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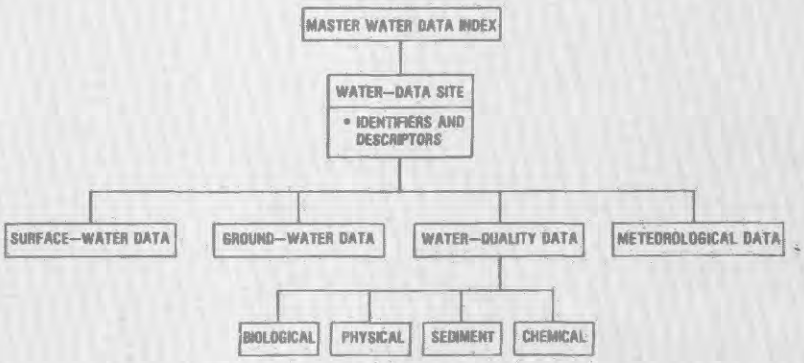
NATIONAL WATER DATA EXCHANGE

DEFINITIONS OF COMPONENTS OF THE MASTER WATER DATA INDEX MAINTAINED BY THE NATIONAL WATER DATA EXCHANGE



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By ROBERT A. PERRY and OWEN O. WILLIAMS

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UNITED STATES DEPARTMENT OF THE INTERIOR
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Dallas L. PECK, Director

For additional information write to:

Chief Hydrologist
U.S. Geological Survey, WRD
421 National Center
Reston, Virginia 22092

PREFACE

The National Water Data Exchange (NAWDEX) is an interagency program to facilitate the exchange of water data and to promote the standardization of water-data-handling procedures. The participants in the NAWDEX program are those Federal, State, local governmental organizations, and private organizations that collect and use water data.

NAWDEX maintains a "Master Water Data Index" which is a computerized index of available water data. The Index contains information on sites for which water data are available, the location of these sites, the type of site, the data-collection organization, the types of data available, the major water-data parameters for which data are available, the frequency at which these parameters are measured, and the media in which the data are stored. The Master Water Data Index meets an Office of Management and Budget requirement in Circular A-67 that the Department of the Interior establish and maintain a catalog of information on water data.

This document defines the data components contained in the Master Water Data Index (MWDI); it is referred to as the MWDI Data Dictionary. Its purpose is to describe, in detail, the information in the MWDI:

Inquiries related to the Dictionary may be directed to:

Program Manager
National Water Data Exchange
U.S. Geological Survey
421 National Center
Reston, Virginia 22092

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DEFINITIONS OF COMPONENTS OF THE MASTER WATER DATA INDEX MAINTAINED BY THE NATIONAL WATER DATA EXCHANGE

By

Robert A. Perry and Owen O. Williams

INTRODUCTION

The Master Water Data Index (MWDI) is a computerized data base, developed and maintained by the National Water Data Exchange (NAWDEX) Program Office, which contains information about water-data collection sites of NAWDEX members and participants. It contains information on the identification and location of sites for which water data are available, the type of data-collection site, the organizations collecting data at each site, the current status of each site, the types of data available, the period of time for which data are available, the major water-data parameters for which data are available, the frequency at which these parameters are measured, and the media in which the data are available.

This document contains a definition and description of each component of the MWDI data base. For simplicity, it is referred to as a data dictionary. It is intended, primarily, to assist those persons using the MWDI in understanding and clarifying information obtained from the data base.

The MWDI is designed to be used independently, or in conjunction with, the Water Data Sources Directory (WDSD). The WDSD is also a computerized data base developed and maintained by the NAWDEX Program Office. It contains information about organizations that are sources of water data; the major orientation of water-data activities conducted by these organizations; the names, addresses, and telephone numbers of offices within each organization from which water data may be obtained; the types of data held by each organization and the geographic locations where these data have been collected; and alternate sources of an organization's data. A few components are common in both data bases, thereby allowing retrieved information to be cross-referenced between them. For example, a retrieval may be made from the Master Water Data Index to identify all sites, within a geographic area of interest, for which water-quality data are available. A retrieval can then be made from the Water Data Sources Directory to determine the addresses from which data may be obtained from organizations operating the identified sites. A description of the Water Data Sources Directory is found in the publication entitled "Definition of Components of the Water Data Sources Directory Maintained by the National Water Data Exchange."

OVERVIEW OF THE MASTER WATER DATA INDEX

Data Base Description

The Master Water Data Index (MWDI), contains the following general categories of information:

Station Identification

- Unique identifiers
- Operating organization
- Type of site (stream, well, etc.)
- Geographical identifiers
- Physical identifiers
- Station status (active, inactive)
- Supplementary data available

Type of water data collected (surface water, ground water, water quality, meteorological)

- Period of record
- Record continuity
- Data parameters collected
- Frequency of data collection
- Media on which data are stored
- Purpose of activity
- Status of activity

Data-Base Structure

The MWDI data base is managed and maintained through a generalized Data Base Management System called SYSTEM 2000[1/]. The data in a SYSTEM 2000 Data Base are organized into a hierarchical structure as shown in figure 1 on page 269. All the data about a single major item (in this case, a water data collection site operated by an organization) comprises a logical entry in the data base. In certain instances two or more organizations may be collecting different kinds of water data at the same physical site. Each organization will separately report its station activity at that site as a separate logical entry. Individual pieces of information, such as the drainage area of the station or the temperature of the water are data components. A group of components related to the same subject that may have multiple occurrences of data is called a schema record. Each single occurrence of a group of data values related to the same subject within a schema record is called a data record.

1/ SYSTEM 2000 is a registered trademark of Intel Corporation and its mention does not imply endorsement by the U.S. Geological Survey.

Under the concept of the hierarchial structure, every data component "belongs to" a schema record and every schema record "belongs to" a higher level schema record (the logical entry is, itself, a schema record at the highest level, belonging to the data base). Thus, information about the temperature of water "belongs to" the set of information about the type of water data (water quality) collected; the type of water data information "belongs to" the collection site; and the collection site (the logical entry) is a schema record belonging, in turn, to the data base as a whole.

A fundamental aspect of the schema record is that it can occur once, many times, or not at all. Each logical entry contains all the information about an individual site, and because the logical entry is a schema record that can occur many times, there can be information about many sites in the data base. Similarly, for any particular logical entry (site) there can be more than one type of water data collected. Each "type of water data" schema record contains information on particular data parameters collected.

Figure 1 identifies the various schema records which have been defined for the MWDI data base. They are arranged in a logical tree structure representing their hierarchical relationships to each other. That is, all those schema records, defined by boxes, which appear below the single box located at the top of the figure are groups of related data components directly related to the description of the site. According to the situation at a particular site, any one of these lower-level schema records may occur once, several times, or not at all. The absence of a schema record may be the result of the lack of data, or applicability, to that particular site. For example, the schema record labeled "Surface Water Data" would not be appropriate with a site whose type was identified as "well."

An important aspect of the system is that logical entries can be of varying length, since, if a data record is not required, it is not stored and no space is reserved for it. If information that belongs in a nonexistent data record is added later, the data record is created and stored in any available space.

HOW TO USE THIS DOCUMENT

This document contains a detailed explanation of each Master Water Data Index (MWDI) schema record and data component. It is organized in the same order as the MWDI data base, with descriptions of data components belonging to the same schema record being located together. Each page in this document describes one schema record or data component. A user searching for the description of a particular data component should use figure 1 to determine its schema record (SR), then find the page number of that schema record in the table of contents. The description of the data component follows the description of the schema record.

At the top of each page, certain attributes of the data component defined are listed to provide information generally needed only by data processing personnel for software development. These include IN SR, DATA TYPE, PICTURE, and LARGEST VALUE. A full definition of each of these attributes is found below. For the majority of users it will only be necessary to consider these attributes when producing a report or formulating a complex retrieval using the SYSTEM 2000 Immediate Access retrieval language. In other words, the majority of users need not be concerned with these attributes.

The attributes with which all users should be concerned are COMPONENT NAME, COMPONENT NUMBER, and KEY. COMPONENT NAME and COMPONENT NUMBER are simply labels for the component and may be used interchangeably by the user whenever referring to a component. The KEY attribute is an indicator of the relative expense and response time the user can expect when formulating a retrieval using the component in a conditional select clause. For most cases, using key components (KEY=Yes) instead of non-key components (KEY=No), in specifying the selection criteria for a data base retrieval, will result in faster response and lower expense. Additional information on the use of attributes may be obtained from the System 2000 Reference Manual.

Figure 2 illustrates the format used to describe MWDI components. The following text contains an explanation of each part of the description.

IN SR - A number appears here, which is the number of the schema record (SR) to which the schema record or data component belongs. For example, the top level schema record, as shown in figure 1, is schema record 0. Data components 1 through 40, 150, 250, 350, 450, 550, 650, 750, and 1350 belong to schema record 0, as do schema records 100, 200, 300, 800, 900, 990, 1000, 1100, 1200 and 1300. All data components that belong to the same schema record appear together in this document.

COMPONENT NAME - The unique name of the schema record or data component as used in the data base.

COMPONENT NUMBER - The unique number of the schema record or data component as used in the data base.

NAWDEX

MASTER WATER DATA INDEX

DATA DICTIONARY

IN SR _____ COMPONENT NAME _____ COMPONENT NUMBER _____

MANDATORY _____ KEY _____ DATA TYPE _____

PICTURE _____ LARGEST VALUE _____

Data Values

General Description

Figure 2.--Format of a component description.

MANDATORY - Marked either "Yes" or "No." If "Yes," a value for the data component must be present in each data record. For example, data component 1, NAWDEX ID, is mandatory because it is the unique identification code of the site and, therefore, must always be present. On the other hand, data component 115, COMPLETE FLOW is not mandatory because not every site has streamflow measurements and, therefore, the data component may be null (nonvalued).

KEY - Marked either "Yes" or "No." In SYSTEM 2000, certain data components are designated by the designer of the data base as KEY to provide efficiencies in data retrieval. However, any data component, whether KEY or not, can be retrieved from the MWDI. This designation is not used for schema records.

DATA TYPE - Contains either CHAR, TEXT, INTEGER, DECIMAL, or DATE, depending on what type of data are stored for the component. CHAR and TEXT are used to store alphanumeric data (any character recognized by the computer), the difference being that TEXT retains leading and trailing blanks and multiple blanks between words, and CHAR does not. INTEGER and DECIMAL store whole numbers and decimal numbers, respectively, and DATE stores dates in the MM/DD/YYYY format. This notation is not applicable to schema records.

PICTURE - Describes the "storage capacity" of the data component, using X(n) or 9(n) notation. Data components that are CHAR and TEXT have picture lengths of X(n), where "n" is the total number of characters. For example, X(23) indicates that typically up to 23 characters are stored for the data component. X indicates that only one character may be stored for the data component. INTEGER uses 9(n) to indicate the total number of digits that can be stored. For DECIMAL data components, 9(n).9(n) indicates places to the left and right of the decimal point. DATE is always MM/DD/YYYY, where MM equals month, DD equals day, and YYYY equals year, and, therefore, PICTURE designation is unnecessary. Schema records do not have a PICTURE designation.

LARGEST VALUE - This is the largest value that is allowed for the data component. For example, the largest value of a component designated as PICTURE 9(4) may be 5075 because of editing standards placed on data input to the data base. For data components defined as CHAR or TEXT, the largest value is allowed to exceed the PICTURE size because of the SYSTEM 2000 "overflow" capability. An example of this is data component 7, STATION NAME, which is PICTURE X(30) but may contain names up to 48 characters long if necessary.

DATA VALUES - This is a narrative definition of the values that can be stored for a data component.

GENERAL DESCRIPTION - A narrative description of the type of data stored for a data component, its purpose, and the source or usefulness of the data. If If a coding scheme is used, the meaning of each code is explained.

MASTER WATER DATA INDEX
COMPONENT DEFINITIONS

N/A	WATER_DATA_SITE	0
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY N/A KEY N/A DATA TYPE SR

PICTURE N/A LARGEST VALUE N/A

This is the highest level schema record in the hierarchical structure of the data base and, therefore, represents the logical entry of a single water data collection site operated by an organization. It contains information on the identification, location, and type of site, and the organization that operates it.

0	NAWDEX ID	1
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY Yes KEY Yes DATA TYPE Char

PICTURE X(20) LARGEST VALUE 22 characters

Data Values - The NAWDEX Station Identification number can be up to 22 characters in length. The first 1-5 characters contain the NAWDEX Agency code (see component 4) and the remaining characters contain the Agency Station Number (see component 5). In the event no Agency Station Number exists for a site, the latitude-longitude of the site or a unique sequence number may be substituted. In the event duplicate Agency Station Numbers exist, a one- or two-digit sequence number may be appended to the end of the NAWDEX_ID.

General Description - The NAWDEX_ID is assigned by the NAWDEX Program Office and is the unique identifier of a logical entry in the data file. A logical entry is all of the information about a site that is being stored. A site is a hydrologic data collection site that is being operated by an individual organization. If more than one agency is collecting hydrologic data at the same physical site, there will be a separate logical entry for each agency.

0	LATITUDE	2
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY Yes KEY No DATA TYPE Integer

PICTURE 9(6) LARGEST VALUE 900000

Data Values - This component (six digits) contains the latitudinal location of the site expressed in degrees, minutes, and seconds. For sites where seconds, and in some cases minutes, have not been submitted, zeros are stored in those portions of the value. Latitudinal locations north of the equator are positively valued and those south of the equator are negatively valued.

General Description - The latitude is the angular distance north or south from the Earth's equator measured through 90 degrees. The length of a degree varies from 68.704 statute miles at the equator to 69.407 at the poles because of the flattened configuration of the Earth. The length of a second is approximately 100 feet.

