d.	n.d.	n.d.	9.14	n.d.	n.d.	n.d.	2.18	n.d.	n.d.	n.d.		n.d.	n.d.	441	n.d.	n.d.

Table 1. Major- and trace-element compositions...continued

Sample	Nb	Ba	Sc	V	Cr	Ni	Cu	Zn	REE data in Table 2	Method, lab, if available	Rock type	Latitude	Longitude
65-GA-72	n.d.	112	n.d.	280	160	96	26	99			amphibolite	n.a.	n.a.
136-GA-75	n.d.	62	n.d.	305	330	106	66	89	+		amphibolite	n.a.	n.a.
178-GA-75	n.d.	255	n.d.	285	160	134	72	69	+		amphibolite	n.a.	n.a.
163-GA-75	n.d.	90	n.d.	205	76	79	79	64	+		amphibolite	n.a.	n.a.
215-GA-75	n.d.	230	n.d.	245	120	128	140	82	+		amphibolite	n.a.	n.a.
216-GA-75	n.d.	270	n.d.	280	29	55	9	125	+		amphibolite	n.a.	n.a.
TECTONIC FRAGMENTS AND DIKES OF JOSEPHINE OPHIOLITE METABASALT													
Klamath River at Aitken Creek, CA (this report)													
OMB888	11	b.d.	28.7	323	22	18	17	72		ICP,TTU	greenstone	41° 13' 38"	123° 38' 59"
OMB1088	5	22	27.1	268	7	13	47	109		ICP,TTU	greenstone	41° 13' 38"	123° 38' 59"
OMB1188	8	113	30.7	269	7	10	44	73		ICP,TTU	greenstone	41° 13' 38"	123° 38' 59"
OMB1288	7	75	34.1	284	9	16	78	113		ICP,TTU	greenstone	41° 13' 38"	123° 38' 59"
Dike of Josephine ophiolite type west of Cave Junction, OR (D.Yule, unpub. data)													
90DYJM6	2	49	31.5	220	231	95	92	138		ICP,TTU	massive metabasalt	42° 14' 31"	123° 45' 53"
146-151 Ma DIKES THAT CUT THE SMITH RIVER SUBTERRANE													
i15	3.2	140	16	120	40	9	48	63		3	hbld meta-andesite	42° 14' 36"	123° 40' 59"
HP	5	388	7	58	6	4	3	77		6	hbld meta-andesite	41° 55' 59"	123° 56' 05"
C10L	n.d.	n.d.	5	41	19	12	n.d.	n.d.		9	meta-dacite	41° 57' 22"	123° 49' 04"
D19C	n.d.	n.d.	15	166	27	16	n.d.	n.d.		9	meta-basalt	41° 50' 25"	123° 48' 31"
D74h	n.d.	233	14	185	43	26	n.d.	n.d.		9	hbld meta-basalt	41° 52' 46"	123° 48' 58"
Q1h	n.d.	2,287	14	175	35	4	n.d.	n.d.		9	hbld meta-basalt	41° 52' 41"	123° 49' 34"
D42c	n.d.	n.d.	n.d.	16	19	14	n.d.	n.d.		9	meta-dacite	41° 52' 43"	123° 49' 43"
D24h	4.6	295	33	383	91	50	n.d.	n.d.		9	hbld meta-basalt	41° 52' 10"	123° 49' 49"
D26	n.d.	410	20	212	67	31	n.d.	n.d.			hbld meta-andesite	41° 52' 18"	123° 49' 50"
D91hb1	n.d.	433	14	n.d.	<10	<10	n.d.	n.d.			hbld meta-andesite	41° 52' 04"	123° 49' 55"
D91hb2	n.d.	391	19	n.d.	13	38	n.d.	n.d.			hbld meta-andesite	41° 52' 04"	123° 49' 55"
pc1	4.1	156	14	99	21	14	131	71			hbld meta-andesite	41° 52' 20"	123° 50' 34"
GT2b	2.68	35	42	406	237	61	110	60			hbld meta-basalt	41° 49' 36"	123° 53' 42"
Y35	7	307	4.2	30	8	11	9	53		6	hbld meta-andesite	41° 49' 05"	123° 50' 55"
Y36b	3.2	1,413	19	219	37	40	n.d.	n.d.		9	hbld meta-basalt	41° 48' 07"	123° 50' 36"
K40	n.d.	76	23	410	48	38	n.d.	n.d.		9	hbld meta-basalt	41° 47' 52"	123° 50' 48"
J6	n.d.	n.d.	n.d.	286	139	80	n.d.	n.d.		9	hbld meta-basalt	41° 45' 29"	123° 52' 59"
J19	n.d.	n.d.	n.d.	46	32	25	n.d.	n.d.		9	hbld meta-andesite	41° 47' 11"	123° 54' 38"
J79c	n.d.	n.d.	n.d.	369	41	39	n.d.	n.d.		9	hbld meta-basalt	41° 46' 28"	123° 54' 01"
C29b	n.d.	n.d.	n.d.	31	30	68	n.d.	n.d.		9	hbld meta-andesite	41° 44' 16"	123° 52' 37"
C23	n.d.	823	2	22	24	14	n.d.	n.d.		9	meta-dacite	41° 44' 07"	123° 52' 42"
C19	n.d.	n.d.	n.d.	197	150	64	n.d.	n.d.		9	hbld meta-basalt	41° 43' 54"	123° 53' 04"
LR1	n.d.	431	38	n.d.	335	105	n.d.	n.d.			hbld meta-andesite	41° 51' 09"	123° 51' 47"

Table 1. Major- and trace-element compositions...continued

Sample	SiO2	TiO2	Al2O3	Fe2O3	FeO	MnO	MgO	CaO	Na2O	K2O	P2O5	LOI	Total	Mg#	Rb	Sr	Zr	Y
LR4	n.d.	n.d.	n.d.	n.d.	9.59	n.d.	n.d.	n.d.	2.45	n.d.	n.d.	n.d.		n.d.	n.d.	532	n.d.	n.d.
LR2	n.d.	n.d.	n.d.	n.d.	9.20	n.d.	n.d.	n.d.	3.47	n.d.	n.d.	n.d.		n.d.	19	674	n.d.	17
WESTERN PALEOZOIC AND TRIASSIC BELT																		
RATTLESNAKE CREEK TERRANE																		
Bolan Lake area, OR (Tomlinson, 1993 and unpub. data)																		
BL48	82.83	0.31	6.66	3.08	n.d.	0.08	1.61	0.41	1.30	1.45	0.06	1.70	99.49	0.51	n.d.	77	85	24.0
BL95	90.55	0.22	4.63	1.69	n.d.	0.02	0.93	0.10	0.13	1.02	0.06	0.96	100.33	0.52	33	52	59	11.0
BL113	51.14	0.65	16.74	6.85	n.d.	0.14	5.52	6.88	3.91	3.39	0.58	3.06	98.86	0.61	n.d.	654	186	31.0
BL136	48.23	0.24	10.26	7.36	n.d.	0.26	12.66	16.95	0.24	0.03	0.07	3.38	99.68	0.77	5	51	34	10.8
BL137	69.44	0.73	12.01	6.67	n.d.	0.10	2.65	0.80	2.06	3.05	0.07	2.26	99.83	0.44	51	130	132	24.1
BL18	46.63	0.21	15.23	8.17	n.d.	0.14	12.73	10.75	2.04	0.42	0.02	3.98	100.33	0.76	13	279	2	7.1
BL19	73.30	0.40	11.94	3.75	n.d.	0.06	1.32	1.89	5.37	0.02	0.06	1.46	99.59	0.41	1	84	129	36.6
BL22	50.70	1.56	13.65	12.22	n.d.	0.20	7.15	8.15	4.13	0.15	0.14	2.70	100.75	0.54	9	139	81	41.1
BL26	50.61	1.22	15.65	12.20	n.d.	0.34	7.17	4.13	5.22	0.14	0.16	3.32	100.16	0.54	9	115	55	21.8
BL27	47.60	0.10	16.91	5.59	n.d.	0.12	9.35	15.11	1.77	0.03	0.01	4.38	100.96	0.77	5	129	b.d.	4.8
BL41	52.54	2.24	17.79	8.54	n.d.	0.18	4.11	3.38	4.64	2.78	0.72	3.22	100.13	0.49	42	443	237	30.7
BL42	48.90	1.92	12.98	13.13	n.d.	0.18	6.74	8.65	3.45	0.04	0.17	3.56	99.70	0.50	8	138	105	49.3
BL77	67.79	0.79	11.56	7.20	n.d.	0.18	2.42	4.45	3.47	0.00	0.26	1.02	99.14	0.40	2	110	124	50.1
BL135	52.01	0.71	17.05	9.41	n.d.	0.20	4.36	9.63	3.13	2.11	0.24	1.67	100.51	0.48	41	465	55	18.1
BL140	48.40	1.63	14.00	12.55	n.d.	0.22	7.28	9.72	2.50	0.90	0.15	2.58	99.93	0.53	26	144	88	43.3
KM105	50.83	1.32	15.83	10.15	n.d.	0.20	5.38	11.43	3.81	0.39	0.14	0.85	100.34	0.51	14	112	64	33.6
KM72	54.34	0.84	15.31	9.46	n.d.	0.15	5.92	7.51	5.17	0.09	0.09	0.48	99.36	0.55	8	258	56	24.0
KM75	54.90	1.15	14.10	12.84	n.d.	0.19	4.67	10.40	0.98	0.11	0.10	0.55	99.98	0.42	11	223	46	24.6
KM77	51.71	1.31	14.48	9.23	n.d.	0.16	6.86	10.15	4.59	0.15	0.16	0.48	99.28	0.60	8	123	74	24.9
Orleans area, CA																		
Packsaddle Ridge (Barnes, unpub. data)																		
KM42A	74.70	0.38	11.97	0.78	2.26	0.05	1.14	0.26	6.31	0.09	0.07	1.03	99.05	0.41	2	17	122	39.2
Ikes Creek area, Hwy. 96 (Barnes, unpub. data)																		
OMB2188A	51.04	0.45	16.24	11.88	n.d.	0.21	6.09	9.41	3.11	0.06	0.07	2.60	101.15	0.50	0.8	250	15	9
OMB2188B	75.62	0.29	11.80	3.13	n.d.	0.06	0.83	1.68	5.83	0.08	0.05	0.90	100.27	0.34	b.d.	86	126	55
92OMB141	50.53	1.72	17.09	12.02	n.d.	0.14	5.16	2.94	5.67	1.32	0.22	3.87	100.69	0.46	17	45	150	75.8
Prospect Hill and Klamath River area, blocks in melange (Gray, 1985)																		
VC-14B	52.80	0.47	14.22	3.00	3.96	0.14	9.42	6.07	1.40	4.01	0.06	3.64	99.19	0.72	65	106	28	6
KR-5A	51.02	0.63	12.01	1.33	5.78	0.14	12.26	11.62	2.24	0.58	0.10	2.75	100.46	0.76	15	115	43	10
KR-16A	49.82	0.75	15.64	3.15	5.96	0.16	8.07	9.22	2.87	0.76	0.06	2.77	99.23	0.62	13	178	21	11
KR-16C	55.47	0.20	9.98	1.96	4.61	0.16	12.39	11.03	2.03	0.53	0.02	2.08	100.46	0.78	10	78	0	2
PH119	54.28	1.11	15.66	7.11	3.85	0.16	4.27	3.99	6.52	0.24	0.08	2.20	99.47	0.43	3	142	46	16
PH19C	57.46	0.31	13.05	1.74	5.58	0.16	8.29	7.44	3.42	0.36	0.05	2.68	100.54	0.67	5	136	31	5
BM-3	53.04	1.21	15.59	5.84	4.28	0.15	6.37	4.61	3.98	0.73	0.12	3.51	99.43	0.54	19	159	72	22

Table 1. Major- and trace-element compositions...continued

Sample	Nb	Ba	Sc	V	Cr	Ni	Cu	Zn	REE data in Table 2	Method, lab, if available	Rock type	Latitude	Longitude
LR4	n.d.	383	38	n.d.	596	76	n.d.	n.d.			hbld meta-andesite	41° 51' 09"	123° 51' 47"
LR2	3.2	1,413	36	n.d.	71	n.d.	n.d.	n.d.			hbld meta-andesite	41° 51' 09"	123° 51' 47"
WESTERN PALEOZOIC AND TRIASSIC BELT													
RATTLESNAKE CREEK TERRANE													
Bolan Lake area, OR (Tomlinson, 1993 and unpub. data)													
BL48	8	1296	11.0	92	49	31	92	100		ICP,TTU	argillite	42° 01' 20"	123° 29' 28"
BL95	6	2302	8.2	73	43	1	48	19		ICP,TTU	argillite	42° 01' 25"	123° 28' 56"
BL113	8	857	24.5	196	123	34	70	66		ICP,TTU	meta-arenite	42° 01' 49"	123° 27' 07"
BL136	1	19	30.9	158	1413	308	33	54		ICP,TTU	lithic meta-arenite	42° 01' 37"	123° 28' 47"
BL137	14	454	16.5	104	68	63	66	94	+	ICP,TTU	tuffaceous metasediment	42° 02' 40"	123° 29' 33"
BL18	0	180	53.2	144	318	95	18	31		ICP,TTU	metagabbro	42° 00' 18"	123° 30' 00"
BL19	3	10	13.5	61	2	7	31	20	+	ICP,TTU	quartz keratophyre	42° 00' 16"	123° 30' 04"
BL22	2	9	44.8	337	245	84	84	85		ICP,TTU	metabasalt	42° 00' 31"	123° 29' 56"
BL26	b.d.	36	40.0	328	25	28	117	335		ICP,TTU	quartz keratophyre	42° 00' 31"	123° 29' 56"
BL27	1	14	40.1	96	64	80	2	22		ICP,TTU	metagabbro	42° 00' 31"	123° 29' 56"
BL41	50	605	15.9	115	92	111	52	80	+	ICP,TTU	spilitic diabase	42° 00' 12"	123° 30' 10"
BL42	2	11	47.1	392	121	61	61	92	+	ICP,TTU	metabasalt	42° 00' 12"	123° 30' 10"
BL77	2	16	15.5	31	0	3	288	102		ICP,TTU	quartz keratophyre	42° 20' 37"	123° 26' 15"
BL135	3	579	30.5	241	10	9	35	71		ICP,TTU	metabasalt	42° 01' 37"	123° 28' 47"
BL140	3	33	44.2	336	320	108	69	89	+	ICP,TTU	metabasalt	42° 02' 46"	123° 28' 50"
KM105	1	46	45.2	272	283	84	73	84	+	ICP,TTU	amphibolite	41° 00' 11"	123° 22' 21"
KM72	2	87	37.7	268	83	50	5	36	+	ICP,TTU	amphibolite	42° 00' 13"	123° 23' 37"
KM75	b.d.	9	36.8	385	7	16	46	105	+	ICP,TTU	amphibolite	42° 00' 22"	123° 23' 03"
KM77	5	40	39.6	217	319	74	45	62		ICP,TTU	amphibolite	41° 00' 36"	123° 23' 31"
Orleans area, CA													
Packsaddle Ridge (Barnes, unpub. data)													
KM42A	4	35	10.9	20	9	18	4	49	+	ICP,TTU	keratophyre	41° 10' 51"	123° 34' 00"
Ikes Creek area, Hwy. 96 (Barnes, unpub. data)													
OMB2188A	5	66	44.2	294	29	25	141	75		ICP,TTU	greenstone	41° 21' 46"	123° 29' 25"
OMB2188B	n.d.	7	13.5	5	6	3	3	24		ICP,TTU	greenstone	41° 21' 46"	123° 29' 25"
92OMB141	n.d.	65	27.0	141	3	1	26	154		ICP,TTU	greenstone	41° 21' 46"	123° 29' 25"
Prospect Hill and Klamath River area, blocks in melange (Gray, 1985)													
VC-14B	0	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF	metavolcanic rock	n.a.	n.a.
KR-5A	8	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF	metagabbro	n.a.	n.a.
KR-16A	6	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF	metagabbro	n.a.	n.a.
KR-16C	0	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF	metagabbro	n.a.	n.a.
PH119	4	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF	metavolcanic rock	n.a.	n.a.
PH19C	0	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF	greenstone	n.a.	n.a.
BM-3	0	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF	greenstone	n.a.	n.a.

Table 1. Major- and trace-element compositions...continued

Sample	SiO2	TiO2	Al2O3	Fe2O3	FeO	MnO	MgO	CaO	Na2O	K2O	P2O5	LOI	Total	Mg#	Rb	Sr	Zr	Y
BM-12	54.74	0.47	15.16	1.56	6.41	0.15	6.60	7.35	4.43	0.98	0.07	2.02	99.94	0.60	30	260	18	4
Prospect Hill, block in melange (Barnes, unpub. data)																		
KM4A	49.60	0.77	14.37	9.50	n.d.	0.18	8.14	11.22	3.00	0.77	0.11	n.d.	97.65	0.63	8	659	52	17.2
Prospect Hill, coherent sequence above melange (Barnes, unpub. data)																		
92KM1A	64.78	0.51	14.29	8.53	n.d.	0.10	1.27	0.83	8.51	0.07	0.00	1.25	100.14	0.23	2	35	30	3
92KM2C	74.14	0.41	13.07	3.46	n.d.	0.05	0.61	0.07	1.32	2.53	0.03	3.65	99.34	0.26	28	27	133	38.1
92KM3A	59.40	1.10	14.10	9.45	n.d.	0.13	2.75	3.44	6.01	0.39	0.20	2.10	99.06	0.37	8	90	86	36.1
92KM4	51.44	1.03	14.99	12.00	n.d.	0.20	5.76	4.30	5.27	0.65	0.10	3.27	99.01	0.49	10	200	54	25.7
92KM5	52.20	0.49	14.06	7.48	n.d.	0.15	10.53	6.50	2.20	2.88	0.08	2.67	99.24	0.74	40	84	50	15.9
92KM6	60.73	0.57	14.70	5.23	n.d.	0.09	3.86	7.07	3.28	1.56	0.57	2.54	100.18	0.59	29	425	140	25.5
92KM8	52.33	0.83	15.52	9.14	n.d.	0.15	6.85	4.96	3.90	2.43	0.10	3.66	99.86	0.60	42	128	37	22.5
92KM9	50.21	0.74	15.82	9.29	n.d.	0.14	8.25	7.77	3.01	0.54	0.40	4.37	100.54	0.64	10	880	121	25.3
92KM10	48.85	1.80	15.01	12.87	n.d.	0.15	5.79	6.73	3.55	1.85	0.20	3.04	99.84	0.47	39	98	103	30.5
Pony Peak area, coherent sequence above melange (Barnes, unpub. data)																		
PP1288C	74.47	0.69	10.72	4.91	n.d.	0.10	2.03	1.27	2.41	1.83	0.08	1.72	100.23	0.45	63	109	138	22
92OMB190	78.51	0.48	9.57	4.25	n.d.	0.13	2.06	0.81	1.40	1.85	0.09	1.68	100.84	0.49	59	133	106	21.4
92OMB192	61.48	0.59	15.92	7.18	n.d.	0.19	3.04	4.30	4.28	1.40	0.21	1.65	100.24	0.46	30	519	74	20.8
92OMB197	86.16	0.26	5.92	2.82	n.d.	0.09	1.04	0.51	0.67	1.35	0.07	0.89	99.78	0.42	47	82	74	14.8
92OMB198	84.75	0.28	6.39	3.10	n.d.	0.03	1.22	1.16	1.14	1.23	0.05	0.94	100.30	0.44	44	162	78	17.0
92OMB201	52.56	0.66	17.25	10.30	n.d.	0.18	4.64	7.97	4.64	0.92	0.17	1.54	100.83	0.47	20	504	45	21.2
92OMB202	88.42	0.18	4.38	1.96	n.d.	0.07	0.83	0.41	1.37	0.48	0.03	0.77	98.91	0.46	20	58	48	10.7
92OMB193	52.93	0.74	16.54	10.74	n.d.	0.15	4.74	7.39	4.88	0.60	0.18	1.19	100.10	0.47	16	420	50	22.7
92OMB194	54.45	0.67	16.83	9.17	n.d.	0.16	3.27	9.18	4.17	0.61	0.21	0.97	99.69	0.41	12	478	55	19.6
92OMB199	76.25	0.44	9.94	5.11	n.d.	0.08	1.99	0.79	1.37	2.27	0.10	1.78	100.12	0.44	73	199	108	19.1
92OMB200	55.51	0.92	16.88	9.36	n.d.	0.17	3.20	5.52	5.86	0.84	0.35	1.22	99.82	0.40	18	543	134	32.6
92OMB203A	53.55	0.81	17.53	9.76	n.d.	0.17	3.62	8.11	3.39	0.76	0.22	2.33	100.24	0.42	15	333	66	24.9
92OMB206	57.20	0.78	16.14	8.24	n.d.	0.15	3.40	7.21	4.05	0.80	0.27	1.61	99.87	0.45	18	558	114	27.9
Southern Klamath Mountains, Wright & Wyld (1994)																		
Amphibolite blocks in melange																		
R-43	54.26	1.62	13.07	12.01	n.d.	0.18	5.50	10.26	2.70	0.24	0.16		100.00	0.48	9	134	115	48
R-75	41.96	2.51	13.70	16.29	n.d.	0.34	7.37	15.42	1.54	0.28	0.54		99.95	0.47	9	893	189	67
R306	48.03	1.43	15.49	11.32	n.d.	0.18	9.05	11.31	2.39	0.66	0.14		100.00	0.61	26	247	96	40
R647	52.58	0.91	13.78	11.03	n.d.	0.18	7.84	10.50	2.74	0.34	0.07		99.97	0.58	11	219	68	34
Greenstone blocks in melange																		
R-1006	47.20	0.95	15.35	10.54	n.d.	0.16	9.43	14.27	1.82	0.24	0.07		100.03	0.64	3	984	86	29
R-1007	45.10	1.52	13.67	12.99	n.d.	0.19	9.54	15.43	1.21	0.12	0.17		99.94	0.59	7	302	120	29
R-1008	53.20	1.42	13.84	11.01	n.d.	0.17	6.90	8.59	4.30	0.47	0.15		100.05	0.55	2	736	112	41
R-1009	48.90	1.21	15.95	10.79	n.d.	0.23	9.50	9.24	4.00	0.05	0.07		99.94	0.64	1	291	80	38
R-1010	50.00	1.60	15.19	11.13	n.d.	0.17	7.22	10.59	3.04	0.90	0.20		100.04	0.56	18	253	118	37
Metabasaltic blocks in melange																		

Table 1. Major- and trace-element compositions...continued

Sample	Nb	Ba	Sc	V	Cr	Ni	Cu	Zn	REE data in Table 2	Method, lab, if available	Rock type	Latitude	Longitude
BM-12	11	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF	amphibolite	n.a.	n.a.
Prospect Hill, block in melange (Barnes, unpub. data)													
KM4A	2	98.2	42.4	310	420	121	28.4	68.6		ICP,TTU	metagabbro	41° 21' 27"	123° 32' 44"
Prospect Hill, coherent sequence above melange (Barnes, unpub. data)													
92KM1A	2	18	30.8	51	1	4	12	82		ICP,TTU	metamorphosed volcanic ash	41° 22' 57"	123° 32' 49"
92KM2C	3	209	13.0	27	4	4	15	58		ICP,TTU	metamorphosed volcanic ash	41° 23' 01"	123° 32' 54"
92KM3A	1	80	28.2	201	2	4	12	87		ICP,TTU	meta-hornblende dacite	41° 23' 04"	123° 32' 56"
92KM4	b.d.	115	48.8	322	12	2	103	85		ICP,TTU	meta-pyroxene andesite	41° 23' 23"	123° 32' 59"
92KM5	2	357	31.0	156	797	301	33	62		ICP,TTU	diabase dike	41° 23' 22"	123° 33' 00"
92KM6	16	239	20.7	196	26	2	77	43		ICP,TTU	meta-basaltic andesite	41° 23' 43"	123° 32' 57"
92KM8	1	184	36.2	205	101	57	72	67		ICP,TTU	meta-basaltic andesite	41° 23' 52"	123° 33' 01"
92KM9	4	170	33.5	230	286	106	59	74		ICP,TTU	crystal-rich lahar deposit	41° 24' 38"	123° 33' 13"
92KM10	7	89	35.0	263	103	308	83	102		ICP,TTU	mafic tuff	41° 25' 38"	123° 33' 29"
Pony Peak area, coherent sequence above melange (Barnes, unpub. data)													
PP1288C	11	442	17	129	94	40	97	n.d.	+	ICP,TTU	argillite	41° 38' 32"	123° 22' 44"
92OMB190	10	703	14.1	100	73	41	70	84		ICP,TTU	micaceous argillite	41° 38' 37"	123° 33' 48"
92OMB192	4	3898	24.5	205	67	30	113	85		ICP,TTU	arenite	41° 38' 42"	123° 33' 50"
92OMB197	8	542	9.6	43	32	18	77	54		ICP,TTU	siliceous argillite	41° 39' 10"	123° 33' 51'
92OMB198	4	616	11.9	91	51	33	100	77		ICP,TTU	siliceous argillite	41° 39' 17"	123° 33' 40"
92OMB201	1	477	32.3	293	50	19	102	86		ICP,TTU	mafic arenite	41° 39' 29"	123° 33' 33"
92OMB202	6	303	6.3	32	27	31	35	35		ICP,TTU	siliceous argillite	41° 39' 39"	123° 33' 34"
92OMB193	1	280	39.7	332	51	7	108	67		ICP,TTU	greenstone	41° 38' 48"	123° 33' 56"
92OMB194	2	248	28.1	248	28	19	149	87		ICP,TTU	mafic feldspathic arenite	41° 38' 50"	123° 33' 57"
92OMB199	8	1243	14.5	126	73	45	112	130		ICP,TTU	black argillite	41° 39' 22"	123° 33' 45"
92OMB200	5	531	28.5	212	60	12	27	122		ICP,TTU	feldspathic arenite	41° 39' 27"	123° 33' 33"
92OMB203A	3	268	28.9	272	36	13	79	84		ICP,TTU	foliated arenite	41° 39' 43"	123° 33' 35"
92OMB206	4	390	25.9	197	77	43	37	84		ICP,TTU	mafic arenite	41° 39' 51"	123° 33' 22"
Southern Klamath Mountains, Wright & Wyld (1994)													
Amphibolite blocks in melange													
R-43	10	n.d.	n.d.	275	115	77	n.d.	n.d.	+	XRF	amphibolite	n.a.	n.a.
R-75	22	n.d.	n.d.	376	189	85	n.d.	n.d.		XRF	amphibolite	n.a.	n.a.
R306	11	n.d.	n.d.	252	96	116	n.d.	n.d.	+	XRF	amphibolite	n.a.	n.a.
R647	10	n.d.	n.d.	251	68	138	n.d.	n.d.	+	XRF	amphibolite	n.a.	n.a.
Greenstone blocks in melange													
R-1006	6	n.d.	n.d.	181	86	113	n.d.	n.d.	+	XRF	greenstone	n.a.	n.a.
R-1007	13	n.d.	n.d.	270	120	119	n.d.	n.d.	+	XRF	greenstone	n.a.	n.a.
R-1008	8	n.d.	n.d.	297	112	79	n.d.	n.d.	+	XRF	greenstone	n.a.	n.a.
R-1009	6	n.d.	n.d.	239	80	251	n.d.	n.d.	+	XRF	greenstone	n.a.	n.a.
R-1010	13	n.d.	n.d.	279	118	154	n.d.	n.d.	+	XRF	greenstone	n.a.	n.a.
Metabasaltic blocks in melange													

