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GEOLOGICAL SURVEY

Analytical results and sample locality map of rock samples from the Garberville 30' x 1° quadrangle (southwest quarter of the Redding 1° x 2° quadrangle), Humboldt, Trinity, Shasta, Tehama, and Mendocino Counties, California

By

Jerry R. Hassemer *, Miles L. Silberman *, and Roy T. Hopkins *

Open-File Report 92-316-A

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*U.S. Geological Survey, Mail Stop 973, Box 25046, Denver, CO, 80225-0046

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TABLE OF CONTENTS

TABLE OF CONTENTS --cont

ILLUSTRATIONS

TABLES

TABLE OF CONTENTS —cont

STUDIES RELATED TO CUSMAP

This report presents the results of a lithogeochemical survey of the Garberville 30' x 1° quadrangle (southwest quarter of the Redding 1° x 2° quadrangle), California. Geochemical samples were collected as one of several multidisciplinary studies associated with the Conterminous United States Mineral Appraisal Program (CUSMAP). The data contained in this report are also available as U.S. Geological Survey Open-File Report 92-316B

INTRODUCTION

From 1983 to 1988, the U.S. Geological Survey conducted a reconnaissance geochemical survey of the Redding 1° x 2° quadrangle which is currently undergoing geological, geophysical, geochemical, and mineral resource assessment studies as part of the CUSMAP program. The Redding 1° x 2° (1:250,000 scale) quadrangle is also covered by four 30 min. x 1° (1:100,000 scale) quadrangles: Garberville, Hayfork, Redding, and Red Bluff (see Figure 1).

Geochemical sampling of stream sediments, the principal media for the geochemical survey in the Redding 1° x 2° quadrangle, was organized and conducted at the 1:100,000 scale. The geochemical data obtained from the Redding 1° x 2° quadrangle is being released as a series of summaries covering the four component 1:100,000 quadrangles. Stream-sediment data for the Garberville quadrangle was summarized by Smith and others (1991). Stream-sediment data for the Hayfork quadrangle was summarized by Smith and others (1990). Interpretative reports on various aspects of the stream-sediment geochemistry (for example, Silberman and others, 1991) have been prepared and others are in preparation.

Rock samples were collected to augment the stream-sediment survey, generally to investigate specific objectives such as the geochemical characterization of major lithologies and the determination of metal associations in the various types of mineral deposits that occur in the area. Rock sampling was not intended to be a systematic coverage of the survey area. This report summarizes data for those rock samples collected from the Garberville quadrangle. Rock data for the Hayfork quadrangle was summarized by Hassemer and others (1992). Interpretative reports on various aspects of the lithogeochemistry, on gold deposits, for example (Danielson and Silberman, 1988; Silberman and Danielson, 1991), have been prepared and others are in preparation.

The Garberville quadrangle is approximately 55 km southwest of Redding and 70 km west of Red Bluff, California. Major access is by Highway 36 west from Red Bluff. This paved highway, which has very narrow, winding sections, traverses the northern part of the quadrangle. Highway 101, a four lane freeway, passes through the westernmost part of the quadrangle. Much of this highway borders or lies within portions of the Humboldt Redwoods State Park. The southern and eastern parts of the quadrangle are remote, and include part of the Yolla Bolly-Middle Eel Wilderness Area (Figure 1). Good secondary paved roads provide access

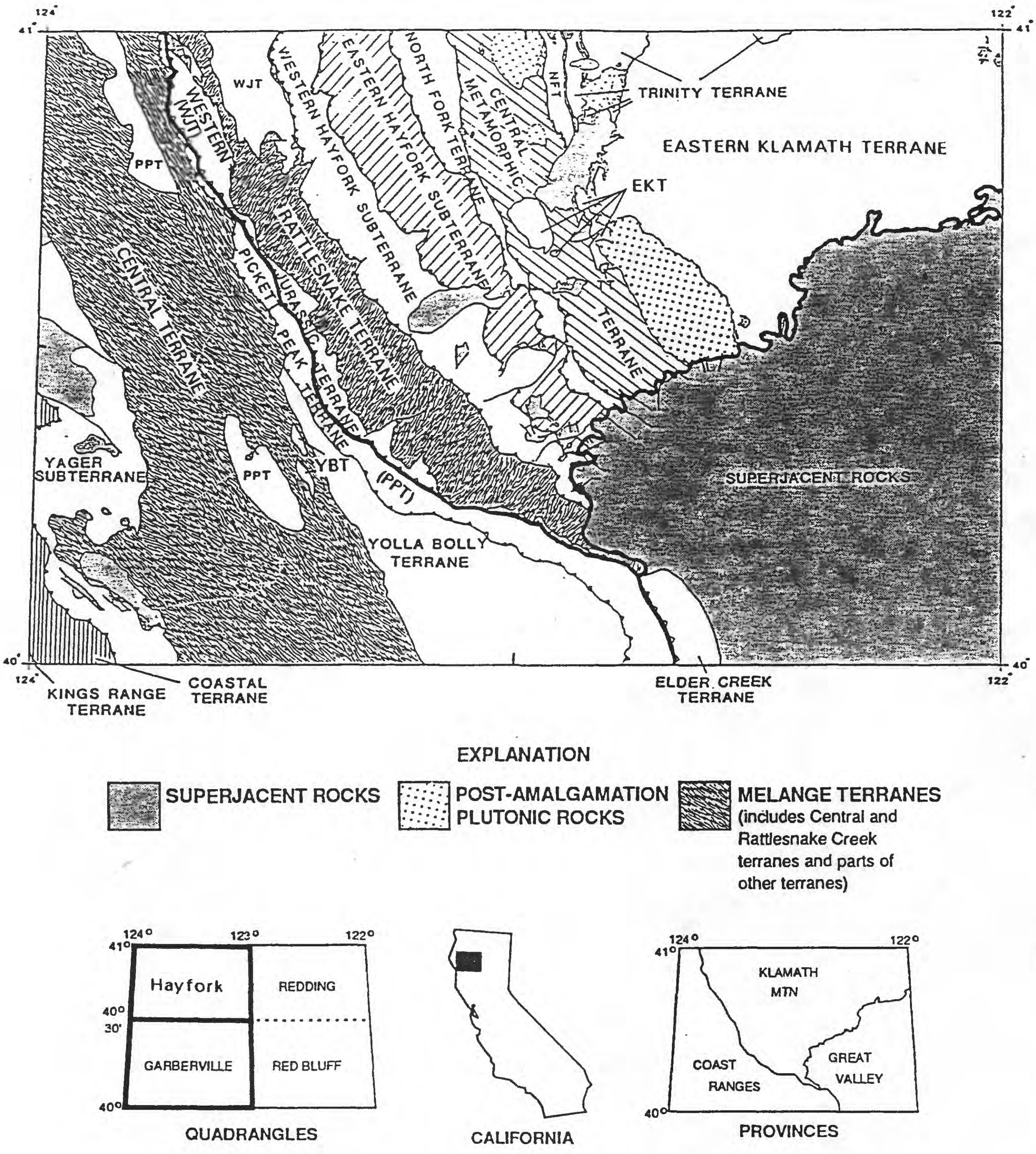

Figure 1. Index maps showing the location of, physiographic provinces in, and component quadrangles of the Redding 1° x 2° quadrangle; and, a generalized geologic map of the Redding 1° x 2° quadrangle showing geologic terranes (modified from Fraticelli and others, 1987).

to most of the quadrangle, although some areas, particularly along South Fork Mountain ridge are quite remote. The Eel, Mad, and Van Duzen rivers run through parts of the quadrangle and provide rafting access (see Plate 1).

At the time of this writing, much of Northern California, including most of the Redding 1° x 2° quadrangle, is economically depressed due to a decline in the lumbering industry because of lower demand from the housing industry and pressure by environmental groups to preserve woodlands, old growth forests, and potential habitat areas of wildlife perceived to be threatened species, most notably, possible habitat areas of the Northern Spotted Owl. Mining in the Garberville quadrangle is largely inactive and is under even greater environmental pressure to preserve both woodlands and wetlands, and to maintain purity of surface and ground water.

Silberman and Danielson (1991) estimated that a minimum of 2.1 million ounces of gold were taken from lode deposits in the Redding 1° x 2° quadrangle. Less than 1 % of that production came from the Garberville quadrangle. Past production of Mn from Mn-rich chert deposits, and Cu, Ag, and Au from the Island Mountain massive sulfide deposit was significant (Stinson, 1957; Davis, 1957). Small amounts of Cu have been produced from other massive sulfide occurrences and from Cu-sulfides in veins and disseminations in serpentinite and diorite (Eric, 1948). Only very minor production of Cr from sparse, small podiform chromite deposits have been recorded from the Garberville quadrangle (Rice, 1957).

Timber companies control considerable tracts of land in the Garberville quadrangle. Some areas of the quadrangle were not sampled because it was not possible to obtain access to land controlled by some of the companies. Additionally, the region was experiencing aggressive marijuana cultivation. Some areas were not sampled because of the latter problem. Wilderness areas, Indian reservations and State Park lands were also not systematically sampled during this survey (see Figure 2). Data for USGS geochemical samples collected in wilderness areas in earlier studies include information for stream-sediment, panned-concentrate, and rock samples collected at a much higher density than in the Redding CUSMAP survey. Table 1 lists the areas and the reports that give geochemical data.

General Geology of the Redding 1° x 2° Quadrangle

The geology of the Redding 1° x 2° quadrangle is described here in some detail as a framework for the summaries of the geochemistry of the four component 1:100,000 quadrangles. Figure 1 is a generalized geologic map of the Redding quadrangle showing the outlines of these four 1:100,000 quadrangles. The quadrangle contains parts of three physiographic provinces; the Coast Ranges, the Klamath Mountains, and the Great Valley. The Coast Ranges and the Klamath

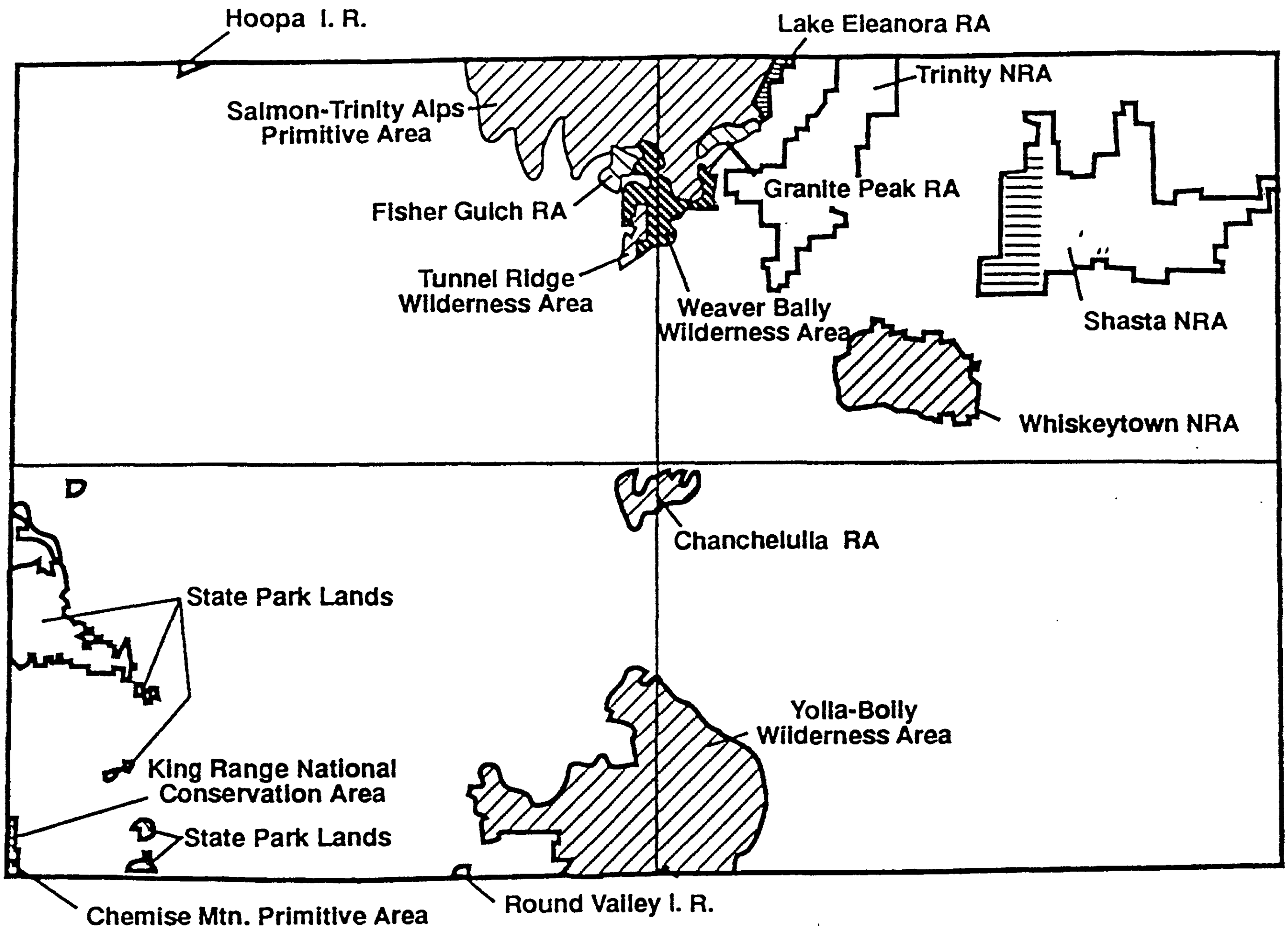

Figure 2. Areas excluded by design from systematic geochemical coverage in the Redding 1° x 2° quadrangle. Areas include proposed Wilderness Areas (Wilderness, Primitive, Roadless, and Instant Study Areas), National Recreation Areas, State Parks, and Indian Reservations. Areas of earlier U.S.G.S. studies having geochemical data for stream sediment and rock samples are indicated by diagonal line patterns. Boundaries of various wilderness areas are not legal boundaries, but rather areas of geochemical coverage. Reports having geochemical data for areas lying within the Garberville quadrangle are listed in Table 1. Boundaries are diagrammatic, and have been simplified.

Table 1. Garberville quadrangle Wilderness and Roadless Area reports having geochemical data.

Yolla Bolly - Middle Eel Wilderness and adjacent areas

Blake, Jr, M.C., Jayko, A.S., Leszcykowski, A.M., Longwill, W.D., and Gobla, M., 1983, Mineral resource potential of the Yolla Bolly-Middle Eel Wilderness and adjacent Roadless Areas, Northern California: U.S. Geological Survey Miscellaneous Field Studies Map MF-1595B, scale 1:62,500.

Chanchelulla Roadless Area

Huber D.F., Nelson, S.C., Fraticelli, L.A., and Stebbins, S.A., 1983, Mineral resource potential map of the Chanchelulla Roadless Area, Trinity County, California: U.S. Geological Survey Open File Report 83-506, 13 p.

King Range - Chemise Mountain Instant Study Areas

Dellinger, D.A., 1980, Geochemical sampling within the King Range and Chemise Mountain Instant Study Areas, northern California: U.S. Geological Survey Open File Report 80-815, 14 p.

McLaughlin, R.J., Sorg, D.H., Ohlin, H.N., Beutner, E.C., and Peters, T.J., 1981, Mineral resource potential of the King Range and Chemise Mountain Instant Study Areas, Humboldt and Mendocino Counties, California: U.S. Geological Survey Miscellaneous Field Studies Map MF-1196C (accompanied by 20 page text).

Mountains provinces are part of the complex of accreted terranes that form the western margin of North America from Alaska to Mexico (Coney and others, 1980).

The Klamath Mountains province consists of a series of lithotectonic units or belts of rock that form thrust plates in a generally eastward dipping sequence (Irwin, 1981). These "terranes" as they are now referred to and their structural and tectonic evolution have been described by Irwin (1981; 1985; 1989). They consist of island-arc volcanic and sedimentary rocks and oceanic crust and upper mantle rocks (now ophiolites) that formed during Ordovician through Jurassic time. The Eastern Klamath Terrane (fig. 1), the nucleus of the province to which the other terranes were joined, was formed during long standing volcanic-arc activity that extended from the Devonian through the Jurassic (Irwin, 1981). This Eastern Klamath Terrane was built on Ordovician oceanic crust and upper mantle, now represented by the Trinity Terrane. Along the western edge of the Eastern Klamath Terrane, the Central Metamorphic Terrane (fig. 1) developed during Devonian subduction beneath the Trinity Terrane. Subsequently, during middle to late Jurassic time, the Northfork, Hayfork, Rattlesnake Creek, and Western Jurassic Terranes were then amalgamated and(or) accreted to the combined Eastern Klamath and Central Metamorphic Terranes by successive subduction events (Irwin, 1981; 1985).

Granitic plutons occur in all of the terranes of the Klamath Mountains Province and can be subdivided into belts that generally follow the trends of the individual terranes. Some plutons were emplaced before the host terranes were attached to an adjacent terrane and are hence "pre-amalgamation." Most of these are parts of ophiolites or are co-magmatic with the volcanic rock sequences that formed in island arcs. Other plutons were emplaced subsequent to amalgamation as they are significantly younger than the rocks of their host terranes, or they can be seen to cross cut terrane boundaries (Irwin, 1985). Both groups of plutons are associated with mineral deposits in the region.

The terrane boundaries are thrust faults, many of which commonly contain serpentinized ultramafic bodies. Most of the serpentinites are parts of ophiolites which were deformed during terrane amalgamation and(or) accretion. Deformation led to dismemberment, remobilization, and emplacement of the serpentinites along the regional terrane boundaries and other thrust faults. The serpentinites are strongly magnetic and their subsurface extent is well delineated on aeromagnetic maps (Griscom, 1992, in press).

The Coast Ranges Province is dominantly composed of the Franciscan complex (fig. 1), consisting of several terranes of intensely deformed and dismembered oceanic turbidites, sandstones, mudstones, shales, greenstones, cherts, and serpentinite bodies (Bailey and others, 1964). The Franciscan terranes were thrust under the terranes of the Klamath Mountains Province by subduction events in the Cretaceous (Irwin, 1981). The boundary between the two provinces is the South Fork Mountain Fault. A regionally extensive blueschist sequence, the South Fork Mountain schist developed along the footwall of the fault (Picket Peak Terrane of fig. 1).

Most of the terranes of the Coast Ranges Province and the Klamath Mountains Province contain similar lithologies. A few, such as the Rattlesnake Creek Terrane and the Central Metamorphic Terrane are unique. The former is largely dismembered ophiolite, the latter is a complex of mafic and felsic gneisses and schists. Some terranes such as the Northfork and Eastern Hayfork Terranes of the Klamath Mountains Province and the Central Terrane of the Coast Ranges Province are melanges or contain a significant melange component. The melanges are chaotic mixtures of varied oceanic or island-arc lithologies in a shaley matrix.

Perhaps the most significant differences between the Klamath Mountains Province and the Coast Ranges Province are the lack of granitic intrusions in the Franciscan rocks, and the occurrence within Franciscan melanges of blueschist facies exotic blocks. No granitic bodies of significant size have been mapped in the Franciscan complex rocks in the Redding quadrangle, although some magnetic anomalies along the trend of the South Fork Mountain Schist (Picket Peak Terrane of fig. 1) may be indicative of subsurface granitic bodies (Griscom, 1992, in press).

Superjacent rocks that overlie the amalgamated terranes include the Great Valley Sequence sedimentary rocks of Cretaceous age, and other sedimentary and volcanic rocks of Cretaceous and Tertiary age. Most of these occur in the Great Valley Physiographic Province (fig. 1).

The lithological assemblages in the Provinces and terranes are described by Irwin (1977; 1981). The plutonic rocks and their relationship to their host rocks and to the overall tectonic evolution are described by Irwin (1985). Irwin (1985) also includes a summary of radiometric ages of plutonic rocks in the Klamath Mountains. Individual formations in the terranes, including plutons are described by Fraticelli and others (1987), from which the generalized geologic map was modified (fig. 1).

Slightly less than one-fourth of the 4,600 square kilometers of the Garberville quadrangle, the northern part, is underlain by several terranes of the Klamath Mountains Province (fig. 1). The remainder is all underlain by Franciscan-complex terranes of the Coast Ranges Province (Blake and others, 1985). The largest area is composed of the Central Terrane, followed by the Yolla Bolly Terrane and Yager Subterrane (fig. 1). Superjacent rocks, mostly sedimentary lithologies of Late Miocene to Pliocene age occur along the western border (Fraticelli and others, 1987).

Topography

Most of the topography of the Garberville quadrangle is rugged. The maximum elevation of 2464 m (about 8100 ft) occurs at Black Rock Mountain in the Yolla Bolly-Middle Eel Wilderness Area near the eastern border (plate 1). The lowest elevation, about 50 m (160 ft), occurs at the northwest boundary where the Eel river flows to the northwest (plate 1). Most of the quadrangle is heavily wooded. The slopes are steep in the eastern part, and more gently rolling in the west.

METHODS OF STUDY

Sample Media

Analyses of unaltered or unmineralized rock samples provide background geochemical data for individual rock units. On the other hand, analyses of altered or mineralized rocks, where present, may provide useful geochemical information about the major- and trace-element assemblages associated with a mineralizing system.

Sample Collection

Rock samples were collected from outcrops, mines and prospect pits, and as float in the vicinity of the plotted site location (Plate 1). Samples were collected from unaltered, altered, and mineralized rocks.

Samples collected for lithologic background characterization purposes were usually composited as chips from an area of one or more m^2 from outcrop judged as representative of that rock unit. These samples were generally located on 1:100,000 or 1:250,000 scale compilation maps, with a site location error ± 5 seconds. Mineralized and altered areas commonly had several samples at a single site. For example, samples taken at a mine might include samples of ore, various cross-cutting veins, selvages, and wallrock both adjacent to a vein, and some meters distant. These samples were generally plotted on 1:24,000, 1:25,000, or 1:62,500 scale field maps with a site location error of ± 1 second.

Samples were collected by D. Bloom, J. Danielson, V.S. Gillerman, B. King, D.A. Miller, and M.L. Silberman.

Sample Preparation

Rock samples were crushed and then pulverized to minus 0.15 mm with ceramic plates.

Sample Analysis

Two principal methods were used for the analysis of the rock samples, a semiquantitative spectrographic method which experience has shown to be very useful for the rapid, inexpensive acquisition of element data, and, atomic absorption spectroscopy analyses for selected trace elements.

Other methods of analysis were used on selected rock samples to obtain data for other elements, or to compare methods, or to obtain better sensitivity, greater accuracy, or better precision. The various analytical methods are summarized in the following sections and the analytical results for the Garberville quadrangle are presented in Tables 7 through 12.

Because analyses in this report were made over the time span of 1983-1990, changes and modifications to analytical procedures occurred. For current (as of mid-1990) procedures in use by the U.S.G.S., the reader is referred to a report edited by Arbogast (1990) which also includes useful information on potential analytical and safety problems.

Emission spectrography methods

All rock samples were analyzed for 31 elements using a six-step semiquantitative, direct-current arc emission spectrographic method (Grimes and Marranzino, 1968; Golightly and others, 1987, both are modifications of Myers and others, 1961). Direct-current arc spectrographic procedures were also used for the samples analyzed by fire assay methods.

In the direct-current arc emission spectrographic method, a small amount of powdered sample (5-15 mg) and buffer mix are placed into the cup-shaped end of a thin graphite rod that is used as an electrode. A second graphite rod is used as counter electrode. The application of direct current across the two electrodes causes an arc that volatizes the sample. Atoms of elements excited in the electric arc emit characteristic quantitized light, the intensity of which is dependent on the concentrations of elements present. The light is passed through diffraction gratings to create spectra that are captured on photographic film. The spectral lines are read visually or with a spectrophotometer.

Six-step semiquantitative spectrography-- Spectrographic results were obtained by visual comparison of spectra derived from the sample against spectra obtained from standards made from pure oxides and carbonates. Standard concentrations are geometrically spaced over any given order of magnitude of concentration as follows: 100, 50, 20, 10, and so forth. Samples whose concentrations are estimated to fall between those values are assigned values of 70, 30, 15, and so forth. Thus results are reported in six intervals per order of magnitude. The precision of the analytical method is approximately plus or minus one reporting interval at the 83 percent confidence level and plus or minus two reporting intervals at the 96 percent confidence level (Motooka and Grimes, 1976). Values determined for the major elements (calcium, iron, magnesium, phosphorous, sodium, and titanium) are given in weight percent; all others are given in parts per million (micrograms/gram). Analytical data for samples from the Garberville 1:100,000 quadrangle are listed in Table 7.

During the time period in which the samples were being analyzed, minor modifications were made, resulting in the addition of 4 elements and in minor changes in the lower determination limits for 5 other elements. Therefore, some of the rock samples were analyzed for 31 elements and some for 35 elements (with differing lower limits of determination). The 31/35 elements analyzed and their lower limits of determination are listed in table 2. Parentheses were used to show the old lower limits of determination.

Quantitative spectrography-- Quantitative spectrographic results are obtained through the rigorous calibration of standards and the careful matching of matrices of standards and samples. Relative standard deviation is in the range of 5 to 20 percent. The fire assay procedure as a whole is discussed in a later section.

Analysts-- Spectrographic analyses for the Garberville quadrangle were performed by B.M. Adrian, S.E. Cooley, D.E. Detra, M.S. Erickson, and R.T. Hopkins.

Atomic absorption spectroscopy methods

Atomic absorption spectroscopy (Aruscavage and Crock, 1987) was used to analyze several trace elements of interest, including As, Au, Hg, Sb, Te, Tl, and Zn. During the time period in which the samples were being analyzed, changes were made in some of the methods, but comparability of results has not been found to be a problem. A summary of the methods and the determination limits is given in Table 3. Analytical data for samples from the Garberville 1:100,000 quadrangle are listed in Table 8.

Atomic absorption spectroscopy (AAS) is based on the property of atoms in their ground state to strongly absorb incident light at specific wavelengths. The amount of absorbance is directly proportional to the amount of the element present. Electronic discharge tubes produce light of the requisite wavelength, the sample is introduced into the light beam as free atoms, and the resulting decrease in energy in the light beam is measured by a photoelectric tube. Because some atoms are excited by the photon impact, a light modulation system corrects for energy released as excited atoms return to their ground state.

Gold (Au)-- About half of the Au determinations were performed using the method of Thompson and others (1968) or minor variations of that method (O'Leary and Meier, 1986; Wilson and others, 1987). In this procedure, 10 grams of sample are dissolved in an acid solution of HBr and Br_2. The gold is extracted into an organic solvent (methyl isobutyl ketone, MIBK) which is aspirated into a flame (flame atomic absorption spectroscopy, FAAS) wherein the gold is disassociated into free atoms. About half of the samples were analyzed by the method of Hubert and Chao (1985), described next, but the smaller sample size led to the return to the method of Thompson and others. Precision is the range of 5- to 20-percent relative standard deviation (RSD).

Gold (Au), Tellurium (Te), and Thallium (Tl)-- Most Te and all Tl determinations were done using the two-step extraction method of Hubert and Chao (1985). In this procedure 4 grams of sample are digested in an acid solution of HF, HCl, and HNO_3 The solution is taken to dryness, and the residue is redissolved in HBr and BR_2. After the solution is diluted, Au and Tl are extracted into MIBK, then determined by FAAS. In the second step, excess MIBK is removed, the acid strength of the solution is increased, then Te is extracted into MIBK and determined by FAAS. Precision is in the range of 5- to 15- percent RSD.

Tellurium (Te)-- A few Te samples were analyzed by the method of Chao and others (1978) wherein 2½-gram samples are digested in $HBr-Br_2$, then treated with ascorbic acid. Te is extracted into MIBK, and determined by FAAS. Precision is the range of 2- to 15- percent RSD.

Arsenic (As), Antimony (Sb), and Zinc (Zn)-- These elements were first determined by FAAS, but were later determined by inductively coupled plasma-atomic emission spectrometry (ICP-AES), a methodology described in a later section. The sample digestion procedure, however, remained unchanged; more importantly, the digestion procedure is partial. Hence, the change in instrumentation is not regarded as significant. The digestion is near "total", however, for these elements when they are present in sulfide, carbonate, and most secondary iron-rich (gossan) minerals. Thus, for the purpose of exploration geochemistry, the procedure is suitable for detecting most anomalous occurrences of these elements.

In determinations by AAS (O'Leary and Viets, 1986), a 1-gram sample is digested in an acid solution of HCl and H_2O_2, then treated with an ascorbic acid-potassium iodide solution. The metals are extracted into a solution of Aliquat 336 (tricaprylylmethylammonium chloride) and MIBK (methyl isobutyl ketone), and determined by FAAS. Precision is the range of 2- to 10- percent RSD.

Arsenic (As), Antimony (Sb), and Zinc (Zn)-- In determinations by ICP-AES (Crock and others, 1987), 0.15-gram samples are digested, then analyzed without further treatment. Precision is the range of 2- to 15- percent RSD.

Mercury (Hg)-- Mercury was determined by two different cold-vapor AAS procedures. The first procedure was an undocumented modification of Vaughn and McCarthy (1964) and McNerney and others (1972). A 0.1-gram sample is heated, releasing mercury as a gas. The mercury vapor that is released is absorbed by a gold collector placed in the gas stream, while potential interferents pass through the system. The gold collector is then heated by resistivity, the released mercury gas passes through a quartz cell on an AA spectrophometer, and the amount of absorbance is measured. Precision is estimated to be in the range of 10- to 15- percent RSD (O'Leary, written commun., 1991).

Mercury (Hg)-- Later samples were analyzed by the method of Kennedy and Crock (1987), a modification of Koirtyohann and Khalil (1976). A 0.1-gram sample is digested in a solution of HNO_3 and $Na_2Cr_2O_7$. The mercury is reduced to its free state by the addition of $SnCl_2$, partitioned by passing air through the solution, and measured by passing the mercury vapor-air mixture through a cell on a AA spectrophometer. Precision is the range of 5- to 15- percent RSD.

Analysts-- B.M. Anderson, P.J. Aruscavage, J.G. Crock, M.W. Doughten, R.J. Fairfield, T. Floyd, C.A. Gent, P.L. Hageman, T.F. Harms, D.B. Hatfield, S.R. Jaunarajs, K.R. Kennedy, L.S. Laudon, J.G. Layne, B.J. Libby, T.M. McCollom, R.T. Moore, R.M. O'Leary, T.A. Roemer, J.D. Sharkey, L. Sherlock, C.D. Taylor, F.W. Tippitt, E.P. Welsch, and S.A. Wilson.

X-ray fluorescence spectroscopy methods

Selected samples were analyzed for major, minor, and trace elements by X-ray fluorescence (XRF) spectroscopy (Taggart and others, 1987; Johnson and King, 1987). In this procedure, samples are irradiated by a high-energy X-ray source. The energy absorbed by an element present in the sample is released as X-ray quanta, X-rays with a narrow energy bandwidth that are characteristic to that element. A dispersion system sorts the X-rays, either by wavelength or by energy, and detectors, selected by their efficiency at specific X-ray energy levels, measure the intensity. A number of corrections are computer calculated. Correction equations may be based on instrumentation, sample matrices, analytical objectives, or other factors. Analytical data for samples from the Garberville 1:100,000 quadrangle are listed in Table 9.

Wavelength-dispersive X-ray fluorescence spectroscopy-- Wavelength-dispersive X-ray fluorescence spectroscopy (Taggart and others, 1987) was chosen for the analysis of major and minor elements. In this method, X-rays emitted by an excited element impinge on a crystal which is used to diffract the incident X-rays over a wide angular range. Detectors are placed at the proper angular location to receive only the characteristic X-rays of the element being analyzed. Relative standard deviation is in the range of 0.5 to 5 percent within the calibration range (Table 4).

Energy-dispersive X-ray fluorescence spectroscopy-- Energy-dispersive X-ray fluorescence spectroscopy (Johnson and King, 1987) was chosen for the analysis of trace elements. In this method, X-rays emitted by an excited element are converted into electronic signals whose amplitudes are proportional to the energies of the incident X-rays. The signals are sorted by amplitude using a multi-channel analyzer. A selected range of amplitudes is subdivided into 1024 intervals, and the number of impulses (intensity) occurring within a region of interest is counted. To reduce background for trace element analyses, a secondary target, placed in front of the sample, is irradiated first. This secondary target becomes a mono-energetic X-ray source of excitation radiation for the sample. For Ba, La, and Ce, the secondary target was gadolinium; for Rb, Sr, Y, Zr, and Nb, silver; for Ni, Cu, and Zn, germanium; and for Cr, iron. Relative error for most of the concentration range (Table 4) is ± 5 percent.

Analysts-- A.J. Bartel, J.R. Evans, R.G. Johnson, E.C. Robb. D.F. Siems, K.C. Stewart, and J.E. Taggart, Jr.

Major and minor oxides requiring individual methods

Those major and minor constituents that can not be determined by X-ray fluorescence methods require individual analytical procedures (all are described in Jackson and others, 1987). Because the data for these methods are almost invariably used with the data obtained from XRF analyses, data for the limits of determination are included on Table 4, and the results are included on Table 9.

