Chemical Composition of Sedimentary Rocks in California and Hawaii

GEOLOGICAL SURVEY PROFESSIONAL PAPER 1097

Chemical Composition of Sedimentary Rocks in California and Hawaii

Compiled by THELMA P. HILL

GEOLOGICAL SURVEY PROFESSIONAL PAPER 1097

A compilation of 2,312 analyses published before 1974

UNITED STATES GOVERNMENT PRINTING OFFICE, WASHINGTON : 1981

UNITED STATES DEPARTMENT OF THE INTERIOR

JAMES G. WATT, *Secretary*

GEOLOGICAL SURVEY

Dallas L. Peck, *Director*

Library of Congress catalog-card No. 81-600092

For sale by the Superintendent of Documents, U.S. Government Printing Office
Washington, D.C. 20402

CONTENTS

	Page
Abstract	1
General information	1
Groups, class, and categories	1
Analyses	3
Types of samples	3
Analyses of samples	4
Explanation of terms and arrangement of tables	4
Acknowledgments	5
Graphical summaries	5
Areal distribution	6
Distribution by composition	6
Cumulative-frequency curves	12
References cited	12

ILLUSTRATIONS

	Page
FIGURE 1. Triangular diagram of composition of sedimentary rocks, showing the nine fields into which the chemical analyses are grouped	2
2. Tetrahedron showing three categories of rock composition	2
3. A diagrammatic explanation of a typical descriptive note	4
4. Map showing sample localities, California	7
5. Map showing sample localities, Hawaii	8
6. Triangular diagram showing composition of rocks, California	10
7. Triangular diagram showing composition of rocks, Hawaii	11
8. Cumulative-frequency curves showing percentages of various constituents:	
A, Group A, California	18
B, Group B, California	19
C, Group B, Hawaii	20
D, Group C, California	21
E, Group D_5 California	22
F, Group D_5, Hawaii	23
G, Group D_6, California	24
H, Group D_6, Hawaii	25
I, Group E, California and Hawaii	26
J, Group F_1, California	27
K, Group F_2, California and Hawaii	28

TABLES

	Page
TABLE 1. Analyses of samples from California containing 90-100 percent uncombined silica (Group A_3), common- and mixed-rock categories	37
2. Analyses of samples from California containing 75-90 percent uncombined silica (Group A_4), common- and mixed-rock categories	38
3. Analyses of samples from California and Hawaii containing uncombined silica and clay each less then 75 percent; uncombined silica and clay each greater than carbonate (Group B), common- and mixed-rock categories	40
4. Analyses of samples from California containing uncombined silica and carbonate each less than 75 percent; each greater than clay (group C), common- and mixed-rock categories	56
5. Analyses of samples from California and Hawaii containing 75-90 percent clay (Group D_5), common- and mixed-rock categories	58

Page

TABLE 6. Analyses of samples from California and Hawaii containing 90-100 percent clay (Group D_6), from all rock categories 64
7. Analyses of samples from California and Hawaii containing clay and carbonate each less than 75 percent: clay and carbonate each greater than uncombined silica (Group E), common- and mixed-rock categories 82
8. Analyses of samples from California containing 75-90 percent carbonate (Group F_1), common- and mixed-rock categories 84
9. Analyses of samples from California and Hawaii containing more than 90 percent carbonate (Group F_2), common-rock category 90
10. Analyses of samples from California containing 50 percent or more sodium chloride (Group Na), special-rock category 130
11. Analyses of samples from California containing 50 percent or more miscellaneous sulfate- and carbonate-bearing material (Group S), special-rock category 134
12. Analyses of samples from California containing 50 percent or more gypsum, anhydrite, or gypsite (Group G), special-rock category 137
13. Analyses of samples celestite and strontianite (Group Sr), from California, special-rock category 138
14. Analyses of samples of boron-bearing rocks (Group B_1) from California, special-rock category 139
15. Analyses of samples of various types of rocks (Group M) from California and Hawaii, special-rock category 140
16. Analyses of samples of phosphate rock (Group P) from California, special-rock category 142
17. Analyses of samples of manganiferous opal (Group Mn) from California, special-rock category 142
18. Number of samples of various rock types in the classification groups A-F_2, common- and mixed-rock categories, California 12
19. Numbers of samples of various rock types in the classification groups of the special-rock category, California 13
20. Number of samples of various rock types in the classification groups, Hawaii 13
21. Distribution of samples by State, age, stratigraphic unit, county, and classification group 14
22. Distribution of 2,312 samples by State, category, and group 17
23. Code numbers for State and County 143
24. Code numbers for use of rock 143
25. Code numbers of authors 144

CHEMICAL COMPOSITION OF SEDIMENTARY ROCKS IN CALIFORNIA AND HAWAII

Compiled by THELMA P. HILL

ABSTRACT

A compilation of published chemical analyses of sedimentary rocks of the United States was undertaken by the U.S. Geological Survey in 1952 to make available scattered data that are needed for a wide range of economic and scientific uses. About 20,000-25,000 chemical analyses of sedimentary rocks in the United States have been published. This report brings together 2,312 of these analyses from California and Hawaii.

The samples are arranged by general lithologic characteristics and locality. Indexes of stratigraphy, rock name, commercial uses, and minor elements are provided.

The sedimentary rocks are classified into groups and into categories according to the chemical analyses. The groups (A through F_2) are defined by a system similar to that proposed by Brian Mason in 1952, in which the main parameters are the three major components of sedimentary rocks: (1) uncombined silica, (2) clay ($R_2O_3 \cdot 3SiO_2 \cdot nH_2O$), and (3) calcium-magnesium carbonate. The categories are based on the degree of admixture of these three major components with other components, such as sulfate, phosphate, and iron oxide. Common-rock, mixed-rock, and special-rock categories apply to rocks consisting of 85 percent or more, 50-84 percent, and less than 49 percent, respectively, of the three major components combined.

Maps show distribution of sample localities by States; triangular diagrams show the lithologic characteristics and classification groups. Cumulative-frequency curves of each constituent in each classification group of the common-rock and mixed-rock categories are also included.

The numerous analyses may not adequately represent the geochemical nature of the rock types and formations of the region because of sampling bias. Maps showing distribution of sample localities indicate that many of the localities are in areas where, for economic or other reasons, special problems attracted interest.

Most of the analyzed rocks tended to be fairly simple in composition — mainly mixtures of just two of the three major components or a mixture of these and a fourth component such as phosphate, gypsum, or iron oxide.

GENERAL INFORMATION

In 1952, the U.S. Geological Survey began a project to compile published analyses of sedimentary rocks of the United States. The first report, covering the States of Colorado, Kansas, Montana, Nebraska, North Dakota, South Dakota, and Wyoming, was published as U.S. Geological Survey Professional Paper 561 (Hill and others, 1967); the second report, covering the States of Alaska, Idaho, Oregon, and Washington, was published as Professional Paper 771 (Hill and Werner, 1972). The present report covers the States of California and Hawaii, and in most respects it is similar to the first and second reports.

The classification of the analyses into groups and categories was based on work done by computer. The tables of analyses and descriptive notes were arranged and printed out by computer. The cumulative-frequency curves were also based on statistical work done by computer. The triangular diagrams were drawn by a computer-controlled plotter.

The chemical analyses of sedimentary rocks were taken from many publications, and as a result the constituents determined, as well as the methods used for determination, vary widely. Uniformity seemed desirable in presenting the analyses in this report, so several general rules were formulated. Although information concerning some of the analyses is probably inadequate for certain purposes, a more critical selection can be made by the reader. The chemical analyses are shown in tables 1-17.

GROUPS, CLASS, AND CATEGORIES

Groups.—The analyses are classified into groups A_3 through F_2, following a system modified from the one proposed by Mason (1952, p. 130, 131), in which the relative proportions of the three major components of sedimentary rocks are utilized. These components are (1) uncombined silica, (2) an arbitrary clay molecule ($R_2O_3 \cdot 3SiO_2 \cdot nH_2O$), and (3) calcium and magnesium carbonate. When the proportions are plotted on a triangular diagram (fig. 1), the following symmetrical groups can be identified:

Group	*Identification*	*Explanation*
A_3	Silica	Uncombined silica, 90-100 percent.
A_4	Silica	Uncombined silica, 75-90 percent.
B	Mixed silica and clay	Uncombined silica and clay, each less than 75 percent; uncombined silica and clay, each equal to or more than carbonate.

C	Mixed silica and carbonate	Uncombined silica and carbonate, each less than 75 percent; uncombined silica and carbonate, each equal to or more than clay.
D_5	Clay	Clay, 75-90 percent.
D_6	Clay	Clay, 90-100 percent.
E	Mixed clay and carbonate	Clay and carbonate, each less than 75 percent; clay and carbonate, each equal to or more than uncombined silica.
F_1	Carbonate	Carbonate, 75-90 percent.
F_2	Carbonate	Carbonate, more than 90 percent.

For the purpose of assigning analyses into compositional groups, the percentage of each major component was based on the total of all three major components. However, the percentages shown in the tables of analyses are based on total sample weight; therefore, those percentages are somewhat different than the compositional percentages.

Class.—The class figures are the calculated total amounts of the three major components in weight percent. The figures for silica, clay, and carbonate are given in that order at the bottom of each analysis.

Samples that contained 33 percent or more calcium-magnesium carbonate were given a notation indicating the ratio of calcium to magnesium unless it exceeded 100, and then the notation is simply Ca/Mg > 100. The ratio appears at the end of each descriptive note.

Categories.—The categories are based on the degree to which the three major components used to define the groups are admixed with other materials. The categories are defined by the following amounts of the three main components: silica, clay, and carbonate.

Percent	*Category*
85 or more	Common rock
50-84	Mixed rock
49 or less	Special rock

The common- and mixed-rock categories are assembled by group, State, county, and position within the county. Samples of common- and mixed-rock categories are intermixed in the tables of analyses, but the two may be distinguished by adding up the three class figures (last line of each analysis). A total of 85-100 percent indicates the common-rock category; 50-84 percent, the mixed-rock category. Table 6 also includes some Hawaiian clay samples from the special-rock category in which the class total of the three main constituents is less than 50 percent. The rest of the analyses of the special-rock category are in tables 10-17.

The special-rock category is divided according to the kind of material admixed with the major component of silica, clay, and carbonate. The numerical limits of the special-rock category were not strictly observed for all samples; some samples were included in this category because of unusual composition or other factors.

The relation of the three general categories to one another is illustrated by the tetrahedron in figure 2, which represents a four-component classification system. The base of the tetrahedron may be taken as the triangular diagram of figure 1, its three corners being,

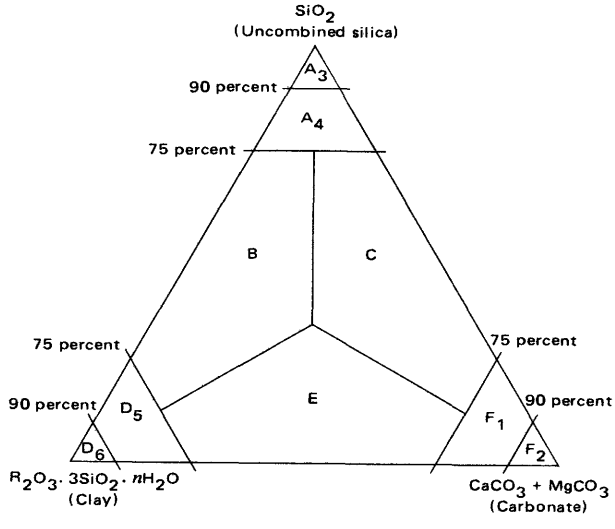

FIGURE 1.—Composition of sedimentary rocks, showing the nine fields into which the chemical analyses are grouped.

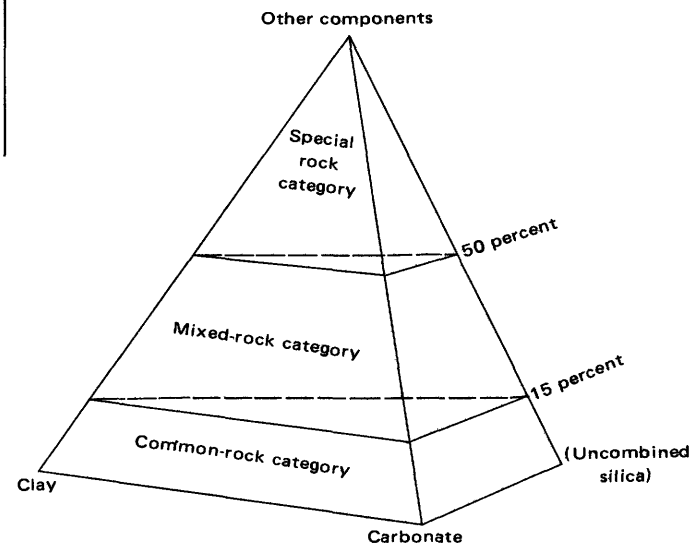

FIGURE 2.—Tetrahedron showing three categories of rock composition; common-rock category consisting of rocks with 85 percent or more uncombined silica, clay, and carbonate; mixed-rock category that includes rocks with one or more additional components; and special-rock category, in which other components, such as gypsum or phosphate rock, make up more than 50 percent of the rock sample.

respectively, 100 percent uncombined silica, 100 percent clay, and 100 percent carbonate, The apex of the tetrahedron is then 100 percent of some component, or components, other than uncombined silica, clay, or carbonate. The interior of the tetrahedron, the volume above the basal triangle, represents those rocks composed partly of the three major components (uncombined silica, clay, and carbonate) and partly of one or more additional components. If, for example, an analysis shows 19 percent uncombined silica, 19 percent clay, 57 percent carbonate, and 5 percent calcium sulfate, its location within the tetrahedron is determined by first recalculating the three major component figures into percentages based on the total of those three components only: that is, 20 percent uncombined silica, 20 percent percent clay, and 60 percent carbonate. The point thus defined is located in the basal triangle, and is projected up towards the apex for a distance representing the amount of the fourth component. In this case, the point would be projected 5 percent of the distance from the base to the apex, and it would lie within the volume designated as common-rock category in figure 2.

For an analysis that shows 15 percent uncombined silica, 30 percent clay, 15 percent carbonate, and 40 percent calcium phosphate, the recalculation explained above would yield these figures: 25 percent uncombined silica, 50 percent clay, and 25 percent carbonate. The defined point is located on the basal plane and then projected toward the apex for a distance equivalent to 40 percent (the amount of calcium phosphate in the analysis). The point representing the analysis will then fall in the upper part of the volume designated as mixed-rock category in figure 2. If the analysis had shown 60 percent calcium phosphate, the point representing it would have fallen in the lower part of the volume designated as special-rock category.

To keep the nomenclature of the classification scheme simple and reasonably consistent, the subdivisions of the special-rock category are designated as "groups" by analogy with the use of that term for the different mixtures of the three main components represented on the basal plane of the tetrahedron. The nomenclature of the special-rock category is as follows:

Table	*Group*	*Description*
10	Na	Sodium chloride
11	S	Miscellaneous sodium-sulfate and sodium-carbonate rocks
12	G	Gypsum, gypsite, and anhydrite
13	Sr	Celestite, strontianite
14	B	Boron-bearing rocks
15	M	Miscellaneous rocks
16	P	Phosphorite
17	Mn	Manganiferous opal

ANALYSES

Analysis section. — Analyses were taken only from reports published prior to 1974 and from open-file reports of the U.S. Geological Survey. The analyses are generally recorded in this report as they are given in the original publication; the few recalculations made by the compiler are noted.

Arrangement of analyses. — The 2,312 analyses compiled are presented in tables 1-17 of this report. The tables are arranged in sequence according to classification groups of the common- and mixed-rock categories. For A through F_2, each table lists the analyses by States and contains all the analyses in the group.

The user should note that the published analyses of California rocks, despite their large number, are probably not truly representative of the composition of all sedimentary rocks of the region. Most of the analyzed rocks were collected because they are (or were thought to be) of special economic interest and hence are probably of rather unusual chemical composition. For example, limestone that contains 95 percent or more $CaCO_3$ is grossly overrepresented in the published analyses; natural limestone analyses show a wide range in $CaCO_3$. This geochemically unrepresentative or biased nature of the published analyses does not necessarily detract from the potential usefulness of these analyses. Carbonate rocks of unusual purity were specially selected for analysis; the analysis of these pure rocks affords the potential manufacturer of lime, industrial fluxes, and other mineral commodities valuable information on localities where the best source materials for his particular purpose can most readily be obtained.

TYPES OF SAMPLES

Sedimentary and metamorphic rocks. — The dividing line between sedimentary and metamorphic rocks is not a sharp one in nature, and some authors do not always clarify where a given analyzed sample lies in relation to this line. In this report, the usage of the individual author was followed wherever possible. Slightly altered rocks are generally included in this compilation; considerably altered rocks are not. An "altered" rock is included if the "alteration" is interpreted to be due primarily to sedimentary or diagenetic processes rather than to metamorphic or hydrothermal processes. In general, Precambrian sedimentary rocks have been greatly modified by pressure, heat, and circulating fluids; only those that seem from the description to have been slightly modified are included here. "Marble" is sometimes applied as a trade name to any carbonate rock that will take a high polish, and for this reason, analyses of some rocks called marble are also included here. Analyses of some rocks of doubtful ori-

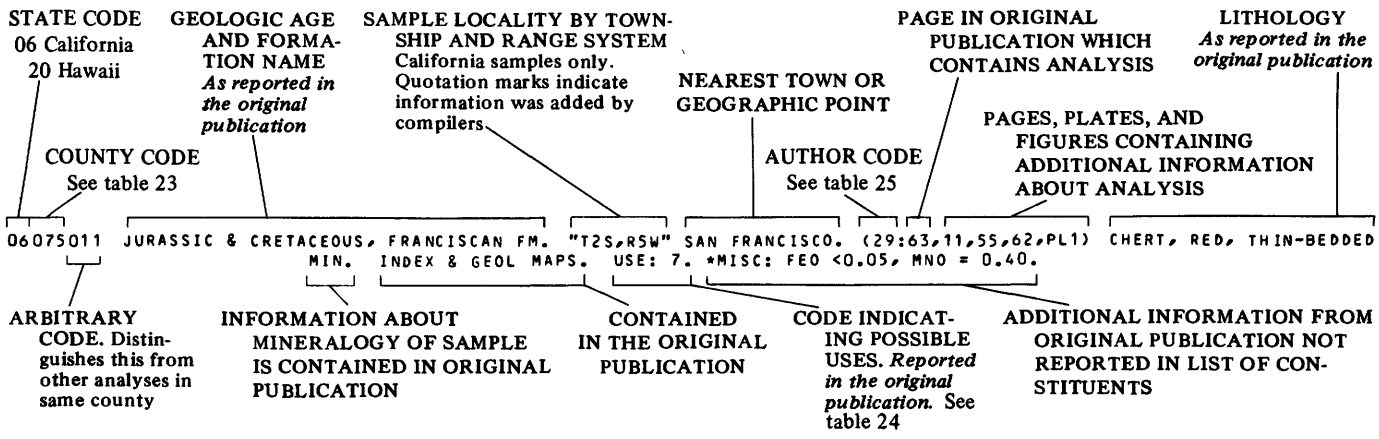

FIGURE 3.—Diagrammatic explanation of a typical descriptive note.

gin, or ones that have undergone an unknown amount of metamorphism, are included if the rock is of special economic interest.

Washed and purified samples.—Analyses of washed and purified samples are included if no more than 10 percent of the material was removed during the processing.

ANALYSES OF SAMPLES

Completeness.—No selection based on the known or inferred quality of the analyses was made, except that analyses totaling less than 95 percent or more than 102.5 percent were excluded. Selection and grading of analyses based on quality and completeness are left to the reader. A few analyses that do not precisely meet the standards outlined above are nevertheless included if the sample is part of a related suite, is the only one from a given formation, is of particular economic or scientific interest, or contains constituents not commonly determined.

Analyses were not graded into categories of superior, good, and fair. The original publication dates of the analyses afford the user a general means by which the reliability of such analyses might be appraised. This inclusive compilation can facilitate a later, more critical selection of truly superior analyses.

Insoluble residues.—Analyses that record more than 25 percent of the rock as insoluble in acid and that do not report SiO_2 are not included.

Totals.—In general, analyses are reported if their totals are within the range of 95 to 102.5 percent. For those analyses whose totals were outside the range because the percentage of a readily calculated constituent had not previously been determined, the omitted constituent was calculated so the total was brought within these limits. For example, in some limestone and dolomite analyses, CO_2 was not determined, and the analysis total is accordingly too low to meet the 95-percent criterion. However, analyses of limestone and dolomite are included if the CO_2 calculated from the determined CaO and MgO brings the total above the 95-percent limit. If the total is not in the source reference, the amount has been added by the compiler.

EXPLANATION OF TERMS AND ARRANGEMENT OF TABLES

Sample location.—Only rock samples that have reasonably adequate information concerning their localities are included. Localities are shown in the descriptive notes by State and county codes (see table 23), by the nearest town or geographic point, and for California only by township and range numbers (see fig. 3).

References.—Analyses utilized in this study were obtained mostly from readily available publications. If more than one reference is given for an analysis, the first given is generally the reference from which the analysis was taken. References other than the first supply additional information for the descriptive notes or for the analysis itself.

To simplify the computer printout of the descriptive notes, authors were given code numbers. Figure 3 shows how these codes are used in the descriptive notes, and a complete list of author codes is given in table 25. Authors are also listed alphabetically in the section on "References Cited" at the back of this report.

Lithology.—The rock name given to a sample is that used in the original reference. If the reference gives no name, or if the compiler thought there was some doubt as to the accuracy of the name, a name was supplied on the basis of either the position of the analysis in the classification system or the compiler's interpretation of the original publication.

Treatment of stratigraphic nomenclature.—Because the stratigraphic nomenclature used in this report is from many published sources, the names and ages do not necessarily reflect the latest usage of the U.S. Geological Survey. The age and formation of each sample are given in the descriptive notes as reported in the

published source of the analysis, unless the reported assignment is so out of date as to be misleading and better information could be conveniently obtained. For some of the rock samples, age and the stratigraphic unit are not known because of the complex structure of the rocks or because the area has not been fully investigated.

Chemical analyses.—The lists of constituents in the tables were simplified so that the analyses could be printed by computer. Also, for the sake of simplicity, the footnotes do not vary from page to page, although not all footnotes are required on every page. For information that did not fit the standard footnote form, an asterisk is put on the total of the sample and the additional information is printed out in the descriptive notes. (See fig. 3.) The list of constituents for the common- and mixed-rock categories was not suitable for the special-rock category, so each set of analyses in that category has its own constituent list derived from the original publication. The footnotes for that category pertain only to the page where they appear.

Additional information.—If the original publication gave a spectrographic analysis or described the mineralogy of the sample, this is indicated in the descriptive notes, although these data are not reproduced here (see fig. 3). Quotation marks in the descriptive notes indicate information supplied by the compilers.

Many analyses are published and republished over the years. Most of these analyses are quoted exactly, but some are not consistent in constituents and amounts when republished. These inconsistencies may reflect the interpretation of a later author, or they may simply be the result of typographic errors.

Pages as a unit.—Each set of facing pages with chemical analyses and accompanying descriptive notes is considered a unit, and the footnotes apply to the unit as a whole.

English units, metric units.—English units of measure were not converted to metric units. For a few analyses the original publication used metric units, and these are recorded as given. Most of the units used are feet, inches, and miles, and the conversion factors are:

1 mile	=	1.609 kilometers
1 foot	=	0.3048 meters
1 inch	=	2.54 centimeters

Reported use of the rock.—Generally, the information of the actual or potential economic use is given only if it is stated in the original publication. Uses have been grouped, and each type has been given a code number (1-18). This code number is used in the descriptive notes. (See table 24 for explanation of the code number.)

Abbreviations.—For the sake of saving space and computer printout time, many abbreviations are used in the descriptive notes. Most of these abbreviations are standard and probably are familiar to most readers. However, the notes also contain a few unusual or little-known abbreviations, and these are listed here.

B.D., Bulk density

COMPOS., Composite

DH, Drill hole

DIF., Difference

GR., Group or Grain

I.L., Ignition loss

MIN., Mineralogy (information about the sample's mineralogy is contained in the original publication)

MOTL., Mottled

ORG., Organic or Organic matter

PHYS. PROP., Physical properties

REPR., Represents or representative

REPT., Reported

SMPL., Sample

SOL., Soluble

TEX., Texture

Acknowledgments:—My thanks to the following: Marian A. Werner for some of the research; Harry A. Tourtelot for help during different stages of assembling the material; Margaret Roberts for writing the computer programs; and Lillian Kennedy and Pamela Ketterer for their contribution to the work of preparing and typing the manuscript.

GRAPHICAL SUMMARIES

The analyses assembled in this report may be considered primarily as individual pieces of information about the composition of particular sedimentary rocks in particular places. Also, they may be thought of collectively as groups of data that tend to cluster around various modal points of composition corresponding to rocks of different lithologic types, geologic ages, economic uses, and so forth. Collectively, then, the data of the analyses need to be summarized if any clustering of points or systematic relations that may exist are to be recognized.

Many of the samples had been collected for analysis because the rock was, or was thought to be, of economic value. For this reason, the resulting analyses do not represent random sampling of all sedimentary rocks of the report region. Yet, despite systematic bias in the choice of samples, the compiler hopes that the wide range in composition of the samples may tend to offset the purely local peculiarities in the data and provide information of more regional interest and utility.

AREAL DISTRIBUTION

Figures 4 and 5 show the approximate locations of analyzed samples from each of the rock-classification groups. These maps are crowded in some areas, and, accordingly, some symbols may indicate more than one sample; in addition, where symbols are closely spaced on the map, some of them are plotted in the county adjacent to their true location. More detailed locations are given in the descriptive notes accompanying the tables of analyses.

DISTRIBUTION BY COMPOSITION

Figures 6 and 7 are computer plots of the analyses within the fields of the triangular diagram that is the basis for the classification system. In some of the more crowded areas of the diagrams, much overlap occurs.

These computer plots show that much more data is available for some kinds of rocks, notably mixtures of siliceous and clayey materials (group B) and carbonate rocks (group F_1, and F_2), than for others. Whether these larger amounts of data are a reflection of the economic value of such rocks or of the relative abundance of the rocks is not certain.

The summaries also emphasize the difficulties of designing a classification system that consistently groups sedimentary rocks according to the names commonly applied to them. Rocks called clay, for example, fall into several of the classification groups when classified according to their chemical composition. The inverse is also true and is perhaps more important. Common names for sedimentary rocks are not always closely related to the actual rock composition, nor are they always consistently applied.

Tables 18, 19, and 20 categorize the numbers of analyses of various rock types by classification group and States as an aid in understanding the distribution of data.

Table 21 lists, by State, the number of analyses in each classification group, stratigraphic unit, and county. The stratigraphic units are those of the original author and do not necessarily conform to the usage of the U.S. Geological Survey. This table is useful for finding the available data on rocks of a particular composition within a reasonably restricted geographic area.

Table 22 shows the general distribution of the samples by State, category, and group.

The geologist or geochemist interested in estimating the average composition of the Earth's materials probably cannot find the gross averages of thousands of published analyses of unusually pure limestones particularly useful for his purpose. Careful observation, however, of the areal distribution and thickness of different rock types and of different geologic formations represented by the published analyses should enable the geologist or geochemist to make closer estimates of average compositions than most of those now available, or at least enable him to discover which rock types and formations are most in need of new analytical data.

Several noteworthy questions and facts about sedimentary rocks resulted from the compilation. One possibly significant relation became apparent when the analyses of this report were plotted on triangular diagrams (figs. 5 and 6). A very large proportion of all the analyses fall not within the central region of the diagram, as might reasonably be expected, but within about 10 percent of the exterior boundaries of the triangle. This means that many samples of uncombined silica and clay mixtures contain very little carbonate, and that many samples of carbonate contain very little uncombined silica or clay. Such relations probably are not artifacts resulting from systematic bias in the choice of analyzed samples or in the classification system used; rather, they are largely results of natural sedimentation processes. Thus, environments favorable for deposition of sand and clay are unfavorable for deposition of carbonates, and vice versa. It follows that the physicochemical factors underlying deposition of sand and clay are different from those that result in carbonate deposition.

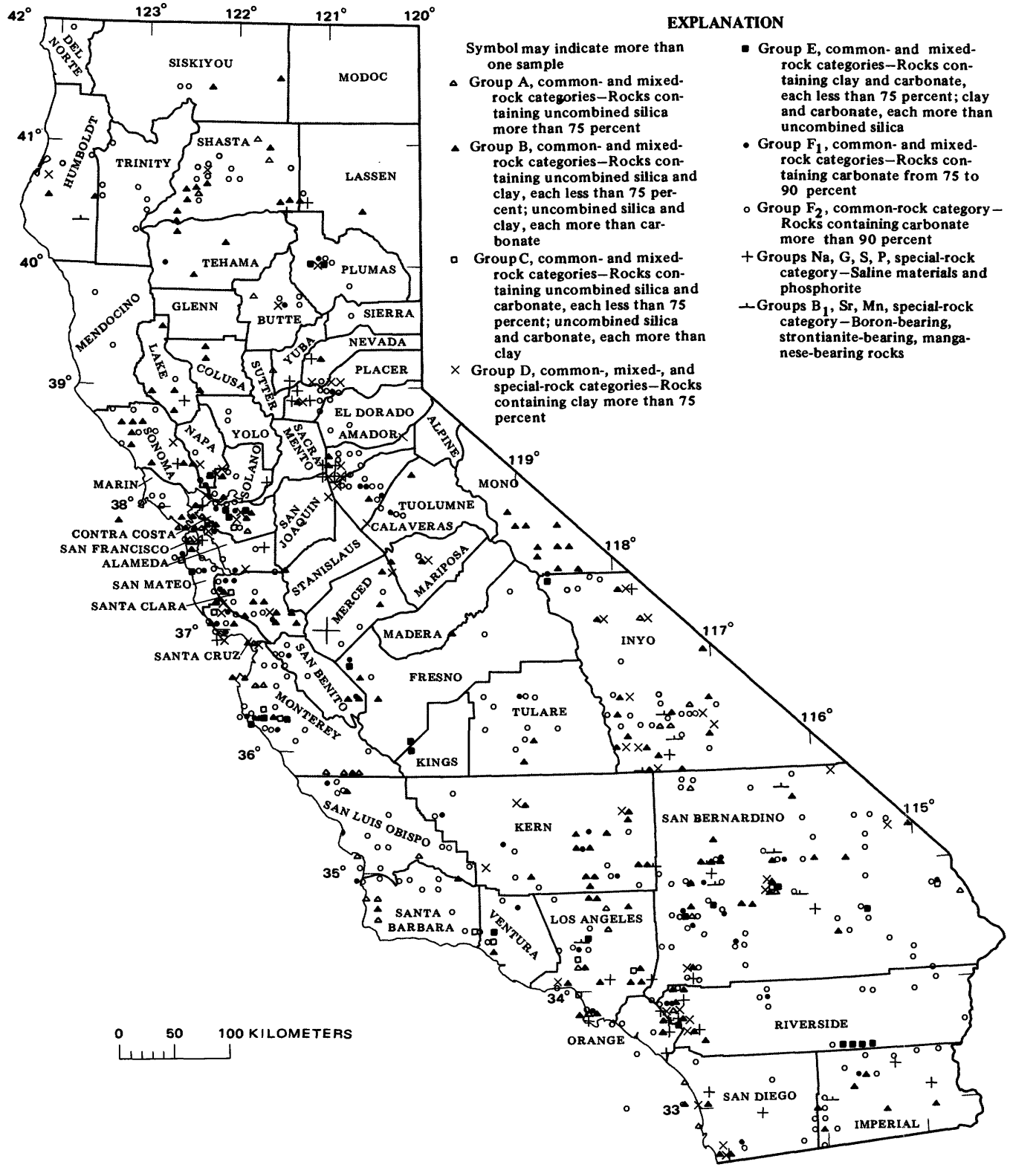

FIGURE 4.—Sample localities of common-, mixed-, and special-rock category rocks, California.

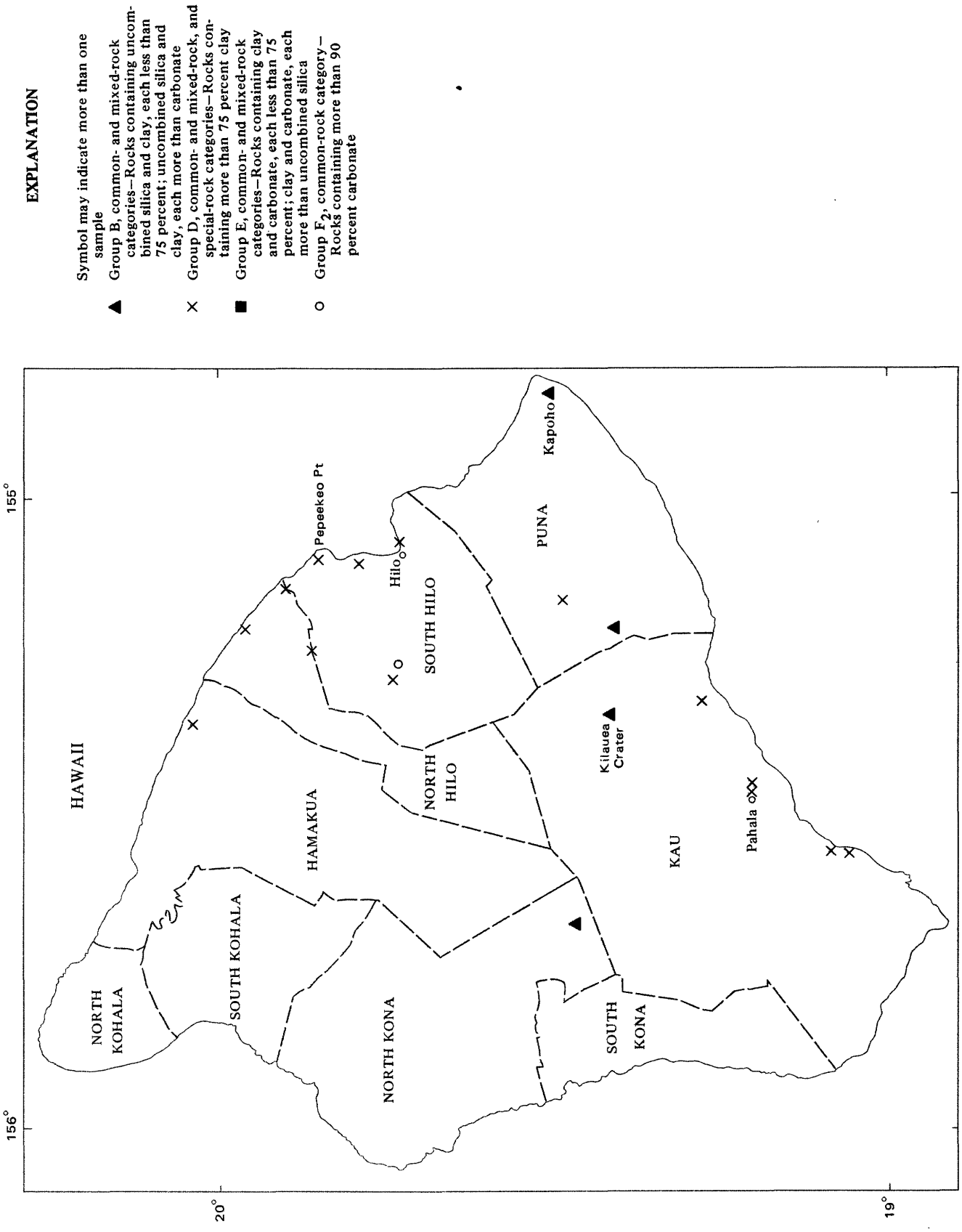

FIGURE 5.—Sample localities of common- and mixed-rock categories of rocks in Hawaii. Some of the analyses (D Group) are in the special-rock category.

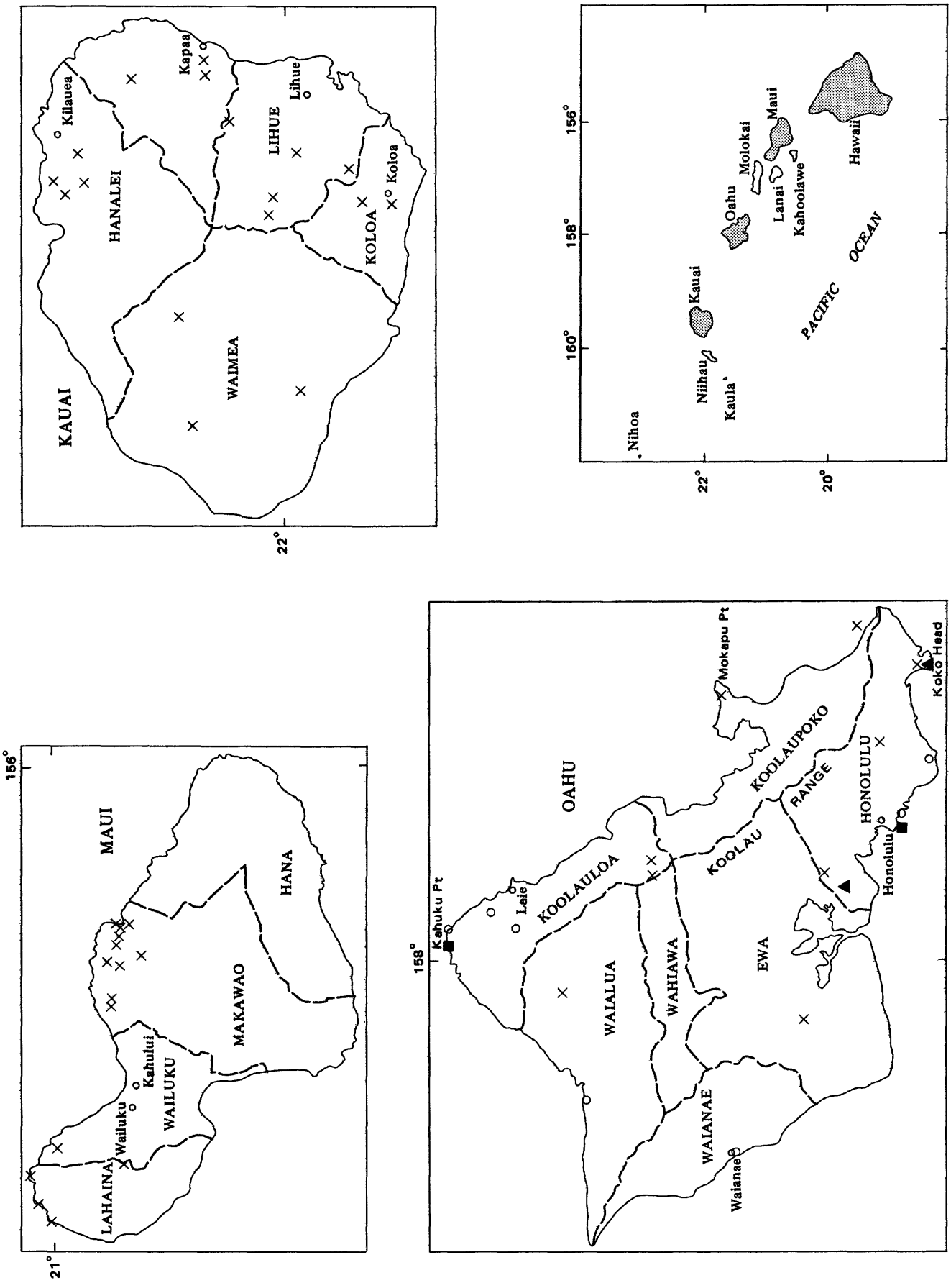

FIGURE 5.—Continued.

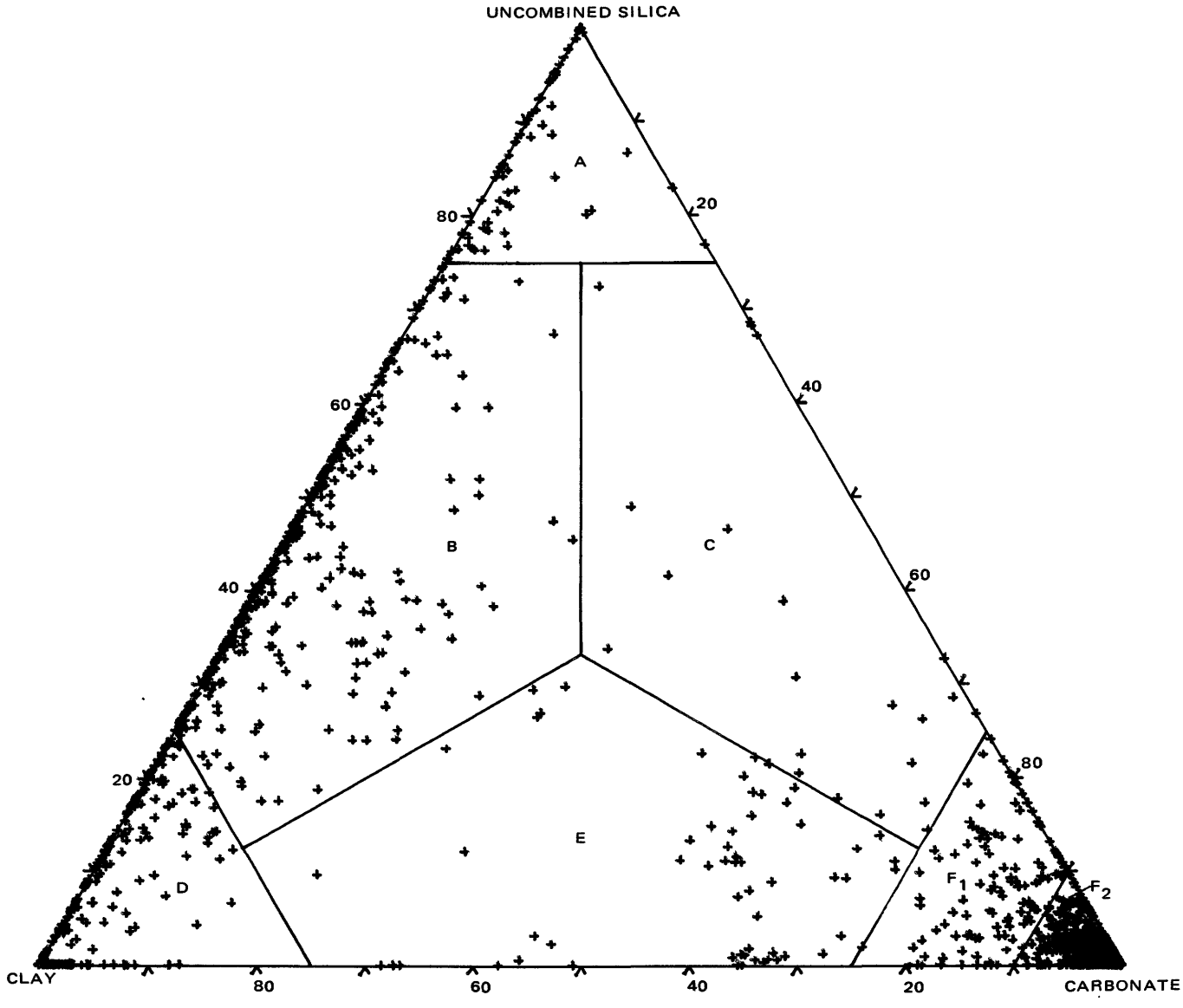

FIGURE 6.—Distribution among compositional groups of analyses of samples from California; common- and mixed-rock categories.

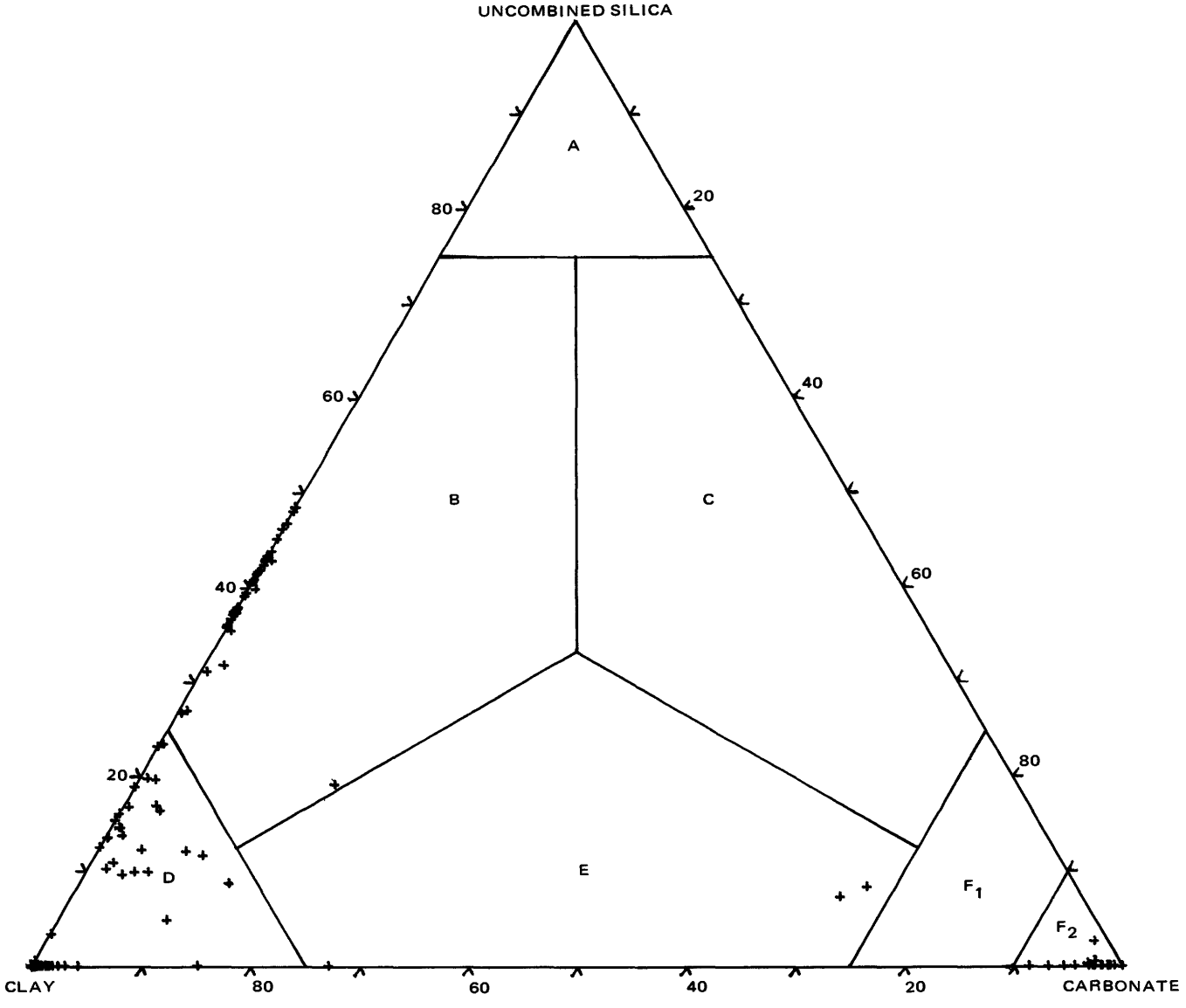

FIGURE 7.—Distribution among compositional groups of analyses of samples from Hawaii; common- and mixed-rock categories. Some of the analyses, Group D, are in the special-rock category.

TABLE 18. — *Number of samples of various rock types in the classification groups A-F2, common- and mixed-rock categories, California*

Rock type	Classification group						
	A	B	C	D	E	F1	F2
Aragonite	---	---	---	---	---	---	1
Argillite	---	1	---	---	---	---	---
Arkose	---	---	---	---	2	---	---
Bauxite	---	---	---	4	---	---	---
Bentonite	---	11	---	9	---	---	---
Caliche	---	---	---	---	---	1	---
Chert	11	---	---	---	---	---	---
Clay	6	66	---	231	1	---	2
Diatomite	17	18	---	---	---	---	---
Dolomite	---	---	1	---	---	16	130
Flint	1	---	---	---	---	---	---
Fuller's earth	---	2	---	2	---	---	---
Graywacke	---	46	---	1	---	---	---
Laterite	---	---	---	3	---	---	---
Limestone	---	1	8	---	5	65	697
Magnesite	---	---	---	---	---	20	57
Marble	---	2	1	---	5	4	35
Marl	---	---	---	1	2	---	1
Onyx	---	---	---	---	---	---	2
Phosphorite	---	1	---	---	---	---	---
Pumice	---	23	---	1	---	---	---
Pyroclastics	---	3	---	---	---	---	---
Quartzite	11	1	---	---	---	1	---
Reef rock	---	---	---	---	---	---	1
Sand	6	53	---	---	3	---	---
Saponite	1	1	---	---	---	---	---
Searlesite crust	1	---	---	---	---	---	---
Shale	7	43	4	16	1	---	---
Strontianite	---	---	---	---	---	1	---
Travertine	---	---	---	---	---	2	13
Tuff	---	32	---	3	---	---	---
Volcanic ash	---	11	---	1	---	---	---
Weathered igneous rock	---	5	---	---	1	---	---
Total	61	320	14	272	20	110	939

CUMULATIVE-FREQUENCY CURVES

Figures 8*A-K* are cumulative-frequency curves of the constituents determined in all samples of each classification group. These curves show on one diagram the wide range in abundance of some of the constituents. Note that the minor constituents generally vary much more widely than do the major constituents.

Many of the constituents, particularly those determined in only a few samples, are distributed very irregularly, and several of them do not fit very well into either normal or log-normal distributions. Nevertheless, most of the more abundant constituents approximate a normal distribution, and many of the constituents of intermediate and lesser abundance show a tendency toward a log-normal distribution.

REFERENCES CITED

Allen, J. E., 1946, Geology of the San Juan Bautista quadrangle, California: California Div. Mines Bull. 133, p. 9-75.

Allen, R. D., and Kramer, Henry, 1953, Occurrence of bassanite in two desert basins in southeastern California: Am. Mineralogist, v. 38, no. 12, p. 1266-1268.

Allen, V. T., 1929, The Ione Formation of California: California Univ. Pubs. Geol. Sci., v. 18, no. 14, p. 347-448.

——— 1941, Eocene anauxite clays and sands in the Coast Range of California: Geol. Soc. America Bull., v. 52, no. 2, p. 271-293.

Ames, L. L., Jr., Sand, L. B., and Goldich, S. S., 1958, A contribution on the Hector, California bentonite deposit: Econ. Geology, v. 53, no. 1, p. 22-37.

Anderson, C. A., 1933a, Volcanic history of Glass Mountain, northern California: Am. Jour. Sci., 5th ser., v. 26, no. 155, p. 485-506.

——— 1933b, The Tuscan Formation of northern California, with a discussion concerning the origin of volcanic breccias: California Univ. Pubs. Geol. Sci., v. 23, no. 7, p. 215-276.

TABLE 19. — *Number of samples of various rock types in the classification groups of the special-rock category, California*

Rock type	Classification group							
	Na	S	G	Sr	B_1	M	Mn	P
Barite nodule	---	---	---	---	---	1	---	---
Bassanite	---	---	1	---	---	---	---	---
Borax crust	---	---	---	---	1	---	---	---
Burkeite	---	2	---	---	---	---	---	---
Celestite	---	---	---	9	---	---	---	---
Colemanite	---	---	---	---	5	---	---	---
Copiate	---	---	---	---	---	1	---	---
Gaylussite	---	1	---	---	---	---	---	---
Gypsum	---	---	23	---	---	---	---	---
Halite	27	---	---	---	---	---	---	---
Hanksite	1	6	---	---	---	---	---	---
Howlite	---	---	---	---	4	---	---	---
Hydroboracite	---	---	---	---	1	---	---	---
Laterite	---	---	---	---	---	32	---	---
Magnesium sulfate pentahydrate	---	1	---	---	---	---	---	---
Mirabilite crust	---	2	---	---	---	---	---	---
Natroalumite	---	---	---	---	---	2	---	---
Neocolemanite	---	---	---	---	1	---	---	---
Niter	4	1	---	---	---	1	---	---
Opal	---	---	---	---	---	---	3	---
Phosphorite	---	---	---	---	---	---	---	2
Pickeringite	---	---	---	---	---	2	---	---
Pirsonite	1	---	---	---	---	---	---	---
Salines	36	---	---	---	---	---	---	---
Sand	---	---	---	---	---	2	---	---
Sodium sulfate, sodium carbonate	---	28	---	---	---	---	---	---
Strontianite	---	---	---	10	---	---	---	---
Thenardite	---	1	---	---	1	---	---	---
Tincalconite	---	1	---	---	---	---	---	---
Trona	3	19	---	---	---	---	---	---
Ulexite	---	---	---	---	2	---	---	---
Urao	---	2	---	---	---	---	---	---
Veatchite	---	---	---	---	1	---	---	---
Total	72	64	24	19	16	41	3	2

——— 1936, Volcanic history of the Clear Lake area, California: Geol. Soc. America Bull., v. 47, no. 5, p. 629-664.

Anderson, C. A., and Russell, R. D., 1939, Tertiary formations of northern Sacramento Valley, California: California Jour. Mines and Geology, v. 35, no. 3, p. 219-253 [1940].

Anderson, F. M., 1899, The geology of Point Reyes Peninsula: California Univ. Pubs. Geol. Sci., v. 2, no. 5, p. 119-153.

——— 1911, The Neocene deposits of Kern River, California, and the Temblor Basin: California Acad. Sci. Proc., 4th ser., v. 3, p. 73-146.

Anderson, Robert, and Pack, R. W., 1915, Geology and oil resources of the west border of the San Joaquin Valley north of Coalinga, California: U.S. Geol. Survey Bull. 603, 220 p.

Angel, Myron, 1890, San Luis Obispo County: California State Mining Bur. 10th Ann. Rept., p. 567-585.

Arnold, Ralph, and Anderson, Robert, 1907, Diatomaceous deposits

TABLE 20. — *Number of samples of various rock types in the classification groups, Hawaii*

	B	D	E	F_2	M
Bauxite	---	113	---	---	---
Chalk	---	---	---	2	---
Clay	---	32	2	---	---
Limestone	---	5	---	18	---
Pumice	36	---	---	---	---
Pyroclastic	2	4	1	---	---
Saprolite	---	85	---	---	---
Soda-alenite	---	---	---	---	1
Tuff	4	23	---	---	---
Volcanic ash	2	5	---	---	---
Total	44	267	3	20	1

TABLE 21. — *Distribution of samples by State, age, stratigraphic unit, county, and classification group*

[The stratigraphic nomenclature used in this table does not necessarily reflect the latest usage of the U.S. Geological Survey; names and ages were taken from many published sources. Stratigraphic units are in alphabetical order in each age grouping]

Age	Stratigraphic unit	County	Classification group													
			A	B	C	D	E	F_1	F_2	Na	S	G	Sr	B_1	M	Mn&P
California																
Holocene	Not given	Butte	---	1	---	---	---	---	---	---	---	---	---	---	---	---
		Imperial	---	1	---	---	---	---	---	---	---	---	---	---	---	---
		Inyo	---	2	---	---	---	---	---	1	---	---	---	---	---	---
		Lassen	---	3	---	---	---	---	---	---	---	---	---	---	---	---
		Mono	---	7	---	---	---	---	---	---	---	---	---	---	---	---
		San Bernardino	---	---	---	---	---	---	---	12	8	---	---	---	---	---
		San Luis Obispo	---	---	---	---	---	---	1	---	3	---	---	---	---	---
		San Mateo	---	---	---	---	---	---	4	---	---	---	---	---	---	---
		Shasta	5	5	---	---	---	---	---	---	---	---	---	---	---	---
		Siskiyou	---	2	---	---	---	---	---	---	---	---	---	---	---	---
Pleistocene	do	Inyo	---	1	---	---	---	---	---	---	---	---	---	---	---	---
		Los Angeles	---	---	---	1	---	---	---	---	---	---	---	---	---	---
		Mono	---	5	---	---	---	---	---	---	---	---	---	---	---	---
		San Bernardino	---	---	---	---	---	---	---	20	17	---	---	---	---	---
		San Diego	---	2	---	---	---	---	---	---	---	---	---	---	---	---
		San Mateo	---	---	---	---	---	---	1	---	---	---	---	---	---	---
	Bishop Tuff	Mono	---	2	---	---	---	---	---	---	---	---	---	---	---	---
	Blackhawk Breccia	San Bernardino	---	---	---	---	---	---	7	---	---	---	---	---	---	---
	Hookton Formation	Humboldt	---	1	---	---	---	---	---	---	---	---	---	---	---	---
Pleistocene and Pliocene	Tulare Formation	Fresno	---	---	---	---	1	1	---	---	---	---	---	---	---	---
Tertiary	Not given	Amador	---	---	---	1	---	---	---	---	---	---	---	---	---	---
		Fresno	---	---	---	---	---	---	---	---	---	4	---	---	---	---
		Imperial	---	---	---	1	---	---	---	---	---	---	1	---	---	---
		Inyo	---	---	---	---	---	---	---	1	---	---	---	---	---	---
		Kern	---	1	---	---	---	---	---	---	---	---	---	---	---	---
		Los Angeles	---	---	---	---	---	---	---	---	---	---	---	1	---	---
		Nevada	---	1	---	---	---	---	---	---	---	---	---	---	---	---
		Orange	---	---	---	---	---	---	---	---	---	1	---	---	---	---
		Riverside	---	5	---	12	---	---	---	---	---	---	---	---	---	---
		San Bernardino	1	3	---	---	---	13	42	---	---	---	---	---	---	---
		San Diego	---	---	---	1	---	---	---	---	---	---	---	---	---	---
		Solano	---	1	---	---	---	---	---	---	---	---	---	---	---	---
Pliocene	do	Lake	---	1	---	---	---	---	---	---	---	---	---	---	---	---
		Los Angeles	---	---	---	---	---	---	1	---	---	---	---	---	---	---
		Trinity	---	1	---	---	---	---	---	---	---	---	---	---	---	---
	Pinole Tuff	Solano	---	1	---	---	---	---	---	---	---	---	---	---	---	---
	Red Mountain Andesite	San Bernardino	1	1	---	---	---	---	---	---	---	---	---	---	---	---
	Ricardo Formation	Kern	---	4	---	---	---	---	---	---	---	---	---	---	---	---
	San Diego Formation	San Diego	---	6	---	---	---	---	---	---	---	---	---	---	---	---
	Tehama Formation	Shasta	---	1	---	---	---	---	---	---	---	---	---	---	---	---
		Tehama	---	2	---	---	---	---	---	---	---	---	---	---	---	---
	Tuscan Formation	do	---	1	---	---	---	---	---	---	---	---	---	---	---	---
Pliocene and Miocene	Sisquoc Formation	Santa Barbara	1	---	---	---	---	---	---	---	---	---	---	---	---	---
Miocene	Not given	Contra Costa	---	1	---	---	---	---	---	---	---	---	---	---	---	---
		Kern	---	---	---	---	---	9	7	---	---	---	---	---	---	---
		Lassen	---	1	---	---	---	---	---	---	---	---	---	---	---	---
		Los Angeles	---	---	---	---	---	---	---	---	---	1	---	---	---	---
		Orange	---	---	---	---	---	---	1	---	---	---	---	---	---	---
		San Bernardino	---	---	---	---	---	---	---	---	---	---	8	---	---	---
		Santa Barbara	---	2	---	---	---	---	2	---	---	---	---	---	---	---
		Trinity	---	1	---	---	---	---	---	---	---	---	---	---	---	---
	Barstow Formation	San Bernardino	---	7	---	---	---	---	---	---	---	---	---	---	---	---
	Claremont Shale	Contra Costa	---	---	---	---	---	1	1	---	---	---	---	---	---	---
	Glendora Volcanics	Los Angeles	---	3	---	---	---	---	---	---	---	---	---	---	---	---
	Kinnick Formation	Kern	---	1	---	---	---	---	---	---	---	---	---	---	---	---
	Modelo Formation	Los Angeles	---	3	---	---	---	---	---	---	---	---	---	---	---	1
	Monterey Formation	Kern	---	---	---	---	---	1	1	---	---	---	---	---	---	---
		Los Angeles	3	2	---	1	---	---	---	---	---	---	---	---	---	1
		Monterey	1	4	---	---	---	---	---	---	---	---	---	---	---	---
		Santa Barbara	5	4	---	---	---	---	---	---	---	---	---	---	---	---
		Shasta	3	---	---	---	---	---	---	---	---	---	---	---	---	---
	Monterey Shale	Los Angeles	---	1	---	---	---	2	2	---	---	---	---	---	---	---
		Monterey	1	---	---	---	---	---	---	---	---	---	---	---	---	---
		San Luis Obispo	---	---	---	---	---	1	3	---	---	---	---	---	---	---
		Santa Barbara	1	1	---	---	---	1	---	---	---	---	---	---	---	---
		Santa Cruz	1	---	---	---	---	---	---	---	---	---	---	---	---	---

TABLE 21. — *Distribution of samples by State, age, stratigraphic unit, county, and classification group* — Continued

Age	Stratigraphic unit	County	Classification group													
			A	B	C	D	E	F_1	F_2	Na	S	G	Sr	B_1	M	Mn & P
		California — Continued														
Miocene	Santa Margarita Formation	San Luis Obispo	---	---	---	---	---	---	3	---	---	---	---	---	---	---
	Tropico Group	Kern	---	2	---	---	---	---	---	---	---	---	---	---	---	---
	Vaqueros Formation	do	---	2	---	---	---	---	---	---	---	---	---	---	---	---
		San Benito	---	---	---	---	---	---	2	---	---	---	---	---	---	---
	Wildcat Series	Humboldt	---	1	---	---	---	---	---	---	---	---	---	---	---	---
Miocene and Oligocene	Mindego Basalt	Santa Cruz	---	---	1	---	---	1	---	---	---		---	---	---	---
	Temblor Formation	Kern	---	1	---	1	---	---	---	---	---	---	---	---	---	---
		Fresno	---	---	---	---	---	---	---	---	---	---	---	---	2	---
Miocene and Oligocene(?)	Vaqueros Sandstone	Monterey	---	---	---	---	---	---	2	---	---	---	---	---	---	---
		Riverside	---	1	---	---	---	---	---	---	---	---	---	---	---	---
Oligocene	Weaverville Formation	Trinity	---	2	---	---	---	---	---	---	---	---	---	---	---	---
Oligocene and Eocene	Sespe Formation	do	---	1	---	---	---	---	---	---	---	---	---	---	---	---
Eocene	Not given	Alameda	---	2	---	1	---	---	---	---	---	---	---	---	---	---
		Amador	---	3	---	1	---	---	---	---	---	---	---	---	---	---
		Inyo	---	---	---	---	---	---	---	---	1	---	---	---	1	---
		Orange	---	1	---	2	---	---	---	---	---	---	---	---	---	---
		Riverside	---	8	---	9	---	---	---	---	---	---	---	---	---	---
		San Diego	---	1	---	---	---	---	---	---	---	---	---	---	---	---
		Solano	---	---	---	---	---	2	---	---	---	---	---	---	---	---
		Ventura	---	1	---	---	1	---	---	---	---	---	---	---	---	---
	Ione Formation	Amador	---	27	---	74	---	---	---	---	---	---	---	---	---	---
		Calaveras	---	3	---	---	---	---	---	---	---	---	---	---	---	---
		Placer	---	1	---	10	---	---	---	---	---	---	---	---	---	---
	Sierra Blanca Limestone	Santa Barbara	---	---	---	---	---	---	7	---	---	---	---	---	---	---
	Tejon Formation	Kern	---	2	---	---	---	---	---	---	---	---	---	---	---	---
	Tesla Formation	Alameda	---	1	---	---	---	---	---	---	---	---	---	---	---	---
Paleocene	Not given	Riverside	---	4	---	2	---	---	---	---	---	---	---	---	---	---
	Martinez Formation	Los Angeles	---	1	---	---	---	---	1	---	---	---	---	---	---	---
		Orange	---	1	---	1	---	---	---	---	---	---	---	---	---	---
		Riverside	---	3	---	1	---	---	---	---	---	---	---	---	---	---
	Silverado Formation	do	---	8	---	6	---	---	---	---	---	---	---	---	---	---
Cretaceous	Not given	Contra Costa	---	7	---	---	1	---	---	---	---	---	---	---	---	---
		Napa	---	---	---	---	---	1	---	---	---	---	---	---	---	---
		San Diego	---	---	---	---	---	---	1	---	---	---	---	---	---	---
		Yolo	---	---	---	---	---	---	2	---	---	---	---	---	---	---
	Berryessa Formation	Santa Clara	---	6	---	---	---	3	---	---	---	---	---	---	---	---
		Alameda	---	1	---	---	---	---	---	---	---	---	---	---	---	---
	Chico Formation	Contra Costa	---	1	---	---	1	---	---	---	---	---	---	---	---	---
		Sonoma	---	---	---	---	---	---	1	---	---	---	---	---	---	---
	Horsetown Formation	Shasta	---	6	---	---	---	---	---	---	---	---	---	---	---	---
		Riverside	---	1	---	---	1	---	---	---	---	---	---	---	---	---
Pre-Cretaceous	Not given	Fresno	---	---	---	---	---	---	2	---	---	---	---	---	---	---
		Kern	---	---	---	---	---	---	3	---	---	---	---	---	---	---
		San Diego	---	---	---	---	---	---	2	---	---	---	---	---	---	---
	Placerita Formation	Los Angeles	---	---	---	---	---	1	6	---	---	---	---	---	---	---
Cretaceous & Jurassic	Not given	Contra Costa	---	1	---	---	---	---	---	---	---	---	---	---	---	---
	Franciscan Formation	Alameda	1	2	---	---	---	---	---	---	---	---	---	---	---	---
		Colusa	---	6	---	---	---	---	---	---	---	---	---	---	---	---
		Contra Costa	3	4	---	1	---	---	---	---	---	---	---	---	---	---
		Humboldt	---	---	---	---	---	---	2	---	---	---	---	---	---	---
		Lake	---	2	---	---	---	---	---	---	---	---	---	---	---	---
		Marin	3	10	---	---	---	---	2	---	---	---	---	---	---	---
		Mendocino	---	---	---	---	---	---	3	---	---	---	---	---	---	---
		San Benito	---	3	---	---	---	---	---	---	---	---	---	---	---	---
		San Francisco	3	9	---	1	---	---	---	---	---	---	---	---	---	---
		San Mateo	---	16	---	---	---	5	6	---	---	---	---	---	---	---
		Santa Clara	---	21	---	---	---	11	19	---	---	---	---	---	---	---
		Santa Cruz	---	---	---	---	---	1	---	---	---	---	---	---	---	---
		Sonoma	---	8	---	---	---	---	1	---	---	---	---	---	---	---
		Stanislaus	---	1	---	---	---	---	---	---	---	---	---	---	---	---

TABLE 21. — *Distribution of samples by State, age, stratigraphic unit, county, and classification group* — Continued

Age	Stratigraphic unit	County	Classification group												
			A	B	C	D	E	F_1	F_2	Na	S	G	Sr	B931	M	Mn&P
		California — Continued														
Jurassic	Amador Group	Amador	---	---	---	1	---	---	---	---	---	---	---	---	---	---
	Knoxville Formation	Colusa	---	1	---	---	---	---	---	---	---	---	---	---	---	---
		Contra Costa	1	1	---	---	---	---	---	---	---	---	---	---	---	---
		Humboldt	---	---	---	---	---	---	---	---	---	---	---	---	---	3
		Napa	---	---	---	---	2	---	---	---	---	---	---	---	---	---
		San Luis Obispo	1	---	---	---	---	---	---	---	---	---	---	---	---	---
		Santa Clara	---	1	---	---	---	---	---	---	---	---	---	---	---	---
	Mariposa Slate	Mariposa	---	1	---	---	---	---	---	---	---	---	---	---	---	---
Jurassic & Triassic	Not given	San Diego	---	---	---	---	---	---	1	---	---	---	---	---	---	---
	Bedford Canyon Formation	Orange	---	---	---	---	---	1	2	---	---	---	---	---	---	---
		Riverside	---	---	---	---	---	1	---	---	---	---	---	---	---	---
		San Bernardino	---	1	---	---	---	---	---	---	---	---	---	---	---	---
		Trinity	---	---	---	---	---	---	1	---	---	---	---	---	---	---
Pre-Franciscan (Pre-Jurassic)	Sur Series	Monterey	---	3	---	---	2	5	89	---	---	---	---	---	---	---
		San Benito	---	---	---	---	---	2	64	---	---	---	---	---	---	---
		Santa Cruz	---	---	---	---	---	---	1	---	---	---	---	---	---	---
Triassic	Gabilan Limestone	Marin	---	---	---	---	---	---	4	---	---	---	---	---	---	---
		Santa Cruz	---	---	---	---	---	---	6	---	---	---	---	---	---	---
	Cedar Formation	Plumas	---	1	---	---	1	2	---	---	---	---	---	---	---	---
	Hosselkus Limestone	Shasta	---	---	---	---	---	---	23	---	---	---	---	---	---	---
Mesozoic and Permian	Hodge Volcanic Series	San Bernardino	---	1	---	---	---	---	---	---	---	---	---	---	---	---
Paleozoic	Not given	Imperial	---	---	---	---	---	---	1	---	---	---	---	---	---	---
		Kern	---	---	---	---	---	---	33	---	---	---	---	---	---	---
		Marin	---	---	---	---	---	---	2	---	---	---	---	---	---	---
		Riverside	---	---	---	---	---	---	4	---	---	---	---	---	---	---
		San Bernadino	---	---	---	---	---	---	4	---	---	---	---	---	---	---
		Siskiyou	---	---	---	---	---	---	7	---	---	---	---	---	---	---
		Trinity	---	---	---	---	---	---	1	---	---	---	---	---	---	---
	Bean Canyon Formation	Kern	---	---	---	---	---	1	15	---	---	---	---	---	---	---
	Calaveras Formation	Amador	---	---	---	---	---	---	110	---	---	---	---	---	---	---
		Butte	---	1	---	---	---	1	2	---	---	---	---	---	---	---
		Calaveras	---	3	---	---	---	3	53	---	---	---	---	---	---	---
		El Dorado	---	---	---	---	---	---	53	---	---	---	---	---	---	---
		Placer	---	2	---	---	---	---	---	---	---	---	---	---	---	---
		Tuolumne	---	---	---	---	---	11	30	---	---	---	---	---	---	---
	Furnace Limestone	San Bernardino	---	---	---	---	---	1	8	---	---	---	---	---	---	---
	Jurupa Series	Riverside	---	---	---	---	---	---	1	---	---	---	---	---	---	---
		San Bernardino	---	---	---	---	---	---	1	---	---	---	---	---	---	---
Permian	Not given	Trinity	---	---	---	---	---	---	6	---	---	---	---	---	---	---
	Fairview Valley Formation	San Bernardino	---	---	---	---	1	1	---	---	---	---	---	---	---	---
		do	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	McCloud Limestone	Shasta	---	---	---	---	---	---	2	---	---	---	---	---	---	---
Permian, Pennsylvanian, and Mississippian	Bird Spring Formation	San Bernardino	---	---	---	---	---	---	1	---	---	---	---	---	---	---
Pennsylvanian and Mississippian	Not given	Inyo	---	---	---	---	---	---	1	---	---	---	---	---	---	---
		Nevada	---	---	---	---	---	---	1	---	---	---	---	---	---	---
		Riverside	---	---	---	---	---	---	1	---	---	---	---	---	---	---
		San Bernardino	---	---	---	---	---	---	4	---	---	---	---	---	---	---
		Tulare	---	---	---	---	---	---	2	---	---	---	---	---	---	---
	Lee Flat Limestone	Inyo	---	---	---	---	---	---	1	---	---	---	---	---	---	---
	Oro Grande Formation	San Bernardino	3	---	---	---	---	1	21	---	---	---	---	---	---	---
Devonian	Not given	Humboldt	---	---	---	---	---	---	1	---	---	---	---	---	---	---
		Trinity	---	---	---	---	---	---	1	---	---	---	---	---	---	---
	Kennett Formation	Shasta	---	---	---	---	---	---	4	---	---	---	---	---	---	---
	Monte Cristo Formation	San Bernardino	---	---	---	---	---	1	---	---	---	---	---	---	---	---
	Sultan Limestone	do	---	---	---	---	---	1	---	---	---	---	---	---	---	---
Devonian & Silurian	Gazelle Formation	Siskiyou	---	---	---	---	---	---	2	---	---	---	---	---	---	---
Cambrian	Harkless Formation	Inyo	---	6	---	---	---	---	---	---	---	---	---	---	---	---
	Inyo Marble	do	---	---	---	---	---	---	1	---	---	---	---	---	---	---
	Poleta Formation	do	---	1	---	---	---	---	---	---	---	---	---	---	---	---
	Prospect Mtn Quartzite	do	---	---	---	---	---	---	1	---	---	---	---	---	---	---
	Zabriskie Quartzite	do	3	---	---	---	---	---	---	---	---	---	---	---	---	---

TABLE 21. — *Distribution of samples by State, age, stratigraphic unit, county, and classification group* — Continued

Age	Stratigraphic unit	County	Classification group													
			A	B	C	D	E	F_1	F_2	Na	S	G	Sr	B_1	M	Mn&P
California — Continued																
Cambrian & Precambrian	Campito Formation	do	---	3	---	---	---	---	---	---	---	---	---	---	---	---
	Wood Canyon Formation	do	2	5	---	1	---	---	---	---	---	---	---	---	---	---
Precambrian	Deep Spring Formation	do	---	1	---	1	---	---	---	---	---	---	---	---	---	---
	Johnnie Formation	do	---	5	---	---	---	---	1	---	---	---	---	---	---	---
		San Bernardino	---	1	---	---	---	---	---	---	---	---	---	---	---	---
	Essex Series	do	---	---	---	---	---	---	1	---	---	---	---	---	---	---
	Noonday Dolomite	Inyo	---	---	---	---	---	---	1	---	---	---	---	---	---	---
	Reed Dolomite	do	---	---	---	---	---	---	1	---	---	---	---	---	---	---
	Stirling Quartzite	do	3	1	---	---	---	---	---	---	---	---	---	---	---	---
		San Bernardino	---	1	---	---	---	---	---	---	---	---	---	---	---	---
Hawaii																
Holocene	Keanakakoi Formation	Hawaii	---	---	---	2	---	---	---	---	---	---	---	---	---	---
		Honolulu	---	2	---	---	1	---	---	---	---	---	---	---	---	---
	Not given	Hawaii	---	37	---	---	---	---	---	---	---	---	---	---	---	---
Holocene and Pleistocene	Koloa Volcanic Series	Kauai	---	---	---	4	---	---	---	---	---	---	---	---	---	---
Pleistocene and Pliocene	Honolulu Volcanic Series	Maui	---	---	---	2	---	---	---	---	---	---	---	---	---	---
	Pahala Ash	Hawaii	---	---	---	9	---	---	---	---	---	---	---	---	---	---
		Honolulu	---	5	---	21	2	---	4	---	---	---	---	---	---	---
Pliocene (?)	Wailuku Volcanic Series	Maui	---	---	---	2	---	---	---	---	---	---	---	---	---	---

of northern Santa Barbara County, California: U.S. Geol. Survey Bull. 315-O, p. O438-O447.

Arnold, Ralph, and Johnson, H. R., 1909, Sodium sulfate in Soda Lake, Carriso Plain, San Luis Obispo County, California: U.S. Geol. Survey Bull. 380-L, p. L369-L371.

Aubury, L. E., 1906, The structural and industrial materials of California: California State Mining Bur. Bull. 38, p. 13-378.

Aune, Q. A., 1965, Limestone, *in* O'Brien, J. C., Mines and mineral resources of Trinity County, California: California Div. Mines and Geology County Rept. 4, p. 39-42.

Averill, C. V., 1929, Redding Field Division: California Div. Mines and Mining Rept. 24, no. 4, p. 261-316.

——— 1937, Mineral resources of Plumas County: California Jour. Mines and Geology, v. 33, no. 2, p. 79-143.

TABLE 22. — *Distribution of 2,312 samples by State, category, and group*

State	
California	1,977
Hawaii	335

Category	
Common and mixed rock	2,070
Special rock	242

Group					
A	61	F_1	110	Sr	19
B	364	F_2	959	B_1	16
C	14	Na	72	M	42
D	539	S	64	P	2
E	23	G	24	Mn	3

——— 1939, Mineral resources of Shasta County: California Jour. Mines and Geology, v. 35, no. 2, p. 108-191.

——— 1941, Mineral resources of Humboldt County: California Jour. Mines and Geology, v. 37, no. 4, p. 499-528.

——— 1947, Mines and mineral resources of Lake County, California: California Jour. Mines and Geology, v. 43, no. 1, p. 15-40.

Bailey, E. H., and Everhart, D. L., 1964, Geology and quicksilver deposits of the New Almaden district, Santa Clara County, California: U.S. Geol. Survey Prof. Paper 360, 206 p.

Bailey, E. H., Irwin, W. P., and Jones, D. L., 1964, Franciscan and related rocks, and their significance in the geology of western California: California Div. Mines and Geology Bull. 183, 177 p.

Bailey, G. E., 1902, The saline deposits of California: California State Mining Bur. Bull. 24, 216 p.

Bateman, P. C., 1965, Geology and tungsten mineralization of the Bishop district, California: U.S. Geol. Survey Prof. Paper 470, 208 p.

Bates, P. H., Young, R. N., and Rapp, Paul, 1923, Tests of caustic magnesia made from magnesite from several sources: U.S. Natl. Bur. Standards Tech. Paper 239, v. 17, p. 529-558.

Bates, T. F., 1945, Origin of the Edwin clay, Ione, California: Geol. Soc. America Bull., v. 56, no. 1, p. 1-38.

Becker, G. F., 1888, Geology of the quicksilver deposits of the Pacific slope, with an atlas: U.S. Geol. Survey Mon. 13, 486 p.

Benson, W. T., 1963, Pine Flat and Diamond Flat nickel-bearing laterite deposits, Del Norte County, California: U.S. Bur. Mines Rept. Inv. 6206, 19 p.

Bloxam, T. W., 1956, Jadeite-bearing metagraywackes in California: Am. Mineralogist, v. 41, no. 5-6, p. 488-496.

——— 1959, Glaucophane-schists and associated rocks near Valley Ford, California: Am. Jour. Sci., v. 257, no. 2, p. 95-112.

——— 1960, Jadeite-rocks and glaucophane-schists from Angel Island, San Francisco Bay, California: Am. Jour. Sci., v. 258, no. 8, p. 555-573.

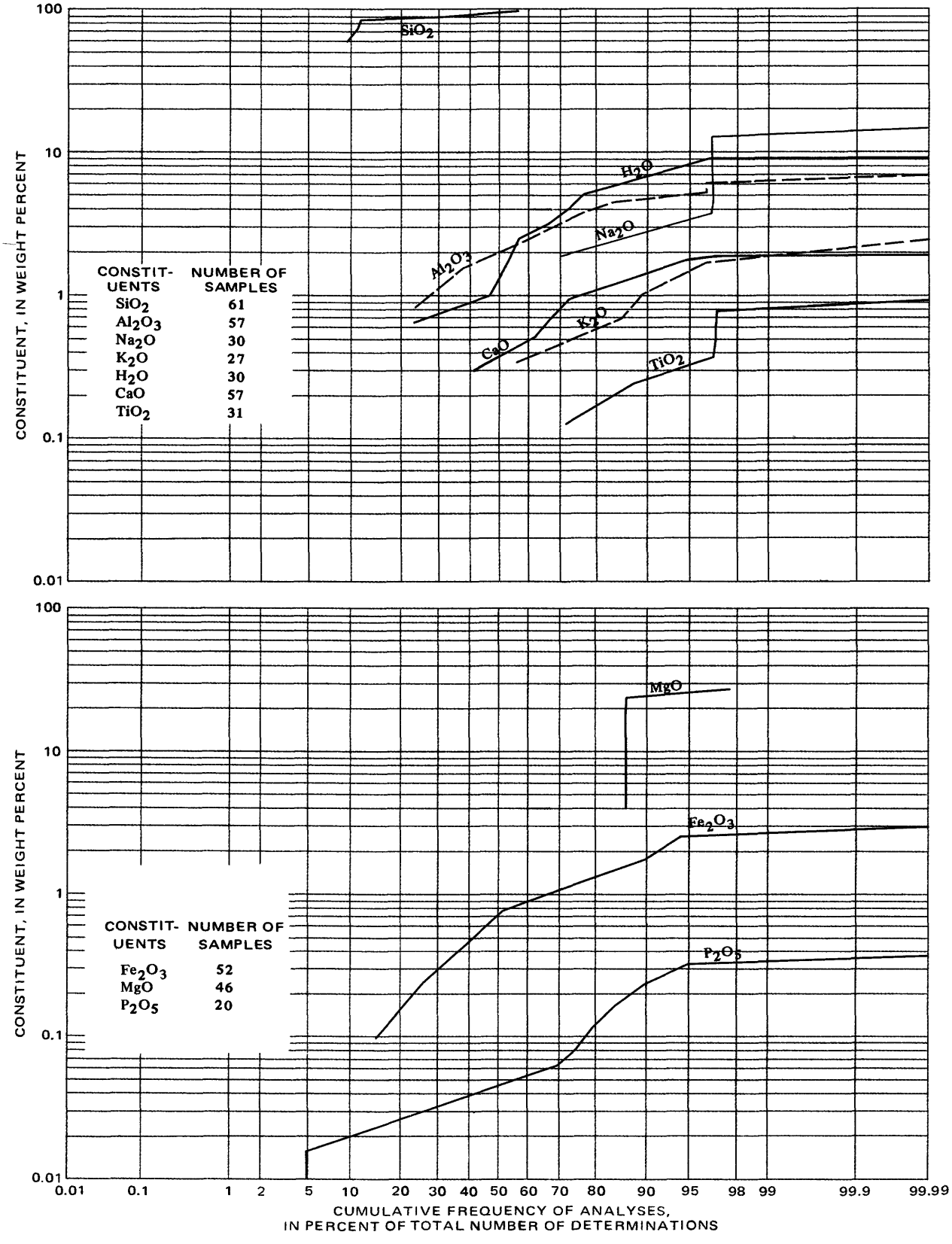

FIGURE 8.—Cumulative-frequency curves *A-K* showing the proportion of all analyses that contain as much as, but not more than, the indicated percentages of various constituents. Constituents determined in fewer than nine samples and constituents with consistently low values were not plotted. *A*, Group *A*, California.

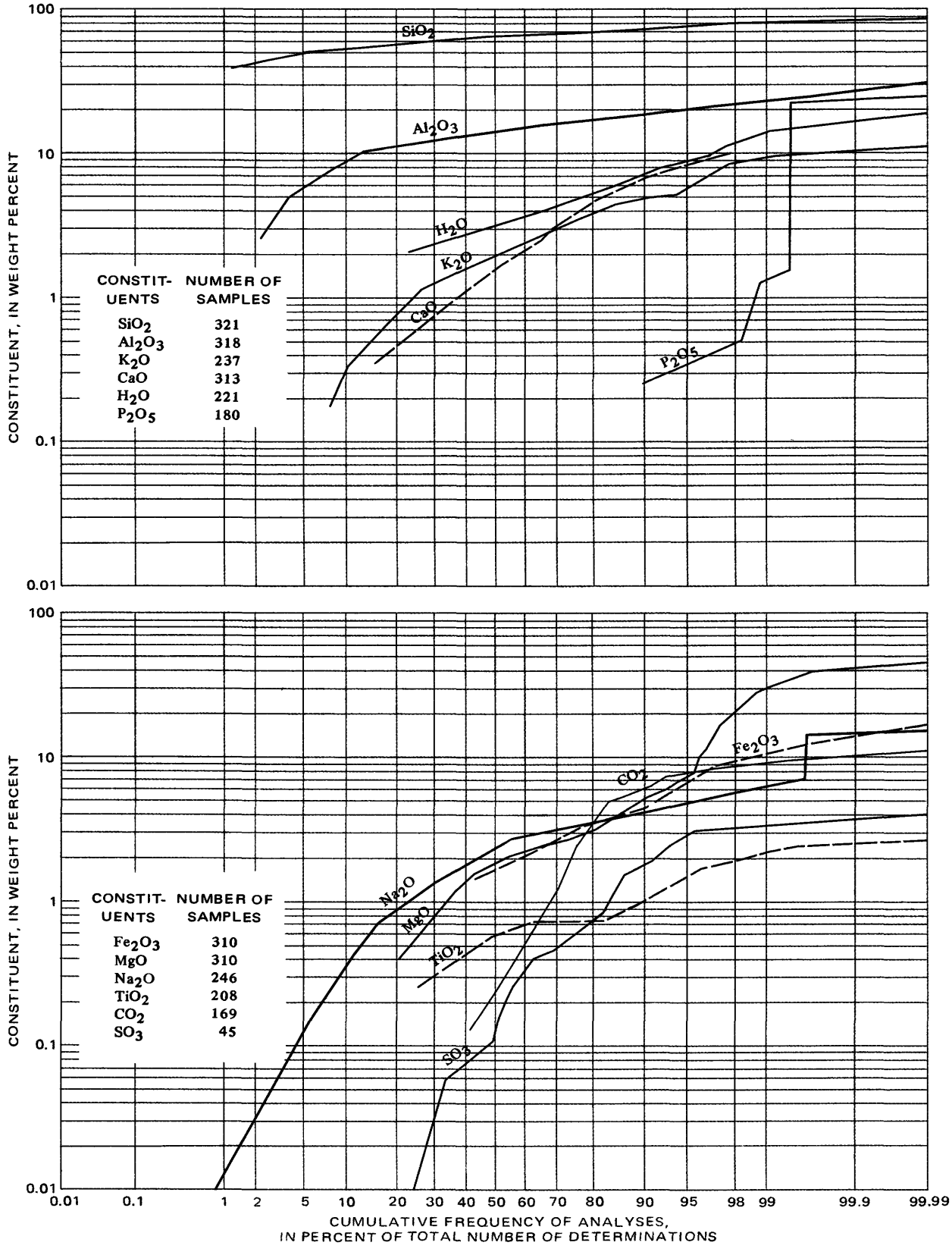

FIGURE 8.—Cumulative-frequency curve showing percentages of various constituents: *B*, Group *B*, California.

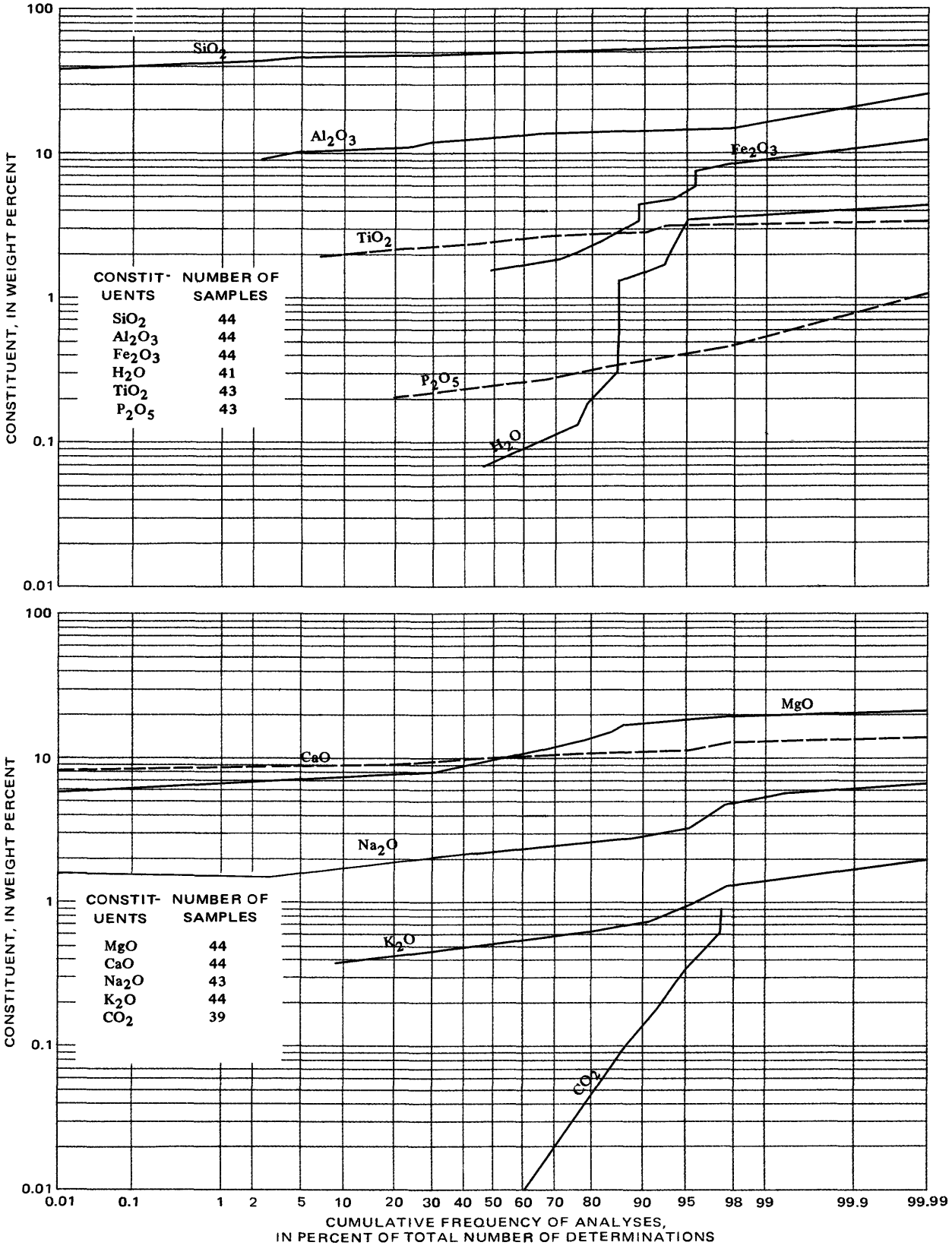

FIGURE 8.—Cumulative-frequency curve showing percentages of various constituents: *C*, Group *B*, Hawaii.

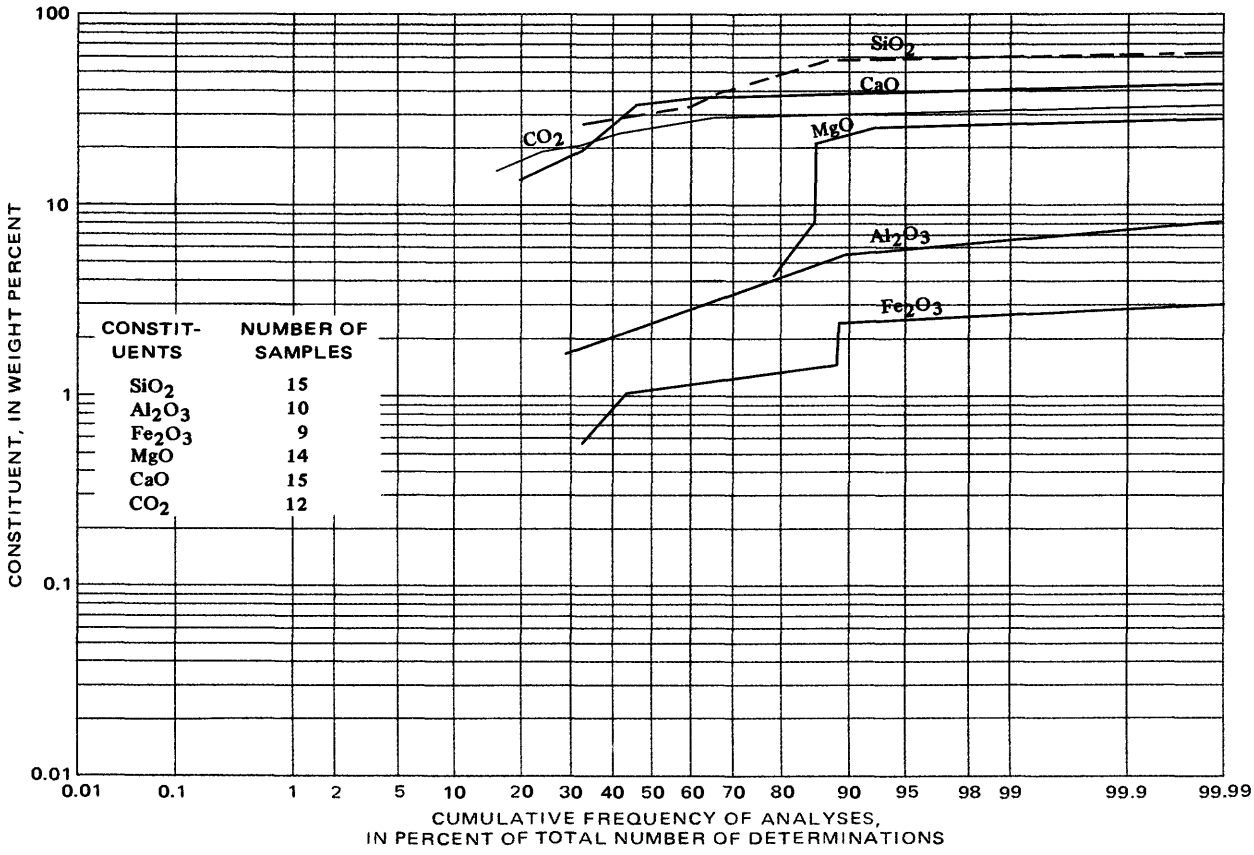

FIGURE 8.—Cumulative-frequency curve showing percentages of various constituents: *D*, Group *C*, California.

Boalich, E. S., Castello, W. O., Huguenin, Emile, Logan, C. A., and Tucker, W. B., 1920, The clay industry in California: California State Mining Bur. Prelim. Rept. 7, 102 p.

Booth, Edward, 1880, Report of the chemist: California State Mining Bur. Ann. Rept., June 1, 1880 to Dec. 1, 1880, p. 15-17.

Bowen, N. L., and Aurousseau, M., 1923, Fusion of sedimentary rocks in drill holes: Geol. Soc. America Bull., v. 34, no. 3, p. 431-448.

Bowen, O. E., Jr., 1954, Geology and mineral deposits of Barstow quadrangle, San Bernardino County, California: California Div. Mines Bull. 165, p. 7-185.

Bowen, O. E., Jr., and Gray, C. H., Jr., 1957, Mines and mineral deposits of Mariposa County, California: California Jour. Mines and Geology, v. 53, no. 1-2, p. 34-343.

——— 1959, Geology and economic possibilities of the limestone and dolomite deposits of the northern Gabilan Range, California: California Div. Mines and Geology Spec. Rept. 56, 40 p.

——— 1962, The portland cement industry in California, 1962-Part 2: California Div. Mines and Geology Mineral Inf. Service, v. 15, no. 8, p. 1-11.

Bowen, O. E., Jr., and Ver Planck, W. E., 1965, Stratigraphy, structure, and mineral deposits in the Oro Grande Series near Victorville, California: California Div. Mines and Geology Spec. Rept. 84, 41 p.

Bradley, W. W., 1916, Mines and mineral resources of the counties of Colusa, Glenn, Lake, Marin, Napa, Solano, Sonoma, Yolo, California: California State Mining Bur. Rept. 14, pt. 2, p. 173-370.

——— 1925, Magnesite in California: California State Mining Bur. Bull. 79, 147 p.

Bradley, W. W., and Logan, C. A., 1919, San Benito County: California State Mining Bur. Rept. 15, pt. 5, p. 616-673.

Bramlette, M. N., 1946, The Monterey Formation of California and the origin of its siliceous rocks: U.S. Geol. Survey Prof. Paper 212, 57 p.

Burchard, E. F., 1911, Glass sand, other sand, and gravel: U.S. Geol. Survey Mineral Resources U.S., 1909, pt. 2, p. 519-542.

——— 1912, Lime: U.S. Geol. Survey Mineral Resources U.S., 1911, pt. 2, p. 645-718.

Burchfiel, B. M., 1923, Refractory clays of the Alberhill, California deposits: Am. Ceramic Soc. Jour., v. 6, no. 11, p. 1167-1175.

Burgess, P. S., 1917, Nitrification as a measure of the availability of different forms of calcium carbonate when employed as correctors of soil acidity: Soil Sci., v. 4, p. 327-336.

Burnett, J. L., 1965, Expansible shale resources of the San Jose-Gilroy area, California: California Div. Mines and Geology Spec. Rept. 87, 32 p.

Burnham, C. W., 1959, Contact metamorphism of magnesite limestones at Crestmore, California: Geol. Soc. America Bull., v. 70, p. 879-919.

Calhoun, W. A., and Hill, T. E., Jr., 1962, Metallurgical testing of Hawaiian ferruginous bauxites: U.S. Bur. Mines Rept. Inv. 6003, 43 p.

California Division of Mines, 1948, Unique portland cement operation at Victorville: California Div. Mines Mineral Inf. Service, v. 1, no. 8, p. 9.

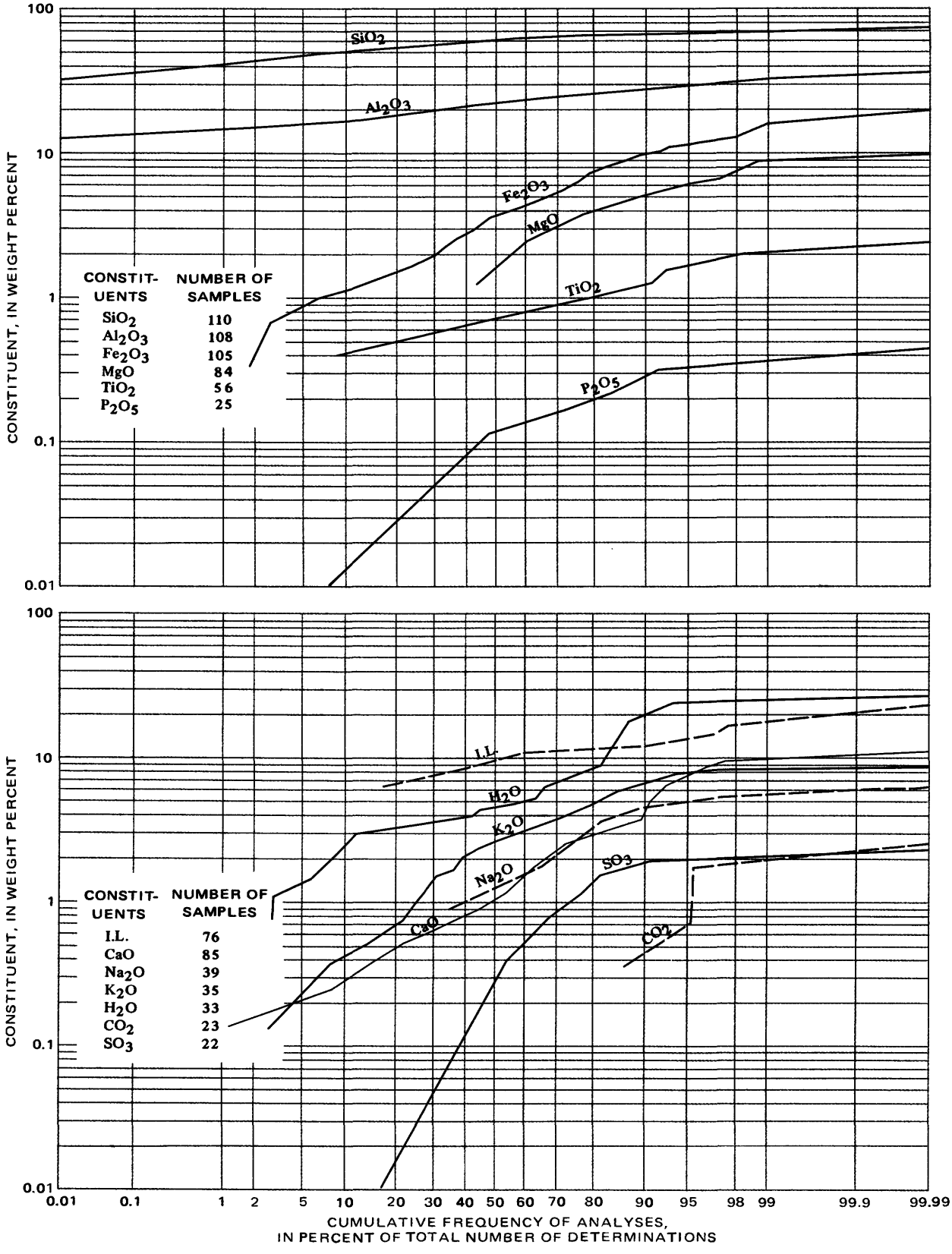

FIGURE 8.—Cumulative-frequency curve showing percentages of various constituents: *E*, Group D_5, California. (I.L., ignition loss.)

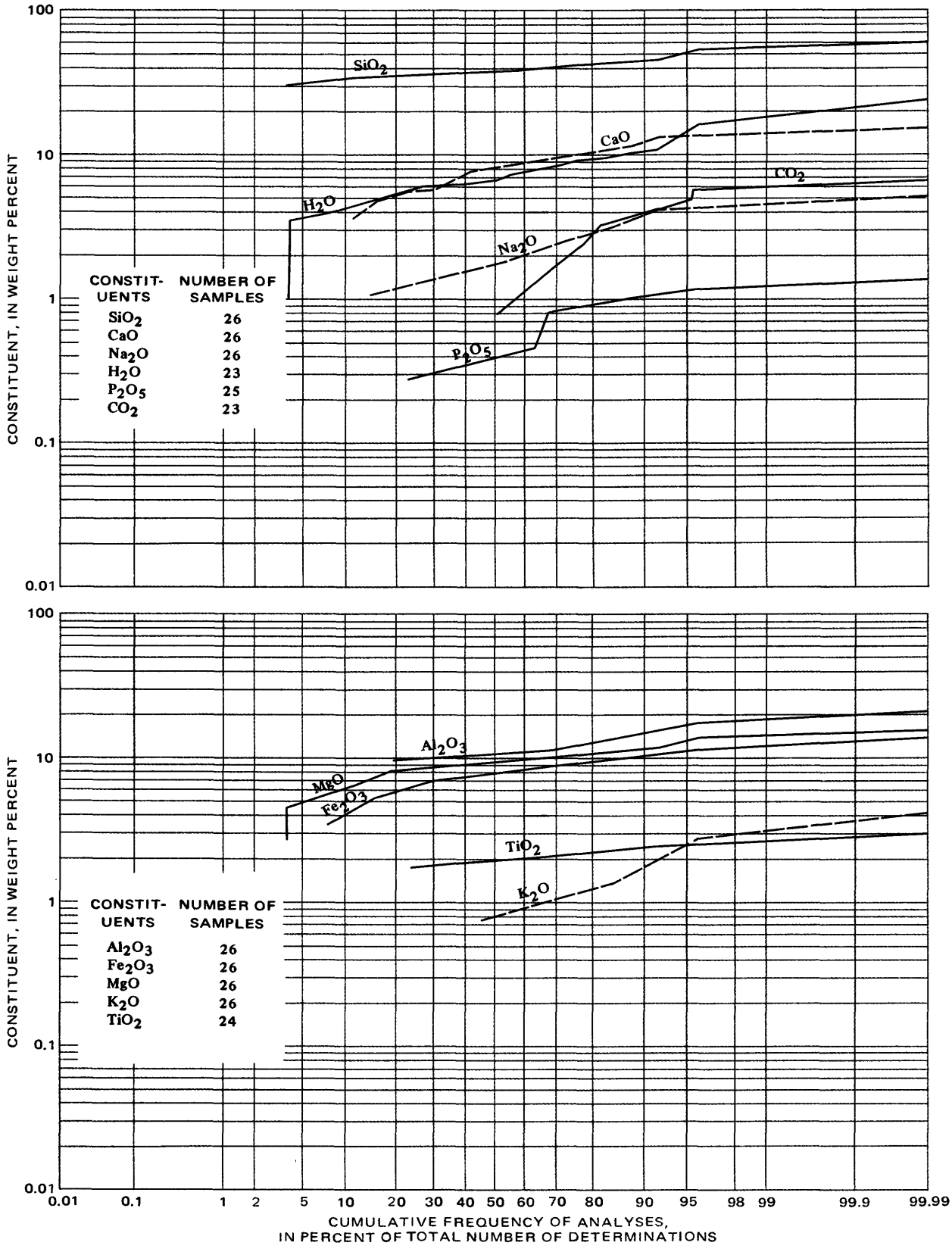

FIGURE 8.—Cumulative-frequency curve showing percentages of various constituents: *F*, Group D_5, Hawaii.

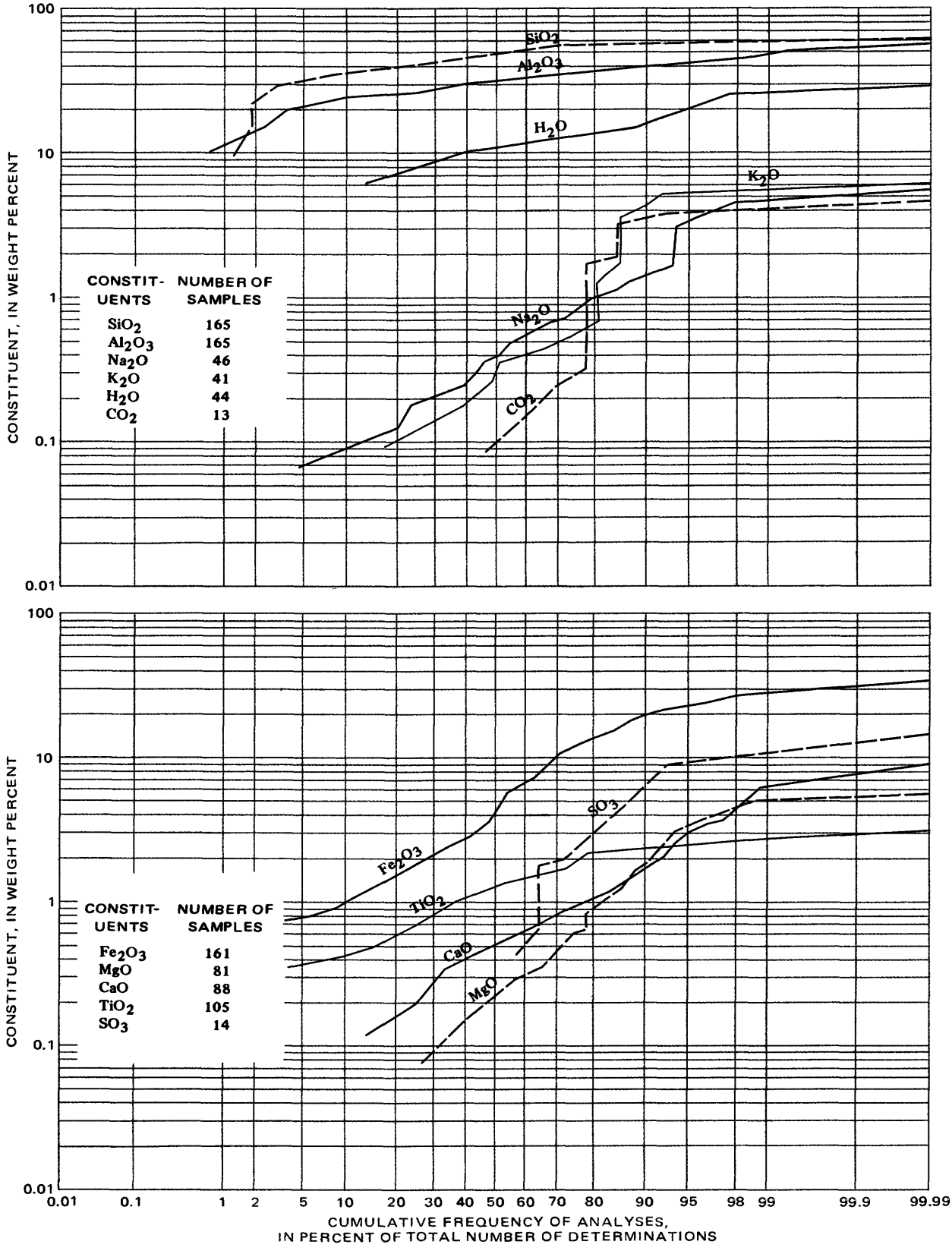

FIGURE 8.—Cumulative-frequency curve showing percentages of various constituents: *G*, Group D_6, California.

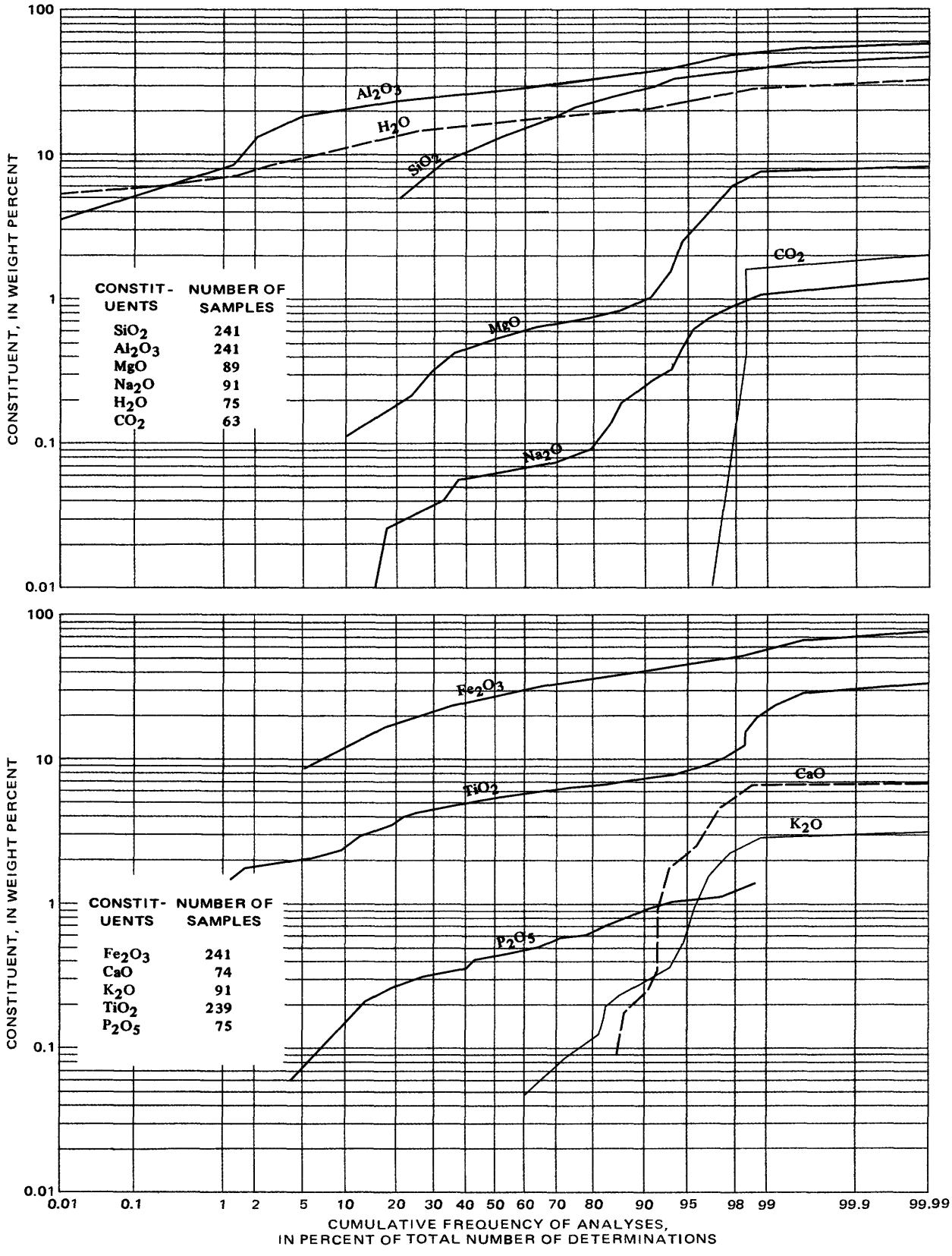

FIGURE 8.—Cumulative-frequency curve showing percentages of various constituents: *H*, Group D_6, Hawaii.

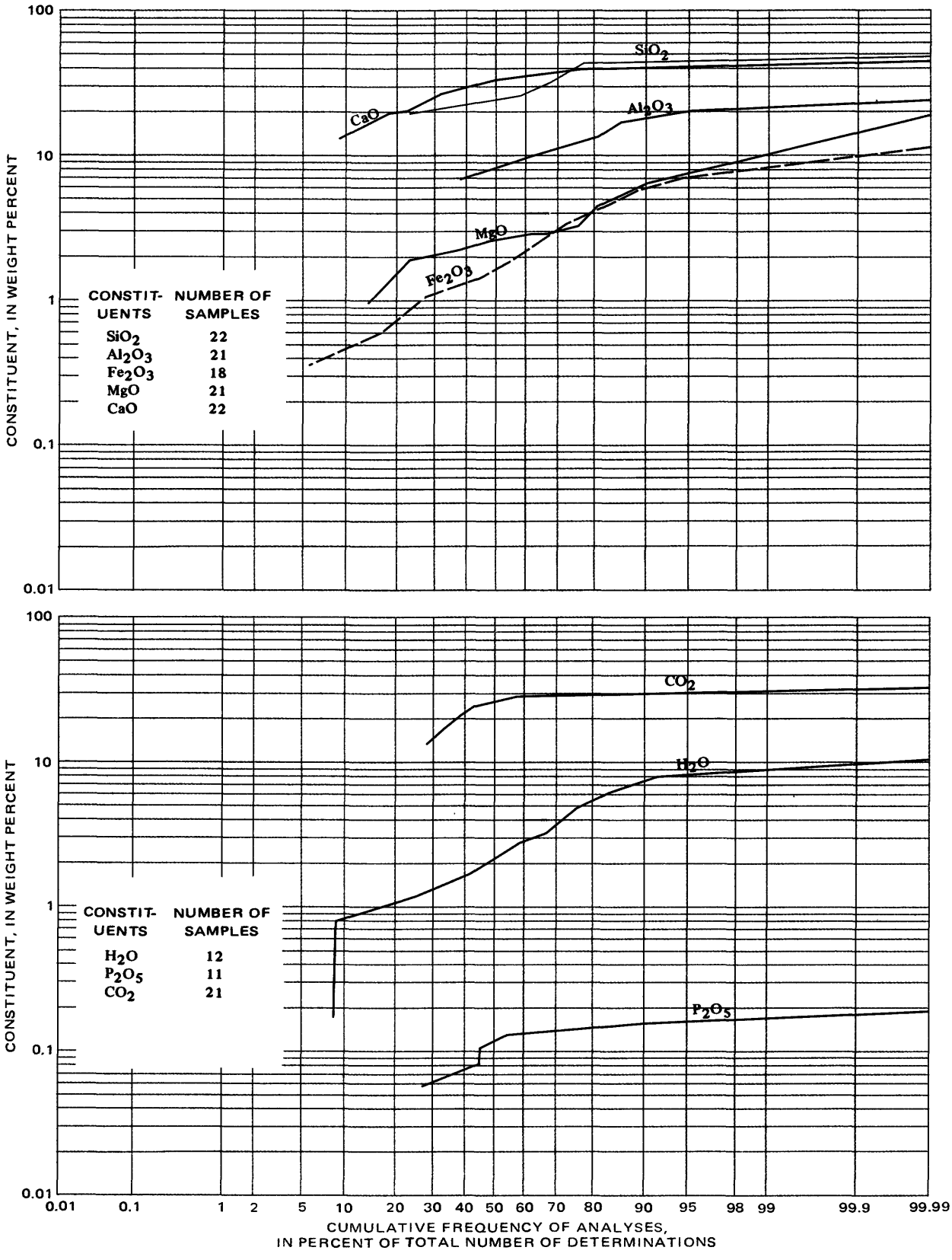

FIGURE 8.—Cumulative-frequency curve showing percentages of various constituents: *I*, Group *E*, California and Hawaii.

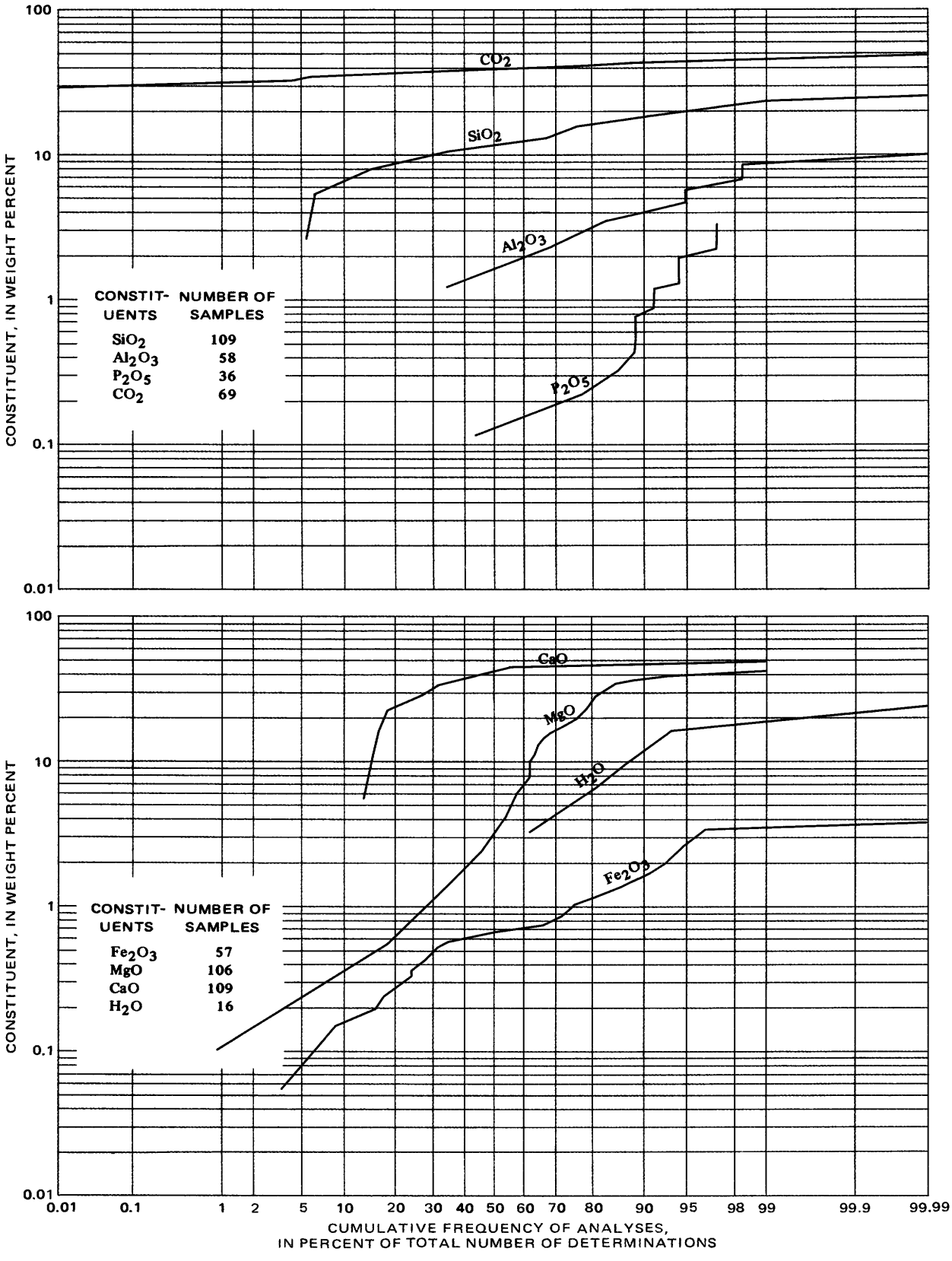

FIGURE 8.—Cumulative-frequency curve showing percentages of various constituents: *J*, Group F_1, California.

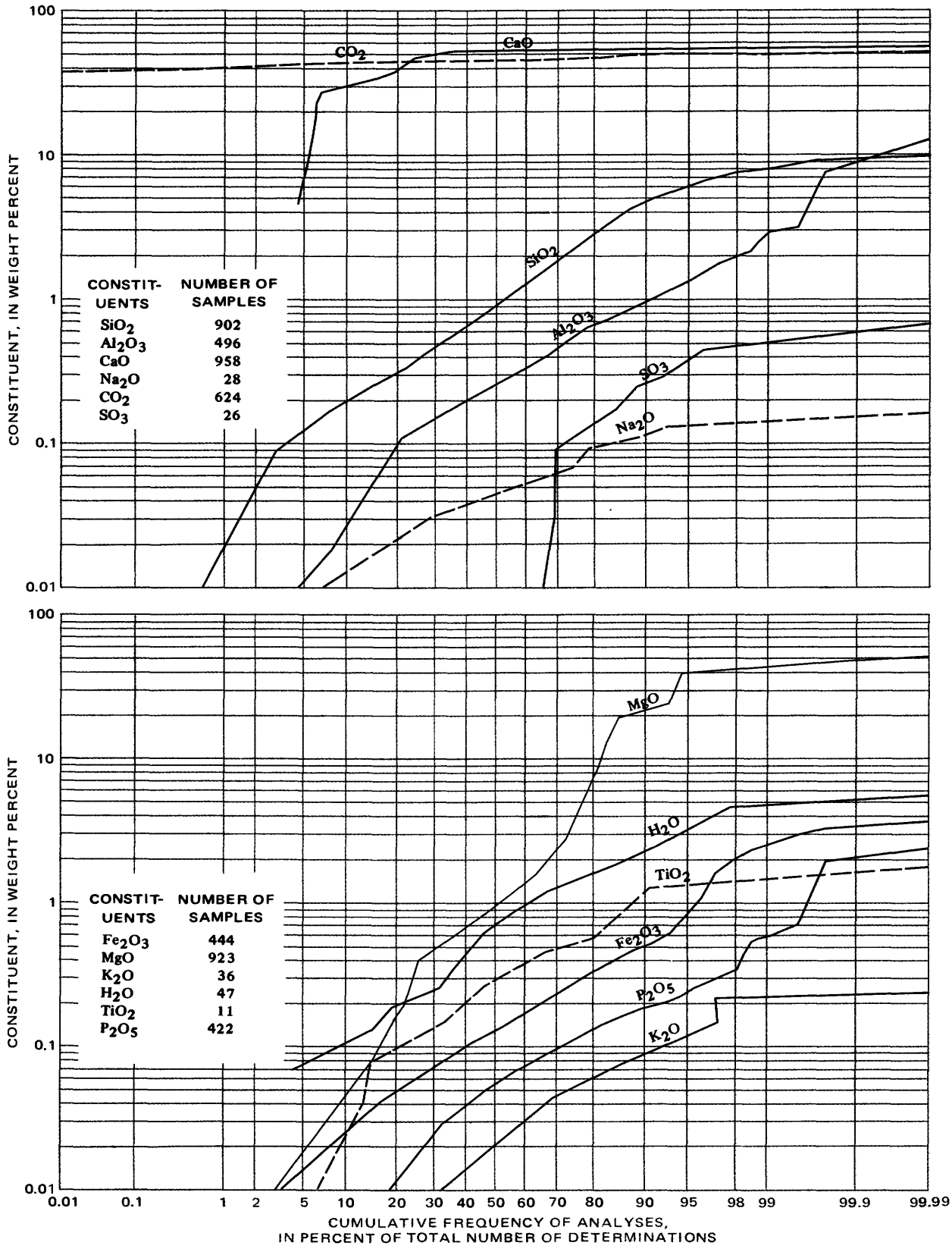

FIGURE 8.—Cumulative-frequency curve showing percentages of various constituents: K, Group F_2, California and Hawaii.

——— 1957, Aluminum: California Div. Mines Mineral Inf. Service, v. 10, no. 7, p. 1-6.

Campbell, M. R., 1902, Reconnaissance of borax deposits of Death Valley and Mohave Desert: U.S. Geol. Survey Bull. 200, 23 p.

Carlson, D. W., and Clark, W. B., 1954, Mines and mineral resources of Amador County, California: California Jour. Mines and Geology, v. 50, no. 1, p. 149-285.

Cathcart, J. B., 1958, Bauxite deposits of Hawaii, Maui, and Kauai, Territory of Hawaii—A preliminary report: U.S. Geol. Survey open-file rept., 72 p.

Chandra, D. K., 1961, Geology and mineral deposits of the Colfax and Foresthill quadrangles, California: California Div. Mines and Geology Spec. Rept. 67, 50 p.

Chapman, R. W., 1946, Lithification of Pleistocene clay at Kahuku Point, Oahu [Hawaii]: Geol. Soc. America Bull., v. 57, no. 11, p. 985-995.

Chatard, T. M., 1890, Natural soda—its occurrence and utilization: U.S. Geol. Survey Bull. 60, p. 27-101.

Chesterman, C. W., 1943, Contact metamorphic rocks of the Twin Lakes region, Fresno County, California: California Jour. Mines and Geology, v. 38, no. 3-4, p. 243-281.

——— 1956, Pumice, pumicite, and volcanic cinders in California: California Div. Mines Bull. 174, 119 p.

Clark, L. D., 1954, Geology and mineral deposits of the Calaveritas quadrangle, Calaveras County, California: California Div. Mines Spec. Rept. 40, 23 p.

Clark, W. B., 1954, The Cool-Cave Valley limestone deposits, El Dorado and Placer Counties, California: California Jour. Mines and Geology, v. 50, nos. 3 and 4, p. 438-465.

Clark, W. B., and Carlson, D. W., 1956, Mines and mineral resources of El Dorado County, California: California Jour. Mines and Geology, v. 52, no. 4, p. 369-591.

Clark, W. B., and Lydon, P. A., 1962, Mines and mineral resources of Calaveras County, California: California Div. Mines and Geology County Rept. 2, 217 p.

Clarke, F. W., 1889, Report of work done in the division of chemistry and physics, mainly during the fiscal year 1886-87: U.S. Geol. Survey Bull. 55, 96 p.

——— 1890, Report of work done in the division of chemistry and physics, mainly during the fiscal year 1887-88: U.S. Geol. Survey Bull. 60, 174 p.

——— 1891, Report of work done in the division of chemistry and physics, mainly during the fiscal year 1889-90: U.S. Geol. Survey Bull. 78, 131 p.

——— 1903, Mineral analyses from the laboratories of the United States Geological Survey, 1880-1903: U.S. Geol. Survey Bull. 220, 119 p.

——— 1908, The data of geochemistry: U.S. Geol. Survey Bull. 330, 716 p.

——— 1915, Analyses of rocks and minerals from the laboratory of the United States Geological Survey, 1880 to 1914: U.S. Geol. Survey Bull. 591, 376 p.

Clarke, F. W., and Hillebrand, W. F., 1897, Analyses of rocks, with a chapter on analytical methods, laboratory of the United States Geological Survey 1880 to 1896: U.S. Geol. Survey Bull. 148, 306 p.

Cleveland, G. B., 1957, Clay, *in* Mineral commodities of California: California Div. Mines Bull. 176, p. 131-152.

——— 1958, Poverty Hills diatomaceous earth deposit, Inyo County, California: California Jour. Mines and Geology, v. 54, no. 3, p. 305-316.

——— 1960, Geology of the Otay bentonite deposits, San Diego County, California: California Div. Mines Spec. Rept. 64, 16 p.

——— 1961, Economic geology of the Long Valley diatomaceous earth deposits, Mono County, California: California Div. Mines and Geology Map, sheet 1.

——— 1962, Clay, *in* Troxel, B. W., and Morton, P. K., Mines and mineral resources of Kern County, California: California Div. Mines and Geology County Rept. 1, p. 69-82.

Cloudman, H. C., Huguenin, Emile, and Merrill, F. J. H., 1919, San Bernardino County: California State Mining Bur. Rept. 15, pt. 6, p. 775-899.

Crawford, J. J., 1894, Report of the State mineralogist, two years ending September 15, 1894: California State Mining Bur. Rept. 12, 412 p.

——— 1896, Report of the State mineralogist for the two years ending September 15, 1896: California State Mining Bureau Rept. 13, 726 p.

Creely, R. S., 1965, Geology of the Oroville quadrangle, California: California Div. Mines and Geology Bull. 184, 86 p.

Cressman, E. R., 1962, Nondetrital siliceous sediments, *in* Data of geochemistry: U.S. Geol. Survey Prof. Paper 440-T, 23 p.

Cross, Whitman, 1915, Lavas of Hawaii and their relations: U.S. Geol. Survey Prof. Paper 88, 97 p.

Dana, J. D., 1852, On coral reefs and islands: Am. Jour. Sci., 2nd ser., v. 14, no. 40, p. 76-84.

Davis, C. W., and Vacher, H. C., 1928, Bentonite, its properties, mining, preparation, and utilization: U.S. Bur. Mines Tech. Paper 439, 51 p.

Davis, E. F., 1918a, The Franciscan sandstone: California Univ. Pubs. Geol. Sci., v. 11, no. 1, p. 1-44.

——— 1918b, The radiolarian cherts of the Franciscan Group: California Univ. Pubs. Geol. Sci., v. 11, no. 3, p. 235-432.

Davis, F. F., 1955, Mines and mineral resources of San Mateo County, California: California Jour. Mines and Geology, v. 51, no. 4, p. 401-458.

Day, A. L., and Allen, E. T., 1925, The volcanic activity and hot springs of Lassen Peak [California]: Carnegie Inst. Washington Pub. 360, 190 p.

Day, W. C., 1892, Stone: U.S. Geol. Survey Mineral Resources U.S., 1889-90, p. 373-440.

——— 1898, Stone: U.S. Geol. Survey 19th Ann. Rept. for 1897-98, pt. 6, p. 205-309.

——— 1899, Stone: U.S. Geol. Survey 20th Ann. Rept. for 1898-99, pt. 6, p. 269-464.

Dickinson, W. R., 1962, Metasomatic quartz keratophyre in central Oregon: Am. Jour. Sci., v. 260, no. 4, p. 249-266.

Dietrich, W. F., 1928, The clay resources and the ceramic industry of California: California State Mining Bur. Bull. 99, 383 p.

Dietrich, W. F., and Meyer, W. W., 1930, An investigation of the possible uses of certain California clays in vitreous china sanitary-ware bodies: Am. Ceramic Soc. Jour., v. 13, no. 3, p. 202-217.

Diller, J. S., 1890, Sandstone dikes: Geol. Soc. America Bull., v. 1, p. 411-442.

——— 1891, A late volcanic eruption in northern California and its peculiar lava: U.S. Geol. Survey Bull. 79, 33 p.

——— 1903, Klamath Mountain section, California: Am. Jour. Sci., 4th ser., v. 15, p. 342-362.

——— 1904, Mining and mineral resources in the Redding quadrangle, California, in 1903: U.S. Geol. Survey Bull. 225, p. 169-179.

——— 1906, Description of the Redding quadrangle, California: U.S. Geol. Survey Geol. Atlas, Folio 138, 14 p.

——— 1911, The auriferous gravels of the Trinity River basin, California: U.S. Geol. Survey Bull. 470, p. 11-29.

Dolbear, C. E., 1913, The Searles Lake potash deposit: Eng. and Min-

ing Jour., v. 95, no. 5, p. 259-261.
Dupont, F. M., 1910, The borax industry: Jour. Indus. and Eng. Chem., v. 2, no. 12, p. 500-503.
Durrell, Cordell, 1953, Geological investigations of strontium deposits in southern California: California Div. Mines Spec. Rept. 32, 48 p.
Eakle, A. S., 1911, Neocolemanite, a variety of colemanite, and howlite from Lang, Los Angeles County, California: California Univ. Pubs. Geol. Sci., v. 6, no. 9, p. 179-189.
——— 1914, Minerals of California: California State Mining Bur. Bull. 67, 226 p.
——— 1917, Minerals associated with the crystalline limestone at Crestmore, Riverside County, California: California Univ. Pubs. Geol. Sci., v. 10, no. 19, p. 327-360.
——— 1923, Minerals of California: California State Mining Bur. Bull. 91, 328 p.
Eardley-Wilmot, V. L., 1928, Diatomite, its occurrence, preparation and uses: Canada Dept. Mines, Mines Branch Pub. 691, 182 p.
Eckel, E. B., and Meyers, W. B., 1946, Quicksilver deposits of the New Idria district, San Benito and Fresno Counties, California: California Jour. Mines and Geology, v. 42, no. 2, p. 81-124.
Eckel, E. C., 1905, Cement materials and industry of the United States: U. S. Geol. Survey Bull. 243, 395 p.
——— 1912, Building stones and clays—their origin, characters and examination, 1st edition: New York, John Wiley and Sons, 264 p.
——— 1913, Portland cement materials and industry in the United States, with contributions by E. F. Burchard, A. F. Crider, G. B. Richardson, E. A. Smith, J. S. Taff, E. O. Ulrich, and W. H. Weed: U. S. Geol. Survey Bull. 522, 401 p.
——— 1928, Cements, limes, and plasters—their materials, manufacture, and properties, 3d edition: New York, John Wiley and Sons, 699 p.
——— 1934, Limestone deposits of the San Francisco region: California Jour. Mines and Geology, v. 29, no. 3-4, p. 348-361.
Engle, René, Gay, T. E., Jr., and Rogers, B. L., 1959, Geology and mineral deposits of the Lake Elsinore quadrangle, California: California Div. Mines Bull. 146, 154 p.
Ernst, W. G., Seki, Yotaro, Onuki, H., Gilbert, M. C., 1970, Comparative study of low-grade metamorphism in the California Coast Ranges and the Outer Metamorphic Belt of Japan: Geol. Soc. America Mem. 124, 276 p.
Everhart, J. O., 1957, Use of auxiliary fluxes to improve structural clay bodies: Am. Ceramic Soc. Bull. 36, no. 7, p. 268-271.
Fairbanks, H. W., 1896, The geology of Point Sal: California Univ. Pubs. Geol. Sci. Bull. 2, 91 p.
——— 1904, Gypsum deposits in California: U.S. Geol. Survey Bull. 223, p. 119-123.
Fiske, R. S., and Koyanagi, R. Y., 1968, The December 1965 eruption or Kilauea Volcano, Hawaii: U.S. Geol. Survey Prof. Paper 607, 21 p.
Foshag, W. F., 1918, Ulexite from Lang, California: Am. Mineralogist, v. 3, no. 4, p. 35.
——— 1935, Burkeite, a new mineral species from Searles Lake, California: Am. Mineralogist, v. 20, no. 1, p. 50-56.
——— 1938, Sodium bicarbonate from Searles Lake, California [abs.]: Am. Mineralogist, v. 23, no. 3, p. 169.
Foshag, W. F., and Woodford, A. O., 1936, Bentonitic magnesian clay mineral from California: Am. Mineralogist, v. 21, no. 4, p. 238-244.
Franke, H. A., 1930, San Francisco Field Division: California Div. Mines Rept. 26, no. 1, p. 2-39.
——— 1931, San Francisco Field Division: California Div. Mines Rept. 26, no. 4, p. 413-471.
——— 1936, Mines and mineral resources of San Luis Obispo County: California Jour. Mines and Geology, v. 31, no. 4, p. 402-461.
Fraser, H. J., Wilson, H. D. B., and Hendry, N. W., 1943, Hot springs deposits of the Coso Mountains: California Jour. Mines and Geology, v. 38, nos. 3 and 4, p. 223-242.
Gale, H. S., 1912, Magnesite: U.S. Geol. Survey Mineral Resources U.S., 1911, pt. 2, p. 1113-1127.
——— 1914a, Prospecting for potash in Death Valley, California: U.S. Geol. Survey Bull. 540, p. 407-415.
——— 1914b, Salt, borax, and potash in Saline Valley, Inyo County, California: U.S. Geol. Survey Bull. 540, p. 416-421.
——— 1914c, Late developments of magnesite deposits in California and Nevada: U.S. Geol. Survey Bull. 540, p. 483-520.
——— 1915, Salines in the Owens, Searles, and Panamint basins, southeastern California: U.S. Geol. Survey Bull. 580, p. 251-323.
——— 1946, Geology of the Kramer borate district, Kern County, California: California Jour. Mines and Geology, v. 42, no. 4, p. 325-378.
Glaser, J. D., 1971, Geology and mineral resources of southern Maryland: Maryland Geol. Survey Rept. Inv. 15, 85 p.
Goldman, H. B., 1959, Franciscan chert in California concrete aggregates: California Div. Mines and Geology Spec. Rept. 55, 28 p.
Goldsmith, J. R., Graf, D. L., Witters, Juanita, and Northrop, D. A., 1962, Studies in the system $CaCO_3$-$MgCO_3$-$FeCO_3$—Part 1, Phase relations; Part 2, A method for major-element spectrochemical analysis; Part 3, Composition of some ferroan dolomites: Jour. Geology, v. 70, no. 6, p. 659-688.
Goodyear, W. A., 1890, Marble quarries, *in* Degroot, Henry, Inyo County: California State Mining Bur. 10th Ann. Rept., p. 215-218.
Gower, H. D., and Madsen, B. M., 1964, The occurrence of phosphate rock in California: U.S. Geol. Survey Prof. Paper 501-D, p. D79-D85.
Gray, C. H., Jr., 1961, Mines and mineral deposits of the Corona South quadrangle, Riverside and Orange Counties, California: California Div. Mines and Geology Bull. 178, p. 59-120.
——— 1962a, Limestone resources of southern California, Part 1: California Div. Mines and Geology Mineral Inf. Service, v. 15, no. 5, p. 1-5.
——— 1962b, Limestone resources of southern California, Part 2: California Div. Mines and Geology Mineral Inf. Service, v. 15, no. 6, p. 4-7.
——— 1962c, Limestone, dolomite, and cement, *in* Troxel, B. W., and Morton, P. K., Mines and mineral resources of Kern County, California: California Div. Mines and Geology County Rept. 1, p. 212-236.
Hagner, A. F., 1939, Adsorptive clays of the Texas Gulf Coast: Am. Mineralogist, v. 24, no. 2, p. 67-108.
Hall, C. W., and Sardeson, F. W., 1895, The magnesian series of the Northwestern States: Geol. Soc. America Bull., v. 6, p. 167-198.
Hall, W. E., and Stephens, H. G., 1963, Economic geology of the Panamint Butte quadrangle and Modoc district, Inyo County, California: California Div. Mines and Geology, Spec. Rept. 73, 39 p.
Hanks, H. G., 1882, Mud volcanoes and Colorado Desert: California State Mining Bur. 2d Ann. Rept., 1880-82, p. 227-240.
——— 1883, Report on the borax deposits of California and Nevada: California State Mining Bur. 3rd Ann. Rept., 1882-83, pt. 2, 111 p.
——— 1884, Catalogue and description of the minerals of California as far as known, with special reference to those having an

economic value: California State Mining Bur. 4th Ann. Rept., 1883-84, p. 61-397.

——— 1885, Fifth annual report of the State mineralogist, for the year ending May 15, 1885: California State Mining Bur. 5th Ann. Rept., 235 p.

Harder, E. C., 1910, The gypsum deposits of the Palen Mountains, Riverside County, California: U.S. Geol. Survey Bull. 430, p. 407-416.

——— 1912, Iron-ore deposits of the Eagle Mountains, California: U.S. Geol. Survey Bull. 503, 81 p.

Hart, E. W., 1959, Geology of limestone and dolomite deposits in the southern half of Standard quadrangle, Tuolumne County, California: California Div. Mines Spec. Rept. 58, 25 p.

