GEOLOGICAL SURVEY CIRCULAR 755–B

Description of Individual Data Items and Codes in CRIB

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By Eleanor K. Keefer and James A. Calkins

CRIB, the Mineral Resources Data Bank of the U.S. Geological Survey—Guide for Public Users, 1977

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ABSTRACT

The U.S. Geological Survey's Computerized Resources Information Bank (CRIB) is being made available for public use through the computer facilities of the University of Oklahoma and the General Electric Company, USA. The use of General Electric's worldwide information-services network provides access to the CRIB file to a worldwide clientele. This manual, which consists of two chapters, is intended as a guide to users who wish to interrogate the file. Chapter A contains a description of the CRIB file, information on the use of the GIPSY retrieval system, and a description of the General Electric Mark III Service. Chapter B contains a description of the individual data items in the CRIB record as well as code lists.

CRIB consists of a set of variable-length records on the metallic and nonmetallic mineral resources of the United States and other countries. At present, 31,645 records in the master file are being made available. The record contains information on mineral deposits and mineral commodities. Some topics covered are: deposit name, location, commodity information, description of deposit, geology, production, reserves, potential resources, and references.

The data are processed by the GIPSY program, which maintains the data file and builds, updates, searches, and prints the records using simple yet versatile command statements. Searching and selecting records is accomplished by specifying the presence, absence, or content of any element of information in the record; these specifications can be logically linked to prepare sophisticated search strategies. Output is available in the form of the complete record, a listing of selected parts of the record, or fixed-field tabulations.

The General Electric Mark III Service is a computerized information services network operating internationally by land lines, satellites, and undersea cables. The service is available by local telephone to 500 cities in North America, Western Europe, Australia, Southeast Asia, Japan, and Saudi Arabia. An interface called the "foreground driver" is used to link the GIPSY program to the General Electric system.

INTRODUCTION

The U.S. Geological Survey's (USGS) Computerized Resources Information Bank (CRIB) is being made available for public use through the computer facilities of the University of Oklahoma and the General Electric Company MARK III Service.[1] This chapter contains a description of the individual data or information items [2] in the CRIB record, an index list of the data items, and a set of code lists. The information in Chapter B will be of assistance in understanding the file content and in formulating useful retrievals. Although approximately 400 data items are available, one record is unlikely ever to contain information on all these data items.

A data item is the smallest unit of information to which reference is made in a record. A data item consists of one or more of the following four main components: (1) Label, (2) item (label) description, (3) field (associated with the label), and (4) data (contained in the field).

The minimum requirement for defining a data item is a label. The label as used in the GIPSY program is a unique alphanumeric identifier of 1–7 characters. All data items in the CRIB record are defined in terms of a label, and the collection of all labels in the record constitutes the data dictionary or search dictionary. The label can be thought of loosely as the name of a field of a given data item, and

[1] MARK III is a registered service mark of General Electric Company, USA.

[2] "Data" and "information" are synonyms in most of their senses and are used interchangeably in this manual. In the strict sense, the term "data" constitutes facts and figures (as the number "15"), and when meaning is assigned to this number, it becomes information (15 tons). Implicit in a set of numbers or letters (data) is meaning; therefore, "data" implies information, and so the two words are synonyms.

it serves to identfy each field or data item to the user and to the GIPSY program. For example, the label A10 defines the field containing the DEPOSIT NAME. The label is the basis for identifying fields to be searched during a retrieval.

The item description is an optional descriptor associated with a given label. It consists of 1–59 characters and serves to describe the data item in readable English on the printout or to perform the function of a header line. For example, the label A10 has the item description DEPOSIT NAME associated wtih it, and the label A1 generates the header line NAME AND LOCATION.

The field is the computer storage space made available to store data. All fields are taken as variable-length fields by the GIPSY program. However, these variable-length fields can be rigidly formatted by controlling the length and nature of the data entered into the fields; thus, many fields in the CRIB record are equivalent to fixed-length fields.

The data is the alphanumeric entry placed in the field. It may consist of text, a number, a code, or keywords.

INDIVIDUAL DATA ITEMS

This section contains a detailed description of each data item. The data items are arranged label by label in the order in which they are printed in the standard output record (see dummy record, fig. 1). The material includes the label, item description, format (if any) of data contained in the field, what the data mean, how the field is used, and other information. Following the descriptions of many labels is a code letter, or letters, indicating one or more key characteristics of that label, of the item description, of the field, or of the data contained in the field. The meaning of these codes is as follows:

L ____Item (label) description only appears in output record. No entry is associated with the labels and the item description itself constitutes the data. Data items of this type are treated as literals (see Chapter A, p. A8) when used in the COPY, SORT, or COUNT commands.

N ____Numeric field or alphanumeric field treated as a numeric field.

F ____Formatted field.

PF ___Partially formatted field or field containing key words or codes of varying lengths.

D ____Discontinued label. Entries may appear on early records, but the label is no longer in use for current input.

NS ___Label not on standard input form 10(9–76).

C ____A coded field. Entries are coded from code list indicated.

RECORD IDENTIFICATION

B10 Record number.—The record number is a unique identifying code assigned to each record in the file; it is alphanumeric and usually contains seven characters. (F).

Record type.—

A.—Form A used as source document. (NS, L, D).

B.—Form B used as source document. (NS, L, D).

D.—Special-purpose form used as source document. (NS, L, D).

U.—Record that has been updated. Updating can include significant or material additions, deletions, or other changes to the original data in one or more fields of the record. It does not include simple spelling or other minor typographical corrections. (L).

S.—Short form used as source document. (NS, L, D).

L.—Long form used as source document. (NS, L, D).

USGS Country/organization.—An international code indicating the country where the file resides and the organization maintaining the file—in this example, the United States Geological Survey. (L).

B30 Source.—Used to indicate a primary source file (computerized or not) when the File Link ID (B50) is used for a secondary rather than a primary source. (NS).

B50 File Link ID.—An entry in this field indicates that further information on this locality is stored in some other file, either computerized or not. Examples of keyword entries in this field are RASS (Rock Analysis File), USBM (Bureau of Mines data), GEOPHY (Geophysical files), BLM (Bureau

```
CRIB MINERAL RESOURCES FILE 10

                                    RECORD IDENTIFICATION   (Header BH1)
                                B10 RECORD NO.............  W999999
                                (U) RECORD TYPE...........     U       (Header B20)
                                (USGS) COUNTRY/ORGANIZATION. USGS
                                B30 SOURCE................  XXXXX
                                B50 FILE LINK ID..........  XXXXX
                                B40 DEPOSIT NO............  XXXXX
                                B51 GEOLOGIC CODE.........  XXXXX

                                    REPORTER                (Header GH1)
                                G2  NAME:  XXXXXX, XXXXXXX X.
                                G1  DATE:  76 08
                                G3  UPDATE(S): 76 09
                                G4  BY:  XXXXXX, XXXXXXX X.

  NAME AND LOCATION      (Header A1)
A10 DEPOSIT NAME.....................  XXXXX
A11 SYNONYM NAME.....................  XXXXX

A30 MINING DISTRICT/AREA/SUBDIST.  XXXXX
A31 SUBDISTRICT.....................  XXXXX

A32 CONTINENT OR GLOBAL AREA.....  XXXXXX

A40 COUNTRY CODE.....................  US

A50 STATE CODE.....................  08

A60 COUNTY.........................  XXXXX
A67 NAME OF FOREST.................  XXXXX
A61 CONGRESSIONAL DIST.............  XXXXX
A62 DRAINAGE AREA..................  XX
A63 PHYSIOGRAPHIC PROV.............  XX
A64 LAND CLASSIFICATION............  XXXXX

    QUAD SCALE          QUAD NO OR NAME     (Header AH2)
A100  1: 9999999       A90  XXXXX
A91   1: 9999999       A92  XXXXX

    LATITUDE            LONGITUDE           (Header AH3)
A70   XX-XX-XXN        A80  XXX-XX-XXW

A107  ALTITUDE.. 9999 FT

    UTM NORTHING        UTM EASTING         UTM ZONE NO      (Header AH4)
A120  9999999.9      A130   999999.9      A110   +99

    STATE X COORDINATE STATE Y COORDINATE STATE ZONE NO   (Header AH5)
A71   999999999.9      A72  999999999.9      A73 9999

    MAP X-Y COORDINATES       (Header AH6)
              A74X
     1:250,000....X  999     A74Y  Y  999      (Header A74)
     1: 63,360....X  999     A75Y  Y  999      (Header A75)
              A75X
A77 TWP.....  XXXX    XXXX
A78 RANGE...  XXXX    XXXX
A79 SECTION..  XX XX XX XX XX XX
A81 MERIDIAN.  XXXXX

A82 POSITION FROM NEAREST PROMINENT LOCALITY:  XXXXX

A83 LOCATION COMMENTS: XXXXX


  COMMODITY INFORMATION          (Header COMINFO)
C10 COMMODITIES PRESENT: XXX XXX XXX XXX XXX XXX XXX

    SIGNIFICANCE:                (Header C15)
      MAJOR     MAJOR.....  XXX
      MINOR     MINOR.....  XXX
      COPROD    COPRODUCT..  XXX
      BYPROD    BYPRODUCT..  XXX
      POTEN     POTENTIAL..  XXX
      OCCUR     OCCURRENCE.  XXX XXX

C20 COMMODITY SPECIALIST INFORMATION:
      XXX

C21   SPECIAL FIELD 1  XXXXX

C22   SPECIAL FIELD 2  XXXXX

C23   SPECIAL FIELD 3  XXXXX
```

NOTE: Circled label indicates that no text accompanies the label.

FIGURE 1.—Dummy record showing the standard output format of the CRIB mineral resources file.

```
C30 ORE MATERIALS (MINERALS,ROCKS,ETC.):
      XXXXX

C41 COMMODITY SUBTYPES OR USE CATEGORIES:
      XXXXX

C50 COMMODITY COMMENTS:
      XXXXX

  ANALYTICAL DATA      (Header ANALD)
C44  SOURCE REFERENCE.. XXXXX
BTU  BTU.............. 99999
SUL  SULFUR........... 99.9 %
ASH  ASH.............. 99.9 %
CARB FIXED CARBON..... 99.9 %
C45  VOLATILES........ 99.9 %
C46  MOISTURE......... 99.9 %
C47  THICKNESS OF COAL. 999.9 FT

C43 ANALYTICAL DATA(GENERAL)
      XXXXX

  MINERAL ECONOMICS FACTORS      (Header MINECON)

C42A EXPLORATION M$.......... 99
C42B DEVELOPMENT M$.......... 99
C42C EXPANSION M$............ 99
C42D MILL M$................. 99

C42E TOTAL INVESTMENTS M$..... 99

C42F MILL CAPACITY PER YR.(THOUS. UNITS).. 99 MET TONS
C42G       YR APPLICABLE..... 1974

C42 ECONOMIC COMMENTS:
      XXXXX


  EXPLORATION AND DEVELOPMENT    (Header LH1)
A20  STATUS OF EXPLOR. OR DEV.  X
                          (A21) PROPERTY IS ACTIVE
                          (A22) PROPERTY IS INACTIVE
L10  YEAR OF DISCOVERY....... 1965
L20  BY WHOM................. XXXXX
L30  NATURE OF DISCOVERY..... X
L40  YEAR OF FIRST PRODUCTION. 1970
A12  PRESENT/LAST OWNER...... XXXXX
A13  PRESENT/LAST OPERATOR... XXXXX

    WORK DONE BY USGS              (Header LH2)
        YEAR  WORK TYPE  GEOLOGIST AND RESULTS      (Header LH3)
L41   1) 1965  XXXXXXX  XXX
L42   2) 1966  XXXXXXX  XXX
L43   3) 1967  XXXXXXX  XXX

    WORK DONE BY OTHER ORGANIZATIONS    (Header LH4)
        YEAR  WORK TYPE  ORGANIZATION AND RESULTS  (Header LH5)
L50   1) 1965  XXXXXXX  XXX
L60   2) 1967  XXXXXXX  XXX
L70   3) 1969  XXXXXXX  XXX
L80   4) 1971  XXXXXXX  XXX
L90   5) 1973  XXXXXXX  XXX

L100 REPORTS AVAILABLE:
      XXXXX

L110 EXPLOR. AND DEVELOP. COMMENTS:
      XXXXX


  DESCRIPTION OF DEPOSIT      (Header MH1)

C40  DEPOSIT TYPES:
      XXXX
M10  FORM/SHAPE OF DEPOSIT: XXXX

    SIZE/DIRECTIONAL DATA     (Header MH2)

M15    SIZE OF DEPOSIT.....  XXX
M20    DEPTH TO TOP .......  999 M21 FT
M30    DEPTH TO BOTTOM.....  999 M31 FT
M40    MAX LENGTH..........  999 M41 FT
M50    MAX WIDTH...........  999 M51 FT
M60    MAX THICKNESS.......  999 M61 FT
M70    STRIKE OF OREBODY....  XXX
M80    DIP OF OREBODY......  XXX
M90    PLUNGE OF OREBODY....  XXX
M100   DIRECTION OF PLUNGE..  XXX
M110 COMMENTS(DESCRIPTION OF DEPOSIT):
      XXXXX
```