Carbonate carbon-- Carbonate carbon, reported as percent (%) CO_2, was determined by using an automated coulimetric titrator. Samples were digested in 2M $HClO_4$, the CO_2 evolved was collected in a coulimetric cell where the CO_2 gas is converted into a titratable acid by absorbance into monoethanolamine. Relative standard deviation (RSD) ranges from 0.5 to 35 percent (B. Arbogast, written commun., 1991).

Ferrous iron-- Ferrous iron, reported as percent (%) FeO, was determined by boiling the sample in a mixture of HF and H_2SO_4 in a platinum crucible. The sample, still in the crucible, is immersed in a solution of H_3BO_3, H_3PO_4 and H_2SO_4. The resulting solution is titrated with a solution of $K_2Cr_2O_7$ using an automated potentiometric titrator. Although the presence of sulfides and some other matrices can seriously effect the validity of results, most unaltered rocks will yield good accuracy and precision, with a RSD of about 0.5 percent.

Moisture (H_2O-)-- Moisture (nonessential water, H_2O–), reported as percent (%) H_2O, is determined gravimetrically by weight loss after heating at 110°C.

Essential water (H_2O+)-- Essential water (bound water, H_2O+), reported as percent (%) H_2O, is determined by the difference of total water and moisture. Total water is determined coulometrically by a Karl Fisher titration of the evolved water obtained when the sample is fused at 900–950°C with lead oxide and lead chromate. A recent modification to the method is the addition of calcium carbonate to the flux. RSD ranges from 2 to 4 percent.

Analysts-- E.L. Brandt, J.H. Christie, E.E. Engleman, J.R. Gillison, L.L. Jackson, J.S. Kane, M.G. Kavulak, N. Rait, and S. Roof.

Inductively coupled plasma-atomic emission spectroscopy method

Some samples were analyzed by inductively coupled plasma–atomic emission spectrometry methods (ICP–AES; ICP) (Lichte and others, 1987). The elements to be analyzed are taken into solution following an acid digestion of the sample. The solution is aspirated into a high–temperature argon plasma created by the application of high–input radio–frequency power. Photomultiplier tubes, set for specific wavelengths, measure the relaxation–energy photons emitted by excited atoms. A computer, using calibration information including spectral–interference corrections, calculates the results.

40-element ICP-- Selected rock samples were analyzed for 40 elements using ICP–AES (Crock and others, 1983; Lichte and others, 1987). Samples are digested in an acid solution of HF, HCl, HNO_3, and $HClO_4$, taken to dryness. The salts are redissolved in a solution of aqua regia (HNO_3 and HCl), then diluted. Lutetium is used as an internal standard. Nearly 300 spectral interference corrections are used in the calculation of the results. Precision is ± 10 percent relative standard deviation. Typical determination limits in a rock of granitic composition are presented in Table 5. Analytical results are presented in Table 10.

3-element ICP-- A change in analytical procedure resulted in some trace elements being analyzed by ICP instead of other instrumental methods. This was described in an earlier section and summarized on Table 3. The procedure is repeated here for the convenience of the reader. In determinations of arsenic (As), antimony (Sb), and zinc (Zn) by ICP-AES (Crock and others, 1987), 0.15-gram samples are digested in an acid solution of HCl and H_2O_2, then analyzed without further treatment. Precision is the range of 2- to 15- percent RSD. Analytical results were included with the data in Table 8.

Analysts-- P.H.Briggs, D.L. Fey, L.R. Layman, A.H. Love, and J.M. Motooka

Instrumental neutron activation analysis methods

Selected samples were submitted for instrumental neutron activation analysis (INAA) for 28 elements. In this procedure (Baedecker and McKown, 1987), samples are irradiated in a reactor to induce thermal-neutron nuclear reactions that create radioactive nuclides. The activity of a radionuclide is directly proportional to the amount of the parent element in the sample. Radiation produced by the decay of the radionuclide is measured by a high-resolution gamma-ray spectrometer. Samples are counted a minimum 5 or 6 times over a 60-day decay period using a 4,096-channel Ge detector and a 2,048-channel low-energy photon detector. Mathematical corrections are made for such factors as fission product interference, spectral interferences, neutron flux variations, and so forth. Data reduction and corrections are done using a computer.

Both the accuracy and precision of elemental determinations are variable. Accuracy is highly dependent on the composition of the sample and precision of the analysis depends on the INAA methodology chosen. An indication of the accuracy of a determination is given by the coefficient of variation (CV) which is given in the data tables for each determination. The coefficient of variation value is based on a one-sigma counting statistic error and is a measure of the signal-to-background ratio. The INAA "long count" has higher precision than the "short count" because of the greater number of duplicate determinations. Empirical limits of determination for the long and short count are given in table 6. An alternative method of establishing limits of determination is based on consideration of accuracy and uses a 10 percent counting statistic error to establish elemental concentrations; these limits are also given in table 7. INAA data for Garberville samples are presented in Table 11.

Analysts-- J.R. Budahn, R.J. Knight, D.M. McKown, and R.B. Vaughn

Fire assay method

A fire assay procedure (Adrian and Carlson, 1990; Cooley and others, 1976) was used to separate the precious metals, Au, Pd, Pt, Rh, Ru, and Ir, prior to determination. Os was not determined due to potential loss during the sample fusion steps. Limits of determination are presented on Table 3, analytical results on Table 12.

In this procedure, a 15-gram sample is mixed with a predetermined flux that is based on the composition of the sample. The flux consists of lead oxide, sodium carbonate, silica, borax, graphite, and, if needed, potassium nitrate. A silver collector is added. The sample is fused at 870 °C. whereby the rock constituents, with the silica, combine to form a molten slag. The lead oxide is reduced to elemental lead which alloys with the precious metals in the sample and the collector metal. Upon cooling in a mold, the lead, as a result of gravity settling, forms a button in the bottom of a glassy slag. The lead button is retrieved, placed into a bone ash cup (a cupel), and heated to 800 °C. The lead reacts with oxygen in the air to form lead oxide which is absorbed into the cupel, leaving behind the collector and the accumulated precious metals.

The metals were determined by a modified semi-quantitative direct-current arc emission spectrographic method. The principles of six-step spectrography was described in an earlier section. Here, precision is increased by arcing in an argon-oxygen atmosphere, and by the addition of silver oxide to the material to be arced thereby more closely matching the matrices of the samples to the standards. Relative standard deviation ranges from 30 to 50 percent.

Analysts-- B.M. Adrian and R.R. Carlson

ROCK ANALYSIS STORAGE SYSTEM

Upon completion of all analytical work, the analytical results were entered into a computer-based file system called Rock Analysis Storage System (RASS). Data bases in this system contain both descriptive geological information and analytical data. Data for a single sample may be in more than one data base. Any or all of the information may be retrieved and converted to a binary form (STATPAC) for manipulation, computerized statistical analysis, or publication (VanTrump and Miesch, 1977). This report, however, contains data files that have been modified for presentation purposes and thus the information they contain is not identical to that residing in the RASS data bases.

DESCRIPTION OF DATA TABLES

Because a high percentage of the samples came from mineralized sources, and because rock samples of the same type, even when not altered or mineralized, frequently came from different geologic terranes, statistical summaries of the data tables were not performed. Latitude and longitude in degrees, minutes and seconds, sample locations keyed to Plate 1, and simplified rock names are provided for all tables. Additional information on rock type, latitude and longitude in decimal degrees, and terrane source are provided for the reader in Table 13.

Tables 7-12

Tables 7-12 list the results of the various analyses. For the tables, the data are arranged so that column 1 contains numbers which correspond to the numbers shown on the site location map (plate 1). Column 2 contains the sample labels which are the unique identifiers for that sample. Column 3 ("rock type") contains the simplified name of the major (by volume) rock type present in the sample. For example, a sample of a quartz vein that also included a cross-cutting epidote vein and selvages of wall rock would be listed as "quartz". Additional descriptive information on sample rock types is given in table 13.

Column 4 and 5 contain the latitude and longitude in degrees, minutes and seconds.

The remaining columns contain chemical data relating to the sample. A letter "N" in the tables indicates that a given element was looked for but not detected (see the following section) at or below the lower limit of determination, the value following the "N". A letter "L" in the tables indicates that a given element was looked for and was detected, but occurred at an arbitrary and variable amount (see the following section) below the lower limit of determination, the value following the "L". If an element was known only to be neither at nor above a method- or sample- established lowest reporting value, a "less than" symbol (<) was entered in the tables in front of the lower limit of determination. If an element was observed but was above the highest reporting value, the letter "G" was entered in the tables in front of the upper limit of determination. "Greater than" symbols (>) are used in Table 11 with coefficient of variation data. If an element was not determined due to insufficient sample material or simply not analyzed for in a sample, dashes (–) were entered in the tables in place of a value.

Significance of "L" and "<"

The concept of less than as implied in the "<" symbol should be clear to most readers: if an analyzed amount neither meets nor exceeds a given cut-off value, then it must be below that cut-off value. For most circumstances involving unmineralized rocks, a "<" has an implicit equivalency of an "N" (discussed in following paragraph) and a knowledge of crustal abundance levels for various rock types can provide "probable" or "most likely" values for a given element. However, altered and mineralized rocks are less amenable to such assumptions. Of more importance is the fact that much of the "<" data has been generated through computer manipulations. Being extremely literal, computer outputs can, for example, label a value of 0.999 as "< 1.0". In chemical terminology, there is no bias as to how close to (or far from) the limit of determination a "<" datum represents. Interpretative bias should be made using reasonable geologic inferences.

The "N" and "L" concept came into being as a result of the exploration geochemist's desire to obtain maximum information from an analysis, especially when using earlier generations of analytical instrumentation or when using methods wherein the detection limits were relatively high for elements of interest. An example is six-step emission spectrography wherein the limit of determination for gold (see table 2) is four orders of magnitude above gold's normal abundance level in rocks. Further, it was known that frequently one analyst could visually identify the spectral line for an element that another analyst could not. Also noted was the fact that the same analysts could have different levels of discriminatory powers depending on the instrumentation used, environmental conditions, sample matrices, and other factors. For the exploration geochemist, however, the important point was: If certain elements, such as gold, could be identified as being present in a sample, the sample was highly anomalous regardless of the fact that a quantifying number could not be assigned. An "L" value pushes the boundaries of an analytical method, but has no numerical value assigned to it.

The "N" and "L" concept has the implication of any "L" being close to the cut-off value and any "N" being considerably farther away. But, in combined tables such as those in this report involving a number of analysts, equipment, and a time span of several years, making such an assumption could lead to erroneous interpretations.

An "L" should not be assumed to have the value of a hypothetical next lower report interval.

Care should be used when using this type of data.

Formatting and Significant Figures

Because of the formatting used in the computer programs that produced the tables, some of the elements listed in these tables carry one or more nonsignificant digits to the right of the significant digits. The analysts did not determine (nor report) these elements to the accuracy suggested by the extra zeros now listed. Additionally, many of the data were produced as computer-manipulated machine readouts that were subsequently imported directly into the RASS data bases. These data frequently maintained an internal maximum number of figures which were held to prevent rounding errors during the manipulations.

Even with methods that are considered high-precision and high-accuracy procedures, no more than 3 significant figures should be assumed.

Table 13

The data columns in Table 13 describes the rock samples, lists the terrane of origin and stratigraphic unit of origin. For a complete description of the stratigraphic units, the reader is referred to the geologic map of the Redding quadrangle by Fraticelli and others (1987). The table also lists the mining district, mine, and major commodity produced when applicable. Additional information includes the principal analytical laboratory number and the map type on which the sample was originally located. Latitude and longitude are given in both degrees, minutes, and seconds, and in decimal degrees.

Commonly used abbreviations are given in the descriptive column labeled "comments". These abbreviations are summarized in the following paragraph. Whether the abbreviation represents a noun or adjective (for example, "Arg" for argillite and argillaceous) should be readily recognizable in context. A semi-colon was used to separate rock types in those samples that consisted of more than one rock type. Commas were used to separate items relating to the rock type preceding. Hyphens indicate that the word or abbreviation is considered an essential part of the rock name. The "rock type" column always contained the name of the major (by volume) rock type present in the sample. In all cases the rock descriptions are field descriptions and not the result of chemical analyses or thin-section petrographic analyses.

Color abbreviations include: blk (black)and grn (green); mineral and rock abbreviations include: and (andesite, andesitic), arg (argillite, argillic, argillaceous), cal (calcite, calcitic), carb (carbonate, carbonatized), carbon (carbonaceous), chl (chlorite, chloritic), cong (conglomerate), cpy (chalcopyrite), ep (epidote, epidotized), hem (hematite, hematitic), hb (hornblende), lim (limonite, limonitic), mus (muscovite), ol (olivine), ox (oxide, oxidized), po (pyrrhotite), px (pyroxene), py (pyrite, pyritic); qtz (quartz, quartzose), serp (serpentinite, serpentinized), sil (silicate, siliceous), ss (sandstone), sul (sulfides); other abbreviations include: alt (altered), brec (breccia, brecciated), coat (coating, coated), and volc (volcanoclastic).

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Table 2. Limits of determination for the six-step semi-quantitative emission spectrographic analysis of rocks, based on a 10-mg sample. [Older limits in parentheses]

Elements	Lower determination limit	Upper determination limit
	Percent	
Calcium (Ca)	0.05	20
Iron (Fe)	0.05	20
Magnesium (Mg)	0.02	10
Sodium (Na)	(--) 0.2	(--) 5
Phosphorous (P)	(--) 0.2	(--) 10
Titanium (Ti)	0.002	1
	Parts per million	
Silver (Ag)	0.5	5,000
Arsenic (As)	200	10,000
Gold (Au)	10	500
Boron (B)	10	2,000
Barium (Ba)	20	5,000
Beryllium (Be)	1	1,000
Bismuth (Bi)	10	1,000
Cadmium (Cd)	20	500
Cobalt (Co)	(5) 10	2,000
Chromium (Cr)	10	5,000
Copper (Cu)	5	20,000
Gallium (Ga)	(--) 5	(--) 500
Germanium (Ge)	(--) 10	(--) 100
Lanthanum (La)	(20) 50	1,000
Manganese (Mn)	10	5,000
Molybdenum (Mo)	5	2,000
Niobium (Nb)	20	2,000
Nickel (Ni)	5	5,000
Lead (Pb)	10	20,000
Antimony (Sb)	100	10,000
Scandium (Sc)	5	100
Tin (Sn)	10	1,000
Strontium (Sr)	100	5,000
Vanadium (V)	10	10,000
Tungsten (W)	(50) 20	10,000
Yttrium (Y)	10	2,000
Zinc (Zn)	200	10,000
Zirconium (Zr)	10	1,000
Thorium (Th)	100	2,000

Table 3. Limits of determination for rocks analyzed for trace elements by atomic absorption spectroscopy methods, fire assay methods, and other miscellaneous methods.

[AA = atomic absorption spectroscopy; ICP = inductively coupled plasma-atomic emission spectroscopy; FA = fire assay; SS = semi-quantitative emission spectrography; older limits in parentheses]

Element or constituent determined	Method	Determination limit (micrograms/ gram or ppm)	Reference
Gold (Au)	AA	0.05	Thompson and others, 1968.
Gold (Au)	AA	0.05	Hubert and Chao, 1985.
Thallium (Th)	AA	0.05	
Tellurium (Te)	AA	0.05	
Tellurium (Te)	AA	0.05	Chao and others, 1978.
Mercury (Hg)	AA	0.02	<u>Modification of</u> McNerney and others, 1972, <u>and</u> Vaughn and McCarthy, 1964.
Mercury (Hg)	AA	0.02	Kennedy and Crock, 1987, <u>Modification of</u> Koirtyohann and Khalil, 1976.
Arsenic (As)	AA	(5) 10	O'Leary and Viets, 1986.
Antimony (Sb)	AA	2	
Zinc (Zn)	AA	5	
Arsenic (As)	ICP	10	Crock and others, 1987.
Antimony (Sb)	ICP	2	
Zinc (Zn)	ICP	5	
Gold (Au)	FA-SS	0.001	Adrian and Carlson, 1990, <u>Modification of</u> Cooley and others, 1976.
Palladium (Pd)	FA-SS	0.001	
Platinum (Pt)	FA-SS	0.005	
Rhodium (Rh)	FA-SS	0.002	
Ruthenium (Ru)	FA-SS	0.200	
Iridium (Ir)	FA-SS	0.050	

Table 4. Limits of determination for rocks analyzed for major, minor, and trace elements by X-ray fluorescence methods and for rocks analyzed for major and minor oxides requiring individual determinations. [older determination limits in parentheses]

Wavelength dispersive x-ray fluorescence [values in percent]

Major and minor oxides	Lower determination limit	Upper determination limit
Al_2O_3	0.10	28.0
CaO	0.02 (0.05)	60.0
Fe_2O_3 (total Fe)	0.04	28.0
K_2O	0.02 (0.05)	30.0
MgO	0.10 (0.15)	60.0
MnO	0.01 (0.02)	15.0
Na_2O	0.15 (0.20)	30.0
P_2O_5	0.05	50.0
SiO_2	0.10	99.0
TiO_2	0.02	10.0

Energy dispersive x-ray fluorescence [values in parts per million]

Trace elements	Lower determination limit	Upper determination limit
Barium (Ba)	(5) 10	(4,000) 4,700
Cerium (Ce)	(5) 10	500
Chromium (Cr)	20	(4,000) 4,200
Copper (Cu)	(2) 10	1,000
Lanthanum (La)	(5) 10	(500) 1,300
Niobium (Nb)	10	500
Nickel (Ni)	(2) 10	3,000
Rubidium (Rb)	(2) 10	2,000
Strontium (Sr)	(2) 10	2,000
Yttrium (Y)	(2) 10	(500) 200
Zinc (Zn)	(2) 10	(1,000) 1,300
Zirconium (Zr)	(5) 10	2,000

Major and minor oxides [values in percent]

Constituent	Lower determination limit	Upper determination limit
CO_2	0.01	(--) 50
FeO	0.01	--
H_2O+	0.05 (0.01)	--
H_2O-	0.05 (0.01)	--

Table 5. Determination limits in a rock of granitic composition analyzed by inductively coupled plasma-atomic emission spectrometry for 40 elements using an acid digestion. [Older determination limits in parentheses]

Element	Lower limit	Element	Lower limit
	Percent		
Aluminum (Al)	0.005 (0.05)	Magnesium (Mg)	0.05
Calcium (Ca)	0.005 (0.05)	Sodium (Na)	0.005 (0.1)
Iron (Fe)	0.005 (0.05)	Phosphorous (P)	0.005 (0.01)
Potassium (K)	0.05 (0.01)	Titanium (Ti)	0.005 (0.01)
	Parts per million		
Silver (Ag)	2		
Arsenic (As)	10		
Gold (Au)	8		
Barium (Ba)	1		
Beryllium (Be)	1		
Bismuth (Bi)	10		
Cadmium (Cd)	2		
Cerium (Ce)	4		
Cobalt (Co)	1		
Chromium (Cr)	1		
Copper (Cu)	1		
Europium (Eu)	2		
Gallium (Ga)	4		
Holmium (Ho)	4		
Lanthanum (La)	2		
Lithium (Li)	2		
Manganese (Mn)	4 (10)		
Molybdenum (Mo)	2		
Niobium (Nb)	4		
Neodymium (Nd)	4 (20)		
Nickel (Ni)	2		
Lead (Pb)	4		
Scandium (Sc)	2		
Tin (Sn)	10 (4)		
Strontium (Sr)	2		
Tantalum (Ta)	40		
Thorium (Th)	4		
Uranium (U)	100		
Vanadium (V)	2		
Yttrium (Y)	2		
Ytterbium (Yb)	1		
Zinc (Zn)	2 (4)		

Table 6. Empirical detection limits for an instrumental neutron activation analysis for 28 elements. Values are approximate and depend on parameters established during the course of the analysis. [Parts per million; old values in parentheses]

Element	"Long count"	"Short count"		Approximate 10 % error	
Arsenic (As)	0.1	0.4	(1)	1.7	(1.12)
Gold (Au)	0.0005	0.001	(0.005)	0.0059	(0.0050)
Barium (Ba)	4.3	9.6	(100)	74.4	(73.0)
Cerium (Ce)	0.2	1.6	(0.5)	3.9	(2.3)
Cobalt (Co)	0.02	0.03	(0.2)	0.27	(0.13)
Chromium (Cr)	0.2	0.3	(0.5)	3.6	(2.7)
Cesium (Cs)	0.01	0.03	(0.1)	0.19	(0.26)
Europium (Eu)	0.008	0.012	(0.04)	0.10	(0.10)
Iron (Fe)	20.0	25.0	(50)	310	(402)
Hafnium (Hf)	0.02	0.035	(0.1)	0.31	(0.18)
Lanthanum (La)	0.02	0.015	(0.02)	0.47	(0.43)
Lutetium (Lu)	0.002	0.004	(0.01)	0.04	(0.03)
Sodium (Na)	3.1	20.0	(10)	80	(125)
Neodymium (Nd)	0.45	2.4	(2)	14.1	(10.0)
Nickel (Ni)	2.5	4.2	(50)	36.1	(22.0)
Rubidium (Rb)	0.65	1.0	(5)	12.7	(12.0)
Antimony (Sb)	0.035	0.008	(0.1)	0.80	(0.21)
Scandium (Sc)	0.0015	0.0024	(0.01)	0.025	(0.07)
Samarium (Sm)	0.002	0.05	(0.5)	0.057	(0.07)
Strontium (Sr)	8.1	14.4	(50)	113	(98)
Tantalum (Ta)	0.002	0.02	(0.02)	0.04	(0.30)
Terbium (Tb)	0.006	0.01	(0.05)	0.08	(0.25)
Thorium (Th)	0.015	0.024	(0.1)	0.24	(0.11)
Uranium (U)	0.02	0.1	(0.5)	0.45	(0.58)
Tungsten (W)	0.2	0.85	(0.1)	3.1	(1.12)
Ytterbium (Yb)	0.02	0.04	(0.1)	0.34	(0.15)
Zinc (Zn)	0.5	1.0	(1)	7.6	(2.20)
Zirconium (Zr)	4.5	14.0	(200)	88.6	(126)

Table 7. Results of six-step semiquantitative emission spectrographic analyses of rock samples from the Garberville 1:100,000 quadrangle, Humboldt, Trinity, Shasta, Tehama, and Mendocino Counties, California. (Page 1, part A).

Site	Field No	Rock type	Latitude	Longitude	Ca %	Fe %	Mg %	Na %	P %	Ti %
1	83R018	Serpentinite	402326	1230522	L 0.05	10.0	10.00	-	-	N 0.002
2	83R019	Dunite	402006	1230355	7.00	10.0	10.00	-	-	0.100
2	83R019B	Serpentinite	402006	1230355	5.00	20.0	10.00	-	-	0.100
4	83R020	Dunite	402215	1230443	0.10	10.0	10.00	-	-	L 0.002
4	83R020B	Dunite	402215	1230443	L 0.05	20.0	10.00	-	-	0.005
6	84R023A	Siltstone	402758	1235016	5.00	7.0	3.00	-	-	0.500
7	84R024A	Basalt	402838	1234255	10.00	10.0	7.00	-	-	0.700
8	84R025A	Breccia	402809	1234217	2.00	10.0	10.00	-	-	1.000
9	84R026A	Graywacke	402835	1233913	2.00	5.0	3.00	-	-	0.500
10	84R027A	Graywacke	402556	1232827	2.00	5.0	2.00	-	-	0.300
11	84R028A	Conglomerate	402438	1232639	2.00	10.0	5.00	-	-	0.500
11	84R028B	Argillite	402438	1232639	0.20	10.0	3.00	-	-	0.500
13	84R029A	Schist	402249	1232256	0.07	7.0	2.00	-	-	0.500
14	84R030A	Argillite	402230	1232140	0.70	7.0	2.00	-	-	0.500
15	84R031A	Diorite	402211	1231848	10.00	10.0	7.00	-	-	0.500
16	84R032A	Basalt	402315	1231732	10.00	10.0	7.00	-	-	0.500
17	84R032B	Vein	402308	1231735	10.00	10.0	3.00	-	-	1.000
18	GA2R001A	Chert	400729	1231105	0.05	5.0	1.00	-	-	0.700
18	GA2R001B	Chert	400729	1231105	0.07	7.0	2.00	-	-	0.700
18	GA2R001C	Chert	400729	1231105	0.05	1.0	0.70	-	-	0.150
18	GA2R001D	Graywacke	400729	1231105	0.50	7.0	1.50	-	-	0.700
18	GA2R001E	Chert	400729	1231105	0.70	1.0	0.50	-	-	0.050
18	GA2R001F	Sandstone	400729	1231105	0.10	7.0	1.50	-	-	0.700
24	GA2R002A	Graywacke	400645	1231443	0.50	3.0	2.00	-	-	0.300
24	GA2R002B	Tuff	400645	1231443	0.15	1.0	0.30	-	-	0.070
24	GA2R002C	Diabase	400645	1231443	2.00	10.0	5.00	-	-	G 1
24	GA2R002D	Chert	400645	1231443	0.05	0.7	0.30	-	-	0.050
24	GA2R002E	Chert	400645	1231443	L 0.05	0.7	0.20	-	-	0.050
24	GA2R002F	Graywacke	400645	1231443	0.20	7.0	2.00	-	-	0.700
24	GA2R002G	Manganese	400645	1231443	0.15	1.0	L 0.02	-	-	0.007
24	GA2R002H	Chert	400645	1231443	0.10	0.5	0.20	-	-	0.070
24	GA2R002I	Chert	400645	1231443	1.00	5.0	3.00	-	-	0.700
24	GA2R002J	Chert	400645	1231443	0.05	1.0	0.30	-	-	0.070
34	GA2R003A	Shale	400701	1231400	0.30	7.0	2.00	-	-	0.700
34	GA2R003B	Shale	400701	1231400	0.15	5.0	1.00	-	-	0.500
34	GA2R003C	Argillite	400701	1231400	0.05	10.0	2.00	-	-	0.200
34	GA2R003D	Graywacke	400701	1231400	0.50	5.0	2.00	-	-	0.500
34	GA2R003E	Chert	400701	1231400	0.05	1.0	0.50	-	-	0.070
39	GA2R004	Graywacke	400654	1231438	L 0.05	0.7	0.20	-	-	0.050
40	GA2R005A	Manganese	400720	1231331	2.00	1.5	2.00	1.0	L 0.2	0.070
40	GA2R005B	Argillite	400720	1231331	0.30	5.0	1.00	1.5	L 0.2	0.300
40	GA2R005C	Argillite	400720	1231331	0.50	5.0	1.50	1.5	L 0.2	0.500
40	GA2R005D	Chert	400720	1231331	0.05	1.0	0.15	L 0.2	L 0.2	0.070
40	GA2R005E	Chert	400720	1231331	0.07	5.0	0.70	L 0.2	L 0.2	0.200
40	GA2R005F	Chert	400720	1231331	L 0.05	3.0	0.70	0.7	N 0.2	0.200
40	GA2R005G	Graywacke	400720	1231331	0.05	5.0	1.00	2.0	L 0.2	0.300
40	GA2R005H	Greenstone	400720	1231331	1.00	5.0	1.50	3.0	L 0.2	0.500
40	GA2R005I	Manganese	400720	1231331	0.10	2.0	0.10	1.0	L 0.2	0.070
49	GA4R001A	Argillite	400153	1232949	1.00	7.0	5.00	-	-	0.700
49	GA4R001B	Chert	400153	1232949	0.50	1.5	1.00	-	-	0.200
49	GA4R001C	Chert	400153	1232949	1.50	3.0	1.50	-	-	0.300
49	GA4R001D	Greenstone	400153	1232949	2.00	10.0	5.00	-	-	1.000
49	GA4R001E	Sulfide	400153	1232949	L 0.05	G 20	0.03	-	-	0.003
49	GA4R001F	Graywacke	400153	1232949	3.00	5.0	1.50	-	-	0.500
55	GA4R002	Chert	400706	1232909	0.05	1.5	0.50	-	-	0.070
56	GA4R003A	Greenstone	400643	1232925	5.00	7.0	5.00	-	-	G 1
56	GA4R003B	Chert	400643	1232925	0.05	0.7	0.30	-	-	0.070
58	GA5R001A	Chert	400637	1233353	0.07	0.5	0.10	-	-	0.050
58	GA5R001B	Graywacke	400637	1233353	0.15	5.0	1.00	-	-	1.000
58	GA5R001C	Chert	400637	1233353	0.50	0.5	0.15	-	-	0.070

Table 7. Results of six-step semiquantitative emission spectrographic analyses of rock samples from the Garberville 1:100,000 quadrangle, Humboldt, Trinity, Shasta, Tehama, and Mendocino Counties, California -- continued. (page 1, part B)

Site	Field No	Ag ppm	As ppm	Au ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Cd ppm	Co ppm	Cr ppm
1	83R018	N 0.5	N 200	N 10	20	N 20	N 1	N 10	N 20	100	2000
2	83R019	N 0.5	N 200	N 10	20	50	N 1	N 10	N 20	50	1000
2	83R019B	N 0.5	N 200	N 10	30	N 20	N 1	N 10	N 20	100	1000
4	83R020	N 0.5	N 200	N 10	N 10	N 20	N 1	N 10	N 20	50	700
4	83R020B	N 0.5	N 200	N 10	10	N 20	N 1	N 10	N 20	100	G 5000
6	84R023A	N 0.5	N 200	N 10	100	700	1	N 10	N 20	50	100
7	84R024A	N 0.5	N 200	N 10	100	100	N 1	N 10	N 20	100	300
8	84R025A	N 0.5	N 200	N 10	20	100	N 1	N 10	N 20	70	100
9	84R026A	N 0.5	N 200	N 10	50	1000	1	N 10	N 20	20	150
10	84R027A	N 0.5	N 200	N 10	50	500	1	N 10	N 20	20	100
11	84R028A	N 0.5	N 200	N 10	50	200	N 1	N 10	N 20	50	150
11	84R028B	N 0.5	N 200	N 10	150	500	1	N 10	N 20	30	150
13	84R029A	N 0.5	N 200	N 10	150	500	L 1	N 10	N 20	20	100
14	84R030A	N 0.5	N 200	N 10	70	1500	1	N 10	N 20	30	100
15	84R031A	N 0.5	N 200	N 10	30	N 20	N 1	N 10	N 20	50	30
16	84R032A	N 0.5	N 200	N 10	50	70	N 1	N 10	N 20	50	200
17	84R032B	N 0.5	N 200	N 10	20	1000	L 1	N 10	N 20	50	100
18	GA2R001A	N 0.5	N 200	N 10	100	1000	1.5	N 10	N 20	20	100
18	GA2R001B	N 0.5	N 200	N 10	150	1000	1.5	N 10	N 20	20	100
18	GA2R001C	N 0.5	N 200	N 10	30	200	L 1	N 10	N 20	10	50
18	GA2R001D	N 0.5	N 200	N 10	100	500	L 1	N 10	N 20	20	150
18	GA2R001E	N 0.5	N 200	N 10	15	200	N 1	N 10	N 20	15	10
18	GA2R001F	N 0.5	N 200	N 10	150	500	N 1	N 10	N 20	15	70
24	GA2R002A	N 0.5	N 200	N 10	50	300	1	N 10	N 20	20	200
24	GA2R002B	N 0.5	N 200	N 10	30	1000	L 1	N 10	N 20	5	15
24	GA2R002C	N 0.5	N 200	N 10	30	150	L 1	N 10	N 20	50	150
24	GA2R002D	N 0.5	N 200	N 10	20	200	L 1	N 10	N 20	10	150
24	GA2R002E	N 0.5	N 200	N 10	20	200	L 1	N 10	N 20	10	20
24	GA2R002F	N 0.5	N 200	N 10	50	200	1	N 10	N 20	30	200
24	GA2R002G	N 0.5	N 200	N 10	150	L 20	L 1	N 10	N 20	200	L 10
24	GA2R002H	N 0.5	N 200	N 10	50	200	L 1	N 10	N 20	5	30
24	GA2R002I	N 0.5	N 200	N 10	50	200	L 1	N 10	N 20	20	300
24	GA2R002J	N 0.5	N 200	N 10	20	300	L 1	N 10	N 20	20	15
34	GA2R003A	N 0.5	N 200	N 10	200	500	L 1	N 10	N 20	70	100
34	GA2R003B	N 0.5	N 200	N 10	150	1000	1	N 10	N 20	50	70
34	GA2R003C	N 0.5	N 200	N 10	70	200	L 1	N 10	N 20	20	150
34	GA2R003D	N 0.5	N 200	N 10	50	300	L 1	N 10	N 20	50	100
34	GA2R003E	N 0.5	N 200	N 10	30	300	1	N 10	N 20	10	15
39	GA2R004	N 0.5	N 200	N 10	20	150	L 1	N 10	N 20	20	15
40	GA2R005A	N 0.5	N 200	N 10	N 10	1500	L 1	N 10	N 20	150	N 10
40	GA2R005B	N 0.5	N 200	N 10	100	1500	1.5	N 10	N 20	200	150
40	GA2R005C	N 0.5	N 200	N 10	150	1500	1.5	N 10	N 20	200	100
40	GA2R005D	N 0.5	N 200	N 10	L 10	700	N 1	N 10	N 20	N 10	L 10
40	GA2R005E	N 0.5	N 200	N 10	L 10	1000	L 1	N 10	N 20	10	30
40	GA2R005F	N 0.5	N 200	N 10	15	300	L 1	N 10	N 20	10	70
40	GA2R005G	N 0.5	N 200	N 10	50	300	L 1	N 10	N 20	10	100
40	GA2R005H	N 0.5	N 200	N 10	L 10	100	N 1	N 10	N 20	20	20
40	GA2R005I	N 0.5	N 200	N 10	70	300	L 1	N 10	N 20	70	15
49	GA4R001A	N 0.5	N 200	N 10	100	3000	1	N 10	N 20	20	500
49	GA4R001B	N 0.5	N 200	N 10	50	500	1	N 10	N 20	20	20
49	GA4R001C	N 0.5	N 200	N 10	70	500	1	N 10	N 20	50	30
49	GA4R001D	N 0.5	N 200	N 10	50	150	N 1	N 10	N 20	50	300
49	GA4R001E	100	7000	N 10	150	70	N 1	30	150	7	N 10
49	GA4R001F	N 0.5	N 200	N 10	70	300	1	N 10	N 20	10	100
55	GA4R002	N 0.5	N 200	N 10	30	300	1	N 10	N 20	7	30
56	GA4R003A	N 0.5	N 200	N 10	10	100	L 1	N 10	N 20	30	100
56	GA4R003B	N 0.5	N 200	N 10	30	1000	1	N 10	N 20	10	20
58	GA5R001A	N 0.5	N 200	N 10	20	200	1	N 10	N 20	L 5	10
58	GA5R001B	N 0.5	N 200	N 10	150	300	1	N 10	N 20	20	100
58	GA5R001C	N 0.5	N 200	N 10	50	200	L 1	N 10	N 20	50	20