0	LONGITUDE	3
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY Yes KEY No DATA TYPE Integer

PICTURE 9(7) LARGEST VALUE 1800000

Data Values - This component (seven digits) contains the most accurate available longitudinal location of the site expressed in degrees, minutes, and seconds. For sites where seconds and in some cases minutes, have not been submitted, zeros are stored in those portions of the value. Longitudinal locations west of the prime meridian are positively valued and those east of the prime meridian are negatively valued.

General Description - Longitude is the angular distance, measured in degrees, due east or west from the prime meridian that runs between the north and south poles and passes through Greenwich, England. The length of a degree varies from 69.65 statute miles at the Equator to zero miles at the poles. The length of a second is a little over 100 feet at the equator and about 78 feet at the 40 degree latitudinal parallel which passes through the approximate middle of the United States.

0	NAWDEX AGCY	4
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY Yes KEY Yes DATA TYPE Char

PICTURE X(5) LARGEST VALUE 5 characters

Data Values - The NAWDEX Agency code varies in length from three to five characters. For Federal organizations, it is US followed by a two or three character abbreviation of the organization's name. Values for non-Federal organizations whose activities are within a given State boundary have a two-character alphabetic State code followed by a NAWDEX-assigned sequence number. Alphabetic State codes are contained in the Federal Information Processing Standards (FIPS) Publication 5-1, dated June 15, 1970, entitled "States and Outlying Areas of the United States." Values for non-Federal organizations having activities at the multi-State or national level have a three to five character abbreviation of the organization name (the characters US will not appear in the first two character positions). The NAWDEX Agency code also appears in component 1 as the beginning part of the NAWDEX Identification number.

NAWDEX Agency codes are presented in the publication entitled "Identification Codes for Organizations Listed in Computerized Data Systems of the U.S. Geological Survey" by Edwards, M. D., and Myers, B. M., which may be obtained from the National Water Data Exchange, U.S. Geological Survey, 421 National Center, Reston, Virginia 22092

General Description - The NAWDEX Agency code is assigned by the NAWDEX Program Office and is the unique identifier for participating Federal and non-Federal organizations that actively collect and store water data. Non-Federal organizations include State, county, and municipal organizations as well as intergovernmental compacts, private organizations, universities, and any local organizations at other than county or municipal level.

0	AGCY_STA_NO	5
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Text

PICTURE X(15) LARGEST VALUE 15 characters

Data Values - The Agency Station Number may consist of varying configurations of alphabetic characters and numbers depending upon the type of system used by the operating organization to distinguish among its sites. For example, the U. S. Geological Survey uses either an 8-digit downstream order number or a 15-digit number, which contains the station latitude in the first 6 characters and the station longitude in the next 7 characters followed by an arbitrary 2-digit sequence number.

General Description - The Agency Station Number is the code assigned and used by the participating organization that operates hydrologic data collection sites to uniquely identify the individual sites under its control.

0	STATION_NAME	7
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(30) LARGEST VALUE 48 characters

Data Values - The station name may contain up to 48 printable characters.

General Description - The station name is assigned by the participating organizations for the sites where it conducts water-data collection activities. It may contain both the name and location of the site.

0	NON_US_COUNTRY	71
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(2) LARGEST VALUE 2 characters

Data Values - This component contains a two-character alphabetic country code if, and only if, the site is physically located outside the United States; if the site is located within the United States, the component is not valued. Commonly used values are:

MX = Mexico
RP = Republic of the Phillipine Islands
CA = Canada

A complete list of country codes is contained in the Federal Information Processing Standards (FIPS) publication 10-2, dated 1976, entitled "Countries, Dependencies, and Areas of Special Sovereignty."

General Description - The non-U.S. country code is valued for only those sites that lie outside the borders of the United States and its outlying areas. It bears no relationship to the location of the organization or office that is responsible for the operation of the site.

0	STATE	8
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY Yes KEY No DATA TYPE Integer

PICTURE 9(3) LARGEST VALUE 100

Data Values - This component contains a two-digit numeric code representing the State in which the site is physically located. Numeric codes for foreign installations will also appear, when applicable, as follows:

80 = Mexico
81 = Republic of the Philipine Islands
87 = Canada
99 = U.S. foreign installations - miscellaneous
100 = Other foreign countries

A complete list of State codes is contained in the Federal Information Processing Standards (FIPS) Publication 5-1, dated June 15, 1970, entitled "States and Outlying Areas of the United States."

General Description - The STATE component is valued for those sites which are physically located within the United States. It bears no relationship to the organization or office that is responsible for the operation of the sites.

0	COUNTY	9
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Integer

PICTURE 9(3) LARGEST VALUE 3 numeric digits

Data Values - This component contains a three-digit numeric code of the county or county equivalent in which the site is physically located. For sites not located in the conterminous U.S., Alaska, and Hawaii, this component is not valued.

General Description - The value contained in this component must be for a county or county equivalent located in the State identified in component 8, STATE. A complete list of county codes is contained in the Federal Information Processing Standards (FIPS) Publication 6-3, dated September 15, 1979, entitled "Counties and County Equivalents of States of the United States and the District of Columbia."

Note: Codes used to value this component include independent city codes for the states of Maryland, Missouri, Nevada, and Virginia, and division codes for the state of Alaska.

0	HYDROL_UNIT	10
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY Yes DATA TYPE Char

PICTURE X(8) LARGEST VALUE 8 characters

Data Values - This component contains an eight-digit numeric code identifying the site's location with reference to the areal definitions shown on the USGS State Hydrologic Unit Maps. The format is (RRSSAACC) where:

RR is the 2-digit code for the regional area defined in (1) below
SS is the 2-digit code for the subregional area defined in (2) below
AA is the 2-digit code for the accounting unit area defined in (3) below
CC is the 2-digit code for the cataloging unit area defined in (4) below

General Description - Hydrologic unit codes are given in the U.S. Geological Survey map series "State Hydrologic Unit Maps." The series provides a uniform, nationally consistent set of maps showing drainage, culture, hydrography, and hydrologic boundaries of: (1) WRC (Water Resources Council) Regions, (2) WRC (Water Resources Council) Subregions, (3) National Water Data Network Accounting Units, and (4) Cataloging Units of the Catalog of Information on Water Data maintained by the Office of Water Data Coordination (OWDC).

0	CONG_DIST	11
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Integer

PICTURE 9(3) LARGEST VALUE 2 digits

Data Values - This component contains the two-digit code of the U.S. Congressional District in which the station is physically located.

General Description - Congressional District boundaries are specified in the laws and(or) court orders establishing districts within the various States based upon population census. They are identified and defined in the latest "Congressional Directory" which may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

0	SITE_TYPE	12
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY Yes KEY Yes DATA TYPE Char

PICTURE X(2) LARGEST VALUE 2 characters

Data Values - This component contains a two-character alphabetic code that describes the type of water body subject to hydrologic data collection activities performed at the site, or the type of data collected at the site.

General Description:

Code		Meaning
CN	Canal -	An artificial waterway designed for navigation or for transporting water for municipal water supply, land irrigation, or drainage (see Drain below).
CP	Outcrop -	That part of a geologic formation or structure that appears at the surface of the Earth; also, bedrock that is covered only by surficial deposits such as alluvium.
DR	Drain -	A small artificial watercourse designed to drain swampy areas or irrigated lands. Theoretically, it is actually a small canal, but it is referred to as a "drain" in many localities.
ES	Estuarine Zone or Estuary -	The term "estuarine zone" means an environmental system consisting of an estuary and those transitional areas which which are consistently influenced or affected by water from an estuary such as, but not limited to, salt marshes, coastal and intertidal areas, bays, harbors, lagoons, inshore water, and channels. The term "estuary" means that part of a river or stream, or other body of water having unimpaired connection with the open sea, where the sea water is measurably diluted with fresh water derived from land drainage. The term includes estuary-type areas of the Great Lakes.

EX Excavation - A pit, cavity, hole or other uncovered cutting produced by the process of removing soil and/or rock materials from one location and transporting them to another.

GW Well - An artificial excavation that derives some water from the interstices of the rocks or soil which it penetrates, and from which water can be withdrawn.

LK Lake, reservoir - An inland body of standing water, an expanded part of a river, or an impoundment formed by a dam.

ME Meteorological - A site where measurements are made to describe the scientific phenomena related to the atmosphere such as temperature, solar radiation, winds, quantity of precipitation, quantity of precipitation, and quality of precipitation.

OC Ocean - A site located in any of the world's oceans.

OT Other - Other types of sites where hydrologically related data, not categorized above or below, are collected.

PD Pond - Pond dug to intercept the water table or the potentiometric surface and serve as a water supply.

SB Subsidence - A site where data are obtained on the lowering of the elevation of the land surface, resulting from the compaction of sediments composing an aquifer system, due to the withdrawal of subsurface fluids.

SH Sinkhole - A hollow into which surface water flows to join an underground drainage system, produced by the solution of underlying material such as limestone, salt, etc. or by collapse of underlying caves.

SP Spring - A place where water flows from a rock or soil upon the land surface or into a body of water.

SM Soil Moisture (soil water) - A site where phenomena on soil moisture are measured. Soil moisture is the water diffused in the soil immediately below the land surface (zone of aeration), from which water is discharged by transpiration in plants or by evaporation from the soil.

SS Specific Source - An artificial conduit or other conveyance where pollutants are discharged (from factories, sewage treatment plants, etc.) into a water body or aquifer.

SW Stream - A body of water flowing in a natural channel as distinct from a canal (see Canal on previous page).

TN Tunnel - Tunnel, shaft, or mine from which ground water is obtained.

0	BASIN_DESCRP	13
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Integer

PICTURE 9(3) LARGEST VALUE 124

Data Values - The Basin Descriptor component may contain up to three numeric codes. It is used to classify conditions in the drainage area of the data collection site. Code "3" (Urban) and code "4" (Natural) are mutually exclusive; one or the other will always be present but both will never be present in the same component.

Code	Meaning
1	Regulation
2	Diversion
3	Urban
4	Natural

General Description - A Basin Descriptor is a general term used to describe man's effect on the hydrologic characteristics of a drainage basin or an aquifer.

Regulation - The artificial manipulation of the flow of a stream. The term does not apply to ground-water sites.

Diversion - The taking of significant quantities of water from a stream or other body of water into a canal, pipe, or other conduit. This term applies to ground-water stations when pumping is significant.

Urban - The situation where streamflow patterns at a site are affected significantly by urban development. The effect is considered to be significant when approximately 20-25 percent or more of the drainage area is covered by a dense road grid (indicating the presence of impermeable surfaces of roads, parking lots, and building roofs). The term is also applied to the setting in which a ground-water site is situated, but it is based upon a macroscopic scale and not restricted just to the immediate vicinity of the site.

Natural - The opposite of "Urban".

0	WDSD OFC CODE	17
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY Yes DATA TYPE Integer

PICTURE 9(9) LARGEST VALUE 999,999,999

Data Values - This component contains from one to nine numeric digits to identify a particular office of the organization, as recorded in the NAWDEX Water Data Sources Directory (WDSD) data base, which is responsible for the data collection activities performed at the site. The code assignment is unique, by organization, and represents the relationship of a particular office to the parent organization. This component corresponds to component 102 OFC_CODE in the WDSD data base.

The office code is comprised of the 2-digit FIPS state code, the 5-digit FIPS place code and a 2-digit sequence number for offices within same organization and place or city.

General Description - The WDSD code is assigned by the NAWDEX Program Office and used by NAWDEX support software to retrieve addresses of operating offices from the NAWDEX WDSD data base.

0	DRAIN_AREA	19
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Decimal

PICTURE 9(7). 9(2) LARGEST VALUE 9,999,999.99

Data Values - This component contains the value of the site's drainage area in square miles. The component allows values specified to the hundredths of a square mile for small drainage areas, and values seven digits to the left of the decimal point for large drainage areas. The component is not valued for ground water stations.

General Description - The drainage area of the stream at the specific location of the site is that area, measured in a horizontal plane, enclosed by a topographic divide from which direct surface runoff from precipitation normally drains by gravity into the stream above the site; it includes all closed basins, or non-contributing areas, within the total drainage area.

0	NC_AREA	20
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE Y

Data Values - This component is valued with an "N" if the contributing drainage area is equal to the total drainage area, or valued with a "Y" when the contributing drainage is less than the total drainage area. The "Y" value, therefore, signifies the existence of a noncontributing area in the drainage area referred to in component 19.

General Description - A noncontributing drainage area situation can occur when part of the drainage area consists of highly porous soil of depressions in the land surface that either allows all runoff to enter the ground-water zone or traps the water in ponds, lakes, or swamps, etc., so that precipitation does not contribute to runoff. Noncontributive conditions are rarely caused by manmade structures and then only when there is total diversion of runoff (including floodflows) from the drainage area.

0	LAST_UPDATE	21
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY Yes KEY No DATA TYPE Date

PICTURE N/A LARGEST VALUE current date

Data Values - This component contains the month, day, and year of the last date (MM/DD/YYYY) that an update of any type was processed against the station's logical entry. This date is generated by the computer at the time a transaction is performed against the data base.

General Description - An update is defined as any computer transaction that adds, deletes, or changes data values in the MWDI data base.

0	STATE_COUNTY	22
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY Yes KEY Yes DATA TYPE Integer

PICTURE 9(5) LARGEST VALUE 5 numeric digits

Data Values - This component contains a concatenation (SSCCC) of the 2-digit numeric state code and the 3-digit numeric county code of the State and county in which the site is physically located.

General Description - These codes also appear in component numbers 8(STATE) and 9(COUNTY) but are repeated here in a combined format to provide computer search strategy efficiencies for retrievals involving specific States and counties.