——— 1966, Mines and mineral resources of Monterey County: California Div. Mines and Geology County Rept. 5, 142 p.

Hay, R. L., and Iijima, A., 1968, Nature and origin of palagonite tuffs of the Honolulu Group on Oahu, Hawaii, *in* Studies in volcanology— A memoir in honor of Howel Williams: Geol. Soc. America Mem. 116, p. 331-376.

Hay, R. L., and Jones, B. F., 1972, Weathering of basaltic tephra on the Island of Hawaii: Geol. Soc. America Bull., v. 83, no. 2, p. 317-332.

Hazzard, J. C., 1938, Paleozoic section in the Nopah and Resting Springs Mountains, Inyo County, California: California Jour. Mines and Geology, v. 33, no. 4, p. 237-339.

Heiken, Grant, 1972, Morphology and petrography of volcanic ashes: Geol. Soc. America Bull., v. 83, no. 7, p. 1961-1988.

Hess, F. L., 1910, A reconnaissance of the gypsum deposits of California: U.S. Geol. Survey Bull. 413, 36 p.

Hewett, D. F., 1956, Geology and mineral resources of the Ivanpah quadrangle, California and Nevada: U.S. Geol. Survey Prof. Paper 275, 172 p.

Heyl, G. R., and Walker, G. W., 1949, Geology of the limestone near Gazelle, Siskiyou County, California: California Jour. Mines and Geology, v. 45, no. 4, p. 514-520.

Heyl, G. R., and Wiese, J. H., 1949, Geology of the limestone near Sonora, Tuolumne County, California: California Jour. Mines and Geology, v. 45, no. 4, p. 509-513.

Hidden, W. E., 1885, On hanksite, *in* Hanks, H. G., Fifth Annual Report of the State Mineralogist: California State Mining Bur. 5th Ann. Rept., p. 62-64.

Hietanen, Anna, 1951, Metamorphic and igneous rocks of the Merrimac area, Plumas National Forest, California: Geol. Soc. America Bull., v. 62, no. 6, p. 565-607.

Hilgard, E. W., 1892, A report on the relations of soil to climate: U.S. Dept. Agriculture Weather Bur. Bull. 3, 59 p.

Hill, J. H., 1923, Clay deposits of the Alberhill Coal and Clay Company: California State Mining Bur. Rept. 19, no. 4, p. 185-210.

Hill, T. P., Werner, M. A., and Horton, M. J., compilers, 1967, Chemical composition of sedimentary rocks in Colorado, Kansas, Montana, Nebraska, North Dakota, South Dakota, and Wyoming, *with an introduction by* W. W. Rubey: U.S. Geol. Survey Prof. Paper 561, 241 p.

Hill, T. P., and Werner, M. A., compilers, 1972, Chemical composition of sedimentary rocks in Alaska, Idaho, Oregon, and Washington: U.S. Geol. Survey Prof. Paper 771, 319 p. [1973].

Hinds, N. E. A., 1929, The weathering of the Hawaiian lavas, pt. 1, The compositions of lavas and soils from Kauai: Am. Jour. Sci., 5th ser., v. 17, no. 100, p. 297-320.

Hodge, E. T., 1935, Fluxes and refractories, App. L-1 *of* Report on available raw materials for a Pacific Coast iron industry: Portland, Oregon, U.S. Army Corps Engineers, North Pacific Div., v. 4, App. L-1, 84 p.

——— 1938a, Silica localities other than the Pacific Northwest, *in* Market for Columbia River hydroelectric power using northwest minerals: Portland, Oregon, U.S. War Dept., Corps Engineers, North Pacific Div., sec. 2, v. 2, pt. 2, p. 177-189.

——— 1938b, Other limestone occurrences available to or competitive with the Lower Columbia River area, *in* Market for Columbia River hydroelectric power using northwest minerals: Portland, Oregon, U.S. War Dept., Corps Engineers, North Pacific Div., sec. 3, v. 2, pt. 2, p. 373-382.

——— 1938c, Uses, technology, and market of limestone and lime, *in* Market for Columbia River hydroelectric power using northwest minerals: Portland, Oregon, U.S. War Dept., Corps Engineers, North Pacific Div., sec 3, v. 2, pt. 3, p. 383-621.

——— 1944, Limestone of the Pacific Northwest—Available limestones suitable for calcium carbide and for flint glass industries: Portland, Oregon, U.S. Bonneville Power Adm., 104 p.

Hoots, H. W., 1930, Geology and oil resources along the southern border of San Joaquin Valley, California: U.S. Geol. Survey Bull 812-D, p. D243-D332.

——— 1931, Geology of the eastern part of the Santa Monica Mountains, Los Angeles County, California: U.S. Geol. Survey Prof. Paper 165, p. 83-134.

Huguenin, Emile, 1919, Ventura County: California State Mining Bur. Rept. 15, p. 751-769.

Huguenin, Emile, and Castello, W. O., 1921a, San Mateo County: California State Mining Bur. Rept. 17, p. 167-179.

——— 1921b, Santa Clara County: California State Mining Bur. Rept. 17, p. 180-227.

Irelan, William, Jr., 1888, Report of the State mineralogist: California State Mining Bur. 8th Ann. Rept., 948 p.

——— 1890, California cement: California State Mining Bur. 9th Ann. Rept., p. 309-311.

Johnson, F. T., and Ricker, Spangler, 1949, Ione-Carbondale clays, Amador County, California; California Jour. Mines and Geology, v. 45, no. 3, p. 491-498.

Johnston, W. D., 1890, Clays: California State Mining Bur. 9th Ann. Rept., p. 287-308.

Jones, C. C., 1916, The Pacific Coast iron situation—The iron ores of California and possibilities of smelting: Am. Inst. Mining Engineers Trans., v. 53, p. 306-323.

Jones, W. F., 1911, The geology of the Sargent oil field: California Univ. Pubs. Geol. Sci., v. 6, no. 3, p. 55-78.

Keenan, M. F., 1932, The Eocene Sierra Blanca Limestone at the type locality in Santa Barbara County, California: San Diego Soc. Nat. History Trans., v. 7, no. 8, p. 53-84.

Kelley, F. R., Cleveland, G. B., and Arkey, R. J., 1959, Field trip to the Ione clay area [California] held in conjunction with the 6th National Clay Conference, August 21, 1957, *in* Swineford, Ada, ed., Clays and clay minerals: Internat. Ser. Mons. Earth Sci., v. 2, p. 1-17.

Kerr, P. F., and Cameron, E. N., 1936, Fuller's earth of bentonitic origin from Tehachapi, California: Am. Mineralogist, v. 21, no. 4, p. 230-237.

Kerr, P. F., Hamilton, P. K., and Pill, R. J., 1950, X-ray diffraction measurements, *in* Analytical data on reference clay minerals: Am. Petroleum Inst. Research Proj. 49, Clay Mineral Standards, Prelim. Rept. 7, secs. 1A and 1B, p. 1-58.

Kerrick, D. M., and Cotton, W. R., 1971, Stability relations of jadeite pyroxene in Franciscan metagraywackes near San Jose, California: Am. Jour. Sci., v. 271, no. 4, p. 350-369.

Kessler, D. W., 1919, Physical and chemical tests of the commercial marbles of the United States: U.S. Natl. Bur. Standards Tech. Paper 123, 54 p.

King, C. R., 1948, Pumice and perlite as industrial materials in California: California Jour. Mines and Geology, v. 44, no. 3, p. 293-319.

Kinkel, A. R., Jr., Hall, W. E., and Albers, J. P., 1956, Geology and base-metal deposits of west Shasta copper-zinc district, Shasta County, California: U.S. Geol. Survey Prof. Paper 285, 156 p.

Kivari, A. M., 1942, Milling at the Permanente Cement Plant: Am. Inst. Mining Metall. Engineers Trans., v. 148, p. 374-397.

Knopf, Adolph, 1918, Strontianite deposits near Barstow, California: U.S. Geol. Survey Bull. 660, p. 257-270.

Kümmel, H. B., 1901, Report on the portland cement industry: New Jersey Geol. Survey Ann. Rept., 1900, p. 9-101.

Ladoo, R. B., 1920, The mining and preparation of tripoli: U.S. Bur. Mines Rept. Inv. 2190, 9 p.

——— 1921, Bentonite: U.S. Bur. Mines Rept. Inv. 2289, 5 p.

——— 1948, Industrial silica for Pacific Northwest industries: Portland, Oregon, Raw Materials Survey, Inc. Resource Rept. 1, 40 p.

Ladoo, R. B., and Myers, W. M., 1951, Nonmetallic minerals, 2nd ed: New York, McGraw-Hill, 605 p.

Laizure, C. M., 1925a, San Francisco Field Division: California State Mining Bur. Rept. 21. no. 1, p. 23-57.

——— 1925b, San Francisco Field Division: California State Mining Bur. Rept. 21, no. 3, p. 281-324.

——— 1925c, San Francisco Field Division: California State Mining Bur. Rept. 21, no. 4, p. 499-538.

——— 1926, San Francisco Field Division: California State Mining Bur. Rept. 22, no. 1, p. 68-93.

——— 1929, San Francisco Field Division: California Div. Mines and Mining Rept. 25, no. 3, p. 301-365.

Lamar, R. S., 1953, Absorbent clays in California: California Jour. Mines and Geology, v. 49, no. 3, p. 297-337.

Lamey, C. A., 1946, Shasta and California iron-ore deposits, Shasta County, California: California Div. Mines Bull. 129, pt. K, p. 137-164.

Laudermilk, J. D., 1935, Soda-alunite from Molokai, Hawaiian Islands: Am. Mineralogist, v. 20, no. 1, p. 57-58.

Laudermilk, J. D., and Woodford, A. O., 1932, Concerning rillensteine: Am. Jour. Sci., ser. 5, v. 23, no. 134, p. 135-154.

——— 1934, Secondary montmorillonite in a California pegmatite: Am. Mineralogist, v. 19, no. 6, p. 260-267.

Lawson, A. C., 1893, The geology of Carmelo Bay: California Univ. Pubs. Geol. Sci., v. 1, p. 1-59.

——— 1914, Description of the San Francisco district, California—Tamalpais, San Francisco, Concord, San Mateo, and Hayward quadrangles: U.S. Geol. Survey Geol. Atlas, Folio 193, 24 p.

Lindgren, Waldemar, 1896, The gold-quartz veins of Nevada City and Grass Valley districts, California: U.S. Geol. Survey 17th Ann. Rept., pt. 2, p. 1-262.

——— 1898, Rhyolitic pumice, *in* Diller, J. S., The educational series of rock specimens collected and distributed by the United States Geological Survey: U.S. Geol. Survey Bull. 150, p. 148-149.

Linton, Robert, 1928, Tertiary clays of southern California: Am. Ceramic Soc. Jour., v. 11, no. 10, p. 771-781.

Lockwood, J. P., 1971, Sedimentary and gravity-slide emplacement of serpentine: Geol. Soc. America Bull., v. 82, no. 4, p. 919-936.

Loew, Oscar, 1876, Report on the alkaline lakes, thermal springs, mineral springs, and brackish waters of southern California and adjacent country: U.S. Geog. Surveys West of the One Hundreth Meridian (Wheeler), App. JJ, p. 188-199.

Logan, C. A., 1926, Sacramento Field Division: California State Mining Bur. Rept. 22, no. 2, p. 121-216.

——— 1947, Limestone in California: California Jour. Mines and Geology, v. 43, no. 3, p. 175-357.

Loney, R. A., 1968, Flow structure and composition of the Southern Coulee, Mono Craters, California—A pumiceous rhyolite flow, *in* Studies in volcanology—A memoir in honor of Howel Williams: Geol. Soc. America Mem. 116, p. 415-440.

Lowell, F. L., 1916, The counties of Del Norte, Humboldt, Mendocino: California State Mining Bur. Rept. 14, pt. 3, p. 371-425.

Lydon, P. A., 1964, Unusual phosphatic rock—New deposit near Hyampom opens economic possibilities: California Div. Mines and Geology Mineral Inf. Service, v. 17, no. 5, p. 65-74.

Lyons, A. B., 1896, Chemical composition of Hawaiian soils and of the rocks from which they have been derived: Am. Jour. Sci., ser. 4, v. 2, p. 421-429.

MacBoyle, Errol, 1920, Mines and mineral resources of Plumas County: California State Mining Bur. Rept. 16, 188 p.

Macdonald, G. A., and Katsura, Takashi, 1965, Eruption of Lassen Peak, Cascade Range, California, in 1915—Example of mixed magmas: Geol. Soc. America Bull., v. 76, no. 5, p. 475-482.

Mason, Brian, 1952, Principles of geochemistry [1st ed.]: New York, John Wiley & Sons, Inc., 276 p.

Merrill, F. J. H., 1916, The counties of San Diego, Imperial: California State Mining Bur. Rept. 14, pt. 4, p. 635-743.

——— 1919, Los Angeles County, Orange County, Riverside County: California State Mining Bur. Rept. 15, pt. 4, p. 465-589.

Milton, Charles, and Johnston, W. D., Jr., 1938, Sulphate minerals of the Comstock Lode, Nevada: Econ. Geology, v. 33, no. 7, p. 749-771.

Moore, B. N., 1935, Some strontium deposits of southeastern California and western Arizona: Am. Inst. Mining Metall. Engineers Trans., v. 115, p. 356-377.

——— 1936, Celestite and strontianite, *in* Hewett, D. F., and others, Mineral resources of the region around Boulder Dam: U.S. Geol. Survey Bull. 871, p. 151-162.

Muffler, L. J. P., and Doe, B. R., 1968, Composition and mean age of detritus of the Colorado River delta in the Salton Trough, southeastern California: Jour. Sed. Petrology, v. 38, no. 2, p. 384-399.

Muffler, L. J. P., and White, D. E., 1969, Active metamorphism of upper Cenozoic sediments in the Salton Sea geothermal field and the Salton Trough, southeastern California: Geol. Soc. America Bull., v. 80, no. 2, p. 157-182.

Murata, K. J., Friedman, Irving, and Cremer, Marcelyn, 1972, Geochemistry of diagenetic dolomites in Miocene marine formations of California and Oregon: U.S. Geol. Survey Prof. Paper 724-C, 12 p.

Murata, K. J., and Richter, D. H., 1966, Chemistry of the lavas of the 1959-60 eruption of Kilauea Volcano, Hawaii: U.S. Geol. Survey Prof. Paper 537-A, 26 p.

Murdoch, Joseph, and Webb, R. W., 1948, Minerals of California: California Div. Mines Bull. 136, 402 p.

——— 1956, Minerals of California: California Div. Mines Bull. 173, 452 p.

Norman, James, and Ralston, O. C., 1942, Purification of diatomite by froth flotation: Am. Inst. Mining Metall. Engineers Trans., v. 148, p. 356-366.

Norman, L. A., Jr., and Stewart, R. M., 1951, Mines and mineral resources of Inyo County, California: California Jour. Mines and Geology, v. 47, no. 1, p. 17-223.

Norton, F. H., 1939, Critical study of the differential thermal method for the identification of the clay minerals: Am. Ceramic Soc. Jour., v. 22, no. 2, p. 54-63.

——— 1952, Elements of ceramics: Cambridge, Mass., Addison-Wesley, 246 p.

Nutting, P. G., 1943, Absorbent clays, their distribution, properties, production, and uses: U.S. Geol. Survey Bull. 928-C, p. C127-C221.

Oakeshott, G. B., 1937, Geology and mineral deposits of the western San Gabriel Mountains, Los Angeles County: California Jour. Mines and Geology, v. 33, no. 3, p. 215-249.

O'Brien, J. C., 1953, Mines and mineral resources of Mendocino County, California: California Jour. Mines and Geology, v. 49, no. 4, p. 347-398.

Oesterling, W. A., and Spurck, W. H., 1964a, Klamath Mountains and Cascade Range, *in* Minerals for industry—Summary of geological survey of 1955-1961, Volume 2—Northern California: San Francisco, Southern Pacific Co., pt. 2, p. 85-196.

——— 1964b, Eastern Mojave and Colorado Deserts, *in* Minerals for industry—Summary of geological survey of 1955-1961, Volume 3—Southern California: San Francisco, Southern Pacific Co., pt. 3, p. 99-198.

Ogle, B. A., 1953, Geology of Eel River Valley area, Humboldt County, California: California Div. Mines Bull. 164, 128 p.

Osthaus, B. B., 1955, Interpretation of chemical analyses of montmorillonites, *in* Clays and clay technology: California Div. Mines Bull. 169, p. 95-100.

——— 1956, Kinetic studies on montmorillonites and nontronite by the acid-dissolution technique, *in* Swineford, Ada, ed., Clays and clay minerals: Natl. Conf. Clays and Clay Minerals, 4th, University Park, Pa., October 10-13, 1955, Proc., Natl. Acad. Sci.—Natl. Research Council Pub. 456, v. 7, p. 301-321.

Pabst, Adolf, 1938, Minerals of California: California Div. Mines Bull. 113, 344 p.

Pack, R. W., 1914, Ornamental marble near Barstow, California, *in* Contributions to economic geology, 1912, Part 1, Metals and nonmetals except fuels: U.S. Geol. Survey Bull. 540, p. 363-368.

Pask, J. A., and Turner, M. D., 1952, Geology and ceramic properties of the Ione Formation, Buena Vista area, Amador County, California: California Div. Mines Spec. Rept. 19, 39 p.

Patterson, S. H., 1964, Halloysitic underclay and amorphous inorganic matter in Hawaii, *in* Clays and clay minerals, 12th Natl. Conf., Atlanta, Georgia, 1963, Proc.: New York, Macmillan Co., p. 153-172.

——— 1971, Investigations of ferruginous bauxite and other mineral resources on Kauai and a reconnaissance of ferruginous bauxite deposits on Maui, Hawaii: U.S. Geol. Survey Prof. Paper 656, 74 p.

Pearson, R. C., Hayes, P. T., and Fillo, P. V., 1967, Mineral resources of the Ventana primitive area, Monterey County, California: U.S. Geol. Survey Bull. 1261-B, 42 p.

Phalen, W. C., 1911, Potash salts—their uses and occurrence in the United States: U.S. Geol. Survey Mineral Resources U.S., 1910, pt. 2, p. 747-767.

Powers, H. A., 1932, The lavas of the Modoc Lava Bed quadrangle, California: Am. Mineralogist, v. 17, no. 7, p. 253-294.

Prescott, Basil, 1908, The occurrence and genesis of the magnetite ores of Shasta County, California: Econ. Geology, v. 3, no. 6, p. 465-480.

Ralston, O. C., Pike, R. D., and Duschak, L. H., 1925, Plastic magnesia: U.S. Bur. Mines Bull. 236, 111 p.

Richter, D. H., Ault, W. U., Eaton, J. P., and Moore, J. G., 1964, The 1961 eruption of Kilauea Volcano, Hawaii: U.S. Geol. Survey Prof. Paper 474-D, 34 p.

Rollins, R. Z., 1951, Agricultural gypsum, *in* Jenkins, O. P., ed., Minerals useful to California agriculture: California Div. Mines Bull. 155, p. 105-116.

Ross, C. S., and Hendricks, S. B., 1941, Clay minerals of the montmorillonite group, their mineral and chemical relationships, and the factors controlling base exchange: Soil Sci. Soc. America Proc., 1941, v. 6, p. 58-62.

——— 1945, Minerals of the montmorillonite group, their origin and relation to soils and clays: U.S. Geol. Survey Prof. Paper 205-B pt. 4, p. B23-B79 [1946].

Ross, C. S., and Shannon, E. V., 1926, The minerals of bentonite and related clays and their physical properties: Am. Ceramic Soc. Jour., v. 9, no. 2, p. 77-96.

Rubey, W. W., and Callaghan, Eugene, 1936, Magnesite and brucite, *in* Hewett, D. F., and others, Mineral resources of the region around Boulder Dam: U.S. Geol. Survey Bull. 871, p. 113-144.

Russel, I. C., 1889, Quaternary history of Mono Valley, California: U.S. Geol. Survey 8th Ann. Rept., 1886-1887, pt. 1, p. 261-394.

Sampson, R. J., 1937, Mineral resources of Los Angeles County: California Jour. Mines and Geology, v. 33, no. 3, p. 173-213.

Sampson, R. J., and Tucker, W. B., 1931, Feldspar, silica, andalusite, and cyanite deposits of California: California Div. Mines Rept. 27, no. 3, p. 407-458.

——— 1942, Mineral resources of Imperial County: California Jour. Mines and Geology, v. 38, no. 2, p. 105-145.

Schaller, W. T., 1930, Borate minerals from the Kramer district, Mojave Desert, California: U.S. Geol. Survey Prof. Paper 158, p. 137-170.

Schneider, Hyrum, 1927, A study of glauconite: Jour. Geology, v. 35, no. 4, p. 289-310.

Schroter, G. A., and Campbell, Ian, 1942, Geological features of some deposits of bleaching clay: Am. Inst. Mining Metall. Engineers Trans., v. 148, p. 178-208.

Shelton, J. S., 1955, Glendora volcanic rocks, Los Angeles Basin, California: Geol Soc. America Bull., v. 66, no. 1, p. 45-89.

Sheppard, R. A., and Gude, A. J., 3d, 1965a, Zeolitic authigenesis of tuffs in the Ricardo Formation, Kern County, southern California, *in* Geological Survey research 1965: U.S. Geol. Survey Prof. Paper 525-D, p. D44-D47.

——— 1965b, Potash feldspar of possible economic value in the Barstow Formation, San Bernardino County, California: U.S. Geol. Survey Circ. 500, 7 p.

——— 1969, Diagenesis of tuffs in the Barstow Formation, Mud Hills, San Bernardino County, California: U.S. Geol. Survey Prof. Paper 634, 35 p.

Sherman, G. D., 1950, The genesis and morphology of Hawaiian ferruginous laterite crusts: Pacific Sci., v. 4, no. 4, p. 315-322.

Sherman, G. D., Kanehiro, Yoshinori, and Matsusaka, Yoshito, 1953, The role of dehydration in the development of laterite [Hawaii]: Pacific Sci., v. 7, no. 4, p. 438-446.

Simpson, E. C., 1935, Geology and mineral deposits of the Elizabeth Lake quadrangle, California Jour. Mines and Geology, v. 30, no. 4, p. 371-415.

Slaughter, M., and Earley, J. W., 1965, Mineralogy and geological significance of the Mowry bentonites, Wyoming: Geol. Soc. America Spec. Paper 83, 95 p.

Smith, C. A., 1924, The manufacture of an insulating brick from diatomaceous earth: Am. Ceramic Soc. Jour., v. 7, no. 1, p. 52-60.

Smith, G. I., 1973, Subsurface stratigraphy and composition of saline bodies, Searles Lake, California; a preliminary report: U.S. Geol. Survey open-file rept., 118 p.

Speil, Sidney, Berkelhamer, L. H., Pask, J. A., and Davies, Ben, 1945, Differential thermal analysis, its application to clays and other aluminous minerals: U.S. Bur. Mines Tech. Paper 664, 81 p.

Spurck, W. H., 1964, Western Mojave Desert, *in* Minerals for industry—Summary of geological survey of 1955-1961, Volume 3—Southern California: San Francisco, Southern Pacific Co., pt. 2, p. 37-97.

Stewart, J. H., 1970, Upper Precambrian and Lower Cambrian strata in the southern Great Basin, California and Nevada: U.S. Geol.

Survey Prof. Paper 620, 206 p.

Sutherland, J. C., 1935, Geological investigation of the clays of Riverside and Orange Counties, southern California: California Jour. Mines and Geology, v. 31, no. 1, p. 51-87.

Takahashi, J. R., 1929, Significance of micro-crystals of carbonates in bituminous shales, a preliminary note: Am. Assoc. Petroleum Geologists Bull., v. 13, no. 10, pt. 2, p. 1377-1386.

Taliaferro, N. L., 1943, Franciscan-Knoxville problem: Am. Assoc. Petroleum Geologists Bull., v. 27, no. 2, p. 109-219.

Taliaferro, N. L., and Hudson, F. S., 1943, Genesis of manganese deposits of the Coast Ranges of California, *in* Jenkins, O. P., Manganese in California: California Div. Mines Bull. 125, p. 217-275.

Tischler, M. S., 1964, Northern Sierra Nevada, *in* Minerals for industry—Summary of geological survey of 1955-1961, Volume 2—Northern California: San Francisco, Southern Pacific Co. pt. 1, p. 9-83.

Townsend, R. H., 1933, Method and cost of quarrying limestone at the plant of the Calaveras Cement Company, San Andreas, California: U.S. Bur. Mines Inf. Circ. 6610, 13 p.

Tucker, W. B., 1919, Tulare County: California State Mining Bur. Rept. 15, pt. 4, p. 900-954.

——— 1921, Los Angeles Field Division: California State Mining Bur. Rept. 17, p. 263-390.

——— 1923a, Economic minerals of the Avawitz Mountains: California State Mining Bur. Rept. 18, p. 114-117.

——— 1923b, Limestone deposits of McCloud River, Shasta County, and their possible value for cement material: California State Mining Bur. Rept. 19, no. 2, p. 69-71.

——— 1924, Los Angeles Field Division: California State Mining Bur. Rept. 20, no. 2, p. 87-98.

——— 1925a, Los Angeles Field Division: California State Mining Bur. Rept. 21, no. 1, p. 58-71.

——— 1925b, Los Angeles Field Division: California State Mining Bur. Rept. 21, no. 3, p. 325-382.

——— 1926, Los Angeles Field Division: California State Mining Bur. Rept. 22, no. 2, p. 248-285.

——— 1927a, Los Angeles Field Division: California State Mining Bur. Rept. 22, no. 4, p. 453-530.

——— 1927b, Los Angeles Field Division: California State Mining Bur. Rept. 23, no. 3, p. 287-345.

——— 1929, Los Angeles Field Division: California Div. Mines and Mining Rept. 25, no. 1, p. 20-81.

Tucker, W. B., and Sampson, R. J., 1929, Los Angeles Field Division: California Div. Mines Rept. 25, no. 4, p. 468-526.

——— 1930, Los Angeles Field Division: California Div. Mines Rept. 26, no. 3, p. 202-325.

——— 1931, Los Angeles Field Division: California Div. Mines Rept. 27, no. 3, p. 262-401.

——— 1933, Los Angeles Field Division: California Div. Mines Rept. 28, nos. 3 and 4, p. 247-277.

——— 1938, Mineral resources of Inyo County: California Jour. Mines and Geology, v. 34, no. 4, p. 368-500.

——— 1940, Current mining activity in southern California: California Jour. Mines and Geology, v. 36, no. 1, p. 9-82.

——— 1944, Mineral resources of San Bernardino County: California Jour. Mines and Geology, v. 39, no. 4, p. 427-549.

Turner, H. W., 1891, The geology of Mount Diablo, California, *with a supplement on* The chemistry of the Mount Diablo rocks, by W. H. Melville: Geol. Soc. America Bull., v. 2, p. 384-414.

——— 1898, Chiastolite-schist, *in* Diller, J. S., The educational series of rock specimens collected and distributed by the United States Geological Survey: U.S. Geol. Survey Bull. 150, p. 339-343.

Tyson, P. T., 1851, Reports on the geology and topography of California, communicated to the Senate by the Secretary of War: Ex. Doc. 47, 31st Cong., 1st sess., *summarized in* Am. Jour. Sci., ser. 2, v. 11, no. 32, p. 301.

Ver Planck, W. E., Jr., 1955, Mines, mineral resources, and mineral industries of Marin County, California: California Jour. Mines and Geology, v. 51, no. 3, p. 221-289.

——— 1958, Salt in California: California Div. Mines Bull. 175, 168 p.

Vitaliano, C. J., 1950, Needles magnesite deposit, San Bernardino County, California: California Jour. Mines and Geology, v. 46, no. 3, p. 357-372.

Walker, G. W., 1950a, Sierra Blanca Limestone in Santa Barbara County, California: California Div. Mines Spec. Rept. 1-A, 8 p.

——— 1950b, The Calera Limestone in San Mateo and Santa Clara Counties, California: California Div. Mines Spec. Rept. 1-B, 7 p.

Walker, J. L., Sherman, G. D., and Katsura, Takashi, 1969, The iron and titanium minerals in the titaniferous ferruginous latosols of Hawaii; Pacific Sci., v. 23, no. 3, p. 291-304.

Washington, H. S., 1917, Chemical analyses of igneous rocks published from 1884 to 1913, inclusive, with a critical discussion of the character and use of analyses: U.S. Geol. Survey Prof. Paper 99, 1201 p.

Watts, W. L., 1897, Oil and gas yielding formations of Los Angeles, Ventura, and Santa Barbara Counties: California State Mining Bur. Bull. 11, 94 p.

Weaver, C. E., 1949, Geology and mineral deposits of an area north of San Francisco Bay, California: California Div. Mines Bull. 149, 135 p.

Weber, F. H., Jr., 1963a, Geology and mineral deposits of the Ord Mountain district, San Bernardino County, California: California Div. Mines and Geology Spec. Rept. 77, 45 p.

——— 1963b, Limestone and dolomite, *in* Geology and mineral resources of San Diego County: California Div. Mines and Geology County Rept. 3, p. 173-185.

Weigel, W. M., 1927, Technology and uses of silica and sand: U.S. Bur. Mines Bull. 266, 204 p.

Weitz, J. H., 1942, High-grade dolomite deposits in the United States: U.S. Bur. Mines Inf. Circ. 7226, 86 p.

Wells, R. C., 1937, Analyses of rocks and minerals from the laboratory of the United States Geological Survey, 1914-1936: U.S. Geol. Survey Bull. 878, 134 p.

Wentworth, C. K., Wells, R. C., and Allen, V. T., 1940, Ceramic clay in Hawaii: Am. Mineralogist, v. 25, no. 1, p. 1-33.

Whitehouse, U. G., Jeffrey, L. M., and Debbrecht, J. D., 1960, Differential settling tendencies of clay minerals in saline waters, *in* Swineford, Ada, ed., Clays and clay minerals, Natl. Conf. Clay and Clay Minerals, 7th, Washington, D. C., 1958, Proc.: New York, Pergamon Press, Internat. Earth Sci. Ser. Mon. 5, p. 1-79.

Williams, Howel, 1932, Geology of the Lassen Volcanic National Park, California: California Univ. Pubs. Geol. Sci., v. 21, no. 8, p. 195-385.

Winston, W. B., 1947, Pumice: California Jour Mines and Geology, v. 43, no. 4, 469-479.

Woodford, A. O., and Harris, T. F., 1928, Geology of Blackhawk Canyon, San Bernardino Mountains, California: California Univ. Pubs. Geol. Sci., v. 17, no. 8, p. 265-304.

Wright, L. A., Stewart, R. M., Gay, T. E., Jr., and Hazenbush, G. C., 1953, Mines and mineral deposits of San Bernardino County, California: California Jour. Mines and Geology, v. 49, nos. 1 and 2, p. 49-259, and 192 p. of tables.

Wright, T. L., 1971, Chemistry of Kilauea and Mauna Loa [Hawaii] lava in space and time: U.S. Geol. Survey Prof. Paper 735, 40 p.

Yale, C. G., and Stone, R. W., 1921, Magnesite: U.S. Geol. Survey Mineral Resources U.S., 1918, pt. 2, p. 141-158.

Youngman, E. P., 1930, Deposits of titanium-bearing ores: U.S. Bur. Mines Inf. Circ. 6386, 49 p.

TABLES 1-17, 23-25

The stratigraphic nomenclature used in tables 1-9 does not necessarily reflect the latest usage of the U.S. Geological Survey; names and ages were taken from many published sources.

TABLE 1. — *Analyses of samples from California containing 90-100 percent uncombined silica (Group A_3), common- and mixed-rock categories*

SAMPLE	06001011	06013034	06027052	06027053	06027054	06027056	06027057	06027058	06037039	06037040
SIO2	95.00	93.54	97.80	96.60	97.40	94.80	96.50	96.40	98.30	98.80
AL203	1.70	2.26	0.55	0.93	0.73	2.00	1.30	1.70	1.30 C	0.0 B
FE203	0.78	0.48	0.10	0.70	0.18	1.10	0.41	0.13	0.0 B	0.0 T
MGO	0.23	0.66	0.0	0.0	0.0	0.06	0.06	0.0	0.0 B	0.0 B
CAO	0.41	0.09	0.0	0.03	0.0	0.09	0.0	0.03	0.0	0.0 T
NA20	0.09	0.51	0.12	0.0	0.0	0.19	0.06	0.0	0.0 B	0.0 B
K20	0.33	0.37	0.0	0.0	0.0	0.40	0.28	0.38	0.0 B	0.0 B
H20	0.71 F	0.72 F	0.40 F	0.43 F	0.61 F	0.85 F	0.43 F	0.33 F	0.0 B	0.0 B
H20-	0.08	0.21	0.0	0.0	0.0	0.12	0.05	0.06	0.0 B	0.0 B
TIO2	0.08	0.0 B	0.0	0.25	0.02	0.20	0.0	0.0	0.0 B	0.0 B
P205	0.20	0.0 B	0.03	0.04	0.04	0.09	0.05	0.05	0.0 B	0.0 B
CO2	0.06	0.0 B	0.05 P	0.05 P	0.05 P	0.05 P	0.05 P	0.05 P	0.0 B	0.0 B
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.97 *	99.86 *	99.25 *	99.11 *	99.23 *	100.03 *	99.27 *	99.21 *	99.60	98.80
CLASS	91, 7, 0	89, 8, 0	97, 2, 0	94, 4, 0	96, 3, 0	90, 9, 0	94, 5, 0	93, 5, 0	96, 4, 0	99, 0, 0

SAMPLE	06041013	06041014	06041020	06065086	06071229	06071230	06071231	06071237	06071364	06075012
SIO2	94.70	96.50	95.90	97.45	98.57	98.90	99.04	59.77	53.97	93.50
AL203	1.10	1.50	1.10	0.0 B	0.46	0.16	0.27	0.49	0.19	0.96
FE203	2.70	0.34	1.70	0.09 K	0.34	0.18	0.13	0.03	0.04	2.80
MGO	0.14	0.16	0.10	0.0 B	0.17	0.08	0.04	27.46	25.92	0.11
CAO	0.06	0.17	0.50	0.0 B	0.05	0.23	0.15	0.45	0.18	0.42
NA20	0.01	0.11	0.02	0.0 B	0.15 E	0.24 E	0.32 E	2.73	3.08	0.01
K20	0.37	0.26	0.26	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.26	0.08
H20	0.63 F	0.65 F	0.70 F	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	5.65 F	0.72 F
H20-	0.16	0.15	0.11	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.22
TIO2	0.06	0.08	0.06	0.0 B	0.05	0.04	0.04	0.0 B	0.02	0.04
P205	0.03	0.04	0.02	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.03
CO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	4.00 G	9.28 G	0.0 B
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	100.23 *	100.37 *	100.86 *	97.54 *	99.79	99.83	99.99	100.28 *	99.86 *	100.24 *
CLASS	90, 10, 0	93, 6, 0	92, 7, 0	97, 0, 0	97, 2, 0	98, 1, 0	98, 1, 0	59, 2, 7	54, 6, 7	89, 10, 0

SAMPLE	06075013	06083030	06089048	06089049
SIO2	97.40	94.59	96.02	97.16
AL203	0.47	1.87	1.03	0.0 T
FE203	1.30	0.0 B	0.62	0.0
MGO	0.05 P	0.0 T	0.0 B	0.0 B
CAO	0.05	0.83	0.12	0.0 T
NA20	0.01	0.0 B	0.0 B	0.0 B
K20	0.04	0.0 B	0.0 B	0.0 B
H20	0.55 F	0.0 B	0.0 B	0.0 B
H20-	0.07	0.0 B	0.0 B	0.0 B
TIO2	0.03	0.10	0.0 B	0.0 B
P205	0.04	0.0 B	0.0 B	0.0 B
CO2	0.0 B	2.22 G	0.0 B	0.0 B
SO3	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	100.29 *	100.37 *	97.79	97.16
CLASS	95, 5, 0	91, 7, 1	93, 5, 0	97, 0, 0

A INSOL.
B BLANK--NO VALUE REPT.
C AL203 + FE203.
D MGO + CAO.
E NA20 + K20.
F H20+.
G IGNITION LOSS (MAY INCLUDE WATER).
H REPORTED AS S.
I CALCULATED BY COMPILERS.
J ORGANIC MATTER.
K TOTAL IRON.
M BY DIFFERENCE.
N INCLUDES TIO2.
O GREATER THAN.
P LESS THAN.
T TRACE.
* ADDITIONAL INFORMATION IN DESCRIPTIVE NOTES.

06001011 JURASSIC & CRETACEOUS, FRANCISCAN FM. "T1S,R4W" OAKLAND. (131:TR) RADIOLARIAN CHERT. *MISC: FEO = 0.11, MNO = 0.18, LI20 = 0.01.

06013034 JURASSIC & CRETACEOUS, FRANCISCAN FM. "T1N,R1E" MOUNT DIABLO. (99:124/ 221:9,8,25,28) CHERT, BROWNISH-RED: MIN. GEOL MAP. USE: 4. *MISC: FEO = 0.79, MNO = 0.23.

06027052 CAMBRIAN, ZABRISKIE QTZITE. S20,T24N,R6E. (585:34,8,114) QUARTZITE: MIN. INDEX MAP, MEAS SEC. SPECTRO ANAL ALSO GIVEN. *MISC: FEO = 0.20, MNO = 0.00.

06027053 CAMBRIAN, ZABRISKIE QTZITE. S7,8,T10S,R40E & S29-32,T9S,R40E. (585:35,8,82) QUARTZITE: MIN. INDEX MAP, MEAS SEC. SPECTRO ANAL ALSO GIVEN. *MISC: FEO = 0.08, MNO = 0.00.

06027054 CAMBRIAN, ZABRISKIE QTZITE. S1,T19S,R45E. (585: 35,8,98) QUARTZITE: MIN. INDEX MAP, MEAS SEC. SPECTRO ANAL ALSO GIVEN. *MISC: FEO = 0.20, MNO = 0.00.

06027056 PRECAMBRIAN & CAMBRIAN, WOOD CANYON FM. S1,T19S,R45E. (585:35,8,98) QUARTZITE: MIN. INDEX MAP, MEAS SEC. SPECTRO ANAL ALSO GIVEN. *MISC: FEO = 0.08, MNO = 0.00.

06027057 PRECAMBRIAN, STIRLING QTZITE. S1,T19S,R45E. (585:35,100,101) QUARTZITE: MIN. INDEX MAP, MEAS SEC. SPECTRO ANAL ALSO GIVEN. *MISC: FEO = 0.08, MNO = 0.00.

06027058 PRECAMBRIAN, STIRLING QTZITE. S1,T19S,R45E. (585:35,100,101) QUARTZITE: MIN. INDEX MAP, MEAS SEC. SPECTRO ANAL ALSO GIVEN. *MISC: FEO = 0.08, MNO = 0.00.

06037039 "T5N,R12W" ACTON. (67:527) SAND. USE: 15.

06037040 "T7N,R12W" LANCASTER. (67:527) SAND. USE: 10,15.

06041013 JURASSIC & CRETACEOUS, FRANCISCAN FM. "T1S,R6W" YELLOW BLUFF. (29:63,11,55,62,PL1) CHERT, RED, THIN-BEDDED: MIN. INDEX & GEOL MAPS. USE: 7. *MISC: FEO = 0.22, MNO = 0.05.

06041014 JURASSIC & CRETACEOUS, FRANCISCAN FM. "T1S,R6W" YELLOW BLUFF. (29:63,11,55,62,PL1) CHERT, GREEN, THIN-BEDDED: MIN. INDEX & GEOL MAPS. USE: 7. *MISC: FEO = 0.38, MNO = 0.03.

06041020 JURASSIC & CRETACEOUS, FRANCISCAN FM. "T1S,R6W" SAUSALITO. (29:63,11,55,62,PL1) CHERT, RED, THIN-BEDDED: MIN. INDEX & GEOL MAP. USE: 7. *MISC: FEO = 0.34, MNO = 0.05.

06065086 S17,19,T4S,R6W. (446:443) SAND. *MISC: IRON IN DEPOSIT = 0.09-0.11.

06071229 CARBONIFEROUS, ORO GRANDE FM. S17,T6N,R4W. (52:178,12,16,177,PL1-3) QUARTZITE: QUARRY SMPL: 100-250 FT THICK. INDEX & GEOL MAPS, GEOL SEC. USE: 4.

06071230 CARBONIFEROUS, ORO GRANDE FM. S17,T6N,R4W. (52:176,12,175,PL1-3) QUARTZITE: TONNAGE. INDEX & GEOL MAPS, GEOL SEC. USE: 4,14.

06071231 CARBONIFEROUS, ORO GRANDE FM. S11,T6N,R4W. (52:178,PL1-3) QUARTZITE: TONNAGE. INDEX & GEOL MAP, GEOL SEC. USE:4,14.

06071237 "T8N,R5E" HECTOR. (439:27) HECTORITE. *MISC: F = 5.35, FE203 REPT AS 0.026. DUPLICATE ANAL OF SAMPL, SIO2 55.86.

06071364 "T8N,R5E" HECTOR. (541:12) HECTORITE: MAX VALUES OF 6 SMPL: FOR MIN VALUES SEE SIO2 53.91. *MISC: FEO = 0.00, MNO = 0.00, LI20 = 1.27.

06075012 JURASSIC & CRETACEOUS, FRANCISCAN FM. "T2S,R5W" SAN FRANCISCO. (29:63,11,55,62,PL1) CHERT, RED, THIN-BEDDED: MIN. INDEX & GEOL MAPS. USE: 7. *MISC: FEO = <0.05, MNO = 1.3.

06075013 JURASSIC & CRETACEOUS, FRANCISCAN FM. "T2S,R5W" SAN FRANCISCO. (29:63,11,55,62,PL1) CHERT, RED: 25 FT THICK: MIN. INDEX & GEOL MAPS. USE: 7. *MISC: FEO = 0.26, MNO = 0.02.

06083030 "T8N,R34W" LOMPOC. (464:53) DIATOMACEOUS SHALE, COMPACT: FIRING TESTS. USE: 11. *MISC: FEO = 0.76.

06089048 HOLOCENE. S26,T37N,R2E. (366:166,163-165) DIATOMITE, WHITE: 340 FT EXPOSED. INDEX MAP.

06089049 HOLOCENE. S33,T37N,R2E TO S10,T36N,R4E. (366:166,163-165) DIATOMITE, WHITE: 340 FT EXPOSED. INDEX MAP.

TABLE 2. — *Analyses of samples from California containing 75-90 percent uncombined silica (Group A_4), common-and mixed-rock categories*

SAMPLE	06007007	06013033	06013036	06027055	06027059	06037018	06037020	06037024	06037029	06053107
SIO2	88.70	96.37	95.08	87.40	90.50	82.55	88.90	84.00	84.45	83.61
AL2O3	4.50	2.38	2.17	5.20	3.40	4.82	2.28	4.50	4.14	4.70
FE2O3	0.50	1.70	2.82	1.80	0.32	0.90	0.87	1.27	1.48	1.19
MGO	0.36	0.0 B	0.0 B	0.43	0.05	0.0 B	0.0 B	0.0 T	0.52	0.17
CAO	0.93	0.0 B	0.0 B	0.11	0.03	1.30	1.05	1.10	1.25	1.43
NA2O	0.63 E	0.0 B	0.0 B	0.20	0.0	1.09 E	0.49 E	0.0 T	0.46	1.45 E
K2O	0.0 B	0.0 B	0.0 B	2.30	0.70	0.0 B	0.0 B	0.0 B	0.64	0.0 B
H2O	4.46	0.0 B	0.0 B	1.40 F	0.56 F	2.90 F	2.80 F	0.0 B	3.11 F	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.15	0.04	5.53	3.10	0.0 B	3.25	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.31	0.32	0.0 B	0.0 B	0.85 J	0.20 J	0.12
P2O5	0.0 B	0.0 B	0.0 B	0.08	0.15	0.0 B	0.0 B	0.0 B	0.28	0.0 T
CO2	0.0 B	0.0 B	0.0 B	0.05 P	0.05 P	0.0 B	0.0 B	6.84 G	0.0 B	5.81 G
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.18	0.0
TOT CONS	100.08	100.45	100.07	99.63 *	96.40 *	100.03 *	99.96 *	98.79 *	100.82 *	99.90 *
CLASS	80, 18, 0	90, 10, 0	88, 12, 0	76, 20, 0	84, 11, 0	73, 24, 0	84, 14, 0	75, 21, 2	75, 21, 0	74, 20, 3

SAMPLE	06053108	06053109	06071189	06071191	06071193	06071220	06071309	06073031	06073032	06075011
SIO2	84.11	86.89	53.68	57.50	56.41	55.17	53.91	92.00 O	94.00	93.00
AL2O3	3.55	2.32	0.60	0.68	0.37	0.33	0.08	5.00	5.20	2.00
FE2O3	1.29	1.28	0.0 B	0.24	0.0 B	0.12	0.0	0.10	0.10	2.40
MGO	0.86	0.0 T	25.34	25.98	1.82	24.51	25.83	0.0 T	0.0 B	0.13
CAO	1.24	0.43	0.52	0.47	0.0 B	0.90	0.12	1.40	0.02	0.11
NA2O	0.0 B	2.32	3.00	2.48	12.78	2.20	2.97	0.10 E	0.0 B	0.11
K2O	0.0 B	1.26	0.07	0.45	1.00	0.08	0.16	0.0 B	0.0 B	0.41
H2O	0.0 B	0.0 B	8.24 F	6.88 F	9.47	2.84 F	5.57 F	0.0 B	0.0 B	1.00 F
H2O-	5.12	0.0 B	7.28	3.52	0.0 B	8.93	0.0 B	0.0 B	0.0 B	0.26
TIO2	0.0 B	0.0 B	0.0 B	0.02	0.0 B	0.01	0.0	0.0 B	0.0 B	0.12
P2O5	0.0 B	0.0 B	0.0 B	0.34	0.0 B	0.05	0.0 B	0.0 B	0.0 B	0.05
CO2	0.88	4.89 G	0.0 B	0.0 B	0.0 B	0.63	9.28 G	0.30 G	0.0 B	0.0 B
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	97.05	99.39	100.16 *	98.56	100.00 *	99.83 *	99.07 *	98.90	99.32	100.04 *
CLASS	76, 19, 2	81, 14, 1	53, 17, 0	56, 13, 3	56, 10, 0	54, 13, 1	54, 6, 7	83, 14, 0	85, 15, 0	87, 12, 0

SAMPLE	06079010	06083015	06083016	06083017	06083018	06083019	06083020	06083021	06083024	06083025
SIO2	84.90	86.24	88.40	88.68	88.72	88.60	89.70	92.53	86.92	92.37
AL2O3	4.80	3.05	2.05	2.68	2.68	3.72	3.72	1.11	4.27	2.46
FE2O3	2.10	1.02	1.13	0.0 T	0.0 T	1.50	1.09	0.78 K	0.0 B	0.0 B
MGO	1.20	0.63	0.52	1.30	1.30	0.60	0.65	0.50	0.0 T	0.0 B
CAO	0.46	0.18	0.34	1.61	1.61	0.60	0.35	0.35	1.60	1.70
NA2O	0.70	0.0 B	0.0 B	0.0 B	0.0 B	0.50	0.82 E	0.0 B	2.48 E	0.0 B
K2O	0.31	0.0 B	0.0 B	0.0 B	0.0 B	0.50	0.0 B	0.0 B	0.0 B	0.0 B
H2O	2.00 F	0.0 B	0.0 B	0.0 B	5.54	0.0 B	0.0 B	3.86	0.0 B	0.0 B
H2O-	0.72	5.62	6.08	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.18	0.0 B	0.0 B	0.0 B	0.10	0.20	0.10	0.0 B	0.0 B	0.0 B
P2O5	0.02	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	0.0 B	1.20	0.31	5.54 G	0.0 B	3.75 G	3.70 G	0.0 B	5.13 G	2.74 G
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.65 *	97.94	98.83	99.81	99.95	99.97	100.13	99.13	100.40	99.27
CLASS	74, 20, 1	80, 17, 2	84, 15, 1	84, 10, 6	84, 13, 0	80, 16, 2	82, 15, 2	90, 9, 2	79, 16, 3	88, 8, 3

SAMPLE	06083029	06087025	06089044	06089045	06089046	06089047	06089050
SIO2	85.28	87.02	86.79	88.05	88.35	91.33	98.05
AL2O3	5.35	2.97	6.30 C	6.25	3.24	2.59	6.25
FE2O3	0.0 B	0.0 B	0.0 B	1.08	0.84	0.92	1.08
MGO	1.30	0.25	0.0 B	0.0 B	0.45	0.0 B	0.0 B
CAO	1.12	1.12	0.51	1.00	0.37	0.66	1.00
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0	0.0 B	0.0 B
H2O	0.0 B	0.0 B	6.20	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	5.74	0.0 B	0.0 B
TIO2	0.21	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	5.57 G	7.40 G	0.0 B	0.0 B	0.88	0.0 B	0.0 B
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.95 *	98.76	99.80	96.38	99.87	95.50	96.38
CLASS	76, 18, 5	82, 14, 3	76, 23, 0	76, 21, 2	82, 17, 2	86, 10, 1	86, 21, 2

A INSOL.
B BLANK--NO VALUE REPT.
C AL2O3 + FE2O3.
D MGO + CAO.
E NA2O + K2O.
F H2O+.
G IGNITION LOSS (MAY INCLUDE WATER).
H REPORTED AS S.
I CALCULATED BY COMPILERS.
J ORGANIC MATTER.
K TOTAL IRON.
M BY DIFFERENCE.
N INCLUDES TIO2.
O GREATER THAN.
P LESS THAN.
T TRACE.
* ADDITIONAL INFORMATION IN DESCRIPTIVE NOTES.

TABLE 2.—*Analyses of samples from California containing 75-90 percent uncombined silica (Group A_4), common- and mixed-rock categories* —Continued

06007007 "T21,22N,R1E" CHICO. (307:302) CLAY, WHITE. USE: 5.
06013033 JURASSIC & CRETACEOUS, FRANCISCAN FM. "T1N,R5W" POINT RICHMOND. (138:268,241,254,255/ 221:9,8,25,28) CHERT, RED, SILICEOUS: THIN-BEDDED: MIN. GEOL MAP. USE: 4.
06013036 JURASSIC & CRETACEOUS, FRANCISCAN FM. "T1N,R5W" RED ROCK ISLAND. (138:268,254) CHERT, RED, FOS: MIN.

06027055 PRECAMBRIAN & CAMBRIAN, WOOD CANYON FM. S17,18,20,21,T24N,R7F. (585:35,8,118) QUARTZITE & CONGLOMERATE: MIN. INDEX MAP, MEAS SEC. SPECTRO ANAL ALSO GIVEN. *MISC: FEO = 0.20, MNO = 0.00.

06027059 PRECAMBRIAN, STIRLING QTZITE. S1,T19S,R45E. (585:35,100,101) QUARTZITE: MIN. INDEX MAP, MEAS SEC. SPECTRO ANAL ALSO GIVEN. *MISC: FEO = 0.28, MNO = 0.00.
06037018 MIOCENE, MONTEREY FM. "T4S,R14W" PALOS VERDES HILLS. (61:13,PL1) SHALE, CHERTY. INDEX MAP. *MISC: FEO=0.13, CL=0.81.

06037020 MIOCENE, MONTEREY FM. "T4S,R14W" PALOS VERDES HILLS. (61:13,PL1) SHALE, CHERTY. INDEX MAP. *MISC: FEO=0.20, CL=0.27.

06037024 "T4S,R14W" TORRENCE. (401:361) DIATOMITE. *MISC: TIO2 = 0.23, ORG MATTER CALC FROM REPT C.

06037029 MIOCENE, MONTEREY FM. "T1N,R15W" SANTA MONICA MTNS. (61:13,PL1) SHALE, CHERTY. INDEX MAP. *MISC: FEO = 0.51, TIO2 = 0.35: ORG MATTER CALC FROM ORG C.
06053107 S18,T24S,R9E. (339:36,35) DIATOMITE. *MISC: MNO, TR: NACL = 1.42.
06053108 MIOCENE, MONTERFY FM. "T24S,R11E" BRADLEY. (169:108,99,101) DIATOMITE, WHITE, COMPACT. USE: 7.

06053109 MIOCENE, MONTEREY SH. "T16S,R2W" CARMELO BAY AREA. (356: 25,24,PL1) SHALE, WHITE, CHALKY, FOS: OVER 1,000 FT THICK: MIN: B.D., 1.8-2.1. INDEX & GEOL MAP, GEOL SEC.
06071189 TERTIARY. S27,T8N,R5E. (573:241,238-240/ 411:248) BENTONITIC CLAY, WHITE. *MISC: CL = 0.31, LI2O = 1.12.

06071191 "T8N,R5E" HECTOR. (563:110/ 411:248) SAPONITE.
06071193 "T25,26S,R43,44F" SEARLES LAKE. (395:269) SEARLESITE CRUSTS, WHITE: B.D., 2.45. *MISC: FEO = 1.89: B2O3 = 16.26.

06071220 PLIOCENE, RED MOUNTAIN ANDESITE. T8N,R5E, HECTOR. (6:31,23-25,29) HECTORITE: MIN. INDEX MAP. *MISC: FEO = TR, MNO = TR, LI2O = 1.14, BAO = 0.00, RB2O = 0.00, F = 4.75, CL = 0.21: LESS O = F,CL, 2.04.

06071309 "T8N,R5E" HECTOR. (541:TABLE 2,P12) HECTORITE: MINIMUM VALUES OF 6 SMPLS, FOR MAXIMUM VALUES SEE SIO2 53.97. *MISC: FEO = 0.00, MNO = 0.00, LI2O = 1.15: I.L. = 14.85, LESS H2O+.
06073031 "T15S,R4W" LA JOLLA. (31:180) SAND. USE: 10.
06073032 "T11S,R5W" OCEANSIDE. (31:180) BEACH SAND. USE: 10.
06075011 JURASSIC & CRETACEOUS, FRANCISCAN FM. "T2S,R5W" SAN FRANCISCO. (29:63,11,55,62,PL1) CHERT, RED, THIN-BEDDED: MIN. INDEX & GEOL MAPS. USE: 7. *MISC: FEO <0.05, MNO = 0.40.
06079010 JURASSIC, KNOXVILLE FM. "T12N,R32W" STANLEY MTN. (29:63,64,PL1) CHERT, BROWN, THIN-BEDDED: MIN. INDEX & GEOL MAPS. *MISC: FEO = 1.8, MNO = 0.46.
06083015 MIOCENE, MONTEREY FM. "T8N,R34W" LOMPOC. (169:108,98) DIATOMITE. USE: 6.

06083016 MIOCENE, MONTEREY FM. "T8N,R34W" LOMPOC. (169:108,98) DIATOMITE. USE: 6.

06083017 MIOCENE, MONTEREY FM & (OR) MIOCENE, PLIOCENE, SISQUOC FM. "T8N,R34W" LOMPOC. (114:313,305) DIATOMACEOUS EARTH.

06083018 "T8N,R34W" LOMPOC. (569:2) DIATOMACEOUS EARTH.
06083019 "T8N,R34W" LOMPOC. (583:43) DIATOMITE.
06083020 MIOCENE, MONTEREY FM. "T8N,R34W" LOMPOC. (570:40/ 131:T6) DIATOMITE.

06083021 "T6N,R34W" WHITE HILLS. (534:193:) DIATOMACEOUS EARTH, WHITE.
06083024 MIOCENE, MONTEREY SH. "T8N,R35W" POINT SAL. (187:12,11,PL1/ 138:290,278) SHALE, WHITE, PORCELAIN-LIKE: B.D. 2.12. MIN. INDEX & GEOL MAP, GEOL SEC.
06083025 MIOCENE, MONTEREY FM. "T8N,R35W, POINT SAL" (187:12,10,PL1) FLINT: B.D., 2.54: MIN. INDEX & GEOL MAP, GEOL SEC.

06083029 "T8N,R34W" LOMPOC. (464:53) DIATOMACEOUS EARTH, BROWN: FIRING TESTS. USE: 11. *MISC: FEO = 1.12.

06087025 MIOCENE, MONTEREY SH. "T12S,R2E" CHITTENDEN. (305:64,63,PL 17,18) SHALE, WHITE TO BROWN. INDEX & GEOL MAP, GEOL SEC.

06089044 "T31,32N,R5W" REDDING. (172:131) SANDSTONE.
06089045 HOLOCENE. S33,T37N,R2E TO S10,T36N,R4E. (26:129,128,PL2) DIATOMITE, WHITE. INDEX MAP. USE: 11.

06089046 MIOCENE, MONTEREY FM. "T35N,R3E" BURNEY. (169:108,98,102) DIATOMITE, FRIABLE. USE: 4.

06089047 HOLOCENE. S25,T37N,R2E. (366:166,163-165) DIATOMITE, WHITE: 340 FT EXPOSED. INDEX MAPS.

06089050 HOLOCENE. S33,T37N,R2E TO S10,T36N,R4E. (366:166,163-165) DIATOMITE, WHITE: 340 FT EXPOSED. INDEX MAP.

TABLE 3. — *Analyses of samples from California and Hawaii containing uncombined silica and clay each less than 75 percent; uncombined silica and clay each greater than carbonate (Group B), common- and mixed-rock categories*

SAMPLE	06001007	06001008	06005111	06005120	06005121	06005122	06005123	06005125	06005131	06007010
SIO2	68.84	62.35	65.20	71.22	71.98	72.24	72.88	75.80	75.46	54.66
AL2O3	14.54	15.45	19.00 N	19.27	18.38	20.02 N	17.77	16.70	16.05	15.85
FE2O3	0.62	4.95	1.60	1.23	0.72	1.10	0.78	0.40	0.31	1.82
MGO	1.94	3.05	0.27	0.34	0.42	0.27	0.30	0.40	0.01	5.64
CAO	2.23	2.05	0.33	0.21	0.27	0.0 T	0.30	0.70	0.06	8.75
NA2O	3.88	0.0 B	0.60 E	0.0 B	0.67 E	0.0 E	0.97 E	0.90 E	0.97	3.46
K2O	2.68	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.12	0.47
H2O	1.60 F	4.45 F	5.00 F	0.0 B	6.15 F	6.22 F	6.13 F	4.90	5.57	2.48 F
H2O-	0.35	1.75	8.00	0.0 B	0.85	0.29	0.40	0.0 B	5.57	0.25
TIO2	0.25	0.0 B	0.0 B	0.0 B	0.56	0.0 B	0.47	0.20	1.07	0.67
P2O5	0.15	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.15
CO2	0.14	0.0 B	0.0 B	7.73 G	0.0 B	0.0 B	0.0 B	0.0 B	0.07	0.0 B
SO3	0.15	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.03	0.0 B
TOT CONS	99.93 *	95.30 *	100.00	100.00	100.00 *	100.14	100.00 *	100.00 *	99.73 *	100.02 *
CLASS	42, 44, 0	29, 59, 10	30, 69, 0	36, 63, 1	39, 59, 0	36, 64, 0	41, 57, 0	46, 52, 0	47, 56, 0	25, 50, 0

SAMPLE	06009048	06011001	06011002	06011003	06011004	06011005	06011006	06011007	06011008	06013011
SIO2	49.10	59.80	62.62	63.86	65.73	68.51	85.99	68.15	40.50	36.57
AL2O3	15.50	14.48	12.59	14.06	16.89	13.97	4.82	12.75	2.20	0.95
FE2O3	0.0 B	0.75	3.04	1.05	0.62	0.86	4.49	3.37	3.60	7.29
MGO	11.00	2.51	0.82	3.18	2.05	1.61	0.76	0.77	33.90	40.27
CAO	8.50	4.04	5.71	2.41	0.72	0.71	1.05 I	3.91	1.90	0.14
NA2O	3.60	4.32	4.22	3.76	5.62	5.69	0.0 B	4.55	0.04	0.31
K2O	1.50	0.68	0.67	1.04	0.35	0.72	0.0 B	0.73	0.10	0.0 T
H2O	0.0 B	3.37 F	3.43 F	2.58 F	2.01 F	2.32 F	0.0 B	2.73 F	11.90 F	12.43 F
H2O-	1.90	0.24	0.08	0.28	0.12	0.41	0.69	0.30	1.10	0.94
TIO2	0.0 B	1.88	1.42	0.99	0.82	0.75	0.0 B	0.33	0.09	0.0 B
P2O5	0.0 B	0.47	0.44	0.16	0.15	0.13	0.0 B	0.07	0.03	0.0 B
CO2	0.0 B	0.17	0.04	0.21	0.47	0.06	1.38 G	0.04	0.91	0.0 B
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.50 *	100.38 *	99.92 *	99.77 *	99.76 *	99.56 *	99.18 *	99.68 *	99.25 *	100.01 *
CLASS	22, 45, 0	33, 45, 0	37, 45, 0	38, 44, 0	35, 50, 1	43, 43, 0	72, 25, 0	42, 45, 0	33, 27, 2	27, 32, 0

SAMPLE	06013013	06013015	06013016	06013017	06013024	06013025	06013026	06013027	06013028	06013029
SIO2	40.17	44.54	45.43	45.64	56.52	56.66	56.84	61.68	68.22	69.98
AL2O3	12.76	12.63	12.55	15.42	17.65	17.64	11.37	19.39	11.31	11.69
FE2O3	2.10	2.50	0.0 B	3.40	1.58	0.49	1.46	5.29	8.75	6.23
MGO	15.42	5.55	13.41	4.62	3.97	3.50	3.10	1.69	2.39	1.29
CAO	4.24	14.65	12.39	8.11	1.09	1.67	7.62	0.72	0.99	0.38
NA2O	0.57	3.35	1.71	3.13	2.14	2.17	3.26	0.0 B	0.0 B	0.73
K2O	1.36	1.37	0.11	1.86	2.36	2.27	0.86	0.0 B	0.0 B	3.72
H2O	6.73 F	2.25 F	2.74 F	8.74	5.84 F	5.92 F	3.34 F	0.0 B	0.0 B	2.92 F
H2O-	9.19	1.43	2.41	0.0 B	3.41	3.01	1.45	0.0 B	1.39	1.03
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 J	0.0 J	0.0 B	0.0 B	0.0 B
P2O5	0.08	0.29	0.04	0.27	0.11	0.15	0.10	0.0 B	0.0 B	0.05
CO2	3.48	7.76	2.35	4.59	0.0 T	0.0 B	5.10	11.36 G	4.42 G	0.0 B
SO3	0.0 B	0.0 B	0.24	0.0 B	0.0 B	0.93	0.0 B	0.41	0.0 B	0.0 B
TOT CONS	99.82 *	99.84 *	100.09 *	99.96 *	100.24 *	99.82 *	99.67 *	100.54	97.60 *	99.59 *
CLASS	15, 56, 7	19, 44, 17	23, 40, 5	15, 59, 10	24, 61, 0	25, 59, 0	35, 39, 11	21, 74, 5	38, 56, 0	42, 50, 1

SAMPLE	06013030	06013031	06013032	06013037	06019007	06019008	06019009	06019012	06023004	06025009
SIO2	70.61	72.50	73.71	63.47	72.43	73.18	83.30	47.40	70.00	51.50
AL2O3	11.99	15.30 C	10.40	10.14	6.53	15.46	4.94	0.55	18.50	15.60
FE2O3	1.59	0.0 B	3.89	14.60	8.49	1.09	3.68	4.30	0.60	2.00
MGO	2.82	0.0 T	1.62	2.41	1.58	0.36	0.27	28.40	0.50	3.20
CAO	2.41	0.0 T	0.96	0.74	0.49	1.37	0.68	3.40	3.40	6.00
NA2O	2.86	2.68	3.48	0.0 B	2.98 E	3.66 E	1.83 E	0.05	3.40	0.87
K2O	1.64	2.28	0.99	0.0 B	0.0 B	0.0 B	0.0 B	0.05	2.40	2.80
H2O	2.81 F	0.0 B	2.60 F	0.0 B	0.0 B	0.0 B	0.0 B	8.40 F	0.0 B	2.70 F
H2O-	0.20	0.0 B	1.06	1.44	0.0 B	0.0 B	0.0 B	0.97	0.0 B	2.70
TIO2	0.53	0.0 B	0.0 B	0.0 B	0.04	0.0 B	0.08	0.0	0.0 B	0.62
P2O5	0.07	0.0 B	0.0	0.0 B	0.0 B	0.0 B	0.0 B	0.03	0.0 B	0.16
CO2	0.03	4.30 G	0.0	3.91 G	7.46 G	4.17 G	5.22 G	4.20	0.0 B	7.10
SO3	0.0 B	0.0 T	0.0 B	0.0 B	0.0 B	0.71	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.83 *	97.06	100.76 *	96.79 *	100.00 *	100.00 *	100.00 *	99.22 *	98.80	98.09 *
CLASS	48, 40, 0	47, 45, 0	51, 41, 0	29, 64, 0	51, 41, 4	45, 49, 0	70, 26, 2	42, 20, 8	37, 54, 0	22, 53, 15

SAMPLE	06025010	06025011	06025012	06025013	06025014	06025015	06025016	06025017
SIO2	51.60	53.40	53.50	56.20	55.00	57.10	57.30	57.50
AL2O3	14.10	13.90	14.10	12.10	13.70	16.20	15.20	15.60
FE2O3	1.80	2.00	3.90	2.70	1.50	1.60	2.00	2.00
MGO	3.20	2.90	3.62	3.30	3.10	2.60	3.20	3.20
CAO	8.70	7.30	6.80	7.70	8.50	3.30	2.60	6.60
NA2O	1.10	1.00	3.98 E	1.30	1.20	1.50	2.00	2.50
K2O	3.00	2.80	0.0 B	2.50	2.90	6.90	6.50	4.70
H2O	3.70 F	3.60 F	0.0 B	3.10 F	3.70 F	3.10 F	3.10 F	2.20 F
H2O-	1.60	1.70	0.0 B	3.00	0.68	0.22	0.68	0.24
TIO2	0.61	0.58	0.0 B	0.50	0.61	0.72	0.72	0.75
P2O5	0.18	0.17	0.0 B	0.16	0.18	0.20	0.18	0.19
CO2	7.50	7.60	14.16 G	6.10	5.90	0.62	0.56	1.70
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.91 *	99.32 *	100.06	99.72 *	99.71 *	99.99 *	99.47 *	99.90 *
CLASS	25, 48, 16	27, 48, 16	24, 52, 20	32, 45, 13	29, 45, 13	27, 52, 1	28, 50, 1	28, 50, 4

A INSOL.
B BLANK--NO VALUE REPT.
C AL2O3 + FE2O3.
D MGO + CAO.
E NA2O + K2O.
F H2O+.
G IGNITION LOSS (MAY INCLUDE WATER).
H REPORTED AS S.
I CALCULATED BY COMPILERS.
J ORGANIC MATTER.
K TOTAL IRON.
M BY DIFFERENCE.
N INCLUDES TIO2.
O GREATER THAN.
P LESS THAN.
T TRACE.
* ADDITIONAL INFORMATION IN DESCRIPTIVE NOTES.

TABLE 3. — *Analyses of samples from California and Hawaii containing uncombined silica and clay each less than 75 percent; uncombined silica and clay each greater than carbonate (Group B), common- and mixed-rock categories*—Continued

```
06001007  JURASSIC & CRETACEOUS, FRANCISCAN FM. "T1S,R3W" PIEDMONT.  (137:22,18-21)  SANDSTONE: MIN: B.D. = 2.720.  *MISC:
          FEO = 2.47,  BAO = 0.04, ZRO2 = 0.05.
06001008  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T1S,R4W" OAKLAND.  (138:269,242,266)  SHALE, GREEN: FINE-GR: MIN.  *MISC:
          FEO = 0.70, MNO = 0.55.
06005111  EOCENE, IONE FM.  "T6N,R9E" IONE.  (3:378,355,377)  SAND, FINE-GR: MIN.  INDEX & GEOL MAPS.  USE: 3.

06005120  EOCENE.  S20,30,31,T7N,R9E.  (43:38/ 147:354,261,PL1,6)  SAND, WHITE, FINE-GR: MIN: AVG THICKNESS 16 FT: PHYS PROP,
          FIRING TESTS.  INDEX MAPS.  USE: 3,5.
06005121  EOCENE, IONE FM.  "T6N,R9E" IONE.  (3:378,355,377)  SAND, FINE-GR: MIN.  INDEX & GEOL MAPS.  USE: 3.
          *MISC: NA2O + K2O, BY DIF.
06005122  EOCENE, IONE FM.  "T6N,R9E" IONE.  (3:378,355,377)  SAND, FINE-GR: MIN.  INDEX & GEOL MAPS.  USE: 3.

06005123  EOCENE, IONE FM.  "T6N,R9E" IONE.  (3:378,355,377)  SAND, FINE-GR: MIN.  INDEX & GEOL MAPS.  USE: 3.
          *MISC: NA2O + K2O, BY DIF.
06005125  EOCENE, IONE FM.  "T6N,R9E" IONE.  (3:378,355,377)  SAND, FINE-GR: MIN.  INDEX & GEOL MAPS.  USE: 3.
          *MISC: NA2O + K2O, BY DIF.
06005131  EOCENE, IONE FM.  "T6N,R9E" NEAR IONE.  (315:11,12)  CLAY: PHYS PROP.  *MISC: FEO = 0.00, V2O5 = 0.01: H2O REPT AS I.L.

06007010  HOLOCENE.  LASSEN PEAK AREA.  (111:205,204)  DIABASE TUFF: MIN.  *MISC: FEO = 5.12, MNO = 0.18, LI2O = 0.00,
          FES2 = 0.09, NIO = TR, BAO = 0.04, SRO = TR.
06009048  PALEOZOIC, CALAVERAS FM.  "T3N,R13E" CARSON HILL.  (82:14)  AUGITE CRYSTAL TUFF.  *MISC: FEO = 8.40.

06011001  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T16N,R4W" GOAT MTN LOOKOUT.  (186:33,31,PL1,2)  METASEDIMENT: MIN.  INDEX &
          GEOL MAPS, GEOL SEC.  *MISC: FEO = 7.52, MNO = 0.15.
06011002  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T16N,R4W" GOAT MTN LOOKOUT.  (186:33,31,PL1,2)  METASEDIMENT: MIN.  INDEX & GEOL
          MAPS, GEOL SEC.  *MISC: FEO = 4.71, MNO = 0.13.
06011003  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T16N,R4W" GOAT MTN LOOKOUT.  (186:23,20,21,PL1,2)  METAGRAYWACKE OR
          METASILTSTONE: MIN.  INDEX & GEOL MAP, GEOL SEC.  *MISC: FEO = 6.09, MNO = 0.10.

06011004  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T16N,R4W" GOAT MTN LOOKOUT.  (186:23,20,21,PL1,2)  METAGRAYWACKE OR
          METASILTSTONE: MIN.  INDEX & GEOL MAP, GEOL SEC.  *MISC: FEO = 4.10, MNO = 0.11.

06011005  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T16N,R4W" GOAT MTN LOOKOUT.  (186:23,20,21,PL1,2)  METAGRAYWACKE OR
          METASILTSTONE: MIN.  INDEX & GEOL MAP, GEOL SEC.  *MISC: FEO = 3.66, MNO = 0.16.

06011006  S20,T17N,R4W.  (145:361/ 21:122,124)  SANDSTONE, GRAY & BUFF, FINE-GR: 4-6 FT THICK: B.D., 2.558: PHYS PROP.  USE: 15.
          *MISC: MGO INCL ALKALIES.
06011007  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T16N,R4W" GOAT MTN LOOKOUT.  (186:33,31,PL1,2)  METASEDIMENT: MIN.  INDEX &
          GEOL MAPS, GEOL SEC.  *MISC: FEO = 1.90, MNO = 0.08.
06011008  JURASSIC, KNOXVILLE FM.  "T13N,R4,5,W" THOMPSON CANYON.  (372:925,922)  DETRITAL SERPENTINITE.  *MISC:FEO=2.9. MNO=0.08.

06013011  "T1N,R1E" MOUNT DIABLO.  (99:124)  BASTITE.  *MISC: FEO = 0.37: MNO = 0.10: CR2O3 = 0.33: NIO = 0.31. CA/MG = 0.003.

06013013  CRETACEOUS.  "T1N,R1E" MOUNT DIABLO.  (508:408,403,407,PL15)  SHALE, FRIABLE.  GEOL MAP, GEOL SEC.  *MISC: FEO = 3.56:
          MNO = 0.16: NIO, TR.
06013015  MIOCENE.  "T1N,R1E" MOUNT DIABLO.  (508:412,400,411,PL15)  SANDSTONE, FRIABLE.  GEOL MAP & SEC. *MISC:FEO=3.08: MNO=.44.

06013016  CRETACEOUS.  "T1N,R1E" MOUNT DIABLO.  (508:404,400,PL15)  SHALEY GABBRO, GREEN, FRIABLE.  GEOL MAP, GEOL SEC.  *MISC:
          FEO = 6.50: MNO = 0.21: ORG, TR.
06013017  JURASSIC, KNOXVILLE FM.  "T1N,R1E" MOUNT DIABLO.  (508:409,400,410,PL15)  SHALE, BROWN, FRIABLE: MIN.  GEOL MAP, GEOL
          SEC. *MISC: FEO = 3.73, MNO = 0.33, CR2O3 = 0.12.
06013024  CRETACEOUS.  "T1N,R1E" MOUNT DIABLO.  (508:408,400,403,PL15)  SHALE, GRAY, FRIABLE.  GEOL MAP, GEOL SEC.  *MISC:
          FEO = 5.25: MNO = 0.32: NIO = TR.
06013025  CRETACEOUS.  "T1N,R1E" MOUNT DIABLO.  (508: 404,400,403,PL15)  SHALE, BLACK.  GEOL MAP, GEOL SEC.  *MISC: FEO = 5.22:
          MNO =0.19: ORGANIC MATTER = TR.
06013026  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T1N,R1E" BAGLEY CREEK.  (508:412,400,PL15/ 29:33,11)  SANDSTONE, GREEN.  GEOL
          MAP, GEOL SEC.  *MISC: FEO = 4.95: MNO =0.22: ORGANIC MATTER = TR.
06013027  "T1N,R1W" COWELL.  (173:122)  CLAY.  USE: 4.
06013028  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T1N,R5W" POINT RICHMOND.  (138:269,265,268)  SHALE, RED: MIN.  *MISC: MNO=0.13.

06013029  JURASSIC & CRETACEOUS.  "T1N,R1E" MOUNT DIABLO.  (508:411,400,403,410,PL15/ 29:64,11,PL1)  SHALE, RED, FRIABLE: MIN.
          INDEX & GEOL MAPS, GEOL SEC.  *MISC: FEO = 1.08: MNO = 0.49.
06013030  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T1S,R4W" BERKELEY HILLS.  (578:493,495/ 29:108,11,92)  METAGRAYWACKE: MIN.
          INDEX & GEOL MAPS.  *MISC: FEO = 2.22, MNO = 0.05.
06013031  "T1S,R13W" FAIRMOUNT.  (345:328)  PUMICE: PHYS PROP.  USE: 4.
06013032  CRETACEOUS, CHICO FM.  "T1N,R1E" MOUNT DIABLO.  (508:412,400,411,PL15)  SANDSTONE, BROWN, FINE-GR.  GEOL MAP, GEOL SEC.
          *MISC: FEO = 1.88, MNO = 0.17, ORG MATTER = TR.
06013037  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T1N,R5W" RED ROCK ISLAND.  (138:269,257,264,265)  SHALE, RED, FINE-GR: MIN.
          *MISC: MNO = 0.08.
06019007  S8,T15S,R12E.  (345:310,309)  DIATOMITE: TONNAGE.  USE: 4,11.  *MISC:  NA2O + K2O, BY DIF: MN3O4 = 0.00.

06019008  T11S,R21E, FRIANT.  (345:324,323)  VOLCANIC ASH, CREAM-COLORED. USE: 1,4.  *MISC: NA2O + K2O, REPT AS ALKALIES & UNDETD.

06019009  S8,T15S,R12E.  (345:310,309)  DIATOMITE: TONNAGE.  USE: 4,11.  *MISC: MN3O4 = 0.00: ALKALIES BY DIF.

06019012  MIOCENE, TEMBLOR FM: BIG BLUE SERPENTINOUS MBR.  CANTUA CREEK.  (372:925,922)  DETRITAL SERPENTINITE.  *MISC: FEO = 1.4,
          MNO = 0.07.
06023004  MIOCENE & PLEISTOCENE, WILDCAT SER.  "T2N,R1W" ELK RIVER.  (340:324/ 87:33,9,PL1)  VOLCANIC ASH, WHITE, FINE:
          2 FT THICK.  INDEX MAPS.
06025009  S23,T11S,R13E.  (394:170,160,164)  SANDSTONE, SILTSTONE: INTERBEDDED: WELL, 5,232 FT: SMPL AT 1,310 FT.  INDEX MAP.
          *MISC: FEO = 2.8, MNO = 0.04.
06025010  S23,T11S,R13E.  (394:170,160,164)  SANDSTONE, SILTSTONE: INTERBEDDED: WELL, 5,232 FT: SMPL AT 1,680 FT.  INDEX MAP.
          *MISC: FEO = 2.8, MNO = 0.02.
06025011  S20,T14S,R15E.  (394:174,159,170)  SILTSTONE & SANDSTONE, FINE-GR: WELL, 13,443 FT: SMPL AT 7,800 FT.  INDEX MAP.
          *MISC: FEO = 2.3, MNO = 0.07.
06025012  TERTIARY.  S6-8,T16S,R9E.  (447:132,PL1)  CLAY.  INDEX MAP.
06025013  S23,T11S,R13E.  (394:170,160,164)  SANDSTONE, SILTSTONE: INTERBEDDED: WELL, 5,232 FT: SMPL AT 460 FT.  INDEX MAP.
          *MISC: FEO = 1.0, MNO = 0.06.
06025014  S23,T11S,R13E.  (394:170,160,164)  SANDSTONE, SILTSTONE: INTERBEDDED: WELL, 5,232 FT: SMPL AT 2,220 FT.  INDEX MAP.
          *MISC: FEO = 2.7, MNO = 0.04.
06025015  S23,T11S,R13E.  (394:170,160,164)  SANDSTONE, SILTSTONE: INTERBEDDED: WELL, 5,232 FT: SMPL AT 4,090 FT.  INDEX MAP.
          *MISC: FEO = 5.8, MNO = 0.13.
06025016  S23,T11S,R13E.  (394:170,160,164)  SANDSTONE, SILTSTONE: INTERBEDDED: WELL, 5,232 FT: SMPL AT 4,485 FT.  INDEX MAP.
          *MISC: FEO = 5.3, MNO = 0.13.
06025017  S23,T11S,R13E.  (394:170,160,164)  SANDSTONE, SILTSTONE: INTERBEDDED: WELL, 5,232 FT: SMPL AT 3,520 FT.  INDEX MAP.
          *MISC: FEO = 2.6, MNO = 0.12.
```

TABLE 3. — *Analyses of samples from California and Hawaii containing uncombined silica and clay each less than 75 percent; uncombined silica and clay each greater than carbonate (Group B), common- and mixed-rock categories*—Continued

SAMPLE	06025018	06025019	06025020	06025022	06025023	06025025	06025026	06025027	06025028	06025029
SIO2	57.90	58.70	59.20	75.06	86.00	56.00	56.60	55.80	55.70	54.50
AL2O3	13.60	15.00	11.90	19.23	8.39	12.70	13.80	12.70	13.70	13.60
FE2O3	1.30	4.40	2.10	0.66	1.18	3.50	2.40	2.80	2.90	1.80
MGO	2.70	2.80	2.50	0.11	0.0 T	2.80	3.10	2.70	2.70	3.40
CAO	7.10	6.00	6.50	3.45	3.06	6.80	6.00	6.40	6.60	7.40
NA2O	1.80	1.30	1.10	0.09 E	0.11 E	1.10	1.10	0.85	1.10	0.58
K2O	3.60	4.00	2.60	0.0 B	0.0 B	2.60	2.70	2.40	2.30	3.10
H2O	2.90 F	2.40 F	3.00 F	0.0 B	0.0 B	3.60 F	3.40 F	3.40 F	4.00 F	3.30 F
H2O-	0.53	0.18	2.20	0.0 B	0.0 B	3.70	2.10	2.00	2.80	1.10
TIO2	0.61	0.70	0.52	0.0 B	0.0 B	0.58	0.58	0.55	0.56	0.57
P2O5	0.17	0.21	0.15	0.0 B	0.0 B	0.18	0.17	0.16	0.16	0.19
CO2	4.40	0.06	6.10	1.27 G	1.24 G	5.60	6.00	6.30	5.90	7.70
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.49 *	99.85 *	99.64 *	99.87	99.95	99.81 *	99.80 *	97.64 *	99.90 *	100.01 *
CLASS	32, 44, 9	27, 53, 0	36, 43, 13	40, 56, 0	70, 27, 0	30, 50, 12	29, 49, 13	30, 47, 13	28, 51, 13	28, 46, 16

SAMPLE	06025030	06025034	06027015	06027016	06027029	06027031	06027032	06027033	06027034	06027035
SIO2	57.70	59.80	45.62	45.83	50.56	53.24	54.58	54.92	55.81	58.63
AL2O3	12.50	12.40	8.43	8.05	15.62	10.84	16.44	11.25	10.07	12.76
FE2O3	3.30	2.80	0.57	2.77	0.24	2.59	2.59	2.77	3.43	5.92
MGO	2.30	2.60	21.89	1.23	4.56	5.82	4.90	4.91	2.22	3.39
CAO	6.30	5.80	3.14	4.88	1.48	9.18	0.72	8.76	9.14	1.21
NA2O	1.00	1.20	0.72	14.21	0.0 B	2.06	3.02	2.10	3.09	0.91
K2O	2.10	2.60	0.67	2.86	0.60	2.64	0.81	2.77	2.98	1.65
H2O	4.00 F	3.20 F	5.27 F	1.18 F	19.12	2.73 F	5.49 F	2.40 F	2.50 F	5.74 F
H2O-	3.30	2.90	11.93	4.02	0.0 B	1.41	11.10	2.05	0.65	9.33
TIO2	0.54	0.53	0.19	0.30	0.0 B	0.25	0.18	0.30	0.80	0.47
P2O5	0.15	0.18	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.27	0.0 B
CO2	5.30	5.10	3.30	6.44	0.0 B	8.75	0.0 B	7.24	7.22	0.0 B
SO3	0.0 B	0.0 B	0.0 B	1.85	0.0 B	0.08	0.0 B	0.0 T	0.45	0.0 B
TOT CONS	99.37 *	100.06 *	101.73 *	99.85 *	99.35 *	100.51 *	99.94 *	100.49 *	100.21 *	100.04 *
CLASS	32, 49, 11	35, 46, 11	30, 42, 6	28, 33, 11	23, 63, 1	31, 40, 18	23, 68, 0	32, 41, 15	34, 38, 16	29, 63, 0

SAMPLE	06027036	06027037	06027038	06027040	06027042	06027044	06027046	06027047	06027049	06027050
SIO2	60.30	63.80	68.43	59.80	66.40	64.60	59.80	59.10	62.90	76.20
AL2O3	16.26	17.90	12.94 C	16.50	18.80	18.10	19.50	15.80	14.40	11.50
FE2O3	2.80	1.20	0.0 B	2.20	1.30	2.10	3.10	5.00	4.10	2.10
MGO	3.98	5.40	0.22	2.40	1.40	1.90	2.80	3.60	2.90	0.16
CAO	5.74	3.10	1.17	3.50	0.40	0.25	0.55	0.38	0.41	0.82
NA2O	1.95	0.0 T	3.50	1.20	0.05	1.30	0.71	1.10	3.50	3.30
K2O	0.06	0.0 T	2.15	4.10	4.30	4.20	5.20	4.20	3.20	3.90
H2O	0.0 B	0.0 B	10.01	2.90 F	3.20 F	3.00 F	3.30 F	3.00 F	1.70 F	0.39 F
H2O-	0.0 B	0.0 B	0.0 B	0.14	0.05	0.09	0.21	0.37	0.14	0.08
TIO2	0.60	0.0 B	0.0 B	0.73	1.10	0.88	0.92	1.50	2.00	0.70
P2O5	0.0	0.0 B	0.0 B	0.09	0.06	0.09	0.15	0.20	0.31	0.36
CO2	7.82 G	7.30 G	0.21	2.50	0.12	0.07	0.17	0.12	0.05 P	0.05 P
SO3	0.0	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.51 *	95.70	99.10 *	99.39 *	99.88 *	99.18 *	100.04 *	99.40 *	100.06 *	99.87 *
CLASS	28, 56, 6	31, 57, 5	47, 45, 0	28, 53, 5	32, 58, 0	30, 58, 0	22, 64, 0	26, 58, 0	33, 50, 0	53, 37, 0

SAMPLE	06027051	06027064	06027066	06027069	06027071	06027072	06027074	06027075	06027076	06029080
SIO2	57.30	61.80	73.30	65.90	77.60	68.60	63.40	63.10	63.41	60.40
AL2O3	14.80	17.00	14.00	21.30	12.70	18.60	19.40	17.90	18.80	13.10
FE2O3	5.10	2.30	4.90	0.48	1.10	1.10	3.90	3.30	2.68	0.95
MGO	2.40	3.30	0.40	0.90	0.95	1.20	1.70	2.40	1.48	4.00
CAO	1.50	0.55	0.25	0.35	0.20	0.03	0.15	0.22	3.62	5.60
NA2O	2.20	0.75	0.10	0.62	0.10	0.07	0.22	0.75	5.48 E	0.40
K2O	2.80	5.00	2.70	4.80	4.10	5.50	6.00	4.60	0.0 B	0.10
H2O	3.40 F	3.40 F	1.90 F	3.30 F	1.30 F	2.60 F	2.90 F	3.90 F	0.0 B	0.0 B
H2O-	0.13	0.45	0.04	0.38	0.04	0.06	0.11	0.13	0.0 B	0.0 B
TIO2	2.20	1.30	0.88	0.91	0.73	1.00	1.00	0.95	0.0 B	0.03
P2O5	0.31	0.15	0.12	0.02	0.05	0.13	0.09	0.18	0.0 B	0.0 B
CO2	0.14	0.07	0.16	0.06	0.05 P	0.05 P	0.05 P	0.05 P	4.53 G	0.0 B
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.67	0.0 B
TOT CONS	99.00 *	99.87 *	99.49 *	99.24 *	99.08 *	99.22 *	99.36 *	99.98 *	100.67	85.08 *
CLASS	25, 55, 0	29, 56, 0	43, 51, 0	28, 64, 0	54, 39, 0	34, 56, 0	25, 65, 0	28, 61, 0	27, 62, 0	36, 42, 18

SAMPLE	06029081	06029082	06029083	06029084	06029085	06029086	06029087	06029090	06029091	06029092
SIO2	61.50	63.76	64.23	65.44	67.92	71.89	75.56	66.52	67.50	53.88
AL2O3	14.37	12.28	17.85	14.16	14.68	14.69	14.82	23.34	14.40	11.66
FE2O3	1.36	2.52	4.25	2.89	2.34	0.0 B	0.09	0.80	0.96	4.60 K
MGO	4.26	2.35	0.0 T	2.05	5.24	0.33	0.20	0.34	0.64	8.61
CAO	0.15	2.16	4.01	1.42	2.08	0.90	0.22	1.20	1.24	1.56
NA2O	0.62	1.33	1.98	2.30	0.11	4.86	0.29	3.38	0.77	0.15
K2O	0.42	1.40	1.53	1.35	0.07	3.18	6.81	1.12	5.41	0.39
H2O	6.80 F	4.38 F	0.0 B	3.58 F	0.0 B	4.86	0.0 B	0.0 B	0.0 B	9.98 F
H2O-	10.11	7.16	0.0 B	5.68	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	8.21
TIO2	0.08	0.36	0.0 B	0.40	0.18	0.0 B	0.0 B	0.0 B	0.0 B	0.44
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.02	0.0 B	0.0 B	0.0 B	0.0 B	0.16
CO2	0.19	0.0 B	5.33 G	0.0 B	7.18 G	0.11	2.04 G	3.22 G	9.00 G	0.0
SO3	0.0 B	2.34	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0
TOT CONS	99.86 *	100.04	99.18	99.27	100.00 *	100.88 *	100.03	99.92	99.92	99.82 *
CLASS	35, 60, 0	39, 51, 0	28, 64, 0	37, 55, 1	39, 50, 6	46, 46, 0	49, 43, 0	24, 70, 0	41, 49, 4	28, 60, 0

A INSOL.
B BLANK--NO VALUE REPT.
C AL2O3 + FE2O3.
D MGO + CAO.
E NA2O + K2O.
F H2O+.
G IGNITION LOSS (MAY INCLUDE WATER).
H REPORTED AS S.
I CALCULATED BY COMPILERS.
J ORGANIC MATTER.
K TOTAL IRON.
M BY DIFFERENCE.
N INCLUDES TIO2.
O GREATER THAN.
P LESS THAN.
T TRACE.
* ADDITIONAL INFORMATION IN DESCRIPTIVE NOTES.

TABLE 3. — *Analyses of samples from California and Hawaii containing uncombined silica and clay each less than 75 percent; uncombined silica and clay each greater than carbonate (Group B), common- and mixed-rock categories*—Continued

```
06025018  S23,T11S,R13E.  (394:170,160,164)  SANDSTONE, SILTSTONE: INTERBEDDED: WELL, 5,232 FT: SMPL AT 2,840 FT.  INDEX MAP.
          *MISC: FEO = 2.8, MNO = 0.08.
06025019  S23,T11S,R13E.  (394:170,160,164)  SANDSTONE, SILTSTONE: INTERBEDDED: WELL, 5,232 FT: SMPL AT 5,210 FT.  INDEX MAP.
          *MISC: FEO = 4.0, MNO = 0.10.
06025020  S23,T11S,R13E.  (394:170,160,164)  SANDSTONE, SILTSTONE: INTERBEDDED: WELL, 5,232 FT: SMPL AT 890 FT.  INDEX MAP.
          *MISC: FEO = 1.7, MNO = 0.07.
06025022  S10,15,T14S,R9E.  (497:281,280)  SAND.  USE: 10.
06025023  S10,15,T14S,R9E.  (446:438/ 497:281,280)  SILICA SAND.  SMPL OF PLUS 50-MESH & 50 PER CENT ORIGINAL ROCK.

06025025  HOLOCENE.  "T13,14S,R19,20E"  (394:170,159,174)  SEDIMENTS: AVG OF 6 ANAL.  INDEX MAP.  *MISC: FEO = 0.6: MNO = .05.

06025026  S20,T14S,R15E.  (394:174,159,170)  SILTSTONE & SANDSTONE, FINE-GR: WELL, 13,443 FT: SMPL AT 3,580 FT.  INDEX MAP.
          *MISC: FEO = 1.8, MNO = 0.05.
06025027  S20,T14S,R15E.  (394:174,159,170)  SILTSTONE & SANDSTONE, FINE-GR: WELL, 13,443 FT: SMPL AT 6,600 FT.  INDEX MAP.
          *MISC: FEO = 1.5, MNO = 0.08.
06025028  S20,T14S,R15E.  (394:174,159,170)  SILTSTONE & SANDSTONE, FINE-GR: WELL, 13,443 FT: SMPL AT 4,680 FT.  INDEX MAP.
          *MISC: FEO = 1.4, MNO = 0.08.
06025029  S20,T14S,R15E.  (394:174,159,170)  SILTSTONE & SANDSTONE, FINE-GR: WELL, 13,443 FT: SMPL AT 9,420 FT.  INDEX MAP.
          *MISC: FEO = 2.7, MNO = 0.07.
06025030  S20,T14S,R15E.  (394:174,159,170)  SILTSTONE & SANDSTONE, FINE-GR: WELL, 13,443 FT: SMPL AT 2,040 FT.  INDEX MAP.
          *MISC: FEO = 0.82 MNO = 0.06.
06025034  "T12S,R12E" SALTON TROUGH.  (393:393,385)  DETRITUS: MIN: MEAN OF 20 SMPL.  INDEX MAP.  SPECTRO ANAL ALSO GIVEN.
          *MISC: FEO = 0.91, MNO = 0.04.
06027015  "T25N,R5E" DEATH VALLEY JUNCTION.  (346:302)  SAPONITE.  *MISC: MNO = TR.

06027016  "T17S,R38E" KEELER.  (84:97,98)  CLAY, GRAY, FRIABLE: MIN. *MISC: FEO=0.43, MNO=0.12, CL=7.33. ANAL OF SOLUBLE PART ALSO
          GIVEN.
06027029  "T20,21N,R4,5E" ARMAGOSA RIVER.  (498:514,513)  BENTONITE, WHITE, FRIABLE: B.D., 2.45.  USE: 6.  *MISC: NACL = 7.17.

06027031  "T17S,R37E" KEELER.  (565:89/ 84:97)  CLAY, SANDY: 12-18 IN THICK.  *MISC: FEO = 0.77, MNO = 0.10, CL = 0.05.

06027032  "T21N,R7E" TECOPA.  (411:238)  MONTMORILLONITE.  *MISC: FEO = 0.11.
06027033  "T17S,R37E" KEELER.  (565:89/ 84:97)  CLAY, BLUE.  *MISC: FEO = 0.94: MNO = 0.08: CL, TR.

06027034  "T17S,R37E" OWENS LAKE.  (84:93)  VOLCANIC ASH, GRAY.  *MISC: FEO = 0.67, MNO = 0.23: CL = 0.88, O = 0.20.

06027035  "T19S,R37E" OLANCHA.  (346:302,315,319)  FULLERS EARTH: B.D., 2.52.  USE: 6.  *MISC: MNO = 0.03.

06027036  HOLOCENE.  S13,23,T21S,R38E.  (87:63,62,PL1,3)  PUMICE, GRAY-WHITE: 30 FT THICK: MIN.  INDEX & GEOL MAPS, GEOL SEC.
          USE: 4.  *MISC: SO3 REPT AS SO2.
06027037  "S32,33,T22N,R7E"  (140:10,5)  HALLOYSITE: 1-10 FT THICK.  USE: 6.
06027038  PLEISTOCENE.  S32,33,T22N,R7E.  (498:521)  VOLCANIC ASH: 4-6 FT THICK.  USE: 1,6.  *MISC: NACL = 0.47.

06027040  CAMBRIAN, HARKLESS FM.  S30,T13S,R46E.  (585:22,8)  PELITE: MIN.  INDEX MAP.  SPECTRO ANAL ALSO GIVEN.  *MISC:
          FEO = 3.3, MNO = 0.03.
06027042  CAMBRIAN, HARKLESS FM.  S14,24,T7S,R38E.  (585:22,8,77)  PELITE: MIN.  INDEX MAP, MEAS SEC.  SPECTRO ANAL ALSO GIVEN.
          *MISC: FEO = 2.7, MNO = 0.00.
06027044  CAMBRIAN, HARKLESS FM.  S1,12,13,24,T10S,R35E.  (585:23,8)  PELITE: MIN.  INDEX MAP.  SPECTRO ANAL ALSO GIVEN.  *MISC:
          FEO = 2.6, MNO = 0.00.
06027046  CAMBRIAN, POLETA FM.  S15,T7S,R38E.  (585:23,8,74)  PELITE: MIN.  INDEX MAP, MEAS SEC.  SPECTRO ANAL ALSO GIVEN.  *MISC:
          FEO = 3.6, MNO = 0.03.
06027047  PRECAMBRIAN, DEEP SPRING FM.  S14,24,T7S,R38E.  (585:23,8)  PELITE: MIN.  INDEX MAP.  SPECTRO ANAL ALSO GIVEN.  *MISC:
          FEO = 5.0, MNO = 0.03.
06027049  PRECAMBRIAN & CAMBRIAN, CAMPITO FM, ANDREWS MOUNTAIN MBR.  S14,24,T7S,R38E.  (585:34,8)  SANDSTONE: MIN.  INDEX MAP.
          SPECTRO ANAL ALSO GIVEN.  *MISC: FEO = 4.3, MNO = 0.15.
06027050  PRECAMBRIAN & CAMBRIAN, CAMPITO FM, ANDREWS MOUNTAIN MBR.  S14,24,T7S,R38E.  (585:34,8)  SANDSTONE: MIN.  INDEX MAP.
          SPECTRO ANAL ALSO GIVEN.  *MISC: FEO = 0.28, MNO = 0.03.
06027051  PRECAMBRIAN & CAMBRIAN, CAMPITO FM, ANDREWS MOUNTAIN MBR. LAT 37 DEG. 19', LONG 117 DEG. 43'.  (585:34,8)  SANDSTONE:
          MIN. INDEX MAP.  SPECTRO ANAL ALSO GIVEN.  *MISC: FEO = 6.6, MNO = 0.12.

06027064  PRECAMBRIAN & CAMBRIAN, WOOD CANYON FM.  S9,10,T20N,R8E.  (585:24,8,127)  PELITE: MIN.  INDEX MAP, MEAS SEC.  SPECTRO
          ANAL ALSO GIVEN.  *MISC: FEO = 3.8, MNO = 0.00.
06027066  PRECAMBRIAN, STIRLING QTZITE.  S11,T27N,R2E.  (585:25,8)  PELITE: MIN.  INDEX MAP.  SPECTRO ANAL ALSO GIVEN.  *MISC:
          FEO = 0.74, MNO = 0.00.
06027069  PRECAMBRIAN, JOHNNIE FM.  S9-11,T20N,R8E.  (585:25,8,127)  PELITE: MIN.  INDEX MAP, MEAS SEC.  SPECTRO ANAL ALSO GIVEN.
          *MISC: FEO = 0.22, MNO = 0.00.
06027071  PRECAMBRIAN, JOHNNIE FM.  S20,T21S,R46E.  (585:25,8)  PELITE: MIN.  INDEX MAP.  SPECTRO ANAL ALSO GIVEN.  *MISC:
          FEO = 0.16, MNO = 0.00.
06027072  PRECAMBRIAN, JOHNNIE FM.  LAT 36 DEG. 03' LONG 117 DEG. 04'.  (585:25,8)  PELITE: MIN.  INDEX MAP.  SPECTRO ANAL ALSO
          GIVEN.  *MISC: FEO = 0.28, MNO = 0.00.
06027074  PRECAMBRIAN, JOHNNIE FM.  LAT 36 DEG. 03' LONG 117 DEG. 04'.  (585:25,8)  PELITE: MIN.  INDEX MAP.  SPECTRO ANAL ALSO
          GIVEN.  *MISC: FEO = 0.44, MNO = 0.00.
06027075  PRECAMBRIAN, JOHNNIE FM.  LAT 36 DEG. 01' LONG 117 DEG. 04'.  (585:25,8)  PELITE: MIN.  INDEX MAP.  SPECTRO ANAL ALSO
          GIVEN.  *MISC: FEO = 2.5, MNO = 0.00.
06027076  "T22S,R37E" COSO DISTRICT.  (327:308)  PUMICE.
06029080  MIOCENE & PLIOCENE, TROPICO GROUP.  S26,T11N,R8W.  (213:353,328,350,352,PL51,52)  TUFF, WHITE.  INDEX & GEOL MAPS, GEOL
          SEC.  *MISC: MNO = 0.1: SRO = 0.4.
06029081  MIOCENE & PLIOCENE, TROPICO GR.  S2,3,T11N,R9W.  (346:302,319/ 117:74,69,75,PL1,2)  FULLERS EARTH, WHITE: 6 FT THICK.
          INDEX & GEOL MAPS.  USE: 6.  *MISC: MNO = TR.
06029082  MIOCENE & OLIGOCENE, VAQUEROS FM.  S18,T10N,R22W.  (292:253,258,PL31)  BENTONITE.  INDEX & GEOL MAPS, GEOL SEC.

06029083  OLIGOCENE & MIOCENE, TEMBLOR FM.  S14,T27S,R28E.  (15:94)  VOLCANIC ASH: MIN.

06029084  EOCENE, TEJON FM.  S19,T10N,R19W.  (292:253,PL31)  BENTONITE, WHITE: 15-20 FT THICK.  INDEX & GEOL MAPS, GEOL SEC.

06029085  "T30S,R33E" TEHACHAPI.  (453:183)  CLAY.  USE: 6.  *MISC: CL = 0.18.
06029086  PLIOCENE, RICARDO FM.  S5,8,T29S,R38E.  (87:85,68,PL1,4)  PUMICITE, WHITE, FINE-GR, COMPACT: LAYERS TO 9 FT THICK.
          INDEX & GEOL MAPS, GEOL SEC.  USE: 1.  *MISC: CL2 = 0.06.
06029087  TERTIARY.  S34,T30S,R36E.  (117:80,69,75,82)  CLAY, WHITE TO BUFF, FINE-GR: MIN: PHYS PROP, FIRING TESTS.  INDEX & GEOL
          MAPS.  USE: 5,9.
06029090  "T28S,R38E" EL PASO RANGE.  (327:308)  TUFF.
06029091  "T28S,R38E" EL PASO RANGE.  (327:308)  TUFF.
06029092  MIOCENE, KINNICK FM.  S2,T32S,R34E: S34,T31S,R34E.  (574:235,230-234/ 117:73,69,PL1,2)  BENTONITE, GRAYISH-WHITE,
          COARSE-GR: 7 FT THICK: MIN.  INDEX & GEOL MAPS.  USE: 6.  *MISC: MNO = 0.18, CO2 REPT AS CO3, ZRO2 = 0.00.
```

TABLE 3. — *Analyses of samples from California and Hawaii containing uncombined silica and clay each less than 75 percent; uncombined silica and clay each greater than carbonate (Group B), common- and mixed-rock categories*—Continued

SAMPLE	06029094	06029095	06029096	06029104	06033002	06033003	06033004	06035001	06035002	06035003
SIO2	68.92	68.98	72.49	58.95	72.98	68.50	71.99	55.93	56.53	56.70
AL2O3	11.04	11.10	11.87	9.92	13.21	12.82	10.17	17.34	17.50	15.75
FE2O3	0.95	0.97	0.63	2.03	0.60	1.29	0.99	1.50	1.35	1.29
MGO	1.51	1.37	0.13	4.64	0.37	2.21	1.43	7.29	5.94	7.16
CAO	1.10	0.94	0.57	1.09	1.19	1.82	2.76	8.04	8.07	7.67
NA2O	1.46	1.75	2.46	0.19	2.99	6.03	2.32	3.32	3.51	3.36
K2O	1.54	1.77	5.39	0.46	4.36	1.26	1.45	1.35	1.55	1.56
H2O	4.70 F	4.83 F	5.44 F	7.11 F	2.76 F	2.11 F	2.82 F	0.26	0.27	0.30
H2O-	8.23	7.67	0.52	14.28	0.19	0.28	0.09	0.0 B	0.0 B	0.0 B
TIO2	0.14	0.14	0.12	0.74	0.28	0.60	0.47	0.0 B	0.54	0.65
P2O5	0.03	0.03	0.02	0.03	0.02	0.16	0.09	0.0 B	0.15	0.20
CO2	0.0	0.02	0.01	0.02	0.0 T	0.0 B	0.34	0.0 B	0.0 B	0.0 B
SO3	0.0 B	0.0 B	0.0 B	0.02	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.82 *	99.80 *	99.93 *	99.76 *	99.77 *	100.47 *	100.11 *	100.23 *	100.56 *	100.18 *
CLASS	48, 46, 0	48, 45, 0	51, 40, 0	39, 53, 0	49, 41, 0	44, 41, 0	53, 33, 1	24, 51, 0	24, 52, 0	27, 47, 0

SAMPLE	06035004	06037013	06037014	06037016	06037017	06037019	06037023	06037027	06037028	06037030
SIO2	70.01	57.14	62.85	69.20	72.16	82.80	72.90	59.26	78.70	73.04
AL2O3	12.61	14.64	16.78	8.76	13.73	6.06	9.60	15.80	5.83	3.58
FE2O3	1.47	4.29	3.71	9.64	0.32	1.94	3.98	7.54 K	1.92	1.28
MGO	0.72	2.62	1.93	1.87	0.10	0.92	0.0 T	3.62	0.71	0.45
CAO	1.06	2.75	5.13	2.24	1.04	0.51	2.20	4.10	2.59	8.63
NA2O	1.94	1.89	3.27	0.78 E	3.69	0.0 B	0.0 T	0.0 B	0.56	0.40
K2O	5.12	0.46	0.51	0.0 B	3.95	0.0 B	0.0 B	0.0 B	1.06	0.55
H2O	4.68 F	4.77 F	2.16 F	0.0 B	3.52 F	0.0 B	6.40	0.0 B	4.26 F	2.69 F
H2O-	2.37	10.30	2.59	0.0 B	0.14	5.88	0.0 B	0.0 B	3.64	2.82
TIO2	0.0 B	0.74	0.61	0.0 B	0.04	0.0 B	0.48	0.0 B	0.39 J	0.10 J
P2O5	0.04	0.20	0.25	0.0 B	0.03	0.0 B	0.0 B	0.0 B	0.34	0.15
CO2	0.0 B	0.01	0.0	7.40 G	0.01	0.0 T	0.62	6.58 G	0.0 B	5.96
SO3	0.0 B	0.02 H	0.01 H	0.0 B	0.02 H	0.0 B	0.0 B	1.35	0.0 T	0.05
TOT CONS	100.52 *	100.06 *	100.07 *	99.89	99.73 *	98.11	96.18 *	98.25	100.97 *	100.44 *
CLASS	46, 45, 0	26, 65, 0	29, 59, 0	43, 49, 6	48, 42, 0	70, 29, 0	51, 41, 1	23, 66, 2	66, 28, 0	65, 18, 13

SAMPLE	06037031	06037038	06041009	06041010	06041011	06041012	06041016	06041017	06041018	06041019
SIO2	73.71	65.66	60.00	67.00	60.90	58.40	69.00	70.04	70.31	72.90
AL2O3	7.25	12.71	18.10	14.10	13.10	14.30	11.70	13.88	14.03	11.30
FE2O3	2.63	3.54	1.00	0.90	9.20	7.40	1.00	0.91	0.85	1.10
MGO	1.47	0.71	2.90	2.80	2.30	3.30	3.80	2.11	2.07	2.70
CAO	1.72	1.44	1.10	1.30	0.0 B	2.00	1.30	1.79	1.31	0.60
NA2O	1.19	1.10	1.80	3.40	0.08	1.70	2.00	4.01	4.12	3.80
K2O	1.00	1.72	3.20	1.60	4.90	3.90	2.30	0.97	1.19	0.90
H2O	6.94 F	8.03 F	4.40 F	2.80 F	4.60 F	3.10 F	3.30 F	3.15 F	2.37 F	2.20 F
H2O-	2.88	4.34	0.64	0.60	2.00	2.00	0.30	0.25	0.23	0.40
TIO2	0.0 J	0.40	0.73	0.60	0.92	0.66	0.70	0.14	0.36	0.60
P2O5	0.24	0.0 B	0.17	0.10	0.14	1.30	0.20	0.0	0.05	0.10
CO2	0.0 T	0.0 B	0.10	0.10	0.0 B	0.0 B	0.0 B	0.07	0.09	0.10
SO3	0.16	0.0 B	0.34 H	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	100.13 *	99.65	99.42 *	99.40 *	99.25 *	99.46 *	99.90 *	99.65 *	99.69 *	99.70 *
CLASS	58, 35, 0	39, 55, 1	27, 57, 0	41, 44, 0	27, 62, 1	25, 60, 1	47, 38, 0	44, 44, 0	45, 43, 0	52, 36, 0

SAMPLE	06041021	06041023	06043004	06043006	06047001	06047002	06047004	06047005	06047006	06051001
SIO2	68.20	69.77	60.35	71.70	55.18	58.90	68.46	70.16	60.00	60.10
AL2O3	13.00	14.82	17.62	12.91	16.26	17.60	17.60	16.82	15.85	13.56
FE2O3	1.60	1.21	5.64	4.57	4.10	5.04	4.50	4.23	5.95	3.30
MGO	2.40	2.38	1.04	2.06	2.54	1.35	0.30	0.0 B	1.65	0.72
CAO	2.00	1.99	0.45	1.11	2.26	0.56	0.0 T	0.0 B	2.14	4.96
NA2O	2.20	3.89	1.00	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	2.00
K2O	2.20	1.01	3.16	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.68
H2O	3.20 F	2.96 F	4.36 F	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	12.87
H2O-	0.50	0.20	1.02	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.62	0.41	0.75	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 T
P2O5	0.10	0.08	0.17	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	1.00	0.10	0.0	3.82 G	16.96 G	15.42 G	7.60 G	7.34 G	12.54 G	0.0 B
SO3	0.0 B	0.0 B	0.05	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	1.83
TOT CONS	99.80 *	100.20 *	99.76 *	96.17	97.30	98.87	98.46	98.55	98.13	100.16 *
CLASS	43, 43, 2	42, 47, 0	23, 66, 0	44, 49, 0	22, 66, 9	22, 73, 4	32, 66, 1	36, 63, 0	25, 66, 7	32, 57, 0

SAMPLE	06051002	06051003	06051004	06051005	06051006	06051007	06051008	06051009	06051010
SIO2	67.39	75.28	75.30	75.40	75.50	75.50	75.60	75.70	76.70
AL2O3	15.99	12.62	12.60	13.50	12.60	12.80	13.10	13.10	13.00
FE2O3	0.56	1.76 K	0.31	0.42	0.37	0.34	0.80	0.62	0.50
MGO	0.77	0.92	0.41	0.10	0.05	0.05	0.18	0.05	0.13
CAO	1.63	0.85	0.52	0.42	0.62	0.62	0.56	0.64	0.52
NA2O	4.74	0.0 B	3.90	3.80	4.00	3.70	3.80	4.00	3.70
K2O	4.80	0.0 B	4.90	4.80	5.10	5.10	4.80	4.50	4.50
H2O	2.06	2.50 F	1.00 F	0.71 F	0.71 F	0.70 F	0.35	0.71 F	0.34
H2O-	0.0 B	5.50	0.19	0.17	0.16	0.15	0.0 B	0.09	0.0 B
TIO2	0.0 B	0.0 B	0.03	0.04	0.04	0.05	0.11	0.05	0.06
P2O5	0.0 B	0.43	0.0 B	0.0 B	0.0 B	0.0 B	0.01	0.0	0.0
CO2	0.0 B	0.0 B	0.09	0.08	0.06	0.07	0.16	0.05 P	0.08
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.93 *	99.86	100.04 *	99.99 *	100.03 *	99.80 *	99.64 *	100.06 *	99.82 *
CLASS	38, 48, 0	51, 47, 0	53, 37, 0	51, 39, 0	53, 37, 0	52, 37, 0	52, 38, 0	52, 38, 0	53, 37, 0

A INSOL.
B BLANK--NO VALUE REPT.
C AL2O3 + FE2O3.
D MGO + CAO.
E NA2O + K2O.
F H2O+.
G IGNITION LOSS (MAY INCLUDE WATER).
H REPORTED AS S.
I CALCULATED BY COMPILERS.
J ORGANIC MATTER.
K TOTAL IRON.
M BY DIFFERENCE.
N INCLUDES TIO2.
O GREATER THAN.
P LESS THAN.
T TRACE.
* ADDITIONAL INFORMATION IN DESCRIPTIVE NOTES.

TABLE 3. — *Analyses of samples from California and Hawaii containing uncombined silica and clay each less than 75 percent; uncombined silica and clay each greater than carbonate (Group B), common- and mixed-rock categories*—Continued

```
06029094  PLIOCENE, RICARDO FM.  S18,T29S,R38E.  (465:D45,D44)  TUFF, WHITE OR  LIGHT-PINK, MIN.  INDEX MAP.  *MISC: FEO = 0.04,
          MNO = 0.10, CL = 0.01, F = 0.05.
06029095  PLIOCENE, RICARDO FM.  S18,T29S,R38E.  (465:D45,D44)  TUFF, WHITE OR  LIGHT-PINK, MIN.  INDEX MAP.  *MISC: FEO = 0.04,
          MNO = 0.14, CL = 0.01, F = 0.04.
06029096  PLIOCENE, RICARDO FM.  S5,T29S,R38E.  (465:D45,D44)  TUFF, WHITE TO GRAY, FINE-GR, FRIABLE: 6-22 FT THICK: MIN.
          INDEX MAP.  *MISC: FEO = 0.14, MNO = 0.05, CL = 0.06, F = 0.03.
06029104  "T32S,R33E" TEHACHAPI.  (236:102,96)  CLAY: MIN.  *MISC: FEO = 0.26, MNO = 0.01, CL = 0.01.

06033002  PLIOCENE OR PLEISTOCENE.  "T13N,R9W" KELSEYVILLE.  (9:TABLE 1,P 659, PL2)  PUMICE: MIN.  INDEX & GEOL MAP.  *MISC:
          FEO = 0.75, MNO = 0.02, S = TR, BAO = 0.05.
06033003  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "S5,T13N,R7W"  (11:92,93,251,PL1/ 29:33,11,32,PL1)  SANDSTONE: MIN.  INDEX & GEOL
          MAPS.  *MISC: FEO = 3.373, MNO = 0.023.
06033004  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T19N,R8W" GOAT  MTN LOOKOUT.  (186:23,21,PL1,2)  METAGRAYWACKE OR METASILTSTONE:
          MIN.  INDEX & GEOL MAP, GEOL SEC.  *MISC: FEO = 5.11, MNO = 0.08.
06035001  HOLOCENE.  "S16,T31N,R6E"  (98:156,155)  VOLCANIC SAND. *MISC: FEO = 5.20: BAO, SRO, LI2O, REPT AS (?).

06035002  HOLOCENE.  "S16,T31N,R6E"  (98:156,155)  LAPILLI.  *MISC: FEO = 5.03: MNO = 0.12: LI2O= TR: CR2O3= TR: BAO= TR: SRO=(?).

06035003  HOLOCENE.  S16,T31N,R6E.  (152:29,21,PL10,11)  VOLCANIC BOMB.  INDEX & GEOL MAP, GEOL SEC.  *MISC: FEO = 5.32: MNO =
          0.19: LI2O = TR: CR2O3 = TR: SRO = TR: BAO = 0.03.
06035004  MIOCENE.  "T30N,R11:12E" SUSANVILLE.  (111:192/ 157:23,24)  RHYOLITE TUFF.  *MISC: FEO = 0.50, MNO = TR.

06037013  MIOCENE, GLENDORA VOLCANICS.  S3,T1S,R9W.  (459:72,62,PL1)  TUFF: MIN.  INDEX & GEOL MAP.  NORM.  *MISC:  FEO = 0.22,
          MNO = 0.02, BAO = 0.00.
06037014  MIOCENE, GLENDORA VOLCANICS.  S26,T1N,R9W.  (459:72-74,PL1,3)  MATRIX OF TUFF BRECCIA: B.D., 2.438.  INDEX & GEOL MAP.
          MISC:  FEO = 0.22, MNO = 0.01, BAO = 0.04.
06037016  MIOCENE, MONTEREY SH.  "T1S,R13W" LOS ANGELES.  (43:56)  SHALE.  USE: 8.

06037017  MIOCENE, GLENDORA VOLCANICS.  T1S,R9W, PUDDINGSTONE DAM.  (459:59,PL1)  PERLITE: B.D., 2.332.  INDEX & GEOL MAP.
          USE: 19.  *MISC: FEO = 0.88, MNO = 0.04, BAO = 0.07: LESS O = S, 0.01.
06037019  MIOCENE, MONTEREY FM.  "T1S,R10W" COVINA.  (169:108,99,100)  DIATOMITE.  USE: 3,4.

06037023  "T4S,R14W" TORRENCE.  (401:361)  DIATOMITE.  *MISC: H2O REPT AS I.L.
06037027  PALEOCENE, MARTINEZ FM.  "T1S,R16W" SANTA YNEZ CANYON.  (293:134,133,PLI6)  SHALE.  USE: 4.

06037028  MIOCENE, MONTEREY FM.  "T1N,R15W" SANTA MONICA MTNS.  (61:13,PL1)  SHALE, CHERTY.  INDEX MAP.  *MISC: FEO = 0.62,
          TIO2 = 0.35: ORG MATTER CALC FROM ORG C.
06037030  MIOCENE, MODELO FM.  "T1N,R15W" MULHOLLAND HIGHWAY.  (293:108,PL16,17)  SHALE, GRAY, CHERTY, FOS: 1-3 IN THICK.
          INDEX & GEOL MAP, GEOL SEC.  *MISC: FEO = 0.44, TIO2 = 0.30.
06037031  MIOCENE, MODELO FM.  LAT 34 DEG. 8'8"N, LONG 118 DEG. 24'30"W.  (293:108,PI 16,17)  SHALE, WHITE, DIATOMACEOUS:
          BEDS 1-3 IN THICK.  INDEX & GEOL MAP, GEOL SEC.  *MISC: FEO = 0.44, TIO2 = 0.50.

06037038  "T1S,R16-18W" SANTA MONICA MTNS.  (403:183,182)  TUFF, PARTLY ALTERED TO BENTONITE.

06041009  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T2N,R5W" POINT SAN PEDRO.  (29:38,11,39,PL1)  SHALE, GRAY, BLACK: MIN: QUARRY
          SMPL.  INDEX & GEOL MAPS.  *MISC: FEO = 5.0: MNO = 0.11: LESS O = S,0.17.

06041010  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T1S,R6W" LIME POINT.  (29:33,11,32,PL1)  GRAYWACKE: MIN.  INDEX & GEOL MAPS.
          *MISC: FEO = 4.0, MNO = 0.1.
06041011  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T1S,R6W" YELLOW BLUFF.  (29:64,11,PL1)  SHALE, GREEN: MIN.  INDEX & GEOL MAPS.
          *MISC: FEO = 1.0: MNO = 0.11.
06041012  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T1S,R6W" YELLOW BLUFF.  (29:64,11,PL1)  SHALE, RED: 1 FT THICK: MIN.  INDEX &
          GEOL MAPS.  *MISC: MNO = 1.4.
06041016  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T1S,R5W" ANGEL ISLAND.  (29:33,11,31,PL1)  GRAYWACKE: MIN.  INDEX & GEOL MAPS.
          *MISC: FEO = 4.2, MNO = 0.1.
06041017  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T1S,R5W" ANGEL ISLAND.  (576:559,556-558)  METAGRAYWACKE: MIN: B.D., 2.91.
          INDEX & GEOL MAPS.  *MISC: FEO = 2.26, MNO = 0.07.
06041018  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T1S,R5W" ANGEL ISLAND.  (576:559,556-558)  GRAYWACKE: MIN: B.D., 2.78.
          INDEX & GEOL MAPS.  *MISC: FEO = 2.61, MNO = 0.10.
06041019  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T1S,R5W" ANGEL ISLAND.  (29:33,11,32,PL1)  GRAYWACKE: MIN.  INDEX & GEOL MAPS.
          *MISC: FEO = 2.8, MNO = 0.2.
06041021  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T1S,R5W" ANGEL ISLAND.  (29:108,11,90,92)  METAGRAYWACKE: MIN.  INDEX & GEOL
          MAPS.  *MISC: FEO = 2.7, MNO = 0.08.
06041023  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T1S,R5W" ANGEL ISLAND.  (576:559,556-558,567)  METAGRAYWACKE: MIN: B.D., 2.89.
          INDEX & GEOL MAPS.  *MISC: FEO = 1.35, MNO = 0.03.
06043004  JURASSIC, MARIPOSA SLATE.  "T5S,R17E" YAQUI GULCH.  (111:286/ 510:342,340)  CLAY SLATE: MIN.  *MISC: FEO = 2.20,
          MNO = 0.00, CL = 0.01, F = TR, TIO2 = 0.75, BAO = 0.12.
06043006  "S10,T4S,R18E"  (147:356,PL1)  CLAY.  INDEX MAP.
06047001  "T5S,R14E" SNELLING.  (147:356,PL1)  CLAY.  INDEX MAP.
06047002  "T4S,R15E" MERCED FALLS.  (147:356,PL1)  CLAY.  INDEX MAP.
06047004  "T4S,R15E" MERCED FALLS.  (147:356,129,PL1)  CLAY, WHITE.  INDEX MAP.  USE: 5.

06047005  "T4S,R15E" MERCED FALLS.  (147:356,128,129,PL1)  CLAY, WHITE.  INDEX MAP.  USE: 5.

06047006  "T8S,R14E" MERCED.  (147:356,PL1)  CLAY.  INDEX MAP.
06051001  S32,33,T5S,R33E.  (87:60,PL1)  PUMICE, GRAY-WHITE: 12-15 FT THICK.  INDEX MAPS.  USE: 4,11.  *MISC: MNO= 0.14: CL= 0.00.

06051002  PLEISTOCENE.  "T1-3N,R26-29E" MONO LAKE.  (362:149,148 /111:229)  PUMICE, RHYOLITIC, GRAY: MIN. *MISC: FEO = 1.99.

06051003  PLEISTOCENE.  S5,8,T3S,R29E.  (116:SHEET 1)  DIATOMACEOUS EARTH, GRAY, 17 FT THICK: TONNAGE: PHYS PROP.  INDEX & GEOL
          MAPS, GEOL SEC.  USE: 9,11.
06051004  HOLOCENE.  "T1S,R27E" SOUTHERN COULEE.  (371:426,417,PL1)  PUMICE, GRAY.  INDEX & GEOL MAPS, GEOL SEC.  *MISC: FEO =
          0.58, P2O3 = 0.10, MNO = 0.11.  SPECTRO ANAL ALSO GIVEN.
06051005  HOLOCENE.  "T1S,R27E" SOUTHERN COULEE.  (371:426,417,PL1)  PUMICE, GRAY.  INDEX & GEOL MAPS, GEOL SEC.  *MISC: FEO =
          0.50, P2O3 = 0.00, MNO = 0.05.  SPECTRO ANAL ALSO GIVEN.
06051006  HOLOCENE.  "T1S,R27E" SOUTHERN COULEE.  (371:426,417,PL1)  PUMICE, GRAY.  INDEX & GEOL MAPS, GEOL SEC.  *MISC: FEO =
          0.66, P2O3 = 0.10, MNO = 0.06.  SPECTRO ANAL ALSO GIVEN.
06051007  HOLOCENE.  "T1S,R27E" SOUTHERN COULEE.  (371:426,417,PL1)  PUMICE, GRAY.  INDEX & GEOL MAPS, GEOL SEC.  *MISC: FEO =
          0.60, P2O3 = 0.07, MNO = 0.05.  SPECTRO ANAL ALSO GIVEN.
06051008  PLEISTOCENE, BISHOP TUFF.  S22,T5S,R31E.  (34:156,159,PL2,5)  RHYOLITIC TUFF: MIN.  INDEX & GEOL MAPS, GEOL SEC.
          *MISC: FEO = 0.13, MNO = 0.04.
06051009  HOLOCENE.  "T1S,R27E" SOUTHERN COULEE.  (371:426,417,PL1)  PUMICE, GRAY.  INDEX & GEOL MAPS, GEOL SEC.  *MISC: FEO =
          0.44, P2O3 = 0.05, MNO = 0.06.  SPECTRO ANAL ALSO GIVEN.
06051010  PLEISTOCENE, BISHOP TUFF.  S22,T5S,R31E.  (34:156,159,PL2,5)  RHYOLITIC TUFF: MIN.  INDEX & GEOL MAPS, GEOL SEC.
          *MISC: FEO = 0.26, MNO = 0.03.
```

TABLE 3. — *Analyses of samples from California and Hawaii containing uncombined silica and clay each less than 75 percent; uncombined silica and clay each greater than carbonate (Group B), common- and mixed-rock categories*—Continued

SAMPLE	06051011	06051012	06051013	06051015	06051016	06051017	06051018	06051019	06053099	06053100
SIO2	77.16	78.76	79.46	75.30	74.70	61.80	77.26	75.87	46.93 M	61.14 M
AL2O3	5.78	2.32	8.58	12.50	12.50	12.86	9.94	11.23	4.83	10.60
FE2O3	2.24 K	1.84 K	0.88 K	0.23	0.61	0.0 B	1.82	1.45	3.52 K	3.52 K
MGO	1.19	0.97	0.97	0.05	0.10	2.38	0.08	0.05	3.20	1.00
CAO	2.04	3.19	0.79	0.62	0.52	5.10	1.71	1.59	33.70	15.00
NA2O	0.0 B	0.0 B	0.0 B	4.00	3.80	3.49	2.59 E	2.28 E	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	5.10	5.00	1.20	0.0 B	0.0 B	0.0 B	0.0 B
H2O	3.10 F	1.50 F	0.0 B	1.00 F	1.50 F	8.25	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	5.50	7.20	6.40	0.16	0.21	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.04	0.04	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.47	0.30	0.35	0.0 B	0.0 B	0.0 T	0.0 B	0.0 B	0.10	0.06
CO2	0.0 B	0.0 B	0.0 B	0.07	0.07	0.0 B	3.91 G	4.96 G	7.72	8.68
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.48	3.15	2.94	0.0 B	0.0 B
TOT CONS	97.48	96.08	97.43	99.91 *	99.77 *	100.30 *	100.46	100.37	100.00	100.00
CLASS	64, 29, 5	73, 19, 8	63, 34, 0	53, 36, 0	52, 38, 0	39, 44, 0	58, 34, 0	54, 38, 0	34, 21, 17	38, 37, 19

SAMPLE	06053101	06053102	06053103	06053104	06053105	06053106	06053110	06057005	06059007	06059010
SIO2	77.88	78.40	78.72	80.44	80.68	82.64	80.96	73.63	73.85	65.94
AL2O3	6.80	6.76	5.60	11.68	11.35	5.23	11.21	10.54	18.32	22.65
FE2O3	1.90	1.04	1.90	0.07	0.08	1.61	0.06	0.0 B	1.38	1.41
MGO	0.13	0.64	0.04	0.0 B	0.28	0.70	0.0 B	1.84	0.16	0.26
CAO	0.33	0.51	0.51	1.66	1.15	0.74	0.0 B	2.47	0.11	0.10
NA2O	3.37	0.0 B	5.28	3.11	3.10	0.0 B	0.0 B	1.81	0.94	0.21 E
K2O	2.02	0.0 B	1.57	2.79	2.69	0.0 B	0.0 B	1.89	0.11	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	1.07 F	0.0 B	0.0 B
H2O-	5.20	7.76	5.70	0.0 B	0.0 B	6.00	0.0 B	0.11	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.01	0.02	0.0 B	0.01	0.59 J	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.13	0.0 B	0.0 B
CO2	2.56	1.30	1.06	0.24 G	0.25 G	0.30	0.0 B	0.62	6.10 G	8.42 G
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	100.19	96.41	100.38	100.00	99.60	97.22	92.24 *	100.37 *	100.97	98.99
CLASS	64, 28, 3	65, 31, 2	67, 25, 2	60, 33, 0	61, 32, 0	72, 26, 1	61, 34, 0	55, 30, 1	40, 59, 1	24, 74, 1

SAMPLE	06061052	06065031	06065065	06065067	06065073	06065074	06065075	06065076	06065077	06065078
SIO2	69.20	66.00	62.12	62.60	66.40	66.60	68.00	68.16	68.57	68.57
AL2O3	7.03	16.50	19.22	18.90	20.20	22.20	15.07	20.54	15.19	22.99
FE2O3	8.74	4.00 K	5.04	1.80	4.50	1.50	7.69 K	1.76	7.75	1.82
MGO	1.11	6.00 D	0.68	0.0 B	0.0 B	0.0 B	0.0 T	0.45	0.0 T	0.04
CAO	1.23	0.0 B	2.00	0.0 B	0.0 B	0.0 B	0.0	0.46	0.0	0.16
NA2O	0.97 E	0.0 B	1.22 E	1.60 E	3.40 E	1.50 E	2.68 E	0.55 E	2.70 E	1.22 E
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	7.78 F	5.50	0.0 B	0.0 B	6.00	7.90	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	3.89	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.60	0.0 B	0.0 B	0.0 B
TIO2	0.44	2.00 J	0.0 B	0.0 B	0.0 B	0.0 B	0.96	0.70	0.97	0.0 B
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 T	0.0 B	0.0 B	0.0 B
CO2	0.0 B	0.0 B	10.06 G	14.90 G	0.0 B	0.0 B	4.65 G	7.62 G	4.69 G	5.20 G
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0	0.0 B	0.0 B	0.0 B
TOT CONS	100.39	100.00 *	100.34 *	99.80 *	100.50 *	99.70	99.78 *	100.24	100.00 *	100.00 *
CLASS	47, 50, 0	32, 60, 0	22, 72, 5	27, 71, 0	26, 71, 0	26, 73, 0	33, 63, 0	30, 67, 2	33, 63, 0	26, 73, 0

SAMPLE	06065079	06065080	06065081	06065082	06065083	06065084	06065085	06065089	06065091	06069076
SIO2	70.14	70.20	72.56	73.74	75.00	75.46	77.40	67.40	54.00	35.24
AL2O3	14.97	18.48	18.73	12.77	15.00	16.22	13.80	21.99	17.00	0.38
FE2O3	1.61	4.26	0.63	1.03	0.0 B	2.24 K	1.30	2.16	5.00 K	7.08
MGO	0.09	0.38	0.22	3.04	2.00 D	0.0 T	0.0 T	0.19	0.0 B	39.35
CAO	1.58	0.42	0.54	5.25	0.0 B	0.03	0.80	0.02	3.40 I	0.20
NA2O	3.94 E	1.14 E	0.30 E	0.0 B	0.0 B	0.20 E	1.30 E	2.58 E	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	6.00	0.0 B	5.60	0.0 B	6.00	15.49
H2O-	0.0 B	0.0 B	0.0 B	1.22	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	7.78 G	5.46 G	6.97 G	0.87 G	0.0 B	6.24 G	0.0 B	4.72 G	5.10	2.66
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	3.50 I	0.0 B
TOT CONS	100.11	100.34 *	99.95	97.92	99.50 *	100.39	100.20	99.06	100.00 *	100.40 *
CLASS	42, 51, 3	33, 66, 0	39, 59, 1	50, 40, 0	48, 48, 1	44, 56, 0	52, 47, 0	26, 70, 0	18, 62, 6	27, 32, 5

SAMPLE	06069082	06069083	06069084	06071033	06071184	06071185	06071187
SIO2	77.82	65.67	76.61	65.10	47.95	48.00	51.26
AL2O3	11.81	17.16	12.01	16.60	14.97	12.90	0.36
FE2O3	0.45	2.21	0.39	0.41	4.78	4.30 K	0.09
MGO	0.07	1.26	0.60	0.10	5.08	0.0 B	23.25
CAO	0.0	0.07	0.0	0.15	5.00	25.80	2.60
NA2O	3.58	0.92	2.39	0.39	2.96	0.0 B	3.47
K2O	3.34	4.16	2.61	15.80	4.54	0.0 B	0.10
H2O	0.0 B	0.0 B	0.0 B	0.47 F	3.97 F	0.0 B	5.14 F
H2O-	0.0 B	0.0 B	0.0 B	0.32	4.53	0.0 B	11.56
TIO2	0.0 B	0.81	0.0 B	0.0	0.58	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.0 B	0.07	0.13	0.0 B	0.0 B
CO2	0.40	2.14	1.00	0.09	3.70	5.00	1.35
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.30	0.0 B	0.0 B
TOT CONS	100.25 *	97.45 *	98.58 *	100.26 *	99.65 *	96.00	99.84 *
CLASS	56, 34, 0	33, 55, 3	55, 35, 2	35, 48, 0	16, 60, 8	20, 49, 11	51, 18, 3

A INSOL.
B BLANK--NO VALUE REPT.
C AL2O3 + FE2O3.
D MGO + CAO.
E NA2O + K2O.
F H2O+.
G IGNITION LOSS (MAY INCLUDE WATER).
H REPORTED AS S.
I CALCULATED BY COMPILERS.
J ORGANIC MATTER.
K TOTAL IRON.
M BY DIFFERENCE.
N INCLUDES TIO2.
O GREATER THAN.
P LESS THAN.
T TRACE.
* ADDITIONAL INFORMATION IN DESCRIPTIVE NOTES.