Table 7. Results of six-step semiquantitative emission spectrographic analyses of rock samples from the Garberville 1:100,000 quadrangle, Humboldt, Trinity, Shasta, Tehama, and Mendocino Counties, California -- continued. (page 1, part C)

Site	Field No	Cu ppm	Ga ppm	Ge ppm	La ppm	Mn ppm	Mo ppm	Nb ppm	Ni ppm	Pb ppm	Sb ppm
1	83R018	5	-	-	50	1000	N 5	L 20	1500	L 10	N 100
2	83R019	50	-	-	50	1500	N 5	L 20	1000	L 10	N 100
2	83R019B	100	-	-	50	1500	N 5	L 20	1500	L 10	N 100
4	83R020	7	-	-	50	1000	N 5	L 20	1500	L 10	N 100
4	83R020B	5	-	-	50	300	N 5	L 20	1500	N 10	N 100
6	84R023A	100	-	-	N 20	2000	N 5	N 20	30	30	N 100
7	84R024A	100	-	-	N 20	1000	L 5	N 20	50	N 10	N 100
8	84R025A	100	-	-	N 20	2000	N 5	N 20	30	N 10	N 100
9	84R026A	30	-	-	L 20	500	N 5	N 20	70	N 10	N 100
10	84R027A	15	-	-	N 20	1000	N 5	N 20	50	20	N 100
11	84R028A	100	-	-	N 20	1500	N 5	N 20	50	L 10	N 100
11	84R028B	100	-	-	N 20	700	N 5	N 20	50	20	N 100
13	84R029A	100	-	-	L 20	200	N 5	N 20	50	30	N 100
14	84R030A	50	-	-	N 20	500	N 5	N 20	50	20	N 100
15	84R031A	200	-	-	N 20	1000	N 5	N 20	20	N 10	N 100
16	84R032A	100	-	-	N 20	2000	N 5	N 20	50	N 10	N 100
17	84R032B	7	-	-	N 20	2000	N 5	N 20	50	N 10	N 100
18	GA2R001A	100	-	-	30	1500	N 5	L 20	50	10	N 100
18	GA2R001B	100	-	-	50	1500	N 5	L 20	70	N 10	N 100
18	GA2R001C	20	-	-	N 20	500	N 5	N 20	15	L 10	N 100
18	GA2R001D	50	-	-	N 20	700	N 5	N 20	70	15	N 100
18	GA2R001E	20	-	-	N 20	1000	7	N 20	15	L 10	N 100
18	GA2R001F	30	-	-	N 20	1000	N 5	N 20	50	15	N 100
24	GA2R002A	20	-	-	30	700	N 5	N 20	70	20	N 100
24	GA2R002B	15	-	-	30	2000	N 5	N 20	30	N 10	N 100
24	GA2R002C	100	-	-	N 20	5000	N 5	L 20	100	N 10	N 100
24	GA2R002D	5	-	-	N 20	500	N 5	N 20	10	N 10	N 100
24	GA2R002E	7	-	-	N 20	300	N 5	N 20	10	N 10	N 100
24	GA2R002F	50	-	-	100	3000	N 5	L 20	100	30	N 100
24	GA2R002G	100	-	-	N 20	G 5000	20	N 20	700	10	N 100
24	GA2R002H	20	-	-	N 20	5000	5	N 20	10	L 10	N 100
24	GA2R002I	30	-	-	20	500	N 5	N 20	100	10	N 100
24	GA2R002J	10	-	-	N 20	2000	N 5	N 20	15	N 10	N 100
34	GA2R003A	70	-	-	N 20	5000	N 5	N 20	200	N 10	N 100
34	GA2R003B	50	-	-	N 20	3000	N 5	N 20	150	N 10	N 100
34	GA2R003C	30	-	-	N 20	500	N 5	N 20	100	N 10	N 100
34	GA2R003D	20	-	-	30	5000	N 5	N 20	50	15	N 100
34	GA2R003E	30	-	-	N 20	700	N 5	N 20	30	L 10	N 100
39	GA2R004	7	-	-	N 20	3000	N 5	N 20	30	N 10	N 100
40	GA2R005A	30	7	N 10	N 50	G 5000	N 5	N 20	100	N 10	N 100
40	GA2R005B	50	30	N 10	L 50	G 5000	N 5	N 20	200	30	N 100
40	GA2R005C	50	30	N 10	L 50	G 5000	N 5	L 20	150	15	N 100
40	GA2R005D	30	L 5	N 10	N 50	500	N 5	N 20	L 5	L 10	N 100
40	GA2R005E	50	15	N 10	L 50	1500	N 5	N 20	50	15	N 100
40	GA2R005F	30	15	N 10	N 50	700	N 5	N 20	30	L 10	N 100
40	GA2R005G	30	20	N 10	L 50	700	N 5	L 20	50	10	N 100
40	GA2R005H	30	50	N 10	N 50	1500	N 5	N 20	10	10	N 100
40	GA2R005I	2000	7	N 10	50	G 5000	5	N 20	100	20	N 100
49	GA4R001A	70	-	-	N 20	2000	10	N 20	300	20	N 100
49	GA4R001B	200	-	-	30	3000	N 5	N 20	50	15	N 100
49	GA4R001C	100	-	-	50	3000	N 5	N 20	150	10	N 100
49	GA4R001D	100	-	-	N 20	2000	N 5	N 20	100	N 10	N 100
49	GA4R001E	7000	-	-	N 20	700	L 5	N 20	L 5	1000	N 100
49	GA4R001F	20	-	-	30	500	L 5	N 20	30	20	N 100
55	GA4R002	30	-	-	L 20	700	N 5	N 20	30	L 10	N 100
56	GA4R003A	50	-	-	N 20	1500	N 5	N 20	30	N 10	N 100
56	GA4R003B	7	-	-	N 20	1500	N 5	N 20	20	N 10	N 100
58	GA5R001A	20	-	-	N 20	500	N 5	N 20	7	N 10	N 100
58	GA5R001B	30	-	-	20	3000	N 5	N 20	50	10	N 100
58	GA5R001C	20	-	-	N 20	300	20	N 20	50	N 10	N 100

Table 7. Results of six-step semiquantitative emission spectrographic analyses of rock samples from the Garberville 1:100,000 quadrangle, Humboldt, Trinity, Shasta, Tehama, and Mendocino Counties, California -- continued. (page 1, part D)

Site	Field No	Sc ppm	Sn ppm	Sr ppm	Th ppm	V ppm	W ppm	Y ppm	Zn ppm	Zr ppm
1	83R018	5	N 10	N 100	N 100	20	N 50	N 10	L 200	N 10
2	83R019	30	N 10	100	N 100	200	N 50	N 10	L 200	N 10
2	83R019B	30	N 10	N 100	N 100	200	N 50	N 10	L 200	N 10
4	83R020	5	N 10	N 100	N 100	20	N 50	N 10	N 200	N 10
4	83R020B	N 5	N 10	N 100	N 100	200	N 50	N 10	N 200	N 10
6	84R023A	20	N 10	200	N 100	150	N 50	30	N 200	100
7	84R024A	50	N 10	200	N 100	300	N 50	30	N 200	50
8	84R025A	30	N 10	300	N 100	200	N 50	30	N 200	70
9	84R026A	10	N 10	500	N 100	100	N 50	10	N 200	70
10	84R027A	10	N 10	200	N 100	150	N 50	20	N 200	100
11	84R028A	20	N 10	N 100	N 100	200	N 50	20	N 200	70
11	84R028B	15	N 10	N 100	N 100	200	N 50	15	N 200	100
13	84R029A	20	N 10	L 100	N 100	200	N 50	30	L 200	100
14	84R030A	15	N 10	300	N 100	200	N 50	20	L 200	100
15	84R031A	20	N 10	500	N 100	300	N 50	15	N 200	100
16	84R032A	20	N 10	100	N 100	200	N 50	20	N 200	20
17	84R032B	30	N 10	1000	N 100	200	N 50	30	N 200	50
18	GA2R001A	20	N 10	100	N 100	100	N 50	30	L 200	100
18	GA2R001B	20	N 10	L 100	N 100	100	N 50	50	L 200	100
18	GA2R001C	10	N 10	L 100	N 100	50	N 50	15	L 200	50
18	GA2R001D	20	N 10	100	N 100	150	N 50	20	L 200	100
18	GA2R001E	5	N 10	100	N 100	30	N 50	L 10	L 200	20
18	GA2R001F	15	N 10	L 100	N 100	150	N 50	15	L 200	100
24	GA2R002A	10	N 10	100	N 100	100	N 50	15	L 200	100
24	GA2R002B	7	N 10	L 100	N 100	20	N 50	10	L 200	50
24	GA2R002C	20	N 10	100	N 100	150	N 50	30	L 200	100
24	GA2R002D	5	N 10	100	N 100	20	N 50	L 10	L 200	30
24	GA2R002E	L 5	N 10	L 100	N 100	15	N 50	10	L 200	30
24	GA2R002F	20	N 10	100	N 100	100	N 50	50	L 200	100
24	GA2R002G	L 5	N 10	N 100	N 100	300	N 50	N 10	300	N 10
24	GA2R002H	7	N 10	L 100	N 100	50	L 50	15	L 200	50
24	GA2R002I	20	N 10	L 100	N 100	150	N 50	20	L 200	150
24	GA2R002J	10	N 10	L 100	N 100	70	L 50	20	L 200	30
34	GA2R003A	30	N 10	150	N 100	150	N 50	50	200	100
34	GA2R003B	15	N 10	L 100	N 100	100	N 50	30	L 200	70
34	GA2R003C	15	N 10	L 100	N 100	100	N 50	30	L 200	100
34	GA2R003D	15	N 10	150	N 100	100	N 50	30	L 200	100
34	GA2R003E	7	N 10	L 100	N 100	50	N 50	20	L 200	50
39	GA2R004	7	N 10	L 100	N 100	20	L 50	L 10	L 200	20
40	GA2R005A	10	N 10	N 100	N 100	200	N 20	20	300	30
40	GA2R005B	15	N 10	200	N 100	150	N 20	30	L 200	100
40	GA2R005C	20	N 10	300	N 100	200	N 20	30	L 200	150
40	GA2R005D	N 5	N 10	N 100	N 100	50	N 20	L 10	N 200	30
40	GA2R005E	7	N 10	N 100	N 100	100	N 20	30	N 200	100
40	GA2R005F	7	N 10	N 100	N 100	100	N 20	20	N 200	70
40	GA2R005G	10	N 10	N 100	N 100	150	N 20	20	N 200	100
40	GA2R005H	20	N 10	100	N 100	200	N 20	20	N 200	70
40	GA2R005I	7	N 10	150	N 100	200	N 20	20	N 200	30
49	GA4R001A	20	N 10	150	N 100	100	N 50	20	200	100
49	GA4R001B	15	N 10	100	N 100	100	N 50	30	200	100
49	GA4R001C	20	N 10	100	N 100	100	N 50	70	L 200	100
49	GA4R001D	20	N 10	200	N 100	150	N 50	20	L 200	100
49	GA4R001E	N 5	200	L 100	N 100	L 10	N 50	10	G 10000	N 10
49	GA4R001F	15	N 10	200	N 100	150	N 50	20	L 200	150
55	GA4R002	5	N 10	L 100	N 100	50	N 50	15	L 200	30
56	GA4R003A	30	N 10	150	N 100	300	N 50	50	L 200	100
56	GA4R003B	5	N 10	100	N 100	20	N 50	L 10	L 200	30
58	GA5R001A	5	N 10	150	N 100	20	N 50	N 10	L 200	30
58	GA5R001B	15	N 10	150	N 100	100	N 50	20	L 200	150
58	GA5R001C	7	N 10	150	N 100	20	N 50	30	L 200	50

Table 7. Results of six-step semiquantitative emission spectrographic analyses of rock samples from the Garberville 1:100,000 quadrangle, Humboldt, Trinity, Shasta, Tehama, and Mendocino Counties, California -- continued. (page 2, part A)

Site	Field No	Rock type	Latitude	Longitude	Ca %	Fe %	Mg %	Na %	P %	Ti %
61	GB1R001A	Shale	401217	1230636	0.30	5.0	2.00	-	-	0.500
61	GB1R001B	Chert	401217	1230636	L 0.05	5.0	0.15	-	-	0.050
61	GB1R001C	Chert	401217	1230636	L 0.05	0.5	0.20	-	-	0.050
64	GB2R001	Chert	400813	1231142	0.15	1.0	0.30	0.5	L 0.2	0.050
65	GB2R003	Graywacke	401245	1231041	1.00	5.0	1.50	3.0	L 0.2	0.500
66	GB2R004A	Chert	401244	1231454	0.05	3.0	0.30	L 0.2	L 0.2	0.150
66	GB2R004B	Chert	401244	1231454	L 0.05	2.0	0.50	L 0.2	L 0.2	0.200
68	GB2R005A	Graywacke	401254	1230746	0.50	7.0	1.50	2.0	L 0.2	0.700
68	GB2R005B	Tuff	401254	1230746	0.50	3.0	0.70	3.0	L 0.2	0.300
68	GB2R005C	Greenstone	401254	1230746	10.00	7.0	1.50	1.5	N 0.2	0.500
71	GB3R001A	Graywacke	401132	1231812	0.20	3.0	1.50	-	-	0.500
71	GB3R001B	Diabase	401132	1231812	10.00	10.0	5.00	-	-	G 1
71	GB3R001C	Chert	401132	1231812	0.05	1.0	0.05	-	-	0.020
71	GB3R001D	Manganese	401132	1231812	0.20	1.5	L 0.02	-	-	0.050
71	GB3R001E	Chert	401132	1231812	0.15	1.0	0.50	-	-	0.070
71	GB3R001F	Manganese	401132	1231812	0.10	1.0	L 0.02	-	-	0.070
71	GB3R001G	Chert	401132	1231812	L 0.05	0.2	0.10	-	-	0.050
78	GB3R002A	Graywacke	401110	1231822	0.70	5.0	2.00	-	-	0.700
78	GB3R002B	Chert	401110	1231822	L 0.05	5.0	1.00	-	-	0.100
80	GB3R003A	Chert	401259	1231510	0.10	3.0	0.70	0.3	N 0.2	0.200
80	GB3R003B	Graywacke	401259	1231510	0.30	5.0	1.50	3.0	N 0.2	0.500
82	GB3R004A	Chert	401151	1231602	L 0.05	0.5	0.20	N 0.2	L 0.2	0.030
82	GB3R004B	Manganese	401151	1231602	0.10	1.5	0.15	L 0.2	N 0.2	0.015
84	GB4R001A	Chert	401216	1232729	0.10	1.0	0.15	L 0.2	L 0.2	0.070
84	GB4R001B	Chert	401216	1232729	0.07	0.7	0.15	L 0.2	L 0.2	0.100
84	GB4R001C	Chert	401216	1232729	L 0.05	0.7	0.15	N 0.2	L 0.2	0.070
84	GB4R001D	Argillite	401216	1232729	0.05	10.0	2.00	L 0.2	L 0.2	0.500
84	GB4R001E	Graywacke	401216	1232729	L 0.05	7.0	1.00	3.0	L 0.2	0.500
89	GB5R001	Schist	401213	1233102	7.00	7.0	3.00	-	-	1.000
90	GB5R002	Graywacke	401142	1233133	1.50	3.0	1.50	-	-	0.500
91	GB5R003A	Graywacke	401115	1233136	1.00	5.0	1.00	-	-	0.700
91	GB5R003B	Chert	401115	1233136	0.20	2.0	0.50	-	-	0.100
91	GB5R003C	Argillite	401115	1233136	0.30	3.0	0.50	-	-	0.150
94	GB5R004	Serpentinite	401125	1233351	3.00	3.0	10.00	-	-	0.020
95	GB5R005A	Chert	401205	1233002	0.05	2.0	0.20	L 0.2	N 0.2	0.100
95	GB5R005B	Chert	401205	1233002	0.05	2.0	0.15	L 0.2	L 0.2	0.070
95	GB5R005C	Argillite	401205	1233002	0.30	3.0	1.50	0.2	L 0.2	0.500
95	GB5R005D	Chert	401205	1233002	L 0.05	1.0	0.30	N 0.2	L 0.2	0.070
99	GC1R001	Peridotite	402211	1230446	0.15	7.0	G 10	L 0.2	N 0.2	0.003
100	GC1R006A	Argillite	401729	1230619	L 0.05	3.0	1.00	-	-	0.300
100	GC1R006B	Chert	401729	1230619	L 0.05	3.0	0.30	-	-	0.200
100	GC1R006C	Manganese	401729	1230619	0.05	0.5	L 0.02	-	-	0.002
100	GC1R006D	Basalt	401729	1230619	5.00	5.0	2.00	-	-	1.000
104	GC1R007A	Chert	401608	1230718	L 0.05	1.5	0.02	-	-	0.002
104	GC1R007B	Manganese	401608	1230718	1.00	1.5	L 0.02	-	-	0.005
106	GC1R013	Basalt	401954	1230128	3.00	7.0	1.50	3.0	L 0.2	0.700
107	GC1R014	Graywacke	401908	1230540	2.00	5.0	2.00	2.0	L 0.2	0.500
108	GC1R015	Chert	401921	1230551	0.07	3.0	0.70	0.7	L 0.2	0.150
109	GC1R016	Chert	401945	1230523	0.30	7.0	0.70	5.0	L 0.2	0.500
110	GC1R017	Chert	401941	1230606	0.10	3.0	0.70	N 0.2	L 0.2	0.300
111	GC2R001A	Greenstone	401856	1230817	3.00	10.0	2.00	1.5	L 0.2	0.700
111	GC2R001B	Chert	401856	1230817	0.15	2.0	0.30	0.7	N 0.2	0.100
111	GC2R001C	Quartz	401856	1230817	10.00	2.0	0.30	N 0.2	N 0.2	0.030
114	GC3R001	Phyllite	402010	1231717	1.00	3.0	1.50	-	-	0.700
115	GC3R002	Phyllite	401937	1231653	2.00	3.0	1.50	-	-	0.200
116	GC3R004	Phyllite	401930	1231553	0.15	3.0	1.50	-	-	0.200
117	GC3R005	Graywacke	402229	1231941	1.50	5.0	2.00	-	-	0.300
118	GC3R006A	Greenstone	401914	1231549	1.50	7.0	3.00	-	-	1.000
118	GC3R006B	Dacite	401914	1231549	0.20	1.0	1.00	-	-	0.100
120	GC3R007	Graywacke	401921	1231554	0.10	5.0	1.50	-	-	0.500

Table 7. Results of six-step semiquantitative emission spectrographic analyses of rock samples from the Garberville 1:100,000 quadrangle, Humboldt, Trinity, Shasta, Tehama, and Mendocino Counties, California -- continued. (page 2, part B)

Site	Field No	Ag ppm	As ppm	Au ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Cd ppm	Co ppm	Cr ppm
61	GB1R001A	N 0.5	N 200	N 10	70	300	1	N 10	N 20	15	150
61	GB1R001B	N 0.5	N 200	N 10	L 10	700	1	N 10	N 20	5	30
61	GB1R001C	N 0.5	N 200	N 10	15	200	L 1	N 10	N 20	20	20
64	GB2R001	N 0.5	N 200	N 10	L 10	1500	N 1	N 10	N 20	70	L 10
65	GB2R003	N 0.5	N 200	N 10	20	300	1.5	N 10	N 20	15	200
66	GB2R004A	N 0.5	N 200	N 10	15	500	L 1	N 10	N 20	N 10	15
66	GB2R004B	N 0.5	N 200	N 10	15	300	L 1	N 10	N 20	N 10	20
68	GB2R005A	N 0.5	N 200	N 10	20	300	L 1	N 10	N 20	15	150
68	GB2R005B	N 0.5	N 200	N 10	10	70	N 1	N 10	N 20	N 10	10
68	GB2R005C	N 0.5	N 200	N 10	30	30	1	N 10	N 20	10	10
71	GB3R001A	N 0.5	N 200	N 10	50	500	1	N 10	N 20	20	200
71	GB3R001B	N 0.5	N 200	N 10	50	500	L 1	N 10	N 20	50	150
71	GB3R001C	N 0.5	N 200	N 10	15	200	N 1	N 10	N 20	5	15
71	GB3R001D	N 0.5	N 200	N 10	50	1000	1	N 10	N 20	200	L 10
71	GB3R001E	N 0.5	N 200	N 10	30	500	1	N 10	N 20	50	15
71	GB3R001F	N 0.5	N 200	N 10	30	5000	1	N 10	N 20	70	20
71	GB3R001G	N 0.5	N 200	N 10	20	300	L 1	N 10	N 20	L 5	15
78	GB3R002A	N 0.5	N 200	N 10	50	300	L 1	N 10	N 20	20	200
78	GB3R002B	N 0.5	N 200	N 10	50	1000	1	N 10	N 20	15	50
80	GB3R003A	N 0.5	N 200	N 10	10	G 5000	L 1	N 10	N 20	L 10	10
80	GB3R003B	N 0.5	N 200	N 10	30	700	L 1	N 10	N 20	15	100
82	GB3R004A	N 0.5	N 200	N 10	10	300	N 1	N 10	N 20	N 10	10
82	GB3R004B	N 0.5	N 200	N 10	N 10	G 5000	L 1	N 10	N 20	50	N 10
84	GB4R001A	N 0.5	N 200	N 10	10	1000	L 1	N 10	N 20	N 10	L 10
84	GB4R001B	N 0.5	N 200	N 10	10	200	N 1	N 10	N 20	N 10	10
84	GB4R001C	N 0.5	N 200	N 10	10	200	N 1	N 10	N 20	N 10	15
84	GB4R001D	N 0.5	N 200	N 10	10	500	2	N 10	N 20	15	100
84	GB4R001E	N 0.5	N 200	N 10	20	500	1.5	N 10	N 20	20	100
89	GB5R001	N 0.5	N 200	N 10	30	100	L 1	N 10	N 20	30	150
90	GB5R002	N 0.5	N 200	N 10	50	300	L 1	N 10	N 20	7	100
91	GB5R003A	N 0.5	N 200	N 10	100	500	1	N 10	N 20	20	100
91	GB5R003B	N 0.5	N 200	N 10	20	300	L 1	N 10	N 20	15	20
91	GB5R003C	N 0.5	N 200	N 10	150	500	1	N 10	N 20	30	50
94	GB5R004	N 0.5	N 200	N 10	1000	L 20	L 1	N 10	N 20	30	700
95	GB5R005A	N 0.5	N 200	N 10	20	300	1	N 10	N 20	10	15
95	GB5R005B	N 0.5	N 200	N 10	10	500	L 1	N 10	N 20	70	L 10
95	GB5R005C	N 0.5	N 200	N 10	100	1000	2	N 10	N 20	200	50
95	GB5R005D	N 0.5	N 200	N 10	10	500	L 1	N 10	N 20	30	10
99	GC1R001	N 0.5	N 200	N 10	N 10	N 20	N 1	N 10	N 20	200	G 5000
100	GC1R006A	N 0.5	N 200	N 10	50	300	1	N 10	N 20	7	50
100	GC1R006B	N 0.5	N 200	N 10	50	300	1	N 10	N 20	L 5	30
100	GC1R006C	N 0.5	N 200	N 10	300	500	L 1	N 10	N 20	500	30
100	GC1R006D	N 0.5	N 200	N 10	50	200	L 1	N 10	N 20	30	200
104	GC1R007A	N 0.5	N 200	N 10	20	150	L 1	N 10	N 20	N 5	15
104	GC1R007B	N 0.5	N 200	N 10	300	100	L 1	N 10	N 20	N 5	L 10
106	GC1R013	N 0.5	N 200	N 10	20	50	L 1	N 10	N 20	20	10
107	GC1R014	N 0.5	N 200	N 10	30	1500	1	N 10	N 20	20	200
108	GC1R015	N 0.5	N 200	N 10	10	500	1	N 10	N 20	N 10	15
109	GC1R016	N 0.5	N 200	N 10	15	2000	2	N 10	N 20	N 10	N 10
110	GC1R017	N 0.5	N 200	N 10	20	2000	1	N 10	N 20	N 10	30
111	GC2R001A	N 0.5	N 200	N 10	L 10	700	N 1	N 10	N 20	50	100
111	GC2R001B	N 0.5	N 200	N 10	10	200	L 1	N 10	N 20	N 10	L 10
111	GC2R001C	N 0.5	N 200	N 10	G 2000	30	20	N 10	N 20	N 10	10
114	GC3R001	N 0.5	N 200	N 10	50	500	L 1	N 10	N 20	10	150
115	GC3R002	N 0.5	N 200	N 10	70	300	1	N 10	N 20	5	100
116	GC3R004	N 0.5	N 200	N 10	50	300	1	N 10	N 20	7	200
117	GC3R005	L 0.5	N 200	N 10	50	500	1	N 10	N 20	15	200
118	GC3R006A	N 0.5	N 200	N 10	20	50	N 1	N 10	N 20	20	30
118	GC3R006B	N 0.5	N 200	N 10	20	30	L 1	N 10	N 20	20	15
120	GC3R007	N 0.5	N 200	N 10	70	700	1	N 10	N 20	7	150

Table 7. Results of six-step semiquantitative emission spectrographic analyses of rock samples from the Garberville 1:100,000 quadrangle, Humboldt, Trinity, Shasta, Tehama, and Mendocino Counties, California -- continued. (page 2, part C)

Site	Field No	Cu ppm	Ga ppm	Ge ppm	La ppm	Mn ppm	Mo ppm	Nb ppm	Ni ppm	Pb ppm	Sb ppm
61	GB1R001A	50	-	-	N 20	700	N 5	N 20	70	L 10	N 100
61	GB1R001B	70	-	-	N 20	5000	L 5	N 20	50	L 10	N 100
61	GB1R001C	15	-	-	N 20	700	L 5	N 20	15	N 10	N 100
64	GB2R001	100	L 5	N 10	N 50	G 5000	N 5	N 20	20	L 10	N 100
65	GB2R003	30	30	N 10	L 50	1000	N 5	N 20	100	15	N 100
66	GB2R004A	30	10	N 10	N 50	1500	N 5	N 20	20	10	N 100
66	GB2R004B	30	15	N 10	L 50	700	N 5	N 20	15	L 10	N 100
68	GB2R005A	50	30	N 10	N 50	700	N 5	N 20	70	20	N 100
68	GB2R005B	7	30	N 10	N 50	500	N 5	N 20	L 5	L 10	N 100
68	GB2R005C	15	70	N 10	N 50	1500	N 5	N 20	L 5	10	N 100
71	GB3R001A	20	-	-	20	1000	N 5	L 20	70	20	N 100
71	GB3R001B	150	-	-	30	1000	N 5	20	70	N 10	N 100
71	GB3R001C	10	-	-	N 20	100	N 5	N 20	10	L 10	N 100
71	GB3R001D	70	-	-	N 20	G 5000	20	N 20	300	N 10	N 100
71	GB3R001E	50	-	-	N 20	G 5000	N 5	N 20	50	N 10	N 100
71	GB3R001F	300	-	-	N 20	G 5000	15	N 20	150	N 10	N 100
71	GB3R001G	7	-	-	N 20	200	N 5	N 20	7	N 10	N 100
78	GB3R002A	20	-	-	30	500	N 5	L 20	100	15	N 100
78	GB3R002B	100	-	-	50	5000	N 5	N 20	100	10	N 100
80	GB3R003A	300	10	N 10	L 50	G 5000	10	N 20	50	10	N 100
80	GB3R003B	30	50	N 10	N 50	1000	N 5	N 20	50	15	N 100
82	GB3R004A	7	L 5	N 10	N 50	1000	N 5	N 20	L 5	L 10	N 100
82	GB3R004B	500	7	N 10	100	G 5000	100	N 20	300	N 10	N 100
84	GB4R001A	20	5	N 10	N 50	5000	N 5	N 20	15	10	N 100
84	GB4R001B	5	7	N 10	N 50	1000	N 5	N 20	L 5	L 10	N 100
84	GB4R001C	5	7	N 10	N 50	700	N 5	N 20	5	L 10	N 100
84	GB4R001D	300	50	N 10	50	5000	N 5	L 20	150	30	N 100
84	GB4R001E	30	50	N 10	L 50	1500	N 5	N 20	100	10	N 100
89	GB5R001	50	-	-	N 20	1500	N 5	N 20	70	N 10	N 100
90	GB5R002	20	-	-	N 20	500	N 5	N 20	30	20	N 100
91	GB5R003A	50	-	-	20	700	N 5	N 20	70	15	N 100
91	GB5R003B	50	-	-	20	1000	N 5	N 20	50	N 10	N 100
91	GB5R003C	30	-	-	N 20	700	N 5	N 20	70	N 10	N 100
94	GB5R004	L 5	-	-	N 20	500	N 5	N 20	700	N 10	N 100
95	GB5R005A	30	7	N 10	N 50	1500	N 5	N 20	30	10	N 100
95	GB5R005B	50	7	N 10	N 50	G 5000	N 5	N 20	50	L 10	N 100
95	GB5R005C	200	30	N 10	50	G 5000	N 5	L 20	200	50	N 100
95	GB5R005D	30	7	N 10	N 50	1500	N 5	N 20	20	10	N 100
99	GC1R001	5	5	N 10	N 50	700	N 5	N 20	G 5000	N 10	N 100
100	GC1R006A	50	-	-	N 20	200	N 5	N 20	30	N 10	N 100
100	GC1R006B	50	-	-	N 20	100	L 5	N 20	10	N 10	N 100
100	GC1R006C	7	-	-	N 20	G 5000	15	N 20	500	N 10	N 100
100	GC1R006D	50	-	-	N 20	700	L 5	N 20	70	N 10	N 100
104	GC1R007A	5	-	-	N 20	500	N 5	N 20	10	N 10	N 100
104	GC1R007B	7	-	-	N 20	G 5000	5	N 20	200	N 10	N 100
106	GC1R013	30	50	N 10	N 50	1000	N 5	N 20	15	L 10	N 100
107	GC1R014	70	30	N 10	L 50	700	N 5	L 20	100	15	N 100
108	GC1R015	20	15	N 10	N 50	500	N 5	L 20	20	15	N 100
109	GC1R016	20	100	N 10	200	700	N 5	70	5	15	N 100
110	GC1R017	30	10	N 10	N 50	200	N 5	N 20	20	10	N 100
111	GC2R001A	100	20	N 10	L 50	G 5000	N 5	N 20	150	20	N 100
111	GC2R001B	20	7	N 10	N 50	1500	N 5	N 20	15	10	N 100
111	GC2R001C	10	10	N 10	N 50	G 5000	N 5	N 20	20	L 10	N 100
114	GC3R001	50	-	-	L 20	500	N 5	N 20	50	15	N 100
115	GC3R002	50	-	-	N 20	700	N 5	N 20	50	30	N 100
116	GC3R004	15	-	-	N 20	300	N 5	N 20	30	N 10	N 100
117	GC3R005	70	-	-	L 20	1000	N 5	N 20	70	15	N 100
118	GC3R006A	50	-	-	N 20	1000	N 5	N 20	10	N 10	N 100
118	GC3R006B	20	-	-	30	200	N 5	N 20	5	N 10	N 100
120	GC3R007	20	-	-	N 20	300	N 5	L 20	20	10	N 100

Table 7. Results of six-step semiquantitative emission spectrographic analyses of rock samples from the Garberville 1:100,000 quadrangle, Humboldt, Trinity, Shasta, Tehama, and Mendocino Counties, California -- continued. (page 2, part D)