Table 1. Major- and trace-element compositions...continued

Sample	SiO2	TiO2	Al2O3	Fe2O3	FeO	MnO	MgO	CaO	Na2O	K2O	P2O5	LOI	Total	Mg#	Rb	Sr	Zr	Y
R-13	51.50	2.26	18.40	10.30	n.d.	0.10	2.01	5.92	5.08	3.32	1.10		99.99	0.28	87	234	203	37
R-112	48.80	1.52	14.50	9.37	n.d.	0.16	6.30	5.10	3.60	0.44	0.15		89.94	0.57	1	169	98	37
R-1005	52.10	1.14	14.45	10.36	n.d.	0.18	7.77	8.80	4.33	0.72	0.11		99.96	0.60	15	122	82	32
R-1001A	48.80	1.93	17.41	10.83	n.d.	0.15	9.94	6.32	3.72	0.35	0.48		99.93	0.65	12	607	176	37
R-1001B	49.50	2.12	17.50	11.91	n.d.	0.20	10.05	3.95	4.11	0.17	0.54		100.05	0.63	9	125	188	39
R-1002A	48.80	2.24	18.20	10.89	n.d.	0.20	5.15	8.10	3.69	2.23	0.45		99.95	0.48	64	266	196	37
R-1002B	48.20	2.41	18.48	9.67	n.d.	0.24	7.54	7.93	3.29	1.72	0.45		99.93	0.61	49	356	189	38
Salt Creek lavas, coherent sequence above melange																		
S-83	52.70	0.70	14.03	7.30	n.d.	0.19	6.86	12.80	3.06	2.27	0.08		99.99	0.65	39	80	56	18
S-89	56.80	1.55	15.00	12.00	n.d.	0.16	3.62	4.79	5.67	0.15	0.19		99.93	0.37	3	106	110	37
R-469	56.70	1.48	15.80	9.93	n.d.	0.18	4.84	6.42	4.40	0.09	0.19		100.03	0.49	3	108	135	43
R-488	53.50	1.20	16.00	10.80	n.d.	0.23	7.08	5.65	5.35	0.10	0.15		100.06	0.57	2	94	90	30
R-520	52.20	0.99	16.30	9.21	n.d.	0.15	6.36	10.34	4.27	0.07	0.09		99.98	0.58	3	79	82	29
R-1000A	51.20	0.99	15.89	11.05	n.d.	0.16	4.44	13.84	1.20	1.06	0.14		99.97	0.44	22	281	88	32
R-1000B	52.40	2.02	14.77	12.78	n.d.	0.18	4.96	8.77	3.16	0.68	0.20		99.92	0.43	22	125	126	49
R-449C	54.90	0.64	16.60	7.13	n.d.	0.17	6.63	7.86	3.67	2.26	0.16		100.02	0.65	37	123	57	12
R1003B	49.60	1.44	15.46	11.23	n.d.	0.15	8.33	9.56	3.81	0.24	0.15		99.97	0.60	10	157	102	30
Dubakella Mountain lavas, coherent sequence above melange																		
S-145	48.20	0.62	16.60	11.60	n.d.	0.19	7.23	13.16	1.80	0.40	0.10		99.90	0.55	10	400	28	13
S-154	50.90	0.65	18.20	9.58	n.d.	0.17	3.79	12.90	2.65	1.00	0.17		100.01	0.44	21	405	42	12
S-155	54.00	0.50	12.10	8.25	n.d.	0.15	10.00	10.02	3.05	1.51	0.17		99.75	0.71	20	276	30	<10
R-551	52.30	0.46	16.70	9.54	n.d.	0.19	5.46	11.71	3.26	0.28	0.07		99.97	0.53	<10	290	19	<10
R-21	51.80	0.69	18.50	9.03	n.d.	0.14	5.46	6.26	2.04	5.32	0.67		99.91	0.55	108	270	122	17
R64B	52.50	0.69	20.00	8.65	n.d.	0.12	4.42	4.89	2.71	5.38	0.63		99.99	0.50	108	600	118	20
Gabbro/diorite intrusions																		
R-37	56.56	0.47	15.21	7.24	n.d.	0.19	7.09	8.48	3.55	1.18	0.04		100.01	0.66	33	62	48	14
R-310B	57.21	0.61	18.42	7.98	n.d.	0.13	4.53	5.78	4.95	0.25	0.14		100.00	0.53	5	205	59	16
R-312	52.91	1.16	15.64	9.81	n.d.	0.17	7.23	8.99	3.91	0.06	0.12		100.00	0.59	2	238	95	28
R-413	49.01	0.49	15.47	10.84	n.d.	0.17	9.42	12.21	2.03	0.36	0.00		100.00	0.63	12	89	23	10
R-481	52.34	1.28	16.79	10.24	n.d.	0.15	6.88	7.35	4.40	0.43	0.14		100.00	0.57	6	259	101	30
R-494	51.07	1.31	15.82	10.41	n.d.	0.19	7.60	9.58	3.53	0.39	0.10		100.00	0.59	5	127	100	30
R-522	50.40	1.23	16.92	9.42	n.d.	0.16	8.37	9.78	3.54	0.09	0.08		99.99	0.64	4	81	90	26
R-548	49.24	0.45	16.08	7.21	n.d.	0.14	9.83	14.77	1.04	1.22	0.01		99.99	0.73	14	106	40	14
R-558	54.00	1.64	16.60	7.37	n.d.	0.17	5.53	8.25	3.74	2.43	0.15		99.88	0.60	60	205	129	36
Devils Elbow area, southern Klamath Mtns. (Wyld & Wright, 1988)																		
SMM-1	45.80	1.52	14.50	12.72	n.d.	0.17	4.96	20.10	0.04	0.02	0.15		99.98	0.44	6	62	101	44
SMM-2	41.80	1.15	17.00	11.49	n.d.	0.17	8.24	19.12	0.75	0.05	0.14		99.91	0.59	2	51	88	36
SMM-7	37.90	1.85	17.21	15.68	n.d.	0.21	6.37	19.41	1.08	0.05	0.22		99.98	0.45	0	311	130	52
SMM-12	35.90	2.02	21.11	15.63	n.d.	0.20	9.07	14.76	1.05	0.05	0.22		100.01	0.53	0	68	97	41
SMM-3	49.20	1.87	17.24	15.03	n.d.	0.21	6.86	4.83	4.47	0.08	0.20		99.99	0.47	3	175	118	47
SMM-11	48.90	1.75	14.78	13.02	n.d.	0.20	6.58	11.03	3.42	0.17	0.18		100.03	0.50	1	272	120	44
SMM-13	52.70	1.76	13.30	13.87	n.d.	0.47	7.13	5.61	4.62	0.31	0.15		99.92	0.50	5	139	94	35
213b	52.50	1.47	14.88	11.85	n.d.	0.17	8.63	5.21	4.70	0.42	0.16		99.99	0.59	6	191	107	36

Table 1. Major- and trace-element compositions...continued

Sample	Nb	Ba	Sc	V	Cr	Ni	Cu	Zn	REE data in Table 2	Method, lab, if available	Rock type	Latitude	Longitude
R-13	36	n.d.	n.d.	270	203	113	n.d.	n.d.	+	XRF	metabasalt	n.a.	n.a.
R-112	11	n.d.	n.d.	183	98	255	n.d.	n.d.	+	XRF	metabasalt	n.a.	n.a.
R-1005	7	n.d.	n.d.	n.d.	82	n.d.	n.d.	n.d.	+	XRF	metabasalt	n.a.	n.a.
R-1001A	31	n.d.	n.d.	n.d.	176	n.d.	n.d.	n.d.		XRF	metabasalt	n.a.	n.a.
R-1001B	34	n.d.	n.d.	n.d.	188	n.d.	n.d.	n.d.	+	XRF	metabasalt	n.a.	n.a.
R-1002A	34	n.d.	n.d.	n.d.	196	n.d.	n.d.	n.d.	+	XRF	metabasalt	n.a.	n.a.
R-1002B	34	n.d.	n.d.	n.d.	189	n.d.	n.d.	n.d.		XRF	metabasalt	n.a.	n.a.
Salt Creek lavas, coherent sequence above melange													
S-83	7	n.d.	n.d.	168	56	93	n.d.	n.d.	+	XRF	metavolcanic	n.a.	n.a.
S-89	8	n.d.	n.d.	352	110	20	n.d.	n.d.	+	XRF	metavolcanic	n.a.	n.a.
R-469	8	n.d.	n.d.	292	135	36	n.d.	n.d.	+	XRF	metavolcanic	n.a.	n.a.
R-488	9	n.d.	n.d.	287	90	49	n.d.	n.d.	+	XRF	metavolcanic	n.a.	n.a.
R-520	7	n.d.	n.d.	224	82	66	n.d.	n.d.	+	XRF	metavolcanic	n.a.	n.a.
R-1000A	8	n.d.	n.d.	207	88	51	n.d.	n.d.		XRF	metavolcanic	n.a.	n.a.
R-1000B	9	n.d.	n.d.	342	126	30	n.d.	n.d.	+	XRF	metavolcanic	n.a.	n.a.
R-449C	<10	n.d.	n.d.	n.d.	57	62	n.d.	n.d.	+	XRF	metavolcanic	n.a.	n.a.
R1003B	13	n.d.	n.d.	219	102	115	n.d.	n.d.	+	XRF	metavolcanic	n.a.	n.a.
Dubakella Mountain lavas, coherent sequence above melange													
S-145	<10	n.d.	n.d.	n.d.	28	43	n.d.	n.d.	+	XRF	metavolcanic	n.a.	n.a.
S-154	<10	n.d.	n.d.	n.d.	42	27	n.d.	n.d.	+	XRF	metavolcanic	n.a.	n.a.
S-155	<10	n.d.	n.d.	n.d.	30	123	n.d.	n.d.	+	XRF	metavolcanic	n.a.	n.a.
R-551	<10	n.d.	n.d.	n.d.	19	36	n.d.	n.d.	+	XRF	metavolcanic	n.a.	n.a.
R-21	<10	n.d.	n.d.	n.d.	122	53	n.d.	n.d.	+	XRF	metavolcanic	n.a.	n.a.
R64B	12	n.d.	n.d.	n.d.	118	28	n.d.	n.d.	+	XRF	metavolcanic	n.a.	n.a.
Gabbro/diorite intrusions													
R-37	4	n.d.	n.d.	188	48	51	n.d.	n.d.	+	XRF	gabbro/diorite	n.a.	n.a.
R-310B	6	n.d.	n.d.	243	59	12	n.d.	n.d.		XRF	gabbro/diorite	n.a.	n.a.
R-312	5	n.d.	n.d.	257	95	58	n.d.	n.d.	+	XRF	gabbro/diorite	n.a.	n.a.
R-413	5	n.d.	n.d.	240	23	55	n.d.	n.d.	+	XRF	gabbro/diorite	n.a.	n.a.
R-481	6	n.d.	n.d.	266	101	47	n.d.	n.d.	+	XRF	gabbro/diorite	n.a.	n.a.
R-494	4	n.d.	n.d.	270	100	41	n.d.	n.d.	+	XRF	gabbro/diorite	n.a.	n.a.
R-522	6	n.d.	n.d.	242	90	93	n.d.	n.d.		XRF	gabbro/diorite	n.a.	n.a.
R-548	6	n.d.	n.d.	160	40	101	n.d.	n.d.		XRF	gabbro/diorite	n.a.	n.a.
R-558	7	n.d.	n.d.	297	129	72	n.d.	n.d.	+	XRF	gabbro/diorite	n.a.	n.a.
Devils Elbow area, southern Klamath Mtns. (Wyld & Wright, 1988)													
SMM-1	8	n.d.	n.d.	242	70	36	n.d.	n.d.		XRF	greenstone	n.a.	n.a.
SMM-2	9	n.d.	n.d.	209	218	80	n.d.	n.d.		XRF	greenstone	n.a.	n.a.
SMM-7	7	n.d.	n.d.	347	54	30	n.d.	n.d.		XRF	greenstone	n.a.	n.a.
SMM-12	7	n.d.	n.d.	374	62	42	n.d.	n.d.		XRF	greenstone	n.a.	n.a.
SMM-3	8	n.d.	n.d.	482	27	47	n.d.	n.d.		XRF	diabase	n.a.	n.a.
SMM-11	7	n.d.	n.d.	331	102	61	n.d.	n.d.		XRF	diabase	n.a.	n.a.
SMM-13	6	n.d.	n.d.	438	23	28	n.d.	n.d.		XRF	diabase	n.a.	n.a.
213b	11	n.d.	n.d.	355	29	53	n.d.	n.d.		XRF	diabase	n.a.	n.a.

Table 1. Major- and trace-element compositions...continued

Sample	SiO2	TiO2	Al2O3	Fe2O3	FeO	MnO	MgO	CaO	Na2O	K2O	P2O5	LOI	Total	Mg#	Rb	Sr	Zr	Y
West of Cave Junction, OR (D. Yule, unpub. data)																		
89DYCP3	48.51	2.66	14.45	13.10	n.d.	0.20	4.47	8.86	4.58	0.27	0.39	2.84	100.33	0.40	7	225	197	43.3
89DYCP45	50.14	0.93	16.19	8.89	n.d.	0.15	6.63	13.14	2.21	0.03	0.10	3.69	102.11	0.60	2	56	65	24.5
91DYCR22	49.52	1.38	12.12	13.70	n.d.	0.22	7.17	8.86	2.83	0.22	0.11	3.09	99.22	0.51	7	100	68	32.8
92DYEDM83B	45.68	2.06	15.39	9.65	n.d.	0.15	5.00	11.42	4.44	0.48	0.38	6.33	100.97	0.51	8	419	146	24.7
92DYG14A	49.02	1.27	15.89	9.25	n.d.	0.15	6.46	9.69	3.68	0.14	0.16	2.66	98.37	0.58	4	256	104	32.8
92DYEDM83A	46.31	2.20	15.36	10.75	n.d.	0.16	6.70	9.73	4.03	0.30	0.39	4.44	100.37	0.55	6	361	156	26.1
92DYOM11	54.06	1.18	13.47	7.82	n.d.	0.17	7.70	8.57	4.09	0.75	0.16	2.20	100.16	0.66	13	90	99	29.6
92DYOM14	53.98	0.51	14.79	7.99	n.d.	0.14	8.23	8.45	3.23	0.34	0.08	2.99	100.75	0.67	8	156	36	16.5
92DYOM8	48.54	1.38	14.57	12.24	n.d.	0.21	5.93	10.05	3.68	0.42	0.20	2.43	99.66	0.49	9	245	81	39.7
Northwestern Siskiyou Mountains (Gorman, 1985)																		
Bear Basin Rd. (upper sequence)																		
2KL-144A	50.91	2.78	14.00	12.10	n.d.	0.24	6.38	6.60	3.88	0.22	0.02	2.35	99.48	0.51	6	256	161	30
P-1	52.69	2.35	13.68	12.64	n.d.	0.12	5.80	7.02	3.82	0.30	0.00	2.04	100.46	0.48	5	179	122	35
2KL-218	49.91	2.24	13.10	16.05	n.d.	0.09	5.82	6.16	4.39	1.00	0.00	0.68	99.44	0.42	25	216	124	38
2KL-117	51.54	2.30	13.54	10.72	n.d.	0.16	4.82	10.22	4.12	0.22	0.22	1.01	98.87	0.47	3	293	150	30
2KL-132	46.38	1.51	14.71	10.92	n.d.	0.18	9.06	10.26	2.50	0.19	0.18	2.13	98.02	0.62	5	267	97	27
2KL-113	47.91	1.33	16.40	11.17	n.d.	0.20	5.22	12.82	2.95	0.42	0.10	1.41	99.93	0.48	12	247	87	21
Bear Basin Rd. (lower sequence)																		
2KL-222	50.02	2.40	13.45	13.64	n.d.	0.22	6.68	8.05	3.94	0.42	0.15	2.14	101.11	0.49	9	162	139	43
2KL-304	49.22	2.06	12.88	15.33	n.d.	0.26	5.82	8.68	2.99	0.70	0.11	1.99	100.04	0.43	14	99	121	45
Melange greenstone																		
2KL-344	46.33	2.03	13.21	17.61	n.d.	0.31	7.88	7.55	3.37	0.16	0.11	3.01	101.57	0.47	8	72	119	45
2KL-347	47.67	1.94	14.31	13.29	n.d.	0.23	9.19	7.62	3.56	0.29	0.08	4.12	102.30	0.58	9	221	130	42
2KL-317	46.71	1.30	14.22	11.71	n.d.	0.22	7.92	10.71	2.96	0.16	0.06	4.11	100.08	0.57	5	159	76	34
Baldy Peak volcanic rocks																		
2KL-230	51.54	1.11	14.33	9.57	n.d.	0.17	7.24	8.76	4.09	0.16	0.06	1.75	98.78	0.60	1	167	80	27
2KL-240	50.62	0.94	15.80	8.77	n.d.	0.16	6.51	10.45	3.66	0.18	0.05	2.00	99.14	0.60	2	253	67	26
2KL-228	52.26	0.69	13.37	9.07	n.d.	0.17	9.50	8.76	2.99	0.38	0.02	1.86	99.07	0.67	12	129	56	19
HIGH-GRADE METAMORPHIC EQUIVALENT OF RATTLESNAKE CREEK TERRANE (MARBLE MOUNTAIN TERRANE)																		
Observation Peak area, OR (Thompson, 1988)																		
OP58	51.61	0.77	15.02	1.39	7.17	0.18	7.48	10.40	3.29	0.43	0.15	1.69	99.58	0.61	8	298	61	21.1
OP82	54.28	0.81	13.72	1.65	7.10	0.16	7.41	11.27	0.39	0.12	0.18	1.66	98.75	0.61	4	369	62	22.2
OP83	57.47	0.75	14.99	0.33	6.78	0.15	6.89	8.58	2.51	0.64	0.12	0.50	99.71	0.63	15	301	59	20.2
OPC5	53.89	1.04	13.49	0.97	9.28	0.21	6.80	8.81	3.76	0.51	0.13	1.67	100.56	0.54	7	94	59	20.2
OP58A	46.48	2.97	13.72	1.94	13.12	0.31	8.68	11.10	1.77	0.63	0.18	0.49	101.39	0.51	10	n.d.	261	n.d.
Titus Ridge area (Petersen, 1982)																		
RCP-9B	54.73	1.04	14.71	11.65	n.d.	0.15	4.71	7.29	3.81	0.15	0.10	1.56	99.90	0.44	b.d.	117	54	b.d.
RCP-9D	51.75	0.28	16.16	5.81	n.d.	0.11	8.97	10.98	3.05	0.59	0.07	1.30	99.07	0.75	15	127	b.d.	b.d.

Table 1. Major- and trace-element compositions...continued

Sample	Nb	Ba	Sc	V	Cr	Ni	Cu	Zn	REE data in Table 2	Method, lab, if available	Rock type	Latitude	Longitude
West of Cave Junction, OR (D. Yule, unpub. data)													
89DYCP3	28	70	33.4	285	64	44	55	115		ICP,TTU	pillow basalt	42° 14' 11"	123° 47' 46"
89DYCP45	b.d.	11	37.6	195	209	75	104	46		ICP,TTU	metabasalt	42° 13' 12"	123° 48' 22"
91DYCR22	4	26	49.3	325	109	50	85	103		ICP,TTU	metabasalt	42° 25' 38"	123° 37' 33"
92DYEDM83B	32	201	21.9	204	179	121	41	74		ICP,TTU	pillow basalt	42° 17' 20"	123° 37' 33"
92DYG14A	2	33	35.5	245	233	90	52	63		ICP,TTU	metabasalt	42° 32' 37"	123° 30' 40"
92DYEDM83A	30	132	24.4	209	200	138	51	78		ICP,TTU	pillow basalt	42° 17' 20"	123° 43' 43"
92DYOM11	4	62	28.4	212	247	97	53	55		ICP,TTU	massive metabasalt	42° 27' 55"	123° 35' 44"
92DYOM14	b.d.	155	36.2	228	341	101	74	51		ICP,TTU	foliated metatuff	42° 29' 52"	123° 32' 36"
92DYOM8	n.d.	46	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		ICP,TTU	pillow basalt	42° 26' 26"	123° 35' 44"
Northwestern Siskiyou Mountains (Gorman, 1985)													
Bear Basin Rd. (upper sequence)					n.d.	n.d.	n.d.	n.d.					
2KL-144A	14	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF	metabasalt	n.a.	n.a.
P-1	14	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF	metabasalt	n.a.	n.a.
2KL-218	11	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF	metabasalt	n.a.	n.a.
2KL-117	14	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF	metabasalt	n.a.	n.a.
2KL-132	11	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF	metabasalt	n.a.	n.a.
2KL-113	21	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF	metabasalt	n.a.	n.a.
Bear Basin Rd. (lower sequence)													
2KL-222	8	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	+	XRF	metabasalt	n.a.	n.a.
2KL-304	6	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF	metabasalt	n.a.	n.a.
Melange greenstone													
2KL-344	4	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF	greenstone	n.a.	n.a.
2KL-347	11	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	+	XRF	greenstone	n.a.	n.a.
2KL-317	7	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF	greenstone	n.a.	n.a.
Baldy Peak volcanic rocks													
2KL-230	6	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	+	XRF	metabasalt	n.a.	n.a.
2KL-240	4	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF	metabasalt	n.a.	n.a.
2KL-228	b.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF	metabasalt	n.a.	n.a.
<u>HIGH-GRADE METAMORPHIC EQUIVALENT OF RATTLESNAKE CREEK TERRANE (MARBLE MOUNTAIN TERRANE)</u>													
Observation Peak area, OR (Thompson, 1988)													
OP58	4	495	42.1	232	270	64	30	87	+	ICP,TTU ◊	amphibolitic dike	n.a.	n.a.
OP82	4	893	40.2	247	290	34	86	83		ICP,TTU ◊	amphibolitic dike	n.a.	n.a.
OP83	6	392	33.9	177	371	59	29	79	+	ICP,TTU ◊	amphibolitic dike	n.a.	n.a.
OPC5	n.d.	140	41	268	198	8	50	81		ICP,TTU ◊	amphibolite	n.a.	n.a.
OP58A	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	+	ICP,TTU ◊	amphibolite	n.a.	n.a.
Titus Ridge area (Petersen, 1982)													
RCP-9B	b.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF	metadiabase	n.a.	n.a.
RCP-9D	b.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF	metadiabase	n.a.	n.a.

Table 1. Major- and trace-element compositions...continued

Sample	SiO2	TiO2	Al2O3	Fe2O3	FeO	MnO	MgO	CaO	Na2O	K2O	P2O5	LOI	Total	Mg#	Rb	Sr	Zr	Y
RCP-22a	52.78	0.54	15.72	9.18	n.d.	0.15	7.31	7.77	4.57	0.20	0.05	0.80	99.07	0.61	b.d.	52	28	b.d.
RCP-35A	52.78	1.24	14.29	12.83	n.d.	0.19	4.88	5.27	5.73	0.35	0.08	1.29	98.93	0.43	20	114	68	28
RCP-53	51.09	0.25	13.09	10.18	n.d.	0.22	9.88	10.71	2.43	0.11	0.05	1.05	99.06	0.66	17	97	31	9
RCP-66A	52.34	0.38	15.46	8.05	n.d.	0.14	8.43	7.79	3.98	0.72	0.02	2.20	99.51	0.67	18	260	40	14
RCP-167	53.68	1.23	15.27	13.55	n.d.	0.20	3.69	5.12	5.69	0.05	0.10	0.92	99.50	0.35	b.d.	84	48	24
RCP-186	53.57	0.59	14.96	8.15	n.d.	0.11	8.42	8.56	4.19	0.18	0.10	1.31	100.14	0.67	b.d.	83	53	22
RCP-238A	49.29	0.31	16.56	10.63	n.d.	0.17	8.09	6.88	3.51	0.32	0.04	3.13	98.93	0.60	b.d.	198	19	8
RCP-263	54.88	0.92	14.88	10.11	n.d.	0.15	5.38	7.02	4.70	0.11	0.10	0.78	99.03	0.51	b.d.	124	53	21
Huckleberry Ridge area (Rawson, 1984)																		
80-45	51.51	0.48	12.68	9.20	n.d.	0.16	11.13	8.97	3.35	0.37	0.14	1.04	99.03	0.71	b.d.	222	48	14
80-61c	53.08	0.32	15.76	5.60	n.d.	0.13	9.39	11.90	3.29	0.24	0.03	0.62	100.36	0.77	7	130	25	17
80-69	51.23	0.62	16.88	9.49	n.d.	0.16	6.65	10.31	3.80	0.12	0.09	0.73	100.08	0.58	b.d.	155	44	20
80-72	53.92	0.98	14.88	12.17	n.d.	0.16	4.07	9.60	3.27	0.19	0.10	0.57	99.91	0.40	b.d.	231	54	20
80-73a	52.81	0.57	15.83	9.97	n.d.	0.15	6.31	8.28	4.36	0.59	0.05	1.37	100.29	0.56	11	191	27	16
80-75a	55.24	0.99	14.89	11.07	n.d.	0.21	4.44	10.89	1.24	0.07	0.10	0.70	99.84	0.44	b.d.	442	57	24
81-299	49.05	0.20	17.42	5.07	n.d.	0.09	9.68	14.58	1.68	0.13	0.03	1.16	99.09	0.79	b.d.	130	10	11
81-425b	52.11	0.40	15.79	9.44	n.d.	0.16	9.21	7.86	3.84	0.08	0.09	1.47	100.45	0.66	b.d.	153	27	13
Wrangle Gap area (Ferns, 1979)																		
KMF181	50.54	0.78	10.77	2.29	9.38	0.21	11.32	11.21	1.19	0.30	0.19	0.70	98.88	0.64	9	285	90	23
KMF85a	50.86	1.69	18.13	1.91	7.64	0.15	3.86	8.51	2.67	1.33	0.42	1.92	99.09	0.42	20	332	76	19
KMF71	50.93	0.60	16.83	8.72	n.d.	0.17	7.21	12.52	0.93	0.22	0.12	1.74	99.99	0.62	5	640	50	11
KMF193a	51.62	1.06	11.75	10.85	n.d.	0.19	9.30	10.58	2.20	0.24	b.d.	0.30	98.09	0.63	b.d.	271	74	14
TR60	52.88	0.59	12.12	8.81	n.d.	0.14	9.79	9.94	2.58	0.74	0.12	2.61	100.32	0.69	n.d.	n.d.	n.d.	n.d.
TR102	56.84	0.71	17.90	9.87	n.d.	0.15	1.68	8.42	2.17	0.19	0.40	2.33	100.66	0.25	n.d.	n.d.	n.d.	n.d.
KMF33	46.31	1.23	14.37	11.07	n.d.	0.16	6.84	11.11	3.38	0.33	0.10	0.98	95.88	0.55	5	131	75	22
KMF146b	48.35	0.88	18.83	1.52	11.03	0.23	4.23	8.32	4.46	0.36	0.05	n.d.	98.26	0.38	n.d.	n.d.	n.d.	n.d.
TR54	46.30	1.96	15.05	13.76	n.d.	0.21	6.62	9.33	2.63	0.88	0.25	3.26	100.25	0.49	22	191	143	50
KM143b	48.81	1.05	15.01	9.99	n.d.	0.15	7.74	9.96	3.97	0.34	0.08	1.93	99.03	0.61	n.d.	n.d.	n.d.	n.d.
KM123	47.51	2.23	13.24	13.40	n.d.	0.17	4.30	13.02	2.68	0.81	0.25	3.26	100.87	0.39	11	179	161	43
KM35	48.14	2.98	13.19	16.98	n.d.	0.21	5.22	7.50	3.96	0.15	0.45	2.52	101.30	0.38	b.d.	69	241	62
Marble Mountain Wilderness (Donato, 1987)																		
MMD121	57.5	0.86	17.1	1.22	7.49	0.15	3.16	5.35	5.59	0.22	0.08	0.39	99.1	0.40	2	109	59	n.d.
MMD121.1	49.6	1.00	16.3	1.95	8.68	0.21	6.63	9.79	3.79	0.23	0.10	0.58	98.9	0.53	0.1	102	67	n.d.
MMD234	53.5	0.85	13.3	2.23	6.28	0.17	8.61	8.64	3.30	0.98	0.22	0.71	98.8	0.65	14	252	100	n.d.
MMD137c	47.4	1.75	16.4	1.39	9.64	0.18	8.42	9.43	3.12	0.31	0.17	0.60	98.8	0.58	3	230	111	n.d.
MMD210	50.4	1.72	17.2	1.61	5.53	0.15	4.00	12.10	4.24	0.70	0.17	1.03	98.9	0.51	13	161	107	n.d.
MMD233	47.8	1.77	18.2	3.64	6.26	0.19	4.83	10.90	3.57	0.86	0.17	0.76	99.0	0.47	9	223	123	n.d.
Marble Mountain Wilderness (B.R. Hacker, unpub. data)																		
Yr105	49.4	1.92	14.3	14.0	n.d.	0.2	6.9	10.3	2.9	0.2	0.2		100.26	0.49	2	133	117	42.7
Yr107	51.3	0.72	17.0	10.2	n.d.	0.2	8.4	8.1	3.9	0.7	0.2		100.64	0.62	12	516	72	17.4

Table 1. Major- and trace-element compositions...continued

Sample	Nb	Ba	Sc	V	Cr	Ni	Cu	Zn	REE data in Table 2	Method, lab, if available	Rock type	Latitude	Longitude
RCP-22a	b.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF	metagabbro	n.a.	n.a.
RCP-35A	b.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF	metadiabase	n.a.	n.a.
RCP-53	b.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF	metagabbro	n.a.	n.a.
RCP-66A	b.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF	metagabbro	n.a.	n.a.
RCP-167	b.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF	metadiabase	n.a.	n.a.
RCP-186	b.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF	metadiabase	n.a.	n.a.
RCP-238A	b.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF	metagabbro	n.a.	n.a.
RCP-263	b.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF	metadiabase	n.a.	n.a.
Huckleberry Ridge area (Rawson, 1984)					n.d.	n.d.	n.d.	n.d.					
80-45	b.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF	metagabbro	n.a.	n.a.
80-61c	b.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF	metagabbro	n.a.	n.a.
80-69	b.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF	amphibolitic metavolcanic	n.a.	n.a.
80-72	b.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF	amphibolitic metavolcanic	n.a.	n.a.
80-73a	b.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF	amphibolitic metavolcanic	n.a.	n.a.
80-75a	b.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF	amphibolitic metavolcanic	n.a.	n.a.
81-299	b.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF	metagabbro	n.a.	n.a.
81-425b	b.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF	metagabbro	n.a.	n.a.
Wrangle Gap area (Ferns, 1979)													
KMF181	12	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF	metadiorite	n.a.	n.a.
KMF85a	11	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF	metadiorite	n.a.	n.a.
KMF71	7	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF	metadiorite	n.a.	n.a.
KMF193a	10	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF	metadiorite	n.a.	n.a.
TR60	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF	metadiorite	n.a.	n.a.
TR102	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF	metadiorite	n.a.	n.a.
KMF33	7	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF	amphibolite block	n.a.	n.a.
KMF146b	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF	amphibolite block	n.a.	n.a.
TR54	14	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF	metavolcanic	n.a.	n.a.
KM143b	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF	metavolcanic	n.a.	n.a.
KM123	16	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF	metavolcanic	n.a.	n.a.
KM35	21	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF	metavolcanic	n.a.	n.a.
Marble Mountain Wilderness (Donato, 1987)													
MMD121	n.d.	74	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF,USGS	amphibolitic pillow lava	41°33'	123°07'
MMD121.1	n.d.	64	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF,USGS	amphibolitic pillow lava	41°33'	123°07'
MMD234	n.d.	474	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF,USGS	amphibolitic schist	41°36'	123°07'
MMD137c	n.d.	67	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF,USGS	amphibolitic pillow lava	41°36'	123°07'
MMD210	n.d.	144	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF,USGS	amphibolitic schist	41°38'	123°05'
MMD233	n.d.	116	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF,USGS	amphibolitic schist	41°37'	123°07'
Marble Mountain Wilderness (B.R. Hacker, unpub. data)													
Yr105	2	12	n.d.	434	130	55	88	128		XRF, Stanford	amphibolite	n.a.	n.a.
Yr107	3	269	n.d.	287	196	57	89	96		XRF, Stanford	volcaniclastic rock	n.a.	n.a.