0	PRIMARY_USE	34
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - This component contains a 1-character code which indicates principal use of water from the site. If water from the site is used for more than one purpose, circle the principal use here and enter the subordinate uses in the following two fields. The codes and their meanings are:

A - air conditioning
B - bottling
C - commercial
D - dewatering
E - power generation
F - fire protection
H - domestic
I - irrigation
J - industrial (cooling)
K - mining
M - medicinal
N - industrial
P - public supply
Q - aquaculture
R - recreation
S - stock supply
T - institutional
U - unused
Y - desalination
Z - other

General Description:

Air conditioning (A) refers to water supply used solely or principally for heating or cooling a building. Water used to cool industrial machinery belongs in the industrial category, not in the air-conditioning category.

Bottling (B) refers to the storage of water in bottles and use of the water for potable purposes (see Medicinal).

Commercial (C) use refers to use by a business establishment that does not fabricate or produce a product. Filling stations and motels are examples of commercial establishments. If some product is manufactured, assembled, or otherwise fabricated, use of water for that plant should be considered industrial even though the water is not used directly in the product or in the manufacturing of the product.

Dewatering (D) means that water is pumped to drain a construction or mining site, or to lower the water table for agricultural purposes. In this respect, it differs from a drainage well that is used to drain surface water underground. If the main purpose for which the water is withdrawn is to provide drainage, dewatering should be indicated even though the water may be discharged into an irrigation ditch and subsequently used to irrigate land.

Power generation (E) refers to use of water for generation of any type of power.

Fire protection (F) refers to the principal use of the water and should be indicated if the site was constructed principally for this purpose even though the water may be used at times to supplement an industrial or defense supply, irrigate a golf course, fill a swimming pool, or for other use.

Domestic (H) use is water used to supply household needs, principally water for drinking, cooking, washing, and sanitary purposes, but can include watering a lawn and caring for a few pets. Most domestic wells will be at suburban or farm homes, but wells supplying small quantities of water for one-classroom schools, turnpike gates, and for similar installations, should also be in the domestic category.

Irrigation (I) refers to the use of water to irrigate cultivated plants including grass. Most irrigation sites will supply water for farm crops, but the category should include wells used to water school, industrial plant, cemetery, or golf course grounds if more than a small amount of water is pumped and that is the sole use of the water.

Industrial (cooling) (J) refers to a water supply used solely for industrial cooling.

Mining (K) refers to a water supply used solely for mining purposes.

Medicinal (M) refers to water purported to have therapeutic value. Water may be used for bathing and/or drinking. If use of water is mainly because of its claimed therapeutic value, use this category even though the water is bottled.

Industrial (N) use is water used within a plant that manufactures or fabricates a product. The water may or may not be incorporated into the product being manufactured. Industrial water may be used to cool machinery, to provide sanitary facilities for employees, to air-condition the plant, and to irrigate the ground at the plant.

Public Supply (P) use is water that is pumped and distributed to several homes. Such supplies may be owned by a municipality or community, a water district, or a private concern. In most States, public supplies are regulated by departments of health which enforce minimum safety and sanitary requirements. If the system supplies five or more homes, it should be considered a public

supply; for four or fewer, classify use as domestic. Water supplies for trailers or summer camps with five or more living units should be in this category, but motels and hotels are classified as commercial. Most public supply systems also furnish water for a variety of other uses, such as industrial, institutional, and commercial.

Aquaculture (Q) refers to a water supply used solely for aquaculture, such as fish farms.

Recreation (R) refers to water discharged into pools, or channels which are dammed downstream to form pools, for swimming, boating, fishing, ice rinks, and other recreational uses.

Stock Supply (S) refers to the watering of livestock.

Institutional (T) refers to water used in the maintenance and operation of institutions such as large schools, universities, hospitals, rest homes, or similar installations. Owners of institutions may be individuals, corporations, churches, or governmental units.

Unused (U) means water is not being removed from the site for one of the purposes described above. A test hole, oil or gas well, recharge, drainage, observation, or waste-disposal well will be in this category. Do not use this classification for an irrigation, domestic, stock, or other well during "off season" or temporary periods of nonuse. The use of water from a newly constructed site should be considered as the use for which it is intended even though it may not yet be in use when inventoried.

Desalination (Y) refers to water used in a desalting process whereby dissolved solids are removed to make water potable or suitable for other uses. Enter the type of use of the desalinated water in the next column, Secondary Water Use.

Other (Z) refers to miscellaneous uses not included in the listed categories.

0	WRD_ACCT	35
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - If the site is identified as a USGS site, then this component contains a "Y" if the USGS provides funding for the operation of the site or a "N" if the USGS does not provide funding.

General Description - The USGS maintains data for some sites for which the collection of data was not funded by the USGS. These sites will not have a C1000 (SITE_FUNDING) data record existing and component 901 (NETWORK_CODE) of a C900 (NETWORKS) data record will contain "COOP". Those sites which receive some funding from the USGS will have at least one C1000 data record and will not have a C901 containing "COOP". This component will be valued only for sites identified as USGS sites.

0	DOWNSTREAM_ORDER_NO	36
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Integer

PICTURE 9(15) LARGEST VALUE 999,999,999,999,999

Data Values - This component contains a 15-digit sequence number for surface-water sites. It is used as a sort-key to arrange sites in downstream order.

General Description - The downstream order number is assigned to each site by the NAWDEX Program Office.

0	OTHER_DATA	40
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(4) LARGEST VALUE 123456

Data Values - The Other Data component provides for the entry of up to six one-digit numeric codes to indicate the availability of supplementary or special purpose data for a station:

1 Precipitation/Quantity
2 Wind
3 Evaporation
4 Radiation
5 Soil Moisture
6 Datum

General Descriptions:

Precipitation/Quantity - The discharge of water, in liquid or solid state, out of the atmosphere. Precipitation includes rainfall, snow, hail, and sleet. For the purposes of this data file, precipitation data collection refers specifically to the quantity of water that is precipitated (usually expressed in inches).

Wind - Air in natural motion parallel to the surface of the Earth. Data parameters commonly measured are velocity (miles per hour) and/or direction in degrees from true north (clockwise).

Evaporation - The process by which water is changed from the liquid or the solid state into the vapor state. In hydrology, evaporation is vaporization that takes place at a temperature below the boiling point. It is usually measured with evaporation pans.

Radiation (solar) - The process in which energy (as waves or particles) is emitted from the Sun, transmitted through space and absorbed by the Earth. The rate of solar radiation is measured with a variety of instruments. A general method is to convert the Sun's radiation into heat, which can be accurately measured.

Soil Moisture (soil water) - The water diffused in the soil immediately below the land surface (zone of aeration), from which water is discharged by the transpiration in plants or by evaporation from the soil.

Datum - Any level surface, line, or point used as a reference in measuring elevations. For the purpose of the MWDI, datum refers to station datum that has been referenced to mean sea level.

0	SW_ACTIVE	150
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY Yes DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - This component contains a value that signifies whether or not surface water parameters (in the 100 schema record) are actively being collected at the site. The existence of a "Y" means that one or more surface water parameters are actively being collected and an "N" means that although one or more parameters have been collected in the past, none are presently being collected.

General Description - The Surface Water Active component provides computer search strategy efficiencies for retrievals concerned exclusively with active or inactive surface-water stations.

0	GW_ACTIVE	250
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY Yes DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - This component contains a value that signifies whether or not ground-water parameters (in the 200 schema record) are actively being collected at the site. The existence of a "Y" means that one or more ground-water parameters are actively being collected and an "N" means that although one or more parameters have been collected in the past, none are presently being collected.

General Description - The Ground Water Active component provides computer search strategy efficencies for retrievals concerned exclusively with active or inactive ground-water stations.

0	QW_ACTIVE	350
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY Yes DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - This component contains a value that signifies whether or not water-quality parameters (300-700 schema records) are actively being collected at the site. The existence of a "Y" means that one or more water-quality parameters are actively being collected and an "N" means that although one or more parameters have been collected in the past, none are presently being collected.

General Description - The Quality of Water Active component provides computer search strategy efficiencies for retrievals concerned exclusively with active or inactive water quality stations.

0	BIO_ACTIVE	450
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY Yes DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - This component contains a value that signifies whether or not biological parameters are actively being collected at the site. The existence of a "Y" means that one or more biological parameters are actively being collected. An "N" value means that although one or more parameters have been collected in the past, none are presently being collected.

General Description - The Biological Active component provides computer search strategy efficiencies for retrievals concerned exclusively with active or inactive biological sites.

0	PHY_ACTIVE	550
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY Yes DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - This component contains a value that signifies whether or not water quality physical parameters are actively being collected at the site. The existence of a "Y" means that one or more physical parameters are actively being collected. An "N" value means that although one or more parameters have been collected in the past, none are presently being collected.

General Description - The water quality physical parameters activity component provides computer search strategy efficiencies for retrievals concerned exclusively with active or inactive physical parameter data-collection sites.

0	SED_ACTIVE	650
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY Yes DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - This component contains a retrieval key that signifies whether or not sediment parameters are actively being collected at the site. The existence of a "Y" means that one or more sediment parameters are actively being collected. An "N" value means that although one or more parameters have been collected in the past, none are presently being collected.

General Description - The Sediment Active component provides computer search strategy efficiencies for retrievals concerned exclusively with active or inactive chemical quality sites.

0	CHM_ACTIVE	750
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY Yes DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - This component contains a retrieval key that signifies whether or not chemical water quality parameters are actively being collected at the site. The existence of a "Y" means that one or more chemical parameters are actively being collected. An "N" value means that although one or more parameters have been collected in the past, none are presently being collected.

General Description - The Chemical Active component provides computer search strategy efficiencies for retrievals concerned exclusively with active or inactive chemical quality sites.

0	MET_ACTIVE	1350
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY Yes DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - This component contains a value that signifies whether or not meteorological parameters (in the 1300 schema record) are actively being collected at the site. The existence of a "Y" means that one or more meteorological parameters are actively being collected and an "N" means that although one or more parameters have been collected in the past, none are presently being collected.

General Description - The Meteorological Active component provides computer search strategy efficiencies for retrievals concerned exclusively with active or inactive meteorological stations.

0	SURFACE_WTR	100
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY N/A KEY N/A DATA TYPE SR

PICTURE N/A LARGEST VALUE N/A

A schema record containing data values that indicate the types of surface-water data collection activities performed, the years in which these activities took place, and the media in which surface-water data for the sites are available.

100	SW_BEGIN_YR	101
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Integer

PICTURE 9(4) LARGEST VALUE current year

Data Values - The Surface Water Data Collection Begin Year component contains a 4-digit numeric value identifying the year that surface-water data were first collected at the site, for example 1910.

General Description - This component identifies the calendar year in which the acquisition of surface-water data first began at a site, regardless of the types of surface-water data that were collected. This date will never change even though surface-water data collection may be deactivated and reactivated several times during a site's history.

100	SW_END_YR	102
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Integer

PICTURE 9(4) LARGEST VALUE current year

Data Values - The Surface Water Data Collection End Year component contains a 4-digit numeric value identifying the year that all surface-water data collection activities were ceased at the site. If the organization is currently collecting any surface-water data at the site, this component is not valued.

General Description - This component identifies the calendar year in which all surface-water data collection activity at the site was discontinued. If at a later date, the collection of any of the surface-water parameters is resumed, the former end date is deleted.

100	SW_INTERRUPTED	103
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE Y

Data Values - The Surface Water Interrupted component contains a value of "Y" if the collection of all surface-water parameters has been discontinued (for more than one year) and later resumed one or more times in the history of the site. If surface water data colleciton has not been discontinued at any time, the component is not valued.

General Description - The presence of a value of "Y" for this component indicates one or more interruptions in the period of record of surface water data acquisition during the period beginning with SW_BEGIN_YR (component 101) through the present time (if currently active), or ending with SW_END_YR (component 102).

100	SW_OWDC_NO	104
IN SR .	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(5) LARGEST VALUE 5 characters

Data Values - The Surface Water OWDC Number component contains a 5-character alpha-numeric code.

General Description - A unique identification number assigned by the U.S. Geological Survey's Office of Water Data Coordination (OWDC) to each site in the "Part A-Streamflow and Stage" section of the "Catalog of Information on Water Data."

100	SW_OWDC_SEQ	107
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Integer

PICTURE 9(13) LARGEST VALUE 13 digits

Data Values - The Surface Water OWDC Sequence Number consists of 13 numeric digits.

General Description - A 13-digit downstream order number is assigned by the U.S. Geological Survey's Office of Water Data Coordination (OWDC) to each site in the "Part A - Streamflow and Stage" section of the "Catalog of Information on Water Data." It is used as a sort key to arrange sites in downstream order.

100	COMPLETE_STAGE	110
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character code in this component indicates the frequency with which stage observations or instrument recorded stage determinations are made at the site. This component is not valued for partial record sites (see next paragraph). See appendix A for frequency codes.

General Description - The stage of a stream or lake is the height of the water surface above an established datum plane. The water-surface elevation referred to some arbitrary or predetermined gage datum is called the gage height. The terms may be used interchangeably when, as in this particular instance, they are used to describe data-collection activity at a site. Records of stage at a site are obtained by systematic observations of a nonrecording gage or from data automatically registered by a water-stage-recording instrument. This component pertains only to those sites where a complete record (full range) of stage is being determined. Partial record sites where stage determinations are purposely limited to only those above or below a predetermined gage height are separately accounted for in components 111 (PEAK_STATE) and 112 (LOW_STAGE).

100	PEAK_STAGE	111
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - The Peak Stage component, if applicable, will be valued with a 1-character code as follows:

Code	Meaning
1	Year round - Peak stage sensing devices are operated, and determinations are made on a year round basis.
2	Seasonal - Peak stage sensing devices are operated, and determinations are made only during certain portions of the year.
E	Eliminated activity - Peak stage data collection, on a year round or seasonal basis, has been conducted in the past but has since been discontinued. Also applies if the site previously measured peak stage only, or peak stage and low stage only, but now measures complete stage.
Null	A null value signifies that there has been no peak stage only, or peak stage and low stage only, activity in the history of the site.