Site	Field No	Sc ppm	Sn ppm	Sr ppm	Th ppm	V ppm	W ppm	Y ppm	Zn ppm	Zr ppm
61	GB1R001A	15	N 10	100	N 100	100	N 50	20	L 200	100
61	GB1R001B	5	N 10	L 100	N 100	100	N 50	15	L 200	30
61	GB1R001C	7	N 10	L 100	N 100	20	N 50	L 10	L 200	30
64	GB2R001	5	N 10	N 100	N 100	50	N 20	15	N 200	30
65	GB2R003	7	N 10	N 100	N 100	200	N 20	15	N 200	100
66	GB2R004A	L 5	N 10	N 100	N 100	100	N 20	L 10	N 200	70
66	GB2R004B	L 5	N 10	N 100	N 100	70	N 20	L 10	N 200	70
68	GB2R005A	10	N 10	N 100	N 100	150	N 20	15	N 200	100
68	GB2R005B	7	N 10	N 100	N 100	100	N 20	20	N 200	150
68	GB2R005C	20	N 10	N 100	N 100	150	N 20	20	N 200	70
71	GB3R001A	15	N 10	100	N 100	100	N 50	15	L 200	100
71	GB3R001B	20	N 10	150	N 100	150	N 50	20	L 200	100
71	GB3R001C	L 5	N 10	L 100	N 100	15	N 50	N 10	L 200	N 10
71	GB3R001D	10	N 10	150	N 100	300	N 50	30	L 200	30
71	GB3R001E	7	N 10	L 100	N 100	70	N 50	30	L 200	50
71	GB3R001F	10	N 10	700	N 100	200	N 50	50	L 200	50
71	GB3R001G	5	N 10	L 100	N 100	20	N 50	10	L 200	10
78	GB3R002A	20	N 10	L 100	N 100	100	N 50	20	L 200	200
78	GB3R002B	15	N 10	L 100	N 100	50	N 50	50	200	100
80	GB3R003A	5	N 10	150	N 100	150	N 20	15	N 200	70
80	GB3R003B	7	N 10	N 100	N 100	150	N 20	10	N 200	100
82	GB3R004A	N 5	N 10	N 100	N 100	70	N 20	N 10	N 200	30
82	GB3R004B	N 5	N 10	200	N 100	1500	N 20	70	200	20
84	GB4R001A	N 5	N 10	N 100	N 100	30	N 20	10	N 200	30
84	GB4R001B	L 5	N 10	N 100	N 100	30	N 20	L 10	N 200	30
84	GB4R001C	N 5	N 10	N 100	N 100	50	N 20	N 10	N 200	30
84	GB4R001D	15	N 10	N 100	N 100	200	N 20	70	N 200	150
84	GB4R001E	15	N 10	N 100	N 100	150	N 20	15	N 200	200
89	GB5R001	30	N 10	100	N 100	150	N 50	30	L 200	70
90	GB5R002	15	N 10	200	N 100	100	N 50	20	L 200	100
91	GB5R003A	20	N 10	200	N 100	100	N 50	20	L 200	100
91	GB5R003B	10	N 10	150	N 100	50	N 50	15	L 200	50
91	GB5R003C	15	N 10	150	N 100	70	N 50	15	L 200	70
94	GB5R004	5	N 10	L 100	N 100	30	N 50	N 10	L 200	N 10
95	GB5R005A	7	N 10	N 100	N 100	70	N 20	10	N 200	70
95	GB5R005B	5	N 10	100	N 100	70	N 20	20	N 200	30
95	GB5R005C	50	N 10	500	N 100	100	N 20	200	L 200	200
95	GB5R005D	L 5	N 10	N 100	N 100	50	N 20	15	N 200	30
99	GC1R001	7	N 10	N 100	N 100	30	N 20	N 10	N 200	N 10
100	GC1R006A	10	N 10	N 100	N 100	100	N 50	15	L 200	100
100	GC1R006B	10	N 10	N 100	N 100	100	N 50	L 10	L 200	100
100	GC1R006C	N 5	N 10	L 100	N 100	150	N 50	10	L 200	L 10
100	GC1R006D	30	N 10	150	N 100	150	N 50	20	L 200	100
104	GC1R007A	N 5	N 10	L 100	N 100	50	N 50	N 10	L 200	N 10
104	GC1R007B	N 5	N 10	L 100	N 100	100	N 50	15	200	L 10
106	GC1R013	20	N 10	N 100	N 100	100	N 20	30	N 200	150
107	GC1R014	15	N 10	100	N 100	200	N 20	20	N 200	150
108	GC1R015	5	N 10	N 100	N 100	70	N 20	10	N 200	70
109	GC1R016	15	N 10	200	N 100	20	N 20	70	N 200	G 1000
110	GC1R017	7	N 10	N 100	N 100	150	N 20	10	N 200	70
111	GC2R001A	30	N 10	L 100	N 100	500	N 20	70	L 200	70
111	GC2R001B	5	N 10	N 100	N 100	70	N 20	L 10	N 200	50
111	GC2R001C	15	N 10	100	N 100	30	N 20	30	N 200	20
114	GC3R001	20	N 10	200	N 100	100	N 50	20	L 200	100
115	GC3R002	15	N 10	300	N 100	100	N 50	15	L 200	100
116	GC3R004	10	N 10	150	N 100	100	N 50	15	L 200	100
117	GC3R005	15	N 10	200	N 100	100	N 50	20	L 200	150
118	GC3R006A	20	N 10	100	N 100	100	N 50	30	L 200	70
118	GC3R006B	10	N 10	100	N 100	50	N 50	20	L 200	150
120	GC3R007	15	N 10	200	N 100	100	N 50	20	L 200	100

Table 7. Results of six-step semiquantitative emission spectrographic analyses of rock samples from the Garberville 1:100,000 quadrangle, Humboldt, Trinity, Shasta, Tehama, and Mendocino Counties, California -- continued. (page 3, part A)

Site	Field No	Rock type	Latitude	Longitude	Ca %	Fe %	Mg %	Na %	P %	Ti %
121	GC3R008A	Graywacke	401936	1231554	0.05	3.0	1.00	-	-	0.300
121	GC3R008B	Conglomerate	401936	1231554	0.20	5.0	1.00	-	-	0.300
123	GC3R009	Breccia	401916	1231555	10.00	10.0	10.00	-	-	0.200
124	GC3R010	Breccia	401924	1231602	0.15	20.0	1.00	-	-	0.200
125	GC3R011A	Chert	401830	1232129	L 0.05	5.0	0.70	0.7	L 0.2	0.500
125	GC3R011B	Chert	401830	1232129	L 0.05	2.0	0.70	0.7	L 0.2	0.150
125	GC3R011C	Chert	401830	1232129	0.07	2.0	0.70	0.5	L 0.2	0.150
128	GC4R001A	Graywacke	402151	1232719	0.70	3.0	1.50	2.0	L 0.2	0.300
128	GC4R001B	Chert	402151	1232719	0.10	1.5	0.30	L 0.2	L 0.2	0.150
128	GC4R001C	Chert	402151	1232719	0.15	2.0	0.30	L 0.2	L 0.2	0.150
128	GC4R001D	Greenstone	402151	1232719	5.00	10.0	7.00	0.2	L 0.2	1.000
128	GC4R001E	Basalt	402151	1232719	3.00	10.0	7.00	0.3	L 0.2	1.000
128	GC4R001F	Manganese	402151	1232719	1.50	0.7	0.20	L 0.2	N 0.2	0.007
128	GC4R001G	Manganese	402151	1232719	G 20	1.0	0.50	L 0.2	N 0.2	L 0.002
128	GC4R001H	Manganese	402151	1232719	1.00	0.7	0.20	N 0.2	L 0.2	0.030
136	GC4R005	Chert	402128	1232516	0.05	3.0	0.70	0.2	L 0.2	0.150
137	GC4R006	Graywacke	402032	1232425	0.50	5.0	1.50	3.0	L 0.2	0.500
138	GC4R007	Graywacke	402118	1232508	0.70	7.0	1.50	3.0	L 0.2	0.500
139	GC4R008	Graywacke	401747	1232728	1.00	5.0	1.50	3.0	L 0.2	0.500
140	GC4R009A	Basalt	401501	1232849	5.00	5.0	1.50	3.0	L 0.2	1.000
140	GC4R009B	Argillite	401501	1232849	0.30	3.0	1.00	1.0	L 0.2	0.300
142	GC4R010	Graywacke	401514	1232901	0.70	5.0	1.50	2.0	L 0.2	0.500
143	GC5R001A	Greenstone	401943	1233225	5.00	10.0	7.00	-	-	1.000
143	GC5R001B	Chert	401943	1233225	1.50	20.0	0.15	-	-	0.070
143	GC5R001C	Manganese	401943	1233225	1.00	20.0	0.50	-	-	0.070
143	GC5R001D	Argillite	401943	1233225	0.20	10.0	1.50	-	-	0.500
147	GC5R002A	Chert	402042	1233303	0.15	10.0	1.00	-	-	0.200
147	GC5R002B	Manganese	402042	1233303	0.07	5.0	0.30	-	-	0.070
149	GC5R003A	Phyllite	402015	1233247	0.07	5.0	2.00	-	-	0.500
149	GC5R003B	Serpentinite	402015	1233247	1.00	5.0	G 10	-	-	0.020
149	GC5R003C	Rodingite	402015	1233247	15.00	10.0	5.00	-	-	0.500
149	GC5R003D	Gabbro	402015	1233247	15.00	1.0	5.00	-	-	0.100
153	GC5R004	Basalt	402004	1233313	7.00	10.0	5.00	-	-	1.000
154	GC5R005	Graywacke	402150	1233522	1.00	7.0	2.00	-	-	0.500
155	GC5R006	Basalt	402105	1233339	7.00	15.0	3.00	-	-	1.000
156	GC5R007	Graywacke	402032	1233223	0.70	10.0	5.00	-	-	0.500
157	GC5R008A	Greenstone	402024	1233228	7.00	7.0	5.00	-	-	G 1
157	GC5R008B	Greenstone	402024	1233228	2.00	10.0	2.00	-	-	G 1
159	GD1R001	Rhyolite	402921	1230136	1.50	3.0	1.50	2.0	L 0.2	0.300
160	GD1R002	Gabbro	402845	1230338	10.00	7.0	3.00	2.0	N 0.2	0.500
161	GD1R003	Gabbro	402800	1230352	15.00	7.0	3.00	2.0	N 0.2	0.500
162	GD1R004	Gabbro	402635	1230349	15.00	7.0	3.00	3.0	N 0.2	0.500
163	GD1R005A	Graywacke	402411	1230045	0.70	5.0	2.00	1.0	L 0.2	0.700
163	GD1R005B	Quartz	402411	1230045	10.00	0.3	0.15	N 0.2	L 0.2	0.020
163	GD1R005C	Graywacke	402411	1230045	1.50	5.0	3.00	1.5	L 0.2	0.500
166	GD1R006	Graywacke	402350	1230717	0.15	5.0	3.00	1.0	L 0.2	0.500
167	GD1R007	Tuff	402320	1230353	7.00	7.0	3.00	2.0	0.2	0.500
168	GD2R002	Phyllite	402311	1231319	0.15	3.0	1.50	-	-	0.500
169	GD2R004	Phyllite	402350	1231114	0.20	7.0	1.50	1.0	L 0.2	0.300
170	GD2R010A	Greenstone	402511	1231021	L 0.05	3.0	0.10	L 0.2	L 0.2	0.002
170	GD2R010B	Quartz	402511	1231021	L 0.05	1.5	0.02	N 0.2	L 0.2	0.003
170	GD2R010C	Manganese	402511	1231021	0.70	1.0	1.00	0.7	L 0.2	0.070
170	GD2R010D	Manganese	402511	1231021	3.00	1.5	0.70	N 0.2	N 0.2	0.100
170	GD2R010E	Quartz	402511	1231021	0.05	0.5	0.05	L 0.2	N 0.2	0.003
170	GD2R010F	Greenstone	402511	1231021	0.50	10.0	10.00	L 0.2	N 0.2	0.500
170	GD2R010G	Phyllite	402511	1231021	L 0.05	7.0	1.50	0.2	L 0.2	0.500
177	GD3R001	Graywacke	402242	1231940	10.00	10.0	7.00	2.0	L 0.2	1.000
178	GD3R002A	Pyroxenite	402254	1232028	20.00	7.0	7.00	0.3	N 0.2	0.500
178	GD3R002B	Hornblendite	402254	1232028	20.00	10.0	7.00	0.2	N 0.2	0.700
180	GD3R002C	Hornblendite	402252	1232021	15.00	10.0	7.00	1.5	N 0.2	1.000

Table 7. Results of six-step semiquantitative emission spectrographic analyses of rock samples from the Garberville 1:100,000 quadrangle, Humboldt, Trinity, Shasta, Tehama, and Mendocino Counties, California -- continued. (page 3, part B)

Site	Field No	Ag ppm	As ppm	Au ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Cd ppm	Co ppm	Cr ppm
121	GC3R008A	N 0.5	N 200	N 10	100	1000	1	N 10	N 20	20	200
121	GC3R008B	0.5	N 200	N 10	100	700	1	N 10	N 20	15	100
123	GC3R009	N 0.5	N 200	N 10	10	30	N 1	N 10	N 20	50	700
124	GC3R010	1.5	N 200	N 10	20	100	N 1	N 10	N 20	15	15
125	GC3R011A	N 0.5	N 200	N 10	30	500	1	N 10	N 20	10	50
125	GC3R011B	N 0.5	N 200	N 10	15	500	N 1	N 10	N 20	N 10	15
125	GC3R011C	N 0.5	N 200	N 10	15	500	L 1	N 10	N 20	L 10	20
128	GC4R001A	N 0.5	N 200	N 10	30	1000	L 1	N 10	N 20	15	200
128	GC4R001B	N 0.5	N 200	N 10	15	500	L 1	N 10	N 20	N 10	15
128	GC4R001C	N 0.5	N 200	N 10	15	500	L 1	N 10	N 20	N 10	15
128	GC4R001D	N 0.5	N 200	N 10	N 10	300	N 1	N 10	N 20	150	1000
128	GC4R001E	N 0.5	N 200	N 10	20	30	L 1	N 10	N 20	200	1000
128	GC4R001F	N 0.5	N 200	N 10	700	500	N 1	N 10	N 20	70	N 10
128	GC4R001G	N 0.5	N 200	N 10	100	3000	N 1	N 10	N 20	10	N 10
128	GC4R001H	N 0.5	N 200	N 10	500	200	N 1	N 10	N 20	N 10	L 10
136	GC4R005	N 0.5	N 200	N 10	10	1000	N 1	N 10	N 20	15	10
137	GC4R006	N 0.5	N 200	N 10	30	700	L 1	N 10	N 20	15	100
138	GC4R007	N 0.5	N 200	N 10	30	200	L 1	N 10	N 20	20	100
139	GC4R008	N 0.5	N 200	N 10	30	700	1.5	N 10	N 20	20	100
140	GC4R009A	N 0.5	N 200	N 10	30	300	L 1	N 10	N 20	70	500
140	GC4R009B	N 0.5	N 200	N 10	20	1500	1.5	N 10	N 20	70	100
142	GC4R010	N 0.5	N 200	N 10	20	500	L 1	N 10	N 20	15	200
143	GC5R001A	N 0.5	N 200	N 10	10	300	N 1	N 10	N 20	30	300
143	GC5R001B	N 0.5	N 200	N 10	50	G 5000	3	N 10	N 20	30	20
143	GC5R001C	N 0.5	N 200	N 10	200	5000	2	N 10	N 20	50	15
143	GC5R001D	N 0.5	N 200	N 10	70	1500	2	N 10	N 20	50	100
147	GC5R002A	N 0.5	N 200	N 10	50	2000	1	N 10	N 20	30	20
147	GC5R002B	N 0.5	N 200	N 10	30	5000	L 1	N 10	N 20	30	20
149	GC5R003A	N 0.5	N 200	N 10	100	300	L 1	N 10	N 20	50	150
149	GC5R003B	N 0.5	N 200	N 10	30	L 20	N 1	N 10	N 20	70	2000
149	GC5R003C	N 0.5	N 200	N 10	15	N 20	N 1	N 10	N 20	30	200
149	GC5R003D	N 0.5	N 200	N 10	20	N 20	N 1	N 10	N 20	10	50
153	GC5R004	N 0.5	N 200	N 10	30	500	N 1	N 10	N 20	30	300
154	GC5R005	N 0.5	N 200	N 10	100	500	L 1	N 10	N 20	20	150
155	GC5R006	N 0.5	N 200	N 10	50	150	L 1	N 10	N 20	30	300
156	GC5R007	N 0.5	N 200	N 10	30	150	N 1	N 10	N 20	20	50
157	GC5R008A	N 0.5	N 200	N 10	15	L 20	N 1	N 10	N 20	50	200
157	GC5R008B	N 0.5	N 200	N 10	15	70	L 1	N 10	N 20	50	150
159	GD1R001	N 0.5	N 200	N 10	50	70	1	N 10	N 20	10	70
160	GD1R002	N 0.5	N 200	N 10	10	100	N 1	N 10	N 20	50	70
161	GD1R003	N 0.5	N 200	N 10	15	150	N 1	N 10	N 20	70	70
162	GD1R004	N 0.5	N 200	N 10	15	200	N 1	N 10	N 20	70	100
163	GD1R005A	N 0.5	N 200	N 10	30	1000	L 1	N 10	N 20	15	100
163	GD1R005B	N 0.5	300	N 10	L 10	70	N 1	N 10	N 20	N 10	L 10
163	GD1R005C	N 0.5	N 200	N 10	20	500	L 1	N 10	N 20	10	150
166	GD1R006	N 0.5	N 200	N 10	30	700	1	N 10	N 20	15	200
167	GD1R007	N 0.5	N 200	N 10	20	700	1	N 10	N 20	50	L 10
168	GD2R002	N 0.5	N 200	N 10	100	500	1	N 10	N 20	10	200
169	GD2R004	N 0.5	N 200	N 10	30	1000	1	N 10	N 20	30	100
170	GD2R010A	N 0.5	N 200	N 10	20	L 20	N 1	N 10	N 20	N 10	N 10
170	GD2R010B	N 0.5	N 200	N 10	N 10	50	N 1	N 10	N 20	N 10	L 10
170	GD2R010C	N 0.5	N 200	N 10	N 10	1000	N 1	N 10	N 20	N 10	20
170	GD2R010D	N 0.5	N 200	N 10	70	1000	N 1	N 10	N 20	300	50
170	GD2R010E	N 0.5	N 200	N 10	N 10	150	N 1	N 10	N 20	N 10	L 10
170	GD2R010F	N 0.5	N 200	N 10	N 10	L 20	N 1	N 10	N 20	70	500
170	GD2R010G	0.5	N 200	N 10	30	2000	1.5	N 10	N 20	70	150
177	GD3R001	N 0.5	N 200	N 10	20	300	L 1	N 10	N 20	70	1000
178	GD3R002A	N 0.5	N 200	N 10	L 10	N 20	N 1	N 10	N 20	50	1000
178	GD3R002B	N 0.5	N 200	N 10	L 10	N 20	N 1	N 10	N 20	70	2000
180	GD3R002C	N 0.5	N 200	N 10	N 10	20	N 1	N 10	N 20	70	1500

Table 7. Results of six-step semiquantitative emission spectrographic analyses of rock samples from the Garberville 1:100,000 quadrangle, Humboldt, Trinity, Shasta, Tehama, and Mendocino Counties, California -- continued. (page 3, part C)

Site	Field No	Cu ppm	Ga ppm	Ge ppm	La ppm	Mn ppm	Mo ppm	Nb ppm	Ni ppm	Pb ppm	Sb ppm
121	GC3R008A	20	-	-	N 20	200	N 5	N 20	50	10	N 100
121	GC3R008B	20	-	-	N 20	500	N 5	N 20	50	L 10	N 100
123	GC3R009	50	-	-	N 20	1000	N 5	N 20	200	N 10	N 100
124	GC3R010	2000	-	-	N 20	500	50	N 20	15	50	N 100
125	GC3R011A	50	20	N 10	L 50	700	N 5	L 20	30	L 10	N 100
125	GC3R011B	30	7	N 10	N 50	1000	N 5	N 20	20	10	N 100
125	GC3R011C	30	10	N 10	L 50	500	N 5	N 20	20	10	N 100
128	GC4R001A	20	30	N 10	L 50	700	N 5	L 20	30	L 10	N 100
128	GC4R001B	30	10	N 10	N 50	700	N 5	N 20	L 5	L 10	N 100
128	GC4R001C	20	15	N 10	N 50	700	N 5	L 20	30	10	N 100
128	GC4R001D	70	30	N 10	N 50	1500	N 5	L 20	1500	10	N 100
128	GC4R001E	50	20	N 10	N 50	5000	N 5	L 20	1500	L 10	N 100
128	GC4R001F	3000	L 5	N 10	50	G 5000	N 5	N 20	150	N 10	N 100
128	GC4R001G	2000	L 5	N 10	50	G 5000	N 5	N 20	100	N 10	N 100
128	GC4R001H	200	L 5	N 10	N 50	G 5000	N 5	N 20	7	10	N 100
136	GC4R005	30	7	N 10	L 50	1500	N 5	N 20	30	10	N 100
137	GC4R006	20	50	N 10	L 50	700	N 5	L 20	20	20	N 100
138	GC4R007	30	30	N 10	L 50	700	N 5	N 20	30	15	N 100
139	GC4R008	30	50	N 10	L 50	1000	N 5	L 20	50	20	N 100
140	GC4R009A	50	50	L 10	L 50	1500	N 5	L 20	70	L 10	N 100
140	GC4R009B	30	30	N 10	L 50	G 5000	N 5	L 20	70	10	N 100
142	GC4R010	30	30	N 10	L 50	700	N 5	N 20	70	10	N 100
143	GC5R001A	150	-	-	N 20	1000	N 5	N 20	50	L 10	N 100
143	GC5R001B	700	-	-	150	G 5000	5	N 20	200	30	N 100
143	GC5R001C	700	-	-	100	G 5000	7	N 20	300	30	N 100
143	GC5R001D	300	-	-	L 20	G 5000	N 5	N 20	100	30	N 100
147	GC5R002A	700	-	-	N 20	5000	L 5	N 20	70	15	N 100
147	GC5R002B	50	-	-	N 20	G 5000	5	N 20	70	10	N 100
149	GC5R003A	70	-	-	N 20	1500	N 5	N 20	100	20	N 100
149	GC5R003B	15	-	-	N 20	1000	N 5	N 20	2000	N 10	N 100
149	GC5R003C	50	-	-	N 20	1000	N 5	N 20	100	N 10	N 100
149	GC5R003D	20	-	-	N 20	1000	N 5	N 20	30	N 10	N 100
153	GC5R004	70	-	-	N 20	1000	N 5	N 20	100	N 10	N 100
154	GC5R005	50	-	-	N 20	700	N 5	N 20	70	N 10	N 100
155	GC5R006	70	-	-	N 20	700	L 5	20	150	N 10	N 100
156	GC5R007	70	-	-	N 20	1000	L 5	N 20	30	N 10	N 100
157	GC5R008A	50	-	-	N 20	1000	N 5	N 20	50	N 10	N 100
157	GC5R008B	70	-	-	N 20	1000	N 5	N 20	30	10	N 100
159	GD1R001	7	50	N 10	N 50	500	N 5	N 20	15	15	N 100
160	GD1R002	100	50	N 10	N 50	1500	N 5	N 20	30	N 10	N 100
161	GD1R003	10	50	N 10	N 50	1500	N 5	N 20	20	N 10	N 100
162	GD1R004	50	50	N 10	N 50	1500	N 5	N 20	30	10	N 100
163	GD1R005A	50	50	N 10	L 50	1500	N 5	L 20	20	10	N 100
163	GD1R005B	15	L 5	N 10	N 50	500	N 5	N 20	L 5	N 10	N 100
163	GD1R005C	70	30	N 10	L 50	1000	L 5	L 20	15	15	N 100
166	GD1R006	30	30	N 10	L 50	700	N 5	L 20	70	15	N 100
167	GD1R007	500	50	N 10	50	1500	N 5	L 20	15	15	N 100
168	GD2R002	20	-	-	N 20	300	N 5	N 20	70	10	N 100
169	GD2R004	70	30	N 10	L 50	500	7	L 20	100	20	N 100
170	GD2R010A	L 5	7	N 10	N 50	5000	7	N 20	5	N 10	N 100
170	GD2R010B	5	L 5	N 10	N 50	300	7	N 20	L 5	N 10	N 100
170	GD2R010C	100	7	N 10	N 50	700	N 5	N 20	10	L 10	N 100
170	GD2R010D	100	7	N 10	N 50	G 5000	7	N 20	150	N 10	N 100
170	GD2R010E	5	5	N 10	N 50	1500	N 5	N 20	5	10	N 100
170	GD2R010F	70	20	N 10	N 50	2000	N 5	N 20	200	N 10	N 100
170	GD2R010G	100	30	N 10	L 50	700	5	N 20	50	15	N 100
177	GD3R001	7	50	N 10	L 50	1500	N 5	L 20	200	10	N 100
178	GD3R002A	7	20	N 10	N 50	1500	N 5	N 20	100	L 10	N 100
178	GD3R002B	7	20	N 10	N 50	1000	N 5	N 20	200	N 10	N 100
180	GD3R002C	50	30	N 10	N 50	1000	N 5	N 20	150	N 10	N 100

Table 7. Results of six-step semiquantitative emission spectrographic analyses of rock samples from the Garberville 1:100,000 quadrangle, Humboldt, Trinity, Shasta, Tehama, and Mendocino Counties, California -- continued. (page 3, part D)

Site	Field No	Sc ppm	Sn ppm	Sr ppm	Th ppm	V ppm	W ppm	Y ppm	Zn ppm	Zr ppm
121	GC3R008A	15	N 10	100	N 100	100	N 50	20	L 200	100
121	GC3R008B	15	N 10	100	N 100	100	N 50	30	L 200	100
123	GC3R009	50	N 10	150	N 100	150	N 50	15	L 200	20
124	GC3R010	15	N 10	100	N 100	100	N 50	10	2000	30
125	GC3R011A	15	N 10	N 100	N 100	100	N 20	20	L 200	70
125	GC3R011B	L 5	N 10	N 100	N 100	100	N 20	L 10	N 200	50
125	GC3R011C	5	N 10	N 100	N 100	50	N 20	10	N 200	50
128	GC4R001A	7	N 10	200	N 100	200	N 20	15	N 200	100
128	GC4R001B	L 5	N 10	N 100	N 100	70	N 20	L 10	N 200	70
128	GC4R001C	7	N 10	N 100	N 100	100	N 20	10	N 200	70
128	GC4R001D	15	N 10	700	N 100	150	N 20	15	N 200	150
128	GC4R001E	15	N 10	N 100	N 100	100	N 20	20	N 200	100
128	GC4R001F	N 5	N 10	N 100	N 100	700	N 20	L 10	N 200	15
128	GC4R001G	N 5	N 10	500	N 100	300	N 20	L 10	N 200	N 10
128	GC4R001H	N 5	N 10	N 100	N 100	70	N 20	N 10	N 200	15
136	GC4R005	5	N 10	N 100	N 100	200	N 20	L 10	N 200	50
137	GC4R006	15	N 10	100	N 100	150	N 20	20	N 200	200
138	GC4R007	10	N 10	200	N 100	200	N 20	15	N 200	150
139	GC4R008	15	N 10	150	N 100	100	N 20	30	N 200	200
140	GC4R009A	50	N 10	L 100	N 100	200	N 20	50	N 200	150
140	GC4R009B	20	N 10	N 100	N 100	100	N 20	30	L 200	100
142	GC4R010	20	N 10	N 100	N 100	200	N 20	20	L 200	150
143	GC5R001A	30	N 10	300	N 100	200	N 50	30	L 200	50
143	GC5R001B	15	20	1000	N 100	500	N 50	100	300	100
143	GC5R001C	15	20	500	N 100	300	N 50	100	300	100
143	GC5R001D	20	N 10	100	N 100	150	N 50	30	L 200	100
147	GC5R002A	15	N 10	100	N 100	70	N 50	30	L 200	100
147	GC5R002B	7	N 10	200	N 100	150	N 50	20	L 200	50
149	GC5R003A	15	N 10	L 100	N 100	150	N 50	20	L 200	150
149	GC5R003B	10	N 10	L 100	N 100	50	N 50	N 10	L 200	N 10
149	GC5R003C	30	N 10	150	N 100	200	N 50	20	L 200	50
149	GC5R003D	15	N 10	100	N 100	70	N 50	20	L 200	L 10
153	GC5R004	20	N 10	500	N 100	300	N 50	20	L 200	50
154	GC5R005	15	N 10	200	N 100	150	N 50	15	L 200	100
155	GC5R006	20	N 10	200	N 100	100	N 50	30	200	100
156	GC5R007	20	N 10	200	N 100	200	N 50	15	L 200	50
157	GC5R008A	30	N 10	200	N 100	200	N 50	30	L 200	70
157	GC5R008B	30	N 10	100	N 100	200	N 50	30	200	100
159	GD1R001	5	N 10	300	N 100	70	N 20	L 10	N 200	50
160	GD1R002	50	N 10	1000	N 100	500	N 20	15	N 200	30
161	GD1R003	30	N 10	1500	N 100	500	N 20	15	N 200	10
162	GD1R004	30	N 10	1000	N 100	500	N 20	15	N 200	15
163	GD1R005A	15	N 10	300	N 100	200	N 20	20	N 200	150
163	GD1R005B	N 5	N 10	L 100	N 100	20	N 20	L 10	N 200	10
163	GD1R005C	15	N 10	300	N 100	200	N 20	20	N 200	200
166	GD1R006	15	N 10	N 100	N 100	150	N 20	15	N 200	300
167	GD1R007	20	N 10	500	N 100	300	N 20	20	N 200	150
168	GD2R002	15	N 10	150	N 100	100	N 50	15	L 200	100
169	GD2R004	7	N 10	N 100	N 100	100	N 20	20	L 200	200
170	GD2R010A	N 5	N 10	N 100	N 100	70	N 20	N 10	N 200	L 10
170	GD2R010B	N 5	N 10	N 100	N 100	70	N 20	N 10	N 200	15
170	GD2R010C	5	N 10	N 100	N 100	70	N 20	10	N 200	30
170	GD2R010D	7	N 10	N 100	N 100	200	N 20	10	N 200	50
170	GD2R010E	N 5	N 10	N 100	N 100	30	N 20	L 10	N 200	N 10
170	GD2R010F	30	N 10	N 100	N 100	100	N 20	20	N 200	70
170	GD2R010G	15	N 10	N 100	N 100	200	N 20	20	L 200	200
177	GD3R001	30	N 10	700	N 100	200	N 20	20	N 200	150
178	GD3R002A	100	N 10	300	N 100	200	N 20	15	N 200	20
178	GD3R002B	100	N 10	300	N 100	300	N 20	15	N 200	30
180	GD3R002C	50	N 10	300	N 100	500	N 20	15	N 200	15

Table 7. Results of six-step semiquantitative emission spectrographic analyses of rock samples from the Garberville 1:100,000 quadrangle, Humboldt, Trinity, Shasta, Tehama, and Mendocino Counties, California -- continued. (page 4, part A)