FIGURE 1.—Dummy record showing the standard output format of the CRIB mineral resources file—Continued.

```
  DESCRIPTION OF WORKINGS       (Header MH3)
(M120)  SURFACE
(M130)  UNDERGROUND
(M140)  SURFACE AND UNDERGROUND

     DESCRIP. OF UNDERGRND WORKINGS     (Header M150)
M160     DEPTH OF WORKINGS BELOW SURFACE. 999  M161 FT
M170     LENGTH OF WORKINGS.............. 999  M171 FT

     DESCRIP. OF OPEN WORKINGS (SURFACE OR UNDERGRND)      (Header M180)
M190     OVERALL LENGTH OF MINED AREA.... 999  M191 FT
M200     OVERALL WIDTH OF MINED AREA..... 999  M201 FT
M210     OVERALL AREA.................... 999  M211 SQ FT

M220 COMMENTS(DESCRIP. OF WORKINGS):
     XXXXX

(PROD)
  PRODUCTION          (PROD is Label and Header)
   (YES)  YES
   (NO)   NO PRODUCTION
   (LGE)  LARGE PRODUCTION
   (MED)  MEDIUM PRODUCTION
   (SML)  SMALL PRODUCTION


(DH) ANNUAL PRODUCTION (ORE AND COMMODITIES)       (DH is Label and Header)

        ITEM   ACC  AMOUNT   THOUS.UNITS YEAR GRADE OR USE      (Header DH1)
D1      1  XXXX XXX 99999999 XXXXXXXX    1970 XXXXX
D2      2  XXXX XXX 99999999 XXXXXXXX    1970 XXXXX
D3      3  XXXX XXX 99999999 XXXXXXXX    1970 XXXXX
D4      4  XXXX XXX 99999999 XXXXXXXX    1970 XXXXX
D5      5  XXXX XXX 99999999 XXXXXXXX    1970 XXXXX
D6      6  XXXX XXX 99999999 XXXXXXXX    1970 XXXXX
D7      7  XXXX XXX 99999999 XXXXXXXX    1970 XXXXX
                    D1A-D7A   D1B-D7B     D1C-D7C D1D-D7D
(DH2) CUMULATIVE PRODUCTION (ORE,COMMOD.,CONC.,OVERBUR.)     (DH2 is Label and Header)

        ITEM   ACC  AMOUNT   THOUS.UNITS   YEARS      GRADE OR USE   (Header DH3)
G7      8  XXXX XXX 99999999 XXXXXXXX    1970-1974  XXXXX
G8      9  XXXX XXX 99999999 XXXXXXXX    1970-1974  XXXXX
                    G7A-G8A   G7B-G8B      G7C-G8C    G7D-G8D
G9      10 XXXX XXX 99999999 XXXXXXXX    1970-1974  XXXXX
G10     11 XXXX XXX 99999999 XXXXXXXX    1970-1974  XXXXX
G11     12 XXXX XXX 99999999 XXXXXXXX    1970-1974  XXXXX
G12     13 XXXX XXX 99999999 XXXXXXXX    1970-1974  XXXXX
G13     14 XXXX XXX 99999999 XXXXXXXX    1970-1974  XXXXX
G14     15 XXXX XXX 99999999 XXXXXXXX    1970-1974  XXXXX
G15     16 XXXX XXX 99999999 XXXXXXXX    1970-1974  XXXXX
                    G9A-G15A  G9B-G15B     G9C-G15C   G9D-G15D
(DH4) OVERBURDEN AND CONCENTRATES (ANNUAL)       (DH4 is Label and Header)

      ITEM          ACC  AMOUNT   THOUS.UNITS YEAR  GRADE,REMARKS     (Header DH5)
P1    17 XXXXXXXXX XXX 99999999 XXXXXXXX    1970  XXXXX
P2    18 XXXXXXXXX XXX 99999999 XXXXXXXX    1970  XXXXX
P3    19 XXXXXXXXX XXX 99999999 XXXXXXXX    1970  XXXXX
P4    20 XXXXXXXXX XXX 99999999 XXXXXXXX    1970  XXXXX
P5    21 XXXXXXXXX XXX 99999999 XXXXXXXX    1970  XXXXX
P6    22 XXXXXXXXX XXX 99999999 XXXXXXXX    1970  XXXXX
P7    23 XXXXXXXXX XXX 99999999 XXXXXXXX    1970  XXXXX
                       P1A-P7A   P1B-P7B     P1C-P7C P1D-P7D
D8 PRODUCTION YEARS.......  1970-1974

D9 SOURCE OF INFORMATION..  XXXXX

D10 PRODUCTION COMMENTS....  XXXXX


(EH) RESERVES AND POTENTIAL RESOURCES   (EH is Label and Header)

      ITEM          ACC  AMOUNT   THOUS.UNITS YEAR  GRADE OR USE      (Header EH1)
E1    1  XXXXXXXXX XXX 99999999 XXXXXXXX    1975  XXXXX
E2    2  XXXXXXXXX XXX 99999999 XXXXXXXX    1975  XXXXX
E3    3  XXXXXXXXX XXX 99999999 XXXXXXXX    1975  XXXXX
E4    4  XXXXXXXXX XXX 99999999 XXXXXXXX    1975  XXXXX
E5    5  XXXXXXXXX XXX 99999999 XXXXXXXX    1975  XXXXX
E6    6  XXXXXXXXX XXX 99999999 XXXXXXXX    1975  XXXXX
                       E1A-E6A   E1B-E6B     E1C-E6C E1D-E6D
E7    SOURCE OF INFORMATION..  XXXXX

E8    COMMENTS.................  XXXXX
```

FIGURE 1.—Dummy record showing the standard output format of the CRIB mineral resources file—Continued.

```
(HH)RESERVES ONLY          (HH is Label and Header)

      ITEM          ACC  AMOUNT   THOUS.UNITS YEAR  GRADE OR USE     (Header HH1)
H1    1  XXXXXXXXX XXX  99999999 XXXXXXXX    1975  XXXXX
H2    2  XXXXXXXXX XXX  99999999 XXXXXXXX    1975  XXXXX
H3    3  XXXXXXXXX XXX  99999999 XXXXXXXX    1975  XXXXX
H4    4  XXXXXXXXX XXX  99999999 XXXXXXXX    1975  XXXXX
H5    5  XXXXXXXXX XXX  99999999 XXXXXXXX    1975  XXXXX
H6    6  XXXXXXXXX XXX  99999999 XXXXXXXX    1975  XXXXX
                        H1A-H6A  H1B-H6B     H1C-H6C H1D-H6D
H7    COMMENTS.. XXXXX

H8    SOURCE OF INFORMATION  XXXXX

(JH)POTENTIAL RESOURCES (EXCLUSIVE OF RESERVES)    (JH is Label and Header)

      ITEM          ACC  AMOUNT   THOUS.UNITS YEAR  GRADE OR USE     (Header JH1)
J1    1  XXXXXXXXX XXX  99999999 XXXXXXXX    1975  XXXXX
J2    2  XXXXXXXXX XXX  99999999 XXXXXXXX    1975  XXXXX
J3    3  XXXXXXXXX XXX  99999999 XXXXXXXX    1975  XXXXX
J4    4  XXXXXXXXX XXX  99999999 XXXXXXXX    1975  XXXXX
J5    5  XXXXXXXXX XXX  99999999 XXXXXXXX    1975  XXXXX
J6    6  XXXXXXXXX XXX  99999999 XXXXXXXX    1975  XXXXX
                        J1A-J6A  J1B-J6B     J1C-J6C J1D-J6D
J7    COMMENTS.. XXXXX

J8    SOURCE OF INFORMATION  XXXXX

  GEOLOGY AND MINERALOGY    (Header KH1)
K7    GENERAL GEOLOGICAL ENVIRONMENT.....  XXXXX

K1    AGE/NAMES OF HOST ROCKS.............  XXXXXXXXXX XXXXX

K2    AGE/NAMES OF ASSOC. IGNEOUS ROCKS..  XXXXXXXXXX XXXXX

K3    AGE OF MINERALIZATION...............  XXXXXXXXXX

K4    PERTINENT MINERALOGY................  XXXXX

K5    IMPORTANT ORE CONTROL OR LOCUS.....  XXXXX

K6    GEOLOGICAL DESCRIPTIVE NOTES.......  XXXXX


   GEOLOGY (SUPPLEMENTARY INFORMATION)     (Header NH1)
    REGIONAL GEOLOGY                       (Header NH2)
N5    MAJOR REGIONAL STRUCTURES..  XXXXX
N10   REGIONAL TRENDS.............  XXXXX
N15   TECTONIC SETTING............  XXXXX

N20   MAJOR LITHOLOGIC/STRATIGRAPHIC UNITS:
        XXXXX

N25   COMMENTS XXXXX

    LOCAL GEOLOGY        (Header NH3)
      AGE/NAMES OF FORMATIONS OR ROCK TYPES    (Header NH4)
N30     1) XXXXXXXXXX XXXXX
N35     2) XXXXXXXXXX XXXXX
N40     3) XXXXXXXXXX XXXXX
N45     4) XXXXXXXXXX XXXXX

      AGE/NAMES OF IGNEOUS UNITS OR ROCK TYPES      (Header NH5)
N50     1) XXXXXXXXXX XXXXX
N55     2) XXXXXXXXXX XXXXX
N60     3) XXXXXXXXXX XXXXX
N65     4) XXXXXXXXXX XXXXX
```

FIGURE 1.—Dummy record showing the standard output format of the CRIB mineral resources file—Continued.

```
N70    SIGNIFICANT LOCAL STRUCTURES:
         XXXXX

N75    SIGNIFICANT ALTERATION:
         XXXXX

N80    GEOLOGICAL PROCESSES OF CONCENTRATION OR ENRICHMENT:
         XXXXX

N85 COMMENTS (GEOLOGY AND MINERALOGY):
      XXXXX

GEN GENERAL COMMENTS
      XXXXX


   GENERAL REFERENCES        (Header FH1)
F1   1) XXXXX
F2   2) XXXXX
F3   3) XXXXX
F4   4) XXXXX

        5) XXXXX  }
                  } Illustrates paragraph function
        6) XXXXX  }
```

FIGURE 1.—Dummy record showing the standard output format of the CRIB mineral resources file—Continue

of Land Management data), CONSV (USGS Conservation Division data), TVA (Tennessee Valley Authority), FS (U.S. Forest Service), and GUILD (metallogenic map file). (PF).

B40 Deposit number.—The deposit number is used optionally by reporters for file numbers; for a series of localities of a given commodity; for a sequence of mineral localities; for field numbers; or for any other individual numbering system.

B51 Geologic code.—A coding system used in a special file on metallogenic map data. (NS).

REPORTER

G2 Name.—Name of the reporter who filled out the original source document (or the geologist under whose supervision this was done). (PF).

Format: _____, _____ _____
Last name First name Initial

G1 Date.—Date the original source document was filled out. (F, N).

Format: | | | | | | | | |
Year Month

G3 Update(s).—Date the record was updated. (F, N).

Format: | | | | | | | | |
Year Month

G4 By.—The person who updated the record. (PF).

Format: _____, _____ _____
Last name First name Initial

NAME AND LOCATION

A10 Deposit name.—The most commonly used name of the mineral deposit, district, mine, prospect, claim, or occurrence. The deposit name also is used to identify summary records (for example, Zinc, Country Summary —Peru).

A11 Synonym name(s).—Other names by which the deposit is known.

A30 Mining district/area subdistrict.— Name of the mining district, area, subdistrict, or other large mineral-area name or regional geographic name.

A31 Subdistrict.—For optional use when district is divided into subdistricts. (NS).

A32 Continent or global area.—Intended to designate entire continents or large global areas (such as the Southwest Pacific). (NS).