TABLE 3. — *Analyses of samples from California and Hawaii containing uncombined silica and clay each less than 75 percent; uncombined silica and clay each greater than carbonate (Group B), common- and mixed-rock categories*—Continued

```
06051011  PLEISTOCENE.  S2,T4S,R29E.  (116:SHEET 1)  DIATOMACEOUS EARTH, GRAY: 4 FT THICK: PHYS PROP: TONNAGE.  INDEX & GEOL MAPS,
          GEOL SEC.  USF: 9,11.
06051012  PLEISTOCENE.  S18,T3S,R29E.  (116:SHEET 1)  DIATOMACEOUS EARTH, WHITE: 12 FT THICK: PHYS PROP: TONNAGE.  INDEX & GEOL
          MAPS, GEOL SEC.  USE: 9,11.
06051013  PLEISTOCENE.  S21,T3S,R29E.  (116:SHEET 1)  DIATOMACEOUS EARTH, WHITE: 8 FT THICK:  TONNAGE:  PHYS PROP.  INDEX & GEOL
          MAPS, GEOL SEC.  USE: 9,11.
06051015  HOLOCENE.  "T1S,R27E" SOUTHERN COULEE.  (371:426,417,PL1)  PUMICE, GRAY.  INDEX & GEOL MAPS, GEOL SEC.  *MISC: FEO =
          0.72, P2O3 = 0.07, MNO = 0.05.  SPECTRO ANAL ALSO GIVEN.
06051016  HOLOCENE.  "T1S,R27E" SOUTHERN COULEE.  (371:426,417,PL1)  PUMICE, GRAY.  INDEX & GEOL MAPS, GEOL SEC.  *MISC: FEO =
          0.54, P2O3 = 0.12, MNO = 0.06.  SPECTRO ANAL ALSO GIVEN.
06051017  "T1N,R28E" LAKE MONO.  (443:307,PL16)  CLAY, DIATOMACEOUS: OUTCROP SMPL.  INDEX MAPS.  *MISC: FEO = 3.57, NACL = 1.17.

06051018  S27,28,T3S,R32E.  (327:308)  PUMICE.
06051019  S1,T3S,R31E.  (327:308)  PUMICE.
06053099  PRE-FRANCISCAN, SUR SER.  S20,T19S,R3E.  (420:B40,B8,PL1,2)  MARBLE, WHITE, CRYS: MIN: CHIP SMPL.  INDEX & GEOL MAPS.

06053100  PRE-FRANCISCAN, SUR SER.  S20,T19S,R3E.  (420:B40,PL1,2)  MARBLE, WHITE, FINE TO COARSELY CRYS: CHIP SMPL.  INDEX &
          GEOL MAPS.
06053101  MIOCENE, MONTEREY FM.  "T15S,R1E" MONTEREY.  (169:108,98,102)  DIATOMITE: 300 FT THICK.  USE: 4,11.

06053102  MIOCENE, MONTEREY FM.  "T15S,R1E" MONTEREY.  (169:108,98,102)  DIATOMITE: 300 FT THICK.  USE: 4,11.

06053103  MIOCENE, MONTEREY FM.  "T15S,R1E" MONTEREY.  (169:108,98,102)  DIATOMITE: 300 FT THICK.  USE: 4,11.

06053104  S22,T15S,R1W.  (265:99,98,PL1)  SAND, WHITE, MED-GR: MIN.  INDEX & GEOL MAPS.  USE: 10.

06053105  S33,T15S,R1W.  (265:95,94,PL1)  SAND: MIN.  INDEX & GEOL MAPS.  USE:5,11.

06053106  MIOCENE, MONTEREY FM.  "T24S,R11E" BRADLEY.  (169:108,99,101)  DIATOMITE, WHITE, COMPACT.  USE: 7.

06053110  "T15S,R1E" DEL MONTE.  (564:39)  BEACH SAND: TYPICAL SMPL.  USE: 14,15.  *MISC: CR2O3 = <0.001.

06057005  PALEOZOIC, CALAVERAS FM.  "T16N,R8E" NEVADA CITY.  (361:81,80)  ARGILLITE: MIN.  *MISC: FEO = 1.87, SRO = TR, BAO = 0.12,
          LI2O = TR, FE7O8 = 3.16, TIO2 = 0.52.
06059007  EOCENE.  S11,T6S,R7W.  (147:354,140,260,267-269,PL1)  CLAY: MIN: PHYS PROP, FIRING TESTS.  INDEX MAP.  USE: 3,5.

06059010  PALEOCENE, MARTINEZ FM.  T5S,R7W, SERRANO MINE.  (478:85,81,83,PL1/ 147:356,PL1)  CLAY, WHITE OR PINK, PLASTIC: MIN:
          INDEX MAP.
06061052  "T12N,R6E" LINCOLN.  (3:414,351,363,413)  CLAY, SANDY: MIN.  INDEX MAP, MEAS SEC.  USE: 3.

06065031  TERTIARY.  "T5S,R5W" ALBERHILL.  (43:84,75-82)  CLAY, WHITE, SANDY, PLASTIC: PHYS PROP, FIRING TESTS.  *MISC: ORG CALC
          FROM REPT CARBON.
06065065  PALEOCENE, SILVERADO FM.  S21,22,T5S,R5W.  (147:355,162-173,323-332,PL1/ 185:88,77-86,PL1-6)  CLAY,SANDY: 20 FT THICK:
          PHYS PROP, FIRING TESTS.  INDEX MAPS, MEAS SEC, GEOL SEC.  USE: 3.  *MISC: NA2O + K2O BY DIF.

06065067  PALEOCENE, SILVERADO FM.  S22,T5S,R5W.  (185:88,77-81,86,PL1-6)  CLAY, WHITE TO GRAY: 30 FT THICK: PHYS PROP, FIRING
          TESTS.  INDEX & GEOL MAPS, GEOL SEC.  USE: 3,5.  *MISC: ALKALIES INCL CA & MG.

06065073  PALEOCENE.  S23,T5S,R5W.  (185:89,77-79,86,PL1-6)  CLAY, RED, PLASTIC: 30 FT THICK: PHYS PROP, FIRING TESTS.
          INDEX & GEOL MAPS, GEOL SEC.  USE: 3.  *MISC: NA2O + K2O, INCL MGO & CAO.

06065074  PALEOCENE, SILVERADO FM.  S22,T5S,R5W.  (185:89,77-81,86,PL1-6)  CLAY, WHITE TO GRAY: 30 FT THICK: PHYS PROP,
          FIRING TESTS.  INDEX & GEOL MAPS, GEOL SEC.  USE: 3,5.
06065075  PALEOCENE.  S22,T5S,R5W.  (285:208/ 185:88,77-79,86,PL1-6)  CLAY, PINK, MOTL, PLASTIC: 150 FT THICK: PHYS PROP,
          FIRING TESTS.  INDEX & GEOL MAPS, GEOL SEC.  *MISC: MNO, TR: CL =0.13.
06065076  TERTIARY.  "T6S,R4W" ELSINORE.  (388:574/ 43:86,75)  CLAY, WHITE.  USE: 3.

06065077  EOCENE.  T5S,R5W, ALBERHILL.  (147:355,163,328-334,PL1)  CLAY, PINK-YELLOW MOTL, FINE-GR, PLASTIC: PHYS PROP, FIRING
          TESTS.  INDEX MAPS, MEAS SEC, GEOL SEC.  USE: 3.  *MISC: NA2O + K2O  BY DIF: MNO = TR: CL = 0.13.

06065078  EOCENE.  S21,22,T5S,R5W.  (147:355,162-173,317-319,PL1)  CLAY, SANDY: 8 FT THICK: PHYS PROP, FIRING TESTS.  INDEX MAPS,
          MEAS SEC, GEOL SEC.  USE: 3.  *MISC: NA2O + K2O BY DIF.
06065079  PALEOCENE, MARTINEZ FM.  T7S,R3W, WILDOMAR.  (147:356,180,PL1/ 478:74,52,75,PL1)  CLAY: MIN: 30-42 IN THICK.  INDEX MAP.
          USE: 5.
06065080  EOCENE.  S22,T5S,R5W.  (147:355,162,176,177,315-320,PL1)  CLAY, MED-GR, PLASTIC: 50-70 FT THICK: PHYS PROP,
          FIRING TESTS: MEAS SEC.  INDEX MAPS. USE: 3,5. *MISC: NA2O+K2O BY DIF.
06065081  PALEOCENE, MARTINEZ FM.  T5S,R5W, ALBERHILL.  (478:66,52,65,67,PL1)  CLAY, GRAY-WHITE, SANDY: 35 FT THICK: MIN:
          PHYS PROP, FIRING TEST.  INDEX MAP.  USE: 3,5.
06065082  OLIGOCENE(?) & MIOCENE, VAQUEROS SS & EOCENE & OLIGOCENE, SESPE FM. S29,T4S,R6W.  (446:444/ 228:103,PL1,2)  SAND.
          INDEX & GEOL MAP, GEOL SEC.
06065083  TERTIARY.  "T5S,R5W" ALBERHILL.  (43:84,75,76)  SAND, WHITE, COARSE: CONTAINS CLAY: PHYS PROP, FIRING TESTS.  USE: 3.
          *MISC: FES2 = 1.5.
06065084  EOCENE.  "T5S,R5W" ALBERHILL.  (285:201,185,186,196,199/ 147:354,162,163,168,264,PLS1,10)  CLAY, GRAY: BED 20 FT THICK:
          PHYS PROP, FIRING TESTS.  INDEX MAP, MEAS SEC, GEOL SEC.  USE: 3,5.
06065085  PALEOCENE, SILVERADO FM.  S22,T5S,R5W.  (185:88,77-81,86,PL1-6)  CLAY, WHITE TO GRAY: 30 FT THICK: PHYS PROP,
          FIRING TESTS.  INDEX & GEOL MAPS, GEOL SEC.  USE: 3,5.
06065089  EOCENE.  "T5S,R5W" ALBERHILL.  (147:356,PL10)  CLAY.  INDEX MAP.
06065091  TERTIARY.  "T5S,R5W" ALBERHILL.  (43:85,75,76,81,82)  SHALE, BLUE-GRAY: PHYS PROP, FIRING TESTS.  USE:3.
          *MISC: FES2 = 4.0, BORAX = 2.0.
06069076  S35,T17S,R11E.  (211:508,504)  WEATHERED SERPENTINE, GREEN.  INDEX MAP.  *MISC: H2O REPT AS I.L. LESS CO2.

06069082  JURASSIC & CRETACEOUS, FRANCISCAN FM.  S32,T17S,R12E.  (170:100,82,88-90,99,112,PL8,9)  SANDSTONE: CHIP SMPL: MIN.
          INDEX & GEOL MAP, GEOL SEC.  *MISC: FEO = 0.36.  ALTERED: FOR UNALTERED SMPL, SEE SIO2 76.61.

06069083  JURASSIC & CRETACEOUS, FRANCISCAN FM.  S32,T17S,R12E.  (170:100,88,90,PL8,9)  SHALE, GRAY: BEDS 1-6 IN THICK: CHIP SMPL:
          MIN.  INDEX & GEOL MAPS, GEOL SEC.  *MISC: TOTAL FE = 5.26.
06069084  JURASSIC & CRETACEOUS, FRANCISCAN FM.  S32,T17S,R12E.  (170:100,82,88-90,99,112,PL8,9)  SANDSTONE: CHIP SMPL: MIN.
          INDEX & GEOL MAP, GEOL SEC.  *MISC: FEO = 1.30.
06071033  MIOCENE, BARSTOW FM.  S20,T11N,R1W.  (460:5,1-4)  TUFF, WHITE TO GRAY: MIN: 1.5-7 FT THICK.  INDEX & GEOL MAPS.
          USE: 5,10.  *MISC: FEO = 0.04: MNO = 0.04: B2O3 = 0.68, DETD       BY SPECTRO ANAL.

06071184  MIOCENE, BARSTOW FM.  S24,T11N,R2W.  (461:8,4,7)  MUDSTONE: TYPICAL SMPL: MIN.  INDEX & GEOL MAPS.  *MISC: FEO = 0.90,
          MNO = 0.11, BAO = 0.05, CL = 0.03, F = 0.14.
06071185  "T11N,R12E"  KELSO.  (309:317,316)  LIMESTONE.  INDEX & GEOL MAP.
06071187  TERTIARY.  S27,T8N,R5E.  (573:241,238-240/ 563:110)  BENTONITIC CLAY: PHYS PROP.  INDEX MAP, GEOL SEC.  *MISC:
          FEO = 0.06, F = 0.00, LI2O = 0.60, SR = TR.
```

TABLE 3. — *Analyses of samples from California and Hawaii containing uncombined silica and clay each less than 75 percent; uncombined silica and clay each greater than carbonate (Group B), common- and mixed-rock categories*—Continued

SAMPLE	06071195	06071197	06071200	06071202	06071203	06071204	06071205	06071206	06071207	06071208
SIO2	58.99	62.80	64.20	65.10	65.30	65.40	65.41	66.48	66.90	68.10
AL2O3	16.62	18.45	17.20	16.60	16.60	16.20	16.64	22.27	14.00	15.18
FE2O3	1.82	2.07	0.63	0.69	0.51	0.06	0.10	0.31	1.60	1.34
MGO	4.37	4.71	0.0	0.10	0.0	0.0	0.04	0.14	1.40	2.06
CAO	0.40	0.98	0.06	0.23	0.08	0.58	0.13	0.08	0.10	4.66
NA2O	5.13	3.09 E	0.41	0.82	0.41	0.50	0.41	0.87	0.69	3.71
K2O	0.54	0.0 B	16.40	14.80	15.80	15.30	15.47	1.70	12.40	1.48
H2O	4.67 F	0.0 B	0.53 F	1.00 F	0.75 F	0.63 F	0.66 F	5.27	1.20 F	0.55
H2O-	4.83	0.0 B	0.28	0.27	0.25	0.28	0.12	0.0 B	1.00	0.0 B
TIO2	0.17	0.0 B	0.0	0.0	0.0	0.0	0.02	0.35	0.13	0.35
P2O5	0.03	0.0 B	0.07	0.07	0.09	0.07	0.01	0.03	0.11	0.18
CO2	0.06	0.0 B	0.05 P	0.09	0.05 P	0.22	0.15	2.25	0.05	0.0 B
SO3	0.58	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.09	0.0 B	0.0 B
TOT CONS	99.66 *	92.10	100.51 *	100.40 *	100.88 *	100.24 *	99.84 *	99.85 *	100.74 *	99.57 *
CLASS	28, 59, 0	28, 61, 5	33, 50, 0	35, 49, 0	35, 48, 0	37, 46, 1	36, 47, 0	27, 68, 2	40, 44, 0	40, 45, 1

SAMPLE	06071209	06071210	06071211	06071219	06071223	06071224	06071226	06071227	06071376	06073018
SIO2	70.00	71.27	79.75	71.76	52.20	72.00	44.00	66.50	53.95	51.19
AL2O3	13.76	14.65	13.88	17.88	8.10 C	26.20	10.60	17.00	0.14	15.13
FE2O3	2.00	2.28	0.14 I	1.00	0.0 B	0.60	0.0 T	2.80	0.03	0.86
MGO	0.94	1.30	0.0 B	0.73	19.86	0.0 B	24.30	1.80	25.89	7.19
CAO	4.40	1.80	0.45	1.52	0.56	0.51	2.00	0.35	0.16	1.00
NA2O	1.92	0.29	2.06	0.75	0.0 B	0.0 B	0.0 B	0.38	3.04	0.73
K2O	1.93	4.42	1.95	0.14	0.0 B	0.0 B	0.0 B	4.60	0.23	0.12
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	6.20 F	2.30 F	5.61 F	0.0 B
H2O-	0.0 B	0.0 B	0.98	0.0 B	0.0 B	0.0 B	12.60	0.42	9.29	15.80
TIO2	0.10	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.73	0.0 T	0.16
P2O5	0.02	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.07	0.0 B	0.0 B
CO2	4.00 G	3.11 G	0.69 G	6.48 G	13.71 G	0.0 B	0.0 B	0.13	0.0 B	7.57 G
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.07	99.23 *	99.90	100.26	94.43	99.31	99.70	98.98 *	99.56 *	99.75
CLASS	43, 46, 0	43, 49, 0	55, 40, 0	39, 56, 4	39, 24, 22	25, 74, 0	25, 48, 1	33, 56, 0	54, 15, 1	23, 64, 7

SAMPLE	06073019	06073021	06073022	06073023	06073024	06073026	06073027	06073028	06073029	06073030
SIO2	52.52	55.68	57.80	59.84	63.90	63.04	66.58	66.84	67.47	68.59
AL2O3	16.10	17.66	16.25	11.84	17.70	18.44	21.07	17.79	20.33	20.33
FE2O3	0.51	0.96	1.10	3.26	0.50	1.20	1.93	7.54	1.85	2.88
MGO	5.69	7.23	6.56	2.32	3.30	7.30	0.10	0.34	0.13	0.50
CAO	0.47	1.37	0.06	2.90	0.90	0.08	0.12	1.12	0.09	0.09
NA2O	0.82	1.32	3.87	2.13	0.50	3.40	1.94 E	0.46	2.31 E	0.48
K2O	0.23	0.50	0.14	2.34	0.40	0.02	0.0 B	0.20	0.0 B	0.17
H2O	8.16 F	0.0 B	0.0 B	0.0 B	0.0 B	6.47	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	14.68	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.16	0.0 B	0.16	0.0 B	0.0 B	0.14	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.05	0.0 B	0.0 B	0.0 B	0.0 B
CO2	0.0 B	13.96 G	14.10 G	10.50 G	6.20 G	0.0 B	8.26 G	6.43 G	7.82 G	7.62 G
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.60 *	98.68	100.04	95.13	93.40 *	100.15 *	100.00 *	100.72	100.00 *	100.66
CLASS	23, 68, 1	23, 56, 18	28, 54, 14	35, 45, 10	32, 55, 3	29, 60, 0	27, 70, 0	27, 72, 0	29, 68, 0	29, 69, 1

SAMPLE	06075002	06075005	06075006	06075007	06075008	06075009	06075010	06079011	06081011	06083009
SIO2	68.90	60.90	63.20	66.30	66.70	67.10	70.80	70.23	67.30	55.91
AL2O3	12.70	16.40	16.10	15.90	14.10	14.90	14.00	16.55	15.50	6.59
FE2O3	1.50	1.40	0.70	3.30	6.50	1.00	0.60	0.0 B	0.40	4.92
MGO	2.50	3.10	3.10	1.80	1.60	1.60	1.70	0.59	1.90	1.38
CAO	1.90	3.90	1.10	0.05	0.05	2.00	1.50	1.06	0.60	1.53
NA2O	2.70	4.20	2.40	0.18	0.10	3.10	3.70	0.0 B	4.20	0.0 B
K2O	2.10	0.60	2.50	4.90	3.80	2.30	2.20	11.32	3.20	0.0 B
H2O	2.80 F	3.70 F	3.70 F	4.30 F	4.00 F	2.60 F	2.20 F	0.0 B	1.80 F	0.0 B
H2O-	0.70	0.50	0.49	1.30	1.20	0.80	0.20	0.0 B	0.20	0.0 B
TIO2	0.60	0.60	0.68	0.76	0.81	0.50	0.40	0.0 B	0.60	0.33
P2O5	0.10	0.10	0.20	0.27	0.09	0.10	0.10	0.0 B	0.10	0.0 B
CO2	0.30	0.10	0.0 B	0.0 B	0.0 B	0.20	0.10	0.0 B	0.0 B	25.57 G
SO3	0.0 B	0.0 B	0.22 H	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.70 *	100.00 *	99.27 *	100.10 *	99.63 *	99.20 *	100.10 *	99.75	99.70 *	96.23
CLASS	45, 42, 1	30, 53, 0	34, 50, 1	34, 57, 0	34, 58, 1	40, 47, 0	45, 42, 0	41, 46, 0	39, 46, 1	39, 52, 6

SAMPLE	06083010	06083011	06083012	06083013	06083014	06083023	06085013	06085015	06085016	06085018
SIO2	72.11	72.50	75.68	80.40	82.62	74.84	67.10	57.58	58.28	58.94
AL2O3	11.62	11.71	9.88	6.88	5.05	12.58	13.60	16.23	16.82	16.17
FE2O3	1.01	2.35	2.92 K	2.12	0.81	0.0 B	1.30	5.25	4.49	1.91
MGO	0.16	0.83	0.69	1.17	0.48	0.26	2.40	2.32	3.04	2.21
CAO	0.38	0.32	0.29	0.86	0.79	0.98	2.60	0.62	0.78	4.31
NA2O	2.13	1.88 E	0.08	0.0 B	0.0 B	5.36 E	1.40	1.46	1.46	3.43
K2O	4.35	0.0 B	0.02	0.0 B	0.0 B	0.0 B	2.00	2.60	2.91	1.47
H2O	6.44 F	9.54	9.21	0.0 B	0.0 B	0.0 B	4.00 F	8.20 F	8.14 F	4.92 F
H2O-	0.22	0.0 B	0.0 B	6.12	7.60	0.0 B	0.10	0.0 B	0.0 B	0.39
TIO2	0.37	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.55	1.24 J	0.57 J	0.97
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.19	0.16	0.16	0.19
CO2	0.0 B	0.0 B	0.0 B	0.61	0.72	5.27 G	0.0 B	0.13	0.0	0.83
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.39 H	0.09	0.08	0.0 B
TOT CONS	100.14 *	99.13	98.77	98.16	98.07	99.29	99.00 *	99.80 *	100.15 *	100.25 *
CLASS	50, 41, 0	49, 47, 2	55, 43, 2	66, 32, 1	73, 25, 2	53, 39, 2	42, 45, 2	23, 64, 0	23, 64, 0	28, 54, 2

A INSOL.
B BLANK--NO VALUE REPT.
C AL2O3 + FE2O3.
D MGO + CAO.
E NA2O + K2O.
F H2O+.
G IGNITION LOSS (MAY INCLUDE WATER).
H REPORTED AS S.
I CALCULATED BY COMPILERS.
J ORGANIC MATTER.
K TOTAL IRON.
M BY DIFFERENCE.
N INCLUDES TIO2.
O GREATER THAN.
P LESS THAN.
T TRACE.
* ADDITIONAL INFORMATION IN DESCRIPTIVE NOTES.

TABLE 3. — *Analyses of samples from California and Hawaii containing uncombined silica and clay each less than 75 percent; uncombined, silica and clay each greater than carbonate (Group B), common- and mixed-rock categories*—Continued

```
06071195  PLIOCENE, RED MOUNTAIN ANDESITE.  T8,9N,R5E, HECTOR.  (6:31,23-30)  BENTONITE.  INDEX MAP, GEOL SEC.  *MISC: FEO = TR;
          MNO = 0.01; LI2O = 0.24; BAO = 0.02; RB2O = 0.00; F = 1.14; CL = 0.67; LESS O = F,CL, 0.63.

06071197  "T11N,R9E" BALCH.  (502:305)  BENTONITE, BEDS 10 FT THICK.
06071200  MIOCENE, BARSTOW FM.  S24,T11N,R2W.  (460:5,1-4)  TUFF, WHITE TO GRAY; 1.5-7 FT THICK; MIN.  INDEX & GEOL MAPS.  USE: 5.
          *MISC: FEO = 0.08, MNO = 0.02; B2O3 = 0.58 BY SPECTRO ANAL.
06071202  MIOCENE, BARSTOW FM.  S24,T11N,R2W.  (460:5,1-4)  TUFF, WHITE TO GRAY; MIN; 1.5-7 FT THICK.  INDEX & GEOL MAPS.
          USE: 5,10.  *MISC: FEO = 0.04; MNO = 0.04; B2O3 = 0.55, DETD AS B BY SPECTRO ANAL.

06071203  MIOCENE, BARSTOW FM.  S24,T11N,R2W.  (460:5,1-4)  TUFF, WHITE TO GRAY; 1.5-7 FT THICK; MIN.  INDEX & GEOL MAPS.  USE: 5.
          *MISC: FEO = 0.04, MNO = 0.03; B2O3 = 0.97 BY SPECTRO ANAL.
06071204  MIOCENE, BARSTOW FM.  S19,T11N,R1W.  (460:5,1-4)  TUFF, WHITE TO GRAY; 1.5-7 FT THICK; MIN.  INDEX & GEOL MAPS.  USE: 5.
          *MISC: FEO = 0.04, MNO = 0.03; B2O3 = 0.93 BY SPECTRO ANAL.
06071205  MIOCENE, BARSTOW FM.  S24,T11N,R2W.  (460:5,1-4)  TUFF, WHITE TO GRAY; 1.5-7 FT THICK; MIN.  INDEX & GEOL MAPS.  USE: 5.
          *MISC: FEO = 0.09; MNO = 0.02; CL = 0.01, F = 0.01; B2O3, SPECTRO ANAL, 0.55.

06071206  MESOZOIC & PERMIAN, HODGE VOLCANIC SER.  S36,T9N,R4W.  (52:143,142,PL1-3)  CLAY, WHITE; COMPOS SMPL.  INOEX & GEOL MAP,
          GEOL SEC.  *MISC: MNO = 0.01, F2 = 0.00, BAO = TR.
06071207  MIOCENE, BARSTOW FM.  S24,T11N,R2W.  (460:5,1-4)  TUFF, WHITE TO GRAY; 1.5-7 FT THICK; MIN.  INDEX & GEOL MAPS.  USE: 5.
          *MISC: FEO = 0.16, MNO = 0.10; B2O3 = 0.90 BY SPECTRO ANAL.
06071208  "T1N,R4W" ONO.  (99:123)  SANDSTONE DIKE.  *MISC: FEO = 1.70, MNO = 0.20, BAO = 0.06.

06071209  S19,T11N,R2W & S24,T11N,R3W.  (503:391)  PUMICITE; 50-100 FT THICK.  USE: 4.

06071210  S34,35,T7N,R4W.  (507:512,511)  CLAY, WHITE TO GRAY; AVG THICKNESS 25 FT; TONNAGE.  USE: 9.  *MISC: SOL CL = 0.11.

06071211  TRIASSIC OR OLDER.  S16,T7N,R2E.  (532:11,44,PL1)  QUARTZITE, GRAY, FELDSPATHIC, FINE- TO MED-GR; MIN.  INDEX & GEOL
          MAPS, GEOL SEC.  USE: 5.
06071219  "T14N,R18E" HART.  (147:354,196,197,265,PL1)  CLAY; MIN; 60-70 FT THICK; PHYS PROP, FIRING TESTS.  INDEX MAP.  USE: 9.

06071223  TERTIARY.  S27,T8N,R5E.  (573:243,238,239,242)  TUFF, BROWN; MIN.  PHYS PROP.  INDEX MAP.  SPECTRO ANAL ALSO GIVEN.

06071224  S6,T4N,R11E.  (255:242,241)  VOLCANIC ASH.  USE: 15.
06071226  "T7N,R23E"  12 MILES SOUTH OF NEEDLES.  (69:61)  CLAY.
06071227  PRECAMBRIAN, STIRLING QTZITE.  S6,T17N,R7E.  (585:25,8,141)  PELITE; MIN.  INDEX MAP, MEAS SEC.  SPECTRO ANAL ALSO
          GIVEN.  *MISC: FEO = 1.9, MNO = 0.00.
06071376  "T8N,R5E", NEAR HECTOR.  (321:55)  HECTORITE.  *MISC:  LI2O = 1.22.
06073018  PLIOCENE, SAN DIEGO FM.  S15,T18S,R2W.  (467:11/ 115:10,5,7,8,11,15,PL1)  BENTONITE; BEDS 4 FT THICK; TONNAGE.  INDEX &
          GEOL MAPS, MEAS SEC.  USE: 6,11.
06073019  PLIOCENE, SAN DIEGO FM.  S25,T18S,R2W.  (115:10,5-15,PL1)  BENTONITE; MIN; BEDS 4 FT THICK; TONNAGE.  INDEX & GEOL MAPS,
          MEAS SEC.  USE: 6,8.  *MISC: FEO = 0.26; MNO = 0.003; C = TR.
06073021  PLIOCENE, SAN DIEGO FM.  S17,18,T18S,R1W.  (453:183/ 115:10,8,PL1/ 118:61,60,PL1)  BENTONITE; FEW IN TO 4 FT THICK;
          TONNAGE.  INDEX & GEOL MAP, MEAS SEC.  USE: 6,9.
06073022  "T18S,R2W" OTAY.  (457:20/612:304)  MONTMORILLONITE.
06073023  "T18S,R2W" OTAY.  (567:5)  BENTONITE, WHITE, FINE-GR.
06073024  "T18S,R2W" OTAY.  (140:10,5)  MONTMORILLONITE.  *MISC: H2O+ = 24.12, H2O- = 20.25; NOT INCLUDED IN TOTAL.

06073026  PLIOCENE, SAN DIEGO FM.  S17-20,T18S,R1W.  (410:96/ 115:10,7,8,15,PL1)  BENTONITE; BEDS 4 FT THICK; TONNAGE.
          INDEX & GEOL MAPS, MEAS SEC.  USE: 6,11.  *MISC: MNO = 0.01.
06073027  S3,T13S,R3W.  (559:690,689)  PINITE, GRAY, BEDDED.  USE: 9,13.  *MISC: NA2O + K2O, BY DIF.

06073028  EOCENE.  "T13S,R5W" CARDIFF.  (147:355,202,330-332,PL1)  CLAY, MED-GR; PHYS PROP, FIRING TESTS.  INDEX MAP.  USE: 3.

06073029  S3,T13S,R3W.  (559:690,689)  PINITE, WHITE, BEDDED.  USE: 9,13.  *MISC: NA2O + K2O, BY DIF.

06073030  PLEISTOCENE.  "T13S,R5W" CARDIFF.  (147:354,287-295,PL1)  CLAY, SANDY; 10-12 FT THICK; PHYS PROP, FIRING TESTS.  INDEX
          MAP.  USE: 3.
06075002  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T2S,R6W" LANDS END.  (29:33,11,32,PL1)  GRAYWACKE; MIN.  INDEX & GEOL MAPS.
          *MISC: FEO = 2.8, MNO = 0.1.
06075005  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T2S,R5W" SAN FRANCISCO.  (29:33,11,32,PL1)  GRAYWACKE; MIN.  INDEX & GEOL MAPS.
          *MISC: FEO = 4.4, MNO = 0.1.
06075006  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T2S,R5W" SAN FRANCISCO.  (29:38,11,PL1)  SILTSTONE; MIN.  INDEX & GEOL MAPS.
          *MISC: FEO = 4.9, MNO = 0.09; LESS O = S, 0.11.
06075007  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T2S,R5W" SAN FRANCISCO.  (29:64,11,PL1)  SHALE, GREEN; 1-FT BED; MIN. INDEX &
          GEOL MAPS.  *MISC: FEO = 0.96, MNO = 0.08.
06075008  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T2S,R5W" SAN FRANCISCO.  (29:64,11,PL1)  SHALE, RED; MIN.  INDEX & GEOL MAPS.
          *MISC: FEO = 0.58, MNO = 0.10.
06075009  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T2S,R5W" SAN FRANCISCO.  (29:33,11,32,PL1)  GRAYWACKE; MIN.  INDEX & GEOL MAPS.
          *MISC: FEO = 2.9, MNO = 0.1.
06075010  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T2S,R5W" SAN FRANCISCO.  (29:33,11,32,PL1)  GRAYWACKE; MIN.  INDEX & GEOL MAPS.
          *MISC: FEO = 2.5, MNO = 0.1.
06079011  S23,T26S,R10E.  (17:583)  DIATOMACEOUS EARTH; 6 FT THICK.  GEOL MAP.  USE: 1.

06081011  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T3S,R5W" SAN BRUNO MTN.  (29:33,11,32,PL1)  ARKOSIC GRAYWACKE; MIN.  INDEX &
          GEOL MAPS.  *MISC: FEO = 3.8, MNO = 0.1.
06083009  MIOCENE, MONTEREY SH.  "T10N,R34W" SANTA MARIA.  (480:1381)  OIL-SHALE.

06083010  MIOCENE, MONTEREY FM.  "T8N,R34W" LOMPOC.  (61:24,14,PL1,2)  VOLCANIC ASH.  INDEX MAP.  *MISC: FEO = 1.19, MNO = 0.01,
          BAO = 0.15.
06083011  MIOCENE, MONTEREY FM.  "T9N,R34W" ORCUTT.  (18:445,444)  SHALE.
06083012  "T8N,R34W"  (534:193)  DIATOMACEOUS EARTH.
06083013  MIOCENE, MONTEREY FM.  "T8N,R34W" LOMPOC.  (169:108,98)  DIATOMITE.
06083014  MIOCENE, MONTEREY FM.  "T8N,R34W" LOMPOC.  (169:108,98)  DIATOMITE.  USE: 7.

06083023  MIOCENE.  "T8N,R35W" POINT SAL RIDGE.  (187:18,16,17,PL1)  VOLCANIC ASH; MIN; B.D., 2.402.  INDEX & GEOL MAP, GEOL SEC.

06085013  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T10S,R6E" PACHECO PASS.  (29:38,11,PL1)  SHALE, DARK-GRAY OR BLACK; MIN.
          *MISC: FEO = 3.5, MNO = 0.06.
06085015  JURASSIC, KNOXVILLE FM.  S2,T8S,R2E.  (66:23,18,22-24,31,PL1)  SHALE, BLACK, BEDDED; MIN; B.D., 2.49; PHYS PROP.  INDEX
          & GEOL MAPS.  USE: 11.  *MISC: FEO = 3.16; TIO2 = 0.76.  SPECTRO ANAL ALSO GIVEN.

06085016  CRETACEOUS, BERRYESSA FM.  S12,T10S,R4E.  (66:23,18,24,31,PL1)  SHALE, GREEN, BEDDED; 200 FT THICK; MIN; B.D., 2.55;
          PHYS PROP.  INDEX & GEOL MAPS.  USE: 11.  *MISC: FEO=2.66; TIO2=0.76.  SPECTRO ANAL ALSO GIVEN.

06085018  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T9S,R5,6E" PACHECO PASS.  (186:52,45-50,PL3)  METAGRAYWACKE; MIN.  INDEX & GEOL
          MAP, GEOL SEC.  *MISC: FEO = 4.37, MNO = 0.14.
```

TABLE 3. — *Analyses of samples from California and Hawaii containing uncombined silica and clay each less than 75 percent; uncombined silica and clay each greater than carbonate (Group B), common- and mixed-rock categories*—Continued

SAMPLE	06085019	06085020	06085021	06085022	06085023	06085024	06085025	06085026	06085027	06085028
SIO2	59.93	60.09	60.61	61.91	62.31	63.33	63.99	65.01	65.48	67.17
AL2O3	17.76	16.03	16.24	15.66	12.48	16.23	14.53	13.32	13.72	6.40
FE2O3	2.17	2.00	0.70	1.56	1.25	3.20	2.11	1.83	1.35	1.01
MGO	2.61	2.60	2.61	2.33	4.62	1.95	2.20	2.04	2.93	1.69
CAO	0.56	2.75	3.99	3.14	5.28	0.62	3.90	5.26	1.15	8.10
NA2O	1.54	2.97	4.46	4.90	1.62	1.94	4.05	1.79	3.98	1.16
K2O	2.72	0.15	1.82	1.21	1.75	2.66	1.28	0.35	1.91	0.67
H2O	5.86 F	5.81 F	3.22 F	3.58 F	3.74 F	6.47 F	3.20 F	5.25 F	2.62 F	5.47 F
H2O-	0.0 B	0.65	0.42	0.10	0.14	0.0 B	0.27	0.64	1.16	0.18
TIO2	0.61 J	0.95	0.99	0.89	0.77	0.63 J	0.84	0.92	1.04	0.46
P2O5	0.13	0.26	0.15	0.05	0.16	0.13	0.10	0.02	0.08	0.68
CO2	0.07	0.27	0.21	0.57	1.39	0.0	0.02	0.25	0.22	3.01
SO3	0.08	0.0 B	0.0 B	0.0 B	0.0 B	0.09	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.87 *	100.08 *	100.39 *	99.83 *	100.26 *	100.17 *	99.82 *	100.09 *	99.85 *	100.35 *
CLASS	26, 60, 0	29, 55, 1	31, 50, 0	32, 50, 1	39, 41, 3	31, 58, 0	36, 48, 0	39, 47, 1	40, 45, 0	55, 26, 7

SAMPLE	06085029	06085030	06085031	06085032	06085033	06085039	06085040	06085058	06085059	06085060
SIO2	68.32	70.00	70.34	71.39	72.69	62.54	67.30	63.20	66.20	51.65
AL2O3	14.59	12.00	11.18	11.82	11.21	14.81	12.40	16.70	15.11	14.22
FE2O3	1.60	1.00	0.79	1.57	0.67	2.02	0.60	6.40	5.43	3.10
MGO	1.73	3.10	2.72	1.89	1.78	3.38	2.30	10.80	1.71	6.22
CAO	0.95	2.20	3.25	2.15	1.75	1.40	3.30	1.50	1.68	5.59
NA2O	4.69	2.60	2.69	3.41	3.84	2.90	3.00	0.0 B	0.0 B	4.24
K2O	1.95	2.00	0.64	1.37	1.50	2.13	1.20	0.0 B	0.0 B	0.32
H2O	1.94 F	2.70 F	3.27 F	2.69 F	2.59 F	2.91 F	2.50 F	0.0 B	0.0 B	4.86 F
H2O-	0.33	0.16	0.21	0.25	0.06	0.82	0.30	0.0 B	0.0 B	0.47
TIO2	0.54	0.51	0.67	0.51	0.62	0.96 J	1.80	0.0 B	0.0 B	1.11
P2O5	0.14	0.10	0.08	0.08	0.08	0.15	0.10	0.0 B	0.0 B	0.08
CO2	0.25	0.38	0.15	0.30	0.53	0.08	0.60	0.0 B	5.14 G	0.02
SO3	0.0 B	0.18 H	0.0 B	0.0 B	0.0 B	0.05 H	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.87 *	99.81 *	100.19 *	99.68 *	100.10 *	100.51 *	99.50 *	98.60	95.27	99.69 *
CLASS	41, 46, 1	48, 38, 1	50, 36, 0	49, 39, 1	52, 35, 1	34, 49, 0	45, 38, 1	26, 61, 0	33, 59, 0	23, 51, 0

SAMPLE	06085062	06085063	06085064	06085065	06085066	06085068	06085073	06085076	06085077	06085078
SIO2	51.77	55.70	57.15	57.23	62.88	69.46	44.90	69.90	68.80	66.60
AL2O3	14.19	15.42	13.15	17.27	16.47	18.03	9.94	12.70	14.30	12.50
FE2O3	1.15	3.59	4.59	1.32	0.89	4.79	3.10	0.70	1.04	4.20 K
MGO	6.39	2.40	3.87	2.73	2.33	1.55	14.24	1.60	2.08	1.82
CAO	4.22	4.01	6.74	2.31	3.09	3.18	9.38	2.58	1.39	2.15
NA2O	5.07	4.85	1.87	3.96	3.76	0.18 E	1.17	3.53	4.41	3.09
K2O	0.54	1.95	0.10	2.73	1.47	0.0 B	0.27	1.10	1.27	1.63
H2O	3.56 F	5.51 F	5.16 F	4.88 F	3.96 F	0.0 B	4.95 F	0.0 B	0.0 B	0.0 B
H2O-	0.75	0.02	0.77	0.73	0.67	0.0 B	0.86	0.0 B	0.0 B	0.0 B
TIO2	2.44	1.12	1.31	0.93	0.80	0.0 B	1.84	0.60	0.52	0.74
P2O5	0.18	0.20	0.16	0.21	0.12	0.0 B	0.17	0.0 B	0.0 B	0.0 B
CO2	1.53	0.39	0.49	0.02	0.33	2.81 G	0.02	4.42 G	3.33 G	7.19 G
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	100.01 *	99.73 *	100.27 *	99.89 *	100.18 *	100.00	99.82 *	100.01 *	100.00 *	100.00 *
CLASS	25, 46, 3	24, 56, 1	29, 52, 1	25, 56, 0	33, 52, 1	32, 63, 0	24, 40, 0	47, 40, 2	42, 45, 0	40, 48, 6

SAMPLE	06085079	06087017	06087019	06087023	06087024	06089036	06089037	06089038	06089039	06089040
SIO2	67.26	72.68	79.76	59.80	63.26	60.19	63.86	64.72	66.45	67.62
AL2O3	12.37	13.58	10.84	15.64	17.26	17.63	16.07	16.30	16.19	13.63
FE2O3	0.59	0.76	2.76	7.73	6.17	1.33	1.56	1.86	2.66	1.25
MGO	2.34	0.32	1.07	2.92	1.40	3.76	2.11	2.53	1.86	2.34
CAO	3.33	4.30	0.0 T	2.96	3.05	6.29	4.94	4.71	4.55	2.80
NA2O	2.96	1.92	0.0 B	2.64 E	1.69 E	4.02	3.59	4.14	4.06	2.78
K2O	1.17	3.26	0.0 B	0.0 B	0.0 B	1.65	1.91	2.17	2.03	1.11
H2O	2.50 F	0.0 B	0.0 B	0.0 B	0.0 B	0.32 F	0.81 F	0.54 F	0.68 F	2.83 F
H2O-	0.31	0.0 B	0.0 B	0.0 B	0.0 B	0.05	1.47	0.0	0.39	0.64
TIO2	1.76	0.0 B	0.0 B	0.0 B	0.0 B	0.67	0.45	0.55	0.39	0.48
P2O5	0.15	0.0 B	0.0 B	0.0 B	0.0 B	0.16	0.12	0.13	0.16	0.08
CO2	0.56	3.12 G	0.0 B	7.71 G	7.17 G	0.0 B	0.0 B	0.0 B	0.0 B	0.72
SO3	0.0 B	0.0 B	0.62	0.60	0.0 T	0.0 B	0.84 H	0.0 B	0.09 H	0.0 B
TOT CONS	99.41 *	99.94	95.05	100.00	100.00	100.16 *	100.16 *	99.90 *	100.70 *	99.73 *
CLASS	45, 38, 1	48, 42, 0	57, 39, 2	23, 66, 4	26, 67, 3	28, 52, 0	34, 50, 0	34, 50, 0	35, 52, 0	42, 44, 1

SAMPLE	06089041	06089042	06089043	06089051	06089052	06089053	06089054
SIO2	69.51	76.30	81.39	54.55	55.85	59.10	60.74
AL2O3	15.61	12.40	8.32	10.64	13.20	14.02	10.25
FE2O3	0.56	1.10	2.18	1.59	2.56	3.16	4.31
MGO	0.61	0.69	0.0 B	1.29	1.90	1.72	3.69
CAO	2.80	0.74	2.27	14.30	6.93	9.35	4.97
NA2O	3.43	6.00	0.0 B	2.60	2.60	2.21	1.83
K2O	2.81	0.26	0.0 B	1.68	1.89	1.49	0.52
H2O	3.63	0.61	0.0 B	1.60 F	2.29 F	2.63 F	4.36 F
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	1.13	0.0 B	0.0 B
TIO2	0.0 T	0.20	0.0 B	0.0 T	0.76	0.70	0.86
P2O5	0.0 B	0.02	0.0 B	0.10	0.18	0.0 T	0.0 T
CO2	0.0 B	0.39	0.0 B	9.05	4.97	4.65	2.29
SO3	0.0 B	0.0 B	0.0 B	0.10	0.0 B	0.0 T	0.40
TOT CONS	100.23 *	100.67 *	94.16	100.28 *	99.27 *	100.45 *	100.43 *
CLASS	41, 48, 0	53, 37, 1	64, 30, 4	34, 34, 20	30, 45, 11	31, 48, 10	38, 42, 5

A INSOL.
B BLANK--NO VALUE REPT.
C AL2O3 + FE2O3.
D MGO + CAO.
E NA2O + K2O.
F H2O+.
G IGNITION LOSS (MAY INCLUDE WATER).
H REPORTED AS S.
I CALCULATED BY COMPILERS.
J ORGANIC MATTER.
K TOTAL IRON.
M BY DIFFERENCE.
N INCLUDES TIO2.
O GREATER THAN.
P LESS THAN.
T TRACE.
* ADDITIONAL INFORMATION IN DESCRIPTIVE NOTES.

TABLE 3. — *Analyses of samples from California and Hawaii containing uncombined silica and clay each less than 75 percent; uncombined silica and clay each greater than carbonate (Group B), common- and mixed-rock categories*—Continued

```
06085019  CRETACEOUS, BERRYESSA FM.  S18,T9S,R4E.  (66:23,18,22-24,PL1)  SHALE, BLACK, REDDED: 120 FT THICK: MIN: B.D., 2.63:
          PHYS PROP.  INDEX & GEOL MAP.  USE:19.  *MISC: FEO=5.09: TIO2 = 0.74.  SPECTRO ANAL ALSO GIVEN.

06085020  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T9S,R5,6E" PACHECO PASS.  (186:51,45-50,PL3)  METASHALY ROCK: MIN.  INDEX & GEOL
          MAP, GEOL SEC.  *MISC: FEO = 5.47, MNO = 0.08.
06085021  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T9S,R5,6E" PACHECO PASS.  (186:51,45-50,PL3)  METAGRAYWACKE: MIN.  INDEX & GEOL
          MAP, GEOL SEC.  *MISC: FEO = 4.88, MNO = 0.09.
06085022  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T9S,R5,6E" PACHECO PASS.  (186:52,45-50,PL3)  METAGRAYWACKE: MIN.  INDEX & GEOL
          MAP, GEOL SEC.  *MISC: FEO = 3.80, MNO = 0.13.
06085023  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T9S,R5,6E" PACHECO PASS.  (186:52,45-50,PL3)  METAGRAYWACKE: MIN.  INDEX & GEOL
          MAP, GEOL SEC.  *MISC: FEO = 4.36, MNO = 0.39.
06085024  CRETACEOUS, BERRYESSA FM.  S22,T8S,R3E.  (66:23,15,18,24,31,PL1)  SHALE, GREEN, MASSIVE: MIN: B.D., 2.63: PHYS PROP.
          INDEX & GEOL MAPS.  *MISC: FEO = 2.16: TIO2 = 0.76.  SPECTRO ANAL ALSO GIVEN.

06085025  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T9S,R5,6E" PACHECO PASS.  (186:52,45-50,PL3)  METAGRAYWACKE: MIN.  INDEX & GEOL
          MAP, GEOL SEC.  *MISC: FEO = 3.26, MNO = 0.07.
06085026  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T9S,R5,6E" PACHECO PASS.  (186:52,45-50,PL3)  METAGRAYWACKE: MIN.  INDEX & GEOL
          MAP, GEOL SEC.  *MISC: FEO = 3.25, MNO = 0.16.
06085027  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T9S,R5,6E" PACHECO PASS.  (186:51,45-50,PL3)  METAGRAYWACKE: MIN.  INDEX & GEOL
          MAP, GEOL SEC.  *MISC: FEO = 4.14, MNO = 0.07.
06085028  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T9S,R5,6E" PACHECO PASS.  (186:52,45-50,PL3)  METASHALY ROCK: MIN.  INDEX & GEOL
          MAP, GEOL SEC.  *MISC: FEO = 4.27, MNO = 0.08.
06085029  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T9S,R5,6E" PACHECO PASS.  (186:52,45,47,PL3)  METACLASTIC ROCK: MIN.  INDEX &
          GEOL MAP, GEOL SEC.  *MISC: FEO = 2.79: MNO = 0.05.
06085030  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T9S,R5,6E"  PACHECO PASS.  (29:108,11,90,92)  METAGRAYWACKE: MIN.  INDEX &
          GEOL MAPS.  *MISC:  FEO = 2.8, MNO = 0.08.
06085031  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T9S,R5,6E" PACHECO PASS.  (186:52,45-50,PL3)  METAGRAYWACKE: MIN.  INDEX & GEOL
          MAP, GEOL SEC.  *MISC: FEO = 4.14, MNO = 0.06.
06085032  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T9S,R5,6E" PACHECO PASS.  (186:52,45-50,PL3)  METAGRAYWACKE: MIN.  INDEX & GEOL
          MAP, GEOL SEC.  *MISC: FEO = 2.17, MNO = 0.08.
06085033  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T9S,R5,6E" PACHECO PASS.  (186:51,45-50,PL3)  METAGRAYWACKE: MIN.  INDEX & GEOL
          MAP, GEOL SEC.  *MISC: FEO = 2.73, MNO = 0.05.
06085039  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T9S,R1E" FERN HILL.  (29:38,11,PL1)  SILTSTONE, BLACK: MIN.  INDEX & GEOL MAPS.
          *MISC: FEO = 5.47, MNO = 0.05, TIO2 = 0.87: LESS O = S, 0.03.
06085040  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T9S,R1E" NEW ALMADEN DIST.  (29:33,11,32,PL1)  GRAYWACKE: MIN.  INDEX & GEOL
          MAPS.  *MISC: FEO = 4.0, MNO = 0.1.
06085058  JURASSIC & CRETACEOUS, FRANCISCAN FM.  S17,18,T7S,R2W.  (331:391,374)  CLAY.

06085059  JURASSIC & CRETACEOUS, FRANCISCAN FM.  S17,18,T7S,R2W.  (331:377,374)  CLAY: AVG COMPOS OF FOUR DEPOSITS.  USE: 4.

06085060  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T9S,R5,6E" PACHECO PASS.  (186:52,45-50,PL3)  TUFF & TUFFACEOUS GRAYWACKE:  MIN.
          INDEX & GEOL MAP, GEOL SEC.  *MISC: FEO = 7.67, MNO = 0.14.
06085062  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T9S,R5,6E" PACHECO PASS.  (186:51,45-50, PL3)  TUFF & TUFFACEOUS GRAYWACKE: MIN.
          INDEX & GEOL MAP, GEOL SEC.  *MISC: FEO = 8.06, MNO = 0.16.
06085063  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T9S,R5,6E" PACHECO PASS.  (186:52,45-50,PL3)  METAGRAYWACKE: MIN. INDEX & GEOL
          MAP, GEOL SEC.  *MISC: FEO = 4.50, MNO = 0.07.
06085064  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T9S,R5,6E" PACHECO PASS.  (186:52,45-50,PL3)  TUFF & TUFFACEOUS GRAYWACKE:  MIN.
          INDEX & GEOL MAP, GEOL SEC.  *MISC: FEO = 4.81, MNO = 0.10.
06085065  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T9S,R5,6E" PACHECO PASS.  (186:52,45-50,PL3)  METAGRAYWACKE: MIN. INDEX & GEOL
          MAP, GEOL SEC.  *MISC: FEO = 5.38, MNO = 0.19.
06085066  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T9S,R5,6E" PACHECO PASS.  (186:51,45-50,PL3)  METAGRAYWACKE: MIN.  INDEX & GEOL
          MAP, GEOL SEC.  *MISC: FEO = 3.34, MNO = 0.07.
06085068  "T8S,R2W" SARATOGA.  (67:527)  SAND.  USE: 15.
06085073  JURASSIC & CRETACEOUS, FRANCISCAN FM.  S24,T9S,R1E.  (40:37,4,PL1)  TUFF: MIN.  INDEX & GEOL MAP, GEOL SEC.
          *MISC:  FEO = 8.82, MNO = 0.15.
06085076  JURASSIC & CRETACEOUS, FRANCISCAN FM.  HALLS VALLEY.  (318:359,354,355)  METAGRAYWACKE: MIN.  INDEX & GEOL MAP.
          *MISC: FEO = 2.79, MNO = 0.05, SRO = 0.035: IGNITION LOSS REPT AS H2O + CO2, BY DIF.

06085077  JURASSIC & CRETACEOUS, FRANCISCAN FM.  HALLS VALLEY.  (318:359,354,355)  METAGRAYWACKE: MIN.  INDEX & GEOL MAP.
          *MISC: FEO = 2.80, MNO = 0.05, SRO = 0.011: IGNITION LOSS REPT AS H2O + CO2, BY DIF.

06085078  JURASSIC & CRETACEOUS, FRANCISCAN FM.  HALLS VALLEY.  (318:359,354,355)  METAGRAYWACKE: MIN.  INDEX & GEOL MAP.
          *MISC: MNO = 0.06, SRO = 0.02: IGNITION LOSS REPT AS H2O + CO2, BY DIF.

06085079  JURASSIC & CRETACEOUS, FRANCISCAN FM.  S2,T9S,R1E.  (40:17,4,PL1)  GRAYWACKE.  INDEX & GEOL MAP, GEOL SEC.
          *MISC: FEO = 4.03, MNO = 0.08.
06087017  T10S,R1W, SOQUEL.  (342:89,88)  SANDSTONE.
06087019  "T10S,R3W" DAVENPORT.  (173:123,122)  SHALE, DIATOMACEOUS.  USE: 4.
06087023  "T12S,R2E" CHITTENDEN.  (305:78,PLS17,18)  CLAY, BLUE, UNIFORM TEX: 40 FT THICK.  INDEX & GEOL MAPS, GEOL SEC.  USE: 4.

06087024  "T12S,R2E" CHITTENDEN.  (305:78,PL17,18)  CLAY, BLUE, UNIFORM TEXTURE: 40 FT THICK.  INDEX & GEOL MAP, GEOL SEC.  USE:4.

06089036  HOLOCENE.  "T31N,R5E" LASSEN PEAK.  (379:477,PL1)  PUMICE, DARK.  *MISC: FEO = 4.00: MNO = 0.09.

06089037  HOLOCENE.  S34,T31N,R4E.  (529:258/ 543:335,311,FIG1)  VOLCANIC ASH, ANDESITIC: MIN.  INDEX & GEOL MAPS, GEOL SEC.
          *MISC: FEO = 2.31, MNO = 0.05, ZRO2 = 0.04, BAO = 0.03, LI2O = TR.
06089038  HOLOCENE.  "T31N,R5E" LASSEN PEAK.  (379:477)  PUMICE.  *MISC: FEO = 2.17, MNO = 0.08.

06089039  HOLOCENE.  "T31N,R5E" LASSEN PEAK.  (141:41,42,55)  VOLCANIC ASH, ANDESITIC: MIN, PHYS PROP.  INDEX MAP.
          *MISC: FEO = 1.12, MNO = 0.10: ZRO2 = 0.01: LESS O = 0.04.
06089040  CRETACEOUS, HORSETOWN FM & CHICO FM.  "T30N,R7W" ONO.  (151:429,413,425)  SANDSTONE, GRAY: MIN: B.D., 2.65.  INDEX MAP.
          *MISC: FEO = 3.27, MNO = 0.15, BAO = 0.03.
06089041  PLIOCENE, TEHAMA FM.  T32,33N,R4W, REDDING.  (111:197/ 13:247,222,243,246,PL3)  TUFF: MIN.  INDEX & GEOL MAPS.
          *MISC: FEO = 1.27.
06089042  "T31N,R6W" SHASTA.  (568:263)  ALTERED TUFF.  INDEX MAP.  *MISC: FEO = 1.9, MNO = 0.06.

06089043  HOLOCENE.  S12,T36N,R3E.  (366:166,163-165)  DIATOMACEOUS EARTH, WHITE: 340 FT EXPOSED.  INDEX MAP.

06089051  CRETACEOUS, HORSETOWN FM.  "S11,T28N,R7W"  (151:429,413,425,430)  SANDSTONE DIKE, GRAY: MIN: B.D., 2.7346.  INDEX MAP.
          *MISC: FEO = 1.16, MNO = 1.53: LI2O = 0.00, CL = 0.09.
06089052  CRETACEOUS, HORSETOWN FM & CHICO FM.  "S23,T29N,R7W"  (151:429,430,434)  SANDSTONE, GRAY: MIN.  B.D., 2.69.  INDEX MAP.
          *MISC:  FEO = 4.77, MNO = 0.24.
06089053  CRETACEOUS, HORSETOWN FM & CHICO FM.  "S11,T28N,R7W"  (151:429,413,425)  SANDSTONE DIKE, GRAY: MIN.  INDEX MAP.  *MISC:
          FEO = 1.42, MNO = TR, LI2O = 0.00, CL = TR.
06089054  CRETACEOUS, HORSETOWN FM & CHICO FM.  "S10,T28N,R7W"  (151:429,413,425)  SANDSTONE, GRAY: MIN.  INDEX MAP.  *MISC:
          FEO = 6.21, MNO = TR, LI2O = 0.00, CL = TR.
```

TABLE 3. — *Analyses of samples from California and Hawaii containing uncombined silica and clay each less than 75 percent; uncombined silica and clay each greater than carbonate (Group B), common- and mixed-rock categories*—Continued

SAMPLE	06089055	06093009	06093010	06093011	06093012	06095014	06095017	06095018	06097006	06097007
SIO2	61.60	71.30	72.75	73.10	73.91	58.25	61.72	65.40	69.14	62.70
AL2O3	12.15	13.76	13.83	14.10	13.30	18.56	17.05	15.35	15.08	13.10
FE2O3	2.09	0.47	0.78	0.57	2.46	7.35	1.48	2.10	1.51	2.10
MGO	2.33	0.42	0.62	0.35	0.37	1.28	1.54	0.60	1.08	1.30
CAO	6.92	1.66	1.80	1.50	0.54	3.10	3.00	1.12	2.79	6.00
NA2O	2.16	3.85	3.80	3.80	3.63	2.35 E	3.28	2.07	5.31	3.60
K2O	1.41	3.88	4.00	4.10	4.18	0.0 B	2.09	3.21	1.28	1.70
H2O	3.10 F	1.95 F	0.30 F	0.40 F	1.01	0.0 B	2.00 F	0.0 B	1.96 F	3.20
H2O-	0.0 B	0.35	0.20	0.0	0.0 B	0.0 B	3.47	1.18	0.08	0.0 B
TIO2	0.0 T	0.20	0.25	0.25	0.0 B	0.0 B	0.58	0.55	0.37	0.50
P2O5	0.08	0.03	0.0 T	0.0 T	0.0 B	0.0 B	0.21	0.0 B	0.0	0.10
CO2	5.05	0.0 B	0.0	0.0 B	0.0 B	8.55	0.65	7.00 G	0.12	3.60
SO3	0.27	0.21 H	0.0 B	0.0 B	0.0 B	0.45	0.14 H	0.0 B	0.0 B	0.0 B
TOT CONS	100.46 *	100.10 *	99.94 *	100.03 *	99.40	99.89	99.93 *	99.86 *	99.59 *	99.30 *
CLASS	38, 41, 11	46, 41, 0	47, 40, 0	48, 41, 0	48, 43, 1	17, 67, 13	30, 56, 1	36, 54, 3	41, 47, 0	37, 44, 8

SAMPLE	06097008	06097009	06097010	06097012	06097013	06097016	06097017	06099003	06103002	06103003
SIO2	72.20	67.20	67.50	70.70	58.40	74.60	71.18	71.72	65.78	67.27
AL2O3	11.70	14.60	14.60	14.20	14.20	15.97	13.14	13.23	14.87	14.84
FE2O3	0.70	1.90	2.70	1.80	2.40	0.50	1.05	0.30	1.27	1.01
MGO	2.70	2.30	1.70	1.30	1.20	0.06	2.25	1.81	1.89	1.36
CAO	0.60	1.80	1.10	0.70	8.20	0.18	1.48	1.80	2.41	2.30
NA2O	3.20	3.70	3.70	4.30	3.30	0.0 B	4.31	2.72	2.58	2.94
K2O	1.40	1.90	1.90	2.40	2.00	0.0 B	1.11	1.29	2.71	2.87
H2O	2.70	3.40	3.50	2.40	3.10	0.0 B	1.91 F	2.53 F	4.32 F	4.95 F
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.32	0.15	2.87	1.55
TIO2	0.50	0.50	0.60	0.40	0.50	0.21	0.44	0.35	0.0 B	0.27
P2O5	0.10	0.10	0.10	0.10	0.10	0.0 B	0.08	0.09	0.08	0.06
CO2	0.10	0.0 B	0.0 B	0.0 B	4.80	8.80 G	0.15	0.32	0.0 B	0.0
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0
TOT CONS	99.20 *	99.80 *	99.40 *	99.60 *	99.80 *	100.32 *	99.85 *	99.93 *	99.78 *	100.42 *
CLASS	51, 37, 0	39, 48, 0	39, 50, 1	44, 46, 1	31, 48, 11	46, 54, 0	47, 41, 0	48, 40, 1	38, 51, 0	40, 50, 0

SAMPLE	06103004	06105010	06105011	06105012	06105013	06105014	06107015	06109122	06111011	06111012
SIO2	60.93	48.10	60.23	63.55	70.40	38.00	68.52	62.33	65.99	66.25
AL2O3	18.56	12.16	18.64	17.10	13.50	9.30	16.04	17.31	6.65	12.75
FE2O3	2.68	1.02	3.81	3.21	1.31	3.90	4.00 K	3.00	2.84	8.75 K
MGO	2.37	1.65	1.64	0.43	0.37	1.80	2.35	1.05	1.10	2.70
CAO	6.63	15.88	6.04	0.82	0.56	19.90	0.58	3.23	5.31	3.07
NA2O	3.79	2.46	3.87	2.12	2.11	1.30	0.0 B	4.21	0.0 B	2.40 E
K2O	1.33	1.56	1.46	2.30	2.39	1.80	0.0 B	4.46	0.0 B	0.0 B
H2O	0.90	3.27 F	1.97 F	5.13 F	7.41 F	1.40 F	0.0 B	0.75 F	0.0 B	0.0 B
H2O-	0.0 B	0.46	0.95	4.20	1.05	0.44	1.78	0.44	0.0 B	0.0 B
TIO2	0.61	0.47	0.57	0.41	0.0 B	0.16	0.0 B	0.29 J	0.0 B	0.0 B
P2O5	0.18	0.13	0.20	0.10	0.08	22.90	0.0 B	0.29	0.0 B	0.0 B
CO2	0.0 B	10.36	0.0	0.0	0.0 B	0.0 B	3.02 G	0.0 B	16.37 G	4.33 G
SO3	0.0 B	0.0 B	0.0	0.0 T	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	100.41 *	99.92 *	100.43 *	100.32 *	100.79 *	101.19 *	96.29	100.51 *	98.26	100.25 *
CLASS	25, 58, 0	25, 40, 23	23, 63, 0	30, 63, 0	45, 49, 0	17, 36, 0	36, 58, 0	28, 55, 0	51, 35, 12	34, 58, 0

SAMPLE	20001001	20001002	20001003	20001004	20001005	20001006	20001007	20001008	20001009	20001010
SIO2	48.99	46.68	48.22	49.12	48.41	47.98	49.56	49.42	46.82	46.70
AL2O3	11.95	9.52	11.56	12.42	11.62	11.39	13.33	13.22	9.82	10.00
FE2O3	1.47	1.57	1.36	1.30	1.36	1.43	2.30	1.75	1.37	1.50
MGO	11.50	19.52	13.67	10.45	13.34	14.08	8.22	8.92	18.87	18.20
CAO	10.60	8.26	9.68	10.57	9.77	9.58	11.16	11.05	8.31	8.30
NA2O	2.05	1.52	1.94	2.09	1.94	1.89	2.22	2.20	1.57	1.90
K2O	0.47	0.35	0.45	0.54	0.47	0.45	0.55	0.54	0.36	0.40
H2O	0.05 F	0.0 F	0.07 F	0.09 F	0.04 F	0.01 F	0.06 F	0.0 F	0.0 F	0.23
H2O-	0.03	0.01	0.01	0.01	0.0	0.02	0.01	0.02	0.0	0.0 B
TIO2	2.42	1.80	2.27	2.53	2.30	2.30	2.77	2.68	1.86	1.90
P2O5	0.23	0.18	0.23	0.25	0.23	0.23	0.27	0.26	0.19	0.22
CO2	0.02	0.02	0.02	0.01	0.01	0.0	0.01	0.05	0.02	0.05 P
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	100.08 *	99.92 *	100.00 *	99.97 *	99.99 *	99.82 *	99.90 *	100.05 *	99.91 *	99.97 *
CLASS	26, 36, 0	28, 30, 0	26, 35, 0	26, 37, 0	26, 35, 0	26, 35, 0	23, 42, 0	24, 40, 0	28, 30, 0	27, 31, 0

SAMPLE	20001011	20001012	20001013	20001014	20001015	20001016	20001017	20001018	20001019
SIO2	47.34	46.74	47.02	46.99	47.70	48.00	50.62	50.76	50.42
AL2O3	10.47	9.70	9.86	10.06	11.10	11.50	13.76	13.70	13.51
FE2O3	1.69	1.36	1.24	1.80	1.40	1.50	1.80	1.68	2.34
MGO	16.59	19.25	18.26	18.25	14.90	14.40	6.43	6.09	6.97
CAO	8.92	8.16	8.46	8.43	9.30	9.20	10.21	10.01	10.18
NA2O	1.69	1.55	1.61	1.61	1.90	1.90	2.63	2.71	2.59
K2O	0.41	0.41	0.40	0.38	0.46	0.47	0.65	0.69	0.62
H2O	0.0 F	0.0 F	0.03 F	0.0 F	0.22	0.25	0.10 F	0.04 F	0.11 F
H2O-	0.03	0.01	0.04	0.01	0.0 B	0.0 B	0.0	0.03	0.0
TIO2	2.15	1.92	2.03	1.96	2.20	2.20	3.20	3.37	3.17
P2O5	0.21	0.19	0.20	0.20	0.25	0.25	0.35	0.36	0.34
CO2	0.01	0.0	0.01	0.0	0.05 P	0.05 P	0.01	0.02	0.01
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.79 *	99.93 *	99.90 *	99.92 *	100.16 *	100.20 *	99.93 *	100.08 *	100.07 *
CLASS	27, 33, 0	28, 30, 0	28, 30, 0	27, 32, 0	26, 34, 0	26, 35, 0	24, 42, 0	25, 42, 0	24, 42, 0

A INSOL.
B BLANK--NO VALUE REPT.
C AL2O3 + FE2O3.
D MGO + CAO.
E NA2O + K2O.
F H2O+.
G IGNITION LOSS (MAY INCLUDE WATER).
H REPORTED AS S.
I CALCULATED BY COMPILERS.
J ORGANIC MATTER.
K TOTAL IRON.
M BY DIFFERENCE.
N INCLUDES TIO2.
O GREATER THAN.
P LESS THAN.
T TRACE.
* ADDITIONAL INFORMATION IN DESCRIPTIVE NOTES.

TABLE 3. — *Analyses of samples from California and Hawaii containing uncombined silica and clay each less than 75 percent; uncombined silica and clay each greater than carbonate (Group B), common- and mixed-rock categories*—Continued

```
06089055  CRETACEOUS, HORSETOWN FM & CHICO FM.  "S11,T28N,R7W"  (151:429,413,425)  SANDSTONE DIKE, GRAY: MIN.  INDEX MAP.  *MISC:
          FEO = 3.30, MNO = TR, LI2O = 0.00, CL = TR.
06093009  HOLOCENE.  "T43N,R4E"  PUMICE STONE MTN.  (423:292,294/ 548:473,476,PL43)  PUMICE, WHITE TO GRAY.  INDEX MAP.  USE: 4.
          *MISC: FEO = 2.02, MNO = TR.
06093010  HOLOCENE.  T43N,R4E, GLASS MTN.  (7:502,487,493)  PUMICE, RHYOLITIC. INDEX & GEOL MAPS.  *MISC: FEO = 1.61, MNO = 0.00:
          S, TR.
06093011  T43,44N,R4E, GLASS MTN.  (548:473,474,476,PL43)  PUMICE, WHITE TO GRAY. FRAGMENTAL: SURFACE SMPL.  INDEX MAP.  USE: 4.
          *MISC: FEO = 1.86, MNO = 0.00, S = TR.
06093012  "T41,42N,R3,4W" MOUNT SHASTA.  (338:408)  PUMICE.
06095014  "T5N,R2W" SUISAN.  (555:120,121)  CLAY.  USE: 4.
06095017  EOCENE, TEJON FM.  "T5N,R2W" SUISUN.  (51:436,433)  SHALE, BANDED: MIN: DH SMPL.  *MISC: FEO = 2.64, MNO = 0.06,
          BAO = 0.07, CR2O3 = TR, LESS O = 0.05.
06095018  PLIOCENE, PINOLE TUFF.  T3N,R2W, CORDELIA.  (575:12)  TUFF.  *MISC: FEO = 1.22, MNO = 0.05, CL = 0.01.

06097006  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T6N,R9W" VALLEY FORD.  (578:493/ 576:559,558/ 29:108,90)  METAGRAYWACKE: MIN.
          B.D., 2.91.  INDEX & GEOL MAPS.  *MISC: FEO = 0.84, MNO = 0.03.
06097007  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "S31,T10N,R10W"  (29:33,11,32,PL1)  GRAYWACKE: MIN.  INDEX & GEOL MAPS.
          *MISC: FEO = 1.3, MNO = 0.1.
06097008  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "S24,T10N,R11W"  (29:33,11,32,PL1)  GRAYWACKE: MIN.  INDEX & GEOL MAPS.  *MISC:
          FEO = 3.2, MNO = 0.1.
06097009  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "S20,T10N,R12W"  (29:33,11,32,PL1)  GRAYWACKE: MIN.  INDEX & GEOL MAPS.
          *MISC: FEO = 2.3, MNO = 0.1.
06097010  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T8N,R11W" CAZADERO.  (29:33,11,32,PL1)  GRAYWACKE: MIN.  INDEX & GEOL MAPS.
          *MISC: FEO = 1.9, MNO = 0.1.
06097012  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "S5,T10N,R12W"  (29:33,11,32,PL1)  GRAYWACKE: MIN.  INDEX & GEOL MAPS.
          *MISC: FEO = 1.3.
06097013  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T9N,R11W" REESE GAP.  (29:33,11,32,PL1)  GRAYWACKE: MIN.  INDEX & GEOL MAPS.
          *MISC: FEO = 1.4, MNO = 0.2.
06097016  "T6N,R6W" GLEN ELLEN.  (57:318,317)  KAOLIN, WHITE: FIRING TESTS.  USE: 3,4.  *MISC: MNO, TR.

06097017  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T6N,R9W" VALLEY FORD.  (580:98,96)  GRAYWACKE: MIN: B.D., 2.70.  INDEX & GEOL
          MAP.  *MISC: FEO = 2.37, MNO = 0.06.
06099003  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "S3,T5S,R5E"  (481:136/ 29:33,11,31,PL1)  GRAYWACKE: MIN.  INDEX & GEOL MAPS.
          *MISC: FEO = 3.58, MNO = 0.00, ZRO2 = 0.04.
06103002  PLIOCENE, TEHAMA FM.  T24N,R5W, PASKENTA.  (111:194/ 13:247,243,246,PL3)  TUFF, DACITIC: MIN.  INDEX & GEOL MAPS. MEAS
          SEC.  *MISC: FEO = 1.00: MNO = TR.
06103003  PLIOCENE, TEHAMA FM.  T24N,R5W, PASKENTA.  (154:360,359/ 13:247,243,246,PL3)  TUFF: MIN.  INDEX & GEOL MAPS, MEAS SEC.
          *MISC: FEO = 0.85: MNO = TR: ZRO2=0.00: CR2O3=TR: SRO=0.00: BAO=0.15.
06103004  PLIOCENE, TUSCAN FM.  "T27N,R2W" RED BLUFF.  (8:232,216,231,FIG3)  VOLCANIC BRECCIA, PALE BUFF: MIN.  INDEX & GEOL MAPS:
          GEOL SEC.  *MISC: MNO = 0.10: SRO = 0.12: BAO = 0.02.
06105010  CRETACEOUS, HORSETOWN FM. "T30N,R7W" ONO.  (151:429,413,430)  SANDSTONE DIKE, GRAY: MIN.  INDEX MAP.  *MISC: FEO = 2.14,
          MNO = 0.26.
06105011  PLIOCENE.  "T32N,R5W" REDDING CREEK BASIN.  (154:360,359)  TUFF.  *MISC: FEO =0.88: MNO = TR: SRO =0.05: ZRO2 = 0.01:
          BAO = 0.11: CR2O3 = TR.
06105012  MIOCENE.  "T32N,R6E" HAY FORK.  (157:23,24,PL1)  TUFF.  INDEX & GEOL MAP.  *MISC: FEO = 0.92, MNO = 0.03, SO3 REPT AS S.

06105013  OLIGOCENE, WEAVERVILLE FM.  S23,T3N,R6E.  (111:228/ 376:68,65)  TUFF. INDEX & GEOL MAPS. *MISC: FEO = 1.61: MNO, TR.

06105014  OLIGOCENE(?), WEAVERVILLE FM.  S13,T3N,R6E.  (376:68,65-67,70-72)  PHOSPHORITE, PURPLISH-RED, FINE-GR: 1 FT THICK: MIN.
          INDEX & GEOL MAPS.  USE: 2.  *MISC: FEO = 0.18, MNO = 0.11.  SPECTRO ANAL ALSO GIVEN.

06107015  S34,T21N,R28E  (489:906)  SHALE.  USE: 3.
06109122  "T3N,R18E" NEAR CLOVER MEADOW.  (111:217/ 607:186) TUFF, MIN. *MISC: FEO = 1.63, MNO = 0.08, FES2 = 0.06, ZRO2 = 0.04,
          SRO = 0.05, BAO = 0.24, LI2O = TR, TIO2 = 1.05: ORG MATTER CALC FROM REPT C.

06111011  "T3N,R23W" VENTURA.  (480:1381)  OIL SHALE, DARK, CHERTY.
06111012  "T3N,R23W" VENTURA.  (493:98,97)  SAND, FINE-GR.  USE: 12.  *MISC: I.L., INCL UNDETD.

20001001  HOLOCENE.  KILAUEA VOLCANO.  (5:A5,A3,A4)  PUMICE.  NORM.  *MISC: FEO=10.08, MNO=0.18, CL=0.02, F=0.03: LESS O = 0.01.

20001002  HOLOCENE.  KILAUEA VOLCANO.  (5:A5,A3,A4)  PUMICE.  NORM.  *MISC: FEO=10.30, MNO=0.17, CL=0.01, F=0.02: LESS O = 0.01.

20001003  HOLOCENE.  KILAUEA VOLCANO.  (5:A5,A3,A4)  PUMICE.  NORM.  *MISC: FEO=10.31, MNO=0.18, CL=0.01, F=0.03: LESS O = 0.01.

20001004  HOLOCENE.  KILAUEA VOLCANO.  (5:A5,A3,A4)  PUMICE.  NORM.  *MISC: FEO=10.17, MNO=0.18, CL=0.01, F=0.04, CR2O3=0.21:
          LESS O = 0.02.
20001005  HOLOCENE.  KILAUEA VOLCANO.  (5:A5,A3,A4)  PUMICE.  NORM.  *MISC: FEO=10.29, MNO =0.17, CL=0.02, F=0.03: LESS O=0.01.

20001006  HOLOCENE.  KILAUEA VOLCANO.  (5:A5,A3,A4)  PUMICE.  NORM.  *MISC: FEO=10.26, MNO=0.17,CL=0.01,F=0.03: LESS O = 0.01.

20001007  HOLOCENE.  KILAUEA VOLCANO.  (5:A5,A3,A4)  PUMICE.  NORM.  *MISC: FEO=9.23, MNO=0.17, CL=0.02, F=0.03: LESS O = 0.01.

20001008  HOLOCENE.  KILAUEA VOLCANO.  (5:A5,A3,A4)  PUMICE.  NORM.  *MISC: FEO=9.72, MNO=0.18, CL=0.02, F=0.03: LESS O = 0.01.

20001009  HOLOCENE.  KILAUEA VOLCANO.  (5:A5,A3,A4)  PUMICE.  NORM.  *MISC: FEO=10.53, MNO=0.17, CL=0.01, F=0.02: LESS O = 0.01.

20001010  HOLOCENE.  KILAUEA VOLCANO.  (5:A5,A3,A4)  PUMICE.  *MISC: FEO = 10.4, MNO = 0.17.

20001011  HOLOCENE.  KILAUEA VOLCANO.  (5:A5,A3,A4)  PUMICE.  NORM.  *MISC: FEO=10.08, MNO=0.17, CL=0.02, F=0.02: LESS O = 0.01.

20001012  HOLOCENE.  KILAUEA VOLCANO.  (5:A5,A3,A4)  PUMICE.  NORM.  *MISC: FEO=10.44, MNO=0.18, CL=0.01, F=0.02: LESS O = 0.01.

20001013  HOLOCENE.  KILAUEA VOLCANO.  (5:A5,A3,A4)  PUMICE.  NORM.  *MISC: FEO=10.53, MNO=0.18, CL=0.02, F=0.02: LESS O = 0.01.

20001014  HOLOCENE.  KILAUEA VOLCANO.  (5:A5,A3,A4)  PUMICE.  NORM.  *MISC: FEO=10.04, MNO=0.17, CL=0.01, F=0.02: LESS O = 0.01.

20001015  HOLOCENE.  KILAUEA VOLCANO.  (5:A5,A3,A4)  PUMICE.  *MISC: FEO = 10.5, MNO = 0.18.

20001016  HOLOCENE.  KILAUEA VOLCANO.  (5:A5,A3,A4)  PUMICE.  *MISC: FEO = 10.3, MNO = 0.18.

20001017  HOLOCENE.  KILAUEA VOLCANO.  (5:A6,A9)  PUMICE.  NORM.  *MISC: FEO=9.95, MNO=0.18, CL=0.02, F=0.04: LESS O = 0.02.

20001018  HOLOCENE.  KILAUEA VOLCANO.  (5:A6,A9)  PUMICE.  NORM.  *MISC: FEO=10.40, MNO=0.18, CL=0.02, F=0.04: LESS O = 0.02.

20001019  HOLOCENE.  KILAUEA VOLCANO.  (5:A6,A9)  PUMICE.  NORM.  *MISC: FEO=9.59,  MNO=0.18, CL=0.02, F=0.04: LESS O = 0.02.
```

TABLE 3. — *Analyses of samples from California and Hawaii containing uncombined silica and clay each less than 75 percent; uncombined silica and clay each greater than carbonate (Group B), common- and mixed-rock categories*—Continued

SAMPLE	20001020	20001021	20001022	20001023	20001024	20001025	20001026	20001027	20001029	20001030
SIO2	49.49	49.21	49.34	48.86	48.77	49.31	48.91	50.01	51.12	48.17
AL2O3	12.92	12.34	12.56	11.98	11.55	12.24	11.71	13.83	10.09	11.65
FE2O3	2.31	1.56	1.78	1.58	1.40	1.31	1.35	1.85	5.35	1.87
MGO	9.39	11.27	10.58	12.11	13.13	11.12	12.46	7.10	9.68	10.84
CAO	9.98	9.94	9.80	9.51	9.29	9.85	9.46	11.29	9.72	10.25
NA2O	2.33	2.16	2.24	2.15	2.08	2.22	2.16	2.25	3.38	3.08
K2O	0.57	0.53	0.54	0.50	0.49	0.51	0.48	0.53	0.56	0.49
H2O	0.14 F	0.11 F	0.12 F	0.08 F	0.09 F	0.10 F	0.08 F	0.09 F	1.31	0.0 B
H2O-	0.0	0.0	0.0	0.03	0.02	0.01	0.01	0.12	0.0 B	0.0 B
TIO2	2.83	2.59	2.69	2.60	2.42	2.61	2.55	2.71	0.0 B	2.44
P2O5	0.31	0.27	0.28	0.31	0.26	0.28	0.28	0.27	0.0 B	0.25
CO2	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.0 B	0.0 B	0.0 B
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.11 H
TOT CONS	99.91 *	100.20 *	100.07 *	100.00 *	99.93 *	100.02 *	100.01 *	99.81 *	99.80 *	99.03 *
CLASS	24, 41, 0	26, 38, 0	25, 39, 0	26, 37, 0	27, 35, 0	26, 37, 0	27, 35, 0	23, 42, 0	27, 41, 0	25, 37, 0

SAMPLE	20001031	20001062	20001063	20001064	20001065	20001066	20001067	20001068	20003009	20003036
SIO2	49.29	50.22	50.36	50.39	50.39	51.87	50.24	51.60	47.96	37.12
AL2O3	14.12	13.64	13.70	13.69	13.69	14.11	13.56	13.98	7.82	10.02
FE2O3	12.79	1.29	1.44	1.41	1.28	1.50	1.36	1.58	8.09	4.67
MGO	7.33	7.74	7.54	7.49	7.53	7.11	7.59	7.58	9.72	8.98
CAO	10.44	11.34	11.31	11.36	11.36	10.51	11.06	10.46	12.08	14.36
NA2O	0.0 B	2.32	2.36	2.33	2.31	2.23	2.31	2.33	6.23	1.58
K2O	0.35	0.55	0.54	0.53	0.54	0.36	0.54	0.42	1.93	0.66
H2O	0.0 B	0.04 F	0.0 F	0.02 F	0.04 F	0.06 F	0.04 F	0.05 F	0.0 B	4.12 F
H2O-	0.0 B	0.04	0.01	0.01	0.0	0.01	0.01	0.05	0.0 B	4.25
TIO2	2.51	2.76	2.77	2.76	2.78	2.03	2.65	2.16	2.90	1.63
P2O5	0.23	0.27	0.27	0.27	0.27	0.21	0.26	0.24	1.08	0.38
CO2	0.0 B	0.01	0.01	0.0	0.01	0.01	0.01	0.0	0.0 B	6.35
SO3	0.09 H	0.0 B	0.0 B	0.02 I	0.0 B	0.0 B	0.0 B	0.0 B	0.27	0.0 B
TOT CONS	97.38 *	100.05 *	100.05 *	100.05 *	100.08 *	99.84 *	99.78 *	100.06 *	100.12 *	100.36 *
CLASS	10, 69, 0	25, 41, 0	25, 41, 0	25, 41, 0	25, 41, 0	25, 42, 0	25, 40, 0	25, 42, 0	25, 39, 0	14, 46, 13

SAMPLE	20003047	20003050	20003051	20003052	20003054
SIO2	42.71	43.98	44.38	45.58	50.29
AL2O3	10.67	12.93	11.94	13.00	13.77
FE2O3	4.53	2.88	2.97	2.64	1.33
MGO	9.15	9.49	10.32	10.30	7.74
CAO	8.51	8.97	10.46	10.18	11.08
NA2O	2.21	2.36	2.89	2.93	2.36
K2O	0.70	0.85	0.80	0.76	0.55
H2O	4.10 F	3.32 F	1.58 F	1.34 F	0.12 F
H2O-	6.81	3.50	0.66	0.17	0.01
TIO2	2.02	2.19	2.14	2.13	2.56
P2O5	0.30	0.31	0.34	0.41	0.27
CO2	0.26	0.13	0.55	0.18	0.0
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.90 *	99.96 *	99.74 *	100.14 *	100.17 *
CLASS	19, 50, 1	18, 49, 0	20, 42, 1	20, 43, 0	24, 41, 0

A INSOL.
B BLANK--NO VALUE REPT.
C AL2O3 + FE2O3.
D MGO + CAO.
E NA2O + K2O.
F H2O+.
G IGNITION LOSS (MAY INCLUDE WATER).
H REPORTED AS S.
I CALCULATED BY COMPILERS.
J ORGANIC MATTER.
K TOTAL IRON.
M BY DIFFERENCE.
N INCLUDES TIO2.
O GREATER THAN.
P LESS THAN.
T TRACE.
* ADDITIONAL INFORMATION IN DESCRIPTIVE NOTES.

TABLE 3. — *Analyses of samples from California and Hawaii containing uncombined silica and clay each less than 75 percent; uncombined silica and clay each greater than carbonate (Group B), common- and mixed-rock categories*—Continued

20001020 HOLOCENE. KILAUEA VOLCANO. (5:A6,A9) PUMICE. NORM. *MISC: FEO=9.41, MNO=0.18, CL=0.02, F=0.04; LESS O = 0.02.

20001021 HOLOCENE. KILAUEA VOLCANO. (5:A6,A9) PUMICE. NORM. *MISC: FEO=10.00, MNO=0.17, CL=0.02, F=0.04; LESS O = 0.02.

20001022 HOLOCENE. KILAUEA VOLCANO. (5:A6,A9) PUMICE. NORM. *MISC: FEO=9.91, MNO=0.17, CL=0.02, F=0.04; LESS O = 0.02

20001023 HOLOCENE. KILAUEA VOLCANO. (5:A6,A9) PUMICE. NORM. *MISC: FEO=10.06, MNO=0.18, CL=0.02, F=0.03; LESS O = 0.01.

20001024 HOLOCENE. KILAUEA VOLCANO. (5:A6,A9) PUMICE. NORM. *MISC: FEO=10.21, MNO=0.18, CL=0.01, F=0.03; LESS O = 0.01.

20001025 HOLOCENE. KILAUEA VOLCANO. (5:A6,A9) PUMICE. NORM. *MISC: FEO=10.24, MNO=0.17, CL=0.02, F=0.03, LESS O = 0.01.

20001026 HOLOCENE. KILAUEA VOLCANO. (5:A6,A9) PUMICE. NORM. *MISC: FEO=10.33, MNO=0.18, CL=0.02, F=0.03; LESS O = 0.01.

20001027 HOLOCENE. KILAUEA VOLCANO. (5:A14) PUMICE. *MISC: FEO = 9.59, MNO = 0.17.

20001029 HOLOCENE. MAUNA LOA. (127:48,49,52,PL1) PUMICE. NORM. INDEX MAP. *MISC: FEO = 8.59.

20001030 HOLOCENE. KILAUEA IKI. (273:1985) VOLCANIC ASH. *MISC: FEO = 9.66, MNO = 0.22.

20001031 HOLOCENE. KILAUEA IKI. (273:1985) VOLCANIC ASH. *MISC: MNO = 0.23.

20001062 HOLOCENE. KILAUEA CALDERA. (433:D29,D3) THOLEIITIC BASALTIC PUMICE; MIN. NORM. INDEX & GEOL MAPS, GEOL SEC. *MISC: FEO = 9.63, MNO = 0.17, CL = 0.02, F = 0.04, LESS O = 0.03.

20001063 HOLOCENE. KILAUEA CALDERA. (433:D29,D3) THOLEIITIC BASALTIC PUMICE; MIN. NORM. INDEX & GEOL MAPS, GEOL SEC. *MISC: FEO = 9.54, MNO = 0.17, CL = 0.02, F = 0.04, LESS O = 0.03.

20001064 HOLOCENE. KILAUEA CALDERA. (433:D29,D3) THOLEIITIC BASALTIC PUMICE; MIN. NORM. INDEX & GEOL MAPS, GEOL SEC. *MISC: FEO = 9.59, MNO = 0.17, CASO4 = 0.04, LESS O = 0.03.

20001065 HOLOCENE. KILAUEA CALDERA. (433:D29,D3) THOLEIITIC BASALTIC PUMICE; MIN. NORM. INDEX & GEOL MAPS, GEOL SEC. *MISC: FEO = 9.68, MNO = 0.17, CL = 0.02, F = 0.03; LESS O = 0.02.

20001066 HOLOCENE. MAUNA LOA. (546:17,2,36) PUMICE. INDEX MAP. *MISC: FEO = 9.63, MNO = 0.17, CL = 0.01, F = 0.04, LESS O = 0.02.

20001067 HOLOCENE. HALEMAUMAU CRATER. (546:9,2,35) PUMICE. INDEX MAP. *MISC: FEO = 9.95, MNO = 0.17, CL = 0.01, F = 0.03, LESS O = 0.01.

20001068 HOLOCENE. MAUNA LOA. (546:18) PUMICE. INDEX MAP. *MISC: FEO = 9.41, MNO = 0.17, CL = 0.01, F = 0.03, LESS O = 0.01.

20003009 HOLOCENE. PUNAHOU, NEAR HONOLULU. (127:48,50,52,PL1) LAPILLI, BLACK. NORM. INDEX MAP. *MISC: MNO = 0.39; FES2 = 1.40; CUO = 0.25; SIO2 INCL 12.10 INSOL.

20003036 PLEISTOCENE. KOKO CRATER. (268:341,335,338,344) TUFF; B.D., 2.07; MIN. INDEX MAP. *MISC: FEO = 6.12, MNO = 0.12.

20003047 PLEISTOCENE. KOKO CRATER. (268:341,335,338) TUFF; B.D., 1.83; MIN. INDEX MAP. *MISC: FEO = 7.77, MNO = 0.16.

20003050 PLEISTOCENE. KOKO CRATER. (268:341,335,338) TUFF; B.D., 1.91; MIN. INDEX MAP. *MISC: FEO = 8.89, MNO = 0.16.

20003051 PLEISTOCENE. SOUTH OF KOKO CRATER. (268:341,335,338) TUFF; ROADCUT SMPL; B.D., 1.74; MIN. INDEX MAP. *MISC: FEO = 10.53, MNO = 0.18.

20003052 PLEISTOCENE. NORTH OF KOKO CRATER. (268:341,335,338) LAPILLI; ROADCUT SMPL; MIN. INDEX MAP. *MISC: FEO = 10.36, MNO = 0.16.

20003054 HOLOCENE. KILAUEA VOLCANO. (193:18,2,16) PUMICE; MIN. NORM. INDEX MAP. *MISC: FEO = 9.87, MNO = 0.17, CL = 0.02, F = 0.05, LESS O = 0.02.

TABLE 4. — *Analyses of samples from California containing uncombined silica and carbonate each less than 75 percent; each greater than clay (Group C), common- and mixed-rock categories*

SAMPLE	06013009	06013039	06037012	06037021	06037022	06053098	06071181	06071192	06081020	06083007
SIO2	21.19	44.56	55.80	19.72	27.08	42.31 M	28.65	55.98	32.23	41.42
AL2O3	0.39	3.12	4.13	3.27 C	0.0 B	1.84	1.51	0.18 C	2.26	7.14
FE2O3	1.52	1.27	1.36	0.0 B	0.0 B	2.72 K	0.32	0.0 B	0.34	0.0 B
MGO	1.39	3.39	0.50	0.50 I	0.58 I	2.08	25.70	24.96	0.58	3.50
CAO	35.61	12.70	18.14	40.72 I	36.98 I	30.70	13.99	0.0	35.64	10.72
NA2O	0.0 B	3.09	0.40	0.67 E	2.02 E	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.88	0.75	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	2.33 F	6.24 F	3.02 F	1.76	1.20	0.0 B	7.35	0.0 B	0.0 B	0.0 B
H2O-	0.76	1.41	2.58	0.0 B	0.0 B	0.0 B	0.0 B	8.73	0.0 B	6.18
TIO2	0.0 B	0.0 B	0.27 J	0.0 B	0.0 B	0.0 B	0.0	0.0 B	0.0 B	6.32 J
P2O5	2.55	0.16	0.24	0.0 B	0.0 B	0.05	0.0 B	0.0 B	0.0 B	0.0 B
CO2	26.84	17.62	12.81	32.51 I	29.34 I	20.30	22.50	6.27 G	28.64 I	15.98
SO3	0.0 B	0.0 B	0.0 T	0.0 T	0.60 I	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	96.19 *	99.65 *	100.69 *	99.15	97.80 *	100.00	100.02 *	96.12	99.69	100.00 *
CLASS	19, 7, 60	38, 19, 34	47, 20, 29	14, 11, 74	27, 1, 66	36, 11, 46	26, 12, 45	56, 9, 12	28, 7, 65	29, 26, 30

SAMPLE	06085038	06085053	06085054	06087027	06111010
SIO2	22.82	24.10	29.23	23.50 A	28.54
AL2O3	2.82	3.60	1.26	0.0 B	6.34 C
FE2O3	0.66	1.40 K	0.54	0.0 B	0.0 B
MGO	0.99	0.50	0.24	8.30	0.0 B
CAO	41.37	38.90	38.04	23.10	36.06
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.0 B	0.22	0.0 B
CO2	31.51 I	31.90 G	30.66 G	32.29	28.78
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	100.17	100.40	99.97	96.51 *	99.72
CLASS	17, 9, 71	16, 14, 70	26, 5, 68	24, 0, 64	18, 17, 65

A INSOL.
B BLANK--NO VALUE REPT.
C AL2O3 + FE2O3.
D MGO + CAO.
E NA2O + K2O.
F H2O+.
G IGNITION LOSS (MAY INCLUDE WATER).
H REPORTED AS S.
I CALCULATED BY COMPILERS.
J ORGANIC MATTER.
K TOTAL IRON.
M BY DIFFERENCE.
N INCLUDES TIO2.
O GREATER THAN.
P LESS THAN.
T TRACE.
* ADDITIONAL INFORMATION IN DESCRIPTIVE NOTES.

06013009 JURASSIC, KNOXVILLE FM. "T1N,R1E" MT DIABLO (508:409,400,PL15) LIMESTONE, GRAY, FRIABLE. GEOL MAP, GEOL SEC. *MISC: MNO = 3.61. CA/MG = 23.2.

06013039 CRETACEOUS. "T1S,R1W" MOUNT DIABLO. (111:286) SHALE, DARK, CALCAREOUS, COMPACT. *MISC: FEO = 5.21, MNO = TR. CA/MG = 3.75.

06037012 MIOCENE, MODELO FM. "T2S,R15W" MULHOLLAND HIGHWAY. (293:108,109,PL16,17) SHALE, WHITE, FOS: MIN. INDEX & GEOL MAP, GEOL SEC. *MISC: FEO = 0.44, TIO2 = 0.25: ORG MATTER CALC FROM ORG C.

06037021 "S4,T2N,R15W" (555:117) SHELL LIMESTONE. CA/MG = 81.4.

06037022 "T1N,R9W" GLENDORA. (72:880) LIMESTONE, SHELL. *MISC: SIO2 INCLUDES FE & AL2O3. CA/MG = 63.8.

06053098 PRE-FRANCISCAN, SUR SER. S32,T19S,R3E. (420:B40,B8,PL1,2) MARBLE, WHITE, FINE TO COARSELY CRYS: SELECTED SMPL. INDEX & GEOL MAPS. CA/MG = 14.8.

06071181 TERTIARY. S22,T8N,R21E. (524:364,357-360,PL62-64) SHALE, WHITE, SOFT, THIN-BEDDED: 1.95 FT THICK, TONNAGE. INDEX & GEOL MAPS, MEAS SEC, GEOL SEC. *MISC: CR2O3 = 0.00. CA/MG = 0.544.

06071192 "S35,T8N,R5E" (467:11) MONTMORILLONITE.

06081020 JURASSIC & CRETACEOUS, FRANCISCAN FM. "T4S,R6W" KEN ROYCE QUARRY. (526:7,4,PL1) LIMESTONE. INDEX & GEOL MAPS. USE: 4,7. CA/MG = 61.4.

06083007 MIOCENE. "T4N,R25W" CARPINTERIA. (530:49,FIG35) SHALE. INDEX & GEOL MAP. *MISC: FEO= 8.74, FEO & AL2O3, ESTIMATED. CA/MG = 3.06.

06085038 JURASSIC & CRETACEOUS, FRANCISCAN FM. "T7S,R2W" MONTA VISTA. (526:6,4,7,PL1) LIMESTONE, GRAY, FINELY CRYS, FOS: BEDS 3-18 IN THICK: TYPICAL ANAL FROM QUARRY. INDEX & GEOL MAPS. USE:4,7. CA/MG = 41.8.

06085053 JURASSIC & CRETACEOUS, FRANCISCAN FM. S17,18,T7S,R2W. (331:376,374) LIMESTONE: TONNAGE: SCREEN SIZE, <0.5 IN: PHYS TESTS. USE: 4. CA/MG = 77.8.

06085054 JURASSIC & CRETACEOUS, FRANCISCAN FM. S17,18,T7S,R2W. (331:377,374,376) LIMESTONE: AVG COMPOS OF MANY SMPL: TONNAGE. USE: 4. CA/MG >100.

06087027 OLIGOCENE & (OR) MIOCENE, MINDEGO BASALT. "T9S,R2W" SANTA CRUZ MTNS. (386:C6) DOLOMITE. *MISC: FEO=8.80, MNO=0.28, SRO = 0.025. CA/MG = 2.78.

06111010 EOCENE. S22,27,T5N,R25W. (504:268,267/ 556:349,PL37) LIMESTONE, FINE-GR: 250 FT THICK. INDEX MAP. USE: 4,18.

TABLE 5. — *Analyses of samples from California and Hawaii containing 75-90 percent clay (Group D_5), common- and mixed-rock categories*

SAMPLE	06001006	06005052	06005065	06005095	06005096	06005097	06005098	06005099	06005100	06005101
SIO2	56.91	45.58	51.53	61.25	61.30	61.56	61.88	62.45	63.03	63.90
AL203	17.40	23.19	29.10	27.00	26.98	21.32	24.93	26.52	27.79	24.26
FE203	4.89	18.50	10.15	1.58	0.94	9.75	5.00	3.90	3.30	1.75
MGO	3.03	0.0 B	0.0 B	0.58	0.60	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CAO	1.06	0.0 B	0.0 B	0.24	2.60	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
NA20	1.74	0.0 B	0.0 B	1.83	2.75	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K20	2.72	0.0 B	0.0 B	2.84	0.94	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H20	8.57 F	0.0 B	0.0 B	0.0 B	3.30	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H20-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.46 J	1.24	1.20	0.0 B	0.0 B	0.60	1.02	0.51	0.49	1.66
P205	0.17	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	0.05	11.49 G	8.02 G	6.34 G	0.0 B	6.77 G	7.17 G	6.62 G	5.39 G	8.43 G
SO3	0.09	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	100.08 *	100.00	100.00	101.66	99.41	100.00	100.00	100.00	100.00	100.00
CLASS	21, 67, 0	0, 88, 0	0, 92, 0	12, 84, 0	13, 80, 1	13, 87, 0	12, 87, 0	11, 88, 0	10, 89, 0	19, 79, 0

SAMPLE	06005102	06005103	06005104	06005105	06005106	06005107	06005108	06005109	06005110	06005112
SIO2	64.18	64.40	64.49	64.58	64.64	64.96	64.99	65.03	65.15	65.37
AL203	27.81	22.63	26.50	23.72	24.73	26.53	23.37	26.44	24.23	24.34
FE203	1.25	3.75	1.20	4.95	4.10	1.70	1.80	1.25	4.65	3.80
MGO	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CAO	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
NA20	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K20	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H20	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H20-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.51	0.91	0.58	0.56	0.67	0.53	1.81	0.51	0.58	0.47
P205	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	6.25 G	8.31 G	7.23 G	6.19 G	5.86 G	6.28 G	8.03 G	6.77 G	5.39 G	6.02 G
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
CLASS	14, 86, 0	20, 79, 0	16, 83, 0	17, 82, 0	16, 83, 0	16, 83, 0	22, 77, 0	17, 83, 0	17, 82, 0	18, 81, 0

SAMPLE	06005113	06005114	06005115	06005116	06005117	06005118	06007006	06009044	06009045	06009046
SIO2	65.91	65.91	66.03	66.07	66.89	67.65	48.04	55.72	57.56	61.00
AL203	22.58	23.06	23.31	25.54	24.91	22.28	18.06	24.56	18.97	22.38
FE203	5.45	4.70	4.50	1.40	1.40	4.30	3.02	4.02	9.31	4.02
MGO	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	4.54	1.15	1.16	1.14
CAO	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	10.03	0.45	0.45	0.56
NA20	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	1.77	1.18 E	1.25 E	0.78 E
K20	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	1.38	0.0 B	0.0 B	0.0 B
H20	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	3.42 F	0.0 B	0.0 B	0.0 B
H20-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.24	0.0 B	0.0 B	0.0 B
TIO2	0.34	0.56	0.34	0.53	0.44	0.49	0.66	0.0 B	0.0 B	0.0 B
P205	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.40	0.0 B	0.0 B	0.0 B
CO2	5.72 G	5.77 G	5.82 G	6.46 G	6.36 G	5.28 G	0.25	12.92 G	11.30 G	10.12 G
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	100.00	100.00	100.00	100.00	100.00	100.00	99.83 *	100.00 *	100.00 *	100.00 *
CLASS	20, 80, 0	20, 80, 0	20, 80, 0	19, 80, 0	21, 78, 0	23, 76, 0	13, 60, 1	8, 88, 3	14, 82, 3	17, 79, 3

SAMPLE	06009047	06013018	06013019	06013020	06013021	06013022	06013023	06023003	06027028	06027030
SIO2	64.67	49.14	53.16	53.20	53.56	53.65	55.64	33.25	50.50	50.90
AL203	25.34	16.91	19.40	23.97	20.94	17.64	22.88	29.70	20.16	18.24
FE203	1.39	4.39	5.32	6.03	4.54	4.06	5.08	2.02	1.44	7.77
MGO	0.06	5.43	1.94	1.65	1.81	5.15	1.49	2.34	0.20	5.73
CAO	0.61	3.28	3.72	1.84	2.14	2.27	2.68	2.60	0.68	9.58
NA20	1.13 E	4.67	0.0 B	0.0 B	0.0 B	2.53	0.0 B	1.86	0.45	4.90
K20	0.0 B	1.53	0.0 B	0.0 B	0.0 B	2.22	0.0 B	3.43	1.45	2.20
H20	0.0 B	6.97 F	0.0 B	0.0 B	0.0 B	4.57 F	0.0 B	0.0 B	18.63 F	0.71 F
H20-	0.0 B	3.39	0.0 B	0.0 B	0.0 B	3.95	0.0 B	0.0 B	3.63	0.22
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	2.49 J	0.80	1.79
P205	0.0 B	0.24	0.0 B	0.0 B	0.0 B	0.23	0.0 B	0.0 B	0.0 T	0.0 B
CO2	6.81 G	0.0 B	12.30 G	12.80 G	15.18 G	0.0 B	11.80 G	22.30 G	0.42	0.0 B
SO3	0.0 B	0.0 B	1.93	0.66	0.0 B	0.0 B	1.78	0.0 B	1.39	0.0 B
TOT CONS	100.01 *	99.99 *	97.77	100.15	98.17	100.00 *	101.35	100.00 *	99.88 *	102.04
CLASS	18, 80, 0	14, 67, 0	13, 73, 8	4, 89, 7	11, 79, 8	18, 66, 0	9, 83, 6	0, 70, 10	13, 81, 1	10, 68, 0

SAMPLE	06027041	06027043	06027045	06027060	06027061	06027062	06027065	06027067	06027068
SIO2	55.40	59.50	54.80	52.70	58.50	57.00	55.50	61.00	63.20
AL203	21.40	20.50	23.60	23.50	20.10	20.20	20.80	22.10	21.10
FE203	2.70	3.20	2.60	1.90	3.60	4.60	2.50	4.50	3.50
MGO	2.90	2.30	1.80	3.00	2.80	2.60	2.90	1.00	0.80
CAO	0.45	0.45	0.30	0.32	0.60	0.68	0.45	0.30	0.55
NA20	0.0	0.20	1.10	0.55	1.20	0.0	0.85	0.20	1.10
K20	4.00	4.90	3.30	7.70	5.30	7.30	6.60	5.90	4.20
H20	4.60 F	3.90 F	4.90 F	3.30 F	3.40 F	3.30 F	3.10 F	2.50 F	3.70 F
H20-	0.44	0.34	0.20	0.15	0.16	0.26	0.25	0.37	0.47
TIO2	0.84	0.79	0.88	0.97	0.79	0.92	1.50	0.91	0.94
P205	0.16	0.09	0.11	0.11	0.08	0.14	0.15	0.06	0.04
CO2	0.06	0.10	0.10	0.16	0.13	0.17	0.06	0.07	0.12
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.31 *	99.11 *	99.66 *	99.54 *	99.69 *	99.47 *	99.39 *	99.11 *	99.94 *
CLASS	15, 70, 0	20, 68, 0	10, 76, 0	9, 73, 0	19, 67, 0	16, 69, 0	16, 66, 0	17, 74, 0	22, 70, 0

A INSOL.
B BLANK--NO VALUE REPT.
C AL203 + FE203.
D MGO + CAO.
E NA20 + K20.
F H20+.
G IGNITION LOSS (MAY INCLUDE WATER).
H REPORTED AS S.
I CALCULATED BY COMPILERS.
J ORGANIC MATTER.
K TOTAL IRON.
M BY DIFFERENCE.
N INCLUDES TIO2.
O GREATER THAN.
P LESS THAN.
T TRACE.
* ADDITIONAL INFORMATION IN DESCRIPTIVE NOTES.

TABLE 5. — *Analyses of samples from California and Hawaii containing 75-90 percent clay (Group D_5), common- and mixed-rock categories*— Continued

```
06001006  CRETACEOUS, BERRYESSA FM.  S3,T5S,R1E.  (66:23,18,22-24,31,PL1)  SHALE, GREEN, BEDDED: MIN: B.D., 2.50: PHYS PROP.
          INDEX & GEOL MAPS.  *MISC: FEO = 2.30: TIO2 = 0.69.  SPECTRO ANAL ALSO GIVEN.

06005052  EOCENE, IONE FM.  "S18,T5N,R10E"  (417:39,17,PL1-3)  CLAY, RED: WITH IRON NODULES: DH, 234-235 FT: MIN.  INDEX & GEOL
          MAPS, GEOL SEC.  USE: 14.
06005065  EOCENE, IONE FM.  "S24,T5N,R9E"  (417:39,35,PL1-3)  CLAY, BUFF: DH, 157-158 FT.  INDEX & GEOL MAPS, GEOL SEC.

06005095  EOCENE.  T6N,R9E, IONE.  (147:354,18,52,273-276,PL1)  CLAY, WHITE, FINE-GR: 12 FT EXPOSED: AVG THICKNESS 16 FT: PHYS
          PROP, FIRING TESTS.  INDEX MAP.  USE: 3,5.
06005096  "T6N,R9E" CARBONDALE.  (72:109,108)  CLAY, WHITE: 4-20 FT THICK.  USE: 3,5.

06005097  EOCENE, IONE FM.  S13,T5N,R9E.  (417:38,3-5,PL1-4)  CLAY, YELLOW, SANDY: DH, 290-291 FT: MIN.  INDEX & GEOL MAPS, GEOL
          SEC.  USE: 14.
06005098  EOCENE.  S7,T5N,R10E.  (417:38,27,PL1-3)  ARGILLACEOUS SILTSTONE: DH, 232-233 FT.  INDEX & GEOL MAPS, GEOL SEC.

06005099  EOCENE, IONE FM.  S13,T5N,R9E.  (417:39,3-5,17,PL1-4)  CLAY, RED & WHITE: DH, 305-306 FT: MIN.  INDEX & GEOL MAPS,
          GEOL SEC.  USE: 14.
06005100  EOCENE, IONE FM.  S13,T5N,R9E.  (417:38,3-5,17,PL1-4)  SILTSTONE, YELLOW & WHITE, ARGILLACEOUS: DH, 294-295 FT: MIN.
          INDEX & GEOL MAPS, GEOL SEC.  USE: 14.
06005101  EOCENE, IONE FM.  S7,T5N,R10E.  (417:38,17,PL1-3)  CLAY, BROWN: DH, 41-42 FT: MIN.  INDEX & GEOL MAPS, GEOL SEC. USE:14.

06005102  EOCENE, IONE FM.  S13,T5N,R9E.  (417:38,3-5,PL1-4)  CONGLOMERATE: DH, 296-297 FT: MIN.  INDEX & GEOL MAPS, GEOL SEC.
          USE: 14.
06005103  EOCENE, IONE FM.  S24,T5N,R9E.  (417:39,3-5,17,32,PL1,3)  CLAY, WHITE: DH, 167-168 FT: MIN.  INDEX & GEOL MAPS, GEOL
          SEC.  USE: 14.
06005104  EOCENE, IONE FM.  S13,T5N,R9E.  (417:39,3-5,38,PL1-4)  CONGLOMERATE, WHITE: DH, 302-303 FT: MIN.  INDEX & GEOL MAPS,
          GEOL SEC.  USE: 14.
06005105  EOCENE, IONE FM.  S13,T5N,R9E.  (417:39,3-5,38,PL1-4)  CLAY, RED: OH, 306-307 FT: MIN.  INDEX & GEOL MAPS, GEOL SEC.
          USE: 14.
06005106  EOCENE, IONE FM.  S13,T5N,R9E.  (417:38,3-5,17,PL1-4)  CLAY, RED, SANDY: DH, 278-279 FT: MIN.  INDEX & GEOL MAPS,
          GEOL SEC.  USE: 14.
06005107  EOCENE, IONE FM.  S13,T5N,R9E.  (417:38,3-5,PL1-4)  CONGLOMERATE: DH, 295-296 FT: MIN.  INDEX & GEOL MAPS, GEDL SEC.
          USE: 14.
06005108  EOCENE, IONE FM.  S7,T5N,R10E.  (417:38,17,PL1-3)  CLAY, BROWN: DH, 35-36 FT: MIN.  INDEX & GEOL MAPS, GEOL SEC. USE:14.

06005109  EOCENE, IONE FM.  S13,T5N,R9E.  (417:38,3-5,PL1-4)  CONGLOMERATE: DH, 301-302 FT: MIN.  INDEX & GEOL MAPS, GEOL SEC.
          USE: 14.
06005110  EOCENE, IONE FM.  S13,T5N,R9E.  (417:39,3-5,38,PL1-4)  CLAY, RED: DH, 308-309 FT: MIN.  INDEX & GEOL MAPS, GFOL SEC.
          USE: 14.
06005112  EOCENE.  S13,T5N,R9E.  (417:38,5,29,PL1-4)  CLAY, WHITE, YELLOW STAINS: DH, 373-374 FT.  INDEX & GEOL MAPS, GEOL SEC.

06005113  EOCENE.  S13,T5N,R9E.  (417:38,29,PL1-4)  CLAY, RED & BUFF, SILTY:  DH, 311-313 FT.  INDEX & GEOL MAPS, GEOL SEC.

06005114  EOCENE, IONE FM.  S13,T5N,R9E.  (417:39,3-5,38,PL1-4)  CLAY, REO: DH, 307-308 FT: MIN.  INDEX & GEDL MAPS, GEOL SEC.
          USE: 14.
06005115  EOCENE, IONE FM.  S13,T5N,R9E.  (417:39,3-5,38,PL1-4)  CLAY, RED: DH, 310-311 FT: MIN.  INDEX & GEOL MAPS, GEOL SEC.
          USE: 14.
06005116  EOCENE, IONE FM.  S13,T5N,R9E.  (417:39,3-5,38,PL1-4)  CLAY, WHITE: DH, 303-304 FT: MIN.  INDEX & GEOL MAPS, GEOL SEC.
          USE: 14.
06005117  EOCENE, IONE FM.  S13,T5N,R9E.  (417:39,3-5,38,PL1-4)  CLAY, WHITE: DH, 304-305 FT: MIN.  INDEX & GEOL MAPS, GEOL SEC.
          USE: 14.
06005118  EOCENE, IONE FM.  S13,T5N,R9E.  (417:39,3-5,38,PL1-4)  CLAY, RED: DH, 309-310 FT: MIN.  INDEX & GEOL MAPS, GEOL SEC.
          USE: 14.
06007006  PALEOZOIC, CALAVERAS FM.  S18,T21N,R4E.  (130:15,PL1)  LAPILLI TUFF: MIN.  INDEX & GEOL MAP. *MISC: FEO=7.88, MNO =0.14.

06009044  EOCENE, IONE FM.  "T3N,R9E" HELISMA.  (147:355,69,305-310,PL1)  CLAY, FINE GR: 8-15 FT THICK: PHYS PROP, FIRING TESTS.
          INOEX MAP.  USE: 3.  *MISC: NA2O + K2O, BY DIF.
06009045  EOCENE, IONE FM.  "T4N,R10E" VALLEY SPRINGS.  (147:355,68,337-346,PL1)  CLAY, YELLOW: PHYS PROP, FIRING TESTS.  INDEX
          MAP.  *MISC: NA2O + K2O, BY OIF.
06009046  EOCENE, IONE FM.  "T4N,R10E" VALLEY SPRINGS.  (147:355,68,69,299,306-308,PL1)  CLAY, WHITE, PLASTIC: PHYS PROP, FIRING
          TESTS.  INDEX MAP.  USE: 3.  *MISC: NA2O + K2O  BY DIF.
06009047  PALEOZOIC, CALAVERAS FM.  "T4N,R10E" VALLEY SPRINGS.  (147:354,68,258,270,PL1)  KAOLIN, WHITE: 15-25 FT THICK: PHYS
          PROP, FIRING TESTS.  INDEX MAP.  USE: 3.  *MISC: NA2O + K2O BY DIF.
06013018  CRETACEOUS.  "T1N,R1E" MOUNT DIABLO.  (508:406,400,PL15)  SHALE.  GEOL MAP & SEC. *MISC: FEO = 3.82, MNO =0.22, NIO= TR.

06013019  "T1N,R1W" COWELL.  (173:122)  SHALE CLAY.  USE: 4.
06013020  "T1N,R1W" COWELL.  (173:122)  SHALE CLAY.  USE: 4.
06013021  "T1N,R1W" COWELL.  (173:122)  CLAY.  USE: 4.
06013022  CRETACEOUS.  "T1N,R1E" MOUNT DIABLO.  (508:406,384,400,403,PL15)  SHALE, SLATE-COLORED, FRIABLE.  GEOL MAP, GEOL SEC.
          *MISC: FEO = 3.72, MNO = 0.01, NIO = TR.
06013023  "T1N,R1W" CONCORD.  (173:122)  SHALE CLAY.  USE: 4.
06023003  PLEISTOCENE, HOOKTON FM.  "T4N,R1W" EUREKA.  (340:302/ 409:84,8,10,PL1,2)  CLAY, BLUE, PLASTIC: AVG, 22 FT THICK.  INDEX
          & GEOL MAPS, GEOL SEC.  USE: 3.  *MISC: ANAL RECALCULATED TO INCLUDE I. L.

06027028  HOLOCENE.  S4,T22S,R39E.  (498:519/ 202:230,223-229,PL4)  CLAY, WHITE, FINE-GR: MIN.  INDEX & GEOL MAPS.  *MISC:
          AS2O3 = 0.001, CL = 0.13, B2O3 = 0.00.
06027030  S30,T22S,R38E.  (402:111,PL1)  VOLCANIC CINDERS, RED: MIN.  INDEX MAP.
06027041  CAMBRIAN, HARKLESS FM.  S14,24,T7S,R38E.  (585:22,8,77)  PELITE: MIN.  INDEX MAP, MEAS SEC.  SPECTRO ANAL ALSO GIVEN.
          *MISC:  FEO = 6.2, MNO = 0.16.
06027043  CAMBRIAN, HARKLESS FM.  S15,T7S,R38E.  (585:23,8,73)  PELITE: MIN.  INDEX MAP, MEAS SEC.  SPECTRO ANAL ALSO GIVEN.
          *MISC: FEO = 2.8, MNO = 0.04.
06027045  CAMBRIAN, HARKLESS FM.  S1,12,13,24,T10S,R35E.  (585:23,8)  PELITE: MIN.  INDEX MAP.  SPECTRO ANAL ALSO GIVEN.  *MISC:
          FEO = 5.9, MNO = 0.07.
06027060  PRECAMBRIAN & CAMBRIAN, WOOD CANYON FM.  S7,8,T10S,R40E & S29-32,T9S,R40E.  (585:24,8,82)  PELITE: MIN.  INDEX MAP, MEAS
          SEC.  SPECTRO ANAL ALSO GIVEN.  *MISC: FEO = 5.1, MNO = 0.08.
06027061  PRECAMBRIAN & CAMBRIAN, WOOD CANYON FM.  S7,8,T10S,R40E & S29-32,T9S,R40E.  (585:24,8,82)  PELITE: MIN.  INDEX MAP, MEAS
          SEC.  SPECTRO ANAL ALSO GIVEN.  *MISC: FEO = 3.0, MNO = 0.03.
06027062  PRECAMBRIAN & CAMBRIAN, WOOD CANYON FM.  S1,T19S,R45E.  (585:24,8,98)  PELITE: MIN.  INDEX MAP, MEAS SEC.  SPECTRO ANAL
          ALSO GIVEN.  *MISC: FEO = 2.3, MNO = 0.00.
06027065  PRECAMBRIAN & CAMBRIAN, WOOD CANYON FM.  S1,T19S,R45E.  (585:24,8,99)  PELITE: MIN.  INDEX MAP, MEAS SEC.  SPECTRO ANAL
          ALSO GIVEN.  *MISC: FEO = 4.7, MNO = 0.03.
06027067  PRECAMBRIAN, JOHNNIE FM.  S9-11,T20N,R8E.  (585:25,8,127)  PELITE: MIN.  INDEX MAP. MEAS SEC.  SPECTRO ANAL ALSO GIVEN.
          *MISC: FEO = 0.20, MNO = 0.00.
06027068  PRECAMBRIAN, JOHNNIE FM.  S9-11,T20N,R8E.  (585:25,8,127)  PELITE: MIN.  INOEX MAP, MEAS SEC.  SPECTRO ANAL ALSO GIVEN.
          *MISC: FEO = 0.22, MNO = 0.00.
```

TABLE 5. — *Analyses of samples from California and Hawaii containing 75-90 percent clay (Group D_5), common- and mixed-rock categories*— Continued

SAMPLE	06027070	06027073	06029079	06029089	06029093	06037010	06043005	06047003	06055009	06057004
SIO2	54.70	57.70	54.32	63.90	50.33	50.03	49.37	59.10	60.15	60.18
AL203	23.80	22.90	18.88	23.86	16.42	16.70	17.93	17.42	27.80	26.28
FE203	1.60	1.80	6.50	1.20	2.42	6.30	11.90	5.11	1.12	2.68
MGO	2.70	2.20	3.22	0.40	4.10	2.78	2.91	0.0 B	0.0 T	0.0 T
CAO	0.40	0.15	1.00	0.39	1.39	1.20	3.53	0.0 B	0.39	0.64
NA20	0.85	1.60	4.21 E	3.88	0.12	0.26	0.0 B	0.0 B	0.75 E	0.89 E
K20	4.20	3.20	0.0 B	3.08	1.00	0.60	0.0 B	0.0 B	0.0 B	0.0 P
H20	4.90 F	4.60 F	0.0 B	0.0 B	23.95	7.52 F	0.0 B	0.0 B	0.0 B	0.0 B
H20-	0.25	0.14	0.0 B	0.0 B	0.0 B	13.53	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.88	0.87	0.0 B	0.0 B	0.0 B	0.65	0.0 B	0.0 B	0.0 B	0.0 B
P205	0.07	0.13	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	0.10	0.05 P	11.86 G	3.83 G	0.0 B	0.0 B	13.35 G	14.30 G	9.79 G	9.33 G
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.87 *	99.74 *	99.99 *	100.54	99.73	99.57	98.99	95.93	100.00 *	100.00 *
CLASS	11, 74, 0	15, 72, 0	14, 74, 9	20, 72, 0	19, 75, 1	13, 81, 1	4, 82, 12	23, 73, 0	10, 89, 1	11, 87, 1

SAMPLE	06061038	06061039	06061049	06063013	06065049	06065053	06065057	06065059	06065060	06065061
SIO2	48.36	49.48	56.47	65.20	55.08	57.48	58.22	59.20	59.32	59.44
AL203	16.82	20.66	21.90	20.40	15.50	23.39	16.39	26.60	25.67	26.28
FE203	1.74	1.16	7.70	9.10 K	9.80 K	2.55 K	10.36	1.30	1.67	2.24
MGO	5.48	5.89	1.26	0.0 B	2.40	0.48	2.54	0.0 B	0.26	0.20
CAO	10.27	6.44	1.15	2.70	1.40	0.89	1.48	0.0 B	0.58	0.26
NA20	1.54	2.92	0.27 E	0.0 B	1.04 E	0.54	1.10 E	1.10 E	0.10 E	0.15 E
K20	2.83	2.33	0.0 B	0.0 B	0.0 B	0.51	0.0 B	0.0 B	0.0 B	0.0 B
H20	3.07 F	3.64 F	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H20-	0.16	0.38	0.0 B	0.0 B	5.62	5.23	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.80	0.48	0.0 B	0.0 B	1.04	0.0 B	1.10	0.0 B	0.0 B	0.0 B
P205	0.39	0.10	0.0 B	0.0 B	0.20	0.0 B	0.21	0.0 B	0.0 B	0.0 B
CO2	0.35	0.0	11.25 G	2.10	8.08 G	8.61 G	8.55 G	11.30 G	12.34 G	11.64 G
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0	0.08	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.83 *	99.92 *	100.00	99.50	100.23 *	99.76	100.02 *	99.50	99.94	100.21
CLASS	17, 53, 1	12, 64, 0	9, 86, 5	19, 76, 5	17, 76, 4	13, 83, 3	18, 74, 4	11, 88, 0	12, 86, 2	10, 89, 1

SAMPLE	06065062	06065063	06065064	06065066	06065068	06065069	06065070	06065071	06065072	06065092
SIO2	60.78	60.80	61.02	62.14	63.00	63.10	63.19	63.63	63.86	61.20
AL203	26.00	24.75	21.42	23.84	23.83	21.08	26.99	24.07	21.52	27.29
FE203	0.32	2.70	4.00	2.24	1.28 K	5.86	1.98	1.29	4.12	0.77
MGO	0.04	0.51	0.76	0.22	0.0	0.05	0.04	0.0	0.09	0.05
CAO	0.50	0.94	1.68	0.74	0.76	0.90	0.16	0.77	0.24	0.0 T
NA20	0.85	0.57	1.02 E	0.82 E	0.56 E	0.43 E	1.19 E	0.57 F	0.83 E	0.0 B
K20	0.22	0.54	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H20	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H20-	0.0 B	0.0 B	0.0 B	0.0 B	1.18	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.80	0.0 B	0.20	1.00	0.89	0.0 B	0.0 B	0.90	0.0 B	0.0 B
P205	0.0 B	0.0 B	0.0 B	0.0 B	0.0 T	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	10.98 G	9.11 G	10.08 G	9.10 G	8.68 G	8.44 G	6.45 G	8.77 G	8.73 G	10.72 G
SO3	0.0 B	0.03	0.25	0.11	0.0	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	100.50 *	99.95	100.43	100.21	100.18 *	99.86 *	100.00 *	100.00 *	99.39	100.03 *
CLASS	14, 83, 1	14, 82, 3	19, 76, 5	17, 79, 2	19, 78, 1	19, 78, 2	13, 85, 0	20, 78, 1	21, 77, 1	12, 88, 0

SAMPLE	06071183	06071188	06071190	06071198	06071199	06071228	06071238	06073016	06073017	06073020
SIO2	47.50	52.32	54.48	63.52	64.00	58.10	53.02	49.56	50.30	54.36
AL203	33.00 C	18.74	26.12	25.85	25.26	22.40	18.50	15.08	15.96	21.14
FE203	0.0 B	1.20	0.84	0.58	0.0 T	3.20	2.33	3.44	0.86	0.0 B
MGO	2.00	4.35	2.90	0.44	0.14	1.70	4.04	7.84	6.53	4.46
CAO	4.00	0.96	1.01	1.06	0.80	0.60	0.80	1.08	1.24	0.79
NA20	1.50 E	4.98	0.0 B	1.65	1.79 E	0.0	3.80	0.0 B	1.19	0.0 B
K20	0.0 B	0.41	0.0 B	1.74	0.0 B	8.40	0.16	0.0 B	0.45	0.0 B
H20	0.0 B	15.54	0.0 B	0.0 B	0.0 B	3.10 F	5.44 F	22.96	23.61	8.16 F
H20-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.46	11.69	0.0 B	0.0 B	11.09
TIO2	0.0 B	0.10	0.0 B	0.0 B	0.0 B	0.75	0.13	0.40	0.0 B	0.0 B
P205	0.0 B	0.04	0.0 B	0.0 B	0.0 B	0.11	0.0 B	0.0 B	0.0 B	0.0 B
CO2	13.50 G	0.0 B	13.70 G	6.10 G	8.01 G	0.12	0.0 B	0.0 B	0.0 B	0.0 B
SO3	0.0 B	0.33	0.61	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	101.50	100.00 *	99.66	100.94	100.00 *	99.90 *	100.04 *	100.37 *	100.14	100.00 *
CLASS	0, 84, 11	18, 70, 0	7, 84, 8	17, 79, 0	19, 77, 2	15, 72, 0	18, 73, 0	19, 72, 0	21, 70, 0	17, 78, 0

SAMPLE	06073025	06075004	06085017	06085055	06085056	06085057	06085061	06087014	06087015	06087016
SIO2	64.48	57.55	58.46	46.18	46.68	47.21	51.71	60.03	62.22	63.73
AL203	22.22	15.65	17.03	12.91	16.17	16.08	18.21	21.76	20.02	22.12
FE203	2.72	11.85	5.74	11.23	11.79	13.76	1.41	11.49 K	8.25 K	9.01 K
MGO	0.0 T	2.50	2.31	9.24	6.77	4.46	4.20	0.25	0.0 T	0.0 T
CAO	0.68	1.65	0.84	8.12	7.62	6.42	6.96	3.37	1.96	2.83
NA20	0.57 E	0.0 B	1.54	0.0 B	0.0 B	0.0 B	6.15	1.36 E	0.81 E	0.21 F
K20	0.0 B	0.0 B	2.54	0.0 B	0.0 B	0.0 B	0.05	0.0 B	0.0 B	0.0 B
H20	0.0 B	0.0 B	8.99 F	0.0 B	0.0 B	0.0 B	4.43 F	1.45	6.52	1.12
H20-	0.0 B	2.40	0.0 B	0.0 B	0.0 B	0.0 B	0.11	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.90 J	0.0 B	0.0 B	0.0 B	1.12	0.0 B	0.0 B	0.0 B
P205	0.0 B	0.0 B	0.13	0.0 B	0.0 B	0.0 B	0.12	0.0 B	0.0 B	0.0 B
CO2	9.25 G	4.10 G	0.03	10.94 G	9.16 G	10.28 G	0.45	0.0 T	0.0 T	0.0 T
SO3	0.0 B	0.0 B	0.09	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.92 *	96.90 *	99.97 *	98.62	98.19	98.21	99.90 *	99.71	100.03 *	99.02 *
CLASS	22, 76, 1	17, 75, 0	22, 68, 0	11, 66, 10	5, 77, 5	3, 81, 6	18, 58, 1	9, 86, 1	18, 79, 0	14, 82, 2

A INSOL.
B BLANK--NO VALUE REPT.
C AL203 + FE203.
D MGO + CAO.
E NA20 + K20.
F H20+.
G IGNITION LOSS (MAY INCLUDE WATER).
H REPORTED AS S.
I CALCULATED BY COMPILERS.
J ORGANIC MATTER.
K TOTAL IRON.
M BY DIFFERENCE.
N INCLUDES TIO2.
O GREATER THAN.
P LESS THAN.
T TRACE.
* ADDITIONAL INFORMATION IN DESCRIPTIVE NOTES.

TABLE 5. — *Analyses of samples from California and Hawaii containing 75-90 percent clay (Group D_5), common- and mixed-rock categories*— Continued

```
06027070  PRECAMBRIAN, JOHNNIE FM.  S17,18,T20S,R46E.  (585:25,8,105)  PELITE: MIN.  INDEX MAP, MEAS SEC. SPECTRO ANAL ALSO GIVEN.
          *MISC: FEO = 5.4, MNO = 0.02.
06027073  PRECAMBRIAN, JOHNNIE FM.  LAT 36 DEG. 22',LONG 117 DEG. 06'.  (585:25,8)  PELITE: MIN.  INDEX MAP.  SPECTRO ANAL ALSO
          GIVEN.  *MISC: FEO = 4.4, MNO = 0.00.
06029079  OLIGOCENE & MIOCENE, TEMBLOR FM.  S14,T27S,R28E.  (21:275,274/ 15:93)  FULLERS  EARTH: 15-50 FT THICK.  USE: 6.
          *MISC: NA2O + K2O, BY DIF.
06029089  "T28S,R38E" EL PASO RANGE.  (327:308)  PUMICE.
06029093  "T11N,R24W" MARICOPA.  (440:89,95)  BENTONITE.
06037010  "T1S,R16-18W" SANTA MONICA MTN.  (403:183,182) BENTONITE.
06043005  "S10,T4S,R18E" BRICEBURG.  (147:356,PL1)  CLAY.  INDEX MAP.
06047003  "T5S,R15E" MERCED FALLS.  (147:356,128,PL1)  CLAY, WHITE.  INDEX MAP.  USE: 5.

06055009  S12,13,T8N,R7W: S7,18,T8N,R6W.  (147:354,135,258-270,PL1)  KAOLIN, WHITE: PHYS PROP, FIRING TESTS.  INDEX MAP.  USE:3,5.
          *MISC: NA2O + K2O BY DIF.
06057004  TERTIARY.  S13,T14N,R7E.  (147:354,135,137,261,267-269,PL1)  KAOLIN: SMPL OF 10 FT: PHYS PROP, FIRING TESTS.  INDEX MAP.
          USE: 3,5.  *MISC: NA2O + K2O BY DIF.
06061038  PALEOZOIC, CALAVERAS FM.  S19,T14N,R10E.  (82:14,PL1-3)  TUFF, FINE-GR.  INDEX & GEOL MAPS, GEDL SEC. *MISC: FEO = 7.68,
          MNO = 0.34.
06061039  PALEOZOIC, CALAVERAS FM.  S12,T14N,R9E.  (82:14,PL1-4)  TUFF, FINE-GR.  INDEX & GEDL MAPS, GEOL SEC.  *MISC: FEO = 6.27,
          MNO = 0.17.
06061049  EOCENE, IONE FM.  S4,T12N,R6E.  (43:68,67)  CLAY, RED: PHYS PROP, FIRING TESTS: MEAS SEC.  USE: 3.

06063013  TRIASSIC, CEDAR FM.  S6-8,T25N,R8E.  (23:311,310)  SLATE.  USE: 4.
06065049  PALEOCENE, SILVERADO FM.  S22,T5S,R5W.  (285:209,196/ 185:88,77-86,PL1-6)  CLAY: WHITE TO GRAY, SANDY, PLASTIC:
          30 FT THICK: PHYS PROP, FIRING TESTS.  INDEX & GEOL MAPS, GEOL SEC.  USE: 3,5.  *MISC: MNO = TR, CL = 0.07.

06065053  PALEOCENE, SILVERADO FM.  S23,T5S,R5W.  (285:205,186,196/ 185:89,77-81,PL1-6)  CLAY, WHITE, SANDY, PLASTIC: 10 FT THICK:
          PHYS PROP, FIRING TESTS.  INDEX & GEOL MAPS, GEOL SEC.  USE: 3,5.
06065057  EOCENE.  T5S,R5W, TEMESCAL VALLEY.  (147:355,162,168,311-319,PL1)  CLAY, MED-GR: 8 FT THICK: PHYS PROP, FIRING TESTS.
          INDEX MAPS, MEAS SEC, GEOL SEC.  USE:3.  *MISC: NA2O + K2O BY DIF: MNO = TR: CL = 0.07.

06065059  PALEOCENE, SILVERADO FM.  S22,T5S,R5W.  (185:88,77-81,86,PL1-6)  CLAY, WHITE TO GRAY: SELECTED SMPL, 30 FT THICK: PHYS
          PROP, FIRING TESTS.  INDEX & GEOL MAPS, GEOL SEC.  USE: 3,5.
06065060  PALEOCENE, MARTINEZ FM.  T5S,R5W, ALBERHILL.  (478:66,52,65,67,PL1)  CLAY, GRAY-WHITE: MIN: ABOUT 35 FT THICK: PHYS
          PROP, FIRING TESTS.  INDEX MAP.  USE: 3,5.
06065061  PALEOCENE, SILVERADO FM.  S22,T5S,R5W.  (285:201,199/ 185:88,77-81,86,PL1-6)  CLAY, GRAY: ABOUT 20 FT THICK: PHYS PROP,
          FIRING TESTS.  INDEX & GEOL MAPS, GEOL SEC.  USE: 3,5.
06065062  EOCENE.  S35,T4S,R6W.  (147:354,162,169,272,274-276,PL1)  CLAY, WHITE: 7 FT THICK: PHYS PROP, FIRING TESTS.  INDEX MAP:
          MEAS SEC: GEOL SEC.  USE: 3.  *MISC: MNO = 0.01.
06065063  EOCENE.  T5S,R5W, ALBERHILL.  (147:354,162,168,258,287,293-295,PL1)  CLAY, WHITE, FINE-GR, PLASTIC: 8 FT THICK: PHYS
          PROP, FIRING TESTS.  INDEX MAP, MEAS SEC, GEOL SEC.  USE:5.
06065064  TERTIARY.  "T6S,R4W" ELSINORE.  (388:574/ 43:86,75)  CLAY, GRAY.  USE: 14.

06065066  TERTIARY.  "T6S,R4W" ELSINORE.  (388:574/ 43:86,75)  FULLERS  EARTH, GRAY.

06065068  TERTIARY.  "T5S,R5W" ALBERHILL.  (285:199,185,186,196)  CLAY, GRAY, PLASTIC: PHYS PROP, FIRING TESTS.  INDEX MAP,
          GEOL SEC.  USE: 3,5.  *MISC: MNO = 0.00, CL = 0.00, N2O5 = 0.00.
06065069  EOCENE.  S26,T5S,R5W.  (147:355,162,178,324-332,PL1)  CLAY, BLUE, SANDY, MED-GR, PLASTIC: 40 FT THICK: PHYS PROP, FIRING
          TESTS.  INDEX MAPS.  USE: 3.  *MISC: NA2O + K2O BY DIF.
06065070  EOCENE.  T5S,R5W, ALBERHILL.  (147:354,162,168,267-269,PL1)  CLAY, WHITE, SANDY: MIN: PHYS PROP, FIRING TESTS.  INDEX
          MAPS, MEAS SEC, GEOL SEC.  USE: 5.  *MISC: NA2O + K2O BY DIF.
06065071  EOCENE.  T5S,R5W, ALBERHILL.  (147:354,162,264-271,PL1)  CLAY, PLASTIC: PHYS PROP, FIRING TESTS.  INDEX MAPS, MEAS SEC,
          GEOL SEC.  USE: 5.  *MISC: NA2O + K2O BY DIF: MNO = 0.00.
06065072  PALEOCENE, SILVERADO FM.  S3,10,T4S,R7W.  (478:78,52,77,PL1/ 228:77,74,PL1,2)  SHALE, RED OR PINK: MIN: PHYS PROP,
          FIRING TESTS.  INDEX & GEOL MAP, GEOL SEC.  USE: 3.
06065092  EOCENE.  "T5S,R5W" ALBERHILL.  (566:1169)  CLAY, WHITE WITH BLACK SPOTS: 4 FT THICK: PHYS PROP.  MEAS SEC.  USE: 14.
          *MISC: NA2O + K2O = TR.
06071183  "T1S,R4W" COLTON.  (174:327)  CLAY.  USE: 4.
06071188  S31,T9N,R5E:  S22-27,T8N,R5E.  (506:82,81)  BENTONITE, WHITE TO GRAY, BEDS 6-40 FT THICK.  USE: 4,8.  *MISC: CL = 1.03.

06071190  T8N,R5E, HECTOR.  (503:380,262)  BENTONITE: BEDS 2-15 FT THICK.  INDEX MAP.

06071198  S13,24,T14N,R17E.  (147:354,194,258-271,PL1)  CLAY: MIN: PHYS PROP, FIRING TESTS.  INDEX MAP.  USE: 14.

06071199  S13,24,T14N,R17E.  (147:354,194,258-271,PL1)  CLAY: MIN: PHYS PROP, FIRING TESTS.  INDEX MAP.  USE: 14.  *MISC: NA2O +
          K2O BY DIF.
06071228  PRECAMBRIAN, JOHNNIE FM.  S1,T19N,R11E.  (585:25,8,132)  PELITE:  MIN.  INDEX MAP, MEAS SEC.  SPECTRO ANAL ALSO
          GIVEN.  *MISC: FEO = 0.96, MNO = 0.00.
06071238  "T8N,R5E" HECTOR.  (439:34,30)  BENTONITE, PALE GRAY.  *MISC: FEO = 0.13.

06073016  PLIOCENE, SAN DIEGO FM.  S17,T18S,R1W.  (440:88/ 115:10,5-15,PL1)  BENTONITE: TONNAGE.  INDEX & GEOL MAPS, MEAS SEC.
          USE: 6,9.  *MISC: MNO = 0.01.
06073017  PLIOCENE, SAN DIEGO FM.  S30,T18S,R1W & S25,T18S,R2W.  (440:88/ 115:10,5,7,11,15,PL1)  BENTONITE: 0-4 FT THICK.
          INDEX & GEOL MAPS, MEAS SEC.  USE: 6,11.
06073020  "T17S,R2W" NATIONAL CITY.  (563:106)  BENTONITE.  *MISC: MGO INCL ALKALIES.

06073025  PLEISTOCENE.  "T13S,R5W" CARDIFF.  (147:354,287-295,PL1)  CLAY, SANDY: 10-12 FT THICK: PHYS PROP, FIRING TESTS.  INDEX
          MAP.  USE: 3.  *MISC: NA2O + K2O BY DIF.
06075004  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T2S,R5W" SAN FRANCISCO.  (138:269,242,264,265)  SHALE, RED, FINE-GR: MIN.
          *MISC: MNO = 1.20.
06085017  CRETACEOUS, BERRYESSA FM.  S36,T9S,R4E.  (66:23,18,22-24,31,PL1)  SHALE, GREEN: MIN: B.D., 2.36: PHYS PROP.  INDEX &
          GEOL MAPS.  *MISC: FEO = 0.72: TIO2 = 0.65.  SPECTRO ANAL ALSO GIVEN.
06085055  JURASSIC & CRETACEOUS, FRANCISCAN FM.  S17,18,T7S,R2W.  (331:377,374)  CLAY: AVG COMPOS OF FOUR DEPOSITS.  USE: 4.

06085056  JURASSIC & CRETACEOUS, FRANCISCAN FM.  S17,18,T7S,R2W.  (331:377,374)  CLAY: AVG COMPOS OF FOUR DEPOSITS.  USE: 4.

06085057  JURASSIC & CRETACEOUS, FRANCISCAN FM.  S17,18,T7S,R2W.  (331:377,374)  CLAY: AVG COMPOS OF FOUR DEPOSITS.  USE: 4.

06085061  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T9S,R5,6E" PACHECO PASS.  (186:51,45-50,PL3)  TUFF & TUFFACEOUS GRAYWACKE:  MIN.
          INDEX & GEOL MAP, GEOL SEC.  *MISC: FEO = 4.86, MNO = 0.12.
06087014  "T11S,R2W" SANTA CRUZ.  (72:881,880)  CLAY, FINE-GR.  USE: 4.
06087015  "T11S,R2W" SANTA CRUZ.  (72:881,880) SHALE.  USE: 4.  *MISC: SAND = 0.25: H2O INCL CARBONACEOUS MATTER.

06087016  "T11S,R2W" SANTA CRUZ.  (72:881,880)  CLAY, FINE TEXTURE.  USE: 4.  *MISC: H2O INCL CARBONACEOUS MATTER.
```

TABLE 5. — *Analyses of samples from California and Hawaii containing 75-90 percent clay (Group D_5), common- and mixed-rock categories*— Continued

SAMPLE	06087020	06087021	06087022	06089035	06095010	06095011	06095012	06095013	06095015	06095016
SIO2	51.62	51.88	52.79	57.51	53.21	57.25	57.83	58.02	58.65	59.10
AL2O3	16.83	18.05	18.12	19.85	15.91	26.15 C	19.52	26.12 C	18.25	25.41 C
FE2O3	7.87	8.20	7.58	8.28	7.25	0.0 B	7.46 K	0.0 B	7.35	0.0 B
MGO	4.24	4.29	4.27	2.61	0.99	1.10	2.06	1.00	1.15	0.87
CAO	2.67	2.67	3.31	2.98	1.89	3.09	1.24	3.70	2.15	3.61
NA2O	4.36 E	0.54 E	2.34 E	3.16 E	2.21 E	1.88 E	3.86 E	1.55 E	2.05 E	1.10 E
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.81	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	10.38 G	11.87 G	10.58 G	4.46 G	17.21 G	9.30 G	8.03 G	9.27 G	10.00 G	9.81 G
SO3	2.03	2.33	1.01	0.0 B	0.97	0.39	0.0 B	0.33	0.50	0.31
TOT CONS	100.00	99.83	100.00	101.00 *	99.64	99.16	100.00	99.99	100.10	100.21
CLASS	13, 70, 8	11, 74, 10	12, 73, 8	13, 77, 0	17, 74, 5	14, 76, 6	15, 77, 3	14, 76, 6	18, 73, 6	17, 74, 8

SAMPLE	06097015	20001035	20001036	20001037	20003001	20003025	20003026	20003027	20003029	20003030
SIO2	58.10	45.81	44.30	36.26	57.00	30.21	31.83	33.24	35.14	35.36
AL2O3	26.79	12.90	13.56	11.32	21.93	9.28	8.16	8.96	10.24	9.72
FE2O3	1.17	9.15	3.71	1.75	3.23	9.09	9.90	8.25	8.24	7.78
MGO	0.05	4.87	9.66	6.53	0.86	14.44	11.10	9.48	8.10	8.98
CAO	0.32	5.55	8.39	6.75	0.03	8.41	13.56	12.24	7.71	9.14
NA2O	0.0 B	0.86	1.53	1.14	0.40	1.65	1.33	2.26	3.35	1.28
K2O	0.0 B	0.21	0.35	0.30	4.18	1.20	1.43	1.13	0.72	0.54
H2O	0.0 B	7.76 F	6.18 F	22.09 F	6.27 F	6.01 F	5.84 F	5.72 F	9.55 F	10.50 F
H2O-	0.0 B	6.37	1.68	4.08	1.84	10.16	5.82	6.19	10.83	10.00
TIO2	0.56	2.85	2.40	2.06	0.43 J	1.79	2.32	2.34	1.59	1.73
P2O5	0.0 B	0.24	0.19	0.25	0.0 B	0.90	0.56	1.15	0.29	0.28
CO2	12.66 G	0.0 B	0.0 B	0.0 B	0.0	3.54	4.70	3.29	1.66	1.46
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.65 *	100.09 *	100.41 *	100.48 *	100.59 *	99.82 *	99.87 *	99.83 *	99.54 *	100.15 *
CLASS	9, 89, 1	13, 69, 0	16, 53, 0	14, 61, 0	15, 76, 0	4, 61, 7	6, 55, 10	8, 54, 7	8, 66, 3	9, 64, 3

SAMPLE	20003031	20003032	20003033	20003034	20003035	20003037	20003038	20003039	20003040	20003041
SIO2	36.23	36.87	36.91	36.91	37.00	37.26	37.34	37.38	37.54	37.82
AL2O3	10.53	10.47	10.95	11.41	9.46	10.45	7.49	10.64	10.70	13.16
FE2O3	8.81	5.87	7.47	8.62	6.65	9.27	8.23	8.16	6.57	14.11
MGO	12.76	9.26	12.13	11.28	8.80	9.46	9.09	9.08	12.23	11.75
CAO	6.79	9.13	10.42	7.00	9.38	9.31	8.48	8.75	11.28	13.39
NA2O	0.64	3.25	4.98	2.20	1.16	0.73	2.14	1.80	5.15	1.66
K2O	0.94	0.56	1.18	0.78	0.58	0.79	0.73	0.96	1.77	1.49
H2O	7.67 F	6.65 F	4.06 F	6.21 F	9.31 F	8.58 F	10.76 F	7.87 F	0.77 F	0.0 B
H2O-	9.58	8.73	2.44	7.06	10.41	9.49	10.03	6.85	0.52	0.0 B
TIO2	1.65	1.97	2.11	2.17	1.73	1.72	1.67	1.91	2.75	0.0 B
P2O5	0.28	0.31	0.89	0.82	0.25	0.32	0.25	0.30	1.15	0.82
CO2	2.19	1.23	0.27	1.26	1.06	0.76	0.56	3.05	0.20	5.56
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.15
TOT CONS	100.38 *	100.13 *	100.44 *	99.73 *	99.86 *	100.52 *	99.83 *	100.20 *	99.98 *	100.41 *
CLASS	8, 65, 4	12, 57, 3	9, 53, 1	7, 63, 3	13, 60, 2	8, 67, 2	15, 59, 1	9, 62, 6	11, 45, 0	0, 64, 12

SAMPLE	20003042	20003043	20003044	20003045	20003046	20003048	20003049
SIO2	38.78	41.15	41.32	41.43	42.24	42.48	43.83
AL2O3	11.74	12.01	11.65	11.30	11.68	12.63	12.29
FE2O3	9.32	8.24	6.95	9.42	9.65	8.43	5.03
MGO	10.91	8.05	9.06	9.13	9.59	9.27	9.25
CAO	5.45	5.07	5.64	3.61	3.80	5.44	8.12
NA2O	1.59	3.05	1.23	1.64	2.44	2.72	2.04
K2O	0.70	0.86	1.03	0.78	0.51	0.51	0.60
H2O	5.07 F	5.13 F	7.78 F	9.34 F	5.97 F	4.18 F	3.61 F
H2O-	6.91	9.27	8.21	8.42	8.90	4.44	4.92
TIO2	2.44	1.88	1.98	1.96	1.97	2.42	2.00
P2O5	1.33	0.29	0.29	0.10	0.30	0.86	0.37
CO2	0.63	0.55	0.18	0.09	0.09	0.27	0.13
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.77 *	99.52 *	100.01 *	99.83 *	100.15 *	99.44 *	100.10 *
CLASS	8, 64, 1	11, 65, 1	13, 63, 0	11, 69, 0	11, 68, 0	11, 62, 1	16, 53, 0

A INSOL.
B BLANK--NO VALUE REPT.
C AL2O3 + FE2O3.
D MGO + CAO.
E NA2O + K2O.
F H2O+.
G IGNITION LOSS (MAY INCLUDE WATER).
H REPORTED AS S.
I CALCULATED BY COMPILERS.
J ORGANIC MATTER.
K TOTAL IRON.
M BY DIFFERENCE.
N INCLUDES TIO2.
O GREATER THAN.
P LESS THAN.
T TRACE.
* ADDITIONAL INFORMATION IN DESCRIPTIVE NOTES.