General Description - This component pertains primarily to those sites where less than a complete record (full range) of stage is being determined. It is predominantly a type of partial record site where stage determinations are limited to a predetermined range in stage. This component and component number 110 (COMPLETE_STAGE) may both be valued if peak stages are discretely available in addition to complete stages.

100	LOW_STAGE	112
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - The Low Stage component, if applicable, will be valued with a 1-character code as follows:

Code	Meaning
1	Year round - Low stage sensing devices are operated, or observations are made, on a year round basis.
2	Seasonal - Low stage sensing devices are operated, or observations are made, only during certain portions of the year.
E	Eliminated activity - Low stage data collection, on a year-round or seasonal basis, has been conducted in the past but has since been discontinued. Also applies if the sites previously measured low stage only, or peak stage and low stage only, but now measures complete stage.
Null	A null value signifies that there has been no low stage only, or peak stage and low stage only, activity in the history of the site.

General Description - This component pertains primarily to those sites where less than a complete record (full range) of stage is determined. It is predominantly a type of partial-record site where stage determinations are limited to a predetermined range in stage. This component and component number 110 (COMPLETE_STAGE) may both be valued if low stage is discretely available in addition to complete stage.

100	STAGE_MED	113
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - This component contains a 1-character code indicating the type(s) of storage media (document, computer readable, etc.) on which the data values for stage are stored and available to potential users of the data. See appendix B for Data Storage codes and also see component number 110 (COMPLETE_STAGE) for the definition of stage.

General Description - Organizations collect hydrologic data and record and store the information on a variety of storage media ranging from original field notes to computer storage devices. Media is used as a general term encompassing all means of storing and disseminating the data.

100	COMPLETE_FLOW	115
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - The Complete Flow component provides for the entry of a 1-character code as follows:

Codes		
Year Round	Seasonal	Meaning
1	2	Daily - Mean daily flow figures are determined either on a year-round basis or only during certain portions of a year, as indicated by the code entered.
3	4	Monthly - Monthly totals and mean monthly flow figures are determined either on a year-round basis or only during certain portions of the year, as indicated by the code entered.
	E	Eliminated activity - Complete flow figures have been determined in the past, but have since been discontinued.

General Description - Surface water flow is the discharge that occurs in any natural or artificial surface channel or course. Discharge is the volume of water (or more broadly, total fluid) that passes a given point within a given period of time.

Complete Flow means that flow (discharge) figures are determined based upon a complete record (full range) of stage, as opposed to partial record flow where figures pertain only to a predetermined limited range in stage. Partial record flow sites are separately accounted for in components 116 (PEAK_FLOW) and 117 (LOW_FLOW).

100	PEAK_FLOW	116
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - The Peak Flow component, if applicable, is valued with a 1-character code as follows:

Code	Meaning
1	Year round - Peak flows (instantaneous discharges) only above a predetermined base, are determined on a year round-basis.
2	Seasonal - Peak flows (instantaneous discharges) only above a predetermined base, are determined only during certain portions of the year.
8	Annual - Same as year round (above) except that only the maximum peak for the year is recorded.
9	Not specified - Peak flow data are collected at an irregular or unspecified frequency.
E	Eliminated activity - Peak flow data have been collected in the past but the activity has since been discontinued. Also applies if the site previously measured peak flow only, or peak flow and low flow only, but now measures complete flow.
Null	A null value signifies that there has been no peak flow only, or peak flow and low flow only, activity in the history of the site.

General Description - This component pertains primarily to those sites where less than a complete record (full range) of flow is being or has been determined. It is predominantly a type of partial-record site (commonly called a crest-stage site) where peak flows (instantaneous discharges) above a predetermined base are being determined. This component and component number 115 (COMPLETE_FLOW) may both be valued if peak flow is discretely available in addition to complete flow.

100	LOW_FLOW	117
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - The Low Flow component, if applicable, is valued with a 1-character code as follows:

Code	Meaning
1	Year round - Low-flow determinations (machine recorded or observed) are made on a year-round basis.
2	Seasonal - Low-flow determinations (machine recorded or observed) are made only during certain portions of the year.
9	Not specified - Low-flow data are collected at an irregular or unspecified frequency.
E	Eliminated activity - Low-flow data have been collected in the past but the activity has since been discontinued. Also applies if the site previously measured low flow only, or peak flow and low flow only, but now measures complete flow.
Null	A null value signifies that there has been no low flow only, or peak flow and low flow only, activity in the history of the site.

General Description - This component pertains primarily to those sites where less than a complete record (full range) of flow is being determined. It is predominantly a type of partial-record site where only low flows are being determined. This component and component 115 (COMPETE_FLOW) may both be valued if low flow is discretely available in addition to complete flow.

100	MISC_FLOW_MEAS	119
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data-Values - The Miscellaneous Flow Measurements component, if applicable, is valued with a 1-character alphabetic code that describes the frequency with which the measurements are made. See appendix A for frequency codes.

General Description - Field discharge measurements are made periodically at sites other than those classified as partial-record or complete-record gaging sites. The sites are called miscellaneous sites and the measurements are made during times of drought or flood to give better areal coverage to these events.

100	FLOW_MED	121
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - This component contains a 1-character code for the type(s) of storage media (document, computer readable, etc.) on which the data values for flow are stored and available to potential users of the data. See appendix B for data storage codes and also see component number 115 (COMPLETE_FLOW) for the definition of flow.

General Description - Organizations collect hydrologic data and record and store the information on a variety of storage media ranging from original field notes to computer storage devices. Media is used as a general term encompassing all means of storing and disseminating the data.

100	VOLUME	124
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character frequency code indicates the time intervals at which reservoir or lake volumetric measurements are computed as follows:

Code	Meaning
1	Daily values - Volume figures are computed once a day.
3	Monthly values - Volume figures are computed once a month.
9	Not specified - Volume figures are computed at an irregular or unspecified frequency.
E	Eliminated activity - Volume figures have been computed in the past but the activity has since been discontinued.

General Description - The terms "volume" and "contents" are often used interchangeably when referring to the volume of water in a lake or reservoir. Lake or reservoir content is computed on the basis of a level pool and usually does not include bank storage.

100	VOLUME_CHANGE	125
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character frequency code indicates the time intervals at which changes in reservoir or lake volume (contents) are computed as follows:

Code	Meaning
1	Daily values - Changes in volume figures are computed once a day.
3	Monthly values - Changes in volume figures are computed once a month.
9	Not specified - Changes in volume figures are computed at an irregular or unspecified frequency.
E	Eliminated activity - Changes in volume figures have been computed in the past but the activity has since been discontinued.

General Description - Change in volume (contents) computations are made for reservoirs and lakes where the total volume of the water body is not known. They are also often made, where the total volume is known, for the purpose of acquiring more definitive information. The figures reflect the difference (plus or minus) from a previously computed volume. See component 124 (VOLUME) for the general definition of volume.

100	VOLUME_MED	126
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - This component contains a 1-character code indicating the type(s) of storage media (document, computer readable, etc.) on which the data values for volume are stored and can be made available to potential users of the data. See appendix B for data storage codes and also see component number 114 (VOLUME) for the definition of volume.

General Description - Organizations collect hydrologic data and record and store the information on a variety of storage media ranging from original field notes to computer storage devices. Media is used as a general term encompassing all means of storing and disseminating the data.

100	SW_UNIT_FLOW	127
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - The Unit Flow component, if applicable, is valued with a 1-character code as follows:

Code	Recording Interval	Readings Per Day
A	0.5 min (30 sec)	2880
B	1 min.	1440
C	2 min.	720
D	3 min.	480
E	4 min.	360
F	5 min.	288
G	6 min.	240
H	10 min.	144
I	15 min.	96
J	30 min.	48
K	45 min.	32
L	1 hr	24
M	2 hr	12
N	3 hr	8
O	4 hr	6
P	6 hr	4

Code	Recording Interval	Readings Per Day
Q	12 hr	2
R	24 hr	1

General Description - A unit flow data value is an instantaneous discharge determination or reading. An instantaneous discharge is the volume of water (or more broadly, fluid) that passes a given point at a single instant in time. The Unit Flow Component indicates the time interval, at which instantaneous discharge determinations or readings are made and the number of readings that are available for a given 24-hour period of time. This component pertains primarily to those sites where more than one data determination or readings per day is available. The code does not indicate the total length of the period of record for which the data are available.

100	SW_UNIT_STAGE	128
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - The unit stage component, if applicable, is valued with a 1-character code as follows:

Code	Recording Interval	Readings Per Day
A	0.5 min (30 sec)	2880
B	1 min.	1440
C	2 min.	720
D	3 min.	480
F	4 min.	360
G	5 min.	288
H	6 min.	240
I	10 min.	144
J	15 min.	96
K	30 min.	48
L	45 min.	32
M	1 hr	24
N	2 hr	12
O	3 hr	8
P	4 hr	6

Code	Recording Interval	Readings Per Day
Q	6 hr	4
R	12 hr	2
S	24 hr	1
E	Eliminated	-

General Description - A unit stage data value is an instantaneous stage reading. An instantaneous stage reading is the height of the water surface above an established datum plane at a single instant in time. The Unit Stage Component indicates the time intervals at which the stage readings are made and the number of readings that are available for a given 24-hour period of time. This component pertains primarily to those sites where more than one data reading per day is available. The code does not indicate the total length of the period of record for which the data are available.

100	SW_UNIT_VOLUME	129
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - The Unit Volume component, if applicable, is valued with a 1-character code as follows:

Code	Recording Interval	Readings Per Day
A	0.5 min (30 sec)	2880
B	1 min.	1440
C	2 min.	720
D	3 min.	480
F	4 min.	360
G	5 min.	288
H	6 min.	240
I	10 min.	144
J	15 min.	96
K	30 min.	48
L	45 min.	32
M	1 hr	24
N	2 hr	12
O	3 hr	8
P	4 hr	6

Code	Recording Interval	Readings Per Day
Q	6 hr	4
R	12 hr	2
S	24 hr	1
E	Eliminated	-

General Description - A unit volume data value is an instantaneous volume determination or reading. Volume is the volume of water in a lake or reservoir. The Unit Volume Component indicates the time intervals at which the volume determinations or readings are made and the number of readings that are available for a given 24-hour period of time. This component pertains primarily to those sites where more than one data reading per day is available. The code does not indicate the total length of the period of record for which the data are available.

100	SW_RECMD_MTHDS	130
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - The Surface Water Recommended Methods component is valued with a "Y" if the C100 data record describes data collected according to recommended methods. If not the component is valued with a "N".

General Description - In 1977, the Office of Water Data Coodination published the National Handbook of Recommended Methods for Water Data Acquisition. Another reference for recommended methods is the USGS's Techniques of Water-Resources Investigations (TWRI).

100	SW_OTHER	140
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(6) LARGEST VALUE ABC123456789

Data Values - The Other Surface Water component contains any combination of 1-character codes needed to indicate supplementary surface water related data available, as follows:

Code	Meaning
1	QW, recurring - Systematic water quality data collection takes place at the site.
2	QW, nonrecurring - A one-time-only water-quality data measurement is available.
3	Flood hydrograph - Certain sites are equipped with special-purpose stage recorders that become activated when the stage exceeds a chosen base stage. A continuous record of stage and discharge with respect to time is produced, but only for the periods when the water elevation exceeds the chosen base. This record is called a flood hydrograph.
4	Sediment data - Data on fluvial sediment are collected at the site. See component 600 for definition of sediment.
5	Cross section - A two-dimensional representation of the profile of the flood plain land surface along a plane at right angles to a stream.
6	Flow duration - A computed relationship that shows the percentage of time that specified daily discharges were equaled or exceeded in a stated number of complete years.
7	Flood frequency - A relationship showing the probability that floods of a certain magnitude are equaled or exceeded in any year; or a similar relationship between flood magnitude and frequency of ex-

8 Coefficient of roughness - This is the "resistance to flow" variable used in hydraulic equations to determine peak discharges in natural channels by indirect methods. The factors that exert the greatest influence upon the coefficient of roughness are the character of the bed material, cross-section irregularities, depth of flow, vegetation, and alignment of the channel.

9 Time of travel - This refers to the rate of movement of water, or water-borne materials, through the reach of stream channel for steady or gradually varied flow conditions. These studies are conducted by dye tracing methods where dye is injected at some location on a stream and detected at other locations downstream.

A Flood plain maps - These maps either define areas inundated by specific floods of record, or show areas potentially covered by floods of selected frequencies (for example 10, 50, 100, or 500 year recurrence intervals).

B Tides - Records of tidal stage collected at ocean gages or gages located in estuarine zones.

C Surface inflow-outflow - Data related to stored water in lakes and reservoirs where inflow to and outflow from the water body is computed for the purpose of regulation or research.

General Description - Special purpose surface-water data or other tyes of surface water related information are often collected at or in the near vincinity of a site, in addition to, or instead of, the normal stage-discharge determinations.

100	SW_TELEMETRY	143
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE 9(1) LARGEST VALUE 1 character

Data Values - The Surface Water Telemetry code is a 1-digit numeric code identifying, if applicable, the type of telemetry system in use at the sites:

Code	Meaning
1	Telemeter-land line - A telemetry system that uses electrical current conducting wires (telephone, etc.) to transmit data from a site to a distant receiving site.
2	Telemeter-radio network - A telemetry system that uses terrestrial line of sight radios (wireless transmission of electric impulses) to transmit data from a site to a distant receiving site.
3	Landsat - A satellite telemetry system used to relay data two or more times daily from in situ sensors.
4	GOES (Geostationary Operational Environmental Satellite) - A satellite telemetry system used to relay data, normally once every 3 hours, from in situ sensors.
5	DARC (Device for Automatic Remote Data Collection) - A telemetry system interface used to enter in situ sensor data into a land-line, line of sight radio, or satellite telemetry system.
6	Other - Other telemetry systems.
7	Two or more of the above telemetry systems are in use.
8	Telemetry equipment used but type not specified.