A40 Country code.—Country in which the deposit is found. Each country is coded by two alphabetic characters—see CRIB Country Code List (List C, p. B23–B25). (C, F).

A50 State code.—State, Province, or other second-order political subdivision below the country level. States in the United States and Provinces in Canada are coded by two numeric characters—see State Codes for U.S. and Province Codes for Canada (List D, p. B26). In other countries, the State or Province names are written out. (C, F).

A60 County.—Names(s) of the county(ies) or other third-order political subdivision(s). Census divisions may be used in Alaska.

A67 Name of forest.—Used mainly in records generated by the U.S. Forest Service. (NS).

A61 Congressional District.—Congressional District in which the deposit is located. (NS).

A62 Drainage area.—The drainage area in which the deposit is located. See Drainage Area Codes of the U.S. (List J, p. B28 and fig. 4). The numeric code for a drainage area is entered in the first two spaces in the field. The rest of the entry is used to describe the drainage area further (For example, the code 02 indicates the Middle Atlantic region, and "Upper Hudson River" indicates the specific drainage area.) or to enter information about the drainage area of a non-U.S. mineral deposit. (PF, C).

A63 Physiographic province.—The physiographic province in which the deposit is located. See Physiographic Provinces Codes of the U.S. (List K, p. B30 and fig. 5). The numeric code for a U.S. physiographic province is entered in the first two spaces in the field. The rest of the entry is used to describe the physiographic province further (for example, Southern Catskills) or to describe the province of a non-U.S. deposit. (PF, C).

A64 Land classification.—A two-digit coded field classifying the land in terms of private-land ownership and various types of public lands—see Land Classification Codes (List

P, p. B30). This is a recently added field and as yet contains little data. (C, F).

A100 Quadrangle scale.—Under quadrangle scale is entered the denominator of the fractional scale of the map of the quadrangle where the deposit is located (For example, if the scale is 1:24,000, then the entry is 24000). (N, F).

Format: | | | 2 | 4 | 0 | 0 | 0 | (right justified)

A90 Quadrangle number or name.—The number or name of the quadrangle in which the mineral deposit is located. Quadrangle index maps and map information are available from the National Cartographic Information Center, U.S. Geological Survey, 507 National Center, Reston, Va. 22092.

A91 Second quadrangle scale.—Available for use if a second quadrangle (usually of different scale) is involved. Format same as A100 above. (NS, F, N).

A92 Second quadrangle number or name.—Similar to A90 above. Used when a second quadrangle is reported. (NS).

Location methods.—Four possible location methods available are: geodetic coordinates, Universal Transverse Mercator coordinates, State Grid coordinates, and the public-land survey (township—range—section) system. In addition, an X–Y cartesian coordinate system is available for special-purpose use. Usually just one of these methods is used by a reporter, but in some records, two methods (such as, latitude and longitude and also township, range, and section) may be used.

Geodetic coordinates.—For the two fields—A70 Latitude and A80 Longitude—please note that when an exact location is not available, reporters have used an arbitrary center point or the coordinates of a principal mine or quarry. Even though a single-point location may not be a realistic "center," nevertheless, an arbitrary location is important so that the area in question can be retrieved on the basis of latitude and longitude.

For an example of a retrieval based upon latitude and longitude see chapter A, fig. 7, of this report.

A70 Latitude (F).

Format:

		–		–			
deg			min		sec	N/S	

A80 Longitude (F).

Format:

			–			–			
deg				min			sec	E/W	

107 Altitude (N, PF).

Usual format: | 9 | 9 | 9 | 9 | | F | T |

This is the surface elevation of the item being described (mine, prospect, or district). For a large area, the altitude of a point, or an average altitude is reported. The usual format is digits followed by a space, then FT or M (feet or meters).

UTM coordinates

A120 UTM northing (F, N).

Format

9	9	9	9	9	9	9	.	9

A130 UTM easting (F, N).

9	9	9	9	9	9	.	9

A110 UTM zone number (F, N).

±	9	9

The Universal Transverse Mercator grid is shown on all USGS quadrangle maps printed since 1956. To define a point in the UTM system, a northing, easting, and zone number are required. The world is divided into 60 meridional zones numbered from 1 to 60; each zone covers a strip 6° wide in longitude.

Zones north of the equator are positive (+); zones south of the equator are negative (−). The zone number is indicated in the lower left corner of 7½-minute topographic sheets. Within each zone coordinates are measured in meters north of the equator and east of the west boundary of the zone. Grid lines drawn on the base map, together with a metric coordinate reader, make it possible to plot a point in the UTM system.

The following is an example of a point in the Northern Hemisphere:

UTM northing

Format

| 3 | 5 | 9 | 8 | 8 | 8 | 7 | . | |

UTM easting

| | 9 | 0 | 1 | 2 | 3 | . | | |

UTM zone no.

| + | 1 | 7 |

State Coordinates

A71 State X coordinate (F, N).

Format

| 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | . | 9 |

A72 State Y coordinate (F, N).

| 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | . | 9 |

A73 State zone number (F, N).

| 9 | 9 | 9 | 9 |

Each state has its own coordinate system, and these can be used as location coordinates. State coordinate ticks are printed on the edges of most topographic maps. Detailed descriptions of the State coordinate systems can be obtained from the appropriate State agencies. A listing of the the four-digit zone numbers for each State can be found in "Program Description, DO154" (Buehrer, 1969, unpub. data), available from the U.S. Geological Survey Computer Center, 801 National Center, Reston, Va. 22092.

Map X–Y coordinates

A74X X (map coordinate for 1:250,000-scale map) (NS, N).

A74Y Y (map coordinate for 1:250,000-scale map) (NS, N).

A75X X (map coordinate for 1:63,360-scale map) (NS, N).

A75Y Y (map coordinate for 1:63,360-scale map) (NS, N).

An example of an X-Y coordinate system is that used in many records on Alaska, in which each mineral location is referenced in X–Y on 1:250,000-scale maps and also on 1:63,360-scale maps when available. This location system may in the future come into wider use, especially in locating drillholes.

A77 Township(s).—Space is provided for two townships on the standard form. Three spaces are allotted for digits, followed by a space for N (north) or S (south) in each. (F).

Format:

| 0 | 3 | 8 | N | | | | | 0 | 3 | 9 | N |

A78 Range(s).—Space is provided for two ranges on the standard form. Three spaces are allotted for digits, followed by a space for E (east) or W (west) in each. (F).

Format:

| 0 | 0 | 9 | E | | | | | 0 | 1 | 0 | E |

A79 Section(s).—Space is provided for six sections (two digits each). If only one Twp–Rge is entered, all six sections may refer to that single township. If, however, two Twp–Rge locations are given, the first three sections may refer to the first Twp–Rge and the 4th, 5th, and 6th sections may refer to the second Twp–Rge.

Format:

| 1 | 0 | | 1 | 1 | | 1 | 2 |
sections in 1st Twp-Rge

| 0 | 7 | | 0 | 8 | | 0 | 9 |
sections in 2nd Twp-Rge

A81 Meridian.—The name of the meridian that governs the set of townships and ranges. In some records, this has been abbreviated when entered.

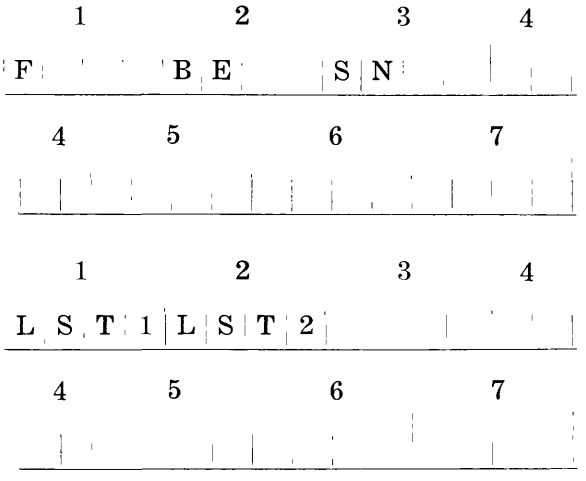
A82 Position from nearest prominent locality.—This can include the direction and distance of the location from some nearby town or prominent geographic feature or other pertinent information.

On some records in the CRIB file, this field is used to indicate the position within the section (that is, the quarter section).

A83 Location comments.—Contains any comments concerning the location of the deposit.

COMMODITY INFORMATION

C10 Commodities present.—A fixed field containing seven subfields of four spaces each. This provides for listing of as many as seven commodities in a given mineral deposit. The subfields are occupied as in the examples given below. Note that entries are left justified in each subfield.



The codes for commodities are in LIST E (p. B26–B28). Element codes are the standard chemical symbols of one or two letters. Other commodities are coded in three letters or three letters and a number. (F, C).

Significance.—This section classifies the commodities shown in C10 into major or minor products, coproducts, byproducts, potential products, and occurrences. Codes used in these six fields and method of entry are the same as in C10. In many records, the reporters have entered commodities in the C10 field without breaking them down into their significance here.

MAJOR Major product (F, C).

MINOR Minor product (F, C).

Four subfields of four spaces each are allowed for each of the above two fields.

COPROD Coproduct (F, C).

BYPROD Byproduct (F, C).

POTEN Potential (F, C).

OCCUR Occurrence (F, C).

Three subfields of four spaces each are allowed for each of the above four fields.

C20 Commodity specialist information.—Commodity codes from List E (p. B26–B28) will be entered here (in the same format as in C10) when the following conditions apply: (1) The reporter is a commodity specialist and is supplying information on his own commodity, or (2) information is obtained from sources that were originally compiled by a commodity specialist. Four subfields of four spaces each are allowed for C20.

C21 Special field 1 (NS).

C22 Special field 2 (NS).

C23 Special field 3 (NS).

The above three fields are used by commodity specialists for special information not entered into other fields.

C30 Ore materials (minerals, rocks, and so on).—This field is for the names of the most important ore minerals, rocks, or other ore materials.

C41 Commodity subtypes or use categories.—This field provides for the subdivision of commodities into specialized subtypes, if needed, or into categories based upon end use.

Example: Bauxite coded AL1 in C10, could be further classified as:

C41 <BAUXITE, REFRACTORY GRADE>

C50 Commodity comments.—Comments pertaining to the commodity information section are entered here.

ANALYTICAL DATA

This section includes certain fields relating to coal, plus a general field for other types of analytical data.

C44 Source reference.—Refers to the source reference for the analytical data.

BTU BTU.—British Thermal Units (N, F).

Format: | | | | | |.

SUL Sulfur.—Sulfur content in weight percent (N,F).

Format: | | . | | |%|.

ASH Ash.—Ash content in weight percent (N, F).

Format: | | . | | |%|

CARB Fixed carbon.—Fixed carbon in weight percent (N, F).

Format: | | | . | | | % |

C45 Volatile material.—Volatile material in weight percent (N, F).

Format: | | | . | | | % |

C46 Moisture.—Moisture content in weight percent (N, F).

Format: | | . | | % |

C47 Thickness of coal.—Thickness of coal in feet or meters (N, F).

Format: | | | . | | | | | (FT) or M)

C43 Analytical data (General).—This field is available for other types of analytical data.

MINERAL ECONOMICS FACTORS

This section contains a limited number of fields relating to the economics of a mining operation. These include (in the millions of dollars): the costs for exploration, development, and expansion of the mining operation; the cost of the mill; the total investment; and the mill capacity (in tons or other units). A field also is available for general economic comments. These fields are listed below:

C42A Exploration M$ (N).

C42B Development M$ (N).

C42C Expansion M$ (N).

C42D Mill M$ (N).

C42E Total investments M$ (N).

C42F Mill capacity per year.—In thousands of metric tons (or other units) per year. (N, PF).

C42G Year applicable.

C42 Economic comments.—This field is used for any comments relating to economic factors that might govern or affect the exploration of the deposit or commodity. These could include such items as distance to market, railroad, or road; high altitude; labor or price situation; favorable or unfavorable mining conditions; or unusual milling problems.

EXPLORATION AND DEVELOPMENT

A20 Status of exploration or development.—This field shows the degree of development of the deposit into four categories in terms of the surface and underground information available. It will be coded by one of the number codes from Status of Exploration or Development (List B, p. B22). (C).

A21 Property is active.—This entry is intended to indicate whether there was any activity at the time the record was reported. It is applicable mainly to specific tangible localities (such as prospects, mines, or districts). Activity includes production or any present-day exploration or development work. (L).