TABLE 5. — *Analyses of samples from California and Hawaii containing 75-90 percent clay (Group D_5), common- and mixed-rock categories*— Continued

```
06087020  "T12S,R2E" CHITTENDEN.  (305:78,PL17,18)  CLAY, DARK-BLUE, UNIFORM TEX: 40 FT THICK.  INDEX & GEOL MAP, GEOL SEC.
          USE: 4.
06087021  "T12S,R2E" CHITTENDEN.  (305:78,PL17,18)  CLAY, BLUE, UNIFORM TEX: 40 FT THICK.  INDEX & GEOL MAP, GEOL SEC.  USE: 4.

06087022  "T12S,R2E" CHITTENDEN.  (305:78,PL17,18)  CLAY, DARK-BLUE, UNIFORM TEX: 40 FT THICK.  INDEX & GEOL MAP, GEOL SEC. USE:4.

06089035  S16,T34N,R4W.  (492:71)  SHALE: 300 FT THICK: TONNAGE.  USE: 4.  *MISC: NA2O + K2O, BY DIF: MN3O4 = 1.34.

06095010  "T5N,R2W" SUISUN.  (174:326)  CLAY.  USE: 4.
06095011  "T5N,R2W" SUISUN.  (174:326)  CLAY.  USE: 3.
06095012  "T3N,R4W" VALLEJO.  (57:301)  SHALE, YELLOW.  USE: 3.
06095013  "T5N,R2W" SUISUN.  (174:326)  CLAY.  USE: 4.
06095015  TERTIARY.  S17,T5N,R1W.  (21:188,185,186)  CLAY, GRAY TO BUFF, PLASTIC, LAMINATED.  USE: 4.

06095016  "T5N,R2W" SUISUN.  (174:326)  CLAY.  USE: 4.
06097015  S3,T6N,R6W.  (57:318,317/ 147:354,227,258-270,PL1)  KAOLIN, WHITE, PLASTIC: 20-30 FT THICK: MIN: PHYS PROP, FIRING
          TESTS.  INDEX MAP.  USE: 3,4.  *MISC: MNO = TR.
20001035  PLEISTOCENE, PAHALA ASH.  HILINA PALI.  (270:322,318)  VOLCANIC ASH, YELLOWISH-ORANGE: CONTAINS PELLETS: ROADCUT SMPL:
          MIN.  INDEX MAP.  *MISC: FEO = 3.36, MNO = 0.16.
20001036  HOLOCENE, KEANAKAKOI FM.  KILAUEA.  (270:322,318)  CLAYEY PALEOSOL: REDDISH-BROWN: 5 CM THICK: MIN.  INDEX MAP.
          *MISC: FEO = 8.26, MNO = 0.20.
20001037  HOLOCENE, KEANAKAKOI FM.  (270:322,318)  CLAYEY SOIL, BLACK: 10 CM THICK: MIN.  INDEX MAP.  *MISC: FEO=7.81, MNO=0.14.

20003001  KOOLAU RANGE.  (577:24)  CLAY, GRAY: 1-8 IN THICK: MIN: PHYS PROP, FIRING TESTS.  USE: 5.  *MISC: TIO2 = 4.33,
          LI2O = 0.03, ZRO2 = 0.02, BAO = 0.04: MNO, CL, N, RARE EARTHS = 0.00.
20003025  PLEISTOCENE.  MANANA ISLAND.  (268:343,335,338,344)  TUFF: B.D., 2.02: MIN.  INDEX MAP.  *MISC: FEO = 2.93, MNO = 0.21.

20003026  PLEISTOCENE.  ULUPAU HEAD.  (268:343,335,338)  TUFF: B.D., 2.00: MIN.  INDEX MAP.  *MISC: FEO = 3.15, MNO = 0.17.

20003027  PLEISTOCENE.  ROUND TOP.  (268:343,335,338,344)  TUFF: B.D., 1.78: MIN.  INDEX MAP.  *MISC: FEO = 5.39, MNO = 0.19.

20003029  PLEISTOCENE.  KOKO CRATER.  (268:342,335,338,344)  TUFF, ORANGE-BROWN, DENSE: B.D., 1.86: MIN.  INDEX MAP.
          *MISC: FEO = 1.98, MNO = 0.14.
20003030  PLEISTOCENE.  KOKO CRATER.  (268:342,335,338,344)  TUFF, REDDISH-BROWN, DENSE: B.D., 2.06: MIN.  INDEX MAP.
          *MISC: FEO = 3.23, MNO = 0.15.
20003031  PLEISTOCENE.  KOKO CRATER.  (268:342,335,338,344)  TUFF, ORANGE, DENSE: B.D., 2.01: MIN.  INDEX MAP.  *MISC: FEO = 2.17,
          MNO = 0.14.
20003032  PLEISTOCENE.  KOKO CRATER.  (268:342,335,338,344)  TUFF: B.D., 2.05: MIN.  INDEX MAP.  *MISC: FEO = 5.69, MNO = 0.14.

20003033  PLEISTOCENE.  MANANA ISLAND.  (268:341,335,338,344)  TUFF: B.D., 1.55: MIN.  INDEX MAP.  *MISC: FEO = 6.40, MNO = 0.23.

20003034  PLEISTOCENE.  NORTH OF ALIAMANU CRATER.  (268:343,335,338)  TUFF: B.D., 1.98: MIN.  INDEX MAP.  *MISC: FEO = 3.82,
          MNO = 0.19.
20003035  PLEISTOCENE.  KOKO CRATER.  (268:342,335,338)  TUFF, GREENISH-GRAY, DENSE: B.D., 2.07: MIN.  INDEX MAP.
          *MISC: FEO = 3.93, MNO = 0.14.
20003037  PLEISTOCENE.  KOKO CRATER.  (268:342,335,338)  TUFF: GRAYISH-BROWN, DENSE: B.D., 1.90: MIN.  INDEX MAP. *MISC: FEO=2.25,
          MNO = 0.13.
20003038  PLEISTOCENE.  KOKO CRATER.  (268:342,335,338,344)  TUFF, GRAYISH-BROWN, DENSE: B.D., 2.08: MIN.  INDEX MAP.
          *MISC: FEO = 2.93, MNO = 0.13.
20003039  PLEISTOCENE.  KOKO CRATER.  (268:343,335,338,344)  TUFF, POROUS: B.D., 1.82: MIN.  INDEX MAP. *MISC: FEO=3.33, MNO=0.12.

20003040  PLEISTOCENE.  FOOT OF ROUND TOP.  (268:341,335,344)  ASH & LAPILLI: MIN.  INDEX MAP.  *MISC: FEO = 9.14, MNO = 0.21.

20003041  PUNCH BOWL.  (375:427,428)  TUFF, BROWN, MOTL: CONTAINS CORAL.  *MISC: FEO = 0.14, MNO = 0.24, CUO = 0.07, FES2 = 0.05.

20003042  PLEISTOCENE.  NORTH OF ALIAMANU CRATER.  (268:343,335,338)  TUFF: ROADCUT SMPL: B.D., 1.82: MIN.  INDEX MAP.
          *MISC: FEO = 4.67, MNO = 0.23.
20003043  PLEISTOCENE.  KOKO CRATER.  (268:342,335,338)  TUFF: B.D., 1.64: MIN.  INDEX MAP.  *MISC: FEO = 3.80, MNO = 0.17.

20003044  PLEISTOCENE.  KOKO CRATER.  (268:342,335,338)  TUFF: B.D., 2.02: MIN.  INDEX MAP.  *MISC: FEO = 4.57, MNO = 0.12.

20003045  PLEISTOCENE.  KOKO CRATER.  (268:343,335,338)  TUFF, POROUS: B.D., 1.76: MIN.  INDEX MAP. *MISC: FEO = 2.51, MNO = 0.10.

20003046  PLEISTOCENE.  KOKO CRATER.  (268:343,335,338)  TUFF, POROUS: B.D., 1.89: MIN.  INDEX MAP. *MISC: FEO = 2.88, MNO = 0.13.

20003048  PLEISTOCENE.  NORTH OF ALIAMANU CRATER.  (268:343,335,338)  TUFF: ROADCUT SMPL: B.D., 1.73: MIN.  INDEX MAP.
          *MISC: FEO = 5.56, MNO = 0.23.
20003049  PLEISTOCENE.  KOKO CRATER.  (268:341,335,338)  TUFF: B.D., 1.81: MIN.  INDEX MAP.  *MISC: FEO = 7.77, MNO = 0.14.
```

TABLE 6. — *Analyses of samples from California and Hawaii containing 90-100 percent clay (Group D_6), from all rock categories*

SAMPLE	06001004	06001005	06001009	06001010	06005016	06005017	06005018	06005019	06005020	06005021
SIO2	44.40	48.93	47.90	48.39	6.45	30.82	32.18	33.05	34.52	34.68
AL2O3	15.60	36.13	35.91	35.77	39.85	25.76	23.91	28.05	31.95	28.73
FE2O3	11.60 K	1.15	0.96	0.91	31.35	26.30	25.75	24.05	18.55	22.75
MGO	4.10	0.21	0.30	0.23	0.36	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CAO	8.60	0.36	0.10	0.10	0.0	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
NA2O	3.90	0.87 E	0.08	0.09	0.0	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	1.50	0.0 B	0.42	0.42	0.0	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	9.50	0.0 B	12.73 F	12.39 F	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.83	0.95	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.54	0.53	1.53	2.42	1.62	2.19	2.45	2.45
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	0.0 B	12.35 G	0.30 G	0.27 G	20.46 G	14.70 G	16.54 G	12.66 G	12.53 G	11.39 G
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.20	100.00 *	100.07	100.05	100.00	100.00	100.00	100.00	100.00	100.00
CLASS	4, 77, 2	0, 89, 1	0, 89, 0	0, 89, 0	0, 31, 1	0, 67, 0	0, 71, 0	0, 68, 0	0, 70, 0	0, 69, 0

SAMPLE	06005022	06005023	06005024	06005025	06005026	06005027	06005028	06005029	06005030	06005031
SIO2	34.92	34.95	35.15	35.31	35.93	36.00	36.13	36.98	37.12	37.31
AL2O3	27.44	29.39	32.66	31.44	31.67	31.23	28.00	30.14	30.53	34.85
FE2O3	23.75	21.75	14.95	12.18	17.50	17.85	21.80	17.55	17.50	10.45
MGO	0.0 B	0.0 B	0.0 B	0.26	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CAO	0.0 B	0.0 B	0.0 B	0.0 T	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
NA2O	0.0 B	0.0 B	0.0 B	0.24	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.03	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	14.32	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	2.19	1.51	3.03	2.48	1.60	2.00	2.37	1.81	1.38	2.59
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	11.70 G	12.40 G	14.21 G	0.17	13.30 G	12.92 G	11.70 G	13.52 G	13.47 G	14.80 G
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	100.00	100.00	100.00	99.94 *	100.00	100.00	100.00	100.00	100.00	100.00
CLASS	0, 70, 0	0, 71, 0	0, 72, 0	0, 72, 0	0, 73, 0	0, 72, 0	0, 72, 0	0, 75, 0	0, 75, 0	0, 75, 0

SAMPLE	06005032	06005033	06005034	06005035	06005036	06005037	06005038	06005039	06005040	06005041
SIO2	37.39	37.52	37.82	37.85	38.14	38.30	38.41	39.10	39.76	39.88
AL2O3	29.72	32.05	30.16	27.55	27.28	41.50	24.45	34.97	32.98	30.10
FE2O3	19.10	14.85	18.75	20.65	21.10	6.00	21.30	11.25	14.70	16.20
MGO	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CAO	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	12.60 F	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	1.50	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	1.54	1.66	1.95	2.12	1.38	0.0 B	1.22	0.98	1.62	1.84
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	12.25 G	13.92 G	11.32 G	11.83 G	12.10 G	0.0 B	14.62 G	13.70 G	10.94 G	11.98 G
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	100.00	100.00	100.00	100.00	100.00	99.90	100.00	100.00	100.00	100.00
CLASS	0, 74, 0	0, 75, 0	0, 74, 0	0, 75, 0	0, 76, 0	0, 75, 0	0, 79, 0	0, 77, 0	0, 76, 0	0, 78, 0

SAMPLE	06005042	06005043	06005044	06005045	06005046	06005047	06005048	06005049	06005050	06005051
SIO2	40.08	40.61	40.86	41.32	42.17	42.54	42.70	43.34	43.48	43.60
AL2O3	26.88	37.43	27.80	38.14	42.48	39.48	39.05	38.83	40.14 N	37.80
FE2O3	20.20	7.27	19.30	1.34	1.26	2.00	1.90	1.60	0.92	1.10
MGO	0.0 B	0.0 T	0.0 B	0.02	0.0 T	0.24	0.0 B	0.0 B	0.20	0.18
CAO	0.0 B	0.11	0.0 B	0.36	0.16	0.49	0.0 B	0.0 B	0.32	0.40
NA2O	0.0 B	0.89	0.0 B	0.11	0.96 E	0.0 E	0.0 B	0.0 B	0.24 E	0.23
K2O	0.0 B	0.26	0.0 B	0.39	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.12
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	13.60 F	0.0 B	0.0 B	13.60 F	13.70 F
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	1.28	0.0 B	0.0 B	1.10	1.20
TIO2	1.38	0.0 B	1.45	2.62	0.0 B	1.32	2.54	2.71	0.0 B	1.90
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	11.46 G	13.40 G	10.59 G	15.69 G	12.97 G	0.0 B	13.81 G	13.52 G	0.0 B	0.0 B
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	100.00	99.97	100.00	99.99	100.00 *	100.95	100.00	100.00	100.00 *	100.23
CLASS	0, 78, 0	0, 78, 0	0, 79, 0	0, 80, 1	0, 79, 0	0, 82, 0	0, 81, 0	0, 82, 0	0, 83, 0	0, 83, 0

SAMPLE	06005053	06005054	06005055	06005056	06005057	06005058	06005059	06005060
SIO2	45.77	45.80	46.56	47.04	47.37	47.67	48.00	48.10
AL2O3	36.06	33.30	28.71	27.79	25.76	28.93	34.56	32.60
FE2O3	2.60	11.60	12.45	12.35	14.25	8.75	1.54	1.25
MGO	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.35	0.10
CAO	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.23	0.12
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.51	0.14
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.59	0.34
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	12.30 F	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	1.30	0.0 B
TIO2	2.05	0.79	1.12	1.20	1.18	1.72	1.00	2.20
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	13.52 G	8.51 G	11.16 G	11.62 G	11.44 G	12.93 G	0.0 B	15.15 G
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	100.00	100.00	100.00	100.00	100.00	100.00	100.38	100.00
CLASS	0, 86, 0	0, 83, 0	0, 87, 0	0, 89, 0	0, 90, 0	0, 90, 0	0, 89, 0	0, 91, 0

A INSOL.
B BLANK--NO VALUE REPT.
C AL2O3 + FE2O3.
D MGO + CAO.
E NA2O + K2O.
F H2O+.
G IGNITION LOSS (MAY INCLUDE WATER).
H REPORTED AS S.
I CALCULATED BY COMPILERS.
J ORGANIC MATTER.
K TOTAL IRON.
M BY DIFFERENCE.
N INCLUDES TIO2.
O GREATER THAN.
P LESS THAN.
T TRACE.
* ADDITIONAL INFORMATION IN DESCRIPTIVE NOTES.

TABLE 6. — *Analyses of samples from California and Hawaii containing 90-100 percent clay (Group D_6), from all rock categories* —Continued

06001004 "T1S,R4W" BERKELEY. (255:102,101) BRECCIATED ROCK, LIGHT-COLORED.
06001005 EOCENE, TESLA FM. S26,T3S,R3E. (147:354,43-45,258-270,PL1/ 113:135,138) CLAY, WHITE, PLASTIC: OUTCROP 6-8 FT THICK. PHYS PROP, FIRING TESTS. INDEX MAPS, GEOL SEC. USE: 3,5. *MISC: ALKALIES, BY DIF.

06001009 EOCENE. "S25,T3S,R3E" (4:277,273-275) CLAY, WHITE: MIN. INDEX MAP, MEAS SEC.

06001010 EOCENE. "S25,T3S,R3E" (4:277,273-275) CLAY, WHITE: MIN. INDEX MAP, MEAS SEC. USE: 5.

06005016 EOCENE, IONE FM. "T6N,R9E" IONE. (37:15,2,22,PL1,2) LATERITE: MIN: FIRING TEST. INDEX & GEOL MAP, GEOL SEC. USE:5,14.

06005017 EOCENE, IONE FM. "S24,T5N,R9E" (417:39,3,17,33,PL1-3) CLAY, RED, BUFF, MOTL: DH, 184-194 FT: MIN. INDEX & GEOL MAPS, GEOL SEC. USE: 14.
06005018 EOCENE, IONE FM. "S24,T5N,R9E" (417:39,3,17,33,PL1-3) CLAY, RED, WHITE, BUFF, MOTL: DH, 182-183 FT: MIN. INDEX & GEOL MAPS, GEOL SEC. USE: 14.
06005019 EOCENE, IONE FM. "S24,T5N,R9E" (417:39,3-5,17,35,PL1-3) CLAY, RED, BUFF, MOTL: DH, 5-6 FT: MIN. INDEX & GEOL MAPS, GEOL SEC. USE:14.
06005020 EOCENE, IONE FM. S13,T5N,R9E. (417:38,17,28,PL1-3) CLAY, BUFF, RED,SANDY: DH, 169-169.5 FT: MIN. INDEX & GEOL MAPS, GEOL SEC. USE: 14.
06005021 EOCENE, IONE FM. "S24,T5N,R9E" (417:39,3,17,33,PL1-3) CLAY, RED, WHITE, BUFF, MOTL: DH, 178-179 FT: MIN. INDEX & GEOL MAPS, GEOL SEC. USE: 14.
06005022 EOCENE, IONE FM. "S24,T5N,R9E" (417:39,3,17,33,PL1-3) CLAY, RED & WHITE: DH, 201-202 FT: MIN. INDEX & GEOL MAPS, GEOL SEC. USE: 14.
06005023 EOCENE, IONE FM. "S24,T5N,R9E" (417:39,3-5,17,35,PL1-3) CLAY, RED, YELLOW, PURPLE, MOTL: DH, 40-41 FT: MIN. INDEX & GEOL MAPS, GEOL SEC. USE: 14.
06005024 EOCENE, IONE FM. "S24,T5N,R9E" (417:39,3,17,33,PL1-3) CLAY, RED, WHITE, MOTL: DH, 156-157 FT: MIN. INDEX & GEOL MAPS, GEOL SEC. USE: 14.
06005025 EOCENE, IONE FM. S24,T5N,R9E. (37:22,2,PL1,2) CLAY, RED: MIN. INDEX MAPS, GEOL MAPS, GEOL SEC. USE: 3,14. *MISC: FEO = 2.33, I.L. = 1.18.
06005026 EOCENE, IONE FM. "S24,T5N,R9E" (417:39,3-5,17,35,PL1-3) CLAY, RED, MOTL: DH, 31-32 FT: MIN. INDEX & GEOL MAPS, GEOL SEC. USE: 14.
06005027 EOCENE, IONE FM. "S24,T5N,R9E" (417:39,3-5,17,35,PL1-3) CLAY, RED, BUFF, MOTL: DH, 10-11 FT: MIN. INDEX & GEOL MAPS, GEOL SEC. USE: 14.
06005028 EOCENE, IONE FM. "S24,T5N,R9E" (417:39,3,17,33,PL1-3) CLAY, RED, WHITE, BUFF, MOTL: DH, 176-177 FT: MIN. INDEX & GEOL MAPS, GEOL SEC. USE: 14.
06005029 EOCENE, IONE FM. "S24,T5N,R9E" (417:39,3,17,33,PL1-3) CLAY, RED, WHITE, BUFF, MOTL: DH, 180-181 FT: MIN. INDEX & GEOL MAPS, GEOL SEC. USE: 14.
06005030 EOCENE, IONE FM. "S24,T5N,R9E" (417:39,3,17,33,PL1-3) CLAY, RED, WHITE, BUFF, MOTL: DH, 196-197 FT: MIN. INDEX & GEOL MAPS, GEOL SEC. USE: 14.
06005031 EOCENE, IONE FM. "S24,T5N,R9E" (417:39,3,17,33,PL1-3) CLAY, BUFF, GRAY, MOTL: DH, 144-145 FT: MIN. INDEX & GEOL MAPS, GEOL SEC. USE: 14.
06005032 EOCENE, IONE FM. "S24,T5N,R9E" (417:39,3,17,33,PL1-3) CLAY, RED & WHITE: DH, 199-200 FT: MIN. INDEX & GEOL MAPS, GEOL SEC. USE: 14.
06005033 EOCENE, IONE FM. "S24,T5N,R9E" (417:39,3-5,17,35,PL1-3) CLAY, RED, BUFF, PURPLE, MOTL: DH, 15-16 FT: MIN. INDEX & GEOL MAPS, GEOL SEC. USE: 14.
06005034 EOCENE, IONE FM. "S24,T5N,R9E" (417:39,3,17,33,PL1-3) CLAY, YELLOW, RED: DH, 178-179 FT: MIN: INDEX & GEOL MAPS, GEOL SEC. USE: 14.
06005035 EOCENE, IONE FM. "S24,T5N,R9E" (417:39,3,17,33,PL1-3) CLAY, RED, WHITE: DH, 218-219 FT: MIN. INDEX & GEOL MAPS, GEOL SEC. USE: 14.
06005036 EOCENE, IONE FM. "S24,T5N,R9E" (417:39,3,17,33,PL1-3) CLAY, YELLOW, RED: DH, 202-203 FT: MIN: FIRING TESTS. INDEX & GEOL MAPS, GEOL SEC. USE: 14.
06005037 TERTIARY. "T6N,R9E" IONE. (3:383,355,357,384) LATERITE, RED, BUFF, MASSIVE. INDEX & GEOL MAPS, MEAS SEC, GEOL SEC.

06005038 EOCENE, IONE FM. S7,T5N,R10E. (417:38,17,27,PL1-3) CLAY, RED, BUFF, MOTL: DH, 226-227 FT: MIN. INDEX & GEOL MAPS, GEOL SEC. USE: 14.
06005039 EOCENE, IONE FM. "S24,T5N,R9E" (417:39,3-5,17,35,PL1-3) CLAY, RED, BUFF, MOTL: DH, 20-21 FT: MIN. INDEX & GEOL MAPS, GEOL SEC. USE: 14.
06005040 EOCENE, IONE FM. "S24,T5N,R9E" (417:39,3,17,33,PL1-3) CLAY, WHITE, RED, MOTL: DH, 174-175 FT: MIN. INDEX & GEOL MAP, GEOL SEC. USE: 14.
06005041 EOCENE, IONE FM. "S24,T5N,R9E" (417:39,3,17,33,PL1-3) CLAY, RED: DH, 204-214 FT: MIN. INDEX & GEOL MAPS, GEOL SEC. USE: 14.
06005042 EOCENE, IONE FM. "S24,T5N,R9E" (417:39,3,17,33,PL1-3) CLAY, RED, WHITE: DH 210-211 FT: MIN. INDEX & GEOL MAPS, GEOL SEC. USE: 14.
06005043 EOCENE. T6N,R9E, IONE. (147:355,18,53,PL1,6) LATERITE: PHYS PROP, FIRING TESTS. INDEX MAP. USE: 19.

06005044 EOCENE, IONE FM. "S24,T5N,R9E" (417:39,3,17,33,PL1-3) CLAY, BUFF, PURPLE, MOTL: DH, 180-181 FT: MIN. INDEX & GEOL MAPS, GEOL SEC. USE: 14.
06005045 EOCENE, IONE FM. "T6N,R9E" IONE. (37:22,2,6,PL1,2) CLAY: AVG OF 4 ANAL: MIN: FIRING TESTS. INDEX & GEOL MAPS, GEOL SEC. USE: 3,14.
06005046 EOCENE, IONE FM. T6N,R9E, IONE. (147:354,53,272-276,PL1/ 71:3,2) CLAY, MED-GR, PLASTIC: PHYS PROP, FIRING TESTS: 8-10 FT THICK. INDEX MAPS. USE: 3,5. *MISC: NA2O + K2O, BY DIF.
06005047 EOCENE, IONE FM. "T6N,R9E" IONE. (3:381,355,384) CLAY, WHITE: MIN. INDEX & GEOL MAPS, MEAS SEC, GEOL SEC.

06005048 EOCENE, IONE FM. "S24,T5N,R9E" (417:39,3,17,33,PL1-3) CLAY, WHITE, SILTY: DH, 129-130 FT: MIN. INDEX & GEOL MAPS, GEOL SEC. USE: 14.
06005049 EOCENE, IONE FM. "S24,T5N,R9E" (417:39,3,17,33,PL1-3) CLAY, WHITE, SANDY: DH, 124-125 FT: MIN. INDEX & GEOL MAPS, GEOL SEC. USE: 14.
06005050 EOCENE, IONE FM. "T6N,R9E" IONE. (3:381,355,384) CLAY, WHITE: MIN. INDEX & GEOL MAP, MEAS SEC, GEOL SEC. *MISC: NA2O + K2O BY DIF.
06005051 EOCENE, IONE FM. "T6N,R9E" IONE. (3:381,355,384) CLAY, WHITE: MIN. INDEX & GEOL MAPS, MEAS SEC, GEOL SEC.

06005053 EOCENE, IONE FM. S13,T5N,R9E. (417:39,17,29,PL1-4) CLAY, GRAY: DH, 154-155 FT: MIN. INDEX & GEOL MAPS, GEOL SEC. USE: 14.
06005054 JURASSIC, AMADOR GR. S7,T5N,R10E. (417:38,13,27,PL1-3) GREENSTONE, WEATHERED: DH, 263-264 FT. INDEX & GEOL MAPS, GEOL SEC.
06005055 EOCENE, IONE FM. "S24,T5N,R9E" (417:39,3-5,17,35,PL1-3) CLAY, RED, YELLOW, PURPLE, MOTL, SANDY: DH, 45-46 FT: MIN. INDEX & GEOL MAPS, GEOL SEC. USE: 14.
06005056 EOCENE, IONE FM. S7,T5N,R10E. (417:38,17,27,PL1-3) CLAY, RED, BUFF, MOTL: DH, 228-229 FT: MIN. INDEX & GEOL MAPS, GEOL SEC. USE: 14.
06005057 EOCENE, IONE FM. S18,T5N,R10E. (417:39,17,30,PL1-3) CLAY, RED, BUFF, MOTL: CONTAINS IRON NODULES: DH, 228-229 FT: MIN. INDEX & GEOL MAPS, GEOL SEC. USE: 14.
06005058 EOCENE, IONE FM. S13,T5N,R9E. (417:39,17,29,PL1-4) CLAY, CREAM-COLORED: CONTAINS PELLETS OF SIDERITE, DH, 187-188 FT: MIN. INDEX & GEOL MAPS, GEOL SEC. USE: 14.
06005059 EOCENE, IONE FM. "T6N,R9E" IONE. (3:379,355,357,380-384) CLAY, WHITE, PLASTIC: MIN. INDEX & GEOL MAPS, MEAS SEC, GEOL SEC. USE: 5.
06005060 EOCENE, IONE FM. "T6N,R9E" IONE. (37:22,4,25,26) CLAY, RED: MIN: FIRING TESTS. INDEX & GEOL MAPS. USE: 3,5.

TABLE 6. — *Analyses of samples from California and Hawaii containing 90-100 percent clay (Group D_6), from all rock categories*— Continued

SAMPLE	06005061	06005062	06005064	06005065	06005066	06005067	06005068	06005069	06005070	06005071
SIO2	48.34	48.51	51.51	51.53	52.09	53.56	54.81	55.01	55.13	55.71
AL2O3	24.03	36.88	25.97	29.10	27.34	26.96	31.52	29.54	29.62	26.18
FE2O3	13.40	1.91	10.80	10.15	7.90	3.34	1.60	5.15	6.70	7.15
MGO	0.0 B	0.26	0.0 B	0.0 B	0.0 B	0.37	0.0 B	0.0 B	0.0 B	0.0 B
CAO	0.0 B	0.21	0.0 B	0.0 B	0.0 B	0.58	0.0 B	0.0 B	0.0 B	0.0 B
NA2O	0.0 B	0.25	0.0 B	0.0 B	0.0 B	0.23	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.09	0.0 B	0.0 B	0.0 B	0.47	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	1.20	0.0 B	1.14	1.20	1.16	1.68	0.42	1.22	0.79	1.18
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	13.03 G	12.80 G	10.58 G	8.02 G	11.51 G	12.93 G	11.65 G	9.08 G	7.76 G	9.78 G
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	100.00	100.91	100.00	100.00	100.00	100.12 *	100.00	100.00	100.00	100.00
CLASS	0, 93, 0	0, 89, I	0, 95, 0	0, 92, 0	0, 96, 0	2, 94, 2	0, 98, 0	0, 97, 0	0, 96, 0	1, 97, 0

SAMPLE	06005072	06005073	06005074	06005075	06005076	06005077	06005078	06005079	06005080	06005081
SIO2	55.82	55.92	56.15	56.29	56.49	56.75	56.76	56.86	57.57	57.70
AL2O3	29.09	26.95	28.17	27.55	26.54	30.83	29.49	27.48	24.62	23.69
FE2O3	6.50	7.70	6.00	7.15	7.40	2.65	3.75	6.40	9.05	10.70
MGO	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CAO	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.64	0.53	1.22	0.67	0.75	0.89	0.85	0.85	0.83	0.64
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	7.95 G	8.90 G	8.46 G	8.34 G	8.82 G	8.88 G	9.15 G	8.41 G	7.93 G	7.27 G
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
CLASS	0, 98, 0	0, 99, 0	0, 99, 0	0, 99, 0	1, 98, 0	0, 99, 0	0, 99, 0	1, 98, 0	4, 95, 0	4, 96, 0

SAMPLE	06005082	06005083	06005084	06005085	06005086	06005087	06005088	06005089	06005090	06005091
SIO2	57.78	57.86	58.09	58.28	58.31	58.47	58.99	59.15	59.51	59.51
AL2O3	30.15	29.30	27.20	31.47	30.20	24.62	29.96	25.66	25.42	27.43
FE2O3	5.05	5.40	6.10	1.60	2.15	9.45	2.05	6.95	6.70	3.55
MGO	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CAO	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.53	0.64	0.67	0.71	0.73	0.60	0.51	0.56	0.67	1.10
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	6.49 G	6.80 G	7.94 G	7.94 G	8.61 G	6.86 G	8.49 G	7.68 G	7.70 G	8.41 G
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
CLASS	0, 99, 0	0, 99, 0	3, 96, 0	1, 98, 0	2, 97, 0	4, 95, 0	4, 96, 0	6, 93, 0	7, 92, 0	7, 92, 0

SAMPLE	06005092	06005093	06005094	06005119	06005127	06005128	06005129	06005130	06005132	06005133
SIO2	59.85	60.00	60.63	46.35	27.46	35.31	41.76	49.34	42.18	52.26
AL2O3	26.27	30.29	26.06	25.77	27.60	32.90	38.86	33.07	38.09	30.60
FE2O3	5.70	2.27	5.35	14.55	27.85	13.85	1.18	1.31	1.46	1.00
MGO	0.0 B	0.0 T	0.0 B	0.0 B	0.0 B	0.0 B	0.0	0.06	0.0	0.30
CAO	0.0 B	0.28	0.0 B	0.0 B	0.0 B	0.0 B	0.26	0.10	0.14	0.16
NA2O	0.0 B	1.02 E	0.0 B	0.0 B	0.0 B	0.0 B	0.10	0.22	0.17	1.03
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.09	0.69	0.11	0.07
H2O	0.0 B	8.05	0.0 B	0.0 B	0.0 B	0.0 B	15.08	13.27	14.80	12.23
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.56	0.0 B	0.45	1.26	2.45	2.57	2.64	1.43	2.47	1.57
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	7.62 G	0.0 B	7.51 G	12.07 G	14.64 G	15.37 G	0.0	0.0	0.0	0.31
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.11	0.09	0.04	0.11
TOT CONS	100.00	101.91	100.00	100.00	100.00	100.00	100.25 *	99.87 *	99.62 *	99.65 *
CLASS	7, 92, 0	4, 97, 0	9, 91, 0	0, 89, 0	0, 61, 0	0, 73, 0	0, 81, 0	0, 91, 0	0, 81, 0	0, 94, 1

SAMPLE	06005136	06005137	06009043	06013038	06025008	06025031	06027048	06027063	06037009
SIO2	44.70	48.80	51.64	50.58	49.10	27.93	47.80	51.90	49.70
AL2O3	38.64	35.18	23.84	14.35	36.90	42.33	23.00	17.80	22.10
FE2O3	0.96	1.24	9.78	15.64	1.40	1.92 K	3.30	13.60	2.12
MGO	0.08	0.0 B	1.24	3.08	1.40	0.0 B	5.50	2.10	2.85
CAO	0.24	0.22	0.67	1.77	3.10	0.55	0.50	0.72	1.08
NA2O	0.62	0.25	0.91 E	0.70	1.50	0.70	0.10	0.0	1.17
K2O	0.14	0.40	0.0 B	3.84	3.70	0.0 B	5.60	6.00	0.0
H2O	13.88 F	12.81 F	0.0 B	0.0 B	0.0 B	12.44 F	5.10 F	2.60 F	21.14
H2O-	0.64	1.16	0.0 B	3.30	0.0 B	0.74	0.47	0.25	0.0 B
TIO2	0.22	0.61	0.0 B	0.55	0.0 B	0.0 B	1.20	2.50	0.28
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.13	0.36	0.0
CO2	0.0 B	0.0 B	11.92 G	5.19 G	3.70 G	0.0 B	0.12	0.11	0.0 B
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	13.39	0.0 B	0.0 B	0.0 B
TOT CONS	100.12	100.67	100.00 *	100.01 *	100.80	100.00	99.34 *	99.14 *	100.44 *
CLASS	0, 85, 0	0, 91, 0	0, 94, 4	8, 81, 0	0, 81, 0	0, 51, 0	3, 76, 0	5, 81, 0	8, 87, 0

A INSOL.
B BLANK--NO VALUE REPT.
C AL2O3 + FE2O3.
D MGO + CAO.
E NA2O + K2O.
F H2O+.
G IGNITION LOSS (MAY INCLUDE WATER).
H REPORTED AS S.
I CALCULATED BY COMPILERS.
J ORGANIC MATTER.
K TOTAL IRON.
M BY DIFFERENCE.
N INCLUDES TIO2.
O GREATER THAN.
P LESS THAN.
T TRACE.
* ADDITIONAL INFORMATION IN DESCRIPTIVE NOTES.

TABLE 6. — *Analyses of samples from California and Hawaii containing 90-100 percent clay (Group D_6), from all rock categories*— Continued

```
06005061  EOCENE, IONE FM.  S7,T5N,R10E.  (417:38,24,27,PL1-3)  CLAY, RED, BUFF, MOTL, SANDY: DH, 220-221 FT: MIN.  INDEX & GEOL
          MAPS, GEOL SEC.  USE: 14.
06005062  EOCENE.  T6N,R10E, BUENA VISTA.  (147:354,18,59,280-285,PL1)  CLAY, YELLOW, MED-GR: 6-10 FT THICK: PHYS PROP, FIRING
          TESTS.  INDEX MAP.  USE: 3.
06005064  EOCENE, IONE FM.  S7,T5N,R10E.  (417:38,17,27,PL1-3)  CLAY, RED, BUFF, MOTL: DH, 222-223 FT: MIN.  INDEX & GEOL MAPS,
          GEOL SEC.  USE: 14.
06005065  EOCENE, IONE FM.  "S24,T5N,R9E"  (417:39,35,PL1-3)  CLAY, BUFF: DH, 157-158 FT.  INDEX & GEOL MAPS, GEOL SEC.

06005066  EOCENE, IONE FM.  S7,T5N,R10E.  (417:38,17,27,PL1-3)  CLAY, BUFF, SILTY: CONTAINS SIDERITE NODULES: DH, 215-216 FT: MIN.
          INDEX & GEOL MAPS, GEOL SEC.  USE: 14.
06005067  EOCENE, IONE FM.  "T6N,R9E" IONE.  (306:497,491-495)  CLAY: DH SMPL: BEDS 13-196 FT THICK.  INDEX & GEOL MAP.  USE: 3,5.
          *MISC: TIO2 INCL ZRO2.
06005068  EOCENE, IONE FM.  S24,T5N,R9E.  (417:39,3-5,17,32,PL1,3)  CLAY, WHITE: DH, 164-165 FT: MIN: FIRING TESTS.  INDEX & GEOL
          MAPS, GEOL SEC.  USE: 14.
06005069  EOCENE, IONE FM.  S7,T5N,R10E.  (417:38,17,PL1-3)  CLAY, BUFF: DH, 230-231 FT: MIN.  INDEX & GEOL MAPS, GEOL SEC.
          USE: 14.
06005070  EOCENE, IONE FM.  S13,T5N,R9E.  (417:38,3-5,17,PL1-4)  CLAY, RED, SANDY: DH, 277-278 FT: MIN.  INDEX & GEOL MAPS,
          GEOL SEC.  USE: 14.
06005071  EOCENE.  S18,T5N,R10E.  (417:38,30,PL1-3)  CLAY, BUFF, SILTY:  DH, 253-254 FT.  INDEX & GEOL MAPS, GEOL SEC.

06005072  EOCENE, IONE FM.  S13,T5N,R9E.  (417:38,3-5,17,PL1-4)  CLAY, RED & BUFF: DH, 283-284 FT: MIN.  INDEX & GEOL MAPS,
          GEOL SEC.  USE: 14.
06005073  EOCENE, IONE FM.  S13,T5N,R9E.  (417:38,3-5,17,PL1-4)  CLAY, RED & WHITE: DH, 288-289 FT: MIN.  INDEX & GEOL MAPS,
          GEOL SEC.  USE: 14.
06005074  EOCENE, IONE FM.  S7,T5N,R10E.  (417:38,17,27,PL1-3)  CLAY, RED, BUFF: DH, 139-140 FT: MIN.  INDEX & GEOL MAPS, GEOL
          SEC.  USE: 14.
06005075  EOCENE, IONE FM.  S13,T5N,R9E.  (417:38,3-5,17,PL1-4)  CLAY, RED & BUFF: DH, 281-282 FT: MIN.  INDEX & GEOL MAPS,
          GEOL SEC.  USE: 14.
06005076  EOCENE, IONE FM.  S13,T5N,R9E.  (417:38,3-5,17,PL1-4)  CLAY, RED & BUFF: DH, 282-283 FT: MIN.  INDEX & GEOL MAPS,
          GEOL SEC.  USE: 14.
06005077  EOCENE, IONE FM.  S13,T5N,R9E.  (417:38,3-5,PL1-4)  CONGLOMERATE: DH, 298-299 FT: MIN.  INDEX & GEOL MAPS, GEOL SEC.
          USE: 14.
06005078  EOCENE, IONE FM.  S24,T5N,R9E.  (417:39, PL1-3)  CLAY, GREENISH-BUFF: DH, 114-115 FT.  INDEX & GEOL MAPS, GEOL SEC.

06005079  EOCENE, IONE FM.  S13,T5N,R9E.  (417:38,3-5,17,PL1-4)  CLAY, RED, SANDY: DH, 276-277 FT: MIN.  INDEX & GEOL MAPS,
          GEOL SEC.  USE: 14.
06005080  EOCENE, IONE FM.  S13,T5N,R9E.  (417:38,3-5,17,PL1-4)  CLAY, RED, YELLOW, WHITE, MOTL, SANDY: DH, 285-286 FT: MIN.
          INDEX & GEOL MAPS, GEOL SEC.  USE: 14.
06005081  EOCENE, IONE FM.  S13,T5N,R9E.  (417:38,3-5,PL1-4)  CLAY, YELLOW, SANDY: DH, 291-292 FT: MIN.  INDEX & GEOL MAPS, GEOL
          SEC.  USE: 14.
06005082  EOCENE, IONE FM.  S13,T5N,R9E.  (417:38,3-5,17,PL1-4)  CLAY, RED & BUFF: DH, 284-285 FT: MIN.  INDEX & GEOL MAPS,
          GEOL SEC.  USE: 14.
06005083  EOCENE, IONE FM.  S13,T5N,R9E.  (417:38,3-5,17,PL1-4)  CLAY, RED, SANDY: DH, 279-280 FT: MIN.  INDEX & GEOL MAPS,
          GEOL SEC.  USE: 14.
06005084  EOCENE, IONE FM.  S13,T5N,R9E.  (417:38,3-5,17,PL1-4)  CLAY, RED & BUFF: DH, 280-281 FT: MIN.  INDEX & GEOL MAPS,
          GEOL SEC.  USE: 14.
06005085  EOCENE, IONE FM.  S13,T5N,R9E.  (417:38,3-5,PL1-4)  CONGLOMERATE: DH, 300-301 FT: MIN.  INDEX & GEOL MAPS, GEOL SEC.
          USE: 14.
06005086  EOCENE, IONE FM.  S13,T5N,R9E.  (417:38,3-5,PL1-4)  CONGLOMERATE: DH, 299-300 FT: MIN.  INDEX & GEOL MAPS, GEOL SEC.
          USE: 14.
06005087  EOCENE, IONE FM.  S13,T5N,R9E.  (417:38,3-5,PL1-4)  CLAY, YELLOW, SANDY: DH, 292-293 FT: MIN.  INDEX & GEOL MAPS, GEOL
          SEC.  USE: 14.
06005088  EOCENE, IONE FM.  S13,T5N,R9E.  (417:38,3-5,PL1-4)  CONGLOMERATE: DH, 297-298 FT: MIN.  INDEX & GEOL MAPS, GEOL SEC.
          USE: 14.
06005089  EOCENE, IONE FM.  S13,T5N,R9E.  (417:38,3-5,PL1-4)  CLAY, YELLOW, SANDY: DH, 293-294 FT: MIN.  INDEX & GEOL MAPS, GEOL
          SEC.  USE: 14.
06005090  EOCENE, IONE FM.  S13,T5N,R9E.  (417:38,3-5,17,PL1-4)  CLAY, RED, YELLOW, WHITE, MOTL, SANDY: DH, 286-287 FT: MIN.
          INDEX & GEOL MAPS, GEOL SEC.  USE: 14.
06005091  EOCENE.  S7,T5N,R10E.  (417:38,27,PL1-3)  ARGILLACEOUS SILTSTONE: DH, 235-236 FT.  INDEX & GEOL MAPS, GEOL SEC.

06005092  EOCENE, IONE FM.  S13,T5N,R9E.  (417:38,3-5,17,PL1-4)  CLAY, RED, YELLOW, WHITE, MOTL, SANDY: DH, 287-288 FT: MIN.
          INDEX & GEOL MAPS, GEOL SEC.  USE: 14.
06005093  "T7N,R10E" CARBONDALE.  (21:207,206)  CLAY.
06005094  EOCENE, IONE FM.  S13,T5N,R9E.  (417:38,3-5,17,PL1-4)  CLAY, WHITE, SANDY: DH, 289-290 FT: MIN.  INDEX & GEOL MAPS,
          GEOL SEC.  USE: 14.
06005119  EOCENE, IONE FM.  S7,T5N,R10E.  (417:38,17,27,PL1-3)  CLAY, RED, BUFF, MOTL: DH, 224-225 FT: MIN.  INDEX & GEOL MAPS,
          GEOL SEC.  USE: 14.
06005127  EOCENE, IONE FM.  "S24,T5N,R9E".  (417:39,3,5,26,33,PL1-3)  CLAY, RED & WHITE MOTL: CONTAINS IRON NODULES:
          DH 159-160 FT: MIN.  INDEX & GEOL MAPS, GEOL SEC.  USE: 14.
06005128  EOCENE, IONE FM.  S24,T5N,R9E.  (417:39,3,17,33,PL1,3)  CLAY, BUFF & GRAY, MOTL: CONTAINS IRON NODULES: MIN.
          DH 145-146 FT.  INDEX & GEOL MAPS, GEOL SEC.  USE: 14.
06005129  EOCENE, IONE FM.  "T6N,R9E" NEAR IONE.  (315:11,12)  CLAY: PHYS PROP.  *MISC: FEO = 0.15, V205 = 0.02: H20 REPT AS I.L.

06005130  EOCENE, IONE FM.  "T6N,R9E" NEAR IONE.  (315:11,12)  CLAY: PHYS PROP.  *MISC: FEO = 0.28, V205 = 0.01: H20 REPT AS I.L.

06005132  EOCENE, IONE FM.  "T6N,R9E" NEAR IONE.  (315:11,12)  CLAY: PHYS PROP.  *MISC: FEO = 0.14, V205 = 0.02: H20 REPT AS I.L.

06005133  EOCENE, IONE FM.  "T6N,R9E" NEAR IONE.  (315:11,12)  CLAY: PHYS PROP.  *MISC: FEO = 0.00, V205 = 0.01: H20 REPT AS I.L.

06005136  "T6N,R9E" IONE.  (400:56)  KAOLINITE.
06005137  "T6N,R9E" IONE.  (400:56)  ANAUXITE.
06009043  EOCENE, IONE FM.  "T6N,R9E" VALLEY SPRINGS.  (147:355,68,337-346,PL1)  CLAY, PINK, MOTL, FINE-GR, PLASTIC: PHYS PROP,
          FIRING TESTS.  INDEX MAP.  USE: 3.  *MISC: NA20 + K20, BY DIF.
06013038  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T1N,R5W" RED ROCK ISLAND, SAN FRANCISCO BAY.  (575:23/ 29:64,11,65,PL1)
          SHALE, RED: MIN.  INDEX & GEOL MAPS.  USE: 13.  *MISC: FEO = 0.65, MNO = 0.36.

06025008  S24,T12S,R19E.  (447:131,PL1)  CLAY, WHITE: 100 FT THICK.  INDEX MAP.  USE: 14.

06025031  TERTIARY.  "T10S,R16E" IRIS.  (43:47,48/ 497:269,268)  CLAY, WHITE.
06027048  PRECAMBRIAN, DEEP SPRING FM.  S31,32,T7S,R39E & S24,T7S,R38E.  (585:23,8,78)  PELITE: MIN.  INDEX MAP, MEAS SEC.
          SPECTRO ANAL ALSO GIVEN.  *MISC: FEO = 6.5, MNO = 0.02.
06027063  PRECAMBRIAN & CAMBRIAN, WOOD CANYON FM.  S32,T21N,R6E.  (585:24,8)  PELITE: MIN.  INDEX MAP.  SPECTRO ANAL ALSO GIVEN.
          *MISC: FEO = 1.2, MNO = 0.00.
06037009  "T1S,R8W" CLAREMONT.  (354:263)  MONTMORILLONITE: SELECTED SMPL. *MISC: MNO =TR.
```

TABLE 6. — *Analyses of samples from California and Hawaii containing 90-100 percent clay (Group D_6), from all rock categories* — Continued

SAMPLE	06037011	06037015	06057003	06059005	06059006	06059008	06059009	06061035	06061036	06061037
SIO2	50.49	47.60	41.09	49.02	59.21	54.42	54.08	41.80	44.82	46.80
AL2O3	26.11	9.90	34.33	34.03	31.13	32.54	30.00	38.78	34.54	26.02
FE2O3	5.66	21.90	1.00	0.0 B	0.41	1.90	2.57	2.12	1.86	13.72
MGO	1.16	3.70	0.60	0.0 B	0.0 T	0.0	0.45	1.02	0.96	0.49
CAO	3.33	0.80	0.20	0.0 B	0.46	0.20	0.26	1.48 I	1.68 I	0.91
NA2O	4.40 E	1.40	0.83 E	1.08 E	0.31 E	0.42 E	0.23 E	3.46	4.74	0.33
K2O	0.0 B	5.30	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.25
H2O	3.31 F	7.70	12.16 F	0.0 B	0.0 B	0.0 B	0.0 B	6.00 F	8.37 F	0.0 B
H2O-	2.62	0.0 B	9.79	13.08	0.0 B	0.0 B	0.0 B	1.62	1.27	0.0 B
TIO2	0.63	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.42	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	0.0 B	0.0 B	0.0 B	0.0 B	8.48 G	10.52 G	11.57 G	3.72 I	1.76 I	11.47 G
SO3	2.18	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	100.31	99.80 *	100.00	97.21	100.00 *	100.00 *	99.16	100.00 *	100.00 *	99.99
CLASS	0, 87, 0	5, 82, 0	0, 87, 0	0, 93, 0	4, 95, 1	0, 96, 0	0, 96, 1	0, 74, 6	0, 80, 4	0, 87, 3

SAMPLE	06061040	06061041	06061042	06061043	06061044	06061045	06061046	06061047	06061048	06061050
SIO2	50.38	52.49	52.50	52.72	52.85	54.18	55.30	55.36	55.65	57.28
AL2O3	32.11	33.45	33.50	32.39	33.50	32.28	30.29	29.23	28.89	31.10
FE2O3	2.99	2.53	2.50	2.45	2.46	1.76	2.44	4.53	2.61	2.14
MGO	1.07	0.63	0.60	0.39	0.33	0.0 T	0.52	0.12	0.89	0.08
CAO	1.15	0.80	0.80	0.90	0.55	0.08	1.01	0.95	1.28	0.54
NA2O	0.0 B	0.56	0.20	0.20	0.49	0.65 E	0.30	1.02 E	0.72	0.38
K2O	0.0 B	0.18	0.60	0.12	0.20	0.0 B	0.16	0.0 B	0.20	0.16
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.38	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	11.29 G	10.30 G	10.30 G	10.70 G	10.03 G	11.05 G	9.54 G	8.79 G	9.83 G	8.63 G
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.93 *	100.94	101.00	99.87	100.41	100.00 *	99.56	100.00 *	100.07	100.31
CLASS	0, 89, 4	0, 92, 3	0, 92, 3	0, 93, 2	0, 93, 2	0, 96, 0	0, 96, 3	0, 96, 1	2, 93, 4	0, 99, 1

SAMPLE	06061051	06065001	06065018	06065019	06065020	06065021	06065022	06065023	06065024	06065025
SIO2	58.36	3.23	13.56	30.35	35.35	37.72	38.00	39.82	41.30	41.48
AL2O3	28.92	53.10	45.42	46.52	20.74	42.21	42.00	36.43	28.10	41.50
FE2O3	2.06	12.82	14.87	3.33	2.52	0.51	0.50	7.14	15.00	0.80
MGO	0.12	0.0 B	0.0 B	0.10	0.15	0.05	0.10	0.0 B	0.09	0.0 T
CAO	0.66	0.0 B	0.0 B	0.36	0.90	0.72	0.70	0.0 B	0.60	0.0 T
NA2O	0.45	0.0 B	0.0 B	1.03	1.18 E	0.09 E	0.10	0.0 B	0.0 B	0.35 E
K2O	0.48	0.0 B	0.0 B	0.16	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	29.08 F	23.23 F	0.0 B	0.0 B	0.0 B	0.0 B	13.96 F	0.0 B	0.0 B
H2O-	0.0 B	0.95	1.99	0.0 B	0.0 B	0.0 B	0.0 B	1.26	0.0 B	0.0 B
TIO2	0.0 B	1.65	2.34	0.0 B	0.0 B	0.0 B	0.0 B	2.37	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	9.06 G	0.0 B	0.0 B	18.34 G	33.84 G	18.96 G	18.90 G	0.0 B	13.00 G	15.72 G
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	100.11	100.83	101.46 *	100.19	94.68	100.26	100.30	101.02 *	98.09	99.85
CLASS	5, 93, 1	0, 35, 0	0, 47, 0	0, 66, 1	0, 89, 2	0, 77, 1	0, 78, 1	0, 79, 0	0, 80, 1	0, 81, 0

SAMPLE	06065026	06065027	06065028	06065029	06065030	06065032	06065033	06065034	06065035	06065037
SIO2	42.54	43.70	44.22	44.30	45.08	46.50	47.00	47.08	47.10	48.81
AL2O3	38.48	39.09	39.52	39.59	37.31	28.00	28.00	33.36	33.30	34.58
FE2O3	2.40	2.50	2.08 K	2.08	3.74	7.00 K	0.0 B	0.96 K	0.90	0.99
MGO	0.12	0.0 T	0.0 T	0.0 T	0.0 T	3.00 D	5.00 D	0.0 T	0.0 T	0.0 T
CAO	0.22	0.40	0.39	0.39	0.10	0.41 I	0.0 B	0.66	0.60	0.68
NA2O	0.70 E	0.0 B	0.0 E	0.0 E	0.72	0.0 B	0.0 B	0.13 E	0.10 E	0.13 E
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.44	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	12.10 F	0.0 B	0.0 B	10.00	10.00	0.0 B	12.90 F	0.0 B
H2O-	0.0 B	0.0 B	0.30	0.0 B	0.0 B	0.0 B	0.0 B	3.98	3.90	0.0 B
TIO2	1.12	0.0 B	1.50	1.50	0.0 B	0.0 B	2.00 J	1.38	1.40	1.43
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0	0.0 B	0.0 B
CO2	14.80 G	15.10 G	0.0 T	12.13 G	13.15 G	0.0 B	0.0 B	12.88 G	0.0 B	13.36 G
SO3	0.0 B	0.0 B	0.0	0.0 B	0.0 B	0.59 I	3.53 I	0.0	0.0 B	0.0 B
TOT CONS	100.38	100.79	100.13 *	100.01 *	100.54	100.09 *	101.40 *	100.43 *	100.20	99.98 *
CLASS	0, 82, 1	0, 84, 1	0, 82, 0	0, 82, 1	0, 85, 0	0, 85, 0	0, 82, 0	0, 90, 1	0, 91, 0	0, 90, 1

SAMPLE	06065038	06065039	06065040	06065041	06065042	06065044	06065045	06065047	06065048	06065050
SIO2	49.00	50.00	51.76	52.00	52.00	53.00	54.80	54.85	55.00	55.56
AL2O3	37.00	28.00	29.83	29.00	30.00	21.00	37.10	43.43	30.00	28.79
FE2O3	0.0 B	6.00 K	2.10	3.00	2.00 K	7.00 K	0.70	0.72	3.00 K	1.77
MGO	0.0 B	3.00 D	0.30	0.0 B	0.0 B	0.0 B	0.0 B	0.0 T	0.0 B	0.20
CAO	0.0 B	0.0 B	0.44	1.20 I	0.0 B	4.10 I	0.60	0.0 T	0.0 B	0.90
NA2O	0.0 B	0.0 B	0.79 E	0.0 B	0.0 B	0.0 B	0.0 B	0.86 E	0.0 B	1.40 E
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	13.00	10.00	0.0 B	10.00	10.50	9.00	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	10.00	0.0 B
TIO2	1.70 J	0.0 B	0.0 B	0.0 B	6.00 J	0.0 B	0.0 B	0.0 B	3.40 J	0.0 B
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	0.0 B	0.0 B	13.96 G	0.0 B	0.0 B	0.0 B	9.32 G	0.26 G	0.0 B	10.90 G
SO3	0.0 B	0.0 B	0.0 B	1.80 I	0.0 B	5.90 I	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	100.70 *	100.00 *	99.18 *	98.00 *	101.50 *	100.00	102.52	100.12 *	101.40 *	99.52 *
CLASS	0, 90, 0	0, 90, 0	0, 95, 1	0, 92, 0	0, 93, 0	8, 79, 0	0, 95, 1	0, 86, 0	0, 97, 0	3, 93, 2

A INSOL.
B BLANK--NO VALUE REPT.
C AL2O3 + FE2O3.
D MGO + CAO.
E NA2O + K2O.
F H2O+.
G IGNITION LOSS (MAY INCLUDE WATER).
H REPORTED AS S.
I CALCULATED BY COMPILERS.
J ORGANIC MATTER.
K TOTAL IRON.
M BY DIFFERENCE.
N INCLUDES TIO2.
O GREATER THAN.
P LESS THAN.
T TRACE.
* ADDITIONAL INFORMATION IN DESCRIPTIVE NOTES.

TABLE 6. — *Analyses of samples from California and Hawaii containing 90-100 percent clay (Group D_6), from all rock categories* — Continued

```
06037011  MIOCENE, MONTEREY FM.  "T1S,R12W" LOS ANGELES.  (43:56)  SHALE, BLUE, THIN-BEDDED.  USE: 3.

06037015  PLEISTOCENE.  "T5S,R14W" SAN PEDRO.  (10:296)  SHELL MARL, UNCONSOLIDATED.  *MISC: FEO = 1.5.

06057003  "T16N,R8E" NEVADA CITY.  (3:386)  HALLOYSITE, MICACEOUS.
06059005  "T3S,R5W" PRADO.  (43:66)  CLAY, BLUE.  USE: 4.
06059006  EOCENE.  "T8S,R7W" SAN JUAN CAPISTRANO.  (147:354,140,145,258-269,PL1)  CLAY, WHITE, GRAY, PLASTIC: 10-15 FT EXPOSED:
          PHYS PROP, FIRING TESTS.  INDEX MAP.  *MISC: NA2O + K2O BY DIF.
06059008  EOCENE.  S11,T6S,R7W.  (147:354,140,260-270)  CLAY: MIN: PHYS PROP, FIRING TESTS.  USE: 3.  *MISC: NA2O + K2O, BY DIF.

06059009  PALEOCENE, MARTINEZ FM.  T5S,R7W, SERRANO MINE.  (478:85,81,83,PL1)  CLAY, WHITE OR PINK, PLASTIC: MIN.  INDEX MAP.

06061035  "T12N,R6E" LINCOLN.  (256:109)  CLAY, WHITE.  *MISC: CO2 INCL I.L., 2.56.

06061036  "T12N,R6E" LINCOLN.  (256:109)  CLAY, BLUE, PLASTIC.  *MISC: CO2 INCL I.L., 0.44.

06061037  EOCENE, IONE FM.  S4,T12N,R6E.  (147:355,147,149,158,336-346,PL1)  CLAY: 6 FT THICK: PHYS PROP, FIRING TESTS.  INDEX
          MAP, MEAS SEC, GEOL SEC.  USE:3,5.
06061040  EOCENE, IONE FM.  S4,9,10,T12N,R6E.  (43:68,67)  CLAY, WHITE: PHYS PROP, FIRING TESTS: MEAS SEC.  USE: 3,5.
          *MISC: MNO = 0.56.
06061041  EOCENE, IONE FM.  S4,T12N,R6E.  (147:355,147,158,303-310,PL1)  CLAY: WHITE, FINE-GR: 15 FT THICK: PHYS PROP, FIRING
          TESTS.  INDEX MAP, MEAS SEC, GEOL SEC.  USE: 3,5.
06061042  "T12N,R6W" LINCOLN DIST.  (148:204,205)  CLAY, PLASTIC: FIRING TESTS.  USE: 3,5.

06061043  EOCENE, IONE FM.  S4,T12N,R6E.  (147:355,147,149,158,291-296,PL1)  CLAY: 22 FT THICK: PHYS PROP, FIRING TESTS.  INDEX
          MAP, MEAS SEC, GEOL SEC.  USE: 3,5.
06061044  EOCENE, IONE FM.  S4,T12N,R6E.  (147:355,147,158,303-310,PL1)  CLAY: 12 FT THICK: PHYS PROP, FIRING TESTS.  INDEX MAP,
          MEAS SEC, GEOL SEC.  USE: 3,5.
06061045  S12,24,T13N,R6E.  (147:355,159,292-296,PL1)  KAOLIN, WHITE, PLASTIC: PHYS PROP,  FIRING TESTS.  INDEX MAP.  USE: 3,5.
          *MISC: NA2O + K2O, BY DIF.
06061046  EOCENE, IONE FM.  S4,T12N,R6E.  (147:355,147,149,158,298-308,PL1)  CLAY: 8 FT THICK: PHYS PROP, FIRING TESTS.  INDEX
          MAP, MEAS SEC, GEOL SEC.  USE: 3,5.
06061047  EOCENE, IONE FM.  S4,T12N,R6E.  (147:355,147,149,158,291-296,PL1)  CLAY, SANDY, PLASTIC: 8 FT THICK: PHYS PROP, FIRING
          TESTS.  INDEX MAP, MEAS SEC, GEOL SEC.  USE: 3,5. *MISC: NA2O + K2O, BY DIF.

06061048  EOCENE, IONE FM.  S4,T12N,R6E.  (147:355,147,149,158,291-296,PL1)  CLAY, SANDY, PLASTIC: 8 FT THICK: PHYS PROP, FIRING
          TESTS.  INDEX MAP, MEAS SEC, GEOL SEC.  USE: 3,5.
06061050  EOCENE, IONE FM.  S4,T12N,R6E.  (147:355,147,149,158,291-296,PL1)  CLAY: 22 FT THICK: PHYS PROP, FIRING TESTS.  INDEX
          MAP, MEAS SEC, GEOL SEC.  USE: 3,5.
06061051  EOCENE, IONE FM.  S4,T12N,R6E.  (147:355,147,158,306-308,PL1)  CLAY: 8FT THICK: PHYS PROP, FIRING TESTS.  INDEX MAP,
          MEAS SEC, GEOL SEC.  USE: 3,5.
06065001  "T5S,R5W" CORONA & ALBERHILL.  (165:121)  BAUXITE, RED, PISOLITIC.
06065018  "T5S,R5W" CORONA & ALBERHILL.  (165:121)  BAUXITE, RED, PISOLITIC.  *MISC: MNO = 0.05.

06065019  PALEOCENE, SILVERADO FM.  S21,T5S,R5W.  (147:354,163,175,281-286,PL1/  113:29,30)  CLAY, PISOLITIC, COARSE: PHYS PROP,
          FIRING TESTS.  INDEX MAP, MEAS SEC, GEOL SEC.  USE: 3.
06065020  PALEOCENE, MARTINEZ FM.  T5S,R5W, ALBERHILL DIST.  (478:67,52,65,68,PL1)  CLAY, CARBONACEOUS: MIN: PHYS PROP, FIRING
          TESTS.  INDEX MAP.  USE: 3.
06065021  PALEOCENE, SILVERADO FM.  S22,T5S,R5W.  (185:89,77-86,PL1-6/ 566:1173)  CLAY, CARBONACEOUS, PLASTIC: 8 FT THICK:
          PHYS PROP, FIRING TESTS.  INDEX & GEOL MAPS, GEOL SEC.  USE: 3,5.
06065022  "T5S,R5W" ALBERHILL.  (148:204,205)  CLAY, PLASTIC: FIRING TESTS.
06065023  "T5S,R5W" CORONA & ALBERHILL.  (165:121)  BAUXITE, GRAY, PISOLITIC.  *MISC: MNO = 0.04.

06065024  TERTIARY.  "T6S,R4W" ELSINORE.  (388:574/ 43:86,75,85)  CLAY, RED.
06065025  EOCENE.  S21,22,T5S,R5W.  (147:354,162,171,258,279,285,PL1)  CLAY, MED-GR, PLASTIC: 6 FT THICK: PHYS PROP, FIRING TESTS.
          INDEX MAP, MEAS SEC, GEOL SEC.  USE: 3,14.
06065026  TERTIARY.  "T6S,R4W" ELSINORE.  (388:574/ 43:86,75)  CLAY, WHITE.  USE: 5.

06065027  TERTIARY.  "T6S,R4W" ELSINORE.  (388:574/ 43:86,75)  CLAY, WHITE, PISOLITIC.

06065028  PALEOCENE.  S22,T5S,R5W.  (285:203,186,196/ 185:89,77-86,PL1-6)  CLAY: PHYS PROP, FIRING TESTS.  INDEX & GEOL MAPS, GEOL
          SEC.  USE:3,14.  *MISC: NA2O + K2O, TR: H2O+ REPT AS I.L.: CL = 0.02.
06065029  EOCENE.  T5S,R6W, ALBERHILL.  (147:354,136,163,277-285,PL1)  CLAY, MED-GR: 4 FT THICK.  PHYS PROP, FIRING TESTS.  INDEX
          MAP, MEAS SEC, GEOL SEC.  USE: 3,14. *MISC: NA2O + K2O, TR: CL = 0.02.
06065030  PALEOCENE, SILVERADO FM.  S21,T5S,R5W.  (147:354,174,283-285,PL1/ 113:135,137)  CLAY: 6 FT THICK.  PHYS PROP, FIRING
          TESTS.  INDEX MAP, MEAS SEC, GEOL SEC.  USE: 3,5.
06065032  TERTIARY.  "T5S,R5W" ALBERHILL.  (43:83,75-82)  CLAY, RED, MOTL, PLASTIC: 10-15 FT THICK: PHYS PROP, FIRING TESTS.
          USE: 3.  *MISC: FES2 = 3.0: NACL = 2.0.
06065033  TERTIARY.  "T5S,R5W" ALBERHILL.  (43:84,75,76)  CLAY, PLASTIC: PHYS PROP, FIRING TESTS.  USE: 3.  *MISC: CASO4 = 6.0,
          FES2 = 2.0, ORG CALC FROM REPT CARBON.
06065034  TERTIARY.  "T5S,R5W" ALBERHILL.  (285:198,185,186,196)  CLAY, GRAY, PLASTIC: PHYS PROP, FIRING TESTS.  INDEX MAP, GEOL
          SEC.  USE: 3,14. *MISC:  MNO= TR, CL = 0.00, N2O5 = 0.00.
06065035  PALEOCENE, SILVERADO FM.  S22,T5S,R5W.  (185:89,77-86,PL1-6)  CLAY, PLASTIC: PHYS PROP, FIRING TESTS.  INDEX & GEOL
          MAPS, GEOL SEC.  USE: 3,5.
06065037  EOCENE.  T5S,R6W, ALBERHILL.  (147:354,136,162,163,168,PL1)  CLAY: PHYS PROP, FIRING TESTS.  INDEX MAP, GEOL SEC, MEAS
          SEC.  USE: 5.  *MISC: MNO = TR.  ALKALIES BY DIF.
06065038  TERTIARY.  "T5S,R5W" ALBERHILL.  (43:83,75-82)  CLAY, GRAY: 4 FT THICK: PHYS PROP, FIRING TESTS.  USE: 5.  *MISC: ORG
          CALC FROM REPT CARBON.
06065039  PALEOCENE.  S22,T5S,R5W.  (43:83,77/ 185:88,77,79,PL1-6)  CLAY, RED, MOTL, PLASTIC: 10-15 FT THICK: PHYS PROP, FIRING
          TESTS.  INDEX & GEOL MAPS, GEOL SEC.  USE: 3.  *MISC: FES2 = 3.0.
06065040  EOCENE.  S22,T5S,R5W.  (147:355,162,176,298,306-308,PL1)  CLAY, FINE-GR, PLASTIC: 7 FT THICK: PHYS PROP, FIRING TESTS.
          INDEX MAP, MEAS SEC.  USE: 3,5.  *MISC: NA2O + K2O, BY DIF.
06065041  TERTIARY.  "T5S,R5W" ALBERHILL.  (43:84,75,76,80)  CLAY, PLASTIC: 5-6 FT THICK: PHYS PROP, FIRING TESTS.  USE: 3,5.
          *MISC: FES2 = 1.0.
06065042  TERTIARY.  "T5S,R5W" ALBERHILL.  (43:83,75,76,82) CLAY, DARK-GRAY, PLASTIC: PHYS PROP, FIRING TESTS.  *MISC: FES2 = 1.0,
          ORG MATTER CALC FROM C.
06065044  TERTIARY.  "T5S,R5W" ALBERHILL.  (43:84,76)  CLAY, PLASTIC: 12-18 FT THICK: PHYS PROP, FIRING TESTS.

06065045  TERTIARY.  "T5S,R5W" ALBERHILL.  (43:86,75,85)  CLAY, SANDY.
06065047  EOCENE.  S21,22,T5S,R5W.  (147:354,162,163,171,272-276,PL1)  CLAY: PHYS PROP, FIRING TESTS.  INDEX MAPS, GEOL SEC.
          USE: 3.  *MISC: NA2O + K2O, BY DIF.
06065048  TERTIARY.  "T5S,R5W" ALBERHILL.  (43:84,76,82)  CLAY, GRAY, PLASTIC: PHYS PROP, FIRING TESTS.  *MISC: ORG MATTER CALC
          FROM C.
06065050  EOCENE.  S21,22,T5S,R5W.  (147:355,162,163,168-173,298-308,PL1)  CLAY,WHITF, FINE-GR: PHYS PROP, FIRING TESTS.  INDEX
          MAPS, MEAS SEC, GEOL SEC.  USE: 3.  *MISC: NA2O + K2O, BY DIF.
```

TABLE 6. — *Analyses of samples from California and Hawaii containing 90-100 percent clay (Group D_6), from all rock categories* —Continued

SAMPLE	06065051	06065052	06065055	06065056	06065058	06065090	06067001	06071186	06071194	06071196
SIO2	55.59	57.38	58.00	58.06	59.00	38.96	46.35	50.10	58.68	60.00
AL2O3	26.36	27.62	27.50	27.48	28.00	35.76	22.62	29.70	25.91	35.40
FE2O3	3.95	2.06	2.50	2.52	3.00 K	8.30	11.38	0.0 B	3.97	0.96
MGO	0.61	0.11	0.30	0.31	0.0 B	0.16	2.21	1.87	1.49	0.0 B
CAO	1.33	1.90	0.50	0.52	0.0 B	0.62	2.09	2.30	1.45	0.18
NA2O	0.57	0.13 E	1.10 E	1.12 E	0.0 B	1.02 E	0.24 E	0.0 B	1.39	0.0 B
K2O	0.41	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	10.00	0.0 B	0.0 B	0.0 B	6.84	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	12.30	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0	0.0 B
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.06	0.0 B
CO2	10.90 G	10.62 G	10.00 G	10.08 G	0.0 B	15.32 G	15.11 G	3.85	0.0 T	1.20 G
SO3	0.29	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.11	0.0 B
TOT CONS	100.01	99.82 *	99.90	100.09 *	100.00	100.14	100.00 *	100.12	100.00 *	97.74
CLASS	5, 91, 4	6, 90, 4	7, 91, 2	7, 91, 2	6, 94, 0	0, 77, 1	0, 87, 8	0, 91, 8	8, 87, 0	0, 95, 0

SAMPLE	06073015	06073034	06075003	06075014	06089034	06095009	06097014	06103001	20001032	20001033
SIO2	49.14	56.58	56.51	40.10	47.51	47.21	56.29	54.97	24.50	34.57
AL2O3	31.26	24.81	21.33	10.90	34.08	31.97	31.13	27.72	19.96	15.64
FE2O3	1.44 K	8.27	12.31	27.60	1.17	3.65	0.59	0.88	15.22	13.96
MGO	0.20	0.16	0.0 T	3.50	0.28	0.98	0.05	0.20	1.94	2.79
CAO	0.89	0.10	3.53	0.53	0.08	0.21	0.05	0.39	1.51	2.06
NA2O	0.51	0.59 E	0.0 B	0.12	0.21	0.39	0.0 B	0.41	0.23	0.22
K2O	0.0 B	0.0 B	0.0 B	4.50	0.11	1.30	0.0 B	0.46	0.08	0.12
H2O	0.0 B	0.0 B	6.30	4.80 F	11.60 F	11.04 F	0.0 B	9.93 F	14.22 F	11.09 F
H2O-	0.0 B	0.0 B	0.0 B	2.20	1.89	1.39	0.0 B	2.54	16.15	14.57
TIO2	0.0 B	0.65	0.0 B	0.76	0.65	1.18	0.31	0.83	3.58	3.23
P2O5	0.0 B	0.0 B	0.0 B	0.14	0.81	0.0 B	0.0 B	0.11	0.23	0.12
CO2	16.52 G	9.98 G	0.0 B	0.08	0.0 B	0.40 G	11.67 G	0.0 B	0.0 B	0.0 B
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.63 H	0.0 B	0.0 B	1.11 H	0.0 B	0.0 B
TOT CONS	99.96	100.49 *	99.98	100.03 *	99.68 *	99.72	100.09	99.93 *	100.34 *	100.12 *
CLASS	0, 93, 2	3, 96, 1	5, 92, 0	0, 78, 0	0, 88, 1	0, 87, 0	1, 99, 0	5, 91, 0	0, 71, 0	0, 84, 0

SAMPLE	20001034	20001038	20001039	20001040	20001041	20001043	20001044	20001045	20001046	20001047
SIO2	40.91	36.80	15.93	10.21	8.86	8.80	9.20	9.80	10.20	12.30
AL2O3	14.03	16.00	17.05	26.21	23.77	26.60	27.30	28.30	29.60	24.50
FE2O3	15.37	7.19	12.14	15.40	26.17	27.10	28.00	25.70	25.60	28.60
MGO	4.91	7.02	2.91	0.74	0.10	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CAO	2.97	6.54	2.14	0.19	0.02	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
NA2O	0.88	1.20	0.30	0.14	0.07	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.27	0.28	0.21	0.11	0.30	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	9.34 F	10.73 F	30.18 F	20.61 F	25.14 F	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	6.31	4.88	6.62	18.25	8.05	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	3.43	2.82	4.15	4.11	5.77	5.00	5.70	5.10	5.60	5.60
P2O5	0.08	0.30	0.26	0.16	0.13	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	0.0 B	0.0 B	0.0 B	1.53	0.0 B	31.10 G	28.40 G	30.50 G	25.80 G	28.10 G
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	100.27 *	100.17 *	100.62 *	100.22 *	100.49 *	98.60	98.60	99.40	96.80	99.10
CLASS	0, 85, 0	0, 75, 0	0, 63, 0	0, 56, 2	0, 48, 0	0, 46, 0	0, 44, 0	0, 47, 0	0, 43, 0	0, 49, 0

SAMPLE	20001048	20001049	20001050	20001051	20001052	20001053	20001054	20001055	20001056	20001057
SIO2	12.90	11.70	11.80	11.00	12.00	9.90	11.90	14.20	10.40	10.50
AL2O3	24.70	23.60	25.00	25.00	26.50	28.80	22.30	22.90	30.10	26.80
FE2O3	29.20	29.10	29.40	32.30	31.20	26.70	30.60	27.20	26.30	28.10
MGO	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CAO	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	5.80	5.70	6.00	6.00	6.90	6.10	6.00	6.60	5.30	6.10
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	23.30 G	26.40 G	25.40 G	22.40 G	21.10 G	25.20 G	25.70 G	26.10 G	25.10 G	25.90 G
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	95.90	96.50	97.60	96.70	97.70	96.70	96.50	97.00	97.20	97.40
CLASS	0, 45, 0	0, 46, 0	0, 45, 0	0, 41, 0	0, 42, 0	0, 42, 0	0, 46, 0	0, 50, 0	0, 43, 0	0, 44, 0

SAMPLE	20001058	20001059	20001060	20001061	20001069	20003002	20003003	20007001	20007002
SIO2	13.00	11.10	11.60	10.70	13.80	39.72	33.88	17.20	23.70
AL2O3	21.60	23.70	29.20	38.70	20.20	25.12	25.69	27.90	25.00
FE2O3	28.90	29.10	24.70	21.50	26.80	7.38	8.61	27.70	28.70
MGO	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.61	0.92	0.0 B	0.0 B
CAO	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.05	0.06	0.0 B	0.0 B
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.21	0.25	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	3.01	2.76	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	8.70 F	8.20 F	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	1.40	2.08	0.0 B	0.0 B
TIO2	6.70	5.70	4.90	4.90	5.40	0.66 J	0.91 J	4.90	4.50
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.06	0.0 B	0.0 B
CO2	27.10 G	26.80 G	25.50 G	21.30 G	31.00 G	0.0	0.0	19.30 G	16.10 G
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0	0.0	0.0 B	0.0 B
TOT CONS	97.30	96.40	95.90	97.10	97.20	100.92 *	98.78 *	98.90 *	98.28 *
CLASS	0, 49, 0	0, 46, 0	0, 45, 0	0, 39, 0	0, 55, 0	0, 74, 0	0, 65, 2	0, 48, 0	0, 56, 0

A INSOL.
B BLANK--NO VALUE REPT.
C AL2O3 + FE2O3.
D MGO + CAO.
E NA2O + K2O.
F H2O+.
G IGNITION LOSS (MAY INCLUDE WATER).
H REPORTED AS S.
I CALCULATED BY COMPILERS.
J ORGANIC MATTER.
K TOTAL IRON.
M BY DIFFERENCE.
N INCLUDES TIO2.
O GREATER THAN.
P LESS THAN.
T TRACE.
* ADDITIONAL INFORMATION IN DESCRIPTIVE NOTES.

TABLE 6. — *Analyses of samples from California and Hawaii containing 90-100 percent clay (Group D_6), from all rock categories* —Continued

```
06065051 EOCENE. T5S,R5W, ALBERHILL. (147:354,162-169,293-295,PL1,10) CLAY, WHITE, FINE-GR, PLASTIC: 8 FT THICK: PHYS PROP,
         FIRING TESTS. INDEX MAPS, MEAS SEC, GEOL SEC. USE: 5.
06065052 PALEOCENE, SILVERADO FM. S3,9,10,T4S,R7W. (147:354,179,277-285,PL1/ 228:77,PL1,2) CLAY, SANDY,PLASTIC: 30 FT THICK.
         PHYS PROP, FIRING TESTS. INDEX & GEOL MAP, GEOL SEC. USE: 3. *MISC: NA2O + K2O, BY DIF.

06065055 PALEOCENE, SILVERADO FM. S22,T5S,R5W. (185:88,77-81,PL1-6) CLAY: PHYS PROP, FIRING TESTS: 20 FT THICK. INDEX & GEOL
         MAPS, GEOL SEC. USE: 3.
06065056 EOCENE. S21,22,T5S,R5W. (147:354,162,163,171,272-276,PL1) CLAY: PHYS PROP, FIRING TESTS. INDEX MAPS, GEOL SEC.
         USE: 3. *MISC: NA2O + K2O, BY DIF.
06065058 TERTIARY. "T5S,R5W" ALBERHILL. (43:83,75,76) CLAY, PLASTIC: PHYS PROP, FIRING TESTS.

06065090 EOCENE. "T5S,R5W" ALBERHILL. (S66:1173) BAUXITE: 2 FT THICK: FIRING TESTS. USE: 14.

06067001 "S7,T5N,R10E" (147:355,186,337-346) CLAY, FINE-GR: PHYS PROP, FIRING TESTS. USE: 3. *MISC: ALKALIES BY DIF.

06071186 "T1S,R4W" COLTON. (21:175) CLAY. USE: 4.
06071194 "T10N,R2W" BARSTOW. (567:5) BENTONITE, WHITE. *MISC: CL = 0.10.
06071196 S4,T6N,R9E. (507:512) CLAY: BEDS 50 TO 100 FT THICK.
06073015 S29,T14S,R2E. (496:354/ 147:354,201,267-269,PL1) KAOLIN, WHITE: MIN: 50 FT THICK: PHYS PROP, FIRING TESTS. INDEX MAP.
         USE: 5.
06073034 TERTIARY. "T12S,R3W" CARLSBAD. (147:355/ 364:776) CLAY, YELLOW: FINE-GR, DENSE, PLASTIC: PHYS PROP, FIRING TESTS.
         INDEX MAP. USE: 3. *MISC: NA2O + K2O, BY DIF.
06075003 "T2S,R5W" SAN FRANCISCO. (47:17) CLAY.
06075014 JURASSIC & CRETACEOUS, FRANCISCAN FM. "S31,T2S,R5W" (29:64,65,PL1) SHALE, RED: MIN: ROADCUT SMPL. INDEX & GEOL MAPS.
         *MISC: MNO = 4.8.
06089034 S26,27,T30N,R5E. (141:119,55,88/ 543:285,200,282-284) SOLFATARIC MUD, CREAM, WHITE: MIN. INDEX & GEOL MAPS, GEOL
         SEC. *MISC: FEO = 0.52, MNO= TR, LI2O= TR, ZRO2 = 0.09, BAO = 0.05.
06095009 EOCENE. "T4N,R2E" RIO VISTA. (4:284,273) CLAY, GRAY: MIN: AT 4,309-FT DEPTH.

06097014 S3,T6N,R6W. (57:318,317/ 147:354,227,258-270,PL1) KAOLIN, WHITE, PLASTIC: 20-30 FT THICK: MIN: PHYS PROP, FIRING
         TESTS. INDEX MAP. USE: 3,4.
06103001 S21,T30N,R5E. (543:285,229,FIG 1) SOLFATARIC MUD: MIN. INDEX & GEOL MAP. *MISC: FEO = 0.32, ZRO2 = 0.03, BAO = 0.03,
         LI2O = TR.
20001032 PLEISTOCENE, PAHALA ASH. NEAR JUNCTION OF WRIGHT RD & HWY 11. (270:322,318) PALAGONITIC TUFF: MIN. INDEX MAP.
         *MISC: FEO = 2.53, MNO = 0.19.
20001033 PLEISTOCENE, PAHALA ASH. NEAR PAHALA. (270:322,318) PALAGONITIC TUFF: MIN. INDEX MAP. *MISC: FEO=1.64, MNO=0.11.

20001034 PLEISTOCENE, PAHALA ASH. NEAR HONUAPO. (270:322,318) VOLCANIC ASH, YELLOWISH-ORANGE: CONTAINS PELLETS: ROADCUT SMPL:
         MIN. INDEX MAP. *MISC: FEO = 1.62, MNO = 0.15.
20001038 PLEISTOCENE, PAHALA ASH. NEAR JUNCTION OF WRIGHT RD & HWY 11. (270:322,318) CLAYEY ASH, WEATHERED: 10 CM THICK: MIN.
         INDEX MAP. *MISC: FEO = 6.22, MNO = 0.19.
20001039 PLEISTOCENE, PAHALA ASH. NEAR JUNCTION OF HWY 11 & TWENTY-TWO MILE RD. (270:322,318) CLAYEY ASH: WEATHERED: MIN.
         INDEX MAP. *MISC: FEO = 8.56, MNO = 0.17.
20001040 PLEISTOCENE, PAHALA ASH. NEAR JUNCTION OF HWY 11 & TWENTY-TWO MILE RD. (270:322,318) CLAY: ROADCUT SMPL:
         1.5 M THICK: MIN. INDEX MAP. *MISC: FEO = 2.50, MNO = 0.06.
20001041 PLEISTOCENE, PAHALA ASH. AKAKA FALLS, EAST SLOPE OF MAUNA KEA. (270:322,318) CLAY: 1.5 M THICK: MIN. INDEX MAP.
         *MISC: FEO = 1.96, MNO = 0.15.
20001043 WEST OF HILO BAY. (75:21-23) FERRUGINOUS BAUXITE, CHANNEL SMPL FROM ROADCUT: MIN. INDEX MAP. SPECTRO DATA ALSO GIVEN.
         USE: 16.
20001044 WEST OF HILO BAY. (75:21-23) FERRUGINOUS BAUXITE, CHANNEL SMPL FROM ROADCUT: MIN. INDEX MAP. SPECTRO DATA ALSO GIVEN.
         USE: 16. DUP ANAL, SEE SMPL 20001043.
20001045 WEST OF PEPEEKEO POINT. (75:21-23) FERRUGINOUS BAUXITE, CHANNEL SMPL FROM ROADCUT: MIN. INDEX MAP. SPECTRO DATA
         ALSO GIVEN. USE: 16.
20001046 WEST OF PEPEEKEO POINT. (75:21-23) FERRUGINOUS BAUXITE, CHANNEL SMPL FROM ROADCUT: MIN. INDEX MAP. SPECTRO DATA
         ALSO GIVEN. USE: 16. DUP ANAL, SEE SMPL 20001045.
20001047 HAKALAU BAY. (75:21-23) FERRUGINOUS BAUXITE, CHANNEL SMPL FROM ROADCUT: MIN. INDEX MAP. SPECTRO DATA ALSO GIVEN.
         USE:16.
20001048 HAKALAU BAY. (75:21-23) FERRUGINOUS BAUXITE, CHANNEL SMPL FROM ROADCUT: MIN. INDEX MAP. SPECTRO DATA ALSO GIVEN.
         USE:16. DUP ANAL, SEE SMPL 20001047.
20001049 WEST OF HILO BAY. (75:41,22,42) FERRUGINOUS BAUXITE, CHANNEL SMPL: DEPTH, 8.0 FT. INDEX MAP. SPECTRO DATA ALSO GIVEN.
         USE: 16.
20001050 WEST OF HILO BAY. (75:41,22,42) FERRUGINOUS BAUXITE, CHANNEL SMPL: DEPTH, 7.3 FT. INDEX MAP. SPECTRO DATA ALSO GIVEN.
         USE: 16.
20001051 HILO BAY. (75:41,22,42) FERRUGINOUS BAUXITE, CHANNEL SMPL: DEPTH, 11.0 FT. INDEX MAP. SPECTRO DATA ALSO GIVEN. USE:16.

20001052 PAPAIKOU. (75:41,22,42) FERRUGINOUS BAUXITE, CHANNEL SMPL: DEPTH, 3.5 FT. INDEX MAP. SPECTRO DATA ALSO GIVEN. USE:16.

20001053 WEST OF PEPEEKEO POINT. (75:41,22,42) FERRUGINOUS BAUXITE, CHANNEL SMPL: DEPTH, 9.0 FT. INDEX MAP. SPECTRO DATA ALSO
         GIVEN. USE: 16.
20001054 WEST OF PEPEEKEO POINT. (75:41,22,42) FERRUGINOUS BAUXITE, CHANNEL SMPL: DEPTH, 5.5 FT. INDEX MAP. SPECTRO DATA ALSO
         GIVEN. USE: 16.
20001055 SOUTHWEST OF HAKALAU BAY. (75:41,22,42) FERRUGINOUS BAUXITE, CHANNEL SMPL: DEPTH, 10.0 FT. INDEX MAP. SPECTRO DATA
         ALSO GIVEN. USE: 16.
20001056 HAKALAU BAY. (75:41,22,42) FERRUGINOUS BAUXITE, CHANNEL SMPL: DEPTH, 4.8 FT. INDEX MAP. SPECTRO DATA ALSO GIVEN.
         USE: 16.
20001057 HANOHINA. (75:41,22,42) FERRUGINOUS BAUXITE, CHANNEL SMPL: DEPTH, 1.8 FT. INDEX MAP. SPECTRO DATA ALSO GIVEN. USE:16.

20001058 SOUTHWEST OF HANOHINA. (75:41,22,42) FERRUGINOUS BAUXITE, CHANNEL SMPL: DEPTH, 3.0 FT. INDEX MAP. SPECTRO DATA ALSO
         GIVEN. USE: 16.
20001059 SOUTHWEST OF MAULUA BAY. (75:41,22,42) FERRUGINOUS BAUXITE, CHANNEL SMPL: DEPTH, 3.0 FT. INDEX MAP. SPECTRO DATA
         ALSO GIVEN.
20001060 MAULUA. (75:41,22,42) FERRUGINOUS BAUXITE, CHANNEL SMPL: DEPTH, 3.0 FT. INDEX MAP. SPECTRO DATA ALSO GIVEN. USE: 16.

20001061 SOUTH OF KOHOLALELE LANDING. (75:41,22,42) FERRUGINOUS BAUXITE, CHANNEL SMPL: DEPTH, 4.0 FT. INDEX MAP.
         SPECTRO DATA ALSO GIVEN. USE: 16.
20001069 PLEISTOCENE, PAHALA ASH. NORTH OF WAILUKU RIVER. (611:40,8,33) BAUXITIC CLAY, RED OR RED-BROWN, VERY FINE GR,
         COMPOS SMPL: MIN: TONNAGE. INDEX MAP, MEAS SEC. SPECTRO ANAL ALSO GIVEN.

20003002 KOOLAU RANGE. (577:24) CLAY, GRAY: 1-8 IN THICK: MIN: PHYS PROP, FIRING TESTS. USE: 5. *MISC: TIO2 = 14.06:
         MNO, CL, N, RARE EARTHS = 0.00.
20003003 KOOLAU RANGE. (577:24) CLAY, GRAY: 1-8 IN THICK: MIN: PHYS PROP, FIRING TESTS. USE: 5. *MISC: TIO2 = 15.28,
         LI2O = 0.04, ZRO2 = 0.04: MNO, CL, N, RARE EARTHS = 0.00.
20007001 LIHUE PLANTATION, KAUAI. (421:PL3,P5,42) SAPROLITE, AUGER-HOLE SMPL: DEPTH, 4-9 FT: MIN: TONNAGE. INDEX & GEOL MAPS,
         GEOL SEC. *MISC: FEO = 1.9.
20007002 LIHUE PLANTATION, KAUAI. (421:PL3,P5,42) SAPROLITE, AUGER-HOLE SMPL: DEPTH, 9-14 FT: MIN: TONNAGE. INDEX & GEOL MAPS,
         GEOL SEC. *MISC: FEO = 0.28.
```

TABLE 6. — *Analyses of samples from California and Hawaii containing 90-100 percent clay (Group D_6), from all rock categories* —Continued

SAMPLE	20007003	20007004	20007005	20007006	20007007	20007008	20007009	20007010	20007011	20007012
SIO2	25.00	12.40	19.40	22.40	1.80	4.30	17.40	5.40	11.80	10.40
AL2O3	25.50	27.80	27.00	26.10	18.50	22.50	20.20	29.20	24.80	28.70
FE2O3	27.30	32.20	28.10	26.30	41.80	38.30	32.80	35.30	37.60	33.00
MGO	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CAO	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	4.30	5.30	4.50	4.40	12.30	10.50	9.10	6.00	5.00	4.90
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	16.00 G	19.60 G	17.60 G	17.30 G	15.80 G	16.30 G	13.90 G	21.60 G	18.10 G	19.50 G
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	98.23 *	95.70 *	98.00 *	98.00 *	96.80 *	96.30 *	96.10 *	98.70 *	98.15 *	97.70 *
CLASS	0, 58, 0	0, 41, 0	0, 50, 0	0, 55, 0	0, 19, 0	0, 24, 0	0, 44, 0	0, 31, 0	0, 38, 0	0, 37, 0

SAMPLE	20007013	20007014	20007015	20007016	20007017	20007018	20007019	20007020	20007021	20007022
SIO2	14.60	2.20	15.40	8.60	11.50	16.00	4.80	5.00	7.80	1.00
AL2O3	21.40	20.90	22.20	33.40	20.10	20.20	31.40	30.20	30.00	25.60
FE2O3	36.30	47.00	36.90	28.00	40.40	37.90	30.80	32.60	31.80	42.30
MGO	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.70
CAO	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.08
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.08
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	19.00
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	5.60	10.00	6.00	4.50	9.60	9.20	7.00	6.60	6.30	7.00
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.85
CO2	18.70 G	17.30 G	16.40 G	22.00 G	14.20 G	13.40 G	23.60 G	22.40 G	21.80 G	0.05 P
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.20 *	97.94 *	98.50 *	98.10 *	97.70 *	97.90 *	98.80 *	98.40 *	99.10 *	97.76 *
CLASS	0, 44, 0	0, 21, 0	0, 43, 0	0, 36, 0	0, 34, 0	0, 41, 0	0, 32, 0	0, 31, 0	0, 35, 0	0, 21, 0

SAMPLE	20007023	20007024	20007025	20007026	20007027	20007028	20007029	20007030	20007031	20007032
SIO2	2.90	4.60	14.30	17.00	4.20	4.60	7.50	15.10	13.00	24.90
AL2O3	26.90	27.40	24.60	24.80	29.60	33.10	28.90	28.20	29.30	25.80
FE2O3	39.70	35.60	33.50	32.20	35.60	31.70	33.90	29.90	29.80	26.50
MGO	0.88	0.78	0.70	0.69	0.10	0.12	0.16	0.17	0.19	0.37
CAO	0.0 B	0.0 B	0.0 B	0.0 B	0.10 P	0.10 P	0.10 P	0.10 P	0.10 P	0.10 P
NA2O	0.06	0.08	0.08	0.09	0.05	0.03	0.04	0.08	0.06	0.06
K2O	0.03	0.04	0.04	0.04	0.10	0.03	0.04	0.02	0.04	0.02
H2O	18.80	19.00	16.00	15.60	21.70	22.20	20.20	17.80	19.20	14.80
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	5.80	6.70	6.20	5.90	5.40	5.40	5.60	5.00	5.00	4.50
P2O5	1.20	1.10	1.10	0.88	0.31	0.43	0.48	0.74	0.77	0.76
CO2	0.05 P	0.05 P	0.05 P	0.05 P	0.05 P	0.05 P	0.05 P	0.05 P	0.05 P	0.05 P
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	97.76 *	98.31 *	97.67 *	98.67 *	97.98 *	98.97 *	98.19 *	98.63 *	98.97 *	99.43 *
CLASS	0, 24, 0	0, 27, 0	0, 41, 0	0, 45, 0	0, 29, 0	0, 30, 0	0, 33, 0	0, 43, 0	0, 41, 0	0, 57, 0

SAMPLE	20007033	20007034	20007035	20007036	20007037	20007038	20007039	20007040	20007041	20007042
SIO2	0.94	11.80	25.70	14.40	16.80	27.30	3.50	3.00	2.50	4.70
AL2O3	26.60	28.50	24.40	21.30	23.40	23.80	26.50	28.20	32.40	30.50
FE2O3	41.60	29.50	24.20	36.00	33.00	26.80	40.80	38.60	33.90	34.70
MGO	0.41	0.64	0.66	0.55	0.63	0.80	0.47	0.44	0.47	0.60
CAO	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.09	0.05	0.06	0.07
NA2O	0.04	0.04	0.06	0.06	0.06	0.06	0.04	0.04	0.04	0.06
K2O	0.04	0.01	0.02	0.03	0.02	0.02	0.11	0.05	0.03	0.04
H2O	19.80	18.10	14.50	14.50	14.80	13.00	19.50	20.70	22.00	20.70
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	7.00	5.80	4.90	7.00	6.50	4.90	6.20	6.00	5.40	5.40
P2O5	0.53	1.00	1.10	0.61	0.69	0.81	0.35	0.41	0.47	0.51
CO2	0.05 P	0.05 P	0.05 P	0.05 P	0.05 P	0.05 P	0.05 P	0.05 P	0.05 P	0.05 P
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	97.96 *	99.11 *	98.91 *	97.18 *	97.72 *	98.48 *	99.28 *	99.82 *	99.98 *	99.77 *
CLASS	0, 21, 0	0, 38, 0	0, 58, 0	0, 39, 0	0, 44, 0	0, 59, 0	0, 26, 0	0, 26, 0	0, 26, 0	0, 29, 0

SAMPLE	20007043	20007044	20007045	20007046	20007047	20007049
SIO2	7.80	14.00	15.60	20.80	15.70	26.10
AL2O3	28.90	27.40	27.20	26.20	25.70	26.90
FE2O3	34.60	32.90	32.20	29.70	31.70	24.10
MGO	0.64	0.64	0.72	0.68	0.12	0.58
CAO	0.06	0.07	0.07	0.07	0.07	0.06
NA2O	0.06	0.06	0.04	0.05	0.04	0.04
K2O	0.03	0.02	0.01	0.01	0.06	0.02
H2O	19.50	17.50	17.40	16.30	18.30	16.10
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	5.40	5.20	4.80	4.60	5.30	4.00
P2O5	0.55	0.56	0.56	0.56	0.30	4.00
CO2	0.05 P	0.05 P	0.05 P	0.05 P	0.05 P	0.05 P
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.81 *	100.40 *	100.21 *	100.35 *	98.84 *	103.60 *
CLASS	0, 33, 0	0, 41, 0	0, 44, 0	0, 52, 0	0, 45, 0	0, 60, 0

A INSOL.
B BLANK--NO VALUE REPT.
C AL2O3 + FE2O3.
D MGO + CAO.
E NA2O + K2O.
F H2O+.
G IGNITION LOSS (MAY INCLUDE WATER).
H REPORTED AS S.
I CALCULATED BY COMPILERS.
J ORGANIC MATTER.
K TOTAL IRON.
M BY DIFFERENCE.
N INCLUDES TIO2.
O GREATER THAN.
P LESS THAN.
T TRACE.
* ADDITIONAL INFORMATION IN DESCRIPTIVE NOTES.

TABLE 6. — *Analyses of samples from California and Hawaii containing 90-100 percent clay (Group D_6), from all rock categories* — Continued

```
20007003  LIHUE PLANTATION, KAUAI.  (421:PL3,P5,42)  SAPROLITE, AUGER-HOLE SMPL: DEPTH, 14-19 FT: MIN: TONNAGE.  INDEX & GEOL MAP,
          GEOL SEC.  *MISC: FEO = 0.13.
20007004  LIHUE PLANTATION, KAUAI.  (421:PL3,P5,42)  SAPROLITE, AUGER-HOLE SMPL: DEPTH, 4-9 FT: MIN: TONNAGE.  INDEX & GEOL MAPS,
          GEOL SEC.  *MISC: FEO = 1.4.
20007005  LIHUE PLANTATION, KAUAI.  (421:PL3,P5,42)  SAPROLITE, AUGER-HOLE SMPL: DEPTH, 9-14 FT: MIN: TONNAGE.  INDEX & GEOL MAPS,
          GEOL SEC.  *MISC: FEO = 1.4.
20007006  LIHUE PLANTATION, KAUAI.  (421:PL3,P5,42)  SAPROLITE, AUGER-HOLE SMPL: DEPTH, 14-19 FT: MIN: TONNAGE.  INDEX & GEOL MAP,
          GEOL SEC.  *MISC: FEO = 1.5.
20007007  LIHUE PLANTATION, KAUAI.  (421:PL3,P5,42)  FERRUGINOUS BAUXITE, AUGER-HOLE SMPL: DEPTH, 6-9 FT: MIN: TONNAGE.
          INDEX & GEOL MAPS, GEOL SEC.  *MISC: FEO = 6.6.
20007008  LIHUE PLANTATION, KAUAI.  (421:PL3,P5,42)  FERRUGINOUS BAUXITE, AUGER-HOLE SMPL: DEPTH, 9-14 FT: MIN: TONNAGE.
          INDEX & GEOL MAPS, GEOL SEC.  *MISC: FEO = 4.4.
20007009  LIHUE PLANTATION, KAUAI.  (421:PL3,P5,42)  SAPROLITE, AUGER-HOLE SMPL: DEPTH, 14-19 FT: MIN: TONNAGE.  INDEX & GEOL MAP,
          GEOL SEC.  *MISC: FEO = 2.7.
20007010  LIHUE PLANTATION, KAUAI.  (421:PL3,P5,42)  FERRUGINOUS BAUXITE, AUGER-HOLE SMPL: DEPTH, 5-10 FT: MIN: TONNAGE.
          INDEX & GEOL MAPS, GEOL SEC.  *MISC: FEO = 1.2.
20007011  LIHUE PLANTATION, KAUAI.  (421:PL3,P5,42)  SAPROLITE, AUGER-HOLE SMPL: DEPTH, 10-15 FT: MIN: TONNAGE.  INDEX & GEOL MAP,
          GEOL SEC.  *MISC: FEO = 0.85.
20007012  LIHUE PLANTATION, KAUAI.  (421:PL3,P5,42)  SAPROLITE, AUGER-HOLE SMPL: DEPTH, 15-20 FT: MIN: TONNAGE.  INDEX & GEOL MAP,
          GEOL SEC.  *MISC: FEO = 1.2.
20007013  PRINCEVILLE RANCH, KAUAI.  (421:PL1,P5,42)  SAPROLITE, AUGER-HOLE SMPL: DEPTH, 4-6 FT: MIN: TONNAGE.  INDEX & GEOL MAPS,
          GEOL SEC.  *MISC: FEO = 2.6.
20007014  PRINCEVILLE RANCH, KAUAI.  (421:PL1,P5,42)  FERRUGINOUS BAUXITE, AUGER-HOLE SMPL: DEPTH, 4-9 FT. MIN: TONNAGE.
          INDEX & GEOL MAPS, GEOL SEC.  *MISC: FEO = 0.54.
20007015  PRINCEVILLE RANCH, KAUAI.  (421:PL1,P5,42)  SAPROLITE, AUGER-HOLE SMPL: DEPTH, 6-14 FT: MIN: TONNAGE.  INDEX & GEOL MAP,
          GEOL SEC.  *MISC: FEO = 1.6.
20007016  PRINCEVILLE RANCH, KAUAI.  (421:PL1,P5,42)  FERRUGINOUS BAUXITE, AUGER-HOLE SMPL: DEPTH, 14-19 FT: MIN: TONNAGE.
          INDEX & GEOL MAPS, GEOL SEC.  *MISC: FEO = 1.6.
20007017  PRINCEVILLE RANCH, KAUAI.  (421:PL1,P5,42)  SAPROLITE, AUGER-HOLE SMPL: DEPTH, 9-14 FT: MIN: TONNAGE.  INDEX & GEOL MAP,
          GEOL SEC.  *MISC: FEO = 1.9.
20007018  PRINCEVILLE RANCH, KAUAI.  (421:PL1,P5,42)  SAPROLITE, AUGER-HOLE SMPL: DEPTH, 14-19 FT: MIN: TONNAGE.
          INDEX & GEOL MAPS, GEOL SEC.  *MISC: FEO = 1.2.
20007019  PRINCEVILLE RANCH, KAUAI.  (421:PL1,P5,42)  FERRUGINOUS BAUXITE, AUGER-HOLE SMPL: DEPTH, 4-9 FT: MIN: TONNAGE.  INDEX
          AND GEOL MAPS, GEOL SEC.  *MISC: FEO = 1.2.
20007020  PRINCEVILLE RANCH, KAUAI.  (421:PL1,P5,42)  FERRUGINOUS BAUXITE: AUGER-HOLE SMPL: DEPTH, 9-14 FT: MIN: TONNAGE.
          INDEX & GEOL MAPS, GEOL SEC.  *MISC: FEO = 1.6.
20007021  PRINCEVILLE RANCH, KAUAI.  (421:PL1,P5,42)  FERRUGINOUS BAUXITE: AUGER-HOLE SMPL: DEPTH, 14-19FT: MIN: TONNAGE:
          INDEX & GEOL MAPS, GEOL SEC.  *MISC: FEO = 1.4.
20007022  PRINCEVILLE RANCH, KAUAI.  (421:11,5,42,52,PL1)  FERRUGINOUS BAUXITE, AUGER-HOLE SMPL: DEPTH, 4-9 FT: MIN: TONNAGE:
          FIRING TESTS.  INDEX & GEOL MAPS, GEOL SEC.  *MISC: FEO=1.0, MNO=0.10.
20007023  PRINCEVILLE RANCH, KAUAI.  (421:11,5,42,52,PL1)  FERRUGINOUS BAUXITE, AUGER-HOLE SMPL: DEPTH, 9-14 FT: MIN: TONNAGE:
          FIRING TESTS.  INDEX & GEOL MAPS, GEOL SEC.  *MISC: FEO=1.1, MNO=0.34.
20007024  PRINCEVILLE RANCH, KAUAI.  (421:11,5,42,52,PL1)  FERRUGINOUS BAUXITE, AUGER-HOLE SMPL: DEPTH, 14-19 FT: MIN: TONNAGE:
          FIRING TESTS.  INDEX & GEOL MAPS, GEOL SEC.  *MISC: FEO=2.7, MNO=0.26.
20007025  PRINCEVILLE RANCH, KAUAI.  (421:11,5,42,PL1)  SAPROLITE, AUGER-HOLE SMPL: DEPTH, 19-29 FT: MIN: TONNAGE.
          INDEX & GEOL MAPS, GEOL SEC.  *MISC: FEO = 1.1: MNO = 0.32.
20007026  PRINCEVILLE RANCH, KAUAI.  (421:11,5,42,PL1)  SAPROLITE, AUGER-HOLE SMPL: DEPTH, 29-39 FT: MIN: TONNAGE.
          INDEX & GEOL MAPS, GEOL SEC.  *MISC: FEO = 1.1: MNO = 0.32.
20007027  PRINCEVILLE RANCH, KAUAI.  (421:11,5,40,42,52,PL1)  FERRUGINOUS BAUXITE: LOG OF AUGER HOLE: DEPTH, 4-9 FT: MIN: TONNAGE:
          FIRING TESTS.  INDEX & GEOL MAPS, GEOL SEC.  *MISC: FEO = 0.71, MNO = 0.06: SMPL CONTAINS ORGANIC MATTER.

20007028  PRINCEVILLE RANCH, KAUAI.  (421:11,5,40,42,52,PL1)  FERRUGINOUS BAUXITE: LOG OF AUGER HOLE: DEPTH, 9-14 FT: MIN:
          TONNAGE: FIRING TESTS.  INDEX & GEOL MAPS, GEOL SEC.  *MISC: FEO = 1.0, MNO = 0.11.

20007029  PRINCEVILLE RANCH, KAUAI.  (421:11,5,40,42,52,PL1)  FERRUGINOUS BAUXITE: LOG OF AUGER HOLE: DEPTH, 14-22 FT: MIN:
          INDEX & GEOL MAPS, GEOL SEC.  *MISC: FEO = 1.0: MNO = 0.12: SMPL CONTAINS ORGANIC MATTER.

20007030  PRINCEVILLE RANCH, KAUAI.  (421:11,5,40,42,52,PL1)  SAPROLITE: LOG OF AUGER HOLE: DEPTH, 22-24 FT: MIN: TONNAGE.
          INDEX & GEOL MAPS, GEOL SEC.  *MISC: FEO = 1.3: MNO = 0.17: SMPL CONTAINS ORGANIC MATTER.

20007031  PRINCEVILLE RANCH, KAUAI.  (421:11,5,40,42,52,PL1)  SAPROLITE: LOG OF AUGER HOLE: DEPTH, 24-34 FT: MIN: TONNAGE.
          INDEX & GEOL MAPS, GEOL SEC.  *MISC: FEO = 1.3: MNO = 0.16.
20007032  PRINCEVILLE RANCH, KAUAI.  (421:11,5,40,42,52,PL1)  SAPROLITE: LOG OF AUGER HOLE: DEPTH, 34-54 FT: MIN: TONNAGE.
          INDEX & GEOL MAPS, GEOL SEC.  *MISC: FEO = 1.3: MNO = 0.27.
20007033  KAUAI.  (421:11,5,42,52,PL3)  FERRUGINOUS BAUXITE, AUGER-HOLE SMPL: DEPTH,  4-9  FT, MIN: TONNAGE: FIRING TESTS.
          INDEX & GEOL MAPS, GEOL SEC.  *MISC: FEO = 0.91, MNO = 0.04.
20007034  KAUAI.  (421:11,5,42,PL3)  SAPROLITE, AUGER-HOLE SMPL: DEPTH, 24-29 FT: MIN: TONNAGE.  INDEX & GEOL MAPS, GEOL SEC.
          *MISC: FEO = 3.4, MNO = 0.27.
20007035  KAUAI.  (421:11,5,42,PL3)  SAPROLITE, AUGER-HOLE SMPL: DEPTH, 39-44 FT: MIN: TONNAGE.  INDEX & GEOL MAPS, GEOL SEC.
          *MISC: FEO = 3.0, MNO = 0.32.
20007036  KAUAI.  (421:11,5,42,52,PL3)  SAPROLITE, AUGER-HOLE SMPL: DEPTH, 4-9   FT: MIN: TONNAGE: FIRING TESTS.
          INDEX & GEOL MAPS, GEOL SEC.  *MISC: FEO = 2.5, MNO = 0.18.
20007037  KAUAI.  (421:11,5,42,52,PL3)  SAPROLITE, AUGER-HOLE SMPL: DEPTH, 9-14  FT: MIN: TONNAGE: FIRING TESTS.
          INDEX & GEOL MAPS, GEOL SEC.  *MISC: FEO = 1.6, MNO = 0.17.
20007038  KAUAI.  (421:11,5,42,PL3)  SAPROLITE, AUGER-HOLE SMPL: DEPTH, 46-49 FT: MIN: TONNAGE.  INDEX & GEOL MAPS, GEOL SEC.
          MISC: FEO = 0.62, MNO = 0.32.
20007039  KAUAI.  (421:11,5,40,42,52,PL3)  FERRUGINOUS BAUXITE: LOG OF AUGER HOLE: DEPTH,  4-9 FT: MIN: TONNAGE: FIRING TESTS.
          INDEX & GEOL MAPS, GEOL SEC.  *MISC: FEO = 1.5, MNO = 0.17.
20007040  KAUAI.  (421:11,5,40,42,52,PL3)  FERRUGINOUS BAUXITE: LOG OF AUGER HOLE: DEPTH, 9-14 FT: MIN: TONNAGE: FIRING TESTS.
          INDEX & GEOL MAPS, GEOL SEC.  *MISC: FEO = 2.1, MNO = 0.18.
20007041  KAUAI.  (421:11,5,40,42,52,PL3)  FERRUGINOUS BAUXITE: LOG OF AUGER HOLE: DEPTH, 14-19 FT: MIN: TONNAGE: FIRING TESTS.
          INDEX & GEOL MAPS, GEOL SEC.  *MISC: FEO = 2.5, MNO = 0.16.
20007042  KAUAI.  (421:11,5,40,42,PL3)  FERRUGINOUS BAUXITE: LOG OF AUGER HOLE: DEPTH, 19-24 FT: MIN: TONNAGE.  INDEX & GEOL MAPS,
          GEOL SEC.  *MISC: FEO = 2.0, MNO = 0.44.
20007043  KAUAI.  (421:11,5,40,42,PL3)  FERRUGINOUS BAUXITE: LOG OF AUGER HOLE: DEPTH, 24-29 FT: MIN: TONNAGE.  INDEX & GEOL MAPS,
          GEOL SEC.  *MISC: FEO = 1.8, MNO = 0.42.
20007044  KAUAI.  (421:11,5,41,42,PL3)  SAPROLITE, LOG OF AUGER HOLE: DEPTH, 29-39 FT: MIN: TONNAGE.  INDEX & GEOL MAPS, GEOL SEC.
          *MISC: FEO = 1.6, MNO = 0.40.
20007045  KAUAI.  (421:11,5,41,42,PL3)  SAPROLITE, LOG OF AUGER HOLE: DEPTH, 39-49 FT: MIN: TONNAGE.  INDEX & GEOL MAPS, GEOL SEC.
          *MISC: FEO = 1.2, MNO = 0.36.
20007046  KAUAI.  (421:11,5,41,42,PL3)  SAPROLITE, LOG OF AUGER HOLE: DEPTH, 49-54 FT: MIN: TONNAGE.  INDEX & GEOL MAPS, GEOL SEC.
          *MISC: FEO = 1.0, MNO = 0.33.
20007047  KAUAI.  (421:11,5,42,52,PL3)  SAPROLITE, AUGER-HOLE SMPL: DEPTH, 4-9 FT: MIN: TONNAGE: FIRING TESTS.
          INDEX & GEOL MAPS, GEOL SEC.  *MISC: FEO = 1.4, MNO = 0.10.
20007049  KAUAI.  (421:11,5,42,52,PL3)  SAPROLITE, AUGER-HOLE SMPL: DEPTH, 14-19 FT: MIN: TONNAGE: FIRING TESTS.
          INDEX & GEOL MAPS, GEOL SEC.  *MISC: FEO = 1.2, MNO = 0.45.
```

TABLE 6. — *Analyses of samples from California and Hawaii containing 90-100 percent clay (Group D_6), from all rock categories* —Continued

SAMPLE	20007050	20007051	20007052	20007053	20007054	20007055	20007056	20007057	20007058	20007059
SIO2	23.00	23.20	25.90	42.10	3.70	3.90	4.80	8.50	13.70	18.20
AL2O3	27.70	28.10	27.20	14.00	28.90	28.30	23.00	22.90	24.40	26.70
FE2O3	24.70	24.60	24.60	13.00	38.60	38.30	43.60	40.60	34.90	30.10
MGO	0.47	0.52	0.43	7.90	0.40	0.47	0.61	0.59	0.53	0.38
CAO	0.07	0.06	0.06	6.40	0.06	0.08	0.08	0.09	0.08	0.06
NA2O	0.07	0.09	0.06	0.76	0.08	0.07	0.06	0.07	0.06	0.04
K2O	0.02	0.02	0.02	0.62	0.08	0.04	0.06	0.03	0.03	0.02
H2O	16.80	16.80	16.40	10.20	20.80	20.10	17.60	17.00	15.70	16.40
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	4.40	4.30	4.20	2.40	5.50	5.80	6.60	6.20	5.50	4.70
P2O5	0.60	0.50	0.44	0.33	0.28	0.35	0.42	0.45	0.47	0.49
CO2	0.05 P	0.05 P	0.05 P	0.05 P	0.05 P	0.05 P	0.05 P	0.05 P	0.05 P	0.05 P
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.56 *	99.72 *	100.31 *	100.52 *	99.89 *	99.48 *	99.23 *	99.03 *	97.66 *	98.57 *
CLASS	0, 55, 0	0, 56, 0	0, 60, 0	3, 77, 0	0, 27, 0	0, 27, 0	0, 26, 0	0, 32, 0	0, 39, 0	0, 47, 0

SAMPLE	20007060	20007061	20007062	20007063	20007064	20007065	20007066	20007067	20007068	20007069
SIO2	23.20	8.60	11.40	17.10	19.70	21.50	25.30	4.50	6.60	7.80
AL2O3	24.60	25.50	24.60	26.20	25.80	25.10	24.40	22.30	23.90	23.40
FE2O3	29.30	39.10	37.80	32.70	32.10	30.70	29.10	44.50	42.70	41.90
MGO	0.41	0.72	0.91	0.83	1.00	1.00	0.87	0.49	0.56	0.62
CAO	0.07	0.08	0.09	0.08	0.07	0.08	0.08	0.03	0.08	0.06
NA2O	0.07	0.05	0.06	0.06	0.06	0.06	0.06	0.04	0.06	0.07
K2O	0.02	0.09	0.05	0.03	0.03	0.03	0.02	0.10	0.06	0.05
H2O	15.00	17.80	17.20	15.80	15.00	14.60	13.90	18.30	17.60	17.30
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	4.70	5.60	5.70	5.10	4.90	4.90	4.50	6.40	6.40	6.40
P2O5	0.56	0.30	0.36	0.31	0.32	0.36	0.48	0.43	0.43	0.45
CO2	0.05 P	0.05 P	0.05 P	0.05 P	0.05 P	0.05 P	0.05 P	0.05 P	0.05 P	0.05 P
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.30 *	98.40 *	99.24 *	99.09 *	99.80 *	99.18 *	99.45 *	97.77 *	98.99 *	98.55 *
CLASS	0, 55, 0	0, 33, 0	0, 37, 0	0, 45, 0	0, 49, 0	0, 51, 0	0, 57, 0	0, 26, 0	0, 29, 0	0, 31, 0

SAMPLE	20007070	20007071	20007072	20007073	20007074	20007075	20007076	20007077	20007078	20007079
SIO2	14.40	20.80	19.10	25.20	27.50	26.10	1.10	15.20	32.00	20.29
AL2O3	24.00	25.20	25.00	23.20	25.40	23.70	34.70	32.00	35.28	37.97
FE2O3	36.40	30.90	32.40	27.40	25.60	27.80	31.90	26.60	11.80	15.01
MGO	0.59	0.65	0.64	0.59	0.38	0.58	0.19	0.0 B	0.14	0.20
CAO	0.08	0.06	0.07	0.0 B	0.0 B	0.0 B	0.04	0.0 B	0.22	0.33
NA2O	0.06	0.06	0.05	0.08	0.12	0.08	0.02	0.0 B	0.61	0.27
K2O	0.03	0.02	0.02	0.06	0.02	0.08	0.01	0.0 B	0.30	0.25
H2O	16.40	15.40	16.00	14.20	14.20	14.00	24.50 F	0.0 B	15.06	16.84
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	5.60	4.80	5.10	4.70	4.10	4.60	4.60	4.10	2.13	4.69
P2O5	0.55	0.63	0.56	0.21	0.48	0.25	0.35	0.0 B	0.04	0.23
CO2	0.05 P	0.05 P	0.05 P	0.05 P	0.05 P	0.05 P	0.05 P	20.40 G	0.0 B	0.0 B
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.70	0.78
TOT CONS	98.61 *	98.99 *	99.30 *	98.54 *	99.17 *	98.89 *	98.84 *	98.30	99.89 *	100.27 *
CLASS	0, 41, 0	0, 51, 0	0, 49, 0	0, 57, 0	0, 61, 0	0, 58, 0	0, 26, 0	0, 46, 0	0, 67, 0	0, 50, 0

SAMPLE	20007080	20007081	20007082	20007083	20007084	20007085	20007086	20007087	20007088	20007089
SIO2	24.01	26.82	34.00	33.10	29.50	29.70	38.10	31.50	1.40	1.50
AL2O3	36.27	30.13	34.80	26.70	34.60	32.70	33.10	9.60	28.00	28.40
FE2O3	14.29	16.86	2.20	2.20	1.80	0.72	5.20	18.60	41.50	40.50
MGO	0.09	0.11	0.06	0.54	0.10	0.0	0.0 B	0.0 B	0.0 B	0.0 B
CAO	0.17	0.22	0.0	0.0	0.0	0.0	0.0 B	0.0 B	0.0 B	0.0 B
NA2O	0.31	0.57	0.08	0.22	0.08	0.07	0.03	0.15	0.0 B	0.0 B
K2O	0.24	0.46	0.21	1.70	0.28	0.09	0.21	1.40	0.0 B	0.0 B
H2O	15.61	18.34	13.50 F	9.30 F	12.60 F	11.90 F	17.40 F	5.30 F	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	6.80	6.10	10.80	15.00	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	4.84	2.21	7.50	17.50	8.90	7.60	6.20	30.60	6.90	7.40
P2O5	0.34	0.19	0.41	0.31	0.31	0.98	0.05	0.14	0.0 B	0.0 B
CO2	0.0 B	0.0 B	0.05 P	0.05 P	0.05 P	0.05 P	0.0 B	0.0 B	21.60 G	20.90 G
SO3	0.49	0.74	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	100.40 *	99.74 *	100.36 *	99.38 *	99.78 *	99.33 *	100.35 *	97.89 *	99.40	98.70
CLASS	0, 55, 0	0, 63, 1	0, 74, 0	0, 68, 0	0, 70, 0	0, 74, 0	0, 78, 0	0, 60, 0	0, 24, 0	0, 23, 0

SAMPLE	20007090	20007091	20007092	20007093
SIO2	3.30	3.40	2.30	2.30
AL2O3	30.30	30.30	28.90	29.90
FE2O3	38.30	37.30	39.70	38.30
MGO	0.0 B	0.0 B	0.0 B	0.0 B
CAO	0.0 B	0.0 B	0.0 B	0.0 B
NA2O	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	6.50	6.90	6.80	7.20
P2O5	0.0 B	0.0 B	0.0 B	0.0 B
CO2	21.50 G	20.80 G	21.90 G	21.30 G
SO3	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.90	98.70	99.60	99.00
CLASS	0, 27, 0	0, 27, 0	0, 26, 0	0, 25, 0

A INSOL.
B BLANK--NO VALUE REPT.
C AL2O3 + FE2O3.
D MGO + CAO.
E NA2O + K2O.
F H2O+.
G IGNITION LOSS (MAY INCLUDE WATER).
H REPORTED AS S.
I CALCULATED BY COMPILERS.
J ORGANIC MATTER.
K TOTAL IRON.
M BY DIFFERENCE.
N INCLUDES TIO2.
O GREATER THAN.
P LESS THAN.
T TRACE.
* ADDITIONAL INFORMATION IN DESCRIPTIVE NOTES.

TABLE 6. — *Analyses of samples from California and Hawaii containing 90-100 percent clay (Group D_6), from all rock categories* —Continued

```
20007050  KAUAI.  (421:11,5,42,PL3)  SAPROLITE, AUGER-HOLE SMPL: DEPTH, 19-24 FT: MIN: TONNAGE.  INDEX & GEOL MAPS, GEOL SEC.
          *MISC: FEO = 1.4, MNO = 0.28.
20007051  KAUAI.  (421:11,5,42,PL3)  SAPROLITE, AUGER-HOLE SMPL: DEPTH, 24-29 FT: MIN: TONNAGE.  INDEX & GEOL MAPS, GEOL SEC.
          *MISC: FEO = 1.2, MNO = 0.28.
20007052  KAUAI.  (421:11,5,42,PL3)  SAPROLITE, AUGER-HOLE SMPL: DEPTH, 29-35 FT: MIN: TONNAGE.  INDEX & GEOL MAPS, GEOL SEC.
          *MISC: FEO = 0.69, MNO = 0.26.
20007053  KAUAI.  (421:11,5,42,PL3)  SAPROLITE, AUGER-HOLE SMPL: DEPTH, 35-35.5 FT: MIN: TONNAGE.  INDEX & GEOL MAPS, GEOL SEC.
          *MISC: FEO = 2.5:  MNO = 0.26.
20007054  KAUAI.  (421:11,5,41,52,PL3)  FERRUGINOUS BAUXITE: LOG OF AUGER HOLE, DEPTH,  4-7  FT: MIN: TONNAGE: FIRING TESTS.
          INDEX & GEOL MAPS, GEOL SEC.  *MISC: FEO = 1.3, MNO = 0.14.
20007055  KAUAI.  (421:11,5,41,52,PL3)  FERRUGINOUS BAUXITE: LOG OF AUGER HOLE, DEPTH,  7-9  FT: MIN: TONNAGE: FIRING TESTS.
          INDEX & GEOL MAPS, GEOL SEC.  *MISC: FEO = 1.8, MNO = 0.22.
20007056  KAUAI.  (421:11,5,41,52,PL3)  FERRUGINOUS BAUXITE: LOG OF AUGER HOLE, DEPTH,  9-14 FT: MIN: TONNAGE: FIRING TESTS.
          INDEX & GEOL MAPS, GEOL SEC.  *MISC: FEO = 2.1, MNO = 0.25.
20007057  KAUAI.  (421:11,5,41,52,PL3)  FERRUGINOUS BAUXITE: LOG OF AUGER HOLE, DEPTH, 14-19 FT: MIN: TONNAGE: FIRING TESTS.
          INDEX & GEOL MAPS, GEOL SEC.  *MISC: FEO = 2.2, MNO = 0.35.
20007058  KAUAI.  (421:11,5,41,42,PL3)  SAPROLITE, LOG OF AUGER HOLE: DEPTH, 19-24 FT: MIN: TONNAGE.  INDEX & GEOL MAPS, GEOL SEC.
          *MISC: FEO = 1.9: MNO = 0.34: SMPL CONTAINS ORGANIC MATTER.
20007059  KAUAI.  (421:11,5,41,42,PL3)  SAPROLITE, LOG OF AUGER HOLE: DEPTH, 24-34 FT: MIN: TONNAGE.  INDEX & GEOL MAPS, GEOL SEC.
          *MISC: FEO = 1.1: MNO = 0.33: SMPL CONTAINS ORGANIC MATTER.
20007060  KAUAI.  (421:11,5,41,42,PL3)  SAPROLITE, LOG OF AUGER HOLE: DEPTH, 34-39 FT: MIN: TONNAGE.  INDEX & GEOL MAPS, GEOL SEC.
          *MISC: FEO = 1.0: MNO = 0.32.
20007061  KAUAI.  (421:11,5,42,52,PL3)  FERRUGINOUS BAUXITE, AUGER-HOLE SMPL: DEPTH,  4-10 FT, MIN: TONNAGE: FIRING TESTS.
          INDEX & GEOL MAPS, GEOL SEC.  *MISC: FEO = 0.37: MNO = 0.14: SMPL CONTAINS ORGANIC MATTER.

20007062  KAUAI.  (421:11,5,42,52,PL3)  SAPROLITE, AUGER-HOLE SMPL: DEPTH, 10-14 FT: MIN: TONNAGE: FIRING TESTS.
          INDEX & GEOL MAPS, GEOL SEC.  *MISC: FEO = 0.82, MNO = 0.20.
20007063  KAUAI.  (421:11,5,42,52,PL3)  SAPROLITE, AUGER-HOLE SMPL: DEPTH, 14-19 FT: MIN: TONNAGE: FIRING TESTS.
          INDEX & GEOL MAPS, GEOL SEC.  *MISC: FEO = 0.58, MNO = 0.25.
20007064  KAUAI.  (421:11,5,42,PL3)  SAPROLITE, AUGER-HOLE SMPL: DEPTH, 19-24 FT: MIN: TONNAGE.  INDEX & GEOL MAPS, GEOL SEC.
          *MISC: FEO = 0.50, MNO = 0.27.
20007065  KAUAI.  (421:11,5,42,PL3)  SAPROLITE, AUGER-HOLE SMPL: DEPTH, 24-34 FT: MIN: TONNAGE.  INDEX & GEOL MAPS, GEOL SEC.
          *MISC: FEO = 0.53, MNO = 0.27.
20007066  KAUAI.  (421:11,5,42,PL3)  SAPROLITE, AUGER-HOLE SMPL: DEPTH, 34-39 FT: MIN: TONNAGE.  INDEX & GEOL MAPS, GEOL SEC.
          *MISC: FEO = 0.44, MNO = 0.25.
20007067  KAUAI.  (421:12,5,42,52,PL3)  FERRUGINOUS BAUXITE, AUGER-HOLE SMPL: DEPTH,  4-9  FT, MIN: TONNAGE: FIRING TESTS.
          INDEX & GEOL MAPS, GEOL SEC.  *MISC: FEO = 0.52: MNO = 0.11: SMPL CONTAINS ORGANIC MATTER.

20007068  KAUAI.  (421:12,5,42,52,PL3)  FERRUGINOUS BAUXITE, AUGER-HOLE SMPL: DEPTH,  9-14 FT, MIN: TONNAGE: FIRING TESTS.
          INDEX & GEOL MAPS, GEOL SEC.  *MISC: FEO = 0.39: MNO = 0.16.
20007069  KAUAI.  (421:12,5,42,52,PL3)  FERRUGINOUS BAUXITE, AUGER-HOLE SMPL: DEPTH, 14-19 FT, MIN: TONNAGE: FIRING TESTS.
          INDEX & GEOL MAPS, GEOL SEC.  *MISC: FEO = 0.27: MNO = 0.18: SMPL CONTAINS ORGANIC MATTER.

20007070  KAUAI.  (421:12,5,42,PL3)  SAPROLITE, AUGER-HOLE SMPL: DEPTH, 19-24 FT: MIN: TONNAGE.  INDEX & GEOL MAPS, GEOL SEC.
          *MISC: FEO = 0.21: MNO = 0.24: SMPL CONTAINS ORGANIC MATTER.
20007071  KAUAI.  (421:12,5,42,PL3)  SAPROLITE, AUGER-HOLE SMPL: DEPTH, 24-34 FT: MIN: TONNAGE.  INDEX & GEOL MAPS, GEOL SEC.
          *MISC: FEO = 0.14, MNO = 0.28.
20007072  KAUAI.  (421:12,5,42,PL3)  SAPROLITE, AUGER-HOLE SMPL: DEPTH, 34-44 FT: MIN: TONNAGE.  INDEX & GEOL MAPS, GEOL SEC.
          *MISC: FEO = 0.07, MNO = 0.24.
20007073  PLEISTOCENE & HOLOCENE, KOLOA VOLCANIC SER.  NEAR BRIDGE, ANAHOLA STREAM, HW 56, KAUAI.  (421:28,5,33,PL2)  SAPROLITE,
          GRAY: ROADCUT SMPL: MIN.  INDEX & GEOL MAPS, GEOL SEC.  *MISC: FEO = 2.8, MNO = 0.05.  SPECTRO ANAL ALSO GIVEN.

20007074  PLEISTOCENE & HOLOCENE, KOLOA VOLCANIC SER.  NEAR BRIDGE, ANAHOLA STREAM, HW 56, KAUAI.  (421:28,5,33,PL2)  SAPROLITE,
          GRAY: ROADCUT SMPL: MIN.  INDEX & GEOL MAPS, GEOL SEC.  *MISC: FEO = 1.3, MNO = 0.02.  SPECTRO ANAL ALSO GIVEN.

20007075  PLEISTOCENE & HOLOCENE, KOLOA VOLCANIC SER.  NEAR BRIDGE, ANAHOLA STREAM, HW 56, KAUAI.  (421:28,5,33,PL2)  SAPROLITE,
          RED: ROADCUT SMPL: MIN.  INDEX & GEOL MAPS, GEOL SEC.  *MISC: FEO = 1.6, MNO = 0.05.  SPECTRO ANAL ALSO GIVEN.

20007076  PLEISTOCENE & HOLOCENE, KOLOA VOLCANIC SER.  NEAR BRIDGE, ANAHOLA STREAM, HW 56, KAUAI.  (421:28,5,PL2)
          FERRUGINOUS BAUXITE, REDDISH-BROWN: MIN.  INDEX & GEOL MAP, GEOL SEC. *MISC: FEO = 1.3: MNO = 0.08: CAO BY SPECTRO ANAL.

20007077  NEAR LIHUE, KAUAI.  (421:12,5,PL3/ 611: TABLE 9)  SAPROLITE, REDDISH-BROWN, ROAD-CUT SMPL: MIN.  INDEX & GEOL MAP.

20007078  KAUAI.  (289:314,313)  WEATHERED LAVA: ANAL OF UNWEATHERED LAVA ALSO GIVEN.  *MISC: FEO = 1.53, MNO = 0.08.

20007079  KAUAI.  (289:314,313)  WEATHERED LAVA: ANAL OF UNWEATHERED LAVA ALSO GIVEN.  *MISC: FEO = 3.22, MNO = 0.19.

20007080  KAUAI.  (289:314,313)  WEATHERED LAVA: ANAL OF UNWEATHERED LAVA ALSO GIVEN.  *MISC: FEO = 3.31, MNO = 0.43.

20007081  KAUAI.  (289:314,313)  WEATHERED LAVA: ANAL OF UNWEATHERED LAVA ALSO GIVEN.  *MISC: FEO = 3.03, MNO = 0.06.

20007082  ALAKAI SWAMP, KAUAI.  (421:49,5,47,52,PL5)  CLAY, LIGHT-GRAY: 14.3 FT THICK: LOG OF AUGER HOLE: MIN: FIRING TESTS.
          INDEX & GEOL MAPS, GEOL SEC.  *MISC: FEO = 0.67, MNO = 0.08.
20007083  ALAKAI SWAMP, KAUI.  (421:49,5,47,PL5)  CLAY, GRAY: 7 FT THICK: LOG OF AUGER HOLE: MIN.  INDEX & GEOL MAPS, GEOL SEC.
          *MISC: FEO = 1.5, MNO = 0.16.
20007084  GROVE FARM, KAUAI.  (421:49,5,47,PL3)  CLAY, GRAY, 9.7 FT THICK: LOG OF AUGER HOLE: MIN.  INDEX & GEOL MAPS, GEOL SEC.
          *MISC: FEO = 0.68, MNO = 0.08.
20007085  NEAR PRINCEVILLE RANCH, KAUAI.  (421:49,5,47,PL1)  CLAY, GRAY & BROWN, PLASTIC: 9.3 FT THICK: LOG OF AUGER HOLE: MIN.
          INDEX & GEOL MAPS, GEOL SEC.  *MISC: FEO = 0.44, MNO = 0.08.
20007086  KNUDSENS GAP, KAUAI.  (421:11,12,5,54,PL3)  CLAY: CHANNEL SMPL OF UPPER 5 FT OF DEPOSIT: MIN.  INDEX & GEOL MAPS,
          GEOL SEC.  *MISC: MNO = 0.06.
20007087  NEAR KANEHA RESERVOIRS, KAUAI.  (421:49,5,55,PL2)  CLAY, GRAY: 1 FT THICK: MIN: TONNAGE.  INDEX & GEOL MAPS, GEOL SEC.
          *MISC: MNO = 0.60.  SMPL CONTAINS ORGANIC MATTER.
20007088  5 MILES WEST OF KAPAA.  (75:7,5,6)  FERRUGINOUS BAUXITE, CHANNEL SMPL: MIN. INDEX MAP.  SPECTRO DATA ALSO GIVEN. USE:16.

20007089  5 MILES WEST OF KAPAA.  (75:7,5,6)  FERRUGINOUS BAUXITE, CHANNEL SMPL: MIN. INDEX MAP.  SPECTRO DATA ALSO GIVEN. USE:16.
          DUP ANAL, SEE SMPL 20007088.
20007090  5 MILES WEST OF KAPAA.  (75:7,5,6)  FERRUGINOUS BAUXITE, CHANNEL SMPL: MIN. INDEX MAP.  SPECTRO DATA ALSO GIVEN. USE:16.

20007091  5 MILES WEST OF KAPAA.  (75:7,5,6)  FERRUGINOUS BAUXITE, CHANNEL SMPL: MIN. INDEX MAP.  SPECTRO DATA ALSO GIVEN. USE:16.
          DUP ANAL, SEE SMPL 20007090.
20007092  5 MILES WEST OF KAPAA.  (75:7,5,6)  FERRUGINOUS BAUXITE, COMPOSITE SMPL: MIN.  INDEX MAP.  SPECTRO DATA ALSO GIVEN.
          USE: 16.
20007093  5 MILES WEST OF KAPAA.  (75:7,5,6)  FERRUGINOUS BAUXITE, COMPOSITE SMPL: MIN.  INDEX MAP.  SPECTRO DATA ALSO GIVEN.
          USE: 16.  DUP ANAL, SEE SMPL 20007092.
```

TABLE 6. —*Analyses of samples from California and Hawaii containing 90-100 percent clay (Group D_6), from all rock categories* —Continued

SAMPLE	20007094	20007095	20007096	20007097	20007098	20007099	20007100	20007101	20007102	20007103
SIO2	1.00	1.00	1.60	1.70	4.90	5.00	3.30	3.30	2.00	2.40
AL2O3	26.80	27.30	31.90	30.90	28.50	27.70	29.30	29.80	32.20	29.30
FE2O3	42.20	41.00	38.60	37.60	39.30	38.80	39.30	37.80	36.30	38.40
MGO	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CAO	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	7.10	7.60	4.50	6.00	5.60	6.20	5.20	6.10	6.60	6.80
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	22.20 G	21.40 G	22.50 G	22.50 G	21.40 G	20.40 G	22.50 G	21.70 G	20.90 G	21.10 G
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.30	98.30	99.10	98.70	99.70	98.10	99.60	98.70	98.00 G	98.00
CLASS	0, 24, 0	0, 23, 0	0, 25, 0	0, 25, 0	0, 30, 0	0, 29, 0	0, 28, 0	0, 27, 0	0, 24, 0	0, 25, 0

SAMPLE	20007104	20007105	20007106	20007107	20007108	20007109	20007110	20007111	20007112	20007113
SIO2	25.10	7.70	5.90	3.10	12.80	3.20	15.50	20.60	16.60	16.50
AL2O3	39.40	19.60	30.00	28.70	28.00	26.80	29.30	26.00	30.50	26.40
FE2O3	9.70	43.90	36.60	40.20	33.90	41.30	31.10	32.30	29.30	31.70
MGO	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CAO	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	6.50	11.00	7.50	8.30	6.10	7.00	5.90	5.30	5.10	6.20
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	18.80 G	17.40 G	19.60 G	19.30 G	18.80 G	21.30 G	17.70 G	15.40 G	18.10 G	18.60 G
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.50	99.60	99.60	99.60	99.60	99.60	99.50	99.60	99.60	99.40
CLASS	0, 59, 0	0, 31, 0	0, 30, 0	0, 25, 0	0, 41, 0	0, 27, 0	0, 44, 0	0, 51, 0	0, 46, 0	0, 47, 0

SAMPLE	20007114	20007115	20007116	20007117	20007118	20007119	20007120	20007121	20007122	20007123
SIO2	15.00	17.80	1.10	6.00	1.00	2.40	5.50	3.90	34.50	29.20
AL2O3	28.30	28.70	29.60	26.80	24.90	21.70	7.60	5.80	35.00	25.70
FE2O3	30.20	31.00	40.30	39.70	43.50	44.10	78.50	60.80	3.30	23.70
MGO	0.0 B	0.0 B	0.0 B	0.0 B	0.55	0.36	0.0 B	0.0 B	0.0 B	0.0 B
CAO	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.10 P	0.0 B	0.0 B	0.0 B	0.0 B
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.10	0.06	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.09	0.15	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	18.70	18.30	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	6.40	4.90	7.70	6.90	7.30	6.50	7.20	26.00	5.20	3.10
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.67	0.29	0.0 B	0.0 B	0.0 B	0.0 B
CO2	19.50 G	17.30 G	20.80 G	20.10 G	0.05 P	0.05 P	0.0 B	0.0 B	19.60 G	16.80 G
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.40	99.70	99.50	99.50	98.04 *	95.02 *	98.80	96.50	97.60	98.50
CLASS	0, 45, 0	0, 47, 0	0, 23, 0	0, 30, 0	0, 20, 0	0, 22, 0	0, 11, 0	0, 8, 0	0, 74, 0	0, 66, 0

SAMPLE	20007124	20007125	20007126	20007127	20007128	20007129	20007130	20007131	20007132	20007133
SIO2	4.50	12.30	5.80	4.00	4.20	2.40	9.00	1.90	6.30	8.50
AL2O3	22.40	34.50	27.50	28.40	37.80	42.20	54.00	53.70	12.50	22.20
FE2O3	44.80	22.60	35.50	37.30	27.50	23.80	4.00	9.80	57.00	31.50
MGO	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0	0.14
CAO	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0	0.0
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0	0.0
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0	0.0
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	8.60	5.00	6.90	5.40	4.00	4.00	1.40	2.20	5.70	3.60
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	20.10 G	23.80 G	21.30 G	23.40 G	25.00 G	25.80 G	31.00 G	31.30 G	16.10 G	31.10 G
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	100.40	98.20	97.00	98.50	98.50	98.20	99.40	98.90	99.54 *	100.06 *
CLASS	0, 28, 0	0, 44, 0	0, 31, 0	0, 30, 0	0, 32, 0	0, 30, 0	0, 45, 0	0, 34, 0	0, 27, 0	0, 46, 0

SAMPLE	20007134	20007135	20007136	20007137	20007138	20007139	20007140	20007141
SIO2	12.00	23.50	27.90	15.00	5.70	12.30	9.00	8.60
AL2O3	25.00	28.40	28.30	26.10	18.20	25.50	20.20	22.20
FE2O3	22.10	21.30	22.00	19.90	28.90	19.90	32.70	26.30
MGO	0.0	0.42	0.72	0.14	0.03	0.11	0.41	0.30
CAO	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NA2O	0.0	0.0	0.0	0.0 T	0.0 T	0.0 T	0.0 T	0.0 T
K2O	0.0	0.0	0.0	0.0	0.0 T	0.0	0.0	0.0 T
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	3.10	3.60	3.90	3.50	3.10	2.70	5.10	3.40
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	34.40 G	20.90 G	15.50 G	33.10 G	40.10 G	36.80 G	29.30 G	35.90 G
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.62 *	100.07 *	99.91 *	99.90 *	99.35 *	99.72 *	99.54 *	99.52 *
CLASS	0, 55, 0	0, 60, 1	0, 61, 2	0, 58, 0	0, 50, 0	0, 57, 0	0, 44, 1	0, 50, 1

A INSOL.
B BLANK--NO VALUE REPT.
C AL2O3 + FE2O3.
D MGO + CAO.
E NA2O + K2O.
F H2O+.
G IGNITION LOSS (MAY INCLUDE WATER).
H REPORTED AS S.
I CALCULATED BY COMPILERS.
J ORGANIC MATTER.
K TOTAL IRON.
M BY DIFFERENCE.
N INCLUDES TIO2.
O GREATER THAN.
P LESS THAN.
T TRACE.
* ADDITIONAL INFORMATION IN DESCRIPTIVE NOTES.

TABLE 6. — *Analyses of samples from California and Hawaii containing 90-100 percent clay (Group D_6), from all rock categories* —Continued

20007094 SOUTHWEST OF KILAUEA. (75:7,5,6) FERRUGINOUS BAUXITE, CHANNEL SMPL: MIN. INDEX MAP. SPECTRO DATA ALSO GIVEN. USE:16.