Table 1. Major- and trace-element compositions...continued

Sample	SiO2	TiO2	Al2O3	Fe2O3	FeO	MnO	MgO	CaO	Na2O	K2O	P2O5	LOI	Total	Mg#	Rb	Sr	Zr	Y
Yr112	50.1	1.70	17.1	8.7	n.d.	0.2	7.2	10.1	3.3	1.6	0.5		100.36	0.62	28	552	153	23.4
Yr114	49.9	1.22	14.6	9.8	n.d.	0.2	8.0	12.8	3.3	0.2	0.1		100.07	0.62	2	189	78	26.0
TM8	53.1	1.20	15.9	10.6	n.d.	0.2	7.0	8.3	3.6	0.2	0.1		100.23	0.57	1	120	81	27.6
Yr115	47.9	1.21	16.7	11.7	n.d.	0.2	9.8	9.8	3.2	0.3	0.0		100.85	0.63	4	84	64	30.3
Yr118	50.2	2.09	14.2	13.5	n.d.	0.2	6.3	9.7	3.8	0.2	0.2		100.31	0.48	2	195	127	41.2
Yr120	50.9	1.21	14.0	12.8	n.d.	0.2	7.3	9.6	3.2	0.9	0.1		100.34	0.53	13	155	76	24.1
Yr121	53.0	0.87	15.9	10.1	n.d.	0.2	7.3	7.6	4.2	0.9	0.1		100.16	0.59	22	172	54	21.6
Yr122	43.5	2.11	13.9	15.9	n.d.	0.3	9.2	14.3	1.2	0.2	0.1		100.69	0.53	0	163	107	47.1
Yr124	44.8	1.44	12.9	16.3	n.d.	0.3	10.5	12.3	1.5	0.4	0.1		100.49	0.56	3	52	55	33.0
Yr135	48.0	2.20	15.7	12.6	n.d.	0.2	6.1	10.5	3.4	0.4	0.2		99.24	0.49	2	329	135	29.1
Grider Creek area (Hill, 1984)																		
330	54.3	1.57	14.4	3.21	7.72	0.22	5.18	7.04	3.94	0.23	0.11	n.d.	97.9	0.47	n.d.	127	113	32
279j	55.6	0.96	15.8	4.17	5.02	0.13	3.85	9.94	2.38	0.03	0.14	n.d.	98.0	0.44	n.d.	242	89	22
183a	48.4	1.69	14.1	1.95	11.05	0.21	7.08	10.20	3.55	0.14	0.13	n.d.	98.5	0.50	n.d.	163	95	22
95	57.8	0.70	15.7	4.14	5.33	0.15	3.31	10.30	1.28	0.09	0.09	n.d.	98.9	0.39	n.d.	181	67	24
392	53.7	1.05	15.0	11.2	n.d.	0.19	3.93	11.10	1.40	0.10	0.13	n.d.	97.8	0.41	n.d.	220	120	29
393	54.5	0.92	14.1	11.3	n.d.	0.18	3.96	12.00	0.73	0.05	0.09	n.d.	97.9	0.41	n.d.	320	99	25
402	53.7	0.44	15.4	2.12	6.03	0.12	7.32	10.60	2.22	0.16	0.06	n.d.	98.2	0.62	n.d.	137	51	15
370	52.2	1.38	15.6	3.19	7.28	0.16	5.82	8.25	3.72	0.31	0.12	n.d.	98.0	0.51	n.d.	157	93	29
150	50.2	1.13	15.4	2.10	7.27	0.18	8.46	9.40	3.42	0.19	0.10	n.d.	97.9	0.62	n.d.	123	73	22
366b	52.7	1.64	15.3	3.82	6.98	0.29	5.47	7.09	4.17	0.07	0.16	n.d.	97.7	0.48	n.d.	130	110	32
361	51.9	1.40	15.5	2.74	6.18	0.20	6.84	7.92	3.51	0.03	0.12	n.d.	96.3	0.59	n.d.	114	99	29
366a	52.6	0.19	10.8	1.51	6.89	0.14	15.10	6.70	1.96	0.05		n.d.	95.9	0.77	n.d.	29	42	13
253	54.6	1.02	16.9	2.06	6.19	0.13	5.64	6.88	4.66	0.12	0.13	n.d.	98.3	0.56	n.d.	197	86	24
244	51.2	1.14	15.7	2.03	6.99	0.17	7.45	10.70	3.21	0.04	0.10	n.d.	98.7	0.60	n.d.	119	80	23
357	50.4	1.15	15.2	3.50	6.27	0.17	6.41	11.80	3.22	0.31	0.09	n.d.	98.5	0.55	n.d.	100	76	24
245	56.5	1.09	15.6	8.72	n.d.	0.19	3.71	7.36	4.06	0.09	0.11	n.d.	97.4	0.46	n.d.	480	120	27
694	50.3	1.34	14.9	9.90	n.d.	0.18	6.89	10.30	3.32	0.06	0.09	n.d.	97.3	0.58	n.d.	120	120	29
713	52.1	1.38	15.7	9.45	n.d.	0.19	5.56	7.64	4.82	0.31	0.13	n.d.	97.3	0.54	n.d.	94	150	33
WESTERN HAYFORK TERRANE																		
Trinity River area (Wright & Fahan, 1988)																		
D-1A	48.77	0.75	12.76	8.07	n.d.	0.14	9.28	16.69	1.74	0.92	0.84	n.d.	99.96	0.69	n.d.	n.d.	n.d.	n.d.
D-1B	54.81	0.81	18.16	5.42	n.d.	0.12	5.24	10.12	3.09	1.85	0.27	n.d.	99.89	0.66	n.d.	n.d.	n.d.	n.d.
D-1C	52.77	0.63	14.63	6.65	n.d.	0.14	6.90	14.15	3.60	0.26	0.21	n.d.	99.94	0.67	n.d.	n.d.	n.d.	n.d.
D-1D	50.80	0.81	16.95	8.38	n.d.	0.13	7.12	11.36	3.48	0.62	0.31	n.d.	99.96	0.63	n.d.	n.d.	n.d.	n.d.
1058-24	53.72	0.63	18.22	6.82	n.d.	0.13	5.53	9.30	4.79	0.57	0.24	n.d.	99.95	0.62	n.d.	n.d.	n.d.	n.d.
1058-27	54.27	0.72	12.23	12.09	n.d.	0.72	3.28	7.47	2.37	1.28	0.51	n.d.	94.94	0.35	n.d.	n.d.	n.d.	n.d.
Trinity River area (Barnes, unpub. data)																		
92OMB26	48.08	0.61	13.98	8.79	n.d.	0.18	7.11	13.55	2.31	0.45	0.19	1.42	96.67	0.62	n.d.	501	59	20.3
92OMB77	53.64	0.65	18.95	7.49	n.d.	0.16	4.08	7.31	4.40	1.21	0.20	1.51	99.60	0.52	n.d.	463	98	19.9

Table 1. Major- and trace-element compositions...continued

Sample	Nb	Ba	Sc	V	Cr	Ni	Cu	Zn	REE data in Table 2	Method, lab, if available	Rock type	Latitude	Longitude
Yr112	24	442	n.d.	257	226	77	42	81		XRF, Stanford	metavolcanic rock	n.a.	n.a.
Yr114	2	23	n.d.	230	378	169	38	83		XRF, Stanford	metavolcanic rock	n.a.	n.a.
TM8	2	0	n.d.	317	64	44	71	78		XRF, Stanford	amphibolite	n.a.	n.a.
Yr115	1	28	n.d.	255	388	218	131	91		XRF, Stanford	massive amphibolite	n.a.	n.a.
Yr118	4	39	n.d.	455	119	54	64	120		XRF, Stanford	foliated amphibolite	n.a.	n.a.
Yr120	6	87	n.d.	335	249	91	91	100		XRF, Stanford	foliated amphibolite	n.a.	n.a.
Yr121	1	66	n.d.	314	169	67	78	81		XRF, Stanford	foliated amphibolite	n.a.	n.a.
Yr122	5	22	n.d.	460	407	135	35	152		XRF, Stanford	foliated amphibolite	n.a.	n.a.
Yr124	4	26	n.d.	488	303	144	57	135		XRF, Stanford	foliated amphibolite	n.a.	n.a.
Yr135	13	69	n.d.	352	174	42	93	109		XRF, Stanford	amygdaloidal metavolcanic rock	n.a.	n.a.
Grider Creek area (Hill, 1984)													
330	4.9	n.d.	n.d.	n.d.	4	27	n.d.	40		XRF	amphibolitic dike	n.a.	n.a.
279j	3.8	n.d.	n.d.	n.d.	34	36	24	47		XRF	amphibolitic dike	n.a.	n.a.
183a	5.3	n.d.	n.d.	n.d.	202	85	35	108		XRF	amphibolitic dike	n.a.	n.a.
95	2.4	n.d.	n.d.	n.d.	20	15	124	80		XRF	amphibolitic dike	n.a.	n.a.
392	n.d.	n.d.	n.d.	270	n.d.	20	19	310		XRF	amphibolitic dike	n.a.	n.a.
393	n.d.	n.d.	n.d.	290	n.d.	16	45	210		XRF	amphibolitic dike	n.a.	n.a.
402	3.7	n.d.	n.d.	n.d.	272	94	n.d.	29		XRF	amphibolitic dike	n.a.	n.a.
370	4.2	n.d.	n.d.	n.d.	79	45	19	31		XRF	amphibolitic dike	n.a.	n.a.
150	5.1	n.d.	n.d.	n.d.	385	150	n.d.	45		XRF	amphibolitic dike	n.a.	n.a.
366b	3.8	n.d.	n.d.	n.d.	54	38	67	186		XRF	amphibolite	n.a.	n.a.
361	3	n.d.	n.d.	n.d.	207	80	42	46		XRF	amphibolite	n.a.	n.a.
366a	2.7	n.d.	n.d.	n.d.	1275	374	n.d.	40		XRF	amphibolite	n.a.	n.a.
253	5	n.d.	n.d.	n.d.	26	33	n.d.	25		XRF	amphibolite	n.a.	n.a.
244	5.3	n.d.	n.d.	n.d.	232	64	n.d.	42		XRF	amphibolite	n.a.	n.a.
357	2.7	n.d.	n.d.	n.d.	157	69	50	76		XRF	amphibolite	n.a.	n.a.
245	n.d.	n.d.	n.d.	310	23	18	55	350		XRF	amphibolite	n.a.	n.a.
694	n.d.	n.d.	n.d.	240	110	52	6.6	170		XRF	amphibolite	n.a.	n.a.
713	n.d.	n.d.	n.d.	250	63	39	54	110		XRF	amphibolite	n.a.	n.a.
WESTERN HAYFORK TERRANE													
Trinity River area (Wright & Fahan, 1988)													
D-1A	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF	metavolcanic cobble	n.a.	n.a.
D-1B	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF	metavolcanic cobble	n.a.	n.a.
D-1C	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF	metavolcanic cobble	n.a.	n.a.
D-1D	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF	metavolcanic cobble	n.a.	n.a.
1058-24	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF	metavolcanic cobble	n.a.	n.a.
1058-27	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF	garnet amphibolite	n.a.	n.a.
Trinity River area (Barnes, unpub. data)													
92OMB26	6	144	47.4	226	180	39	22	79		ICP,TTU	meta-arenite	40' 56' 09"	123° 28' 05"
92OMB77	5	567	24.2	209	62	15	90	78		ICP,TTU	meta-arenite	41° 44' 37"	123° 22' 41"

Table 1. Major- and trace-element compositions...continued

Sample	SiO2	TiO2	Al2O3	Fe2O3	FeO	MnO	MgO	CaO	Na2O	K2O	P2O5	LOI	Total	Mg#	Rb	Sr	Zr	Y
92OMB79	50.67	0.64	16.77	9.05	n.d.	0.19	6.81	9.59	2.68	0.99	0.15	2.33	99.87	0.60	n.d.	454	52	18.1
92OMB83	50.69	0.68	16.16	8.67	n.d.	0.18	6.85	10.20	2.99	0.72	0.18	2.23	99.53	0.61	n.d.	411	72	17.5
92OMB85	51.68	0.66	18.96	7.17	n.d.	0.14	5.68	7.68	4.51	0.83	0.24	2.33	99.88	0.61	n.d.	836	92	19.2
92OMB88	67.14	0.57	13.97	5.51	n.d.	0.06	2.43	3.36	3.17	1.48	0.13	1.60	99.43	0.47	n.d.	318	115	25.2
92OMB90	52.81	0.69	15.01	8.58	n.d.	0.16	7.16	9.27	3.51	0.52	0.16	1.75	99.61	0.62	n.d.	603	83	20.0
92OMB91	70.62	0.49	11.97	4.96	n.d.	0.07	2.40	4.55	0.35	1.88	0.12	2.22	99.55	0.49	n.d.	308	114	25.3
92OMB97	51.63	0.59	18.13	7.61	n.d.	0.13	5.84	9.76	3.85	0.78	0.26	1.94	100.52	0.60	n.d.	696	111	20.7
Trinity River area, CA (Charlton, 1979)																		
HTim1	48.28	0.84	18.71	7.22	n.d.	0.18	5.27	8.91	3.44	1.33	0.14	2.95	97.27	0.59	n.d.	n.d.	n.d.	n.d.
HTim2	52.90	0.55	18.39	5.98	n.d.	0.11	4.16	6.34	5.61	0.67	0.15	2.42	97.28	0.58	n.d.	n.d.	n.d.	n.d.
HTim3	53.42	0.44	17.71	6.22	n.d.	0.12	4.82	6.16	5.79	0.82	0.25	2.02	97.77	0.61	n.d.	n.d.	n.d.	n.d.
HTI1a	51.90	0.74	15.50	1.44	7.51	0.16	6.37	9.16	3.91	0.66	0.32	1.29	98.96	0.56	11	386	110	n.d.
HTI2a	49.50	0.89	15.80	4.49	4.67	0.16	6.32	10.90	3.17	0.93	0.15	1.14	98.12	0.56	19	707	80	n.d.
HTI3a	52.10	0.96	13.60	1.15	8.50	0.19	8.07	10.00	2.88	0.55	0.20	1.43	99.63	0.60	9	274	74	n.d.
HTI4a	51.70	1.07	14.60	1.32	8.35	0.19	6.90	9.72	3.31	0.67	0.27	1.29	99.39	0.56	17	576	96	n.d.
HTI5a	54.80	0.74	14.10	0.83	6.29	0.17	7.97	9.38	3.21	0.66	0.13	1.45	99.73	0.67	12	204	75	n.d.
HTI6g	52.40	0.52	12.70	0.94	6.59	0.15	11.00	9.09	2.50	1.01	0.13	2.23	99.26	0.73	16	102	58	n.d.
HTI7g	48.20	0.72	11.40	1.90	6.89	0.16	12.20	13.50	1.41	0.15	0.07	2.75	99.35	0.72	3	166	45	n.d.
HTI8g	50.30	0.54	12.20	0.64	7.04	0.15	13.70	8.97	1.79	0.88	0.12	2.97	99.30	0.76	16	106	62	n.d.
Orleans, CA area (Barnes, unpub. data)																		
KM28	67.76	0.68	12.36	2.26	n.d.	0.04	1.28	2.73	0.99	0.68	0.20	5.80	94.76	0.53	86	154	159	19
KM33	52.66	0.68	17.32	8.34	n.d.	0.12	4.78	7.84	4.18	0.68	0.30	1.59	98.48	0.53	22	527	119	22.7
KM34A	71.21	0.64	10.27	4.92	n.d.	0.14	2.62	2.86	1.30	1.35	0.12	3.33	98.77	0.51	42	186	125	26.8
KM34B	56.41	0.46	13.59	8.53	n.d.	0.16	7.34	7.24	2.75	0.99	0.08	1.83	99.38	0.63	21	304	48	23.2
KM35B	52.05	0.67	18.12	7.46	n.d.	0.11	6.12	8.64	3.35	0.47	0.15	2.46	99.60	0.62	9	642	82	18.1
KM38	52.54	0.60	17.36	7.64	n.d.	0.14	5.94	8.48	3.22	0.60	0.14	1.49	98.14	0.61	11	491	93	19.2
KM39B	52.51	0.67	16.15	9.00	n.d.	0.14	7.34	9.38	2.64	0.67	0.18	1.76	100.44	0.62	13	417	95	21.7
KM40A	52.24	0.64	18.03	7.86	n.d.	0.12	5.88	9.35	3.23	0.73	0.12	1.51	99.71	0.60	21	519	73	17.9
KM40B	54.23	0.64	17.06	7.28	n.d.	0.16	5.04	8.35	4.39	0.56	0.14	1.29	99.13	0.58	11	547	77	19.6
92OMB112A	54.16	0.69	17.46	8.38	n.d.	0.14	6.62	7.94	3.76	0.38	0.12	1.46	101.11	0.61	9	539	83	17.6
92OMB123	58.70	0.59	16.37	6.31	n.d.	0.10	3.43	12.36	0.98	0.34	0.13	1.48	100.80	0.52	9	463	91	20.1
92OMB128	50.99	0.81	10.70	16.14	n.d.	0.31	7.41	7.01	1.87	1.88	0.21	0.40	97.73	0.48	45	386	61	33.2
92OMB130	49.79	0.73	18.12	9.39	n.d.	0.11	7.80	10.04	2.41	0.55	0.15	2.30	101.40	0.62	10	489	87	20.6
92OMB131	82.41	0.40	6.34	0.28	n.d.	0.01	0.62	0.39	0.55	3.07	0.07	2.43	96.56	0.82	56	48	99	17.1
92OMB136A	63.03	0.55	14.92	6.02	n.d.	0.07	2.99	4.55	2.84	1.36	0.22	2.47	99.02	0.50	39	555	111	23.8
92OMB156	58.39	0.68	17.41	5.54	n.d.	0.10	3.38	6.21	3.77	2.33	0.28	2.76	100.86	0.55	55	747	146	28.1
92OMB167	53.49	0.58	17.03	7.20	n.d.	0.11	6.91	8.71	2.82	0.47	0.13	1.88	99.34	0.66	9	545	95	19.5
92OMB212	85.57	0.30	5.45	2.87	n.d.	0.03	1.78	0.17	0.32	0.84	0.04	1.93	99.30	0.55	21	27	63	10.6
KM37G1	58.02	0.58	18.93	5.34	n.d.	0.07	3.12	6.26	5.20	0.91	0.42	2.24	101.10	0.54	15	838	139	21.7
KM37G2	51.57	0.68	21.61	6.74	n.d.	0.08	4.51	7.90	4.32	0.98	0.19	2.16	100.76	0.57	13	903	107	10.6
KM39A1	53.72	0.65	16.98	7.31	n.d.	0.13	5.69	8.39	3.80	0.66	0.35	1.86	99.55	0.61	14	558	101	23.6
KM39A2	53.04	0.60	13.85	8.97	n.d.	0.19	8.72	10.54	2.83	0.30	0.20	1.32	100.54	0.66	6	411	78	18.4

Table 1. Major- and trace-element compositions...continued

Sample	Nb	Ba	Sc	V	Cr	Ni	Cu	Zn	REE data in Table 2	Method, lab, if available	Rock type	Latitude	Longitude
92OMB79	2	308	36.5	223	124	35	120	64		ICP,TTU	meta-arenite	40' 44' 38"	123° 22' 27"
92OMB83	3	148	35.8	231	106	24	82	73		ICP,TTU	meta-arenite	40' 44' 34"	123° 21' 37"
92OMB85	5	293	22.7	193	176	60	72	67		ICP,TTU	meta-arenite	40' 44' 35"	123° 19' 28"
92OMB88	10	539	17.6	157	81	24	55	96		ICP,TTU	argillite	40' 44' 25"	123° 20' 43"
92OMB90	7	222	38.2	240	231	45	76	79		ICP,TTU	meta-arenite	40' 44' 04"	123° 20' 24"
92OMB91	11	422	14.0	123	69	32	51	75		ICP,TTU	argillite	40' 44' 04"	123° 20' 18"
92OMB97	7	175	22.6	169	212	79	59	64		ICP,TTU	meta-arenite	40' 40' 29"	123° 12' 28"
Trinity River area, CA (Charlton, 1979)													
HTim1	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF, AA	metavolcanic cobble	n.a.	n.a.
HTim2	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF, AA	metavolcanic cobble	n.a.	n.a.
HTim3	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF, AA	metavolcanic cobble	n.a.	n.a.
HTI1a	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF, AA	hypabyssal intrusive	n.a.	n.a.
HTI2a	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF, AA	hypabyssal intrusive	n.a.	n.a.
HTI3a	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF, AA	hypabyssal intrusive	n.a.	n.a.
HTI4a	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF, AA	hypabyssal intrusive	n.a.	n.a.
HTI5a	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF, AA	hypabyssal intrusive	n.a.	n.a.
HTI6g	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF, AA	hypabyssal intrusive	n.a.	n.a.
HTI7g	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF, AA	hypabyssal intrusive	n.a.	n.a.
HTI8g	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF, AA	hypabyssal intrusive	n.a.	n.a.
Orleans, CA area (Barnes, unpub. data)													
KM28	21	1733	15.3	247	103	14.1	46.6	17.8	+	ICP,TTU	slate	41° 16' 14"	123° 25' 39"
KM33	9	369	25.5	229	93.9	32.5	72.6	83.3		ICP,TTU	meta-arenite	41° 16' 11"	123° 26' 18"
KM34A	11	899	17.3	171	96	79	114	102	+	ICP,TTU	slate	41° 15' 57"	123° 26' 23"
KM34B	4	477	38.0	187	238	51	74	92		ICP,TTU	metadiorite	41° 15' 57"	123° 26' 23"
KM35B	5	165	26.8	195	163	69	60	66		ICP,TTU	meta-arenite	41° 15' 09"	123° 26' 40"
KM38	4	157	26.3	196	214	85	79	68	+	ICP,TTU	meta-arenite	41° 14' 40"	123° 28' 20"
KM39B	5	201	35.1	218	240	57	71	75		ICP,TTU	meta-arenite	41° 14' 29"	123° 29' 00"
KM40A	8	215	33.1	218	164	49	71	74	+	ICP,TTU	argillite	41° 14' 13"	123° 29' 40"
KM40B	6	305	28.8	209	163	42	118	66		ICP,TTU	argillite	41° 14' 13"	123° 29' 40"
92OMB112A	4	122	29.6	249	203	63	88	72		ICP,TTU	meta-arenite	41° 14' 45"	123° 29' 03"
92OMB123	11	60	23.5	250	105	38	57	83		ICP,TTU	argillite	41° 14' 42"	123° 28' 38"
92OMB128	7	596	46.0	313	41	18	64	141		ICP,TTU	argillite	41° 14' 40"	123° 28' 18"
92OMB130	4	342	33.8	260	232	79	86	72		ICP,TTU	meta-arenite	41° 14' 40"	123° 27' 55"
92OMB131	12	346	8.8	178	88	b.d.	5	27		ICP,TTU	argillite	41° 14' 40"	123° 27' 53"
92OMB136A	9	516	17.3	155	63	11	114	89		ICP,TTU	argillite	41° 15' 39"	123° 26' 16"
92OMB156	11	910	22.5	220	70	10	148	66		ICP,TTU	argillite	41° 09' 52"	123° 30' 30"
92OMB167	5	140	25.5	188	253	88	74	74		ICP,TTU	meta-arenite	41° 13' 24"	123° 25' 48"
92OMB212	9	513	9.3	49	52	38	38	44		ICP,TTU	argillite	41° 12' 28"	123° 24' 13"
KM37G1	14	308	14.4	163	9	10	70	45		ICP,TTU	metavolcanic cobble	41° 14' 45"	123° 27' 04"
KM37G2	7	397	23.8	210	7	10	113	56		ICP,TTU	metavolcanic cobble	41° 14' 45"	123° 27' 04"
KM39A1	10	308	29.7	235	66	35	95	68		ICP,TTU	metavolcanic cobble	41° 14' 29"	123° 29' 00"
KM39A2	5	172	42.9	212	419	98	70	99		ICP,TTU	metavolcanic cobble	41° 14' 29"	123° 29' 00"