General Description - A telemeter is an electrical apparatus for measuring quantity (e.g. stage data) and transmitting the value to a distant receiving site, and there indicating or recording the quantity measured. The Surface Water Telemetry component indentifies the type of system or equipment being used to transmit surface-water information (primarily stage data) from the data collecting site to a central receiving site.

100	SW_LST_UPDATE	144
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY Yes KEY No DATE TYPE Integer

PICTURE 9(4) LARGEST VALUE Current Year

Data Values - This component contains the year and month (YY/MM) in which the C100 data record was last updated. This date is generated by the computer.

General Description - An update is defined as any transaction that adds, deletes, or changes data values in the MWDI data base.

100	SW_PURPOSE	145
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(4) LARGEST VALUE 4 character

Data Values - Up to four codes may be entered to denote the purpose(s) (classification) of a surface water site as follows:

Code	Meaning
B	Benchmark - Sites measuring natural phenomena in areas where man's activity has essentially no effect. These sites would be expected to continue at least as long as natural conditions exist.
H	Long-term hydrologic - Sites intended for the development of general hydrologic knowledge and/or trends having local as well as transfer value to other points.
R	Research or special study - Sites identified with research projects or special studies, including modeling, as part of a specific plan for developing specialized water information. These sites would be operated during the period of the research project or special study.
A	Areal analysis - Sites to provide data for the hydrologic definition of an area or basin. These sites would generally be expected to be in operation until satisfactory area definition is achieved.
S	Assessment - Sites operated for the specific purpose of national accounting, or determining trends, or general hydrologic planning.
F	Forecasting - Sites to provide data for the purpose of forecasting hazardous or critical conditions.
L	Compact or legal - Sites providing data used for surveillance or recordkeeping to fulfill legal requirements or compacts.
C	Current operation - Sites providing information necessary for the management and operation of hydrologic projects, water supplies, pollution abatement, waste disposal, etc. These sites would be operated as long as the specific need exists.

General Description - A site classification scheme devised and used internally by the U.S. Geological Survey to identify the purpose(s) being served by the collection of hydrologic data at the site.

100	SW_RECORDER_TYPE	147
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - The Surface Water Recorder Type component is valued with a 1-character code to indicate the type of recorder used to collect the water data.

Code	Meaning
A	Digital Recorder - Records data at intervals throughout the day by storing the values on paper tape or magnetic recording devices.
B	Graphic Recorder - Supplies a continuous trace of parameter value with respect to time on a chart.
C	Crest-Stage Gage - is a device for obtaining the elevation of the flood crest of streams.

General Description - A recorder is an automatic (self-acting or self-regulating) device that registers and stores data values without human intervention. Telemetry equipment, which is used to transmit data to points distant from the data collection site, is separately accounted for in component 143 (SW_TELEMETRY).

100	SW_RECORDER_FREQ	148
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - This component contains a 1-character code to indicate the frequency at which data are being recorded at a site.

Code	Recording Interval	Readings Per Day
A	0.5 min (30 sec)	2880
B	1 min.	1440
C	2 min.	720
D	3 min.	480
E	4 min.	360
F	5 min.	288
G	6 min.	240
H	10 min.	144
I	15 min.	96
J	30 min.	48
K	45 min.	32
L	1 hr	24
M	2 hr	12
N	3 hr	8

Code	Recording Interval	Readings Per Day
O	4 hr	6
P	6 hr	4
Q	12 hr	2
R	24 hr	1
S	Continuous	-
T	Periodic	-

General Description - This component pertains to the frequency at which data are recorded and not the length of the period of record for which the data are available.

100	SW_PN_CODE	149
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - For sites which are in the planning stage, the Surface Water Planned or Needed component contains a 1-character code as follows:

B Plan to establish - The establishment of a new site is planned.

R Plan to reestablish - The reestablishment of a discontinued site is planned

D Plan to discontinue - An active site is planned to be discontinued

C Plan to change - A change in the parameter types or frequency of data collection at an active site is planned.

1 Need to establish - There is a need to establish a new site.

2 Need to reestablish - There is a need to reestablish a discontinued site.

3 Need to discontinue - There is a need to discontinue an active site.

4 Need to change - A change in the parameter types or frequency of data collection at an active site is needed.

General Description - The Office of Water Data Coordination (OWDC) is responsible for coordinating Federal agency needs and plans for long-term site activities for obtaining data on stage, flow, and quality of surface waters and quality of ground water. "Planned" activities are those for which funds have been budgeted. "Needed" activities are those that are planned but do not yet have funds budgeted for them.

100	SW_MODIFIERS	170
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY N/A KEY N/A DATA TYPE SR

PICTURE N/A LARGEST VALUE N/A

A schema record containing codes that indicate the external file that contains the data indexed in the C100 data record. The MWDI indexes data from the Environmental Protection Agency's Storage and Retrieval (STORET) System, the U.S. Geological Survey's National Water Data Storage and Retreival System (WATSTORE), and the Texas Natural Resources Information System (TNRIS) by means of software interfaces. Multiple occurrences of C170 may exist for each C100 data record having data indexed from more than one external file.

170	SW_POINTER	171
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(4) LARGEST VALUE 4 characters

Data Values - This component contains a 4-character code that indicates an external file from which data have been indexed in the C100 schema record. The codes, assigned at the time of interfacing, are described below:

Code	Description
STOR	Data have been indexed from EPA's STORET.
TNRS	Data have been indexed from the Texas Natural Resources Information System (TNRIS).
WATD	Data have been indexed from the USGS's WATSTORE Daily Values File.
WATG	Data have been indexed from the WATSTORE Ground-water Site Inventory (GWSI) data base.
WATP	Data have been indexed from the WATSTORE Peak Flow file.
WATS	Data have been indexed from the WATSTORE data base but the exact file is unknown.

General Description - Surface-water data indexed at the time of interfacing with the major water data bases have the Surface Water Pointer component (C171) automatically set and stored to indicate the appropriate major water data base. Use of this component simplifies the retrieval of data from the appropriate data base.

170	SW_MOD_FILE	172
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - This component contains a 1-character code to indicate the WATSTORE Groundwater Site Inventory (GWSI) data base subset from which the data were indexed.

Code	Subset
N	Northeast Region
S	Southeast Region
C	Central Region
W	Western Region

General Description - This component is set automatically to one of the above codes to indicate the GWSI subset in which the data resides at the time of interfacing with the GWSI.

0	GROUND_WATER	200
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY N/A KEY N/A DATA TYPE SR

PICTURE N/A LARGEST VALUE N/A

A schema record containing data values that indicate the types of ground-water data collection activities performed, the years in which these activities took place, and the media on which ground-water data for the sites are available.

200	GW_BEGIN_YR	201
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Integer

PICTURE 9(4) LARGEST VALUE current year

Data Values - The Ground Water Data Collection Begin Year component contains a 4-digit numeric value that identifies the year during which ground-water data were first collected at the site, for instance 1910.

General Description - This component identifies the calendar year in which the acquisition of ground-water data was first begun at a site, regardless of the types of ground-water data that were collected. This date will never change even though ground water collection may be deactivated and reactivated several times during a site's history.

200	GW_END_YR	202
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Integer

PICTURE 9(4) LARGEST VALUE current year

Data Values - The Ground Water Data Collection End Year component contains a 4-digit numeric value which identifies the year that all ground-water data collection activities were ceased at the site. If the organization is currently collecting any ground-water data at the site, this component is not valued.

General Description - This component identifies the calendar year in which all ground-water data collection activity at a site was discontinued. If at a later date, the collection of any of the ground-water parameters is resumed, the former end date is deleted.

200	GW_INTERRUPTED	203
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - The Ground Water Interrupted component contains a value of "Y" if the collection of all ground-water parameters has been discontinued (for more than one year) and later resumed one or more times in the history of the site. If ground-water data collection has not been discontinued at any time, the component is not valued.

General Description - The presence of a value of "Y" for this component indicates one or more interruptions in the period of record of ground-water acquisition during the period beginning with GW_BEGIN_YR (component 201) through the present time (if currently active), or ending with GW_END_YR (component 202).

200	GW_OWDC_NO	204
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(5) LARGEST VALUE 5 characters

Data Values - The Ground Water OWDC Number component contains a five-character, alpha-numeric code.

General Description - A unique identification number assigned by the U.S. Geological Survey's Office of Water Data Coordination (OWDC) to each site in the "Part C - Quality of Ground Water" section of the "Catalog of Information on Water Data".

200	PRIN_AQUIFER	208
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(8) LARGEST VALUE 8 characters

Data Values - The Principal Aquifer component contains the Geologic Unit code (up to eight alpha-numeric characters) for the aquifer supplying water to the well. For Geologic Unit codes see appendix F of the WATSTORE User's Guide, U.S. Geological Survey Open File Report 75-426, August 1975.

General Description - An aquifer is a formation, group of formations, or part of a formation that contains sufficient saturated permeable material to yield significant quantities of water to wells and springs. If a well taps more than one aquifer, the principal aquifer will be the one that yields the greatest amount of water.

200	AQUIFER TYPE	209
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - The component contains a 1-character alphabetic code that best describes the type(s) of aquifer(s) supplying water to the well as follows:

Code	Meaning
U	Unconfined single aquifer
N	Unconfined multiple aquifers
C	Confined single aquifer
M	Confined multiple aquifers
X	Mixed (confined and unconfined) multiple aquifers. This is also used when a multiple aquifer situation exists but confined/unconfined conditions have not been indicated.

General Description - A confined aquifer contains ground water that is under pressure significantly greater than that of the atmosphere, and its upper limit is the bottom of a bed of distinctly lower hydraulic conductivity than that of the material in which the confined water occurs. An unconfined aquifer contains ground water that has a water table.

200	LEVEL_FREQ	210
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character alphabetic code in this component indicates the frequency with which well water level measurements or instrument recorded water level determination are made. See appendix A for frequency codes.

General Description - The water level of a well is the distance to the water surface below a reference datum. Water level measurements are expressed in feet with reference to either mean sea level or land-surface datum. Mean sea level is the datum plane on which the network of precise levels is based; land-surface datum is a datum plane that is approximately at land surface at each well. The altitude of the land-surface datum with repect to mean sea level is often known.

200	LEVEL_MED	211
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - This component contains a 1-character code indicating the type(s) of storage media (document, computer readable, etc.) on which the data values for well water levels are stored and available to potential users of the data. See appendix B for data storage codes and also see component number 210 (LEVEL FREQ) for the definition of level.

General Description - Organizations collect hydrologic data and record and store the information on a variety of storage media ranging from original field notes to computer storage devices. Media is used as a general term encompassing all means of storing and desseminating the data.

200	DISCHRG FREQ	212
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character alphabetic code in this component indicates the frequency with which well discharge measurements are made. See appendix A for frequency codes.

General Description - The discharge from a well is either the natural flow from a well or that produced by pumping. Discharge is the volume of water (or more broadly, total fluid) that passes a given point within a given period of time, usually expressed in gallons per minute.

200	DICHRG_MED	213
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - This component contains a 1-character code indicating the type(s) of storage media (document, computer readable, etc.) on which the data values for well discharge are stored and available to potential users of the data. See appendix B for data storage codes and also see component number 212 (DISCHRG_FREQ) for the definition of discharge.

General Description - Organizations collect hydrologic data and record and store the information on a variety of storage media ranging from original field notes to computer storage devices. Media is used a a general term encompassing all means of storing and disseminating the data.

200	SUBSIDE_FREQ	214
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character alphabetic code in this component indicates the frequency with which subsidence data are collected. See appendix A for frequency codes.

General Description - Subsidence is the lowering of the land surface, resulting from the compaction of sediments composing an aquifer system when subsurface fluids are withdrawn.

200	SUBSIDE_MED	215
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - This component contains a 1-character code indicating the type(s) of storage media (document, computer readable, etc.) on which the data values for subsidence are stored and available to potential users of the data. See appendix B for data storage codes and also see component number 214 (SUBSIDE_FREQ) for the definition of subsidence.

General Description - Organizations collect hydrologic data and record and store the information on a variety of storage media ranging from original field notes to computer storage devices. Media is used as a general term encompassing all means of storing and disseminating the data.

200	WELL_DEPTH	221
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Integer

PICTURE 9(5) LARGEST VALUE 999999

Data Values - This component contains the depth (up to five digits) of the well in feet.

General Description - The greatest depth below land surface at which water can enter the well will be reported. For screened or perforated wells, the depth to the bottom of the screen or to the lowest perforations will be reported. For open-hole or open-end wells, the total depth will be reported.

200	GW_RECMD_MTHDS	230
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - The Ground-Water Recommended-Methods Component is valued with a "Y" if the C200 data record describes data collected according to recommended methods. If not, the component is valued with a "N".

General Description - In 1977, the Office of Water Data Coordination published the National Handbook of Recommended Methods for Water Data Acquisition. Another reference for recommended methods is the USGS's Techniques of Water-Resources Investigations (TWRI).

200	GW_OTHER	240
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(6) LARGEST VALUE ABC123456789

Data Values - The Other Ground Water component will contain any combination of 1-character codes needed to indicate supplementary ground water related data available as follows:

Code	Meaning
1	Total annual pumpage or flow - The total volume of water withdrawn from a well in a year's time, usually expressed in acre-feet or millions of gallons.
2	Depth of well - The total depth to which the hole was drilled even though it may have been plugged back in completing the well.
3	Casing record - Information on well casing material, diameter, and length.
4	Screen record - Information about openings that permit water to enter the well, including perforations and uncased sections of the aquifer.
5	Driller s log - Description by the driller of the geologic materials penetrated from the land surface to the greatest depth of the well.
6	Geologic Log - Same as code "5" except that the description is made by a geologist.
7	Instrument log - Measurements of physical phenomena about the well or natural phenomena in the earth surrounding the well, or responses of the earth material around the well to induced stimuli such as radiation, electric current, or induced magnetic field.
8	Hydraulic conductivity - The rate at which water moves through aquifer material under a unit hydraulic gradient, expressed as volume per unit time per unit cross section ($ft^3/day/ft^2$ or $M^3/day/M^2$) reduced to feet per day or meters per day.
9	Transmissivity - The rate at which water moves through the aquifer expressed as volume per unit time per unit width ($ft^3/day/ft$ or $M^3/day/M$) reduced to (ft^2/day or M^2/day). Note that transmissivity is

a property of a vertical strip of the aquifer and is the product of hydraulic conductivity of the material and the saturated thickness of the aquifer.