20007095 SOUTHWEST OF KILAUEA. (75:7,5,6) FERRUGINOUS BAUXITE, CHANNEL SMPL: MIN. INDEX MAP. SPECTRO DATA ALSO GIVEN. USE:16. DUP ANAL, SEE SMPL 20007094.

20007096 KILOHANA CRATER. (75:7,5,6) FERRUGINOUS BAUXITE, CHANNEL SMPL: MIN. INDEX MAP. SPECTRO DATA ALSO GIVEN. USE: 16.

20007097 KILOHANA CRATER. (75:7,5,6) FERRUGINOUS BAUXITE, CHANNEL SMPL: MIN. INDEX MAP. SPECTRO DATA ALSO GIVEN. USE: 16. DUP ANAL, SEE SMPL 20007096.

20007098 KILOHANA CRATER. (75:7,5,6) FERRUGINOUS BAUXITE, CHANNEL SMPL: MIN. INDEX MAP. SPECTRO DATA ALSO GIVEN. USE: 16.

20007099 KILOHANA CRATER. (75:7,5,6) FERRUGINOUS BAUXITE, CHANNEL SMPL: MIN. INDEX MAP. SPECTRO DATA ALSO GIVEN. USE: 16. DUP ANAL, SEE SMPL 20007098.

20007100 KILOHANA CRATER. (75:7,5,6) FERRUGINOUS BAUXITE, COMPOSITE SMPL: MIN. INDEX MAP. SPECTRO DATA ALSO GIVEN. USE: 16.

20007101 KILOHANA CRATER. (75:7,5,6) FERRUGINOUS BAUXITE, COMPOSITE SMPL: MIN. INDEX MAP. SPECTRO DATA ALSO GIVEN. USE: 16. DUP ANAL, SEE SMPL 20007100.

20007102 WEST OF KAPAA. (75:30,5) FERRUGINOUS BAUXITE, AUGER SMPL: DEPTH, 5 FT. INDEX MAP. USE: 16.

20007103 WEST OF KAPAA. (75:30,5) FERRUGINOUS BAUXITE, CHANNEL SMPL: DEPTH, 7.1 FT. INDEX MAP. USE: 16.

20007104 KANEHA RESERVOIR. (75:30,5,34) FERRUGINOUS BAUXITE: DEPTH, 1.0 FT. INDEX MAP. SPECTRO DATA ALSO GIVEN. USE: 16.

20007105 KILAUEA AREA. (75:30,5,29) FERRUGINOUS BAUXITE: 1-FT GRAB SMPL: DEPTH, 1.0 FT. INDEX MAP. SPECTRO DATA ALSO GIVEN. USE: 16.

20007106 SOUTHWEST OF KILAUEA. (75:30,5,34) FERRUGINOUS BAUXITE, CHANNEL SMPL: DEPTH, 4.8 FT. INDEX MAP. SPECTRO DATA ALSO GIVEN. USE: 16.

20007107 ROAD NEAR ANINI STREAM. (75:30,5,33) FERRUGINOUS BAUXITE, CHANNEL SMPL: DEPTH, 7.0 FT. INDEX MAP. SPECTRO DATA ALSO GIVEN. USE: 16.

20007108 KILOHANA CRATER. (75:30,5,34) FERRUGINOUS BAUXITE, CHANNEL SMPL: DEPTH, 9.4 FT. INDEX MAP. SPECTRO DATA ALSO GIVEN. USE: 16.

20007109 KILOHANA CRATER. (75:30,5,33) FERRUGINOUS BAUXITE, COMPOSITE SMPL: DEPTH, 5.2 FT: MIN. INDEX MAP. SPECTRO DATA ALSO GIVEN. USE: 16.

20007110 KILOHANA CRATER. (75:30,5,33) FERRUGINOUS BAUXITE, CHANNEL SMPL: DEPTH, 8.0 FT. INDEX MAP. SPECTRO DATA ALSO GIVEN. USE: 16.

20007111 KILOHANA CRATER. (75:30,5,34) FERRUGINOUS BAUXITE, CHANNEL SMPL: DEPTH, 5.5 FT. INDEX MAP. SPECTRO DATA ALSO GIVEN. USE: 16.

20007112 KILOHANA CRATER. (75:30,5,34) FERRUGINOUS BAUXITE, CHANNEL SMPL: DEPTH, 5.0 FT. INDEX MAP. SPECTRO DATA ALSO GIVEN. USE: 16.

20007113 KAPAA AREA. (75:30,5,33) FERRUGINOUS BAUXITE, CHANNEL SMPL: DEPTH, 9.0 FT. INDEX MAP. SPECTRO DATA ALSO GIVEN. USE:16.

20007114 PRINCEVILLE RANCH. (75:30,5,34) FERRUGINOUS BAUXITE, CHANNEL SMPL: DEPTH, 3.2 FT. INDEX MAP. SPECTRO DATA ALSO GIVEN. USE: 16.

20007115 ANINI STREAM. (75:30,5, 33) FERRUGINOUS BAUXITE, CHANNEL SMPL: DEPTH, 8.0 FT. INDEX MAP. SPECTRO DATA ALSO GIVEN. USE: 16.

20007116 BETWEEN ANINI STREAM & KALIHIWAI RIVER. (75:30,5,33) FERRUGINOUS BAUXITE, CHANNEL SMPL: DEPTH 7.0 FT. INDEX MAP. SPECTRO DATA ALSO GIVEN. USE: 16.

20007117 KILOHANA CRATER. (75:30,5,33) FERRUGINOUS BAUXITE, CHANNEL SMPL: DEPTH, 6.2 FT. INDEX MAP. SPECTRO DATA ALSO GIVEN. USE: 16.

20007118 KAUAI. (609:156) SAPROLITE: MIN. *MISC: FEO =1.1, P205 REPT AS P203, MNO = 0.08.

20007119 KAUAI. (609:156) SAPROLITE: MIN. *MISC: FEO = 0.93, P205 REPT AS P203, MNO = 0.08, SMPL CONTAINS ORG MATTER.

20007120 KAUI, OFF KOKEE RD. (176:317) FERRUGINOUS LATERITE: FRIABLE: MIN: DEPTH, 11-27 FT.

20007121 KAUAI, WAIMEA CANYON. (176:318) FERRUGINOUS LATERITE: MIN.

20007122 5.5 MI NW OF LIHUE. (611:TABLE 9) KAOLINITIC FRAGMENTS: CREAM-COLORED: ROADCUT SMPL: MIN: TONNAGE. INDEX MAP.

20007123 3 MI NW OF KAPAA. (611:TABLE 9) KAOLINITIC CRUST: ROADCUT SMPL: MIN: TONNAGE. INDEX MAP. SPECTRO ANAL ALSO GIVEN.

20007124 2 MI SE OF KILOUEA. (611:TABLE 9) BAUXITE NODULES: ROADCUT SMPL: MIN: TONNAGE. INDEX MAP. SPECTRO ANAL ALSO GIVEN.

20007125 2 MI S OF KILOUEA. (611:TABLE 9) BAUXITIC FRAGMENTS, RED-BROWN: ROADCUT SMPL: MIN: TONNAGE. INDEX MAP.

20007126 6 MI NW OF LIHUE. (611:TABLE 9) BAUXITIC FRAGMENTS, RED-BROWN, ROADCUT SMPL: MIN: TONNAGE. INDEX MAP.

20007127 4 MI NW OF KAPAA. (611:TABLE9) BAUXITIC FRAGMENTS, RED-BROWN: ROADCUT SMPL: MIN: TONNAGE. INDEX MAP.

20007128 1 MI W OF LIHUE. (611:TABLE 9) BAUXITIC FRAGMENTS, RED-BROWN: ROADCUT SMPL: MIN: TONNAGE. INDEX MAP.

20007129 4 MI NW OF WAILUA. (611:TABLE 9) BAUXITIC CRUST: ROADCUT SMPL: MIN: TONNAGE. INDEX MAP. SPECTRO ANAL ALSO GIVEN.

20007130 5 MI NW OF KAPAA. (611:TABLE 9) BAUXITIC FRAGMENTS, WHITE: ROADCUT SMPL: MIN: TONNAGE. INDEX MAP. SPECTRO ANAL ALSO GIVEN.

20007131 4 MI NW OF LIHUE. (611:TABLE 9) BAUXITIC FRAGMENTS, YELLOW: ROADCUT SMPL: MIN: TONNAGE. INDEX MAP. SPECTRO ANAL ALSO GIVEN.

20007132 KAUI, KOKEE CANYON ROAD, WAIMEA DIST. (48:295,293) CLAY: MIN: 10 - 12 IN BELOW SURFACE: B.D., 1.4. *MISC: MNO = 0.04, FEO = 1.9.

20007133 KAUI, KOKEE CANYON ROAD, WAIMEA DIST. (48:295,293) CLAY: MIN: 12 - 15 IN BELOW SURFACE: B.D., 0.9. *MISC: MNO = 0.02, FEO = 3.0.

20007134 KAUI, KOKEE CANYON ROAD, WAIMEA DIST. (48:295,293) CLAY: MIN: 15 - 19 IN BELOW SURFACE: B.D., 0.9. *MISC: MNO = 0.02, FEO = 3.0.

20007135 KAUI, KOKEE CANYON ROAD, WAIMEA DIST. (48:295,293) CLAY: MIN: 19 - 25 IN BELOW SURFACE: B.D., 1.7. *MISC: MNO = 0.05, FEO = 1.9.

20007136 KAUI, KOKEE CANYON ROAD, WAIMEA DIST. (48:295,293) CLAY: MIN: 25+ IN BELOW SURFACE: B.D., 1.7. *MISC: MNO = 0.09, FEO = 1.5.

20007137 KAUI, KOKEE CANYON ROAD, WAIMEA DIST. (48:300) CLAY, MIN. *MISC: MNO = 0.06, FEO = 2.1.

20007138 KAUI, KOKEE CANYON ROAD, WAIMEA DIST. (48:300) CLAY, MIN. *MISC: MNO = 0.02, FEO = 3.3.

20007139 KAUI, KOKEE CANYON ROAD, WAIMEA DIST. (48:300) CLAY, MIN. *MISC: MNO = 0.01, FEO = 2.4.

20007140 KAUI, KOKEE CANYON ROAD, WAIMEA DIST. (48:300) CLAY, MIN. *MISC: MNO = 0.03, FEO = 2.8.

20007141 KAUI, KOKEE CANYON ROAD, WAIMEA DIST. (48:300) CLAY, MIN. *MISC: MNO = 0.02, FEO = 2.8.

TABLE 6. — *Analyses of samples from California and Hawaii containing 90-100 percent clay (Group D_6), from all rock categories* —Continued

SAMPLE	20007142	20007143	20007144	20007145	20007146	20007147	20007148	20007149	20009003	20009004
SIO2	12.70	13.40	19.70	16.60	27.10	26.70	14.78	13.01	23.60	25.70
AL2O3	23.30	26.60	29.00	28.20	30.70	30.50	22.60	22.58	27.70	26.20
FE2O3	23.40	19.50	18.10	18.40	18.10	20.20	27.40	32.10	21.60	22.30
MGO	0.22	0.21	0.27	0.21	0.39	0.46	0.0 B	0.0 B	0.0 B	0.0 B
CAO	0.0	0.0	0.0	0.0	0.0	0.0	0.0 B	0.0 B	0.0 B	0.0 B
NA2O	0.03	0.02	0.0	0.0	0.0 T	0.0	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 T	0.0 T	0.0	0.0 T	0.0 T	0.0	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	3.20	2.50	2.20	2.30	3.70	3.50	4.34	5.67	5.30	5.60
P2O5	0.0 B	0.0 B	0.04	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	32.70 G	33.60 G	28.10 G	31.60 G	18.00 G	16.50 G	28.53 G	25.72 G	17.80 G	15.90 G
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.58 *	99.76 *	99.61 *	99.86 *	99.56 *	99.74 *	97.65	99.08	97.70 *	97.90 *
CLASS	0, 54, 0	0, 56, 0	0, 60, 1	0, 59, 0	0, 62, 1	0, 60, 1	0, 54, 0	0, 48, 0	0, 57, 0	0, 59, 0

SAMPLE	20009005	20009006	20009007	20009008	20009009	20009010	20009011	20009012	20009013	20009014
SIO2	19.80	21.50	11.60	17.80	17.30	22.00	23.70	24.50	9.00	11.60
AL2O3	29.10	27.90	32.00	30.30	27.30	28.10	27.90	27.20	34.10	33.60
FE2O3	17.00	20.10	23.30	22.90	28.60	18.30	19.30	20.60	25.70	25.00
MGO	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CAO	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	5.80	5.90	5.50	5.00	5.90	6.20	5.80	6.00	6.60	7.40
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	18.40 G	17.00 G	20.20 G	19.30 G	17.10 G	17.50 G	17.80 G	17.70 G	21.80 G	18.80 G
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	98.20 *	97.80 *	98.00 *	98.40 *	99.50 *	98.10 *	97.60 *	98.40 *	99.00 *	98.70 *
CLASS	0, 51, 0	0, 53, 0	0, 40, 0	0, 49, 0	0, 46, 0	0, 54, 0	0, 57, 0	0, 59, 0	0, 37, 0	0, 38, 0

SAMPLE	20009015	20009016	20009017	20009018	20009019	20009020	20009021	20009022	20009023	20009024
SIO2	10.10	16.10	16.20	18.80	26.40	24.40	25.90	12.80	24.10	35.10
AL2O3	33.60	32.10	31.90	30.10	29.10	27.50	26.70	37.50	37.70	31.20
FE2O3	21.60	17.50	17.80	19.80	21.80	21.40	21.20	8.80	8.10	9.50
MGO	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CAO	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	7.80	7.40	7.00	7.00	5.40	6.80	6.60	1.60	1.40	1.80
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	19.50 G	17.20 G	17.90 G	16.60 G	14.20 G	14.50 G	14.20 G	36.10 G	26.40 G	19.80 G
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	97.60 *	97.40 *	96.80 *	97.80 *	98.60 *	98.10 *	97.90 *	97.90 *	98.40 *	98.10 *
CLASS	0, 36, 0	0, 44, 0	0, 45, 0	0, 48, 0	0, 58, 0	0, 55, 0	0, 58, 0	0, 57, 0	0, 65, 0	0, 77, 0

SAMPLE	20009025	20009026	20009027	20009028	20009029	20009030	20009031	20009032	20009033	20009034
SIO2	36.10	34.50	34.90	14.40	31.00	34.00	35.60	33.00	12.80	12.30
AL2O3	31.10	31.40	30.00	38.80	33.30	32.40	31.90	32.60	39.00	40.70
FE2O3	10.40	11.90	11.70	11.50	11.20	11.40	10.70	11.70	16.20	15.40
MGO	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CAO	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	1.80	2.00	2.10	2.00	2.00	2.00	1.90	2.00	2.60	2.60
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	18.60 G	19.30 G	17.60 G	31.00 G	20.70 G	18.30 G	17.60 G	19.10 G	26.50 G	25.40 G
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	98.60 *	99.30 *	97.10 *	98.50 *	99.10 *	98.80 *	98.30 *	99.00 *	98.00 *	97.30 *
CLASS	0, 77, 0	0, 75, 0	0, 74, 0	0, 54, 0	0, 71, 0	0, 74, 0	0, 75, 0	0, 73, 0	0, 47, 0	0, 45, 0

SAMPLE	20009035	20009036	20009037	20009038	20009039	20009040	20009041	20009042
SIO2	20.00	21.90	20.00	6.50	6.50	13.90	12.90	5.60
AL2O3	39.20	38.60	38.80	22.50	22.30	32.40	32.10	44.20
FE2O3	13.10	12.20	12.60	41.40	41.60	27.00	27.70	19.30
MGO	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CAO	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	2.00	2.10	2.20	7.60	8.10	6.30	6.60	3.00
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	23.30 G	22.10 G	22.90 G	21.50 G	18.90 G	20.10 G	17.80 G	27.30 G
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	98.60 *	98.00 *	97.80 *	99.50	97.40	99.70	97.10	99.40
CLASS	0, 56, 0	0, 58, 0	0, 55, 0	0, 33, 0	0, 30, 0	0, 43, 0	0, 39, 0	0, 36, 0

A INSOL.
B BLANK--NO VALUE REPT.
C AL2O3 + FE2O3.
D MGO + CAO.
E NA2O + K2O.
F H2O+.
G IGNITION LOSS (MAY INCLUDE WATER).
H REPORTED AS S.
I CALCULATED BY COMPILERS.
J ORGANIC MATTER.
K TOTAL IRON.
M BY DIFFERENCE.
N INCLUDES TIO2.
O GREATER THAN.
P LESS THAN.
T TRACE.
* ADDITIONAL INFORMATION IN DESCRIPTIVE NOTES.

TABLE 6. — *Analyses of samples from California and Hawaii containing 90-100 percent clay (Group D_6), from all rock categories* —Continued

```
20007142  KAUI, KOKEE CANYON ROAD, WAIMEA DIST.   (48:295,293)  CLAY: MIN: 9 - 14 IN BELOW SURFACE: B.D., 0.8.  *MISC: MNO = 0.03,
          FEO = 4.0.
20007143  KAUI, KOKEE CANYON ROAD, WAIMEA DIST.   (48:295,293)  CLAY: MIN: 14 - 20 IN BELOW SURFACE: B.D., 0.9.  *MISC:
          MNO = 0.03, FEO = 3.9.
20007144  KAUI, KOKEE CANYON ROAD, WAIMEA DIST.   (48:295,293)  CLAY: MIN: 20 - 25 IN BELOW SURFACE: B.D., 0.8.  *MISC:
          MNO = 0.04, FEO = 2.2.
20007145  KAUI, KOKEE CANYON ROAD, WAIMEA DIST.   (48:295,293)  CLAY: MIN: 25 - 31 IN BELOW SURFACE: B.D., 0.9.  *MISC:
          MNO = 0.05, FEO = 2.5.
20007146  KAUI, KOKEE CANYON ROAD, WAIMEA DIST.   (48:295,293)  CLAY: MIN: 31 - 38 IN BELOW SURFACE: B.D., 1.7.  *MISC:
          MNO = 0.07, FEO = 1.5.
20007147  KAUI, KOKEE CANYON ROAD, WAIMEA DIST.   (48:295,293)  CLAY: MIN: 38+ IN BELOW SURFACE: B.D., 1.7.  *MISC: MNO = 0.08,
          FEO = 1.8.
20007148  KAUI, WAIMEA CANYON.   (35:442,441)  LATERITE CRUST: 10 - 15 IN BELOW SURFACE: MIN.  B.D., 0.9.

20007149  KAUI, WAIMEA CANYON.   (35:442,441)  LATERITE CRUST: 10 - 15 IN BELOW SURFACE: MIN.  B.D., 2.1.

20009003  NEAR HAIKU, MAUI.  (421:PL7,P1,5)  SAPROLITE: AUGER-HOLE SMPL: DEPTH, 4-9 FT: MIN: TONNAGE.  INDEX & GEOL MAP, GEOL SEC.
          *MISC: FEO = 1.7.
20009004  NEAR HAIKU, MAUI.  (421:PL7,P1,5)  SAPROLITE: AUGER-HOLE SMPL: DEPTH, 9-10.5 FT: MIN: TONNAGE.  INDEX & GEOL MAPS,
          GEOL SEC.  *MISC: FEO = 2.2.
20009005  NEAR HAIKU, MAUI.  (421:PL7,P1,5)  SAPROLITE: AUGER-HOLE SMPL: DEPTH, 14-20 FT: MIN: TONNAGE.  INDEX & GEOL MAPS,
          GEOL SEC.  *MISC: FEO = 8.1.
20009006  NEAR HAIKU, MAUI.  (421:PL7,P1,5)  SAPROLITE: AUGER-HOLE SMPL: DEPTH, 10.5-14 FT: MIN: TONNAGE.  INDEX & GEOL MAPS,
          GEOL SEC.  *MISC: FEO = 5.4.
20009007  NEAR ULUMALU, MAUI.  (421:PL7,P1,5)  SAPROLITE, AUGER-HOLE SMPL: DEPTH, 4-9 FT: MIN: TONNAGE.  INDEX & GEOL MAPS,
          GEOL SEC.  *MISC: FEO = 5.4.
20009008  NEAR ULUMALU, MAUI.  (421:PL7,P1,5)  SAPROLITE, AUGER-HOLE SMPL: DEPTH, 9-16 FT: MIN: TONNAGE.  INDEX & GEOL MAPS,
          GEOL SEC.  *MISC: FEO = 3.1.
20009009  NEAR ULUMALU, MAUI.  (421:PL7,P1,5)  SAPROLITE, AUGER-HOLE SMPL: DEPTH, 16-20 FT: MIN: TONNAGE.  INDEX & GEOL MAPS,
          GEOL SEC.  *MISC: FEO = 3.3.
20009010  NEAR ULUMALU, MAUI.  (421:PL7,P1,5)  SAPROLITE, AUGER-HOLE SMPL: DEPTH, 20-24 FT: MIN: TONNAGE.  INDEX & GEOL MAPS,
          GEOL SEC.  *MISC: FEO = 6.0.
20009011  NEAR ULUMALU, MAUI.  (421:PL7,P1,5)  SAPROLITE, AUGER-HOLE SMPL: DEPTH, 24-34 FT: MIN: TONNAGE.  INDEX & GEOL MAPS,
          GEOL SEC.  *MISC: FEO = 3.1.
20009012  NEAR ULUMALU, MAUI.  (421:PL7,P1,5)  SAPROLITE, AUGER-HOLE SMPL: DEPTH, 34-39 FT: MIN: TONNAGE.  INDEX & GEOL MAPS,
          GEOL SEC.  *MISC: FEO = 2.4.
20009013  NEAR WAIPIO BAY, MAUI.  (421:PL7,P1,5)  FERRUGINOUS BAUXITE: AUGER-HOLE SMPL: DEPTH, 4-9 FT: MIN: TONNAGE.
          INDEX & GEOL MAPS, GEOL SEC.  *MISC: FEO = 1.8.
20009014  NEAR WAIPIO BAY, MAUI.  (421:PL7,P1,5)  SAPROLITE: AUGER-HOLE SMPL: DEPTH, 9-14 FT: MIN: TONNAGE.  INDEX & GEOL MAPS,
          GEOL SEC.  *MISC: FEO = 2.3.
20009015  NEAR WAIPIO BAY, MAUI.  (421:PL7,P1,5)  SAPROLITE: AUGER-HOLE SMPL: DEPTH, 14-19 FT: MIN: TONNAGE.  INDEX & GEOL MAPS,
          GEOL SEC.  *MISC: FEO = 5.0.
20009016  NEAR WAIPIO BAY, MAUI.  (421:PL7,P1,5)  SAPROLITE: AUGER-HOLE SMPL: DEPTH, 19-24 FT: MIN: TONNAGE.  INDEX & GEOL MAPS,
          GEOL SEC.  *MISC: FEO = 7.1.
20009017  NEAR WAIPIO BAY, MAUI.  (421:PL7,P1,5)  SAPROLITE: AUGER-HOLE SMPL: DEPTH, 24-27 FT: MIN: TONNAGE.  INDEX & GEOL MAPS,
          GEOL SEC.  *MISC: FEO = 6.0.
20009018  NEAR WAIPIO BAY, MAUI.  (421:PL7,P1,5)  SAPROLITE: AUGER-HOLE SMPL: DEPTH, 27-29 FT: MIN: TONNAGE.  INDEX & GEOL MAPS,
          GEOL SEC.  *MISC: FEO = 5.5.
20009019  NEAR WAIPIO BAY, MAUI.  (421:PL7,P1,5)  SAPROLITE: AUGER-HOLE SMPL: DEPTH, 29-33 FT: MIN: TONNAGE.  INDEX & GEOL MAPS,
          GEOL SEC.  *MISC: FEO = 1.7.
20009020  NEAR WAIPIO BAY, MAUI.  (421:PL7,P1,5)  SAPROLITE: AUGER-HOLE SMPL: DEPTH, 33-38 FT: MIN: TONNAGE.  INDEX & GEOL MAPS,
          GEOL SEC.  *MISC: FEO = 3.5.
20009021  NEAR WAIPIO BAY, MAUI.  (421:PL7,P1,5)  SAPROLITE: AUGER-HOLE SMPL: DEPTH, 38-45 FT: MIN: TONNAGE.  INDEX & GEOL MAPS,
          GEOL SEC.  *MISC: FEO = 3.3.
20009022  NEAR HONOKAHUA, MAUI.  (421:PL6,P5,42)  SAPROLITE, AUGER-HOLE SMPL: DEPTH, 4-9 FT: MIN: TONNAGE.  INDEX & GEOL MAPS,
          GEOL SEC.  *MISC: FEO = 1.1.
20009023  NEAR HONOKAHUA, MAUI.  (421:PL6,P5,42)  SAPROLITE, AUGER-HOLE SMPL: DEPTH, 9-14 FT: MIN: TONNAGE.  INDEX & GEOL MAPS,
          GEOL SEC.  *MISC: FEO = 0.7.
20009024  NEAR HONOKAHUA, MAUI.  (421:PL6,P5,42)  SAPROLITE, AUGER-HOLE SMPL: DEPTH, 14-19 FT: MIN: TONNAGE.  INDEX & GEOL MAPS,
          GEOL SEC.  *MISC: FEO = 0.7.
20009025  NEAR HONOKAHUA, MAUI.  (421:PL6,P5,42)  SAPROLITE, AUGER-HOLE SMPL: DEPTH, 19-24 FT: MIN: TONNAGE.  INDEX & GEOL MAPS,
          GEOL SEC.  *MISC: FEO = 0.6.
20009026  NEAR HONOKAHUA, MAUI.  (421:PL6,P5,42)  SAPROLITE, AUGER-HOLE SMPL: DEPTH, 24-30 FT: MIN: TONNAGE.  INDEX & GEOL MAPS,
          GEOL SEC.  *MISC: FEO = 0.2.
20009027  NEAR HONOKAHUA, MAUI.  (421:PL6,P5,42)  SAPROLITE, AUGER-HOLE SMPL: DEPTH, 30-33 FT: MIN: TONNAGE.  INDEX & GEOL MAPS,
          GEOL SEC.  *MISC: FEO = 0.8.
20009028  NEAR HONOKAHUA, MAUI.  (421:PL6,P5,42)  SAPROLITE, AUGER-HOLE SMPL: DEPTH, 7-9 FT: MIN: TONNAGE.  INDEX & GEOL MAPS,
          GEOL SEC.  *MISC: FEO = 0.8.
20009029  NEAR HONOKAHUA, MAUI.  (421:PL6,P5,42)  SAPROLITE, AUGER-HOLE SMPL: DEPTH, 9-19 FT: MIN: TONNAGE.  INDEX & GEOL MAPS,
          GEOL SEC.  *MISC: FEO = 0.9.
20009030  NEAR HONOKAHUA, MAUI.  (421:PL6,P5,42)  SAPROLITE, AUGER-HOLE SMPL: DEPTH, 19-29 FT: MIN: TONNAGE.  INDEX & GEOL MAPS,
          GEOL SEC.  *MISC: FEO = 0.7.
20009031  NEAR HONOKAHUA, MAUI.  (421:PL6,P5,42)  SAPROLITE, AUGER-HOLE SMPL: DEPTH, 29-39 FT: MIN: TONNAGE.  INDEX & GEOL MAPS,
          GEOL SEC.  *MISC: FEO = 0.6.
20009032  NEAR HONOKAHUA, MAUI.  (421:PL6,P5,42)  SAPROLITE, AUGER-HOLE SMPL: DEPTH, 39-47 FT: MIN: TONNAGE.  INDEX & GEOL MAPS,
          GEOL SEC.  *MISC: FEO = 0.6.
20009033  NEAR KAHAKULOA, MAUI.  (421:PL6,P5,42)  SAPROLITE, AUGER-HOLE SMPL: DEPTH, 4-9 FT: MIN: TONNAGE.  INDEX & GEOL MAPS,
          GEOL SEC.  *MISC: FEO = 0.9.
20009034  NEAR KAHAKULOA, MAUI.  (421:PL6,P5,42)  SAPROLITE, AUGER-HOLE SMPL: DEPTH, 9-14 FT: MIN: TONNAGE.  INDEX & GEOL MAPS,
          GEOL SEC.  *MISC: FEO = 0.9.
20009035  NEAR KAHAKULOA, MAUI.  (421:PL6,P5,42)  SAPROLITE, AUGER-HOLE SMPL: DEPTH, 14-19 FT: MIN: TONNAGE.  INDEX & GEOL MAPS,
          GEOL SEC.  *MISC: FEO = 1.0.
20009036  NEAR KAHAKULOA, MAUI.  (421:PL6,P5,42)  SAPROLITE, AUGER-HOLE SMPL: DEPTH, 19-24 FT: MIN: TONNAGE.  INDEX & GEOL MAPS,
          GEOL SEC.  *MISC: FEO = 1.1.
20009037  NEAR KAHAKULOA, MAUI.  (421:PL6,P5,42)  SAPROLITE, AUGER-HOLE SMPL: DEPTH, 24-29 FT: MIN: TONNAGE.  INDEX & GEOL MAPS,
          GEOL SEC.  *MISC: FEO = 1.3.
20009038  WEST OF HONOPOU STREAM.  (75:15-17)  FERRUGINOUS BAUXITE, CHANNEL SMPL: MIN. INDEX MAP. SPECTRO DATA ALSO GIVEN. USE:16.

20009039  WEST OF HONOPOU STREAM.  (75:15-17)  FERRUGINOUS BAUXITE, CHANNEL SMPL: MIN. INDEX MAP. SPECTRO DATA ALSO GIVEN. USE:16.
          DUP ANAL, SEE SMPL 20009038.
20009040  SOUTH OF OPANA POINT.  (75:15-17)  FERRUGINOUS BAUXITE, CHANNEL SMPL: MIN.  INDEX MAP.  SPECTRO DATA ALSO GIVEN. USE:16.

20009041  SOUTH OF OPANA POINT.  (75:15-17)  FERRUGINOUS BAUXITE, CHANNEL SMPL: MIN.  INDEX MAP.  SPECTRO DATA ALSO GIVEN. USE:16.
          DUP ANAL, SEE SMPL 20009040.
20009042  KAHAKULOA.  (75:15-17)  FERRUGINOUS BAUXITE, CHANNEL SMPL, MIN.  INDEX MAP.  SPECTRO DATA ALSO GIVEN.  USE: 16.
```

TABLE 6. — *Analyses of samples from California and Hawaii containing 90-100 percent clay (Group D_6), from all rock categories*—Continued

SAMPLE	20009043	20009044	20009045	20009046	20009047	20009048	20009049	20009050	20009051	20009052
SIO2	5.90	9.60	26.80	14.10	9.70	13.40	20.50	12.00	12.40	13.90
AL2O3	44.80	44.90	26.10	34.80	39.60	42.60	38.40	33.20	36.60	36.40
FE2O3	18.60	9.80	16.80	24.40	22.50	16.60	16.70	27.20	22.50	21.90
MGO	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CAO	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	3.40	3.00	5.20	6.40	4.70	4.00	3.40	7.80	6.70	6.80
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	24.70 G	28.50 G	19.10 G	19.90 G	23.20 G	23.10 G	20.80 G	19.50 G	21.40 G	20.50 G
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	97.40	97.60 *	97.30 *	99.60	99.70	99.70	99.80	99.70	99.60	99.50
CLASS	0, 34, 0	0, 44, 0	0, 64, 0	0, 43, 0	0, 39, 0	0, 45, 0	0, 54, 0	0, 40, 0	0, 42, 0	0, 43, 0

SAMPLE	20009053	20009054	20009055	20009056	20009057	20009058	20009059	20009060	20009061	20009062
SIO2	10.20	6.90	9.50	7.80	7.10	3.50	7.80	22.80	16.60	15.60
AL2O3	35.00	32.40	41.80	38.00	36.40	44.90	3.60	29.60	33.90	45.30
FE2O3	24.70	31.10	18.90	24.40	25.00	21.00	60.40	22.60	22.70	10.50
MGO	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CAO	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	7.60	9.00	4.70	5.90	7.20	3.20	24.00	4.90	4.60	2.80
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	22.20 G	20.30 G	24.70 G	23.40 G	23.60 G	27.00 G	0.0 B	18.60 G	20.10 G	24.50 G
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.70	99.70	99.60	99.50	99.30	99.60	95.80	98.50	97.90	98.70
CLASS	0, 39, 0	0, 32, 0	0, 40, 0	0, 36, 0	0, 35, 0	0, 33, 0	0, 16, 0	0, 57, 0	0, 48, 0	0, 50, 0

SAMPLE	20009063	20009064	20009065	20009066
SIO2	9.20	4.60	2.80	14.80
AL2O3	52.80	52.00	55.00	32.00
FE2O3	5.40	9.00	7.00	26.00
MGO	0.0 B	0.0 B	0.0 B	0.0 B
CAO	0.0 B	0.0 B	0.0 B	0.0 B
NA2O	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	1.80	2.20	1.20	5.60
P2O5	0.0 B	0.0 B	0.0 B	0.0 B
CO2	30.20 G	29.60 G	33.30 G	20.80 G
SO3	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.40	97.40	99.30	99.20
CLASS	0, 45, 0	0, 37, 0	0, 38, 0	0, 46, 0

A INSOL.
B BLANK--NO VALUE REPT.
C AL2O3 + FE2O3.
D MGO + CAO.
E NA2O + K2O.
F H2O+.
G IGNITION LOSS (MAY INCLUDE WATER).
H REPORTED AS S.
I CALCULATED BY COMPILERS.
J ORGANIC MATTER.
K TOTAL IRON.
M BY DIFFERENCE.
N INCLUDES TIO2.
O GREATER THAN.
P LESS THAN.
T TRACE.
* ADDITIONAL INFORMATION IN DESCRIPTIVE NOTES.

TABLE 6. — *Analyses of samples from California and Hawaii containing 90-100 percent clay (Group D_6), from all rock categories*—Continued

20009043 KAHAKULOA. (75:15-17) FERRUGINOUS BAUXITE, CHANNEL SMPL, MIN. INDEX MAP. SPECTRO DATA ALSO GIVEN. USE: 16.
DUP ANAL, SEE SMPL 20009042.

20009044 PLIOCENE(?), WAILUKU VOLCANIC SER & PLIOCENE OR PLEISTOCENE, HONOLULU VOLCANIC SER. NEAR NAKALELE POINT. (421:60,1,59,
PL6) SAPROLITE: MIN: TONNAGE. INDEX & GEOL MAP, MEAS SEC, GEOL SEC. *MISC: FEO = 1.8.

20009045 PLIOCENE(?), WAILUKU VOLCANIC SER & PLIOCENE OR PLEISTOCENE, HONOLULU VOLCANIC SER. NEAR NAKALELE POINT. (421:60,1,59,
PL6) SAPROLITE: MIN: TONNAGE. INDEX & GEOL MAP, MEAS SEC, GEOL SEC. *MISC: FEO = 3.3.

20009046 HONOKALA GULCH. (75:36,16,37) FERRUGINOUS BAUXITE, CHANNEL SMPL: DEPTH, 11.8 FT. INDEX MAP. SPECTRO DATA ALSO GIVEN.
USE: 16.

20009047 HOOLAWA STREAM. (75:36,16,37) FERRUGINOUS BAUXITE, CHANNEL SMPL: DEPTH, 5.3 FT. INDEX MAP. SPECTRO DATA ALSO GIVEN.
USE: 16.

20009048 NAKALELE POINT. (75:36,16,37) FERRUGINOUS BAUXITE, CHANNEL SMPL: DEPTH, 7.0 FT. INDEX MAP. SPECTRO DATA ALSO GIVEN.
USE: 16.

20009049 WAILENA GULCH. (75:36,16,37) FERRUGINOUS BAUXITE, CHANNEL SMPL: DEPTH, 5.0 FT. INDEX MAP. SPECTRO DATA ALSO GIVEN.
USE: 16.

20009050 SOUTH OF OPANA POINT. (75:36,16,37) FERRUGINOUS BAUXITE, CHANNEL SMPL: DEPTH, 17.0 FT. INDEX MAP. SPECTRO DATA ALSO
GIVEN. USE: 16.

20009051 HANEHOI STREAM. (75:36,16,37) FERRUGINOUS BAUXITE, CHANNEL SMPL: DEPTH, 9.0 FT. INDEX MAP. SPECTRO DATA ALSO GIVEN.
USE: 16.

20009052 HOALUA STREAM. (75:36,16,37) FERRUGINOUS BAUXITE, CHANNEL SMPL: DEPTH, 5.0 FT. INDEX MAP. SPECTRO DATA ALSO GIVEN.
USE: 16.

20009053 WAIPIO STREAM. (75:36,16,37) FERRUGINOUS BAUXITE, CHANNEL SMPL: DEPTH: 4.3 FT. INDEX MAP. SPECTRO DATA ALSO GIVEN.
USE: 16.

20009054 HOOLAWA STREAM. (75:36,16,37) FERRUGINOUS BAUXITE, CHANNEL SMPL: DEPTH, 7.0 FT. INDEX MAP. SPECTRO DATA ALSO GIVEN.
USE: 16.

20009055 HONOPOU STREAM. (75:36,16,37) FERRUGINOUS BAUXITE, CHANNEL SMPL: DEPTH, 4.5 FT. INDEX MAP. SPECTRO DATA ALSO GIVEN.
USE: 16.

20009056 SOUTH OF OPANA POINT. (75:36,16,37) FERRUGINOUS BAUXITE, CHANNEL SMPL: DEPTH, 11.2 FT. INDEX MAP. SPECTRO DATA ALSO
GIVEN. USE: 16.

20009057 SOUTHEAST OF PAUWELA. (75:36,16,37) FERRUGINOUS BAUXITE, CHANNEL SMPL: DEPTH, 10.5 FT. INDEX MAP. SPECTRO DATA ALSO
GIVEN. USE: 16.

20009058 KAHAKULO. (75:36,16,37) FERRUGINOUS BAUXITE, CHANNEL SMPL: DEPTH, 5.0 FT. INDEX MAP. SPECTRO DATA ALSO GIVEN. USE:16.

20009059 MOLOKAI, JUST BELOW FOREST LINE. (176:318) FERRUGINOUS LATERITE: MIN.

20009060 MAUI, 2 MI SE OF HUELO POINT. (611: TABLE 7) KAOLINITIC & LAVA FRAGMENTS: MIN. INDEX MAP.

20009061 MAUI, 1 MI W OF HUELO POINT. (611: TABLE 7) BROWN BAUXITIC FRAGMENTS & WHITE SPHEROIDS: MIN. INDEX MAP. SPECTRO ANAL
ALSO GIVEN.

20009062 MAUI, 1 MI W OF HUELO POINT. (611: TABLE 7) BAUXITE FRAGMENTS & LAVA FRAGMENTS: MIN. INDEX MAP.

20009063 MAUI, 2 MI SE OF PAUWELA POINT. (611: TABLE 7) BAUXITE FRAGMENTS, WHITE: MIN. INDEX MAP.

20009064 MAUI, 3 MI SE OF PAUWELA POINT. (611: TABLE 7) BAUXITE FRAGMENTS, WHITE: MIN. INDEX MAP.

20009065 MAUI, NEAR NAKALELE POINT. (611:56) BAUXITIC BRECCIA, WHITE: MIN. INDEX MAP.

20009066 MAUI, NEAR LIPOA POINT. (611:56) BAUXITIC MATERIAL, SCREENED: CHANNEL SMPL: MIN. INDEX MAP.

TABLE 7. — *Analyses of samples from California and Hawaii containing clay and carbonate each less than 75 percent; clay and carbonate each greater than uncombined silica (Group E), common- and mixed-rock categories*

SAMPLE	06013010	06013012	06013014	06019006	06027012	06027014	06031001	06053094	06053096	06055007
SIO2	25.05	36.93	42.61	19.84	17.10	19.70	46.23	16.29 M	19.56 M	20.23
AL2O3	8.28	7.22	15.05	4.97	3.80	3.60	16.85	4.60	3.50	8.68
FE2O3	0.27	1.59	4.10 K	1.95	1.20	1.40 K	6.36	4.64 K	2.40 K	3.11
MGO	2.61	2.34	2.60	5.28	3.10	2.90	3.70	2.02	0.80	0.82 I
CAO	27.87	29.34	17.98	34.06	43.60	44.70	6.32	42.40	42.60	36.54 I
NA2O	0.0 B	2.94	0.26 E	0.0 B	0.20	0.24	0.50	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.64	0.0 B	0.0 B	0.76	0.60	3.80	0.0 B	0.0 B	0.0 B
H2O	2.86 F	3.45 F	0.96	0.0 B	0.84	0.12	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	1.44	0.57	0.0 B	0.0 B	0.0 B	0.0 B	5.78	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.16	0.16	0.97	0.0 B	0.0 B	0.0 B
P2O5	0.08	0.16	0.0 B	0.0 B	0.05	0.07	0.0 B	0.15	0.04	0.0 B
CO2	24.20	11.30 M	14.12	29.85	29.00	26.70	9.64	29.90	31.10	29.59 I
SO3	0.0 B	0.0 B	0.84	0.0	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.25
TOT CONS	99.18 *	100.00 *	99.22 *	95.95	99.90 *	100.25 *	100.15	100.00	100.00	99.22
CLASS	10, 28, 54	22, 27, 25	11, 51, 31	9, 20, 66	9, 14, 65	12, 13, 60	9, 66, 20	3, 23, 67	11, 15, 70	1, 31, 67

SAMPLE	0605500B	06063011	06065036	06071176	06071178	06071182	06081009	06081010	06111009	20003023
SIO2	20.87	14.00	48.13	21.63	26.42	30.90	45.63	45.78	22.64	18.10
AL2O3	10.50	6.40	11.19	3.86	8.41	23.10	12.14	11.98	7.86 C	5.80 C
FE2O3	3.50	1.30	1.25	0.80	0.79	0.0 B	0.45	0.50	0.0 B	0.0 B
MGO	0.71 I	4.70	2.22	19.17	7.11	1.10	1.87	1.82	0.0 B	2.70 I
CAO	35.16 I	34.50	16.39	26.18	27.30	21.10	21.29	21.27	37.76	37.40 I
NA2O	0.0 B	0.0 B	2.29	0.0	0.52	0.0 B	3.06	2.89	0.0 B	0.0 B
K2O	0.0 B	0.0 B	1.17	0.0	1.94	0.0 B	1.35	1.49	0.0 B	0.0 B
H2O	0.0 B	6.40	1.78 F	6.07 F	2.57	0.0 B	1.50	1.40	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.78	0.17	0.0 B	1.50	0.0 B	0.0 B	0.0 B	3.70
TIO2	0.0 B	0.0 B	0.24	0.26	0.38	0.0 B	0.30	0.25	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.14	0.05	0.12	0.0 B	0.13	0.14	0.0 B	0.0 B
CO2	28.37 I	32.30	12.73	20.35	24.86	22.30 G	12.96	13.02	30.99	32.30 I
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.05	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.11	99.60	100.11 *	99.67 *	100.53 *	102.50 *	100.73 *	100.64 *	99.25	100.00
CLASS	0, 35, 64	1, 27, 71	27, 36, 28	14, 19, 43	11, 28, 54	0, 54, 40	24, 36, 29	24, 36, 29	9, 22, 69	8, 19, 72

SAMPLE	20003024	20003028
SIO2	19.70 A	33.25
AL2O3	7.40 C	19.53
FE2O3	0.0 B	10.71
MGO	2.00 I	3.06
CAO	37.10 I	11.37
NA2O	0.0 B	0.0 B
K2O	0.0 B	0.0 B
H2O	0.0 B	9.84
H2O-	2.40	0.0 B
TIO2	0.0 B	0.0 B
P2O5	0.0 B	0.0 B
CO2	31.40 I	11.09
SO3	0.0 B	0.0 B
TOT CONS	100.00	98.85
CLASS	7, 22, 70	0, 65, 24

A INSOL.
B BLANK--NO VALUE REPT.
C AL2O3 + FE2O3.
D MGO + CAO.
E NA2O + K2O.
F H2O+.
G IGNITION LOSS (MAY INCLUDE WATER).
H REPORTED AS S.
I CALCULATED BY COMPILERS.
J ORGANIC MATTER.
K TOTAL IRON.
M BY DIFFERENCE.
N INCLUDES TIO2.
O GREATER THAN.
P LESS THAN.
T TRACE.
* ADDITIONAL INFORMATION IN DESCRIPTIVE NOTES.

TABLE 7. — *Analyses of samples from California and Hawaii containing clay and carbonate each less than 75 percent; clay and carbonate each greater than uncombined silica (Group E), common- and mixed-rock categories* — Continued

```
06013010  CRETACEOUS. "T1N,R1E" MOUNT DIABLO.  (508:408,400,403,407,PL15)  SHALE, SLATE-COLORED, FRIABLE.  GEOL MAP, GEOL SEC.
          *MISC: FEO = 2.41; MNO = 4.11; NIO = TR.  CA/MG = 10.7.
06013012  CRETACEOUS, CHICO FM.  "T1N,R1E" MOUNT DIABLO.  (508:412,400,411,PL15)  SANDSTONE, GRAY, FOS, CRYS.  GEOL MAP, GEOL SEC.
          *MISC: FEO = 2.95; MNO = 0.57.  CA/MG = 12.5.
06013014  "T2N,R2W" PINOLE.  (72:882)  LIMESTONE.  USE:4.  *MISC: MANGANESE, 0.70.  CA/MG = 6.92.

06019006  PLIOCENE & PLEISTOCENE, TULARE FM.  S30,T14S,R11E.  (16:210,PL1)  MARL: 15-20 FT THICK.  INDEX & GEOL MAPS, GEOL SEC.
          CA/MG = 6.45.
06027012  T6S,R30E, PINE CREEK MINE.  (34:131,129,PL2,5)  MARBLE, GRAY; MIN; B.D., 2.72.  INDEX & GEOL MAPS, GEOL SEC.  *MISC:
          MNO = 0.09.  CA/MG = 14.1.
06027014  SW1/4,T6S,R30E.  (34:131,129,PL2,5)  MARBLE, GRAY; MIN.  INDEX & GEOL MAPS, GEOL SEC.  *MISC: MNO = 0.06.  CA/MG = 15.4.

06031001  S24,T22S,R17E.  (563:43,42)  OIL SAND; DEPTH 7,670 FT.
06053094  PRE-FRANCISCAN, SUR SER.  S17,T19S,R2E.  (420:B40,B8,PL1,2)  MARBLE, WHITE, FINE TO COARSELY CRYS; CHIP SMPL.  INDEX &
          GEOL MAPS.  CA/MG = 21.0.
06053096  PRE-FRANCISCAN, SUR SER.  S29,T19S,R3E.  (420:B40,B8,PL1,2)  MARBLE, WHITE, FINE TO COARSELY CRYS; SELECTED SMPL.  INDEX
          & GEOL MAPS.  CA/MG = 53.2.
06055007  JURASSIC, KNOXVILLE FM.  "T5N,R3W" NAPA JUNCTION.  (21:182,180/ 531:B9,B8,PL3-5,19)  LIMESTONE; BEDS 1-4 FT THICK.
          INDEX & GEOL MAPS, GEOL SEC.  USE: 4.  CA/MG = 44.6.
0605500B  "T5N,R3W" NAPA JUNCTION.  (555:121)  LIMESTONE.  USE: 4.  CA/MG=49.5.
06063011  TRIASSIC, CEDAR FM.  S6-8,T25N,RBE.  (23:310,311)  LIMESTONE; COMPOS SMPL.  USE: 4,1B.  CA/MG = 7.34.

06065036  CRETACEOUS, HORSETOWN FM.  "T7,8S,R11-14E" SALT CREEK.  (151:429,413,430)  SANOSTONE DIKE, GRAY; MIN.  INDEX MAP.
          *MISC:  FEO = 1.47, MNO = 0.29, BAO = 0.04.
06071176  T7N,R2W, BARSTOW.  (412:366,364)  MARBLE, GREEN & WHITE, MOTL; BEDS FEW  IN TO 12 FT THICK.  *MISC: FEO = 1.13;
          CR2O3 = 0.00.  CA/MG = 1.37.
06071178  PERMIAN, FAIRVIEW VALLEY FM.  S6,7,T6N,R4W.  (52:151,12,150,PL1-3,5)  MARL, WHITE; 30 FT THICK; MIN.  INDEX & GEOL MAPS,
          GEOL SEC.  USE: 1,9.  *MISC: MNO = 0.06, F2 = 0.00, BAO = 0.00.  CA/MG = 3.84.

06071182  S26,T6N,R14E.  (502:300,202)  CLAY; 14 FT THICK.  INDEX MAP.  *MISC: MGCL = 2.5.  CA/MG = 19.2.

06081009  "T5S,R5W" MIRAMAR.  (298:179)  ARKOSE, GRAY; MIN.  *MISC: FEO = 0.05.
06081010  "T5S,R5W" MIRAMAR.  (298:179)  ARKOSE, GRAY; MIN.  *MISC: FEO = 0.10.
06111009  EOCENE.  S22,T5N,R25W.  (504:268,267/ 556:349)  LIMESTONE, GRAY, FINE-GR; 250 FT THICK.  INDEX MAP.  USE: 4,1B.

20003023  PLEISTOCENE.  KAHUKU POINT.  (83:992,986,988,991)  CLAY, BROWN, FINE TEXTURE, LITHIFIED; MIN; 0-1 FT THICK.
          INDEX & GEOL MAP, MEAS SEC.  CA/MG = 13.9.
20003024  PLEISTOCENE.  KAHUKU POINT.  (83:992,986,988,991)  CLAY, BROWN, FINE TEXTURE, LITHIFIED; MIN; 0-1 FT THICK.
          INDEX & GEOL MAP, GEOL SEC.  CA/MG = 18.5.
20003028  HOLOCENE.  OAHU.  (98:164,162)  CHALK.
```

TABLE 8. — *Analyses of samples from California containing 75-90 percent carbonate (Group F_1), common- and mixed-rock categories*

SAMPLE	06001003	06007009	06009042	06009053	06009062	06013003	06013004	06013041	06019005	06025038
SIO2	19.10	7.38	10.19	7.09	10.06	10.80	12.89	10.00 A	9.74	9.97 A
AL2O3	4.10 C	3.59	5.65 C	3.08 C	4.31 C	6.88 C	0.0 B	0.0 B	2.76	0.0 B
FE2O3	0.0 B	1.68	0.0 B	0.0 B	0.0 B	0.0 B	2.95 K	0.0 B	1.65	2.16
MGO	13.20 I	2.72 I	10.15 I	0.60 I	0.94 I	0.78	2.26	16.40	1.85	1.36 I
CAO	27.40 I	44.82 I	34.68 I	49.82 I	46.54 I	44.28	40.32	28.00	45.48	44.80 I
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.37 E	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.67	0.0 B	0.0 B	2.35
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.17	0.0 B	0.0 B
CO2	36.00 I	38.16 I	38.32 I	39.78 I	37.57 I	38.08 G	40.11	41.12	35.94	35.83 I
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0	0.74 I
TOT CONS	99.80 *	98.35	98.99	100.37	99.42	100.82	99.72 *	97.97 *	97.42	98.47 *
CLASS	12, 11, 77	0, 13, 86	1, 16, 83	2, 8, 90	3, 12, 85	0, 20, 81	10, 7, 83	10, 0, 86	3, 12, 81	8, 7, 81

SAMPLE	06027011	06029005	06029006	06029071	06029072	06029073	06029074	06029075	06029076	06029077
SIO2	16.00	8.51	9.64	8.42	8.74	9.20	9.45	10.33	10.60	16.86
AL2O3	3.30	2.94 C	2.46 C	3.27 C	2.78 C	2.60	2.68 C	6.17	6.10	0.33
FE2O3	1.20 K	0.0 B	0.0 B	0.0 B	0.0 B	0.60	0.0 B	0.68	0.86	0.03
MGO	3.00	38.32	37.19	38.90	40.44	0.70	40.48	34.65	33.56	5.18
CAO	45.10	3.36	4.25	1.70	2.76	48.30	2.01	3.58	4.90	40.90
NA2O	0.20	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.76	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.46	6.75	5.76	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.14	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.06	0.0 B	0.0 B	0.0 B	0.0 B	0.02	0.0 B	0.0 B	0.0 B	0.28
CO2	30.10	40.12	40.70	0.0 B	0.0 B	37.90 G	0.0 B	0.0 B	0.0 B	0.0 B
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	100.44 *	100.00 *	100.00 *	52.29	54.72	99.32	54.62	55.41	56.02	63.58
CLASS	9, 12, 68	4, 15, 78	6, 12, 79	3, 10, 84	4, 8, 86	4, 9, 84	5, 8, 86	0, 18, 79	0, 18, 79	16, 1, 81

SAMPLE	06029100	06029102	06029103	06037008	06037034	06037035	06053090	06053092	06053093	06053095
SIO2	17.50 A	18.40 A	16.00 A	10.50 A	10.30 A	11.00 A	6.92 M	7.70	10.90 M	17.94
AL2O3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	2.76	1.62	2.21	0.22
FE2O3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	3.68 K	0.17	3.52 K	0.19
MGO	17.50	11.70	16.40	5.90	17.00	17.20	1.14	10.10	0.58	0.58
CAO	23.30	25.80	26.30	46.10	29.30	28.60	49.30	37.77	46.40	44.83
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.15	0.10	0.34	0.0 B	0.11	1.20	0.10	7.11	0.19	0.04
CO2	37.23	0.0 B	0.0 B	38.40	0.0 B	39.60	36.10	0.0 B	36.20	0.0 B
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	96.07 *	61.96 *	60.30 *	100.90	57.01 *	97.70 *	100.00	64.47	100.00	63.80
CLASS	18, 0, 78	18, 0, 71	16, 0, 81	11, 0, 85	10, 0, 88	11, 0, 83	0, 12, 82	5, 5, 72	3, 14, 82	17, 1, 81

SAMPLE	06053097	06055003	06055004	06055006	06059004	06061053	06063010	06065013	06065017	06069003
SIO2	23.40	6.87	7.12	6.63	8.28	16.96 A	6.00	21.10 A	9.18	2.50
AL2O3	0.38	2.98	2.36	3.61	1.87	1.74 C	1.60	0.60	9.18	0.13
FE2O3	0.14	1.21 K	1.16	1.26	0.48	0.0 B	0.40 K	0.70	0.80	0.44
MGO	0.17	1.33	0.40 I	0.87 I	2.32	1.75 I	0.30	1.80	0.83	41.60
CAO	42.28	47.30	49.13 I	47.71 I	46.71	43.44 I	49.10	40.00	43.74	0.34
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	3.40	1.30	0.0 B	19.21
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	2.20 J	0.0 B	0.0 B
P2O5	0.05	0.0 B	0.0 B	0.0 B	0.04	0.10	0.0 B	0.0 T	0.03	0.0 B
CO2	0.0 B	38.12	39.01 I	38.42 I	0.0 B	36.01 I	39.10	33.30	0.0 B	34.89
SO3	0.0 B	0.0 B	0.0 B	0.91	0.0 B	0.0 B	0.0 B	0.0	0.0 B	0.0 B
TOT CONS	66.42	97.81	99.18	99.41	59.70	100.00	99.90	101.00 *	63.76	99.11 *
CLASS	23, 1, 76	0, 12, 86	2, 10, 89	0, 11, 87	4, 7, 88	14, 5, 81	3, 9, 88	19, 4, 75	0, 16, 79	2, 21, 67

SAMPLE	06069074	06069075	06071014	06071015	06071016	06071017	06071018	06071019	06071020
SIO2	9.96	17.90	8.52	8.76	9.48	10.12	10.14	10.58	10.60 A
AL2O3	0.89	3.67	1.13	1.14	1.20	3.69	4.40	0.60	0.80 C
FE2O3	0.73	0.02	0.59	0.58	0.58	0.67	0.78	0.52	0.0 B
MGO	17.54	0.15	2.66	2.56	1.64	35.62	36.48	0.55 I	1.80
CAO	35.60	43.38	48.20	47.40	48.50	3.36	1.74	48.45 I	48.60
NA2O	0.05	0.0 B	0.0 B	0.0 B	0.0 B	0.88 E	0.86 E	0.0 B	0.0 B
K2O	0.05	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.40
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.01	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.06	0.0 B
CO2	34.27 G	34.87 G	39.43 G	38.65 G	38.44 G	45.80	45.68	38.41 G	0.0 B
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.09	100.00	100.53	99.09	99.84	100.14	100.08	99.17	62.20 *
CLASS	8, 4, 72	11, 11, 77	6, 5, 88	6, 5, 86	7, 5, 86	3, 12, 85	1, 14, 84	9, 3, 86	9, 3, 85

A INSOL.
B BLANK--NO VALUE REPT.
C AL2O3 + FE2O3.
D MGO + CAO.
E NA2O + K2O.
F H2O+.
G IGNITION LOSS (MAY INCLUDE WATER).
H REPORTED AS S.
I CALCULATED BY COMPILERS.
J ORGANIC MATTER.
K TOTAL IRON.
M BY DIFFERENCE.
N INCLUDES TIO2.
O GREATER THAN.
P LESS THAN.
T TRACE.
* ADDITIONAL INFORMATION IN DESCRIPTIVE NOTES.

TABLE 8. — *Analyses of samples from California containing 75-90 percent carbonate (Group F_1), common- and mixed-rock categories* — Continued

06001003 "T4,5S,R1W" NILES. (72:881) LIMESTONE, ARGILLACEOUS. USE: 4. *MISC: SIO2 REPT AS SILICA & CLAY. CA/MG = 2.08.

06007009 S8,T21N,R4E. (571:67/ 556:213,PL37) MARBLE: QUARRY SMPL: TONNAGE. INDEX MAP. CA/MG = 16.6.

06009042 PALEOZOIC, CALAVERAS FM. T3N,R14E, VALLECITO. (96:103,94,PL A,D) DOLOMITIC LIMESTONE: DH OF 1,352 FT. INDEX & GEOL MAPS, GEOL SEC. CA/MG = 3.42.

06009053 PALEOZOIC, CALAVERAS FM. "T4N,R12E" SAN ANDREAS. (485:3,2) LIMESTONE: D-H SMPL. CA/MG = 83.0.

06009062 PALEOZOIC, CALAVERAS FM. "T4N,R12E" SAN ANDREAS. (485:3,2) LIMESTONE: D-H SMPL. CA/MG = 49.5.

06013003 "T1N,R1W" COWELL. (173:122,PL4) TRAVERTINE. INDEX MAP. USE: 4. CA/MG = 56.8.

06013004 "T2N,R3W" MARTINEZ. (72:882) LIMESTONE. USE: 4. *MISC: MN = 0.15. CA/MG = 17.8.

06013041 MIOCENE, CLAREMONT SH. "T1S,R3W" BERKELEY HILLS. (386:C6) DOLOMITE. *MISC: FEO=2.2, MNO=0.04, SRO=0.036. CA/MG=1.71.

06019005 PLIOCENE & PLEISTOCENE, TULARE FM. S30,T14S,R11E. (16:210,PL1) LIMESTONE: THIN BEDS. INDEX & GEOL MAPS, GEOL SEC. CA/MG = 24.6.

06025038 "S15,T11S,R13E" MUD VOLCANOS. (253:236,234) TRAVERTINE: 1 IN TO 2 FT THICK. *MISC: NACL = 1.26. CA/MG = 32.2.

06027011 T6S,R30E, PINE CREEK MINE. (34:131,129,PL2,5) MARBLE, GRAY: MIN: B.D., 2.78. INDEX & GEOL MAPS, GEOL SEC. *MISC: MNO = 0.12. CA/MG = 15.0.

06029005 MIOCENE. S11,T10N,R11W. (207:1118,1115-1117/ 436:116,114,117) MAGNESITE, WHITE, THIN BEDS: TONNAGE. INDEX & GEOL MAPS, MEAS SEC. *MISC: H2O REPT AS I.L. & UNDETERMINED. CA/MG=0.088.

06029006 MIOCENE. S11,T10N,R11W. (207:1118,1115-1117/ 436:116,114,117) MAGNESITE, WHITE, THIN BEDS: TONNAGE. INDEX & GEOL MAPS, MEAS SEC. *MISC: H2O REPT AS I.L. & UNDETERMINED. CA/MG=0.114.

06029071 MIOCENE. S11,T10N,R11W. (436:116,114-117) MAGNESITE, WHITE, THIN BEDS: TONNAGE. INDEX & GEOL MAPS, MEAS SEC. CA/MG = 0.044.

06029072 MIOCENE. S11,T10N,R11W. (436:116,114-117) MAGNESITE, WHITE, THIN BEDS, TONNAGE. GEOL MAP, MEAS SEC. CA/MG = 0.068.

06029073 PALEOZOIC, BEAN CANYON FM. "T32S,R33E" TEHACHAPI. (55:7,5) LIMESTONE, GRAY TO WHITE, COARSELY CRYS. USE: 4. CA/MG = 69.0.

06029074 MIOCENE. S11,T10N,R11W. (436:116,114-117) MAGNESITE, WHITE, THIN BEDS, 1 FT THICK, TONNAGE. GEOL MAP, MEAS SEC. CA/MG = 0.050.

06029075 MIOCENE. S11,T10N,R11W. (436:116,114-117) MAGNESITE, WHITE: THIN BEDS: TONNAGE. INDEX & GEOL MAPS, MEAS SEC. CA/MG = 0.103.

06029076 MIOCENE. S11,T10N,R11W. (436:116,114-117) MAGNESITE, WHITE: THIN BEDS: TONNAGE. GEOL MAP, MEAS SEC. CA/MG = 0.146.

06029077 PRE-CRETACEOUS. S25,T30S,R34E. (229:216,233) LIMESTONE, WHITE TO GRAY, FINE TO COARSELY CRYS. INDEX & GEOL MAPS. USE: 4. CA/MG = 7.90.

06029100 MIOCENE, MONTEREY FM, CHICO MARTINEZ CHERT MBR. "T28S,R20E" CHICO MARTINEZ CREEK. (386:C6) DOLOMITE. *MISC: FEO = 0.31, MNO = 0.02, SRO = 0.058. CA/MG = 1.33.

06029102 MIOCENE. "T31S,R26E" PALOMA OIL-FIELD. (386:C6,C5) DOLOMITE: DEPTH, 12,060 FT. *MISC: FEO=5.7, MNO=0.24, SRO=0.021. CA/MG = 2.21.

06029103 MIOCENE. "T31S,R26E" PALOMA OIL-FIELD. (386:C6,C5) DOLOMITE: DEPTH, 15,300 FT. *MISC: FEO = 1.2, MNO = 0.06. CA/MG = 1.60.

06037008 PRE-CRETACEOUS, PLACERITA FM. S3-6,T3N,R15W. (404:221,218,220) LIMESTONE, WHITE, CRYS: MIN. INDEX MAP. CA/MG = 7.81.

06037034 MIOCENE, MONTEREY SH, MALAGA MUDSTONE MBR. "T4S,R14W" PALOS VERDES HILLS. (386:C6) DOLOMITE. *MISC: FEO = 0.28, MNO = 0.00, SRO = 0.015. CA/MG = 1.72.

06037035 MIOCENE, MONTEREY SH, VALMONTE DIATOMITE MBR. "T4S,R14W" PALOS VERDES HILLS. (386:C6) DOLOMITE. *MISC: FEO = 0.09. MNO = 0.01. CA/MG = 1.57.

06053090 PRE-FRANCISCAN, SUR SER. S20,T19S,R2E. (420:B40,B8,PL1,2) MARBLE, WHITE, FINE TO COARSELY CRYS: CHIP SMPL. INDEX & GEOL MAPS. CA/MG = 43.2.

06053092 PRE-FRANCISCAN, SUR SER. S36,T20S,R4E. (265:66,5,PL1) DOLOMITE. INDEX & GEOL MAPS. CA/MG = 2.81.

06053093 PRE-FRANCISCAN, SUR SER. S20,T19S,R2E. (420:B40,B8,PL1,2) MARBLE, WHITE, FINE TO COARSELY CRYS: CHIP SMPL. INDEX & GEOL MAPS. CA/MG = 80.0.

06053095 PRE-FRANCISCAN, SUR SER. S1,T19S,R1E. (265:65,5,63,64,PL1) LIMESTONE, WHITE, COARSELY CRYS: MIN: TONNAGE. INDEX & GEOL MAPS, GEOL SEC. USE: 4,6. CA/MG = 77.3.

06053097 PRE-FRANCISCAN, SUR SER. S1,T19S,R1E. (265:6S,5,63,64,PL1) LIMESTONE, WHITE, COARSELY CRYS: MIN: TONNAGE. INDEX & GEOL MAPS, GEOL SEC. USE: 4. CA/MG >100.

06055003 "T4N,R4W" NAPA JUNCTION. (23:310) LIMESTONE. CA/MG = 35.6.

06055004 "T4N,R4W" NAPA JUNCTION. (555:32,121) LIMESTONE. USE: 4. CA/MG >100.

06055006 JURASSIC, KNOXVILLE FM. "T4N,R4W" NAPA JUNCTION. (21:182/ 531:89,88,PL3-5,19) LIMESTONE, CRYS, FOS: BEDS 1-4 FT THICK. INDEX & GEOL MAPS, GEOL SEC. USE: 4. CA/MG = 54.8.

06059004 TRIASSIC & JURASSIC, BEDFORD CANYON FM. S34,T4S,R7W. (228:87,86,PL1,2) LIMESTONE, GRAY TO BLACK, FINE-GR, CRYS. INDEX & GEOL MAP. USE: 4. CA/MG = 20.1.

06061053 PALEOZOIC, CALAVERAS FM. S30,T13N,R9E. (94:464,460,461,PL3) LIMESTONE. INDEX & GEOL MAP. CA/MG = 24.8.

06063010 TRIASSIC, CEDAR FM. S6-8,T25N,R8E. (23:310,311) LIMESTONE: COMPOS OF 11 SMPL. USE: 4,18. CA/MG >100.

06065013 "T3S,R4E" GARNET HILL. (353:142) CALICHE: AVG OF SEVERAL SMPL. *MISC: ALKALIES=TR, LI=TR, NITRATES=NONE. CA/MG=22.2.

06065017 TRIASSIC & JURASSIC, BEDFORD CANYON FM. S32,T4S,R6W. (228:117,PL1,2) LIMESTONE, GRAY, FINE-GR. INDEX & GEOL MAPS. CA/MG = 52.7.

06069003 S35,T17S,R11E. (211:508,504) HYDROMAGNESITE, WHITE, POWDERY. INDEX MAP. *MISC: H2O = I.L. LESS CO2. CA/MG = 0.008.

06069074 PRE-FRANCISCAN, SUR SER. SW1/4,T13S,R5E. (54:32,11,31,PL1) DOLOMITE: TONNAGE. INDEX & GEOL MAPS, GEOL SEC. CA/MG = 2.03.

06069075 PRE-FRANCISCAN, SUR SER. SW1/4,T13S,R5E. (54:32,11,31,PL1) LIMESTONE: TONNAGE. INDEX & GEOL MAPS, GEOL SEC. CA/MG >100.

06071014 "T5N,R4W" VICTORVILLE. (70:9) LIMESTONE CONGLOMERATE: CONTAINS CHERT. USE: 4. CA/MG = 18.1.

06071015 "T5N,R4W" VICTORVILLE. (70:9) LIMESTONE CONGLOMERATE: CONTAINS CHERT. USE: 4. CA/MG = 18.5.

06071016 "T5N,R4W" VICTORVILLE. (70:9) LIMESTONE CONGLOMERATE: CONTAINS CHERT. USE: 4. CA/MG = 29.6.

06071017 TERTIARY. S21,28,T11N,R6E. (58:74,72,PL1/ 436:118,117) MAGNESITE, WHITE, PINK, FINE-GR, BEDDED: 30-40 FT THICK: TONNAGE. INDEX MAP, GEOL SEC. CA/MG = 0.094.

06071018 TERTIARY. S21,28,T11N,R6E. (58:74,72,PL1/ 436:118,117) MAGNESITE, WHITE, PINK, FINE-GR, BEDDED: 30-40 FT THICK: OUTCROP SMPL: TONNAGE. INDEX MAP, GEOL SEC. CA/MG = 0.048.

06071019 S5,T9N,R3W. (470:77) LIMESTONE. CA/MG = 88.1.

06071020 "T6N,R5W" ADELANTO. (353:144) LIMESTONE, GRAY. *MISC: INSOL = MUSCOVITE, QTZ, ETC. CA/MG = 27.0.

TABLE 8. — *Analyses of samples from California containing 75-90 percent carbonate (Group F_1), common- and mixed-rock categories* — Continued

SAMPLE	06071062	06071146	06071161	06071162	06071163	06071164	06071165	06071166	06071167	06071168
SIO2	0.46	5.82	10.09	10.10	10.26 A	10.45 A	10.46 A	11.00	11.14 A	12.00
AL2O3	1.05	0.60	0.69	1.73	0.72 C	0.38 C	0.48 C	1.70	1.58 C	1.74
FE2O3	0.09	0.16	0.08	1.41	0.0 B	0.0 B	0.0 B	0.80	0.0 B	1.06
MGO	23.97	29.01	30.02	38.19	39.62	35.51	36.68	3.30	21.73 I	2.68
CAO	34.64	17.02	16.86	3.10	2.06	8.30	6.94	46.00	22.78 I	45.50
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	9.97	5.93	3.13	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0	0.0	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.10
CO2	29.40	41.69	39.22	40.65	44.86 I	45.36 I	45.44 I	37.20 G	41.69 I	36.63 G
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.58	100.23 *	100.09 *	95.18	97.52	100.00	100.00	100.00	98.92	99.71
CLASS	0, 11, 62	5, 8, 84	9, 5, 79	5, 9, 79	9, 2, 87	10, 1, 89	10, 1, 89	7, 7, 82	8, 5, 86	8, 8, 81

SAMPLE	06071169	06071170	06071171	06071172	06071173	06071175	06071177	06073014	06079012	06081015
SIO2	12.20 A	12.97	14.31	14.40 A	16.60 A	20.87 A	21.80 A	13.34	17.00 A	10.05
AL2O3	0.0 B	0.40	0.59	0.0 B	0.0 B	0.0 B	0.0 B	3.20	0.0 B	1.25
FE2O3	0.0 B	0.24	0.22	0.0 B	0.0 B	0.0 B	0.0 B	0.61	0.0 B	1.05
MGO	20.60	22.94	23.27	29.50	33.50	0.0 B	4.50	1.40	15.00	1.05
CAO	24.40	24.06	23.17	11.10	4.70	34.59	38.50	44.24	27.80	48.50
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	2.01	2.97	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0	0.0	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.15	0.13	0.0 B
CO2	0.0 B	34.47	35.28	0.0 B	0.0 B	30.92	35.10 I	0.0 B	38.32	38.31
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	57.20	97.09 *	99.81 *	55.00	54.80	95.31 *	99.90	62.94 *	98.39 *	100.21
CLASS	12, 0, 87	12, 4, 71	13, 5, 73	14, 0, 82	17, 0, 78	21, 0, 66	22, 0, 78	7, 11, 82	17, 0, 81	7, 6, 87

SAMPLE	06081016	06081017	06081018	06081019	06083026	06085009	06085010	06085011	06085012	06085037
SIO2	10.85	15.59	16.73	18.74	19.10 A	11.21 A	11.73 A	14.98 A	17.20	12.30
AL2O3	0.98	2.23	1.51	1.95	0.0 B	0.0 B	0.0 B	0.0 B	1.40	0.79 C
FE2O3	0.26	0.58	0.42	0.33	0.0 B	0.0 B	0.0 B	0.0 B	0.60	0.0 B
MGO	0.32	0.36	0.31	0.29	15.20	1.02	1.28	0.90	0.30	0.0 T
CAO	48.73	44.96	44.81	43.76	27.40	47.35	46.62	45.00	44.20	48.50
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.24	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	38.62 I	35.72 I	35.55 I	34.71 I	0.0 B	37.57 I	38.04 I	36.35 I	34.70	38.30
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.76	99.44 *	99.33	99.78	62.30 *	97.15	97.67	97.23	98.40	99.89
CLASS	9, 4, 88	11, 8, 81	14, 6, 81	15, 6, 79	19, 0, 80	11, 0, 85	12, 0, 86	15, 0, 82	14, 6, 79	11, 2, 87

SAMPLE	06085051	06085052	06085070	06085071	06085072	06085074	06085080	06085081	06085082	06087002
SIO2	12.00	12.86	15.20	13.40	11.30	17.50	18.40	16.70	15.90	8.18 A
AL2O3	1.10	1.12	1.50	1.40	1.30	1.40	1.50	1.50	1.50	1.17
FE2O3	1.00	0.54	0.70	0.60	0.60	0.70	0.70	0.70	0.70	0.17
MGO	0.10	0.27	0.40	0.40	0.30	0.40	0.30	0.30	0.40	39.30 M
CAO	48.00	47.48	45.40	46.40	47.80	43.80	43.30	44.40	44.90	4.28
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	1.43
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	0.0 B	37.70 G	36.10 G	37.10 G	38.30 G	34.70 G	34.30 G	35.10 G	35.70 G	45.50
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	62.20	99.97	99.30	99.30	99.60	98.50	98.50	98.70	99.10	100.03 *
CLASS	9, 6, 85	10, 5, 85	12, 6, 81	10, 6, 83	8, 5, 86	14, 6, 78	15, 6, 77	13, 6, 78	12, 6, 80	6, 5, 88

SAMPLE	06087003	06087026	06087030	06107004	06109077	06109078	06109108
SIO2	8.62 A	12.40 A	11.90	11.80 A	0.62	0.64	2.40
AL2O3	1.12	0.0 B	4.38	0.79 C	10.08 C	10.06 C	8.12 C
FE2O3	0.32	0.0 B	1.42	0.0 B	0.0 B	0.0 B	0.0 B
MGO	37.88 M	16.10	1.18	2.10 I	1.69	2.69	4.54
CAO	4.35	25.90	44.88	46.50 I	47.63	46.18	44.30
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	1.35	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.11	0.0 B	0.0 B	0.09	1.81	0.05
CO2	45.80	39.72	35.82 G	38.80 I	39.24 I	39.20 I	39.76 I
SO3	0.0 B	0.0 B	0.57	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.59 *	96.77 *	100.15	99.99	99.35	100.58	99.17
CLASS	6, 5, 88	12, 0, 82	3, 17, 78	10, 2, 87	0, 1, 89	0, 1, 86	0, 4, 89

A INSOL.
B BLANK--NO VALUE REPT.
C AL2O3 + FE2O3.
D MGO + CAO.
E NA2O + K2O.
F H2O+.
G IGNITION LOSS (MAY INCLUDE WATER).
H REPORTED AS S.
I CALCULATED BY COMPILERS.
J ORGANIC MATTER.
K TOTAL IRON.
M BY DIFFERENCE.
N INCLUDES TIO2.
O GREATER THAN.
P LESS THAN.
T TRACE.
* ADDITIONAL INFORMATION IN DESCRIPTIVE NOTES.

TABLE 8. — *Analyses of samples from California containing 75-90 percent carbonate (Group F_1), common- and mixed-rock categories* — Continued

06071062 S15,T6N,R1W. (507:524) DOLOMITE, WHITE TO BROWN, FINE- TO MED-CRYS. CA/MG = 1.45.

06071146 TERTIARY. S22,T8N,R21E. (524:364,357-360,PL62-64) MAGNESITE, WHITE, THIN-BEDDED, 5.50 FT THICK, TONNAGE. INDEX & GEOL MAPS, MEAS SEC, GEOL SEC. *MISC: CR203 = 0.00. CA/MG = 0.587.

06071161 TERTIARY. S22,T8N,R21E. (524:364,357-360,PL62-64) MAGNESIAN DOLOMITE, WHITE, THIN-BEDDED: 0.83 FT THICK: TONNAGE. INDEX & GEOL MAPS, MEAS SEC, GEOL SEC. *MISC: CR203=0.00. CA/MG=0.56.

06071162 TERTIARY. S21,28,T11N,R6E. (490:354,353/ 58:74,72,PL1/ 436:118,117) MAGNESITE, WHITE, PINK, FINE-GR: BEDDED: 30-40 FT THICK: OUTCROP SMPL: TONNAGE. INDEX MAP. CA/MG = 0.081.

06071163 TERTIARY. S22,T8N,R21E. (524:368,357-363,PL62-64) MAGNESITE, BROWN, FINE-GR, THIN-BEDDED: 2.3-FT CHANNEL SMPL: TONNAGE. INDEX & GEOL MAPS, MEAS SEC, GEOL SEC. CA/MG = 0.052.

06071164 TERTIARY. S22,T8N,R21E. (524:368,357-363,PL62-64) MAGNESITE, BROWN, FINE-GR, THIN-BEDDED: 3.9-FT CHANNEL SMPL: TONNAGE. INDEX & GEOL MAPS, MEAS SEC, GEOL SEC. CA/MG = 0.234.

06071165 TERTIARY. S15,T8N,R21E. (524:368,357-363,PL62-64) MAGNESITE, BROWN, FINE-GR, THIN-BEDDED: 4.8-FT CHANNEL SMPL: TONNAGE. INDEX & GEOL MAPS, MEAS SEC, GEOL SEC. CA/MG = 0.189.

06071166 PERMIAN, FAIRVIEW VALLEY FM. "T5N,R4W" VICTORVILLE. (552:180,177,PL1/ 52:167,12,165,PL1-3) LIMESTONE: TONNAGE. INDEX & GEOL MAPS. USE: 4. CA/MG = 13.9.

06071167 TERTIARY. S22,T8N,R21E. (524:368,357-360,PL62-64) DOLOMITE: 3.3-FT CHANNEL SMPL: TONNAGE. INDEX & GEOL MAP, MEAS SEC, GEOL SEC. CA/MG = 1.05.

06071168 CARBONIFEROUS, ORO GRANDE FM. "T5N,R4W" VICTORVILLE. (55:7,8) LIMESTONE, CONGLOMERATE, GRAY & WHITE, CRYS: 1.350 FT THICK. USE: 4. CA/MG = 17.0.

06071169 TERTIARY. "S21,28,T11N,R6E" (436:118,117) MAGNESITE, PINK, FINE-GR: 3.5 FT THICK: QUARRY SMPL: TONNAGE. INDEX MAP. CA/MG = 1.18.

06071170 TERTIARY. S22,T8N,R21E. (524:364,357-360,PL62-64) DOLOMITE, WHITE, THIN-BEDDED: 0.11 FT THICK: TONNAGE. INDEX & GEOL MAPS, MEAS SEC, GEOL SEC. *MISC: CR203 = 0.00. CA/MG = 1.05.

06071171 TERTIARY. S22,T8N,R21E. (524:364,357-360,PL62-64) DOLOMITE, BUFF, GRAY, BROWN: 4.70 FT THICK, TONNAGE. INDEX & GEOL MAPS, MEAS SEC, GEOL SEC. *MISC: CR203 = 0.00. CA/MG = 1.00.

06071172 TERTIARY. "S21,28,T11N,R6E" (436:118,117) MAGNESITE, WHITE, PINK: 5.0 FT THICK: QUARRY SMPL: TONNAGE. INDEX MAP. CA/MG = 0.376.

06071173 TERTIARY. "S21,28,T11N,R6E" (436:118,117) MAGNESITE, WHITE: FINE-GR, 2.8 FT THICK: QUARRY SMPL: TONNAGE. INDEX MAP. CA/MG = 0.140.

06071175 S30,T11N,R1W. (160:34,24,36,PL2-4) STRONTIANITE ROCK, BROWN, POROUS: TONNAGE. INDEX & GEOL MAPS, MEAS SEC, GEOL SEC. USE: 16. *MISC: SRCO3 = 8.93.

06071177 PALEOZOIC, FURNACE LS. T3N,R1E, MONARCH FLAT. (550:268,267-270,PL36) LIMESTONE, COMPOS SMPL: MIN. INDEX & GEOL MAPS. CA/MG = 8.56.

06073014 S27,T17S,R1E. (118:180,179,PL1) LIMESTONE, CREAM-COLORED, POROUS: 1-8 FT THICK: TONNAGE. INDEX & GEOL MAPS. USE: 4. *MISC: FE203 REPT AS FE304. CA/MG = 31.6.

06079012 MIOCENE, MONTEREY SH, SANDHOLDT MBR. "T25S,R9E" NACIMIENTO DAM. (386:C6) DOLOMITE. *MISC: FEO = 0.09, MNO = 0.05. CA/MG = 1.85.

06081015 JURASSIC & CRETACEOUS, FRANCISCAN FM. "T4S,R6W" CALERA. (175:358,354) LIMESTONE: TONNAGE. CA/MG = 46.2.

06081016 JURASSIC & CRETACEOUS, FRANCISCAN FM. "T4S,R6W" ROCKAWAY QUARRY. (526:7,4,PL1) LIMESTONE: REPR 35-FT SEC. INDEX & GEOL MAPS. USE: 4,7. CA/MG >100.

06081017 JURASSIC & CRETACEOUS, FRANCISCAN FM. "T5S,R4W" HILL TOP QUARRY. (526:7,4,6,PL1) LIMESTONE, GRAY TO BLACK: BEDS 1-8 IN THICK: SMPL OF 35-FT SEC. INDEX & GEOL MAPS. USE: 7. *MISC: ORG PRESENT. CA/MG >100.

06081018 JURASSIC & CRETACEOUS, FRANCISCAN FM. "T4S,R6W" ROCKAWAY QUARRY. (526:7,4,6,PL1) LIMESTONE, DARK-BLUE: TAKEN ACROSS 40-FT SEC. INDEX & GEOL MAPS. USE: 4,7. CA/MG >100.

06081019 JURASSIC & CRETACEOUS, FRANCISCAN FM. "T5S,R4W" SKYLINE QUARRY. (526:7,4,PL1) LIMESTONE: COMPOS SMPL OF 70 FT. INDEX & GEOL MAPS. USE: 4,7. CA/MG >100.

06083026 MIOCENE, MONTEREY SH. "T7N,R27W" SAN RAFAEL MTNS. (386:C6) DOLOMITE. *MISC: FEO = 0.30, MNO = 0.03, SRO = 0.027. CA/MG = 1.80.

06085009 CRETACEOUS, BERRYESSA FM. T10S,R4E, COYOTE RESERVOIR. (66:16,15,31,PL1) LIMESTONE NODULES: 6 IN OR LARGER: PHYS PROP. INDEX & GEOL MAPS. CA/MG = 46.4.

06085010 CRETACEOUS, BERRYESSA FM. T10S,R4E, COYOTE RESERVOIR. (66:16,15,31,PL1) LIMESTONE NODULES: 6 IN OR LARGER: PHYS PROP. INDEX & GEOL MAPS. CA/MG = 36.4.

06085011 CRETACEOUS, BERRYESSA FM. T10S,R4E, COYOTE RESERVOIR. (66:16,15,31,PL1) LIMESTONE NODULES: 6 IN OR LARGER: PHYS PROP. INDEX & GEOL MAPS. CA/MG = 50.0.

06085012 JURASSIC & CRETACEOUS, FRANCISCAN FM. "T6S,R2W" LOS ALTOS. (29:76,11,68-70,PL1) LIMESTONE, GRAY TO BLACK: APHANITIC: MASSIVE: AVG OF 8 ANAL. INDEX & GEOL MAPS, MEAS SEC. USE: 4,7. CA/MG >100.

06085037 JURASSIC & CRETACEOUS, FRANCISCAN FM. "T5S,R3W" EAGLES. (175:358) LIMESTONE: QUARRY SMPL: TONNAGE. USE: 7.

06085051 JURASSIC & CRETACEOUS, FRANCISCAN FM. S17,18,T7S,R2W. (331:391,374,376) LIMESTONE: TONNAGE. CA/MG >100.

06085052 JURASSIC & CRETACEOUS, FRANCISCAN FM. S17,18,T7S,R2W. (331:377,374,376) LIMESTONE: AVG COMPOS OF MANY SMPL: TONNAGE. USE: 4. CA/MG >100.

06085070 JURASSIC & CRETACEOUS: FRANCISCAN FM, CALERA LS MBR. S17,18,T7S,R2W. (40:24,21) LIMESTONE: INCL CHERT LENSES: QUARRY SMPL. USE: 4. CA/MG >100.

06085071 JURASSIC & CRETACEOUS: FRANCISCAN FM, CALERA LS MBR. S17,18,T7S,R2W. (40:24,21) LIMESTONE: INCL CHERT LENSES: QUARRY SMPL. USE: 4. CA/MG >100.

06085072 JURASSIC & CRETACEOUS: FRANCISCAN FM, CALERA LS MBR. S17,18,T7S,R2W. (40:24,21) LIMESTONE: INCL CHERT LENSES: QUARRY SMPL. USE: 4. CA/MG >100.

06085074 JURASSIC & CRETACEOUS: FRANCISCAN FM, CALERA LS MBR. S17,18,T7S,R2W. (40:24,21) LIMESTONE: INCL CHERT LENSES: QUARRY SMPL. USE: 4. CA/MG >100.

06085080 JURASSIC & CRETACEOUS: FRANCISCAN FM, CALERA LS MBR. S17,18,T7S,R2W. (40:24,21) LIMESTONE: INCL CHERT LENSES: QUARRY SMPL. USE: 4. CA/MG >100.

06085081 JURASSIC & CRETACEOUS: FRANCISCAN FM, CALERA LS MBR. S17,18,T7S,R2W. (40:24,21) LIMESTONE: INCL CHERT LENSES: QUARRY SMPL. USE: 4. CA/MG >100.

06085082 JURASSIC & CRETACEOUS: FRANCISCAN FM, CALERA LS MBR. S17,18,T7S,R2W. (40:24,21) LIMESTONE: INCL CHERT LENSES: QUARRY SMPL. USE: 4. CA/MG >100.

06087002 "T11S,R1W" CLIFFSIDE. (428:11,10) MAGNESITE. *MISC: H20 = I.L. LESS CO2. CA/MG = 0.109.

06087003 "T11S,R1W" CLIFFSIDE. (428:11,8,10) MAGNESITE. USE: 19. *MISC: NACL = 0.15. CA/MG = 0.115.

06087026 OLIGOCENE & (OR) MIOCENE, MINDEGO BASALT. "T9S,R2W" SANTA CRUZ MTNS. (386:C6) DOLOMITE. *MISC: FEO = 2.5, MNO=0.04. CA/MG = 1.61.

06087030 JURASSIC & CRETACEOUS, FRANCISCAN FM. "T10S,R3W" DAVENPORT. (291:81) LIMESTONE, GRAY TO WHITE, COMPACT: TONNAGE. CA/MG = 38.0.

06107004 S35,36,T17S,R27E. (556:339,PL37) LIMESTONE, WHITE TO BLACK. INDEX MAP. CA/MG = 22.1.

06109077 PALEOZOIC, CALAVERAS FM. S35,T1N,R15E. (264:20,7-9,PL1,3) LIMESTONE: OUTCROP SMPL: MIN. INDEX & GEOL MAP. CA/MG = 28.2.

06109078 PALEOZOIC, CALAVERAS FM. S35,T1N,R15E. (264:20,7-9,PL1,3) LIMESTONE: OUTCROP SMPL: MIN. INDEX & GEOL MAP. CA/MG = 17.2.

06109108 PALEOZOIC, CALAVERAS FM. S35,T1N,R15E. (264:20,7-9,19,PL1,3) DOLOMITIC LIMESTONE: OUTCROP SMPL: MIN. INDEX & GEOL MAPS. CA/MG = 9.76.

TABLE 8. — *Analyses of samples from California containing 75-90 percent carbonate (Group F_1), common- and mixed-rock categories* — Continued

SAMPLE	06109111	06109115	06109116	06109117	06109118	06109119	06109120	06109121	06111001	06111002
SIO2	2.56	6.48	8.42	8.56	8.84	10.80	12.46	12.96	8.68	10.82
AL2O3	12.12 C	17.18 C	2.02 C	2.30 C	4.76 C	3.12 C	4.30 C	2.72 C	3.20	4.34
FE2O3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
MGO	3.81	6.96	17.40	14.03	6.47	6.25	7.28	4.11	1.27	1.66
CAO	43.21	34.46	28.92	34.11	40.63	40.35	37.85	42.19	48.80	47.13
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.16	0.12	0.73	0.11	0.15	0.16	0.25	0.09	0.0 B	0.0 B
CO2	38.10 I	34.68 I	41.77 I	42.15 I	38.98 I	38.52 I	37.69 I	37.62 I	37.89	36.47
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.96	99.88	99.26	101.26	99.83	99.20	99.83	99.69	99.84	100.42
CLASS	0, 4, 85	0, 10, 76	5, 6, 87	5, 6, 90	1, 13, 86	6, 9, 85	5, 12, 83	8, 8, 84	3, 9, 86	3, 12, 82

SAMPLE	06111006	06111007	06111008
SIO2	12.22	15.06	16.02
AL2O3	4.76 C	5.20 C	5.32 C
FE2O3	0.0 B	0.0 B	0.0 B
MGO	0.0 B	0.0 B	1.12
CAO	43.60	42.76	42.63
NA2O	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.0 B
CO2	36.78	34.54	34.19
SO3	0.0 B	0.0 B	0.0 B
TOT CONS	97.36	97.56	99.27
CLASS	4, 14, 80	6, 15, 77	7, 15, 77

A INSOL.
B BLANK--NO VALUE REPT.
C AL2O3 + FE2O3.
D MGO + CAO.
E NA2O + K2O.
F H2O+.
G IGNITION LOSS (MAY INCLUDE WATER).
H REPORTED AS S.
I CALCULATED BY COMPILERS.
J ORGANIC MATTER.
K TOTAL IRON.
M BY DIFFERENCE.
N INCLUDES TIO2.
O GREATER THAN.
P LESS THAN.
T TRACE.
* ADDITIONAL INFORMATION IN DESCRIPTIVE NOTES.

TABLE 8. — *Analyses of samples from California containing 75-90 percent carbonate (Group F_1), common- and mixed-rock categories* — Continued

```
06109111  PALEOZOIC, CALAVERAS FM.  S35,T1N,R15E.  (264:20,7-9,19,PL1,3)  DOLOMITIC LIMESTONE: OUTCROP SMPL: MIN.  INDEX & GEOL
          MAPS.  CA/MG = 11.3.
06109115  PALEOZOIC, CALAVERAS FM.  S35,T1N,R15E.  (264:20,7-9,19,PL1,3)  OOLOMITIC LIMESTONE: OUTCROP SMPL: MIN.  INDEX & GEOL
          MAPS.  CA/MG = 4.95.
06109116  PALEOZOIC, CALAVERAS FM.  S35,T1N,R15E.  (264:19,7-9,PL1,3)  DOLOMITE: OUTCROP SMPL: MIN.  INDEX & GEOL MAP. CA/MG=1.61.

06109117  PALEOZOIC, CALAVERAS FM.  S26,T1N,R15E.  (264:19,7-9,PL1,3)  DOLOMITIC LIMESTONE: OUTCROP SMPL: MIN.  INDEX & GEOL MAPS.
          CA/MG = 2.43.
06109118  PALEOZOIC, CALAVERAS FM.  S35,T1N,R15E.  (264:20,7-9,19,PL1,3)  DOLOMITIC LIMESTONE: OUTCROP SMPL: MIN.  INDEX & GEOL
          MAPS.  CA/MG = 6.28.
06109119  PALEOZOIC, CALAVERAS FM.  S35,T1N,R15E.  (264:19,7-9,PL1,3)  DOLOMITIC LIMESTONE: OUTCROP SMPL: MIN.  INDEX & GEOL MAPS.
          CA/MG = 6.46.
06109120  PALEOZOIC, CALAVERAS FM.  S35,T1N,R15E.  (264:19,7-9,PL1,3)  DOLOMITIC LIMESTONE: OUTCROP SMPL: MIN.  INDEX & GEOL MAPS.
          CA/MG = 5.20.
06109121  PALEOZOIC, CALAVERAS FM.  S35,T1N,R15E.  (264:19,7-9,PL1.3)  DOLOMITIC LIMESTONE: OUTCROP SMPL: MIN.  INDEX & GEOL MAPS.
          CA/MG = 10.3.
06111001  S22,23,26,27,T5N,R25W.  (297:762)  LIMESTONE.  USE: 4.  CA/MG = 38.4.
06111002  S22,23,26,27,T5N,R25W.  (297:762)  LIMESTONE.  USE: 4.  CA/MG = 28.4.
06111006  EOCENE.  S22,27,T5N,R25W.  (504:268,267/ 556:349,PL37)  LIMESTONE, FINE-GR: 250 FT THICK.  INDEX MAP.  USE: 4,18.

06111007  EOCENE.  S22,27,T5N,R25W.  (504:268,267/ 556:349,PL37)  LIMESTONE, FINE-GR: 250 FT THICK.  INDEX MAP.  USE: 4,18.

06111008  S23,24,T5N,R24W.  (297:762,761)  LIMESTONE, MASSIVE.  USE: 4.  CA/MG = 38.1.
```

TABLE 9. — *Analyses of samples from California and Hawaii containing more than 90 percent carbonate (Group F_2), common-rock category*

SAMPLE	06001001	06001002	06001012	06005001	06005002	06005003	06005004	06005005	06005006	06005007
SIO2	9.57	0.80 A	0.05	0.0 B	0.22 A	0.38 A	0.60 A	0.65 A	0.66 A	0.68 A
AL2O3	0.0 B	0.40	0.0 B	0.0 B	0.19 C	0.55 C	0.22 C	0.46 C	0.14 C	0.27 C
FE2O3	0.0 B	0.0 T	0.16	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
MGO	42.48	46.90 M	0.31 I	0.0 B	0.18 I	0.10 I	1.42 I	0.44 I	0.10 I	0.68 I
CAO	2.83	0.80	55.49 I	54.78 I	55.48 I	54.37 I	53.40 I	54.47 I	54.32 I	54.46 I
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	44.70	51.10 G	43.99 I	43.00 I	43.74 I	42.79 I	43.47 I	43.24 I	42.74 I	43.49 I
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	100.58 *	100.00	100.00	97.78	99.81	98.19	99.11	99.26	97.96	99.58
CLASS	10, 0, 86	0, 1, 98	0, 0,100	0, 0, 98	0, 0, 99	0, 1, 97	0, 1, 98	0, 1, 98	0, 0, 97	0, 1, 99

SAMPLE	06005008	06005009	06005010	06005011	06005012	06005013	06005014	06005015	06005126	06005134
SIO2	0.78 A	1.00 A	1.03 A	1.06 A	1.60 A	1.71 A	3.55 A	5.59 A	1.16 A	1.39
AL2O3	0.69 C	0.56 C	0.16 C	0.25 C	0.42 C	0.20 C	0.30 C	0.56 C	0.37 C	0.72 C
FE2O3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
MGO	0.54 I	0.20 I	0.10 I	0.10 I	0.51 I	1.14 I	11.62 I	0.98 I	0.16 I	0.0 T
CAO	54.17 I	54.82 I	54.47 I	54.57 I	54.19 I	53.44 I	40.17 I	50.81 I	54.49 I	54.78 I
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	43.12 I	43.24 I	42.87 I	42.93 I	43.26 I	43.19 I	44.22 I	40.94 I	43.00 I	43.00 I
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.30	99.82	98.63	98.91	99.98	99.68	99.86	98.88	99.18	99.89
CLASS	0, 1, 98	0, 2, 98	1, 0, 97	1, 1, 98	1, 1, 98	1, 1, 98	3, 1, 96	5, 2, 93	1, 1, 98	0, 2, 98

SAMPLE	06005135	06007001	06007002	06007003	06007004	06007005	06007008	06007011	06007012	06007013
SIO2	0.0 B	2.12	0.23	0.28	1.00 P	2.22	0.48	0.18	3.06	4.68 A
AL2O3	0.0 B	0.54	0.36	0.23	1.00	0.39	0.21	0.02	0.44	0.39 C
FE2O3	0.0 B	0.0	0.10	0.11	0.0 B	0.11	0.39	0.03	0.33	0.0 B
MGO	0.0 T	1.77 I	0.48 I	1.20	1.00	0.60	2.97	1.10 I	0.48 I	0.83
CAO	55.80 I	52.21 I	54.62 I	53.96	53.78 I	53.08	54.48	53.67 I	53.33 I	52.12
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.0 B	0.02	0.0 B	0.01	0.0 B	0.0 B	0.0 B	0.0 B
CO2	43.80 I	42.92 I	43.40 I	0.0 B	42.22 I	0.0 B	0.0 B	43.33 I	42.39 I	41.54
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.60	99.56	99.19	55.80	99.00	56.41	58.53	98.33	100.03	99.86 *
CLASS	0, 0,100	1, 2, 97	0, 0, 98	0, 1, 99	0, 2, 96	1, 1, 96	0, 1, 93	0, 0, 98	2, 2, 96	4, 1, 94

SAMPLE	06009001	06009002	06009003	06009004	06009005	06009006	06009007	06009008	06009009	06009010
SIO2	2.99 A	2.23 A	0.08	0.11	0.11	0.15	0.17	0.20	0.20	0.21
AL2O3	1.21 C	1.29 C	0.08	0.12	0.20 C	0.14 C	0.10	0.18	0.22	0.25 C
FE2O3	0.0 B	0.0 B	0.0 T	0.07	0.0 B	0.0 B	0.11	0.09	0.16	0.0 B
MGO	2.69 I	1.44 I	9.99	1.25	3.22 I	9.05 I	4.93	0.33 I	0.63	1.58 I
CAO	50.36 I	52.15 I	44.08	54.02	52.52 I	45.06 I	49.87	55.40 I	54.83	54.32 I
NA2O	0.0 B	0.0 B	0.02	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.02	0.0 B
K2O	0.0 B	0.0 B	0.03	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.02	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.0 B	0.01	0.0 B	0.0 B	0.01	0.0 B	0.0 B	0.0 B
CO2	42.48 I	42.53 I	45.65	0.0 B	44.74 I	45.27 I	0.0 B	43.86 I	43.86	44.36 I
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.73	99.64	99.93	55.58	100.79	99.67	55.19	100.06	99.94	100.72
CLASS	1, 4, 96	0, 4, 96	0, 0,100	0, 0, 99	0, 0,100	0, 0, 99	0, 0, 99	0, 0,100	0, 0, 99	0, 0,100

SAMPLE	06009011	06009012	06009013	06009014	06009015	06009016	06009017	06009018	06009019
SIO2	0.23	0.23	0.27	0.27	0.28	0.31	0.31	0.31	0.32
AL2O3	0.14	0.25	0.21	0.38 C	0.15	0.34 C	0.40 C	0.45	0.12 C
FE2O3	0.05	0.07	0.02	0.0 B	0.07	0.0 B	0.0 B	0.07	0.0 B
MGO	2.59	2.28	1.40	11.28 I	0.42	7.93 I	1.84 I	0.53	4.02 I
CAO	52.59	54.64	53.87	42.51 I	55.07	46.13 I	53.49 I	54.73	51.53 I
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 T	0.0 T	0.03	0.0 B	0.01	0.0 B	0.0 B	0.01	0.0 B
CO2	0.0 B	0.0 B	0.0 B	45.68 I	0.0 B	44.88 I	44.00 I	0.0 B	44.84 I
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	55.60	57.47	55.80	100.12	56.00	99.59	100.04	56.10	100.83
CLASS	0, 0, 99	0, 0, 96	0, 0, 99	0, 0, 99	0, 1, 99	0, 1, 99	0, 0, 99	0, 1, 99	0, 0,100

A INSOL.
B BLANK--NO VALUE REPT.
C AL2O3 + FE2O3.
D MGO + CAO.
E NA2O + K2O.
F H2O+.
G IGNITION LOSS (MAY INCLUDE WATER).
H REPORTED AS S.
I CALCULATED BY COMPILERS.
J ORGANIC MATTER.
K TOTAL IRON.
M BY DIFFERENCE.
N INCLUDES TIO2.
O GREATER THAN.
P LESS THAN.
T TRACE.
* ADDITIONAL INFORMATION IN DESCRIPTIVE NOTES.

TABLE 9. — *Analyses of samples from California and Hawaii containing more than 90 percent carbonate (Group F_2), common-rock category* — Continued

06001001 S27,T4S,R3E. (553:151/ 58:15,16,41,PL1) MAGNESITE. INDEX MAP. USE: 16. *MISC: FEO = 1.00. CA/MG = 0.067.

06001002 "T3S,R2E" LIVERMORE. (428:10,9) MAGNESITE. CA/MG = 0.017.
06001012 "T4S,R2W" WASHINGTON CORNERS. (256:107) LIMESTONE. USE: 4. CA/MG > 100.

06005001 PALEOZOIC, CALAVERAS FM. S16,T6N,R10E. (556:208,207,PL37) LIMESTONE, FINELY CRYS. INDEX MAP. USE: 18.

06005002 PALEOZOIC, CALAVERAS FM. "T7N,R12E" VOLCANO. (556:212,207,211,PL37) LIMESTONE: DH, 230-235 FT. INDEX MAP. USE: 4. CA/MG >100.
06005003 PALEOZOIC, CALAVERAS FM. S23,T7N,R12E. (80:213,212,PL1) LIMESTONE, GRAY: SURFACE SMPL. INDEX & GEOL MAP, GEOL SEC. CA/MG >100.
06005004 PALEOZOIC, CALAVERAS FM. S5,T7N,R12E. (556:210,207,PL37) LIMESTONE, GRAY TO WHITE: TONNAGE. INDEX MAP. CA/MG=37.6.

06005005 PALEOZOIC, CALAVERAS FM. S23,T7N,R12E. (80:213,212,PL1) LIMESTONE, GRAY: SURFACE SMPL. INDEX & GEOL MAP, GEOL SEC. CA/MG >100.
06005006 PALEOZOIC, CALAVERAS FM. S23,T7N,R12E. (80:213,212,PL1) LIMESTONE, GRAY: SURFACE SMPL. INDEX & GEOL MAP, GEOL SEC. CA/MG >100.
06005007 PALEOZOIC, CALAVERAS FM. S23,T7N,R12E. (80:213,212,PL1) LIMESTONE, GRAY: SURFACE SMPL. INDEX & GEOL MAP, GEOL SEC. CA/MG = 80.1.
06005008 PALEOZOIC, CALAVERAS FM. S23,T7N,R12E. (80:213,212,PL1) LIMESTONE, GRAY: SURFACE SMPL. INDEX & GEOL MAP, GEOL SEC. CA/MG >100.
06005009 PALEOZOIC, CALAVERAS FM. S5,8,T7N,R10E. (556:211,207,PL37) LIMESTONE, GRAY, FINELY CRYS. INDEX MAP. CA/MG >100.

06005010 PALEOZOIC, CALAVERAS FM. S23,T7N,R12E. (80:213,212,PL1) LIMESTONE, GRAY: SURFACE SMPL. INDEX & GEOL MAPS, GEOL SEC. CA/MG >100.
06005011 PALEOZOIC, CALAVERAS FM. S23,T7N,R12E. (80:213,212,PL1) LIMESTONE, GRAY: SURFACE SMPL. INDEX & GEOL MAP, GEOL SEC. CA/MG >100.
06005012 PALEOZOIC, CALAVERAS FM. S3,T6N,R10E. (556:208,207,PL37) LIMESTONE, GRAY, MED-GR. INDEX MAP. CA/MG >100.

06005013 PALEOZOIC, CALAVERAS FM. S23,T7N,R12E. (80:213,212,PL1) LIMESTONE, GRAY: SURFACE SMPL. INDEX & GEOL MAP, GEOL SEC. CA/MG = 46.9.
06005014 PALEOZOIC, CALAVERAS FM. S33,T7N,R10E. (556:209,207,208,PL37) MAGNESIAN LIMESTONE, GRAY. INDEX MAP. CA/MG = 3.46.

06005015 PALEOZOIC, CALAVERAS FM. S6,T7N,R11E. (556:209,207,PL37) MARBLE, WHITE TO GRAY: QUARRY SMPL. INDEX MAP. USE:15. CA/MG = 51.8.
06005126 PALEOZOIC, CALAVERAS FM. "T7N,R12E" VOLCANO. (556:212,207,211,PL37) LIMESTONE: SURFACE SMPL. INDEX MAP. USE: 4. CA/MG >100.
06005134 "T6N,R9E" IONE. (68:660) LIMESTONE. USE: 2.
06005135 "S28,29,T7N,R12E" (144:241) MARBLE, WHITE WITH BLUISH & BLACK VEINS: QUARRY SMPL.

06007001 S8,T21N,R4E. (571:69/ 556:214,PL37) MARBLE: TONNAGE. INDEX MAP. CA/MG = 29.5.

06007002 S18,T21N,R4E. (571:69/ 556:215,214,PL37) MARBLE: TONNAGE. INDEX MAP. CA/MG >100.

06007003 PALEOZOIC, CALAVERAS FM. S8,T21N,R4E. (130:19,17,18,PL1,2) LIMESTONE, GRAY TO BLACK, DENSE: MIN. INDEX & GEOL MAPS. CA/MG = 45.0.
06007004 S8,T21N,R4E. (556:214,PL37) LIMESTONE. INDEX MAP. TONNAGE. CA/MG = 53.8.

06007005 PALEOZOIC, CALAVERAS FM. S17,T21N,R4E. (130:19,6,17,18,PL1) LIMESTONE, GRAY TO BLACK, DENSE: MIN. INDEX & GEOL MAP. CA/MG = 88.5.
06007008 S8,T21N,R4E. (571:67/ 556:213,PL37) MARBLE: QUARRY SMPL: TONNAGE. INDEX MAP. USE: 2. CA/MG = 18.9.

06007011 S11,T22N,R6E. (571:68) MARBLE: COARSE-GR: QUARRY SMPL: COMPOS OF 4 SMPLS: TONNAGE. INDEX MAP. CA/MG = 48.8.

06007012 S35,T22N,R6E. (571:68) MARBLE: QUARRY SMPL: COMPOS OF 4 SMPLS: TONNAGE. INDEX MAP. CA/MG >100.

06007013 CARBONIFEROUS TO JURASSIC. S2,T21N,R6E. (283:576,567,PL1/ 571:69,MAP 2) LIMESTONE: MIN. INDEX & GEOL MAPS. *MISC: FEO = 0.29, MNO = 0.014. CA/MG = 62.8.
06009001 PALEOZOIC, CALAVERAS FM. S32,T5N,R11E. (556:218/ 96:104,94,PL A,D) LIMESTONE, WHITE TO GRAY, FINE-GR. INDEX & GEOL MAPS, GEOL SEC. USE: 12,18. CA/MG = 18.7.
06009002 PALEOZOIC, CALAVERAS FM. S4,T4N,R11E. (556:218/ 96:104,94,211,PL A,D) LIMESTONE, WHITE TO GRAY, FINE-GR. INDEX & GEOL MAPS, GEOL SEC. USE:4,18. CA/MG = 36.2.
06009003 PALEOZOIC, CALAVERAS FM. S10,T4N,R13E. (93:14,4,7,PL1,2) LIMESTONE, WHITE TO GRAY, COARSE- TO FINE-GR: CHIP SMPL REPR 350 FT. INDEX & GEOL MAPS. CA/MG = 4.41.
06009004 PALEOZOIC, CALAVERAS FM. S31,T4N,R14E. (96:104,94,PL,A,D) LIMESTONE. INDEX & GEOL MAPS, GEOL SEC. CA/MG = 43.2.

06009005 PALEOZOIC, CALAVERAS FM. S3,10,T4N,R13E. (96:102,94,PL,A,D) DOLOMITIC LIMESTONE, WHITE TO GRAY, 600-1,500 FT THICK: SMPL TAKEN ACROSS 100 FT. INDEX & GEOL MAPS, GEOL SEC. CA/MG = 16.3.
06009006 PALEOZOIC, CALAVERAS FM. S3,10,T4N,R13E. (96:102,94,PL,A,D) DOLOMITIC LIMESTONE, WHITE TO GRAY, 600-1,500 FT THICK: SMPL TAKEN ACROSS 95 FT. INDEX & GEOL MAPS, GEOL SEC. CA/MG = 4.98.
06009007 PALEOZOIC, CALAVERAS FM. S31,T4N,R14E. (96:104,94,PL,A,D) MAGNESIAN LIMESTONE. INDEX & GEOL MAPS, GEOL SEC. CA/MG = 10.1.
06009008 PALEOZOIC, CALAVERAS FM. S25,35,T4N,R12E. (96:98,94,97,PL A,D) LIMESTONE, WHITE TO GRAY, MASSIVE, COARSELY CRYS: DH OF 164 FT. INDEX & GEOL MAPS, GEOL SEC. USE: 4. CA/MG >100.
06009009 PALEOZOIC, CALAVERAS FM. S11,T4N,R13E. (93:14,4,7,PL1,2) LIMESTONE, WHITE, GRAY, COARSE- TO FINE-GR: CHIP SMPL OF 100 FT. INDEX & GEOL MAPS. CA/MG = 87.0.
06009010 PALEOZOIC, CALAVERAS FM. S3,10,T4N,R13E. (96:102,94,PL,A,D) LIMESTONE, WHITE TO GRAY, 600-1,500 FT THICK: SMPL TAKEN ACROSS 111 FT. INDEX & GEOL MAPS, GEOL SEC. CA/MG = 34.4.
06009011 PALEOZOIC, CALAVERAS FM. S31,T4N,R14E. (96:104,94,PL,A,D) MAGNESIAN LIMESTONE. INDEX & GEOL MAPS, GEOL SEC. CA/MG = 20.3.
06009012 PALEOZOIC, CALAVERAS FM. S31,T4N,R14E. (96:104,94,PL,A,D) MAGNESIAN LIMESTONE. INDEX & GEOL MAPS, GEOL SEC. CA/MG = 24.0.
06009013 PALEOZOIC, CALAVERAS FM. S31,T4N,R14E. (96:104,94,PL,A,D) LIMESTONE. INDEX & GEOL MAPS, GEOL SEC. CA/MG = 38.5.

06009014 PALEOZOIC, CALAVERAS FM. S3,10,T4N,R13E. (96:102,94,PL,A,D) DOLOMITIC LIMESTONE, WHITE TO GRAY, 600-1,500 FT THICK: SMPL TAKEN ACROSS 300 FT. INDEX & GEOL MAPS, GEOL SEC. CA/MG = 3.77.
06009015 PALEOZOIC, CALAVERAS FM. S8,T3N,R14E. (96:104,94,PL A,D) LIMESTONE. INDEX & GEOL MAPS, GEOL SEC. CA/MG >100.

06009016 PALEOZOIC, CALAVERAS FM. S3,10,T4N,R13E. (96:102,94,PL,A,D) DOLOMITIC LIMESTONE, WHITE TO GRAY, 600-1,500 FT THICK: SMPL TAKEN ACROSS 951 FT. INDEX & GEOL MAPS, GEOL SEC. CA/MG = 5.82.
06009017 PALEOZOIC, CALAVERAS FM. S3,10,T4N,R13E. (96:102,94,PL,A,D) LIMESTONE, WHITE TO GRAY, 600-1,500 FT THICK: SMPL TAKEN ACROSS 300 FT. INDEX & GEOL MAPS, GEOL SEC. CA/MG = 29.1.
06009018 PALEOZOIC, CALAVERAS FM. S8,T3N,R14E. (96:104,94,PL A,D) LIMESTONE. INDEX & GEOL MAPS, GEOL SEC. CA/MG >100.

06009019 PALEOZOIC, CALAVERAS FM. S3,10,T4N,R13E. (96:102,94,PL,A,D) DOLOMITIC LIMESTONE, WHITE TO GRAY, 600-1,500 FT THICK: SMPL TAKEN ACROSS 94 FT. INDEX & GEOL MAPS, GEOL SEC. CA/MG = 12.8.

TABLE 9. — *Analyses of samples from California and Hawaii containing more than 90 percent carbonate (Group F_2), common-rock category* — Continued

SAMPLE	06009020	06009021	06009022	06009023	06009024	06009025	06009026	06009027	06009028	06009029
SIO2	0.32	0.36	0.37	0.41	0.46	0.46	0.49	0.53	0.56	0.65
AL2O3	0.28	0.45 C	0.72 C	0.23	0.20	0.62 C	0.63	0.25	0.30	0.22
FE2O3	0.09	0.0 B	0.0 B	0.04	0.09	0.0 B	0.36	0.16	0.09	0.08
MGO	1.61	2.86 I	8.73 I	0.34 I	0.57	6.79 I	7.52	0.72	0.35 I	5.08
CAO	53.57	52.67 I	45.26 I	55.08 I	54.70	45.80 I	46.32	54.65	55.08 I	49.21
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.03	0.02	0.0 B	0.02
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.03	0.02	0.0 B	0.05
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 T	0.0 B	0.0 B	0.0 B	0.01	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	0.0 B	44.48 I	45.07 I	43.62 I	0.0 B	43.36 I	44.66	43.65	43.63 I	44.51
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	55.87	100.82	100.15	99.72	56.03	97.03	100.04	100.00	100.01	99.82
CLASS	0, 1, 99	0, 1,100	0, 1, 99	0, 1, 99	0, 1, 99	0, 1, 96	0, 1, 98	0, 1, 99	0, 1, 99	0, 1, 99

SAMPLE	06009030	06009031	06009032	06009033	06009034	06009035	06009036	06009038	06009039	06009040
SIO2	0.69	0.73	0.83	0.91	1.09	1.61	1.61	3.45	3.53	4.70
AL2O3	0.27	0.13	0.54 C	0.26 C	0.40	0.64	0.67	2.36 C	0.41	1.21
FE2O3	0.13	0.07	0.0 B	0.0 B	0.18	0.16	0.45	0.0 B	0.27	0.48
MGO	0.21 I	0.38	5.01 I	8.47 I	0.41	0.69	0.53 I	1.12 I	0.39 I	1.42
CAO	55.17 I	54.88	48.19 I	45.77 I	54.45	53.53	53.89 I	51.39 I	53.20 I	50.49
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.0 T	0.0 B	0.0 B	0.01	0.07	0.0 B	0.0 B	0.0 B	0.13
CO2	43.55 I	0.0 B	43.32 I	45.19 I	0.0 B	0.0 B	42.87 I	41.58 I	42.18 I	0.0 B
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	100.02	56.19	97.89	100.60	56.54	56.70	100.02	99.90	99.98	58.43
CLASS	0, 1, 99	0, 1, 99	0, 1, 97	0, 1, 99	0, 2, 98	0, 2, 97	0, 3, 97	0, 6, 94	3, 2, 96	2, 5, 93

SAMPLE	06009041	06009049	06009050	06009051	06009052	06009054	06009055	06009056	06009057	06009058
SIO2	4.71	2.30	3.09	6.75	1.43	1.13	1.79	1.59	2.68	4.21
AL2O3	2.98 C	1.39 C	1.69 C	2.70 C	1.35 C	1.08 C	0.86 C	0.79 C	2.13 C	1.54 C
FE2O3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
MGO	2.81 I	0.44 I	0.07 I	0.50 I	0.25 I	0.88 I	0.55 I	0.71 I	0.85 I	1.26 I
CAO	48.28 I	53.54 I	53.50 I	50.27 I	54.50 I	53.84 I	54.17 I	53.94 I	52.21 I	51.97 I
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	40.97 I	42.52 I	42.08 I	40.01 I	43.05 I	43.22 I	43.14 I	43.11 I	41.92 I	42.17 I
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.75	100.19	100.43	100.23	100.58	100.15	100.51	100.14	99.79	101.15
CLASS	0, 8, 92	0, 4, 96	0, 5, 96	2, 7, 91	0, 2, 98	0, 2, 98	0, 2, 98	0, 2, 98	0, 4, 95	2, 4, 95

SAMPLE	06009059	06009060	06009061	06009063	06009064	06013001	06013002	06013005	06013006	06013007
SIO2	5.84	1.77	4.21	2.00	4.20	4.36	4.56	0.26	1.40	1.64
AL2O3	1.50 C	0.57 C	1.28 C	1.55 C	1.40 C	1.12 C	1.34 C	0.20	0.92 C	0.54 C
FE2O3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
MGO	0.36 I	0.68 I	0.34 I	0.87 I	0.0 B	0.66	0.54	0.30	0.76	0.70
CAO	51.33 I	53.72 I	52.36 I	52.79 I	47.20	52.48	52.16	54.80	53.60	54.74
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.14 E	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.50	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	40.68 I	42.92 I	41.47 I	42.40 I	47.20 M	41.95 G	41.86 G	43.38	43.20	43.08 G
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.71	99.66	99.66	99.61	100.00	100.57	100.46	99.58	99.88	100.70
CLASS	3, 4, 92	1, 2, 97	2, 4, 94	0, 3, 96	2, 4, 94	2, 3, 94	2, 4, 94	0, 1, 98	0, 2, 98	1, 2, 97

SAMPLE	06013008	06013035	06013040	06013042	06017001	06017002	06017003	06017004	06017005
SIO2	1.80	0.30	9.30 A	0.24	0.0 B	0.12 A	0.21 A	0.22 A	0.24
AL2O3	0.54 C	1.40 C	0.0 B	0.80	0.0 B	0.14 C	0.21 C	0.25 C	0.16 C
FE2O3	0.0 B	0.0 B	0.0 B	0.40	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
MGO	0.70	0.0 T	18.60	0.35	0.0 B	4.56 I	0.76 I	0.16 I	0.35 I
CAO	54.24	54.80 I	26.80	55.11	54.64 I	50.50 I	54.63 I	55.18 I	55.39 I
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.25	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.14	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	43.52 G	43.00 I	42.52	43.20 G	42.89 I	44.64 I	43.71 I	43.50 I	43.86 I
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	100.80	99.75	97.94 *	100.10	97.53	99.96	99.52	99.31	100.00
CLASS	1, 2, 98	0, 1, 98	9, 0, 88	0, 0, 98	0, 0, 98	0, 0,100	0, 0, 99	0, 0, 99	0, 0,100

A INSOL.
B BLANK--NO VALUE REPT.
C AL2O3 + FE2O3.
D MGO + CAO.
E NA2O + K2O.
F H2O+.
G IGNITION LOSS (MAY INCLUDE WATER).
H REPORTED AS S.
I CALCULATED BY COMPILERS.
J ORGANIC MATTER.
K TOTAL IRON.
M BY DIFFERENCE.
N INCLUDES TIO2.
O GREATER THAN.
P LESS THAN.
T TRACE.
* ADDITIONAL INFORMATION IN DESCRIPTIVE NOTES.

TABLE 9. — *Analyses of samples from California and Hawaii containing more than 90 percent carbonate (Group F_2), common-rock category* — Continued

06009020 PALEOZOIC, CALAVERAS FM. S31,T4N,R14E. (96:104,94,PL,A,D) LIMESTONE. INDEX & GEOL MAPS, GEOL SEC. CA/MG = 33.3.

06009021 PALEOZOIC, CALAVERAS FM. S3,10,T4N,R13E. (96:102,94,PL,A,D) LIMESTONE, WHITE TO GRAY, 600-1,500 FT THICK: SMPL TAKEN ACROSS 121 FT. INDEX & GEOL MAPS, GEOL SEC. CA/MG = 18.4.

06009022 PALEOZOIC, CALAVERAS FM. S3,10,T4N,R13E. (96:102,94,PL,A,D) DOLOMITIC LIMESTONE, WHITE TO GRAY, 600-1,500 FT THICK: SMPL TAKEN ACROSS 551 FT. INDEX & GEOL MAPS, GEOL SEC. CA/MG = 5.18.

06009023 PALEOZOIC, CALAVERAS FM. S4,T2N,R14E. (96:103,94,PL A,D) LIMESTONE, WHITE, COARSELY CRYS: TONNAGE. INDEX & GEOL MAPS, GEOL SEC. CA/MG >100.

06009024 PALEOZOIC, CALAVERAS FM. S8,T3N,R14E. (96:104,94,PL A,D) LIMESTONE. INDEX & GEOL MAPS, GEOL SEC. CA/MG = 96.0.

06009025 PALEOZOIC, CALAVERAS FM. S3,10,T4N,R13E. (96:102,94,PL,A,D) DOLOMITIC LIMESTONE, WHITE TO GRAY, 600-1,500 FT THICK: SMPL TAKEN ACROSS 1,042 FT. INDEX & GEOL MAPS, GEOL SEC. CA/MG=6.75.

06009026 PALEOZOIC, CALAVERAS FM. S11,T4N,R13E. (93:14,4,7,PL1,2) LIMESTONE, WHITE TO GRAY, COARSE- TO FINE-GR: 700-FT CHIP SMPL. INDEX & GEOL MAPS. CA/MG = 6.16.

06009027 PALEOZOIC, CALAVERAS FM. S28,T4N,R13E. (93:14,4,17,PL1,2) LIMESTONE, WHITE TO GRAY, COARSE-GR: 80-FT CHIP SMPL. INDEX & GEOL MAPS. CA/MG = 75.9.

06009028 PALEOZOIC, CALAVERAS FM. S25,35,T4N,R12E. (96:98,94,97,PL A,D) LIMESTONE, WHITE TO GRAY, MASSIVE, COARSELY CRYS: DH OF 164 FT. INDEX & GEOL MAPS, GEOL SEC. USE: 4. CA/MG >100.

06009029 PALEOZOIC, CALAVERAS FM. S3,T4N,R13E. (93:14,4,PL1,2) MAGNESIAN LIMESTONE: 50-FT CHIP SMPL. INDEX & GEOL MAPS. CA/MG = 9.69.

06009030 PALEOZOIC, CALAVERAS FM. S25,35,T4N,R12E. (96:98,94,97,PL A,D) LIMESTONE, WHITE TO GRAY, MASSIVE, COARSELY CRYS: DH OF 164 FT. INDEX & GEOL MAPS, GEOL SEC. USE: 4. CA/MG >100.

06009031 PALEOZOIC, CALAVERAS FM. S8,T3N,R14E. (96:104,94,PL A,D) LIMESTONE. INDEX & GEOL MAPS, GEOL SEC. CA/MG >100.

06009032 PALEOZOIC, CALAVERAS FM. S3,10,T4N,R13E. (96:102,94,PL,A,D) DOLOMITIC LIMESTONE, WHITE TO GRAY, 600-1,500 FT THICK: SMPL TAKEN ACROSS 1,239 FT. INDEX & GEOL MAPS, GEOL SEC. CA/MG=9.62.

06009033 PALEOZOIC, CALAVERAS FM. S3,10,T4N,R13E. (96:102,94,PL,A,D) DOLOMITIC LIMESTONE, WHITE TO GRAY, 600-1,500 FT THICK: SMPL TAKEN ACROSS 597 FT. INDEX & GEOL MAPS, GEOL SEC. CA/MG = 5.40.

06009034 PALEOZOIC, CALAVERAS FM. S8,T3N,R14E. (96:104,94,PL A,D) LIMESTONE. INDEX & GEOL MAPS, GEOL SEC. CA/MG >100.

06009035 PALEOZOIC, CALAVERAS FM. S8,T3N,R14E. (96:104,94,PL A,D) LIMESTONE. INDEX & GEOL MAPS, GEOL SEC. CA/MG = 77.6.

06009036 PALEOZOIC, CALAVERAS FM. S25,35,T4N,R12E. (96:98,94,97,PL A,D) LIMESTONE, WHITE TO GRAY, MASSIVE, COARSELY CRYS: DH OF 164 FT. INDEX & GEOL MAPS, GEOL SEC. USE: 4. CA/MG >100.

06009038 PALEOZOIC, CALAVERAS FM. T3N,R14E, VALLECITO. (96:103,94,PL A,D) LIMESTONE: DH OF 1,352 FT. INDEX & GEOL MAPS, GEOL SEC. CA/MG = 45.9.

06009039 PALEOZOIC, CALAVERAS FM. S25,35,T4N,R12E. (96:98,94,97,PL A,D) LIMESTONE, WHITE TO GRAY, MASSIVE, COARSELY CRYS: DH OF 164 FT. INDEX & GEOL MAPS, GEOL SEC. USE: 4. CA/MG >100.

06009040 PALEOZOIC, CALAVERAS FM. S36,T6N,R12E. (96:103,94,PL A,D) LIMESTONE, WHITE TO GRAY, COARSE-GR. INDEX & GEOL MAPS, GEOL SEC. CA/MG = 35.6.

06009041 PALEOZOIC, CALAVERAS FM. T3N,R14E, VALLECITO. (96:103,94,PL A,D) LIMESTONE: DH OF 1,352 FT. INDEX & GEOL MAPS, GEOL SEC. CA/MG = 17.2.

06009049 PALEOZOIC, CALAVERAS FM. "T4N,R12E" SAN ANDREAS. (485:3,2) LIMESTONE. USE: 4. CA/MG >100.

06009050 PALEOZOIC, CALAVERAS FM. "T4N,R12E" SAN ANDREAS. (485:3,2) LIMESTONE: D-H SMPL. CA/MG >100.

06009051 PALEOZOIC, CALAVERAS FM. "T4N,R12E" SAN ANDREAS. (485:3,2) LIMESTONE: D-H SMPL. CA/MG >100.

06009052 PALEOZOIC, CALAVERAS FM. "T4N,R12E" SAN ANDREAS. (485:3,2) LIMESTONE: D-H SMPL. CA/MG >100.

06009054 PALEOZOIC, CALAVERAS FM. "T4N,R12E" SAN ANDREAS. (485:3,2) LIMESTONE: D-H SMPL. CA/MG = 61.2.

06009055 PALEOZOIC, CALAVERAS FM. "T4N,R12E" SAN ANDREAS. (485:3,2) LIMESTONE: D-H SMPL. CA/MG = 98.5.

06009056 PALEOZOIC, CALAVERAS FM. "T4N,R12E" SAN ANDREAS. (485:3,2) LIMESTONE: D-H SMPL. CA/MG = 76.0.

06009057 PALEOZOIC, CALAVERAS FM. "T4N,R12E" SAN ANDREAS. (485:3,2) LIMESTONE: D-H SMPL. CA/MG = 61.4.

06009058 PALEOZOIC, CALAVERAS FM. "T4N,R12E" SAN ANDREAS. (485:3,2) LIMESTONE: D-H SMPL. CA/MG = 41.2.

06009059 PALEOZOIC, CALAVERAS FM. "T4N,R12E" SAN ANDREAS. (485:3,2) LIMESTONE: D-H SMPL. CA/MG >100.

06009060 PALEOZOIC, CALAVERAS FM. "T4N,R12E" SAN ANDREAS. (485:3,2) LIMESTONE: D-H SMPL. CA/MG = 79.0.

06009061 PALEOZOIC, CALAVERAS FM. "T4N,R12E" SAN ANDREAS. (485:3,2) LIMESTONE: D-H SMPL. CA/MG >100.

06009063 PALEOZOIC, CALAVERAS FM. "T4N,R12E" SAN ANDREAS. (485:3,2) LIMESTONE: D-H SMPL. CA/MG = 60.7.

06009064 "T4N,R10E" CAMPO SECO. (68:660) LIMESTONE.

06013001 "T1N,R1W" COWELL. (173:122,PL4) TRAVERTINE. INDEX MAP. USE: 4. CA/MG = 79.5.

06013002 "T1N,R1W" COWELL. (173:122,PL4) TRAVERTINE. INDEX MAP. USE: 4. CA/MG = 96.6.

06013005 "T2N,R3W" PORT COSTA. (303:311,310/ 173: 119,PL4) TRAVERTINE. INDEX MAP. USE: 4,18. CA/MG >100.

06013006 PLEISTOCENE TO RECENT. "T1N,R1W" CONCORD. (175:360,359) TRAVERTINE. USE: 4. CA/MG = 70.5.

06013007 "T1N,R1W" COWELL. (173:122,PL4) TRAVERTINE: QUARRY SMPL. INDEX MAP. USE: 4. CA/MG = 78.2.

06013008 "T1N,R1W" COWELL. (173:122,PL4) TRAVERTINE, FLOAT. INDEX MAP. USE:4. CA/MG = 77.5.

06013035 "T1S,R1W" MOUNT DIABLO. (512:301) LIMESTONE, COMPACT: B.D., 2.63.

06013040 MIOCENE, CLAREMONT SH. "T1S,R3W" BERKELEY HILLS. (386:C6) DOLOMITE. *MISC: FEO = 0.56, MNO = 0.02. CA/MG = 1.44.

06013042 "T1S,R3W" BERKELEY. (68:661) LIMESTONE. CA/MG >100.

06017001 PALEOZOIC, CALAVERAS FM. "S15,T11N,R8E" (556:223,222,PL37) LIMESTONE, GRAY TO WHITE: MED TO FINELY CRYS. INDEX MAP. USE: 6,18.

06017002 PALEOZOIC, CALAVERAS FM. S28,T10N,R11E. (556:230,222,226,PL37) LIMESTONE. INDEX MAP. USE: 15. CA/MG = 11.1.

06017003 PALEOZOIC, CALAVERAS FM. "T9N,R9E" SHINGLE SPRINGS. (556:231,222,230,PL37) LIMESTONE, WHITE. INDEX MAP. USE: 12,18. CA/MG = 71.9.

06017004 PALEOZOIC, CALAVERAS FM. S6,18,T12N,R9E. (556:225,222,224,PL37) LIMESTONE, GRAY TO BLACK, FINELY CRYS: CHIP SMPL OF 270 FT. INDEX MAP. USE: 6,18. CA/MG >100.

06017005 PALEOZOIC, CALAVERAS FM. S7,T12N,R9E. (94:452,440-460,PL3) LIMESTONE, GRAY TO BLACK, DENSE, CRYS: 800 FT THICK: TONNAGE. INDEX & GEOL MAPS. USE: 6,12. CA/MG >100.

TABLE 9. — *Analyses of samples from California and Hawaii containing more than 90 percent carbonate (Group F_2), common-rock category* — Continued

SAMPLE	06017006	06017007	06017008	06017009	06017010	06017011	06017012	06017013	06017014	06017015
SIO2	0.24	0.30	0.32 A	0.34 A	0.36	0.36 A	0.36 A	0.36 A	0.41 A	0.42 A
AL2O3	0.0 B	0.72 C	0.27 C	0.24 C	0.22 C	0.26 C	0.64 C	1.04 C	0.36 C	0.22 C
FE2O3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
MGO	0.0 B	0.37 I	0.18 I	0.41 I	0.12 I	0.43 I	0.28 I	0.37 I	0.42 I	0.42 I
CAO	54.70 I	54.99 I	55.43 I	55.19 I	55.55 I	55.13 I	54.98 I	54.60 I	55.10 I	55.10 I
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.0 B	0.04	0.0 B	0.08	0.28	0.36	0.0 B	0.13
CO2	42.95 I	43.59 I	43.71 I	43.78 I	43.75 I	43.74 I	43.48 I	43.27 I	43.71 I	43.71 I
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	97.89	99.97	99.91	100.00	100.00	100.00	100.02	100.00	100.00	100.00
CLASS	0, 0, 98	0, 1, 99	0, 1, 99	0, 1, 99	0, 1, 99	0, 1, 99	0, 1, 99	0, 1, 98	0, 1, 99	0, 1, 99

SAMPLE	06017016	06017017	06017018	06017019	06017020	06017021	06017022	06017023	06017024	06017025
SIO2	0.43 A	0.43 A	0.46 A	0.48 A	0.48	0.52 A	0.54 A	0.60	0.60	0.58 A
AL2O3	0.42 C	0.51 C	0.28 C	0.20 C	0.52 C	0.18 C	0.41 C	0.26 C	0.38 C	0.74 C
FE2O3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
MGO	0.14 I	5.30 I	0.25 I	0.28 I	0.11 I	0.34 I	0.33 I	0.57 I	0.30 I	0.37 I
CAO	55.35 I	49.29 I	55.24 I	55.21 I	55.33 I	55.20 I	54.98 I	54.86 I	55.13 I	54.79 I
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.13	0.18	0.0 B	0.04	0.22	0.0 B	0.0 B	0.11
CO2	43.61 I	44.47 I	43.64 I	43.65 I	43.56 I	43.72 I	43.52 I	43.69 I	43.59 I	43.41 I
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.95	100.00	100.00	100.00	100.00	100.00	100.00	99.98	100.00	100.00
CLASS	0, 1, 99	0, 1, 99	0, 1, 99	0, 1, 99	0, 1, 99	0, 0, 99	0, 1, 99	0, 1, 99	0, 1, 99	0, 1, 99

SAMPLE	06017026	06017027	06017028	06017029	06017030	06017031	06017032	06017033	06017034	06017035
SIO2	0.64 A	0.66 A	0.68 A	0.70 A	0.70 A	0.70 A	0.72	0.74 A	0.78 A	0.82 A
AL2O3	0.28 C	0.44 C	0.24 C	0.26 C	0.44 C	0.65 C	0.24 C	1.06 C	0.26 C	0.36 C
FE2O3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
MGO	0.70 I	0.28 I	0.56 I	0.88 I	0.41 I	5.26 I	0.31 I	0.40 I	0.22 I	0.37 I
CAO	54.70 I	54.98 I	54.80 I	54.42 I	54.78 I	49.10 I	55.11 I	54.21 I	55.10 I	54.86 I
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.08	0.14	0.07	0.06	0.21	0.0 B	0.0 B	0.59	0.15	0.11
CO2	43.70 I	43.48 I	43.65 I	43.68 I	43.46 I	44.29 I	43.61 I	43.00 I	43.49 I	43.48 I
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	100.10	99.98	100.00	100.00	100.00	100.00	99.99	100.00	100.00	100.00
CLASS	0, 1, 99	0, 1, 99	0, 1, 99	0, 1, 99	0, 1, 99	0, 1, 99	0, 1, 99	0, 1, 97	0, 1, 99	0, 1, 99

SAMPLE	06017036	06017037	06017038	06017039	06017040	06017041	06017042	06017043	06017044	06017045
SIO2	0.84 A	0.92 A	0.96 A	1.02 A	1.02 A	1.12 A	1.16 A	1.18 A	1.18 A	1.28 A
AL2O3	0.48 C	0.56 C	0.58 C	0.29 C	0.64 C	0.34 C	0.44 C	0.30 C	0.32 C	0.52 C
FE2O3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
MGO	0.33 I	0.33 I	0.28 I	0.22 I	0.36 I	0.47 I	0.64 I	0.80 I	0.52 I	0.54 I
CAO	54.84 I	54.76 I	54.73 I	54.98 I	54.50 I	54.61 I	54.31 I	54.19 I	54.54 I	54.27 I
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.11	0.07	0.08	0.0 B	0.30	0.06	0.12	0.11	0.06	0.21
CO2	43.40 I	43.36 I	43.27 I	43.39 I	43.18 I	43.40 I	43.33 I	43.42 I	43.37 I	43.18 I
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	100.00	100.00	99.90	99.90	100.00	100.00	100.00	100.00	99.99	100.00
CLASS	0, 1, 99	0, 1, 98	0, 2, 98	1, 1, 99	0, 2, 98	1, 1, 98	0, 1, 98	1, 1, 98	1, 1, 98	0, 1, 98

SAMPLE	06017046	06017047	06017048	06017049	06017050	06017051	06017052	06017053
SIO2	1.38 A	2.38 A	2.42 A	2.50 A	4.62 A	4.92 A	5.56 A	5.56 A
AL2O3	0.84 C	0.54 C	0.38 C	0.62 C	0.48 C	2.14 C	1.78 C	2.26 C
FE2O3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
MGO	0.53 I	0.31 I	0.37 I	0.63 I	0.43 I	0.95 I	0.80 I	0.77 I
CAO	54.03 I	53.91 I	53.92 I	53.49 I	52.56 I	50.87 I	50.93 I	50.62 I
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.23	0.20	0.17	0.08	0.16	0.16	0.08	0.20
CO2	42.99 I	42.66 I	42.74 I	42.68 I	41.75 I	40.96 I	40.85 I	40.59 I
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
CLASS	0, 2, 98	1, 1, 97	2, 1, 97	1, 2, 97	4, 1, 95	1, 6, 93	3, 5, 93	2, 6, 92

A INSOL.
B BLANK--NO VALUE REPT.
C AL2O3 + FE2O3.
D MGO + CAO.
E NA2O + K2O.
F H2O+.
G IGNITION LOSS (MAY INCLUDE WATER).
H REPORTED AS S.
I CALCULATED BY COMPILERS.
J ORGANIC MATTER.
K TOTAL IRON.
M BY DIFFERENCE.
N INCLUDES TIO2.
O GREATER THAN.
P LESS THAN.
T TRACE.
* ADDITIONAL INFORMATION IN DESCRIPTIVE NOTES.