Table 1. Major- and trace-element compositions...continued

Sample	SiO2	TiO2	Al2O3	Fe2O3	FeO	MnO	MgO	CaO	Na2O	K2O	P2O5	LOI	Total	Mg#	Rb	Sr	Zr	Y
92OMB134D	63.74	0.66	14.70	5.90	n.d.	0.09	4.35	4.51	3.66	0.46	0.25	2.83	101.14	0.59	9	496	104	25.7
92OMB149	55.18	0.57	18.82	6.52	n.d.	0.12	3.42	7.55	4.51	0.95	0.61	2.80	101.07	0.51	18	1371	170	24.7
92OMB169	49.34	0.86	18.82	7.67	n.d.	0.19	4.50	11.53	2.94	0.76	0.32	2.10	99.03	0.54	14	626	83	25.9
92OMB172D	53.06	0.59	18.71	7.03	n.d.	0.19	4.31	7.81	5.37	0.79	0.31	2.13	100.30	0.55	12	593	121	21.8
92OMB211	48.68	0.73	14.66	9.00	n.d.	0.14	6.56	11.78	2.98	1.23	0.29	3.84	99.90	0.59	21	555	93	22.0
Lower Salmon River area, CA (Barnes, unpub. data)																		
KM7A	50.74	0.72	16.49	8.16	n.d.	0.16	8.65	6.95	3.84	0.72	0.14	2.03	98.61	0.68	17	423	85.9	22.4
KM7B	49.52	0.72	16.52	8.23	n.d.	0.19	9.58	6.63	3.03	0.72	0.11	2.33	97.57	0.70	20	430	77.2	18.6
KM7C	50.56	0.73	16.62	8.32	n.d.	0.14	9.17	7.98	3.38	0.73	0.12	2.29	100.02	0.69	16	591	79.4	20.6
Klamath River/Kings Creek area, CA (Barnes, unpub. data)																		
MMB614B	52.03	0.97	16.74	9.13	n.d.	0.21	6.52	9.68	3.79	0.77	0.11	1.45	101.40	0.59	15	553	80.5	21.1
MMB619B	54.11	0.77	12.97	18.15	n.d.	0.16	5.51	6.50	0.70	0.79	1.41	n.d.	101.07	0.38	21	195	58	18.0
MMB652B	73.54	0.59	9.52	7.35	n.d.	0.18	2.30	1.84	0.72	2.37	0.09	1.40	99.90	0.38	80	194	115	37.5
MMB672C	51.33	0.72	15.77	9.71	n.d.	0.17	7.34	10.07	2.78	0.72	0.15	1.67	100.43	0.60	15	662	91	18.8
MMB673	57.03	0.54	18.29	5.59	n.d.	0.09	4.06	6.93	4.09	0.87	0.28	1.96	99.73	0.59	13	947	110	16.2
MMB677	67.63	0.73	12.04	6.14	n.d.	0.04	2.68	0.66	0.66	2.77	0.07	2.51	95.93	0.46	93	76	146	25.7
MMB717B	71.55	0.59	9.87	1.43	n.d.	0.04	1.69	0.98	1.02	1.91	0.15	6.05	95.29	0.70	56	136	155	29.9
MMB902A	51.61	0.70	16.46	8.77	n.d.	0.21	6.33	10.00	3.32	1.04	0.23	1.47	100.15	0.59	22	485	88	19.7
MMB902B	51.14	0.73	16.27	9.09	n.d.	0.13	6.55	10.38	3.06	0.69	0.29	1.43	99.76	0.59	17	458	74	31.8
MMB902D	50.62	0.71	15.91	9.11	n.d.	0.14	6.71	10.29	2.64	0.56	0.24	0.89	97.82	0.59	11	538	89	18.2
MMB903F	53.57	0.56	18.76	6.49	n.d.	0.12	3.09	13.29	2.06	0.56	0.31	0.72	99.53	0.49	13	723	125	18.7
MMB672D	50.90	0.85	15.81	6.74	n.d.	0.16	5.77	13.33	3.44	0.91	0.37	2.24	100.52	0.63	22	584	101	24.5
MMB903A2	56.53	0.52	19.05	6.27	n.d.	0.13	3.09	6.84	5.73	0.89	0.24	0.88	100.17	0.49	19	854	119	20.2
MMB903C	51.97	0.78	20.51	6.45	n.d.	0.15	4.06	9.62	4.14	1.06	0.25	1.53	100.54	0.56	23	967	112	24.7
MMB903D	53.38	0.63	18.69	7.24	n.d.	0.13	3.77	7.94	5.34	0.63	0.24	0.77	98.76	0.51	9	556	116	19.8
MMB903G2	52.78	0.60	19.57	6.70	n.d.	0.14	3.48	8.00	5.19	1.31	0.26	1.06	99.07	0.51	19	886	131	19.5
MMB903G3	44.60	0.88	15.62	8.10	n.d.	0.21	4.98	19.16	2.03	0.51	0.73	4.16	100.97	0.55	11	1105	129	25.3
Grider Creek area, CA (Hill, 1984)																		
162	53.7	0.62	15.3	8.06	n.d.	0.16	6.67	9.60	2.56	0.37	0.18	n.d.	97.22	0.62	n.d.	260	100	20.0
133	49.4	0.81	15.4	9.09	n.d.	0.12	7.01	8.87	3.40	0.91	0.41	n.d.	95.42	0.60	n.d.	510	210	26.0
Bolan Lake area, OR (Tomlinson, 1993; unpub. data)																		
BL103	49.86	0.68	19.44	8.89	n.d.	0.13	4.79	8.84	3.16	1.47	0.19	2.03	99.49	0.52	30	1097	79	21.0
BL107	53.73	0.63	19.43	7.52	n.d.	0.11	4.60	7.79	2.77	1.76	0.29	1.59	100.22	0.55	n.d.	973	102	24.0
BL108	73.05	0.54	10.61	2.29	n.d.	0.08	1.98	2.03	0.79	3.07	0.13	4.64	99.21	0.63	n.d.	259	136	29.0
BL112	50.05	0.70	16.24	7.78	n.d.	0.13	7.84	7.47	3.75	2.74	0.62	2.98	100.30	0.67	n.d.	523	207	36.0
BL117	48.08	0.67	15.69	9.98	n.d.	0.17	4.83	12.38	3.07	1.25	0.32	n.d.	96.43	0.49	23	1498	109	22.9
BL124	50.87	0.65	18.97	10.41	n.d.	0.19	4.71	9.06	2.72	0.40	0.13	1.03	99.14	0.47	n.d.	321	23	15.0
BL126	52.85	0.78	16.56	7.92	n.d.	0.12	6.88	7.39	3.88	2.11	0.68	0.96	100.13	0.63	n.d.	823	188	31.0
BL167	54.02	0.59	17.37	7.86	n.d.	0.14	4.33	8.88	3.33	1.05	0.35	1.17	99.08	0.52	21	1107	104	24.0
BL72B	52.91	0.70	18.35	9.00	n.d.	0.14	4.13	6.04	4.01	2.87	0.48	2.30	100.92	0.48	48	1432	126	26.1

Table 1. Major- and trace-element compositions...continued

Sample	Nb	Ba	Sc	V	Cr	Ni	Cu	Zn	REE data in Table 2	Method, lab, if available	Rock type	Latitude	Longitude
92OMB134D	15	157	24.3	164	92	44	55	60		ICP,TTU	metavolcanic cobble	41° 14' 45"	123° 27' 04"
92OMB149	7	317	14.9	184	39	16	71	70		ICP,TTU	meta-ash	41° 10' 14"	123° 31' 52"
92OMB169	4	197	34.4	301	102	31	90	80		ICP,TTU	vesicular metabasalt	41° 13' 16"	123° 25' 55"
92OMB172D	8	288	22.6	177	84	15	49	63		ICP,TTU	metavolcanic clast	41° 13' 10"	123° 26' 07"
92OMB211	2	385	43.2	265	231	71	49	73		ICP,TTU	greenstone	41° 12' 28"	123° 24' 13"
Lower Salmon River area, CA (Barnes, unpub. data)													
KM7A	4	184	39.5	254	215	69.6	74.5	72.2		ICP,TTU	meta-arenite	41° 22' 49"	123° 26' 21"
KM7B	3	166	40.5	260	204	67.2	68.8	70.8		ICP,TTU	meta-arenite	41° 22' 49"	123° 26' 21"
KM7C	4	205	42.8	262	225	111	66.8	74.2		ICP,TTU	meta-arenite	41° 22' 49"	123° 26' 21"
Klamath River/Kings Creek area, CA (Barnes, unpub. data)													
MMB614B	3	127	40.9	284	206	91	479	103		ICP,TTU	meta-arenite	41° 22' 43"	123° 25' 54"
MMB619B	n.d.	n.d.	n.d.	85	n.d.	16	n.d.	48		ICP,TTU	meta-arenite	41° 36' 54"	123° 29' 25"
MMB652B	11	2776	14.8	68	56	31	196	106		ICP,TTU	argillite	41° 25' 15"	123° 27' 35"
MMB672C	6	235	40.1	265	192	74	101	68		ICP,TTU	meta-arenite	41° 36' 35"	123° 24' 10"
MMB673	11	397	15.4	130	33	5	60	53		ICP,TTU	meta-arenite	41° 36' 41"	123° 24' 23"
MMB677	16	863	16.8	106	82	34	66	91		ICP,TTU	argillite	41° 36' 04"	123° 25' 41"
MMB717B	15	907	12.9	430	75	22	85	43		ICP,TTU	argillite	41° 35' 03"	123° 28' 28"
MMB902A	4	286	36.3	256	191	50	117	67		ICP,TTU	meta-arenite	41° 36' 35"	123° 24' 10"
MMB902B	7	163	39.6	241	103	1	86	71		ICP,TTU	meta-arenite	41° 36' 35"	123° 24' 10"
MMB902D	5	251	33.9	257	125	35	94	72		ICP,TTU	meta-arenite	41° 36' 35"	123° 24' 10"
MMB903F	16	198	15.6	155	90	124	21	67	+	ICP,TTU	argillite	41° 36' 24"	123° 23' 55"
MMB672D	7	431	41.0	258	321	82	100	82	+	ICP,TTU	metavolcanic cobble	41° 36' 35"	123° 24' 10"
MMB903A2	8	239	11.7	151	7	4	72	71		ICP,TTU	metavolcanic cobble	41° 36' 24"	123° 23' 55"
MMB903C	6	295	28.6	254	89	20	107	73		ICP,TTU	metavolcanic cobble	41° 36' 24"	123° 23' 55"
MMB903D	9	178	16.5	194	29	16	15	63		ICP,TTU	metavolcanic cobble	41° 36' 24"	123° 23' 55"
MMB903G2	13	251	13.7	153	27	12	62	66		ICP,TTU	metavolcanic cobble	41° 36' 24"	123° 23' 55"
MMB903G3	22	121	31.5	235	76	39	86	61		ICP,TTU	metavolcanic cobble	41° 36' 24"	123° 23' 55"
Grider Creek area, CA (Hill, 1984)													
162	n.d.	n.d.	n.d.	200	110	18	95	100		ICP	greenstone	n.a.	n.a.
133	n.d.	n.d.	n.d.	240	93	35	71	150		ICP	greenstone	n.a.	n.a.
Bolan Lake area, OR (Tomlinson, 1993; unpub. data)													
BL103	5	446	34.3	246	34	8	120	75		ICP,TTU	meta-arenite	42° 00' 58"	123° 27' 25"
BL107	6	430	21.0	224	26	7	93	74		ICP,TTU	argillite	42° 00' 47"	123° 27' 25"
BL108	14	888	11.9	204	85	10	43	28		ICP,TTU	argillite	42° 00' 39"	123° 27' 27"
BL112	7	489	29.5	220	166	49	74	80	+	ICP,TTU	meta-arenite	42° 01' 51"	123° 27' 03"
BL117	5	481	35.9	279	66	19	219	76		ICP,TTU	meta-arenite	42° 01' 50"	123° 27' 53"
BL124	5	179	33.7	282	45	21	118	69	+	ICP,TTU	meta-arenite	42° 01' 20"	123° 26' 01"
BL126	9	1117	22.2	174	115	50	90	66	+	ICP,TTU	meta-arenite	42° 02' 05"	123° 26' 41"
BL167	6	389	24.1	212	23	8	93	75		ICP,TTU	meta-arenite	42° 00' 42"	123° 27' 19"
BL72B	3	718	21.7	230	25	14	186	77		ICP,TTU	amphibolite	42° 01' 51"	123° 28' 29"

Table 1. Major- and trace-element compositions...continued

Sample	SiO2	TiO2	Al2O3	Fe2O3	FeO	MnO	MgO	CaO	Na2O	K2O	P2O5	LOI	Total	Mg#	Rb	Sr	Zr	Y
KM94A	52.66	0.33	15.24	9.72	n.d.	0.11	9.16	5.49	2.56	2.00	0.03	3.59	100.89	0.65	40	360	16	16.7
KM94B	51.75	0.28	13.52	9.87	n.d.	0.18	11.60	3.90	2.77	0.99	0.03	4.18	99.06	0.70	23	296	11	12.0
MMB869C	52.60	0.65	16.52	6.71	n.d.	0.15	5.08	10.21	4.85	1.00	0.54	2.10	100.40	0.60	14	718	138	27.7
MMB869D	53.29	0.61	18.57	6.34	n.d.	0.10	3.95	7.06	4.21	3.55	0.55	1.14	99.37	0.55	47	1165	176	26.8
MMB869E	48.86	0.77	16.26	8.57	n.d.	0.13	6.27	9.46	4.04	1.57	0.64	2.17	98.74	0.59	30	545	162	31.0
Applegate Group, upper Applegate drainage, OR (Donato, unpub. data)																		
RU-305A-92	52.00	0.67	18.21	8.46	n.d.	0.15	3.68	9.18	2.99	0.30	0.15	4.33	100.12	0.46	9	529	43	19.2
RU-306-92	49.15	1.09	17.74	11.58	n.d.	0.14	3.19	9.23	4.02	0.52	0.18	4.08	100.93	0.35	11	297	64	23.4
RU-309-92	52.20	0.62	17.42	7.94	n.d.	0.11	5.96	9.84	2.67	0.65	0.19	1.90	99.49	0.60	18	529	79	17.8
RU-311-92	54.07	0.66	17.45	7.12	n.d.	0.12	5.02	7.54	4.03	0.87	0.16	2.25	99.29	0.58	14	601	107	20.1
RU-314-92	74.74	0.54	10.50	2.83	n.d.	0.04	1.64	2.06	1.38	1.49	0.15	3.69	99.05	0.53	43	175	130	35.1
RU-316A-92	51.84	0.44	17.80	6.22	n.d.	0.18	3.54	10.29	3.54	1.27	0.19	3.99	99.30	0.53	31	580	76	17.2
RU-324-92	53.38	0.72	18.17	7.59	n.d.	0.12	3.87	5.00	3.09	4.79	0.63	1.69	99.06	0.50	105	883	209	29.4
RU-366-92	51.25	0.69	15.59	9.06	n.d.	0.15	7.48	11.48	2.20	0.45	0.18	1.20	99.74	0.62	8	512	86	21.7
RU-367-92	48.40	0.89	16.89	11.11	n.d.	0.18	7.56	11.20	2.00	0.58	0.14	1.20	100.14	0.57	10	471	64	17.9
RU-383-92	51.70	0.68	17.12	8.61	n.d.	0.14	6.20	9.94	2.74	0.53	0.12	1.69	99.47	0.59	13	442	74	18.9
RU-384-92	51.07	0.35	14.82	8.89	n.d.	0.18	10.21	9.35	2.18	0.13	0.07	2.15	99.41	0.69	4	156	24	14.9
RU-385-92	52.99	0.31	12.69	7.96	n.d.	0.20	8.53	14.43	0.28	0.24	0.11	1.55	99.29	0.68	6	189	25	12.6
RU-388A-92	55.36	0.62	18.48	7.55	n.d.	0.14	4.38	6.76	3.86	1.60	0.22	1.87	100.85	0.53	32	596	106	19.2
RU-388B-92	51.00	0.66	16.18	8.72	n.d.	0.17	7.05	10.24	2.50	0.81	0.12	2.47	99.91	0.62	18	456	64	19.5
RU-25A-91	52.5	0.74	18.7	1.62	6.66	0.17	4.26	5.77	3.28	1.11	0.21	3.09	98.1	0.48	31	570	180	36
RU-27B-91	72.1	0.46	11.7	0.94	3.10	0.07	2.12	2.05	3.38	1.36	0.10	1.61	99.0	0.49	24	140	104	18
RU-35B-91	50.9	0.68	18.4	0.98	5.71	0.14	7.03	4.54	3.81	1.75	0.23	4.74	98.9	0.66	31	340	114	14
RU-45A-91	70.3	0.56	9.8	0.23	4.61	0.08	2.27	1.63	1.48	2.71	0.15	4.63	98.4	0.46	77	152	140	33
RU-73-91	56.9	0.59	18.3	0.93	5.48	0.14	3.35	7.46	3.07	0.90	0.23	1.42	98.8	0.49	18	550	83	16
RU-103-91	74.2	0.56	10.5	0.80	3.74	0.22	2.40	0.64	0.77	2.67	0.07	2.49	99.1	0.49	75	86	130	26
RU-109A-91	56.1	0.70	18.4	1.44	3.82	0.10	2.84	6.51	4.14	1.87	0.40	2.24	98.6	0.50	40	1200	174	21
RU-111-91	61.1	0.81	13.3	0.95	5.67	0.20	2.51	4.58	1.99	1.76	0.23	5.91	99.0	0.41	29	170	102	32
RU-114-91	71.2	0.30	11.8	0.37	2.43	0.06	2.36	3.40	2.95	0.93	0.09	3.43	99.3	0.60	13	240	93	21
RU-132-91	56.7	0.65	17.2	1.08	5.17	0.09	3.17	6.85	3.33	1.51	0.44	2.49	98.7	0.48	30	920	172	19
RU-133-91	53.7	0.93	17.6	1.11	5.94	0.12	5.09	7.47	3.07	0.71	0.32	2.35	98.4	0.57	17	380	132	25
RU-191-91	58.7	0.67	17.2	0.79	4.87	0.12	3.61	7.53	2.60	1.05	0.36	1.48	99.0	0.54	28	740	148	21
RU-104A-91	54.2	0.70	17.1	1.27	7.02	0.16	4.49	7.21	2.34	1.86	0.18	2.01	98.5	0.50	43	570	71	15
RU-205-91	53.8	0.70	18.4	1.39	4.99	0.12	3.84	5.37	4.73	2.32	0.48	2.36	98.5	0.52	46	1500	198	16
RU-207-91	50.4	0.69	19.2	2.12	6.14	0.17	4.55	8.39	3.46	1.04	0.15	2.35	98.7	0.50	21	440	66	12
RU-37-91	49.5	0.43	10.7	1.12	6.77	0.16	16.3	8.75	1.46	0.46	0.07	2.69	98.4	0.79	12	154	35	18
RU-43-91	49.5	0.67	16.8	0.88	7.06	0.15	8.89	9.39	2.57	1.19	0.13	1.29	98.5	0.67	19	305	60	10
RU-93C-91	50.1	0.77	18.1	2.10	5.73	0.10	6.62	9.86	2.72	0.54	0.10	2.28	99.0	0.61	19	620	73	19
RU-203-91	46.7	0.70	17.8	1.23	5.81	0.17	5.62	12.7	2.63	0.72	0.55	3.75	98.4	0.59	17	450	74	28
RU-213-91	48.9	0.62	19.9	1.66	6.54	0.14	5.64	9.54	2.69	0.44	0.11	2.63	98.8	0.56	15	500	65	16
RU-117-91	49.6	1.36	16.1	1.39	7.71	0.25	7.40	8.78	3.13	0.93	0.18	1.85	98.7	0.60	16	380	106	27
RU-129B-91	49.3	0.79	18.7	1.59	6.80	0.24	4.78	11.1	2.99	0.76	0.27	1.60	98.9	0.51	14	495	118	19
RU-163D-91	53.4	0.89	16.9	2.27	7.32	0.14	3.58	7.01	2.84	0.83	0.22	3.45	98.8	0.41	17	430	81	27

Table 1. Major- and trace-element compositions...continued

Sample	Nb	Ba	Sc	V	Cr	Ni	Cu	Zn	REE data in Table 2	Method, lab, if available	Rock type	Latitude	Longitude
KM94A	1	290	41.9	219	363	77	61	72	+	ICP,TTU	metavolcanic cobble	42° 10' 28"	123° 27' 01"
KM94B	0	184	40.6	212	392	163	73	70	+	ICP,TTU	metavolcanic cobble	42° 10' 28"	123° 27' 01"
MMB869C	8	296	29.3	248	100	93	89	69	+	ICP,TTU	meta-arenite	42° 00' 45"	123° 26' 59"
MMB869D	7	1111	17.0	188	27	14	90	71	+	ICP,TTU	meta-arenite	42° 00' 45"	123° 26' 59"
MMB869E	6	245	34.8	272	96	29	88	82		ICP,TTU	meta-arenite	42° 00' 45"	123° 26' 59"
Applegate Group, upper Applegate drainage, OR (Donato, unpub. data)													
RU-305A-92	2	139	28.4	227	12	1	114	66	+	ICP,TTU	argillite	42° 11' 56"	123° 05' 10"
RU-306-92	2	67	36.8	363	7	23	8	92	+	ICP,TTU	greenstone	42° 12' 03"	123° 06' 23"
RU-309-92	5	192	30.7	217	179	70	77	62	+	ICP,TTU	meta-arenite	42° 08' 06"	123° 01' 35"
RU-311-92	5	429	23.6	210	107	0	121	62	+	ICP,TTU	argillite	42° 09' 09"	123° 00' 56"
RU-314-92	13	485	12.7	203	73	47	75	132	+	ICP,TTU	argillite	42° 07' 59"	123° 00' 28"
RU-316A-92	5	368	15.1	142	91	5	53	59	+	ICP,TTU	meta-arenite	42° 03' 13"	123° 06' 42"
RU-324-92	13	2322	15.3	199	32	3	167	81	+	ICP,TTU	meta-arenite	42° 08' 05"	123° 03' 49"
RU-366-92	4	192	44.1	248	173	b.d.	65	76	+	ICP,TTU	meta-arenite	42° 03' 25"	123° 00' 01"
RU-367-92	3	224	49.5	337	78	2	104	74	+	ICP,TTU	meta-arenite	42° 03' 16"	123° 00' 01"
RU-383-92	3	205	33.2	227	97	3	58	67	+	ICP,TTU	meta-arenite	42° 05' 05"	123° 09' 54"
RU-384-92	b.d.	24	44.3	251	764	287	66	65	+	ICP,TTU	metabasalt	42° 05' 37"	122' 58' 28"
RU-385-92	b.d.	31	46.4	241	475	97	34	55	+	ICP,TTU	metabasalt	42° 05' 34"	122' 58' 17"
RU-388A-92	7	512	21.0	191	79	9	62	74	+	ICP,TTU	meta-arenite	42° 03' 36"	123° 06' 51"
RU-388B-92	1	193	37.8	240	143	21	60	63	+	ICP,TTU	meta-arenite	42° 03' 36"	123° 06' 51"
RU-25A-91	10	995	n.d.	n.d.	55	21	106	103	+	XRF,USGS	argillite	42° 06' 54"	123° 05' 18"
RU-27B-91	11	745	n.d.	n.d.	52	22	119	68	+	XRF,USGS	argillite	41° 05' 32"	123° 07' 20"
RU-35B-91	11	345	n.d.	n.d.	139	31	134	72	+	XRF,USGS	argillite	42° 06' 47"	123° 01' 43"
RU-45A-91	15	2668	n.d.	n.d.	171	53	82	271	+	XRF,USGS	argillite	42° 04' 43"	123° 12' 52"
RU-73-91	9	342	n.d.	n.d.	17	11	62	71	+	XRF,USGS	argillite	42° 09' 02'	123° 09' 06"
RU-103-91	20	935	n.d.	n.d.	56	57	193	111	+	XRF,USGS	argillite	42° 07' 48"	123° 12' 15"
RU-109A-91	9	916	n.d.	n.d.	40	20	168	70	+	XRF,USGS	argillite	42° 06' 55"	123° 11' 57"
RU-111-91	11	477	n.d.	n.d.	0	3	2	164	+	XRF,USGS	argillite	42° 07' 07"	123° 07' 38"
RU-114-91	9	283	n.d.	n.d.	12	5	26	40	+	XRF,USGS	argillite	42° 07' 35"	123° 07' 47"
RU-132-91	9	759	n.d.	n.d.	43	21	182	88	+	XRF,USGS	argillite	42° 07' 28"	123° 09' 45"
RU-133-91	12	328	n.d.	n.d.	114	31	135	89	+	XRF,USGS	argillite	42° 07' 22"	123° 09' 58"
RU-191-91	9	508	n.d.	n.d.	49	20	125	82	+	XRF,USGS	argillite	42° 05' 26"	123° 08' 14"
RU-104A-91	10	546	n.d.	n.d.	92	37	127	95	+	XRF,USGS	argillite	42° 07' 24"	123° 12' 22"
RU-205-91	9	898	n.d.	n.d.	51	45	145	144	+	XRF,USGS	argillite	42° 11' 47"	123° 07' 59"
RU-207-91	9	342	n.d.	n.d.	24	17	98	98	+	XRF,USGS	argillite	42° 12' 10"	123° 09' 11"
RU-37-91	9	115	n.d.	n.d.	0	426	13	76	+	XRF,USGS	meta-arenite	42° 05' 28"	123° 00' 55"
RU-43-91	9	248	n.d.	n.d.	277	66	113	79	+	XRF,USGS	meta-arenite	42° 03' 58"	123° 00' 45"
RU-93C-91	9	251	n.d.	n.d.	118	40	115	72	+	XRF,USGS	meta-arenite	42° 08' 08"	123° 13' 01"
RU-203-91	9	293	n.d.	n.d.	73	25	109	68	+	XRF,USGS	meta-arenite	42° 12' 34"	123° 09' 19"
RU-213-91	9	166	n.d.	n.d.	41	25	83	78	+	XRF,USGS	meta-arenite	42° 11' 29"	123° 09' 23"
RU-117-91	9	1148	n.d.	n.d.	253	91	22	87	+	XRF,USGS	greenstone	42° 07' 29"	123° 07' 07"
RU-129B-91	9	310	n.d.	n.d.	22	17	154	85	+	XRF,USGS	greenstone	42° 07' 55"	123° 09' 58"
RU-163D-91	9	599	n.d.	n.d.	16	13	229	114	+	XRF,USGS	greenstone	42° 08' 29"	123° 08' 20"