A Storage coefficient - The volume of water an aquifer releases from or takes into storage unit surface area of the aquifer per unit change in head.

B Construction - Information about the construction of the well such as: the means of drilling, hole diameter, date drilled, driller name, type of finish (screening, perforations), and type of casing.

C Lift - The means by which water is removed from the well such as type of pump.

D Discharge-drawdown - The difference between the static water level and a property of a vertical strip of the aquifer and is the product of the water level during the largest sustainable discharge rate.

General Description - Supplementary ground-water data or related information about the station.

200	MAJOR_VAR	242
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No Key No DATA TYPE Char

PICTURE X(4) LARGEST VALUE 1234567

Data Values - The Causes of Major Variances in Observed Data component may contain up to seven 1-digit numerical codes as follows:

Code	Meaning
1	Pumping - The artificial removal of water from an aquifer.
2	Evapotranspiration - Water withdrawn from a land area by evaporation from water surfaces and moist soil and by plant transpiration.
3	Changes in stream or lake stage - The transfer of water to and from ground water and surface-water bodies.
4	Recharge from soil moisture - The downward percolation from the unsaturated zone (soil moisture or soil water) to the saturated zone of an aquifer.
5	Infiltration - The infusion of water into an aquifer from surface-water sources such as spreading ponds, storage lagoons, disposal pits, etc.
6	Natural dissolution - The dissolving of minerals (such as limestone) resident in the aquifer.
7	Injection of fluids - Deep well artificial recharge of fluids into an aquifer.

General Description - This component identifies the artificial and natural phenomena that cause variations and fluctuations in the movement and amount of fluid in an aquifer.

200	GW_TELEMETRY	243
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Integer

PICTURE 9(1) LARGEST VALUE 1 character

Data Values - The Ground Water Telemetry code is a 1-digit numeric code identifying, if applicable, the type of telemetry system in use at the site:

Code	Meaning
1	Telemeter-land lines - A telemetry system that uses electrical current conducting wires (telephone, etc.) to transmit data from a site to a distant receiving site.
2	Telemeter-radio network - A telemetry system that uses terrestrial line-of-sight radios (wireless transmission of electric impulses) transmit data from a site to a distant receiving site.
3	Landsat - A satellite telemetry system used to relay data two or more times daily from in situ sensors.
4	GOES (Geostationary Operational Environmental Satellite) - A satellite telemetry system used to relay data, normally every 3 hours, from in situ sensors.
5	DARDC (Device for Automatic Remote Data Collection) - A telemetry system interface used to enter in situ sensor data into a landline, line of sight radio, or satellite telemetry system.
6	Other - Other telemetry systems.
7	Two or more of the above telemetry systems are in use.
8	Telemetry equipment used but type not specified.

General Description - A telemeter is an electrical apparatus for measuring quantity (e.g. water-level data) and transmitting the value to a distant receiving site, and there indicating or recording the quantity measured. The Ground Water Telemetry component identifies the type of system or equipment being used to transmit ground-water information from the data collection site to a central receiving site.

200	GW_LST_UPDATE	244
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY Yes KEY No DATA TYPE Integer

PICTURE 9(4) LARGEST VALUE Current YYMM

Data Values - This component contains the year and the month (YY/MM) the C200 data record was last updated. This date is generated by the computer.

General Description - An update is defined as any transaction that adds, changes, or deletes data values in the MWDI data base.

200	GW_PURPOSE	245
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Integer

PICTURE X(4) LARGEST VALUE ABCFHLRS

Data Values - Up to four codes may be entered to denote the purpose(s) (classification) of a ground-water site as follows:

Code	Meaning
B	Benchmark - Sites measuring natural phenomena in areas where man's activity has essentially no effect. These sites would be expected to continue at least as long as natural conditions exist.
H	Long-term hydrologic - Sites intended for the development of general hydrologic knowledge and/or trends having local as well as transfer value to other points.
R	Research or special study - Sites identified with research projects or special studies, including modeling, as part of a specific plan for developing specialized water information. These sites would be operated during the period of the research project or special study.
A	Areal analysis - Sites to provide data for the hydrologic definition of an area or basin. These sites would generally be expected to be in operation until satisfactory areal definition is achieved.
S	Assessment - Sites operated for the specific purpose of national accounting, determining trends, or general hydrologic planning.
F	Forecasting - Sites to provide data for the purpose of forecasting hazardous or critical conditions.
L	Compact or legal - Sites providing data used for surveillance or recordkeeping to fulfill legal requirements or compacts.

C Current operation - Sites providing information necessary for the management and operation of hydrologic projects, water supplies, pollution abatement, waste disposal, etc. These sites would be operated as long as the specific need exists

General Description - A site classification schema devised and used internally by the U.S. Geological Survey to identify the purpose served by collection of hydrologic data at the site.

200	GW_RECORDER_TYPE	247
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - The Ground-Water-Recorder-Type component is valued with a 1-character code to indicate the type of recorder used to collect the water data.

Code	Meaning
A	Digital Recorder - Records data at intervals throughout the day by storing the values on paper tape or magnetic recording device.
B	Graphic Recorder - Supplies a continuous trace of parameter value with respect to time on a chart.

General Description - A recorder is an automatic (self-acting or self-regulating) device that registers and stores data values without human intervention. Telemetry equipment, which is used to transmit data to points distant from the data collection site, is separately accounted for in component 243 (GW_TELEMETRY).

200	GW_RECORDER_FREQ	248
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - This component contains a 1-character code to indicate the frequency at which data are being recorded at a site.

Code	Recording Interval	Readings Per Day
A	0.5 min (30 sec)	2880
B	1 min.	1440
C	2 min.	720
D	3 min.	480
E	4 min.	360
F	5 min.	288
G	6 min.	240
H	10 min.	144
I	15 min.	96
J	30 min.	48
K	45 min.	32
L	1 hr	24
M	2 hr	12
N	3 hr	8

Code	Recording Interval	Readings Per Day
O	4 hr	6
P	6 hr	4
Q	12 hr	2
R	24 hr	1
S	Continuous	-
T	Periodic	-

General Description - This component pertains to the frequency at which the data are recorded and not the length of the period of record for which the data are available.

200	GW_PN_CODE	249
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - For stations which are in the planning stage, the Ground Water Planned or Needed component will contain a 1-character code as follows:

Code	Meaning
B	Plan to establish - The establishment of a new site is planned.
R	Plan to reestablish - The reestablishment of a discontinued site is planned.
D	Plan to discontinue - An active site is planned to be discontinued.
C	Plan to change - A change in the parameter types or frequency of data collection at an active site is planned.
1	Need to establish - There is a need for the establishment of a new site.
2	Need to reestablish - There is a need for the reestablishment of a discontinued site.
3	Need to discontinue - There is a need for discontinuing an active site.
4	Need to change - A change in the parameter types or frequency of data collection at an active site is needed.

General Description - The Office of Water Data Coordination (OWDC) is responsible for coordinating Federal agency needs and plans for long-term site activities for obtaining data on stage, flow, quality of surface waters, and quality of ground waters. "Planned" activities are those for which funds have been budgeted. "Needed" activities are those that are planned but do not yet have funds budgeted for them.

200	GW_MODIFIERS	270
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY N/A KEY N/A DATA TYPE SR

PICTURE N/A LARGEST VALUE N/A

A schema record containing codes that indicate the external file that contains the data indexed in the C200 data record. The MWDI indexes data in the Environmental Protection Agency's Storage and Retrieval (STORET) System, the U.S. Geological Survey's National Water Data Storage and Retrieval System (WATSTORE), and the Texas Natural Resources Information System (TNRIS) by means of software interfaces. Multiple occurrences of C270 may exist for each C200 data record having data indexed from more than one external file.

270	GW_POINTER	271
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY NO KEY NO DATA TYPE Char

PICTURE X(4) LARGEST VALUE 4 characters

Data Values - This component contains a 4-character code that indicates an external file from which data have been indexed in the C200 schema record. The codes, assigned at time of interfacing, are described below:

Code	Description
STOR	Data have been indexed from EPA's STORET.
TNRS	Data have been indexed from the Texas Natural Resources Information System (TNRIS)
WATD	Data have been indexed from USGS's WATSTORE Daily Values File.
WATG	Data have been indexed from the WATSTORE Ground-water Site Inventory File (GWSI) data base.
WATP	Data have been indexed from the WATSTORE Peak Flow File.
WATS	Data have been indexed from the WATSTORE data base but exact file unknown.

General Description - Ground-water data indexed at the time of interfacing with the major water data bases have the Ground Water Pointer component (C271) automatically set and stored to indicate the appropriate major water data bases. Use of this component simplifies the retrieval of data from the appropriate data base.

270	GW_MOD_FILE	272
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY NO KEY NO DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - This component contains a 1-character code to indicate the WATSTORE Ground-Water-Site-Inventory (GWSI) data base subset from which the data were indexed.

Code	Subset
N	Northeast Region
S	Southeast Region
C	Central Region
W	Western Region

General Description - This component is set automatically to one of the above codes to indicate the GWSI subset in which the data resided at the time of interfacing with the GWSI.

0	QUALITY_WTR	300
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY N/A KEY No DATA TYPE SR

PICTURE N/A LARGEST VALUE N/A

A schema record containing data values indicating the types of water-quality data collection activities performed, the years in which these activities took place, and the media on which water-quality data for the sites are available.

300	QW_BEGIN_YR	301
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY Yes KEY No DATA TYPE Integer

PICTURE 9(4) LARGEST VALUE current year

Data Values - The Quality of Water Data Collection Begin Year component contains a 4-digit numeric value identifying the year that water-quality data were first collected at the site, for example, 1910.

General Description - This component identifies the calendar year in which the acquisition of water quality data was first begun at a site, regardless of the types of water quality data that were collected. This date will never change even though water quality data collection may be deactivated and reactivated several times during a site's history.

300	QW_END_YR	302
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Integer

PICTURE 9(4) LARGEST VALUE current year

Data Values - The Quality of Water Data Collection End Year component contains a 4-digit numeric value identifying the year that all water quality data collection activities were ceased at the site. If the organization is currently collecting any water quality data at the site, this component is not valued.

General Description - This component identifies the calendar year in which all water quality data collection activity at a site was discontinued. If, at a later date, the collection of any of the water quality parameters is resumed, the former end date is deleted.

300	QW_INTERRUPTED	303
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - The Quality of Water Interrupted component contains a value of "Y" if the collection of water quality parameters has been discontinued (for more than one year) and later resumed one or more times in the history of the site. If water quality data collection has not been discontinued at any time, the component is not valued.

General Description - The presence of a value of "Y" for this component indicates one or more interruptions in the period of record of water quality data acquisition during the period beginning with QW_BEGIN_YR (component 301) through the present time (if currently active), or ending with QW_END_YR (component 302).

300	QW_OWDC_NO	304
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(5) LARGEST VALUE 5 characters

Data Values - The Quality of Water OWDC Number component contains a 5-character alpha-numeric code.

General Description - A unique identification number assigned by the U.S. Geological Survey's Office of Water Data Coordination (OWDC) to each station in the "Part B - Quality of Surface Water" and to each station in the "Part C - Quality of Ground Water" sections of the "Catalog of Information on Water Data."

300	QW_OWDC_SEQ	307
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Integer

PICTURE 9(13) LARGEST VALUE 13 digits

Data Values - The Quality of Water OWDC Sequence Number consists of 13 numeric digits.

General Description - A 13-digit downstream order number assigned by the U.S. Geological Survey's Office of Water Data Coordination (OWDC) to each site in the "Part B - Quality of Surface Water" section of the "Catalog of Information on Water Data." It is used as a sort key to arrange sites in downstream order.

300	QW_RECMD_MTHDS	330
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - The Quality of Water Recommended Methods component is valued with a "Y" if the C300 data record describes data collected according to recommended methods.

General Description - In 1977, the Office of Water Data Coordination published the National Handbook of Recommended Methods for Water Data Acquisition. Another reference for recommended methods is the USGS's Techniques of Water-Resources Investigations (TWRI).

300	QW_TELEMETRY	343
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Integer

PICTURE 9(1) LARGEST VALUE 1 character

Data Values - The Quality of Water Telemetry code is a 1-digit numeric code identifying, if applicable, the type of telemetry system in use at the station site:

Code	Meaning
1	Telemeter-land lines - A telemetry system that uses electrical current conducting wires (telephone, etc.) to transmit data from a site to distant receiving site.
2	Telemeter-radio network - A telemetry system that uses terrestrial line-of-sight radios (wireless transmission of electric impulses) to transmit data from a station to a distant receiving site.
3	Landsat - A satellite telemetry system used to relay data two or more times daily from in situ sensors.
4	GOES (Geostationary Operational Environmental Satellite) - A satellite telemetry system used to relay data, normally every 3 hours, from in situ sensors.
5	DARDC (Device for Automatic Remote Data Collection) - A telemetry system interface used to enter in situ sensor data into a landline, line-of-sight radio, or satellite telemetry system.
6	Other - Other telemetry systems.
7	Two or more of the above telemetry systems are in use.
8	Telemetry equipment used but type not specified.