TABLE 9. — *Analyses of samples from California and Hawaii containing more than 90 percent carbonate (Group F_2), common-rock category* — Continued

```
06017006  PALEOZOIC, CALAVERAS FM.  S15,22,T9N,R9E.  (556:231,222,PL37/ 95:447,PL9,10)  LIMESTONE, WHITE, MED- TO COARSE-GR.
          INDEX & GEOL MAPS, GEOL SEC.  USE: 4,10.
06017007  PALEOZOIC, CALAVERAS FM.  S7,T12N,R9E.  (94:452,440-460,PL3)  LIMESTONE, GRAY TO BLACK, DENSE, CRYS; 800 FT THICK;
          TONNAGE.  INDEX & GEOL MAPS.  USE: 6,12.  CA/MG >100.
06017008  PALEOZOIC, CALAVERAS FM.  S15,T11N,R8E.  (556:224,222/ 94:461,PL3)  LIMESTONE, GRAY TO WHITE, MED TO FINELY CRYS; SMPL
          OF 25 FT IN PIT.  INDEX & GEOL MAP.  USE: 10,18.  CA/MG >100.
06017009  PALEOZOIC, CALAVERAS FM.  S7,T12N,R9E.  (94:454,440-460,PL3)  LIMESTONE, GRAY TO BLACK, DENSE, CRYS; 800 FT THICK;
          TONNAGE.  INDEX & GEOL MAPS.  USE: 6,12.  CA/MG >100.
06017010  PALEOZOIC, CALAVERAS FM.  S7,T12N,R9E.  (94:452,440-460,PL3)  LIMESTONE, GRAY TO BLACK, DENSE, CRYS; 800 FT THICK;
          TONNAGE.  INDEX & GEOL MAPS.  USE: 6,12.  CA/MG >100.
06017011  PALEOZOIC, CALAVERAS FM.  S7,T12N,R9E.  (94:454,440-460,PL3)  LIMESTONE, GRAY TO BLACK, DENSE, CRYS; 800 FT THICK;
          TONNAGE.  INDEX & GEOL MAPS.  USE: 6,12.  CA/MG >100.
06017012  PALEOZOIC, CALAVERAS FM.  S6,T12N,R9E.  (94:454,440-460,PL3)  LIMESTONE, GRAY TO BLACK, DENSE, CRYS; 800 FT THICK;
          TONNAGE.  INDEX & GEOL MAPS.  USE: 6,12.  CA/MG >100.
06017013  PALEOZOIC, CALAVERAS FM.  S7,T12N,R9E.  (94:454,440-460,PL3)  LIMESTONE, GRAY TO BLACK, DENSE, CRYS; 800 FT THICK;
          TONNAGE.  INDEX & GEOL MAPS.  USE: 6,12.  CA/MG >100.
06017014  PALEOZOIC, CALAVERAS FM.  "T9N,R9E" SHINGLE SPRINGS.  (556:231,222,230,PL37)  LIMESTONE, WHITE.  INDEX MAP.  USE: 12,18.
          CA/MG >100.
06017015  PALEOZOIC, CALAVERAS FM.  S6,T12N,R9E.  (94:454,440-460,PL3)  LIMESTONE, GRAY TO BLACK, DENSE, CRYS; 800 FT THICK;
          TONNAGE.  INDEX & GEOL MAPS.  USE: 6,12.  CA/MG >100.
06017016  PALEOZOIC, CALAVERAS FM.  S8,17,T9N,R9E.  (556:232,222,PL37)  LIMESTONE, GRAY TO WHITE; QUARRY SMPL.  INDEX MAP.
          USE: 18.  CA/MG >100.
06017017  PALEOZOIC, CALAVERAS FM.  S28,T10N,R11E.  (556:230,222,226,PL37)  LIMESTONE.  INDEX MAP.  USE: 15.  CA/MG = 9.30.

06017018  PALEOZOIC, CALAVERAS FM.  S6,T12N,R9E.  (94:454,440-460,PL3)  LIMESTONE, GRAY TO BLACK, DENSE, CRYS; 800 FT THICK;
          TONNAGE.  INDEX & GEOL MAPS.  USE: 6,12.  CA/MG >100.
06017019  PALEOZOIC, CALAVERAS FM.  S6,T12N,R9E.  (94:454,440-460,PL3)  LIMESTONE, GRAY TO BLACK, DENSE, CRYS; 800 FT THICK;
          TONNAGE.  INDEX & GEOL MAPS.  USE: 6,12.  CA/MG >100.
06017020  PALEOZOIC, CALAVERAS FM.  S7,T12N,R9E.  (94:452,440-460,PL3)  LIMESTONE, GRAY TO BLACK, DENSE, CRYS; 800 FT THICK;
          TONNAGE.  INDEX & GEOL MAPS.  USE: 6,12.  CA/MG >100.
06017021  PALEOZOIC, CALAVERAS FM.  S18,T12N,R9E.  (94:454,440-460,PL3)  LIMESTONE, GRAY TO BLACK, DENSE, CRYS; 800 FT THICK;
          TONNAGE.  INDEX & GEOL MAPS.  USE: 6,12.  CA/MG >100.
06017022  PALEOZOIC, CALAVERAS FM.  S7,T12N,R9E.  (94:454,440-460,PL3)  LIMESTONE, GRAY TO BLACK, DENSE, CRYS; 800 FT THICK;
          TONNAGE.  INDEX & GEOL MAPS.  USE: 6,12.  CA/MG >100.
06017023  PALEOZOIC, CALAVERAS FM.  "T9N,R9E" SHINGLE SPRINGS.  (556:231,222,230,PL37)  LIMESTONE, WHITE.  INDEX MAP.  USE: 12,18.
          CA/MG = 96.2.
06017024  PALEOZOIC, CALAVERAS FM.  "T9N,R9E" SHINGLE SPRINGS.  (556:231,222,230,PL37)  LIMESTONE, WHITE.  INDEX MAP.  USE: 12,18.
          CA/MG >100.
06017025  PALEOZOIC, CALAVERAS FM.  S7,T12N,R9E.  (94:454,440-460,PL3)  LIMESTONE, GRAY TO BLACK, DENSE, CRYS; 800 FT THICK;
          TONNAGE.  INDEX & GEOL MAPS.  USE: 6,12.  CA/MG >100.
06017026  PALEOZOIC, CALAVERAS FM.  S7,T12N,R9E.  (94:454,440-460,PL3)  LIMESTONE, GRAY TO BLACK, DENSE, CRYS; 800 FT THICK;
          TONNAGE.  INDEX & GEOL MAPS.  USE: 6,12.  CA/MG = 78.1.
06017027  PALEOZOIC, CALAVERAS FM.  S6,T12N,R9E.  (94:454,440-460,PL3)  LIMESTONE, GRAY TO BLACK, DENSE, CRYS; 800 FT THICK;
          TONNAGE.  INDEX & GEOL MAPS.  USE: 6,12.  CA/MG >100.
06017028  PALEOZOIC, CALAVERAS FM.  S7,T12N,R9E.  (94:454,440-460,PL3)  LIMESTONE, GRAY TO BLACK, DENSE, CRYS; 800 FT THICK;
          TONNAGE.  INDEX & GEOL MAPS.  USE: 6,12.  CA/MG = 97.9.
06017029  PALEOZOIC, CALAVERAS FM.  S18,T12N,R9E.  (94:454,440-460,PL3)  LIMESTONE, GRAY TO BLACK, DENSE, CRYS; 800 FT THICK;
          TONNAGE.  INDEX & GEOL MAPS.  USE: 6,12.  CA/MG = 61.8.
06017030  PALEOZOIC, CALAVERAS FM.  S7,T12N,R9E.  (94:454,440-460,PL3)  LIMESTONE, GRAY TO BLACK, DENSE, CRYS; 800 FT THICK;
          TONNAGE.  INDEX & GEOL MAPS.  USE: 6,12.  CA/MG >100.
06017031  PALEOZOIC, CALAVERAS FM.  S28,T10N,R11E.  (556:230,222,226,PL37)  LIMESTONE.  INDEX MAP.  USE: 15.  CA/MG = 9.33.

06017032  PALEOZOIC, CALAVERAS FM.  "T9N,R9E" SHINGLE SPRINGS.  (556:231,222,230,PL37)  LIMESTONE, WHITE.  INDEX MAP.  USE: 12,18.
          CA/MG >100.
06017033  PALEOZOIC, CALAVERAS FM.  S7,T12N,R9E.  (94:454,440-460,PL3)  LIMESTONE, GRAY TO BLACK, DENSE, CRYS; COMPOS CHIP SMPL;
          800 FT THICK; TONNAGE.  INDEX & GEOL MAPS.  USE: 6,12.  CA/MG >100.
06017034  PALEOZOIC, CALAVERAS FM.  S6,T12N,R9E.  (94:454,440-460,PL3)  LIMESTONE, GRAY TO BLACK, DENSE, CRYS; 800 FT THICK;
          TONNAGE.  INDEX & GEOL MAPS.  USE: 6,12.  CA/MG >100.
06017035  PALEOZOIC, CALAVERAS FM.  S7,T12N,R9E.  (94:454,440-460,PL3)  LIMESTONE, GRAY TO BLACK, DENSE, CRYS; 800 FT THICK;
          TONNAGE.  INDEX & GEOL MAPS.  USE: 6,12.  CA/MG >100.
06017036  PALEOZOIC, CALAVERAS FM.  S6,T12N,R9E.  (94:454,440-460,PL3)  LIMESTONE, GRAY TO BLACK, DENSE, CRYS; 800 FT THICK;
          TONNAGE.  INDEX & GEOL MAPS.  USE: 6,12.  CA/MG >100.
06017037  PALEOZOIC, CALAVERAS FM.  S6,T12N,R9E.  (94:454,440-460,PL3)  LIMESTONE, GRAY TO BLACK, DENSE, CRYS; 800 FT THICK;
          TONNAGE.  INDEX & GEOL MAPS.  USE: 6,12.  CA/MG >100.
06017038  PALEOZOIC, CALAVERAS FM.  S12,T12N,R8E.  (94:460,PL3)  LIMESTONE, GRAY, CRYS.  INDEX & GEOL MAPS.  CA/MG >100.

06017039  PALEOZOIC, CALAVERAS FM.  S6,18,T12N,R9E.  (556:225,222,224,PL37)  LIMESTONE, GRAY TO BLACK, FINELY CRYS; CHIP SMPL OF
          400 FT.  INDEX MAP.  USE: 6,18.  CA/MG >100.
06017040  PALEOZOIC, CALAVERAS FM.  S7,T12N,R9E.  (94:454,440-460,PL3)  LIMESTONE, GRAY TO BLACK, DENSE, CRYS; COMPOS CHIP SMPL;
          800 FT THICK; TONNAGE.  INDEX & GEOL MAPS.  USE: 6,12.  CA/MG >100.
06017041  PALEOZOIC, CALAVERAS FM.  S7,T12N,R9E.  (94:454,440-460,PL3)  LIMESTONE, GRAY TO BLACK, DENSE, CRYS; 800 FT THICK;
          TONNAGE.  INDEX & GEOL MAPS.  USE: 6,12.  CA/MG >100.
06017042  PALEOZOIC, CALAVERAS FM.  S7,T12N,R9E.  (94:454,440-460,PL3)  LIMESTONE, GRAY TO BLACK, DENSE, CRYS; 800 FT THICK;
          TONNAGE.  INDEX & GEOL MAPS.  USE: 6,12.  CA/MG = 84.9.
06017043  PALEOZOIC, CALAVERAS FM.  S7,T12N,R9E.  (94:454,440-460,PL3)  LIMESTONE, GRAY TO BLACK, DENSE, CRYS; 800 FT THICK;
          TONNAGE.  INDEX & GEOL MAPS.  USE: 6,12.  CA/MG = 67.7.
06017044  PALEOZOIC, CALAVERAS FM.  S18,T12N,R9E.  (94:454,440-460,PL3)  LIMESTONE, GRAY TO BLACK, DENSE, CRYS; 800 FT THICK;
          TONNAGE.  INDEX & GEOL MAPS.  USE: 6,12.  CA/MG >100.
06017045  PALEOZOIC, CALAVERAS FM.  S6,T12N,R9E.  (94:454,440-460,PL3)  LIMESTONE, GRAY TO BLACK, DENSE, CRYS; 800 FT THICK;
          TONNAGE.  INDEX & GEOL MAPS.  USE: 6,12.  CA/MG >100.
06017046  PALEOZOIC, CALAVERAS FM.  S7,T12N,R9E.  (94:454,440-460,PL3)  LIMESTONE, GRAY TO BLACK, DENSE, CRYS; 800 FT THICK;
          TONNAGE.  INDEX & GEOL MAPS.  USE: 6,12.  CA/MG >100.
06017047  PALEOZOIC, CALAVERAS FM.  S7,T12N,R9E.  (94:454,440-460,PL3)  LIMESTONE, GRAY TO BLACK, DENSE, CRYS; COMPOS CHIP SMPL;
          800 FT THICK; TONNAGE.  INDEX & GEOL MAPS.  USE: 4,12.  CA/MG >100.
06017048  PALEOZOIC, CALAVERAS FM.  S7,T12N,R9E.  (94:454,440-460,PL3)  LIMESTONE, GRAY TO BLACK, DENSE, CRYS; COMPOS CHIP SMPL;
          800 FT THICK; TONNAGE.  INDEX & GEOL MAPS.  USE: 4,12.  CA/MG >100.
06017049  PALEOZOIC, CALAVERAS FM.  S18,T12N,R9E.  (94:454,440-460,PL3)  LIMESTONE, GRAY TO BLACK, DENSE, CRYS; 800 FT THICK,
          TONNAGE.  INDEX & GEOL MAPS.  USE: 4,12.  CA/MG = 84.9.
06017050  PALEOZOIC, CALAVERAS FM.  S7,T12N,R9E.  (94:454,440-460,PL3)  LIMESTONE, GRAY TO BLACK, DENSE, CRYS; COMPOS CHIP SMPL;
          800 FT THICK; TONNAGE.  INDEX & GEOL MAPS.  USE: 4,12.  CA/MG >100.
06017051  PALEOZOIC, CALAVERAS FM.  S7,T12N,R9E.  (94:454,440-460,PL3)  LIMESTONE, GRAY TO BLACK, DENSE, CRYS; 800 FT THICK,
          TONNAGE.  INDEX & GEOL MAPS.  USE: 4,12.  CA/MG = 53.5.
06017052  PALEOZOIC, CALAVERAS FM.  S6,T12N,R9E.  (94:454,440-460,PL3)  LIMESTONE, GRAY TO BLACK, DENSE, CRYS; 800 FT THICK,
          TONNAGE.  INDEX & GEOL MAPS.  USE: 4,12.  CA/MG = 63.7.
06017053  PALEOZOIC, CALAVERAS FM.  S6,T12N,R9E.  (94:454,440-460,PL3)  LIMESTONE, GRAY TO BLACK, DENSE, CRYS; 800 FT THICK,
          TONNAGE.  INDEX & GEOL MAPS.  USE: 4,12.  CA/MG = 65.7.
```

TABLE 9. — *Analyses of samples from California and Hawaii containing more than 90 percent carbonate (Group F_2), common-rock category* — Continued

SAMPLE	06019001	06019003	06019004	06023001	06023002	06025001	06025002	06025003	06025004	06025005
SIO2	0.55	1.20 A	1.43 A	0.34	1.41	6.43 A	0.0 T	0.0 T	0.34 A	0.75
AL2O3	0.35 C	0.0 B	0.0 B	0.16	0.56	0.72 C	0.09 C	0.90 C	0.83 C	0.75 C
FE2O3	0.0 B	0.0 B	0.0 B	0.13	0.35	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
MGO	0.65 I	5.92	27.83	0.53	0.0 T	0.19 I	0.81 I	0.80 I	0.37 I	0.75
CAO	54.72 I	47.42	33.54	54.88	53.61	50.43 I	54.33 I	54.10 I	54.91 I	54.32
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.01	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.50 J	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	43.68 I	0.0 B	0.0 B	43.64 I	42.13 I	39.79 I	43.37 I	43.60 I	43.51 I	0.0 B
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.29	0.30 I	0.0 B	0.0 B
TOT CONS	99.95	54.54	62.80	99.68	98.57	97.56	98.89	99.70	99.96	56.57
CLASS	0, 1, 99	1, 0, 97	1, 0, 77	0, 1, 99	0, 2, 96	5, 2, 90	0, 0, 98	0, 0, 98	0, 1, 99	0, 1, 98

SAMPLE	06025006	06025007	06025024	06027001	06027002	06027003	06027004	06027005	06027006	06027007
SIO2	1.00	1.08	0.0 B	0.0 B	0.0 B	0.0 B	0.30	0.31	0.50	0.55 A
AL2O3	0.76	0.0 T	0.0 B	0.0 B	0.02 C	0.0 B	0.55 C	0.29	0.15	0.15
FE2O3	0.05	0.02	0.0 B	0.02 K	0.0 B	0.08 K	0.0 B	1.44	0.03	0.0 T
MGO	1.78	1.48	3.86	21.79	21.79	0.0 B	19.36 I	20.90	21.60	22.86 M
CAO	54.32	54.00	50.88	31.01	31.04	54.00 I	33.28 I	30.73	30.20	30.40
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.07	0.08	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 T	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.09	0.0 B	0.0 B
CO2	42.05 G	43.40 G	0.0 B	47.35	47.35	43.00 I	47.26 I	45.90 G	47.60	46.04 G
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.96	99.98	54.74	100.17	100.20	97.08	100.75	99.78 *	100.16	100.00
CLASS	0, 2, 95	1, 0, 98	0, 0, 99	0, 0, 99	0, 0, 99	0, 0, 97	0, 0,100	0, 1, 96	0, 1, 99	0, 0, 96

SAMPLE	06027008	06027010	06027017	06027018	06027019	06027020	06027021	06027022	06027023	06027024
SIO2	0.60	6.27 A	0.25	1.46	0.86	1.04	1.02	2.09	1.53	1.18
AL2O3	0.0 B	0.0 B	0.72 C	0.37	1.03 C	1.00 C	1.66 C	2.38 C	4.46 C	1.81 C
FE2O3	0.0 B	0.28	0.0 B	1.63	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
MGO	21.25 I	17.18	22.42 I	20.34	19.41	19.53	20.51	18.68	20.13	19.31
CAO	30.39 I	28.44	29.20 I	30.19	30.99	30.70	31.15	30.14	30.65	31.66
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.09	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.08	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.0 B	0.09	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	47.06 I	40.74	47.41 I	45.72 G	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.30 *	97.19 *	100.00	100.09 *	52.29	52.27	54.34	53.29	56.77	53.96
CLASS	1, 0, 99	6, 1, 86	0, 0, 99	0, 3, 96	0, 2, 96	0, 2, 96	0, 2, 96	0, 4, 93	0, 3, 90	0, 2, 97

SAMPLE	06027025	06027026	06027027	06027039	06029001	06029003	06029004	06029007	06029008	06029009
SIO2	0.74	0.69	1.39	0.32	4.75	6.03	6.78	2.42	0.0 B	0.0 B
AL2O3	0.70 C	0.56 C	1.13 C	0.10 P	0.76 C	1.40 C	1.56 C	0.82	0.0 B	0.0 B
FE2O3	0.0 B	0.0 B	0.0 B	0.10 K	0.0 B	0.0 B	0.0 B	0.06	0.08	0.28
MGO	21.70	20.75	20.66	0.42	44.20	42.78	42.80	21.06	1.17	1.58
CAO	31.73	31.79	31.48	55.40	0.0 T	1.56	1.81	28.89	53.62	53.53
NA2O	0.0 B	0.0 B	0.0 B	0.06	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.02	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.08	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.01	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.0 B	0.0	0.0 B	0.0 B	0.0 B	0.02	0.0 B	0.0 B
CO2	0.0 B	0.0 B	0.0 B	43.80	47.32	45.78	0.0 B	0.0 B	0.0 B	0.0 B
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	54.87	53.79	54.66	100.30 *	97.03	97.55	52.95	53.27	54.87	55.39
CLASS	0, 1, 95	0, 1, 97	0, 2, 95	0, 1, 99	3, 2, 91	4, 4, 88	4, 5, 90	1, 3, 96	0, 0, 98	0, 0, 99

SAMPLE	06029010	06029011	06029012	06029013	06029014	06029015	06029016	06029017	06029018	06029019
SIO2	0.0 B	0.0 B	0.04	0.06	0.06	0.07	0.08	0.10	0.10	0.12
AL2O3	0.0 B	0.0 B	0.04	0.05	0.06	0.06	0.07	0.06	0.08	0.10
FE2O3	0.0 B	0.0 B	0.04	0.02	0.02	0.03	0.03	0.04	0.05	0.04
MGO	0.45	1.30 I	1.48	1.21	1.87	0.83	1.54	1.51	0.97	1.04
CAO	54.00	52.40 I	54.00	54.24	53.40	54.69	53.80	51.15	54.44	54.45
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.02	0.0 T	0.02	0.01	0.03	0.01	0.01	0.01
CO2	0.0 B	42.50 I	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	54.45	96.20	55.62	55.58	55.43	55.69	55.55	52.87	55.65	55.76
CLASS	0, 0, 97	0, 0, 96	0, 0, 99	0, 0, 99	0, 0, 99	0, 0, 99	0, 0, 99	0, 0, 94	0, 0, 99	0, 0, 99

A INSOL.
B BLANK--NO VALUE REPT.
C AL2O3 + FE2O3.
D MGO + CAO.
E NA2O + K2O.
F H2O+.
G IGNITION LOSS (MAY INCLUDE WATER).
H REPORTED AS S.
I CALCULATED BY COMPILERS.
J ORGANIC MATTER.
K TOTAL IRON.
M BY DIFFERENCE.
N INCLUDES TIO2.
O GREATER THAN.
P LESS THAN.
T TRACE.
* ADDITIONAL INFORMATION IN DESCRIPTIVE NOTES.

TABLE 9. — *Analyses of samples from California and Hawaii containing more than 90 percent carbonate (Group F_2), common-rock category* — Continued

```
06019001  S15,T11S,R24E.  (556:236,PL37)  LIMESTONE.  INDEX MAP.  USE: 2,12.  CA/MG = 84.2.

06019003  PRE-CRETACEOUS.  S29,30,T7S,R26E.  (86:253,244,PL7)  LIMESTONE, GRAY, MED-GR, CRYS: MIN: B.D.,2.69.  INDEX & GEOL MAPS.
          CA/MG = 8.01.
06019004  PRE-CRETACEOUS.  S29,30,T7S,R26E.  (86:254,244,PL7)  DOLOMITE, WHITE, FINE- TO MED-GR, DENSE: MIN: B.D., 2.91.  INDEX &
          GEOL  MAPS.  CA/MG = 1.21.
06023001  DEVONIAN.  S18,19,T6N,R5E.  (27:518,517/ 556:239,PL37)  LIMESTONE.  INDEX MAP.  CA/MG >100.

06023002  JURASSIC & CRETACEOUS, FRANCISCAN FM.  S13,14,T5N,R1E.  (374:394,393/ 27:516)  LIMESTONE.  USE: 2,12.

06025001  S31,32,T13S,R9E.  (497:277/ 556:241,PL37)  LIMESTONE.  INDEX MAP.  CA/MG >100.

06025002  "T15,16S,R9,10E" COYOTE MTN.  (557:101,PL 16)  LIMESTONE, CRYS.  INDEX MAP.  CA/MG = 67.1.

06025003  S22,T15S,R9E -S1,T16S,R9E.  (559:736/ 556:240,PL37)  LIMESTONE, GRAY: TONNAGE.  INDEX MAP.  USE: 4.  CA/MG = 67.6.

06025004  S1,12,T14S,R9E.  (497:277)  LIMESTONE, GRAY, CRYS.  CA/MG >100.
06025005  "T15,16S,R9,10E" COYOTE MTNS.  (557:15,101,PL16)  LIMESTONE: CRYS.  INDEX MAP.  CA/MG = 72.4.

06025006  TERTIARY.  S22,T15S,R9E.  (497:277,276/ 556:240,PL37)  LIMESTONE, WHITE: TONNAGE.  GEOL MAP.  USE: 4.  CA/MG = 30.5.

06025007  TERTIARY.  S22,T15S,R9E.  (497:277,276/ 556:240,PL37)  LIMESTONE, BLUE: TONNAGE.  GEOL MAP.  USE: 4.  CA/MG = 36.5.

06025024  PALEOZOIC OR MESOZOIC.  "S22,T15S,R9E"  (230:5,3)  MAGNESIAN  LIMESTONE, CRYS: AVG OF 26 SMPL.  INDEX MAP.  USE: 4.
          CA/MG = 13.2
06027001  CAMBRIAN, INYO MARBLE.  "T17-19S,R36-38E" INYO MARBLE CO.  (145:359)  MARBLE: QUARRY SMPL.  CA/MG = 1.42.

06027002  "T17S,R37E" KEELER.  (535:77,81)  DOLOMITE.  CA/MG = 1.42.
06027003  CARBONIFEROUS.  "T17,18S,R41,42E" REVENUE CANYON.  (231:5)  LIMESTONE, GRAY, MED-GR, CRYS: SELECTED SMPL.  USE: 6,18.

06027004  "T17S,R37E" KEELER.  (535:77,81)  DOLOMITE.  CA/MG = 1.72.
06027005  PRECAMBRIAN, NOONDAY DOL.  T20N,R8E, NOPAH MTN.  (269:302,274,300)  ALGAL DOLOMITE, CREAM: 1,500 FT THICK.  INDEX MAPS.
          *MISC: MNO = 0.05.  CA/MG = 1.47.
06027006  "T19S,R36E" CARTAGO.  (428:15,8,10)  DOLOMITE.  USE: 15.  CA/MG=1.40.
06027007  "T19S,R36E" CARTAGO.  (428:11,10)  DOLOMITE.  USE: 15.  CA/MG = 1.33.
06027008  "T17S,R37E" KEELER.  (222:218)  DOLOMITE, WHITE.  USE: 15.  *MISC: SIO2 INCL IRON.  CA/MG = 1.43.

06027010  CAMBRIAN, PROSPECT MOUNTAIN QTZ.  T20N,R10E, HORSE SPRING.  (276:30,PL1)  DOLOMITE, GRAY, FINE-GR: BEDS 10 FT THICK.
          INDEX & GEOL MAPS, GEOL SEC.  *MISC: FEO= 3.25, MNO=1.03.  CA/MG=1.66.
06027017  "T9S,R34E"  (535:77)  DOLOMITE.  CA/MG = 1.30.
06027018  PRECAMBRIAN, REED DOL.  "T6S,R34E" HEAD OF WYMAN CREEK.  (269:302)  DOLOMITE.  *MISC: MNO = 0.12.  CA/MG = 1.48.

06027019  "T6S,R35,36E" WYMAN CREEK.  (535:77,81)  DOLOMITE.  CA/MG = 1.60.
06027020  "T6S,R35,36E" WYMAN CREEK.  (535:77,81)  DOLOMITE.  CA/MG = 1.57.
06027021  "T6S,R35,36E" WYMAN CREEK.  (535:77,81)  DOLOMITE.  CA/MG = 1.52.
06027022  "T6S,R35,36E" WYMAN CREEK.  (535:78,81)  DOLOMITE.  CA/MG = 1.61.
06027023  "T6S,R35,36E" WYMAN CREEK.  (535:78,81)  DOLOMITE.  CA/MG = 1.52.
06027024  "T6S,R35,36E" WYMAN CREEK.  (535:77,81)  DOLOMITE.  CA/MG = 1.64.
06027025  "T7S,R34E" MARBLE CANYON.  (535:77,81)  DOLOMITE.  CA/MG = 1.46.
06027026  "T7S,R34E" MARBLE CANYON.  (535:77,81)  DOLOMITE.  CA/MG = 1.53.
06027027  "T7S,R35E" ANTELOPE CREEK.  (535:77,81)  DOLOMITE.  CA/MG = 1.52.
06027039  MISSISSIPPIAN & PENNSYLVANIAN, LEE FLAT LS.  "S20,T19S,R42E"  (251:38,PL1,2)  LIMESTONE, GRAY TO WHITE, MED-GR: 750 FT
          THICK: COMPOS SMPL.  INDEX & GEOL MAPS, GEOL SEC.  *MISC: MNO = 0.00.  CA/MG >100.

06029001  MIOCENE.  S11,T10N,R11W.  (207:1118,1115/ 436:116,114-117)  MAGNESITE, WHITE: THIN-BEDS: TONNAGE.  INDEX & GEOL MAPS,
          MEAS SEC.
06029003  S11,T10N,R11W.  (207:1118,1115-1117/ 553:152)  MAGNESITE.  INDEX MAP, MEAS SEC.  CA/MG = 0.036.

06029004  MIOCENE.  S11,T10N,R11W.  (436:116,114-117)  MAGNESITE, WHITE, THIN BEDS: TONNAGE.  INDEX & GEOL MAPS, MEAS SEC.
          CA/MG = 0.042.
06029007  S34,T10N,R17W.  (229:216,232)  DOLOMITE, WHITE, FINE-GR, SUGARY: TONNAGE.  INDEX & GEOL MAPS.  CA/MG = 1.37.

06029008  "T9N,R20W" FRAZIER PARK.  (230:4,3)  LIMESTONE, WHITE TO GRAY, COARSELY CRYS: AVG OF 5 RANDOM SMPL: MIN.  INDEX MAP.
          USE: 4,15.  CA/MG = 45.8.
06029009  PALEOZOIC, BEAN CANYON FM.  "T11N,R14W" CREAL AREA.  (231:6)  LIMESTONE: AVG OF 13 SMPL.  USE: 4.  CA/MG = 33.9.

06029010  "T9N,R20W"  (230:4,3)  LIMESTONE, WHITE TO GRAY, COARSELY CRYS: MIN.  INDEX MAP.  USE: 4.  CA/MG >100.

06029011  S5-7,T10N,R14W.  (470:77)  LIMESTONE, GRAY, WHITE, BANDED, CA/MG=40.3.
06029012  PALEOZOIC, BEAN CANYON FM.  S5-7,T10N,R14W.  (229:216,215)  LIMESTONE, GRAY, WHITE, BANDED, CRYS: RANDOM SMPL.  INDEX &
          GEOL MAPS.  USE: 4.  CA/MG = 36.5.
06029013  PALEOZOIC.  S22,T9N,R18W.  (229:217,225)  LIMESTONE, GRAY, WHITE, MOTL, FINE TO COARSELY CRYS.  INDEX & GEOL MAPS.
          CA/MG = 44.8.
06029014  S21,27,28,34,35,T9N,R20W.  (229:216,215,235)  LIMESTONE, GRAY, WHITE, COARSELY CRYS: OUTCROP: RANDOM SMPL.  INDEX &
          GEOL MAPS.  USE: 4.  CA/MG = 28.6.
06029015  PALEOZOIC.  S22,T9N,R18W.  (229:217,224)  LIMESTONE, GRAY, WHITE, MOTL, FINE TO COARSELY CRYS.  INDEX & GEOL MAPS.
          CA/MG = 65.9.
06029016  S21,27,28,34,35,T9N,R20W.  (229:216,215,223)  LIMESTONE, GRAY, WHITE, COARSELY CRYS: OUTCROP: RANDOM SMPL.  INDEX & GEOL
          MAPS.  USE: 4.  CA/MG = 34.9.
06029017  PALEOZOIC, BEAN CANYON FM.  S5-7,T10N,R14W.  (229:216,233)  LIMESTONE, GRAY, WHITE, BANDED, CRYS: RANDOM SMPL.  INDEX &
          GEOL MAPS.  USE: 4.  CA/MG = 33.9.
06029018  PALEOZOIC.  S22,T9N,R18W.  (229:217,224)  LIMESTONE, WHITE, GRAY, MOTL, FINE TO COARSELY CRYS.  INDEX & GEOL MAPS.
          CA/MG = 56.1.
06029019  PALEOZOIC.  S22,T9N,R18W.  (229:217,224)  LIMESTONE, WHITE, GRAY, MOTL, FINE TO COARSELY CRYS.  INDEX & GEOL MAPS.
          CA/MG = 52.4.
```

TABLE 9. — *Analyses of samples from California and Hawaii containing more than 90 percent carbonate (Group F_2), common-rock category* — Continued

SAMPLE	06029020	06029021	06029022	06029023	06029024	06029025	06029026	06029027	06029028	06029029
SIO2	0.14	0.14 A	0.14	0.16	0.16	0.16	0.16 A	0.17	0.18	0.18
AL203	0.10	0.20 C	0.35	0.07	0.09	0.14	0.20 C	0.12	0.11	0.12
FE203	0.04	0.0 B	0.07	0.03	0.04	0.04	0.0 B	0.03	0.07	0.04
MGO	0.99	0.97	0.45	1.07	1.63	0.95	1.55	0.99	0.96	1.03
CAO	54.47	54.65	54.80	54.36	53.83	54.35	53.97	54.43	54.47	54.29
NA20	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K20	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H20	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H20-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P205	0.0 T	0.04	0.04	0.01	0.03	0.04	0.01	0.01	0.01	0.02
CO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	55.74	56.00	55.85	55.70	55.78	55.68	55.89	55.75	55.80	55.68
CLASS	0, 0, 99	0, 0,100	0, 0, 99	0, 0, 99	0, 0, 99	0, 0, 99	0, 0,100	0, 0, 99	0, 0, 99	0, 0, 99

SAMPLE	06029030	06029031	06029032	06029033	06029034	06029035	06029036	06029037	06029038	06029039
SIO2	0.18	0.19	0.20	0.20	0.20	0.22	0.24	0.26	0.26	0.26
AL203	0.16	0.13	0.12	0.12	0.14	0.15	0.11	0.17	0.20	0.21
FE203	0.35	0.06	0.03	0.04	0.04	0.03	0.07	0.07	0.06	0.05
MGO	12.42	0.97	1.31	1.65	1.56	1.91	1.14	1.91	1.01	1.45
CAO	41.14	54.49	54.07	53.58	53.77	53.27	54.24	53.20	54.28	53.68
NA20	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K20	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H20	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H20-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P205	0.0 T	0.01	0.01	0.02	0.0 T	0.0 T	0.01	0.0 T	0.01	0.02
CO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	54.25	55.85	55.74	55.61	55.71	55.58	55.81	55.61	55.82	55.67
CLASS	0, 0, 99	0, 0, 99	0, 0, 99	0, 0, 99	0, 0, 99	0, 0, 99	0, 0, 99	0, 0, 99	0, 0, 99	0, 0, 99

SAMPLE	06029040	06029041	06029042	06029043	06029044	06029045	06029046	06029047	06029048	06029049
SIO2	0.32	0.32 A	0.32 A	0.36	0.36	0.36 A	0.36	0.40	0.42	0.44
AL203	0.20	0.22 C	0.26 C	0.25	0.26	0.30 C	0.45	0.19	1.10	0.22
FE203	0.02	0.0 B	0.0 B	0.47	0.06	0.0 B	0.19	0.09	0.08	0.08
MGO	0.95	1.92	0.98	21.62	0.83	5.40	1.85	1.71	19.66	0.80
CAO	54.34	53.20	54.59	29.49	54.45	49.31	52.90	53.44	32.50	54.45
NA20	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K20	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H20	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H20-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P205	0.03	0.01	0.02	0.01	0.01	0.02	0.0 T	0.0 T	0.0	0.0 T
CO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	55.86	55.67	56.17	52.20	55.97	55.39	55.75	55.83	53.76	55.99
CLASS	0, 1, 99	0, 1, 99	0, 1, 99	0, 1, 98	0, 1, 99	0, 1, 99	0, 1, 98	0, 1, 99	0, 1, 97	0, 1, 99

SAMPLE	06029050	06029051	06029052	06029053	06029054	06029055	06029056	06029057	06029058	06029059
SIO2	0.44 A	0.46	0.48	0.48	0.49	0.50 A	0.52 A	0.64 A	0.80 A	1.06
AL203	0.22 C	0.20	0.28	0.30	0.26	0.28 C	0.14 C	0.16 C	0.28 C	0.55
FE203	0.0 B	0.06	0.08	0.11	0.06	0.0 B	0.0 B	0.0 B	0.0 B	0.13
MGO	2.06	1.33	0.88	1.34	0.98	0.01	0.93	1.01	0.94	1.20
CAO	53.23	53.79	54.27	53.69	54.26	54.38	54.32	54.37	54.25	53.38
NA20	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K20	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H20	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H20-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P205	0.03	0.01	0.02	0.01	0.01	0.03	0.01	0.03	0.03	0.02
CO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	55.98	55.85	56.01	55.93	56.06	55.20	55.92	56.21	56.30	56.34
CLASS	0, 1, 99	0, 1, 99	0, 1, 99	0, 1, 99	0, 1, 99	0, 1, 97	0, 0, 99	0, 0, 99	0, 1, 99	0, 2, 98

SAMPLE	06029060	06029061	06029062	06029063	06029064	06029065	06029066	06029067
SIO2	1.40	1.44 A	2.60	2.64	3.90	4.00	4.99	5.15
AL203	0.84	0.48 C	0.57	1.09	1.33	1.72	2.55 C	1.69 C
FE203	0.10	0.0 B	0.15	0.17	0.11	0.62	0.0 B	0.0 B
MGO	0.78	1.10	0.83	2.22	0.76	8.20	41.30	42.95
CAO	53.27	53.60	52.74	50.66	51.65	42.16	2.73	0.69
NA20	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K20	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H20	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H20-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P205	0.06	0.03	0.03	0.04	0.08	0.0 T	0.0 B	0.0 B
CO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	56.45	56.65	56.92	56.82	57.83	56.70	51.57	50.48
CLASS	0, 2, 97	1, 1, 98	1, 2, 96	1, 4, 95	1, 4, 94	0, 7, 92	1, 7, 91	2, 5, 91

A INSOL.
B BLANK--NO VALUE REPT.
C AL203 + FE203.
D MGO + CAO.
F NA2D + K20.

F H20+.
G IGNITION LOSS (MAY INCLUDE WATER).
H REPORTED AS S.
I CALCULATED BY COMPILERS.

J ORGANIC MATTER.
K TOTAL IRON.
M BY DIFFERENCE.
N INCLUDES TIO2.
O GREATER THAN.

P LESS THAN.
T TRACE.
* ADDITIONAL INFORMATION IN DESCRIPTIVE NOTES.

TABLE 9. — *Analyses of samples from California and Hawaii containing more than 90 percent carbonate (Group F_2), common-rock category* — Continued

06029020 PALEOZOIC. S22,T9N,R18W. (229:217,224) LIMESTONE, WHITE, GRAY, MOTL, FINE TO COARSELY CRYS. INDEX & GEOL MAPS. CA/MG = 55.0.
06029021 PALEOZOIC, BEAN CANYON FM. S27,T11N,R14W. (229:216,221) LIMESTONE: BEDS 2-20 FT THICK. INDEX & GEOL MAPS. USE: 4. CA/MG = 56.3.
06029022 S21,27,28,34,35,T9N,R20W. (229:216,223,235) LIMESTONE, WHITE, GRAY, COARSELY CRYS: RANDOM SMPL: OUTCROP. USE: 4. CA/MG >100.
06029023 PALEOZOIC. S22,T9N,R18W. (229:217,224) LIMESTONE, GRAY, WHITE, MOTL, FINE TO COARSELY CRYS. INDEX & GEOL MAPS. CA/MG = 50.8.
06029024 PRE-CRETACEOUS. S26,T9N,R20W. (229:216,223) LIMESTONE, WHITE, COARSELY CRYS. INDFX & GEOL MAPS. USE:4. CA/MG=33.0.
06029025 PALEOZOIC. S26,T9N,R18W. (229:217,224) LIMESTONE, GRAY, WHITE, MOTL, FINE TO COARSELY CRYS: RANDOM SMPL. INDEX & GEOL MAPS. CA/MG = 57.2.
06029026 PALEOZOIC, BEAN CANYON FM. S27,T11N,R14W. (229:216,221) LIMESTONE: BEDS 2-20 FT THICK. INDEX & GEOL MAPS. USE: 4. CA/MG = 34.8.
06029027 PALEOZOIC. S27,T9N,R18W. (229:217,224) LIMESTONE, GRAY, WHITE, MOTL, FINE TO COARSELY CRYS: RANDOM SMPL. INDEX & GEOL MAPS. CA/MG = 55.0.
06029028 PALEOZOIC. S22,T9N,R18W. (229:217,224) LIMESTONE, WHITE, GRAY, MOTL, FINE TO COARSELY CRYS. INDEX & GEOL MAPS. CA/MG = 56.7.
06029029 PALEOZOIC. S22,T9N,R18W. (229:217,224) LIMESTONE, GRAY, WHITE, MOTL, FINE TO COARSELY CRYS. INDEX & GEOL MAPS. CA/MG = 52.7.
06029030 PALEOZOIC. S22,T9N,R18W. (229:217,224) LIMESTONE, GRAY, WHITE, MOTL, FINE TO COARSELY CRYS. INDEX & GEOL MAPS. CA/MG = 3.31.
06029031 PALEOZOIC. S22,T9N,R18W. (229:217,224) LIMESTONE, GRAY, WHITE, MOTL, FINE TO COARSELY CRYS. INDEX & GEOL MAPS. CA/MG = 56.2.
06029032 PALEOZOIC. S22,T9N,R18W. (229:217,224) LIMESTONE, GRAY, WHITE, MOTL, FINE TO COARSELY CRYS. INDEX & GEOL MAPS. CA/MG = 41.3.
06029033 PALEOZOIC. S22,T9N,R18W. (229:217,224) LIMESTONE, GRAY, WHITE, MOTL, FINE TO COARSELY CRYS. INDEX & GEOL MAPS. CA/MG = 32.5.
06029034 PALEOZOIC. S27,T9N,R18W. (229:217,224) LIMESTONE, GRAY, WHITE, MOTL, FINE TO COARSELY CRYS: RANDOM SMPL. INDEX & GEOL MAPS. CA/MG = 34.5.
06029035 PALEOZOIC. S22,T9N,R18W. (229:217,214) LIMESTONE, GRAY, WHITE, MOTL, FINE TO COARSELY CRYS. INDEX & GEOL MAPS. CA/MG = 27.9.
06029036 PALEOZOIC. S22,T9N,R18W. (229:217,224) LIMESTONE, GRAY, WHITE, MOTL, FINE TO COARSELY CRYS. INDEX & GEOL MAPS. CA/MG = 47.6.
06029037 PALEOZOIC, BEAN CANYON FM. S26,T11N,R14W. (229:216,221) LIMESTONE. INDEX & GEOL MAPS. USE: 4. CA/MG = 27.9.
06029038 PALEOZOIC(?) S26,T9N,R18W. (229:217,224) LIMESTONE, GRAY, WHITE, MOTL, FINE TO COARSELY CRYS: RANDOM SMPL. INDEX & GEOL MAPS. CA/MG = 53.7.
06029039 PALEOZOIC. S26,T9N,R18W. (229:217,224) LIMESTONE, GRAY, WHITE, MOTL, FINE TO COARSELY CRYS: RANDOM SMPL. INDEX & GEOL MAPS. CA/MG = 37.0.
06029040 PALEOZOIC. S22,23,26,27,T9N,R18W. (229:217,224) LIMESTONE, GRAY, WHITE, MOTL, FINE TO COARSELY CRYS: RANDOM SMPL. INDEX & GEOL MAPS. CA/MG = 57.2.
06029041 PALEOZOIC, BEAN CANYON FM. S27,T11N,R14W. (229:216,221) LIMESTONE: BEDS 2-20 FT THICK. INDEX & GEOL MAPS. USE: 4. CA/MG = 27.7.
06029042 PALEOZOIC, BEAN CANYON FM. S27,T11N,R14W. (229:216,221) LIMESTONE: BEDS 2-20 FT THICK. INDEX & GEOL MAPS. USE: 4. CA/MG = 55.7.
06029043 PRE-CRETACEOUS. S25,T9N,R20W. (229:216,223,232) DOLOMITE, WHITE, COARSELY CRYS, BRECCIATED. INDEX & GEOL MAPS. USE: 2. CA/MG = 1.36.
06029044 PALEOZOIC. S22,T9N,R18W. (229:217,224) LIMESTONE, GRAY, WHITE, MOTL, FINE TO COARSELY CRYS. INDEX & GEOL MAPS. CA/MG = 65.6.
06029045 PALEOZOIC, BEAN CANYON FM. S27,T11N,R14W. (229:216,221) LIMESTONE: BEDS 2-20 FT THICK. INDEX & GEOL MAPS. USE: 4. CA/MG = 9.13.
06029046 PALEOZOIC, BEAN CANYON FM. S26,T11N,R14W. (229:216,221) LIMESTONE. INDEX & GEOL MAPS. USE: 4. CA/MG = 28.6.
06029047 PALEOZOIC. S22,T9N,R18W. (229:217,224) LIMESTONE, GRAY, WHITE, MOTL, FINE TO COARSELY CRYS. INDEX & GEOL MAPS. CA/MG = 31.3.
06029048 PRE-CRETACEOUS. S31,T10N,R16W. (229:216,236) DOLOMITE, WHITE, MED-GR, SUGARY, MASSIVE: QUARRY RANDOM SMPL: MIN. INDEX & GEOL MAPS. USE: 7. CA/MG = 1.65.
06029049 PALEOZOIC. S22,T9N,R18W. (229:217,224) LIMESTONE, GRAY, WHITE, MOTL, FINE TO COARSELY CRYS. INDEX & GEOL MAPS. CA/MG = 68.1.
06029050 PALEOZOIC, BEAN CANYON FM. S27,T11N,R14W. (229:216,221) LIMESTONE: BEDS 2-20 FT THICK. INDEX & GEOL MAPS. USE: 4. CA/MG = 25.8.
06029051 PALEOZOIC. S22,T9N,R18W. (229:217,224) LIMESTONE, GRAY, WHITE, MOTL, FINE TO COARSELY CRYS. INDEX & GEOL MAPS. CA/MG = 40.4.
06029052 PALEOZOIC. S22,T9N,R18W. (229:217,224) LIMESTONE, GRAY, WHITE, MOTL, FINE TO COARSELY CRYS. INDEX & GEOL MAPS. CA/MG = 61.7.
06029053 PALEOZOIC. S22,T9N,R18W. (229:217,224) LIMESTONE, GRAY, WHITE, MOTL, FINE TO COARSELY CRYS. INDEX & GEOL MAPS. CA/MG = 40.1.
06029054 PALEOZOIC. S22,T9N,R18W. (229:217,224) LIMESTONE, GRAY, WHITE, MOTL, FINE TO COARSELY CRYS. INDEX & GEOL MAPS. CA/MG = 55.4.
06029055 PALEOZOIC, BEAN CANYON FM. S27,T11N,R14W. (229:216,221) LIMESTONE: BEDS 2-20 FT THICK. INDEX & GEOL MAPS. USE: 4. CA/MG >100.
06029056 PALEOZOIC, BEAN CANYON FM. S27,T11N,R14W. (229:216,221) LIMESTONE: BEDS 2-20 FT THICK. INDEX & GEOL MAPS. USE: 4 CA/MG = 58.4.
06029057 PALEOZOIC, BEAN CANYON FM. S27,T11N,R14W. (229:216,221) LIMESTONE: BEDS 2-20 FT THICK. INDEX & GEOL MAPS. USE: 4. CA/MG = 53.8.
06029058 PALEOZOIC, BEAN CANYON FM. S27,T11N,R14W. (229:216,221) LIMESTONE: BEDS 2-20 FT THICK. INDEX & GEOL MAPS. USE: 4. CA/MG = 57.7.
06029059 S21,27,28,34,35,T9N,R20W. (229:216,223,235) LIMESTONE, GRAY, WHITE, COARSELY CRYS: OUTCROP: RANDOM SMPL. INDEX & GEOL MAPS. USE: 4. CA/MG = 44.5.
06029060 PALEOZOIC. S22,T9N,R18W. (229:217,224) LIMESTONE, GRAY, WHITE, MOTL, FINE TO COARSELY CRYS. INDEX & GEOL MAPS. CA/MG = 68.3.
06029061 PALEOZOIC, BEAN CANYON FM. S27,T11N,R14W. (229:216,221) LIMESTONE: BEDS 2-20 FT THICK. INDEX & GEOL MAPS. USE: 4. CA/MG = 48.7.
06029062 S21,T9N,R29E. (229:216,215,235,PL1,2) LIMESTONE, WHITE, GRAY, COARSELY CRYS: OUTCROP SMPL. INDEX & GEOL MAP. USE:4. CA/MG = 63.5.
06029063 PALEOZOIC. S22,T9N,R18W. (229:217,224,225,PL1,2) LIMESTONE, FINE- TO COARSE-GR, CRYS. INDEX & GEOL MAPS. CA/MG=22.8.
06029064 PALEOZOIC. S22,T9N,R18W. (229:217,224,225,PL1,2) LIMESTONE, FINE- TO COARSE-GR, CRYS. INDEX & GEOL MAPS. CA/MG=68.0.
06029065 PALEOZOIC. S22,T9N,R18W. (229:217,224,225,PL1,2) LIMESTONE, FINE- TO COARSE-GR, CRYS. INDEX & GEOL MAPS. CA/MG=5.14.
06029066 MIOCENE. S11,T10N,R11W. (436:116,114-117) MAGNESITE, WHITE, THIN BEDS: TONNAGE. INDEX & GEOL MAPS, MEAS SEC. CA/MG = 0.066.
06029067 MIOCENE. S11,T10N,R11W. (436:116,114-117) MAGNESITE, WHITE, THIN BEDS: TONNAGE. INDEX & GEOL MAPS, MEAS SEC. CA/MG = 0.016.

TABLE 9. — *Analyses of samples from California and Hawaii containing more than 90 percent carbonate (Group F_2), common-rock category* — Continued

SAMPLE	06029068	06029069	06029070	06029101	06029111	06033001	06037001	06037002	06037003	06037004
SIO2	5.91	7.05	7.64	5.70 A	0.60	0.44	0.0 B	0.0 B	0.70 A	2.80 A
AL203	2.92 C	1.35 C	1.42 C	0.0 B	0.0 B	0.41	0.0 B	0.0 B	0.0 B	0.0 B
FE203	0.0 B	0.0 B	0.0 B	0.0 B	0.08	1.62	0.0 B	0.0 B	0.0 B	0.0 B
MGO	41.80	42.42	42.74	19.20	1.75	43.69 I	4.00	17.20	20.30	0.40
CAO	1.07	2.19	1.69	28.80	53.17	2.95 I	49.30	32.75	38.70	54.10
NA20	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K20	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H20	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H20-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P205	0.0 B	0.0 B	0.0 B	0.06	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	0.0 B	0.0 B	0.0 B	43.63	0.0 B	50.03 I	0.0 B	0.0 B	40.50	42.00
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	51.70	53.01	53.49	97.69 *	55.60	99.14	53.30	49.95	100.20	99.30
CLASS	1, 9, 89	5, 4, 90	5, 4, 89	6, 0, 92	1, 0, 99	0, 1, 97	0, 0, 96	0, 0, 94	1, 0, 86	3, 0, 95

SAMPLE	06037005	06037006	06037007	06037032	06037036	06037037	06041001	06041002	06041003	06041004
SIO2	3.56	3.63 A	9.20 A	0.30 A	6.50 A	8.60 A	0.0 B	1.10 A	1.10	1.30
AL203	0.94	0.74	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.68 C	0.30 C
FE203	1.86 K	0.57	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.35	0.0 B	0.0 B
MGO	2.13	2.26	13.90	16.80	17.60	16.10	0.0 B	0.76 I	0.0 T	1.25
CAO	50.66	49.21	36.50	36.70	30.90	31.00	55.00 I	54.62 I	54.80	54.32
NA20	0.0 B	0.44 E	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K20	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H20	0.0 B	2.89 F	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H20-	0.0 B	0.17	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P205	0.0 B	0.73	0.0 B	0.0 B	0.57	0.19	0.0 B	0.0 B	0.0 B	0.0 B
CO2	40.55 G	39.23	40.00	46.40	42.60	41.85	43.00 I	43.72 I	43.20	42.68
SO3	0.0 T	0.13	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.70	100.00	99.60	100.20	98.24 *	97.83 *	98.00	100.55	99.78	99.85
CLASS	0, 7, 90	2, 6, 88	9, 0, 86	0, 0, 99	7, 0, 90	9, 0, 89	0, 0, 98	1, 1, 99	0, 2, 98	1, 1, 97

SAMPLE	06041005	06041006	06041007	06041008	06043001	06043002	06043003	06045001	06045002	06045003
SIO2	1.66	1.90	2.26	2.30	0.20	0.28	1.18	5.56 A	3.20 A	2.40
AL203	0.44	0.76	0.55	0.76 C	0.36 C	0.60 C	1.02 C	0.69 C	0.24 C	0.42
FE203	0.20	0.20	0.25	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	2.60
MGO	0.36 I	0.16 I	0.53 I	0.35	0.0 B	0.0 B	0.0 B	0.19 I	0.72 I	0.0
CAO	54.12 I	54.19 I	53.49 I	53.80	54.60	54.10	53.40	52.19 I	53.20 I	50.00
NA20	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.14
K20	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.08
H20	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.65 F
H20-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.34
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.02
P205	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.12
CO2	42.87 I	42.72 I	42.56 I	42.70	44.48 G	44.22 G	43.92 G	41.17 I	42.56 I	41.50
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.65	99.93	99.64	99.91	99.64	99.20	99.52	99.80	99.92	98.86 *
CLASS	1, 2, 97	0, 3, 97	1, 2, 97	1, 2, 97	0, 2, 97	0, 2, 97	0, 4, 95	4, 2, 94	3, 1, 96	0, 5, 92

SAMPLE	06053001	06053002	06053003	06053004	06053005	06053006	06053007	06053008	06053009	06053010
SIO2	0.0 B	0.0 B	0.13	0.14	0.16	0.17	0.18	0.18	0.20	0.21
AL203	0.78	1.20	0.04	0.17	0.13	0.04	0.06	0.12	0.08	0.05
FE203	0.16 K	0.15 K	0.04	0.13	0.11	0.02	0.05	0.08	0.06	0.05
MGO	1.04	0.41	0.14	0.46	1.06	0.26	0.59	1.12	0.18	0.49
CAO	54.60	56.40	55.69	55.52	54.39	55.52	55.08	54.29	55.58	55.21
NA20	0.0 B	0.0 B	0.0 B	0.04	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K20	0.0 B	0.0 B	0.0 B	0.01	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H20	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H20-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P205	0.10	0.16	0.01	0.0 B	0.0 T	0.04	0.03	0.0 T	0.02	0.05
CO2	43.40	42.90	0.0 B	43.60 G	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	100.08	101.22	56.05	100.07	55.85	56.05	55.99	55.79	56.12	56.06
CLASS	0, 0, 98	0, 0, 97	0, 0,100	0, 0, 99	0, 0, 99	0, 0,100	0, 0,100	0, 0, 99	0, 0,100	0, 0,100

SAMPLE	06053011	06053012	06053013	06053014	06053015	06053016	06053017	06053018
SIO2	0.22	0.24	0.24	0.27	0.31	0.32	0.32	0.42
AL203	0.07	0.10	0.13	0.08	0.08	0.07	0.21	0.08
FE203	0.02	0.20	0.09	0.02	0.08	0.06	0.09	0.08
MGO	0.39	0.41	0.99	0.07	0.14	2.80	1.66	1.53
CAO	55.35	55.42	54.38	55.70	55.56	52.36	53.53	53.94
NA20	0.0 B	0.04	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.01
K20	0.0 B	0.03	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.01
H20	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H20-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P205	0.03	0.0 B	0.0 T	0.02	0.03	0.05	0.03	0.0 B
CO2	0.0 B	43.72 G	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	43.62 G
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	56.08	100.16	55.83	56.16	56.20	55.66	55.84	99.69
CLASS	0, 0,100	0, 0, 99	0, 0, 99	0, 0,100	0, 0, 99	0, 0, 99	0, 1, 99	0, 0, 99

A INSOL.
B BLANK--NO VALUE REPT.
C AL203 + FE203.
O MGO + CAO.
E NA20 + K20.
F H20+.
G IGNITION LOSS (MAY INCLUDE WATER).
H REPORTED AS S.
I CALCULATED BY COMPILERS.
J ORGANIC MATTER.
K TOTAL IRON.
M BY DIFFERENCE.
N INCLUDES TIO2.
O GREATER THAN.
P LESS THAN.
T TRACE.
* ADDITIONAL INFORMATION IN DESCRIPTIVE NOTES.

TABLE 9. — *Analyses of samples from California and Hawaii containing more than 90 percent carbonate (Group F_2), common-rock category* — Continued

06029068 MIOCENE. S11,T10N,R11W. (436:116,114-117) MAGNESITE, WHITE, THIN BEDS: TONNAGE. INDEX & GEOL MAPS, MEAS SEC. CA/MG = 0.026.
06029069 MIOCENE. S11,T10N,R11W. (436:116,114-117) MAGNESITE, WHITE, THIN BEDS: TONNAGE. INDEX & GEOL MAPS, MEAS SEC. CA/MG = 0.052.
06029070 MIOCENE. S11,T10N,R11W. (436:116,114-117) MAGNESITE, WHITE, THIN BEDS: TONNAGE. INDEX & GEOL MAPS, MEAS SEC. CA/MG = 0.040.
06029101 MIOCENE: MONTEREY FM, CHICO MARTINEZ CHERT MBR. "T28S,R20E" CHICO MARTINEZ CREEK. (386:C6) DOLOMITE. *MISC: FEO = 0.21, MNO = 0.04, SRO = 0.054. CA/MG = 1.50.
06029111 "T9N,R18W" EAST OF LEBEC. (231:5) LIMESTONE, TAKEN ACROSS WIDTH OF 1,000 FT. USE: 4. CA/MG = 30.4.

06033001 S12,T14N,R7W. (28:21,PL7) MAGNESITE. INDEX MAP. CA/MG = 0.068.
06037001 PRE-CRETACEOUS, PLACERITA FM. S28,T3N,R14W. (445:203/ 404:219,244,249) DOLOMITIC LIMESTONE, WHITE, CRYS. INDEX & GEOL MAP, GEOL SEC. CA/MG = 12.3.
06037002 PRE-CRETACEOUS, PLACERITA FM. S28,T3N,R14W. (445:203,174/ 404:219,249) DOLOMITE: QUARRY SMPL 20 FT THICK. INDEX & GEOL MAP, GEOL SEC. CA/MG = 1.90.
06037003 PRE-CRETACEOUS, PLACERITA FM. "S3-6,T3N,R15W" (404:221,218-220) DOLOMITE, WHITE, CRYS: MIN. INDEX MAP. CA/MG= 1.91.

06037004 PRE-CRETACEOUS, PLACERITA FM. S3-6,T3N,R15W. (404:221,218-220) LIMESTONE, WHITE, CRYS: MIN. INDEX MAP. CA/MG >100.

06037005 PALEOCENE, MARTINEZ FM. "T1S,R17W" CASTELLAMARE. (293:134,133,PL16) LIMESTONE, AGAL: COMPOS SMPL OF 96 FT: TONNAGE. USE: 4. CA/MG = 23.8.
06037006 PLIOCENE. "T4S,R14W" LOMITA. (499:328/ 556:249,PL37) LIMESTONE, FOS: 30 FT THICK. INDEX MAP. USE:2,7. CA/MG=21.3.

06037007 PRE-CRETACEOUS, PLACERITA FM. S3-6,T3N,R15W. (404:221,218-220) DOLOMITE, WHITE, CRYS: TYPICAL SMPL: MIN. INDEX MAP. CA/MG = 2.63.
06037032 PRE-CRETACEOUS, PLACERITA FM. S3-6,T3N,R15W. (404:221,218-220) DOLOMITE, WHITE, CRYS: MIN. INDEX MAP. CA/MG = 2.18.

06037036 MIOCENE, MONTEREY SH, ALTAMIRA SH MBR. "T4S,R14W" PALOS VERDES HILLS. (386:C6) DOLOMITE. *MISC: FEO=0.07, MNO =0.00. CA/MG = 1.76.
06037037 MIOCENE, MONTEREY SH. SAN CLEMENTE ISLAND. (386:C6) DOLOMITE. *MISC: FEO = 0.05, MNO = 0.04. CA/MG = 1.93.

06041001 PALEOZOIC. "T3N,R9W" POINT REYES STATION. (531:16,89,PL9,10,19) LIMESTONE: MIN. INDEX & GEOL MAPS, GEOL SEC. USE:18.

06041002 PALEOZOIC. "T2N,R10W" POINT REYES STATION. (14:131,133,PL4) LIMESTONE, WHITE, CRYS. INDEX & GEOL MAP. USE: 18. CA/MG = 71.9.
06041003 JURASSIC & CRETACEOUS, FRANCISCAN FM. "T3N,R8W" OLEMA. (175:358,356) LIMESTONE: 50-100 FT THICK: TONNAGE. USE: 18.

06041004 PRE-FRANCISCAN, GABILAN LS. "T3N,R9W" INVERNESS PARK. (175:353/ 521:260,259,PL4) LIMESTONE, WHITE, COARSELY CRYS. INDEX & GEOL MAP. CA/MG = 43.5.
06041005 PRE-FRANCISCAN, GABILAN LS. "T3N,R9W" TOMALES BAY. (175:353/ 531:89,16,PL9,10,19) LIMESTONE, WHITE TO BROWN, CRYS: QUARRY SMPL: MIN. INDEX & GEOL MAPS, GEOL SEC. USE:18. CA/MG >100.
06041006 JURASSIC & CRETACEOUS, FRANCISCAN FM. "T2N,R8W" OLEMA. (175:358,356) LIMESTONE: 50-100 FT THICK: TONNAGE. USE: 18. CA/MG >100.
06041007 PRE-FRANCISCAN, GABILAN LS. "T3N,R9W" TOMALES BAY. (175:353/ 531:89,16,PL9,10,19) LIMESTONE, WHITE TO BROWN, CRYS: MIN. INDEX & GEOL MAPS, GEOL SEC. USE: 18. CA/MG >100.
06041008 PRE-FRANCISCAN, GABILAN LS. "T3N,R9W" TOMALES BAY. (175:353/ 531:89,16,PL9,10,19) LIMESTONE, WHITE TO BROWN, CRYS: MIN. INDEX & GEOL MAPS, GEOL SEC. USE: 18. CA/MG >100.
06043001 S11,T4S,R18E. (556:253,PL37/ 53:211,PL4) LIMESTONE, MOTL: TONNAGE. INDEX MAP.

06043002 S11,T4S,R18E. (556:253,PL37/ 53:211,PL4) LIMESTONE, WHITE: TONNAGE. INDEX MAP.

06043003 S11,T4S,R18E. (556:253,PL37/ 53:211,PL4) LIMESTONE, BLACK: TONNAGE. INDEX MAP.

06045001 JURASSIC & CRETACEOUS, FRANCISCAN FM. S36,T22N,R15W. (556:254,253,PL37/ 406:361,383,PL10A) LIMESTONE, PINK TO GRAY. INDEX MAP. CA/MG >100.
06045002 JURASSIC & CRETACEOUS, FRANCISCAN FM. S26,T17N,R13W. (556:254,PL37/ 406:361,351,PL10B) TRAVERTINE: 6-8 FT THICK. INDEX MAP. USE: 2. CA/MG = 73.9.
06045003 JURASSIC & CRETACEOUS, FRANCISCAN FM. "T11N,R13W" ROCK PILE PEAK. (29:76,11,69,74,PL1) LIMESTONE, RED. INDEX & GEOL MAPS. *MISC: FEO = 0.00, MNO = 0.59.
06053001 PRE-FRANCISCAN, SUR SERIES. S22,T20S,R3E. (420:B40,B8,PL1,2) MARBLE, WHITE, FINE TO COARSELY CRYS. INDEX & GEOL MAP. CA/MG = 52.5.
06053002 PRE-FRANCISCAN, SUR SERIES. S22,T20S,R3E. (420:B40,B8,PL1,2) MARBLE, WHITE, FINE TO COARSELY CRYS. INDEX & GEOL MAP. CA/MG >100.
06053003 PRE-FRANCISCAN, SUR SER. S36,T18S,R1E. (265:65,5,64,PL1) LIMESTONE, WHITE, COARSELY CRYS: MIN: TONNAGE. INDEX & GEOL MAPS, GEOL SEC. USE: 6,12. CA/MG >100.
06053004 PRE-FRANCISCAN, SUR SER. S35,T13S,R4E. (54:31,11,PL1) LIMESTONE, GRAY, MED TO COARSELY CRYS, TONNAGE. INDEX & GEOL MAPS, GEOL SEC. CA/MG >100.
06053005 PRE-FRANCISCAN, SUR SER. S17,18,20,T18S,R4E. (265:67,5,66,PL1) LIMESTONE, GRAY, MED TO COARSELY CRYS. INDEX & GEOL MAPS. USE: 19. CA/MG = 51.3.
06053006 PRE-FRANCISCAN, SUR SER. S36,T18S,R1E. (265:65,5,64,PL1) LIMESTONE, WHITE, COARSELY CRYS: MIN: TONNAGE. INDEX & GEOL MAPS, GEOL SEC. USE: 6,12. CA/MG >100.
06053007 PRE-FRANCISCAN, SUR SER. S36,T18S,R1E. (265:65,5,64,PL1) LIMESTONE, WHITE, COARSELY CRYS: MIN: TONNAGE. INDEX & GEOL MAPS, GEOL SEC. USE: 6,12. CA/MG = 93.4.
06053008 PRE-FRANCISCAN, SUR SER. S17,18,20,T18S,R4E. (265:67,5,66,PL1) LIMESTONE, GRAY, MED TO COARSELY CRYS. INDEX & GEOL MAPS. USE: 19. CA/MG = 48.5.
06053009 PRE-FRANCISCAN, SUR SER. S36,T18S,R1E. (265:65,5,64,PL1) LIMESTONE, WHITE, COARSELY CRYS: MIN: TONNAGE. INDEX & GEOL MAPS, GEOL SEC. USE: 6,12. CA/MG >100.
06053010 PRE-FRANCISCAN, SUR SER. S36,T18S,R1E. (265:65,5,64,PL1) LIMESTONE, WHITE, COARSELY CRYS: MIN: TONNAGE. INDEX & GEOL MAPS, GEOL SEC. USE: 6,12. CA/MG >100.
06053011 PRE-FRANCISCAN, SUR SER. S25,T18S,R1E. (265:65,5,64,PL1) LIMESTONE, WHITE, COARSELY CRYS: MIN: TONNAGE. INDEX & GEOL MAPS, GEOL SEC. USE: 6,12. CA/MG >100.
06053012 PRE-FRANCISCAN, SUR SER. S35,T13S,R4E. (54:31,11,PL1) LIMESTONE: TONNAGE. INDEX & GEOL MAPS, GEOL SEC. CA/MG >100.

06053013 PRE-FRANCISCAN, SUR SER. S17,18,20,T18S,R4E. (265:67,5,66,PL1) LIMESTONE, GRAY, MED TO COARSELY CRYS. INDEX & GEOL MAPS. USE: 19. CA/MG = 54.9.
06053014 PRE-FRANCISCAN, SUR SER. S36,T18S,R1E. (265:65,5,64,PL1) LIMESTONE, WHITE, COARSELY CRYS: MIN: TONNAGE. INDEX & GEOL MAPS, GEOL SEC. USE: 6,12. CA/MG >100.
06053015 PRE-FRANCISCAN, SUR SER. S36,T18S,R1E. (265:65,5,64,PL1) LIMESTONE, WHITE, COARSELY CRYS: MIN: TONNAGE. INDEX & GEOL MAPS, GEOL SEC. USE: 6,12. CA/MG >100.
06053016 PRE-FRANCISCAN, SUR SER. S36,T18S,R1E. (265:65,5,64,PL1) LIMESTONE, WHITE, COARSELY CRYS: MIN: TONNAGE. INDEX & GEOL MAPS, GEOL SEC. USE: 6,12. CA/MG = 18.7.
06053017 PRE-FRANCISCAN, SUR SER. S28,T16S,R4E. (265:67,5,PL1) LIMESTONE, CRYS. INDEX & GEOL MAPS. USE: 19. CA/MG = 32.2.

06053018 PRE-FRANCISCAN, SUR SER. S35,T13S,R4E. (54:31,11,PL1) LIMESTONE, GRAY, MED TO COARSELY CRYS, TONNAGE. INDEX & GEOL MAPS, GEOL SEC. CA/MG = 35.3.

TABLE 9. — *Analyses of samples from California and Hawaii containing more than 90 percent carbonate (Group F_2), common-rock category* — Continued

SAMPLE	06053019	06053020	06053021	06053022	06053023	06053024	06053025	06053026	06053027	06053028
SIO2	0.42	0.44	0.47	0.50	0.52	0.54	0.55	0.56	0.58	0.62
AL2O3	0.0 B	0.11	0.10	0.12	0.06	0.30	0.14	0.30	0.10	0.13
FE2O3	2.40	0.03	0.16	0.07	0.05	0.06	0.13	0.08	0.05	0.02
MGO	17.00	1.08	15.89	0.24	0.43	2.07	0.83	1.02	1.43	0.37
CAO	36.25	54.31	36.88	55.30	55.09	52.81	54.54	54.13	53.81	55.00
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.19	0.02	0.04	0.07	0.02	0.01	0.04	0.20	0.05
CO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	56.07	56.16	53.52	56.27	56.22	55.80	56.20	56.13	56.17	56.19
CLASS	0, 1, 93	0, 0, 99	0, 1, 99	0, 1, 99	0, 0, 99	0, 1, 99	0, 1, 99	0, 1, 99	0, 0, 99	0, 0, 99

SAMPLE	06053029	06053030	06053031	06053032	06053033	06053034	06053035	06053036	06053037	06053038
SIO2	0.66	0.66	0.67	0.68	0.69	0.69	0.70	0.70	0.70	0.72
AL2O3	0.14	0.21	0.16	0.30	0.17	0.18	0.14	0.16	0.20	0.15
FE2O3	0.06	0.05	0.06	0.57 I	0.04	0.05	0.08	0.08	0.05	0.07
MGO	2.77	0.52	4.33	20.67	0.48	0.23	0.33	0.64	0.48	1.19
CAO	52.13	54.78	50.35	33.00	54.92	55.12	55.04	54.71	54.82	53.96
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.21	0.03	0.02	0.02 I	0.02	0.03	0.20	0.20	0.02	0.21
CO2	0.0 B	0.0 B	0.0 B	45.10 G	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	55.97	56.25	55.59	100.39 *	56.32	56.30	56.49	56.49	56.27	56.30
CLASS	0, 1, 99	0, 1, 99	0, 1, 99	0, 1, 95	0, 1, 99	0, 1, 99	0, 1, 99	0, 1, 99	0, 1, 99	0, 1, 99

SAMPLE	06053039	06053040	06053041	06053042	06053043	06053044	06053045	06053046	06053047	06053048
SIO2	0.72	0.74 M	0.76	0.81	0.82	0.84	0.84	0.84	0.86	0.85 M
AL2O3	0.20	0.97	0.13	0.22	0.13	0.21	0.21	0.24	0.26	0.60
FE2O3	0.10	0.11 K	0.08	0.05	0.13	0.13	0.29 I	0.06	0.08	0.15 K
MGO	0.18	0.36	3.66	0.42	0.99	10.96	20.35	0.36	0.45	0.58
CAO	55.17	55.30	51.14	54.87	54.02	42.40	32.00	54.89	54.37	54.40
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.20	0.12	0.05	0.01	0.02	0.03	0.01 I	0.02	0.03	0.12
CO2	0.0 B	42.40	0.0 B	0.0 B	43.89 G	0.0 B	46.53 G	0.0 B	43.95 G	43.30
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0	0.0 B	0.0 B	0.0 B
TOT CONS	56.57	100.00	55.82	56.38	100.00	54.57	100.29 *	56.41	100.00	100.00
CLASS	0, 1, 99	0, 1, 96	0, 1, 99	0, 1, 99	0, 1, 98	0, 1, 99	0, 1, 98	0, 1, 99	0, 2, 98	0, 1, 98

SAMPLE	06053050	06053051	06053052	06053053	06053054	06053055	06053056	06053057	06053058	06053059
SIO2	0.86	0.88	0.92	0.94	0.94	1.00	1.01	1.03	1.04	1.07 M
AL2O3	0.29	0.08	0.17	0.14	0.20	0.20	0.23	0.11	0.53	0.55
FE2O3	0.11	0.04	0.11	0.14	0.47	0.20	0.04	0.23	0.03	0.14 K
MGO	0.53	0.24	0.48	0.92	1.30	20.50	0.49	0.17	0.68	0.48
CAO	54.43	55.09	54.35	54.42	53.47	31.70	54.59	54.50	54.19	55.20
NA2O	0.0 B	0.0 B	0.0 B	0.03	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.02	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.06	0.04	0.02	0.0 B	0.11	0.0 B	0.02	0.04	0.09	0.06
CO2	43.72 G	0.0 B	43.95 G	43.53 G	0.0 B	46.40	0.0 B	43.27 G	0.0 B	42.50
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	100.00	56.37	100.00	100.14	56.49	100.00	56.38	99.35	56.56	100.00
CLASS	0, 1, 98	1, 0, 99	0, 1, 98	1, 1, 98	0, 2, 98	0, 1, 98	1, 1, 98	1, 1, 98	0, 2, 98	0, 2, 96

SAMPLE	06053060	06053061	06053062	06053063	06053064	06053065	06053066	06053067
SIO2	1.08	1.12	1.58	1.18	1.24 M	1.31	1.32	1.48
AL2O3	0.34	0.12	0.58	0.06	1.29	0.35	0.78	0.18
FE2O3	0.16	0.06	0.30	0.02	0.12 K	0.20	0.02	0.05
MGO	1.12	16.95	0.69	0.49	0.26	20.30	0.54	0.59
CAO	53.50	35.30	55.02	54.65	54.00	31.75	54.09	54.25
NA2O	0.0 B	0.0 B	0.04	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.03	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.10	0.01	0.0 B	0.04	0.09	0.0 B	0.12	0.19
CO2	0.0 B	0.0 B	42.14 G	0.0 B	43.00	46.09	0.0 B	0.0 B
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	56.30	53.56	100.38	56.44	100.00	100.00	56.87	56.74
CLASS	0, 1, 98	1, 1, 98	0, 2, 95	1, 0, 99	0, 2, 97	0, 1, 97	0, 2, 97	1, 1, 98

A INSOL.
B BLANK--NO VALUE REPT.
C AL2O3 + FE2O3.
D MGO + CAO.
E NA2O + K2O.
F H2O+.
G IGNITION LOSS (MAY INCLUDE WATER).
H REPORTED AS S.
I CALCULATED BY COMPILERS.
J ORGANIC MATTER.
K TOTAL IRON.
M BY DIFFERENCE.
N INCLUDES TIO2.
O GREATER THAN.
P LESS THAN.
T TRACE.
* ADDITIONAL INFORMATION IN DESCRIPTIVE NOTES.

TABLE 9. — *Analyses of samples from California and Hawaii containing more than 90 percent carbonate (Group F_2), common-rock category* — Continued

```
06053019  PRE-FRANCISCAN, SUR SER.  S7,T15S,R5E.  (265:60,5,PL1)  DOLOMITE, WHITE, FINE TO COARSELY CRYS.  INDEX & GEOL MAPS.
          USE: 2,15.  CA/MG = 2.13.
06053020  PRE-FRANCISCAN, SUR SER.  S11,T19S,R1E.  (265:65,5,64,PL1)  LIMESTONE, WHITE, COARSELY CRYS; MIN; TONNAGE.  INDEX & GEOL
          MAPS, GEOL SEC.  USE: 6,12.  CA/MG = 50.3.
06053021  PRE-FRANCISCAN, SUR SER.  S36,T18S,R1E.  (265:65,5,64,PL1)  CALCAREOUS DOLOMITE; MIN; TONNAGE.  INDEX & GEOL MAPS, GEOL
          SEC.  CA/MG = 2.32.
06053022  PRE-FRANCISCAN, SUR SER.  S36,T18S,R1E.  (265:65,5,64,PL1)  LIMESTONE, WHITE, COARSELY CRYS; MIN; TONNAGE.  INDEX & GEOL
          MAPS, GEOL SEC.  USE: 6,12.  CA/MG >100.
06053023  PRE-FRANCISCAN, SUR SER.  S2,T19S,R1E.  (265:65,5,63,64,PL1)  LIMESTONE, WHITE, COARSELY CRYS; MIN; TONNAGE.  INDEX &
          GEOL MAPS, GEOL SEC.  USE:6,12.  CA/MG >100.
06053024  PRE-FRANCISCAN, SUR SER.  S28,T16S,R4E.  (265:67,5,PL1)  LIMESTONE, CRYS.  INDEX & GEOL MAPS.  USE: 19.  CA/MG = 25.5.

06053025  PRE-FRANCISCAN, SUR SER.  S36,T18S,R1E.  (265:65,5,64,PL1)  LIMESTONE, WHITE, COARSELY CRYS; MIN; TONNAGE.  INDEX & GEOL
          MAPS, GEOL SEC.  USE: 6,12.  CA/MG = 65.7.
06053026  PRE-FRANCISCAN, SUR SER.  S1/2,T18S,R1E.  (265:66,5,PL1)  LIMESTONE, WHITE, FINE TO COARSELY CRYS.  INDEX & GEOL MAPS.
          USE: 19.  CA/MG = 53.1.
06053027  PRE-FRANCISCAN, SUR SER.  S2,T19S,R1E.  (265:65,5,63,64,PL1)  LIMESTONE, WHITE, COARSELY CRYS; MIN; TONNAGE.  INDEX &
          GEOL MAPS, GEOL SEC.  USE:6,12.  CA/MG = 37.6.
06053028  PRE-FRANCISCAN, SUR SER.  S1,T19S,R1E.  (265:65,5,63,64,PL1)  LIMESTONE, WHITE, COARSELY CRYS; MIN; TONNAGE.  INDEX &
          GEOL MAPS, GEOL SEC.  USE: 6,12.  CA/MG >100.
06053029  PRE-FRANCISCAN, SUR SER.  S2,T19S,R1E.  (265:65,5,63,64,PL1)  LIMESTONE, WHITE, COARSELY CRYS; MIN; TONNAGE.  INDEX &
          GEOL MAPS, GEOL SEC.  USE:6,12.  CA/MG = 18.8.
06053030  PRE-FRANCISCAN, SUR SER.  S36,T18S,R1E.  (265:65,5,64,PL1)  LIMESTONE, WHITE, COARSELY CRYS; MIN; TONNAGE.  INDEX & GEOL
          MAPS, GEOL SEC.  USE: 6,12.  CA/MG >100.
06053031  PRE-FRANCISCAN, SUR SER.  S36,T18S,R1E.  (265:65,5,64,PL1)  LIMESTONE, WHITE, COARSELY CRYS; MIN; TONNAGE.  INDEX & GEOL
          MAPS, GEOL SEC.  USE: 4.  CA/MG = 11.6.
06053032  PRE-FRANCISCAN, SUR SER.  S7,T14S,R4E.  (54:28,PL1/ 265:59,5,PL1)  DOLOMITE, WHITE, MED-CRYS; 10-FT CHANNEL SMPL.
          INDEX & GEOL MAPS, GEOL SEC.  *MISC: MN = 0.05; S = 0.003. CA/MG=1.60.
06053033  PRE-FRANCISCAN, SUR SER.  S36,T18S,R1E.  (265:65,5,64,PL1)  LIMESTONE, WHITE, COARSELY CRYS; MIN; TONNAGE.  INDEX & GEOL
          MAPS, GEOL SEC.  USE: 6,12.  CA/MG >100.
06053034  PRE-FRANCISCAN, SUR SER.  S36,T18S,R1E.  (265:65,5,64,PL1)  LIMESTONE, WHITE, COARSELY CRYS; MIN; TONNAGE.  INDEX & GEOL
          MAPS, GEOL SEC.  USE: 6,12.  CA/MG >100.
06053035  PRE-FRANCISCAN, SUR SER.  S2,T19S,R1E.  (265:65,5,63,64,PL1)  LIMESTONE, WHITE, COARSELY CRYS; MIN; TONNAGE.  INDEX &
          GEOL MAPS, GEOL SEC.  USE:6,12.  CA/MG >100.
06053036  PRE-FRANCISCAN, SUR SER.  S11,T19S,R1E.  (265:65,5,64,PL1)  LIMESTONE, WHITE, COARSELY CRYS; MIN; TONNAGE.  INDEX & GEOL
          MAPS, GEOL SEC.  USE: 6,12.  CA/MG = 85.5.
06053037  PRE-FRANCISCAN, SUR SER.  S36,T18S,R1E.  (265:65,5,64,PL1)  LIMESTONE, WHITE, COARSELY CRYS; MIN; TONNAGE.  INDEX & GEOL
          MAPS, GEOL SEC.  USE: 6,12.  CA/MG >100.
06053038  PRE-FRANCISCAN, SUR SER.  S36,T18S,R1E.  (265:65,5,64,PL1)  LIMESTONE, WHITE, COARSELY CRYS; MIN; TONNAGE.  INDEX & GEOL
          MAPS, GEOL SEC.  USE: 6,12.  CA/MG = 45.3.
06053039  PRE-FRANCISCAN, SUR SER.  S36,T18S,R1E.  (265:65,5,64,PL1)  LIMESTONE, WHITE, COARSELY CRYS; MIN; TONNAGE.  INDEX & GEOL
          MAPS, GEOL SEC.  USE: 6,12.  CA/MG >100.
06053040  PRE-FRANCISCAN, SUR SER.  S21,T19S,R2E.  (420:B40,B8,PL1,2)  MARBLE, WHITE, FINE TO COARSELY CRYS; SELECTED SMPL.
          INDEX & GEOL MAPS.  CA/MG >100.
06053041  PRE-FRANCISCAN, SUR SER.  S36,T18S,R1E.  (265:6S,5,64,PL1)  LIMESTONE, WHITE, COARSELY CRYS; MIN; TONNAGE.  INDEX & GEOL
          MAPS, GEOL SEC.  USE: 4.  CA/MG = 14.0.
06053042  PRE-FRANCISCAN, SUR SER.  S36,T18S,R1E.  (265:65,5,64,PL1)  LIMESTONE, WHITE, COARSELY CRYS; MIN; TONNAGE.  INDEX & GEOL
          MAPS, GEOL SEC.  USE: 6,12.  CA/MG >100.
06053043  PRE-FRANCISCAN, SUR SER.  S35,36,T13S,R4E.  (S4:31,11,22,PL1)  LIMESTONE; TONNAGE.  INDEX & GEOL MAPS, GEOL SEC.
          CA/MG = 54.6.
06053044  PRE-FRANCISCAN, SUR SER.  S36,T18S,R1E.  (265:65,5,64,PL1)  CALCAREOUS DOLOMITE; MIN; TONNAGE.  INDEX & GEOL MAPS,
          GEOL SEC.  CA/MG = 3.87.
06053045  PRE-FRANCISCAN, SUR SER.  S7,T14S,R4E.  (54:28,PL1/ 265:59,5,PL1)  DOLOMITE, WHITE, MED-CRYS; 10-FT CHIP SMPL; TONNAGE,
          INDEX & GEOL MAPS, GEOL SEC.  *MISC: MN= 0.05, S= 0.003.  CA/MG =1.57.
06053046  PRE-FRANCISCAN, SUR SER.  S36,T18S,R1E.  (265:65,5,64,PL1)  LIMESTONE, WHITE, COARSELY CRYS; MIN; TONNAGE.  INDEX & GEOL
          MAPS, GEOL SEC.  USE: 6,12.  CA/MG >100.
06053047  PRE-FRANCISCAN, SUR SER.  S35,T13S,R4E.  (54:31,11,PL1)  LIMESTONE; TONNAGE.  INDEX & GEOL MAPS, GEOL SEC.  CA/MG >100.

06053048  PRE-FRANCISCAN, SUR SER.  S22,T20S,R3E.  (420:B40,B8,PLI,2)  MARBLE, WHITE, FINE TO COARSELY CRYS  SELECTED SMPL.
          INDEX & GEOL MAPS.  CA/MG = 93.8.
06053050  PRE-FRANCISCAN, SUR SER.  S35,T13S,R4E.  (54:31,11,PL1)  LIMESTONE; TONNAGE.  INDEX & GEOL MAPS, GEOL SEC.  CA/MG >100.

06053051  PRE-FRANCISCAN, SUR SER.  S36,T18S,R1E.  (265:65,5,64,PL1)  LIMESTONE, WHITE, COARSELY CRYS; MIN; TONNAGE.  INDEX & GEOL
          MAPS, GEOL SEC.  USE: 6,12.  CA/MG >100.
06053052  PRE-FRANCISCAN, SUR SER.  S35,T13S,R4E.  (54:31,11,PL1)  LIMESTONE; TONNAGE.  INDEX & GEOL MAPS, GEOL SEC.  CA/MG >100.

06053053  PRE-FRANCISCAN, SUR SER.  S35,T13S,R4E.  (54:31,11,PL1)  LIMESTONE; TONNAGE.  INDEX & GEOL MAPS, GEOL SEC.  CA/MG= 59.2.

06053054  PRE-FRANCISCAN, SUR SER.  S36,T18S,R1E.  (265:65,5,64,PL1)  LIMESTONE, WHITE, COARSELY CRYS; MIN; TONNAGE.  INDEX & GEOL
          MAPS, GEOL SEC.  USE: 6,12.  CA/MG = 41.1.
06053055  PRE-FRANCISCAN, SUR SER.  "S1,T14S,R3E"  (1:68,69)  DOLOMITE, WHITE, MASSIVE, COARSELY CRYS.  INDEX & GEOL MAPS,
          GEOL SEC.  USE: 16.  CA/MG = 1.55.
06053056  PRE-FRANCISCAN, SUR SER.  S25,T18S,R1E.  (265:65,5,64,PL1)  LIMESTONE, WHITE, COARSELY CRYS; MIN; TONNAGE.  INDEX & GEOL
          MAPS, GEOL SEC.  USE: 6,12.  CA/MG >100.
06053057  PRE-FRANCISCAN, SUR SER.  S22,23,T22S,R13E.  (265:67,5,69,PL1)  LIMESTONE, GRAY, MED TO COARSELY CRYS.  INDEX & GEOL
          MAPS.  CA/MG >100.
06053058  PRE-FRANCISCAN, SUR SER.  T18S,R1E, BIXBY MTN.  (265:63,5,62,PL1)  LIMESTONE, WHITE, MED- TO COARSE-GR.  INDEX & GEOL
          MAPS.  CA/MG = 79.7.
06053059  PRE-FRANCISCAN, SUR SER.  S8,T19S,R2E.  (420:B40,B8,PL1,2)  MARBLE, WHITE, FINE TO COARSELY CRYS; SELECTED SMPL.  INDEX
          & GEOL MAPS.  CA/MG >100.
06053060  PRE-FRANCISCAN, SUR SER.  S6,T21S,R5E.  (265:66,5,PL1)  LIMESTONE, COARSELY CRYS; 150-200 FT THICK; MIN.  INDEX & GEOL
          MAPS.  CA/MG = 47.8.
06053061  PRE-FRANCISCAN, SUR SER.  S1,T19S,R1E.  (265:65,5,64,PL1)  CALCAREOUS  DOLOMITE; MIN; TONNAGE.  INDEX & GEOL MAPS, GEOL
          SEC.  CA/MG = 2.08.
06053062  PRE-FRANCISCAN, SUR SER.  S35,T13S,R4E.  (54:31,22,PL1/ 265:55,5,PL1)  LIMESTONE, GRAY, MED TO COARSELY CRYS; TONNAGE.
          INDEX & GEOL MAPS, GEOL SEC.  CA/MG = 79.7.
06053063  PRE-FRANCISCAN, SUR SER.  S36,T18S,R1E.  (265:65,5,64,PL1)  LIMESTONE, WHITE, COARSELY CRYS; MIN; TONNAGE.  INDEX & GEOL
          MAPS, GEOL SEC.  USE: 6,12.  CA/MG >100.
06053064  PRE-FRANCISCAN, SUR SER.  S21,T19S,R2E.  (420:B40,B8,PL1,2)  MARBLE, WHITE, FINE TO COARSELY CRYS; SELECTED SMPL.  INDEX
          & GEOL MAPS.  CA/MG >100.
06053065  PRE-FRANCISCAN, SUR SER.  S1,2,T14S,R3E.  (265:57,5,56,PL1)  DOLOMITE, WHITE, MED TO COARSELY CRYS.  INDEX & GEOL MAPS.
          USE: 6,12.  CA/MG = 1.56.
06053066  PRE-FRANCISCAN, SUR SER.  T18S,R1E, BIXBY MTN.  (265:63,5,62,PL1)  LIMESTONE, WHITE, MED- TO COARSE-GR.  INDEX & GEOL
          MAPS.  CA/MG >100.
06053067  PRE-FRANCISCAN, SUR SER.  S36,T18S,R1E.  (265:65,5,64,PL1)  LIMESTONE, WHITE, COARSELY CRYS; MIN; TONNAGE.  INDEX & GEOL
          MAPS, GEOL SEC.  USE: 6,12.  CA/MG = 91.9.
```

TABLE 9. — *Analyses of samples from California and Hawaii containing more than 90 percent carbonate (Group F_2), common-rock category* — Continued

SAMPLE	06053068	06053069	06053070	06053071	06053072	06053073	06053074	06053075	06053076	06053077
SIO2	1.52	1.52	1.74	1.82	1.92	1.96	2.16	2.18 M	2.27 M	2.35 M
AL2O3	0.34	0.38	0.14	0.38	0.10	0.30	0.32	0.60	0.69	0.69
FE2O3	0.32	0.14 I	0.04	0.08	0.03	0.12	0.16	0.14 K	0.22 K	0.26 K
MGO	0.41	11.20	0.23	1.22	0.41	1.06	0.38	0.38	0.39	1.80
CAO	54.73	41.20	54.58	52.80	54.56	52.93	54.01	53.80	54.40	52.70
NA2O	0.02	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.06	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.02 I	0.05	0.03	0.05	0.03	0.20	0.10	0.03	0.10
CO2	43.18 G	45.64 G	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	42.80	42.00	42.10
SO3	0.0 B	0.0	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	100.58	100.16 *	56.78	56.33	57.07	56.40	57.23	100.00	100.00	100.00
CLASS	1, 2, 98	1, 2, 97	1, 1, 98	1, 1, 97	2, 0, 97	1, 1, 97	1, 1, 97	1, 2, 97	1, 2, 95	1, 2, 95

SAMPLE	06053078	06053079	06053080	06053081	06053082	06053083	06053084	06053085	06053086	06053087
SIO2	2.56	2.78	3.10	3.14 M	3.59 M	3.84	3.88	3.90	3.92	4.32 M
AL2O3	0.44	0.88	0.16	2.07	0.97	0.18	0.53	0.92	0.23	3.22
FE2O3	0.08	0.03	0.08	3.52 K	0.11 K	0.10	0.13	0.12	0.11	2.72 K
MGO	0.46	0.42	0.57	1.76	3.28	1.04	16.26	0.48	0.53	0.58
CAO	53.66	53.29	53.32	50.20	50.20	51.82	34.31	52.56	52.83	49.80
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.04	0.01	0.14	0.11	0.15	0.02	0.02	0.03	0.21	0.06
CO2	0.0 B	0.0 B	0.0 B	39.20	41.70	0.0 B	0.0 B	0.0 B	0.0 B	39.30
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	57.24	57.41	57.37	100.00	100.00	57.00	55.13	58.01	57.83	100.00
CLASS	2, 2, 97	1, 3, 96	3, 1, 96	0, 5, 88	2, 3, 94	3, 1, 95	3, 2, 95	2, 3, 95	3, 1, 95	0, 7, 89

SAMPLE	06053088	06053089	06053091	06053111	06055001	06055002	06055005	06057001	06059001	06059002
SIO2	4.44	6.12	7.32	6.00 A	4.47	4.50	4.70	3.17 A	2.50	1.34
AL2O3	0.10	1.27	0.36	0.0 B	0.29	0.30	1.70 C	0.31 C	1.00	1.95 C
FE2O3	0.20	0.10	0.19	0.0 B	2.23	2.20	0.0 B	0.0 B	0.50 K	0.0 B
MGO	3.08	0.19	0.71	18.90	43.88 M	43.80	0.58	0.73 I	0.0 B	1.86
CAO	49.70	51.43	50.47	29.60	0.10	0.10	51.40 I	53.20 I	54.00 I	51.45
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.70	0.70	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.04	0.05	0.26	0.13	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	42.39 G	0.0 B	0.0 B	0.0 B	48.68 G	48.60	41.10 I	42.55 I	42.00 I	43.08 G
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.95	59.16	59.31	54.93 *	100.35	100.20	99.48	99.96	100.00	99.68
CLASS	4, 1, 95	4, 4, 92	6, 2, 92	6, 0, 92	1, 6, 92	1, 6, 92	2, 5, 93	3, 1, 96	0, 4, 96	0, 3, 96

SAMPLE	06059003	06059011	06061001	06061002	06061003	06061004	06061005	06061006	06061007	06061008
SIO2	3.27	1.35	0.0 T	0.12	0.12	0.15	0.22 A	0.24 A	0.25	0.26 A
AL2O3	0.39	1.95 C	0.0 B	0.10	0.10 C	0.0 B	2.72 C	0.20 C	0.0 B	0.16 C
FE2O3	0.26	0.0 B	0.05	0.05	0.0 B	0.35	0.0 B	0.0 B	0.25	0.0 B
MGO	2.12	1.86	0.0 T	0.70	0.76 M	0.0 T	0.38 I	0.24 I	0.0 T	0.33 I
CAO	50.81	51.55	55.97	55.10	55.10	55.72	53.87 I	55.41 I	55.72	55.31 I
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.01	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.12	0.15	0.0 B	0.15
CO2	0.0 B	43.08 G	43.98	44.10	43.74 G	43.78	42.69 I	43.76 I	43.78	43.79 I
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	56.86	99.79	100.00	100.17	99.82	100.00	100.00	100.00	100.00	100.00
CLASS	2, 2, 95	0, 3, 96	0, 0,100	0, 0,100	0, 0, 99	0, 0, 99	0, 0, 97	0, 0, 99	0, 0, 99	0, 0, 99

SAMPLE	06061009	06061010	06061011	06061012	06061013	06061014	06061015	06061016	06061017	06061018
SIO2	0.26 A	0.26 A	0.28 A	0.28 A	0.34 A	0.34 A	0.38 A	0.42 A	0.42 A	0.46 A
AL2O3	0.24 C	0.32 C	0.28 C	0.36 C	0.48 C	0.48 C	0.34 C	0.18 C	0.24 C	0.16 C
FE2O3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
MGO	0.57 I	0.50 I	0.39 I	0.12 I	0.24 I	0.40 I	0.28 I	0.33 I	0.28 I	0.29 I
CAO	54.96 I	55.02 I	55.16 I	55.48 I	55.18 I	54.94 I	55.20 I	55.17 I	55.20 I	55.25 I
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.20	0.15	0.16	0.07	0.17	0.28	0.15	0.21	0.06	0.16
CO2	43.77 I	43.75 I	43.73 I	43.69 I	43.59 I	43.56 I	43.64 I	43.69 I	43.64 I	43.68 I
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	100.00	100.00	100.00	100.00	100.00	100.00	99.99	100.00	99.84	100.00
CLASS	0, 0, 99	0, 0, 99	0, 0, 99	0, 0, 99	0, 1, 99	0, 1, 99	0, 1, 99	0, 0, 99	0, 1, 99	0, 0, 99

A INSOL.
B BLANK--NO VALUE REPT.
C AL2O3 + FE2O3.
D MGO + CAO.
E NA2O + K2O.
F H2O+.
G IGNITION LOSS (MAY INCLUDE WATER).
H REPORTED AS S.
I CALCULATED BY COMPILERS.
J ORGANIC MATTER.
K TOTAL IRON.
M BY DIFFERENCE.
N INCLUDES TIO2.
O GREATER THAN.
P LESS THAN.
T TRACE.
* ADDITIONAL INFORMATION IN DESCRIPTIVE NOTES.

TABLE 9. — *Analyses of samples from California and Hawaii containing more than 90 percent carbonate (Group F_2), common-rock category* — Continued

```
06053068  PRE-FRANCISCAN, SUR SER. S36,T13S,R4E.  (54:31,29,PL1)  LIMESTONE: TONNAGE.  INDEX & GEOL MAPS, GEOL SEC.  CA/MG >100.

06053069  PRE-FRANCISCAN, SUR SER.  S7,T14S,R3E.  (54:28,PL1/ 265:59,5,PL1)  DOLOMITE, WHITE, MED-CRYS: 10-FT CHIP SMPL: TONNAGE.
          INDEX & GEOL MAPS, GEOL SEC.  *MISC: MN = 0.06: S = 0.004, CA/MG=3.68.
06053070  PRE-FRANCISCAN, SUR SER.  S12,T19S,R1E.  (265:65,5,64,PL1)  LIMESTONE, WHITE, COARSELY CRYS: MIN: TONNAGE.  INDEX & GEOL
          MAPS, GEOL SEC.  USE: 6,12.  CA/MG >100.
06053071  PRE-FRANCISCAN, SUR SER.  S16,T18S,R1E.  (265:62,5,61,PL1)  LIMESTONE, WHITE, COARSELY CRYS: INDEX & GEOL MAPS.  USE:18.
          CA/MG = 43.3.
06053072  PRE-FRANCISCAN, SUR SER.  S36,T18S,R1E.  (265:65,5,64,PL1)  LIMESTONE, WHITE, COARSELY CRYS: MIN: TONNAGE.  INDEX & GEOL
          MAPS, GEOL SEC.  USE: 6,12.  CA/MG >100.
06053073  PRE-FRANCISCAN, SUR SER.  S16,T18S,R1E.  (265:62,5,61,PL1)  LIMESTONE, WHITE, COARSELY CRYS: INDEX & GEOL MAPS.  USE:18.
          CA/MG = 49.9.
06053074  PRE-FRANCISCAN, SUR SER.  S36,T18S,R1E.  (265:65,5,64,PL1)  LIMESTONE, WHITE, COARSELY CRYS: MIN: TONNAGE.  INDEX & GEOL
          MAPS, GEOL SEC.  USE: 6,12.  CA/MG >100.
06053075  PRE-FRANCISCAN, SUR SER.  S7,T19S,R2E.  (420:B40,B8,PL1,2)  MARBLE, WHITE, FINE TO COARSELY CRYS: CHIP SMPL.  INDEX &
          GEOL MAPS. CA/MG >100.
06053076  PRE-FRANCISCAN, SUR SER.  S19,T19S,R3E.  (420:B40,B8,PL1,2)  MARBLE, WHITE, FINE TO COARSELY CRYS: PICKED SMPL.  INDEX &
          GEOL MAPS.  CA/MG >100.
06053077  PRE-FRANCISCAN, SUR SER.  S7,T19S,R2E.  (420:B40,B8,PL1,2)  MARBLE, WHITE, FINE TO COARSELY CRYS: CHIP SMPL.  INDEX &
          GEOL MAPS.  CA/MG = 29.3.
06053078  PRE-FRANCISCAN, SUR SER.  S36,T18S,R1E.  (265:65,5,64,PL1)  LIMESTONE, WHITE, COARSELY CRYS: MIN: TONNAGE.  INDEX & GEOL
          MAPS, GEOL SEC.  USE: 6,12.  CA/MG >100.
06053079  PRE-FRANCISCAN, SUR SER.  S36,T18S,R1E.  (265:65,5,64,PL1)  LIMESTONE, WHITE, COARSELY CRYS: MIN: TONNAGE.  INDEX & GEOL
          MAPS, GEOL SEC.  USE: 6,12.  CA/MG >100.
06053080  PRE-FRANCISCAN, SUR SER.  S36,T18S,R1E.  (265:65,5,64,PL1)  LIMESTONE, WHITE, COARSELY CRYS: MIN: TONNAGE.  INDEX & GEOL
          MAPS, GEOL SEC.  USE: 6,12.  CA/MG = 93.5.
06053081  PRE-FRANCISCAN, SUR SER.  S18,T19S,R2E.  (420:B40,B8,PL1,2)  MARBLE, WHITE, FINE TO COARSELY CRYS: CHIP SMPL.  INDEX &
          GEOL MAPS.  CA/MG = 28.5.
06053082  PRE-FRANCISCAN, SUR SER.  S8,T19S,R2E.  (420:B40,B8,PL1,2)  MARBLE, WHITE, FINE TO COARSELY CRYS: CHIP SMPL.  INDEX &
          GEOL MAPS.  CA/MG = 15.3.
06053083  PRE-FRANCISCAN, SUR SER.  S16,T18S,R1E.  (265:62,5,61,PL1)  LIMESTONE, WHITE, COARSELY CRYS: INDEX & GEOL MAPS.  USE:18.
          CA/MG = 49.8.
06053084  PRE-FRANCISCAN, SUR SER.  S36,T20S,R4E.  (265:66,5,130,PL1)  DOLOMITE, WHITE, COARSELY CRYS: MIN.  INDEX & GEOL MAPS.
          CA/MG = 2.11.
06053085  PRE-FRANCISCAN, SUR SER.  S36,T18S,R1E.  (265:65,5,64,PL1)  LIMESTONE, WHITE, COARSELY CRYS: MIN: TONNAGE.  INDEX & GEOL
          MAPS, GEOL SEC.  USE: 6,12.  CA/MG >100.
06053086  PRE-FRANCISCAN, SUR SER.  S1,T19S,R1E.  (265:65,5,63,64,PL1)  LIMESTONE, WHITE, COARSELY CRYS: MIN: TONNAGE.  INDEX &
          GEOL MAPS, GEOL SEC.  USE:  4,12.  CA/MG = 99.7.
06053087  PRE-FRANCISCAN, SUR SER.  S12,T20S,R3E.  (420:B40,B8,PL1,2)  MARBLE, WHITE, FINE TO COARSELY CRYS: SELECTED SMPL.  INDEX
          & GEOL MAPS.     CA/MG = 85.9.
06053088  PRE-FRANCISCAN, SUR SER.  S22,23,T22S,R13E.  (265:67,5,131,PL1)  LIMESTONE, GRAY, MED TO COARSELY CRYS.  INDEX & GEOL
          MAPS.  USE. 19.  CA/MG = 16.1.
06053089  PRE-FRANCISCAN, SUR SER.  S36,T18S,R1E.  (265:65,5,64,PL1)  LIMESTONE, WHITE, COARSELY CRYS: MIN: TONNAGE.  INDEX & GEOL
          MAPS, GEOL SEC.  USE: 6,12.  CA/MG >100.
06053091  PRE-FRANCISCAN, SUR SER.  S1,T19S,R1E.  (265:65,5,63,64,PL1)  LIMESTONE, WHITE, COARSELY CRYS: MIN: TONNAGE.  INDEX &
          GEOL MAPS, GEOL SEC.  USE: 6,12.  CA/MG = 71.1.
06053111  MIOCENE, MONTEREY SH, SANDHOLDT MBR.  "T20S,R6E" RELIZ CANYON.  (386:C6)  DOLOMITE.  *MISC: FEO = 0.22, MNO = 0.02,
          SRO = 0.063.  CA/MG = 1.57.
06055001  "T7N,R5W" RUTHERFORD.  (428:10,9)  MAGNESITE.  CA/MG = 0.002.
06055002  "T7N,R5W" RUTHERFORD.  (428:15,8,9)  MAGNESITE.  USE: 15.  CA/MG = 0.002.

06055005  CRETACEOUS.  "T4N,R4W" NAPA JUNCTION.  (175:360)  LIMESTONE.  CA/MG = 88.6.

06057001  CARBONIFEROUS.  S4,5,T14N,R8E.  (556:261,260,PL37)  LIMESTONE, FLOAT.  INDEX MAP.  USE: 18.  CA/MG = 72.9.

06059001  MIOCENE.  "T6S,R8W" EL TORO.  (21:74,182/ 556:261,PL37)  LIMESTONE, FOS.  INDEX MAP.  USE: 2,4.

06059002  TRIASSIC & JURASSIC, BEDFORD CANYON FM.  S3,33,T4S,R7W.  (494:68/ 228:87,86,PL1,2)  LIMESTONE, BLACK, CRYS:
          400 FT THICK. INDEX & GEOL MAPS.  USE: 4.  CA/MG = 27.7.
06059003  TRIASSIC & JURASSIC, BEDFORD CANYON FM.  S34,T4S,R7W.  (228:87,86,PL1,2)  LIMESTONE, DARK-GRAY TO BLACK, FINE-GR, CRYS.
          INDEX & GEOL MAPS, GEOL SEC.  USE: 4.  CA/MG = 24.0.
06059011  "T4S,R7W" CORONA.  (68:660)  LIMESTONE.  CA/MG = 27.7.
06061001  "T13N,R8E" CLIPPER GAP.  (47:16)  LIMESTONE.
06061002  "T12N,R8E" AUBURN.  (428:15,8,9)  LIMESTONE.  USE: 15.  CA/MG = 78.7.
06061003  "T12N,R8E" AUBURN.  (428:10,9)  LIMESTONE.  CA/MG = 72.5.
06061004  S15,T13N,R8E.  (47:17/ 255:111,110)  LIMESTONE, WHITE, SACCHAROIDAL.  USE: 6.

06061005  PALEOZOIC, CALAVERAS FM.  S15,T13N,R8E.  (556:264/ 94:464,460,PL3)  LIMESTONE, WHITE, COARSE, GRANULAR.  INDEX & GEOL
          MAPS.  USE: 12.  CA/MG >100.
06061006  PALEOZOIC, CALAVERAS FM.  S6,T12N,R9E.  (94:454,440-460,PL3)  LIMESTONE, GRAY TO BLACK, DENSE, CRYS: 800 FT THICK:
          TONNAGE.  INDEX & GEOL MAPS.  USE: 6,12.  CA/MG >100.
06061007  "T12N,R8E" AUBURN.  (47:16/ 255:111)  LIMESTONE.  USE: 15.
06061008  PALEOZOIC, CALAVERAS FM.  S6,T12N,R9E.  (94:454,440-460,PL3)  LIMESTONE, GRAY TO BLACK, DENSE, CRYS: 800 FT THICK:
          TONNAGE.  INDEX & GEOL MAPS.  USE: 6,12.  CA/MG >100.
06061009  PALEOZOIC, CALAVERAS FM.  S6,T12N,R9E.  (94:454,440-460,PL3)  LIMESTONE, GRAY TO BLACK, DENSE, CRYS: 800 FT THICK:
          TONNAGE.  INDEX & GEOL MAPS.  USE: 6,12.  CA/MG = 96.4.
06061010  PALEOZOIC, CALAVERAS FM.  S6,T12N,R9E.  (94:454,440-460,PL3)  LIMESTONE, GRAY TO BLACK, DENSE, CRYS: 800 FT THICK:
          TONNAGE.  INDEX & GEOL MAPS.  USE: 6,12.  CA/MG >100.
06061011  PALEOZOIC, CALAVERAS FM.  S6,T12N,R9E.  (94:454,440-460,PL3)  LIMESTONE, GRAY TO BLACK, DENSE, CRYS: 800 FT THICK:
          TONNAGE.  INDEX & GEOL MAPS.  USE: 6,12.  CA/MG >100.
06061012  PALEOZOIC, CALAVERAS FM.  S30,T13N,R9E.  (94:464,460,PL3)  LIMESTONE.  INDEX & GEOL MAP.  CA/MG >100.

06061013  PALEOZOIC, CALAVERAS FM.  S30,T13N,R9E.  (94:464,460,PL3)  LIMESTONE.  INDEX & GEOL MAP.  CA/MG >100.

06061014  PALEOZOIC, CALAVERAS FM.  S6,T12N,R9E.  (94:454,440-460,PL3)  LIMESTONE, GRAY TO BLACK, DENSE, CRYS: 800 FT THICK:
          TONNAGE.  INDEX & GEOL MAPS.  USE: 6,12.  CA/MG >100.
06061015  PALEOZOIC, CALAVERAS FM.  S6,T12N,R9E.  (94:454,440-460,PL3)  LIMESTONE, GRAY TO BLACK, DENSE, CRYS: 800 FT THICK:
          TONNAGE.  INDEX & GEOL MAPS.  USE: 6,12.  CA/MG >100.
06061016  PALEOZOIC, CALAVERAS FM.  S6,T12N,R9E.  (94:454,440-460,PL3)  LIMESTONE, GRAY TO BLACK, DENSE, CRYS: 800 FT THICK:
          TONNAGE.  INDEX & GEOL MAPS.  USE: 6,12.  CA/MG >100.
06061017  PALEOZOIC, CALAVERAS FM.  S12,T12N,R8E.  (94:460,PL3)  LIMESTONE, GRAY, CRYS.  INDEX & GEOL MAPS.  CA/MG >100.

06061018  PALEOZOIC, CALAVERAS FM.  S6,T12N,R9E.  (94:454,440-460,PL3)  LIMESTONE, GRAY TO BLACK, DENSE, CRYS: 800 FT THICK:
          TONNAGE.  INDEX & GEOL MAPS.  USE: 6,12.  CA/MG >100.
```

TABLE 9. — *Analyses of samples from California and Hawaii containing more than 90 percent carbonate (Group F_2), common-rock category* — Continued

SAMPLE	06061019	06061020	06061021	06061022	06061023	06061024	06061025	06061026	06061027	06061028
SIO2	0.46 A	0.48 A	0.60 A	0.60 A	0.72 A	0.72 A	0.79 A	0.82 A	1.06 A	1.18 A
AL2O3	0.63 C	0.66 C	0.74 C	0.99 C	0.42 C	0.50 C	0.59 C	0.46 C	0.97 C	0.58 C
FE2O3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
MGO	0.19 I	0.11 I	0.31 I	0.52 I	0.21 I	0.26 I	0.14 I	0.28 I	0.72 I	0.58 I
CAO	55.18 I	55.12 I	54.84 I	54.51 I	55.05 I	54.95 I	54.59 I	54.87 I	53.95 I	54.27 I
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.25	0.11	0.0 B	0.16	0.15	0.0 B	0.18	0.0 B	0.15
CO2	43.54 I	43.38 I	43.40 I	43.36 I	43.44 I	43.42 I	43.00 I	43.39 I	43.14 I	43.24 I
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	100.00	100.00	100.00	99.98	100.00	100.00	98.52	100.00	99.84	100.00
CLASS	0, 1, 99	0, 1, 99	0, 1, 99	0, 1, 98	0, 1, 99	0, 1, 99	0, 1, 98	0, 1, 99	0, 2, 98	0, 2, 98

SAMPLE	06061029	06061030	06061031	06061032	06061033	06061034	06061054	06063001	06063002	06063003
SIO2	1.34 A	1.76 A	1.78 A	2.42 A	2.79 A	3.70 A	0.0 B	3.31	4.71	0.07
AL2O3	0.46 C	0.76 C	0.30 C	0.54 C	0.60 C	0.66 C	0.0 B	1.47 C	0.37 C	0.05
FE2O3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.11	0.0 B	0.0 B	0.14 K
MGO	0.40 I	0.57 I	0.28 I	0.37 I	0.81 I	2.06 I	0.0 B	0.0 T	0.46 I	0.36
CAO	54.51 I	53.91 I	54.46 I	53.92 I	53.11 I	51.13 I	53.85 I	52.69	52.45 I	54.72
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.06	0.05	0.13	0.06	0.0 B	0.05	0.0 B	0.0 B	0.0 B	0.0 B
CO2	43.23 I	42.95 I	43.05 I	42.74 I	42.57 I	42.40 I	42.27 I	41.94 G	41.70 I	44.42 G
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	100.00	100.00	100.00	100.05	99.88	100.00	96.23	99.41	99.69 *	99.76
CLASS	1, 1, 98	0, 2, 97	1, 1, 98	2, 1, 97	2, 2, 96	3, 2, 96	0, 0, 96	1, 5, 94	4, 1, 95	0, 1, 98

SAMPLE	06063004	06063005	06063006	06063007	06063008	06063009	06065002	06065003	06065004	06065005
SIO2	0.07	0.26	0.91	0.96 A	1.06	2.90	4.26	4.50	4.68	5.24
AL2O3	0.33 C	0.06	0.63 C	0.42 C	0.57 C	1.60 C	1.66 C	1.20 C	1.24 C	1.40 C
FE2O3	0.0 B	0.20 K	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
MGO	0.50	0.62	0.50	0.54 I	0.0 T	0.30	2.54	2.50	2.25	2.60
CAO	55.20	54.94	53.87	54.56 I	54.37	53.30	50.00	50.78	50.85	50.33
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.0 B	0.09	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	44.05 G	43.84 G	43.56 G	43.43 1	43.66 G	41.90	41.54 G	40.60 G	40.36 G	40.40 G
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	100.15	99.92	99.47	100.00	99.66	100.00	100.00	99.58	99.38	99.97
CLASS	0, 0,100	0, 1, 99	0, 2, 97	0, 1, 99	0, 3, 97	0, 4, 95	1, 5, 93	2, 4, 91	3, 4, 90	3, 4, 90

SAMPLE	06065006	06065007	06065008	06065009	06065010	06065011	06065012	06065014	06065015	06065016
SIO2	0.0	0.0 B	0.0 B	0.10	0.17	0.40 A	0.42 A	0.74	0.96	2.36
AL2O3	0.0	0.0 B	0.0 B	0.24	0.37	1.10 C	0.0 B	0.0 T	0.25	0.0 B
FE2O3	0.0 T	0.0 B	0.0 B	0.0	0.0	0.0 B	1.03 K	0.01	0.07	0.13
MGO	0.30	21.67	0.0 B	5.42	8.15	4.60	20.76	2.39	1.75	1.34
CAO	55.85	30.05	55.00 I	51.20	49.21	50.60	30.65	53.29	53.35	51.69
NA2O	0.0 B	0.0 B	0.0 B	0.0	0.08	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0	0.0	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	1.94 F	3.35 F	0.30	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.08	0.0	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.02	0.02	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 T	0.0 B	0.0 B	0.17	0.17	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	43.80 G	0.0 B	43.00 I	40.62	38.40	0.0 B	47.14	0.0 B	43.60	0.0 B
SO3	0.0 B	0.0 B	0.0 B	0.0	0.0	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.95	51.72	98.00	100.08 *	100.32 *	57.00	100.00 *	56.43	99.98	55.52
CLASS	0, 0, 99	0, 0, 99	0, 0, 98	0, 2, 90	0, 4, 85	0, 1, 96	0, 1, 99	1, 0, 98	0, 1, 98	2, 0, 95

SAMPLE	06065087	06065088	06069001	06069002	06069004	06069005	06069006	06069007
SIO2	1.57 A	1.92 A	2.10	2.28	0.10	0.10	0.12	0.14
AL2O3	0.0 B	0.0 B	0.0 B	0.30 C	0.02	0.20 C	0.03	0.10
FE2O3	0.0 B	0.78 M	0.0 B	0.0 B	0.05	0.0 B	0.03	0.02
MGO	19.65	1.70	0.0 B	20.95 I	0.80	14.83	17.54	0.84
CAO	32.15	52.00	53.78 I	30.03 I	54.83	37.99	34.63	54.19
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.27	0.0 B	0.02	0.0 B
CO2	45.85	43.60	42.22 I	46.44 I	43.93 G	46.77	42.70 G	44.34 G
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	100.00 *	100.00	98.10 *	100.00	100.00	99.89	95.07	99.63
CLASS	2, 0, 97	1, 2, 97	2, 0, 96	2, 1, 97	0, 0,100	0, 0,100	0, 0, 91	0, 1, 98

A INSOL.
B BLANK--NO VALUE REPT.
C AL2O3 + FE2O3.
D MGO + CAO.
E NA2O + K2O.
F H2O+.
G IGNITION LOSS (MAY INCLUDE WATER).
H REPORTED AS S.
I CALCULATED BY COMPILERS.
J ORGANIC MATTER.
K TOTAL IRON.
M BY DIFFERENCE.
N INCLUDES TIO2.
O GREATER THAN.
P LESS THAN.
T TRACE.
* ADDITIONAL INFORMATION IN DESCRIPTIVE NOTES.

TABLE 9. — *Analyses of samples from California and Hawaii containing more than 90 percent carbonate (Group F_2), common-rock category* — Continued

06061019 PALEOZOIC, CALAVERAS FM. S30,T13N,R9E. (556:265,222,PL37) LIMESTONE, GRAY, FINE-GR, FOS: SMPL OF 50 FT: TONNAGE. INDEX MAP. USE: 18. CA/MG >100.
06061020 PALEOZOIC, CALAVERAS FM. S6,T12N,R9E. (94:454,440-460,PL3) LIMESTONE, GRAY TO BLACK, DENSE, CRYS: 800 FT THICK: TONNAGE. INDEX & GEOL MAPS. USE: 6,12. CA/MG >100.
06061021 PALEOZOIC, CALAVERAS FM. S30,T13N,R9E. (94:464,460,PL3) LIMESTONE: COMPOS CHIP SMPL. INDEX & GEOL MAP. CA/MG >100.

06061022 PALEOZOIC, CALAVERAS FM. S22,T13N,R8E. (556:264,222,PL37) LIMESTONE, GRAY. INDEX MAP. USE: 18. CA/MG >100.

06061023 PALEOZOIC, CALAVERAS FM. S30,T13N,R9E. (94:464,460,PL3) LIMESTONE. INDEX & GEOL MAP. CA/MG >100.

06061024 PALEOZOIC, CALAVERAS FM. S30,T13N,R9E. (94:464,460,PL3) LIMESTONE: COMPOS CHIP SMPL. INDEX & GEOL MAP. CA/MG >100.

06061025 PALEOZOIC, CALAVERAS FM. "T12N,R8E" AUBURN. (556:266,PL37) LIMESTONE, GRAY, MED-GR: SMPL OF 110 FT. INDEX MAP. CA/MG >100.
06061026 PALEOZOIC, CALAVERAS FM. S30,T13N,R9E. (94:464,460,PL3) LIMESTONE. INDEX & GEOL MAP. CA/MG >100.

06061027 PALEOZOIC, CALAVERAS FM. S3,T12N,R8E. (556:263,222,PL37/ 94:460,PL3) LIMESTONE, GRAY, FINE- TO MED-CRYS. INDEX & GEOL MAP. USE: 18. CA/MG = 74.9.
06061028 PALEOZOIC, CALAVERAS FM. S6,T12N,R9E. (94:454,440-460,PL3) LIMESTONE, GRAY TO BLACK, DENSE, CRYS: 800 FT THICK: TONNAGE. INDEX & GEOL MAPS. USE: 6,12. CA/MG = 93.6.
06061029 PALEOZOIC, CALAVERAS FM. S30,T13N,R9E. (94:464,460,461,PL3) LIMESTONE. INDEX & GEOL MAP. CA/MG >100.

06061030 PALEOZOIC, CALAVERAS FM. S30,T13N,R9E. (94:464,460,461,PL3) LIMESTONE: COMPOS CHIP SMPL. INDEX & GEOL MAP. CA/MG = 94.6.
06061031 PALEOZOIC, CALAVERAS FM. S12,T12N,R8E. (94:460,PL3) LIMESTONE, GRAY, CRYS. INDEX & GEOL MAPS. CA/MG >100.

06061032 PALEOZOIC, CALAVERAS FM. S30,T13N,R9E. (94:464,460,461,PL3) LIMESTONE. INDEX & GEOL MAP. CA/MG >100.

06061033 PALEOZOIC, CALAVERAS FM. S30,T13N,R9E. (556:264,222,PL37) LIMESTONE, GRAY. INDEX MAP. USE: 18. CA/MG = 65.6.

06061034 PALEOZOIC, CALAVERAS FM. S30,T13N,R9E. (94:464,460,461,PL3) LIMESTONE: COMPOS CHIP SMPL. INDEX & GEOL MAP. CA/MG = 24.8.
06061054 "T12N,R8E" NEW CASTLE. (68:660) LIMESTONE.
06063001 S1,12,T23N,R11E. (556:269,PL37) LIMESTONE, WHITE: TONNAGE. INDEX MAP.

06063002 S6-8,16,17,21,28,T25N,R8E. (377:179,178) LIMESTONE. *MISC: CASO4 = TR. CA/MG >100.

06063003 S3,10,T25N,R9E. (25:142,PL2) TRAVERTINE, BANDED: 20 FT THICK. INDEX & GEOL MAP. USE: 6,15. CA/MG >100.

06063004 S3,10,T25N,R9E. (25:142,PL2) TRAVERTINE, BANDED: 20 FT THICK. INDEX & GEOL MAP. USE: 6,15. CA/MG >100.

06063005 S3,10,T25N,R9E. (25:142,PL2) TRAVERTINE, BANDED: 20 FT THICK. INDEX & GEOL MAPS. USE: 6,15. CA/MG = 88.6.

06063006 S1,12,T23N,R11E. (556:269,PL37) LIMESTONE, GRAY: TONNAGE. INDEX MAP. CA/MG >100.

06063007 PALEOZOIC, CALAVERAS FM. S30,T13N,R9E. (94:464,460,PL3) LIMESTONE. INDEX & GEOL MAP. CA/MG >100.

06063008 S1,12,T23N,R11E. (556:269,PL37) LIMESTONE, GRAY: TONNAGE. INDEX MAP.

06063009 TRIASSIC, CEDAR FM. S6-8,T25N,R8E. (23:311,310) LIMESTONE. USE: 4,18. CA/MG >100.

06065002 "T2S,R5W" CRESTMORE. (164:331,328,330) LIMESTONE, WHITE. USE: 4. CA/MG = 19.7.

06065003 "T2S,R5W" CRESTMORE. (164:331,328,330) LIMESTONE, WHITE, USE: 4. CA/MG = 20.3.

06065004 "T2S,R5W" CRESTMORE. (164:331,328,330) LIMESTONE, WHITE. USE: 4. CA/MG = 22.6.

06065005 "T2S,R5W" CRESTMORE. (164:331,328,330) LIMESTONE, WHITE. USE: 4. CA/MG = 19.4.

06065006 PALEOZOIC, JURUPA SER. S2,3,T2S,R5W. (21:75/ 55:7,10) LIMESTONE, WHITE, BLUE, COARSELY CRYS: 200-300 FT THICK. USE: 4,15. CA/MG >100.
06065007 PALEOZOIC. "T3S,R18E" BLYTHE. (231:7) DOLOMITE. CA/MG = 1.39.
06065008 PALEOZOIC. S23,T3S,R3E. (556:273,270,274,PL37) LIMESTONE, WHITE, COARSELY CRYS: 100-200 FT THICK. INDEX MAP.

06065009 "T2S,R5W" RIVERSIDE. (65:886,881-884,PL 1) MARBLE, COMPOS SMPL, DH. MIN. INDEX & GEOL MAP. USE: 4,7. *MISC: FEO = 0.22, MNO = 0.01, S = 0.01, F = 0.02, CL = 0.01, BAO = 0.02. CA/MG = 9.45.

06065010 "T2S,R5W" RIVERSIDE. (65:886,881-884,PL 1) MARBLE, COMPOS SMPL, DH. MIN. INDEX & GEOL MAP. USE: 4,7. *MISC: FEO = 0.14, MNO = 0.01, S = 0.02, F = 0.02, CL = 0.00, BAO = 0.02. CA/MG = 6.03.

06065011 "T3S,R4E" GARNET HILL. (353:143) DOLOMITIC LIMESTONE, WHITE, CRYS: MIN. CA/MG = 11.0.

06065012 "T3S,R14E" EAGLE MTN DIST. (261:38,PL1) DOLOMITE, WHITE, COARSELY CRYS. INDEX & GEOL MAPS. *MISC: TOTAL IRON BY DIF. CA/MG = 1.48.
06065014 CARBONIFEROUS. S22,23,T3S,R3E. (501:516,515) LIMESTONE: MIN: 8-20 FT THICK: TONNAGE. CA/MG = 22.3.

06065015 PALEOZOIC. "T4S,R4E" PALM SPRINGS. (556:272,270,PL37) LIMESTONE. INDEX MAP. CA/MG = 30.5.

06065016 PALEOZOIC. "T2S,R20E" BLYTHE. (231:7) LIMESTONE, AVG OF 7 RANDOM SMPL. CA/MG = 38.6.

06065087 "S13,T3S,R13E" (261:38,PL1) DOLOMITE, WHITE, COARSELY CRYS. INDEX & GEOL MAPS. *MISC: FEO=0.78 BY DIF. CA/MG =1.64.

06065088 "S23,T3S,R13E". (261:38, PL1) LIMESTONE, GRAY, COARSELY CRYS. INDEX & GEOL MAPS. CA/MG = 30.6.

06069001 "T12S,R5E" HOLLISTER. (142:383/ 555:118/ 173:118,PL4) LIMESTONE. INDEX MAP. USE: 18. *MISC: GYPSUM = TR.

06069002 "T12S,R5E" HOLLISTER. (535:77,81) DOLOMITE. CA/MG = 1.43.
06069004 PRE-FRANCISCAN, SUR SER. SW1/4,T13S,R5E. (54:32,11,31,PL1) LIMESTONE: TONNAGE. INDEX & GEOL MAPS, GEOL SEC. CA/MG = 68.5.
06069005 PRE-FRANCISCAN, SUR SER. SW1/4,T13S,R5E. (556:275,PL37/54:31,11,PL1) LIMESTONE, WHITE, GRAY, VARIEGATED, COARSELY CRYS: TONNAGE. INDEX & GEOL MAPS, GEOL SEC. CA/MG = 2.56.
06069006 PRE-FRANCISCAN, SUR SER. SW1/4,T13S,R5E. (54:32,11,PL1) DOLOMITE: TONNAGE. INDEX & GEOL MAPS. GEOL SEC. CA/MG=1.97.

06069007 PRE-FRANCISCAN, SUR SER. S23,T14S,R5E. (556:275,PL37/ 54:38,PL1) LIMESTONE: TONNAGE. INDEX & GEOL MAPS, GEOL SEC. USE: 18. CA/MG = 64.5.

TABLE 9. — *Analyses of samples from California and Hawaii containing more than 90 percent carbonate (Group F_2), common-rock category* — Continued

SAMPLE	06069008	06069009	06069010	06069011	06069012	06069013	06069014	06069015	06069016	06069017
SIO2	0.14	0.14	0.17	0.18	0.20	0.20	0.25	0.25	0.25	0.26
AL2O3	0.11 C	0.17	0.47 C	0.04	0.19	0.25 C	0.10 C	0.26	0.30 C	0.06
FE2O3	0.0 B	0.11	0.0 B	0.05	0.15	0.0 B	0.0 B	0.11	0.0 B	0.02
MGO	22.03 I	22.15	21.23	22.35	0.66	0.35	0.43	0.69	2.13	22.19
CAO	30.06 I	30.80	31.00	29.57	54.44	55.50	55.30	54.67	53.18	29.75
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.0 T	0.0 B	0.02	0.02	0.0 B	0.0 B	0.07	0.0 B	0.02
CO2	47.64 I	47.63 M	47.30	47.79 M	44.34 M	43.25	43.90	43.95 M	44.13	46.70 M
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.98	101.00	100.19 *	100.00	100.00 *	99.55	99.98	100.00	99.90	99.00
CLASS	0, 0,100	0, 0,100	0, 0, 99	0, 0,100	0, 0, 99	0, 0, 98	0, 0,100	0, 0, 99	0, 0, 99	0, 0, 98

SAMPLE	06069018	06069019	06069020	06069021	06069022	06069023	06069024	06069025	06069026	06069027
SIO2	0.28	0.28	0.30	0.30	0.32	0.32	0.32	0.32	0.34	0.35
AL2O3	0.09	0.12	0.25 C	0.35 C	0.07	0.10	0.10	0.14	0.27	0.35 C
FE2O3	0.09	0.02	0.0 B	0.0 B	0.01	0.06	0.11	0.08	0.09	0.0 B
MGO	21.44	16.78	0.79	0.36	5.34	21.98	26.16	2.60	0.54	0.54
CAO	30.51	35.88	54.76	55.50	49.45	29.91	25.00	52.37	54.80	55.45
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.02	0.01	0.0 B	0.0 B	0.03	0.03	0.02	0.01	0.03	0.0 B
CO2	47.57 M	44.78 G	43.69	43.96	0.0 B	47.60 M	48.29 M	44.48 M	43.97 M	44.10
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	100.00	97.87	99.79	100.47	55.22	100.00	100.00	100.00	100.04 *	100.79
CLASS	0, 0,100	0, 0, 95	0, 1, 99	0, 0,100	0, 0, 99	0, 0, 99	0, 1, 99	0, 1, 99	0, 1, 99	0, 1,100

SAMPLE	06069028	06069029	06069030	06069031	06069032	06069033	06069034	06069035	06069036	06069037
SIO2	0.36	0.38	0.39	0.42	0.44	0.50	0.50	0.52	0.58	0.59
AL2O3	0.25	0.18	0.43	0.18 C	0.08	0.12	0.0 B	0.16	0.27	0.31
FE2O3	0.17	0.12	0.29	0.0 B	0.01	0.12	0.0 B	0.08	0.17	0.11
MGO	3.89	0.35	0.25	22.61 I	22.13	0.54	0.0 B	10.32	6.26	0.75
CAO	50.79	55.40	54.90	29.08 I	29.71	54.80	55.50 I	43.17	47.80	54.49
NA2O	0.0 B	0.10	0.0 B	0.0 B	0.0 B	0.04	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.03	0.0 B	0.0 B	0.0 B	0.03	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.03	0.0 B	0.05	0.0 B	0.01	0.0 B	0.0 B	0.0 T	0.02	0.02
CO2	44.51 M	43.65 G	43.69 M	47.51 I	47.62 M	43.68 G	43.50 I	45.75 M	44.90 M	43.73 M
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 T	0.0 B	0.0 B	0.0 B
TOT CONS	100.00	100.21	100.00	99.80	100.00	99.83	99.50	100.00	100.00	100.00
CLASS	0, 1, 99	0, 1, 99	0, 1, 99	0, 1, 99	0, 0, 99	0, 1, 99	1, 0, 99	0, 1, 99	0, 1, 99	0, 1, 99

SAMPLE	06069038	06069039	06069040	06069041	06069042	06069043	06069044	06069045	06069046	06069047
SIO2	0.61	0.70	0.75	0.80	0.81	0.84	0.88	0.98	1.00	1.06
AL2O3	0.30	0.0 B	0.64 C	0.20	0.21	0.44	0.10	0.17	0.80 C	0.89
FE2O3	0.15	0.0 B	0.0 B	0.05	0.03	0.11	0.08	0.15	0.0 B	0.33
MGO	0.69	0.0 B	2.60	1.21	7.84	0.48	4.38	0.35	20.45 I	0.52
CAO	54.45	55.60 I	52.22	53.93	46.17	54.49	50.20	54.20	30.54 I	54.86
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.05	0.05	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.03	0.05	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.01	0.0 B	0.0 B	0.03	0.01	0.03	0.0 B	0.0 B	0.0 B	0.0 B
CO2	43.79 M	43.60 I	44.79 G	43.78 G	44.93 G	43.61 M	44.18 G	43.26 G	46.33 I	0.0 B
SO3	0.0 B	0.0 T	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	100.00	99.90	101.00	100.00	100.00	100.00	99.90	99.21	99.12	57.66
CLASS	0, 1, 99	1, 0, 99	0, 2, 99	0, 1, 99	0, 1, 99	0, 1, 99	1, 0, 99	1, 1, 97	0, 2, 97	0, 2, 96

SAMPLE	06069048	06069049	06069050	06069051	06069052	06069053	06069054	06069055	06069056	06069057
SIO2	1.08	1.18	1.22	1.28	1.44	1.46	1.56	1.74	1.76	2.06
AL2O3	0.14 C	0.36	0.48	0.13	0.67	1.26	0.95	0.29	0.33	0.69
FE2O3	0.0 B	0.34	0.15	0.11	0.19	0.46	0.17	0.19	0.21	0.29
MGO	22.48 I	0.46	0.46	0.39	0.69	0.43	1.41	3.43	0.51	0.45
CAO	28.99 I	54.00	53.72	54.00	53.50	54.86	52.67	54.48	54.20	53.40
NA2O	0.0 B	0.0 B	0.0 B	0.13	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.05	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.03	0.02	0.0 B	0.02	0.0 B	0.03	0.05	0.01	0.02
CO2	47.30 I	43.63 G	43.95 M	43.34 G	43.49 G	0.0 B	44.21 M	39.82 M	42.98 G	43.09 M
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.99	100.00 *	100.00	99.43	100.00 *	58.47	101.00	100.00	100.00 *	100.00
CLASS	1, 0, 99	0, 2, 97	0, 2, 98	1, 1, 97	0, 3, 97	0, 3, 94	0, 2, 98	1, 1, 89	1, 1, 97	1, 3, 97

A INSOL.
B BLANK--NO VALUE REPT.
C AL2O3 + FE2O3.
D MGO + CAO.
E NA2O + K2O.
F H2O+.
G IGNITION LOSS (MAY INCLUDE WATER).
H REPORTED AS S.
I CALCULATED BY COMPILERS.
J ORGANIC MATTER.
K TOTAL IRON.
M BY DIFFERENCE.
N INCLUDES TIO2.
O GREATER THAN.
P LESS THAN.
T TRACE.
* ADDITIONAL INFORMATION IN DESCRIPTIVE NOTES.