Table 1. Major- and trace-element compositions...continued

Sample	SiO2	TiO2	Al2O3	Fe2O3	FeO	MnO	MgO	CaO	Na2O	K2O	P2O5	LOI	Total	Mg#	Rb	Sr	Zr	Y
RU-167B-91	50.8	0.70	17.9	2.38	6.86	0.19	4.08	11.1	2.18	0.72	0.18	1.78	98.9	0.45	10	375	57	19
Applegate Group (Ferns, 1979)																		
KM23 (Ferns)	51.68	0.25	15.46	9.33	n.d.	0.14	8.20	6.18	4.60	0.52	0.02	2.52	98.90	0.64	8	141	27	5
KM121(Ferns)	52.22	0.23	15.07	9.17	n.d.	0.10	8.69	8.68	2.29	0.14	b.d.	3.53	100.12	0.65	b.d.	81	28	b.d.
Probable medium to high grade equivalents of Western Hayfork terrane																		
Marble Mountain wilderness (Donato, 1987)																		
MMD153	61.5	0.43	14.3	1.92	7.45	0.17	3.75	4.87	3.10	0.56	0.06	1.03	99.1	0.42	10	195	44	n.d.
MMD173	70.4	0.43	13.6	2.04	2.45	0.13	1.92	3.37	4.49	0.06	0.09	0.69	99.7	0.44	0.1	156	100	n.d.
MMD183D	53.6	0.42	16.4	2.51	6.18	0.16	6.75	7.07	3.22	1.14	0.05	1.29	98.8	0.59	11	157	36	n.d.
MMD194	62.2	0.66	14.7	3.17	4.87	0.17	2.41	4.99	4.11	0.51	0.08	1.41	99.3	0.36	7	220	66	n.d.
MMD195	61.4	0.52	14.7	2.70	6.26	0.15	3.48	4.01	5.21	0.21	0.06	0.45	99.2	0.42	0.1	180	44	n.d.
MMD198	58.1	0.39	16.0	1.03	7.72	0.18	4.39	5.37	5.56	0.10	0.05	0.36	99.3	0.48	0.1	71	37	n.d.
MMD199B	55.3	0.20	13.8	0.67	5.94	0.14	10.3	6.57	4.38	0.12	0.05	1.24	98.7	0.74	1	224	35	n.d.
MMD265	51.2	0.68	17.4	1.34	6.87	0.14	6.70	10.6	2.70	0.72	0.22	1.64	100	0.60	14	550	94	n.d.
MMD51	67.7	0.39	13.4	1.76	5.19	0.13	1.62	5.35	3.26	0.14	0.07	0.55	99.6	0.30	0.1	80	45	n.d.
MMD152	62.2	0.46	14.1	2.50	6.54	0.17	2.82	5.31	3.45	0.46	0.07	1.34	99.4	0.36	1	239	47	n.d.
MMD148	53.5	0.32	20.4	1.32	5.76	0.12	3.42	6.90	5.27	1.10	0.05	n.d.	98.2	0.47	12	94	28	n.d.
<u>AMPHIBOLITES OF THE MAY CREEK AREA</u>																		
Donato (1991a)																		
MC-9A-85	49.0	1.68	14.1	2.81	9.17	0.22	6.50	10.6	3.29	0.48	0.14	1.26	99.3	0.50	7	204	91	29
MC-20-85	50.2	1.04	17.4	2.04	5.06	0.15	8.49	10.6	3.27	0.05	0.15	1.47	99.9	0.69	3	229	89	21
MC-21A-85	48.1	1.42	16.2	3.21	5.89	0.23	9.41	10.1	3.43	0.07	0.21	1.30	99.6	0.66	b.d.	223	103	26
MC-24-85	48.6	0.91	18.4	1.36	5.70	0.12	8.70	10.6	3.16	0.10	0.13	1.83	99.6	0.69	3	197	85	21
MC-25C-85	50.6	1.65	16.0	2.44	6.89	0.17	6.48	9.52	4.30	0.13	0.24	1.15	99.6	0.56	3	222	150	33
MC-37B-85	51.0	1.20	15.9	2.62	5.99	0.15	7.37	10.2	3.67	0.10	0.19	1.07	99.5	0.61	b.d.	208	91	24
MC-67-85	52.4	1.21	15.9	2.16	5.77	0.14	6.34	10.3	4.33	0.18	0.16	1.51	100	0.59	1	320	109	24
MC-116A-85	49.6	1.03	16.7	1.59	6.30	0.15	8.53	11.6	2.86	0.11	0.12	1.40	100	0.66	b.d.	181	78	20
MC-133B	52.0	1.81	15.8	1.72	6.88	0.16	5.70	12.1	3.46	0.16	0.26	n.d.	100	0.55	b.d.	218	164	35
MC-29-85	51.6	1.20	15.0	2.87	8.04	0.20	5.50	8.12	4.95	0.09	0.20	1.21	99.0	0.48	b.d.	172	107	28
MC-32-85	50.2	1.16	16.7	2.13	5.55	0.15	7.84	10.5	3.57	0.08	0.15	1.57	99.6	0.65	2	173	78	23
MC-152	53.2	0.73	15.9	1.21	4.83	0.13	8.62	12.1	3.25	0.02	0.06	n.d.	100	0.72	b.d.	217	54	17
MC-37A-85	49.3	1.68	16.1	2.49	6.75	0.16	6.98	10.9	3.47	0.10	0.24	1.15	99.3	0.58	2	227	115	28
MC-37C-85	49.9	1.53	16.0	2.46	6.28	0.16	7.47	10.5	3.47	0.19	0.23	1.33	99.5	0.61	1	215	114	27
MC-116B-85	49.2	1.24	16.4	1.91	6.53	0.16	7.88	11.1	3.31	0.16	0.17	1.64	99.7	0.63	2	249	104	23
MC-47A-85	49.9	1.74	16.0	2.63	7.26	0.18	6.34	9.18	4.37	0.15	0.34	1.08	99.2	0.54	b.d.	199	160	36
MC-38B-85	48.9	1.20	17.1	2.99	5.01	0.15	9.24	9.50	3.82	0.09	0.14	1.54	99.7	0.68	b.d.	243	100	23
MC-130	51.8	1.10	16.7	1.67	6.67	0.14	7.33	10.4	3.97	0.08	0.12	n.d.	100	0.62	b.d.	209	119	33
MC-41-85	49.0	2.44	14.7	1.84	9.41	0.21	5.55	9.49	4.47	0.36	0.39	1.01	98.9	0.47	4	203	145	36
MC-61	53.2	1.22	16.3	1.64	6.55	0.17	7.04	9.20	4.38	0.06	0.18	n.d.	99.9	0.61	1	217	105	24
MC-121	54.7	1.53	16.4	2.00	8.01	0.16	4.69	7.73	4.29	0.24	0.22	n.d.	100	0.46	1	235	106	32

Table 1. Major- and trace-element compositions...continued

Sample	Nb	Ba	Sc	V	Cr	Ni	Cu	Zn	REE data in Table 2	Method, lab, if available	Rock type	Latitude	Longitude
RU-167B-91	9	271	n.d.	n.d.	26	17	193	91	+	XRF,USGS	meta-porphyritic dike	42° 08' 38"	123° 06' 37"
Applegate Group (Ferns, 1979)													
KM23 (Ferns)	8	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF	meta-tuff	n.a.	n.a.
KM121(Ferns)	9	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF	meta-tuff	n.a.	n.a.
Probable medium to high grade equivalents of Western Hayfork terrane													
Marble Mountain wilderness (Donato, 1987)													
MMD153	n.d.	139	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF,USGS	amphibolitic schist	41°34'	123°01'
MMD173	n.d.	60	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF,USGS	amphibolitic schist	41°33'	123°03'
MMD183D	n.d.	100	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF,USGS	amphibolitic schist	41°34'	123°02'
MMD194	n.d.	121	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF,USGS	amphibolitic schist	41°34'	123°01'
MMD195	n.d.	61	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF,USGS	amphibolitic schist	41°34'	123°01'
MMD198	n.d.	93	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF,USGS	amphibolitic schist	41°33'	123°02'
MMD199B	n.d.	74	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF,USGS	amphibolitic schist	41°34'	123°00'
MMD265	n.d.	239	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF,USGS	amphibolitic schist	41°29'	123°05'
MMD51	n.d.	81	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF,USGS	amphibolitic schist	41°36'	122°59'
MMD152	n.d.	191	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF,USGS	amphibolitic schist	41°34'	123°01'
MMD148	n.d.	289	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		XRF,USGS	volcanic metasedimentary rock	41°33'	123°01'
AMPHIBOLITES OF THE MAY CREEK AREA													
Donato (1991a)													
MC-9A-85	4	49	n.d.	n.d.	230	73	110	94	+	XRF,USGS	hornblende schist	42° 37'	123° 05'
MC-20-85	2	16	n.d.	n.d.	320	140	62	80	+	XRF,USGS	hornblende schist	42° 38'	123° 03'
MC-21A-85	2	37	n.d.	n.d.	350	130	20	110	+	XRF,USGS	hornblende schist	42° 37'	123° 06'
MC-24-85	2	30	n.d.	n.d.	270	160	56	56	+	XRF,USGS	hornblende schist	42° 38'	123° 07'
MC-25C-85	2	19	n.d.	n.d.	180	77	47	80	+	XRF,USGS	hornblende schist	42° 39'	123° 07'
MC-37B-85	4	35	n.d.	n.d.	180	82	70	53	+	XRF,USGS	hornblende schist	42° 41'	122' 57'
MC-67-85	3	29	n.d.	n.d.	290	74	80	60	+	XRF,USGS	hornblende schist	42° 42'	123° 08'
MC-116A-85	4	14	n.d.	n.d.	340	100	87	62	+	XRF,USGS	hornblende schist	42° 39'	123° 03'
MC-133B	2	14	n.d.	n.d.	161	58	26	57		XRF,USGS	hornblende schist	42° 44'	122' 59'
MC-29-85	2	22	n.d.	n.d.	27	30	120	66		XRF,USGS	metagabbro	42° 39'	123° 00'
MC-32-85	3	16	n.d.	n.d.	320	90	20	26	+	XRF,USGS	metagabbro	42° 39'	123° 00'
MC-152	3	29	n.d.	n.d.	218	93	6	64		XRF,USGS	metagabbro	42° 39'	122' 59'
MC-37A-85	4	28	n.d.	n.d.	150	80	70	70	+	XRF,USGS	metaporphyry	42° 41'	122' 57'
MC-37C-85	3	37	n.d.	n.d.	230	90	60	95	+	XRF,USGS	metaporphyry	42° 41'	122' 57'
MC-116B-85	4	14	n.d.	n.d.	250	90	70	90	+	XRF,USGS	metaporphyry	42° 39'	123° 03'
MC-47A-85	4	39	n.d.	n.d.	170	68	40	90	+	XRF,USGS	metadiorite	42° 38'	123° 03'
MC-38B-85	5	18	n.d.	n.d.	240	90	75	88	+	XRF,USGS	metadiorite	42° 43'	122' 59'
MC-130	2	31	n.d.	n.d.	263	91	3	13		XRF,USGS	metadiorite	42° 43'	122' 59'
MC-41-85	4	70	n.d.	n.d.	40	32	47	110	+	XRF,USGS	metadiorite	42° 36'	123° 02'
MC-61	4	65	n.d.	n.d.	170	70	31	35		XRF,USGS	metadiorite	42° 43'	122' 58'
MC-121	2	82	n.d.	n.d.	16	25	34	40		XRF,USGS	metadiorite	42° 36'	123° 02'

Table 1. Major- and trace-element compositions...continued

Sample	SiO2	TiO2	Al2O3	Fe2O3	FeO	MnO	MgO	CaO	Na2O	K2O	P2O5	LOI	Total	Mg#	Rb	Sr	Zr	Y
MC-132A	51.8	1.58	15.7	1.87	7.47	0.21	7.81	8.48	4.42	0.08	0.31	n.d.	99.7	0.60	b.d.	179	143	33
MC-139B	50.4	1.77	16.2	1.83	7.32	0.19	8.25	9.72	3.97	0.08	0.20	n.d.	99.9	0.62	2	249	123	32
MC-136A	51.1	1.88	15.6	1.98	7.92	0.18	7.13	9.64	4.18	0.18	0.24	n.d.	100	0.57	1	226	125	33
MC-9B-85	50.1	0.87	14.9	1.52	6.96	0.16	9.68	11.6	2.73	0.08	0.10	1.29	100	0.67	1	193	48	16
MC-11A-85	49.4	1.36	15.6	1.37	8.22	0.17	7.45	11.6	3.10	0.09	0.15	1.38	99.9	0.58	2	248	52	20
MC-81A-85	48.2	0.84	17.5	2.50	5.30	0.13	8.78	11.3	2.63	0.40	0.12	1.99	99.7	0.67	3	252	40	18
MC-126-85	47.9	0.78	15.1	1.42	8.53	0.15	9.26	12.6	1.39	0.35	0.06	1.80	99.3	0.63	9	160	45	22
MC-154A	47.2	0.12	20.7	1.46	5.83	0.15	8.56	14.3	1.63	0.06	<.02	n.d.	100	0.68	2	286	25	6
MC-154C	48.7	0.90	12.4	2.27	9.09	0.22	11.6	12.6	1.23	0.66	0.31	n.d.	100	0.65	6	263	62	21
MC-301	46.0	0.94	20.4	1.79	7.15	0.12	6.15	16.2	0.91	0.16	0.12	n.d.	99.9	0.56	8	234	33	19
SAWYERS BAR TERRANE OF HACKER AND OTHERS, 1993																		
Eastern Hayfork terrane																		
Metasedimentary rocks, Salmon River area (Barnes, unpub. data)																		
MMB236C	74.27	0.48	11.35	4.23	n.d.	0.06	1.41	3.03	1.55	2.71	0.17	1.63	100.89	0.40	66	380	200	29.0
92KM13	80.49	0.52	8.65	1.91	n.d.	0.05	1.31	0.42	0.92	3.09	0.10	2.49	99.97	0.58	90	94	132	19.1
92KM15	68.95	0.64	12.72	5.00	n.d.	0.07	2.17	0.45	1.27	3.67	0.13	4.69	99.76	0.46	122	72	127	29.8
92KM16	82.74	0.44	7.69	1.76	n.d.	0.03	1.24	0.16	0.52	2.64	0.11	2.06	99.39	0.58	84	42	122	21.4
92KM18	74.50	0.60	10.37	4.96	n.d.	0.06	2.07	0.29	1.06	3.31	0.15	2.62	99.98	0.45	133	66	147	29.2
92KM21	67.62	0.58	12.96	5.52	n.d.	0.09	2.39	4.01	1.35	2.55	0.13	1.80	99.00	0.46	109	158	176	26.8
Greenstone, Indian Rocks area (Barnes, unpub. data)																		
92OMB210	51.95	1.07	13.77	9.68	n.d.	0.23	7.59	9.52	3.73	0.63	0.08	1.65	99.89	0.61	18	143	105	28.6
92OMB214	50.30	1.53	17.01	10.10	n.d.	0.15	4.59	6.97	4.91	0.89	0.30	2.49	99.24	0.47	21	420	104	29.4
Salmon River metavolcanic rocks																		
Ando (1979)																		
KM72 (Ando)	50.20	0.22	15.59	5.45	n.d.	n.d.	11.89	15.31	1.07	0.04	n.d.	n.d.	99.77	0.81	1	129	n.d.	n.d.
KM152 (Ando)	54.90	1.28	16.50	9.91	n.d.	n.d.	6.31	8.09	3.35	0.93	n.d.	n.d.	101.27	0.56	22	190	n.d.	n.d.
KM169 (Ando)	54.60	1.24	15.18	9.65	n.d.	n.d.	6.22	7.92	3.56	0.18	n.d.	n.d.	98.55	0.56	2	109	n.d.	n.d.
KM160 (Ando)	54.40	1.38	15.58	10.11	n.d.	n.d.	6.18	7.67	4.50	0.38	n.d.	n.d.	100.20	0.55	4	114	n.d.	n.d.
KM166 (Ando)	53.60	0.98	14.95	9.32	n.d.	n.d.	7.30	10.40	3.38	0.13	n.d.	n.d.	100.06	0.61	4	104	n.d.	n.d.
Mortimer (1984)																		
47A	51.5	0.95	16.26	9.68	n.d.	0.16	9.03	8.89	4.10	0.26	0.10	n.d.	100.93	0.65	13	157	78	22.0
54A	52.0	0.87	15.85	9.03	n.d.	0.15	8.51	10.79	2.38	1.25	0.07	n.d.	100.90	0.65	18	113	65	21.0
77A	54.5	0.97	15.86	9.42	n.d.	0.17	7.04	8.17	4.40	0.32	0.10	n.d.	100.95	0.60	3	155	131	32.0
79A	54.1	1.11	16.00	10.35	n.d.	0.18	7.28	6.99	4.79	0.19	0.11	n.d.	101.10	0.58	2	141	90	26.0
98A	51.6	0.96	15.96	10.15	n.d.	0.15	7.56	10.04	3.80	0.67	0.09	n.d.	100.98	0.60	9	210	77	26.0
121A	50.9	1.05	15.46	10.28	n.d.	0.16	7.55	11.91	3.04	0.53	0.11	n.d.	100.99	0.59	19	183	75	24.0
123	52.6	0.83	15.54	9.11	n.d.	0.15	8.36	10.72	3.45	0.21	0.08	n.d.	101.05	0.65		74	61	21.0
Hotz (1979)																		

Table 1. Major- and trace-element compositions...continued

Sample	Nb	Ba	Sc	V	Cr	Ni	Cu	Zn	REE data in Table 2	Method, lab, if available	Rock type	Latitude	Longitude
MC-132A	8	28	n.d.	n.d.	197	57	61	143		XRF,USGS	metadiorite	42° 43'	122' 59'
MC-139B	4	32	n.d.	n.d.	227	103	82	34		XRF,USGS	metadiorite	42° 44'	122' 58'
MC-136A	3	36	n.d.	n.d.	178	78	7	32		XRF,USGS	metadiorite	42° 45'	122' 58'
MC-9B-85	1	17	n.d.	n.d.	410	140	20	73	+	XRF,USGS	amphibolite	42° 37'	123° 05'
MC-11A-85	2	28	n.d.	n.d.	210	76	20	78	+	XRF,USGS	amphibolite	42° 36'	123° 03'
MC-81A-85	4	95	n.d.	n.d.	210	50	72	50	+	XRF,USGS	amphibolite	42° 37'	123° 02'
MC-126-85	2	23	n.d.	n.d.	460	130	20	63	+	XRF,USGS	amphibolite	42° 36'	123° 02'
MC-154A	2	23	n.d.	n.d.	241	72	4	38		XRF,USGS	amphibolite	42° 38'	122' 59'
MC-154C	2	108	n.d.	n.d.	807	42	59	95		XRF,USGS	amphibolite	42° 35'	122' 59'
MC-301	5	24	n.d.	n.d.	219	87	20	28		XRF,USGS	amphibolite	42° 36' 55"	123° 04' 45"
EASTERN HAYFORK TERRANE													
Metasedimentary rocks, Salmon River area (Barnes, unpub. data)													
MMB236C	17	n.d.	n.d.	110	12	17	nd	97	+	ICP,TTU	chert-argillite breccia	41° 22' 37"	123° 25' 13"
92KM13	16	3400	11.5	115	45	2	64	48		ICP,TTU	argillite	41° 18' 47"	123° 22' 37"
92KM15	17	1668	13.2	162	68	40	80	125		ICP,TTU	argillite	41° 18' 40"	123° 22' 33"
92KM16	14	1904	14.6	58	43	1	71	46		ICP,TTU	chert-argillite breccia	41° 18' 31"	123° 22' 24"
92KM18	15	1676	10.6	91	76	142	81	113		ICP,TTU	siliceous argillite	41° 18' 04"	123° 22' 06"
92KM21	24	529	12.1	66	58	30	29	76		ICP,TTU	chert-argillite breccia	41° 19' 11"	123° 22' 52"
Greenstone, Indian Rocks area (Barnes, unpub. data)													
92OMB210	2	91	52.3	265	46	51	18	77		ICP,TTU	greenstone	41° 11' 44"	123° 25' 01"
92OMB214	10	163	36.2	220	248	66	63	99		ICP,TTU	greenstone	41° 12' 02"	123° 24' 40"
SALMON RIVER METAVOLCANIC ROCKS													
Ando (1979)													
KM72 (Ando)	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.			gabbro	n.a.	n.a.
KM152 (Ando)	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.			diabase	n.a.	n.a.
KM169 (Ando)	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.			diabase	n.a.	n.a.
KM160 (Ando)	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.			metabasalt	n.a.	n.a.
KM166 (Ando)	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.			metabasalt	n.a.	n.a.
Mortimer (1984)													
47A	n.d.	n.d.	n.d.	n.d.	343	n.d.	n.d.	n.d.			pillow lava	n.a.	n.a.
54A	4	n.d.	n.d.	n.d.	317	n.d.	n.d.	n.d.			pillow lava	n.a.	n.a.
77A	4	n.d.	n.d.	n.d.	192	n.d.	n.d.	n.d.			diabase	n.a.	n.a.
79A	3	98	n.d.	n.d.	128	n.d.	n.d.	n.d.	+		diabase	n.a.	n.a.
98A	3	n.d.	n.d.	n.d.	161	n.d.	n.d.	n.d.			metabasalt	n.a.	n.a.
121A	4	n.d.	n.d.	n.d.	237	n.d.	n.d.	n.d.			diabase	n.a.	n.a.
123	7	96	n.d.	n.d.	316	n.d.	n.d.	n.d.	+		pillow lava	n.a.	n.a.
Hotz (1979)													

Table 1. Major- and trace-element compositions...continued

Sample	SiO2	TiO2	Al2O3	Fe2O3	FeO	MnO	MgO	CaO	Na2O	K2O	P2O5	LOI	Total	Mg#	Rb	Sr	Zr	Y
2.-64	50.60	0.87	15.00	8.98	n.d.	0.15	9.50	7.40	3.80	0.91	0.11	n.d.	97.32	0.68	n.d.	n.d.	n.d.	n.d.
Ernst (1987)																		
9M	48.00	0.82	12.77	10.93	n.d.	0.17	14.00	9.40	1.70	1.06	0.09	n.d.	98.94	0.72	20	109	68	n.d.
5M	50.10	1.22	12.80	12.25	n.d.	0.18	9.77	9.97	2.75	0.69	0.10	n.d.	99.83	0.61	13	265	73	n.d.
6M	52.50	1.17	11.50	10.88	n.d.	0.18	9.23	11.50	2.70	0.15	0.09	n.d.	99.90	0.63	2	169	60	n.d.
46M	51.90	0.20	14.60	8.40	n.d.	0.17	10.70	11.20	2.30	0.32	0.09	n.d.	99.88	0.72	10	450	b.d.	
54M	54.40	1.10	13.35	10.43	n.d.	0.18	8.50	8.10	1.75	1.92	0.26	n.d.	99.99	0.62	86	500	165	n.d.
57M	52.50	0.53	14.50	8.35	n.d.	0.14	11.50	8.95	2.00	1.40	0.08	n.d.	99.95	0.73	55	327	49	n.d.
65M	54.00	0.85	13.25	8.71	n.d.	0.17	9.40	9.40	2.12	1.72	0.21	n.d.	99.83	0.68	35	330	80	n.d.
67M	52.00	0.65	10.70	10.12	n.d.	0.18	14.10	9.60	1.35	1.02	0.14	n.d.	99.86	0.73	34	261	73	n.d.
69M	56.20	1.02	14.25	9.69	n.d.	0.17	7.30	6.70	2.70	1.73	0.25	n.d.	100.01	0.60	50	380	85	n.d.
80M	51.50	1.00	11.60	10.83	n.d.	0.17	11.56	9.90	2.90	0.30	0.08	n.d.	99.84	0.68	7	139	59	n.d.
81M	49.10	1.22	12.30	11.54	n.d.	0.18	12.15	9.60	2.90	0.76	0.22	n.d.	99.97	0.68	10	306	71	n.d.
84M	51.50	1.02	12.60	10.83	n.d.	0.16	10.50	10.20	2.75	0.21	0.09	n.d.	99.86	0.66	6	85	86	n.d.
85M	49.80	0.75	12.90	10.93	n.d.	0.17	11.15	11.15	1.90	1.00	0.08	n.d.	99.83	0.67	28	101	69	n.d.
86M	50.60	1.13	12.00	12.25	n.d.	0.19	12.10	8.20	2.90	0.42	0.10	n.d.	99.89	0.66	15	66	93	n.d.
92M	48.80	0.11	10.80	9.11	n.d.	0.18	15.00	13.40	1.20	0.10	0.01	n.d.	98.71	0.77	1	202	b.d.	n.d.
103M	50.20	1.00	12.65	10.88	n.d.	0.17	10.85	11.50	2.40	0.11	0.11	n.d.	99.87	0.66	5	274	83	n.d.
115M	51.20	1.09	12.60	12.60	n.d.	0.24	10.50	7.94	3.20	0.34	0.08	n.d.	99.79	0.62	13	135	70	n.d.
117M	51.35	0.97	13.30	11.49	n.d.	0.14	9.30	10.10	3.02	0.08	0.07	n.d.	99.82	0.62	3	90	74	n.d.
124M	52.30	0.68	11.00	9.72	n.d.	0.15	14.00	8.75	2.00	1.15	0.13	n.d.	99.88	0.74	27	93	75	n.d.
127M	53.90	0.76	11.80	10.23	n.d.	0.14	10.70	9.45	2.60	0.14	0.07	n.d.	99.79	0.67	4	76	59	n.d.
146M	51.80	0.93	12.60	10.53	n.d.	0.14	11.70	9.30	2.60	0.15	0.07	n.d.	99.82	0.69	2	183	80	n.d.
161M	50.75	0.88	13.25	11.14	n.d.	0.17	11.30	8.96	3.00	0.23	0.08	n.d.	99.76	0.67	2	113	66	n.d.
174M	50.15	0.50	10.30	11.34	n.d.	0.18	16.10	9.20	1.50	0.58	0.15	n.d.	100.00	0.74	10	216	87	n.d.
212M	48.80	0.85	10.90	11.24	n.d.	0.17	16.40	8.50	1.60	1.10	0.17	n.d.	99.73	0.74	26	222	90	n.d.
215M	51.00	1.06	14.20	11.74	n.d.	0.17	9.15	9.40	2.90	0.35	0.08	n.d.	100.05	0.61	6	206	87	n.d.
220M	51.80	0.82	16.95	9.72	n.d.	0.19	7.30	9.00	2.80	1.00	0.29	n.d.	99.87	0.60	22	768	120	n.d.
221M	58.70	0.65	15.90	7.74	n.d.	0.13	5.00	5.30	3.20	2.80	0.25	n.d.	99.67	0.56	72	660	235	n.d.
222M	55.90	0.86	13.80	11.04	n.d.	0.16	7.20	5.80	3.50	1.35	0.23	n.d.	99.84	0.56	36	404	130	n.d.
235M	49.55	1.07	15.30	11.04	n.d.	0.16	9.50	10.20	2.90	0.20	0.10	n.d.	100.02	0.63	14	100	45	n.d.
237M	48.30	1.12	14.30	10.83	n.d.	0.16	10.30	12.00	2.60	0.11	0.10	n.d.	99.82	0.65	13	110	60	n.d.
241M	53.90	1.03	15.90	12.35	n.d.	0.18	5.30	6.20	2.70	2.10	0.41	n.d.	100.07	0.46	40	540	150	n.d.
245M	52.30	0.89	14.20	9.92	n.d.	0.16	8.50	10.50	2.80	0.59	0.07	n.d.	99.93	0.63	8	110	38	n.d.
249M	55.30	0.75	13.00	9.11	n.d.	0.14	8.50	8.00	2.50	2.10	0.24	n.d.	99.64	0.65	40	340	90	n.d.
272M	50.20	1.01	14.80	12.15	n.d.	0.18	10.60	7.60	3.40	0.15	0.07	n.d.	100.16	0.63	10	160	52	n.d.
285M	56.40	0.85	15.40	8.61	n.d.	0.15	5.90	8.30	3.15	1.05	0.27	n.d.	100.08	0.58	40	490	160	n.d.
288M	50.50	1.16	15.80	9.11	n.d.	0.27	6.25	13.10	3.10	0.60	0.21	n.d.	100.10	0.58	b.d.	150	92	n.d.
312M	50.20	1.24	13.45	12.65	n.d.	0.15	10.60	8.32	2.80	0.30	0.11	n.d.	99.82	0.62	6	200	95	n.d.
320M	49.20	0.79	9.50	11.14	n.d.	0.18	18.60	8.10	1.50	0.62	0.16	n.d.	99.79	0.77	6	115	80	n.d.
321M	55.50	0.87	15.25	9.62	n.d.	0.15	5.50	7.55	2.80	2.42	0.29	n.d.	99.94	0.53	35	450	160	n.d.
329M	54.46	0.78	13.90	10.24	n.d.	0.18	7.77	8.35	2.73	1.53	0.26	n.d.	100.20	0.60	27	760	145	n.d.
347M	53.47	0.76	14.35	10.07	n.d.	0.17	9.52	8.32	2.22	0.97	0.13	n.d.	99.98	0.65	16	245	92	n.d.