Site	Field No	Rock type	Latitude	Longitude	Ca %	Fe %	Mg %	Na %	P %	Ti %
180	GD3R002D	Gabbro	402252	1232021	10.00	5.0	5.00	3.0	L 0.2	0.700
180	GD3R002E	Diorite	402252	1232021	7.00	7.0	3.00	3.0	L 0.2	0.700
180	GD3R002F	Gabbro	402252	1232021	10.00	7.0	7.00	2.0	N 0.2	G 1
180	GD3R002G	Gabbro	402252	1232021	15.00	7.0	5.00	1.5	N 0.2	G 1
185	GD3R003	Basalt	402416	1231845	15.00	7.0	3.00	2.0	L 0.2	G 1
186	GD3R004	Conglomerate	402428	1231526	0.05	7.0	0.15	N 0.2	0.2	0.150
187	GD3R005A	Basalt	402344	1231619	3.00	10.0	3.00	3.0	L 0.2	G 1
187	GD3R005B	Chert	402344	1231619	0.30	2.0	1.00	0.5	L 0.2	0.500
189	GD3R006A	Gabbro	402505	1232018	2.00	5.0	2.00	-	-	0.150
189	GD3R006B	Serpentinite	402505	1232018	L 0.05	5.0	G 10	-	-	0.005
189	GD3R006C	Serpentinite	402505	1232018	20.00	5.0	10.00	-	-	0.070
192	GD3R009A	Diorite	402231	1232100	7.00	10.0	5.00	3.0	L 0.2	G 1
192	GD3R009B	Gabbro	402231	1232100	10.00	7.0	7.00	1.5	N 0.2	G 1
192	GD3R009C	Gabbro	402231	1232100	10.00	7.0	7.00	2.0	N 0.2	G 1
192	GD3R009D	Peridotite	402231	1232100	10.00	7.0	7.00	1.5	N 0.2	1.000
192	GD3R009E	Gabbro	402231	1232100	10.00	5.0	5.00	2.0	L 0.2	1.000
192	GD3R009F	Gabbro	402231	1232100	10.00	10.0	7.00	3.0	N 0.2	G 1
192	GD3R009G	Hornblendite	402231	1232100	10.00	10.0	7.00	2.0	N 0.2	G 1
192	GD3R009H	Hornfels	402231	1232100	0.70	5.0	2.00	3.0	L 0.2	1.000
200	GD3R010A	Greenstone	402330	1231635	3.00	7.0	3.00	3.0	L 0.2	G 1
200	GD3R010B	Chert	402330	1231635	1.50	5.0	0.30	L 0.2	L 0.2	0.050
200	GD3R010C	Chert	402330	1231635	0.20	0.7	0.50	0.2	L 0.2	0.200
203	GD4R004	Phyllite	402802	1232517	0.05	5.0	2.00	-	-	0.500
204	GD4R005	Argillite	402426	1232333	0.10	5.0	1.50	-	-	0.300
205	GD4R006	Argillite	402845	1232503	0.10	3.0	1.50	-	-	0.500
206	GD4R007	Phyllite	402430	1232357	0.10	7.0	2.00	-	-	0.700
207	GD4R008A	Greenstone	402427	1232342	0.50	3.0	1.00	-	-	0.300
207	GD4R008B	Graywacke	402427	1232342	10.00	7.0	7.00	-	-	1.000
209	GD4R009	Phyllite	402629	1232503	0.50	7.0	2.00	1.5	L 0.2	1.000
210	GD4R010	Phyllite	402550	1232443	3.00	5.0	2.00	3.0	L 0.2	1.000
211	GD6R001A	Manganese	402354	1234128	0.30	0.5	L 0.02	-	-	0.050
211	GD6R001B	Chert	402354	1234128	0.05	0.7	0.15	-	-	0.050
211	GD6R001C	Graywacke	402354	1234128	0.70	5.0	2.00	-	-	0.700
211	GD6R001D	Argillite	402354	1234128	0.05	5.0	1.00	-	-	0.150
215	GD6R002	Graywacke	402323	1234140	0.30	3.0	1.00	5.0	L 0.2	0.700
216	GD8R001	Graywacke	402910	1235726	1.00	7.0	2.00	3.0	L 0.2	0.700
217	GD8R002	Siltstone	402827	1235744	0.30	3.0	1.00	2.0	N 0.2	0.500
218	GD8R003	Mudstone	402848	1235440	1.50	7.0	2.00	5.0	L 0.2	0.500
219	GMS1	Sulfides	402420	1232359	1.00	G 20	0.05	1.5	N 0.2	0.005
219	GMS2	Silica	402420	1232359	3.00	2.0	0.15	N 0.2	N 0.2	0.003
219	GMS3	Pyrite	402420	1232359	0.30	G 20	0.05	1.0	N 0.2	0.003
222	HY-10	Conglomerate	402953	1230616	0.50	3.0	1.00	1.0	N 0.2	0.300
223	HY-11	Breccia	402930	1230617	5.00	3.0	2.00	3.0	N 0.2	0.200

Table 7. Results of six-step semiquantitative emission spectrographic analyses of rock samples from the Garberville 1:100,000 quadrangle, Humboldt, Trinity, Shasta, Tehama, and Mendocino Counties, California -- continued. (page 4, part B)

Site	Field No	Ag ppm	As ppm	Au ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Cd ppm	Co ppm	Cr ppm
180	GD3R002D	N 0.5	N 200	N 10	30	300	L 1	N 10	N 20	20	70
180	GD3R002E	N 0.5	N 200	N 10	10	150	L 1	N 10	N 20	20	50
180	GD3R002F	N 0.5	N 200	N 10	15	150	N 1	N 10	N 20	70	1000
180	GD3R002G	N 0.5	N 200	N 10	20	30	N 1	N 10	N 20	100	200
185	GD3R003	N 0.5	N 200	N 10	20	100	N 1	N 10	N 20	70	100
186	GD3R004	N 0.5	N 200	N 10	20	500	1.5	N 10	N 20	N 10	70
187	GD3R005A	N 0.5	N 200	N 10	15	150	N 1	N 10	N 20	100	500
187	GD3R005B	N 0.5	N 200	N 10	10	700	L 1	N 10	N 20	L 10	20
189	GD3R006A	N 0.5	N 200	N 10	30	100	L 1	N 10	N 20	20	30
189	GD3R006B	N 0.5	N 200	N 10	30	20	L 1	N 10	N 20	100	1000
189	GD3R006C	7	N 200	N 10	20	L 20	N 1	N 10	N 20	30	500
192	GD3R009A	N 0.5	N 200	N 10	15	300	N 1	N 10	N 20	50	100
192	GD3R009B	N 0.5	N 200	N 10	10	100	N 1	N 10	N 20	100	1000
192	GD3R009C	N 0.5	N 200	N 10	L 10	50	N 1	N 10	N 20	70	1000
192	GD3R009D	N 0.5	N 200	N 10	L 10	30	N 1	N 10	N 20	100	1500
192	GD3R009E	N 0.5	N 200	N 10	20	150	N 1	N 10	N 20	30	70
192	GD3R009F	0.5	N 200	N 10	L 10	100	N 1	N 10	N 20	150	700
192	GD3R009G	N 0.5	N 200	N 10	N 10	70	N 1	N 10	N 20	100	3000
192	GD3R009H	N 0.5	N 200	N 10	50	1000	L 1	N 10	N 20	15	300
200	GD3R010A	N 0.5	N 200	N 10	15	150	N 1	N 10	N 20	70	100
200	GD3R010B	N 0.5	N 200	N 10	10	150	N 1	N 10	N 20	L 10	10
200	GD3R010C	N 0.5	N 200	N 10	10	300	L 1	N 10	N 20	N 10	L 10
203	GD4R004	N 0.5	N 200	N 10	100	300	1	N 10	N 20	10	150
204	GD4R005	N 0.5	N 200	N 10	100	500	1	N 10	N 20	10	150
205	GD4R006	N 0.5	N 200	N 10	100	500	1	N 10	N 20	7	150
206	GD4R007	10	N 200	N 10	150	500	1	N 10	N 20	20	200
207	GD4R008A	N 0.5	N 200	N 10	70	500	1	N 10	N 20	15	100
207	GD4R008B	N 0.5	N 200	N 10	10	100	N 1	N 10	N 20	30	300
209	GD4R009	L 0.5	N 200	N 10	150	1000	L 1	N 10	N 20	L 10	200
210	GD4R010	N 0.5	N 200	N 10	10	300	N 1	N 10	N 20	30	200
211	GD6R001A	N 0.5	N 200	N 10	70	150	1	N 10	N 20	N 5	20
211	GD6R001B	N 0.5	N 200	N 10	20	200	L 1	N 10	N 20	7	10
211	GD6R001C	N 0.5	N 200	N 10	15	150	1	N 10	N 20	20	500
211	GD6R001D	N 0.5	N 200	N 10	30	500	1	N 10	N 20	10	50
215	GD6R002	N 0.5	N 200	N 10	50	300	L 1	N 10	N 20	15	150
216	GD8R001	N 0.5	N 200	N 10	30	500	2	N 10	N 20	15	200
217	GD8R002	N 0.5	N 200	N 10	50	300	1	N 10	N 20	L 10	200
218	GD8R003	N 0.5	N 200	N 10	20	1000	1.5	N 10	N 20	10	150
219	GMS1	15	200	N 10	L 10	70	N 1	N 10	N 20	70	10
219	GMS2	N 0.5	N 200	N 10	N 10	20	N 1	N 10	N 20	L 10	L 10
219	GMS3	20	1000	N 10	N 10	150	N 1	N 10	N 20	200	20
222	HY-10	N 0.5	N 200	N 10	30	1000	1.5	N 10	N 20	20	150
223	HY-11	N 0.5	N 200	N 10	10	300	< 1	N 10	N 20	30	150

Table 7. Results of six-step semiquantitative emission spectrographic analyses of rock samples from the Garberville 1:100,000 quadrangle, Humboldt, Trinity, Shasta, Tehama, and Mendocino Counties, California -- continued. (page 4, part C)

Site	Field No	Cu ppm	Ga ppm	Ge ppm	La ppm	Mn ppm	Mo ppm	Nb ppm	Ni ppm	Pb ppm	Sb ppm
180	GD3R002D	30	70	N 10	N 50	1000	N 5	N 20	30	L 10	N 100
180	GD3R002E	7	70	N 10	L 50	1500	N 5	L 20	20	L 10	N 100
180	GD3R002F	70	50	N 10	N 50	1500	N 5	N 20	200	N 10	N 100
180	GD3R002G	150	50	N 10	N 50	1000	N 5	N 20	150	L 10	N 100
185	GD3R003	70	30	N 10	N 50	1500	N 5	N 20	30	L 10	N 100
186	GD3R004	50	15	N 10	L 50	150	N 5	N 20	10	L 10	N 100
187	GD3R005A	50	50	N 10	N 50	2000	N 5	N 20	70	L 10	N 100
187	GD3R005B	30	15	N 10	L 50	700	N 5	N 20	30	10	N 100
189	GD3R006A	100	-	-	N 20	500	N 5	N 20	300	L 10	N 100
189	GD3R006B	7	-	-	N 20	700	N 5	N 20	1000	N 10	N 100
189	GD3R006C	20000	-	-	N 20	500	N 5	N 20	300	15	N 100
192	GD3R009A	100	70	N 10	L 50	1500	N 5	N 20	30	10	N 100
192	GD3R009B	300	30	N 10	N 50	1500	N 5	N 20	150	L 10	N 100
192	GD3R009C	30	30	N 10	N 50	2000	N 5	N 20	200	L 10	N 100
192	GD3R009D	30	30	N 10	N 50	1500	N 5	N 20	200	L 10	N 100
192	GD3R009E	50	70	N 10	N 50	1500	N 5	N 20	20	N 10	N 100
192	GD3R009F	1000	50	N 10	N 50	2000	N 5	N 20	300	L 10	N 100
192	GD3R009G	100	30	N 10	N 50	2000	N 5	N 20	300	L 10	N 100
192	GD3R009H	50	50	N 10	L 50	1000	N 5	N 20	100	20	N 100
200	GD3R010A	30	50	N 10	N 50	2000	N 5	N 20	50	L 10	N 100
200	GD3R010B	7	15	N 10	N 50	700	N 5	N 20	5	L 10	N 100
200	GD3R010C	30	5	N 10	N 50	150	N 5	N 20	5	10	N 100
203	GD4R004	70	-	-	N 20	500	L 5	N 20	30	20	N 100
204	GD4R005	50	-	-	N 20	300	L 5	N 20	50	20	N 100
205	GD4R006	50	-	-	N 20	200	L 5	N 20	20	30	N 100
206	GD4R007	50	-	-	N 20	700	N 5	N 20	50	L 10	N 100
207	GD4R008A	20	-	-	N 20	200	N 5	N 20	50	10	N 100
207	GD4R008B	100	-	-	N 20	1500	N 5	N 20	100	15	N 100
209	GD4R009	50	70	N 10	L 50	1000	L 5	N 20	30	20	N 100
210	GD4R010	50	50	N 10	N 50	1500	N 5	N 20	30	15	N 100
211	GD6R001A	70	-	-	N 20	G 5000	15	N 20	200	N 10	N 100
211	GD6R001B	15	-	-	N 20	G 5000	N 5	N 20	30	N 10	N 100
211	GD6R001C	30	-	-	N 20	500	N 5	N 20	150	N 10	N 100
211	GD6R001D	100	-	-	30	5000	N 5	N 20	100	N 10	N 100
215	GD6R002	30	50	N 10	L 50	700	N 5	N 20	30	15	N 100
216	GD8R001	30	50	N 10	L 50	700	N 5	L 20	100	15	N 100
217	GD8R002	30	30	N 10	L 50	500	N 5	N 20	70	10	N 100
218	GD8R003	50	70	N 10	L 50	700	N 5	L 20	50	50	N 100
219	GMS1	5000	70	N 10	N 50	200	20	N 20	30	150	N 100
219	GMS2	50	5	N 10	N 50	2000	N 5	N 20	7	10	N 100
219	GMS3	20000	70	N 10	N 50	300	20	N 20	50	100	N 100
222	HY-10	30	30	N 10	< 50	1000	N 5	< 20	70	20	N 100
223	HY-11	50	30	N 10	N 50	700	N 5	N 20	30	10	N 100

Table 7. Results of six-step semiquantitative emission spectrographic analyses of rock samples from the Garberville 1:100,000 quadrangle, Humboldt, Trinity, Shasta, Tehama, and Mendocino Counties, California -- continued. (page 4, part D)

Site	Field No	Sc ppm	Sn ppm	Sr ppm	Th ppm	V ppm	W ppm	Y ppm	Zn ppm	Zr ppm
180	GD3R002D	15	N 10	2000	N 100	200	N 20	15	N 200	70
180	GD3R002E	10	N 10	1500	N 100	200	N 20	20	N 200	300
180	GD3R002F	50	N 10	1000	N 100	300	N 20	20	N 200	50
180	GD3R002G	30	N 10	1500	N 100	500	N 20	20	N 200	30
185	GD3R003	30	N 10	1000	N 100	300	N 20	30	N 200	100
186	GD3R004	10	N 10	N 100	N 100	50	N 20	15	N 200	50
187	GD3R005A	50	N 10	300	N 100	300	N 20	30	N 200	150
187	GD3R005B	7	N 10	N 100	N 100	70	N 20	15	N 200	70
189	GD3R006A	20	N 10	300	N 100	150	N 50	10	L 200	50
189	GD3R006B	10	N 10	L 100	N 100	20	N 50	N 10	L 200	N 10
189	GD3R006C	7	N 10	200	N 100	70	N 50	N 10	L 200	30
192	GD3R009A	30	N 10	1500	N 100	500	N 20	30	N 200	100
192	GD3R009B	50	N 10	500	N 100	500	N 20	20	N 200	70
192	GD3R009C	30	N 10	500	N 100	300	N 20	20	N 200	70
192	GD3R009D	30	N 10	1000	N 100	300	N 20	15	N 200	10
192	GD3R009E	15	N 10	1000	N 100	500	N 20	10	N 200	N 10
192	GD3R009F	100	N 10	300	N 100	700	N 20	30	N 200	70
192	GD3R009G	50	N 10	300	N 100	700	N 20	20	N 200	10
192	GD3R009H	15	N 10	300	N 100	200	N 20	20	N 200	300
200	GD3R010A	30	N 10	300	N 100	500	N 20	50	N 200	300
200	GD3R010B	5	N 10	N 100	N 100	70	N 20	L 10	N 200	L 10
200	GD3R010C	L 5	N 10	N 100	N 100	30	N 20	L 10	N 200	50
203	GD4R004	15	N 10	150	N 100	100	N 50	15	L 200	100
204	GD4R005	15	N 10	150	N 100	100	N 50	15	L 200	100
205	GD4R006	15	N 10	150	N 100	150	N 50	20	L 200	100
206	GD4R007	20	N 10	200	N 100	200	N 50	20	L 200	100
207	GD4R008A	10	N 10	150	N 100	100	N 50	10	L 200	100
207	GD4R008B	15	N 10	700	N 100	150	N 50	15	L 200	100
209	GD4R009	20	N 10	200	N 100	700	N 20	20	N 200	150
210	GD4R010	20	N 10	300	N 100	300	N 20	15	N 200	70
211	GD6R001A	5	N 10	100	N 100	2000	N 50	L 10	L 200	L 10
211	GD6R001B	7	N 10	100	N 100	50	N 50	20	L 200	20
211	GD6R001C	20	N 10	150	N 100	150	N 50	20	L 200	100
211	GD6R001D	10	N 10	N 100	N 100	100	N 50	20	L 200	100
215	GD6R002	10	N 10	N 100	N 100	200	N 20	10	N 200	100
216	GD8R001	15	N 10	300	N 100	150	N 20	20	N 200	200
217	GD8R002	7	N 10	N 100	N 100	150	N 20	10	N 200	100
218	GD8R003	10	N 10	500	N 100	200	N 20	15	N 200	150
219	GMS1	N 5	N 10	N 100	N 100	70	N 20	L 10	2000	N 10
219	GMS2	N 5	N 10	300	N 100	50	N 20	L 10	N 200	N 10
219	GMS3	N 5	N 10	N 100	N 100	70	N 20	N 10	1500	N 10
222	HY-10	15	N 10	200	N 100	100	N 20	20	N 200	100
223	HY-11	20	N 10	700	N 100	150	N 20	20	N 200	70

Table 8. Results of analyses by atomic absorption spectroscopy and by other miscellaneous chemical methods of rock samples from the Garberville 1:100,000 quadrangle, Humboldt, Trinity, Shasta, Tehama, and Mendocino Counties, California. (page 1)

Site	Sample	Rock type	Latitude	Longitude	As ppm	Au ppm	Hg ppm	Sb ppm	Te ppm	Tl ppm	Zn ppm
1	83R018	Serpentinite	402326	1230522	N 5	N 0.05	N 0.02	N 2	-	-	25
2	83R019	Dunite	402006	1230355	N 5	N 0.05	N 0.02	N 2	-	-	10
2	83R019B	Serpentinite	402006	1230355	N 5	N 0.05	N 0.02	N 2	-	-	20
4	83R020	Dunite	402215	1230443	N 5	N 0.05	N 0.02	N 2	-	-	20
4	83R020B	Dunite	402215	1230443	N 5	N 0.05	N 0.02	N 2	-	-	5
6	84R023A	Siltstone	402758	1235016	N 10	N 0.05	0.08	N 2	0.05	-	85
7	84R024A	Basalt	402838	1234255	N 10	N 0.05	N 0.02	N 2	N 0.05	-	60
8	84R025A	Breccia	402809	1234217	N 10	0.05	N 0.02	N 2	N 0.05	-	55
9	84R026A	Graywacke	402835	1233913	N 10	N 0.05	0.08	N 2	N 0.05	-	45
10	84R027A	Graywacke	402556	1232827	N 10	N 0.05	0.02	N 2	N 0.05	-	50
11	84R028A	Conglomerate	402438	1232639	N 10	N 0.05	N 0.02	N 2	N 0.05	-	70
11	84R028B	Argillite	402438	1232639	N 10	N 0.05	0.04	N 2	N 0.05	-	90
13	84R029A	Schist	402249	1232256	N 10	N 0.05	0.70	N 2	N 0.05	-	80
14	84R030A	Argillite	402230	1232140	N 10	N 0.05	0.10	N 2	N 0.05	-	90
15	84R031A	Diorite	402211	1231848	N 10	N 0.05	1.90	N 2	N 0.05	-	25
16	84R032A	Basalt	402315	1231732	N 10	N 0.05	0.04	N 2	N 0.05	-	90
17	84R032B	Vein	402308	1231735	N 10	0.05	0.02	N 2	N 0.05	-	35
18	GA2R001A	Chert	400729	1231105	N 10	N 0.05	0.04	N 2	0.05	0.35	50
18	GA2R001B	Chert	400729	1231105	N 10	N 0.05	0.02	N 2	0.30	0.60	100
18	GA2R001C	Chert	400729	1231105	N 10	N 0.05	0.04	N 2	0.10	0.15	25
18	GA2R001D	Graywacke	400729	1231105	N 10	N 0.05	0.08	N 2	N 0.05	0.20	90
18	GA2R001E	Chert	400729	1231105	N 10	N 0.05	0.04	N 2	L 0.05	0.10	30
18	GA2R001F	Sandstone	400729	1231105	N 10	N 0.05	0.04	N 2	N 0.05	0.15	90
24	GA2R002A	Graywacke	400645	1231443	L 10	N 0.05	0.06	N 2	N 0.05	0.40	60
24	GA2R002B	Tuff	400645	1231443	10	N 0.05	0.14	N 2	0.20	0.40	25
24	GA2R002C	Diabase	400645	1231443	N 10	N 0.05	0.02	N 2	N 0.05	0.20	115
24	GA2R002D	Chert	400645	1231443	N 10	N 0.05	0.08	N 2	L 0.05	0.45	10
24	GA2R002E	Chert	400645	1231443	N 10	N 0.05	0.04	N 2	0.05	0.50	5
24	GA2R002F	Graywacke	400645	1231443	N 10	N 0.05	0.08	N 2	N 0.05	0.65	100
24	GA2R002G	Manganese	400645	1231443	70	N 0.05	0.16	N 2	0.10	L 0.05	550
24	GA2R002H	Chert	400645	1231443	N 10	N 0.05	0.02	N 2	0.05	0.60	15
24	GA2R002I	Chert	400645	1231443	N 10	N 0.05	0.02	N 2	N 0.05	0.15	80
24	GA2R002J	Chert	400645	1231443	10	N 0.05	0.16	N 2	0.15	1.00	20
34	GA2R003A	Shale	400701	1231400	N 10	N 0.05	0.02	N 2	0.20	0.55	190
34	GA2R003B	Shale	400701	1231400	N 10	N 0.05	0.26	N 2	0.15	0.90	90
34	GA2R003C	Argillite	400701	1231400	N 10	N 0.05	0.06	N 2	N 0.05	0.20	175
34	GA2R003D	Graywacke	400701	1231400	N 10	N 0.05	0.06	N 2	N 0.05	0.20	65
34	GA2R003E	Chert	400701	1231400	N 10	N 0.05	0.04	N 2	0.25	0.50	25
39	GA2R004	Graywacke	400654	1231438	N 10	N 0.05	0.06	N 2	0.05	0.15	25
40	GA2R005A	Manganese	400720	1231331	40	N 0.05	0.30	N 2	0.30	N 0.05	550
40	GA2R005B	Argillite	400720	1231331	N 10	N 0.05	0.04	N 2	0.30	2.10	125
40	GA2R005C	Argillite	400720	1231331	20	N 0.05	0.04	N 2	0.20	1.20	200
40	GA2R005D	Chert	400720	1231331	N 10	N 0.05	0.02	N 2	N 0.05	0.05	15
40	GA2R005E	Chert	400720	1231331	N 10	N 0.05	0.06	N 2	0.15	0.20	90
40	GA2R005F	Chert	400720	1231331	N 10	N 0.05	0.06	N 2	N 0.05	0.15	45
40	GA2R005G	Graywacke	400720	1231331	N 10	N 0.05	0.06	N 2	N 0.05	0.20	90
40	GA2R005H	Greenstone	400720	1231331	N 10	N 0.05	0.02	N 2	N 0.05	N 0.05	80
40	GA2R005I	Manganese	400720	1231331	70	N 0.05	0.40	N 2	0.15	0.20	120
49	GA4R001A	Argillite	400153	1232949	10	N 0.05	0.08	N 2	0.05	0.30	115
49	GA4R001B	Chert	400153	1232949	N 10	N 0.05	0.10	N 2	0.20	0.35	50
49	GA4R001C	Chert	400153	1232949	N 10	N 0.05	0.26	N 2	0.20	1.10	50
49	GA4R001D	Greenstone	400153	1232949	N 10	N 0.05	0.06	N 2	N 0.05	L 0.05	100
49	GA4R001E	Sulfide	400153	1232949	G 2000	0.25	12.00	56	0.10	0.10	G 2000
49	GA4R001F	Graywacke	400153	1232949	20	N 0.05	0.08	N 2	N 0.05	0.25	140
55	GA4R002	Chert	400706	1232909	N 10	N 0.05	0.12	N 2	0.05	0.10	50
56	GA4R003A	Greenstone	400643	1232925	N 10	N 0.05	0.04	N 2	N 0.05	L 0.05	100
56	GA4R003B	Chert	400643	1232925	N 10	N 0.05	0.08	N 2	L 0.05	0.20	5
58	GA5R001A	Chert	400637	1233353	N 10	N 0.05	0.04	N 2	N 0.05	0.15	10
58	GA5R001B	Graywacke	400637	1233353	N 10	N 0.05	0.16	N 2	N 0.05	0.35	75
58	GA5R001C	Chert	400637	1233353	30	N 0.05	0.02	N 2	0.15	0.95	20

Table 8. Results of analyses by atomic absorption spectroscopy and by other miscellaneous chemical methods of rock samples from the Garberville 1:100,000 quadrangle, Humboldt, Trinity, Shasta, Tehama, and Mendocino Counties, California. --continued (page 2)

Site	Sample	Rock type	Latitude	Longitude	As ppm	Au ppm	Hg ppm	Sb ppm	Te ppm	Tl ppm	Zn ppm
61	GB1R001A	Shale	401217	1230636	N 10	N 0.05	0.08	N 2	N 0.05	0.20	115
61	GB1R001B	Chert	401217	1230636	10	N 0.05	0.08	N 2	0.10	0.05	35
61	GB1R001C	Chert	401217	1230636	N 10	N 0.05	0.04	N 2	0.10	0.25	15
64	GB2R001	Chert	400813	1231142	N 10	N 0.05	0.04	N 2	0.15	0.20	50
65	GB2R003	Graywacke	401245	1231041	10	N 0.05	0.04	N 2	N 0.05	0.20	75
66	GB2R004A	Chert	401244	1231454	N 10	N 0.05	0.08	N 2	L 0.05	0.10	15
66	GB2R004B	Chert	401244	1231454	N 10	N 0.05	0.04	N 2	N 0.05	0.20	30
68	GB2R005A	Graywacke	401254	1230746	20	N 0.05	0.12	N 2	N 0.05	0.10	80
68	GB2R005B	Tuff	401254	1230746	N 10	N 0.05	0.02	N 2	N 0.05	N 0.05	25
68	GB2R005C	Greenstone	401254	1230746	N 10	N 0.05	0.02	N 2	N 0.05	N 0.05	50
71	GB3R001A	Graywacke	401132	1231812	N 10	N 0.05	0.08	N 2	N 0.05	0.45	55
71	GB3R001B	Diabase	401132	1231812	N 10	N 0.05	0.04	N 2	N 0.05	0.15	110
71	GB3R001C	Chert	401132	1231812	N 10	N 0.05	0.06	N 2	N 0.05	L 0.05	10
71	GB3R001D	Manganese	401132	1231812	50	N 0.05	0.62	2	0.10	0.05	400
71	GB3R001E	Chert	401132	1231812	N 10	N 0.05	0.04	N 2	0.15	0.90	60
71	GB3R001F	Manganese	401132	1231812	L 10	N 0.05	0.68	N 2	0.25	0.60	140
71	GB3R001G	Chert	401132	1231812	N 10	N 0.05	0.02	N 2	N 0.05	0.15	15
78	GB3R002A	Graywacke	401110	1231822	N 10	N 0.05	0.08	N 2	N 0.05	0.20	80
78	GB3R002B	Chert	401110	1231822	30	N 0.05	0.08	N 2	0.15	0.10	110
80	GB3R003A	Chert	401259	1231510	N 10	N 0.05	0.14	N 2	0.10	0.05	60
80	GB3R003B	Graywacke	401259	1231510	N 10	N 0.05	0.04	N 2	N 0.05	0.10	70
82	GB3R004A	Chert	401151	1231602	N 10	N 0.05	0.04	N 2	L 0.05	0.15	10
82	GB3R004B	Manganese	401151	1231602	20	N 0.05	0.02	N 2	0.05	0.10	400
84	GB4R001A	Chert	401216	1232729	N 10	N 0.05	0.04	N 2	0.05	0.25	5
84	GB4R001B	Chert	401216	1232729	N 10	N 0.05	N 0.02	N 2	N 0.05	0.15	10
84	GB4R001C	Chert	401216	1232729	N 10	N 0.05	N 0.02	N 2	L 0.05	0.15	5
84	GB4R001D	Argillite	401216	1232729	N 10	N 0.05	0.04	N 2	0.35	0.40	20
84	GB4R001E	Graywacke	401216	1232729	L 10	N 0.05	0.06	N 2	N 0.05	0.35	75
89	GB5R001	Schist	401213	1233102	N 10	N 0.05	N 0.02	N 2	N 0.05	0.05	10
90	GB5R002	Graywacke	401142	1233133	N 10	N 0.05	0.06	N 2	N 0.05	0.30	60
91	GB5R003A	Graywacke	401115	1233136	10	N 0.05	0.04	N 2	L 0.05	0.40	90
91	GB5R003B	Chert	401115	1233136	N 10	N 0.05	0.04	N 2	0.10	0.25	55
91	GB5R003C	Argillite	401115	1233136	N 10	N 0.05	0.20	N 2	0.10	1.00	20
94	GB5R004	Serpentinite	401125	1233351	N 10	N 0.05	0.06	N 2	N 0.05	N 0.05	5
95	GB5R005A	Chert	401205	1233002	N 10	N 0.05	N 0.02	N 2	0.05	0.55	10
95	GB5R005B	Chert	401205	1233002	N 10	N 0.05	0.06	N 2	0.40	0.35	15
95	GB5R005C	Argillite	401205	1233002	L 10	N 0.05	0.06	N 2	1.30	4.70	45
95	GB5R005D	Chert	401205	1233002	N 10	N 0.05	0.02	N 2	0.10	0.40	10
99	GC1R001	Peridotite	402211	1230446	N 10	N 0.05	N 0.02	N 2	N 0.05	N 0.05	15
100	GC1R006A	Argillite	401729	1230619	N 10	N 0.05	0.08	N 2	0.05	1.00	50
100	GC1R006B	Chert	401729	1230619	N 10	N 0.05	0.04	N 2	L 0.05	0.80	25
100	GC1R006C	Manganese	401729	1230619	40	N 0.05	10.40	8	N 0.05	0.15	350
100	GC1R006D	Basalt	401729	1230619	N 10	N 0.05	0.16	N 2	N 0.05	0.15	180
104	GC1R007A	Chert	401608	1230718	N 10	N 0.05	0.04	N 2	N 0.05	N 0.05	50
104	GC1R007B	Manganese	401608	1230718	30	N 0.05	0.24	N 2	L 0.05	L 0.05	300
106	GC1R013	Basalt	401954	1230128	N 10	N 0.05	0.04	N 2	N 0.05	N 0.05	80
107	GC1R014	Graywacke	401908	1230540	N 10	N 0.05	0.04	N 2	N 0.05	0.25	65
108	GC1R015	Chert	401921	1230551	N 10	N 0.05	0.04	N 2	N 0.05	0.10	20
109	GC1R016	Chert	401945	1230523	N 10	N 0.05	0.04	N 2	N 0.05	0.30	70
110	GC1R017	Chert	401941	1230606	L 10	N 0.05	0.04	N 2	N 0.05	0.20	30
111	GC2R001A	Greenstone	401856	1230817	20	N 0.05	0.08	N 2	0.05	N 0.05	130
111	GC2R001B	Chert	401856	1230817	N 10	N 0.05	0.02	N 2	N 0.05	0.05	30
111	GC2R001C	Quartz	401856	1230817	N 10	N 0.05	0.02	N 2	L 0.05	N 0.05	N 5
114	GC3R001	Phyllite	402010	1231717	10	N 0.05	0.08	N 2	N 0.05	0.35	85
115	GC3R002	Phyllite	401937	1231653	N 10	N 0.05	0.10	N 2	N 0.05	0.30	80
116	GC3R004	Phyllite	401930	1231553	N 10	N 0.05	0.10	N 2	N 0.05	0.25	80
117	GC3R005	Graywacke	402229	1231941	N 10	N 0.05	0.16	N 2	L 0.05	0.55	125
118	GC3R006A	Greenstone	401914	1231549	N 10	N 0.05	0.08	N 2	N 0.05	N 0.05	120
118	GC3R006B	Dacite	401914	1231549	N 10	N 0.05	0.06	N 2	L 0.05	N 0.05	15
120	GC3R007	Graywacke	401921	1231554	L 10	N 0.05	0.04	N 2	N 0.05	0.25	55

Table 8. Results of analyses by atomic absorption spectroscopy and by other miscellaneous chemical methods of rock samples from the Garberville 1:100,000 quadrangle, Humboldt, Trinity, Shasta, Tehama, and Mendocino Counties, California. --continued (page 3)