TABLE 9. — *Analyses of samples from California and Hawaii containing more than 90 percent carbonate (Group F_2), common-rock category* — Continued

```
06069008  "T12S,R5E" HOLLISTER.  (535:77,81)  DOLOMITE.  CA/MG = 1.36.
06069009  PRE-FRANCISCAN, SUR SER.  NE1/4,T14S,R5E.  (54:35,11,PL1)  DOLOMITE, WHITE, COARSELY CRYS, TONNAGE.  INDEX & GEOL MAPS,
          GEOL SEC.  CA/MG = 1.39.
06069010  PRE-FRANCISCAN, SUR SER.  NE1/4,T14S,R5E.  (535:77/ 54:37,11,PL1/ 556:278) DOLOMITE, WHITE, MED-CRYS: TONNAGE.  INDEX &
          GEOL MAPS, GEOL SEC.  USE: 6,12.  *MISC: MN = 0.006.  CA/MG = 1.46.
06069011  PRE-FRANCISCAN, SUR SER.  S34,T13S,R5E.  (54:35,11,PL1)  DOLOMITE, WHITE, COARSELY CRYS.  INDEX & GEOL MAP, GEOL SEC.
          USE: 14.  CA/MG = 1.32.
06069012  PRE-FRANCISCAN, SUR SER.  SE1/4,T13S,R5E.  (54:36,11,22,PL1)  LIMESTONE.  INDEX & GEOL MAPS, GEOL SEC.
          *MISC: I.L. BY DIF.  CA/MG = 82.5.
06069013  PRE-FRANCISCAN, SUR SER.  SW1/4,T13S,R5E.  (556:275,PL37/ 54:31,22,PL1)  LIMESTONE, WHITE, GRAY, VARIEGATED, COARSELY
          CRYS: TONNAGE.  INDEX & GEOL MAPS, GEOL SEC.  CA/MG >100.
06069014  PRE-FRANCISCAN, SUR SER.  SW1/4,T13S,R5E.  (556:275,PL37/54:31,11,PL1)  LIMESTONE, WHITE, GRAY, VARIEGATED, COARSELY
          CRYS: TONNAGE.  INDEX & GEOL MAPS, GEOL SEC.  CA/MG >100.
06069015  PRE-FRANCISCAN, SUR SER.  SE1/4,T13S,R5E.  (54:36,11,PL1)  LIMESTONE, GRAY, BANDED: MED TO COARSELY CRYS: TONNAGE.
          INDEX & GEOL MAPS, GEOL SEC.  CA/MG = 79.2.
06069016  PRE-FRANCISCAN, SUR SER.  SW1/4,T13S,R5E.  (556:275,PL37/54:31,11,PL1)  LIMESTONE, WHITE, GRAY, VARIEGATED, COARSELY
          CRYS: TONNAGE.  INDEX & GEOL MAPS, GEOL SEC.  CA/MG = 25.0.
06069017  PRE-FRANCISCAN, SUR SER.  S34,T13S,R5E.  (54:35,11,PL1)  DOLOMITE, WHITE, COARSELY CRYS.  INDEX & GEOL MAP, GEOL SEC.
          USE: 14.  CA/MG = 1.34.
06069018  PRE-FRANCISCAN, SUR SER.  SE1/4,T13S,R5E.  (54:36,11,PL1)  DOLOMITE.  INDEX & GEOL MAPS, GEOL SEC.  CA/MG = 1.42.

06069019  PRE-FRANCISCAN, SUR SER.  SW1/4,T13S,R5E.  (54:32,11,31,PL1)  DOLOMITE: TONNAGE.  INDEX & GEOL MAPS, GEOL SEC.
          CA/MG = 2.14.
06069020  PRE-FRANCISCAN, SUR SER.  SW1/4,T13S,R5E.  (556:275,PL37/54:31,11,PL1)  LIMESTONE, WHITE, GRAY, VARIEGATED, COARSELY
          CRYS: TONNAGE.  INDEX & GEOL MAPS, GEOL SEC.  CA/MG = 69.3.
06069021  PRE-FRANCISCAN, SUR SER.  SW1/4,T13S,R5E.  (556:275,PL37/54:31,11,PL1)  LIMESTONE, WHITE, GRAY, VARIEGATED, COARSELY
          CRYS: TONNAGE.  INDEX & GEOL MAPS, GEOL SEC.  CA/MG >100.
06069022  PRE-FRANCISCAN, SUR SER.  SW1/4,T13S,R5E.  (54:32,11,31,PL1)  LIMESTONE: TONNAGE.  INDEX & GEOL MAPS, GEOL SEC.
          CA/MG = 9.26.
06069023  PRE-FRANCISCAN, SUR SER.  S34,T13S,R5E.  (54:35,11,PL1)  DOLOMITE, WHITE, COARSELY CRYS.  INDEX & GEOL MAP, GEOL SEC.
          USE: 14.  CA/MG = 1.36.
06069024  PRE-FRANCISCAN, SUR SER.  SE1/4,T13S,R5E.  (54:33,11,PL1)  DOLOMITE.  INDEX & GEOL MAPS, GEOL SEC.  CA/MG = 0.956.

06069025  PRE-FRANCISCAN, SUR SER.  S20,T13S,R5E.  (54:25,11,PL1)  LIMESTONE, WHITE, COARSELY CRYS: SURFACE SMPL: TONNAGE.
          INDEX & GEOL MAPS, GEOL SEC.  CA/MG = 20.1.
06069026  PRE-FRANCISCAN, SUR SER.  SE1/4,T13S,R5E.  (54:36,11,22,PL1)  LIMESTONE.  INDEX & GEOL MAPS, GEOL SEC.
          *MISC: I.L. BY DIF.  CA/MG >100.
06069027  PRE-FRANCISCAN, SUR SER.  SW1/4,T13S,R5E.  (556:275,PL37/ 54:31,22,PL1)  LIMESTONE, WHITE, GRAY, VARIEGATED, COARSELY
          CRYS: TONNAGE.  INDEX & GEOL MAPS, GEOL SEC.  CA/MG >100.
06069028  PRE-FRANCISCAN, SUR SER.  SW1/4,T13S,R5E.  (54:31,11,22,PL1)  LIMESTONE, WHITE, GRAY, VARIEGATED, COARSELY CRYS:
          TONNAGE.  INDEX & GEOL MAPS, GEOL SEC.  CA/MG = 13.1.
06069029  PRE-FRANCISCAN, SUR SER.  SW1/4,T13S,R5E.  (54:33,11,32,PL1)  LIMESTONE, GRAY, MED-GR: TONNAGE.  INDEX & GEOL MAPS,
          GEOL SEC.  USE: 4.  CA/MG >100.
06069030  PRE-FRANCISCAN, SUR SER.  SE1/4,T13S,R5E.  (54:36,11,PL1)  LIMESTONE, GRAY, BANDED, MED TO COARSELY CRYS: TONNAGE.
          INDEX & GEOL MAPS, GEOL SEC.  CA/MG >100.
06069031  "T12S,R5E" HOLLISTER.  (535:77,81)  DOLOMITE.  CA/MG = 1.29.
06069032  PRE-FRANCISCAN, SUR SER.  S34,T13S,R5E.  (54:35,11,PL1)  DOLOMITE, WHITE, COARSELY CRYS.  INDEX & GEOL MAP, GEOL SEC.
          USE: 14.  CA/MG = 1.34.
06069033  PRE-FRANCISCAN, SUR SER.  SW1/4,T13S,R5E.  (54:33,11,32,PL1)  LIMESTONE, GRAY, MED-GR: TONNAGE.  INDEX & GEOL MAPS,
          GEOL SEC.  USE: 4.  CA/MG >100.
06069034  "T12S,R5E" HOLLISTER.  (142:383/ 173:118,PL4)  LIMESTONE.  INDEX MAP.  USE: 18.

06069035  PRE-FRANCISCAN, SUR SER.  SW1/4,T13S,R5E.  (54:32,11,31,PL1)  LIMESTONE: TONNAGE.  INDEX & GEOL MAPS, GEOL SEC.
          CA/MG = 4.18.
06069036  PRE-FRANCISCAN, SUR SER.  SW1/4,T13S,R5E.  (54:31,11,22,PL1)  LIMESTONE, WHITE, GRAY, VARIEGATED, COARSELY CRYS:
          TONNAGE.  INDEX & GEOL MAPS, GEOL SEC.  CA/MG = 7.64.
06069037  PRE-FRANCISCAN, SUR SER.  SE1/4,T13S,R5E.  (54:36,11,PL1)  LIMESTONE, GRAY, BANDED, MED TO COARSELY CRYS: TONNAGE.
          INDEX & GEOL MAPS, GEOL SEC.  CA/MG = 72.7.
06069038  PRE-FRANCISCAN, SUR SER.  SE1/4,T13S,R5E.  (54:36,11,PL1)  LIMESTONE, GRAY, BANDED, MED TO COARSELY CRYS: TONNAGE.
          INDEX & GEOL MAPS, GEOL SEC.  CA/MG = 78.9.
06069039  "T12S,R5E" HOLLISTER.  (142:383/ 555:118)  LIMESTONE.  USE: 18.
06069040  PRE-FRANCISCAN, SUR SER.  S13,T14S,R5E.  (54:38,11,PL1)  LIMESTONE: COMPOS OF 33 SMPL: TONNAGE.  INDEX & GEOL MAPS,
          GEOL SEC.  CA/MG = 20.1.
06069041  PRE-FRANCISCAN, SUR SER.  SW1/4,T13S,R5E.  (54:32,11,31,PL1)  LIMESTONE: TONNAGE.  INDEX & GEOL MAPS, GEOL SEC.
          CA/MG = 44.6.
06069042  PRE-FRANCISCAN, SUR SER.  SW1/4,T13S,R5E.  (54:32,11,31,PL1)  LIMESTONE: TONNAGE.  INDEX & GEOL MAPS, GEOL SEC.
          CA/MG = 5.89.
06069043  PRE-FRANCISCAN, SUR SER.  SE1/4,T13S,R5E.  (54:36,11,PL1)  LIMESTONE, GRAY, BANDED, MED TO COARSELY CRYS: TONNAGE.
          INDEX & GEOL MAPS, GEOL SEC.  CA/MG >100.
06069044  PRE-FRANCISCAN, SUR SER.  SW1/4,T13S,R5E.  (54:33,11,32,PL1)  LIMESTONE, GRAY, MED-GR: TONNAGE.  INDEX & GEOL MAPS,
          GEOL SEC.  USE: 4.  CA/MG = 11.5.
06069045  PRE-FRANCISCAN, SUR SER.  SW1/4,T13S,R5E.  (54:33,11,32,PL1)  LIMESTONE, GRAY, MED-GR: TONNAGE.  INDEX & GEOL MAPS,
          GEOL SEC.  USE: 4.  CA/MG >100.
06069046  PRE-FRANCISCAN.  "T12S,R5E" HOLLISTER.  (60:636/ 556:278,274,PL37)  DOLOMITE.  INDEX MAP.  CA/MG = 1.49.

06069047  MIOCENE & OLIGOCENE, VAQUEROS FM.  S9,T13S,R4E.  (54:23,PL1)  LIMESTONE, CRYS.  INDEX & GEOL MAPS, GEOL SEC. CA/MG>100.

06069048  "T12S,R5E" HOLLISTER.  (535:77,81)  DOLOMITE.  CA/MG = 1.29.
06069049  PRE-FRANCISCAN, SUR SER.  SE1/4,T13S,R5E.  (54:33,11,22,PL1)  LIMESTONE.  TONNAGE.  INDEX & GEOL MAPS, GEOL SEC.
          *MISC: I.L. BY DIF.  CA/MG >100.
06069050  PRE-FRANCISCAN, SUR SER.  SE1/4,T13S,R5E.  (54:36,11,PL1)  LIMESTONE, GRAY, BANDED, MED TO COARSELY CRYS: TONNAGE.
          INDEX & GEOL MAPS, GEOL SEC.  CA/MG >100.
06069051  PRE-FRANCISCAN, SUR SER.  SW1/4,T13S,R5E.  (54:33,11,32,PL1)  LIMESTONE, GRAY, MED-GR: TONNAGE.  INDEX & GEOL MAPS,
          GEOL SEC.  USE: 4.  CA/MG >100.
06069052  PRE-FRANCISCAN, SUR SER.  SE1/4,T13S,R5E.  (54:33,11,22,PL1)  LIMESTONE.  TONNAGE.  INDEX & GEOL MAPS, GEOL SEC.
          *MISC: I.L. BY DIF.  CA/MG 77.5.
06069053  MIOCENE & OLIGOCENE, VAQUEROS FM.  S9,T13S,R4E.  (54:23,PL1)  LIMESTONE, CRYS.  INDEX & GEOL MAPS, GEOL SEC. CA/MG>100.

06069054  PRE-FRANCISCAN, SUR SER.  S34,T13S,R5E.  (54:36,11,PL1)  LIMESTONE, GRAY, MED TO COARSELY CRYS, TONNAGE.  INDEX & GEOL
          MAPS, GEOL SEC.  CA/MG = 37.4.
06069055  PRE-FRANCISCAN, SUR SER.  SW1/4,T13S,R5E.  (54:31,11,22,PL1)  LIMESTONE, WHITE, GRAY, VARIEGATED, COARSELY CRYS:
          TONNAGE.  INDEX & GEOL MAPS, GEOL SEC.  CA/MG = 15.9.
06069056  PRE-FRANCISCAN, SUR SER.  SE1/4,T13S,R5E.  (54:33,11,22,PL1)  LIMESTONE.  TONNAGE.  INDEX & GEOL MAPS, GEOL SEC.
          *MISC: I.L. BY DIF.  CA/MG >100.
06069057  PRE-FRANCISCAN, SUR SER.  SE1/4,T13S,R5E.  (54:36,11,PL1)  LIMESTONE, GRAY, BANDED, MED TO COARSELY CRYS: TONNAGE.
          INDEX & GEOL MAPS, GEOL SEC.  CA/MG >100.
```

TABLE 9. — *Analyses of samples from California and Hawaii containing more than 90 percent carbonate (Group F_2), common-rock category* — Continued

SAMPLE	06069058	06069059	06069060	06069061	06069062	06069063	06069064	06069065	06069066	06069067
SIO2	2.12	2.34	3.66	3.72	3.72	4.00	4.10	4.24	4.59 A	4.86
AL2O3	0.22	0.81	0.73	0.35	0.70	1.05	1.70 C	1.16	0.26 C	0.51
FE2O3	0.12	0.22	0.23	0.23	0.13	0.53	0.0 B	0.14	0.0 B	0.39
MGO	14.94	1.90	0.73	3.26	13.95	13.74	1.40	6.79	1.43 I	19.13
CAO	41.70	51.56	52.24	50.00	36.86	39.10	51.10	44.74	51.59 I	39.00
NA2O	0.03	0.0 B	0.0 B	0.09	0.0 B	0.05	0.0 B	0.0 B	0.0 B	0.03
K2O	0.01	0.0 B	0.0 B	0.03	0.0 B	0.10	0.0 B	0.0 B	0.0 B	0.01
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.11	0.04	0.0 B	0.10	0.0 B	0.0 B	0.56	0.0 B	0.0 B
CO2	39.68 G	43.06 M	42.37 M	42.21 G	44.54 G	39.68	41.70	42.37 G	42.05 I	34.66 G
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	98.82	100.00	100.00	99.89	100.00	98.25	100.00	100.00	99.92	98.59
CLASS	2, 1, 85	1, 3, 97	2, 3, 95	3, 2, 94	2, 3, 95	2, 4, 86	1, 5, 94	2, 4, 93	4, 1, 95	4, 2, 73

SAMPLE	06069068	06069069	06069070	06069071	06069072	06069073	06069085	06069086	06069087	06071001
SIO2	5.10	6.04	6.04	6.22	6.59	7.36	1.00	2.62 A	0.18	2.54
AL2O3	1.73	0.68	1.79	1.80	1.34	0.39	0.0 T	0.40	0.08	0.42
FE2O3	0.75	0.16	0.03	0.25	0.18	0.19	0.05	0.30	0.03	0.24 K
MGO	0.57	4.45	11.37	7.38	0.60	3.25	2.19	0.24	0.25	1.33 I
CAO	51.02	46.64	38.00	42.29	49.60	51.20	54.13 I	53.91 I	55.48	52.63 I
NA2O	0.07	0.0 B	0.0 B	0.0 B	0.0 B	0.14	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.06	0.0 B	0.0 B	0.0 B	0.0 B	0.05	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.10	0.10	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.10 J	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.14	0.07	0.17	0.02	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	0.0 B	41.89 G	43.02 G	41.89 G	41.67 M	37.88 G	44.68 I	42.58 I	0.0 B	42.76 I
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	59.30	100.00	100.32	100.00	100.00	100.46	100.06	100.15	56.02	99.92
CLASS	1, 7, 91	5, 3, 93	3, 6, 92	3, 6, 91	4, 4, 92	6, 2, 85	1, 0,101	2, 2, 97	0, 0,100	2, 2, 97

SAMPLE	06071002	06071003	06071004	06071005	06071006	06071007	06071008	06071009	06071010	06071011
SIO2	2.60 A	2.74	3.01	3.03	3.70	3.71	4.30	5.30	5.44	6.00
AL2O3	0.0 B	0.44	0.68	0.25	1.92 C	1.00 C	0.48	0.64	1.10	1.42
FE2O3	0.0 B	0.52 K	0.37 K	0.0 T	0.0 B	0.0 B	0.24 K	0.32 K	0.54 K	0.38 K
MGO	2.20 I	0.90 I	1.07 I	20.93	43.70	42.95	1.57 I	1.01 I	0.63 I	1.07
CAO	52.00 I	52.92 I	52.39 I	28.93	1.73	0.42	51.31 I	51.32 I	51.40 I	50.50
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	43.20 I	42.52 I	42.29 I	48.86 G	49.80	48.99	42.00 I	41.38 I	41.04 I	40.60 G
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	100.00 *	100.04	99.81	102.00	100.85	97.07	99.90	99.97	100.15	99.97
CLASS	3, 0, 97	1, 2, 96	1, 3, 96	3, 4, 95	0, 5, 95	2, 3, 92	3, 2, 95	4, 2, 94	3, 4, 93	3, 5, 91

SAMPLE	06071012	06071013	06071021	06071023	06071024	06071025	06071026	06071027	06071028	06071029
SIO2	6.80	2.44	2.16	2.24	2.26	2.30	2.31	2.37	0.0 B	0.0 B
AL2O3	2.00 C	0.66	0.80	0.53 C	0.0 B	0.20	0.0 B	0.45	0.0 B	0.0 B
FE2O3	0.0 B	0.44 K	0.42	0.0 B	0.0 B	0.10 K	0.24 I	0.31 K	0.0 B	0.06
MGO	41.72	1.01 I	1.00 I	0.26 I	20.03	1.51 I	0.82	1.06 I	0.48 I	2.18
CAO	2.12	52.89 I	52.35 I	54.95 I	31.99	52.95 I	52.32	52.96 I	55.29 I	51.36
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.21	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	45.70	42.64 I	42.19 I	43.36 I	0.0 B	43.20 I	0.0 B	42.73 I	43.93 I	0.0 B
SO3	0.0 B	0.0 B	0.0 B	0.09 I	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	98.34	100.08	98.92	101.64	54.28	100.26	55.69	99.88	99.70	53.60
CLASS	3, 6, 88	1, 3, 97	0, 3, 96	1, 2, 98	2, 0, 96	2, 1, 98	2, 1, 95	1, 2, 97	0, 0,100	0, 0, 96

SAMPLE	06071030	06071031	06071032	06071034	06071035	06071036	06071037	06071038	06071039
SIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
AL2O3	0.36	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
FE2O3	0.20	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
MGO	18.22 I	0.40	0.45	0.60	4.50	4.50	2.20 I	4.80	4.90
CAO	33.67 I	54.60 I	54.45 I	55.00	49.10	49.60	52.00 I	50.10	47.60
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	46.50 G	43.30 I	43.24 I	43.90 I	43.40 I	43.80 I	43.20 I	44.50 I	42.70 I
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	98.95	98.30	98.14	99.50	97.00 *	97.90 *	100.00 *	99.40	95.20 *
CLASS	0, 0, 98	0, 0, 98	0, 0, 98	0, 0, 99	0, 0, 97	0, 0, 98	0, 0, 97	0, 0, 99	0, 0, 95

A INSOL.
B BLANK--NO VALUE REPT.
C AL2O3 + FE2O3.
D MGO + CAO.
E NA2O + K2O.
F H2O+.
G IGNITION LOSS (MAY INCLUDE WATER).
H REPORTED AS S.
I CALCULATED BY COMPILERS.
J ORGANIC MATTER.
K TOTAL IRON.
M BY DIFFERENCE.
N INCLUDES TIO2.
O GREATER THAN.
P LESS THAN.
T TRACE.
* ADDITIONAL INFORMATION IN DESCRIPTIVE NOTES.

TABLE 9. — *Analyses of samples from California and Hawaii containing more than 90 percent carbonate (Group F_2), common-rock category* — Continued

06069058 PRE-FRANCISCAN, SUR SFR. SW1/4,T13S,R5E. (54:32,11,31,PL1) DOLOMITE: TONNAGE. INDEX & GEOL MAPS, GEOL SEC. CA/MG = 2.79.
06069059 PRE-FRANCISCAN, SUR SER. SE1/4,T13S,R5E. (54:36,11,PL1) LIMESTONE, GRAY, BANDED, MED TO COARSELY CRYS: TONNAGE. INDEX & GEOL MAPS, GEOL SEC. CA/MG = 27.1.
06069060 PRE-FRANCISCAN, SUR SER. SW1/4,T13S,R5E. (54:31,11,22,PL1) LIMESTONE, WHITE, GRAY, VARIEGATED, COARSELY CRYS: TONNAGE. INDEX & GEOL MAPS, GEOL SEC. CA/MG = 71.6.
06069061 PRE-FRANCISCAN, SUR SER. SW1/4,T13S,R5E. (54:32,11,31,PL1) LIMESTONE: TONNAGE. INDEX & GEOL MAPS, GEOL SEC. CA/MG = 15.3.
06069062 PRE-FRANCISCAN, SUR SER. SW1/4,T13S,R5E. (54:32,11,31,PL1) DOLOMITE: TONNAGE. INDEX & GEOL MAPS, GEOL SEC. CA/MG = 2.64.
06069063 PRE-FRANCISCAN, SUR SER. SW1/4,T13S,R5E. (54:32,11,31,PL1) DOLOMITE: TONNAGE. INDEX & GEOL MAPS, GEOL SEC. CA/MG = 2.85.
06069064 PRE-FRANCISCAN, SUR SER. S24,T13S,R4E. (54:25,11,23,PL1) LIMESTONE: AVG OF 50 SMPL: SURFACE & DH SMPL: TONNAGE. INDEX & GEOL MAPS, GEOL SEC. CA/MG = 36.5.
06069065 PRE-FRANCISCAN, SUR SER. SW1/4,T13S,R5E. (54:32,11,31,PL1) LIMESTONE: TONNAGE. INDEX & GEOL MAPS, GEOL SEC. CA/MG = 6.48.
06069066 PRE-FRANCISCAN, SUR SER. S27,T15S,R7E. (556:275,PL37/ 54:39,11,PL1) LIMESTONE, GRAY TO WHITE: COMPOS SMPL OF 75 FT. INDEX & GEOL MAPS, GEOL SEC. USE: 4. CA/MG = 36.1.
06069067 PRE-FRANCISCAN, SUR SER. SW1/4,T13S,R5E. (54:32,11,31,PL1) DOLOMITE: TONNAGE. INDEX & GEOL MAPS, GEOL SEC. CA/MG = 2.04.
06069068 MIOCENE & OLIGOCENE, VAQUEROS FM. S9,T13S,R4E. (54:23,PL1) LIMESTONE, CRYS. INDEX & GEOL MAPS, GEOL SEC. CA/MG = 89.5.
06069069 PRE-FRANCISCAN, SUR SER. SW1/4,T13S,R5E. (54:32,11,31,PL1) LIMESTONE: TONNAGE. INDEX & GEOL MAPS, GEOL SEC. CA/MG = 10.5.
06069070 PRE-FRANCISCAN, SUR SER. SW1/4,T13S,R5E. (54:32,11,31,PL1) DOLOMITE: TONNAGE. INDEX & GEOL MAPS, GEOL SEC. CA/MG = 3.34.
06069071 PRE-FRANCISCAN, SUR SER. SW1/4,T13S,R5E. (54:32,11,31,PL1) LIMESTONE: TONNAGE. INDEX & GEOL MAPS, GEOL SEC. CA/MG = 5.73.
06069072 PRE-FRANCISCAN, SUR SER. SE1/4,T13S,R5E. (54:36,11,PL1) LIMESTONE, GRAY, BANDED, MED TO COARSELY CRYS: RANDOM SMPL: TONNAGE. INDEX & GEOL MAPS, GEOL SEC. CA/MG = 82.7.
06069073 PRE-FRANCISCAN, SUR SER. SW1/4,T13S,R5E. (54:32,11,31,PL1) LIMESTONE: TONNAGE. INDEX & GEOL MAPS, GEOL SEC. CA/MG = 15.8.
06069085 PRE-FRANCISCAN. "T13S,R4E" CHITTENDEN. (305:58) LIMESTONE, CRYS. USE: 4. CA/MG = 24.7.

06069086 PRE-FRANCISCAN. "T13S,R4E" CHITTENDEN. (305:58) LIMESTONE, BLUE TO WHITE, CRYS. USE: 4. CA/MG >100.

06069087 PRE-FRANCISCAN, SUR SER. "T13S,R3,4E" LOS VERGELES DIST. (265:55,PL1) LIMESTONE, WHITE, CRYS. INDEX & GEOL MAPS. USE: 7,12. CA/MG >100.
06071001 S4,T3N,R7W. (556:291,290,PL37) LIMESTONE, WHITE, CRYS: TONNAGE. INDEX MAP. USE: 4. CA/MG = 39.6.

06071002 "T1S,R4W" COLTON. (145:360) MARBLE, PHYS PROP. USE: 15. *MISC: INSOL = BIOTITE & PYROLUSITE. CA/MG = 23.6.

06071003 S4,T3N,R7W. (556:291,290,PL37) LIMESTONE, WHITE, CRYS: TONNAGE. INDEX MAP. USE: 4. CA/MG = 58.8.

06071004 S4,T3N,R7W. (556:291,290,PL37) LIMESTONE, WHITE, CRYS: TONNAGE. INDEX MAP. USE: 4. CA/MG = 49.0.

06071005 S11,12,T9N,R4W. (507:523) DOLOMITE, WHITE TO GRAY. USE: 12. CA/MG = 1.38.

06071006 S14,T9N,R6W. (507:533,532) MAGNESITE: 300 FT THICK. CA/MG = 0.040.
06071007 S14,T9N,R6W. (507:533,532) MAGNESITE: 300 FT THICK. CA/MG = 0.010.
06071008 S4,T3N,R7W. (556:291,290,PL37) LIMESTONE, WHITE, CRYS: TONNAGE. INDEX MAP. USE: 4. CA/MG = 32.7.

06071009 S4,T3N,R7W. (556:291,290,PL37) LIMESTONE, WHITE, CRYS: TONNAGE. INDEX MAP. USE: 4. CA/MG = 50.8.

06071010 S4,T3N,R7W. (556:291,290,PL37) LIMESTONE, WHITE, CRYS: TONNAGE. INDEX MAP. USE: 4. CA/MG = 81.6.

06071011 S4,T3N,R7W. (556:290,291,PL37) LIMESTONE, WHITE, CRYS: TONNAGE. INDEX MAP. USE: 4. CA/MG = 47.2.

06071012 S14,T9N,R6W. (507:533,532) MAGNESITE: 300 FT THICK. USE: 18. CA/MG = 0.051.

06071013 S4,T3N,R7W. (556:291,290,PL37) LIMESTONE, WHITE, CRYS: TONNAGE. INDEX MAP. USE: 4. CA/MG = 52.4.

06071021 S4,T3N,R7W. (556:291,290,PL37) LIMESTONE, WHITE, CRYS: TONNAGE. INDEX MAP. USE: 4. CA/MG = 52.4.

06071023 PRECAMBRIAN. S12,T11N,R6E. (120:873,872,876/ 557:15,103) LIMESTONE, PINK, CRYS. INDEX MAP. USE: 6. CA/MG >100.

06071024 S17,20,21,T6N,R14E. (556:286,284,287,PL37) DOLOMITE, WHITE, CRYS: 30-110 FT THICK, TONNAGE. INDEX MAP. CA/MG = 1.60.

06071025 S4,T3N,R7W. (556:291,290,PL37) LIMESTONE, WHITE, CRYS: TONNAGE. INDEX MAP. USE: 4. CA/MG = 35.1.

06071026 S17,20,21,T6N,R14E. (556:286,284-287,PL37) LIMESTONE, GRAY, FINELY CRYS: TONNAGE. INDEX MAP. CA/MG = 63.8.

06071027 S4,T3N,R7W. (556:291,290,PL37) LIMESTONE, WHITE, CRYS: TONNAGE. INDEX MAP. USE: 4. CA/MG = 50.0.

06071028 PALEOZOIC, FURNACE LS. S14,T3N,R1E. (556:299,300,PL37/ 550:268,267,269,PL36) LIMESTONE, WHITE, SUGARY. CA/MG >100.

06071029 PLEISTOCENE, BLACKHAWK BRECCIA. "S14,T3N,R1E" (231:6) LIMESTONE, BRECCIATED: AVG OF 6 RANDOM SMPL: 100-600 FT THICK. USE: 4. CA/MG = 23.6.
06071030 PALEOZOIC. S29,T6N,R13E. (408:171,170) MARBLE, OOLOMITIC: TYPICAL SMPL: TONNAGE. CA/MG = 1.85.

06071031 S12,T15N,R13E. (503:385,384) LIMESTONE, FINE-GR TO COARSELY CRYS: BEDS 10-300 FT THICK, AVG OF 4 ANAL. CA/MG >100.

06071032 CARBONIFEROUS. S12,T15N,R13E. (556:287,PL37) LIMESTONE, GRAY TO WHITE, FINE TO COARSELY CRYS: BEDS 300 FT THICK: TONNAGE. INDEX MAP. CA/MG >100.
06071034 PALEOZOIC, FURNACE LS. T3N,R1E, CUSHENBURY CANYON. (550:268,267,269,PL36) LIMESTONE, WHITE: COMPOS SMPL: MIN. INDEX & GEOL MAPS. CA/MG = 91.6.
06071035 PLEISTOCENE, BLACKHAWK BRECCIA. S1/2,T4N,R2E. (550:281,PL36) LIMESTONE BRECCIA, GRAY, GRANULAR: MIN. INDEX & GEOL MAPS. *MISC: INSOL = TREMOLITE. CA/MG = 10.9.
06071036 PLEISTOCENE, BLACKHAWK BRECCIA. S1/2,T4N,R2E. (550:281,PL36) LIMESTONE BRECCIA, GRAY, GRANULAR: MIN. INDEX & GEOL MAPS. *MISC: INSOL = TREMOLITE. CA/MG = 11.0.
06071037 "T1S,R4W" COLTON. (144:240) MARBLE: PHYS PROP. USE:15. *MISC: BIOTITE & PYROLUSITE = 2.6. CA/MG = 23.6.

06071038 PALEOZOIC, FURNACE LS. S12,T3N,R1E. (550:268,269,PL36) LIMESTONE, WHITE: MIN. INDEX & GEOL MAPS. CA/MG = 10.4.

06071039 PLEISTOCENE, BLACKHAWK BRECCIA. S1/2,T4N,R2E. (550:281,PL36) LIMESTONE BRECCIA, GRAY, GRANULAR: MIN. INDEX & GEOL MAPS. *MISC: INSOL = TREMOLITE. CA/MG = 9.71.

TABLE 9. — *Analyses of samples from California and Hawaii containing more than 90 percent carbonate (Group F_2), common-rock category* — Continued

SAMPLE	06071040	06071041	06071042	06071043	06071045	06071046	06071047	06071048	06071049	06071050
SIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
AL2O3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
FE2O3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
MGO	5.00	19.70	5.70	7.50	22.00	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CAO	47.30	31.20	48.10	45.60	30.00 I	55.00 I	55.20 I	55.20 I	55.40 I	56.00 I
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	0.0 B	0.0 B	44.00 I	44.00 I	43.30 I	43.00 I	43.30 I	43.30 I	43.40 I	43.00 I
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	52.30 *	50.90	97.80 *	97.10 *	95.30	98.00	98.50	100.00 *	98.80	99.00
CLASS	0, 0, 95	0, 0, 97	0, 0, 98	0, 0, 97	0, 0, 91	0, 0, 98	0, 0, 98	0, 0, 98	0, 0, 99	0, 0, 98

SAMPLE	06071051	06071052	06071053	06071054	06071055	06071056	06071057	06071058	06071060	06071061
SIO2	0.0 B	0.0 B	0.10	0.20	0.32	0.40 A	0.40	0.40	0.43 A	0.46 A
AL2O3	0.0 B	0.0 B	0.72	0.30	0.12	0.0 B	0.0 B	0.50 C	0.24 C	0.48 C
FE2O3	0.0 B	0.0 B	0.36 K	0.0 B	0.10 K	0.0 B	0.40	0.0 B	0.0 B	0.0 B
MGO	0.0 B	0.0 B	1.45 I	0.0	0.76 I	0.40	21.70	21.10	17.19 I	43.08 I
CAO	56.00 I	55.00 I	52.55 I	56.00	54.81 I	54.70	32.10	31.00	35.34 I	4.46 I
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	43.00 I	44.00 I	42.84 I	43.30 G	43.87 I	43.30 I	0.0 B	0.0 B	46.52 I	50.54 I
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.00	99.00	98.02	99.80	99.98	98.80	54.60	53.00	99.72	99.02
CLASS	0, 0, 98	0, 0, 99	0, 0, 97	0, 0, 98	0, 1, 99	0, 0, 98	0, 1, 95	0, 1, 99	0, 1, 99	0, 1, 98

SAMPLE	06071063	06071064	06071065	06071066	06071067	06071068	06071069	06071070	06071071	06071072
SIO2	0.50	0.50	0.52	0.55	0.60	0.60	0.63	0.70	0.78 A	0.84
AL2O3	0.0 B	0.28	0.15	0.85 C	0.45 C	0.50 C	0.59	0.38	0.24 C	2.77
FE2O3	0.20	0.02	0.45	0.0 B	0.0 B	0.0 B	0.32	0.20 K	0.0 B	0.43
MGO	1.70	0.08	3.94	0.0	20.20	21.03 I	4.14	1.15 I	41.12	43.00
CAO	54.68 I	55.50	50.85	55.22	31.04	30.81 I	51.00	53.96 I	6.06	1.94
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.05	0.0 B	0.0 B	0.0 B	0.05	0.0 B	0.0 B	0.0 B
CO2	42.92 I	43.61 G	0.0 B	43.38	0.0 B	47.16 I	0.0 B	43.61 I	49.66 I	50.80
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	100.00	99.99	55.96	100.00	52.29	100.10	56.73	100.00	97.86	99.78
CLASS	0, 0, 97	0, 1, 99	0, 1, 98	0, 1, 99	0, 1, 98	0, 1, 99	0, 1, 97	0, 1, 99	0, 1, 97	0, 1, 96

SAMPLE	06071074	06071075	06071076	06071077	06071078	06071080	06071081	06071082	06071083	06071084
SIO2	0.90	0.97	0.99	1.00 A	1.01	1.09	1.10	1.10	1.16 A	1.17
AL2O3	0.35	0.11	0.20	0.36	0.54 C	0.0 B	0.03	0.25	0.24 C	0.13 C
FE2O3	0.66	0.75	0.38	0.20	0.0 B	0.0 B	0.11	0.19	0.0 B	0.0 B
MGO	21.51 I	4.98	3.49	18.23	20.35 I	0.45	1.93	2.98	20.69 I	0.13 I
CAO	29.69 I	50.24	51.29	33.68	31.46 I	54.45 I	52.88	51.18	30.99 I	55.14 I
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.11	0.04	0.0 B	0.0 B	0.0 B	0.0 T	0.08	0.0 B	0.0 B
CO2	45.50 G	0.0 B	0.0 B	46.50 G	46.64 G	43.24 I	43.94 G	0.0 B	46.92 I	43.43 I
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	98.61	57.16	56.39	99.97	100.00	99.23	99.99	55.78	100.00	100.00
CLASS	0, 2, 95	0, 2, 95	0, 2, 97	0, 2, 98	0, 2, 98	1, 0, 98	1, 1, 98	0, 1, 98	1, 1, 99	1, 0, 99

SAMPLE	06071086	06071087	06071088	06071089	06071091	06071092	06071093	06071094	06071095	06071096
SIO2	1.34 A	1.34 A	1.38 A	1.40 A	1.40 A	1.45	1.52 A	1.55	1.56	1.57
AL2O3	0.18 C	0.88 C	0.40 C	0.40 C	0.0 B	0.28	0.32 C	0.96	0.73	0.15
FE2O3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.24	0.0 B	0.14	0.94 I	0.43
MGO	43.84	39.41	46.32	19.70	19.70 I	4.58	44.62	3.00	20.23	1.98
CAO	0.78	7.16	1.10	31.20	31.20 I	50.65	0.86	51.14	31.22	53.27
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.03	0.0 B	0.19	0.0 B	0.04
CO2	48.47 I	48.67 I	50.74 I	46.20 I	46.00 I	0.0 B	49.39 I	0.0 B	0.0 B	0.0 B
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	94.61	97.46	99.94	98.90 *	98.90 *	57.23	96.71	56.98	54.68	57.44
CLASS	1, 1, 93	0, 2, 95	1, 1, 98	1, 1, 97	1, 0, 97	1, 1, 95	1, 1, 95	0, 3, 96	0, 3, 95	1, 1, 96

A INSOL.
B BLANK--NO VALUE REPT.
C AL2O3 + FE2O3.
D MGO + CAO.
E NA2O + K2O.
F H2O+.
G IGNITION LOSS (MAY INCLUDE WATER).
H REPORTED AS S.
I CALCULATED BY COMPILERS.
J ORGANIC MATTER.
K TOTAL IRON.
M BY DIFFERENCE.
N INCLUDES TIO2.
O GREATER THAN.
P LESS THAN.
T TRACE.
* ADDITIONAL INFORMATION IN DESCRIPTIVE NOTES.

TABLE 9. — *Analyses of samples from California and Hawaii containing more than 90 percent carbonate (Group F_2), common-rock category* — Continued

```
06071040  PALEOZOIC, FURNACE LS.  T3N,R2E, BLACKHAWK CANYON.  (550:282,PL36)  LIMESTONE.  INDEX & GEOL MAPS.  *MISC: INSOL =
          TREMOLITE.  CA/MG = 9.46.
06071041  SAN BERNARDINO MTN., BLACKHAWK CANYON.  (404:221)  DOLOMITE.  CA/MG = 1.58.

06071042  PLEISTOCENE, BLACKHAWK BRECCIA.  S1/2,T4N,R2E.  (550:281,PL36)  LIMESTONE BRECCIA, GRAY, GRANULAR: MIN.  INDEX & GEOL
          MAPS.  *MISC: INSOL = TREMOLITE.  CA/MG = 8.43.
06071043  PLEISTOCENE, BLACKHAWK BRECCIA.  S1/2,T4N,R2E.  (550:281,PL36)  LIMESTONE BRECCIA, GRAY, GRANULAR: MIN.  INDEX & GEOL
          MAPS.  *MISC: INSOL = TREMOLITE.  CA/MG = 6.08.
06071045  S17,T1N,R2E.  (507:528)  DOLOMITE.  CA/MG = 1.36.
06071046  S32,T12N,R42E.  (503:388,262,387)  LIMESTONE, WHITE, CRYS: TONNAGE.  INDEX MAP.

06071047  S19,T1S,R4W.  (21:77)  LIMESTONE, COARSELY CRYS.  USE: 18.
06071048  S20,T11N,R1W.  (160:32,23-33,PL3-7)  LIMESTONE, BROWN, GRANULAR: MIN: TONNAGE.  INDEX & GEOL MAPS, MEAS SEC, GEOL SEC.
          USE: 16.  *MISC: SRCO3=1.5.
06071049  S5,T1N,R4W.  (507:521)  LIMESTONE, WHITE, CRYS.  USE: 4.
06071050  S19,T1S,R4W.  (21: 77)  LIMESTONE, COARSELY CRYS.  USE: 18.
06071051  CARBONIFEROUS, ORO GRANDE FM.  S25,T6N,R4W.  (52:169,PL1-3)  LIMESTONE, GRAY TO WHITE, MED TO COARSELY CRYS: TONNAGE.
          INDEX & GEOL MAPS, GEOL SEC.  USE: 9,10.
06071052  T15N,R15E, IVANPAH.  (503:389,262)  LIMESTONE, WHITE, GRAY, CRYS.  INDEX MAP.

06071053  S4,T3N,R7W.  (556:290,291,PL37)  LIMESTONE, WHITE, CRYS: TONNAGE.  INDEX MAP.  USE: 4.  CA/MG = 73.2.

06071054  PRECAMBRIAN, ESSEX SER.  S10,T3N,R16E.  (507:521,518/ 556:284,283,PL37)  LIMESTONE, COARSELY CRYS. INDEX MAP.  USE:9,12.

06071055  S4,T3N,R7W.  (556:291,290,PL37)  LIMESTONE, WHITE, CRYS: TONNAGE.  INDEX MAP.  CA/MG = 72.1.

06071056  PALEOZOIC, FURNACE LIMESTONE.  S8,17,T3N,R1E.  (550:268,270,PL36)  LIMESTONE, WHITE: COMPOS SMPL: MIN.  INDEX & GEOL
          MAPS.  CA/MG >100.
06071057  S27,28,33,T4N,R3W.  (507:523,521)  DOLOMITE, WHITE TO BROWN: 700 FT THICK: TONNAGE.  CA/MG = 1.48.

06071058  S17,20,21,T6N,R14E.  (507:518)  DOLOMITE.  CA/MG = 1.47.
06071060  "T9N,R14E" PROVIDENCE MTN.  (309:317,316)  DOLOMITE.  INDEX & GEOL MAP.  CA/MG = 2.06.

06071061  TERTIARY.  S22,T8N,R21E.  (524:368,357-363,PL62-64)  MAGNESITE, BROWN, FINE-GR,  THIN-BEDDED: 1.9-FT CHANNEL SMPL:
          TONNAGE.  INDEX & GEOL MAPS, MEAS SEC, GEOL SEC.  CA/MG = 0.104.
06071063  "T1S,R4W" COLTON.  (290:523)  LIMESTONE.  USE: 10.  CA/MG = 32.2.
06071064  S17,T6N,R14E.  (507:518)  LIMESTONE, WHITE, FINE-GR: 750 FT THICK.  TONNAGE.  CA/MG >100.

06071065  CARBONIFEROUS, ORO GRANDE FM.  S15,T6N,R4W.  (56:34,8,9,33,PL1,2)  LIMESTONE, GRAY, BANDED, MED-CRYS, MASSIVE: 250 FT
          THICK: SPOT SMPL: TONNAGE.  INDEX & GEOL MAP, GEOL SEC.  USE: 4.  CA/MG = 12.9.

06071066  PALEOZOIC, JURUPA SER.  S19,30,T1S,R4W.  (337:24/ 55:7,10/ 21:183)  LIMESTONE, WHITE, BLUE-GRAY, VARIGATED, COARSELY
          CRYS.  USE: 4.
06071067  S20,21,T6N,R14E.  (507:518)  DOLOMITE.  CA/MG = 1.54.
06071068  PALEOZOIC.  S17,20,21,T6N,R14E.  (408:175)  DOLOMITE: TONNAGE.  CA/MG = 1.46.

06071069  CARBONIFEROUS, ORO GRANDE FM.  S15,T6N,R4W.  (56:34,9,33,PL1,2)  LIMESTONE, GRAY, BANDED: SPOT SMPL: 250 FT THICK:
          TONNAGE.  INDEX & GEOL MAPS, GEOL SEC.  USE: 4.  CA/MG = 12.3.
06071070  S4,T3N,R7W.  (556:291,290,PL37)  LIMESTONE, WHITE, CRYS: TONNAGE.  INDEX MAP.  CA/MG = 46.9.

06071071  TERTIARY.  S22,T8N,R21E.  (524:368,357-363,PL62-65)  MAGNESITE, BROWN, FINE-GR, THIN-BEDDED: 3-FT CHANNEL SMPL: TONNAGE.
          INDEX & GEOL MAPS, MEAS SEC, GEOL SEC.  CA/MG = 0.147.
06071072  S15,T6N,R1W.  (507:534,533)  MAGNESITE, WHITE.  CA/MG = 0.045.
06071074  PALEOZOIC.  S21,T6N,R14E.  (408:171)  DOLOMITE, GRAY, FINELY CRYS: TONNAGE.  CA/MG = 1.38.

06071075  CARBONIFEROUS, ORO GRANDE FM.  S15,T6N,R4W.  (56:34,9,33,PL1,2)  LIMESTONE, GRAY, MED-CRYS: SPOT SMPL: 250 FT THICK:
          TONNAGE.  INDEX & GEOL MAPS, GEOL SEC.  USE: 4.  CA/MG = 10.1.
06071076  CARBONIFEROUS, ORO GRANDE FM.  S15,T6N,R4W.  (56:34,9,33,PL1,2)  LIMESTONE, GRAY, MED-GR: SPOT SMPL: 250 FT THICK:
          TONNAGE.  INDEX & GEOL MAPS, GEOL SEC.  USE: 4.  CA/MG = 14.7.
06071077  PALEOZOIC.  S29,T6N,R13E.  (507:518,517/ 556:283,PL37)  DOLOMITE: TONNAGE.  INDEX MAP.  CA/MG = 1.85.

06071078  S8,9,T14N,R16E.  (556:294,293,PL37)  DOLOMITE.  INDEX MAP. CA/MG=1.55.
06071080  S12,13,24,T15N,R13E & S7,T15N,R14E.  (507:521)  LIMESTONE. CA/MG >100.
06071081  PALEOZOIC, FURNACE LS.  "S14,T3N,R1E"  (55:7,9)  LIMESTONE, GRAY, WHITE, VARIEGATED, COARSELY CRYS.  USE: 4,12.
          CA/MG = 27.4.
06071082  CARBONIFEROUS, ORO GRANDE FM.  S8,9,T6N,R4W.  (56:35,8,9,PL1,2)  LIMESTONE, GRAY, MED-CRYS, MASSIVE TO BRECCIATED.
          INDEX & GEOL MAPS, GEOL SEC.  USE: 6,18.  CA/MG = 17.2.
06071083  "T1S,R20E" CHUBBUCK.  (558:333,315,332)  DOLOMITE, WHITE, COARSELY CRYS: TONNAGE.  INDEX MAP.  USE: 18.  CA/MG = 1.50.

06071084  "T1S,R20E" CHUBBUCK.  (558:333,315,332)  LIMESTONE, WHITE, COARSELY CRYS: TONNAGE.  INDEX MAP.  USE: 18.  CA/MG >100.

06071086  TERTIARY.  S22,T8N,R21E.  (524:368,357-363,PL62-64)  MAGNESITE, BROWN, FINE-GR, THIN-BEDDED: 3.5-FT CHANNEL SMPL:
          TONNAGE.  INDEX & GEOL MAPS, MEAS SEC, GEOL SEC.  CA/MG = 0.018.
06071087  TERTIARY.  S22,T8N,R21E.  (524:368,358,369,PL62-64)  DOLOMITIC MAGNESITE: 1.2-FT CHANNEL SMPL: TONNAGE.  INDEX & GEOL
          MAPS, MEAS SEC, GEOL SEC.  CA/MG = 0.182.
06071088  TERTIARY.  S22,T8N,R21E.  (524:368,358-363,PL62-64)  MAGNESITE, BROWN, FINE-GR, THIN-BEDDED: 2.5-FT CHANNEL SMPL:
          TONNAGE.  INDEX & GEOL MAPS, MEAS SEC, GEOL SEC.  CA/MG = 0.024.
06071089  PALEOZOIC, FURNACE LS.  S16,T3N,R1E.  (550:268,266-270,PL36)  DOLOMITE, GRAY: MIN.  INDEX & GEOL MAPS.  *MISC: FECO3 =
          0.6.  CA/MG = 1.58.
06071091  PALEOZOIC, FURNACE LS.  S16,T3N,R1E.  (556:299,300,PL37)  DOLOMITE, GRAY: MIN.  INDEX MAP. *MISC: FECO3=0.6. CA/MG=1.58.

06071092  CARBONIFEROUS, ORO GRANDE FM.  S15,T6N,R4W.  (56:34,9,PL1,2)  LIMESTONE, GRAY, MED-GR: SPOT SMPL: TONNAGE.  INDEX &
          GEOL MAPS, GEOL SEC.  USE: 4.  CA/MG = 11.1.
06071093  TERTIARY.  S15,T8N,R21E.  (524:368,357-363,PL62-64)  MAGNESITE, BROWN, FINE-GR, THIN-BEDDED: 2-FT CHANNEL SMPL: TONNAGE.
          INDEX & GEOL MAPS, MEAS SEC, GEOL SEC.  CA/MG = 0.019.
06071094  CARBONIFEROUS, ORO GRANDE FM.  S9,T6N,R4W.  (56:33,9,PL1,2)  LIMESTONE, GRAY, MED-CRYS, MASSIVE: TYPICAL SMPL.  INDEX &
          GEOL MAPS, GEOL SEC.  USE: 4,6.  CA/MG = 17.0.
06071095  S17,20,21,T6N,R14E.  (556:286,284,PL37)  DOLOMITE, WHITE, FINELY CRYS: TONNAGE.  INDEX MAP.  CA/MG = 1.54.

06071096  CARBONIFEROUS, ORO GRANDE FM.  S15,T6N,R4W.  (56:34,9,33,PL1,2)  LIMESTONE, GRAY, MED-CRYS, MASSIVE: 250 FT THICK:
          TONNAGE.  INDEX & GEOL MAPS, GEOL SEC.  USE: 4.  CA/MG = 26.9.
```

TABLE 9. — *Analyses of samples from California and Hawaii containing more than 90 percent carbonate (Group F_2), common-rock category* — Continued

SAMPLE	06071097	06071098	06071099	06071100	06071101	06071102	06071103	06071104	06071105	06071106
SIO2	1.58	1.60 A	1.65	1.68	1.70	1.70	1.70	1.74 A	1.74	1.82 A
AL2O3	0.39	0.60 C	0.0 B	0.39	0.04 C	0.0 B	0.54	0.44 C	0.82	0.86 C
FE2O3	0.26 I	0.0 B	0.0 B	0.27 K	0.0 B	0.21 I	0.26 K	0.0 B	0.46	0.0 B
MGO	0.31	44.20	19.80	1.03 I	1.05	0.40	0.73	32.20	1.18	43.20
CAO	53.54	3.80	30.90	53.77 I	55.39 I	54.80	53.40	16.30	52.80	1.78
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	0.0 B	49.70 G	0.0 B	43.34 I	44.63 I	0.0 B	42.60 G	47.93 I	42.69 G	48.56 I
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	56.0B	99.90	52.35	100.48	102.81	57.11	99.23	98.61	99.69	96.22
CLASS	1, 2, 96	1, 2, 96	2, 0, 97	1, 2, 98	2, 0,101	1, 0, 97	0, 2, 96	1, 1, 96	0, 3, 96	0, 3, 94

SAMPLE	06071107	06071108	06071109	06071110	06071111	06071112	06071113	06071114	06071115	06071116
SIO2	1.84	1.87	1.88	1.98	2.00	2.02	2.10	2.20 A	2.20 A	2.34 A
AL2O3	0.62	1.08	0.56	0.54	0.70	1.48	4.89	0.0 B	0.32 C	0.18 C
FE2O3	0.48 K	0.08	0.38	0.77	0.30	0.0	2.07	0.0 B	0.0 B	0.0 B
MGO	0.96 I	0.22 I	0.82	3.04	1.00	7.56	16.15	0.90	42.60	45.72
CAO	53.22 I	54.14 I	54.20	55.55	54.40	45.89	31.95	53.40	3.86	1.00
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.02	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.23	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.51 F	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.02	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0	0.12	0.0 B	0.0 B	0.0 B
CO2	42.82 I	42.75 I	42.49 G	37.94 I	42.50 G	42.41	0.0 B	42.90 I	49.55 I	50.76 I
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.94	100.14	100.33	99.82	100.90	100.44 *	57.28	99.40	98.53	100.00
CLASS	0, 3, 97	0, 3, 97	0, 3, 96	0, 3, 85	0, 3, 96	0, 4, 94	0, 4, 90	2, 0, 97	2, 1, 96	2, 0, 97

SAMPLE	06071117	06071118	06071119	06071120	06071121	06071122	06071123	06071124	06071125	06071126
SIO2	2.50 A	2.50 A	2.50 A	2.52 A	2.56 A	2.64	2.66 A	2.67 A	2.70	3.10 A
AL2O3	0.30 C	0.30 C	0.33 C	0.53 C	0.68 C	1.66	0.32 C	0.20 C	1.60	0.50 C
FE2O3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	1.74	0.0 B	0.0 B	0.70	0.0 B
MGO	45.30	46.30	44.24	42.61	44.44	2.48	44.22	39.98	2.40	42.32
CAO	2.50	1.10	2.58	4.44	1.70	48.15	0.48	7.59	52.00	2.30
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	49.90 G	49.80 G	50.35 I	49.90 I	49.85 I	40.45 I	48.66 I	49.56 I	40.60 G	48.12 I
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	100.50	100.00	100.00	100.00	99.23	97.12	96.34	100.00	100.00	96.34
CLASS	2, 1, 96	2, 1, 96	2, 1, 97	2, 1, 97	1, 2, 96	0, 5, 91	2, 1, 93	2, 1, 97	0, 5, 90	2, 1, 93

SAMPLE	06071127	06071128	06071129	06071130	06071131	06071132	06071133	06071134	06071135	06071136
SIO2	3.36	3.44	3.48 A	3.76 A	3.84	4.08 A	4.42 A	4.64	4.66	4.70 A
AL2O3	0.74 C	2.83	1.04 C	0.12 C	0.77	0.36 C	0.62 C	1.66	2.90	0.60 C
FE2O3	0.0 B	1.21	0.0 B	0.0 B	0.19	0.0 B	0.0 B	1.74	1.18	0.0 B
MGO	0.36	20.58	36.24	45.69	2.46	43.88	44.54	2.48	19.02	16.60
CAO	52.50	30.46	10.58	0.30	50.42	1.68	0.60	48.15	30.08	33.90
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.08	0.0 B	0.0 B	0.12	0.0 B	0.0 B	0.0 B	0.06	0.0 B
CO2	41.52 G	0.0 B	47.84 I	50.13 I	0.0 B	49.22 I	49.09 I	40.45 I	0.0 B	45.00 I
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	98.48	58.60	99.18	100.00	57.80	99.22	99.27	99.12	57.90	100.80
CLASS	2, 2, 94	0, 6, 86	2, 3, 95	4, 0, 96	2, 3, 94	3, 1, 95	3, 2, 94	0, 9, 91	0, 8, 87	4, 2, 95

SAMPLE	06071138	06071139	06071140	06071141	06071142	06071143	06071144	06071145
SIO2	5.10 A	5.16	5.24 A	5.27	5.33	5.43 A	5.54 A	5.60 A
AL2O3	0.0 B	1.80	1.90 C	0.26	1.50	0.36 C	0.74 C	0.76 C
FE2O3	0.0 B	1.10	0.0 B	0.34	0.22	0.0 B	0.0 B	0.0 B
MGO	20.30	19.70	28.22	34.52	1.47	23.31 I	21.62	39.92
CAO	28.30	30.68	17.38	13.18	50.80	25.46 I	27.00	5.56
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	1.30	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.14	0.0 B	0.0 B	0.08	0.0 B	0.0 B	0.0 B
CO2	0.0 B	0.0 B	44.42 I	45.19	0.0 B	45.44 I	44.80 I	47.92 I
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	53.70	58.58	97.16	100.06 *	59.40	100.00	99.70	99.76
CLASS	5, 0, 93	1, 8, 86	2, 6, 90	4, 3, 90	2, 5, 91	5, 1, 94	4, 2, 93	4, 2, 93

A INSOL.
B BLANK--NO VALUE REPT.
C AL2O3 + FE2O3.
D MGO + CAO.
E NA2O + K2O.
F H2O+.
G IGNITION LOSS (MAY INCLUDE WATER).
H REPORTED AS S.
I CALCULATED BY COMPILERS.
J ORGANIC MATTER.
K TOTAL IRON.
M BY DIFFERENCE.
N INCLUDES TIO2.
O GREATER THAN.
P LESS THAN.
T TRACE.
* ADDITIONAL INFORMATION IN DESCRIPTIVE NOTES.

TABLE 9. — *Analyses of samples from California and Hawaii containing more than 90 percent carbonate (Group F_2), common-rock category* — Continued

06071097 S17,20,21,T6N,R14E. (556:286,284,285,PL37) LIMESTONE, WHITE TO BROWN, MASSIVE, FINELY CRYS: TONNAGE. INDEX MAP. CA/MG >100.
06071098 TERTIARY. T8N,R21E, HOMER SIDING. (524:371) MAGNESITE, WHITE, FINE-GR, POROUS: BEDS 8 FT THICK. INDEX & GEOL MAPS. CA/MG = 0.086.
06071099 S17,20,21,T6N,R14E. (556:286,284,287,PL37) DOLOMITE: TONNAGE. INDEX MAP. CA/MG = 1.56.

06071100 S4,T3N,R7W. (556:291,290,PL37) LIMESTONE, WHITE, CRYS: TONNAGE. INDEX MAP. CA/MG = 52.2.

06071101 "T5N,R4W" VICTORVILLE. (290:523) LIMESTONE. USE: 10. CA/MG = 52.8.
06071102 S17,T6N,R14E. (507:518) LIMESTONE, WHITE, FINE-GR, COMPACT: 750 FT THICK: TONNAGE. CA/MG >100.

06071103 S4,T3N,R7W. (556:290,291,PL37) LIMESTONE, WHITE, CRYS: TONNAGE. INDEX MAP. USE: 4. CA/MG = 73.2.

06071104 TERTIARY. S22,T8N,R21E. (524:368,357-369,PL62-65) MAGNESITIC DOLOMITE: 1-FT CHANNEL SMPL: TONNAGE. INDEX & GEOL MAPS, MEAS SEC, GEOL SEC. CA/MG = 0.506.
06071105 CARBONIFEROUS, ORO GRANDE FM. S13,T9S,R4W. (52:162,161,PL1-3) LIMESTONE, WHITE: 365 FT THICK: SPOT SMPL: TONNAGE. INDEX & GEOL MAPS, GEOL SEC. CA/MG = 44.7.
06071106 TERTIARY. S22,T8N,R21E. (524:368,357-363,PL62-64) MAGNESITE, BROWN, FINE-GR, THIN-BEDDED: 3.0-FT CHANNEL SMPL: TONNAGE. INDEX & GEOL MAPS, MEAS SEC, GEOL SEC. CA/MG = 0.041.
06071107 S4,T3N,R7W. (556:291,290,PL37) LIMESTONE, WHITE, CRYS: TONNAGE. INDEX MAP. CA/MG = 55.4.

06071108 S8,9,T14N,R16E. (556:294,293,PL37) LIMESTONE. INDEX MAP. USE: 10,12. CA/MG >100.

06071109 CARBONIFEROUS, ORO GRANDE FM. S13,T9S,R4W. (52:162,161,PL1-3) LIMESTONE, WHITE: SPOT SMPL: 365 FT THICK: TONNAGE. INDEX & GEOL MAPS, GEOL SEC. CA/MG = 66.1.
06071110 CAMBRIAN. S26,T6N,R14E. (507:531,529) LIMESTONE, FINE-GR: BEDS 10 FT THICK. USE: 15. CA/MG = 18.3.

06071111 CARBONIFEROUS, ORO GRANDE FM. S2,T6N,R6W: S35,T7W,R6W. (52:169,16,165,PL1-3) LIMESTONE, GRAY, MASSIVE: TONNAGE. INDEX & GEOL MAPS, GEOL SEC. CA/MG = 54.4.
06071112 T7N,R2W, BARSTOW. (412:366,365) LIMESTONE, GRAY, CRYS. *MISC: FEO = 0.30, CR203 = 0.00. CA/MG = 6.07.

06071113 CARBONIFEROUS, ORO GRANDE FM. S15,T6N,R4W. (56:35,8-10,PL1,2) DOLOMITE, WHITE, MED TO COARSELY CRYS, MASSIVE: REPR SMPL: TONNAGE. INDEX & GEOL MAPS, GEOL SEC. CA/MG = 1.98.
06071114 PALEOZOIC, FURNACE LS. S13,14,T3N,R1E. (550:268,266,270,PL36) LIMESTONE, GRAY: MIN. INDEX & GEOL MAPS. CA/MG = 59.3

06071115 TERTIARY. S22,T8N,R21E. (524:368,357-363,PL62-64) MAGNESITE, BROWN, FINE-GR, THIN-BEDDED: 1.7-FT CHANNEL SMPL: TONNAGE. INDEX & GEOL MAPS, MEAS SEC, GEOL SEC. CA/MG = 0.091.
06071116 TERTIARY. S22,T8N,R21E. (524:368,357-363,369,PL62-64) MAGNESITE, WHITE, THIN-BEDDED: 4-FT CHANNEL SMPL: TONNAGE. INDEX & GEOL MAPS, MEAS SEC, GEOL SEC. CA/MG = 0.022.
06071117 TERTIARY. T8N,R21E, HOMER. (524:371,358) MAGNESITE, WHITE, FINE-GR: PICKED SMPL: 8 FT THICK. INDEX & GEOL MAPS. CA/MG = 0.055.
06071118 TERTIARY. T8N,R21E, HOMER. (524:371,358) MAGNESITE, WHITE, FINE-GR: PICKED SMPL: 8 FT THICK. INDEX & GEOL MAPS. CA/MG = 0.024.
06071119 TERTIARY. S22,T8N,R21E. (524:368,357-363,PL62-64) MAGNESITE, BROWN, FINE-GR, THIN-BEDDED: 1.7-FT CHANNEL SMPL: TONNAGE. INDEX & GEOL MAPS, MEAS SEC, GEOL SEC. CA/MG = 0.058.
06071120 TERTIARY. S22,T8N,R21E. (524:368,357-363,PL62-64) MAGNESITE, BROWN, FINE-GR, THIN-BEDDED: 1.3-FT CHANNEL SMPL: TONNAGE. INDEX & GEOL MAPS, MEAS SEC, GEOL SEC. CA/MG = 0.104.
06071121 TERTIARY. S15,T8N,R21E. (524:368,357-363,PL62-64) MAGNESITE, BROWN, FINE-GR, THIN-BEDDED: 2.3-FT CHANNEL SMPL: TONNAGE. INDEX & GEOL MAPS, MEAS SEC, GEOL SEC. CA/MG = 0.038.
06071122 CAMBRIAN. S2,11,T5N,R14E. (556:297,298,PL37) LIMESTONE, VARIGATED: BEDS 20 FT THICK. INDEX MAP. USE:15. CA/MG=19.4.

06071123 TERTIARY. S22,T8N,R21E. (524:368,357-363,PL62-64) MAGNESITE, WHITE, FINE-GR, THIN-BEDDED: 2.0-FT CHANNEL SMPL: TONNAGE. INDEX & GEOL MAPS, MEAS SEC, GEOL SEC. CA/MG = 0.011.
06071124 TERTIARY. S22,T8N,R21E. (524:368,357-360,PL62-64) MAGNESITE, WHITE, FINE-GR, THIN-BEDDED: 3.0-FT CHANNEL SMPL: TONNAGE. INDEX & GEOL MAPS, MEAS SEC, GEOL SEC. CA/MG = 0.190.
06071125 CARBONIFEROUS, ORO GRANDE FM. S2,11,14-16,T6N,R4W. (552:177,PL1/ 52:167,165,PL1-3) LIMESTONE, GRAY: MED-GR, CRYS. INDEX & GEOL MAP, GEOL SEC. USE: 4. CA/MG = 21.7.
06071126 TERTIARY. S15,T8N,R21E. (524:368,357-363,PL62-64) MAGNESITE, BROWN, FINE-GR, THIN-BEDDED: 3.5-FT CHANNEL SMPL: TONNAGE. INDEX & GEOL MAPS, MEAS SEC, GEOL SEC. CA/MG = 0.054.
06071127 CARBONIFEROUS, ORO GRANDE FM. S2,T6N,R6W. (556:280,PL37) LIMESTONE, GRAY TO WHITE, FINE TO MED CRYS: TONNAGE. INDEX MAP. CA/MG >100.
06071128 CARBONIFEROUS, ORO GRANDE FM. S16,T6N,R4W. (56:35,9,PL1,2) DOLOMITE, WHITE, MED-CRYS, 200 FT THICK. INDEX & GEOL MAPS, GEOL SEC. CA/MG = 1.48.
06071129 TERTIARY. S22,T8N,R21E. (524:368,357-363,PL62-64) MAGNESITE, BROWN, FINE-GR, THIN-BEDDED: 2.5-FT CHANNEL SMPL: TONNAGE. INDEX & GEOL MAPS, MEAS SEC, GEOL SEC. CA/MG = 0.292.
06071130 TERTIARY. S22,T8N,R21E. (524:368,357-363,PL62-64) MAGNESITE, BROWN, FINE-GR, THIN-BEDDED: 2.7-FT CHANNEL SMPL: TONNAGE. INDEX & GEOL MAPS, MEAS SEC, GEOL SEC. CA/MG = 0.007.
06071131 CARBONIFEROUS, ORO GRANDE FM. S8,9,T6N,R4W. (56:35,9,PL1,2) LIMESTONE, GRAY, MED-CRYS. INDEX & GEOL MAP, GEOL SEC. USE: 6,18. CA/MG = 20.5.
06071132 TERTIARY. S15,T8N,R21E. (524:368,357-363,PL62-64) MAGNESITE, BROWN, FINE-GR, THIN-BEDDED: 1.7-FT CHANNEL SMPL: TONNAGE. INDEX & GEOL MAPS, MEAS SEC, GEOL SEC. CA/MG = 0.038.
06071133 TERTIARY. S15,T8N,R21E. (524:368,357-363,PL62-64) MAGNESITE, BROWN, FINE-GR, THIN-BEDDED: 2.9-FT CHANNEL SMPL: TONNAGE. INDEX & GEOL MAPS, MEAS SEC, GEOL SEC. CA/MG = 0.014.
06071134 CAMBRIAN. S11,T5N,R14E. (507:529,531) LIMESTONE, VARIEGATED. USE: 15. CA/MG = 19.4.

06071135 CARBONIFEROUS, ORO GRANDE FM. S16,T6N,R4W. (56:35,9,PL1,2) DOLOMITE, WHITE, MED-CRYS: 200 FT THICK. INDEX & GEOL MAPS, GEOL SEC. CA/MG = 1.58.
06071136 PALEOZOIC, FURNACE LS. S8,T3N,R1E. (550:268-270,PL36) DOLOMITE, WHITE, FINE-GR: MIN. INDEX & GEOL MAPS. CA/MG=2.04.

06071138 TERTIARY. "T11N,R6E" AFTON. (436:118,117) MAGNESITE, WHITE: LUMP SMPL: TONNAGE. INDEX MAP. CA/MG = 1.39.

06071139 CARBONIFEROUS, ORO GRANDE FM. S10,15,T6N,R4W. (56:35,9,PL1,2) DOLOMITE, WHITE, MED TO COARSELY CRYS, MASSIVE: TONNAGE. INDEX & GEOL MAPS, GEOL SEC. CA/MG = 1.56.
06071140 TERTIARY. S22,T8N,R21E. (524:368,357-360,PL62-64) DOLOMITE: 3.4-FT CHANNEL SMPL: TONNAGE. INDEX & GEOL MAP, MEAS SEC, GEOL SEC. CA/MG = 0.616.
06071141 TERTIARY. S22,T8N,R21E. (524:364,357-360,PL62-64) DOLOMITIC MAGNESITE, WHITE, THIN-BEDDED: 4.90 FT THICK, TONNAGE. GEOL MAPS, MEAS SEC, GEOL SEC. *MISC: CR203 = 0.00. CA/MG = 0.382.
06071142 CARBONIFEROUS, ORO GRANDE FM. S15,T6N,R4W. (56:34,9,33,PL1,2) LIMESTONE, GRAY, MED-CRYS, MASSIVE: SPOT SMPL: 250 FT THICK: TONNAGE. INDEX & GEOL MAP, GEOL SEC. USE:4. CA/MG=34.6.
06071143 TERTIARY. S22,T8N,R21E. (524:368,357-360,PL62-64) DOLOMITE: 3.2-FT CHANNEL SMPL: TONNAGE. INDEX & GEOL MAP, MEAS SEC, GEOL SEC. CA/MG = 1.09.
06071144 TERTIARY. S22,T8N,R21E. (524:368,357-360,PL62-64) DOLOMITE: 395-FT CHANNEL SMPL: TONNAGE. INDEX & GEOL MAP, MEAS SEC, GEOL SEC. CA/MG = 1.25.
06071145 TERTIARY. S22,T8N,R21E. (524:368,357-363,PL62-64) MAGNESITE, BROWN, FINE-GR, THIN-BEDDED: 1.3-FT CHANNEL SMPL: TONNAGE. INDEX & GEOL MAPS, MEAS SEC, GEOL SEC. CA/MG = 0.139.

TABLE 9. — *Analyses of samples from California and Hawaii containing more than 90 percent carbonate (Group F_2), common-rock category* — Continued

SAMPLE	06071147	06071148	06071149	06071150	06071151	06071152	06071153	06071154	06071155	06071156
SIO2	5.88	6.32 A	6.80 A	6.86 A	6.90 A	7.18 A	7.30 A	7.32 A	7.49 A	7.52 A
AL2O3	0.67	0.80 C	0.0 B	0.88 C	0.98 C	0.54 C	0.0 B	0.42 C	0.19 C	0.68 C
FE2O3	0.13	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
MGO	1.06	21.64	0.60	32.12	28.99	21.48	35.60	38.48	39.34	39.00
CAO	50.29	25.50	51.20	11.42	15.06	26.08	7.80	6.70	5.59	5.64
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.01	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	41.87 G	43.64 I	40.90 I	44.02 I	43.46 I	43.92 I	0.0 B	47.24 I	47.39 I	47.01 I
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.91	97.90	99.50	95.30	95.39	99.20	50.70	100.16	100.00	99.85
CLASS	5, 3, 92	5, 2, 91	7, 0, 93	5, 3, 88	5, 3, 87	6, 2, 91	7, 0, 88	7, 1, 92	7, 1, 92	6, 2, 92

SAMPLE	06071157	06071158	06071159	06071160	06071212	06071213	06071214	06071215	06071216	06071221
SIO2	7.52 A	7.83 A	7.98 A	8.62 A	0.0 B	0.0 B	0.20	0.30	0.35	1.66 A
AL2O3	0.79 C	0.49 C	0.70 C	0.80 C	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.88 C
FE2O3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.20	0.40	0.40	0.0 B
MGO	42.39	42.79	37.68	31.86	0.0 B	6.42	0.10	0.30	0.30	22.52
CAO	1.72	1.22	6.64	13.00	55.90 I	47.50	55.77 I	55.35 I	55.52 I	26.76
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	47.58 I	47.67 I	46.35 I	44.98 I	43.90 I	0.0 B	43.79 I	43.45 I	44.47 I	0.0 B
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	100.00	100.00	99.35	99.26	99.80	53.90	100.06	99.80	101.04	51.82
CLASS	6, 2, 92	7, 1, 92	7, 2, 91	7, 2, 90	0, 0,100	0, 0, 98	0, 0,100	0, 1, 99	0, 1,100	0, 3, 95

SAMPLE	06071225	06071293	06071377	06073001	06073002	06073003	06073004	06073005	06073006	06073007
SIO2	1.70	0.0 B	0.33 A	8.32	0.0 B	0.0 B	0.14	0.20	0.26	0.43
AL2O3	0.0 B	0.0 B	0.13 C	1.16	0.0 B	0.0 B	0.04	0.05	0.15	0.35 C
FE2O3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.04	0.05	0.09	0.0 B
MGO	0.40	2.15 I	1.31 I	1.23	0.0 B	0.0 B	0.33	0.27	20.71	20.89
CAO	54.80	52.04 I	54.44 I	48.49	54.44	54.90 I	55.18	55.42	31.08	31.37
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.0 B	0.02	0.0 B	0.0 B	0.51	0.14	0.06	0.0 B
CO2	0.0 B	43.21 I	44.17 I	0.0 B	0.0 B	43.10 I	0.0 B	0.0 B	0.0 B	46.70
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	57.05 *	97.40	100.38	59.50 *	54.44	98.00	56.24 *	56.13 *	52.35	99.74
CLASS	2, 0, 98	0, 0, 97	0, 0,100	6, 4, 89	0, 0, 97	0, 0, 98	0, 0, 98	0, 0, 99	0, 0, 99	0, 1, 98

SAMPLE	06073008	06073009	06073010	06073011	06073012	06073013	06075001	06079001	06079002	06079003
SIO2	1.26	0.64	1.51	1.86	3.27	3.46	0.09 A	0.0 B	0.0 B	0.40
AL2O3	0.25	0.35	0.39	1.10	0.79	0.0 B	0.11	0.0 B	0.0 B	0.19
FE2O3	0.10	0.11	0.17	0.0 B	0.19	0.03	0.01	0.0 B	0.0 B	0.05
MGO	20.89	14.28	6.44	0.57 I	7.35	0.98	18.65	0.68 I	0.68 I	20.44
CAO	31.37	38.36	47.16	52.82 I	46.51	50.68	35.00	52.58 I	52.62 I	31.70
NA2O	0.0 B	0.0 B	0.0 B	1.15 E	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 T	0.0 T	0.02	0.0 B	0.29	0.0 B	0.0 B	0.11 I	0.22 I	0.0 B
CO2	46.70	0.0 B	0.0 B	42.08 I	0.0 B	0.0 B	46.77	42.17 I	43.53 I	47.36 G
SO3	0.0	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0	0.0 B	0.0 B	0.0 B
TOT CONS	100.57 *	53.74	55.69	99.58	58.40	55.15	100.79	99.53 *	99.53 *	100.14
CLASS	1, 1, 98	0, 1, 98	1, 2, 98	0, 3, 95	2, 3, 91	3, 0, 93	0, 0, 99	0, 0, 95	0, 0, 97	0, 1, 99

SAMPLE	06079006	06079007	06079008	06079009	06079013	06079014	06079015	06081001	06081002	06081003
SIO2	3.19 A	3.80 A	5.17	5.59 A	6.00 A	8.10 A	3.00 A	0.0	0.0 B	0.0 B
AL2O3	0.50 C	0.39 C	0.0 B	0.60 C	0.0 B	0.0 B	0.0 B	0.16	0.0 B	0.0 B
FE2O3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.18	0.0 B	0.0 B
MGO	0.51 I	0.53 I	0.0 B	0.38 I	18.70	19.80	20.40	0.0 T	0.0 B	0.0 B
CAO	53.31 I	53.00 I	51.16 I	52.00 I	29.30	26.20	30.00	54.16 I	53.60 I	53.70 I
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.10	0.13	0.06	0.0 B	0.0 B	0.0 B
CO2	42.39 I	42.18 I	40.16 I	41.23 I	43.95	42.56	0.0 B	42.53 I	42.10 I	42.20 I
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.90	99.90	96.49	99.80	98.07 *	97.89 *	53.61 *	97.03	95.70	95.90
CLASS	2, 1, 96	3, 1, 96	5, 0, 91	5, 2, 94	6, 0, 92	8, 0, 89	3, 0, 96	0, 0, 97	0, 0, 96	0, 0, 96

A INSOL.
B BLANK--NO VALUE REPT.
C AL2O3 + FE2O3.
D MGO + CAO.
E NA2O + K2O.
F H2O+.
G IGNITION LOSS (MAY INCLUDE WATER).
H REPORTED AS S.
I CALCULATED BY COMPILERS.
J ORGANIC MATTER.
K TOTAL IRON.
M BY DIFFERENCE.
N INCLUDES TIO2.
O GREATER THAN.
P LESS THAN.
T TRACE.
* ADDITIONAL INFORMATION IN DESCRIPTIVE NOTES.

TABLE 9. — *Analyses of samples from California and Hawaii containing more than 90 percent carbonate (Group F_2), common-rock category* — Continued

```
06071147  CARBONIFEROUS, ORO GRANDE FM.  "T6N,R5W" ORO GRANDE.  (55:7,8)  LIMESTONE, GRAY, MED-GR, CRYS.  USE: 4.  CA/MG = 47.4.

06071148  TERTIARY.  S22,T8N,R21E.  (524:368,357-360,PL62-64)  DOLOMITE: 4.0-FT CHANNEL SMPL: TONNAGE. INDEX & GEOL MAP, MEAS SEC,
          GEOL SEC.  CA/MG = 1.18.
06071149  PALEOZOIC, FURNACE LS.  S14,T3N,R1E.  (550:268,266-270,PL36)  LIMESTONE, COMPOS SMPL: MIN.  INDEX & GEOL MAP.
          CA/MG = 85.3.
06071150  TERTIARY.  S15,T8N,R21E.  (524:368,357-363,PL62-64)  MAGNESITE, BROWN, FINE-GR, THIN-BEDDED: 2.3-FT CHANNEL SMPL:
          TONNAGE.  INDEX & GEOL MAPS, MEAS SEC, GEOL SEC.  CA/MG = 0.356.
06071151  TERTIARY.  S22,T8N,R21E.  (524:368,357-360,PL62-64)  DOLOMITE: 0.8-FT CHANNEL SMPL: TONNAGE. INDEX & GEOL MAP, MEAS SEC,
          GEOL SEC.  CA/MG = 0.520.
06071152  TERTIARY.  S22,T8N,R21E.  (524:368,357-360,PL62-64)  DOLOMITE: 4.5-FT CHANNEL SMPL: TONNAGE. INDEX & GEOL MAP, MEAS SEC,
          GEOL SEC.  CA/MG = 1.21.
06071153  TERTIARY.  "T11N,R6E" AFTON.  (436:118,117)  MAGNESITE, WHITE: CHANNEL SMPL: 1.0 FT THICK: TONNAGE.  CA/MG = 0.219.

06071154  TERTIARY.  S22,T8N,R21E.  (524:368,357-363,PL62-64)  MAGNESITE, BROWN, FINE-GR, THIN-BEDDED: 5.1-FT CHANNEL SMPL:
          TONNAGE.  INDEX & GEOL MAPS, MEAS SEC, GEOL SEC.  CA/MG = 0.174.
06071155  TERTIARY.  S22,T8N,R21E.  (524:368,357-363,PL62-64)  MAGNESITE, BROWN, FINE-GR, THIN-BEDDED: 3.9-FT CHANNEL SMPL:
          TONNAGE.  INDEX & GEOL MAPS, MEAS SEC, GEOL SEC.  CA/MG = 0.142.
06071156  TERTIARY.  S22,T8N,R21E.  (524:368,357-363,PL62-64)  MAGNESITE, BROWN, FINE-GR, THIN-BEDDED: 1.0-FT CHANNEL SMPL:
          TONNAGE.  INDEX & GEOL MAPS, MEAS SEC, GEOL SEC.  CA/MG = 0.145.
06071157  TERTIARY.  S22,T8N,R21E.  (524:368,357-363,PL62-64)  MAGNESITE, BROWN, FINE-GR, THIN-BEDDED: 2.8-FT CHANNEL SMPL:
          TONNAGE.  INDEX & GEOL MAPS, MEAS SEC, GEOL SEC.  CA/MG = 0.041.
06071158  TERTIARY.  S22,T8N,R21E.  (524:368,357-363,PL62-64)  MAGNESITE, BROWN, FINE-GR, THIN-BEDDED: 3.5-FT CHANNEL SMPL:
          TONNAGE.  INDEX & GEOL MAPS, MEAS SEC, GEOL SEC.  CA/MG = 0.028.
06071159  TERTIARY.  S22,T8N,R21E.  (524:368,357-363,PL62-64)  MAGNESITE, BROWN, FINE-GR, THIN-BEDDED: 2.5-FT CHANNEL SMPL:
          TONNAGE.  INDEX & GEOL MAPS, MEAS SEC, GEOL SEC.  CA/MG = 0.176.
06071160  TERTIARY.  S22,T8N,R21E.  (524:368,357-363,PL62-64)  MAGNESITE, BROWN, FINE-GR, THIN-BEDDED: 2.3-FT CHANNEL SMPL:
          TONNAGE.  INDEX & GEOL MAPS, MEAS SEC, GEOL SEC.  CA/MG = 0.408.
06071212  "T15N,R8E" SILVER LAKE STATION.  (503:388)  LIMESTONE, WHITE, CRYS.
06071213  DEVONIAN, MONTE CRISTO FM & SULTAN LS: MISSISSIPPIAN, PENNSYLVANIAN & PERMIAN, BIRD SPRING FM.  "T13N,R14E"  MESCAL
          RANGE.  (231:7)  LIMESTONE: AVG OF 20 SURFACE SMPLS OF 600 FT.  USE: 4.  CA/MG = 7.40.

06071214  "T3N,R6W" PINE LODGE.  (290:523)  LIMESTONE.  USE: 10.  CA/MG >100.
06071215  "T3N,R6W" PINE LODGE.  (290:523)  LIMESTONE.  USE: 10.  CA/MG >100.
06071216  "T3N,R6W" PINE LODGE.  (290:523)  LIMESTONE.  USE: 10.  CA/MG >100.
06071221  TERTIARY.  S22,T8N,R21E.  (524:368,357,358,360,363,PL62-64)  DOLOMITE, WHITE, THIN-BEDDED: CHANNEL SMPL REPR 1.7 FT.
          TONNAGE.  INDEX & GEOL MAPS, MEAS SEC, GEOL SEC.  CA/MG = 1.19.
06071225  S17,20,T6N,R14E.  (507:518)  LIMESTONE.  *MISC: FEO = 0.15.  CA/MG >100.

06071293  "T1S,R5W" COLTON.  (172:169)  MARBLE.  CA/MG = 24.2.
06071377  "T1S,R4W" COLTON.  (68:660)  LIMESTONE.  CA/MG = 41.6.
06073001  S27,T17S,R1E.  (118:180,13,179,PL1)  LIMESTONE, CREAM-COLORED, POROUS: POORLY INDURATED: 1-8 FT THICK: TONNAGE.
          INDEX & GEOL MAPS.  USE: 4.  *MISC: FE304 = 0.28.  CA/MG = 39.4.
06073002  S22,23,26,27,T16S,R8E.  (557:15,100,PL16)  LIMESTONE, WHITE, CRYS.  INDEX MAP.

06073003  CARBONIFEROUS.  S22,T16S,R8E.  (556:301,300,PL37)  LIMESTONE, WHITE, COARSELY CRYS: BFDS 20-100 FT THICK.  INDEX MAP.

06073004  S10,T11S,R4E.  (118:181,180,PL1)  LIMESTONE, WHITE TO GRAY, DENSE, COARSELY CRYS: 25-30 FT THICK.  INDEX & GEOL MAPS.
          USE: 10,15.  *MISC: FE203 REPT AS FE304.  CA/MG >100.
06073005  S10,T11S,R4E.  (118,181,180,PL1)  LIMESTONE, WHITE, GRAY, DENSE, COARSELY CRYS: 30 FT THICK.  INDEX & GEOL MAPS.
          USE: 10, 15.  *MISC: FE304 = 0.05.  CA/MG >100.
06073006  PRE-CRETACEOUS.  S26,T15S,R8E.  (230:5,3/ 118:175,174,PL1)  DOLOMITE, CRYS.  INDEX & GEOL MAPS.  USE: 2,14.  CA/MG=1.50.

06073007  "T17S,R7E" LIVE OAK SPRINGS.  (535:77,81)  DOLOMITE.  CA/MG = 1.50.
06073008  CARBONIFEROUS.  S26,T15S,R8E.  (556:301,300,PL37)  DOLOMITE.  INDEX MAP.  *MISC: SIO2 = 0.43, INSOL = 0.83.  CA/MG=1.50.

06073009  TRIASSIC OR JURASSIC.  S11,T18S,R8E.  (230:5,3/ 118:185,181,PL1)  MAGNESIAN LIMESTONE, WHITE, GRAY, BANDED, COARSELY
          CRYS: MIN.  INDEX & GEOL MAPS.  USE: 2,15.  CA/MG = 2.69.
06073010  S10,T11S,R4E.  (118:181,180,PL1)  LIMESTONE, WHITE, DENSE, COARSELY CRYS: 25-30 FT THICK.  INDEX & GEOL MAP.  USE:10,15.
          CA/MG = 7.32.
06073011  CARBONIFEROUS.  "T17S,R1E" JAMUL.  (556:302,300,PL37/ 173:117,116,PL4)  LIMESTONE, CHALKLIKE: FINE-GR.  INDEX MAP.
          USE: 4.  CA/MG = 92.7.
06073012  CRETACEOUS.  S23,T16S,R8E.  (118:177,175,176,PL1)  MAGNESIAN LIMESTONE, CREAM, FINE- TO MED-GR, THIN- TO THICK-BEDDED.
          INDEX & GEOL MAPS.  USE: 4,15.  CA/MG = 6.33.
06073013  PRE-CRETACEOUS.  S27,T16S,R8E.  (230:5,3/ 118:178,176,177,PL1)  LIMESTONE, CRYS, MASSIVE: AVG OF 4 SMPL.  INDEX MAP.
          USE: 2,15.  CA/MG = 51.7.
06075001  "T2S,R5W"  SAN FRANCISCO.  (322:51,34-52)  MARBLE: PHYS TESTS: B.D., 2.854.  CA/MG = 1.88.

06079001  HOLOCENE.  S9,16,T31S,R15E.  (21:112,111)  MARBLE, WHITE, MASSIVE: 15 FT THICK.  *MISC: FECO3 = 3.93, MNCO3 = 0.06.
          CA/MG = 77.3.
06079002  S9,16,T31S,R15E.  (73:641)  ONYX: 22 IN THICK.  USE:15.  *MISC: MNO = 0.04, FED = 2.44: CALCULATED BY COMPILERS.
          CA/MG = 90.8.
06079003  S13,T30S,R13E.  (341:513)  DOLOMITE, WHITE.  CA/MG = 1.55.
06079006  MIOCENE, SANTA MARGARITA FM.  S9,10,15,T26S,R9E.  (556:305,304,PL37)  LIMESTONE, BUFF, FOS: TONNAGE.  INDEX MAP.
          USE: 6,18.  CA/MG >100.
06079007  MIOCENE, SANTA MARGARITA FM.  S9,10,15,T26S,R9E.  (556:305,304,PL37)  LIMESTONE, BUFF, FOS: TONNAGE.  INDEX MAP.
          USE: 6,18.  CA/MG = 100.
06079008  MIOCENE.  S30,T26S,R10E.  (556:304,303,PL37)  LIMESTONE, GRAY TO WHITE, MED-CRYS: TONNAGE: INDEX MAP. USE:18.

06079009  MIOCENE.  S30,T26S,R10E.  (556:304,303,PL37)  LIMESTONE, GRAY TO WHITE, MED-CRYS: TONNAGE: INDEX MAP. USE:18. CA/MG>100.

06079013  MIOCENE, MONTEREY SH, SANDHOLDT MBR.  "T25S,R9E" NACIMIENTO DAM.  (386:C6)  DOLOMITE.  *MISC: FEO = 0.02, MNO = 0.00.
          CA/MG = 1.57.
06079014  MIOCENE, MONTEREY SH.  "T10S,R27W" TEMBLOR RANGE.  (386:C6)  DOLOMITE.  *MISC: FEO = 1.0, MNO = 0.05, SRO = 0.054.
          CA/MG = 1.32.
06079015  MIOCENE, MONTEREY SH.  "T31S,14E" PISMO SYNCLINE AREA.  (386:C6)  DOLOMITE.  *MISC: FEO = 0.11,MNO = 0.02, SRO = 0.025.
          CA/MG = 1.47.
06081001  HOLOCENE.  "T6S,R1W" ALVISO.  (175:360/ 556:308)  SHELL LIMESTONE: TONNAGE.  INDEX MAP.  USE: 2,4.

06081002  HOLOCENE.  "T6S,R1W" ALVISO.  (556:308,307,PL37)  SHELL LIMESTONE: TONNAGE.  INDEX MAP.  USE: 2,4.

06081003  HOLOCENE.  "T6S,R1W" ALVISO.  (556:308,307,PL37)  SHELL LIMESTONE: TONNAGE.  INDEX MAP.  USE: 2,4.
```

TABLE 9. — *Analyses of samples from California and Hawaii containing more than 90 percent carbonate (Group F_2), common-rock category* — Continued

SAMPLE	06081004	06081005	06081006	06081007	06081008	06081012	06081013	06081014	06081021	06081022
SIO2	0.20	0.44	0.56	1.08	5.10	0.88	1.50	4.50	2.08 A	1.52 A
AL2O3	0.0	0.12	0.31	0.93	1.05	0.49 C	0.41 C	0.49 C	0.56 C	0.47 C
FE2O3	0.16	0.13	0.19	0.07	0.49	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
MGO	0.0 T	0.42	0.0 T	0.84 I	0.77 I	1.76	0.25	0.13	0.20	0.14
CAO	53.60 I	55.09	53.41 I	52.29 I	51.37 I	54.22	54.50	52.80	54.44	54.84
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.05	0.15
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.02	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 T	0.0 T
CO2	42.08 I	43.90 G	41.93 I	41.97 I	41.18 I	42.54	43.00	41.90	42.92	43.23
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 T	0.0 T
TOT CONS	96.04	100.12	96.40	97.18	99.96	99.89	99.66	99.82	100.25	100.35
CLASS	0, 0, 96	0, 1, 99	0, 1, 95	0, 2, 95	3, 4, 93	0, 1, 96	1, 1, 98	4, 1, 95	1, 2, 98	1, 1, 98

SAMPLE	06083001	06083002	06083003	06083004	06083005	06083006	06083008	06083027	06083028	06085001
SIO2	0.0 B	0.24	0.42	0.96	1.60	4.76	2.01	7.10 A	0.76	2.50
AL2O3	0.0 B	0.56 C	0.66 C	0.94 C	1.80 C	0.52	0.37	0.0 B	0.36 C	11.24
FE2O3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.45	0.33	0.0 B	0.0 B	2.90 K
MGO	1.19	0.32	0.66	0.71	3.00	1.36	1.14	17.60	0.72 I	1.55
CAO	53.24	55.33	54.88	54.32	50.73	51.12	53.07	31.30	54.65 I	45.27 I
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.13	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.0 T	0.0	0.0 T	0.0 T	0.0 B	0.0 B	0.18	0.0 B	0.0 B
CO2	0.0 B	43.82 I	43.84 I	43.46 I	43.15 I	41.66 I	41.69 I	0.0 B	43.68 I	37.23 I
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	54.43	100.27	100.46	100.39	100.28	99.87	98.61	56.30 *	100.30	100.69
CLASS	0, 0, 98	0, 0, 99	0, 1, 99	0, 2, 98	0, 3, 97	3, 3, 94	1, 2, 94	7, 0, 92	0, 1, 99	0, 4, 84

SAMPLE	06085002	06085004	06085005	06085006	06085007	06085008	06085014	06085034	06085035	06085036
SIO2	6.37	0.65	1.08	1.56	2.90	3.86	0.91	1.30	2.40	6.10
AL2O3	0.0 B	0.0 B	0.0 B	0.47	0.94 C	0.30	0.61	0.60 C	0.0 B	0.44 C
FE2O3	0.0 B	0.0 B	0.64	0.22	0.0 B	0.50	0.30	0.0 B	0.0 B	0.0 B
MGO	41.55	45.43	0.25	0.21 I	0.23	0.50 I	0.77	0.0 T	42.56	0.22
CAO	2.88	2.65	54.99	54.45 I	53.40	52.56 I	55.11	54.70	3.68	52.00
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.10	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.0 B	0.06	0.0 B	0.0 B	0.31	0.0 B	0.0 B	0.0 B
CO2	49.18	51.42	43.14 G	42.97 I	42.40	41.81 I	42.24	43.20	49.94	41.10
SO3	0.0 B	0.0 B	0.02	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	100.33 *	100.48 *	100.12	99.99 *	99.87	99.53	100.36 *	99.80	100.02 *	99.86
CLASS	6, 0, 94	1, 0, 99	0, 2, 98	0, 2, 98	1, 3, 96	3, 2, 95	0, 2, 96	0, 2, 98	2, 0, 96	5, 1, 93

SAMPLE	06085041	06085042	06085043	06085044	06085045	06085046	06085047	06085048	06085049	06085050
SIO2	1.60	2.90	3.20	3.80	4.18	4.30	5.60	5.30	7.24	8.20
AL2O3	0.70	0.50	0.40	0.90	0.66	0.60	0.80	0.90	0.60	0.90
FE2O3	0.30 K	0.30 K	0.20 K	0.20 K	0.32	0.30 K	0.30 K	0.30 K	0.42	0.40 K
MGO	0.40	0.50	0.10	0.20	0.05	0.20	0.20	0.20	0.04	0.30
CAO	54.10	53.30	53.50	53.20	52.74	52.70	51.80	52.50	50.96	50.50
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	42.70 G	42.50 G	42.40 G	42.20 G	41.90 G	41.80 G	41.40 G	41.30 G	40.48 G	40.20 G
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.80	100.00	99.80	100.50	99.85	99.90	100.10	100.50	99.74	100.50
CLASS	0, 3, 96	2, 2, 96	2, 2, 96	2, 3, 95	3, 3, 94	3, 3, 94	4, 3, 93	3, 3, 93	6, 3, 91	6, 4, 91

SAMPLE	06085067	06085069	06085075	06087001	06087004	06087005	06087006
SIO2	0.0 B	2.00	3.87	4.71	2.40	0.06	0.22
AL2O3	0.0 B	1.00 C	0.90 C	1.20	0.51	0.0 T	0.22
FE2O3	0.0 B	0.0 B	0.0 B	0.60 K	0.56 K	0.17	0.22
MGO	18.30 I	0.37 I	0.09 I	0.75	1.25	1.29 M	0.80
CAO	29.30 I	53.78 I	52.90 I	50.02	51.31	54.90	55.00
NA2O	0.0 B	0.0 B	0.0 B	1.80 E	1.45 E	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	1.40	1.21	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	46.60 I	42.62 I	41.62 I	39.25	40.32	43.96 G	43.60
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 T	0.0 B
TOT CONS	100.00 *	99.77	100.07 *	99.73	99.01	100.38	100.06
CLASS	0, 0, 94	0, 3, 97	2, 2, 95	2, 6, 89	1, 4, 91	0, 0, 99	0, 0, 99

A INSOL.
B BLANK--NO VALUE REPT.
C AL2O3 + FE2O3.
D MGO + CAO.
E NA2O + K2O.
F H2O+.
G IGNITION LOSS (MAY INCLUDE WATER).
H REPORTED AS S.
I CALCULATED BY COMPILERS.
J ORGANIC MATTER.
K TOTAL IRON.
M BY DIFFERENCE.
N INCLUDES TIO2.
O GREATER THAN.
P LESS THAN.
T TRACE.
* ADDITIONAL INFORMATION IN DESCRIPTIVE NOTES.

TABLE 9. — *Analyses of samples from California and Hawaii containing more than 90 percent carbonate (Group F_2), common-rock category* — Continued

06081004 HOLOCENE. "T4S,R4W" MILBRAE TO ALVISO. (175:360/ 556:308,307,PL37) SHELL LIMESTONE: TONNAGE. INDEX MAP. USE: 2,4.

06081005 PLEISTOCENE. "T5S,R3W" REDWOOD CITY. (55:6,2) SHELLS: 5-20 FT THICK: TONNAGE. USE: 4. CA/MG >100.

06081006 HOLOCENE. S11,12,T4S,R4W (175:360/ 556:308,307,PL37) SHELL LIMESTONE: AVG OF 10 ANAL: TONNAGE. INDEX MAP.

06081007 HOLOCENE. "T4S,R4W" MILLBRAE TO ALVISO. (175:360/ 556:308,307,PL37) SHELL LIMESTONE: TONNAGE. INDEX MAP. USE: 2,4. CA/MG = 62.2.

06081008 JURASSIC & CRETACEOUS, FRANCISCAN FM. S11,T4S,R6W. (556:308,PL37/ 139:435,433,PL5) LIMESTONE, GRAY, DENSE. INDEX & GEOL MAP. USE: 7. CA/MG = 66.7.

06081012 JURASSIC & CRETACEOUS, FRANCISCAN FM. "T4S,R6W" CALERA. (175:358) LIMESTONE: QUARRY SMPL: TONNAGE. CA/MG = 30.8.

06081013 JURASSIC & CRETACEOUS, FRANCISCAN FM. "T5S,R4W" CRYSTAL SPRINGS LAKE. (175:358,354) LIMESTONE: QUARRY SMPL: TONNAGE. CA/MG >100.

06081014 JURASSIC & CRETACEOUS, FRANCISCAN FM. "T4S,R6W" CALERA. (175:358) LIMESTONE: TONNAGE. CA/MG >100.

06081021 JURASSIC & CRETACEOUS, FRANCISCAN FM. T4S,R4W, PERMANTE CANYON. (575:5/ 29:76,11,12,14,68-70) LIMESTONE, GRAY, COMPACT, STRATIFIED, FOS: CONTAINS CHERT: 60 FT THICK. INDEX & GEOL MAPS, MEAS SEC. USE: 6,4. CA/MG >100.

06081022 JURASSIC & CRETACEOUS, FRANCISCAN FM. T4S,R4W, PERMANTE CANYON. (575:5/ 29:76,11,12,14,68-70) LIMESTONE, GRAY, COMPACT, STRATIFIED, FOS: CONTAINS CHERT: 60 FT THICK. INDEX & GEOL MAPS, MEAS SEC. USE: 6,4. CA/MG >100.

06083001 EOCENE, SIERRA BLANCA FM. "T7,8N,R25,26W" INDIAN CREEK. (230:4,3) LIMESTONE, ALGAL: 250 FT THICK: AVG OF 6 SMPL. INDEX MAP. CA/MG = 44.7.

06083002 EOCENE, SIERRA BLANCA LS. "T7,8N,R25,26W" INDIAN CREEK. (312:70,62,66-68) LIMESTONE: BUFF, WHITE, DENSE, FINE-GR, FOS. INDEX & GEOL MAPS, MEAS SEC, GEOL SEC. CA/MG >100.

06083003 EOCENE, SIERRA BLANCA LS. "T7,8N,R25,26W" INDIAN CREEK. (312:70,62,66-68,78) LIMESTONE, BUFF TO WHITE, FINE-GR, FOS. INDEX & GEOL MAPS, MEAS SEC, GEOL SEC. CA/MG = 83.2.

06083004 EOCENE, SIERRA BLANCA LS. "T7,8N,R25,26W" INDIAN CREEK. (312:70,62,66-68) LIMESTONE, BUFF TO WHITE, FINE-GR, FOS. INDEX & GEOL MAPS, MEAS SEC, GEOL SEC. CA/MG = 76.5.

06083005 EOCENE, SIERRA BLANCA LS. "T7,8N,R,25,26W" INDIAN CREEK. (312:70,62,66-68) LIMESTONE, BUFF TO WHITE, FINE-GR, FOS. INDEX & GEOL MAPS, MEAS SEC, GEOL SEC. CA/MG = 16.9.

06083006 EOCENE, SIERRA BLANCA LS. "T6N,R27W" SANTA BARBARA. (525:5,4,PL1) LIMESTONE, WHITE TO GRAY, FINELY CRYS, FOS: 35-40 FT CHANNEL SMPL: BEDS 4 IN - 5 FT THICK: MIN. INDEX & GEOL MAPS. CA/MG = 37.6.

06083008 EOCENE, SIERRA BLANCA LS. "T6N,R27W" BIG PINE MTN RD. (525:5,4,PL1) LIMESTONE, WHITE TO GRAY, FOS, CRYS: COMPOS GRAB SMPL: MIN: 70-80 FT THICK. INDEX & GEOL MAPS. CA/MG = 46.6.

06083027 MIOCENE. "T8N,R31W" SANTA YNEZ RIVER AREA. (386:C6) REEF ROCK, 40 FT THICK. *MISC: FEO = 0.07, MNO = 0.03, SRO = 0.015. CA/MG = 1.78.

06083028 "T10N,R35W" BETTERAVIA. (68:660) LIMESTONE. CA/MG = 76.0.

06085001 "T8S,R1E" EDENVALE. (299:185,186) MARL, FOS: BEDS 200 FT THICK. USE: 2. CA/MG = 29.2.

06085002 "T9S,R3E" MADRONE. (553:151/ 58:15,16,79,PL1) MAGNESITE, BUFF. INDEX MAP. *MISC: FEO = 0.35. CA/MG = 0.069.

06085004 "T9S,R3E" MADRONE. (553:151) MAGNESITE. *MISC: FEO = 0.33. CA/MG = 0.058.

06085005 JURASSIC & CRETACEOUS, FRANCISCAN FM. S14,T7S,R3W. (199:9/ 556:312, PL37) LIMESTONE. INDEX MAP. CA/MG >100.

06085006 JURASSIC & CRETACEOUS, FRANCISCAN FM. S13,T7S,R3W. (299:185/ 29:76,11,68,PL1) LIMESTONE, BLUE TO BLACK, FINE-GR. INDEX & GEOL MAPS. USE: 4,6. CA/MG >100. *MISC: MN304 = 0.05.

06085007 JURASSIC & CRETACEOUS, FRANCISCAN FM. "T10N,R35W" GUADALUPE. (175:358,356) LIMESTONE: TONNAGE. USE: 4,18. CA/MG>100.

06085008 JURASSIC & CRETACEOUS, FRANCISCAN FM. "T10N,R35W" GUADALUPE. (175:358,356) LIMESTONE: TONNAGE. USE:4,18. CA/MG>100.

06085014 JURASSIC & CRETACEOUS, FRANCISCAN FM. "T9S,R1,2E" LONGWALL CANYON. (29:76,11,69,72,PL1) OOLITIC LIMESTONE, FOS: BEDS 50 FT THICK. INDEX & GEOL MAPS. USE: 4,7. *MISC: MNO = 0.01. CA/MG = 71.6.

06085034 JURASSIC & CRETACEOUS, FRANCISCAN FM. "T9S,R1W" LYNDON SWITCH. (175:358,356) LIMESTONE, BEDDED: TONNAGE.

06085035 "T9S,R3E" MORGAN HILL. (553:151) MAGNESITE. *MISC: FEO = 1.44. CA/MG = 0.086.

06085036 JURASSIC & CRETACEOUS, FRANCISCAN FM. "T10N,R35W" GUADALUPE. (175:358) LIMESTONE: TONNAGE. CA/MG >100.

06085041 JURASSIC & CRETACEOUS, FRANCISCAN FM. S17,18,T7S,R2W. (331:376,374) LIMESTONE: TONNAGE: SCREEN SIZE, +6 IN: PHYS TESTS. USE: 4. CA/MG >100.

06085042 JURASSIC & CRETACEOUS, FRANCISCAN FM. S17,18,T7S,R2W. (331:376,374) LIMESTONE: TONNAGE: SCREEN SIZE, +3 IN: PHYS TESTS. USE: 4. CA/MG >100.

06085043 JURASSIC & CRETACEOUS, FRANCISCAN FM. S17,18,T7S,R2W. (331:376,374) LIMESTONE: TONNAGE: SCREEN SIZE, +4 IN: PHYS TESTS. USE: 4. CA/MG >100.

06085044 JURASSIC & CRETACEOUS, FRANCISCAN FM. S17,18,T7S,R2W. (331:376,374) LIMESTONE: TONNAGE: SCREEN SIZE, +2.5 IN: PHYS TESTS. USE: 4. CA/MG >100.

06085045 JURASSIC & CRETACEOUS, FRANCISCAN FM. S17,18,T7S,R2W. (331:377,374,376) LIMESTONE: AVG COMPOS OF MANY SMPL: TONNAGE. USE: 4. CA/MG >100.

06085046 JURASSIC & CRETACEOUS, FRANCISCAN FM. S17,18,T7S,R2W. (331:376,374) LIMESTONE: TONNAGE: SCREEN SIZE, +5 IN: PHYS TESTS. USE: 4. CA/MG >100.

06085047 JURASSIC & CRETACEOUS, FRANCISCAN FM. S17,18,T7S,R2W. (331:376,374) LIMESTONE: TONNAGE: SCREEN SIZE, +2 IN: PHYS TESTS. USE: 4. CA/MG >100.

06085048 JURASSIC & CRETACEOUS, FRANCISCAN FM. S17,18,T7S,R2W. (331:376,374) LIMESTONE: TONNAGE: SCREEN SIZE, +1.5 IN: PHYS TESTS. USE: 4. CA/MG >100.

06085049 JURASSIC & CRETACEOUS, FRANCISCAN FM. S17,18,T7S,R2W. (331:377,374,376) LIMESTONE: AVG COMPOS OF MANY SMPL: TONNAGE. USE: 4. CA/MG >100.

06085050 JURASSIC & CRETACEOUS, FRANCISCAN FM. S17,18,T7S,R2W. (331:376,374) LIMESTONE: TONNAGE: SCREEN SIZE, +0.5 IN: PHYS TESTS. USE: 4. CA/MG >100.

06085067 "T7S,R2E" NEW ALMADEN. (572:683) DOLOMITE. *MISC: FEO = 5.6, MNO = 0.2: CALC FROM FECO3 & MNCO3. CA/MG = 1.60.

06085069 "T8S,R1W" LOS GATOS. (68:660) LIMESTONE. CA/MG >100.

06085075 "T6S,R2W" MOUNTAIN VIEW. (68:660) LIMESTONE. *MISC: ASPHALT = 0.69. CA/MG >100.

06087001 "T11S,R2W" SANTA CRUZ. (72:881,880) LIMESTONE, SOFT, CONCRETIONARY. USE: 4. CA/MG = 66.7.

06087004 "T11S,R2W" SANTA CRUZ. (72:881,880) LIMESTONE, SOFT, CONCRETIONARY. USE: 4. CA/MG = 41.0.

06087005 "T11S,R2W" SANTA CRUZ. (428:10) LIMESTONE. CA/MG = 42.6.

06087006 PRE-FRANCISCAN, GABILAN LS. "T10S,R2W" FELTON. (175:353,350) LIMESTONE, WHITE TO BLUE, COARSELY CRYS: 300-600 FT THICK. USE: 6,12. CA/MG = 68.8.

TABLE 9. — *Analyses of samples from California and Hawaii containing more than 90 percent carbonate (Group F_2), common-rock category* — Continued

SAMPLE	06087007	06087008	06087009	06087010	06087011	06087012	06087013	06087018	06087028	06087029
SIO2	0.50	0.52	0.54	1.12	1.16	1.28	1.30	1.42	1.28	0.0 B
AL2O3	0.21	0.28	0.22	0.46 C	0.43	0.04	0.60 C	0.73	0.31	0.0 B
FE2O3	0.19	0.22	0.26	0.0 B	0.21	0.54	0.0 B	0.60	0.31	0.0 B
MGO	1.32	1.34	0.54	0.14 I	0.89	1.40 I	0.13 I	0.64 I	1.38	0.0 B
CAO	54.09	54.06	54.90	55.38 I	54.30	52.66 I	54.97 I	53.76 I	53.38	53.22 I
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	43.46	43.66	43.54	43.63 I	43.42 G	42.87 I	43.31 I	42.91 I	43.30	41.78 I
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.25	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.77	100.08	100.00	100.73	100.66	98.79	100.31	100.06	99.96	95.00
CLASS	0, 1, 98	0, 1, 99	0, 1, 99	0, 1, 99	0, 2, 98	1, 1, 97	0, 2, 98	0, 2, 97	0, 2, 98	0, 0, 95

SAMPLE	06089001	06089002	06089003	06089004	06089005	06089006	06089007	06089008	06089009	06089010
SIO2	4.40	0.22	0.60	0.60	0.59	0.59	0.63	0.66	0.85	0.95
AL2O3	0.0 B	0.26	0.40	0.50	0.20 C	0.32 C	0.50 C	0.26	0.45 C	0.24 C
FE2O3	0.0 B	0.12	0.30 K	0.30 K	0.0 B	0.0 B	0.0 B	0.04	0.0 B	0.0 B
MGO	0.50	0.0	0.95 I	0.39 I	0.17 I	0.25 I	0.15 I	0.77	0.20 I	0.25 I
CAO	53.30 I	55.93 I	53.41 I	54.95 I	55.78 I	55.36 I	55.07 I	54.35	55.21 I	54.64 I
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.02	0.0 B	0.0 B
CO2	42.50 I	43.91 I	42.95 I	43.56 I	43.96 I	43.72 I	43.39 I	43.92 G	43.56 I	43.17 I
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	100.70 *	100.44	98.61	100.30	100.70	100.24	99.74	100.02	100.27	99.25
CLASS	4, 0, 96	0, 0,100	0, 1, 97	0, 1, 99	0, 1,100	0, 1, 99	0, 1, 99	0, 1, 99	0, 1, 99	1, 1, 98

SAMPLE	06089011	06089012	06089013	06089014	06089015	06089016	06089017	06089018	06089019	06089020
SIO2	0.96	1.00	1.08	1.10	1.20	1.64	1.87	1.89	2.00 A	2.10
AL2O3	0.58 C	0.0 B	0.32 C	0.24	0.50	0.29 C	0.26 C	0.29 C	1.50 C	0.20 C
FE2O3	0.0 B	0.0 B	0.0 B	0.20	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
MGO	0.33 I	0.96 I	0.25 I	2.38	1.10	0.27 I	0.11 I	0.22 I	0.0 B	0.32 I
CAO	54.44 I	54.34 I	54.78 I	52.16	53.80	54.16 I	54.50 I	54.29 I	52.50	54.50 I
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	43.10 I	43.70 I	43.28 I	43.96 G	43.30 G	42.81 I	42.92 I	42.85 I	0.0 B	43.13 I
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.41	100.00	99.71	100.04	100.10 *	99.17	99.76	99.54	56.00	100.25
CLASS	0, 2, 98	1, 0, 99	1, 1, 98	0, 2, 98	0, 2, 98	1, 1, 97	1, 1, 98	1, 1, 97	0, 3, 94	2, 1, 98

SAMPLE	06089021	06089022	06089023	06089024	06089025	06089026	06089027	06089028	06089029	06089030
SIO2	2.21	2.21	2.75	2.79	2.98	3.39	3.51	3.67	4.00 A	4.05
AL2O3	0.28 C	0.38 C	0.40 C	0.47 C	0.55 C	0.44 C	0.53 C	0.24 C	1.50 C	0.62 C
FE2O3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
MGO	0.17 I	0.20 I	0.22 I	0.11 I	0.32 I	0.10 I	0.10 I	0.27 I	0.0 B	0.28 I
CAO	54.29 I	54.36 I	53.73 I	53.59 I	53.59 I	53.51 I	53.23 I	53.30 I	51.00	53.16 I
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	42.80 I	42.90 I	42.40 I	42.19 I	42.40 I	42.12 I	41.89 I	42.13 I	0.0 B	42.04 I
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.75	100.05	99.50	99.15	99.84	99.56	99.26	99.66	56.50	100.15
CLASS	2, 1, 97	2, 1, 97	2, 1, 96	2, 1, 96	2, 2, 96	3, 1, 96	3, 2, 95	3, 1, 96	1, 4, 91	3, 2, 95

SAMPLE	06089031	06089032	06089033	06089056	06089057	06089058	06089059	06091001
SIO2	4.40	4.55	5.50	0.41	0.40 A	0.75	1.02	4.90
AL2O3	0.44 C	1.81 C	0.0 B	0.64	0.41	0.0 B	0.61	0.0 B
FE2O3	0.0 B	0.0 B	0.0 B	0.49 K	0.45	0.0 B	0.0 B	0.36
MGO	0.30 I	0.10 I	0.0 B	0.36 I	0.34 I	1.19 I	1.12	19.60 I
CAO	52.95 I	52.10 I	52.00	54.66 I	54.71 I	54.16 I	53.80	31.04 I
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	1.50 J	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	41.88 I	41.00 I	0.0 B	43.30 I	43.32 I	43.82 I	43.25	45.76 I
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.97	99.56	59.00	99.86	99.63	99.92	100.00 *	101.66
CLASS	4, 1, 95	2, 5, 93	6, 0, 93	0, 1, 98	0, 1, 98	1, 0, 99	0, 2, 98	4, 1, 96

A INSOL.
B BLANK--NO VALUE REPT.
C AL2O3 + FE2O3.
D MGO + CAO.
E NA2O + K2O.
F H2O+.
G IGNITION LOSS (MAY INCLUDE WATER).
H REPORTED AS S.
I CALCULATED BY COMPILERS.
J ORGANIC MATTER.
K TOTAL IRON.
M BY DIFFERENCE.
N INCLUDES TIO2.
O GREATER THAN.
P LESS THAN.
T TRACE.
* ADDITIONAL INFORMATION IN DESCRIPTIVE NOTES.

TABLE 9. — *Analyses of samples from California and Hawaii containing more than 90 percent carbonate (Group F_2), common-rock category* — Continued

06087007 PRE-FRANCISCAN, GABILAN LS. "T10S,R2W" FELTON. (175:353,350) LIMESTONE, WHITE TO BLUE, COARSELY CRYS: 300-600 FT THICK. INDEX MAP. CA/MG = 41.0.
06087008 PRE-FRANCISCAN, GABILAN LS. "T10S,R2W" BONNIE DOON. (175:353,350) LIMESTONE, WHITE TO BLUE, COARSELY CRYS: 300-600 FT THICK. INDEX MAP. CA/MG = 40.3.
06087009 PRE-FRANCISCAN, GABILAN LS. "T10S,R2W" FELTON. (175:353,350) LIMESTONE, WHITE TO BLUE, COARSELY CRYS: 300-600 FT THICK. INDEX MAP. CA/MG >100.
06087010 "T10S,R3W" DAVENPORT. (173:123,122,PL4) LIMESTONE, CRYS. INDEX MAP. USE: 4. CA/MG >100.

06087011 JURASSIC & CRETACEOUS, FRANCISCAN FM. "T10S,R3W" DAVENPORT. (291:116) LIMESTONE, GRAY TO WHITE: COMPACT: TONNAGE. CA/MG = 61.0.
06087012 PRE-FRANCISCAN, GABILAN LS. "T10S,R2W" SANTA CRUZ. (175:353,350) LIMESTONE. INDEX MAP. CA/MG = 37.6.

06087013 "T10S,R2W" DAVENPORT. (173:123,122,PL4) LIMESTONE, CRYS. INDEX MAP. USE: 4. CA/MG >100.

06087018 PRE-FRANCISCAN, SUR SER. S15,T10S,R3W. (556:321,320,PL37/ 55:6,4) LIMESTONE, COARSELY CRYS. INDEX MAP. USE: 4. CA/MG = 84.0.
06087028 PRE-FRANCISCAN, GABILAN LS. "S20,T10S,R2W" (175:353,350,351) LIMESTONE: QUARRY SMPL. INDEX MAP. CA/MG = 38.7.

06087029 "T11S,R2W" SANTA CRUZ. (68:661) LIMESTONE.
06089001 DEVONIAN, KENNETT FM. S34,T34N,R5W. (72:572/ 556:328,327,PL37) LIMESTONE: QUARRY SMPL. INDEX MAP. USE:18. *MISC: ORG = TR. CA/MG >100.
06089002 DEVONIAN, KENNETT FM. S4,T33N,R5W. (329:37,5,PL1-4) LIMESTONE, GRAY, FINE-GR, THIN- TO THICK-BEDDED. INDEX & GEOL MAPS, GEOL SEC.
06089003 PERMIAN, MCCLOUD LS. S13,T34N,R4W. (26:166,165,PL2/ 556:328,PL37) LIMESTONE. INDEX MAP. USE: 4. CA/MG = 56.2.

06089004 PERMIAN, MCCLOUD LS. S13,T34N,R4W. (26:166,165,PL2/ 556:328,PL37) LIMESTONE. INDEX MAP. USE: 4. CA/MG >100.

06089005 TRIASSIC, HOSSELKUS LS. S1,T33N,R2W. (556:325,323,324,PL37) LIMESTONE, DARK, FOS: BEDS 50-200 FT THICK. INDEX MAP. USE: 12,18. CA/MG >100.
06089006 TRIASSIC, HOSSELKUS LS. S1,T33N,R2W. (556:325,323,324,PL37) LIMESTONE, DARK, FOS: BEDS 50-200 FT THICK. INDEX MAP. USE: 12,18. CA/MG >100.
06089007 TRIASSIC, HOSSELKUS LS. S6,T33N,R1W. (556:327,326,PL37) LIMESTONE: SPOT SMPL. INDEX MAP. USE: 18. CA/MG >100.

06089008 PERMIAN, MCCLOUD LS. "T33N,R4W" MOUNTAIN GATE. (55:6,1) LIMESTONE, GRAY, FINE-GR, MASSIVE, CRYS. USE:4. CA/MG=70.6.

06089009 TRIASSIC, HOSSELKUS LS. S1,T33N,R2W. (556:325,323,324,PL37) LIMESTONE, DARK, FOS: BEDS 50-200 FT THICK. INDEX MAP. USE: 12,18. CA/MG >100.
06089010 TRIASSIC, HOSSELKUS LS. S1,T33N,R2W. (556:325,323,324,PL37) LIMESTONE, DARK, FOS: BEDS 50-200 FT THICK. INDEX MAP. USE: 12,18. CA/MG >100.
06089011 TRIASSIC, HOSSELKUS LS. S12,T33N,R4W. (556:325,323,PL37) LIMESTONE: 50-200 FT THICK: INDEX MAP. USE: 12. CA/MG>100.

06089012 DEVONIAN, KENNETT FM. S34,T34N,R5W. (556:327,PL37) LIMESTONE, QUARRY SMPL. INDEX MAP. USE: 12,18. CA/MG = 56.6.

06089013 TRIASSIC, HOSSELKUS LS. S6,T33N,R1W. (556:327,326,PL37) LIMESTONE: SPOT SMPL. INDEX MAP. USE: 18. CA/MG >100.

06089014 PERMIAN, MCCLOUD LS. S13,T34N,R4E. (492:70,71) LIMESTONE, GRAY, FOS, MASSIVE: 2,000 FT THICK. USE: 4. CA/MG = 21.9.

06089015 PERMIAN, MCCLOUD LS. S26,T34N,R4W. (424:477,465-470/ 347:151,140,143) LIMESTONE, GRAY, FINE-GR, FOS. INDEX MAPS. *MISC: FEO = 0.2. CA/MG = 48.9.
06089016 TRIASSIC, HOSSELKUS LS. S8,T34N,R2W. (556:326,325,PL37) LIMESTONE, GRAY, FOS: SPOT SMPL: 200 FT THICK. INDEX MAP. USE: 12. CA/MG >100.
06089017 TRIASSIC, HOSSELKUS LS. S35,T34N,R2W. (556:325,324,PL37) LIMESTONE, DARK, FOS: BEDS 50-200 FT THICK. INDEX MAP. USE: 12. CA/MG >100.
06089018 TRIASSIC, HOSSELKUS LS. S6,T33N,R1W. (556:327,326,PL37) LIMESTONE: SPOT SMPL. INDEX MAP. USE: 18. CA/MG >100.

06089019 PERMIAN, MCCLOUD LS. "T33N,R1W" BAIRD. (155:176/ 156:14) LIMESTONE. INDEX & GEOL MAP. USE: 12,18.

06089020 TRIASSIC, HOSSELKUS LS. S1,T33N,R2W. (556:325,323,324,PL37) LIMESTONE, DARK, FOS: BEDS 50-200 FT THICK. INDEX MAP. USE: 12,18. CA/MG >100.
06089021 TRIASSIC, HOSSELKUS LS. S6,T33N,R1W. (556:327,326,PL37) LIMESTONE: SPOT SMPL. INDEX MAP. USE: 18. CA/MG >100.

06089022 TRIASSIC, HOSSELKUS LS. S1,T33N,R2W. (556:325,323,324,PL37) LIMESTONE, DARK, FOS: BEDS 50-200 FT THICK. INDEX MAP. USE: 12,18. CA/MG >100.
06089023 TRIASSIC, HOSSELKUS LS. S6,T33N,R1W. (556:327,326,PL37) LIMESTONE: SPOT SMPL. INDEX MAP. USE: 18. CA/MG >100.

06089024 TRIASSIC, HOSSELKUS LS. S1,T33N,R2W. (556:325,323,324,PL37) LIMESTONE, DARK, FOS: BEDS 50-200 FT THICK. INDEX MAP. USE: 12,18. CA/MG >100.
06089025 TRIASSIC, HOSSELKUS LS. S1,T33N,R2W. (556:325,323,324,PL37) LIMESTONE, DARK, FOS: BEDS 50-200 FT THICK. INDEX MAP. USE: 12,18. CA/MG >100.
06089026 TRIASSIC, HOSSELKUS LS. S6,T33N,R1W. (556:327,326,PL37) LIMESTONE: SPOT SMPL. INDEX MAP. USE: 18. CA/MG >100.

06089027 TRIASSIC, HOSSELKUS LS. S1,T33N,R2W. (556:325,323,324,PL37) LIMESTONE, DARK, FOS: BEDS 50-200 FT THICK. INDEX MAP. USE: 12,18. CA/MG >100.
06089028 DEVONIAN, KENNETT FM. S31,T31N,R5W. (556:326,PL37) LIMESTONE: 100 FT THICK. INDEX MAP. USE: 2,18. CA/MG >100.

06089029 TRIASSIC, HOSSELKUS LS. S8,T34N,R2W. (155:176/ 556:325,326,PL37) LIMESTONE, GRAY, FOS: 200 FT THICK. INDEX MAP. USE: 12.
06089030 TRIASSIC, HOSSELKUS LS. S1,T33N,R2W. (556:325,323,324,PL37) LIMESTONE, DARK, FOS: BEDS 50-200 FT THICK. INDEX MAP. USE: 12,18. CA/MG >100.
06089031 TRIASSIC, HOSSELKUS LS. S1,T33N,R2W. (556:325,323,324,PL37) LIMESTONE, DARK, FOS: BEDS 50-200 FT THICK. INDEX MAP. USE: 12,18. CA/MG >100.
06089032 TRIASSIC, HOSSELKUS LS. S1,T33N,R2W. (556:325,323,324,PL37) LIMESTONE, DARK, FOS: BEDS 50-200 FT THICK. INDEX MAP. USE: 12,18. CA/MG >100.
06089033 TRIASSIC, HOSSELKUS LS. S7,8,T34N,R2W. (21:89) LIMESTONE, GRAY, FOS, THIN-BEDDED. USE: 12.

06089056 PERMIAN, MCCLOUD LS. S13,24,T34N,R4W. (68:661/ 556:330,PL37) LIMESTONE. INDEX MAP. USE: 4,12. CA/MG >100.

06089057 PERMIAN, MCCLOUD LS. S26,T34N,R4W. (556:330,329,PL37/ 68:661) LIMESTONE. INDEX MAP. USE: 12. CA/MG >100.

06089058 PERMIAN, MCCLOUD LS. S7,31,T35N,R3W. (12:183,182) LIMESTONE: TONNAGE. INDEX MAP. CA/MG = 45.5.

06089059 PERMIAN, MCCLOUD LS. S26,T34N,R4W. (366:197,193,195) LIMESTONE, GRAY: THIN-BEDDED TO MASSIVE: FOS: CONTAINS CHERT. USE: 12. *MISC: FEO = 0.20. CA/MG = 48.0.
06091001 S30,T20N,R11E. (571:69) DOLOMITIC MARBLE, SELECTED SMPL. INDEX MAP. CA/MG = 1.53.

TABLE 9. — *Analyses of samples from California and Hawaii containing more than 90 percent carbonate (Group F_2), common-rock category* — Continued

SAMPLE	06093001	06093002	06093003	06093004	06093005	06093006	06093007	06093008	06093013	06093014
SIO2	0.18	0.63	1.13	1.17	1.96	2.06	2.64	4.21	1.74	4.32
AL2O3	0.10	0.31	0.25	0.48	0.17	0.30	0.67	0.69	0.0 B	0.0 B
FE2O3	0.20	0.09	0.14	0.10	0.29	0.28	0.36	0.43	0.0 B	0.99
MGO	0.27	0.01	0.09	0.0 T	0.22	0.19	0.36	0.37	0.18 I	0.0 B
CAO	55.26	54.92	54.81	54.63	54.12	53.72	52.82	52.52	53.44 I	53.05 I
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.02	0.0 T	0.02 I	0.05 I	0.0 T	0.0 T	0.0 T	0.0 B	0.0 B
CO2	43.76 G	43.32 G	43.07 I	43.07 G	42.76 I	42.21 I	41.89 I	41.67 I	42.15 I	41.64 I
SO3	0.0 B	0.0 B	0.0 H	0.0 B	0.0 B	0.0 H	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.77	99.30	99.49 *	99.47	99.57 *	98.76 *	98.74 *	99.89 *	97.51	100.00
CLASS	0, 0, 99	0, 1, 98	1, 1, 98	0, 2, 98	1, 1, 97	1, 2, 96	1, 3, 95	3, 3, 95	2, 0, 96	3, 2, 95

SAMPLE	06095001	06095002	06095003	06095004	06095005	06095006	06095007	06095008	06095019	06095020
SIO2	6.12 A	0.98	1.02	1.21	1.25	1.46	1.55	1.93	0.02	0.0 B
AL2O3	0.0 B	0.58	1.91 C	0.70	1.00 C	2.15 C	0.99	2.37 C	0.0 B	0.0 B
FE2O3	0.0 B	0.34	0.0 B	0.50	0.0 B	0.0 B	0.49	0.0 B	0.07	0.0 B
MGO	0.24	0.13	0.39	0.44	0.55	0.0 T	0.38 I	0.0 T	0.50	1.05 I
CAO	50.85	54.17	53.36	53.62	53.65	53.62	53.64 I	53.15	55.94	53.49 I
NA2O	0.83 E	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.37
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	41.96	42.96 G	43.01 G	42.98	43.40	42.85	42.51 I	42.46 G	43.96	43.14 I
SO3	0.0 B	0.21	0.12	0.11	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	100.00	99.37	99.81	99.56	99.85	100.08	99.56	99.91	100.49	99.75 *
CLASS	6, 0, 93	0, 2, 97	0, 2, 96	0, 2, 97	0, 2, 98	0, 2, 96	0, 3, 97	0, 4, 95	0, 0,100	0, 0, 98

SAMPLE	06097001	06097002	06097004	06097005	06097011	06105001	06105002	06105003	06105004	06105005
SIO2	2.50	2.50	1.27	1.59	2.00	0.51	0.55	0.60	0.60	0.84
AL2O3	2.20 C	0.55 C	0.43 C	1.96	0.61	0.26	0.0	0.0	0.0	0.0
FE2O3	0.0 B	0.0 B	0.0 B	0.0 B	2.30	0.11	0.07	0.13	0.07	0.07
MGO	46.00	44.89 I	0.63 I	0.58 I	0.0	2.60	0.34	3.70	0.77	0.30
CAO	0.0 B	1.29 I	53.33 I	52.35 I	52.80	51.50	53.90	51.20	52.40	54.40
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.10	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.08	0.03	0.0	0.0	0.0	0.0
H2O	0.0 B	0.0 B	1.60	0.0 B	0.66 F	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.37	0.0 B	0.0 B	0.32	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.28 J	0.02	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.12	0.32	0.18	0.10	0.03	0.08
CO2	49.30	50.04 I	42.56 I	41.74 I	40.70	43.40 G	43.50 G	44.00 G	43.40 G	43.50 G
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	100.00	99.64	100.00	99.81 *	100.42 *	98.73	98.54	99.73	97.27	99.19
CLASS	0, 4, 94	2, 2, 96	1, 3, 97	0, 3, 95	0, 5, 93	0, 1, 97	0, 1, 97	0, 0, 99	1, 2, 95	1, 1, 98

SAMPLE	06105006	06105007	06105008	06105009	06107001	06107002	06107003	06107005	06107006	06107007
SIO2	0.97	1.10	1.30	1.70	3.12	3.48 A	6.10 A	0.12	0.13	0.50 A
AL2O3	0.04	0.08	0.12	0.46	0.26	0.37	0.54 C	0.0 T	0.0 T	0.32 C
FE2O3	0.03	0.10	0.10	0.26	0.44	0.10	0.0 B	0.0 B	0.0 B	0.0 B
MGO	0.26	0.42	0.92	8.30	46.00	45.24 M	0.43 I	0.0	0.0	2.17 I
CAO	55.25	51.00	52.10	42.50	1.13	1.89	51.78 I	55.90 I	55.90 I	53.00 I
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0	0.0	0.13	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.61 I	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.12	0.12	0.01	0.13	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	43.14 G	43.40 G	43.50 G	44.30 G	48.85	47.92 G	41.12 I	43.90 I	43.80 I	43.97 I
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.81	96.22	98.05	97.78	100.41 *	99.00	99.97	99.92 *	99.83 *	99.96
CLASS	1, 0, 98	1, 3, 92	1, 2, 95	1, 4, 93	2, 2, 94	3, 1, 92	5, 1, 93	0, 0,100	0, 0,100	0, 1, 99

SAMPLE	06107008	06107009	06107010	06107011	06107012	06107013	06107014	06109001	06109003	06109004
SIO2	0.65 A	0.70	0.80 A	0.80	0.99 A	5.19 A	6.20	2.28 A	0.03	0.04
AL2O3	0.34 C	0.0 B	0.76 C	0.0 C	0.64 C	1.10 C	0.30 C	0.91 C	0.01	0.01
FE2O3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.03	0.03
MGO	2.46 I	0.0	1.85 I	0.0	0.58 I	2.11 I	0.0	16.95 I	3.32	2.33
CAO	52.58 I	55.40 I	52.99 I	55.40 I	54.41 I	50.11 I	52.30 I	34.04 I	51.88	53.15
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.26	0.09
CO2	43.96 I	43.50 I	43.60 I	43.40 I	43.35 I	41.47 I	41.10 I	45.24 I	44.37 I	44.28 I
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.99	99.60 *	100.00	99.60 *	99.97	99.98	99.90	99.42	99.90	99.93
CLASS	0, 1, 99	1, 0, 99	0, 1, 98	1, 0, 99	0, 2, 98	3, 3, 93	6, 1, 93	1, 3, 96	0, 0,100	0, 0,100

A INSOL.
B BLANK--NO VALUE REPT.
C AL2O3 + FE2O3.
D MGO + CAO.
E NA2O + K2O.
F H2O+.
G IGNITION LOSS (MAY INCLUDE WATER).
H REPORTED AS S.
I CALCULATED BY COMPILERS.
J ORGANIC MATTER.
K TOTAL IRON.
M BY DIFFERENCE.
N INCLUDES TIO2.
O GREATER THAN.
P LESS THAN.
T TRACE.
* ADDITIONAL INFORMATION IN DESCRIPTIVE NOTES.

TABLE 9. — *Analyses of samples from California and Hawaii containing more than 90 percent carbonate (Group F_2), common-rock category* — Continued

```
06093001  SILURIAN & DEVONIAN, GAZELLE FM.  S7,T42N,R6W; S12,T42N,R7W.  (12:181/ 24:331)  LIMESTONE, GRAY, MASSIVE TO THIN-BEDDED,
           DENSE TO FINELY CRYS, TONNAGE.  USE: 6,18.  CA/MG >100.
06093002  PALEOZOIC.  S7,T42N,R6W.  (556:331,330,PL37)  LIMESTONE.  INDEX MAP.  USE: 6,18.  CA/MG >100.

06093003  PALEOZOIC.  S8,T42N,R6W.  (279:520,519,PL26)  LIMESTONE, GRAY, FINE-GR, COMPACT, THICK-BEDDED; 200 FT THICK; SAMPL OF 35
          FT.  INDEX & GEOL MAPS, GEOL SEC.  USE:2,6.  *MISC: S=TR.  CA/MG >100.
06093004  PALEOZOIC.  S7,T42N,R6W.  (556:331,330,PL37)  LIMESTONE.  INDEX MAP.  USE: 6,18.

06093005  PALEOZOIC.  S8,T42N,R6W.  (279:520,519,PL26) LIMESTONE, GRAY, FINE-GR, COMPACT, THICK-BEDDED; 200 FT THICK.  INDEX &
          GEOL MAPS, GEOL SEC.  USE: 2,6.  *MISC: S = TR.  CA/MG >100.
06093006  PALEOZOIC.  S7,T42N,R6W.  (279:520,515,519,PL26)  LIMESTONE, GRAY, FINE-GR, THICK-BEDDED; 200 FT THICK.  INDEX & GEOL
          MAPS, GEOL SECS.  *MISC: S = TR.  CA/MG >100.
06093007  PALEOZOIC.  S18,T42N,R6W.  (279:520,515,PL26)  CONGLOMERATE; CARBONATE CEMENT; COMPOS GRAB SMPL.  INDEX & GEOL MAP, GEOL
          SEC.  *MISC: S = TR.  CA/MG >100.
06093008  PALEOZOIC.  S12,T42N,R7W.  (279:520,515-519,PL26)  LIMESTONE, GRAY, FINE-GR, THICK-BEDDED; 200 FT THICK; SMPL TAKEN
          ACROSS 50 FT.  INDEX & GEOL MAP, GEOL SEC.  *MISC: S=TR.  CA/MG >100.
06093013  SILURIAN & DEVONIAN, GAZELLE FM.  S5,T42N,R6W.  (12:183,182)  LIMESTONE; OUTCROP SMPL; TONNAGE.  INDEX MAP.  CA/MG >100.

06093014  "T42N,R6W" GAZELLE.  (68:661)  LIMESTONE.
06095001  "T3N,R3W" BENICIA.  (72:882)  LIMESTONE.  USE: 4.  CA/MG >100.
06095002  "T5N,R2W" SUISUN.  (174:282)  LIMESTONE.  USE: 4.  CA/MG >100.
06095003  "T5N,R2W" SUISUN.  (174:282)  LIMESTONE.  USE: 4.  CA/MG >100.
06095004  "T5N,R2W" SUISAN.  (555:121,120)  TRAVERTINE.  USE: 4.  CA/MG >100.
06095005  CRETACEOUS, CHICO FM.  S17,T5N,R1W.  (21:185/ 531:88,26,PL4,19)  TRAVERTINE, POROUS; TYPICAL ANAL.  INDEX & GEOL MAPS,
          GEOL SEC.  USE: 4,12.  CA/MG = 97.5.
06095006  "T5N,R2W" SUISUN.  (174:282)  LIMESTONE.  USE: 4.
06095007  PLEISTOCENE TO HOLOCENE.  "T5N,R2W" SUISUN.  (175:360,359)  TRAVERTINE.  USE: 4.  CA/MG >100.

06095008  "T5N,R2W" SUISUN.  (174:282)  LIMESTONE.  USE: 4.
06095019  "T5N,R2W" SUISUN.  (47:17)  ARAGONITE.  CA/MG >100.
06095020  "T6N,R2W"  SUISUN. (73:641)  ONYX, WHITE, GRAY.  USE:15.  *MISC: SRCO3 = 1.59, BACO3 = 0.11.  CA/MG = 50.9.

06097001  S17,T9N,R11W.  (57:331,328-330)  MAGNESITE; 25 FT THICK.  INDEX MAP.  USE: 16.

06097002  S17,T9N,R11W.  (57:331,328-330)  MAGNESITE; 25 FT THICK.  INDEX MAP.  USE: 16.  CA/MG = 0.029.

06097004  "T11N,R9W" GEYSERVILLE.  (72:633)  LIMESTONE, FLOAT.  USE: 18.  CA/MG = 84.7.

06097005  "T9N,R9W" HEALDSBURG.  (556:334,PL37)  LIMESTONE.  INDEX MAP.  *MISC: MNO = 0.18; FECO3 = 1.13.  CA/MG = 90.3.

06097011  JURASSIC & CRETACEOUS, FRANCISCAN FM.  "T8N,R12W" BLACK MTN.  (29:76,11,12,14,PL1)  LIMESTONE, RED.  INDEX & GEOL MAPS.
          *MISC: FEO = 0.23, MNO = 0.48.
06105001  PENNSYLVANIAN OR PERMIAN.  S6,7,T30N,R10W.  (22:42,40,PL1,2)  LIMESTONE, GRAY, DENSE; COMPOS SMPL; 200 FT THICK;
          TONNAGE.  INDEX & GEOL MAPS.  USE: 19.  CA/MG = 19.8.
06105002  PERMIAN.  S28,T30N,R10W.  (22:41,PL1,2)  LIMESTONE BRECCIA.  INDEX & GEOL MAPS.  USE: 19.  CA/MG >100.

06105003  PENNSYLVANIAN OR PERMIAN. S22,27,T31N,R10W.  (22:41,40,PL1,2)  LIMESTONE, GRAY, MASSIVE; 200 FT THICK; TONNAGE.  INDEX
          & GEOL MAPS.  CA/MG = 13.8.
06105004  PALEOZOIC & TRIASSIC.  S16,T28N,R11W.  (22:42,PL1,2)  LIMESTONE, GRAY, DENSE; COMPOS SMPL.  INDEX & GEOL MAPS.  USE: 19.
          CA/MG = 68.0.
06105005  PENNSYLVANIAN OR PERMIAN.  S22,27,T31N,R10W.  (22:41,40,PL1,2)  LIMESTONE, GRAY, MASSIVE; 200 FT THICK; TONNAGE.  INDEX
          & GEOL MAPS.  CA/MG >100.
06105006  PERMIAN.  S34,T31N,R11W.  (22:41,40,PL1,2)  LIMESTONE.  INDEX & GEOL MAPS.  USE: 19.  CA/MG >100.

06105007  TRIASSIC.  S36,T3N,R6E & S1,T2N,R6E.  (22:42,40,41,PL1,2)  LIMESTONE, GRAY.  INDEX & GEOL MAPS.  USE: 19.  CA/MG >100.

06105008  DEVONIAN.  S18,30,T7N,R7E.  (22:42,40,PL1,2)  LIMESTONE, GRAY, FINELY CRYS; COMPOS SMPL; 200 FT THICK. INDEX & GEOL MAP.
          CA/MG = 56.6.
06105009  PENNSYLVANIAN OR PERMIAN.  S16,17,T32N,R11W.  (22:40,PL1,2)  LIMESTONE; 200 FT THICK; TYPICAL SMPL.  INDEX & GEOL MAPS.
          CA/MG = 5.12.
06107001  "T22S,R27E" PORTERVILLE.  (36:535,529-531,555)  MAGNESITE, AMORPHOUS.  USE: 15,16. *MISC: MNO, NIL; H2O = I.L. LESS CO2.
          CA/MG = 0.025.
06107002  "T22S,R27E" PORTERVILLE.  (428:10)  MAGNESITE.  CA/MG = 0.042.
06107003  S25,T17S,R28E.  (556:336,335,PL37)  LIMESTONE, GRAY, CRYS; TONNAGE.  INDEX MAP.  CA/MG >100.

06107005  S25,30,T17S,R28E.  (200:445)  LIMESTONE.  *MISC: AL2O3+FEO=TR.
06107006  S25,30,T17S,R28E.  (200:445)  LIMESTONE.  *MISC: AL2O3+FEO=TR.
06107007  S13,21S,R28E.  (556:338,PL37)  LIMESTONE, WHITE TO BLACK, MOTL, COARSELY CRYS; TONNAGE.  INDEX MAP.  CA/MG = 24.4.

06107008  CARBONIFEROUS.  S30,T20S,R31E.  (556:340,PL37)  LIMESTONE, WHITE, GRAY, BANDED.  INDEX MAP.  CA/MG = 21.3.

06107009  S25,30,T17S,R28E.  (200:455)  LIMESTONE.  *MISC: AL2O3 + FEO = TR.
06107010  S6,T20S,R28E.  (556:341,340,PL37)  LIMESTONE, GRAY TO BLACK, FINE-GR.  INDEX MAP.  USE: 6,12.  CA/MG = 28.6.

06107011  S25,30,T17S,R28E.  (200:445)  LIMESTONE.  USE: 18.  *MISC:  AL2O3+FEO = TR.

06107012  S5,T20S,R28E.  (556:337,PL37)  LIMESTONE, GRAY TO BLACK, FINELY CRYS.  INDEX MAP.  CA/MG =  93.8.

06107013  CARBONIFEROUS.  T20S,R31E, SPRINGVILLE.  (556:340,PL37)  LIMESTONE, GRAY, MED TO FINELY CRYS; SUGARY; GRAB SMPL.  INDEX
          MAP.  CA/MG = 23.7.
06107014  S25,30,T17S,R28E.  (200:445)  LIMESTONE.
06109001  S33,34,T1N,R15E.  (556:345)  DOLOMITE, GRANULAR; 300-FT CHIP SMPL.  CA/MG = 2.01.

06109003  PALEOZOIC, CALAVERAS FM.  S28,T1N,R15E.  (264:20,7-9,22,PL1,3)  LIMESTONE, WHITE, GRAY, MOTL, COARSE-GR; OUTCROP SMPL;
          MIN; TONNAGE.  INDEX & GEOL MAPS.  USE: 4.  CA/MG = 15.6.
06109004  PALEOZOIC, CALAVERAS FM.  S28,T1N,R15E.  (264:20,7-9,22,PL1,3)  LIMESTONE, WHITE, GRAY, MOTL, COARSE-GR; OUTCROP SMPL;
          MIN; TONNAGE.  INDEX & GEOL MAPS.  USE: 4.  CA/MG = 22.8.
```

TABLE 9. — *Analyses of samples from California and Hawaii containing more than 90 percent carbonate (Group F_2), common-rock category* — Continued

SAMPLE	06109005	06109006	06109007	06109008	06109009	06109010	06109011	06109012	06109013	06109014
SIO2	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.07	0.10	0.11
AL2O3	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.03
FE2O3	0.03	0.05	0.13	0.02	0.03	0.03	0.05	0.10	0.05	0.06
MGO	0.91	0.88	0.92	1.92	1.66	3.46	0.36	0.31	2.51	2.01
CAO	54.84	54.91	54.73	53.69	53.96	51.87	55.42	55.51	52.89	53.49
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.02	0.02	0.02	0.02	0.02	0.02	0.17	0.05	0.02	0.06
CO2	44.05 I	44.08 I	43.98 I	44.25 I	44.18 I	44.52 I	43.90 I	43.92 I	44.27 I	44.19 I
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.91	100.00	99.85	99.98	99.93	99.98	99.98	99.98	99.86	99.95
CLASS	0, 0,100	0, 0,100	0, 0,100	0, 0,100	0, 0,100	0, 0,100	0, 0,100	0, 0,100	0, 0,100	0, 0,100

SAMPLE	06109015	06109016	06109017	06109018	06109019	06109020	06109021	06109022	06109023	06109024
SIO2	0.14	0.14	0.15	0.15	0.16	0.16	0.16	0.18	0.18	0.18
AL2O3	0.32 C	2.28 C	0.03	0.90	0.24 C	0.28 C	0.34 C	0.30 C	0.48 C	2.58 C
FE2O3	0.0 B	0.0 B	0.05	0.70 K	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
MGO	0.46	0.51	1.84	13.70	0.72	0.58	1.00	0.85	0.80	0.91
CAO	54.83	53.45	53.62	38.90	54.91	54.92	54.42	54.38	54.47	53.25
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.20	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.07	0.07	0.14	0.0 B	0.09	0.05	0.09	0.09	0.08	0.16
CO2	43.54 I	42.52 I	44.11 I	45.40	43.89 I	43.75 I	43.89 I	43.62 I	43.64 I	42.80 I
SO3	0.0 B	0.0 B	0.0 B	0.0	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.36	98.97	99.94	99.95	100.01	99.74	99.90	99.42	99.65	99.88
CLASS	0, 0, 99	0, 0, 96	0, 0,100	0, 0, 98	0, 0,100	0, 0, 99	0, 0, 99	0, 0, 99	0, 0, 99	0, 0, 97

SAMPLE	06109025	06109026	06109027	06109028	06109029	06109030	06109031	06109032	06109033	06109034
SIO2	0.20	0.20	0.20	0.22	0.22	0.24	0.24	0.24	0.24	0.24
AL2O3	0.18	0.28 C	1.30	0.24 C	3.58 C	0.38 C	0.42 C	2.40 C	4.96 C	9.46 C
FE2O3	0.0 T	0.0 B	0.35 K	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
MGO	8.30	1.85	13.70	0.55	0.46	0.77	2.17	0.49	0.62	0.61
CAO	45.40	53.25	38.40	54.36	53.24	54.46	52.74	53.81	52.13	49.38
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.20	0.0 B	0.20	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.05	0.0 B	0.23	0.04	0.10	0.07	0.04	0.07	1.61
CO2	44.90	43.83 I	45.40	43.27 I	42.29 I	43.59 I	43.75 I	42.78 I	41.60 I	39.43 I
SO3	0.0	0.0 B	0.0	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.18	99.46	99.55	98.87	99.83	99.54	99.39	99.76	99.62	100.73
CLASS	0, 1, 99	0, 0, 99	0, 1, 97	0, 0, 98	0, 0, 96	0, 0, 99	0, 0, 99	0, 0, 97	0, 0, 94	0, 0, 87

SAMPLE	06109035	06109036	06109037	06109038	06109039	06109040	06109041	06109042	06109043	06109044
SIO2	0.26	0.26	0.26	0.26	0.28	0.28	0.28	0.30	0.30	0.30
AL2O3	0.06	0.22 C	2.32 C	3.80 C	0.26 C	1.30 C	3.04 C	0.30 C	0.32 C	0.36 C
FE2O3	0.11	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
MGO	17.70	3.51	0.58	0.41	18.33	17.95	0.37	18.18	0.43	0.64
CAO	34.96	51.58	53.74	52.74	33.69	33.63	53.40	34.21	54.69	54.66
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.03	0.06	0.09	0.06	0.05	0.04	0.05	0.11	0.09	0.01
CO2	46.85 I	44.34 I	42.84 I	41.85 I	46.54 I	46.07 I	43.07 I	46.78 I	43.40 I	43.61 I
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.97	99.97	99.83	99.12	99.15	99.27	100.21	99.88	99.23	99.58
CLASS	0, 0,100	0, 0, 99	0, 0, 97	0, 0, 95	0, 0, 99	0, 0, 98	0, 0, 97	0, 1, 99	0, 1, 99	0, 1, 99

SAMPLE	06109045	06109046	06109047	06109048	06109049	06109050	06109051	06109052
SIO2	0.30	0.30	0.30	0.31	0.32	0.32	0.35	0.36
AL2O3	0.36 C	0.54 C	0.66 C	0.07	0.40 C	0.46 C	0.08	0.08
FE2O3	0.0 B	0.0 B	0.0 B	0.11	0.0 B	0.0 B	0.19	0.09
MGO	0.80	0.73	14.10	15.75	0.46	1.24	1.36	10.15
CAO	54.11	54.36	38.84	37.24	54.66	53.82	53.99	43.71
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.02	0.12	0.06	0.03	0.07	0.05	0.05	0.02
CO2	43.36 I	43.47 I	45.94 I	46.50 I	43.35 I	43.61 I	43.87 I	45.44 I
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	98.95	99.52	99.90	100.01	99.26	99.50	99.89	99.85
CLASS	0, 1, 98	0, 1, 99	0, 1, 99	0, 0, 99	0, 1, 98	0, 1, 99	0, 1, 99	0, 0, 99

A INSOL.
B BLANK--NO VALUE REPT.
C AL2O3 + FE2O3.
D MGO + CAO.
E NA2O + K2O.
F H2O+.
G IGNITION LOSS (MAY INCLUDE WATER).
H REPORTED AS S.
I CALCULATED BY COMPILERS.
J ORGANIC MATTER.
K TOTAL IRON.
M BY DIFFERENCE.
N INCLUDES TIO2.
O GREATER THAN.
P LESS THAN.
T TRACE.
* ADDITIONAL INFORMATION IN DESCRIPTIVE NOTES.