Table 1. Major- and trace-element compositions...continued

Sample	Nb	Ba	Sc	V	Cr	Ni	Cu	Zn	REE data in Table 2	Method, lab, if available	Rock type	Latitude	Longitude
2.-64	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.			metabasalt	n.a.	n.a.
Ernst (1987)													
9M	n.d.	n.d.	n.d.	n.d.	506	269	68	197	+	XRF	metabasaltic lava	n.a.	n.a.
5M	n.d.	n.d.	n.d.	n.d.	224	100	70	91		XRF	metabasaltic lava	n.a.	n.a.
6M	n.d.	n.d.	n.d.	n.d.	169	133	79	79		XRF	metabasaltic lava	n.a.	n.a.
46M					75	83	55	42	+	XRF	metabasaltic lava	n.a.	n.a.
54M	n.d.	n.d.	n.d.	n.d.	126	22	37	108		XRF	metabasaltic hypabyssal intrsv.	n.a.	n.a.
57M	n.d.	n.d.	n.d.	n.d.	232	169	49	81	+	XRF	metabasaltic hypabyssal intrsv.	n.a.	n.a.
65M	n.d.	n.d.	n.d.	n.d.	227	60	85	86		XRF	metabasaltic hypabyssal intrsv.	n.a.	n.a.
67M	n.d.	n.d.	n.d.	n.d.	981	219	80	81		XRF	metabasaltic lava	n.a.	n.a.
69M	n.d.	n.d.	n.d.	n.d.	265	50	50	90		XRF	metabasaltic hypabyssal intrsv.	n.a.	n.a.
80M	n.d.	n.d.	n.d.	n.d.	212	105	121	76		XRF	metabasaltic lava	n.a.	n.a.
81M	n.d.	n.d.	n.d.	n.d.	641	208	88	76		XRF	metabasaltic hypabyssal intrsv.	n.a.	n.a.
84M	n.d.	n.d.	n.d.	n.d.	209	97	86	70		XRF	metabasaltic lava	n.a.	n.a.
85M	n.d.	n.d.	n.d.	n.d.	367	181	115	72	+	XRF	metabasaltic lava	n.a.	n.a.
86M	n.d.	n.d.	n.d.	n.d.	318	173	113	93	+	XRF	metabasaltic lava	n.a.	n.a.
92M	n.d.	n.d.	n.d.	n.d.	644	131	24	44	+	XRF	metabasaltic lava	n.a.	n.a.
103M	n.d.	n.d.	n.d.	n.d.	231	67	56	38		XRF	metabasaltic lava	n.a.	n.a.
115M	n.d.	n.d.	n.d.	n.d.	138	55	55	110		XRF	metabasaltic lava	n.a.	n.a.
117M	n.d.	n.d.	n.d.	n.d.	129	41	45	54	+	XRF	metabasaltic lava	n.a.	n.a.
124M	n.d.	n.d.	n.d.	n.d.	715	206	26	56		XRF	metabasaltic hypabyssal intrsv.	n.a.	n.a.
127M	n.d.	n.d.	n.d.	n.d.	230	84	83	46	+	XRF	metabasaltic lava	n.a.	n.a.
146M	n.d.	n.d.	n.d.	n.d.	245	99	35	40	+	XRF	metabasaltic lava	n.a.	n.a.
161M	n.d.	n.d.	n.d.	n.d.	178	66	54	45		XRF	metabasaltic lava	n.a.	n.a.
174M	n.d.	n.d.	n.d.	n.d.	642	153	31	61		XRF	metabasaltic lava	n.a.	n.a.
212M	n.d.	n.d.	n.d.	n.d.	696	242	41	57	+	XRF	metabasaltic hypabyssal intrsv.	n.a.	n.a.
215M	n.d.	n.d.	n.d.	n.d.	118	48	59	54	+	XRF	metabasaltic lava	n.a.	n.a.
220M	n.d.	n.d.	n.d.	n.d.	56	21	35	69	+	XRF	metabasaltic hypabyssal intrsv.	n.a.	n.a.
221M	n.d.	n.d.	n.d.	n.d.	36	21	74	68		XRF	metabasaltic hypabyssal intrsv.	n.a.	n.a.
222M	n.d.	n.d.	n.d.	n.d.	115	10	29	77		XRF	metabasaltic hypabyssal intrsv.	n.a.	n.a.
235M	n.d.	n.d.	n.d.	n.d.	260	108	80	76	+	XRF	metabasaltic hypabyssal intrsv.	n.a.	n.a.
237M	n.d.	n.d.	n.d.	n.d.	270	135	75	70		XRF	metabasaltic lava	n.a.	n.a.
241M	n.d.	n.d.	n.d.	n.d.	50	19	70	105		XRF	metabasaltic hypabyssal intrsv.	n.a.	n.a.
245M	n.d.	n.d.	n.d.	n.d.	185	75	105	66		XRF	metabasaltic lava	n.a.	n.a.
249M	n.d.	n.d.	n.d.	n.d.	240	40	63	68		XRF	metabasaltic lava	n.a.	n.a.
272M	n.d.	n.d.	n.d.	n.d.	300	110	95	80		XRF	metabasaltic lava	n.a.	n.a.
285M	n.d.	n.d.	n.d.	n.d.	134	70	570	75	+	XRF	metabasaltic hypabyssal intrsv.	n.a.	n.a.
288M	n.d.	n.d.	n.d.	n.d.	53	40	20	81	+	XRF	metabasaltic lava	n.a.	n.a.
312M	n.d.	n.d.	n.d.	n.d.	117	55	62	85		XRF	metabasaltic lava	n.a.	n.a.
320M	n.d.	n.d.	n.d.	n.d.	1000	400	64	88	+	XRF	metabasaltic lava	n.a.	n.a.
321M	n.d.	n.d.	n.d.	n.d.	75	35	55	90	+	XRF	metabasaltic hypabyssal intrsv.	n.a.	n.a.
329M	n.d.	n.d.	n.d.	n.d.	170	65	70	90		XRF	metabasaltic hypabyssal intrsv.	n.a.	n.a.
347M	n.d.	n.d.	n.d.	n.d.	325	60	65	85		XRF	metabasaltic hypabyssal intrsv.	n.a.	n.a.

Table 1. Major- and trace-element compositions...continued

Sample	SiO2	TiO2	Al2O3	Fe2O3	FeO	MnO	MgO	CaO	Na2O	K2O	P2O5	LOI	Total	Mg#	Rb	Sr	Zr	Y
351M	54.10	0.78	11.20	9.64	n.d.	0.18	12.56	9.88	0.58	1.05	0.25	n.d.	100.22	0.72	28	210	130	n.d.
374M	51.20	1.08	14.00	11.90	n.d.	0.14	8.80	9.30	2.60	0.67	0.10	n.d.	99.79	0.59	b.d.	190	114	n.d.
375M	48.30	0.75	9.00	11.25	n.d.	0.18	18.18	10.00	1.35	0.39	0.20	n.d.	99.60	0.76	0	150	105	n.d.
Ernst et al. (1991)																		
140M	58.94	0.53	13.88	7.40	n.d.	0.14	6.99	7.36	2.67	1.82	0.15	n.d.	99.87	0.65	51	347	88	12.0
240M	51.20	0.95	15.66	9.99	n.d.	0.17	7.77	11.14	2.48	0.81	0.06	n.d.	100.23	0.61	14	144	56	22.0
391M	53.30	0.50	10.50	10.12	n.d.	0.17	13.50	6.60	1.75	1.40	0.15	n.d.	97.99	0.73	28	360	144	20.0
412M	53.27	0.97	13.48	9.32	n.d.	0.18	10.27	7.72	3.60	0.72	0.20	n.d.	99.72	0.69	11	292	89	19.7
415M	55.36	0.73	14.16	8.33	n.d.	0.15	8.62	6.76	4.16	1.30	0.22	n.d.	99.78	0.67	22	316	96	17.0
435M	48.00	0.66	11.50	9.72	n.d.	0.13	12.20	14.30	0.53	1.00	0.09	n.d.	98.13	0.71	17	60	65	n.d.
428M	50.00	0.92	13.30	11.24	n.d.	0.16	9.30	10.40	2.80	0.16	0.06	n.d.	98.34	0.62	b.d.	115	66	17.0
450M	53.10	0.88	13.40	10.83	n.d.	0.17	7.30	10.00	3.20	0.30	0.06	n.d.	99.24	0.57	17	80	92	16.0
464M	52.55	0.75	13.50	10.93	n.d.	0.16	7.60	9.45	2.80	0.50	0.06	n.d.	98.30	0.58	10	160	79	15.0
481M	47.60	0.80	15.30	11.34	n.d.	0.16	10.60	7.80	2.15	1.25	0.10	n.d.	97.10	0.65	10	108	65	n.d.
484M	50.80	0.85	12.80	11.64	n.d.	0.15	9.00	10.80	1.60	0.08	0.07	n.d.	97.79	0.61	16	155	78	b.d.
487M	44.75	0.81	12.67	10.25	n.d.	0.14	9.55	19.45	0.42	0.11	0.07	n.d.	98.22	0.65	b.d.	117	65	15.0
495M	49.50	0.86	17.40	10.12	n.d.	0.13	5.90	11.50	3.00	0.25	0.13	n.d.	98.79	0.54	10	250	105	33.0
506M	50.40	1.30	15.00	13.87	n.d.	0.15	6.30	8.20	3.60	0.25	0.14	n.d.	99.21	0.47	b.d.	235	118	b.d.
516M	51.00	1.10	13.30	11.14	n.d.	0.16	8.30	10.10	2.30	0.38	0.08	n.d.	97.86	0.60	10	129	78	33.0
520M	51.40	0.80	14.00	10.53	n.d.	0.14	9.00	8.90	3.00	0.50	0.05	n.d.	98.32	0.63	10	210	92	b.d.
523M	52.80	1.10	14.80	11.84	n.d.	0.18	6.70	9.00	1.10	1.20	0.20	n.d.	98.92	0.53	44	510	118	25.0
589M	51.03	1.61	13.38	13.69	n.d.	0.19	7.36	7.79	3.54	1.00	0.13	n.d.	99.72	0.52	28	122	115	26.9
590M	54.94	0.83	13.43	9.19	n.d.	0.17	7.81	9.20	2.40	1.40	0.24	n.d.	99.61	0.63	38	373	84	19.5
598M	60.57	0.61	17.19	6.27	n.d.	0.14	3.64	4.27	4.14	2.58	0.22	n.d.	99.63	0.53	62	404	121	15.5
604M	53.39	0.50	14.21	9.02	n.d.	0.18	10.47	9.86	2.13	0.13	0.06	n.d.	99.94	0.70	1	327	34	13.1
614M	55.95	1.11	15.81	10.14	n.d.	0.19	6.84	4.70	4.59	0.47	0.24	n.d.	100.04	0.57	8	284	105	23.1
Hacker et al. (1993)																		
Yr1	54.55	0.95	16.33	8.99	n.d.	0.15	5.93	7.64	5.26	0.32	0.08	n.d.	100.20	0.57	2	126	95	26.9
Yr3	55.89	0.85	15.17	9.05	n.d.	0.16	5.96	6.80	4.13	0.57	0.04	n.d.	98.61	0.57	8	96	59	21.5
Yr10	54.06	1.12	15.59	10.40	n.d.	0.17	5.54	6.56	5.88	0.19	0.09	n.d.	99.58	0.51	3	60	82	23.9
Yr11	56.90	0.79	18.52	7.88	n.d.	0.14	4.02	6.58	3.88	1.05	0.12	n.d.	99.88	0.50	22	295	84	18.1
Yr22	49.11	0.30	18.27	5.18	n.d.	0.10	9.82	15.06	1.60	0.34	0.01	n.d.	99.79	0.79	8	186	16	6.7
Yr26	52.75	1.19	14.27	9.62	n.d.	0.15	7.75	7.93	3.79	2.22	0.23	n.d.	99.89	0.61	29	163	109	21.4
Yr28	50.56	0.95	16.33	9.56	n.d.	0.17	9.11	9.05	4.04	0.36	0.07	n.d.	100.20	0.65	6	199	61	20.7
Yr38	51.49	1.08	15.53	9.16	n.d.	0.16	7.16	9.32	4.46	1.03	0.16	n.d.	99.55	0.61	12	325	79	17.4
Yr64	55.41	0.58	18.22	7.94	n.d.	0.16	5.43	7.51	2.73	1.80	0.11	n.d.	99.88	0.58	41	300	42	13.1
Yr73	52.43	1.03	16.14	9.11	n.d.	0.13	7.23	9.15	4.41	0.47	0.08	n.d.	100.18	0.61	6	199	61	20.7
Yr45	48.03	0.76	12.63	9.75	n.d.	0.18	15.87	9.77	2.57	0.32	0.12	n.d.	99.99	0.76	4	158	56	12.3
Yr52	51.04	1.07	15.02	9.14	n.d.	0.16	9.74	7.80	3.89	2.09	0.31	n.d.	100.26	0.68	16	528	106	15.5
Yr61	52.71	0.63	12.58	9.32	n.d.	0.18	13.11	7.78	1.98	1.94	0.17	n.d.	100.39	0.74	29	402	92	17.7
Yr82	54.85	0.84	18.01	7.43	n.d.	0.14	4.67	6.83	5.58	1.18	0.17	n.d.	99.69	0.55	19	294	89	18.0
Yr138	55.03	0.60	18.76	6.65	n.d.	0.15	4.84	8.08	3.59	1.48	0.20	n.d.	99.38	0.59	32	485	112	16.0

Table 1. Major- and trace-element compositions...continued

Sample	Nb	Ba	Sc	V	Cr	Ni	Cu	Zn	REE data in Table 2	Method, lab, if available	Rock type	Latitude	Longitude
351M	n.d.	n.d.	n.d.	n.d.	680	160	50	82	+	XRF	metabasaltic hypabyssal intrsv.	n.a.	n.a.
374M	n.d.	n.d.	n.d.	n.d.	205	72	70	77		XRF	metabasaltic lava	n.a.	n.a.
375M	n.d.	n.d.	n.d.	n.d.	1000	500	22	86	+	XRF	metabasaltic lava	n.a.	n.a.
Ernst et al. (1991)													
140M	5	554	n.d.	159	366	50	80	77		XRF	microdiorite	n.a.	n.a.
240M	2	86	n.d.	284	227	91	103	76		XRF	metadiabase	n.a.	n.a.
391M	10	n.d.	n.d.	n.d.	630	191	n.d.	n.d.		XRF	metabasaltic lava	n.a.	n.a.
412M	6	713	n.d.	226	537	99	47	82		XRF	metadiabase	n.a.	n.a.
415M	6	650	n.d.	177	521	150	63	87		XRF	metadiabase	n.a.	n.a.
435M	n.d.	n.d.	n.d.	n.d.	420	170	n.d.	n.d.		XRF	metabasaltic lava	n.a.	n.a.
428M	n.d.	n.d.	n.d.	n.d.	270	116	n.d.	n.d.		XRF	metabasaltic lava	n.a.	n.a.
450M	20	n.d.	n.d.	n.d.	156	64	n.d.	n.d.	+	XRF	metabasaltic lava	n.a.	n.a.
464M	n.d.	n.d.	n.d.	n.d.	310	116	n.d.	n.d.		XRF	metabasaltic lava	n.a.	n.a.
481M	20	n.d.	n.d.	n.d.	280	272	n.d.	n.d.		XRF	metabasaltic hypabyssal intrsv.	n.a.	n.a.
484M	n.d.	n.d.	n.d.	n.d.	109	66	n.d.	n.d.		XRF	metabasaltic lava	n.a.	n.a.
487M	n.d.	n.d.	n.d.	n.d.	119	69	n.d.	n.d.		XRF	metabasaltic lava	n.a.	n.a.
495M	n.d.	n.d.	n.d.	n.d.	132	73	n.d.	n.d.		XRF	metabasaltic lava	n.a.	n.a.
506M	20	n.d.	n.d.	n.d.	70	48	n.d.	n.d.		XRF	metabasaltic lava	n.a.	n.a.
516M	n.d.	n.d.	n.d.	n.d.	187	80	n.d.	n.d.	+	XRF	metabasaltic lava	n.a.	n.a.
520M	n.d.	n.d.	n.d.	n.d.	327	137	n.d.	n.d.		XRF	metabasaltic lava	n.a.	n.a.
523M	n.d.	n.d.	n.d.	n.d.	152	30	n.d.	n.d.		XRF	metabasaltic lava	n.a.	n.a.
589M	4	1252	n.d.	331	170	73	36	103		XRF	metadiabase	n.a.	n.a.
590M	5	502	n.d.	246	399	50	87	78		XRF	microdiorite	n.a.	n.a.
598M	8	763	n.d.	144	47	11	20	83		XRF	microdiorite	n.a.	n.a.
604M	1	61	n.d.	225	544	146	15	79		XRF	metadiabase	n.a.	n.a.
614M	8	315	n.d.	236	139	51	71	116		XRF	metadiabase	n.a.	n.a.
Hacker et al. (1993)													
Yr1	4	71	n.d.	254	87	54	19	58		XRF	gabbro	n.a.	n.a.
Yr3	1	26	n.d.	289	132	45	23	82		XRF	metavolcanic rock	n.a.	n.a.
Yr10	4	27	n.d.	291	45	31	65	81		XRF	diabase	n.a.	n.a.
Yr11	4	520	n.d.	162	33	12	41	82		XRF	diabase	n.a.	n.a.
Yr22	1	76	n.d.	156	914	213	111	34		XRF	gabbro	n.a.	n.a.
Yr26	8	587	n.d.	256	279	57	110	96		XRF	diabase	n.a.	n.a.
Yr28	3	40	n.d.	233	293	107	94	75		XRF			
Yr38	3	231	n.d.	298	198	42	82	71		XRF	sheeted dike	n.a.	n.a.
Yr64	2	615	n.d.	240	47	21	79	74		XRF	dike in Stuart Fork	n.a.	n.a.
Yr73	3	34	n.d.	263	218	86	99	74		XRF	metabasaltic lava	n.a.	n.a.
Yr45	8	37	n.d.	216	1101	478	60	75		XRF	metabasaltic lava	n.a.	n.a.
Yr52	5	368	n.d.	249	589	179	89	86		XRF	dike in North Fork	n.a.	n.a.
Yr61	3	996	n.d.	223	843	201	88	82		XRF	dike in Eastern Hayfork	n.a.	n.a.
Yr82	5	1302	n.d.	169	59	37	25	78		XRF	dike in Stuart Fork	n.a.	n.a.
Yr138	4	572	n.d.	188	120	41	52	84		XRF			

Table 1. Major- and trace-element compositions...continued

Sample	SiO2	TiO2	Al2O3	Fe2O3	FeO	MnO	MgO	CaO	Na2O	K2O	P2O5	LOI	Total	Mg#	Rb	Sr	Zr	Y
North Fork terrane metavolcanic rocks																		
Ando (1979)																		
KM163a(Ando)	50.80	3.16	15.72	11.42	n.d.	n.d.	3.11	6.06	3.71	4.66	n.d.	n.d.	98.64	0.35	153	383	n.d.	n.d.
KM170 (Ando)	49.90	3.01	15.04	11.53	n.d.	n.d.	7.90	8.42	3.30	0.61	n.d.	n.d.	99.71	0.58	13	558	n.d.	n.d.
KM173 (Ando)	49.70	4.12	15.66	13.39	n.d.	n.d.	4.79	6.72	4.94	0.19	n.d.	n.d.	99.51	0.41	8	312	n.d.	n.d.
Mortimer (1984)																		
111A	58.2	1.35	17.3	8.73	n.d.	0.24	2.48	3.11	6.28	2.65	0.58	2.90	101	0.36	34	320	678	60.0
117A	46.1	3.31	16.9	13.02	n.d.	0.19	3.18	12.59	4.17	0.90	0.86	6.66	101	0.33	14	407	446	39.0
117B	46.3	3.79	16.9	13.25	n.d.	0.26	6.96	8.99	2.07	1.97	0.69	8.30	101	0.51	34	321	461	40.0
67A	49.1	2.86	15.6	10.60	n.d.	0.21	4.46	12.50	4.28	0.99	0.52	11.0	101	0.45	11	427	279	26.0
71A	55.6	2.03	17.9	8.65	n.d.	0.14	1.99	4.40	7.35	1.68	1.18	2.03	101	0.31	28	769	545	61.0
73A	49.4	3.24	16.6	11.57	n.d.	0.21	4.57	7.94	5.36	1.66	0.73	6.17	101	0.44	17	768	349	37.0
Hotz (1979)																		
75-62	45.30	2.40	14.20	12.29	n.d.	0.19	4.30	8.30	4.20	0.55	0.49	n.d.	92.22	0.41	n.d.	n.d.	n.d.	n.d.
16-61	48.10	2.60	15.00	11.32	n.d.	0.14	5.70	9.30	4.90	1.40	0.39	n.d.	98.85	0.50	n.d.	n.d.	n.d.	n.d.
Ernst (1987)																		
1M	43.75	4.00	14.30	16.10	n.d.	0.22	10.30	6.10	3.40	1.45	0.28	n.d.	99.90	0.56	14	508	148	n.d.
11M	46.40	2.20	12.40	11.84	n.d.	0.17	14.10	10.25	1.70	0.52	0.32	n.d.	99.90	0.70	5	635	217	n.d.
38M	49.70	2.17	10.50	12.45	n.d.	0.19	14.30	7.50	2.00	0.90	0.28	n.d.	99.99	0.69	28	326	254	n.d.
89M	46.80	2.38	10.00	13.67	n.d.	0.15	12.25	13.25	0.91	0.34	0.29	n.d.	100.04	0.64	2	421	242	n.d.
91M	45.20	2.64	10.60	12.45	n.d.	0.18	14.00	12.70	0.91	0.70	0.43	n.d.	99.81	0.69	17	954	271	n.d.
153M	51.40	2.20	11.10	14.88	n.d.	0.17	9.60	6.40	3.50	0.36	0.15	n.d.	99.76	0.56	0	100	116	n.d.
170M	51.80	2.20	13.95	13.26	n.d.	0.15	9.40	6.40	2.00	0.71	0.30	n.d.	100.17	0.58	21	360	206	n.d.
201M	49.35	3.10	13.70	14.78	n.d.	0.18	9.20	6.30	2.90	0.16	0.38	n.d.	100.05	0.55	1	379	245	n.d.
207M	48.35	2.80	13.84	13.46	n.d.	0.17	7.40	10.80	1.12	1.50	0.32	n.d.	99.76	0.52	27	440	208	n.d.
354M	46.05	2.07	11.83	14.98	n.d.	0.17	13.12	9.33	1.54	0.42	0.36	n.d.	99.87	0.63	10	200	160	n.d.
372M	48.55	1.95	13.40	13.01	n.d.	0.14	7.10	12.10	3.20	0.20	0.25	n.d.	99.90	0.52	0	290	140	n.d.
Ernst et al. (1991)																		
386M	48.00	2.50	13.40	15.08	n.d.	0.29	9.30	6.70	2.60	0.50	0.35	n.d.	98.72	0.55	22	310	183	25.0
424M	44.40	2.50	11.90	15.19	n.d.	0.14	12.00	6.33	1.66	0.26	0.38	n.d.	94.76	0.61	10	380	190	25.0
425M	46.00	3.10	17.00	14.48	n.d.	0.18	4.70	5.20	3.10	2.40	0.92	n.d.	97.08	0.39	65	430	300	25.0
483M	50.00	2.40	12.80	15.19	n.d.	0.26	6.20	7.40	3.00	0.74	0.23	n.d.	98.22	0.45	22	143	118	25.0
Hacker et al. (1993)																		
Yr21b	47.69	2.75	15.58	13.40	n.d.	0.16	6.66	10.66	3.67	0.30	0.36	n.d.	101.23	0.50	2	764	203	25.7
Yr31	51.29	2.62	14.25	10.40	n.d.	0.12	6.49	8.68	4.47	0.99	0.53	n.d.	99.84	0.55	9	491	266	25.9
Yr34	50.80	3.61	18.29	13.84	n.d.	0.18	4.89	2.21	5.02	0.58	0.75	n.d.	100.16	0.41	8	438	328	42.3
Yr69	52.75	2.82	15.05	12.00	n.d.	0.10	8.27	5.80	0.47	2.36	0.20	n.d.	99.81	0.58	35	169	191	23.5
Yr79	56.11	2.40	15.63	11.13	n.d.	0.17	5.73	3.92	1.01	2.77	0.62	n.d.	99.50	0.50	56	425	302	37.9

Table 1. Major- and trace-element compositions...continued

Sample	Nb	Ba	Sc	V	Cr	Ni	Cu	Zn	REE data in Table 2	Method, lab, if available	Rock type	Latitude	Longitude
NORTH FORK TERRANE METAVOLCANIC ROCKS													
Ando (1979)													
KM163a(Ando)	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.				n.a.	n.a.
KM170 (Ando)	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.				n.a.	n.a.
KM173 (Ando)	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.				n.a.	n.a.
												n.a.	n.a.
Mortimer (1984)													
111A	123	626	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	+		andesitic lava	n.a.	n.a.
117A	107	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.			pillow lava	n.a.	n.a.
117B	109	301	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	+		pillow lava	n.a.	n.a.
67A	38	282	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	+		trachytic lava	n.a.	n.a.
71A	105	419	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	+		trachytic lava	n.a.	n.a.
73A	66	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.			trachytic lava	n.a.	n.a.
Hotz (1979)													
75-62	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.			metavolcanic rock	n.a.	n.a.
16-61	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.			metavolcanic rock	n.a.	n.a.
Ernst (1987)													
1M	n.d.	n.d.	n.d.	n.d.	60	43	94	113		XRF	metabasalt	n.a.	n.a.
11M	n.d.	n.d.	n.d.	n.d.	485	374	97	274	+	XRF	metabasalt	n.a.	n.a.
38M	n.d.	n.d.	n.d.	n.d.	425	299	48	111		XRF	metabasalt	n.a.	n.a.
89M	n.d.	n.d.	n.d.	n.d.	403	310	33	133	+	XRF	metabasalt	n.a.	n.a.
91M	n.d.	n.d.	n.d.	n.d.	549	359	26	114	+	XRF	metabasalt	n.a.	n.a.
153M	n.d.	n.d.	n.d.	n.d.	97	42	42	77		XRF	metabasalt	n.a.	n.a.
170M	n.d.	n.d.	n.d.	n.d.	136	66	22	79		XRF	metabasalt	n.a.	n.a.
201M	n.d.	n.d.	n.d.	n.d.	113	46	74	77	+	XRF	metabasalt	n.a.	n.a.
207M	n.d.	n.d.	n.d.	n.d.	176	68	89	81	+	XRF	metabasalt	n.a.	n.a.
354M	n.d.	n.d.	n.d.	n.d.	445	345	38	105		XRF	metabasalt	n.a.	n.a.
372M	n.d.	n.d.	n.d.	n.d.	118	53	30	84	+	XRF	metabasalt	n.a.	n.a.
Ernst et al. (1991)													
386M	20	n.d.	n.d.	n.d.	255	153	n.d.	n.d.		XRF	metabasalt	n.a.	n.a.
424M	25	n.d.	n.d.	n.d.	361	240	n.d.	n.d.		XRF	metabasalt	n.a.	n.a.
425M	20	n.d.	n.d.	n.d.	35	30	n.d.	n.d.		XRF	metabasalt	n.a.	n.a.
483M	b.d.	n.d.	n.d.	n.d.	101	75	n.d.	n.d.		XRF	metabasalt	n.a.	n.a.
Hacker et al. (1993)													
Yr21b	30	100	n.d.	285	259	123	70	107		XRF	metabasaltic lava	n.a.	n.a.
Yr31	40	226	n.d.	227	8	61	32	78		XRF	pillow lava	n.a.	n.a.
Yr34	61	389	n.d.	68	280	20	24	143		XRF	metabasaltic lava	n.a.	n.a.
Yr69	31	218	n.d.	265	420	178	13	115		XRF	tuff	n.a.	n.a.
Yr79	52	462	n.d.	220	45	36	45	143		XRF	tuff	n.a.	n.a.