A22 Property is inactive.—Indicates that the property was inactive at the time the record was reported. (L).

L10 Year of discovery.—The year or approximate year of discovery is entered here. In some records, generalized entries such as PREHISTORIC, PRESPANISH, OR REVOLUTIONARY WAR may have been used here

L20 By whom.—Name of company, organization, or person most closely involved in the discovery.

L30 Nature of discovery.—Codes of one letter each are used here to describe the nature of discovery. (See Nature of Discovery, List L, p. B30). If the letter F is used indicating "other," this may be clarified under the comments field L110.

L40 Year of first production.—This field indicates the year or approximate year of first production. The same kind of entries are used here as in L10 above.

A12 Present or last owner.—The name of the person or organization that owns or recently has owned the mineral rights to the deposit.

A13 Present or last operator.— The name of the person or mining company that is actually working the deposit or that most recently worked it, if it is now inactive. If the operator is the same as the owner, this name should appear in both A12 and A13.

WORK DONE BY USGS

Three lines, each constituting a single field, are available in this table allowing for the accommodation of the following three subfields:

Year.—The year the work was done or started.

Format: | 1 | 9 | 7 | 5 |

Type of work.—Codes are used here from Type of Work Done (List M, p. B30). If OTHER is entered, it may be clarified in comments field L110. Seven spaces are allowed here.

Format: | X | X | X | X | X | X | X |

Geologist and results.—Name of geologist within the USGS and the results of his (her) work.

L41 (1st line of table) (C, PF, N).

L42 (2nd line of table) (C, PF, N).

L43 (3rd line of table) (C, PF, N).

WORK DONE BY OTHER ORGANIZATIONS

Five lines, each constituting a single field, are available in this table allowing for the accommodation of the following subfields:

Year.—The year the work was done or started.

Format: | 1 | 9 | 7 | 5 |

Type of work.—Codes are used here from Type of Work Done (List M, p. B30). If OTHER is entered here, it may be clarified in the field L110.

Format: | X | X | X | X | X | X | X |

Organization and results.—Name of the organization that did the work and the results.

L50 (1st line of table) (PF, C, N).

L60 (2nd line of table) (PF, C, N).

L70 (3rd line of table) (PF, C, N).

L80 (4th line of table) (PF, NS, C, N).

L90 (5th line of table) (PF, NS, C, N).

L100 Reports available.—This field is for citing available reports, either published or unpublished, that deal with the exploration and development of the deposit.

L110 Exploration and development comments.—Comments on exploration and development, if necessary to clarify the above entries in this section.

DESCRIPTION OF DEPOSIT

C40 Deposit types.—Examples of entries in this field are given in Deposit Types (List F, p. B28). This list is not exhaustive, and other deposit types may have been used. (PF).

M10 Form/shape of deposit.—Entries from Form/Shape of Deposit (List N, p. B30) are commonly found in this field. This list is not exhaustive, and other descriptive terms may be used. (PF, C).

Size/directional data

M15 Size of deposit.—The general size of the deposit will commonly be indicated by one of the key words: LARGE, MEDIUM, or SMALL. In some records the actual size is entered (in acres, sq km). Size, following the scheme devised for the metallogenic map of North America (Guild, 1968), relates to the amount of metal or mineral contained in the deposit, district, or area being described. This scheme, which shows the most common metals, is shown in figure 2. The key words represent different value ranges for the different commodities. For example, an iron mine containing about 150 million tons of iron would probably be considered a LARGE mine, whereas a LARGE gold mine would contain only about 500 tons of gold. (PF).

Abbreviations for units.—In the following pages, certain fields are units fields associated with numeric entries. The abbreviations of these units are shown in Measurement Units (List H, p. B28). In the numeric fields, the figures given may represent only rough averages. These fields, although not formally defined as to field length, are nevertheless formatted fields because the data automatically start in position one.

M20 Depth to top (numeric field.—Distance from the surface to the highest point of the deposit. (N, F).

M21 (units associated with M20) (C, PF).

M30 Depth to bottom (numeric field).—Distance from the surface to the lowest point of the deposit. (N, F).

M31 (units associated with M30) (C, PF).

M40 Maximum length (numeric field).—Overall length of the deposit, measured in the horizontal plane. (N, F).

M41 (units associated with M40) (C, PF).

M50 Maximum width (numeric field).—Overall width of the deposit, measured in the horizontal plane. Applies mainly to steeply dipping deposits, such as veins. (N, F).

M51 (units assicated with M50) (C, PF).

Size categories [1/]

(Metric tons of metal or mineral contained unless otherwise specified)

	Large	>	Medium	>	Small
Aluminum (bauxite)	100,000,000		1,000,000		
Antimony	50,000		5,000		
Asbestos	10,000,000		100,000		
Barite ($BaSO_4$)	5,000,000		50,000		
Beryllium (BeO)	1,000		10		
Boron (B_2O_3)	10,000,000		100,000		
Chromium (Cr_2O_3)	1,000,000		10,000		
Cobalt	20,000		1,000		
Copper	1,000,000		50,000		
Diamond					
Fluorite (CaF_2)	5,000,000		50,000		
Gold	500		25		
Graphite	1,000,000		10,000		
Gypsum-anhydrite	100,000,000		5,000,000		
Iron (ore)	100,000,000		5,000,000		
Kyanite group (Al_2SiO_5)					
Lead	1,000,000		50,000		
Lithium (LiO_2)	100,000		10,000		
Magnesium ($MgCO_3$)	10,000,000		100,000		
Manganese (tons of 40% Mn)	10,000,000		100,000		
Mercury (flasks)	500,000		10,000		
Molybdenum	200,000		5,000		
Nickel	500,000		25,000		
Niobium-Tantalum (R_2O_5)	100,000		1,000		
Phosphate (P_2O_5)	200,000,000		200,000		
Platinum group					
Potassium (K_2O)					
Pyrite (FeS_2)	20,000,000		200,000		
Pyrophyllite					
Rare earths (RE_2O_3)	1,000,000		1,000		
Silver	10,000		500		
Sodium (salts)					
Strontium (salts)	1,000,000		10,000		
Sulfur	10,000,000		100,000		
Talc	10,000,000		1,000,000		
Thorium	10,000		1,000		
Tin	100,000		5,000		
Titanium (TiO_2)	10,000,000		1,000,000		
Tungsten	10,000		500		
Uranium	10,000		100		
Vanadium	10,000		500		
Zinc	1,000,000		50,000		

1/ Suggested limits, subject to revision; blanks await study and advice from specialists. Categories principally for "spot" deposits in which commodity is the principal value contained; co-product values generally totaled, by-product values ignored. Extensive (usually bedded) deposits--e.g., NaCl, iron-formation, phosphates, gypsum-anhydrite, etc., probably not suited for meaningful size categorization on the map.

FIGURE 2.—Size of deposit categories for the major metals. Adapted from Guild (1968).

M60 Maximum thickness (numeric field).—This entry applies mainly to low-dipping deposits. (N, F).

M61 (units associated with M60) (C, PF).

The following four fields (M70, M80, M90, and M100) refer to specific measurements such as N. 20° E., or a generalized regional trend, such as NE.

M70 Strike of orebody

M80 Dip of orebody

M90 Plunge of orebody

M100 Direction of plunge

M110 Comments (description of deposit).—Comments relating to the description of the deposit.

DESCRIPTION OF WORKINGS

M120 Surface.—Indicates that the workings are on the surface. (L).

M130 Underground.—Indicates that the workings are underground. (L).

M140 Surface and underground.—Indicates that the workings are both on the surface and underground. (L).

Description of underground workings

M160 Depth of workings below surface (numeric field).—Depth from the surface to the lowest workings (ground surface=0). (F, N).

M161 (units associated with M160) (C, PF).

M170 Length of workings (numeric field).—The aggregate length of the subsurface workings. (F, N).

M171 (units associated with M170) (C, PF).

Description of open workings (surface and underground).—Refers to surface quarries, open-pit mining, and to large underground stopes, rooms, and so on.

M190 Overall Length of Mined Area (numeric field) (F, N).

M191 (units associated with M190) (C, PF).

M200 Overall width of mined area (numeric field) (F, N).

M201 (units associated with M200) (C, PF).

M210 Overall area (numeric field) (F, N).

M211 (units associated wtih M210) (C, PF).

M220 Comments (description of workings).—This field is now used solely for comments on "Description of Workings." Previously it was used for comments on both "Description of Deposit" and "Description of Workings."

PRODUCTION

PROD Production.—This label is used to indicate that there is an entry in one or more of the production tables or that one or more of the following labels have been used: YES, NO, LGE, MED, SML, D8, D9, D10. It also generates the header line for the Production section. (L).

YES. Yes.—Ore or any of the commodities listed are being or have been produced. (L).

NO No Production.—No production present or past has occurred as of the date reported. (L).

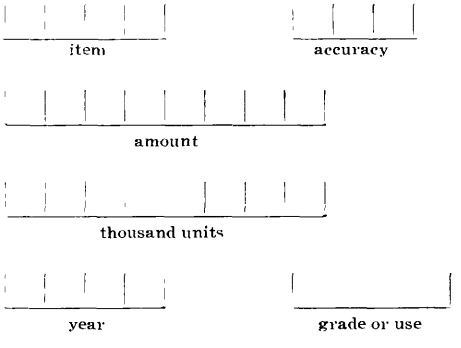
LGE Large production (L).

MED Medium production (L).

SML Small production.—The reporter uses his own judgment in describing production as large, medium, or small. (L).

ANNUAL PRODUCTION (ORE AND COMMODITIES)

Seven lines (numbered 1–7) are provided in this table for annual production information for ore and for as many as six commodities; one line is available for each item reported. The lines are formatted as follows:



D1–D7 Item and accuracy.—Commodity codes from Commodity Codes (List E, p. B26–B28) are entered in the first four spaces. The last three spaces are intended to provide an indication of whether the production figures are accurate, estimated, or an average. If figures are not available, the reporter should indicate whether amounts are small, medium, large. See Accuracy (List G, p. B28) for these codes. (F, C).

D1A–D7A Amount (numeric field.)—Production figures are reported in thousands of units. Therefore, the figure given must be multiplied by 1,000 to obtain the production figures in single units. (F, N).

Format: 

Example: 0004.253 on printout would represent 4253 as an actual figure in single units.

D1B–D7B Thousand units.—These fields contain the units associated with the amount field. The reporter may have repeated the same commodity but with different production figures and different units on another line of the table. Units should be abbreviated as shown in Measurement Units (List H, p. B28). In rare records, figures greater than 99,999,999,000 may be entered. Then, millions of units will be entered in the "thousand units" field. (F, C).

Example:	(amount)	(thousand units)
D1A	00000234	D1B MIL TONS

would represent 234 thousand million tons or 234,000,000,000 tons.

D1C–D7C Year.—These fields of four spaces each contain the year of production, if known. On earlier versions of the CRIB input forms, the production years were entered in a field, D8, called "Production Years." This field is no longer used, and the entries have been moved into their proper places in various production tables. However, some records may still contain production years in field D8 instead of in fields D1C–D7C. (F,N).

D1D–D7D Grade or use.—An unformatted field containing the grade of the item. Some records may show a particular end use. Grade refers primarily to ore grade and should include the grade of the different metals in the ore.

Example: D1D<11.5 % PB; 250 OZ/TON AG; 5 % CU; 0.1 % AU; ZN UNKNOWN>

Where the specific grade of the ore is unknown, the reporters have been asked to list the principal commodities (metals) in the ore.

CUMULATIVE PRODUCTION (ORE, COMMOD., CONC., OVERBUR.)

Nine lines (numbered 8–16) are provided in this table for information on cumulative production of ore and commodities and concentrates, and on overburden removed. This table may show a total cumulative production, production during a given time segment of two or more years, or intermittent production across several time segments.

The same general format is used here as in the previous table for Annual Production, except that a range of years may appear in fields G7C–G15C to indicate the range of years used for the cumulative production figures.

G7–G15 Item and accuracy.—Similar to entries under D1–D7 (see p. B15). (F, C).

G7A–G15A Amount (numeric field) (8 spaces). —Cumulative production figures are reported here in thousands of units. (See example under D1A–D7A on p. B16). (F, N).

G7B–G15B Thousand units.—These fields define the units associated wtih the amounts column. (See example and explanation under D1B–D7B on p. B16). (F, C).

G7C–G15C Years.—These fields contain the range of years of the cumulative production. (F, N).