TABLE 9. — *Analyses of samples from California and Hawaii containing more than 90 percent carbonate (Group F_2), common-rock category* — Continued

06109005 PALEOZOIC, CALAVERAS FM. S31,T1N,R16E. (264:20,7-9,23,PL1,3) LIMESTONE, WHITE: OUTCROP SMPL: MIN: TONNAGE. INDEX & GEOL MAPS. USE: 4,6. CA/MG = 60.3.
06109006 PALEOZOIC, CALAVERAS FM. S31,T1N,R16E. (264:20,7-9,23,PL1,3) LIMESTONE, WHITE: OUTCROP SMPL: MIN: TONNAGE. INDEX & GEOL MAPS. USE: 4,6. CA/MG = 62.4.
06109007 PALEOZOIC, CALAVERAS FM. S31,T1N,R16E. (264:20,7-9,23,PL1,3) LIMESTONE, WHITE: OUTCROP SMPL: MIN: TONNAGE. INDEX & GEOL MAPS. USE: 4,6. CA/MG = 59.5.
06109008 PALEOZOIC, CALAVERAS FM. S31,T1N,R16E. (264:20,7-9,23,PL1,3) LIMESTONE, WHITE: OUTCROP SMPL: MIN: TONNAGE. INDEX & GEOL MAPS. USE: 4. CA/MG = 28.0.
06109009 PALEOZOIC, CALAVERAS FM. S31,T1N,R16E. (264:20,7-9,23,PL1,3) LIMESTONE, WHITE: OUTCROP SMPL: MIN: TONNAGE. INDEX & GEOL MAPS. USE: 4. CA/MG = 32.5.
06109010 PALEOZOIC, CALAVERAS FM. S31,T1N,R16E. (264:20,7-9,23,PL1,3) LIMESTONE, WHITE: OUTCROP SMPL: MIN: TONNAGE. INDEX & GEOL MAPS. USE: 4. CA/MG = 15.0
06109011 PALEOZOIC, CALAVERAS FM. S28,T1N,R15E. (264:20,7-9,22,PL1,3) LIMESTONE, WHITE, GRAY, MOTL, COARSE-GR: OUTCROP SMPL: MIN: TONNAGE. INDEX & GEOL MAPS. USE: 4,6. CA/MG >100.
06109012 PALEOZOIC, CALAVERAS FM. S28,T1N,R15E. (264:20,7-9,22,PL1,3) LIMESTONE, WHITE, GRAY, MOTL, COARSE-GR: OUTCROP SMPL: MIN: TONNAGE. INDEX & GEOL MAPS. USE: 4,6. CA/MG >100.
06109013 PALEOZOIC, CALAVERAS FM. S31,T1N,R16E. (264:20,7-9,23,PL1-3) LIMESTONE, WHITE: OUTCROP SMPL: MIN: TONNAGE. INDEX & GEOL MAPS. USE: 6,18. CA/MG = 21.1.
06109014 PALEOZOIC, CALAVERAS FM. S28,T1N,R15E. (264:20,7-9,22,PL1,3) LIMESTONE, WHITE, GRAY, MOTL, COARSE-GR: OUTCROP SMPL: MIN: TONNAGE. INDEX & GEOL MAPS. USE: 4. CA/MG = 26.6.
06109015 PALEOZOIC, CALAVERAS FM. S35,T1N,R15E. (264:19,7-9,23,PL1,3) LIMESTONE, WHITE TO GRAY, MED-COARSE GR: OUTCROP SMPL: MIN: TONNAGE. INDEX & GEOL MAPS. CA/MG >100.
06109016 PALEOZOIC, CALAVERAS FM. S35,T1N,R15E. (264:19,7-9,23,PL1,3) LIMESTONE, WHITE TO GRAY, MED-COARSE GR: OUTCROP SMPL: MIN: TONNAGE. INDEX & GEOL MAPS. CA/MG >100.
06109017 PALEOZOIC, CALAVERAS FM. S28,T1N,R15E. (264:20,7-9,22,PL1,3) LIMESTONE, WHITE, BANDED, MED-CRYS: OUTCROP SMPL: MIN. INDEX & GEOL MAPS. USE: 4. CA/MG = 29.1.
06109018 "T2N,R14E" COLUMBIA. (556:343,342,PL37) MARBLE, WHITE, BLUE, VEINED, FINE- TO MED-CRYS, PHYS PROP. INDEX MAP. USE: 15. CA/MG = 2.83.
06109019 PALEOZOIC, CALAVERAS FM. S35,T1N,R15E. (264:20,7-9,23,PL1,3) LIMESTONE, WHITE TO GRAY, MED-COARSE GR: OUTCROP SMPL: MIN: TONNAGE. INDEX & GEOL MAPS. USE: 4,6. CA/MG = 76.3.
06109020 PALEOZOIC, CALAVERAS FM. S35,T1N,R15E. (264:20,7-9,23,PL1,3) LIMESTONE, WHITE TO GRAY, MED-COARSE GR: OUTCROP SMPL: MIN: TONNAGE. INDEX & GEOL MAPS. USE: 4,6. CA/MG = 94.7.
06109021 PALEOZOIC, CALAVERAS FM. S35,T1N,R15E. (264:19,7-9,23,PL1,3) LIMESTONE, WHITE TO GRAY, MED-COARSE GR: OUTCROP SMPL: MIN: TONNAGE. INDEX & GEOL MAPS. USE: 4,6. CA/MG = 54.4.
06109022 PALEOZOIC, CALAVERAS FM. S35,T1N,R15E. (264:19,7-9,23,PL1,3) LIMESTONE, WHITE TO GRAY, MED-COARSE GR: OUTCROP SMPL: MIN: TONNAGE. INDEX & GEOL MAPS. USE: 4,6. CA/MG = 64.0.
06109023 PALEOZOIC, CALAVERAS FM. S35,T1N,R15E. (264:20,7-9,23,PL1,3) LIMESTONE, WHITE TO GRAY, MED-COARSE GR: OUTCROP SMPL: MIN: TONNAGE. INDEX & GEOL MAPS. USE: 4,6. CA/MG = 68.1.
06109024 PALEOZOIC, CALAVERAS FM. S35,T1N,R15E. (264:20,7-9,23,PL1,3) LIMESTONE, WHITE TO GRAY, MED-COARSE GR: OUTCROP SMPL: MIN: TONNAGE. INDEX & GEOL MAPS. USE: 4,6. CA/MG = 58.5.
06109025 "T2N,R14E" COLUMBIA. (556:343,342,PL37) MARBLE, WHITE, BLUE, VEINED, FINE- TO MED-CRYS, PHYS PROP. INDEX MAP. USE: 15. CA/MG = 5.46.
06109026 PALEOZOIC, CALAVERAS FM. S35,T1N,R15E. (264:19,7-9,23,PL1,3) LIMESTONE, WHITE TO GRAY, MED-COARSE GR: OUTCROP SMPL: MIN: TONNAGE. INDEX & GEOL MAPS. USE: 4,6. CA/MG = 28.8.
06109027 "T2N,R14E" COLUMBIA. (556:343,342,PL37) MARBLE, WHITE, BLUE, VEINED, FINE- TO MED-CRYS, PHYS PROP. INDEX MAP. USE: 15. CA/MG = 2.80.
06109028 PALEOZOIC, CALAVERAS FM. S35,T1N,R15E. (264:19,7-9,23,PL1,3) LIMESTONE, WHITE TO GRAY, MED-COARSE GR: OUTCROP SMPL: MIN: TONNAGE. INDEX & GEOL MAPS. CA/MG = 98.8.
06109029 PALEOZOIC, CALAVERAS FM. S35,T1N,R15E. (264:20,7-9,23,PL1,3) LIMESTONE, WHITE TO GRAY, MED-COARSE GR: OUTCROP SMPL: MIN: TONNAGE. INDEX & GEOL MAPS. USE: 4,6. CA/MG >100.
06109030 PALEOZOIC, CALAVERAS FM. S35,T1N,R15E. (264:19,7-9,23,PL1,3) LIMESTONE, WHITE TO GRAY, MED-COARSE GR: OUTCROP SMPL: MIN: TONNAGE. INDEX & GEOL MAPS. USE: 4,6. CA/MG = 70.7.
06109031 PALEOZOIC, CALAVERAS FM. S35,T1N,R15E. (264:19,7-9,23,PL1,3) LIMESTONE, WHITE TO GRAY, MED-COARSE GR: OUTCROP SMPL: MIN: TONNAGE. INDEX & GEOL MAPS. USE: 4,6. CA/MG = 24.3.
06109032 PALEOZOIC, CALAVERAS FM. S35,T1N,R15E. (264:20,7-9,23,PL1,3) LIMESTONE, WHITE TO GRAY, MED-COARSE GR: OUTCROP SMPL: MIN: TONNAGE. INDEX & GEOL MAPS. USE: 4,6. CA/MG >100.
06109033 PALEOZOIC, CALAVERAS FM. S35,T1N,R15E. (264:20,7-9,PL1,3) LIMESTONE: OUTCROP SMPL: MIN. INDEX & GEOL MAP. CA/MG = 84.1.
06109034 PALEOZOIC, CALAVERAS FM. S35,T1N,R15E. (264:20,7-9,23,PL1,3) LIMESTONE, WHITE TO GRAY, MED-COARSE GR: OUTCROP SMPL: MIN: TONNAGE. INDEX & GEOL MAPS. USE: 4,6. CA/MG = 77.5.
06109035 PALEOZOIC, CALAVERAS FM. S31,T1N,R16E. (264:20,7-9,PL1,3) DOLOMITE: OUTCROP SMPL: MIN. INDEX & GEOL MAP. CA/MG = 1.98.
06109036 PALEOZOIC, CALAVERAS FM. S35,T1N,R15E. (264:20,7-9,23,PL1,3) LIMESTONE, WHITE TO GRAY, MED-COARSE GR: OUTCROP SMPL: MIN: TONNAGE. INDEX & GEOL MAPS. USE: 4,6. CA/MG = 14.7.
06109037 PALEOZOIC, CALAVERAS FM. S35,T1N,R15E. (264:19,7-9,23,PL1,3) LIMESTONE, WHITE TO GRAY, MED-COARSE GR: OUTCROP SMPL: MIN: TONNAGE. INDEX & GEOL MAPS. CA/MG = 92.7.
06109038 PALEOZOIC, CALAVERAS FM. S35,T1N,R15E. (264:20,7-9,23,PL1,3) LIMESTONE, WHITE TO GRAY, MED-COARSE GR: OUTCROP SMPL: MIN: TONNAGE. INDEX & GEOL MAPS. USE: 4,6. CA/MG >100.
06109039 PALEOZOIC, CALAVERAS FM. S35,T1N,R15E. (264:19,7-9,PL1,3) DOLOMITE: OUTCROP SMPL: MIN. INDEX & GEOL MAP. CA/MG=1.84.
06109040 PALEOZOIC, CALAVERAS FM. S35,T1N,R15E. (264:19,7-9,PL1,3) DOLOMITE: OUTCROP SMPL: MIN. INDEX & GEOL MAP. CA/MG=1.87.
06109041 PALEOZOIC, CALAVERAS FM. S35,T1N,R15E. (264:20,7-9,23,PL1,3) LIMESTONE, WHITE TO GRAY, MED-COARSE GR: OUTCROP SMPL: MIN: TONNAGE. INDEX & GEOL MAPS. USE: 4,6. CA/MG >100.
06109042 PALEOZOIC, CALAVERAS FM. S35,T1N,R15E. (264:19,7-9,PL1,3) DOLOMITE: OUTCROP SMPL: MIN. INDEX & GEOL MAP. CA/MG=1.88.
06109043 PALEOZOIC, CALAVERAS FM. S35,T1N,R15E. (264:19,7-9,23,PL1,3) LIMESTONE, WHITE TO GRAY, MED-COARSE GR: OUTCROP SMPL: MIN: TONNAGE. INDEX & GEOL MAPS. CA/MG >100.
06109044 PALEOZOIC, CALAVERAS FM. S35,T1N,R15E. (264:19,7-9,23,PL1,3) LIMESTONE, WHITE TO GRAY, MED-COARSE GR: OUTCROP SMPL: MIN: TONNAGE. INDEX & GEOL MAPS. CA/MG = 85.4.
06109045 PALEOZOIC, CALAVERAS FM. S35,T1N,R15E. (264:19,7-9,24,PL1,3) LIMESTONE: OUTCROP: MIN. INDEX & GEOL MAP. CA/MG=67.3.
06109046 PALEOZOIC, CALAVERAS FM. S35,T1N,R15E. (264:19,7-9,23,PL1,3) LIMESTONE, WHITE TO GRAY, MED-COARSE GR: OUTCROP SMPL: MIN: TONNAGE. INDEX & GEOL MAPS. USE: 4,6. CA/MG = 74.5.
06109047 PALEOZOIC, CALAVERAS FM. S35,T1N,R15E. (264:19,7-9,PL1,3) DOLOMITIC LIMESTONE: OUTCROP SMPL: MIN. INDEX & GEOL MAPS. CA/MG = 2.75.
06109048 PALEOZOIC, CALAVERAS FM. S30,T1N,R16E. (264:20,8,19,PL1,3) DOLOMITIC LIMESTONE: OUTCROP SMPL: MIN. INDEX & GEOL MAPS. CA/MG = 2.36.
06109049 PALEOZOIC, CALAVERAS FM. S35,T1N,R15E. (264:19,7-9,23,PL1,3) LIMESTONE, WHITE TO GRAY, MED-COARSE GR: OUTCROP SMPL: MIN: TONNAGE. INDEX & GEOL MAPS. CA/MG >100.
06109050 PALEOZOIC, CALAVERAS FM. S35,T1N,R15E. (264:20,7-9,23,PL1,3) LIMESTONE, WHITE TO GRAY, MED-COARSE GR: OUTCROP SMPL: MIN: TONNAGE. INDEX & GEOL MAPS. USE: 4,6. CA/MG = 43.4.
06109051 PALEOZOIC, CALAVERAS FM. S28,T1N,R15E. (264:20,7-9,22,PL1,3) LIMESTONE, WHITE, BANDED, MED-CRYS: OUTCROP SMPL: MIN. INDEX & GEOL MAPS. USE: 4. CA/MG = 39.7.
06109052 PALEOZOIC, CALAVERAS FM. S30,T1N,R16E. (264:20,8,19,PL1,3) DOLOMITIC LIMESTONE: OUTCROP SMPL: MIN. INDEX & GEOL MAPS. CA/MG = 4.31.

TABLE 9. — *Analyses of samples from California and Hawaii containing more than 90 percent carbonate (Group F_2), common-rock category* — Continued

SAMPLE	06109053	06109054	06109055	06109056	06109057	06109058	06109059	06109060	06109061	06109062
SIO2	0.37	0.38	0.39	0.39	0.40 A	0.40	0.42	0.44	0.44	0.44
AL2O3	0.12	3.04 C	0.08	0.10	0.37 C	3.32 C	0.28 C	0.10	0.42 C	2.12 C
FE2O3	0.16	0.0 B	0.10	0.13	0.0 B	0.0 B	0.0 B	0.06	0.0 B	0.0 B
MGO	1.61	0.72	10.99	15.30	2.00 I	0.87	1.12	6.91	1.48	0.70
CAO	53.57	52.74	42.69	37.59	53.10 I	52.74	53.89	47.44	53.73	53.45
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.28	0.07	0.06	0.04	0.0 B	0.15	0.12	0.09	0.02	0.20
CO2	43.82 I	42.19 I	45.57 I	46.28 I	43.70 I	42.35 I	43.53 I	44.91 I	43.88 I	42.73 I
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.93	99.14	99.88	99.83	99.57	99.83	99.36	99.95	99.97	99.64
CLASS	0, 1, 99	0, 1, 96	0, 0, 99	0, 1, 99	0, 1, 99	0, 1, 96	0, 1, 99	0, 0, 99	0, 1, 99	0, 1, 97

SAMPLE	06109063	06109064	06109065	06109066	06109067	06109068	06109069	06109070	06109071	06109072
SIO2	0.46 A	0.54	0.54	0.54 A	0.54	0.54	0.55	0.60	0.60	0.56
AL2O3	0.13 C	0.44 C	0.50 C	0.57 C	2.32 C	2.34 C	0.20	0.12	0.13	3.62 C
FE2O3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.60 K	0.15	0.11	0.0 B
MGO	1.88 I	18.68	19.16	1.36 I	0.68	0.58	0.0 T	10.69	7.13	4.68
CAO	53.45 I	33.52	32.63	53.65 I	53.24	53.06	54.90	42.84	46.91	47.87
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.20	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.05	0.02	0.0 B	0.07	0.09	0.0 B	0.03	0.27	0.03
CO2	44.01 I	46.78 I	46.61 I	43.60 I	42.54 I	42.29 I	43.20	45.35 I	44.64 I	42.71 I
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0	0.0 B	0.0 B	0.0 B
TOT CONS	99.93	100.01	99.46	99.71	99.39	98.90	99.65	99.78	99.79	99.47
CLASS	0, 0, 99	0, 1, 99	0, 1, 98	0, 1, 99	0, 1, 96	0, 1, 96	0, 1, 98	0, 1, 99	0, 1, 99	0, 1, 95

SAMPLE	06109073	06109074	06109075	06109076	06109079	06109080	06109081	06109082	06109083	06109084
SIO2	0.57	0.59	0.61	0.62	0.28	0.65	0.72	0.74	0.74	0.74
AL2O3	0.20	0.32	0.12	0.36 C	5.14 C	0.80	3.06 C	0.12	0.76 C	3.08 C
FE2O3	0.08	0.08	0.10	0.0 B	0.0 B	0.0 T	0.0 B	0.11	0.0 B	0.0 B
MGO	17.89	1.47	16.73	17.87	1.05	8.32	0.52	11.85	0.99	0.75
CAO	34.54	53.70	35.86	34.19	51.61	45.80	52.84	41.51	53.72	52.79
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.20	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.02	0.09 I	0.04	0.07	0.05	0.0 B	0.08	0.05	0.16	0.07
CO2	46.66 I	43.81 I	46.49 I	46.43 I	41.66 I	44.80	42.05 I	45.58 I	43.26 I	42.26 I
SO3	0.0 B	0.0 H	0.0 B	0.0 B	0.0 B	0.0	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.96	100.06 *	99.95	99.54	99.79	100.57	99.27	99.96	99.63	99.69
CLASS	0, 1, 99	0, 1, 99	0, 1, 99	0, 1, 98	0, 0, 94	0, 1, 99	0, 1, 95	0, 1, 99	0, 1, 98	0, 1, 96

SAMPLE	06109085	06109086	06109087	06109088	06109089	06109090	06109091	06109092	06109093	06109094
SIO2	0.78	0.82	0.91 A	0.92	0.94	0.95	1.04	1.14	1.16	1.32
AL2O3	4.72 C	0.16	0.61 C	0.41	0.21	0.36	0.62 C	0.64 C	1.06 C	0.52 C
FE2O3	0.0 B	0.16	0.0 B	0.09	0.09	0.04	0.0 B	0.0 B	0.0 B	0.0 B
MGO	0.77	12.56	3.52 I	0.61	21.06	0.61	18.24	18.29	18.47	18.55
CAO	51.72	40.55	50.86 I	54.42	30.48	54.52	33.62	32.93	33.01	32.97
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.19	0.07	0.0 B	0.07 I	0.10	0.08 I	0.13	0.15	0.02	0.07
CO2	41.44 I	45.60 I	43.77 I	43.43 I	47.01 I	43.51 I	46.38 I	45.90 I	46.15 I	46.21 I
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.62	99.92	99.67	99.95 *	99.89	100.07 *	100.03	99.05	99.87	99.64
CLASS	0, 1, 94	0, 1, 99	0, 2, 98	0, 1, 98	0, 1, 99	0, 1, 99	0, 2, 98	0, 2, 97	0, 2, 98	0, 2, 98

SAMPLE	06109095	06109096	06109097	06109098	06109099	06109100	06109101	06109102
SIO2	1.34	1.43	1.43 A	1.44	1.54	1.58	1.58	1.58
AL2O3	0.27	0.37	0.44 C	0.56 C	0.38	0.27	0.27	0.56 C
FE2O3	0.24	0.12	0.0 B	0.0 B	0.15	0.13	0.19	0.0 B
MGO	17.02	1.13	8.31 I	7.51	10.41	21.15	15.29	19.76
CAO	34.86	53.50	45.09 I	45.95	42.40	30.01	36.68	31.28
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.07	0.06 I	0.0 B	0.07	0.08	0.08	0.12	0.12
CO2	46.02 I	43.28 I	44.47 I	44.30 I	44.70 I	46.74 I	45.55 I	46.21 I
SO3	0.0 B	0.0 H	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.82	99.89 *	99.74	99.83	99.66	99.96	99.68	99.51
CLASS	1, 1, 98	1, 1, 98	1, 1, 98	1, 2, 98	1, 2, 98	1, 1, 98	1, 1, 98	1, 2, 97

A INSOL.
B BLANK--NO VALUE REPT.
C AL2O3 + FE2O3.
D MGO + CAO.
E NA2O + K2O.
F H2O+.
G IGNITION LOSS (MAY INCLUDE WATER).
H REPORTED AS S.
I CALCULATED BY COMPILERS.
J ORGANIC MATTER.
K TOTAL IRON.
M BY DIFFERENCE.
N INCLUDES TIO2.
O GREATER THAN.
P LESS THAN.
T TRACE.
* ADDITIONAL INFORMATION IN DESCRIPTIVE NOTES.

TABLE 9. — *Analyses of samples from California and Hawaii containing more than 90 percent carbonate (Group F_2), common-rock category* — Continued

06109053 PALEOZOIC, CALAVERAS FM. S17,T1N,R15E. (264:20,7-9,22,PL1,3) LIMESTONE, WHITE, BANDED, MED-CRYS; OUTCROP SMPL; MIN. INDEX & GEOL MAPS. CA/MG = 33.3.
06109054 PALEOZOIC, CALAVERAS FM. S35,T1N,R15E. (264:20,7-9,23,PL1,3) LIMESTONE, WHITE TO GRAY, MED-COARSE GR; OUTCROP SMPL; MIN; TONNAGE. INDEX & GEOL MAPS. USE: 4,6. CA/MG = 73.2.
06109055 PALEOZOIC, CALAVERAS FM. S31,T1N,R16E. (264:20,8,19,PL1,3) DOLOMITIC LIMESTONE; OUTCROP SMPL; MIN. INDEX & GEOL MAPS. CA/MG = 3.88.
06109056 PALEOZOIC, CALAVERAS FM. S34,T1N,R15E. (264:20,8,22,PL1,3) DOLOMITE, WHITE, FINE-GR; OUTCROP SMPL; MIN; TONNAGE. INDEX & GEOL MAPS. CA/MG = 2.46.
06109057 "T2N,R14E" COLUMBIA. (556:343,PL37) MARBLE, GRAY, MED TO COARSELY CRYS; SMPL OF 300 FT; PHYS PROP. INDEX MAP. USE: 15. CA/MG = 26.6.
06109058 PALEOZOIC, CALAVERAS FM. S35,T1N,R15E. (264:20,7-9,23,PL1,3) LIMESTONE, WHITE TO GRAY, MED-COARSE GR; OUTCROP SMPL; MIN; TONNAGE. INDEX & GEOL MAPS. USE: 4,6. CA/MG = 60.6.
06109059 PALEOZOIC, CALAVERAS FM. S35,T1N,R15E. (264:19,7-9,23,PL1,3) LIMESTONE, WHITE TO GRAY, MED-COARSE GR; OUTCROP SMPL; MIN; TONNAGE. INDEX & GEOL MAPS. USE: 4,6. CA/MG = 48.1.
06109060 PALEOZOIC, CALAVERAS FM. S31,T1N,R16E. (264:20,8,19,PL1,3) DOLOMITIC LIMESTONE; OUTCROP SMPL; MIN. INDEX & GEOL MAPS. CA/MG = 6.87.
06109061 PALEOZOIC, CALAVERAS FM. S35,T1N,R15E. (264:19,7-9,23,PL1,3) LIMESTONE, WHITE TO GRAY, MED-COARSE GR; OUTCROP SMPL; MIN; TONNAGE. INDEX & GEOL MAPS. CA/MG = 36.3.
06109062 PALEOZOIC, CALAVERAS FM. S35,T1N,R15E. (264:20,7-9,PL1,3) LIMESTONE; OUTCROP SMPL; MIN. INDEX & GEOL MAP. CA/MG = 76.4.
06109063 S20,29,T1N,R15E. (556:347,346,PL37) LIMESTONE, WHITE TO GRAY, FINE- TO MED-CRYS; SMPL OF 540 FT. INDEX MAP. CA/MG = 28.4.
06109064 PALEOZOIC, CALAVERAS FM. S35,T1N,R15E. (264:19,7-9,23,PL1,3) DOLOMITE, GRAY TO BLACK, WHITE, MOTL, FINE-GR; OUT-CROP SMPL; MIN; TONNAGE. INDEX & GEOL MAPS. USE: 14. CA/MG = 1.79.
06109065 PALEOZOIC, CALAVERAS FM. S35,T1N,R15E. (264:19,7-9,24,PL1,3) DOLOMITE, GRAY, BLACK, WHITE, MOTL, FINE-GR; OUT-CROP SMPL; MIN; TONNAGE. INDEX & GEOL MAP. USE: 14. CA/MG = 1.70.
06109066 S33,T1N,R15E. (556:345,PL37) LIMESTONE, GRAY TO WHITE, COARSELY CRYS; CHIP SMPL OF 600 FT. INDEX MAP. CA/MG = 39.4.
06109067 PALEOZOIC, CALAVERAS FM. S35,T1N,R15E. (264:19,7-9,23,PL1,3) LIMESTONE, WHITE TO GRAY, MED-COARSE GR; OUTCROP SMPL; MIN; TONNAGE. INDEX & GEOL MAPS. CA/MG = 78.3.
06109068 PALEOZOIC, CALAVERAS FM. S35,T1N,R15E. (264:19,7-9,23,PL1,3) LIMESTONE, WHITE TO GRAY, MED-COARSE GR; OUTCROP SMPL; MIN; TONNAGE. INDEX & GEOL MAPS. CA/MG = 91.5.
06109069 "T2N,R14E" COLUMBIA. (556:343,342,PL37) MARBLE, WHITE, BLUE, VEINED, FINE- TO MED-CRYS, PHYS PROP. INDEX MAP. USE: 15.
06109070 PALEOZOIC, CALAVERAS FM. S34,T1N,R15E. (264:20,8,22,PL1,3) DOLOMITE, WHITE, FINE-GR; OUTCROP SMPL; MIN; TONNAGE. INDEX & GEOL MAPS. CA/MG = 4.01.
06109071 PALEOZOIC, CALAVERAS FM. S19,T1N,R16E. (264:20,8,19,PL1,3) DOLOMITIC LIMESTONE; OUTCROP SMPL; MIN. INDEX & GEOL MAPS. CA/MG = 6.58.
06109072 PALEOZOIC, CALAVERAS FM. S35,T1N,R15E. (264:20,7-9,23,PL1,3) LIMESTONE, WHITE TO GRAY, MED-COARSE GR; OUTCROP SMPL; MIN; TONNAGE. INDEX & GEOL MAPS. USE: 4,6. CA/MG = 10.2.
06109073 PALEOZOIC, CALAVERAS FM. S25,T1N,R15E. (264:20,7-9,PL1,3) DOLOMITE, GRAY, MED-FINE GR; OUTCROP SMPL; MIN; TONNAGE. INDEX & GEOL MAPS. CA/MG = 1.93.
06109074 PALEOZOIC. "S6,T1N,R15E" (280:512,510,PL24) LIMESTONE, GRAY, WHITE, BANDED, CRYS; SMPL OF 110 FT. INDEX & GEOL MAP, GEOL SEC. USE: 10. *MISC: S = TR. CA/MG = 36.5.
06109075 PALEOZOIC, CALAVERAS FM. S31,T1N,R16E. (264:20,8,19,PL1,3) DOLOMITIC LIMESTONE; OUTCROP SMPL; MIN. INDEX & GEOL MAPS. CA/MG = 2.14.
06109076 PALEOZOIC, CALAVERAS FM. S35,T1N,R15E. (264:19,7-9,24,PL1,3) DOLOMITE, GRAY, BLACK, WHITE, MOTL, FINE-GR; OUT-CROP SMPL; MIN; TONNAGE. INDEX & GEOL MAP. USE: 14. CA/MG = 1.91.
06109079 PALEOZOIC, CALAVERAS FM. S35,T1N,R15E. (264:20,7-9,23,PL1,3) LIMESTONE, WHITE TO GRAY, MED-COARSE GR; OUTCROP SMPL; MIN; TONNAGE. INDEX & GEOL MAPS. USE: 4,6. CA/MG = 49.2.
06109080 "T2N,R14E" COLUMBIA. (556:343,342,PL37) MARBLE, WHITE, BLUE, VEINED, FINE- TO MED-CRYS, PHYS PROP. INDEX MAP. USE: 15. CA/MG = 5.50.
06109081 PALEOZOIC, CALAVERAS FM. S35,T1N,R15E. (264:20,7-9,23,PL1,3) LIMESTONE, WHITE TO GRAY, MED-COARSE GR; OUTCROP SMPL; MIN; TONNAGE. INDEX & GEOL MAPS. USE: 4,6. CA/MG >100.
06109082 PALEOZOIC, CALAVERAS FM. S31,T1N,R16E. (264:20,8,19,PL1,3) DOLOMITIC LIMESTONE; OUTCROP SMPL; MIN. INDEX & GEOL MAPS. CA/MG = 3.50.
06109083 PALEOZOIC, CALAVERAS FM. S35,T1N,R15E. (264:19,7-9,23,PL1,3) LIMESTONE, WHITE TO GRAY, MED-COARSE GR; OUTCROP SMPL; MIN; TONNAGE. INDEX & GEOL MAPS. CA/MG = 54.3.
06109084 PALEOZOIC, CALAVERAS FM. S35,T1N,R15E. (264:20,7-9,23,PL1,3) LIMESTONE, WHITE TO GRAY, MED-COARSE GR; OUTCROP SMPL; MIN; TONNAGE. INDEX & GEOL MAPS. USE: 4,6. CA/MG = 70.4.
06109085 PALEOZOIC, CALAVERAS FM. S35,T1N,R15E. (264:20,7-9,23,PL1,3) LIMESTONE, WHITE TO GRAY, MED-COARSE GR; OUTCROP SMPL; MIN; TONNAGE. INDEX & GEOL MAPS. USE: 4,6. CA/MG = 67.2.
06109086 PALEOZOIC, CALAVERAS FM. S31,T1N,R16E. (264:20,8,19,PL1,3) DOLOMITIC LIMESTONE; OUTCROP SMPL; MIN. INDEX & GEOL MAPS. CA/MG = 3.23.
06109087 S7,T1N,R15E. (556:346,345,PL37) LIMESTONE. INDEX MAP. CA/MG = 14.4.
06109088 PALEOZOIC. "S7,T1N,R15E" (280:512,PL24) LIMESTONE, GRAY, WHITE, BANDED, CRYS; OUTCROP SMPL OF 105 FT. INDEX & GEOL MAP, GEOL SEC. *MISC: S, TR. CA/MG = 89.2.
06109089 PALEOZOIC, CALAVERAS FM. S25,T1N,R15E. (264:20,7-9,PL1,3) DOLOMITE, GRAY, MED-FINE GR; OUTCROP SMPL; MIN; TONNAGE. INDEX & GEOL MAPS. CA/MG = 1.45.
06109090 PALEOZOIC. "S7,T1N,R15E" (280:512,510,PL24) LIMESTONE, GRAY, WHITE, BANDED, CRYS; 51-FT SMPL. INDEX & GEOL MAPS, GEOL SEC. *MISC: S, TR. CA/MG = 89.4.
06109091 PALEOZOIC, CALAVERAS FM. S35,T1N,R15E. (264:19,7-9,PL1,3) DOLOMITE; OUTCROP SMPL; MIN. INDEX & GEOL MAP. CA/MG= 1.84
06109092 PALEOZOIC, CALAVERAS FM. S35,T1N,R15E. (264:19,7-9,24,PL1,3) DOLOMITE, GRAY, BLACK, WHITE, MOTL, FINE-GR; OUT-CROP SMPL; MIN; TONNAGE. INDEX & GEOL MAP. USE: 14. CA/MG = 1.80.
06109093 PALEOZOIC, CALAVERAS FM. S35,T1N,R15E. (264:19,7-9,PL1,3) DOLOMITE; OUTCROP SMPL; MIN. INDEX & GEOL MAP. CA/MG= 1.79
06109094 PALEOZOIC, CALAVERAS FM. S35,T1N,R15E. (264:19,7-9,24,PL1,3) DOLOMITE, GRAY, BLACK, WHITE, MOTL, FINE-GR; OUT-CROP SMPL; MIN; TONNAGE. INDEX & GEOL MAP. USE: 14. CA/MG = 1.78.
06109095 PALEOZOIC, CALAVERAS FM. S34,T1N,R15E. (264:20,8,22,PL1,3) DOLOMITE, WHITE, FINE-GR; OUTCROP SMPL; MIN; TONNAGE. INDEX & GEOL MAPS. CA/MG = 2.05.
06109096 PALEOZOIC. S6,T1N,R15E. (280:512,510,PL24) LIMESTONE, GRAY, WHITE, BANDED, CRYS; 110-FT SMPL. INDEX & GEOL MAP, GEOL SEC. USE: 10. *MISC: S = TR. CA/MG = 47.3.
06109097 S26,35,T1N,R15E. (556:345) LIMESTONE; SMPL OF 700 FT. CA/MG = 5.42.
06109098 PALEOZOIC, CALAVERAS FM. S35,T1N,R15E. (264:19,7-9,PL1,3) DOLOMITIC LIMESTONE; OUTCROP SMPL; MIN. INDEX & GEOL MAPS. CA/MG = 6.12.
06109099 PALEOZOIC, CALAVERAS FM. S19,T1N,R16E. (264:20,8,19,PL1,3) DOLOMITIC LIMESTONE; OUTCROP SMPL; MIN. INDEX & GEOL MAPS. CA/MG = 4.07.
06109100 PALEOZOIC, CALAVERAS FM. S25,T1N,R15E. (264:20,7-9,PL1,3) DOLOMITE, GRAY, MED-FINE GR; OUTCROP SMPL; MIN; TONNAGE. INDEX & GEOL MAPS. CA/MG = 1.42.
06109101 PALEOZOIC, CALAVERAS FM. S31,T1N,R16E. (264:20,8,19,PL1,3) DOLOMITIC LIMESTONE; OUTCROP SMPL; MIN. INDEX & GEOL MAPS. CA/MG = 2.40.
06109102 PALEOZOIC, CALAVERAS FM. S35,T1N,R15E. (264:19,7-9,PL3) DOLOMITE; OUTCROP SMPL; MIN. INDEX & GEOL MAPS. CA/MG = 1.58.

TABLE 9. — *Analyses of samples from California and Hawaii containing more than 90 percent carbonate (Group F_2), common-rock category* — Continued

SAMPLE	06109103	06109104	06109105	06109106	06109107	06109109	06109110	06109112	06109113	06109114
SIO2	1.71	1.82	2.07	2.18	2.20	2.46	2.48	2.80	3.08	3.62
AL2O3	0.30	0.98 C	0.55	1.48 C	0.72 C	0.64 C	0.68 C	1.56 C	1.22 C	0.72 C
FE2O3	0.26	0.0 B	0.21	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
MGO	15.57	14.50	14.00	16.89	18.66	2.14	18.11	0.83	19.06	0.88
CAO	36.33	37.00	38.01	33.65	31.92	51.55	32.65	52.56	30.90	51.99
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.20	0.12	0.14 I	0.16	0.08	0.15	0.02	0.66	0.10	0.09
CO2	45.59 I	44.94 I	45.28 I	44.93 I	45.51 I	42.82 I	45.48 I	42.17 I	45.15 I	41.77 I
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.96	99.36	100.26 *	99.29	99.09	99.76	99.42	100.58	99.51	99.07
CLASS	1, 1, 97	0, 3, 96	1, 2, 97	0, 4, 95	1, 2, 96	1, 2, 97	1, 2, 96	0, 4, 95	1, 4, 95	2, 2, 95

SAMPLE	06111003	06111004	06113002	06113003	20001028	20003004	20003005	20003006	20003007	20003008
SIO2	2.07 A	0.0 B	1.40	6.60	0.45	0.0 B	0.81	0.53	0.75	0.50 A
AL2O3	0.0 B	0.0 B	0.50 C	0.60 C	1.82 C	0.0 B	1.19 C	0.62 C	0.25	0.60 C
FE2O3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.54 K	0.0 B
MGO	0.0 B	0.0 B	0.0 B	0.70	1.83	1.14 I	0.42	2.98	1.14 I	0.60 I
CAO	54.64	54.82 I	54.25	50.35	50.54	51.99 I	52.67	50.69	51.99 I	54.40 I
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.0 B	0.0 B	1.10	1.00	1.93	0.0 B	1.24	0.46	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	1.15	0.50
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.07	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	2.11	0.0 B
CO2	42.86	43.04 I	42.65	40.90	42.80	42.05 I	42.81	43.96	42.06 I	43.40 I
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.64	97.86	99.90	100.15	99.37	95.18	99.14	99.24	99.99	100.00
CLASS	2, 0, 97	0, 0, 98	1, 2, 97	6, 3, 92	0, 3, 95	0, 0, 95	0, 3, 96	0, 1, 98	0, 2, 92	0, 1, 98

SAMPLE	20003010	20003011	20003012	20003013	20003014	20003015	20003016	20003017	20003018	20003019
SIO2	0.25	0.19	0.26	0.67	0.35	1.05	1.10 A	1.20 A	1.60 A	2.40 A
AL2O3	0.49 C	0.52 C	0.21 C	0.73 C	0.19 C	1.26 C	0.80 C	0.40 C	0.80 C	2.00 C
FE2O3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
MGO	0.67	4.60	1.51	2.50	1.74	0.11	0.10 I	0.40 I	0.30 I	0.10 I
CAO	53.34	49.34	52.17	51.09	49.38	51.07	54.70 I	53.90 I	53.80 I	53.10 I
NA2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
H2O	0.93	0.40	0.70	0.79	4.74	1.33	0.0 B	0.0 B	0.0 B	0.0 B
H2O-	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.20	1.20	0.90	0.50
TIO2	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
CO2	43.89	44.33	43.95	43.64	41.89	42.68	43.10 I	42.90 I	42.60 I	41.90 I
SO3	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
TOT CONS	99.57	99.38	98.80	99.42	98.29	97.50	100.00	100.00	100.00	100.00
CLASS	0, 1, 98	0, 1, 98	0, 1, 98	0, 2, 97	0, 5, 93	0, 3, 94	0, 2, 98	1, 2, 97	0, 3, 97	0, 4, 95

SAMPLE	20003020	20003021	20003022	20003055
SIO2	2.97	3.53	5.34	2.40 A
AL2O3	2.88 C	2.26 C	5.11 C	0.0 B
FE2O3	0.0 B	0.0 B	0.0 B	0.0 B
MGO	5.32	2.45	5.95	1.30
CAO	44.82	46.52	42.24	52.60
NA2O	0.0 B	0.0 B	0.0 B	0.0 B
K2O	0.0 B	0.0 B	0.0 B	0.0 B
H2O	1.86	2.75	1.61	1.20
H2O-	0.0 B	0.0 B	0.0 B	0.0 B
TIO2	0.0 B	0.0 B	0.0 B	0.0 B
P2O5	0.0 B	0.0 B	0.0 B	0.10
CO2	40.81	40.59	38.71	41.20 G
SO3	0.0 B	0.0 B	0.0 B	0.60
TOT CONS	98.66	98.10	98.96	99.40
CLASS	0, 7, 91	0, 8, 90	0, 10, 86	2, 1, 90

A INSOL.
B BLANK--NO VALUE REPT.
C AL2O3 + FE2O3.
D MGO + CAO.
E NA2O + K2O.
F H2O+.
G IGNITION LOSS (MAY INCLUDE WATER).
H REPORTED AS S.
I CALCULATED BY COMPILERS.
J ORGANIC MATTER.
K TOTAL IRON.
M BY DIFFERENCE.
N INCLUDES TIO2.
O GREATER THAN.
P LESS THAN.
T TRACE.
* ADDITIONAL INFORMATION IN DESCRIPTIVE NOTES.

TABLE 9. — *Analyses of samples from California and Hawaii containing more than 90 percent carbonate (Group F_2), common-rock category* — Continued

```
06109103  PALEOZOIC, CALAVERAS FM.  S31,T1N,R16E.  (264:20,8,19,PL1,3)  DOLOMITIC LIMESTONE: OUTCROP SMPL: MIN.  INDEX & GEOL
          MAPS.  CA/MG = 2.33.
06109104  PALEOZOIC, CALAVERAS FM.  S35,T1N,R15E.  (264:20,8,19,PL1,3)  DOLOMITIC LIMESTONE: OUTCROP SMPL: MIN.  INDEX & GEOL
          MAPS.  CA/MG = 2.55.
06109105  PALEOZOIC.  "S6,T1N,R15E"  (280:512,PL24)  DOLOMITE, CRYS: TAKEN ACROSS 45 FT.  INDEX & GEOL MAP, GEOL SEC.  MISC: S=TR.
          CA/MG = 2.72.
06109106  PALEOZOIC, CALAVERAS FM.  S35,T1N,R15E.  (264:19,7-9,PL1,3)  DOLOMITIC LIMESTONE: OUTCROP SMPL: MIN.  INDEX & GEOL MAPS.
          CA/MG = 1.99.
06109107  PALEOZOIC, CALAVERAS FM.  S35,T1N,R15E.  (264:19,7-9,PL1,3)  DOLOMITE: OUTCROP SMPL: MIN.  INDEX & GEOL MAP. CA/MG=1.71.

06109109  PALEOZOIC, CALAVERAS FM.  S35,T1N,R15E.  (264:19,7-9,23,PL1,3)  LIMESTONE, WHITE TO GRAY, MED-COARSE GR: OUTCROP SMPL:
          MIN: TONNAGE.  INDEX & GEOL MAPS.  USE: 4,6.  CA/MG = 24.1.
06109110  PALEOZOIC, CALAVERAS FM.  S35,T1N,R15E.  (264:19,7-9,PL1,3)  DOLOMITE: OUTCROP SMPL: MIN.  INDEX & GEOL MAP. CA/MG=1.80.

06109112  PALEOZOIC, CALAVERAS FM.  S35,T1N,R15E.  (264:19,7-9,23,PL1,3)  LIMESTONE, WHITE TO GRAY, MED-COARSE GR: OUTCROP SMPL:
          MIN: TONNAGE.  INDEX & GEOL MAPS.  CA/MG = 62.3.
06109113  PALEOZOIC, CALAVERAS FM.  S35,T1N,R15E.  (264:19,7-9,PL1,3)  DOLOMITE: OUTCROP SMPL: MIN.  INDEX & GEOL MAP. CA/MG=1.62.

06109114  PALEOZOIC, CALAVERAS FM.  S26,T1N,R15E.  (264:19,7-9,PL1,3)  LIMESTONE: OUTCROP SMPL: MIN.  INDEX & GEOL MAPS.
          CA/MG = 59.1.
06111003  S17,T3N,R17W.  (493:97/ 504:267)  LIMESTONE, FOS: 40 FT THICK, QUARRY SMPL.  USE: 2.

06111004  S22,T5N,R25W.  (504:268,267)  LIMESTONE,  GRAY, FINE-GR, COMPACT: 250 FT THICK.  USE: 18.

06113002  CRETACEOUS.  "T10N,R2W" CADENASSA.  (556:350,PL37)  LIMESTONE, FLOAT.  INDEX MAP.  USE: 2.

06113003  CRETACEOUS.  "T10N,R2W" CADENASSA.  (556:350,PL37)  LIMESTONE, FLOAT.  INDEX MAP.  USE: 2.  CA/MG = 71.9.

20001028  WAILUKU BAY.  (98:164,162)  CORAL ROCK.  CA/MG = 27.6.
20003004  OAHU REEF.  (250:192)  CHALK.  CA/MG = 45.6.
20003005  HONOLULU, PRISON KNOLL    (98:164,162)  CORAL ROCK.  CA/MG >100.
20003006  WAIANFA.  (98:164,162)  CORAL ROCK.  CA/MG = 17.0.
20003007  FOOT OF DIAMOND HILL.  (132:79)  CHALK, FINE & EVEN TEX: 8-10 FT THICK.  CA/MG = 43.2.

20003008  PLEISTOCENE.  KAHUKU POINT.  (83:992,986) REEF ROCK: 135 FT THICK. INDEX & GEOL MAP, MEAS SEC.  CA/MG = 90.7.

20003010  KAHUKU, CORAL FLAT.   (98:164)  CORAL ROCK.  CA/MG = 79.6.
20003011  KAHUKU BLUFF.   (98:164)  CORAL ROCK.  CA/MG = 10.7.
20003012  KAHUKU, NEAR CORAL FLAT.   (98:164)  CORAL ROCK.  CA/MG = 34.5.
20003013  KAHUKU BLUFF.   (98:164)  CORAL ROCK.  CA/MG = 20.4.
20003014  LAIE.   (98:164)  CORAL ROCK.  CA/MG = 28.4.
20003015  WAIALUA.   (98:164)  CORAL ROCK.  CA/MG >100.
20003016  PLEISTOCENE.  KAHUKU POINT.  (83:992,986,988,989)  BEACH LIMESTONE, CREAM-COLORED TO WHITE, FOS.  INDEX & GEOL MAP,
          MEAS SEC.   CA/MG >100.
20003017  PLEISTOCENE.  KAHUKU POINT.  (83:992,986,988,989)  REEF ROCK: 135 FT THICK.  INDEX & GEOL MAP, MEAS SEC.  CA/MG >100.

20003018  PLEISTOCENE.  KAHUKU POINT.  (83:992,986,988,989)  BEACH LIMESTONE, CREAM-COLORED TO WHITE, FOS.  INDEX & GEOL MAP,
          MEAS SEC.  CA/MG >100.
20003019  PLEISTOCENE.  KAHUKU POINT.  (83:992,986,988,989)  REEF ROCK: 135 FT THICK.  INDEX & GEOL MAP, MEAS SEC.  CA/MG >100.

20003020  DIAMOND HEAD.   (98:164)  CORAL ROCK.  CA/MG = 8.42.
20003021  HONOLULU, REEF THREE.   (98:164)  CORAL ROCK.  CA/MG = 19.0.
20003022  HONOLULU.  (516:164)  CORAL ROCK.  CA/MG = 7.10.
20003055  NEAR HONOLULU.  (45:327)  CORAL LIMESTONE.  USE: 2.  CA/MG = 40.5.
```

TABLE 10. — *Analyses of samples from California 50 percent or more sodium chloride (Group* Na*), special rock category*

[Amounts in parentheses are not included in total]

Chemical Analyses

Sample	06027081	06027083	06027085	06027086	06027092	06027093	06027094	06027095	06065094	06065095
Insoluble	0.17	0.03	----	0.50	----	----	----	----	----	0.20
KCl	----	----	----	.31	----	----	----	----	----	----
$MgCl_2$	----	----	.00 T	----	----	----	----	.60	----	----
NaCl	98.52	98.71	95.49	94.54	84.0	49.1	47.9	95.51	94.68	97.76
$CaSO_4$	----	.00	.27	----	----	----	----	1.01	.77	.38
$CaSO_4 \cdot 2H_2O$	----	----	----	.79	----	----	----	----	----	----
CO_3	.00	----	----	----	----	----	----	----	----	----
HCO_3	.00	----	----	----	----	----	----	----	----	----
K_2SO_4	.37	----	----	----	----	----	----	----	----	----
$MgCO_3$	----	.00	----	----	----	----	----	----	----	----
$MgSO_4$	----	.00	----	----	----	----	----	----	3.12	----
$NaBO_2$	----	.00	----	----	----	----	----	----	----	----
$NaNO_3$	----	----	----	----	12.5	48.5	50.6	----	----	----
Na_2SO_4	1.02	1.26	2.78	3.53	----	----	----	2.44	.68	.70
Ca	.00	----	----	----	----	----	----	----	----	----
Mg	.00	----	----	----	----	----	----	----	----	----
H_2O+	} .12	----	----	----	----	----	----	----	} .75	.96
H_2O-				{ .14	----	----	----	----		
Total	100.20	100.00	98.54	99.81	96.5	97.6	98.5	99.56	100.00	100.00

Sample	06071090	06071239	06071240	06071241	06071242	06071243	06071244	06071245	06071246
Insoluble	1.4	1.81	1.46	3.76	1.5	5.9	5.8	4.8	0.08
CaO	----	----	----	----	1.2	3.8	6.4	2.9	.05
CO_2	----	----	----	----	10.4	16.3	18.7	14.2	3.8
K_2O	----	----	----	----	.43	1.0	1.1	.89	.27
MgO	----	----	----	----	.64	2.1	1.6	1.0	.03
NaCl	44.0	----	----	----	----	----	----	----	----
Na_2O	----	----	----	----	47.5	36.9	35.8	41.0	50.7
B_2O_3	----	----	----	----	.19	2.0	.85	.78	.41
B_4O_7	----	.12	.02	.02	----	----	----	----	----
CO_3	----	2.4	.9	1.0	----	----	----	----	----
HCO_3	----	1.0	1.4	.08	----	----	----	----	----
NaB_4O_7	1.0	----	----	----	----	----	----	----	----
Na_2CO_3	14.8	----	----	----	----	----	----	----	----
$NaHCO_3$	2.5	----	----	----	----	----	----	----	----
Na_2SO_4	30.5	----	----	----	----	----	----	----	----
SO_3	----	----	----	----	1.0	1.3	3.7	5.3	6.2
SO_4	----	8.9	.5	.3	----	----	----	----	----
Cl	----	47.4	56.9	56.5	40.5	26.0	21.5	27.3	46.5
K	----	.17	.02	.04	----	----	----	----	----
Na	----	38.2	38.8	38.3	----	----	----	----	----
H_2O	5.8	----	----	----	5.7	9.6	10.1	7.6	1.7
Less O = Cl	----	----	----	----	(9.14)	(5.87)	(4.85)	(6.16)	(10.49)
Total	100.0	100.00	100.00	100.00	99.92	99.03	100.70	99.61	99.25

Sample	06071247	06071252	06071253	06071254	06071255	06071256	06071260	06071261	06071263	06071264
Insoluble	1.6	3.8	3.4	8.3	0.12	2.1	0.23	6.6	0.09	10.0
CaO	1.5	3.2	.34	7.2	.16	2.1	.20	5.3	.16	7.0
CO_2	9.4	20.1	11.3	17.0	7.6	12.4	26.2	13.2	9.8	17.1
K_2O	.44	.72	.33	.95	.20	.33	.38	.99	.35	1.3
MgO	.40	.92	.44	2.0	.04	.58	.08	1.8	.12	2.2
Na_2O	46.2	38.8	47.2	33.6	48.6	42.5	43.5	35.8	48.7	31.6
B_2O_3	.29	.34	.18	1.5	1.5	1.1	.15	1.3	.10	1.5
SO_3	9.2	10.0	3.3	6.5	8.3	14.6	1.6	3.4	1.0	2.3
Cl	33.2	12.4	39.1	15.3	37.1	20.4	17.1	25.3	44.0	18.6
H_2O	5.1	10.0	5.8	9.6	4.0	7.0	13.4	9.6	4.8	10.2
Less O = Cl	(7.49)	(2.80)	(8.82)	(3.45)	(8.37)	(4.60)	(3.86)	(5.71)	(9.93)	(4.20)
Total	99.84	97.48	102.57	98.50	99.25	98.51	98.98	97.58	99.19	97.60

Sample	06071265	06071266	06071271	06071272	06071273	06071274	06071276	06071277	06071278	06071280
Insoluble	0.18	0.20	7.6	2.7	0.84	0.22	5.4	0.51	0.08	7.6
CaO	.22	.46	1.4	1.5	.55	.09	5.4	.63	.10	1.4
CO_2	11.0	9.8	3.2	5.2	7.8	7.6	9.2	8.2	9.3	3.2
K_2O	.25	.23	1.1	1.1	1.2	.47	.59	.35	2.0	1.0
MgO	.08	.14	.49	.35	.16	.04	1.1	.16	.03	.32
Na_2O	47.4	46.2	43.8	45.6	46.3	49.0	40.4	47.8	45.2	43.4
B_2O_3	1.7	2.2	.23	.48	1.2	.08	.15	.10	.10	.12
SO_3	13.0	16.2	6.8	9.9	9.6	8.3	.71	9.6	23.9	9.4
Cl	26.9	24.6	41.2	38.8	36.1	40.6	37.9	38.4	18.8	38.3
H_2O	5.2	4.8	2.5	2.9	4.4	3.3	5.1	3.4	3.6	2.0
Less O = Cl	(6.07)	(5.55)	(9.30)	(8.76)	(8.15)	(9.16)	(8.56)	(8.67)	(4.24)	(8.65)
Total	99.86	99.28	99.02	99.77	100.00	100.54	97.39	100.48	98.87	98.09

T Trace.

TABLE 10. — *Analyses of samples from California 50 percent or more sodium chloride (Group* Na*), special-rock category*— Continued

06027081 HOLOCENE. T14S,R38E, SALINE VALLEY. (210:418,417) SALT CRUST, WHITE. INDEX MAP.

06027083 T14S,R38E, SALINE VALLEY. (505:498,PL3) SALT, 30 FT THICK. INDEX MAP.

06027085 "T25N,R5E" DEATH VALLEY. (209:410,408,409) SALT: 1-3 IN THICK. INDEX MAP.

06027086 TERTIARY. "T25,26N,R1E" DEATH VALLEY. (79:18,17,PL1) SALT, BROWN: CRUST, 1 FT THICK. INDEX MAP.

06027092 "T22N,R2E" AMARGOSA RIVER, UPPER CANYON. (30:182,174) NITER. INDEX MAP.

06027093 "T22N,R2E" AMARGOSA RIVER, UPPER CANYON. (30:182,174) NITER. INDEX MAP.

06027094 "T22N,R2E" AMARGOSA RIVER, UPPER CANYON. (30:182,174) NITER. INDEX MAP.

06027095 "T21S,R42E" PANAMINT VALLEY. (613:176) SALT, 1-2 FT THICK.

06065094 "T8S,R10E" SALTON SEA. (30:124,126) SALT CRUST: 10-20 IN THICK. INDEX MAPS, MEAS SEC.

06065095 "T8S,P10E" SALTON SEA. (30:124,126) SALT CRUST: 10-20 IN THICK. INDEX MAPS.

06065098 "T8S,R10E" SALTON. (607:289) ROCK SALT.

06071090 S25,T25S,R43E. (601:278,275,PL5) SALT: DEPTH, 18-25 FT. INDEX MAPS.

06071239 PLEISTOCENE. S25,T25S,R43E, SEARLES LAKE. (466:28,11) HALITE, CORE SMPL: DEPTH, 580.0-583.0 FT: MIN: ANAL OF SOLUBLE PORTION. INDEX MAP.

06071240 PLEISTOCENE. S25,T25S,R43E, SEARLES LAKE. (466:28,11) HALITE, CORE SMPL: DEPTH, 640.3-650.0 FT: MIN: ANAL OF SOLUBLE PORTION. INDEX MAP.

06071241 PLEISTOCENE. S25,T25S,R43E, SEARLES LAKE. (466:28,11) HALITE, CORE SMPL: DEPTH, 722.8-730.0 FT: MIN: ANAL OF SOLUBLE PORTION. INDEX MAP.

06071242 PLEISTOCENE. S30,T25S,R44E, SEARLES LAKE. (466:73,11) HALITE, CORE SMPL: DEPTH, 83.5-87.5 FT: MIN: TONNAGE. INDEX MAP.

06071243 PLEISTOCENE. S30,T25S,R44E, SEARLES LAKE. (466:73,11) HALITE, CORE SMPL: DEPTH, 87.5-92.0 FT: MIN: TONNAGE. INDEX MAP.

06071244 PLEISTOCENE. S30,T25S,R44E, SEARLES LAKE. (466:73,11) HALITE, CORE SMPL: DEPTH, 92.0-94.2 FT: MIN: TONNAGE. INDEX MAP.

06071245 PLEISTOCENE. S30,T25S,R44E, SEARLES LAKE. (466:73,11) HALITE, CORE SMPL: DEPTH, 94.2-100.0 FT: MIN: TONNAGE. INDEX MAP.

06071246 PLEISTOCENE. S30,T25S,R44E, SEARLES LAKE. (466:73,11) HALITE, CORE SMPL: DEPTH, 100.0-104.8 FT: MIN: TONNAGE. INDEX MAP.

06071247 PLEISTOCENE. S30,T25S,R44E, SEARLES LAKE. (466:73,11) HALITE, CORE SMPL: DEPTH, 104.8-109.7 FT: MIN: TONNAGE. INDEX MAP.

06071252 PLEISTOCENE. S3,T26S,R43E, SEARLES LAKE. (466:73,11) TRONA, CORE SMPL: DEPTH, 88.1-94.9 FT: MIN: TONNAGE. INDEX MAP.

06071253 PLEISTOCENE. S3,T26S,R43E, SEARLES LAKE. (466:73,11) HALITE, CORE SMPL: DEPTH, 94.9-98.0 FT, MIN: TONNAGE. INDEX MAP.

06071254 PLEISTOCENE. S3,T26S,R43E, SEARLES LAKE. (466:73,11) HALITE, CORE SMPL: DEPTH, 98.0-102.4 FT: MIN: TONNAGE. INDEX MAP.

06071255 PLEISTOCENE. S3,T26S,R43E, SEARLES LAKE. (466:73,11) HALITE, CORE SMPL: DEPTH, 102.4-110.0 FT: MIN, TONNAGE. INDEX MAP.

06071256 PLEISTOCENE. S3,T26S,R43E, SEARLES LAKE. (466:73,11) HALITE, CORE SMPL: DEPTH, 110.0-114.3 FT: MIN: TONNAGE. INDEX MAP.

06071260 PLEISTOCENE. S27,T25S,R43E, SEARLES LAKE. (466:73,11) TRONA, CORE SMPL: DEPTH, 83.7-86.8 FT, MIN: TONNAGE. INDEX MAP.

06071261 PLEISTOCENE. S27,T25S,R43E, SEARLES LAKE. (466:73,11) HALITE, CORE SMPL: DEPTH, 85.8-91.4 FT: MIN: TONNAGE. INDEX MAP.

06071263 PLEISTOCENE. S27,T25S,R43E, SEARLES LAKE. (466:73,11) HALITE, CORE SMPL: DEPTH, 92.6-97.1 FT, MIN: TONNAGE. INDEX MAP.

06071264 PLEISTOCENE. S27,T25S,R43E, SEARLES LAKE. (466:73,11) PIRSSONITE, CORE SMPL: DEPTH, 97.1-101.9 FT: MIN: TONNAGE. INDEX MAP.

06071265 PLEISTOCENE. S27,T25S,R43E, SEARLES LAKE. (466:73,11) HALITE, CORE SMPL: DEPTH, 101.9-105.6 FT: MIN: TONNAGE. INDEX MAP.

06071266 PLEISTOCENE. S27,T25S,R43E, SEARLES LAKE. (466:73,11) HALITE, CORE SMPL: DEPTH, 105.6-111.3 FT: MIN: TONNAGE. INDEX MAP.

06071271 HOLOCENE. S30,T25S,R44E, SEARLES LAKE. (466:105,11) HALITE, CORE SMPL: DEPTH, 0-17.1 FT: MIN: TONNAGE. INDEX MAP.

06071272 HOLOCENE. S30,T25S,R44E, SEARLES LAKE. (466:105,11) HALITE, CORE SMPL: DEPTH, 17.1-30.7 FT: MIN: TONNAGE. INDEX MAP.

06071273 HOLOCENE. S30,T25S,R44E, SEARLES LAKE. (466:105,11) HALITE, CORE SMPL: DEPTH, 30.7-55.6 FT: MIN: TONNAGE. INDEX MAP.

06071274 HOLOCENE. S30,T25S,R44E, SEARLES LAKE. (466:105,11) HALITE, CORE SMPL: DEPTH, 55.6-68.6 FT: MIN: TONNAGE. INDEX MAP.

06071276 HOLOCENE. S3,T26S,R43E, SEARLES LAKE. (466:105,11) HALITE, CORE SMPL: DEPTH, 26.9-33.3 FT: MIN: TONNAGE. INDEX MAP.

06071277 HOLOCENE. S3,T26S,R43E, SEARLES LAKE. (466:105,11) HALITE, CORE SMPL: DEPTH, 33.3-60.7 FT: MIN: TONNAGE. INDEX MAP.

06071278 HOLOCENE. S3,T26S,R43E, SEARLES LAKE. (466:105,11) HANKSITE, CORE SMPL: DEPTH, 60.7-70.8 FT: MIN: TONNAGE. INDEX MAP.

06071280 HOLOCENE. S27,T25S,R43E, SEARLES LAKE. (466:105,11) HALITE, CORE SMPL: DEPTH, 0-13.8 FT: MIN: TONNAGE. INDEX MAP.

TABLE 10. — *Analyses of samples from California 50 percent or more sodium chloride (Group* Na*), special-rock category*— Continued

Chemical Analyses

Sample	06071281	06071282	06071283	06071287
Insoluble	1.2	0.44	0.22	0.51
CaO	1.5	.50	.13	.15
CO_2	4.6	8.5	6.7	28.3
K_2O	1.4	1.4	4.6	1.5
MgO	.16	.20	.06	.54
Na_2O	45.8	45.2	44.5	40.7
B_2O_3	.07	2.0	.44	.57
SO_3	20.2	11.0	10.8	4.2
H_2O	1.4	5.0	3.6	15.6
Cl	30.3	31.1	37.2	10.2
Less O = Cl	(6.84)	(7.02)	(8.40)	(2.30)
Total	99.79	98.32	99.85	99.97

Sample	06071311	06071319	06071320	06071321	06071322	06071323	06071325	06071327	06071328	06071329
Insoluble	0.0 T	0.2	1.4	3.0	1.4	0.0 T	1.44	16.0	16.1	18.7
KCl	----	----	----	----	----	----	3.64	----	----	----
K_2O	.0 T	----	----	----	----	----	----	----	----	----
$MgCl_2$	----	----	----	----	----	----	----	----	.0 T	----
NaCl	60.5	79.7	47.3	42.7	43.5	82.8	45.90	83.8	82.2	79.9
P_2O_5	.0 T	----	----	----	----	----	----	----	----	----
$CaSO_4$	7.5	----	----	----	----	----	----	.2	1.6	1.3
$MgSO_4$	3.0	----	----	----	----	----	----	.0 T	.1	.1
$Na_2B_4O_7$	----	.0 T	2.0	2.0	5.5	.0 T	2.32	----	----	----
Na_2SO_4	22.5	7.6	28.1	17.1	22.3	10.6	22.80	.0 T	----	.0 T
Na_2CO_3	----	3.2	10.6	19.1	9.5	3.2	16.57	----	----	----
$NaHCO_3$	----	.0	.0	5.9	2.5	.8	6.50	----	----	----
H_2O	6.5 A	3.3	10.6	10.2	15.3	2.6	----	----	----	----
Total	100.0	94.0	100.0	100.0	100.0	100.0	99.17	100.0	100.0	100.0

Sample	06071330	06071331	06071332	06071333	06071334	06071336	06071353	06071354	06071355	06071356
Insoluble	19.7	23.9	25.1	6.7	7.6	4.9	0.0 T	0.0 T	8.3	0.0 T
$CaCl_2$	----	----	----	.2	----	.0 T	----	----	----	----
$MgCl_2$	.0 T	----	----	.0 T	.1	.1	----	----	----	----
NaCl	77.1	75.2	73.0	93.0	92.2	94.9	82.8	19.0	66.8	98.4
$CaSO_4$	2.2	.8	1.9	.1	.1	.1	----	----	----	----
$MgSO_4$	----	.0 T	.0 T	----	.0 T	----	----	----	----	----
$Na_2B_4O_7$	----	----	----	----	----	----	.0 T	.5	.4	0.0
$NaHCO_3$	----	----	----	----	----	----	.8	18.5	5.0	0.0
Na_2CO_3	----	----	----	----	----	----	----	40.3	11.7	1.8
Na_2CO_4	----	----	----	----	----	----	3.2	----	----	----
Na_2SO_3	----	----	----	----	----	----	10.6	7.3	----	----
Na_2SO_4	----	.1	.0 T	----	----	----	----	----	1.0	.8
H_2O	1.0 B	----	----	----	----	----	2.6	14.4	6.8	.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	101.0

Sample	06071358	06071365	06071366	06071373	06071374	06073035	06107018	06107019
Insoluble	15.0	----	----	----	----	0.20	----	----
CO_2	----	----	----	----	----	----	11.62	----
ICl	----	----	----	----	----	.27	----	----
K_2O	----	----	----	----	----	----	1.76	----
NaCl	39.6	>95.	----	----	----	97.76	----	12.21
Na_2O	----	----	----	----	----	----	38.39	----
N_2O_5	----	----	----	----	----	----	10.50	----
B_4O_7	----	----	----	.02	.12	----	----	----
CO_3	----	----	----	1.0	2.4	----	----	----
HCO_3	----	----	----	.08	1.0	----	----	----
K_2SO_4	----	----	----	----	----	----	----	3.25
$Na_2B_4O_7$	5.56	----	----	----	----	----	----	----
Na_2CO_3	16.4	----	----	----	----	----	----	27.02
$NaHCO_3$	3.4	----	----	----	----	----	----	----
$NaNO_3$	----	----	95.7	----	----	----	----	16.40
Na_3PO_4	----	----	----	----	----	----	----	1.87
Na_2SO_4	2.3	----	----	----	----	.70	----	20.91
$(NH_4)_2CO_3$	----	----	----	----	----	----	----	1.27
P_2O_5	----	----	----	----	----	----	1.05	----
SO_4	----	----	----	.3	8.9	----	13.20 C	----
Cl	----	----	----	56.5	47.4	----	7.40	----
K	----	----	----	.04	.17	----	----	----
Na	----	----	----	38.3	38.2	----	----	----
NH_3	----	----	----	----	----	----	.42	----
H_2O	12.74	----	----	----	----	.96 B	17.32 D	17.07 A
Less O = Cl	----	----	----	----	----	----	1.66	----
Total	95.00	>95.	95.7	96.24	98.19	99.89	100.00	100.00

T Trace. A Organic matter. B H_2O-. C SO_3. D Includes organic matter.

TABLE 10. — *Analyses of samples from California 50 percent or more sodium chloride (Group* Na*), special-rock category*— Continued

06071281 HOLOCENE. S27,T25S,R43E, SEARLES LAKE. (466:105,11) HALITE, CORE SMPL; DEPTH, 13.8-25.3 FT; MIN; TONNAGE. INDEX MAP.

06071282 HOLOCENE. S27,T25S,R43E, SEARLES LAKE. (466:105,11) HALITE, CORE SMPL; DEPTH, 25.3-45.8 FT; MIN; TONNAGE. INDEX MAP.

06071283 HOLOCENE. S27,T25S,R43E, SEARLES LAKE. (466:105,11) HALITE, CORE SMPL; DEPTH, 45.8-64.0 FT; MIN; TONNAGE. INDEX MAP.

06071287 HOLOCENE. S20,T25S,R43E, SEARLES LAKE. (466:105,11) TRONA, CORE SMPL; DEPTH, 30.6-35.5 FT; MIN; TONNAGE. INDEX MAP.

06071311 "T11-13N,R8E" MOJAVE SINK. (30:130) SALT CRUST. INDEX MAP. *MISC: ORG MATTER CONTAINS TRACES OF LITHIA.

06071319 S25,T25S,R43E. (601:278,275,PL5) SALT; DEPTH, 0-18 FT. INDEX MAPS.
06071320 S25,T25S,R43E. (601:278,275,PL5) SALT; DEPTH, 25-30 FT. INDEX MAPS.
06071321 S25,T25S,R43E. (601:278,275,PL5) SALT; DEPTH, 30-35 FT. INDEX MAPS.
06071322 S25,T25S,R43E. (601:278,275,PL5) SALT; DEPTH, 35-50 FT. INDEX MAPS.
06071323 S25,T25S,R43E. (601:278,275,PL5) SALT; DEPTH, 50-65 FT. INDEX MAPS.

06071325 "T25,26S,R43,44E" SEARLES LAKE. (601:310,PL5) SALT, COMPOS SMPL. INDEX MAPS.

06071327 T1,2N,R18E, DANBY LAKE. (523:21,23,126) SALT, BROWN; 1-2 FT THICK; TONNAGE; LOGS OF TEST HOLES. INDEX MAP, GEOL SEC.

06071328 T1,2N,R18E, DANBY LAKE. (523:21,23,126) SALT, BROWN; 1-2 FT THICK; TONNAGE; LOGS OF TEST HOLES. INDEX MAP, GEOL SEC.

06071329 T1,2N,R18E, DANBY LAKE. (523:21,23,126) SALT, BROWN; 1-2 FT THICK; TONNAGE; LOGS OF TEST HOLES. INDEX MAP, GEOL SEC.

06071330 T1,2N,R18E, DANBY LAKE. (523:21,23,126) SALT, BROWN; 1-2 FT THICK; TONNAGE; LOGS OF TEST HOLES. INDEX MAP, GEOL SEC.

06071331 T1,2N,R18E, DANBY LAKE. (523:21,23,126) SALT, BROWN; 1-2 FT THICK; TONNAGE; LOGS OF TEST HOLES. INDEX MAP, GEOL SEC.

06071332 T1,2N,R18E, DANBY LAKE. (523:21,23,126) SALT, BROWN; 1-2 FT THICK; TONNAGE; LOGS OF TEST HOLES. INDEX MAP, GEOL SEC.

06071333 S14,T1N,R18E. (523:20,125,PL2) SALT, GRAY; BORE-HOLE SMPL; MIN; 1-10FT THICK; TONNAGE; LOG OF TEST HOLE. INDEX MAP.

06071334 T1N,R18E, DANBY LAKE. (523:20,125,PL2) SALT, BROWN; 1-10 FT THICK; TONNAGE; LOG OF TEST HOLE. INDEX MAP.

06071336 S14,T1N,R18E. (523:20,125,PL2) SALT, GRAY; BORE-HOLE SMPL; MIN; 1-10FT THICK; TONNAGE; LOG OF TEST HOLE. INDEX MAP.

06071353 "T25,26S,R43,44E" SEARLES LAKE. (158:260) SALINES; DH 50-65 FT; BED 70 FT THICK; TONNAGE.

06071354 "T25,26S,R43,44E" SEARLES LAKE. (158:260) SALINES; DH 65-79 FT; BED 70 FT THICK; TONNAGE.

06071355 "T25,26S,R43,44E" SEARLES LAKE. (158:260) SALINES; DH 13-20 FT; TONNAGE.

06071356 "T25,26S,R43,44E" SEARLES LAKE. (158:260) SALINES; DH 20-25 FT; TONNAGE.

06071358 "T25,26S,R43,44E" SEARLES LAKE. (158:260) SALINES; DH 30-35 FT; TONNAGE.

06071365 "T17N,R5E" AVAWATZ MTNS. (30:126,128) ROCK SALT, IRON-STAINED; BED 12-16 FT THICK. INDEX MAP.

06071366 "T18N,R3E" OWL SPRINGS. (30:182,177,181) NITER. INDEX MAPS.
06071373 T25,26S,R43,44E; SEARLES LAKE. (466:28) SALINES, CORE SMPL; DEPTH, 722.8 - 730.0 FT; MIN.

06071374 T25,26S,R43,44E; SEARLES LAKE. (466:28) SALINES, CORE SMPL; DEPTH, 580.0 - 583.0 FT; MIN.

06073035 "T8S,R10E" NEAR DOS PALMAS. (255:352) SALT.
06107018 T20S,R24E, NEAR TULARE. (284:49/ 103:190) SALINES.

06107019 "T20S,R24E" NEAR TULARE. (207:27) ALKALI-CRUST; ANAL OF SOL SALTS.

TABLE 11. — *Analyses of samples from California containing 50 percent or more miscellaneous sulfate- and carbonate-bearing material (Group S), special-rock category*

[*Amounts in parenthesis are not included in total*]

Chemical Analyses

Sample	06025035	06025036	06027013	06027079	06027080	06027082	06027090	06027096	06029106	06029109
Insoluble	0.39	0.0 T	17.90	0.61	0.32	0.28 A	0.02	0.02	0.73 A	0.2
$Al_2O_3 + Fe_2O_3$	.0	.0	----	----	----	.13 B	----	----	----	----
CaO	.0	.0	----	.06	----	----	----	----	----	----
CO_2	----	----	----	37.50	37.00	----	----	38.13	5.06	----
KCl	----	----	----	----	----	4.07	----	----	----	----
K_2O	----	----	.00	.0 T	----	----	----	----	.40	----
MgO	.16	.0 T	----	.02	----	----	----	----	----	----
NaCl	----	----	16.40	----	----	38.16	.32	----	----	.2
Na_2O	43.40	43.64	----	40.08	41.26	----	----	41.00	39.64	----
B_2O_3	.0	.0	----	----	----	.63	----	----	----	----
$CaSO_4$	----	----	.20	----	----	----	----	----	----	----
K_2SO_4	----	----	----	----	----	----	----	----	----	.3
$MgSO_4$	----	----	1.20	----	----	----	----	----	----	----
Na_2CO_3	----	----	----	----	----	34.95	45.86	----	----	1.5
$NaHCO_3$	----	----	----	----	----	7.40	36.46	----	----	.6
Na_2SO_4	----	----	3.10	----	----	14.38	----	----	----	96.9
P_2O_5	----	----	----	----	----	----	----	----	.52	----
SO_3	56.40	56.22	----	.63	.79	----	----	.70	19.82	----
KNO_3	----	----	61.20	----	----	----	----	----	----	----
Cl	----	.10	----	.21	1.57	----	----	.19	19.20	----
H_2O+	.35	.12	----	} 19.94	19.62	----	16.16	20.07	19.01	.3
H_2O-	.02	.07	----							
Less O = Cl	----	----	----	(.05)	(.35)	----	----	(.04)	(4.38)	----
Total	100.72	100.15	100.00	99.00	100.21	100.00	98.82	100.07	100.00	100.0

Sample	06029110	06047007	06047009	06051020	06059013	06071248	06071249	06071250	06071251	06071257
Insoluble	0.82	----	----	3.70	----	8.1	6.1	0.50	0.26	6.7
$Al_2O_3 + Fe_2O_3$	.16	----	----	----	----	----	----	----	----	----
CaO	.20	----	----	----	----	6.0	4.7	.51	.37	6.3
CO_2	51.15	26.19	----	----	28.29	26.6	28.9	35.6	18.9	25.6
K_2O	----	----	----	----	15.67	1.2	.87	.51	.17	.49
MgO	----	----	----	----	----	1.0	1.6	.46	.17	2.0
N_2O_5	----	6.81	----	----	----	----	----	----	----	----
P_2O_5	----	2.63	----	----	----	----	----	----	----	----
NaCl	----	----	1.46	13.76	----	----	----	----	----	----
Na_2O	36.74	44.44	----	----	41.57	29.4	31.8	39.5	30.5	29.6
$NaNO_3$	----	----	12.98	----	----	----	----	----	----	----
NaH_2PO_4	----	----	4.94	----	----	----	----	----	----	----
Na_2SO_4	----	----	4.67	11.25	----	----	----	----	----	----
Na_2CO_3	----	----	75.95	70.31	----	----	----	----	----	----
B_2O_3	----	----	----	----	----	1.3	.32	.20	22.8	.49
SO_3	----	2.19	----	----	9.47	1.9	3.2	3.7	.33	5.2
H_2O	10.76	17.15	----	----	----	20.0	17.9	17.8	24.5	18.2
Cl	----	.74	----	----	6.39	4.0	3.6	2.7	.93	3.3
Less O = Cl	----	(.15)	----	----	(1.39)	(.9)	(.81)	(.61)	(.21)	(.74)
Total	99.83	100.00	100.00	99.02	100.00	98.6	98.18	100.87	98.72	97.14

Sample	06071258	06071259	06071262	06071267	06071268	06071269	06071270	06071275	06071279	06071284
Insoluble	4.2	6.0	5.0	4.1	6.0	13.7	9.2	0.55	0.35	0.14
CaO	4.0	4.8	3.5	4.0	4.3	9.4	7.3	.30	.73	.19
CO_2	31.2	23.0	32.7	16.7	27.2	24.6	25.9	23.5	24.7	31.4
K_2O	.35	.90	1.2	.55	.57	1.06	.84	.65	1.1	.78
MgO	1.5	1.8	.78	2.0	1.5	4.0	2.0	.30	.64	.22
Na_2O	33.4	28.3	35.2	35.8	29.9	20.4	26.7	42.7	37.8	40.3
B_2O_3	.28	10.2	.38	1.8	5.3	1.4	.84	2.2	7.3	1.6
SO_3	2.6	1.3	2.0	19.2	1.5	2.8	2.0	13.6	5.0	2.7
H_2O	19.4	18.8	15.7	9.7	18.6	15.1	18.8	11.6	16.4	16.8
Cl	2.2	3.5	4.9	4.3	2.5	5.0	4.5	6.9	7.4	7.9
Less O = Cl	(.50)	(.79)	(1.11)	(.97)	(.56)	(1.13)	(1.01)	(1.56)	(1.67)	(1.78)
Total	98.63	97.81	100.25	97.18	96.81	96.33	97.07	100.74	99.75	100.25

Sample	06071285	06071286	06071288	06071289	06071290	06071291	06071292	06071315	06071317	06071318
Insoluble	3.5	2.0	2.6	0.97	8.8	0.31	6.3	0.12	0.19	0.04
CaO	1.4	.11	2.5	.32	6.5	.40	4.7	----	----	----
CO_2	13.8	14.8	30.2	35.2	25.8	35.4	27.8	5.63	5.65	11.72
K_2O	1.2	1.7	.50	.53	.92	.55	.83	2.31	2.48	.0
MgO	.59	.44	1.1	.08	2.3	.22	1.6	----	----	----
Na_2O	37.6	40.7	36.2	39.2	28.6	40.5	31.3	43.61	43.35	47.89
B_2O_3	2.4	.85	.28	.23	.43	.24	.40	----	----	----
SO_3	25.8	24.0	4.6	1.5	2.1	2.6	2.2	45.78	45.93	39.96
H_2O	8.0	6.8	17.3	18.3	17.5	17.7	17.5	----	----	.04
Cl	2.2	9.4	2.7	3.4	5.4	3.6	5.3	2.28	2.21	.09
Less O = Cl	(.50)	(2.12)	(.61)	(.76)	(1.22)	(.81)	(1.20)	----	----	----
Total	95.99	98.68	97.37	98.97	97.13	100.71	96.73	99.73	99.81	99.74

T Trace. A SiO_2. B Includes CaO and MgO.

TABLE 11.—*Analyses of samples from California containing 50 percent or more miscellaneous sulfate- and carbonate-bearing material (Group S), special rock category*—Continued

```
06025035  S19,T9S,R12E.  (493:91,87,90)  SODIUM SULPHATE: MIN: 8 IN - 3 FT THICK.  INDEX & GEOL MAP.  USE: 6, 10.
          *MISC: B2O3 = 0.00.
06025036  S19,T9S,R12E.  (493:91,90)  SODIUM SULFATE: MIN: 8 IN - 3 FT THICK.  INDEX & GEOL MAP.  USE: 6, 10.
          *MISC: SIO2 REPT AS INSOL: CL = 0.10, B2O3 = 0.00.
06027013  EOCENE.  "T22N,R2E" AMARGOSA RIVER.  (30:164,156)  NITER: MIN.  INDEX MAPS.

06027079  "T17S,R37E" OWENS LAKE.  (84:76)  URAO, PINK.

06027080  "T17S,R37E" OWENS LAKE.  (101:24)  URAO.

06027082  "T17S,R37E" OWENS LAKE.  (603:762)  SALINES.
06027090  "T17S,R37E" OWENS LAKE.  (103:193,239)  TRONA.
06027096  "T17S,R37E" OWENS LAKE.  (101:24)  TRONA.  B.D. = 2.1473.

06029106  "T11N,R12W" MOHAVE.  (284:49)  SODIUM SALTS.  *MISC:                                H2O INCL ORG MATTER.

06029109  "T9N,R9W" SOUTH OF MUROC.  (563:125)  THENARDITE.
06029110  "T26S,R43E" SEARLES LAKE.  (605:169)  SODIUM BICARBONATE: WELL, AT DEPTH OF 120-285 FT.

06047007  "T7S,R14E" MERCED BOTTOM.  (284:49)  SODIUM CARBONATE.  *MISC:                          H2O INCL ORG MATTER.

06047009  "T7S,R14E" MERCED BOTTOMS.  (338:495)  INCRUSTATION.

06051020  "T2S,R31E" NEAR BENTON.  (613:176)  ALKALINE DEPOSIT.

06059013  "T5S,R11W" WESTMINSTER.  (284:49)  SODIUM CARBONATE.

06071248  PLEISTOCENE.  S30,T25S,R44E, SEARLES LAKE.  (466:73,11)  TRONA, CORE SMPL: DEPTH, 109.7-113.4 FT, MIN: TONNAGE.
          INDEX MAP.
06071249  PLEISTOCENE.  S30,T25S,R44E, SEARLES LAKE.  (466:73,11)  TRONA, CORE SMPL: DEPTH, 113.4-116.8 FT, MIN: TONNAGE.
          INDEX MAP.
06071250  PLEISTOCENE.  S30,T25S,R44E, SEARLES LAKE.  (466:73,11)  TRONA, CORE SMPL: DEPTH, 116.8-120.8 FT, MIN: TONNAGE.
          INDEX MAP.
06071251  PLEISTOCENE.  S3,T26S,R43E, SEARLES LAKE.  (466:73,11)  TINCALCONITE, CORE SMPL: DEPTH, 86.9-88.1 FT, MIN: TONNAGE.
          INDEX MAP.
06071257  PLEISTOCENE.  S3,T26S,R43E, SEARLES LAKE.  (466:73,11)  TRONA, CORE SMPL: DEPTH, 114.3-119.3 FT: MIN: TONNAGE.
          INDEX MAP.
06071258  PLEISTOCENE.  S3,T26S,R43E, SEARLES LAKE.  (466:73,11)  TRONA, CORE SMPL: DEPTH, 119.3-121.9 FT: MIN: TONNAGE.
          INDEX MAP.
06071259  PLEISTOCENE.  S27,T25S,R43E, SEARLES LAKE.  (466:73,11)  TRONA, CORE SMPL: DEPTH, 81.1-83.7 FT, MIN: TONNAGE. INDEX MAP.

06071262  PLEISTOCENE.  S27,T25S,R43E, SEARLES LAKE.  (466:73,11)  TRONA, CORE SMPL: DEPTH, 91.4-92.6 FT: MIN: TONNAGE. INDEX MAP.

06071267  PLEISTOCENE.  S27,T25S,R43E, SEARLES LAKE.  (466:73,11)  BURKEITE, CORE SMPL: DEPTH, 111.3-113.8 FT, MIN: TONNAGE.
          INDEX MAP.
06071268  PLEISTOCENE.  S27,T25S,R43E, SEARLES LAKE.  (466:73,11)  TRONA, CORE SMPL: DEPTH 113.8-117.8 FT, MIN: TONNAGE.
          INDEX MAP.
06071269  PLEISTOCENE.  S20,T25S,R43E, SEARLES LAKE.  (466:73,11)  GAYLUSSITE, SMPL: DEPTH 69.9-74.2 FT: MIN: TONNAGE.
          INDEX MAP.
06071270  PLEISTOCENE.  S20,T25S,R43E, SEARLES LAKE.  (466:73,11)  TRONA, CORE SMPL: DEPTH, 74.2-77.8 FT, MIN: TONNAGE. INDEX MAP.

06071275  HOLOCENE.  S30,T25S,R44E, SEARLES LAKE.  (466:105,11)  TRONA, CORE SMPL: DEPTH, 68.6-72.7 FT: MIN: TONNAGE.  INDEX MAP.

06071279  HOLOCENE.  S3,T26S,R43E, SEARLES LAKE.  (466:105,11,13)  TRONA, CORE SMPL: DEPTH, 70.8-76.3 FT: MIN: TONNAGE. INDEX MAP.

06071284  HOLOCENE.  S27,T25S,R43E, SEARLES LAKE.  (466:105,11)  TRONA,  CORE SMPL: DEPTH, 64.0-70.6 FT: MIN: TONNAGE.  INDEX MAP.

06071285  HOLOCENE.  S20,T25S,R43E, SEARLES LAKE.  (466:105,11) HANKSITE, CORE SMPL: DEPTH,  5.4-10.9 FT: MIN: TONNAGE. INDEX MAP.

06071286  HOLOCENE.  S20,T25S,R43E, SEARLES LAKE.  (466:105,11) HANKSITE, CORE SMPL: DEPTH, 10.9-30.6 FT: MIN: TONNAGE. INDEX MAP.

06071288  PLEISTOCENE.  S27,T25S,R43E, SEARLES LAKE.  (466:73,11)  TRONA, CORE SMPL: DEPTH, 117.5-119.8 FT: MIN: TONNAGE.
          INDEX MAP.
06071289  PLEISTOCENE.  S20,T25S,R43E, SEARLES LAKE.  (466:73,11)  TRONA, CORE SMPL: DEPTH, 53.0-56.8 FT: MIN: TONNAGE. INDEX MAP.

06071290  PLEISTOCENE.  S20,T25S,R43E, SEARLES LAKE.  (466:73,11)  TRONA, CORE SMPL: DEPTH, 56.8-61.2 FT: MIN: TONNAGE. INDEX MAP.

06071291  PLEISTOCENE.  S20,T25S,R43E, SEARLES LAKE.  (466:73,11)  TRONA, CORE SMPL: DEPTH, 61.2-65.9 FT: MIN: TONNAGE. INDEX MAP.

06071292  PLEISTOCENE.  S20,T25S,R43E, SEARLES LAKE.  (466:73,11)  TRONA, CORE SMPL: DEPTH, 65.9-69.9 FT: MIN: TONNAGE. INDEX MAP.

06071315  "T25S,R43E" SEARLES LAKE.  (163:182)  HANKSITE, WHITE, VITREOUS: B.D., 2.562.

06071317  "T25S,R43E" SEARLES LAKE.  (163:182)  HANKSITE, WHITE, VITREOUS: B.D., 2.562.

06071318  "T25S,R43E" SEARLES LAKE.  (600:52)  BURKEITE.
```

TABLE 11. — *Analyses of samples from California containing 50 percent or more miscellaneous sulfate- and carbonate-bearing material (Group S), special-rock category*— Continued

Chemical Analyses

Sample	06071324	06071357	06071359	06071360	06071361	06071378	06079005	06079016	06079017	06079018
Insoluble	0.0 T	1.4	3.2	6.8	7.6	----	0.40	0.16	----	0.91
Al_2O_3	----	----	----	----	----	----	.04	----	----	----
CaO	----	----	----	----	----	.00	.45	----	----	.34
CO_2	----	----	----	----	----	5.42	.0	.29 G	----	----
K_2O	----	----	----	----	----	----	.28	----	----	----
MgO	----	----	----	----	----	.00	1.66	----	----	1.00
NaCl	19.0	15.3	4.5	5.1	4.0	----	----	.47	.32	5.95
$Na_2B_4O_7$	.5	.0 T	.0 T	.0 T	.0	----	----	----	----	----
$MgSO_4$	----	----	----	----	----	----	----	.43	----	----
Na_2CO_3	40.3	38.7	28.6	43.5	53.0	----	----	----	----	----
$NaHCO_3$	18.5	24.4	10.1	21.0	16.0	----	----	----	----	----
Na_2O	----	----	----	----	----	46.34	40.50	----	----	----
Na_2SO_4	7.3	4.7	38.0	6.8	2.8	----	----	98.65	42.78	38.72
SO_3	----	----	----	----	----	45.89	46.12	----	----	50.83
Cl	----	----	----	----	----	2.36	9.27	----	----	----
H_2O	14.4	15.5	10.6	16.8	16.6	----	3.65	----	56.90	2.65 H
Less O = Cl	----	----	----	----	----	----	(2.09)	----	----	----
Total	100.0	100.0	95.0	100.0	100.0	100.01	100.28	100.00	100.00	100.40

Sample	06097018	06107016	06107017
SiO_2	----	2.52	----
CaO	.13	----	----
CO_2	----	13.20	16.69
FeO	.23	----	----
K_2O	----	----	6.76
MgO	17.91	----	.35
MnO	.14	----	----
Na_2O	----	48.97	27.60
NiO	.11	----	----
P_2O_5	----	1.12	2.91
SO_3	38.13	24.78	6.43
H_2O	42.97	1.54	38.09
Cl	----	10.04	1.51
Less O = Cl	----	(2.17)	(.34)
Total	99.62	100.00	100.00

G Ignition loss. H H_2O-. T Trace.

DESCRIPTIVE NOTES

06071324 S25,T25S,R43E. (601:278,275,PL5) SALT: DEPTH, 65-79 FT. INDEX MAPS.
06071357 "T25,26S,R43,44E" SEARLES LAKE. (158:260) SALINES: DH 25-30 FT: TONNAGE.

06071359 "T25,26S,R43,44E" SEARLES LAKE. (158:260) SALINES: DH 60-65 FT: TONNAGE.

06071360 "T25,26S,R43,44E" SEARLES LAKE. (158:260) SALINES: DH 65-70 FT: TONNAGE.

06071361 "T25,26S,R43,44E" SEARLES LAKE. (158:260) SALINES: DH 70-75 FT: TONNAGE.

06071378 "T25S,R43E" SEARLES LAKE. (282:63/ 163:182) HANKSITE, WHITE, VITREOUS: B.D. = 2.562.

06079005 HOLOCENE. S19,T31S,R20E. (20:370) SODIUM-SULFATE CRUST, WHITE: TONNAGE.

06079016 HOLOCENE. T31S,R19,20E, SODA LAKE. (20:371,369) SODIUM-SULFATE CRUST: 1-6 FT THICK.

06079017 HOLOCENE. T31S,R,19,20E, SODA LAKE. (20:370,369) SODIUM-SULFATE CRYSTALS.

06079018 T31S,R20,21E, SODA LAKE. (201:456,455) MIRABILITE CRUST, WHITE, CRYS: TONNAGE. USE: 6.

06097018 "T11N,R11W" THE GEYSERS. (389:763) MAGNESIUM SULPHATE PENTAHYDRATE.

06107016 "T17S,R24E" GOSHEN. (284:49) SODIUM SULPHATE-SODIUM CARBONATE.
H20 INCL ORG MATTER.
06107017 "T18S,R25E" VISALIA. (284:49) SODIUM CARBONATE. *MISC: H20 INCL ORG MATTER.

TABLE 12. — *Analyses of samples from California containing 50 percent or more gypsum, anhydrite, or gypsite (Group G), special-rock category*

Chemical Analyses

Sample	06019013	06019014	06019015	06019016	06025033	06025039	06027091	06029002	06029088	06029097
SiO_2	----	----	----	----	----	0.92	2.32 A	6.1	2.50 A	----
Al_2O_3	1.98 B	2.60 B	1.52 B	8.21 B	.18 B	.21	----	1.4	.50 C	----
CaO	----	----	----	----	32.54	32.75	31.18 I	29.9	6.20 I	31.05
CO_2	----	----	----	----	.67	----	.51 I	.0	4.87 I	----
Fe_2O_3	----	----	----	----	----	.14	----	.3	----	0.56
K_2O	----	----	----	----	----	----	----	.5	----	----
MgO	----	----	----	----	.27	.08	----	.0	----	----
NaCl	----	----	----	----	----	----	.05	----	----	----
Na_2O	----	----	----	----	----	----	----	2.0	----	----
$CaSO_4.2H_2O$	95.24	92.90	94.74	82.20	----	----	----	----	86.07	----
SO_3	----	----	----	----	44.35	47.17	43.59 I	40.8	----	42.19
H_2O+	----	----	----	----	} 20.00	18.73	19.74	19.4	----	{ 17.80
H_2O-	2.78 D	4.50 D	3.74 D	9.59 D						1.49
Cl	----	----	----	----	.06	----	----	.0	----	.0 T
Total	100.00	100.00	100.00	100.00	98.01	100.00	97.39	100.4	100.14	93.09

Sample	06029098	06029099	06029105	06029108	06037033	06047008	06059012	06065093	06065096	06065097
SiO_2	----	----	5.3	9.70 A	----	18.52	----	----	1.54	----
Al_2O_3	----	----	1.7	----	----	1.86 C	----	----	----	
CaO	30.32	33.2	29.5	29.23	32.8	24.36	32.70	32.55	2.39	37.13
CO_2	----	----	.7	1.43	----	1.07	----	6.03	----	17.57
Fe_2O_3	.34	.1	.4	----	.30	----	----	----	----	----
K_2O	----	----	.6	----	----	----	----	----	----	----
MgO	----	----	.0	1.03	----	.46	----	----	.0 T	----
Na_2O	----	----	1.2	----	----	----	----	----	----	----
$CaSO_4.2H_2O$	----	----	----	----	----	----	----	----	92.72	----
SO_3	43.09	47.3	40.7	40.82	45.3	33.70	46.70	41.47	----	37.15
H_2O+	19.75	19.7	} 19.1	17.50	{ 20.5	15.53	} 20.30	{ 18.23	----	1.27
H_2O-	.25	.0			.1	2.88		.03	1.86	.04
Cl	.0 T	----	.0	.23	.06	----	----	----	----	----
Total	93.75	100.3	99.2	99.94	99.06	98.38	99.70	98.31	98.51	93.16

Sample	06071232	06071233	06071310	06111005
SiO_2	----	----	----	0.76
Al_2O_3	----	.0 C	----	.34 C
CaO	32.7	32.48	37.75	30.98 I
CO_2	----	.0	----	----
Fe_2O_3	.20	----	----	----
MgO	----	.12	----	1.15

	06071232	06071233	06071310	06111005
Na_2O	----	----	----	1.10
SO_3	44.7	45.42	54.19	44.24 I
H_2O	19.50	} 20.44	6.37	21.22
H_2O-	.20		----	----
Cl	.13	----		
Total	97.4	98.46	98.31	99.79

A Insoluble. B Reported as clay. C Includes Fe_2O_3. D Includes lime. I Calculated by compiler. T Trace.

DESCRIPTIVE NOTES

06019013 TERTIARY. "T15S,R13E" PAOLI MINE. (188:122,121,PL21) GYPSUM: 30 FT THICK. INDEX MAP. USE:15.

06019014 TERTIARY. "T15S, R13E" PAOLI MINE. (188:122,121,PL21) GYPSUM: BED 18 FT THICK. INDEX MAP. USE: 15.

06019015 TERTIARY. "T15S,R13E" PAOLI MINE. (188:122,121,PL21) GYPSUM. INDEX MAP. USE: 15.

06019016 TERTIARY. "T15S,R13E" PAOLI MINE. (188:122,121,PL21) GYPSUM. INDEX MAP. USE: 15.

06025033 S29,T13S,R9E. (563:122) GYPSUM.
06025039 S19,28,T13S,R9E. (559:739,738) GYPSUM: 100 FT THICK.
06027091 "T17N,R6E" AVAWITZ MTNS. (491:115,117) GYPSUM: 250 FT THICK: TONNAGE. USE: 15.

06029002 S30,T26S,R21E. (602:16,PL1) GYPSITE, CREAMY-BUFF, POWDERY: 4 FT THICK. INDEX MAP. USE: 15.

06029088 "T11N,R23W" SUNSET OIL DISTRICT. (129:324) GYPSUM, CHALKY: SEVERAL FT THICK.

06029097 S21,T30S,R22E. (602:17,16,PL1) GYPSITE, BUFF: 2 FT THICK. INDEX MAP. USE: 2.

06029098 S30,T30S,R22E. (602:17,PL1) GYPSITE: 2-4 FT THICK: INDEX MAP.

06029099 S26,27,T32S,R27E. (602:24,23,PL1) GYPSITE, CREAMY COLOR, FINE-GR: 4 FT THICK: MIN. INDEX MAP. USE: 15.

06029105 S30,T26S,R21E. (602:16,PL1) GYPSITE, CREAMY-BUFF, POWDERY: 4 FT THICK. INDEX MAP. USE: 15.

06029108 "T30S,R38W" SALTDALE. (500:70,69) GYPSUM, WHITE: 9-12 FT THICK. USE: 2.

06037033 MIOCENE. "T5S,R12W" PALMDALE. (602:30,29,PL1/ 463:412,373,395) GYPSUM, YELLOWISH, FINELY CRYS, POROUS, MASSIVE: BEDS 2-4 FT THICK. INDEX MAP, GEOL SEC. USE: 15.
06047008 S2,T12S,R10E. (437:106,108,109) GYPSITE, 5-10 FT THICK. USE: 2. *MISC: SIO2 INCL INSOL.

06059012 TERTIARY. "T3S,RSW" GYPSUM STATION. (174:60) GYPSUM. USE: 15.
06065093 "T3S,R19E" PALEN MTNS. (260:415,407-409,414) GYPSUM, WHITE, FINELY CRYS: MIN. INDEX MAP. USE: 15.

06065096 "T6S,R23E" NORTH OF BLYTHE. (501:513,511) GYPSUM, WHITE, COMPACT, CRYS: 70 FT THICK.

06065097 "T3S,R19E" PALEN MTNS. (260:415,408,409,414) ANHYDRITE & CALCIUM CARBONATE, WHITE, GRANULAR. MIN. INDEX MAP.

06071232 "T5N,R11E" (602:27,PL1) GYPSUM: 8 FT THICK: MIN. INDEX MAP. USE: 15.

06071233 S19,T13S,R9E. (563:122) GYPSUM.
06071310 "T1N,R18E" DANBY LAKE. (2:1267,1266) BASSANITE, WHITE, FIBROUS: MIN: CORE SMPL DEPTH OF 510 FT. SPECTRO ANAL ALSO GIVEN.
06111005 "T4N,R23W" OJAI VALLEY. (165:272) GYPSITE, WHITE.

TABLE 13. — *Analyses of samples of celestite and strontianite (Group Sr) from California, special-rock category*

Chemical Analyses

Sample	06025037	06071174	06071337	06071338	06071339	06071340	06071341	06071342	06071343	06071344
SiO_2	0.90	18.02	11.37 A	----	5.59	14.87 A	5.16 A	2.05	1.53	7.05
Al_2O_3	.49	.66	----	----	1.17	----	----	.45	.92	1.80 C
Fe_2O_3	.50	.05	----	----	----	----	----	.15	.54	----
MgO	.05	----	----	----	----	----	----	----	.11	----
CaO	2.47	.96	32.10	6.40	5.19	----	----	1.55	.97	1.65
H_2O	.16	----	----	----	----	----	----	.50	.56	1.10
MnO	.0 T	.0	----	----	----	----	----	.0	.0 T	.02
CO_2	.71	.03	33.32	29.86	28.18	----	----	.0 T	.30	.0 T
SO_3	41.44	34.49	----	.05	.28	----	----	40.80	41.08	37.30
SrO	52.88	44.35	20.50	60.99	55.20	----	----	50.50	52.35	47.75
BaO	1.53	.09	----	.0	.0	----	----	.13	1.07	.26
$SrCO_3$	----	----	----	----	----	71.08	82.51	----	----	----
$CaCO_3$	----	----	----	----	----	14.05	12.32	----	----	----
Total	101.13	98.65	97.29	97.30	95.61	100.00	99.99	96.13	99.43	96.93

Sample	06071345	06071346	06071347	06071367	06071368	06071369	06071370	06071371	06071372
SiO_2	2.80	2.20	17.86	19.58 A	----	----	----	----	----
Al_2O_3	.55 C	.21	.98	----	----	----	----	----	----
Fe_2O_3	----	.46	.38	----	----	----	----	----	----
MgO	----	.08	.17	----	----	----	----	----	----
CaO	.75	5.34	2.81	----	----	----	----	----	0.75
H_2O	.55	.03	1.60	----	----	----	----	----	----
MnO	.005	.02	.0 T	----	----	----	----	----	----
CO_2	.0 T	4.05	.27	----	----	----	----	----	.92
SO_3	41.20	36.88	31.49	----	----	----	----	----	42.38
SrO	51.55	47.73	40.55	----	----	----	----	----	50.99
BaO	.63	1.14	1.19	----	----	----	----	----	.0 T
$SrCO_3$	----	----	----	59.51	84.0	87.0	79.0	89.0	----
$CaCO_3$	----	----	----	20.91	16.0	13.0	21.0	11.0	----
Total	98.04	98.14	97.30	100.00	100.0	100.0	100.0	100.0	95.04

A Insoluble. C $Al_2O_3 + Fe_2O_3$. T Trace.

DESCRIPTIVE NOTES

06025037 TERTIARY. S18,T13S,R9E. (391:161,154) CELESTITE, WHITE, MASSIVE: 10 FT THICK: REPR SMPL: TONNAGE. INDEX MAP, MEAS SEC.

06071174 MIOCENE. S19,T8N,R7E. (390:371,358-360/ 160:45,37-44,PL8-9/ 390:161,155) CELESTITE: 5.5 FT THICK: TONNAGE. INDEX & GEOL MAPS, MEAS SEC, GEOL SEC.

06071337 S30,T11N,R1W. (160:32,34,23,36,PL2-4) STRONTIANITE, BROWN, DENSE, FIBROUS. TRENCH SAMPLE. TONNAGE. INDEX & GEOL MAPS, MEAS SEC, GEOL SEC.

06071338 S29,30,T11N,R1W. (606:262,PL11/ 160:32,23-31,PL3-7) STRONTIANITE, SELECTED SMPL: MIN, TONNAGE. INDEX & GEOL MAPS, MEAS SEC, GEOL SEC.

06071339 MIOCENE, BARSTOW FM. S29,30,T11N,R1W. (606:260,261,PL11/ 390:377,375/ 160:32,27-31,PL3-7) STRONTIANITE, MIN: TONNAGE. INDEX & GEOL MAPS, MEAS SEC, GEOL SEC.

06071340 S20,T11N,R1W. (160:32,23,27, PL3-7) STRONTIANITE, WHITE, DENSE: 2 FTTHICK: MIN, TONNAGE. INDEX & GEOL MAPS, MEAS SEC, GEOL SEC.

06071341 S20,T11N,R1W. (160:32,23,PL3-7) STRONTIANITE, BROWN, CRYS: MIN. INDEX & GEOL MAPS, MEAS SEC, GEOL SEC.

06071342 MIOCENE. S19,T8N,R7E. (390:371,358-360/ 160:45,37-44, PL8,9) CELESTITE, MASSIVE: 4.5 FT THICK: TONNAGE. INDEX & GEOI MAPS, MEAS SEC, GEOL SEC.

06071343 MIOCENE. S19,T8N,R7E. (390:371,358-360/ 160:45,37-44, PL8,9) CELESTITE, MASSIVE, WEATHERED: 3.5 FT THICK: TONNAGE. INDEX & GEOL MAPS, MEAS SEC, GEOL SEC.

06071344 MIOCENE. S19,T8N,R7E. (390:371,356-358/ 160:45,37-44, PL8,9) CELESTITE, THINLY LAMINATED: 1.5 FT THICK: TONNAGE. INDEX & GEOL MAPS, MEAS SEC, GEOL SEC.

06071345 MIOCENE. S19,T8N,R7E. (390:371,358-360/ 160:45,37-44, PL8,9) CELESTITE, THIN-BEDDED: 1.7 FT THICK: TONNAGE. INDEX & GEOL MAPS, MEAS SEC, GEOL SEC.

06071346 MIOCENE. S19,T8N,R7E. (390:371,358-360/ 160:45,37-44, PL8,9) CELESTITE, PINK, MASSIVE, SUGARY: 0.5 FT THICK: TONNAGE. INDEX & GEOL MAP, MEAS SEC.

06071347 MIOCENE. S19,T8N,R7E. (390:371,358-360/ 160:45,37-44,PL8,9) CELESTITE, PINK & BUFF, FINE-GR, MASSIVE: 2.25 FT THICK: TONNAGE. INDEX & GEOL MAPS, MEAS SEC, GEOL SEC.

06071367 S20,T11N,R1W. (160:32,23-31,PL3-7) STRONTIANITE, BROWN: MIN, TONNAGE. INDEX & GEOL MAPS, MEAS SEC, GEOL SEC.

06071368 S20,T11N,R1W. (160:32,23-31,PL3-7) STRONTIANITE, BROWN. SELECTED SAMPLE. MIN, TONNAGE. INDEX & GEOL MAPS, MEAS SEC, GEOL SEC.

06071369 S20,T11N,R1W. (160:32,23-31, PL3-7) STRONTIANITE, BROWN: MIN, TONNAGE. INDEX & GEOL MAPS, MEAS SEC, GEOL SEC.

06071370 S30,T11N,R1W. (160:32,34,24,36,PL2) STRONTIANITE, BROWN: TONNAGE. INDEX & GEOL MAPS, MEAS SEC, GEOL SEC.

06071371 S30,T11N,R1W. (160:34,23,36,PL2,3) STRONTIANITE, BROWN: TONNAGE. INDEX & GEOL MAPS, MEAS SEC, GEOL SEC.

06071372 TERTIARY. "T18N,R5E" DEATH VALLEY. (160:21,19, PL1) CELESTITE: TONNAGE. INDEX & GEOL MAPS, MEAS SEC.

TABLE 14. — *Analyses of samples of boron-bearing rocks (Group B), from California special-rock category*

Chemical Analyses

Sample	06027009	06027078	06027084	06027087	06027088	06029107	06037041	06037043	06037044	06037046
SiO_2	0.65	1.40 A	0.23	----	----	0.25 A	13.97	14.81	----	----
Al_2O_3	.60 C	----	----	----	----	----	1.27	----	----	----
CaO	28.43	----	14.06	13.8	27.2	----	23.74	28.26	27.76	14.14
CO_2	----	----	.0 T	----	----	----	5.14	----	----	----
Fe_2O_3	----	----	.12	----	----	----	1.32	----	----	----
MgO	----	----	10.14	----	----	----	2.36	----	----	7.05 D
NaCl	----	16.98	----	----	----	----	----	----	----	----
Na_2O	----	----	----	7.7	----	21.40	----	----	----	----
BO_3	48.12	----	----	----	----	----	----	----	----	----
B_2O_3	----	----	47.71	43.0	50.9	47.26	36.10	45.56	49.45	43.13
H_3BO_3	----	36.82	----	----	----	----	----	----	----	----
Na_2O_3	----	----	----	7.7	----	----	----	----	----	----
H_2O+	22.20	44.80	27.37	} 35.5	21.9	31.01	16.10	11.37	22.48	35.68
H_2O-			.0							
Total	100.00	100.00	96.63	100.0	100.0	99.92	100.00	100.00	99.69	100.00

Sample	06037047	06071085	06071312	06071313	06071314	06071316
SiO_2	----	1.28	15.50	15.33	15.31	----
Al_2O_3	----	.19 C	----	----	----	----
CaO	----	27.97	28.45	28.44	29.22	27.42
MgO	----	.13	----	----	----	----
$MgO.Na_2O$	----	----	.09	1.06	----	----
SrO	32.45	----	----	----	----	----
B_2O_3	58.16	47.64	44.38	43.78	44.32	49.70
H_2O	9.39	22.79	11.58	11.39	11.44	22.26
Total	100.00	100.00	100.00	100.00	100.29	99.38

A Insoluble. C Includes Fe_2O_3. D By difference.

DESCRIPTIVE NOTES

06027009 "T23N,R4E" AMARGOSA RANGE. (254:86,87,96/ 163:171) COLEMANITE, WHITE: B.D., 2.39: PHYS PROP.

06027078 "T24S,R40E" SALT WELLS VALLEY. (30:49) BORAX CRUST, 3-10 IN THICK. INDEX MAPS.

06027084 "T25N,R5E" RYAN. (563:115) HYDROBORACITE.
06027087 "T25N,R2E" DEATH VALLEY. (589:270) ULEXITE.

06027088 "T25N,R5E" DEATH VALLEY. (589:270) COLEMANITE.
06029107 "T10N,R7W" KRAMER DIST. (604:164) TINCALCONITE.

06037041 "T4N,R14W" LANG. (161:501) COLEMANITE. USE: 6.

06037043 "T4N,R14W" LANG. (162:188,187) HOWLITE, WHITE, BLACK STREAKS, COMPACT: B.D., 2.531.

06037044 "T5N,R14W" NW OF LANG. (162:187,180-182) NEOCOLEMANITE, BLACKISH-GRAY, MASSIVE, CRYS: 6-10 FT THICK: B.D., 2.423.

06037046 TERTIARY. "S30,T5N,R14W". (608:35) ULEXITE.
06037047 "S30,T5N,R14W" LANG. (396:340) VEATCHITE, PLATY.

06071085 "T9N,R1W" DAGGETT. (163:172) COLEMANITE CRYSTALS.

06071312 "T12N,R4E" DAGGETT. (163:174,173) HOWLITE, SCALY.

06071313 "T12N,R4E" DAGGETT. (163:174,173) HOWLITE.

06071314 "T12N,R4E" DAGGETT" (163:174,173) HOWLITE, WHITE.

06071316 "T9N,R1W" BORATE. (163:172) COLEMANITE CRYSTALS.

TABLE 15. —*Analyses of samples of various types of rocks (Group M), from California and Hawaii, special-rock category*

Chemical Analyses

Sample	06015001	06015002	06015003	06015004	06015005	06015006	06015007	06015008	06015009	06015010
SiO_2	35.20	28.52	30.36	29.94	27.52	10.92	28.24	28.72	37.54	38.94
Al_2O_3	5.68	9.08	8.34	7.64	7.40	17.32	11.14	11.24	4.84	3.40
Cr_2O_3	1.0	1.5	1.4	1.4	1.5	3.2	1.5	1.7	.86	.59
Ag	.0 T	.0 T	.0 T	.0 T	.0 T	.0 T	.0 T	.0 T	.0 T	.0 T
Au	.0 T	.0 T	.0 T	.0 T	.0 T	.0 T	.0 T	.0 T	.0 T	.0 T
Co	.06	.08	.06	.06	.11	.09	.06	.08	.05	.04
Fe	13.9	20.9	16.3	17.6	20.4	37.8	19.5	20.2	12.1	7.8
Ni	.67	.82	.45	.68	.96	.56	.55	.63	.40	.44
Pt	<.005	<.005	<.005	<.005	<.005	<.005	<.005	<.005	<.005	<.005
Total	56.51	60.90	56.91	57.32	57.89	69.89	60.99	62.57	55.79	51.21

Sample	06015011	06015012	06015013	06015014	06015015	06015016	06015017	06015018	06015019	06015020
SiO_2	36.52	36.04	40.44	38.20	34.26	37.16	23.16	30.04	37.66	34.34
Al_2O_3	4.84	5.58	5.32	5.56	5.38	4.36	6.20	5.62	3.90	6.10
Cr_2O_3	.68	.92	.98	.61	1.05	.79	2.11	1.25	.79	1.06
Ag	.0 T	.0 T	.0 T	.0 T	.0 T	.0 T	.0 T	.0 T	.0 T	.0 T
Au	.0 T	.0 T	.0 T	.0 T	.0 T	.0 T	.0 T	.0 T	.0 T	.0 T
Co	.04	.05	.05	.05	.08	.04	.11	.07	.04	.07
Fe	9.3	11.8	14.5	8.7	14.8	11.1	25.7	16.3	10.1	15.1
Ni	.37	.47	.60	.38	.59	.39	1.03	.61	.52	.66
Pt	<.005	<.005	<.005	<.005	<.005	<.005	<.005	<.005	<.005	<.005
Total	51.75	54.86	61.89	53.50	56.16	53.84	58.31	53.89	53.01	57.33

Sample	06015021	06015022	06015023	06015024	06015025	06015026	06015027	06015028	06015029	06015030
SiO_2	35.28	36.94	26.52	26.02	26.30	31.72	36.02	28.24	23.32	48.12
Al_2O_3	9.06	7.20	7.02	7.38	7.20	6.30	4.66	5.60	7.24	3.84
Cr_2O_3	.81	.52	1.47	1.49	1.17	.95	.94	1.54	1.87	.50
Ag	.0 T	.0 T	.0 T	.0 T	.0 T	.0 T	.0 T	.0 T	.0 T	.0 T
Au	.0 T	.0 T	.0 T	.0 T	.0 T	.0 T	.0 T	.0 T	.0 T	.0 T
Co	.04	.04	.10	.09	.11	.05	.05	.11	.08	.04
Fe	13.1	7.8	19.2	12.3	22.2	15.7	14.0	20.8	22.5	8.4
Ni	.42	.33	.67	.80	.80	.55	.74	.63	.69	.33
Pt	<.005	<.005	<.005	<.005	<.005	<.005	<.005	<.005	<.005	<.005
Total	58.71	52.83	54.98	48.08	57.78	55.27	56.41	56.92	55.70	61.23

Sample	06015031	06015032
SiO_2	37.30	38.94
Al_2O_3	3.52	3.92
Cr_2O_3	.73	.60
Ag	.0 T	.0 T
Au	.0 T	.0 T
Co	.04	.04
Fe	9.6	8.1
Ni	.42	.33
Pt	<.005	<.005
Total	51.61	51.93

Sample	06019010	06019011	06027077	06033005	06069088	06071362	06071363	06097020	06097019	20009001
SiO_2	59.16	72.48	21.40 A	0.75 A	7.51	7.46	10.27	----	----	0.04
Al_2O_3	14.03	7.69	----	.37	2.92	39.02	38.46	7.66	8.36	34.64
CaO	2.68	1.46	----	.25	.46	----	----	----	----	.28
CO_2	.33	.25	----	----	----	----	----	----	----	----
FeO	2.68	1.88	----	3.28	----	----	----	2.01	1.56	----
Fe_2O_3	2.26	1.36	----	26.79	.41	----	----	----	----	2.16
K_2O	2.14	1.72	.00	----	----	3.05	1.04	----	----	6.08
MgO	5.20	6.76	----	.16	.35	----	----	7.14	7.51	.0 T
MnO	.03	.03	----	.0 T	----	----	----	----	----	----
NaCl	----	----	25.30	----	----	----	----	----	----	----
Na_2O	2.36	1.76	----	----	----	5.27	6.83	----	----	4.62
P_2O_5	.49	.22	----	----	.0 T	----	----	----	----	----
TiO_2	.61	.23	----	----	----	----	25.03	----	----	.60
$CaSO_4$	----	----	.30	----	----	----	----	----	----	----
$MgSO_4$	----	----	1.20	----	----	----	----	----	----	----
Na_2SO_4	----	----	5.30	----	----	----	----	----	----	----
SO_3	.80	.31	----	38.82	29.41	30.52	----	38.78	38.30	37.02
BaO	----	----	----	----	57.19	----	----	----	----	----
Niter	----	----	46.50	----	----	----	----	----	----	----
S	1.25	.06	----	----	----	----	----	----	----	----
H_2O+	3.28	2.44	----	} 29.58	----	14.87	17.60	44.41	44.27	15.38
H_2O-	2.50	1.34	----							
Total	99.80	99.99	100.00	100.00	98.25	100.19	99.23	100.00	100.00	100.82

T Trace.

TABLE 15. —*Analyses of samples of various types of rocks (Group M), from California and Hawaii, special-rock category*—Continued

06015001 S7,T18N,R2E, DIAMOND FLAT. (41: 16,18) LATERITE, REDDISH-BROWN; DH SMPL; DEPTH, 45 FT; MIN. INDEX MAP.

06015002 S7,T18N,R2E, DIAMOND FLAT. (41: 16,18) LATERITE, REDDISH-BROWN; DH SMPL; DEPTH, 45 FT; MIN. INDEX MAP.

06015003 S8,T18N,R2E, DIAMOND FLAT. (41: 16,18) LATERITE, REDDISH-BROWN; DH SMPL; DEPTH, 80 FT; MIN. INDEX MAP.

06015004 S8,T18N,R2E, DIAMOND FLAT. (41: 16,18) LATERITE, REDDISH-BROWN; DH SMPL; DEPTH, 45 FT; MIN. INDEX MAP.

06015005 S8,T18N,R2E, DIAMOND FLAT. (41: 16,18) LATERITE, REDDISH-BROWN; DH SMPL; DEPTH, 45 FT; MIN. INDEX MAP.

06015006 S8,T18N,R2E, DIAMOND FLAT. (41: 16,18) LATERITE, REDDISH-BROWN; DH SMPL; DEPTH, 45 FT; MIN. INDEX MAP.

06015007 S8,T18N,R2E, DIAMOND FLAT. (41: 16,18) LATERITE, REDDISH-BROWN; DH SMPL; DEPTH, 50 FT; MIN. INDEX MAP.

06015008 S8,T18N,R2E, DIAMOND FLAT. (41: 16,18) LATERITE, REDDISH-BROWN; DH SMPL; DEPTH, 45 FT; MIN. INDEX MAP.

06015009 S6,T18N,R2E, PINE FLAT. (41:16,11,17) LATERITE, YELLOWISH-RED; DH SMPL; DEPTH, 35 FT; MIN. INDEX MAP.

06015010 S6,T18N,R2E, PINE FLAT. (41:16,11,17) LATERITE, YELLOWISH-RED; DH SMPL; DEPTH, 35 FT; MIN. INDEX MAP.

06015011 S6,T18N,R2E, PINE FLAT. (41:16,11,17) LATERITE, YELLOWISH-RED; DH SMPL; DEPTH, 35 FT; MIN. INDEX MAP.

06015012 S6,T18N,R2E, PINE FLAT. (41:16,11,17) LATERITE, YELLOWISH-RED; DH SMPL; DEPTH, 25 FT; MIN. INDEX MAP.

06015013 S6,T18N,R2E, PINE FLAT. (41:16,11,17) LATERITE, YELLOWISH-RED; DH SMPL; DEPTH, 20 FT; MIN. INDEX MAP.

06015014 S6,T18N,R2E, PINE FLAT. (41:16,11,17) LATERITE, YELLOWISH-RED; DH SMPL; DEPTH, 20 FT; MIN. INDEX MAP.

06015015 S6,T18N,R2E, PINE FLAT. (41:16,11,17) LATERITE, YELLOWISH-RED; DH SMPL; DEPTH, 15 FT; MIN. INDEX MAP.

06015016 S6,T18N,R2E, PINE FLAT. (41:16,11,17) LATERITE, YELLOWISH-RED; DH SMPL; DEPTH, 15 FT; MIN. INDEX MAP.

06015017 S6,T18N,R2E, PINE FLAT. (41:16,11,17) LATERITE, YELLOWISH-RED; DH SMPL; DEPTH, 25 FT; MIN. INDEX MAP.

06015018 S6,T18N,R2E, PINE FLAT. (41:16,11,17) LATERITE, YELLOWISH-RED; DH SMPL; DEPTH, 25 FT; MIN. INDEX MAP.

06015019 S31,T19N,R2E, PINE FLAT. (41:16,11,17) LATERITE, YELLOWISH-RED; DH SMPL; DEPTH, 45 FT; MIN. INDEX MAP.

06015020 S31,T19N,R2E, PINE FLAT. (41:16,11,17) LATERITE, YELLOWISH-RED; DH SMPL; DEPTH, 20 FT; MIN. INDEX MAP.

06015021 S31,T19N,R2E, PINE FLAT. (41:16,11,17) LATERITE, YELLOWISH-RED; DH SMPL; DEPTH, 20 FT; MIN. INDEX MAP.

06015022 S31,T19N,R2E, PINE FLAT. (41:16,11,17) LATERITE, YELLOWISH-RED; DH SMPL; DEPTH, 20 FT; MIN. INDEX MAP.

06015023 S31,T19N,R2E, PINE FLAT. (41:16,11,17) LATERITE, YELLOWISH-RED; DH SMPL; DEPTH, 30 FT; MIN. INDEX MAP.

06015024 S31,T19N,R2E, PINE FLAT. (41:16,11,17) LATERITE, YELLOWISH-RED; DH SMPL; DEPTH, 30 FT; MIN. INDEX MAP.

06015025 S31,T19N,R2E, PINE FLAT. (41:16,11,17) LATERITE, YELLOWISH-RED; DH SMPL; DEPTH, 20 FT; MIN. INDEX MAP.

06015026 S31,T19N,R2E, PINE FLAT. (41:16,11,17) LATERITE, YELLOWISH-RED; DH SMPL; DEPTH, 15 FT; MIN. INDEX MAP.

06015027 S31,T19N,R2E, PINE FLAT. (41:16,11,17) LATERITE, YELLOWISH-RED; DH SMPL; DEPTH, 20 FT; MIN. INDEX MAP.

06015028 S6,T18N,R2E, PINE FLAT. (41:16,11,17) LATERITE, YELLOWISH-RED; DH SMPL; DEPTH, 20 FT; MIN. INDEX MAP.

06015029 S31,T19N,R2E, PINE FLAT. (41:16,11,17) LATERITE, YELLOWISH-RED; DH SMPL; DEPTH, 25 FT; MIN. INDEX MAP.

06015030 S31,T19N,R2E, PINE FLAT. (41:16,11,17) LATERITE, YELLOWISH-RED; DH SMPL; DEPTH, 35 FT; MIN. INDEX MAP.

06015031 S6,T18N,R2E, PINE FLAT. (41:16,11,17) LATERITE, YELLOWISH-RED; DH SMPL; DEPTH, 15 FT; MIN. INDEX MAP.

06015032 S6,T18N,R2E, PINE FLAT. (41:16,11,17) LATERITE, YELLOWISH-RED; DH SMPL; DEPTH, 10 FT; MIN. INDEX MAP.

06019010 OLIGOCENE & MIOCENE, TEMBLOR FM. S28,T21S,R17E. (563:43,42) OIL SAND, PORTION PASSING 300 MESH; FOR PORTION NOT PASSING 300 MESH, SEE SIO2 72.48.

06019011 OLIGOCENE & MIOCENE, TEMBLOR SS. S28,T21S,R17E. (563:43,42) OIL SAND, PORTION NOT PASSING 300 MESH; FOR PORTION PASSING 300 MESH, SEE SIO2 59.16.

06027077 EOCENE. "T22N,R2E" AMARGOSA RIVER. (30:164,156) NITER; MIN. INDEX MAPS.

06033005 "T13N,R7&8W" SULPHUR BANK. (607:361) COPIATE.

06069088 "T17S,R12E" NEW IDRIA. (607:359) BARITE NODULE.
06071362 "T19N,R5E" FUNERAL RANGE. (563:73) NATROALUNITE.
06071363 "T19N,R5E" FUNERAL RANGE. (563:73) NATROALUNITE.
06097020 "T11N,R11W" THE GEYSERS. (411:190) PICKERINGITE.

06097019 "T11N,R11W" THE GEYSERS. (411:190) PICKERINGITE.
20009001 MOLOKAI ISLAND. (352:58,57) SODA-ALENITE, WHITE, CHALKY. SPECTRO ANAL ALSO GIVEN.

TABLE 16. — *Analyses of samples of phosphate rock (Group P) from California, special rock category*

[Amounts in parentheses are not included in total]

Chemical Analyses

Sample	06037045	06079019
SiO_2	14.45 A	1.3
Al_2O_3	1.30	1.0
CaO	40.38	51.8
CO_2	9.20	2.5
FeO	----	.08
Fe_2O_3	8.36	.28
K_2O	.0 T	.07
MgO	.10	.19
MnO	----	.0
Na_2O	.0 T	.43
P_2O_5	21.44	35.7
TiO_2	----	.10
SO_3	.0	----
F	1.52	4.0
Cl	.0 T	----
H_2O+	.37 J	2.2
H_2O-	3.02	1.5
Less O_2 = F	(.64)	(1.7)
Total	99.50 *	99.45 *

A Insoluble. T Trace. J Organic matter.

06037045 MIOCENE, MODELO FM. RIDGE WEST OF STONE CANYON. (293:106,PL16,17) PHOSPHATE, BROWN, OOLITIC: RED 6 IN THICK. INDEX & GEOL MAP, GEOL SEC. *MISC: SIO2 = 1.21.

06079019 MIOCENE, MONTEREY FM. S20,T28S,R15E. (224:D84,D80) PHOSPHATE, PELLETAL: MIN: BEDS TO 10 IN THICK. INDEX MAP.

TABLE 17. — *Analyses of samples of manganiferous opal (Group Mn) from California, special-rock category*

Chemical Analyses

Sample	06023005	06023006	06023007
SiO_2	29.90	33.65	36.4
Al_2O_3	1.50	1.70	2.9 C
CaO	.90	1.10	1.8
CO_2	5.05	5.50	4.9
BaO	.0	.0	----
FeO	.0 T	.0 T	.0 T
Fe_2O_3	1.35	1.46	----
MgO	1.98	1.77	2.2
MnO	48.70	40.22	37.2
Na_2O+K_2O	.0 T	.0 T	----
P_2O_5	.06	.0 T	----
H_2O+	8.50	7.30	8.1
H_2O-	2.00	7.20	4.4
Total	99.94	99.90	97.9

C Al_2O_3 + Fe_2O_3. T Trace.

06023005 JURASSIC, KNOXVILLE FM. S3,T1S,R4E. (482:257,217,240) MANGANIFEROUS OPAL, BROWN: 4 FT THICK. INDEX & GEOL MAPS.

06023006 JURASSIC, KNOXVILLE FM. S3,T1S,R4E. (482:257,217,240) MANGANIFEROUS OPAL, BROWN: 4 FT THICK. INDEX & GEOL MAP.

06023007 JURASSIC, KNOXVILLE FM. S3,T1S,R4E. (482:257,217,240) MANGANIFEROUS OPAL, BROWN: 4 FT THICK. INDEX & GEOL MAP.

TABLE 23. — *Code numbers for state and county*

State codes	
6. California	20. Hawaii
California county codes	
1. Alameda	59. Orange
3. Alpine	61. Placer
5. Amador	63. Plumas
7. Butte	65. Riverside
9. Calaveras	67. Sacramento
11. Colusa	69. San Benito
13. Contra Costa	71. San Bernardino
15. Del Norte	73. San Diego
17. El Dorado	75. San Francisco
19. Fresno	77. San Joaquin
21. Glenn	79. San Luis Obispo
23. Humboldt	81. San Mateo
25. Imperial	83. Santa Barbara
27. Inyo	85. Santa Clara
29. Kern	87. Santa Cruz
31. Kings	89. Shasta
33. Lake	91. Sierra
35. Lassen	93. Siskiyou
37. Los Angeles	95. Solono
39. Madera	97. Sonoma
41. Marin	99. Stanislaus
43. Mariposa	101. Sutter
45. Mendocino	103. Tehama
47. Merced	105. Trinity
49. Modoc	107. Tulare
51. Mono	109. Tuolumne
53. Monterey	111. Ventura
55. Napa	113. Yolo
57. Nevada	115. Yuba
Hawaii county codes	
1. Hawaii	7. Kauai
3. Honolulu	9. Maui

TABLE 24. — *Code numbers for use of rock*

Code	Use category	Possible products
1.	Abrasives	Soap ingredient, scouring powders, sandpaper, pulpstone, grindstone.
2.	Agricultural	Limestone, lime, fertilizer, poultry grits.
3.	Brick	Vitrified and unvitrified products; grog, face brick, structural tile, structural units, sewer pipe, tile.
4.	Cement material	Portland cement, concrete additives, and mixtures.
5.	Ceramics	Porcelain, china, pottery, slag, aggregate, glaze, earthenware, stoneware, terra cotta, whiteware.
6.	Chemical and industrial	Bleaching, clarifying, purification, filtering, suspending agent, carrier, water softener, carbide (acetylene gas), insecticide, manufacture of alkalies, pulp and paper, and sugar.
7.	Construction	Railroad ballast, rip-rap, crushed stone, heavy concrete aggregate, road metal, dam cores, jetties.
8.	Drilling mud	----------
9.	Filler	Paper, paints, putty, bonding agent, whiting, soap, cosmetics.
10.	Glass	----------
11.	Insulating material	Acoustical, insulating tiles and blocks, lightweight aggregate.
12.	Metallurgical	Flux, foundry sand, molding sands, bonding clays.
13.	Pigments	----------
14.	Refractories	Electrical insulators, refractory brick.
15.	Structural	Building stone, dimension stone, flagging, roofing, terrazzo, monumental and ornamental stone stucco, plaster.
16.	Source of aluminum or some other metal	Magnesium, vanadium, fluorine, steel, pig iron.
17.	Miscellaneous	----------
18.	Lime	----------

TABLE 25. — *Code numbers of authors*

1. Allen, J. E. (1946)
2. Allen, R. D., and Kramer (1953)
3. Allen, V. T. (1929)
4. Allen, V. T. (1941)
5. Murata and Richter (1966)
6. Ames and others (1958)
7. Anderson, C. A. (1933a)
8. Anderson, C. A. (1933b)
9. Anderson, C. A. (1936)
10. Schneider (1927)
11. Becker (1888)
12. Oesterling and Spurck (1964a)
13. Anderson, C. A., and Russell (1939)
14. Anderson, F. M. (1899)
15. Anderson, F. M. (1911)
16. Anderson, Robert, and Pack (1915)
17. Angel (1908)
18. Arnold and Anderson, Robert (1907)
20. Arnold and Johnson, H. R. (1909)
21. Aubury (1906)
22. Aune (1965)
23. Averill (1929)
25. Averill (1937)
26. Averill (1939)
27. Averill (1941)
28. Averill (1947)
29. Bailey, E. H., and others (1964)
30. Bailey, G. E. (1902)
31. Hodge (1938a)
34. Bateman (1965)
35. Sherman and others (1953)
36. Bates, P. H., and others (1923)
37. Bates, T. F. (1945)
40. Bailey, E. H., and Everhart (1964)
41. Benson (1963)
43. Boalich and others (1920)
45. Burgess (1917)
47. Booth (1880)
48. Walker, J. L., and others (1969)
51. Bowen, N. L., and Aurousseau (1923)
52. Bowen (1954)
53. Bowen and Gray (1957)
54. Bowen and Gray (1959)
55. Bowen and Gray (1962)
56. Bowen and Ver Planck (1965)
57. Bradley (1916)
58. Bradley (1925)
60. Bradley and Logan (1919)
61. Bramlette (1946)
65. Burnham (1959)
66. Burnett (1965)
67. Burchard (1911)
68. Burchard (1912)
69. Ross and Hendricks (1941)
70. California Division of Mines (1948)
71. California Division of Mines (1957)
72. Irelan (1888)
73. Crawford (1896)
75. Calhoun and Hill (1962)
79. Campbell (1902)
80. Carlson and Clark, W. B. (1954)
82. Chandra (1961)
83. Chapman (1946)
84. Chatard (1890)
86. Chesterman (1943)
87. Chesterman (1956)
93. Clark, L. D. (1954)
94. Clark, W. B. (1954)
95. Clark, W. B., and Carlson (1956)
96. Clark, W. B., and Lydon (1962)
98. Clarke (1890)
99. Clarke (1891)
101. Clarke (1903)
103. Clarke (1908)
111. Clarke and Hillebrand (1897)
113. Cleveland (1957)
114. Cleveland (1958)
115. Cleveland (1960)
116. Cleveland (1961)
117. Cleveland (1962)
118. Weber (1963b)
120. Cloudman and others (1919)
127. Cross (1915)
129. Crawford (1894)
130. Creely (1965)
131. Cressman (1962)
132. Dana (1852)
137. Davis, E. F. (1918a)
138. Davis, E. F. (1918b)
139. Davis, F. F. (1955)
140. Davis, C. W., and Vacher (1928)
141. Day, A. L., and Allen, E. T. (1925)
142. Day, W. C. (1892)
144. Day, W. C. (1898)
145. Day, W. C. (1899)
147. Dietrich (1928)
148. Dietrich and Meyer (1930)
151. Diller (1890)
152. Diller (1891)
154. Diller (1903)
155. Diller (1904)
156. Diller (1906)
157. Diller (1911)
158. Dolbear (1913)
160. Durrell (1953)
161. Dupont (1910)
162. Eakle (1911)
163. Eakle (1914)
164. Eakle (1917)
165. Eakle (1923)
169. Eardley-Wilmot (1928)
170. Eckel and Myers (1946)
172. Eckel (1912)
173. Eckel (1913)
174. Eckel (1928)

TABLE 25. — *Code numbers of authors* — Continued

175. Eckel (1934)
176. Sherman (1950)
185. Engel and others (1959)
186. Ernst and others (1970)
187. Fairbanks (1896)
188. Fairbanks (1904)
193. Fiske and Koyanagi (1968)
199. Franke (1930)
200. Franke (1931)
201. Franke (1936)
202. Fraser and others (1943)
207. Gale (1912)
209. Gale (1914a)
210. Gale (1914b)
211. Gale (1914c)
213. Gale (1946)
221. Goldman (1959)
222. Goodyear (1890)
224. Gower and Madsen (1964)
228. Gray (1961)
229. Gray (1962c)
230. Gray (1962a)
231. Gray (1962b)
236. Hagner (1939)
250. Hall, C. W., and Sardeson (1895)
251. Hall, W. E., and Stephens (1963)
253. Hanks (1882)
254. Hanks (1883)
255. Hanks (1884)
256. Hanks (1885)
260. Harder (1910)
261. Harder (1912)
264. Hart (1959)
265. Hart (1966)
268. Hay and Iijima (1968)
269. Hazzard (1938)
270. Hay and Jones, B. F. (1962)
273. Heiken (1972)
276. Hewett (1956)
279. Heyl and Walker (1949)
280. Heyl and Wiese (1949)
282. Hidden (1885)
283. Hietanen (1951)
284. Hilgard (1892)
285. Hill (1923)
289. Hinds (1929)
290. Hodge (1938c)
291. Hodge (1935)
292. Hoots (1930)
293. Hoots (1931)
297. Huguenin (1919)
298. Huguenin and Castello (1921a)
299. Huguenin and Castello (1921b)
303. Irelan (1890)
305. Jones, W. F. (1911)
306. Johnson and Ricker (1949)
307. Johnston (1890)
309. Jones, C. C. (1916)
312. Keenan (1932)
315. Kelley and others (1959)
318. Kerrick and Cotton (1971)
321. Kerr and others (1950)
322. Kessler (1919)
327. King (1948)
329. Kinkel and others (1956)
331. Kivari (1942)
337. Kümmel (1901)
338. Ladoo and Myers (1951)
339. Laizure (1925a)
340. Laizure (1925b)
341. Laizure (1925c)
342. Laizure (1926)
345. Laizure (1929)
346. Lamar (1953)
347. Lamey (1946)
352. Laudermilk (1935)
353. Laudermilk and Woodford (1932)
354. Laudermilk and Woodford (1934)
356. Lawson (1893)
361. Lindgren (1896)
362. Lindgren (1898)
364. Linton (1928)
366. Logan (1926)
371. Loney (1968)
372. Lockwood (1971)
374. Lowell (1916)
375. Lyons (1896)
376. Lydon (1964)
377. MacBoyle (1920)
379. Macdonald and Katsura (1965)
386. Murata and others (1972)
388. Merrill (1919)
389. Milton and Johnston (1938)
390. Moore (1935)
391. Moore (1936)
393. Muffler and Doe (1968)
394. Muffler and White (1969)
395. Murdoch and Webb (1948)
396. Murdoch and Webb (1956)
400. Norton (1939)
401. Norman, James, and Ralston (1942)
402. Norman, L. A., Jr., and Stewart (1951)
403. Nutting (1943)
404. Oakeshott (1937)
406. O'Brien (1953)
408. Oesterling and Spurck (1964b)
409. Ogle (1953)
410. Osthaus (1955)
411. Pabst (1938)
412. Pack (1914)
417. Pask and Turner (1952)
420. Pearson and others (1967)
421. Patterson (1971)
423. Powers (1932)
424. Prescott (1908)
428. Ralston and others (1925)
433. Richter and others (1964)
436. Rubey and Callaghan (1936)
437. Rollins (1951)
439. Ross and Hendricks (1945)
440. Ross and Shannon (1926)
443. Russell (1889)
445. Sampson (1937)
446. Sampson and Tucker (1931)

TABLE 25. — *Code numbers of authors* — Continued

447.	Sampson and Tucker (1942)
453.	Schroter and Campbell (1942)
457.	Slaughter and Earley (1965)
459.	Shelton (1955)
460.	Sheppard and Gude (1965b)
461.	Sheppard and Gude (1969)
463.	Simpson (1935)
464.	Smith, C. A. (1924)
465.	Sheppard and Gude (1965a)
466.	Smith, G. I. (1973)
467.	Speil and others (1945)
470.	Spurck (1964)
478.	Sutherland (1935)
480.	Takahashi (1929)
481.	Taliaferro (1943)
482.	Taliaferro and Hudson (1943)
485.	Townsend (1933)
489.	Tucker (1919)
490.	Tucker (1921)
491.	Tucker (1923a)
492.	Tucker (1923b)
493.	Tucker (1924)
494.	Tucker (1925a)
496.	Tucker (1925b)
497.	Tucker (1926)
498.	Tucker (1927a)
499.	Tucker (1927b)
500.	Tucker (1929)
501.	Tucker and Sampson (1929)
502.	Tucker and Sampson (1930)
503.	Tucker and Sampson (1931)
504.	Tucker and Sampson (1933)
505.	Tucker and Sampson (1938)
506.	Tucker and Sampson (1940)
507.	Tucker and Sampson (1944)
508.	Turner (1891)
510.	Turner (1898)
512.	Tyson (1851)
521.	Ver Planck (1955)
523.	Ver Planck (1958)
524.	Vitaliano (1950)
525.	Walker, G. W. (1950a)
526.	Walker, G. W. (1950b)
529.	Washington (1917)
530.	Watts (1897)
531.	Weaver (1949)
532.	Weber (1963a)
534.	Weigel (1927)
535.	Weitz (1942)
541.	Whitehouse and others (1960)
543.	Williams (1932)
546.	Wright, T. L. (1971)
548.	Winston (1947)
550.	Woodford and Harris (1928)
552.	Wright, L. A. and others (1953)
553.	Yale and Stone (1921)
554.	Youngman (1930)
555.	Eckel (1905)
556.	Logan (1947)
557.	Hodge (1944)
558.	Hodge (1938b)
559.	Merrill (1916)
563.	Wells (1937)
564.	Ladoo (1948)
565.	Clarke (1889)
566.	Burohfiel (1923)
567.	Ladoo (1921)
568.	Dickinson (1962)
569.	Ladoo (1920)
570.	Norton (1952)
571.	Tischler (1964)
572.	Goldsmith and others (1962)
573.	Foshag and Woodford (1936)
574.	Kerr and Cameron (1936)
575.	Lawson (1914)
576.	Bloxam (1960)
577.	Wentworth and others (1940)
578.	Bloxam (1956)
580.	Bloxam (1959)
583.	Glaser (1971)
585.	Stewart (1970)
589.	Everhart (1957)
600.	Foshag (1935)
601.	Gale (1915)
602.	Hess (1910)
603.	Phalen (1911)
604.	Schaller (1930)
605.	Foshag (1938)
606.	Knopf (1918)
607.	Clarke (1915)
608.	Foshag (1918)
609.	Patterson (1964)
611.	Cathcart (1958)
612.	Osthaus (1956)
613.	Loew (1876)

GPO 587-041/19