General Description - A telemeter is an electrical apparatus for measuring quantity (e.g. temperature data) and transmitting the value to a distant receiving site, and there indicating or recording the quantity measured. The Water Quality Telemetry component identifies the type of system or equipment being used to transmit water-quality information from the data collection site to a central receiving site.

300	QW_LST_UPDATE	344
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY Yes KEY No DATA TYPE Integer

PICTURE 9(4) LARGEST VALUE Current YYMM

Data Values - This component contains the year and month (YY/MM) in which the C300 data record was last updated. This date is generated by the computer.

General Description - An update is defined as any transaction that adds, changes, or deletes data values in the MWDI data base.

300	QW_PURPOSE	345
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(4) LARGEST VALUE ABCFHLRS

Data Values - Up to four codes may be entered to denote the purpose(s) (classification) of a water-quality site as follows.

Code	Meaning
B	Benchmark - Sites measuring natural phenomena in areas where man's activity has essentially no effect. These sites would be expected to continue at least as long as natural conditions exist.
H	Long-term hydrologic - Sites intended for the development of general hydrologic knowledge and(or) trends having local as well as transfer value to other points.
R	Research or special study - Sites identified with research projects or special studies, including modeling, as part of a specific plan for developing specialized water information. These sites would be operated during the period of the research project or special study.
A	Areal analysis - Sites to provide data for the hydrologic definition of an area or basin. These sites would generally be expected to be in operation until satisfactory areal definition is achieved.
S	Assessment - Sites operated for the specific purpose of national accounting, determining trends, or general hydrologic planning.
F	Forecasting - Sites to provide data for the purpose of forecasting hazardous or critical conditions.
L	Compact or legal - Sites providing data used for surveillance or recordkeeping to fulfill legal requirements or compacts.

C Current operation - Sites providing information necessary for the management and operation of hydrologic projects, water supplies, pollution abatement, waste disposal, etc. These sites would be operated as long as the specific need exists.

General Description - A site classification scheme devised and used internally by the U.S. Geological Survey to identify the purpose being served by the collection of hydrologic data at the site.

300	QW_RECORDER_TYPE	347
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - The Quality of Water Recorder Type component is valued with a 1-character code to indicate the type of recorder used to collect the water data.

Code	Meaning
A	Digital Recorder - Records data at intervals throughout the day by storing the values on paper tape or magnetic recording device.
B	Graphic Recorder - Supplies a continuous trace of parameter value with respect to time on a chart.

General Description - A recorder is an automatic (self-acting or self-regulating) device that registers and stores data values without human intervention. Telemetry equipment, which is used to transmit data to points distant from the data collection site, is separately accounted for in component 343 (QW_TELEMETRY).

300	QW_RECORDER_FREQ	348
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - This component contains a 1-character code to indicate the frequency at which data are being recorded at site.

Code	Recording Interval	Readings Per Day
A	0.5 min (30 sec)	2880
B	1 min.	1440
C	2 min.	720
D	3 min.	480
E	4 min.	360
F	5 min.	288
G	6 min.	240
H	10 min.	144
I	15 min.	96
J	30 min.	48
K	45 min.	32
L	1 hr	24
M	2 hr	12
N	3 hr	8
O	4 hr	6

Code	Recording Interval	Readings Per Day
P	6 hr	4
Q	12 hr	2
R	24 hr	1
S	Continuous	-
T	Periodic	-

General Description - This component pertains to the frequency at which the data are recorded and not the total or length of period of record for which the data are available.

300	QW_PN_CODE	349
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - For stations which are in the planning stage, the Quality of Water Planned or Needed component will contain a 1-character code as follows:

Code	Meaning
B	Plan to establish - The establishment of a new site is planned.
R	Plan to reestablish - The reestablishment of a discontinued site is planned.
D	Plan to discontinue - An active site is planned to be discontinued.
C	Plan to change - A change in the parameter types or frequency of data collection at an active site is planned.
1	Need to establish - There is a need for the establishment of a new site.
2	Need to reestablish - There is a need for the reestablishment of a discontinued site.
3	Need to discontinue - There is a need for discontinuing an active site.
4	Need to change - A change in the parameter types or frequency of data collection at an active site is needed.

General Description - The Office of Water Data Coordination (OWDC) is responsible for coordinating Federal agency needs and plans for long-term site activities for obtaining data on stage, flow, quality of surface waters, and quality of ground waters. "Planned" activities are those for which funds have been budgeted. "Needed" activities are those that are planned but do not yet have funds budgeted for them.

300	STORET_POINTER	355
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE 9(7) LARGEST VALUE 9,999,999

Data Values - This component contains the STORET computer address to locate the data for the site in the STORET file.

General Description - The STORET pointer is stored in the MWDI data base to facilitate the future development of automated retrieval procedures between the two data systems. The pointer has no application in nonautomated uses of STORET.

300	QW_MODIFIERS	370
IN SR	COMPONENT NAME	COMPONENT NAME

MANDATORY N/A KEY N/A DATA TYPE SR

PICTURE N/A LARGEST VALUE N/A

A schema record containing codes that indicate the external file that contains the data indexed in the C300 data record. The MWDI indexes data in the Environmental Protection Agency's Storage and Retrieval (STORET) system, the U.S. Geological Survey's National Water Data Storage and Retrieval System (WATSTORE), and the Texas Natural Resources Information System (TNRIS) by means of software interfaces. Multiple occurrences of C370 may exist for each C300 data record having data indexed from more than one external file.

370	QW_POINTER	371
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(4) LARGEST VALUE 4 characters

Data Values - This component contains a 4-character code that indicates an external file from which data have been indexed in the C300 schema record. The codes, assigned at time of interfacing, are described below:

Code	Description
STOR	Data have been indexed from EPA's STORET.
TNRS	Data have been indexed from the Texas Natural Resources Information System (TNRIS).
WATD	Data have been indexed from USGS's WATSTORE Daily Values File.
WATG	Data have been indexed from the WATSTORE Ground-water Site Inventory (GWSI) data base.
WATP	Data have been indexed from the WATSTORE Peak Flow file.
WATS	Data have been indexed from the USGS WATSTORE data base but exact file unknown.

General Description - Quality-of-water data indexed at the time of interfacing with the major water data bases have the Quality of Water Pointer component (C371) automatically set and stored to indicate the appropriate major water-data base. Use of this component simplifies the retrieval of data from the appropriate data base.

370	QW_MOD_FILE	372
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - This component contains a 1-character code to indicate the WATSTORE Ground Water Site Inventory (GWSI) base subset from which the data were indexed.

Code	Subset
N	Northeast Region
S	Southeast Region
C	Central Region
W	Western Region

General Description - This component is set automatically to one of the above codes to indicate the GWSI subset in which the data reside at the time of interfacing with the GWSI.

300	BIOLOGICAL_QW	400
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY N/A KEY N/A DATA TYPE SR

PICTURE N/A LARGEST VALUE N/A

A schema record containing data values indicating the type of biological data (relating to living organisms in water) collection activities performed, the frequency at which the observations and/or determinations are made, and the media on which biological data for the site is available.

Components 401 through 453 deal specifically with the population, that is, the community structure found in aquatic habitats (what kinds of organisms and how many of each are present).

Components 455 through 469 are concerned with general measurements of the biological community's functions (see component 454 BIOLOGIC_QW2 for further definitions).

400	ENTERIC_BACT	401
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character alphabetic code in this component indicates the frequency with which a sample of the parameter is collected. See appendix A for frequency codes.

General Description - Enteric bacteria are those which originate in the intestines of warm-blooded animals.

400	NATIVE_BACT	402
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character alphabetic code in this component indicates the frequency with which a sample of the parameter is collected. See appendix A for frequency codes.

General Description - Native bacteria, for the purpose of this data base, are those which are indigenous to a natural water body.

400	PHYTOPLANKTON	403
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character alphabetic code in this component indicates the frequency with which a sample of the parameter is collected. See appendix A for frequency codes.

General Description - Phytoplankton are the suspended or floating plant organisms which drift passively with water currents. Examples of phytoplankton are diatoms and blue-green algae.

400	ZOOPLANKTON	404
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character alphabetic code in this component indicates the frequency with which a sample of the parameter is collected. See appendix A for frequency codes.

General Description - Zooplankton are the suspended or floating animal organisms which drift passively with water currents. Examples of zooplankton are protozoans, entomostracans, and various larvae.

400	PERIPHYTON	405
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character alphabetic code in this component indicates the frequency with which a sample of the parameter is collected. See appendix A for frequency codes.

General Description - Periphyton are the community of microorganisms that are attached to or live upon submerged surfaces.

400	MACROPHYTON	406
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character alphabetic code in this component indicates the frequency with which a sample of the parameter is collected. See appendix A for frequency codes.

General Description - Macrophytes are large aquatic plants that can be seen without magnification, including mosses and seed plants.

400	MICROINVERTS	407
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character alphabetic code in this component indicates the frequency with which a sample of the parameter is collected. See appendix A for frequency codes.

General Description - Small animals (without backbones) that will pass through a U.S. Standard #30 sieve (0.595 millimeter mesh opening) are classified as microinvertebrates, according to the American Public Health Association publication entitled, "Standard Methods For The Examination Of Water and Waste Water" (1975). The U.S. Geological Survey, however, has recently provisionally adopted the use of the U.S. Standard #70 sieve (0.210 millimeter mesh opening) for this purpose. No universal mesh opening standard has been agreed to, but most organizations use mesh opening sizes which fall within the range of the #30 to #70 sieve sizes.

400	MACROINVERTS	408
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character alphabetic code in this component indicates the frequency with which a sample of the parameter is collected. See appendix A for frequency codes.

General Description - Animals (without backbones) that will not pass through a U.S. Standard #30 sieve (0.595 millimeter mesh opening) are classified as macroinvertebrates, according to the American Public Health Association publication entitled, "Standard Methods for the Examination of Water and Waste Water" (1975). The U.S. Geological Survey, however, has recently provisionally adopted the use of the U.S. Standard #70 sieve (0.210 millimeter mesh opening) for this purpose. No universal mesh opening standard has been agreed to, but most organizations use mesh opening sizes which fall within the range of the #30 to #70 sieve sizes.

400	VERTEBRATES	409
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character alphabetic code in this component indicates the frequency with which a sample of the parameter is collected. See appendix A for frequency codes.

General Description - A vertebrate is an animal with a backbone enclosing a nerve cord; aquatic examples include fishes and amphibians.

400	FUNGI	410
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character alphabetic code in this component indicates the frequency with which a sample of the parameter is collected. See appendix A for frequency codes.

General Description - Fungi are plants lacking chlorophyll including molds, yeasts, mildews, rusts, and mushrooms. They derive their nourishment directly from other organisms (parasitic fungi) or from dead organic matter (saprophytic fungi).

400	VIRUSES	411
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character alphabetic code in this component indicates the frequency with which a sample of the parameter is collected. See appendix A for frequency codes.

General Description - A class of ultramicroscopic, filterable, infectious agents, chiefly protein in composition, which are typically inert except when in contact with certain living cells.

400	BIO_RECMD_MTHDS	430
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - The Biological Recommended Methods component is valued with a "Y" if the C400 data record describes data collected according to recommended methods. If not, the component is valued with an "N".

General Description - In 1977, the Office of Water Data Coordination published the National Handbook of Recommended Methods for Water Data Acquisition. Another reference for recommended methods is the USGS's Techniques of Water-Resources Investigations (TWRI).

400	BIO_BEGIN_YR	440
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - The Biological Data Collection Begin Year component contains a 4-digit numeric value identifying the year that biological data were first collected.

General Description - This component identifies the calendar year in which the acquisition of biological data first began at a site regardless of the types of biological data that were collected. This date will never change even though biological data collection may be deactivated and reactivated several times during a site's history.

454	BIO_END_YR	441
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Integer

PICTURE 9(4) LARGEST VALUE Current year

Data Values - The Biological Data Collection End Year component contains a 4-digit numeric value identifying the year that all biological data collection activities were ceased at the site. If the organization is currently collecting data at the site, this component is not valued.

General Description - This component identifies the calendar year in which all biological data collection activities at the site were discontinued. If at a later date, the collection of any of the biological parameters is resumed, the former end date is deleted.

400	BIO_LST_UPDATE	444
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY Yes KEY No DATA TYPE Integer

PICTURE 9(4) LARGEST VALUE Current YYMM

Data Values - This component contains the year and the month (YY/MM) in which the C400 data record was last updated. This date is generated by the computer.

General Description - An update is defined as any transaction that adds, deletes, or changes data values in the MWDI data base.

400	BIOLOGICAL_QW	446
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - This component contains a 1-character code indicating the type(s) of storage media (document, computer readable, etc.) on which the biological data are stored and available to potential users of the data. See appendix B for data storage codes and also see component number 400 (BIOLOGICAL) for the definition of biological.

General Description - Organizations collect hydrologic data and record and store the information on a variety of storage media ranging from original field notes to computer storage devices. Media is used as a general term encompassing all means of storing and disseminating the data.

400	BIOLOGICAL_QW2	454
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY N/A KEY N/A DATA TYPE SR

PICTURE N/A LARGEST VALUE N/A

Further biological analyses used in the interpretation of water quality.

Components 455-458 are concerned with community metabolism, which is the rate at which the life processes of the organisms of a community take place, that is, growth, reproduction, and assimilation.

Components 459-461 are concerned with bioassays, which involve the use of living organisms to test the effect of a given substance.

Components 462-464 are concerned with tissue analysis, which is the examination of dead organisms to detect the presence or influence of substances or physical damage.

454	PRIMARY_PRDCTVTY	455
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character alphabetic code in this component indicates the frequency with which determinations are made. See appendix A for frequency codes.

General Description - Primary productivity is the rate at which organic matter is produced by the photosynthetic and chemosynthetic activity of autotrophic organisms (chiefly green plants) using inorganic material as a carbon source and sunlight as an energy source.