G7D–G15D Grade or use.—The grade or use, if known. In the records of overburden removed, grade, or use does not apply. The grade is taken as the average across the span of years shown (see example under D1D–D7D, p. B16).

ANNUAL PRODUCTION (OVERBURDEN AND CONCENTRATES)

Seven lines (numbered 17–23) are provided in this table for information on annual production of concentrates and annual removal of overburden. This table is similar to the Annual Production (ore and commodities) table except that nine spaces are allowed in the "item" field instead of four.

P1–P7 Item and accuracy.—Similar to entries under D1–D7 (see p. B15), except that the codes used will be OVB (overburden) or CON (concentrates). (F, C).

P1A–P7A Amount (numeric field).—Annual figures for production of concentrates and removal of overburden are reported here in

thousands of units. (See example under D1A–D7A on p. B16). (F, N).

P1B–P7B Thousand units.—These fields contain the kind of units associated with the amounts column. (See examples and explanation under D1B–D7B on p. B16). (F, C).

P1C–P7C Year.—These fields contain the year of production of concentrates or removal of overburden. (F, N).

P1D–P7D Grade, remarks.—The grade of the concentrates. Grade does not apply to overburden. Some records may contain short remarks.

The following three fields (D8, D9, D10) may refer to items in any of the three production tables.

D8 Production years.—This field is discontinued. However, entries in this field are on older records. Production years are now being entered in D1C–D7C, G7C–G15C, P1C–P7C.

D9 Source of information.—This field is for notations on the source(s) of the information in the production tables. In many records, the complete reference(s) appear under General References (labels F1–F4) in the same record. If item numbers appear here, they refer to the individually numbered lines of the production tables.

D10 Production comments.—Explanatory notes that clarify or add information to the entries in the production tables. Item numbers may be used here also.

MINERAL RESERVES AND RESOURCES

The classification of mineral resources used in the CRIB file follows closely that devised by McKelvey (1972). Several refinements have since been published (Brobst and Pratt, 1973; U.S. Geological Survey, 1975; U.S. Bureau of Mines and U.S. Geological Survey, 1976), but these have not changed the basic classification. The only modifications made in the CRIB file to McKelvey's original scheme are the substitution of "Measured," "Indicated," and "Inferred" reserves for the terms "Proved," "Probable," and "Possible" reserves. The basic elements of this slightly modified classification are shown in figure 3.

Three tables plus certain additional fields are used to computerize the information on the resources of a given mineral deposit. Information in the table RESERVES AND POTENTIAL RESOURCES represents the total current resources of the deposit, that is, the entire area of the box shown in figure 3. The table RESERVES ONLY represents the area of the upper left corner of the box, and the table POTENTIAL RESOURCES represents the remaining area of the box, that is, those marginal and undiscovered resources that are not classified as reserves. Detailed discussion of the concept of mineral reserves and resources and of the classification of mineral resources is found in Brobst and Pratt (1973) and U.S. Bureau of Mines and U.S. Geological Survey (1976).

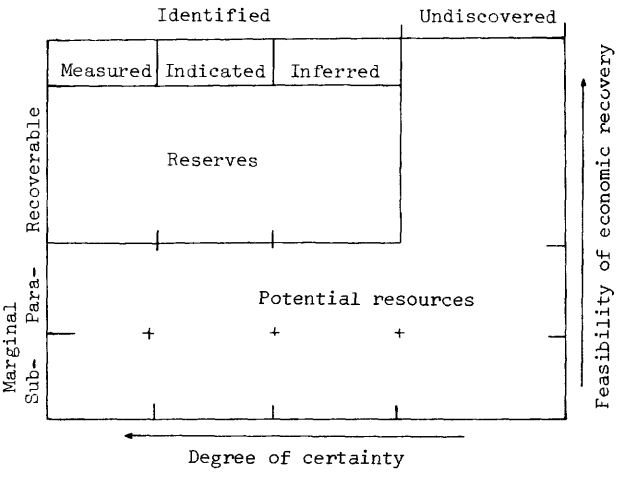


FIGURE 3.—Diagram showing the classification of reserves and resources as used in the CRIB file.

The tables RESERVES ONLY and POTENTIAL RESOURCES provide for a separation of reserve data from data on potential resources. Separate treatment of these two aspects of mineral resources represent an important objective of any mineral resources appraisal or inventory. Such information, however, is not always available.

RESERVES AND POTENTIAL RESOURCES

Six lines (numbered 1–6) are provided in this table for information on reserves plus potential resources of the given ore deposit or mineral locality. One line is used for each item reported. The fields in each line are similar to those previously described in the production tables. These fields are listed below:

E1–E6 Item and accuracy (F, C).

E1A–E6A Amount (numeric field) (F, N).

E1B–E6B Thousand units (F, C).

E1C–E6C Year of estimate (F, N).

E1D–E6D Grade or use

E7 Source of information.—Short notations on source of information about the reserves and potential resources. A more complete reference might be found under General References (labels F1–F4) in the same record.

E8 Comments.—Explanatory notes are entered here, in particular, notes on the general outlook for finding more ore or developing the ore already there. In some records, the key words, "STUDY NEEDED," may be entered here to indicate that the reporter believes that the locality may have definite potential, warranting additional study of the locality.

RESERVES ONLY

Six lines (numbered 1–6) are provided in this table for information on reserves only, one line for each item reported.

Reserves may be treated as a single undedefined class in the table, or they may be divided into measured, indicated, and inferred reserves. If the latter is done, the class of reserves will appear in the "Grade or use" fields. The following entries are similar to these in the previously described tables.

H1–H6 Item and accuracy (F, C).

H1A–H6A Amount (numeric field) (F, N).

H1B–H6B Thousand units (F, C).

H1C–H6C Year of estimate (F, N).

H1D–H6D Grade or use

H7 Comments

H8 Source of information

POTENTIAL RESOURCES (EXCLUSIVE OF RESERVES)

Six lines (numbered 1–6) are provided in this table for information on potential resources, one line for each item reported. "Potential resources" refers to undiscovered deposits or to those identified reserves that at present are not recoverable. The following entries are similar to those in the previously described tables.

J1–J6 Item and accuracy (F, C).

J1A–J6A Amount (numeric field) (F, N).

J1B–J6B Thousand units (F, C).

J1C–J6C Year of estimate (F, N).

J1D–J6D Grade or use

J7 Comments

J8 Source of information

GEOLOGY AND MINERALOGY

The entries on geology and mineralogy are those likely to bear some geological relationship to mineral deposits. Several entries (K1, K2, K3, N30, N35, N40, N45, N50, N55, N60, N65) have a 10-space subfield for geologic ages allotted at the beginning of the entry. The codes for these ages will be found in Authorized Age Abbreviations (List O, p. B30). On early records, however, the geologic ages were placed as complete words at the end of the entry.

K7 General geological environment.—A special-purpose field used only in records obtained from a tape file on metallogenic map data on North America. (NS).

K1 Age/names of host rocks—The geologic ages and the rock types associated with the ore are entered here. (PF. C).

K2 Age/names of associated igneous rocks.—Ages and names of igneous rocks associated with the deposit. If the host rock itself is igneous, this field may show the same information as is in K1.

K3 Age of mineralization.—The geologic age during which the mineralization took place. (F, C).

K4 Pertinent mineralogy.—This field provides for the entry of mineralogic information on minerals other than ore minerals.

K5 Important ore control or locus.—One or more general or specific ore controls may be recorded here.

K6 Geological descriptive notes.—Discontinued field used on early records for comments on the geology and mineralogy section. On later records, these comments appear in the comments field N85. (D, NS).

GEOLOGY (SUPPLEMENTARY INFORMATION)

REGIONAL GEOLOGY

N5 Major regional structures.—This field may include a description of any significant large folds, faults, or other regional structures or trends.

N10 Regional trends.—Discontinued field used on early records. Now combined with N5 (Major Regional Structures). (D, NS).

N15 Tectonic setting.—Shield, geosyncline, platform, piedmont, or descriptive terms of other large-scale tectonic features may be entered here.

N20 Major lithologic/stratigraphic units.—Discontinued field. Entries may appear in early records, but the label is no longer in use. (D, NS).

N25 Comments.—Discontinued field. Entries may appear in early records, but now comments are entered in N85.

LOCAL GEOLOGY

Age/names of formations or rock types

N30, N35, N40, N45.—Each of the four lines provided here has space for recording the ages and names of formations and rock types. Ages, coded from Authorized Age Abbreviations (List O, p. B30), should appear as the first subfield of each line. In older records, however, the geologic ages were placed at the end of each line. (PF, C).

Age/names of igneous units or rock types

N50, N55, N60, N65.—Each of the four lines provided here has space for the ages and names of igneous units or rock types. The placement of the geologic ages is the same as in the previous four fields. (PF, C).

N70 Significant local structures.—This field is for the description of any significant local structures that characterize the area.

N75 Significant alteration.—Descriptive text on alteration may appear here if alteration has a bearing on the given deposit.

N80 Geological processes of concentration or enrichment.—Additional information may be entered here on the basic causes of concentration or enrichment of the given deposit.

COMMENTS (GEOLOGY AND MINERALOGY)

N85 Comments (geology and mineralogy).—Any information concerning the geology and mineralogy that has not been previously shown may appear in this field.

GENERAL COMMENTS

GEN General comments.—This field is for any kind of general information about the deposit that has not been placed in other fields or that could be an elaboration on another field.

GENERAL REFERENCES

F1, F2, F3, F4 (4 fields).—These four fields contain bibliographic references. Reporters are encouraged to follow the standard U.S. Geological Survey arrangement (author's last name, author's initials, date of publication, title of article, name of periodical). However, this arrangement has not always been followed. Therefore references appear in a variety of ways. More than one reference may be stored under each label; this has been done in some records, usually under label F4.

INDEX LIST OF DATA ITEMS

This section consists of an index list of labels (fields) arranged in label sequence for quick reference. Each entry contains the label, item description, and the "characteristics codes" as described in the previous section. Approximately 392 labels are available for search purposes.

A

A	Form A used as source document (NS, L, D).
ASH	Ash (F, N).
A10	Deposit name.
A11	Synonym name(s).
A12	Present or last owner.
A13	Present or last operator.
A20	Status of exploration or development (C, F).
A21	Property is active (L).
A22	Property is inactive (L).
A30	Mining district/area/subdistrict.
A31	Subdistrict (NS).
A32	Continent or global area (NS).
A40	Country code (C, F).
A50	State code (coded and formatted only for the United States and Canada) (C, F).
A60	County.
A61	Congressional District (NS).
A62	Drainage area (PF, C).
A63	Physiographic province (PF, C).
A64	Land classification (C, F).
A67	Name of forest (NS).
A70	Latitude (F).

A71	State X coordinate (N, F).
A72	State Y coordinate (N, F).
A73	State zone number (N, F).
A74X	X (map coordinate for 1:250,000-scale map) (N, NS).
A74Y	Y (map coordinate for 1:250,000-scale map) (N, NS).
A75X	X (map coordinate for 1:63,360-scale map) (N, NS).
A75Y	Y (map coordinate for 1:63,360-scale map) (N, NS).
A77	Township(s) (F).
A78	Range(s) (F).
A79	Section(s) (F).
A80	Longitude (F).
A81	Meridian.
A82	Position from nearest prominent locality.
A83	Location comments.
A90	Quadrangle number or name.
A91	1:Second quadrangle scale (F, N, NS).
A92	Second quadrangle number or name (NS).
A100	1: Quadrangle scale (F, N).
A107	Altitude (N, PF).
A110	UTM zone number (N, F).
A120	UTM northing (N, F).
A130	UTM easting (N, F).

B

B	Form B used as source document (NS, L, D).
BTU	BTU (N, F).
BYPROD	Byproduct (F, C).
B10	Record number (unique identifier) (F).
B30	Source (NS).
B40	Deposit number.
B50	File Link ID (PF).
B51	Geologic code (NS).

C

CARB	Fixed carbon (N, F).
COPROD	Coproduct (F, C).
C10	Commodities present (F, C).
C20	Commodity specialist information (F, C).
C21	Special field 1 (NS).
C22	Special field 2 (NS).
C23	Special field 3 (NS).
C30	Ore materials (minerals, rocks, and so on).
C40	Deposit types (PF).
C41	Commodity subtypes or use categories.
C42	Economic comments.
C42A	Exploration M$ (N).
C42B	Development M$ (N).
C42C	Expansion M$ (N).
C42D	Mill M$ (N).
C42E	Total Investments M$ (N).
C42F	Mill capacity per year (thousand units) (N, F).
C42G	Year applicable (N, F).
C43	Analytical data (general).
C44	Source reference.
C45	Volatile material (N, F).
C46	Moisture (N, F).
C47	Thickness of coal (N, F).
C50	Commodity comments.