Site	Sample	Rock type	Latitude	Longitude	As ppm	Au ppm	Hg ppm	Sb ppm	Te ppm	Tl ppm	Zn ppm
121	GC3R008A	Graywacke	401936	1231554	L 10	N 0.05	0.06	N 2	N 0.05	0.25	85
121	GC3R008B	Conglomerate	401936	1231554	N 10	N 0.05	0.10	N 2	N 0.05	0.20	70
123	GC3R009	Breccia	401916	1231555	N 10	N 0.05	0.04	N 2	N 0.05	N 0.05	50
124	GC3R010	Breccia	401924	1231602	N 10	L 0.05	4.20	N 2	1.70	0.10	G 2000
125	GC3R011A	Chert	401830	1232129	N 10	N 0.05	0.18	N 2	0.25	1.10	90
125	GC3R011B	Chert	401830	1232129	N 10	N 0.05	0.04	N 2	0.05	0.05	25
125	GC3R011C	Chert	401830	1232129	N 10	N 0.05	0.04	N 2	0.05	0.20	30
128	GC4R001A	Graywacke	402151	1232719	N 10	N 0.05	0.08	N 2	N 0.05	0.25	60
128	GC4R001B	Chert	402151	1232719	N 10	N 0.05	0.02	N 2	N 0.05	0.30	15
128	GC4R001C	Chert	402151	1232719	N 10	N 0.05	0.02	N 2	L 0.05	0.55	10
128	GC4R001D	Greenstone	402151	1232719	N 10	N 0.05	0.12	N 2	N 0.05	N 0.05	110
128	GC4R001E	Basalt	402151	1232719	N 10	N 0.05	0.08	N 2	N 0.05	N 0.05	120
128	GC4R001F	Manganese	402151	1232719	90	N 0.05	2.50	2	0.55	N 0.05	200
128	GC4R001G	Manganese	402151	1232719	10	N 0.05	3.50	N 2	0.45	N 0.05	180
128	GC4R001H	Manganese	402151	1232719	N 10	N 0.05	0.12	N 2	L 0.05	L 0.05	30
136	GC4R005	Chert	402128	1232516	N 10	N 0.05	0.04	N 2	0.05	L 0.05	35
137	GC4R006	Graywacke	402032	1232425	10	N 0.05	0.08	N 2	N 0.05	0.35	45
138	GC4R007	Graywacke	402118	1232508	10	N 0.05	0.08	N 2	N 0.05	0.15	70
139	GC4R008	Graywacke	401747	1232728	N 10	N 0.05	0.06	N 2	N 0.05	0.30	60
140	GC4R009A	Basalt	401501	1232849	L 10	N 0.05	0.04	N 2	N 0.05	L 0.05	140
140	GC4R009B	Argillite	401501	1232849	L 10	N 0.05	0.44	N 2	0.25	0.65	100
142	GC4R010	Graywacke	401514	1232901	N 10	N 0.05	0.08	N 2	N 0.05	0.20	90
143	GC5R001A	Greenstone	401943	1233225	N 10	N 0.05	0.04	N 2	N 0.05	0.10	90
143	GC5R001B	Chert	401943	1233225	180	L 0.05	0.06	N 2	0.25	0.15	140
143	GC5R001C	Manganese	401943	1233225	200	L 0.05	0.10	N 2	0.30	0.25	250
143	GC5R001D	Argillite	401943	1233225	N 10	N 0.05	0.06	N 2	0.15	0.50	115
147	GC5R002A	Chert	402042	1233303	N 10	N 0.05	0.28	N 2	0.15	0.25	70
147	GC5R002B	Manganese	402042	1233303	N 10	N 0.05	0.24	N 2	0.25	0.25	40
149	GC5R003A	Phyllite	402015	1233247	N 10	N 0.05	0.10	N 2	L 0.05	0.15	95
149	GC5R003B	Serpentinite	402015	1233247	N 10	N 0.05	0.04	N 2	N 0.05	N 0.05	20
149	GC5R003C	Rodingite	402015	1233247	N 10	N 0.05	0.02	N 2	N 0.05	N 0.05	40
149	GC5R003D	Gabbro	402015	1233247	N 10	N 0.05	N 0.02	N 2	N 0.05	N 0.05	10
153	GC5R004	Basalt	402004	1233313	N 10	N 0.05	0.04	N 2	N 0.05	L 0.05	50
154	GC5R005	Graywacke	402150	1233522	N 10	N 0.05	0.12	N 2	N 0.05	0.20	90
155	GC5R006	Basalt	402105	1233339	N 10	N 0.05	N 0.02	N 2	N 0.05	L 0.05	140
156	GC5R007	Graywacke	402032	1233223	N 10	N 0.05	0.20	N 2	N 0.05	0.10	100
157	GC5R008A	Greenstone	402024	1233228	N 10	N 0.05	0.12	N 2	N 0.05	N 0.05	80
157	GC5R008B	Greenstone	402024	1233228	10	N 0.05	0.36	N 2	N 0.05	L 0.05	85
159	GD1R001	Rhyolite	402921	1230136	L 10	N 0.05	0.12	N 2	N 0.05	0.25	45
160	GD1R002	Gabbro	402845	1230338	N 10	N 0.05	0.02	N 2	N 0.05	N 0.05	45
161	GD1R003	Gabbro	402800	1230352	N 10	N 0.05	0.06	N 2	N 0.05	N 0.05	20
162	GD1R004	Gabbro	402635	1230349	N 10	N 0.05	0.04	N 2	N 0.05	N 0.05	40
163	GD1R005A	Graywacke	402411	1230045	10	N 0.05	0.04	N 2	L 0.05	0.45	80
163	GD1R005B	Quartz	402411	1230045	400	N 0.05	0.06	N 2	L 0.05	N 0.05	5
163	GD1R005C	Graywacke	402411	1230045	N 10	N 0.05	0.06	N 2	0.05	0.30	60
166	GD1R006	Graywacke	402350	1230717	N 10	N 0.05	0.08	N 2	L 0.05	0.40	70
167	GD1R007	Tuff	402320	1230353	N 10	N 0.05	0.06	N 2	N 0.05	0.15	95
168	GD2R002	Phyllite	402311	1231319	N 10	N 0.05	0.10	N 2	N 0.05	0.25	90
169	GD2R004	Phyllite	402350	1231114	10	N 0.05	0.06	N 2	L 0.05	L 0.05	120
170	GD2R010A	Greenstone	402511	1231021	10	N 0.05	0.04	N 2	N 0.05	N 0.05	75
170	GD2R010B	Quartz	402511	1231021	N 10	N 0.05	0.04	N 2	N 0.05	N 0.05	5
170	GD2R010C	Manganese	402511	1231021	N 10	N 0.05	0.04	N 2	L 0.05	0.45	35
170	GD2R010D	Manganese	402511	1231021	70	N 0.05	0.26	N 2	N 0.05	0.05	200
170	GD2R010E	Quartz	402511	1231021	N 10	N 0.05	N 0.02	N 2	N 0.05	N 0.05	5
170	GD2R010F	Greenstone	402511	1231021	N 10	N 0.05	0.02	N 2	N 0.05	N 0.05	65
170	GD2R010G	Phyllite	402511	1231021	N 10	N 0.05	0.08	N 2	0.05	1.50	90
177	GD3R001	Graywacke	402242	1231940	30	N 0.05	0.10	N 2	N 0.05	0.15	25
178	GD3R002A	Pyroxenite	402254	1232028	N 10	N 0.05	0.02	N 2	N 0.05	N 0.05	5
178	GD3R002B	Hornblendite	402254	1232028	N 10	N 0.05	0.02	N 2	N 0.05	N 0.05	5
180	GD3R002C	Hornblendite	402252	1232021	N 10	N 0.05	0.04	N 2	N 0.05	N 0.05	20

Table 8. Results of analyses by atomic absorption spectroscopy and by other miscellaneous chemical methods of rock samples from the Garberville 1:100,000 quadrangle, Humboldt, Trinity, Shasta, Tehama, and Mendocino Counties, California. --continued (page 4)

Site	Sample	Rock type	Latitude	Longitude	As ppm	Au ppm	Hg ppm	Sb ppm	Te ppm	Tl ppm	Zn ppm
180	GD3R002D	Gabbro	402252	1232021	N 10	N 0.05	0.04	N 2	N 0.05	L 0.05	30
180	GD3R002E	Diorite	402252	1232021	N 10	N 0.05	0.04	N 2	N 0.05	L 0.05	30
180	GD3R002F	Gabbro	402252	1232021	N 10	N 0.05	0.06	N 2	N 0.05	N 0.05	15
180	GD3R002G	Gabbro	402252	1232021	N 10	N 0.05	0.06	N 2	N 0.05	N 0.05	20
185	GD3R003	Basalt	402416	1231845	N 10	N 0.05	0.04	N 2	N 0.05	0.10	50
186	GD3R004	Conglomerate	402428	1231526	N 10	N 0.05	0.04	N 2	N 0.05	0.05	40
187	GD3R005A	Basalt	402344	1231619	N 10	N 0.05	0.06	N 2	N 0.05	0.15	105
187	GD3R005B	Chert	402344	1231619	N 10	N 0.05	0.04	N 2	N 0.05	0.25	35
189	GD3R006A	Gabbro	402505	1232018	N 10	N 0.05	0.04	N 2	N 0.05	N 0.05	25
189	GD3R006B	Serpentinite	402505	1232018	N 10	N 0.05	0.04	N 2	N 0.05	N 0.05	25
189	GD3R006C	Serpentinite	402505	1232018	N 10	N 0.05	1.40	N 2	0.60	N 0.05	10
192	GD3R009A	Diorite	402231	1232100	10	N 0.05	0.08	N 2	N 0.05	L 0.05	40
192	GD3R009B	Gabbro	402231	1232100	N 10	N 0.05	0.06	N 2	N 0.05	N 0.05	10
192	GD3R009C	Gabbro	402231	1232100	N 10	N 0.05	0.06	N 2	N 0.05	N 0.05	10
192	GD3R009D	Peridotite	402231	1232100	N 10	N 0.05	0.10	N 2	N 0.05	N 0.05	40
192	GD3R009E	Gabbro	402231	1232100	N 10	N 0.05	0.30	N 2	N 0.05	L 0.05	45
192	GD3R009F	Gabbro	402231	1232100	N 10	N 0.05	0.08	N 2	N 0.05	N 0.05	10
192	GD3R009G	Hornblendite	402231	1232100	N 10	N 0.05	0.06	N 2	N 0.05	N 0.05	35
192	GD3R009H	Hornfels	402231	1232100	10	N 0.05	0.12	N 2	N 0.05	0.30	90
200	GD3R010A	Greenstone	402330	1231635	N 10	N 0.05	0.04	N 2	N 0.05	0.10	95
200	GD3R010B	Chert	402330	1231635	N 10	N 0.05	0.04	N 2	N 0.05	0.05	30
200	GD3R010C	Chert	402330	1231635	N 10	N 0.05	0.02	N 2	N 0.05	0.10	15
203	GD4R004	Phyllite	402802	1232517	N 10	N 0.05	0.08	N 2	N 0.05	0.10	90
204	GD4R005	Argillite	402426	1232333	10	N 0.05	0.24	N 2	L 0.05	0.40	80
205	GD4R006	Argillite	402845	1232503	N 10	N 0.05	0.16	N 2	N 0.05	0.15	70
206	GD4R007	Phyllite	402430	1232357	10	N 0.05	0.18	N 2	N 0.05	0.15	115
207	GD4R008A	Greenstone	402427	1232342	10	N 0.05	0.10	N 2	N 0.05	0.35	80
207	GD4R008B	Graywacke	402427	1232342	30	N 0.05	0.08	N 2	N 0.05	0.10	45
209	GD4R009	Phyllite	402629	1232503	30	N 0.05	0.34	N 2	0.05	0.35	95
210	GD4R010	Phyllite	402550	1232443	10	N 0.05	0.10	N 2	N 0.05	0.05	70
211	GD6R001A	Manganese	402354	1234128	60	L 0.05	0.10	36	0.25	L 0.05	350
211	GD6R001B	Chert	402354	1234128	N 10	N 0.05	N 0.02	N 2	0.10	0.40	25
211	GD6R001C	Graywacke	402354	1234128	10	N 0.05	0.10	N 2	N 0.05	0.05	90
211	GD6R001D	Argillite	402354	1234128	N 10	N 0.05	0.06	N 2	0.10	0.15	100
215	GD6R002	Graywacke	402323	1234140	10	N 0.05	0.14	N 2	N 0.05	0.30	80
216	GD8R001	Graywacke	402910	1235726	L 10	N 0.05	0.10	N 2	N 0.05	0.25	85
217	GD8R002	Siltstone	402827	1235744	L 10	N 0.05	0.08	N 2	N 0.05	0.35	80
218	GD8R003	Mudstone	402848	1235440	L 10	N 0.05	0.08	N 2	N 0.05	0.25	110
219	GMS1	Sulfides	402420	1232359	40	N 0.05	4.40	N 2	0.05	3.50	G 2000
219	GMS2	Silica	402420	1232359	N 10	N 0.05	0.04	N 2	L 0.05	N 0.05	20
219	GMS3	Pyrite	402420	1232359	50	N 0.05	3.60	2	0.15	2.10	900
222	HY-10	Conglomerate	402953	1230616	-	< 0.05	0.04	-	0.05	0.20	-
223	HY-11	Breccia	402930	1230617	-	< 0.05	0.12	-	< 0.05	< 0.05	-

Table 9. Results of analyses for major, minor, and trace elements by X-ray fluorescence spectroscopy and analyses for major and minor oxides requiring individual determinations of rock samples from the Garberville 1:100,000 quadrangle, Humboldt, Trinity, Shasta, Tehama, and Mendocino Counties, California. (Fe_TO_3 = total iron calculated as Fe_2O_3) (page 1, part a)

Site	Field No	Rock type	Latitude	Longitude	Al2O3 %	CO2 %	CaO %	FeO %	FeTO3 %
18	GA2R001D	Graywacke	400729	1231105	14.40	0.45	1.03	4.40	6.66
18	GA2R001F	Sandstone	400729	1231105	13.10	0.01	0.27	2.60	7.52
24	GA2R002A	Graywacke	400645	1231443	13.50	< 0.02	1.12	1.10	4.56
24	GA2R002F	Graywacke	400645	1231443	14.60	< 0.02	0.58	0.56	8.06
34	GA2R003C	Argillite	400701	1231400	15.40	0.01	0.34	11.80	16.50
34	GA2R003D	Graywacke	400701	1231400	14.10	< 0.02	0.93	3.00	5.07
39	GA2R004	Graywacke	400654	1231438	1.54	< 0.02	0.05	0.08	0.98
49	GA4R001F	Graywacke	400153	1232949	13.30	0.28	3.02	2.70	4.58
58	GA5R001B	Graywacke	400637	1233353	14.10	0.01	0.45	2.60	5.39
65	GB2R003	Graywacke	401245	1231041	13.20	< 0.02	1.56	1.20	5.81
68	GB2R005A	Graywacke	401254	1230746	10.90	< 0.02	0.72	1.60	5.96
71	GB3R001A	Graywacke	401132	1231812	13.80	< 0.02	0.67	1.50	4.08
78	GB3R002A	Graywacke	401110	1231822	13.80	< 0.02	1.21	3.60	6.37
84	GB4R001E	Graywacke	401216	1232729	15.60	< 0.02	0.04	1.80	6.02
90	GB5R002	Graywacke	401142	1233133	14.90	< 0.02	2.03	2.00	5.10
91	GB5R003A	Graywacke	401115	1233136	15.30	0.06	1.91	3.00	5.98
107	GC1R014	Graywacke	401908	1230540	9.28	1.10	2.05	2.60	4.11
115	GC3R002	Phyllite	401937	1231653	12.90	2.80	3.56	3.60	5.54
116	GC3R004	Phyllite	401930	1231553	13.70	0.01	0.68	3.80	5.39
117	GC3R005	Graywacke	402229	1231941	12.50	< 0.02	2.15	3.00	5.77
120	GC3R007	Graywacke	401921	1231554	12.40	< 0.02	0.23	3.00	4.76
121	GC3R008A	Graywacke	401936	1231554	12.30	< 0.02	0.17	1.20	4.46
121	GC3R008B	Conglomerate	401936	1231554	8.51	0.01	0.55	1.30	4.51
128	GC4R001A	Graywacke	402151	1232719	14.00	0.20	1.33	3.00	4.94
138	GC4R007	Graywacke	402118	1232508	12.80	0.78	1.29	4.20	6.15
142	GC4R010	Graywacke	401514	1232901	13.60	0.01	1.15	3.20	5.83
154	GC5R005	Graywacke	402150	1233522	12.40	1.60	2.49	4.20	5.74
156	GC5R007	Graywacke	402032	1233223	16.30	0.78	2.15	6.70	9.77
163	GD1R005A	Graywacke	402411	1230045	12.90	0.01	1.40	3.60	6.12
163	GD1R005C	Graywacke	402411	1230045	13.00	0.01	2.47	3.80	6.13
166	GD1R006	Graywacke	402350	1230717	11.30	0.01	0.19	2.90	4.71
167	GD1R007	Tuff	402320	1230353	17.50	0.03	8.55	8.50	11.20
168	GD2R002	Phyllite	402311	1231319	13.00	0.19	0.48	4.00	5.23
169	GD2R004	Phyllite	402350	1231114	11.10	0.02	0.32	1.40	8.03
170	GD2R010G	Phyllite	402511	1231021	11.90	0.01	0.04	1.10	5.54
177	GD3R001	Graywacke	402242	1231940	12.60	0.08	9.62	7.60	10.60
203	GD4R004	Phyllite	402802	1232517	12.30	0.01	0.21	3.50	6.17
204	GD4R005	Argillite	402426	1232333	14.10	0.02	0.37	2.70	6.54
205	GD4R006	Argillite	402845	1232503	13.70	0.02	0.37	2.00	4.39
206	GD4R007	Phyllite	402430	1232357	15.40	0.06	0.29	4.80	7.90
207	GD4R008B	Graywacke	402427	1232342	13.30	9.00	12.30	6.20	7.12
209	GD4R009	Phyllite	402629	1232503	17.90	0.01	0.70	3.40	6.86
210	GD4R010	Phyllite	402550	1232443	14.00	3.00	5.07	6.10	7.77
211	GD6R001C	Graywacke	402354	1234128	12.40	0.01	1.40	4.60	6.61
215	GD6R002	Graywacke	402323	1234140	15.30	0.37	0.49	3.30	6.29
216	GD8R001	Graywacke	402910	1235726	14.10	0.62	1.84	3.20	5.87
217	GD8R002	Siltstone	402827	1235744	11.80	< 0.02	0.84	2.40	4.80
218	GD8R003	Mudstone	402848	1235440	16.40	0.13	2.11	3.90	6.35

Table 9. Results of analyses for major, minor, and trace elements by X-ray fluorescence spectroscopy and analyses for major and minor oxides requiring individual determinations of rock samples from the Garberville 1:100,000 quadrangle, Humboldt, Trinity, Shasta, Tehama, and Mendocino Counties, California -- continued. (page 1, part b)

Site	Field No	H2O+ %	H2O- %	K2O %	MgO %	MnO %	Na2O %	P2O5 %	SiO2 %	TiO2 %
18	GA2R001D	3.64	0.31	1.66	2.38	0.10	3.12	0.16	64.7	0.70
18	GA2R001F	2.52	0.22	1.49	1.91	0.08	2.57	0.16	69.0	0.72
24	GA2R002A	3.16	0.60	1.82	2.44	0.07	3.18	0.10	68.0	0.51
24	GA2R002F	4.63	1.95	1.25	3.67	0.63	2.28	0.23	60.3	1.24
34	GA2R003C	6.12	0.29	1.10	4.22	0.07	1.00	0.25	54.9	0.49
34	GA2R003D	2.22	0.38	1.06	1.98	0.35	4.75	0.14	68.1	0.60
39	GA2R004	0.53	0.08	0.21	0.31	0.26	0.26	< 0.05	95.4	0.05
49	GA4R001F	2.53	0.31	1.91	1.80	0.06	2.91	0.12	68.2	0.53
58	GA5R001B	3.00	0.70	1.94	1.98	0.30	3.04	0.12	67.2	0.63
65	GB2R003	3.50	1.28	1.32	3.45	0.11	2.57	0.13	65.7	0.64
68	GB2R005A	2.77	0.78	0.86	1.90	0.05	2.62	0.14	72.5	0.48
71	GB3R001A	2.88	0.52	1.88	2.25	0.08	3.34	0.12	69.0	0.50
78	GB3R002A	3.27	0.77	1.21	3.83	0.11	3.30	0.13	65.3	0.63
84	GB4R001E	4.11	0.82	1.64	1.94	0.19	2.84	0.11	65.3	0.68
90	GB5R002	2.67	1.49	1.94	2.08	0.07	3.19	0.14	65.2	0.61
91	GB5R003A	4.16	0.70	2.14	2.30	0.09	2.32	0.23	63.5	0.62
107	GC1R014	2.16	0.20	1.61	2.94	0.06	1.87	0.15	73.8	0.47
115	GC3R002	2.74	0.10	1.65	2.19	0.10	1.91	0.19	65.1	0.57
116	GC3R004	2.74	0.14	1.69	2.54	0.04	2.80	0.17	69.6	0.60
117	GC3R005	1.79	0.27	2.30	2.57	0.13	1.77	0.25	68.3	0.60
120	GC3R007	2.69	0.33	1.70	2.42	0.04	2.39	0.12	72.3	0.53
121	GC3R008A	3.16	0.43	2.03	2.02	0.03	1.50	0.09	72.9	0.57
121	GC3R008B	2.13	0.50	1.06	1.65	0.05	1.44	0.16	78.6	0.42
128	GC4R001A	2.70	0.52	2.02	2.25	0.06	3.39	0.11	67.3	0.54
138	GC4R007	2.66	0.26	1.70	2.00	0.09	3.29	0.11	67.8	0.71
142	GC4R010	3.03	0.38	1.48	2.85	0.06	2.75	0.14	67.7	0.65
154	GC5R005	3.07	0.14	1.48	2.76	0.06	2.11	0.17	67.2	0.62
156	GC5R007	4.07	0.32	0.66	4.66	0.13	4.92	0.14	55.4	0.81
163	GD1R005A	2.10	0.30	2.63	3.19	0.15	1.09	0.18	68.3	0.70
163	GD1R005C	2.86	0.44	1.68	3.59	0.09	1.82	0.19	66.9	0.71
166	GD1R006	2.88	0.35	2.27	2.52	0.09	1.29	0.11	73.5	0.55
167	GD1R007	3.24	0.17	2.26	4.35	0.20	2.28	0.59	49.8	0.87
168	GD2R002	2.97	0.13	2.05	2.38	0.04	2.08	0.18	69.6	0.60
169	GD2R004	3.61	0.24	3.11	1.63	0.05	0.91	0.14	69.6	0.52
170	GD2R010G	2.98	0.87	4.06	2.08	0.05	< 0.15	0.12	71.0	0.58
177	GD3R001	2.80	0.20	0.95	11.50	0.20	2.08	0.24	48.7	1.48
203	GD4R004	2.94	0.16	1.49	2.57	0.04	1.99	0.15	69.9	0.56
204	GD4R005	3.08	0.30	2.51	2.34	0.04	2.23	0.13	66.6	0.58
205	GD4R006	2.82	0.42	2.23	1.97	0.02	2.55	0.12	68.3	0.67
206	GD4R007	4.05	0.23	2.05	2.75	0.07	1.43	0.19	63.9	0.66
207	GD4R008B	3.99	0.10	0.33	6.23	0.17	3.19	0.25	44.4	0.90
209	GD4R009	3.90	0.74	2.78	2.51	0.06	1.50	0.15	61.1	0.82
210	GD4R010	3.19	0.12	0.40	4.31	0.12	3.82	0.12	58.0	0.67
211	GD6R001C	3.42	0.13	0.23	5.01	0.09	3.78	0.16	66.1	0.68
215	GD6R002	3.42	0.58	1.96	2.22	0.08	3.24	0.17	65.0	0.70
216	GD8R001	3.95	1.43	2.03	3.26	0.06	2.33	0.16	62.3	0.72
217	GD8R002	3.25	1.35	1.44	2.65	0.04	2.29	0.11	69.1	0.66
218	GD8R003	3.98	1.10	2.11	2.39	0.06	2.60	0.21	60.5	0.71

Table 9. Results of analyses for major, minor, and trace elements by X-ray fluorescence spectroscopy and analyses for major and minor oxides requiring individual determinations of rock samples from the Garberville 1:100,000 quadrangle, Humboldt, Trinity, Shasta, Tehama, and Mendocino Counties, California -- continued. (page 1, part c)

[values in parts per million]

Site	Field No	Ba	Ce	Cr	Cu	La	Nb	Ni	Rb	Sr	Y	Zn	Zr
18	GA2R001D	524	23	162	59	9	< 10	57	40	80	17	111	115
18	GA2R001F	511	21	81	44	15	14	40	40	45	15	123	125
24	GA2R002A	520	42	175	25	27	19	75	61	71	24	76	141
24	GA2R002F	317	81	570	56	86	28	171	42	61	84	110	159
34	GA2R003C	319	52	117	51	26	11	138	33	32	18	200	93
34	GA2R003D	365	39	49	20	19	15	33	30	84	25	83	126
39	GA2R004	114	18	< 20	16	10	< 10	29	7	15	10	36	28
49	GA4R001F	342	46	69	29	27	11	26	52	168	20	141	140
58	GA5R001B	465	24	77	50	15	16	52	66	80	23	93	120
65	GB2R003	358	37	313	34	25	15	122	48	53	21	90	123
68	GB2R005A	261	22	101	40	3	16	53	27	47	25	87	101
71	GB3R001A	540	48	156	25	25	20	69	61	87	26	70	148
78	GB3R002A	384	46	304	29	17	< 10	85	29	57	11	89	129
84	GB4R001E	481	12	93	32	20	< 10	82	62	61	22	88	169
90	GB5R002	680	33	76	33	5	11	40	53	210	22	91	122
91	GB5R003A	696	36	110	56	11	< 10	60	63	201	22	110	116
107	GC1R014	1090	35	122	66	26	16	79	53	90	23	86	97
115	GC3R002	398	25	78	40	9	14	44	64	397	34	102	126
116	GC3R004	640	44	171	29	17	< 10	39	37	174	18	98	143
117	GC3R005	594	39	226	58	14	16	57	79	282	31	145	191
120	GC3R007	853	21	155	33	7	14	31	50	196	16	79	101
121	GC3R008A	1040	32	200	28	12	11	53	55	99	21	97	124
121	GC3R008B	693	25	107	32	13	14	38	32	99	24	81	96
128	GC4R001A	961	38	168	26	20	18	54	63	105	28	80	126
138	GC4R007	245	29	109	31	19	< 10	39	43	133	19	95	124
142	GC4R010	512	20	202	37	16	12	64	43	93	24	96	126
154	GC5R005	465	31	141	43	12	< 10	62	31	153	15	97	118
156	GC5R007	226	25	111	58	4	< 10	32	20	189	22	105	82
163	GD1R005A	1070	40	93	80	14	11	23	69	300	15	84	112
163	GD1R005C	524	43	132	58	17	11	18	46	228	21	80	120
166	GD1R006	858	31	117	53	9	15	56	76	34	20	96	128
167	GD1R007	634	65	< 20	249	22	< 10	6	72	408	21	127	127
168	GD2R002	794	39	186	38	11	14	62	62	87	20	117	147
169	GD2R004	900	46	96	92	19	14	121	108	32	25	121	136
170	GD2R010G	1510	34	119	118	26	18	38	124	15	37	102	128
177	GD3R001	350	39	754	11	12	18	257	31	542	22	111	128
203	GD4R004	538	27	154	71	5	14	29	44	121	24	119	120
204	GD4R005	956	37	152	36	16	13	28	76	175	23	92	136
205	GD4R006	768	31	153	53	14	16	26	72	143	29	95	155
206	GD4R007	519	37	185	63	22	13	46	60	156	26	120	120
207	GD4R008B	161	42	276	97	16	16	96	38	947	16	76	129
209	GD4R009	825	48	163	45	23	< 10	26	68	189	24	114	130
210	GD4R010	327	13	170	33	14	< 10	27	7	322	9	92	69
211	GD6R001C	144	36	524	42	15	< 10	159	< 2	80	15	99	100
215	GD6R002	436	23	116	29	5	17	44	64	66	27	97	146
216	GD8R001	548	37	233	39	13	12	115	69	177	24	102	140
217	GD8R002	375	38	295	32	11	13	163	54	98	22	100	143
218	GD8R003	789	26	81	47	19	15	43	105	463	24	116	178

Table 10. Results of inductively coupled plasma-atomic emission spectroscopy analyses of rock samples from the Garberville 1:100,000 quadrangle, Humboldt, Trinity, Shasta, Tehama, and Mendocino Counties, California.

Site	Sample	Rock type	Latitude	Longitude	Al %	Ca %	Fe %	K %	Mg %	Na %	P %	Ti %
222	HY-10	Conglomerate	402953	1230616	5.20	0.70	4.1	1.20	1.10	0.41	0.04	0.42
223	HY-11	Breccia	402930	1230617	9.40	6.30	5.5	0.76	3.50	2.60	0.08	0.48

Site	Sample	Ag ppm	As ppm	Au ppm	Ba ppm	Be ppm	Bi ppm	Cd ppm	Ce ppm	Co ppm	Cr ppm	Cu ppm
222	HY-10	< 2	< 10	< 8	610	1	< 10	< 2	33	18	140	42
223	HY-11	< 2	< 10	< 8	220	< 1	< 10	< 2	25	32	140	130

Site	Sample	Eu ppm	Ga ppm	Ho ppm	La ppm	Li ppm	Mn ppm	Mo ppm	Nb ppm	Nd ppm	Ni ppm	Pb ppm	Sc ppm
222	HY-10	< 2	12	< 4	21	31	810	< 2	8	22	72	5	13
223	HY-11	< 2	17	< 4	14	14	830	< 2	4	20	36	< 4	33

Site	Sample	Sn ppm	Sr ppm	Ta ppm	Th ppm	U ppm	V ppm	Y ppm	Yb ppm	Zn ppm
222	HY-10	< 10	94	< 40	7	< 100	110	15	2	65
223	HY-11	< 10	800	< 40	< 4	< 100	260	16	2	65

Table 11. Results of induced neutron activation analyses of rock samples from the Garberville 1:100,000 quadrangle, Humboldt, Trinity, Shasta, Tehama, and Mendocino Counties, California. (page 1)

Site	Field No	Rock type	Latitude	Longitude	Fe %	CV/Fe %	Na %	CV/Na %	As ppm	CV/As %
18	GA2R001D	Graywacke	400729	1231105	4.68	1	2.440	1	14.400	2
18	GA2R001F	Sandstone	400729	1231105	5.12	1	1.990	1	9.240	2
24	GA2R002A	Graywacke	400645	1231443	3.19	1	2.460	1	8.180	3
24	GA2R002F	Graywacke	400645	1231443	5.45	1	1.650	2	7.250	1
34	GA2R003C	Argillite	400701	1231400	11.50	1	0.700	1	7.430	2
34	GA2R003D	Graywacke	400701	1231400	3.36	1	3.650	1	6.510	3
39	GA2R004	Graywacke	400654	1231438	0.65	1	0.172	1	0.414	11 ,
49	GA4R001F	Graywacke	400153	1232949	3.07	1	2.240	1	23.700	1
58	GA5R001B	Graywacke	400637	1233353	3.70	1	2.420	1	7.580	3
65	GB2R003	Graywacke	401245	1231041	3.98	1	1.980	1	8.460	3
68	GB2R005A	Graywacke	401254	1230746	4.12	1	2.040	1	14.200	3
71	GB3R001A	Graywacke	401132	1231812	2.84	1	2.590	1	8.640	3
78	GB3R002A	Graywacke	401110	1231822	4.45	1	2.550	1	7.850	2
84	GB4R001E	Graywacke	401216	1232729	4.15	1	2.200	1	7.660	1
90	GB5R002	Graywacke	401142	1233133	3.65	1	2.540	1	8.120	3
91	GB5R003A	Graywacke	401115	1233136	4.24	1	1.760	1	15.300	2
107	GC1R014	Graywacke	401908	1230540	2.83	1	1.430	1	2.200	13
115	GC3R002	Phyllite	401937	1231653	3.65	1	1.440	1	8.780	3
116	GC3R004	Phyllite	401930	1231553	3.62	1	2.070	3	5.430	6
117	GC3R005	Graywacke	402229	1231941	3.93	1	1.320	1	2.340	17
120	GC3R007	Graywacke	401921	1231554	3.28	1	1.830	1	6.880	2
121	GC3R008A	Graywacke	401936	1231554	3.18	1	1.180	1	7.400	1
121	GC3R008B	Conglomerate	401936	1231554	3.23	1	1.130	1	7.080	5
128	GC4R001A	Graywacke	402151	1232719	3.29	1	2.540	1	9.310	2
138	GC4R007	Graywacke	402118	1232508	4.26	1	2.600	1	10.500	1
142	GC4R010	Graywacke	401514	1232901	4.08	1	2.140	1	7.080	3
154	GC5R005	Graywacke	402150	1233522	3.96	1	1.650	1	6.350	1
156	GC5R007	Graywacke	402032	1233223	6.52	1	3.730	1	6.830	3
163	GD1R005A	Graywacke	402411	1230045	4.26	1	0.835	1	12.700	3
163	GD1R005C	Graywacke	402411	1230045	4.22	1	1.410	1	7.250	3
166	GD1R006	Graywacke	402350	1230717	3.15	1	0.954	1	4.950	9
167	GD1R007	Tuff	402320	1230353	7.32	1	1.720	2	0.510	29
168	GD2R002	Phyllite	402311	1231319	3.54	1	1.570	2	8.590	3
169	GD2R004	Phyllite	402350	1231114	5.42	1	0.677	1	7.890	6
170	GD2R010G	Phyllite	402511	1231021	3.70	1	0.079	6	1.810	21
177	GD3R001	Graywacke	402242	1231940	6.91	1	1.650	1	31.400	2
203	GD4R004	Phyllite	402802	1232517	4.20	1	1.590	3	5.120	4
204	GD4R005	Argillite	402426	1232333	4.50	1	1.730	2	9.490	1
205	GD4R006	Argillite	402845	1232503	3.05	1	1.900	1	2.030	10
206	GD4R007	Phyllite	402430	1232357	5.59	1	1.100	3	18.500	3
207	GD4R008B	Graywacke	402427	1232342	5.34	1	2.420	1	33.100	3
209	GD4R009	Phyllite	402629	1232503	4.77	1	1.180	3	24.100	3
210	GD4R010	Phyllite	402550	1232443	5.01	1	2.950	1	10.100	4
211	GD6R001C	Graywacke	402354	1234128	4.69	1	2.980	1	6.690	3
215	GD6R002	Graywacke	402323	1234140	4.29	1	2.570	1	12.600	1
216	GD8R001	Graywacke	402910	1235726	4.12	1	1.780	1	6.960	2
217	GD8R002	Siltstone	402827	1235744	3.43	1	1.740	1	6.810	3
218	GD8R003	Mudstone	402848	1235440	4.53	1	2.040	1	9.520	3