Table 1. Major- and trace-element compositions...continued

Sample	SiO2	TiO2	Al2O3	Fe2O3	FeO	MnO	MgO	CaO	Na2O	K2O	P2O5	LOI	Total	Mg#	Rb	Sr	Zr	Y
Yr84	46.86	3.28	17.38	12.35	n.d.	0.16	4.46	11.26	3.73	0.40	0.37	n.d.	100.24	0.42	5	425	181	21.4
Yr101	40.26	2.03	10.89	14.80	n.d.	0.19	15.15	15.28	0.57	0.09	0.28	n.d.	99.54	0.67	4	145	140	16.9
Yr106	43.85	3.03	17.98	10.21	n.d.	0.18	3.61	12.27	4.01	2.79	1.65	n.d.	99.58	0.41	55	505	313	34.9
Yr131	45.92	3.19	17.96	13.67	n.d.	0.07	4.76	7.98	2.70	3.42	0.20	n.d.	99.86	0.41	69	218	339	17.7
Ernst (1993)																		
603M	46.63	3.13	16.06	14.13	n.d.	0.13	13.29	2.80	2.68	0.28	0.34	n.d.	99.47	0.65	4	113	210	20.5
STUART FORK TERRANE																		
Caribou Lake (Barnes, unpub. data)																		
FPC39B	74.58	0.59	11.90	4.43	n.d.	0.08	2.22	0.93	1.54	2.81	0.08	n.d.	99.15	0.50	88	137	145	31.6
FPC39E	78.92	0.71	7.89	0.39	4.54	0.13	2.85	0.03	0.16	2.20	0.01	n.d.	97.83	0.51	82	8	158	15.8
FPC40	48.54	1.74	13.51	12.80	n.d.	0.19	6.73	10.26	3.37	0.08	0.15	n.d.	97.37	0.51	1	101	99	44.8
Stuart Fork area (Barnes, unpub. data; samples from J.W. Goodge)																		
V-30	62.97	0.63	9.54	7.18	n.d.	0.16	6.79	4.43	1.39	0.65	0.11	n.d.	93.85	0.65	24	100	87	22.2
108	43.47	1.26	13.91	9.57	n.d.	0.17	7.14	8.61	1.18	1.86	0.19	n.d.	87.36	0.60	72	346	140	24.1
99	80.21	0.50	8.56	3.98	n.d.	0.06	1.61	0.12	0.30	2.28	0.07	n.d.	97.68	0.44	89	24	109	15.2
GCC85-222	74.67	0.84	9.76	2.92	n.d.	0.04	1.54	0.66	1.08	2.16	0.05	n.d.	93.71	0.51	45	108	169	28.4
GTA84104	81.36	0.42	7.61	1.55	2.51	0.10	1.77	0.75	0.71	2.22	0.07	1.30	100.37	0.45	100	92	94	17.4
GTA84112B	53.65	1.28	15.42	0.82	8.53	0.18	6.45	7.43	2.62	0.46	0.14	1.61	98.59	0.55	11	209	82	28.7
GTA84115	44.81	2.19	13.19	2.59	10.40	0.23	6.29	8.56	3.49	0.36	0.21	n.d.	92.31	0.47	11	131	124	53.3
GTA8498A	79.89	0.50	8.64	3.50	1.33	0.23	1.65	0.14	0.53	2.56	0.07	1.98	101.02	0.40	103	16	108	20.2
Goodge (1990)																		
G7	47.10	1.11	14.50	12.70	n.d.	0.20	6.59	10.60	2.02	1.32	0.13	2.93	99.20	0.51	26	148	67	24
G12A	44.50	1.10	15.10	11.40	n.d.	0.15	9.28	13.00	1.00	0.39	0.09	3.62	99.63	0.62	8	131	55	25
G10	47.70	1.38	16.40	9.48	n.d.	0.13	5.32	13.10	2.29	0.25	0.25	2.77	99.07	0.53	4	147	99	26
G11	48.10	1.01	15.30	10.30	n.d.	0.14	7.16	12.40	1.87	0.46	0.12	3.00	99.86	0.58	8	136	57	19
G13	46.50	1.17	14.10	12.50	n.d.	0.16	6.16	13.30	1.81	0.21	0.17	3.93	100.01	0.49	6	163	78	27
G218C	46.30	1.27	15.10	12.40	n.d.	0.15	6.23	12.30	1.77	0.34	0.12	3.62	99.60	0.50	10	133	74	28
V6	46.50	1.21	16.50	9.51	n.d.	0.16	7.96	10.50	0.67	2.54	0.29	4.23	100.07	0.62	42	98	79	19
G42	48.70	2.15	14.30	15.30	n.d.	0.21	5.00	10.70	2.33	0.23	0.19	0.31	99.42	0.39	2	202	143	54
G63	47.00	1.07	14.80	12.20	n.d.	0.17	7.06	13.60	2.05	0.42	0.11	1.00	99.48	0.53	7	179	67	23
G70	47.90	1.10	14.40	11.30	n.d.	0.18	8.08	12.60	1.75	0.23	0.07	1.31	98.92	0.59	5	142	60	23
Hotz (1979)																		
20-66	45.70	2.20	13.00	12.20	n.d.	0.18	12.20	7.20	2.30	1.10	0.35	n.d.	96.43	0.66	n.d.	n.d.	n.d.	n.d.
B.R. Hacker (unpub. data)																		
405M	48.10	2.20	13.10	13.80	n.d.	0.17	7.20	7.00	4.10	0.05	0.29	n.d.	96.02	0.51	11	135	118	10.0
408M	48.00	1.32	12.30	12.11	n.d.	0.20	10.75	8.10	1.44	0.35	0.16	n.d.	94.73	0.64	10	244	118	25.0

Table 1. Major- and trace-element compositions...continued

Sample	Nb	Ba	Sc	V	Cr	Ni	Cu	Zn	REE data in Table 2	Method, lab, if available	Rock type	Latitude	Longitude
Yr84	37	139	n.d.	338	13	29	54	107		XRF	dike in North Fork	n.a.	n.a.
Yr101	26	14	n.d.	203	1101	640	84	106		XRF	metavolcanic rock	n.a.	n.a.
Yr106	114	963	n.d.	174	7	16	12	110		XRF	N. Fork boudin E. Hayfork	n.a.	n.a.
Yr131	58	518	n.d.	126	200	169	17	102		XRF	amygdaloidal metabasalt	n.a.	n.a.
Ernst (1993)													
603M	44	b.d.	n.d.	347	80	107	75	102		XRF	meta-basaltic breccia	n.a.	n.a.
STUART FORK TERRANE													
Caribou Lake (Barnes, unpub. data)													
FPC39B	4	4434	17.2	90	64	7	13	88		ICP,TTU	quartz mica schist	41° 02' 49"	122' 57' 16"
FPC39E	20	1877	17.6	131	89	46	13	111		ICP,TTU	quartz mica schist	41° 02' 49"	122' 57' 16"
FPC40	15	16	44.6	357	162	62	54	71	+	ICP,TTU	metabasalt	41° 03' 17"	122' 56' 50"
Stuart Fork area (Barnes, unpub. data; samples from J.W. Goodge)													
V-30	16	458	19.3	141	580	272	32	101		ICP,TTU	quartz mica schist	n.a.	n.a.
108	25	1397	36.9	203	312	104	86	76		ICP,TTU		n.a.	n.a.
99	14	1365	12.9	87	74	19	36	76		ICP,TTU	quartz mica schist	n.a.	n.a.
GCC85-222	27	7349	13.6	194	79	4	30	41		ICP,TTU	quartz mica schist	n.a.	n.a.
GTA84104	11	3356	12.4	53	54	44	13	95		ICP,TTU	quartz mica schist	n.a.	n.a.
GTA84112B	20	127	43.0	228	284	55	67	83		ICP,TTU		n.a.	n.a.
GTA84115	30	47	47.2	333	176	64	54	98		ICP,TTU		n.a.	n.a.
GTA8498A	13	2096	16.0	87	44	43	46	96		ICP,TTU	quartz mica schist	n.a.	n.a.
Goodge (1990)													
G7	4	77	n.d.	270	384	101	138	105			metabasalt	n.a.	n.a.
G12A	3	1174	n.d.	274	689	129	140	108			metabasalt	n.a.	n.a.
G10	14	72	n.d.	244	379	119	38	76			metabasalt	n.a.	n.a.
G11	6	125	n.d.	248	576	102	102	76			metabasalt	n.a.	n.a.
G13	5	253	n.d.	260	479	85	77	83			metabasalt	n.a.	n.a.
G218C	4	577	n.d.	297	484	78	40	84			metabasalt	n.a.	n.a.
V6	11	518	n.d.	245	526	149	121	87			metabasalt	n.a.	n.a.
G42	5	62	n.d.	472	92	43	88	112			metabasalt	n.a.	n.a.
G63	4	52	n.d.	307	345	89	47	85			metabasalt	n.a.	n.a.
G70	3	351	n.d.	312	509	100	68	78			metabasalt	n.a.	n.a.
Hotz (1979)													
20-66	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.			metavolcanic rock	n.a.	n.a.
B.R. Hacker (unpub. data)													
405M	10	n.d.	n.d.	n.d.	155	153	n.d.	n.d.		XRF	metavolcanic rock	n.a.	n.a.
408M	10	n.d.	n.d.	n.d.	213	63	n.d.	n.d.		XRF	metavolcanic rock		

Table 1. Major- and trace-element compositions...continued

Sample	SiO2	TiO2	Al2O3	Fe2O3	FeO	MnO	MgO	CaO	Na2O	K2O	P2O5	LOI	Total	Mg#	Rb	Sr	Zr	Y
CONDREY MOUNTAIN SCHIST (Helper, Donato, and Barnes, unpub. data)																		
Peripheral greenschist belt																		
5CMWR87	48.66	1.17	15.77	10.47	n.d.	0.17	7.11	10.29	2.72	1.17	0.10	2.37	99.99	0.57	23	189	74	29.8
6CMWR87	49.55	1.27	16.61	11.25	n.d.	0.23	5.88	8.11	3.85	1.27	0.11	3.09	101.22	0.51	20	143	74	32.9
7CMWR87	50.05	1.24	15.02	10.69	n.d.	0.16	7.56	7.76	3.90	1.24	0.09	2.62	100.33	0.58	14	101	72	30.2
8CMWR87	46.19	1.43	14.27	11.16	n.d.	0.16	8.07	8.57	3.09	1.43	0.11	5.00	99.48	0.59	3	153	89	38.5
MCM182	69.40	0.63	13.45	4.50	n.d.	0.10	1.55	3.66	1.00	2.03	0.11	2.63	99.06	0.41	32	257	147	28.3
10CMWR87	49.47	1.81	15.27	11.62	n.d.	0.19	4.84	9.58	2.70	1.81	0.24	3.12	100.65	0.45	5	411	128	47.3
11CMWR87	48.61	1.36	15.14	10.24	n.d.	0.18	6.56	10.44	3.53	1.36	0.14	3.61	101.17	0.56	2	186	89	37.7
4CMMD87	48.82	1.19	15.50	11.55	n.d.	0.16	6.39	4.69	4.59	1.19	0.10	6.63	100.80	0.52	4	48	77	32.8
MCM195	57.42	0.34	14.82	7.55	n.d.	0.12	5.89	8.88	1.44	0.31	0.08	2.94	99.79	0.61	6	239	40	11.5
9CMWR87	56.47	0.36	15.56	7.04	n.d.	0.11	4.29	6.96	4.17	0.36	0.04	4.80	100.16	0.55	4	210	46	9.96
CMD-CB-1	51.23	1.23	15.98	10.98	n.d.	0.17	5.77	9.53	3.96	0.52	0.13	2.25	101.76	0.51	12	164	64	27.9
MCM118	56.08	0.34	16.95	8.20	n.d.	0.13	3.91	7.89	3.46	0.34	0.01	2.34	99.65	0.49	11	105	20	3.55
142CM87	59.60	0.79	18.21	4.94	n.d.	0.06	2.38	1.50	8.67	0.08	0.11	1.71	98.06	0.49	2	84	151	27.3
MCM232	70.27	0.22	12.71	3.14	n.d.	0.06	2.12	4.07	2.93	2.49	0.04	2.83	100.88	0.57	30	76	76	17.9
CMS-1	66.49	0.63	14.48	4.82	n.d.	0.10	1.37	4.36	4.92	0.63	0.16	1.59	99.55	0.36	10	188	142	34.3
CMS-2	73.22	0.57	12.76	4.02	n.d.	0.09	1.06	1.79	5.28	0.57	0.18	1.25	100.79	0.34	8	49	125	34.4
CMS-3	62.64	0.68	14.94	6.93	n.d.	0.08	3.92	2.13	3.41	0.68	0.23	3.27	98.91	0.53	55	206	128	24.9
Orthogneiss, Scott Bar																		
119SB87	68.81	0.77	14.44	5.35	n.d.	0.16	1.57	4.24	1.20	0.77	0.18	2.01	99.50	0.37	38	246	143	38.7
11SB87	76.12	0.20	13.20	2.45	n.d.	0.04	1.11	1.09	4.34	0.20	0.04	1.20	99.99	0.47	25	82	128	19.6
7SB87	74.50	0.20	13.04	2.48	n.d.	0.04	1.45	1.02	4.36	0.20	0.05	1.38	98.72	0.54	28	98	116	17.8
Central window epidote-blueschist facies metaigneous rocks																		
Big Rock sheet																		
3CM87	51.92	0.98	18.69	8.68	n.d.	0.13	4.03	6.37	4.00	1.23	0.18	3.02	99.22	0.48	17	376	78	29.8
MCM307	54.32	1.42	14.87	11.17	n.d.	0.16	5.40	6.07	3.01	0.95	0.18	2.79	100.34	0.49	17	171	83	36.6
White Mountain body																		
MCM238	47.82	2.66	18.18	11.04	n.d.	0.11	3.28	8.19	4.15	1.74	0.53	2.70	100.40	0.37	54	617	232	34.8
Blueschist quarry																		
CMC-10-2	49.99	3.30	11.77	16.26	n.d.	0.18	4.32	8.62	4.31	0.05	0.27	1.09	100.17	0.34	3	238	188	73.4
CMC-10-3	44.59	2.55	13.03	14.73	n.d.	0.23	5.35	16.98	1.18	0.06	0.26	1.58	100.54	0.42	3	433	138	68.7
CMC-109-4	51.14	2.26	12.77	13.54	n.d.	0.18	6.16	8.37	3.28	0.96	0.23	2.04	100.94	0.47	23	148	130	55.2
CMC-109-G	50.16	1.48	16.61	10.87	n.d.	0.16	4.54	11.23	3.35	0.08	0.23	2.32	101.04	0.45	4	199	99	41.8
MCM330A	45.73	2.56	14.50	15.88	n.d.	0.26	6.50	9.11	1.65	0.80	0.21	3.34	100.53	0.45	18	228	151	53.9
Scraggy Mountain																		
1CMSM87	56.45	0.75	16.19	8.62	n.d.	0.13	4.72	6.34	2.88	1.12	0.15	2.77	100.12	0.52	21	226	72	25.6
CMC-16-6	54.44	0.84	14.61	10.84	n.d.	0.14	4.31	9.11	3.75	0.46	0.16	1.77	100.44	0.44	9	341	46	27.5
CMC-16-G	51.18	0.74	16.14	10.14	n.d.	0.17	5.98	10.11	3.12	0.41	0.07	2.43	100.49	0.54	10	217	47	21.1
MCM249	69.63	0.40	13.71	4.26	n.d.	0.05	0.83	3.25	5.65	0.53	0.06	0.83	99.21	0.28	9	120	158	50.2
Dry Lake area																		

Table 1. Major- and trace-element compositions...continued

Sample	Nb	Ba	Sc	V	Cr	Ni	Cu	Zn	REE data in Table 2	Method, lab, if available	Rock type	Latitude	Longitude
CONDREY MOUNTAIN SCHIST (Helper, Donato, and Barnes, unpub. data)													
Peripheral greenschist belt													
5CMWR87	<1	62	38.9	258	192	30	48	73	+	ICP,TTU	greenschist	41° 59' 45"	123° 08' 30"
6CMWR87	b.d.	76	40.5	229	188	28	45	140		ICP,TTU	greenschist	41° 59' 40"	123° 08' 10"
7CMWR87	b.d.	21	40.4	263	146	30	58	78		ICP,TTU	greenschist	41° 59' 25"	123° 07' 50"
8CMWR87	b.d.	12	34.3	271	67	127	49	76		ICP,TTU	greenschist	41° 58' 32"	123° 07' 30"
MCM182	n.d.	201	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		ICP,TTU	felsic greenschist	41° 57' 50"	123° 07' 20"
10CMWR87	1	29	28.3	357	13	10	66	81		ICP,TTU	greenschist	41° 56' 47"	123° 07' 30"
11CMWR87	b.d.	7	34.4	265	123	28	49	65	+	ICP,TTU	greenschist	41° 55' 46"	123° 07' 40"
4CMMD87	1	26	33.1	229	29	6	36	78		ICP,TTU	greenschist	42° 00' 57"	122' 57' 00"
MCM195	n.d.	64	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		ICP,TTU	felsic greenschist	41° 56' 50"	123° 05' 50"
9CMWR87	3	20	24.6	197	148	27	56	51		ICP,TTU	felsic greenschist	41° 56' 58"	123° 06' 40"
CMD-CB-1	n.d.	51	39.2	299	68	39	48	72		ICP,TTU	greenschist	41° 56' 00"	123° 07' 00"
MCM118	3	17	36.6	225	264	56	50	79		ICP,TTU	pillowed greenschist	41° 46' 33"	123° 02' 00"
142CM87	n.d.	12	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		ICP,TTU	felsic greenschist	41° 55' 55"	123° 07' 10"
MCM232	n.d.	205	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		ICP,TTU	felsic greenschist	41° 55' 23"	123° 06' 50"
CMS-1	5	94	13.8	39	6	12	31	86		ICP,TTU	felsic greenschist	41° 46' 35"	123° 02' 00"
CMS-2	7	96	12.0	36	6	9	23	68	+	ICP,TTU	felsic greenschist	41° 46' 35"	123° 02' 00"
CMS-3	10	564	18.5	169	141	80	64	113		ICP,TTU	felsic greenschist	41° 46' 35"	123° 01' 49"
Orthogneiss, Scott Bar													
119SB87	4	365	14.9	22	b.d.	b.d.	21	100		ICP,TTU	felsic gneiss	41° 46' 31"	123° 01' 40"
11SB87	4	220	8.4	29	b.d.	b.d.	8	19	+	ICP,TTU	felsic gneiss	41° 45' 28"	123° 00' 40"
7SB87	3	205	8.5	32	b.d.	b.d.	16	30	+	ICP,TTU	felsic gneiss	41° 45' 01"	123° 00' 30"
Central window epidote-blueschist facies metaigneous rocks													
Big Rock sheet													
3CM87	n.d.	279	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		ICP,TTU	mafic blueschist	41° 58' 11"	122' 56' 40"
MCM307	n.d.	92	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		ICP,TTU	blueschist	41° 59' 00"	122' 58' 00"
White Mountain body													
MCM238	n.d.	319	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		ICP,TTU	blueschist	41° 57' 06"	123° 02' 10"
Blueschist quarry													
CMC-10-2	n.d.	18	49.7	493	46	25	1	148		ICP,TTU	blueschist	41° 54' 55"	122' 56' 00"
CMC-10-3	n.d.	27	50.8	486	199	40	5	82		ICP,TTU	greenschist	41° 54' 55"	122' 56' 00"
CMC-109-4	n.d.	106	47.4	365	132	85	32	117		ICP,TTU	blueschist	41° 52' 30"	122' 56' 30"
CMC-109-G	12	26	39.5	289	332	62	88	83		ICP,TTU	greenschist	41° 52' 30"	122' 56' 30"
MCM330A	n.d.	70	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		ICP,TTU	blueschist	41° 52' 30"	122' 56' 30"
Scraggy Mountain													
1CMSM87	n.d.	130	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	+	ICP,TTU	laminated blueschist	41° 57' 33"	123° 00' 00"
CMC-16-6	n.d.	37	33.0	295	32	25	22	64		ICP,TTU	blueschist	41° 57' 27"	123° 00' 00"
CMC-16-G	n.d.	75	42.6	290	218	50	67	73		ICP,TTU	greenschist	41° 57' 27"	123° 00' 00"
MCM249	n.d.	68	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	+	ICP,TTU	felsic blueschist dike	41° 57' 29"	123° 00' 00"
Dry Lake area													

Table 1. Major- and trace-element compositions...continued

Sample	SiO2	TiO2	Al2O3	Fe2O3	FeO	MnO	MgO	CaO	Na2O	K2O	P2O5	LOI	Total	Mg#	Rb	Sr	Zr	Y
CMD-17-A	47.78	1.90	15.40	12.76	n.d.	0.23	4.92	8.29	4.12	0.04	0.25	2.63	98.30	0.43	4	281	108	46.9
CMD-17-B	45.08	4.09	14.96	16.94	n.d.	0.27	5.75	7.34	2.85	0.09	0.19	3.89	101.45	0.40	6	159	242	68.0
CMD-17-D	47.06	4.03	12.27	17.04	n.d.	0.18	4.86	7.16	3.59	1.48	0.42	2.12	100.20	0.36	38	136	240	90.7
DLF-12	47.71	3.42	12.08	17.68	n.d.	0.20	5.03	7.67	3.19	0.98	0.39	2.29	100.63	0.36	23	111	216	79.3
MCM263B	41.66	3.95	13.91	20.55	n.d.	0.22	6.75	6.53	2.07	0.01	0.15	3.95	99.75	0.39	3	345	247	73.7
CMC-14-1	51.05	1.13	14.69	10.66	n.d.	0.17	7.83	6.13	4.53	0.67	0.09	2.57	99.53	0.59	11	102	55	31.2
CMC-14-3	48.04	3.47	11.58	17.32	n.d.	0.23	4.45	9.11	3.66	0.05	0.33	1.69	99.93	0.34	3	165	204	79.2
Data from Hotz (1979)																		
120-63	69.8	0.79	13.5	1.3	4.3	0.1	2.7	0.45	1.9	1.6	0.24	3.26	99.9	0.47	n.d.	n.d.	n.d.	n.d.
114-62	73.6	0.67	11.9	0.9	3.0	b.d.	1.9	0.73	2.0	1.5	0.22	2.27	98.7	0.47	n.d.	n.d.	n.d.	n.d.
113-62	49.6	1.0	15.3	3.8	6.3	0.2	7.9	8.1	4.0	0.2	0.10	3.71	100.2	0.59	n.d.	n.d.	n.d.	n.d.
121-63	50.3	1.1	16.4	4.1	5.4	0.2	6.8	8.5	4.2	0.1	0.39	2.60	100.1	0.57	n.d.	n.d.	n.d.	n.d.
012-60	51.3	1.3	15.9	3.2	5.4	0.2	5.7	8.3	5.1	0.4	0.12	2.17	99.1	0.55	n.d.	n.d.	n.d.	n.d.
113-63	74.2	0.2	13.3	1.2	0.9	0.1	1.2	2.1	3.9	1.6	0.03	1.00	99.7	0.52	n.d.	n.d.	n.d.	n.d.

XRF : X-ray fluorescence
ICP-MS : Inductively-coupled atomic emission mass spectrometry
AA: Atomic absorption spectrometry
n.d.: Not determined
n.a.: Latitude and longitude not available
b.d.: Below detection limits
◊: Major elements analyzed by atomic absorption
Labs: U.S. Geological Survey (USGS); Texas Tech University (TTU)
All USGS major element analyses precise to three significant figures
Rb analyzed at TTU by flame emission
Mg# = Mg/(Mg+Fe), Fe as total iron
§: sample may be related to Josephine ophiolite
Key to methods for samples of Josephine ophiolite and related rocks:
(1) XRF at University of Utah
(2) XRF (majors) at Univ. of Utah; icp (trace) at Univ. of Minnesota
(3) XRF at Washington State Univ.
(4) XRF at McGill Univ.
(5) ICP at CNRS National Lab, Nancy, France
(6) ICP at Texas Tech Univ.
(7) XTF (majors) at McGill Univ.; icp (trace) at Univ. of Minnesota
(8) ICP (trace) at Univ. of Minnesota
(9) XRF at Stanford Univ.
‡ indicates Cu and Zn analyzed by atomic absorption

Table 1. Major- and trace-element compositions...continued

Sample	Nb	Ba	Sc	V	Cr	Ni	Cu	Zn	REE data in Table 2	Method, lab, if available	Rock type	Latitude	Longitude
CMD-17-A	n.d.	18	50.8	356	384	80	51	113		ICP,TTU	greenschist	41° 56' 15"	122' 57' 30"
CMD-17-B	n.d.	113	54.5	448	150	64	50	181		ICP,TTU	garnetiferous greenschist	41° 56' 15"	122' 57' 30"
CMD-17-D	n.d.	286	46.0	488	102	40	22	165		ICP,TTU	blueschist	41° 56' 15"	122' 57' 30"
DLF-12	n.d.	57	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		ICP,TTU	fine gr. blueschist	41° 54' 38"	122' 56' 30"
MCM263B	n.d.	10	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	+	ICP,TTU	blueschist	41° 55' 14"	122' 56' 40"
CMC-14-1	n.d.	143	48.0	275	335	67	26	86		ICP,TTU	greenschist	41° 56' 55"	122' 54' 40"
CMC-14-3	n.d.	27	48.0	508	36	9	31	149		ICP,TTU	blueschist	41° 56' 55"	122' 54' 40"
Data from Hotz (1979)													
120-63	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.			qtz-mu schist	41° 59' 12"	122' 57' 00"
114-62	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.			qtz-mu schist	41° 50' 30"	122' 54' 50"
113-62	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.			greenschist	41° 59' 27"	122' 58' 00"
121-63	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.			greenschist	41° 59' 30"	122' 58' 00"
012-60	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.			greenschist	41° 56' 45"	122' 50' 10"
113-63	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.			ab-qtz mu-ep schist	41° 57' 00"	122' 50' 11"

XRF : x-ray fluorescence
ICP-MS : inductively-coupled atomic emission mass spectrometry
AA : atomic absorption spectrometry
n.d. : not determined

b.d. : below detection limits
◊ major elements analyzed by atomic absorption
Labs: U.S. Geological Survey (USGS); Texas Tech University (TTU)
All USGS major element analyses precise to three significant figures
Rb analyzed at TTU by flame emission
Mg# = Mg/(Mg+Fe), Fe as total iron
§ sample may be related to Josephine ophiolite
Methods for samples of Josephine ophiolite and related rocks:
(1) XRF at University of Utah
(2) XRF (majors) at Univ. of Utah; icp (trace) at Univ. of Minnesota
(3) XRF at Washington State Univ.
(4) XRF at McGill Univ.
(5) ICP at CNRS National Lab, Nancy, France
(6) ICP at Texas Tech Univ.
(7) XTF (majors) at McGill Univ.; icp (trace) at Univ. of Minnesota
(8) ICP (trace) at Univ. of Minnesota
(9) XRF at Stanford Univ.
‡ indicates Cu and Zn analyzed by atomic absorption

Table 2. Rare-earth element compositions (in ppm) of selected metavolcanic and metasedimentary rocks, Klamath Mountains.

Sample	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	method	rock type
RATTLESNAKE CREEK TERRANE																
Southern Klamath Mountains (Wright & Wyld, 1994)																
amphibolite																
R-43	4.4	14.0	n.d.	10	3.3	1.21	n.d.	0.80	n.d.	n.d.	n.d.	n.d.	3.42	0.54		amphibolite
R-306	4.4	12.0	n.d.	9	2.9	1.05	n.d.	0.70	n.d.	n.d.	n.d.	n.d.	2.56	0.40		amphibolite
R-647	1.8	6.0	n.d.	5	1.9	0.63	n.d.	0.60	n.d.	n.d.	n.d.	n.d.	2.28	0.37		amphibolite
greenstone																
R-1006	2.2	8.0	n.d.	n.d.	2.4	0.89	n.d.	0.68	n.d.	n.d.	n.d.	n.d.	2.26	0.33		greenstone
R-1007	12.1	28.1	n.d.	n.d.	4.8	1.67	n.d.	0.92	n.d.	n.d.	n.d.	n.d.	2.54	0.37		greenstone
R-1008	3.6	10.3	n.d.	n.d.	3.4	1.14	n.d.	0.88	n.d.	n.d.	n.d.	n.d.	3.02	0.46		greenstone
R-1009	2.0	7.9	n.d.	n.d.	3.0	1.22	n.d.	0.87	n.d.	n.d.	n.d.	n.d.	3.12	0.46		greenstone
R-1010	8.1	19.9	n.d.	n.d.	4.2	1.45	n.d.	0.95	n.d.	n.d.	n.d.	n.d.	3.29	0.45		greenstone
metabasalt																
R-13	23.2	55.3	n.d.	24	6.1	2.02	6.31	0.93	n.d.	n.d.	n.d.	0.39	2.24	0.34		metabasalt
R-112	4.7	15.4	n.d.	11	3.2	1.12	3.47	0.55	n.d.	n.d.	n.d.	0.31	1.97	0.29		metabasalt
R-1005	1.3	6.1	n.d.		2.8	1.00	n.d.	0.79	n.d.	n.d.	n.d.	n.d.	2.75	0.39		metabasalt
R-1001B	23.5	48.0	n.d.	24	5.6	1.90	n.d.	0.90	n.d.	n.d.	n.d.	n.d.	2.19	0.32		metabasalt
R-1002A	22.3	47.0	n.d.	23	5.4	1.89	n.d.	0.60	n.d.	n.d.	n.d.	n.d.	2.27	0.32		metabasalt
Salt Creek lavas																
S-83	1.6	6.0	n.d.	5	1.8	0.68	2.44	0.48	n.d.	n.d.	n.d.	0.31	1.83	0.28		metavolcanic
S-89	6.8	17.4	n.d.	11	3.7	1.28	4.88	0.85	n.d.	n.d.	n.d.	0.50	3.00	0.46		metavolcanic
R-469	5.5	14.7	n.d.	12	3.8	1.43	5.00	0.93	n.d.	n.d.	n.d.	0.64	4.08	0.62		metavolcanic
R-488	4.6	11.1	n.d.	9	2.9	1.07	3.75	0.66	n.d.	n.d.	n.d.	0.45	2.92	0.42		metavolcanic
R-520	2.9	8.0	n.d.	7	2.3	0.86	3.09	0.59	n.d.	n.d.	n.d.	0.42	2.79	0.44		metavolcanic
R-1000B	4.6	14.0	n.d.	11	3.8	1.37	n.d.	1.00	n.d.	n.d.	n.d.	n.d.	3.45	0.56		metavolcanic
R-449C	4.9	14.2	n.d.	10	2.4	0.71	2.84	0.42	n.d.	n.d.	n.d.	0.26	1.64	0.25		metavolcanic
R-1003B	5.9	16.0	n.d.	13	2.8	0.98	n.d.	0.50	n.d.	n.d.	n.d.	n.d.	1.74	0.29		metavolcanic
Dubakella Mountain lavas																
S-145	5.7	10.1	n.d.	7	2.1	0.82	2.47	0.40	n.d.	n.d.	n.d.	0.26	1.67	0.26		metavolcanic
S-154	8.7	16.1	n.d.	10	2.6	0.94	2.84	0.44	n.d.	n.d.	n.d.	n.d.	1.60	0.24		metavolcanic
S-155	9.2	19.2	n.d.	11	2.8	0.86	2.52	0.37	n.d.	n.d.	n.d.	0.21	1.36	0.20		metavolcanic
R-551	3.2	6.0	n.d.	5	1.4	0.60	1.79	0.32	n.d.	n.d.	n.d.	0.21	1.30	0.20		metavolcanic
R-21	39.8	90.2	n.d.	38	7.5	1.90	6.00	0.73	n.d.	n.d.	n.d.	0.31	1.66	0.25		metavolcanic
R-64B	38.5	87.5	n.d.	36	7.5	2.05	5.94	0.75	n.d.	n.d.	n.d.	0.30	1.59	0.25		metavolcanic
intrusive rocks																
R-37	1.7	5.0	n.d.	4	1.1	0.39	n.d.	0.30	n.d.	n.d.	n.d.	n.d.	1.21	0.18		gabbro/diorite
R-312	3.0	10.0	n.d.	7	2.3	0.76	n.d.	0.60	n.d.	n.d.	n.d.	n.d.	2.14	0.36		gabbro/diorite
R-413	0.2	<1	n.d.	1	0.6	0.25	n.d.	0.20	n.d.	n.d.	n.d.	n.d.	0.72	0.11		gabbro/diorite

Table 2. Rare-earth element compositions...continued.