D

D	Indicates special-purpose form used as source document (NS, L, D).
Annual production (ore and commodities)	
D1–D7	Item and accuracy (F, C).
D1A–D7A	Amount (F, N).
D1B–D7B	Thousand units (F, C).
D1C–D7C	Year (F, N).
D1D–D7D	Grade or use.
D8	Production years (D, NS).
D9	Source of information.
D10	Production comments.

E

Reserves and potential resources	
E1–E6	Item and accuracy (F, C).
E1A–E6A	Amount (F, N).
E1B–E6B	Thousand units (F, C).
E1C–E6C	Year of estimate (F, N).
E1D–E6D	Grade or use.
E7	Source of information.
E8	Comments (reserves and potential resources).

F

General references	
F1	(First reference).
F2	(Second reference).
F3	(Third reference).
F4	(Fourth reference).

G

GEN	General comments.
G1	Date (year and month) (F, N).
G2	Name (reporter) (PF).
G3	Update(s) (year and month) (F, N).
G4	By (PF).
Cumulative production (ore, commod., conc., overbur.)	
G7–G15	Item and accuracy (F, C).
G7A–G15A	Amount (F, N).
G7B–G15B	Thousand units (F, C).
G7C–G15C	Years.
G7D–G15D	Grade or use.

H

Reserves only	
H1–H6	Item and accuracy (F, C).
H1A–H6A	Amount (F, N).
H1B–H6B	Thousand units (F, C).
H1C–H6C	Year of estimate (F, N).
H1D–H6D	Grade or use.
H7	Comments (reserves only).
H8	Source of information.

J

Potential resources (exclusive of reserves)

J1–J6	Item and accuracy (F, C).
J1A–J6A	Amount (F, N).
J1B–J6B	Thousand units (F, C).
J1C–J6C	Year of estimate (F, N).
J1D–J6D	Grade or use.
J7	Comments (potential resources exclusive of reserves).
J8	Source of information.

K

K1	Age/names of host rocks (PF, C).
K2	Age/names of associated igneous rocks (PF, C).
K3	Age of mineralization (F, C).
K4	Pertinent mineralogy.
K5	Important ore control or locus.
K6	Geologic descriptive notes (D, NS).
K7	General geological environment (NS).

L

L	Standard long form used as source document (NS, L, D).
LGE	Large production (L).
L10	Year of discovery.
L20	By whom.
L30	Nature of discovery (F, C).
L40	Year of first production.
	Work done by USGS
	(year) (type of work) (geologist and results)
L41	(1)
L42	(2)
L43	(3)
	(N, C, PF).
	Work done by other organizations
	(year) (type of work) (organization and results)
L50	(1)
L60	(2)
L70	(3)
L80	(4)
L90	(5)
	(N, C, PF).
L100	Reports available.
L110	Exploration and development comments.

M

MAJOR	Major product (F, C).
MED	Medium production (L).
MINOR	Minor product (F, C).
M10	Form/shape of deposit (C, PF).
M15	Size of deposit (PF).
M20	Depth to top (N, F).
M21	Units (C, PF).
M30	Depth to bottom (N, F).
M31	Units (C, PF).
M40	Maximum length (N, F).
M41	Units (C, PF).
M50	Maximum width (N, F).
M51	Units (C, PF).
M60	Maximum thickness (N, F).
M61	Units (C, PF).
M70	Strike of orebody.
M80	Dip of orebody.
M90	Plunge of orebody.
M100	Direction of plunge.
M110	Comments (description of deposit).
M120	Surface (L).
M130	Underground (L).
M140	Surface and underground (L).
M160	Depth of working below surface (N, F).
M161	Units (C, PF).
M170	Length of workings (N, F).
M171	Units (C, PF).
M190	Overall length of mined area (N, F).
M191	Units (C, PF).
M200	Overall width of mined area (N, F).
M201	Units (C, PF).
M210	Overall area (N, F).
M211	Units (C, PF).
M220	Comments (description of workings).

N

NO	No production (L).
N5	Major regional structures.
N10	Regional trends (D, NS).
N15	Tectonic setting.
N20	Major lithologic/stratigraphic units (D, NS).
N25	Comments (on regional geology (D, NS).
	Age names of formation or rock types
N30	(1)
N35	(2)
N40	(3)
N45	(4)
	(PF, C).
	Age names of igneous units or rock types
N50	(1)
N55	(2)
N60	(3)
N65	(4)
	(PF, C).
N70	Significant local structures.
N75	Significant alteration.
N80	Geologic processes of concentration or enrichment.
N85	Comments (geology and mineralogy).

O

OCCUR	Occurrence (F, C).

P

POTEN	Potential (F, C).
PROD	Production (Indicates that production information is available) (L).

Annual production (overburden and concentrates)

P1–P7	Item and accuracy (F, C).
P1A–P7A	Amount (F, N).
P1B–P7B	Thousand units (F, C).

P1C–P7C	Year (F, N).
P1D–P7D	Grade, remarks.
	S
S	Special short form used as source document (NS, L, D).
SML	Small production (L).
SUL	Sulfur (N, F).
	U
U	Indicates updated record (L).
USGS	Country organization USGS (L).
	Y
YES	Yes (there is or has been production) (L).

CODE LISTS

LIST A
RECORD TYPE
(Discontinued)

LIST B
STATUS OF EXPLORATION OR DEVELOPMENT

Code	
1	Occurrence.—Single-point information from outcrop, shallow pit, or isolated drillhole.
2	Raw prospect.—Two-dimensional information. Information exists on length and width from surface trenches, shallow adits, or scattered shallow drilling. Depth unknown or uncertain.
3.	Developed prospect.—Three-dimensional information. Information exists on length, width, and depth from systematic drillhole patterns, mine workings, mapping, or other work.
4	Producer.—Mine or district that is producing or that has produced.

CRIB COUNTRY CODE LIST

CODE	COUNTRY NAME
AF	AFGHANISTAN
AL	ALBANIA
AG	ALGERIA
AQ	AMERICAN SAMOA
AN	ANDORRA
AO	ANGOLA
AY	ANTARCTICA
AC	ANTIGUA
AR	ARGENTINA
AT	ASHMORE AND CARTIER ISLANDS
AS	AUSTRALIA
AU	AUSTRIA
BF	BAHAMAS
BA	BAHRAIN
BB	BARBADOS
BE	BELGIUM
BD	BERMUDA
BT	BHUTAN
BL	BOLIVIA
BC	BOTSWANA
BV	BOUVET ISLAND
BR	BRAZIL
BH	BRITISH HONDURAS
IO	BRITISH INDIAN OCEAN TERR.
BP	BRITISH SOLOMON ISLANDS
VI	BRITISH VIRGIN ISLANDS
BX	BRUNEI
BU	BULGARIA
BM	BURMA
BY	BURUNDI
CB	CAMBODIA
CM	CAMEROON
CA	CANADA
PQ	CANAL ZONE
EQ	CANTON AND ENDERBURY ISLANDS
CV	CAPE VERDE
CJ	CAYMAN ISLANDS
CT	CENTRAL AFRICAN REPUBLIC
CL	CENTRAL AND SOUTHERN LINE ISLANDS
CE	CEYLON
CD	CHAD
CI	CHILE
CH	CHINA,MAINLAND
TW	CHINA,REPUBLIC OF
KT	CHRISTMAS ISLAND
CK	COCOS ISLANDS
CO	COLOMBIA
CN	COMORO ISLANDS
CG	CONGO (KINSHASA)
CF	CONGO REPUBLIC

CRIB COUNTRY CODE LIST

CODE	COUNTRY NAME
CW	COOK ISLANDS
CS	COSTA RICA
CU	CUBA
CY	CYPRUS
CZ	CZECHOSLOVAKIA
DM	DAHOMEY
DA	DENMARK
DO	DOMINICA
DR	DOMINICAN REPUBLIC
GC	EAST GERMANY
EC	ECUADOR
ES	EL SALVADOR
EK	EQUATORIAL GUINEA
ET	ETHIOPIA
FO	FAEROE ISLANDS
FA	FALKLAND ISLANDS
FJ	FIJI
FI	FINLAND
FR	FRANCE
FG	FRENCH GUIANA
FP	FRENCH POLYNESIA
FS	FRENCH SOUTHERN AND ANTARCTIC LANDS
FT	FRENCH TERRITORY OF AFARS AND ISSAS
GB	GABON
GA	GAMBIA
GZ	GAZA STRIP
GH	GHANA
GI	GIBRALTAR
GN	GILBERT AND ELLICE ISLANDS
GR	GREECE
GL	GREENLAND
GJ	GRENADA
GP	GUADELOUPE
GQ	GUAM
GT	GUATEMALA
GV	GUINEA
GY	GUYANA
HA	HAITI
HM	HEARD AND MCDONALD ISLANDS
HO	HONDURAS
HK	HONG KONG
HU	HUNGARY
IC	ICELAND
IN	INDIA
ID	INDONESIA
IR	IRAN
IZ	IRAQ
IY	IRAQ-SAUDI ARABIA NEUTRAL ZONE
EI	IRELAND
IS	ISRAEL

CRIB COUNTRY CODE LIST

CODE	COUNTRY NAME
IT	ITALY
IV	IVORY COAST
JM	JAMAICA
JN	JAN MAYEN
JA	JAPAN
JQ	JOHNSTON ATOLL
JO	JORDAN
KE	KENYA
KN	KOREA,NORTH
KS	KOREA,SOUTH
KU	KUWAIT
LA	LAOS
LE	LEBANON
LT	LESOTHO
LI	LIBERIA
LY	LIBYA
LS	LIECHTENSTEIN
LU	LUXEMBOURG
MC	MACAO
MA	MADAGASCAR
MI	MALAWI
MY	MALAYSIA
MV	MALDIVES
ML	MALI
MT	MALTA
MB	MARTINIQUE
MR	MAURITANIA
MP	MAURITIUS
MX	MEXICO
MQ	MIDWAY ISLANDS
MN	MONACO
MG	MONGOLIA
MH	MONTSERRAT
MO	MOROCCO
MZ	MOZAMBIQUE
MU	MUSCAT AND OMAN
NM	NAMIBIA
NR	NAURU
NP	NEPAL
NL	NETHERLANDS
NA	NETHERLANOS ANTILLES
NC	NEW CALEDONIA
NH	NEW HEBRIDES
NZ	NEW ZEALAND
NU	NICARAGUA
NG	NIGER
NI	NIGERIA
NE	NIUE
NF	NORFOLK ISLAND
NY	NORWAY

CRIB COUNTRY CODE LIST

CODE	COUNTRY NAME
PK	PAKISTAN
PN	PANAMA
PP	PAPUA AND NEW GUINEA
PF	PARACEL ISLANDS
PA	PARAGUAY
PE	PERU
RP	PHILIPPINES
PC	PITCAIRN ISLAND
PL	POLAND
PO	PORTUGAL
PU	PORTUGUESE GUINEA
PT	PORTUGUESE TIMOR
RQ	PUERTO RICO
QA	QATAR
RE	REUNION
RO	ROMANIA
RW	RWANDA
YQ	RYUKYU ISLANDS,SOUTHERN
SM	SAN MARINO
TP	SAO TOME AND PRINCIPE
SA	SAUDI ARABIA
SG	SENEGAL
SE	SEYCHELLES
SL	SIERRA LEONE
SK	SIKKIM
SN	SINGAPORE
SO	SOMALIA
SF	SOUTH AFRICA
WA	SOUTH-WEST AFRICA
RH	SOUTHERN RHODESIA
YS	SOUTHERN YEMEN
UR	SOVIET UNION
SP	SPAIN
SS	SPANISH SAHARA
ME	SPANISH TERR. IN N. MOROCCO
PG	SPRATLY ISLAND
SC	ST. CHRISTOPHER-NEVIS-ANGUILLA
SH	ST. HELENA
ST	ST. LUCIA
SB	ST. PIERRE AND MIQUELON
VC	ST. VINCENT
SU	SUDAN
NS	SURINAM
SV	SVALBARD
SQ	SWAN ISLANOS
WZ	SWAZILAND
SW	SWEDEN
SZ	SWITZERLAND
SY	SYRIA
TZ	TANZANIA

CRIB COUNTRY CODE LIST

CODE	COUNTRY NAME
TH	THAILAND
TO	TOGO
TL	TOKELAU ISLANDS
TN	TONGA
TD	TRINIDAD AND TOBAGO
TC	TRUCIAL STATES
TS	TUNISIA
TU	TURKEY
TK	TURKS AND CAICOS ISLANDS
UG	UGANDA
EG	UNITED ARAB REPUBLIC
UK	UNITED KINGDOM
US	UNITED STATES
UV	UPPER VOLTA
UY	URUGUAY
BQ	US MISC CARIBBEAN ISLANDS
IQ	US MISC PACIFIC ISLANDS
TQ	US TRUST ISLANDS,PACIFIC
VT	VATICAN CITY
VE	VENEZUELA
VN	VIET-NAM,NORTH
VS	VIET-NAM,SOUTH
VQ	VIRGIN ISLANDS
WQ	WAKE ISLAND
WF	WALLIS AND FUTUNA
WB	WEST BERLIN
GE	WEST GERMANY
WS	WESTERN SAMOA
YE	YEMEN
YO	YUGOSLAVIA
ZR	ZAIRE
ZA	ZAMBIA

LIST D

STATE CODES FOR U.S. AND PROVINCE CODES FOR CANADA

The following codes are reserved for possible future use: 03, American Samoa; 07, Canal Zone; 14, Guam; 43, Puerto Rico; and 52, Virgin Islands.