Table 11. Results of induced neutron activation analyses of rock samples from the Garberville 1:100,000 quadrangle, Humboldt, Trinity, Shasta, Tehama, and Mendocino Counties, California --continued. (page 2)

Site	Field No	Ba ppm	CV/Ba %	Ce ppm	CV/Ce %	Co ppm	CV/Co %	Cr ppm	CV/Cr %	Cs ppm	CV/Cs %
18	GA2R001D	512	3	21.4	1	13.00	1	122.00	5	2.640	3
18	GA2R001F	508	1	25.3	2	11.00	1	60.10	3	1.650	2
24	GA2R002A	519	1	51.4	2	11.30	1	158.00	2	2.750	1
24	GA2R002F	309	2	81.6	2	31.60	1	403.00	2	1.680	2
34	GA2R003C	324	2	47.7	2	18.90	1	80.80	5	1.930	2
34	GA2R003D	347	2	36.7	1	26.30	1	53.50	2	1.120	2
39	GA2R004	124	2	19.5	1	16.50	1	6.62	3	0.377	9
49	GA4R001F	338	2	49.1	2	9.63	1	66.00	2	2.300	1
58	GA5R001B	465	2	31.2	1	12.00	1	69.50	2	3.160	1
65	GB2R003	358	2	34.8	2	17.60	1	256.00	2	1.500	1
68	GB2R005A	260	2	13.1	1	12.00	1	94.70	5	1.270	4
71	GB3R001A	534	1	45.7	2	11.50	1	148.00	2	3.060	2
78	GB3R002A	385	1	38.2	1	16.70	1	244.00	2	1.480	1
84	GB4R001E	474	1	41.7	4	20.00	1	83.60	2	3.060	1
90	GB5R002	696	1	34.9	4	10.50	1	65.70	1	2.430	2
91	GB5R003A	726	1	35.0	1	13.10	1	71.50	2	3.650	1
107	GC1R014	1100	1	36.8	2	12.30	1	103.00	7	2.600	1
115	GC3R002	402	1	32.9	3	7.07	1	67.90	7	3.010	1
116	GC3R004	633	2	29.4	3	9.30	1	122.00	7	2.330	4
117	GC3R005	569	1	36.4	3	15.20	1	156.00	7	4.650	1
120	GC3R007	879	1	25.0	1	6.21	1	125.00	2	2.300	1
121	GC3R008A	1100	1	30.1	2	10.80	1	178.00	2	2.860	1
121	GC3R008B	726	1	22.0	1	9.40	1	94.50	2	1.630	1
128	GC4R001A	1020	2	37.4	1	9.27	1	154.00	2	2.320	1
138	GC4R007	254	2	30.5	2	13.10	2	78.00	2	1.840	3
142	GC4R010	507	1	28.8	1	12.90	1	158.00	2	1.830	2
154	GC5R005	472	2	29.5	4	15.70	1	115.00	4	2.700	1
156	GC5R007	206	1	16.1	3	24.50	1	71.80	3	1.060	7
163	GD1R005A	1090	2	32.9	4	13.40	1	65.30	2	1.960	1
163	GD1R005C	518	2	40.7	4	7.12	1	86.90	2	2.150	1
166	GD1R006	857	1	31.5	1	12.10	1	107.00	4	1.880	1
167	GD1R007	631	2	62.6	2	28.70	1	8.60	21	1.640	5
168	GD2R002	814	1	36.6	4	8.70	1	113.00	6	3.220	1
169	GD2R004	897	2	41.4	2	26.30	1	66.50	7	5.150	1
170	GD2R010G	1480	2	42.5	1	19.30	1	79.50	5	3.770	1
177	GD3R001	323	6	32.6	2	40.00	1	605.00	2	0.970	6
203	GD4R004	582	2	20.0	4	8.99	1	95.10	6	2.780	1
204	GD4R005	969	2	32.1	2	6.79	1	103.00	6	4.410	1
205	GD4R006	801	2	28.0	1	6.93	1	97.50	7	3.540	1
206	GD4R007	550	1	27.2	2	13.30	1	120.00	5	3.480	1
207	GD4R008B	195	1	33.0	1	26.10	1	229.00	3	0.666	5
209	GD4R009	803	1	44.6	2	5.93	1	92.80	5	2.660	1
210	GD4R010	306	2	15.7	2	20.80	1	106.00	5	0.509	5
211	GD6R001C	156	2	27.5	1	22.20	1	397.00	2	0.240	13
215	GD6R002	438	2	25.2	3	12.20	1	91.70	2	2.200	1
216	GD8R001	576	1	42.7	2	15.00	1	161.00	2	4.210	1
217	GD8R002	387	1	33.7	1	13.00	1	220.00	2	2.860	1
218	GD8R003	864	2	46.7	4	13.80	1	65.00	2	3.570	1

Table 11. Results of induced neutron activation analyses of rock samples from the Garberville 1:100,000 quadrangle, Humboldt, Trinity, Shasta, Tehama, and Mendocino Counties, California --continued. (page 3)

Site	Field No	Eu ppm	CV/Eu %	Hf ppm	CV/Hf %	La ppm	CV/La %	Lu ppm	CV/Lu %	Nd ppm	CV/Nd %
18	GA2R001D	0.815	5	3.290	3	10.40	1	0.286	5	11.80	15
18	GA2R001F	0.493	2	3.580	3	13.60	1	0.241	3	10.20	2
24	GA2R002A	0.892	1	3.570	2	32.60	1	0.294	4	21.90	2
24	GA2R002F	3.540	1	4.450	2	77.80	1	0.638	5	70.20	2
34	GA2R003C	0.998	3	2.480	3	22.20	1	0.229	5	19.10	1
34	GA2R003D	0.975	1	3.240	2	18.90	1	0.284	2	16.90	2
39	GA2R004	0.315	2	0.414	1	6.32	1	0.092	5	6.41	1
49	GA4R001F	0.931	1	4.220	2	24.50	1	0.274	1	19.80	2
58	GA5R001B	0.755	1	3.160	1	15.20	1	0.281	5	14.30	5
65	GB2R003	0.779	2	3.400	2	20.60	1	0.263	4	15.50	3
68	GB2R005A	0.432	1	2.050	3	5.56	1	0.257	5	7.07	3
71	GB3R001A	0.801	1	3.790	1	23.10	1	0.278	3	17.30	5
78	GB3R002A	0.766	1	3.560	4	19.70	1	0.277	4	16.30	4
84	GB4R001E	0.869	3	4.780	2	21.00	1	0.316	5	17.40	2
90	GB5R002	0.991	2	3.500	1	17.40	1	0.302	6	16.60	2
91	GB5R003A	1.060	2	2.970	2	16.90	1	0.307	1	17.60	1
107	GC1R014	0.830	1	2.270	2	16.90	1	0.245	3	15.80	3
115	GC3R002	1.000	4	2.890	2	14.90	1	0.354	1	15.40	1
116	GC3R004	0.966	2	3.640	4	15.90	1	0.266	1	14.20	2
117	GC3R005	1.120	1	4.530	6	17.40	1	0.374	1	16.50	2
120	GC3R007	0.716	2	2.490	2	11.70	1	0.237	5	12.70	10
121	GC3R008A	0.875	2	3.380	1	18.10	1	0.280	5	15.70	1
121	GC3R008B	0.829	1	2.380	1	12.00	1	0.272	1	14.30	1
128	GC4R001A	0.701	2	3.270	2	19.00	1	0.253	1	15.10	4
138	GC4R007	0.749	4	3.780	1	14.60	1	0.267	1	14.30	3
142	GC4R010	0.908	2	2.920	4	15.50	1	0.296	4	13.90	2
154	GC5R005	0.861	2	3.160	5	14.30	1	0.253	4	14.90	6
156	GC5R007	0.895	1	1.660	4	7.79	1	0.299	3	9.66	7
163	GD1R005A	1.130	2	2.790	3	17.40	1	0.282	2	17.40	2
163	GD1R005C	1.030	3	2.980	4	17.70	1	0.292	1	18.80	4
166	GD1R006	0.532	1	3.180	2	12.50	1	0.273	1	9.69	2
167	GD1R007	1.730	2	2.650	4	30.10	1	0.268	3	28.80	2
168	GD2R002	0.892	1	3.600	5	17.80	1	0.282	2	16.80	3
169	GD2R004	0.964	1	3.610	3	18.50	1	0.343	3	17.60	4
170	GD2R010G	1.170	2	3.030	1	24.40	1	0.380	1	23.60	2
177	GD3R001	1.500	2	2.760	1	15.40	1	0.181	5	17.90	3
203	GD4R004	0.491	4	2.760	6	10.20	1	0.240	2	9.35	3
204	GD4R005	0.675	1	3.510	3	15.70	1	0.265	2	13.90	2
205	GD4R006	0.855	2	3.550	5	12.80	1	0.345	3	13.60	5
206	GD4R007	0.685	2	2.930	3	11.50	1	0.367	1	12.50	2
207	GD4R008B	1.220	4	2.560	2	14.30	1	0.193	5	17.70	3
209	GD4R009	0.842	1	3.410	2	21.60	1	0.477	2	17.10	5
210	GD4R010	0.699	1	1.610	7	7.52	1	0.254	1	7.82	2
211	GD6R001C	0.928	1	3.000	3	12.40	1	0.291	5	13.50	1
215	GD6R002	0.666	2	3.760	2	11.00	1	0.275	1	11.50	4
216	GD8R001	1.040	1	3.670	2	20.00	1	0.307	3	18.40	4
217	GD8R002	0.878	3	3.580	1	15.70	1	0.260	1	15.30	1
218	GD8R003	1.170	1	3.780	2	22.90	1	0.302	2	19.50	1

Table 11. Results of induced neutron activation analyses of rock samples from the Garberville 1:100,000 quadrangle, Humboldt, Trinity, Shasta, Tehama, and Mendocino Counties, California --continued. (page 4)

Site	Field No	Ni ppm	CV/Ni %	Rb ppm	CV/Rb %	Sb ppm	CV/Sb %	Sc ppm	CV/Sc %	Sm ppm	CV/Sm %
18	GA2R001D	50.4	6	53.80	1	1.420	3	15.80	1	3.09	1
18	GA2R001F	40.1	7	43.20	2	1.110	2	12.00	1	1.97	1
24	GA2R002A	61.0	5	61.90	2	0.797	3	12.60	1	4.40	1
24	GA2R002F	163.0	2	41.80	3	0.888	3	21.60	1	15.70	1
34	GA2R003C	121.0	3	39.00	2	0.635	1	14.70	1	3.98	1
34	GA2R003D	34.5	8	31.50	3	0.948	7	12.00	1	3.75	1
39	GA2R004	32.9	6	8.82	4	0.200	29	4.04	1	1.49	1
49	GA4R001F	25.2	9	58.10	1	1.170	3	10.90	1	4.19	1
58	GA5R001B	42.2	9	65.20	1	0.918	3	14.30	1	3.34	1
65	GB2R003	96.0	3	40.00	2	0.819	3	15.00	1	3.34	1
68	GB2R005A	52.7	6	25.70	6	0.766	2	12.40	1	2.06	1
71	GB3R001A	62.9	3	62.50	1	0.740	3	12.20	1	3.56	1
78	GB3R002A	81.6	5	38.70	3	0.686	4	17.50	1	3.65	1
84	GB4R001E	79.1	4	56.70	1	0.733	3	15.40	1	3.78	1
90	GB5R002	34.1	5	56.60	2	0.786	3	14.00	1	3.93	1
91	GB5R003A	46.4	8	62.80	2	1.670	2	15.60	1	4.15	2
107	GC1R014	69.0	3	52.20	1	0.604	4	12.80	1	3.54	1
115	GC3R002	53.2	4	54.90	1	0.765	5	15.30	1	4.02	2
116	GC3R004	34.6	8	46.40	2	0.492	4	13.00	2	3.45	2
117	GC3R005	69.3	5	70.40	7	1.370	9	14.40	2	3.91	2
120	GC3R007	27.0	19	47.60	2	0.305	9	12.40	1	3.01	2
121	GC3R008A	53.3	6	59.90	2	0.586	4	13.70	1	3.51	1
121	GC3R008B	42.6	6	31.80	1	0.906	4	12.00	1	3.70	1
128	GC4R001A	48.7	6	57.00	2	0.865	2	12.80	1	3.35	1
138	GC4R007	39.6	9	52.30	2	1.250	2	13.70	1	3.21	1
142	GC4R010	49.0	7	44.30	2	0.652	4	17.90	1	3.61	1
154	GC5R005	50.5	6	44.10	3	0.581	3	14.70	1	3.41	1
156	GC5R007	42.8	13	17.90	5	0.487	6	33.30	1	2.82	2
163	GD1R005A	22.0	20	75.30	1	0.471	5	21.30	1	4.42	1
163	GD1R005C	21.0	17	50.70	1	-	-	21.90	1	4.43	1
166	GD1R006	45.9	9	73.60	1	0.886	3	13.80	1	2.20	1
167	GD1R007	20.5	12	74.30	1	0.190	4	22.50	1	5.98	1
168	GD2R002	57.5	5	60.00	1	0.664	5	12.90	1	3.80	2
169	GD2R004	93.8	4	111.00	1	1.180	9	11.40	1	4.34	2
170	GD2R010G	47.0	17	123.00	2	1.740	2	14.90	1	5.21	1
177	GD3R001	215.0	4	23.00	5	0.752	6	32.00	1	4.44	1
203	GD4R004	31.4	7	45.90	1	0.967	3	11.70	1	2.10	1
204	GD4R005	43.7	7	77.40	1	1.370	1	13.60	1	3.01	2
205	GD4R006	25.9	12	63.30	2	1.160	2	15.60	1	3.27	1
206	GD4R007	43.1	7	57.60	1	0.976	2	21.40	1	3.12	1
207	GD4R008B	95.5	5	10.60	7	0.140	29	18.70	1	4.00	1
209	GD4R009	30.5	10	75.10	1	1.810	4	23.40	1	3.89	2
210	GD4R010	27.0	16	11.80	5	0.414	9	26.30	1	2.03	1
211	GD6R001C	141.0	9	9.90	9	0.533	9	20.80	1	3.39	1
215	GD6R002	35.7	11	59.10	1	1.190	2	14.50	1	2.65	2
216	GD8R001	99.6	4	74.80	1	0.717	3	15.60	1	4.27	1
217	GD8R002	133.0	3	51.20	2	0.591	4	13.30	1	3.71	1
218	GD8R003	40.9	6	67.00	2	0.632	5	15.70	1	4.69	1

Table 11. Results of induced neutron activation analyses of rock samples from the Garberville 1:100,000 quadrangle, Humboldt, Trinity, Shasta, Tehama, and Mendocino Counties, California --continued. (page 5)

Site	Field No	Sr ppm	CV/Sr %	Ta ppm	CV/Ta %	Tb ppm	CV/Tb %	Th ppm	CV/Th %	U ppm	CV/U %
18	GA2R001D	50.0	18	0.430	2	0.485	2	4.40	1	1.810	1
18	GA2R001F	48.1	15	0.428	1	0.283	1	4.48	1	1.740	5
24	GA2R002A	55.7	14	0.872	1	0.556	1	8.90	1	2.680	1
24	GA2R002F	< 30	-	1.310	3	1.950	1	8.52	1	2.750	1
34	GA2R003C	47.7	14	0.353	2	0.617	3	3.59	1	1.540	2
34	GA2R003D	58.0	16	0.544	1	0.536	2	4.89	2	1.660	1
39	GA2R004	< 30	-	0.084	2	0.191	3	1.24	1	1.420	3
49	GA4R001F	151.0	8	0.728	2	0.524	1	7.70	1	2.630	3
58	GA5R001B	52.0	16	0.530	1	0.480	1	5.01	1	1.940	1
65	GB2R003	14.0	25	0.593	2	0.446	1	5.03	1	1.930	1
68	GB2R005A	< 30	-	0.232	2	0.339	4	2.36	1	0.917	2
71	GB3R001A	52.8	12	0.875	1	0.450	2	8.95	1	2.730	5
78	GB3R002A	48.0	19	0.644	2	0.444	4	6.34	1	2.020	1
84	GB4R001E	< 30	-	0.681	1	0.542	2	7.31	1	2.660	2
90	GB5R002	228.0	5	0.530	2	0.525	1	4.47	1	1.920	1
91	GB5R003A	174.0	8	0.479	2	0.566	3	4.48	1	1.860	4
107	GC1R014	51.0	16	0.518	1	0.487	4	4.71	1	1.510	1
115	GC3R002	368.0	4	0.550	3	0.699	2	4.47	1	1.630	2
116	GC3R004	156.0	9	0.566	2	0.522	1	4.63	1	1.800	1
117	GC3R005	231.0	3	0.465	3	0.626	1	4.18	1	1.760	1
120	GC3R007	162.0	6	0.461	1	0.405	5	4.09	1	1.690	2
121	GC3R008A	66.9	5	0.538	1	0.457	2	4.58	1	1.830	2
121	GC3R008B	65.0	15	0.398	2	0.550	2	3.59	1	1.380	1
128	GC4R001A	82.0	16	0.673	2	0.424	3	6.77	1	2.210	6
138	GC4R007	117.0	6	0.475	2	0.476	3	4.69	2	1.990	1
142	GC4R010	49.0	16	0.418	3	0.545	1	3.85	1	1.600	1
154	GC5R005	143.0	8	0.394	3	0.457	1	3.71	1	1.470	2
156	GC5R007	158.0	8	0.118	1	0.481	6	1.06	1	0.390	8
163	GD1R005A	310.0	2	0.511	3	0.577	2	4.52	1	1.310	1
163	GD1R005C	220.0	6	0.511	2	0.573	2	4.55	2	1.420	4
166	GD1R006	22.0	21	0.660	2	0.334	5	6.35	1	1.930	1
167	GD1R007	421.0	2	0.277	2	0.702	3	5.89	1	1.830	2
168	GD2R002	66.8	13	0.563	2	0.482	4	4.83	1	1.670	1
169	GD2R004	38.0	22	0.748	1	0.646	3	7.38	1	2.630	1
170	GD2R010G	< 30	-	0.659	2	0.746	1	7.04	1	2.770	5
177	GD3R001	552.0	2	0.951	5	0.566	3	1.29	1	0.526	9
203	GD4R004	96.4	7	0.492	4	0.321	1	3.99	1	1.640	1
204	GD4R005	129.0	10	0.627	1	0.441	1	4.68	1	2.020	5
205	GD4R006	120.0	18	0.602	2	0.549	1	5.28	1	2.070	5
206	GD4R007	128.0	11	0.485	2	0.495	3	4.29	1	1.510	3
207	GD4R008B	997.0	2	0.669	2	0.492	1	1.11	1	0.604	9
209	GD4R009	190.0	6	0.568	1	0.660	1	6.48	1	2.020	1
210	GD4R010	302.0	4	0.180	2	0.373	2	1.32	1	0.533	4
211	GD6R001C	36.0	22	0.382	4	0.496	1	2.94	3	1.270	4
215	GD6R002	19.0	23	0.566	2	0.372	1	4.54	2	1.890	4
216	GD8R001	154.0	9	0.681	3	0.569	2	6.24	1	2.480	1
217	GD8R002	41.0	16	0.562	1	0.509	3	4.49	2	2.680	1
218	GD8R003	332.0	5	0.578	2	0.575	1	5.69	1	2.200	1

Table 11. Results of induced neutron activation analyses of rock samples from the Garberville 1:100,000 quadrangle, Humboldt, Trinity, Shasta, Tehama, and Mendocino Counties, California --continued. (page 6)

Site	Field No	W ppm	CV/W %	Yb ppm	CV/Yb %	Zn ppm	CV/Zn %	Zr ppm	CV/Zr %	Au ppb	CV/Au %
18	GA2R001D	0	-	1.860	1	102.0	3	94.3	12	8.130	7
18	GA2R001F	0	-	1.570	1	105.0	7	135.0	6	3.450	17
24	GA2R002A	0	-	1.870	1	73.9	9	103.0	9	3.030	60
24	GA2R002F	0	-	4.300	1	122.0	9	281.0	3	2.600	60
34	GA2R003C	1.700	22	1.630	1	191.0	6	141.0	15	3.120	60
34	GA2R003D	1.120	>30	1.880	1	74.5	9	137.0	7	6.350	6
39	GA2R004	0.446	>30	0.617	3	31.3	8	28.8	13	5.990	5
49	GA4R001F	0.924	20	1.810	5	136.0	7	149.0	7	4.730	7
58	GA5R001B	1.530	19	1.840	1	93.7	9	97.8	11	8.920	6
65	GB2R003	0	-	1.680	2	85.1	9	120.0	24	3.920	7
68	GB2R005A	0	-	1.520	1	80.5	9	74.2	15	6.290	8
71	GB3R001A	2.430	18	1.810	1	71.3	9	140.0	8	4.180	60
78	GB3R002A	0	-	1.770	1	91.7	9	147.0	11	5.050	9
84	GB4R001E	0.970	23	2.020	1	80.6	6	158.0	10	7.180	60
90	GB5R002	0.948	>30	1.950	1	76.1	9	149.0	9	3.240	60
91	GB5R003A	1.400	20	2.040	1	92.3	9	140.0	19	3.880	60
107	GC1R014	2.570	20	1.630	1	77.0	5	94.0	23	8.510	5
115	GC3R002	0.789	>30	2.360	1	102.0	5	146.0	8	8.100	5
116	GC3R004	0	-	1.730	3	89.7	6	145.0	5	9.670	4
117	GC3R005	2.180	>30	2.480	1	149.0	4	164.0	5	10.300	6
120	GC3R007	0	-	1.510	1	69.9	9	104.0	10	1.020	60
121	GC3R008A	0	-	1.810	1	96.6	5	122.0	4	3.450	60
121	GC3R008B	0.696	>30	1.880	1	74.9	5	95.0	13	3.040	60
128	GC4R001A	0.427	25	1.640	1	79.7	9	95.0	5	4.900	10
138	GC4R007	0.942	12	1.790	1	73.4	3	155.0	4	6.760	5
142	GC4R010	0	-	2.020	1	87.9	7	113.0	7	5.570	5
154	GC5R005	1.460	16	1.650	2	81.8	6	111.0	7	4.440	7
156	GC5R007	0	-	1.910	1	125.0	9	126.0	15	8.310	15
163	GD1R005A	1.340	22	1.910	1	-	-	99.8	8	18.200	4
163	GD1R005C	3.190	17	1.900	1	-	-	100.0	13	15.700	4
166	GD1R006	0.991	29	1.680	1	82.9	5	132.0	8	11.000	4
167	GD1R007	1.110	60	1.810	3	128.0	5	173.0	7	31.300	4
168	GD2R002	0.991	>30	1.830	1	110.0	5	132.0	7	3.590	60
169	GD2R004	0	-	2.310	1	122.0	4	136.0	7	8.480	8
170	GD2R010G	0	-	2.590	2	104.0	4	142.0	7	17.700	4
177	GD3R001	1.350	29	1.310	2	129.0	9	105.0	11	1.430	60
203	GD4R004	0.854	>30	1.560	2	114.0	4	121.0	6	139.000	3
204	GD4R005	0	-	1.720	1	84.5	7	121.0	7	6.840	9
205	GD4R006	0	-	2.290	1	80.2	5	131.0	10	5.910	6
206	GD4R007	2.610	22	2.330	1	112.0	5	90.2	13	6.290	6
207	GD4R008B	0	-	1.290	3	81.8	9	120.0	11	5.570	60
209	GD4R009	1.790	29	3.010	1	112.0	5	128.0	6	19.100	5
210	GD4R010	4.170	29	1.650	3	92.1	5	64.0	19	29.900	4
211	GD6R001C	0.939	>30	1.860	1	93.7	9	110.0	29	3.280	60
215	GD6R002	1.360	18	1.830	1	86.3	9	141.0	6	2.980	60
216	GD8R001	1.930	>30	2.040	1	85.6	7	148.0	8	5.770	60
217	GD8R002	0	-	1.800	1	76.7	6	140.0	20	8.440	6
218	GD8R003	2.470	16	1.900	1	114.0	5	164.0	8	4.190	60

Table 12. Results of fire assay analyses of rock samples from the Garberville 1:100,000 quadrangle, Humboldt, Trinity, Shasta, Tehama, and Mendocino Counties, California.

Site	Field No	Rock type	Latitude	Longitude	Au ppm	Pt ppm	Pd ppm	Rh ppm	Ru ppm	Ir ppm
1	83R018	Serpentinite	402326	1230522	0.003	0.015	0.002	0.005	N 0.2	N 0.05
2	83R019	Dunite	402006	1230355	0.007	0.020	0.020	0.005	N 0.2	N 0.05
2	83R019B	Serpentinite	402006	1230355	0.005	0.010	0.010	N 0.002	N 0.2	N 0.05
4	83R020	Dunite	402215	1230443	0.001	N 0.005	N 0.001	N 0.002	N 0.2	N 0.05
4	83R020B	Dunite	402215	1230443	N 0.002	N 0.010	N 0.002	N 0.004	N 0.4	N 0.10
8	84R025A	Breccia	402809	1234217	0.001	N 0.005	N 0.001	N 0.002	N 0.2	N 0.05
15	84R031A	Diorite	402211	1231848	N 0.001	N 0.005	N 0.001	N 0.002	N 0.2	N 0.05
16	84R032A	Basalt	402315	1231732	N 0.001	-	-	-	-	-
17	84R032B	Vein	402308	1231735	N 0.001	-	-	-	-	-

Table 13. Field description of rock samples, terrane data, and other miscellaneous information for rock samples from the Garberville 1:100,000 quadrangle, Humboldt, Trinity, Shasta, Tehama, and Mendocino Counties, California. [for information on terranes, see figure 1 in text; stratigraphic units are keyed to the geologic map by Fraticelli and others, 1987] (page 1, part A)

Site	Field No	Latitude	Longitude	Latitude	Longitude	Map type	Lab No	Terrane	Unit
1	83R018	402326	1230522	40.39055	123.08943	Compile	EMZ860	RCT	rcsp
2	83R019	402006	1230355	40.33499	123.06528	Compile	EMZ861	RCT	rcsp
2	83R019B	402006	1230355	40.33499	123.06528	Compile	EMZ862	RCT	rcsp
4	83R020	402215	1230443	40.37083	123.07861	Compile	EMZ863	RCT	rcsp
4	83R020B	402215	1230443	40.37083	123.07861	Compile	EMZ864	RCT	rcsp
6	84R023A	402758	1235016	40.46611	123.83774	Compile	EPG573	YST	ymt
7	84R024A	402838	1234255	40.47722	123.71527	Compile	EPG574	CT	ctmm
8	84R025A	402809	1234217	40.46916	123.70471	Compile	EPG575	CT	ctmm
9	84R026A	402835	1233913	40.47638	123.65361	Compile	EPG576	CT	ctmm
10	84R027A	402556	1232827	40.43222	123.47417	Compile	EPG577	YBT	ybtmm
11	84R028A	402438	1232639	40.41055	123.44417	Compile	EPG578	YBT	ybtmm
11	84R028B	402438	1232639	40.41055	123.44417	Compile	EPG579	YBT	ybtmm
13	84R029A	402249	1232256	40.38028	123.38222	Compile	EPG580	PPT	sfm
14	84R030A	402230	1232140	40.37473	123.36111	Compile	EPG581	WJrT	wjg
15	84R031A	402211	1231848	40.36972	123.31334	Compile	EPG582	RCT	rcp
16	84R032A	402315	1231732	40.38762	123.29234	Compile	EPG583	RCT	rcv
17	84R032B	402308	1231735	40.38556	123.29306	Compile	EPG584	RCT	rcv
18	GA2R001A	400729	1231105	40.12474	123.18480	Field	ERH658	YBT	ybtmm
18	GA2R001B	400729	1231105	40.12474	123.18480	Field	ERH659	YBT	ybtmm
18	GA2R001C	400729	1231105	40.12474	123.18480	Field	ERH660	YBT	ybtmm
18	GA2R001D	400729	1231105	40.12474	123.18480	Field	ERH661	YBT	ybtmm
18	GA2R001E	400729	1231105	40.12474	123.18480	Field	ERH662	YBT	ybtmm
18	GA2R001F	400729	1231105	40.12474	123.18480	Field	ERH663	YBT	ybtmm
24	GA2R002A	400645	1231443	40.11253	123.24523	Field	ERL635	YBT	ybtmm
24	GA2R002B	400645	1231443	40.11253	123.24523	Field	ERL636	YBT	ybtmm
24	GA2R002C	400645	1231443	40.11253	123.24523	Field	ERL637	YBT	ybtmm
24	GA2R002D	400645	1231443	40.11253	123.24523	Field	ERL638	YBT	ybtmm
24	GA2R002E	400645	1231443	40.11253	123.24523	Field	ERL639	YBT	ybtmm
24	GA2R002F	400645	1231443	40.11253	123.24523	Field	ERL640	YBT	ybtmm
24	GA2R002G	400645	1231443	40.11253	123.24523	Field	ERL641	YBT	ybtmm
24	GA2R002H	400645	1231443	40.11253	123.24523	Field	ERL642	YBT	ybtmm
24	GA2R002I	400645	1231443	40.11253	123.24523	Field	ERL643	YBT	ybtmm
24	GA2R002J	400645	1231443	40.11253	123.24523	Field	ERL644	YBT	ybtmm
34	GA2R003A	400701	1231400	40.11686	123.23323	Field	ERH653	YBT	ybtch
34	GA2R003B	400701	1231400	40.11686	123.23323	Field	ERH654	YBT	ybtch
34	GA2R003C	400701	1231400	40.11686	123.23323	Field	ERH655	YBT	ybtch
34	GA2R003D	400701	1231400	40.11686	123.23323	Field	ERH656	YBT	ybtch
34	GA2R003E	400701	1231400	40.11686	123.23323	Field	ERH657	YBT	ybtch
39	GA2R004	400654	1231438	40.11507	123.24382	Field	ERL645	YBT	ybtmm
40	GA2R005A	400720	1231331	40.12213	123.22519	Field	ERM170	YBT	ybtch
40	GA2R005B	400720	1231331	40.12213	123.22519	Field	ERM171	YBT	ybtch
40	GA2R005C	400720	1231331	40.12213	123.22519	Field	ERM172	YBT	ybtch
40	GA2R005D	400720	1231331	40.12213	123.22519	Field	ERM173	YBT	ybtch
40	GA2R005E	400720	1231331	40.12213	123.22519	Field	ERM174	YBT	ybtch
40	GA2R005F	400720	1231331	40.12213	123.22519	Field	ERM175	YBT	ybtch
40	GA2R005G	400720	1231331	40.12213	123.22519	Field	ERM176	YBT	ybtch
40	GA2R005H	400720	1231331	40.12213	123.22519	Field	ERM177	YBT	ybtch
40	GA2R005I	400720	1231331	40.12213	123.22519	Field	ERM178	YBT	ybtch
49	GA4R001A	400153	1232949	40.03134	123.49696	Field	ERH624	CT	ctmm
49	GA4R001B	400153	1232949	40.03134	123.49696	Field	ERH625	CT	ctmm
49	GA4R001C	400153	1232949	40.03134	123.49696	Field	ERH626	CT	ctmm
49	GA4R001D	400153	1232949	40.03134	123.49696	Field	ERH627	CT	ctmm
49	GA4R001E	400153	1232949	40.03134	123.49696	Field	ERH628	CT	ctmm
49	GA4R001F	400153	1232949	40.03134	123.49696	Field	ERH629	CT	ctmm
55	GA4R002	400706	1232909	40.11832	123.48581	Field	ERL623	CT	ctmm
56	GA4R003A	400643	1232925	40.11204	123.49028	Field	ERL621	CT	ctmm
56	GA4R003B	400643	1232925	40.11204	123.49028	Field	ERL622	CT	ctmm
58	GA5R001A	400637	1233353	40.11015	123.56462	Field	ERL612	CT	ctss
58	GA5R001B	400637	1233353	40.11015	123.56462	Field	ERL613	CT	ctss
58	GA5R001C	400637	1233353	40.11015	123.56462	Field	ERL614	CT	ctss