Sample	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	method	rock type
R-481	4.5	13.0	n.d.	10	3.0	0.99	n.d.	0.70	n.d.	n.d.	n.d.	n.d.	2.45	0.39		gabbro/diorite
R-494	2.9	10.0	n.d.	7	2.6	0.90	n.d.	0.70	n.d.	n.d.	n.d.	n.d.	2.53	0.40		gabbro/diorite
R-558	3.7	11.0	n.d.	10	3.6	1.50	4.90	0.93	n.d.	n.d.	n.d.	0.61	3.74	0.54		gabbro/diorite
Bolan Mountain area																
BL41	34.0	62.0	7.2	29	6.1	2.00	5.9	0.92	5.0	0.95	2.4	0.31	1.9	n.d.	1	greenstone
BL42	5.3	15.0	2.4	12	4.2	1.40	5.4	1.10	6.9	1.50	4.0	0.61	4.0	n.d.	1	greenstone
BL140	4.6	13.0	1.9	10	3.4	1.20	4.5	0.89	5.6	1.20	3.4	0.53	3.1	n.d.	1	greenstone
BL19	5.8	14.0	1.9	9	2.8	0.70	3.5	0.67	4.3	0.93	2.8	0.43	2.6	n.d.	1	keratophyre
BL137	20.0	44.0	4.6	17	3.3	0.73	2.9	0.53	3.1	0.65	1.8	0.27	1.7	n.d.	1	keratophyre
KM72	2.7	6.9	1.1	6	1.9	0.59	2.6	0.50	3.2	0.73	2.1	0.32	1.8	n.d.	1	amphibolite
KM77	6.0	14.0	2.1	10	3.1	1.10	3.4	0.69	4.4	0.87	2.4	0.34	2.1	n.d.	1	amphibolite
KM105	2.5	7.2	1.3	8	2.8	0.96	3.8	0.80	5.0	1.10	3.1	0.44	2.5	n.d.	1	amphibolite
Pony Peak area																
PP1288C	22.0	47.0	5.3	20	3.9	0.85	3.5	0.58	3.5	0.72	2.2	0.32	2.0	n.d.	1	argillite
KM42A	4.8	12.6	n.d.	9	2.8	0.66	n.d.	0.71	n.d.	n.d.	n.d.	n.d.	3.17	0.45	1	keratophyre
Observation Peak area																
OP58	5.6	17.0	n.d.	8	1.4	0.41	n.d.	0.38	n.d.	n.d.	n.d.	n.d.	0.85	0.12	2	amphibolitic dike
OP58A	9.8	14.8	n.d.	9	5.8	1.71	n.d.	1.94	n.d.	n.d.	n.d.	n.d.	5.35	0.77	2	amphibolite
OP83	11.3	20.6	n.d.	9	2.5	0.75	n.d.	0.44	n.d.	n.d.	n.d.	n.d.	1.45	0.24	2	amphibolitic dike
S-19	3.9	8.7	n.d.	8	3.0	1.37	4.9	0.97	n.d.	n.d.	n.d.	0.69	4.35	0.673	2	
S-10	3.6	10.6	n.d.	n.d.	3.0	1.15	3.9	0.73	n.d.	n.d.	n.d.	0.49	3.30	0.496	2	
S-8	2.2	4.5	n.d.	n.d.	1.1	0.45	n.d.	0.31	n.d.	n.d.	n.d.	0.24	1.58	0.247	2	
S-12	2.7	7.2	n.d.	n.d.	2.3	1.02	3.4	0.60	n.d.	n.d.	n.d.	0.43	2.80	0.395	2	
S-13	2.2	7.0	n.d.	6	2.3	0.99	3.4	0.62	n.d.	n.d.	n.d.	0.44	2.67	0.394	2	
S-14	2.7	8.1	n.d.	7	2.4	1.05	3.1	0.65	n.d.	n.d.	n.d.	0.45	2.96	0.416	2	
S-18	4.3	11.9	n.d.	8	2.5	0.99	3.2	0.55	n.d.	n.d.	n.d.	0.39	2.61	0.432	2	
S-6	4.0	11.1	n.d.	11	3.2	1.25	4.3	0.80	n.d.	n.d.	n.d.	0.55	3.60	0.559	2	
S-9	2.0	4.6	n.d.	3	0.9	0.35	1.1	0.22	n.d.	n.d.	n.d.	0.15	1.04	0.168	2	
2KL-222	6.1	23.6	n.d.	15	5.4	1.65	6.4	n.d.	n.d.	n.d.	n.d.	n.d.	5.03	0.83	2	
2KL-347	7.0	25.3	n.d.	15	5.2	1.39	5.4	n.d.	n.d.	n.d.	n.d.	n.d.	3.66	0.58	2	
2KL-230	2.7	15.1	n.d.	8	3.0	0.88	3.6	n.d.	n.d.	n.d.	n.d.	n.d.	2.35	0.37	2	
2KL-101A	8.8	27.1	n.d.	15	4.3	1.41	4.5	n.d.	n.d.	n.d.	n.d.	n.d.	2.24	0.33	2	

Table 2. Rare-earth element compositions...continued.

Sample	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	method	rock type
WESTERN HAYFORK TERRANE																
Klamath River/Kings Creek area (Barnes, unpub. data)																
MMB672D	24.6	58.7	n.d.	34	7.0	1.76	n.d.	0.73	n.d.	n.d.	n.d.	0.41	1.58	0.224	3	metavolcanic clast
MMB903F	35	66	7.8	30	5.3	1.50	4.1	0.58	2.9	0.53	1.5	0.21	1.4	n.d.	1	argillite
Orleans, CA area (this report)																
KM28	32	57	6.3	22	3.6	0.81	3.1	0.47	2.8	0.52	1.5	0.23	1.5	n.d.	1	argillite
KM34A	18	31	4.5	17	4.0	0.95	3.9	0.65	4.0	0.84	2.4	0.36	2.2	n.d.	1	argillite
KM38	12	27	3.7	16	3.6	1.10	3.4	0.52	2.9	0.57	1.7	0.23	1.4	n.d.	1	meta-arenite
KM40A	11	24	3.1	13	3.0	0.94	3.1	0.45	2.7	0.51	1.5	0.21	1.3	n.d.	1	argillite
Applegate Group, upper Applegate drainage, OR (Donato, unpub. data)																
RU-305A-92	7.2	15	2.1	10	2.4	0.88	2.5	0.43	2.8	0.59	1.7	0.23	1.5	n.d.	1	argillite
RU-306-92	10	22	3.2	14	3.5	1.30	3.7	0.64	3.7	0.72	2.0	0.27	1.6	n.d.	1	greenstone
RU-309-92	12	25	3	13	3.0	0.92	2.7	0.46	2.5	0.51	1.5	0.20	1.2	n.d.	1	meta-arenite
RU-311-92	20	40	4.9	20	4.3	1.20	3.6	0.53	2.9	0.55	1.5	0.22	1.4	n.d.	1	argillite
RU-314-92	29	57	6.8	25	5.0	1.10	4.6	0.78	4.5	0.92	2.5	0.37	2.3	n.d.	1	argillite
RU-316A-92	14	27	3.3	14	3.0	0.88	2.7	0.42	2.5	0.46	1.4	0.21	1.3	n.d.	1	meta-arenite
RU-324-92	78	150	17	63	11.0	3.00	7.8	0.98	4.6	0.78	2.1	0.28	1.6	n.d.	1	meta-arenite
RU-366-92	21	43	5.6	24	5.2	1.50	4.7	0.70	3.5	0.68	1.8	0.26	1.6	n.d.	1	meta-arenite
RU-367-92	13	28	3.7	16	3.7	1.10	3.5	0.50	2.7	0.56	1.5	0.21	1.2	n.d.	1	meta-arenite
RU-372-92	9.9	19	2.3	10	2.1	0.70	2.1	0.35	2.1	0.42	1.3	0.19	1.1	n.d.	1	diorite
RU-383-92	11	24	3.2	14	3.3	0.95	3.0	0.49	2.7	0.54	1.6	0.23	1.4	n.d.	1	meta-arenite
RU-384-92	3.5	7.3	1	5	1.4	0.48	1.5	0.29	1.9	0.41	1.2	0.19	1.2	n.d.	1	metavolcanic rock
RU-385-92	6.2	12	1.5	7	2.0	0.52	1.6	0.28	1.7	0.36	1.1	0.17	1.1	n.d.	1	metavolcanic rock
RU-388A-92	22	41	5	19	3.8	1.20	3.4	0.51	2.9	0.58	1.6	0.23	1.5	n.d.	1	meta-arenite
RU-388B-92	11	23	3	13	3.2	0.91	3.0	0.49	2.8	0.58	1.6	0.23	1.3	n.d.	1	meta-arenite
RU-25A-91	30	59	7.6	31	6.6	1.50	6.3	0.93	5.3	1.10	3.0	0.44	2.9	n.d.	1	argillite
RU-27B-91	15	30	4.0	15	3.7	0.78	3.4	0.56	3.3	0.67	2.0	0.29	1.9	n.d.	1	argillite
RU-35B-91	25	46	5.8	24	5.0	1.40	4.2	0.56	3.1	0.66	1.9	0.29	1.7	n.d.	1	argillite
RU-45A-91	34	59	8.1	32	6.4	1.10	5.9	0.84	5.1	1.00	3.1	0.45	2.9	n.d.	1	argillite
RU-73-91	14	28	3.8	16	4.2	1.20	3.9	0.62	3.7	0.85	2.2	0.31	2.1	n.d.	1	argillite
RU-103-91	23	40	5.4	19	4.3	0.81	3.8	0.71	3.7	0.77	2.3	0.33	2.4	n.d.	1	argillite
RU-109A-91	62	120	14.0	52	9.6	2.60	7.1	0.98	4.8	0.93	2.3	0.32	2.2	n.d.	1	argillite
RU-111-91	9	21	3.0	14	3.8	1.10	4.3	0.76	4.9	1.10	3.1	0.45	3.3	n.d.	1	argillite
RU-114-91	8	18	2.5	11	2.6	0.60	2.4	0.46	3.1	0.71	2.1	0.33	2.4	n.d.	1	argillite
RU-132-91	60	110	14.0	54	9.9	2.40	7.4	0.96	5.1	0.92	2.6	0.33	2.4	n.d.	1	argillite
RU-133-91	25	49	6.3	26	5.8	1.60	4.7	0.82	4.4	0.90	2.3	0.36	2.3	n.d.	1	argillite

Table 2. Rare-earth element compositions...continued.

Sample	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	method	rock type
RU-191-91	47	87	11.0	41	8.1	2.10	5.5	0.87	4.5	0.91	2.3	0.36	2.2	n.d.	1	argillite
RU-104A-91	12	22	3.0	13	3.2	0.95	3.3	0.54	3.3	0.67	2.0	0.30	2.2	n.d.	1	argillite
RU-205-91	63	120	14.0	52	9.5	2.50	7.3	0.90	4.5	0.74	2.1	0.32	2.1	n.d.	1	argillite
RU-207-91	8	18	2.4	10	2.6	0.83	3.0	0.49	3.1	0.67	1.8	0.25	1.9	n.d.	1	argillite
RU-37-91	3	7	1.0	4	1.4	0.43	1.7	0.29	1.9	0.40	1.3	0.18	1.1	n.d.	1	meta-arenite
RU-43-91	9	18	2.5	11	3.0	0.82	3.3	0.52	3.1	0.64	1.9	0.27	2.1	n.d.	1	meta-arenite
RU-93C-91	10	20	2.8	12	3.2	1.10	3.1	0.49	3.2	0.64	2.0	0.29	1.9	n.d.	1	meta-arenite
RU-203-91	15	27	3.3	14	3.6	0.99	3.5	0.58	3.5	0.80	2.3	0.35	2.3	n.d.	1	meta-arenite
RU-213-91	6	13	1.9	8	2.2	0.73	2.2	0.41	2.4	0.45	1.3	0.19	1.4	n.d.	1	meta-arenite
RU-117-91	9	20	3.2	14	3.8	1.30	4.7	0.83	5.3	1.10	3.1	0.46	2.7	n.d.	1	greenstone
RU-129B-91	16	32	4.2	19	4.1	1.20	4.2	0.58	3.7	0.71	2.3	0.32	2.1	n.d.	1	greenstone
RU-163D-91	10	20	3.0	13	3.5	1.00	3.6	0.65	4.3	0.87	2.5	0.39	2.5	n.d.	1	greenstone
RU-167B-91	8	16	2.2	10	2.8	0.84	3.3	0.54	3.6	0.77	2.1	0.31	2.2	n.d.	1	meta-porphyritic dike
Bolan Lake area, OR (Tomlinson, 1993; unpub. data)																
KM94A	2	2.7	0.5	3	1.0	0.32	1.5	0.27	1.8	0.42	1.2	0.18	1.1	n.d.	1	metavolcanic clast
KM94B	1.2	2	0.3	1.7	0.7	0.20	0.9	0.20	1.4	0.34	1.0	0.16	0.94	n.d.	1	metavolcanic clast
BL112	70	150	19	76	15.0	4.10	11.0	1.40	6.0	0.98	2.3	0.31	1.8	n.d.	1	meta-arenite
BL124	5.5	12	1.7	7.5	2.0	0.65	2.1	0.40	2.4	0.52	1.4	0.21	1.3	n.d.	1	meta-arenite
BL126	69	140	18	74	14.0	3.70	10.0	1.30	5.5	0.90	2.0	0.23	1.5	n.d.	1	meta-arenite
MMB869C	47	96	12	51	10.0	2.90	8.2	1.00	4.9	0.84	2.0	0.27	1.5	n.d.	1	meta-arenite
MMB869D	60	120	15	61	12.0	3.30	8.6	1.10	4.7	0.80	1.9	0.26	1.5	n.d.	1	meta-arenite
EASTERN HAYFORK TERRANE (see Barnes et al., 1990)																
MMB-236C	42.5	77.9	n.d.	34.4	6.2	0.98	n.d.	0.69	n.d.	n.d.	n.d.	n.d.	2.28	0.30	3	chert-argillite breccia
AMPHIBOLITES OF THE MAY CREEK AREA																
Donato (1991a)																
MC-9A-85	4.6	12.0	n.d.	10.6	3.5	1.37	5.7	1.0	n.d.	n.d.	n.d.	0.59	3.87	0.57	1	hornblende schist
MC-9B-85	1.6	4.7	n.d.	4.6	1.5	0.76	3.2	0.6	n.d.	n.d.	n.d.	0.33	1.91	0.28	1	amphibolite
MC-11A-85	1.7	5.7	n.d.	6.1	2.2	0.96	3.7	0.6	n.d.	n.d.	n.d.	0.37	2.42	0.35	1	amphibolite
MC-20-85	2.9	9.1	n.d.	7.8	2.4	1.10	3.9	0.5	n.d.	n.d.	n.d.	0.35	2.19	0.31	1	hornblende schist
MC-21A-85	3.4	10.5	n.d.	9.6	3.0	1.12	4.9	0.9	n.d.	n.d.	n.d.	0.46	2.89	0.42	1	hornblende schist
MC-24-85	2.9	8.8	n.d.	7.6	2.2	1.03	3.7	0.6	n.d.	n.d.	n.d.	0.34	2.09	0.29	1	hornblende schist
MC-25C-85	6.0	17.9	n.d.	14.7	4.4	1.70	6.3	1.1	n.d.	n.d.	n.d.	0.58	3.74	0.51	1	hornblende schist
MC-29-85	3.2	10.7	n.d.	10.7	3.5	1.59	5.2	0.9	n.d.	n.d.	n.d.	0.53	3.27	0.46	1	metagabbro
MC-32-85	2.6	8.7	n.d.	8.0	2.6	1.16	4.3	0.7	n.d.	n.d.	n.d.	0.33	2.27	0.32	1	metagabbro
MC-37A-85	4.5	13.4	n.d.	11.4	3.5	1.45	5.2	0.8	n.d.	n.d.	n.d.	0.48	3.03	0.44	1	metaporphyry

Table 2. Rare-earth element compositions...continued.

Sample	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	method	rock type
MC-37B-85	4.5	11.8	n.d.	10.4	2.8	1.31	5.2	1.3	n.d.	n.d.	n.d.	0.43	3.00	0.43	1	hornblende schist
MC-37C-85	4.9	14.3	n.d.	11.6	3.3	1.41	5.2	0.9	n.d.	n.d.	n.d.	0.47	3.15	0.47	1	metaporphyry
MC-38B-85	3.0	9.8	n.d.	8.5	2.8	1.14	4.0	0.5	n.d.	n.d.	n.d.	0.37	2.39	0.34	1	metadiorite
MC-41-85	6.9	19.5	n.d.	16.8	4.8	1.94	7.3	1.3	n.d.	n.d.	n.d.	0.68	4.32	0.63	1	metadiorite
MC-47A-85	7.2	20.7	n.d.	17.1	4.9	1.91	7.6	1.2	n.d.	n.d.	n.d.	0.66	4.28	0.60	1	metadiorite
MC-67-85	3.5	11.2	n.d.	9.4	3.0	1.19	4.2	0.6	n.d.	n.d.	n.d.	0.39	2.50	0.34	1	hornblende schist
MC-81A-85	5.4	13.0	n.d.	8.3	2.1	0.87	3.5	0.5	n.d.	n.d.	n.d.	0.31	1.96	0.28	1	amphibolite
MC-116A-85	2.1	7.4	n.d.	7.5	2.2	1.14	4.3	0.8	n.d.	n.d.	n.d.	0.35	2.50	0.36	1	hornblende schist
MC-116B-85	3.3	10.2	n.d.	8.9	2.8	1.20	4.2	0.8	n.d.	n.d.	n.d.	0.40	2.48	0.35	1	metaporphyry
MC-126-85	1.0	3.3	n.d.	3.8	1.7	0.71	2.8	0.5	n.d.	n.d.	n.d.	0.32	2.11	0.31	1	amphibolite
SALMON RIVER METAVOLCANIC ROCKS																
Yreka area (R.G. Coleman, written comm., see Mortimer, 1984)																
79A	3.86	10.4	n.d.	7.4	2.5	0.91	3.3	0.63	n.d.	n.d.	n.d.	0.40	2.69	n.d.	4	metavolcanic
123	2.83	6.21	n.d.	n.d.	2.1	0.69	2.7	0.50	n.d.	n.d.	n.d.	0.35	2.21	0.31	4	metavolcanic
Ernst (1987)																
46M	0.3	2	n.d.	<3	0.4	0.43	n.d.	0.1	n.d.	n.d.	n.d.	n.d.	0.60	0.10	4	metabasalt
9M	3.5	9	n.d.	7	1.9	0.88	n.d.	0.4	n.d.	n.d.	n.d.	n.d.	1.94	0.30	4	metabasalt
57M	3.9	11	n.d.	6	1.5	0.60	n.d.	0.2	n.d.	n.d.	n.d.	n.d.	1.27	0.21	4	metabasalt
85M	3.1	11	n.d.	6	1.9	0.64	n.d.	0.4	n.d.	n.d.	n.d.	n.d.	2.26	0.32	4	metabasalt
86M	5.2	<1	n.d.	<3	<.1	1.20	n.d.	0.6	n.d.	n.d.	n.d.	n.d.	2.79	0.41	4	metabasalt
92M	0.5	6	n.d.	<3	0.1	0.17	n.d.	<0.1	n.d.	n.d.	n.d.	n.d.	0.19	0.04	4	metabasalt
117M	3.7	14	n.d.	7	2.2	0.90	n.d.	0.5	n.d.	n.d.	n.d.	n.d.	2.63	0.39	4	metabasalt
127M	3.2	9	n.d.	6	1.6	0.72	n.d.	0.3	n.d.	n.d.	n.d.	n.d.	1.73	0.28	4	metabasalt
146M	3.1	17	n.d.	6	2.1	0.56	n.d.	0.6	n.d.	n.d.	n.d.	n.d.	2.41	0.35	4	metabasalt
212M	11.0	25	n.d.	12	2.9	0.95	n.d.	0.6	n.d.	n.d.	n.d.	n.d.	1.75	0.26	4	metabasalt
215M	3.5	10	n.d.	7	2.4	0.90	n.d.	0.5	n.d.	n.d.	n.d.	n.d.	2.55	0.40	4	metabasalt
288M	5.8	19	n.d.	12	3.3	1.39	n.d.	0.9	n.d.	n.d.	n.d.	n.d.	3.91	0.60	4	metabasalt
291M	18.6	37	n.d.	17	3.3	1.28	n.d.	0.6	n.d.	n.d.	n.d.	n.d.	1.33	0.18	4	metabasalt
320M	10.2	23	n.d.	12	3.0	0.93	n.d.	0.3	n.d.	n.d.	n.d.	n.d.	1.60	0.25	4	metabasalt
321M	20.0	41	n.d.	22	5.1	1.38	n.d.	0.6	n.d.	n.d.	n.d.	n.d.	2.10	0.35	4	metabasalt
351M	15.5	32	n.d.	15	3.9	1.13	n.d.	0.7	n.d.	n.d.	n.d.	n.d.	1.85	0.27	4	metabasalt
375M	14.8	35	n.d.	17	3.5	1.04	n.d.	0.4	n.d.	n.d.	n.d.	n.d.	1.37	0.19	4	metabasalt
450M	3.6	10	n.d.	7	2.1	1.06	n.d.	0.5	n.d.	n.d.	n.d.	n.d.	2.23	0.33	4	metabasalt
516M	3.5	9	n.d.	7	2.1	1.14	n.d.	0.5	n.d.	n.d.	n.d.	n.d.	2.21	0.33	4	metabasalt

Table 2. Rare-earth element compositions...continued.

Sample	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	method	rock type
SALMON RIVER TERRANE																
Ernst (1987)																
220M	17.5	36	n.d.	17	4.0	1.12	n.d.	0.6	n.d.	n.d.	n.d.	n.d.	2.07	0.27		hypabyssal intrusive
235M	3.3	15	n.d.	6	2.2	1.02	n.d.	0.5	n.d.	n.d.	n.d.	n.d.	2.23	0.33		hypabyssal intrusive
285M	16.4	42	n.d.	19	3.7	1.46	n.d.	0.7	n.d.	n.d.	n.d.	n.d.	2.02	0.29		hypabyssal intrusive
NORTH FORK TERRANE																
Sawyers Bar area (Ernst, 1987)																
11M	25.9	55	n.d.	27	6.1	2.01	n.d.	0.8	n.d.	n.d.	n.d.	n.d.	1.78	0.28		metabasalt
89M	25.7	56	n.d.	27	6.4	2.77	n.d.	1.0	n.d.	n.d.	n.d.	n.d.	1.31	0.18		metabasalt
91M	38.7	75	n.d.	37	7.7	2.90	n.d.	1.0	n.d.	n.d.	n.d.	n.d.	1.89	0.24		metabasalt
201M	33.1	63	n.d.	28	5.4	2.41	n.d.	1.0	n.d.	n.d.	n.d.	n.d.	2.00	0.26		metabasalt
207M	28.0	60	n.d.	29	5.4	1.78	n.d.	0.9	n.d.	n.d.	n.d.	n.d.	1.95	0.27		metabasalt
372M	15.7	37	n.d.	19	4.7	1.66	n.d.	0.5	n.d.	n.d.	n.d.	n.d.	1.72	0.24		metabasalt
Yreka area (R.G. Coleman, written comm., see Mortimer, 1984)																
111A	78.7	168	n.d.	74.3	16.0	4.90	13.2	1.9	n.d.	n.d.	n.d.	n.d.	5.00	0.72		metavolcanic
117B	56.6	112	n.d.	51.3	10.0	3.01	8.5	1.1	n.d.	n.d.	n.d.	n.d.	2.51	0.31		metavolcanic
67A	36.2	72.3	n.d.	38.5	9.2	1.99	7.2	0.9	n.d.	n.d.	n.d.	n.d.	2.22	0.31		metavolcanic
71A	69.8	155	n.d.	74.5	16.0	4.77	13.3	1.7	n.d.	n.d.	n.d.	n.d.	3.76	0.48		metavolcanic
STUART FORK TERRANE																
Caribou Lake (Barnes, unpub. data)																
FPC40	4.7	10.4	n.d.	8.3	3.9	1.30	n.d.	1.3	n.d.	n.d.	n.d.	n.d.	4.19	0.53	2	metabasalt
CONDREY MOUNTAIN SCHIST																
Peripheral greenschist belt																
5CMWR87	3.3	8.2	n.d.	7.7	2.8	1.02	n.d.	0.68	n.d.	n.d.	n.d.	n.d.	2.61	0.36	5	greenschist
11CMWR87	3.7	8.7	n.d.	8.4	3.5	1.27	n.d.	0.84	n.d.	n.d.	n.d.	n.d.	3.24	0.40	5	greenschist
CMS2	9.8	23.9	n.d.	14.0	4.4	1.20	n.d.	0.79	n.d.	n.d.	n.d.	n.d.	3.06	0.43	5	felsic greenschist
Orthogneiss, Scott Bar																
7SB87	4.6	7.3	n.d.	5.8	1.7	0.39	n.d.	0.35	n.d.	n.d.	n.d.	n.d.	1.98	0.30	5	felsic gneiss
11SB87	5.3	11.4	n.d.	5.8	1.9	0.39	n.d.	0.39	n.d.	n.d.	n.d.	n.d.	2.02	0.32	5	felsic gneiss
Central window epidote-blueschist facies metaigneous rocks																
Scraggy Mountain																
1CMSM87	6.8	15.8	n.d.	11.4	3.0	0.96	n.d.	0.58	n.d.	n.d.	n.d.	n.d.	2.31	0.30	5	blueschist

Table 2. Rare-earth element compositions...continued.

Sample	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	method	rock type
MCM249	7.1	18.5	n.d.	13.6	4.9	1.46	n.d.	1.18	n.d.	n.d.	n.d.	n.d.	4.78	0.67	5	blueschist
Dry Lake area																
MCM263B	11.3	32.1	n.d.	24.5	8.6	2.80	n.d.	1.96	n.d.	n.d.	n.d.	n.d.	5.88	0.77	5	blueschist

n.d., not determined
1. ICP-MS, USGS
2. INAA, Sul Ross State University
3. INAA, University of Texas-El Paso
4. INAA, USGS
5. INAA, Oregon State University
6. INAA, Cornell University
7. ICP-MS, Washington State University
8. ICP-MS, University of Durham
9. INAA, Portland State University