Code	State	Code	State
01	Alabama	29	Missouri
02	Alaska	30	Montana
04	Arizona	31	Nebraska
05	Arkansas	32	Nevada
06	California	33	New Hampshire
08	Colorado	34	New Jersey
09	Connecticut	35	New Mexico
10	Delaware	36	New York
11	District of Columbia	37	North Carolina
12	Florida	38	North Dakota
13	Georgia	39	Ohio
15	Hawaii	40	Oklahoma
16	Idaho	41	Oregon
17	Illinois	42	Pennsylvania
18	Indiana	44	Rhode Island
19	Iowa	45	South Carolina
20	Kansas	46	South Dakota
21	Kentucky	47	Tennessee
22	Louisiana	48	Texas
23	Maine	49	Utah
24	Maryland	50	Vermont
25	Massachusetts	51	Virginia
26	Michigan	53	Washington
27	Minnesota	54	West Virginia
28	Mississippi	55	Wisconsin
		56	Wyoming

Code	Province
01	Newfoundland-Labrador
02	Nova Scotia
03	Prince Edward Island
04	New Brunswick
05	Quebec
06	Ontario
07	Manitoba
08	Saskatchewan
09	Alberta
10	British Columbia
11	Yukon Territory
12	Mackenzie District, NWT
13	Franklin District, NWT
14	Keewatin District, NWT

LIST E

COMMODITY CODES

Note.—For commodities not on this list, contact the CRIB representative in Reston, Denver, or Menlo Park.

ALM	Alum
AL	Aluminum (general)
AL1	Bauxite
AL2	Aluminum (from other source materials)
AL3	Alunite
AMB	Amber
GYP	Anhydrite, gypsum
SB	Antimony
AS	Arsenic
ASB	Asbestos
BIT	Asphalt (see Bitumens)
CLY4	Ball clay
BA	Barium, Barite
CLY1	Bentonite
BE	Beryllium
BI	Bismuth
COA2	Bituminous coal
BIT	Bitumens (includes asphalt)
CLY6	Bloating material (includes clay, shale, slate)
B	Boron–Borates
BRI	Brines/salines (see also Evaporites, Sodium, Halite)
BR	Bromine
MG	Brucite (see Magnesium)
STN2	Building stone (see under Stone)
CD	Cadmium
CA	Calcium (see also Carbonates, Limestone, Marble, Stone)
C	Carbon
CAR	Carbonates (see also Calcium, Dolomite, Limestone, Marble, Marl, Shell, Stone, Magnesium)
CER	Cement rock (natural)
CE	Cerium
CS	Cesium
CL	Chlorine
CR	Chromium
CLY	Clay (general)
CLY1	Bentonite
CLY2	Fuller's earth
CLY3	Kaolin or kaolinitic clay (includes high-alumina clay)
CLY4	Ball Clay
CLY5	Fire clay (refractory)
CLY6	Bloating material (includes clay, shale, slate)
CLY7	Common brick clay
COA	Coal
COA1	Anthracite
COA2	Bituminous
COA3	Sub-bituminous
COA4	Lignite
CO	Cobalt
NB	Columbium (see Niobium)
CON	Concentrate
CU	Copper
COR	Corundum
DIA	Diamond
DIT	Diatomite
STN2	Dimension stone (see under Stone)
DOL	Dolomite (general) (see also Carbonates, Stone, Magnesium, Marble)
DOL1	Utra-pure dolomite ($MgCO_3 \cdot CaCO_3$>97 percent)

DOL2	High-magnesian dolomite ($MgCO_3 \cdot CaCO_3$ >95 percent)
EMY	Emery
EVA	Evaporites (see also Brine, Sodium, Halite)
FLD	Feldspar
CLY5	Fire clay (refractory)
F	Fluorine, Fluorite
Fl	Fluorine gas
CLY2	Fuller's earth
GA	Gallium
GAR	Garnet
GAS	Gas (natural)
GEM	Gemstones
GE	Germanium
GLA	Glauconite
AU	Gold
GRT	Granite, Granitic gneiss
GRF	Graphite
SDG	Gravel (see Sand and gravel)
GYP	Gypsum, Anhydrite
HF	Hafnium
HAL	Halite (see also Sodium, Evaporites, Brine)
HE	Helium
H	Hydrogen
IN	Indium
I	Iodine
IR	Iridium
FE	Iron
CLY3	Kaolin or kaolinitic clay (includes high-alumina clay)
KYN	Kyanite, Sillimanite, Andalusite, Dumortierite
LAT	Laterite
PB	Lead
COA4	Lignite
LST	Limestone (general) (see also Carbonates, Calcium, Marble, Stone)
LST1	Ultra-pure limestone ($CaCO_3$>97 percent)
LST2	High-calcium limestone ($CaCO_3$>95 percent)
LI	Lithium
LWA	Lightweight aggregate (see also Bloating material under Clay, Vermiculite, Perlite, Pumice, Stone)
MGS	Magnesite
MG	Magnesium (includes Brucite) (see also Carbonates, Dolomite, Marble, Stone, Magnesite)
MN	Manganese
MBL	Marble (see also Carbonates, Dolomite, Limestone, Magnesium, Stone)
HG	Mercury
MIC	Mica
MIC1	Sheet mica
MIC2	Scrap mica
MIC3	Flake mica
MPG	Mineral pigments
MO	Molybdenum
MON	Monazite
NI	Nickel
NB	Niobium (Columbium)
N	Nitrogen–nitrates
OI	Osmium+iridium (osmiridium)
OIL	Oil (see Petroleum)
SAO	Oil sands
SHO	Oil shale
OLV	Olivine
ORE	Ore
OS	Osmium
OVB	Overburden
OXD	Oxides
O	Oxygen
PD	Palladium
PEA	Peat
PER	Perlite
OIL	Petroleum
P	Phosphorus-phosphates
PT	Platinum
PGM	Platinum group metals
K	Potassium
PUM	Pumice
PYR	Pyrite
PYR1	Pyrrhotite
PYF	Pyrophyllite
QTZ	Quartz (see also Sandstone, Silica)
	Quartzite/quartzose sandstone (see sandstone)
RA	Radium
RAE	Rare earths
RAM	Radioactive materials
RE	Rhenium
RH	Rhodium
RB	Rubidium
RU	Ruthenium
BRI	Salines (see Brines)
BRI	Salt (see Brines, Salines, Sodium, Halite)
SDG	Sand and gravel
SAM	Sand, molding
SST	Sandstone (see also Silica, Stone, Quartzite)
SAP	Saprolite
SC	Scandium
SE	Selenium
SHL	Shale
SIL	Silica (see also Quartz, Quartzite, Sandstone)
AG	Silver
SLA	Slate (see also Stone)
NA	Sodium (see also Evaporites, Halite, Brine)
STN	Stone
STN1	Crushed/broken stone material (includes road metal, riprap, scoria, slag, clinker, baked clay, red dog)
STN2	Dimension or building stone (see also Calcium, Carbonates, Dolomites, Limestone)
SR	Strontium
COA3	Sub-bituminous coal
SUL	Sulfides
S	Sulfur
SLF	Sulfuric acid
TLC	Talc, Soapstone
TA	Tantalum

TE	Tellurium
TL	Thallium
TH	Thorium
SN	Tin
TI	Titanium
W	Tungsten
UNF	Unidentified commodity
U	Uranium
V	Vanadium
VRM	Vermiculite
VOL	Volcanic materials (ash, cinders)
WOL	Wollastonite
YT	Yttrium
ZEO	Zeolites
ZN	Zinc
ZN1	Zinc oxide
ZR	Zirconium

LIST F

DEPOSIT TYPES (Examples)

This list is not exhaustive. Other deposit types may be used as needed.

Alkalic-mafic intrusive	Pegmatite
Bedded	Pipe
Chemical sediment (except evaporites)	Placer
	Replacement
Clastic sedimentary rock	Secondary enrichment
Concordant igneous	Skarn/greisen
Contact metasomatic	Stratabound
Disseminated	Stratiform
Evaporites	Stockwork
Gossan	Sulfide segregation
Laterite	Unconsolidated sediments
Lens	Vein/shear zone
Massive sulfides	Volcanic
Metamorphic	Weathering residual
Metamorphosed bed	

LIST G

ACCURACY

Code	
AVG	Average figures
ACC	Accurate figures
EST	Estimate
SML	Small
MED	Medium
LGE	Large

LIST H

MEASUREMENT UNITS

If none of the units apply, insert the name of the units that pertain to the commodity in question. Millions of units can be expressed by adding the prefix MIL as shown in some of these entries. Do not use $ (dollars) as units.

Units	Abbreviations
Acres	ACRES
Barrels	BBL
Cubic feet	CF
Cubic meters	CM
Cubic yards	CY
Feet	FT
Flasks	FL
Grams	G
Kilograms	KG
Kilometers	KM
Long dry tons	LDT
Long tons	LT
Long-ton units	LTU
Meters	M
Metric tons	MET TONS
Miles	MI
Million cubic feet	MIL CF
Million pounds	MIL LB
Million tons	MIL TONS
Ounces	OZ
Pounds	LB
Short dry tons	SDT
Short tons	ST
Short-ton units	STU
Square feet	SQ. FT
Square meters	SQ. M
Square miles	SQ. MI
Tons	TONS (specify long or short tons if possible)
Troy ounces	TOZ

LIST J

DRAINAGE AREA CODES OF THE U.S.