Table 13. Field description of rock samples, terrane data, and other miscellaneous information for rock samples from the Garberville 1:100,000 quadrangle, Humboldt, Trinity, Shasta, Tehama, and Mendocino Counties, California --continued. (page 1, part B)

Site	Field No	Rock type	Comments	Mine area	District
1	83R018	Serpentinite	Sul		
2	83R019	Dunite			
2	83R019B	Serpentinite			
4	83R020	Dunite			
4	83R020B	Dunite	Chromite		
6	84R023A	Siltstone	Blk		
7	84R024A	Basalt	Pillow, chl; Qtz veins		
8	84R025A	Breccia	Volc, serp, cal		
9	84R026A	Graywacke	Qtz veins		
10	84R027A	Graywacke	Quartzose		
11	84R028A	Conglomerate	FeOx		
11	84R028B	Argillite	Blk; Qtz veins		
13	84R029A	Schist	Qtz-Mus-Chl-; Qtz vein		
14	84R030A	Argillite	Blk; Ss		
15	84R031A	Diorite	Qtz vein		
16	84R032A	Basalt	Chl; Qtz-Ep vein		
17	84R032B	Vein	Qtz-Ep-		
18	GA2R001A	Chert	Red; Arg		
18	GA2R001B	Chert	Grn; Arg		
18	GA2R001C	Chert	Brec; Arg		
18	GA2R001D	Graywacke			
18	GA2R001E	Chert	Grn		
18	GA2R001F	Sandstone	Red		
24	GA2R002A	Graywacke		Blue Jay (Mn)	
24	GA2R002B	Tuff	Grn, radiolarian	Blue Jay (Mn)	
24	GA2R002C	Diabase	Sill, chl	Blue Jay (Mn)	
24	GA2R002D	Chert	Red; Qtz vein	Blue Jay (Mn)	
24	GA2R002E	Chert	Red	Blue Jay (Mn)	
24	GA2R002F	Graywacke		Blue Jay (Mn)	
24	GA2R002G	Manganese	Ox ore	Blue Jay (Mn)	
24	GA2R002H	Chert	Grn	Blue Jay (Mn)	
24	GA2R002I	Chert	Red; Qtz vein	Blue Jay (Mn)	
24	GA2R002J	Chert	Red, brec	Blue Jay (Mn)	
34	GA2R003A	Shale	Gray Grn; Qtz vein; Mn coat		
34	GA2R003B	Shale	Red		
34	GA2R003C	Argillite	Graywacke, sheared		
34	GA2R003D	Graywacke	Massive		
34	GA2R003E	Chert	Grn; Arg		
39	GA2R004	Graywacke	Chert pebble		
40	GA2R005A	Manganese	Ox-Carb-Sil ore	Trout Creek (Mn)	
40	GA2R005B	Argillite	Red, slaty; Qtz vein	Trout Creek (Mn)	
40	GA2R005C	Argillite	Grn, slaty	Trout Creek (Mn)	
40	GA2R005D	Chert	Red, massive; Qtz vein	Trout Creek (Mn)	
40	GA2R005E	Chert	Grn; Arg; Qtz vein	Trout Creek (Mn)	
40	GA2R005F	Chert	Brec	Trout Creek (Mn)	
40	GA2R005G	Graywacke		Trout Creek (Mn)	
40	GA2R005H	Greenstone	Sil	Trout Creek (Mn)	
40	GA2R005I	Manganese	Ox-Carb ore	Trout Creek (Mn)	
49	GA4R001A	Argillite	Blk, sheared	Island Mtn (Cu)	Island Mtn
49	GA4R001B	Chert	Grn; Qtz vein	Island Mtn (Cu)	Island Mtn
49	GA4R001C	Chert	Red	Island Mtn (Cu)	Island Mtn
49	GA4R001D	Greenstone	Calcite vein	Island Mtn (Cu)	Island Mtn
49	GA4R001E	Sulfide	Massive, Po-Py-Cpy ore	Island Mtn (Cu)	Island Mtn
49	GA4R001F	Graywacke		Island Mtn (Cu)	Island Mtn
55	GA4R002	Chert			
56	GA4R003A	Greenstone	Alt pillow basalt		
56	GA4R003B	Chert	Mn stained		
58	GA5R001A	Chert	Red; Qtz vein		
58	GA5R001B	Graywacke			
58	GA5R001C	Chert	Grn, MnOx stain		

Table 13. Field description of rock samples, terrane data, and other miscellaneous information for rock samples from the Garberville 1:100,000 quadrangle, Humboldt, Trinity, Shasta, Tehama, and Mendocino Counties, California --continued. [for information on terranes, see figure 1 in text; stratigraphic units are keyed to the geologic map by Fraticelli and others, 1987] (page 2, part A)

Site	Field No	Latitude	Longitude	Latitude	Longitude	Map type	Lab No	Terrane	Unit
61	GB1R001A	401217	1230636	40.20464	123.10999	Field	ERL632	YBT	ybh
61	GB1R001B	401217	1230636	40.20464	123.10999	Field	ERL633	YBT	ybh
61	GB1R001C	401217	1230636	40.20464	123.10999	Field	ERL634	YBT	ybh
64	GB2R001	400813	1231142	40.13702	123.19487	Field	ERM140	YBT	ybtmm
65	GB2R003	401245	1231041	40.21254	123.17818	Field	ERM141	YBT	ybtmm
66	GB2R004A	401244	1231454	40.21231	123.24833	Field	ERM142	YBT	ybh
66	GB2R004B	401244	1231454	40.21231	123.24833	Field	ERM143	YBT	ybh
68	GB2R005A	401254	1230746	40.21499	123.12944	Field	ERM144	YBT	ybtmm
68	GB2R005B	401254	1230746	40.21499	123.12944	Field	ERM145	YBT	ybtmm
68	GB2R005C	401254	1230746	40.21499	123.12944	Field	ERM146	YBT	ybtmm
71	GB3R001A	401132	1231812	40.19215	123.30323	Field	ERH646	YBT	ybtmm
71	GB3R001B	401132	1231812	40.19215	123.30323	Field	ERH647	YBT	ybtmm
71	GB3R001C	401132	1231812	40.19215	123.30323	Field	ERH648	YBT	ybtmm
71	GB3R001D	401132	1231812	40.19215	123.30323	Field	ERH649	YBT	ybtmm
71	GB3R001E	401132	1231812	40.19215	123.30323	Field	ERH650	YBT	ybtmm
71	GB3R001F	401132	1231812	40.19215	123.30323	Field	ERH651	YBT	ybtmm
71	GB3R001G	401132	1231812	40.19215	123.30323	Field	ERH652	YBT	ybtmm
78	GB3R002A	401110	1231822	40.18625	123.30621	Field	ERL646	YBT	ybtmm
78	GB3R002B	401110	1231822	40.18625	123.30621	Field	ERL647	YBT	ybtmm
80	GB3R003A	401259	1231510	40.21634	123.25288	Field	ERM147	YBT	ybh
80	GB3R003B	401259	1231510	40.21634	123.25288	Field	ERM148	YBT	ybh
82	GB3R004A	401151	1231602	40.19738	123.26712	Field	ERM149	YBT	ybh
82	GB3R004B	401151	1231602	40.19738	123.26712	Field	ERM150	YBT	ybh
84	GB4R001A	401216	1232729	40.20433	123.45793	Field	ERM151	CT	ctmm
84	GB4R001B	401216	1232729	40.20433	123.45793	Field	ERM152	CT	ctmm
84	GB4R001C	401216	1232729	40.20433	123.45793	Field	ERM153	CT	ctmm
84	GB4R001D	401216	1232729	40.20433	123.45793	Field	ERM154	CT	ctmm
84	GB4R001E	401216	1232729	40.20433	123.45793	Field	ERM155	CT	ctmm
89	GB5R001	401213	1233102	40.20371	123.51710	Field	ERL615	CT	ctss
90	GB5R002	401142	1233133	40.19510	123.52572	Field	ERL616	CT	ctss
91	GB5R003A	401115	1233136	40.18748	123.52670	Field	ERL617	CT	ctss
91	GB5R003B	401115	1233136	40.18748	123.52670	Field	ERL618	CT	ctss
91	GB5R003C	401115	1233136	40.18748	123.52670	Field	ERL619	CT	ctss
94	GB5R004	401125	1233351	40.19020	123.56413	Field	ERL620	CT	ctss
95	GB5R005A	401205	1233002	40.20133	123.50068	Field	ERM159	CT	ctss
95	GB5R005B	401205	1233002	40.20133	123.50068	Field	ERM160	CT	ctss
95	GB5R005C	401205	1233002	40.20133	123.50068	Field	ERM161	CT	ctss
95	GB5R005D	401205	1233002	40.20133	123.50068	Field	ERM162	CT	ctss
99	GC1R001	402211	1230446	40.36973	123.07949	Field	ERM128	RCT	rcsp
100	GC1R006A	401729	1230619	40.29129	123.10521	Field	ERL606	RCT	rcv
100	GC1R006B	401729	1230619	40.29129	123.10521	Field	ERL607	RCT	rcv
100	GC1R006C	401729	1230619	40.29129	123.10521	Field	ERL608	RCT	rcv
100	GC1R006D	401729	1230619	40.29129	123.10521	Field	ERL609	RCT	rcv
104	GC1R007A	401608	1230718	40.26896	123.12159	Field	ERL610	RCT	rcv
104	GC1R007B	401608	1230718	40.26896	123.12159	Field	ERL611	RCT	rcv
106	GC1R013	401954	1230128	40.33165	123.02452	Field	ERM127	EHST	rcv
107	GC1R014	401908	1230540	40.31892	123.09437	Field	ERM126	RCT	rcv
108	GC1R015	401921	1230551	40.32257	123.09755	Field	ERM125	RCT	rcv
109	GC1R016	401945	1230523	40.32915	123.08984	Field	ERM124	RCT	rcv
110	GC1R017	401941	1230606	40.32817	123.10163	Field	ESD135	RCT	rcv
111	GC2R001A	401856	1230817	40.31548	123.13801	Compile	ESD136	RCT	rcv
111	GC2R001B	401856	1230817	40.31548	123.13801	Compile	ESD137	RCT	rcv
111	GC2R001C	401856	1230817	40.31548	123.13801	Compile	ESD138	RCT	rcv
114	GC3R001	402010	1231717	40.33602	123.28810	Field	ERL624	WJrT	wjg
115	GC3R002	401937	1231653	40.32698	123.28144	Field	ERL625	WJrT	wjg
116	GC3R004	401930	1231553	40.32512	123.26474	Field	ERL626	WJrT	wjg
117	GC3R005	402229	1231941	40.37479	123.32802	Field	ERL627	WJrT	wjg
118	GC3R006A	401914	1231549	40.32068	123.26374	Field	ERL651	WJrT	wjr
118	GC3R006B	401914	1231549	40.32068	123.26374	Field	ERL652	WJrT	wjr
120	GC3R007	401921	1231554	40.32255	123.26509	Field	ERL653	WJrT	wjg

Table 13. Field description of rock samples, terrane data, and other miscellaneous information for rock samples from the Garberville 1:100,000 quadrangle, Humboldt, Trinity, Shasta, Tehama, and Mendocino Counties, California --continued. (page 2, part B)

Site	Field No	Rock type	Comments	Mine area	District
61	GB1R001A	Shale	Meta-, sheared		
61	GB1R001B	Chert	Red, MnOx stain		
61	GB1R001C	Chert	Grn		
64	GB2R001	Chert	Red; Grn		
65	GB2R003	Graywacke			
66	GB2R004A	Chert	Red; Arg; Qtz vein		
66	GB2R004B	Chert	Yellow; Arg; Qtz vein		
68	GB2R005A	Graywacke	Argillite		
68	GB2R005B	Tuff	Radiolarian		
68	GB2R005C	Greenstone	Alt flow basalt, sil; Qtz vein		
71	GB3R001A	Graywacke		Armstrong No3 (Mn)	
71	GB3R001B	Diabase		Armstrong No3 (Mn)	
71	GB3R001C	Chert	Red, massive; Qtz vein	Armstrong No3 (Mn)	
71	GB3R001D	Manganese	Ox-Sil ore	Armstrong No3 (Mn)	
71	GB3R001E	Chert	Red, ribbon	Armstrong No3 (Mn)	
71	GB3R001F	Manganese	Ox-Carb ore	Armstrong No3 (Mn)	
71	GB3R001G	Chert	Pink; Grn	Armstrong No3 (Mn)	
78	GB3R002A	Graywacke			
78	GB3R002B	Chert	Red		
80	GB3R003A	Chert	Red, clay-rich		
80	GB3R003B	Graywacke			
82	GB3R004A	Chert	Red, clay-rich	Barry Creek (Mn)	
82	GB3R004B	Manganese	Carb-Ox ore	Barry Creek (Mn)	
84	GB4R001A	Chert	Red; Qtz vein		
84	GB4R001B	Chert	Grn; Qtz vein		
84	GB4R001C	Chert	White		
84	GB4R001D	Argillite	Grn, Cherty		
84	GB4R001E	Graywacke			
89	GB5R001	Schist	Mica-		
90	GB5R002	Graywacke	Massive; Qtz vein		
91	GB5R003A	Graywacke	Argillite		
91	GB5R003B	Chert	Argillite; Qtz vein		
91	GB5R003C	Argillite	Red		
94	GB5R004	Serpentinite	Sheared		
95	GB5R005A	Chert	Red; Arg; Qtz vein		
95	GB5R005B	Chert	Red; Arg; Qtz vein		
95	GB5R005C	Argillite	Red, slaty, Mn stain		
95	GB5R005D	Chert	Grn; Qtz vein		
99	GC1R001	Peridotite			
100	GC1R006A	Argillite	Sil, Cu stain	Old Bill (Mn)	
100	GC1R006B	Chert	Pink	Old Bill (Mn)	
100	GC1R006C	Manganese	Ore, blk; Qtz vein	Old Bill (Mn)	
100	GC1R006D	Basalt	Pillow; Qtz-Ep vein	Old Bill (Mn)	
104	GC1R007A	Chert	Grn, massive; Qtz vein	Spider (Mn)	
104	GC1R007B	Manganese	Ore, blk, sil; Qtz-Rhodenite vein	Spider (Mn)	
106	GC1R013	Basalt	Qtz vein		
107	GC1R014	Graywacke	Carbonaceous		
108	GC1R015	Chert	Grn; Qtz vein		
109	GC1R016	Chert	Red; Qtz vein		
110	GC1R017	Chert	Dark grn; Arg		
111	GC2R001A	Greenstone			
111	GC2R001B	Chert	Pelagic		
111	GC2R001C	Quartz	Vein		
114	GC3R001	Phyllite			
115	GC3R002	Phyllite	Qtz vein		
116	GC3R004	Phyllite	Py		
117	GC3R005	Graywacke	Py; Arg		
118	GC3R006A	Greenstone			
118	GC3R006B	Dacite	Dike		
120	GC3R007	Graywacke			

Table 13. Field description of rock samples, terrane data, and other miscellaneous information for rock samples from the Garberville 1:100,000 quadrangle, Humboldt, Trinity, Shasta, Tehama, and Mendocino Counties, California --continued. [for information on terranes, see figure 1 in text; stratigraphic units are keyed to the geologic map by Fraticelli and others, 1987] (page 3, part A)

Site	Field No	Latitude	Longitude	Latitude	Longitude	Map type	Lab No	Terrane	Unit
121	GC3R008A	401936	1231554	40.32664	123.26497	Field	ERL654	WJrT	wjg
121	GC3R008B	401936	1231554	40.32664	123.26497	Field	ERL655	WJrT	wjg
123	GC3R009	401916	1231555	40.32120	123.26524	Field	ERL656	WJrT	wjg
124	GC3R010	401924	1231602	40.32323	123.26718	Field	ERL657	WJrT	wjg
125	GC3R011A	401830	1232129	40.30828	123.35809	Field	ERM163	YBT	ybtmm
125	GC3R011B	401830	1232129	40.30828	123.35809	Field	ERM164	YBT	ybtmm
125	GC3R011C	401830	1232129	40.30828	123.35809	Field	ERM165	YBT	ybtmm
128	GC4R001A	402151	1232719	40.36422	123.45527	Field	ERM132	YBT	ybtmm
128	GC4R001B	402151	1232719	40.36422	123.45527	Field	ERM133	YBT	ybtmm
128	GC4R001C	402151	1232719	40.36422	123.45527	Field	ERM134	YBT	ybtmm
128	GC4R001D	402151	1232719	40.36422	123.45527	Field	ERM135	YBT	ybtmm
128	GC4R001E	402151	1232719	40.36422	123.45527	Field	ERM136	YBT	ybtmm
128	GC4R001F	402151	1232719	40.36422	123.45527	Field	ERM137	YBT	ybtmm
128	GC4R001G	402151	1232719	40.36422	123.45527	Field	ERM138	YBT	ybtmm
128	GC4R001H	402151	1232719	40.36422	123.45527	Field	ERM139	YBT	ybtmm
136	GC4R005	402128	1232516	40.35779	123.42102	Field	ERM131	YBT	ybtmm
137	GC4R006	402032	1232425	40.34211	123.40706	Field	ERM130	YBT	ybtmm
138	GC4R007	402118	1232508	40.35495	123.41887	Field	ERM129	YBT	ybtmm
139	GC4R008	401747	1232728	40.29650	123.45781	Field	ERM169	CT	ctss
140	GC4R009A	401501	1232849	40.25022	123.48025	Field	ERM167	PPT	vsmv
140	GC4R009B	401501	1232849	40.25022	123.48025	Field	ERM168	PPT	vsmv
142	GC4R010	401514	1232901	40.25390	123.48348	Field	ERM166	PPT	vsmv
143	GC5R001A	401943	1233225	40.32858	123.54040	Field	ERH630	CT	ctcr
143	GC5R001B	401943	1233225	40.32858	123.54040	Field	ERH631	CT	ctcr
143	GC5R001C	401943	1233225	40.32858	123.54040	Field	ERH632	CT	ctcr
143	GC5R001D	401943	1233225	40.32858	123.54040	Field	ERH633	CT	ctcr
147	GC5R002A	402042	1233303	40.34502	123.55078	Field	ERH634	CT	ctcr
147	GC5R002B	402042	1233303	40.34502	123.55078	Field	ERH635	CT	ctcr
149	GC5R003A	402015	1233247	40.33749	123.54630	Field	ERH636	PPT	vsmv
149	GC5R003B	402015	1233247	40.33749	123.54630	Field	ERH637	PPT	vsmv
149	GC5R003C	402015	1233247	40.33749	123.54630	Field	ERH638	PPT	vsmv
149	GC5R003D	402015	1233247	40.33749	123.54630	Field	ERH639	PPT	vsmv
153	GC5R004	402004	1233313	40.33456	123.55367	Field	ERH640	CT	ctcr
154	GC5R005	402150	1233522	40.36382	123.58933	Field	ERH641	PPT	vsmv
155	GC5R006	402105	1233339	40.35150	123.56077	Field	ERH642	CT	ctcr
156	GC5R007	402032	1233223	40.34210	123.53986	Field	ERH643	PPT	vsmv
157	GC5R008A	402024	1233228	40.34002	123.54121	Field	ERH644	PPT	vsmv
157	GC5R008B	402024	1233228	40.34002	123.54121	Field	ERH645	PPT	vsmv
159	GD1R001	402921	1230136	40.48924	123.02669	Field	ERM107	EHST	hm
160	GD1R002	402845	1230338	40.47916	123.06059	Field	ERM108	WHST	him
161	GD1R003	402800	1230352	40.46680	123.06432	Field	ERM109	WHST	him
162	GD1R004	402635	1230349	40.44292	123.06349	Field	ERM110	WHST	him
163	GD1R005A	402411	1230045	40.40316	123.01242	Field	ERM111	WHST	hhb
163	GD1R005B	402411	1230045	40.40316	123.01242	Field	ERM112	WHST	hhb
163	GD1R005C	402411	1230045	40.40316	123.01242	Field	ERM113	WHST	hhb
166	GD1R006	402350	1230717	40.39718	123.12139	Field	ERM114	RCT	rcv
167	GD1R007	402320	1230353	40.38882	123.06460	Field	ERM115	WHST	hhb
168	GD2R002	402311	1231319	40.38629	123.22201	Field	ERL628	WJrT	wjg
169	GD2R004	402350	1231114	40.39713	123.18714	Field	ERM116	RCT	rcv
170	GD2R010A	402511	1231021	40.41981	123.17239	Field	ERM117	RCT	rcv
170	GD2R010B	402511	1231021	40.41981	123.17239	Field	ERM118	RCT	rcv
170	GD2R010C	402511	1231021	40.41981	123.17239	Field	ERM119	RCT	rcv
170	GD2R010D	402511	1231021	40.41981	123.17239	Field	ERM120	RCT	rcv
170	GD2R010E	402511	1231021	40.41981	123.17239	Field	ERM121	RCT	rcv
170	GD2R010F	402511	1231021	40.41981	123.17239	Field	ERM122	RCT	rcv
170	GD2R010G	402511	1231021	40.41981	123.17239	Field	ERM123	RCT	rcv
177	GD3R001	402242	1231940	40.37837	123.32792	Field	ERM106	WJrT	wjg
178	GD3R002A	402254	1232028	40.38156	123.34122	Field	ERM105	WJrT	wjsp
178	GD3R002B	402254	1232028	40.38156	123.34122	Field	ERM104	WJrT	wjsp
180	GD3R002C	402252	1232021	40.38123	123.33911	Field	ERM103	WJrT	wjsp

Table 13. Field description of rock samples, terrane data, and other miscellaneous information for rock samples from the Garberville 1:100,000 quadrangle, Humboldt, Trinity, Shasta, Tehama, and Mendocino Counties, California --continued. (page 3, part B)

Site	Field No	Rock type	Comments	Mine area	District
121	GC3R008A	Graywacke			
121	GC3R008B	Conglomerate	Blk chert pebbles		
123	GC3R009	Breccia	Chl matrix, ophiolitic		
124	GC3R010	Breccia	Sil greenstone, sul		
125	GC3R011A	Chert	Grn; Arg, purple		
125	GC3R011B	Chert	Grn; Arg; Qtz vein		
125	GC3R011C	Chert	Red, clay-rich; Qtz vein		
128	GC4R001A	Graywacke	Sheared	Hale Creek (Mn)	
128	GC4R001B	Chert	Grn; Qtz vein	Hale Creek (Mn)	
128	GC4R001C	Chert	Red; Qtz vein	Hale Creek (Mn)	
128	GC4R001D	Greenstone	Sul	Hale Creek (Mn)	
128	GC4R001E	Basalt	Sul vein	Hale Creek (Mn)	
128	GC4R001F	Manganese	Ox-Sil ore	Hale Creek (Mn)	
128	GC4R001G	Manganese	Ox-Sil ore; Qtz vein	Hale Creek (Mn)	
128	GC4R001H	Manganese	Carb ore; Qtz vein	Hale Creek (Mn)	
136	GC4R005	Chert	Red; Qtz vein		
137	GC4R006	Graywacke	Arg		
138	GC4R007	Graywacke			
139	GC4R008	Graywacke			
140	GC4R009A	Basalt	Pillow		
140	GC4R009B	Argillite	Red, Mn stain		
142	GC4R010	Graywacke			
143	GC5R001A	Greenstone	Alt pillow basalt	Mn prospect	Red Lassic Peak
143	GC5R001B	Chert	Mn stain; Qtz vein	Mn prospect	Red Lassic Peak
143	GC5R001C	Manganese	Ox-Sil ore	Mn prospect	Red Lassic Peak
143	GC5R001D	Argillite	Grn, sil	Mn prospect	Red Lassic Peak
147	GC5R002A	Chert	Red, Mn stain		
147	GC5R002B	Manganese	Ox ore		
149	GC5R003A	Phyllite			
149	GC5R003B	Serpentinite	Sheared		
149	GC5R003C	Rodingite	Dike		
149	GC5R003D	Gabbro	Dike		
153	GC5R004	Basalt	Pillow		
154	GC5R005	Graywacke	Argillite		
155	GC5R006	Basalt	Purple; Ep vein		
156	GC5R007	Graywacke	Cal vein		
157	GC5R008A	Greenstone	Ox Cu-Fe sul; Cal vein		
157	GC5R008B	Greenstone	Ox Cu-Fe sul; Cal vein		
159	GD1R001	Rhyolite	Porphyry		
160	GD1R002	Gabbro			
161	GD1R003	Gabbro			
162	GD1R004	Gabbro	Partly serp		
163	GD1R005A	Graywacke	Red stain	Hall City (Au)	Harrison Gulch
163	GD1R005B	Quartz	Vein	Hall City (Au)	Harrison Gulch
163	GD1R005C	Graywacke	Lim stain; Arg, lim stain	Hall City (Au)	Harrison Gulch
166	GD1R006	Graywacke	Cong		
167	GD1R007	Tuff	And-; lim, sul in fractures		
168	GD2R002	Phyllite			
169	GD2R004	Phyllite			
170	GD2R010A	Greenstone	Siliceous; Qtz vein	Manganese Queen (Mn)	
170	GD2R010B	Quartz	Vein	Manganese Queen (Mn)	
170	GD2R010C	Manganese	Carb ore	Manganese Queen (Mn)	
170	GD2R010D	Manganese	Ox-Sil ore	Manganese Queen (Mn)	
170	GD2R010E	Quartz	Vein, lim, Mn	Manganese Queen (Mn)	
170	GD2R010F	Greenstone	Thin qtz veins	Manganese Queen (Mn)	
170	GD2R010G	Phyllite		Manganese Queen (Mn)	
177	GD3R001	Graywacke	Volcanoclastic		
178	GD3R002A	Pyroxenite	Serpentinized		
178	GD3R002B	Hornblendite	Px-		
180	GD3R002C	Hornblendite	Pegmatitic		

Table 13. Field description of rock samples, terrane data, and other miscellaneous information for rock samples from the Garberville 1:100,000 quadrangle, Humboldt, Trinity, Shasta, Tehama, and Mendocino Counties, California --continued. [for information on terranes, see figure 1 in text; stratigraphic units are keyed to the geologic map by Fraticelli and others, 1987] (page 4, part A)

Site	Field No	Latitude	Longitude	Latitude	Longitude	Map type	Lab No	Terrane	Unit
180	GD3R002D	402252	1232021	40.38123	123.33911	Field	ERM102	WJrT	wjsp
180	GD3R002E	402252	1232021	40.38123	123.33911	Field	ERM101	WJrT	wjsp
180	GD3R002F	402252	1232021	40.38123	123.33911	Field	ERM100	WJrT	wjsp
180	GD3R002G	402252	1232021	40.38123	123.33911	Field	ERM099	WJrT	wjsp
185	GD3R003	402416	1231845	40.40450	123.31248	Field	ERM098	RCT	rcv
186	GD3R004	402428	1231526	40.40784	123.25724	Field	ERM097	RCT	ks
187	GD3R005A	402344	1231619	40.39563	123.27190	Field	ERM096	RCT	rcv
187	GD3R005B	402344	1231619	40.39563	123.27190	Field	ERM095	RCT	rcv
189	GD3R006A	402505	1232018	40.41795	123.33837	Field	ERL648	RCT	rcsp
189	GD3R006B	402505	1232018	40.41795	123.33836	Field	ERL649	RCT	rcsp
189	GD3R006C	402505	1232018	40.41795	123.33837	Field	ERL650	RCT	rcsp
192	GD3R009A	402231	1232100	40.37538	123.35010	Field	ERM094	WJrT	wjb
192	GD3R009B	402231	1232100	40.37538	123.35010	Field	ERM093	WJrT	wjb
192	GD3R009C	402231	1232100	40.37538	123.35010	Field	ERM092	WJrT	wjb
192	GD3R009D	402231	1232100	40.37538	123.35010	Field	ERM091	WJrT	wjb
192	GD3R009E	402231	1232100	40.37538	123.35010	Field	ERM090	WJrT	wjb
192	GD3R009F	402231	1232100	40.37538	123.35010	Field	ERM089	WJrT	wjb
192	GD3R009G	402231	1232100	40.37538	123.35010	Field	ERM088	WJrT	wjb
192	GD3R009H	402231	1232100	40.37538	123.35010	Field	ERM087	WJrT	wjb
200	GD3R010A	402330	1231635	40.39167	123.27639	Field	ERM086	RCT	rcv
200	GD3R010B	402330	1231635	40.39167	123.27639	Field	ERM085	RCT	rcv
200	GD3R010C	402330	1231635	40.39167	123.27639	Field	ERM084	RCT	rcv
203	GD4R004	402802	1232517	40.46736	123.42141	Field	ERL629	WJrT	wjg
204	GD4R005	402426	1232333	40.40713	123.39252	Field	ERL630	WJrT	wjg
205	GD4R006	402845	1232503	40.47922	123.41737	Field	ERL631	WJrT	wjg
206	GD4R007	402430	1232357	40.40841	123.39908	Field	ERL658	WJrT	wjg
207	GD4R008A	402427	1232342	40.40738	123.39506	Field	ERL659	WJrT	wjg
207	GD4R008B	402427	1232342	40.40738	123.39506	Field	ERL660	WJrT	wjg
209	GD4R009	402629	1232503	40.44152	123.41761	Field	ERM083	WJrT	wjg
210	GD4R010	402550	1232443	40.43044	123.41184	Field	ERM082	WJrT	wjg
211	GD6R001A	402354	1234128	40.39842	123.69107	Field	ERL602	CT	ctss
211	GD6R001B	402354	1234128	40.39842	123.69107	Field	ERL603	CT	ctss
211	GD6R001C	402354	1234128	40.39842	123.69107	Field	ERL604	CT	ctss
211	GD6R001D	402354	1234128	40.39842	123.69107	Field	ERL605	CT	ctss
215	GD6R002	402323	1234140	40.38968	123.69454	Field	ERM081	CT	ctss
216	GD8R001	402910	1235726	40.48617	123.95723	Field	ERM156	YST	twg
217	GD8R002	402827	1235744	40.47408	123.96213	Field	ERM157	YST	twg
218	GD8R003	402848	1235440	40.47989	123.91105	Field	ERM158	YST	ytm
219	GMS1	402420	1232359	40.40550	123.39977	Compile	ESD139	WJrT	wjg
219	GMS2	402420	1232359	40.40550	123.39977	Compile	ESD140	WJrT	wjg
219	GMS3	402420	1232359	40.40550	123.39977	Compile	ESD141	WJrT	wjg
222	HY-10	402953	1230616	40.49804	123.104551	Compile	D323775	WHST	hs
223	HY-11	402930	1230617	40.49154	123.104751	Compile	D323776	WHST	hs

Table 13. Field description of rock samples, terrane data, and other miscellaneous information for rock samples from the Garberville 1:100,000 quadrangle, Humboldt, Trinity, Shasta, Tehama, and Mendocino Counties, California --continued.(page 4, part B)

Site	Field No	Rock type	Comments	Mine area	District
180	GD3R002D	Gabbro	Hb-, dike		
180	GD3R002E	Diorite			
180	GD3R002F	Gabbro	Hb-Px-		
180	GD3R002G	Gabbro	Hb-, dike, hem stain		
185	GD3R003	Basalt	Cal veins		
186	GD3R004	Conglomerate			
187	GD3R005A	Basalt	Mn stain		
187	GD3R005B	Chert	Grn		
189	GD3R006A	Gabbro		Murphy (Cu)	
189	GD3R006B	Serpentinite	Sheared	Murphy (Cu)	
189	GD3R006C	Serpentinite	Cu sul-carb	Murphy (Cu)	
192	GD3R009A	Diorite	Hb-		
192	GD3R009B	Gabbro	Hb-		
192	GD3R009C	Gabbro	Hb-Ol-		
192	GD3R009D	Peridotite	Serpentinized		
192	GD3R009E	Gabbro	Hb-		
192	GD3R009F	Gabbro	Pegmatitic		
192	GD3R009G	Hornblendite	Ol-, FeOx		
192	GD3R009H	Hornfels	Blk, phyllitic		
200	GD3R010A	Greenstone	Alt pillow basalt		
200	GD3R010B	Chert	Red, radiolarian		
200	GD3R010C	Chert	Grn; Arg		
203	GD4R004	Phyllite	Py-Po lenses		
204	GD4R005	Argillite	Py lenses		
205	GD4R006	Argillite	Py, tuff		
206	GD4R007	Phyllite	Carbon; Qtz vein		
207	GD4R008A	Greenstone	Dike		
207	GD4R008B	Graywacke			
209	GD4R009	Phyllite	Py		
210	GD4R010	Phyllite			
211	GD6R001A	Manganese	Ox-Carb ore	Charles Mtn (Mn)	
211	GD6R001B	Chert	Red; Qtz vein	Charles Mtn (Mn)	
211	GD6R001C	Graywacke		Charles Mtn (Mn)	
211	GD6R001D	Argillite	Cherty; Qtz vein	Charles Mtn (Mn)	
215	GD6R002	Graywacke	Mica; Cal vein		
216	GD8R001	Graywacke			
217	GD8R002	Siltstone			
218	GD8R003	Mudstone			
219	GMS1	Sulfides	Py, Po		
219	GMS2	Silica	Banded		
219	GMS3	Pyrite	Massive		
222	HY-10	Conglomerate	Red		
223	HY-11	Breccia	Chl		