01	New England region
02	Middle Atlantic region
03	South Atlantic Gulf region
04	Great Lakes region
05	Ohio region
06	Tennessee region
07	Upper Mississippi region
08	Lower Mississippi region
09	Souris-Red Rainy region
10	Missouri region
11	Arkansas-White Red region
12	Texas-Gulf region
13	Rio Grande region
14	Upper Colorado region
15	Lower Colorado region
16	Great Basin region
17	Columbia-North Pacific region
18	Columbia-South Pacific region
19	Alaska region
20	Hawaii region

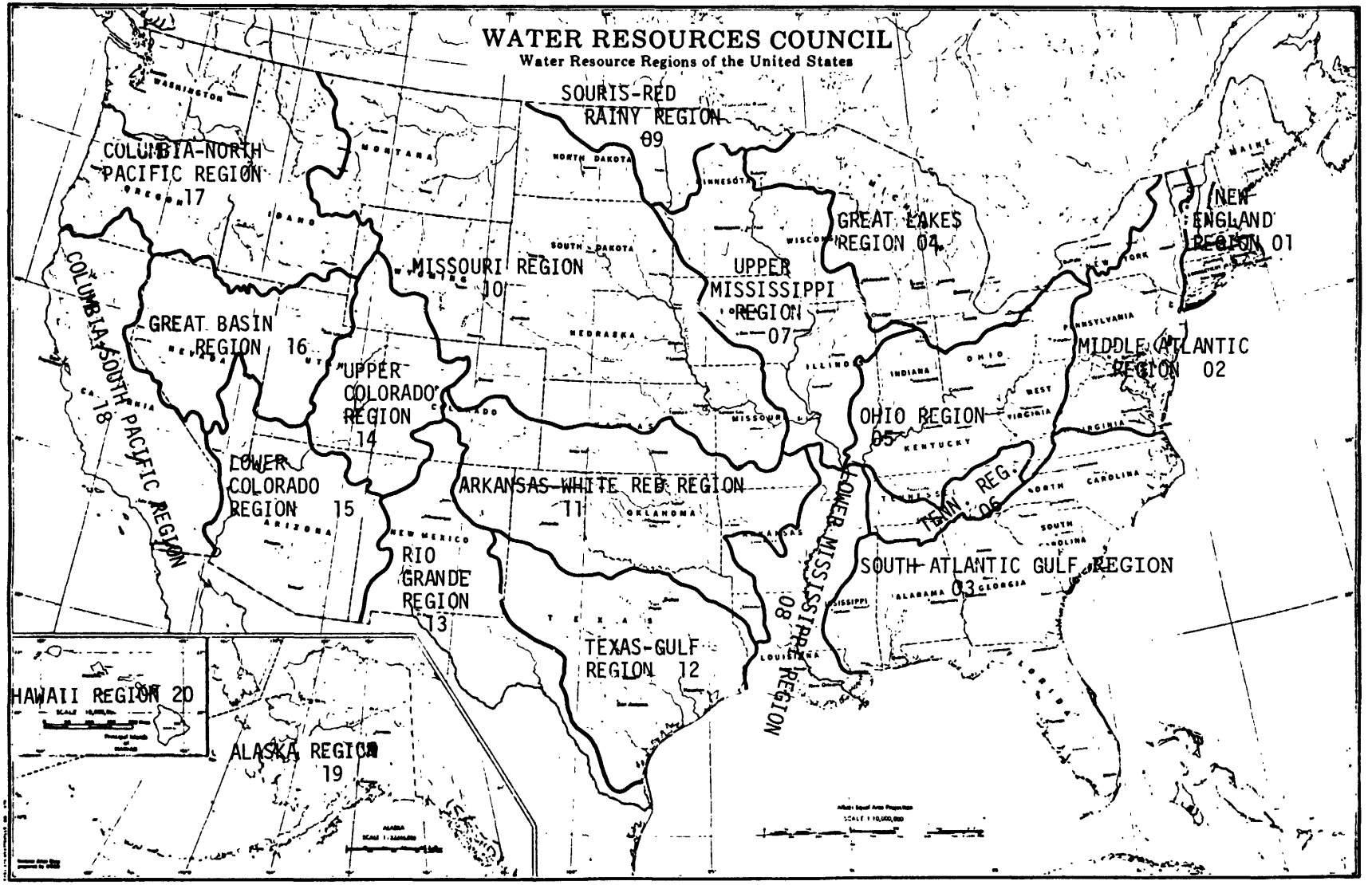


FIGURE 4.—Map showing codes for drainage areas of the United States (see List J). Base map from U.S. Water Resources Council (1970).

LIST K

PHYSIOGRAPHIC PROVINCES CODES OF THE U.S.

Code	*Physiographic Province*
01	New England
02	Appalachian Highland and Triassic Lowland
03	Coastal Plain
04	Interior Highlands
05	Interior Lowlands
06	Laurentian Upland
07	Great Plains
08	Northern Rockies
09	Southern Rockies
10	Columbia Plateau
11	Colorado Plateau
12	Basin and Range
13	Pacific ranges
14	Arctic Lowland
15	Brooks Range
16	Central Highland and Basin

LIST L

NATURE OF DISCOVERY

Code	
A	Ill defined
B	Ore mineral or material in place
C	Ore mineral or material not in place
D	Geophysical anomaly
E	Geochemical anomaly
F	Other (clarify in the comments field L110 if desired)

LIST M

TYPE OF WORK DONE

Code	
COMPILE	Compilation
DIREXPL	Direct exploration (drilling, trenching, mining, pit and so on)
GEOCHEM	Geochemical work
GEOLMAP	Geological mapping
GEOPHYS	Geophysical work
RECON	Reconnaissance
OTHER	Other types of work not covered by above. Enter OTHER under "Type of work" and clarify, if desired, in the comments field L110.

LIST N

FORM/SHAPE OF DEPOSIT (Examples)

Choose one or more, as applicable, and enter under M10. This list is not exhaustive. Other descriptive entries may be formulated by reporters as needed.

Tabular/blanket	Pinch and swell
Wedge	Linear
Pod/lens	Irregular

LIST O

AUTHORIZED AGE ABBREVIATIONS

Quaternary	QUAT
Holocene	HOLO
Pleistocene	PLEIS
Tertiary	TERT
Pliocene	PLIO
Miocene	MIO
Oligocene	OLIGO
Eocene	EO
Paleocene	PALEO
Cretaceous	CRET
Jurassic	JUR
Triassic	TRI
Permian	PERM
Pennsylvanian	PENN
Mississippian	MISS
Devonian	DEV
Silurian	SIL
Ordovician	ORD
Cambrian	CAMB
Precambrian	PREC
Archean	ARCH
Huronian	HUR
Cenozoic	CEN
Mesozoic	MES
Paleozoic	PAL

LIST P

LAND CLASSIFICATION CODES

Undetermined	00
Private	01
County	20
State	30
State Forest	31
State Park	32
Offshore	33
Federal	40
National Forest	41
National Recreation Area	42
National Wilderness Area	43
National Primitive Area	44
National Park	45
National Monument	46
Indian Reservation	47
Offshore	48
Bureau of Land Management Administered	49

GLOSSARY

Alpha-numeric information (alphanumeric, alphameric)—Information consisting of any combination of digits (0–9), letters (A–Z), and special characters (such as /, $, or ?,).

Assumed decimal point (implied decimal point)—A decimal point the position of which is known, but which is not physically entered (punched) into a numeric field.

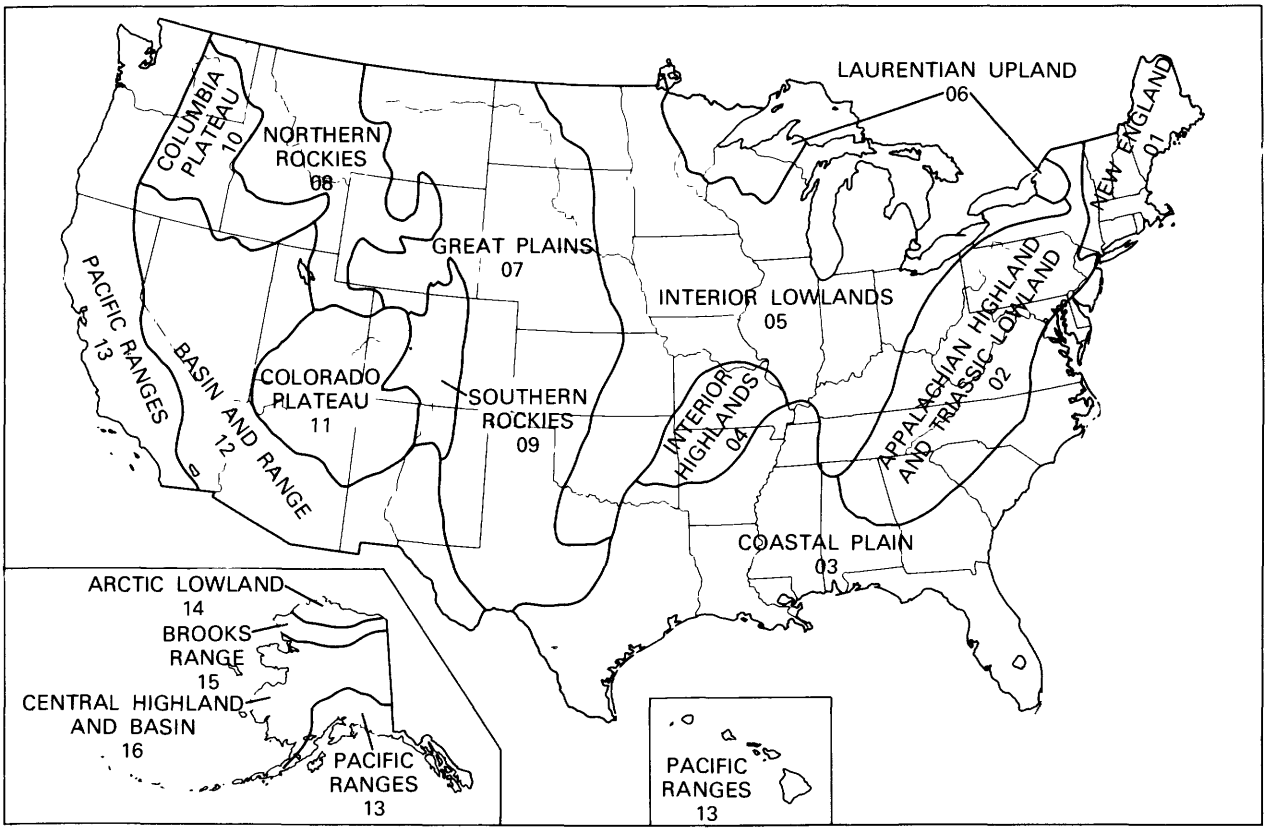


FIGURE 5.—Map showing codes for the physiographic provinces of the United States (see List K).

Batch processing—The sequential processing of records as a group (batch), one group at a time. Batch processing is in contrast to on-line processing, during which each unit of data is processed immediately at the time of presentation—as in the airline reservation system.

Baud—The speed of data transmission in bits per second.

Command procedure—A user-oriented program composed of a prearranged set of operations steps and driven by user-controlled command words, specifications, and options.

Conversational (interactive) mode—The user is communicating with the computer system in a "conversational" manner from a terminal by sending commands to the system. The system executes the commands and sends the reply back to the terminal. One type of on-line processing.

Data item (data element, information item, field)—The smallest unit of information to which reference is made; for example, "country," "State." A set of related data items constitutes a record.

Direct access—The process of finding information in storage, where the time required is independent of the location of other information in storage. A disk is a direct-access device. This is in contrast to the sequential access of tapes.

Disk (disk pack)—A storage device consisting of a circular metal plate that has magnetic material on both sides and that is mounted on a rotating shaft. Read-write heads service both sides of the disk. Ten stacked disks constitute a disk pack.

Field (data item, information item)—A specified category of data treated as a whole. The basic unit of a record.

File—A collection of related records as a unit; for example, the records file and dictionary file of CRIB. Also, in the general sense, a collection of related files; for example, the CRIB file.

File maintenance—Modification of file content; for example, insertions, deletions, transfers, and corrections.

Fixed-fields (fixed-length fields)—An arrangement in which the fields in a record are set beforehand to a specified length.

Fixed-length records—Records of predefined length. Loosely used to mean that both record length and field length are set beforehand to specified length.

Floating decimal—A decimal point without a predetermined fixed position within a numeric field. In a six-position number field, for example, the decimal may be in any of the six positions, depending upon the size of the number.

Foreground—Interactive (conversational, online) mode of operation in which the user is communicating directly with the computer.

Foreground driver—The command procedure program forming the interface between the GIPSY program and the General Electric Mark III System.

Format—A predefined arrangement of characters, fields, print lines, and so forth. The term, "arrangement," is never used in computer work.

Interface—A program or device that translates an initial program or signal into a form compatible with the next program or device.

Job Control Language (JCL)—The language used to supply the necessary information to the computer system so that it can run your job. Includes such items as the name and address of the data file to be processed, the name of the program to be executed, what to do with the results, and so forth.

Label—As used in GIPSY, a set of one to seven alphanumeric characters used to identify a data item or field to the GIPSY program.

Literal—In the GIPSY system, a set of characters inserted into the output record of the COPY command.

Parameter statements (search variables)—A list of the data elements the computer is to search for during a retrieval.

Program—A set of instructions that tells the computer how to solve a problem.

Retrieval operation—The actions connected with the recovery of information stored in a computer storage device.

RPG (report program generator)—An IBM program language that provides a convenient programing method for producing reports, performing calculations, and manipulating data.

Software—Programs that help run the different components of a computer center and help the user to communicate with the computer.

Spanned record—A record that overflows from the end of one track on a disk to the beginning of the next track.

Subroutine—A program that is linked to a larger program and that performs a single task whenever the main program calls upon it to do so.

Track address—A number identifying the location where information is stored on disk.

Utility programs—Programs used to perform certain standard functions, called housekeeping functions; for example, update, transfer data from one device to another, sort programs, and so forth.

Variable fields (variable-length fields)—Fields having no predefined lengths.

Variable-length records (variable-length format)—A field or record of no predefined length.

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