454	SECONDARY_PRDCTVTY	456
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character alphabetic code in this component indicates the frequency with which determinations are made. See appendix A for frequency codes.

General Description - Secondary productivity is the rate at which organic matter is produced by the heterotrophic organisms of a community.

454	CHEMOSYNTHETIC ACTIVITY	458
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character alphabetic code in this component indicates the frequency with which determinations are made. See appendix A for frequency codes.

General Description - Chemosynthetic activity is the synthesis of organic matter from mineral substances with the aid of chemical energy.

454	BIOSTIMULATORY_TEST	459
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character alphabetic code in this component indicates the frequency with which determinations are made. See appendix A for frequency codes.

General Description - Biostimulatory tests determine the reaction of an organism to a given substance or set of conditions, for example, cold, heat, and excessive nutrients. Algae growth potential is an example of this type of test.

454	TOXICITY TEST	460
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character alphabetic code in this component indicates the frequency with which determinations are made. See appendix A for frequency codes.

General Description - Toxicity tests determine the potency of a toxic substance by measuring the intensity of a biological response.

454	OTHER_BIOASSAY_TEST	461
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character alphabetic code in this component indicates the frequency with which determinations are made. See appendix A for frequency codes.

General Description - Other bioassay tests refer to those not covered in components 459 (BIOSTIMULATORY_TEST) and 460 (TOXICITY_TEST), and may include, for example, the measurement of low-level response systems, such as heart rate.

454	CHM_TISSUE_ANALYSIS	462
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character alphabetic code in this component indicates the frequency with which determinations are made. See appendix A for frequency codes.

General Description - Chemical analysis of tissue involves the measurements of the types and/or amounts of chemical substances present in the tissue of an organism.

454	HISTOPATH_ANALYSIS	463
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character alphabetic code in this component indicates the frequency with which determinations are made. See appendix A for frequency codes.

General Description - Histopathological analysis involves the determination of changes in an organism's tissue structure as a result of some physical (for example, parasitism) or chemical (for example toxic substances) activity.

454	OTHER_TISSUE_ANALYSIS	464
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character alphabetic code in this component indicates the frequency with which determinations are made. See appendix A for frequency codes.

General Description - Other tissue analyses of organisms refer to those not covered in components 462 (CHM_TISSUE_ANALYSIS) and 463 (HISTOPATH_ANALYSIS), and may involve, for example, determinations in flavor impairment or fish flesh.

400	BIO_MODIFIERS	470
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY N/A KEY N/A DATA TYPE SR

PICTURE N/A LARGEST VALUE N/A

A schema record containing codes that indicate the external file that contains the data indexed in the C400 data record. The MWDI indexes data from the Environmental Protection Agency's Storage and Retrieval (STORET) System, the U.S. Geological Survey's National Water Data Storage and Retrieval System (WATSTORE), and the Texas Natural Resources Information System (TNRIS) by means of software interfaces. Multiple occurrences of C470 may exist for each C400 data record having data indexed from more than one external file.

470	BIO POINTER	471
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(4) LARGEST VALUE 4 characters

Data Values - This component contains a 4-character code that indicates an external file from which data have been indexed in the C400 schema record. The codes assigned at time of interfacing are described below:

Code	Description
STOR	Data have been indexed from EPA's STORET.
TNRS	Data have been indexed from the Texas Natural Resources Information System (TNRIS).
WATD	Data have been indexed from the WATSTORE Daily Values.
WATG	Data have been indexed from the WATSTORE Ground-water Site Inventory (GWSI) data base.
WATP	Data have been indexed from the WATSTORE Peak Flow file.
WATS	Data have been indexed from the WATSTORE data base but exact file unknown.

General Description - Biological data indexed at the time of interfacing with the major water data bases have the Biological Pointer component (C471) automatically set and stored to indicate the appropriate major water data base. Use of this component simplifies the retrieval of data from the appropriate data base.

470	BIO_MOD_FILE	472
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - This component contains a 1-character code to indicate the WATSTORE Ground Water Site Inventory (GWSI) data base subset from which the data were indexed.

Code	Subset
N	Northeast Region
S	Southeast Region
C	Central Region
W	Western Region

General Description - This component is set automatically to one of the above codes to indicate the GWSI subset in which the data resides at the time of interfacing with the GWSI.

300	PHYSICAL QW	500
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY N/A KEY N/A DATA TYPE SR

PICTURE N/A LARGEST VALUE N/A

A schema record containing data values which indicate the types of physical water-quality data collection activities performed, the frequency at which the observations and/or determinations are made, and the media on which physical water quality data for the site is available.

Physical water quality parameters are those which pertain to the measurement of the physical properties (temperature, turbidity, color, etc.) of water, as distinguished from the concentrations of chemical or biological components.

500	TEMPERATURE	501
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character alphabetic code in this component indicates the frequency with which observed or instrument-recorded temperature data are collected. See appendix A for frequency codes.

General Description - Temperature is a measure of the intensity aspect of heat energy present in a water body. It influences the aquatic environment and affects the aquatic biota, the concentrations of dissolved gases, and the distribution of chemical solutes (dissolved substances).

500	SPEC_CONDUCT	502
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character alphabetic code in this component indicates the frequency with which specific conductance determinations are made. See appendix A for frequency codes.

General Description - Specific conductance is a measure of the ability of water to conduct an electrical current and is expressed in micromhos per centimeter at 25°C.

500	TURBIDITY	503
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character alphabetic code in this component indicates the frequency with which turbidity determinations are made. See appendix A for frequency codes.

General Description - Turbidity is an expression of the optical property of water that causes light to be scattered and absorbed rather than transmitted in straight lines. It is caused by the presence of a wide variety of suspended matter, such as clay, silt, finely divided organic and inorganic matter, plankton, and other microscopic organisms. It is usually measured in terms of milligrams per liter, Jackson turbidity units (JTU), or nephelometric units (NTU).

500	COLOR	504
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character alphabetic code in this component indicates the frequency with which color determinations are made. See appendix A for frequency codes.

General Description - Color in water can be caused by the presence of plankton, aquatic vegetation, decaying organic matter, natural metallic ions, industrial wastes, and sewage. A distinction is made between "true color" (the color of a water sample after turbidity has been removed by filtration) and "apparent color" (the color of an untreated water sample). "True color" is usually measured by comparing the color of a water sample to that of a fixed standard. Color is expressed in terms of "color units" where one color unit is the difference in tint produced by one milligram per liter of the chloroplatinate ion.

500	ODOR	505
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character alphabetic code in this component indicates the frequency with which odor determinations are made. See appendix A for frequency codes.

General Description - Odors from water can be caused by a variety of materials, both natural and foreign, in the water body. Odor tests are made by using the human sense of smell. A panel of "testers," in turn, each sniff various dilutions of a water sample until that dilution with the least, but definitely perceptible, odor to all on the panel is determined.

500	pH	506
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character alphabetic code in this component indicates the frequency with which pH determinations are made. See appendix A for frequency codes.

General Description - pH stands for "parts hydrogen" and is a term used almost universally to express the intensity of the acid or alkaline condition of a solution. It is the logarithm of the reciprocal of hydrogen-ion concentration, or more precisely, the hydrogen-ion activity expressed in moles per liter. The practical pH scale (in standard units) ranges from 0 to 14. A pH of 7.0 indicates that the water sample solution is neutral while readings progressively lower than 7.0 denote increasing acidity and those progressively higher than 7.0 denote increasing alkalinity.

500	SUSPD_SOLIDS	507
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character alphabetic code in this component indicates the frequency with which suspended solids determinations are made. See appendix A for frequency codes.

General Description - Suspended solids include colloidal and particulate matter, such as sand, clay, finely divided organic material, bacteria, and plankton that are suspended in the water body.

The term "suspended solids" is synonymous with "suspended sediment concentration" (component 602), however, it is generally used by sanitary engineers in connection with water treatment facilities, while "suspended sediment" is generally used by civil or hydraulic engineers in connection with sediment transport studies, and the data are reported accordingly.

500	PHY_RECMD_MTHDS	530
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - The Physical Recommended Methods component is valued with a "Y" if the C500 data record describes data collected according to recommended records. If not, the component is valued with an "N".

General Description - In 1977, the Office of Water Data Coordination published the National Handbook of Recommended Methods for Water Data Acquisition. Another reference for recommended methods is the USGS's Techniques of Water-Resources Investigations (TWRI).

500	PHY_BEGIN_YR	540
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Integer

PICTURE 9(4) LARGEST VALUE current year

Data Values - The Physical Data Collection Begin Year component contains a 4-digit numeric value identifying the year that physical data were first collected at the site, for example, 1910.

General Description - This component identifies the calendar year in which the acquisition of physical data was first begun at a site, regardless of the types of physical data that were collected. This date will never change even though physical data collection may be deactivated and reactivated several times during a site's history.

500	PHY_END_YR	541
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Integer

PICTURE 9(4) LARGEST VALUE current year

Data Values - The Physical Data Collection End Year component contains a 4-digit numeric value identifying the year that all physical data collection activities were ceased at the site. If the organization is currently collecting any physical data at the site, this component is not valued.

General Description - This component identifies the calendar year in which all physical data collection activities at a site were discontinued. If at a later date, the collection of any of the physical parameters is resumed, the former end date is deleted.

500	PHY_LST_UPDATE	544
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY Yes KEY No DATA TYPE Integer

PICTURE 9(4) LARGEST VALUE Current YYMM

Data Values - This component contains the year and the month (YY/MM) in which the C500 data record was last updated. This date is generated by the computer.

General Description - An update is defined as any transaction that adds, deletes, or changes data values in the MWDI data base.

500	PHYSICAL_MED	546
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - This component contains a 1-character code indicating the type(s) of storage media (document, computer readable, etc.) on which the physical data are stored and available to potential users of the data. See appendix B for data storage codes.

General Description - Organizations collect hydrologic data and record and store the information on a variety of storage media ranging from original field notes to computer storage devices. Media is used as a general term encompassing all means of storing and disseminating the data.

500	PHY_MODIFIERS	570
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY N/A KEY N/A DATA TYPE SR

PICTURE N/A LARGEST VALUE N/A

A schema record containing codes that indicate the external file that contains the data indexed in the C500 data record. The MWDI indexes data in the Environmental Protection Agency's Storage and Retrieval (STORET) System, the U.S. Geological Survey's National Water Data Storage and Retrieval System (WATSTORE), and the Texas Natural Resources Information System (TNRIS) by means of software interfaces. Multiple occurrences of C570 may exist for each C500 data record having data indexed from more than one external file.

570	PHY_POINTER	571
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(4) LARGEST VALUE 4 characters

Data Values - This component contains a 4-character code that indicates an external file from which data have been indexed in the C500 schema record. The codes assigned at time of interfacing, are described below:

Code	Description
STOR	Data have been indexed from EPA's STORET.
TNRS	Data have been indexed from the Texas Natural Resources Information System (TNRIS).
WATD	Data have been indexed from the WATSTORE Daily Values.
WATG	Data have been indexed from the WATSTORE Ground-water Site Inventory (GWSI) data base.
WATP	Data have been indexed from the WATSTORE Peak Flow file.
WATS	Data have been indexed from the WATSTORE data base but exact file unknown.

General Description - Physical data at the time of interfacing with the major water data bases have the physical pointer component (C571) automatically set and stored to indicate the appropriate major water data base. Use of this component simplifies the retrieval of data from the appropriate data base.

570	PHY_MOD_FILE	572
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - This component contains a 1-character code to indicate the WATSTORE Ground Water Site Inventory (GWSI) data base subset from which the data were indexed.

Code	Subset
N	Northeast Region
S	Southeast Region
C	Central Region
W	Western Region

General Description - This component is set automatically to one of the above codes to indicate the GWSI subset in which the data resides at the time of interfacing with the GWSI.

300	SEDIMENT_QW	600
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY N/A KEY N/A DATA TYPE SR

PICTURE N/A LARGEST VALUE N/A

A schema record containing data values indicating the types of sediment data collection activities performed, the frequency at which the observations and/or determinations are made, and the media on which sediment data for the site is available.

Sediment is the solid particles of inorganic or organic fragmental material, usually derived from disintegrated rocks or other earth material that have been or are being transported laterally or vertically from one or more places of origin by air or water. All references to sediment in this database pertain to fluvial sediment only--that is, sediment which is transported by, suspended in, or deposited by water.

600	BED_LOAD	601
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - This component contains a 1-character alphabetic code that indicates the intervals of time for which records of bedload are available. See appendix A for frequency codes.

General Description - Bedload is the sediment mixture moving on or near the streambed by rolling, sliding, and making brief excursions into the flow, a few diameters above the bed. The term "diameter" is defined as the diameter of a sphere of the same volume as the given particle. Bedload discharge is the amount (weight, mass, or volume) of bedload passing through any cross section of a stream during a unit of time.

600	CNCNTRTN_SUS	602
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character alphabetic code in this component indicates the frequency with which concentration determinations are made. See appendix A for frequency codes.

General Description - Suspended sediment is the sediment mixture that is carried in suspension in the main body flow of a stream for appreciable lengths of time, being kept in this state by the upward components of the turbulence of flow or by colloidal suspension.

The term for component 602 (suspended-sediment concentration) is synonymous with the term for component 507 (suspended solids). However, "suspended-sediment concentration" is generally used by civil or hydraulic engineers in connection with sediment transport studies, while "suspended solids" is generally used by sanitary engineers in connection with water treatment facilities. The data are reported accordingly.

Suspended-sediment concentration is the velocity-weighted (representative) concentration of suspended sediment in the sampled zone (taken from the water surface to a point approximately 0.3 ft. above the bed) and is usually expressed as milligrams of dry solids per liter of water-sediment mixture.

600	CNCNTRTN_TOT	603
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character alphabetic code in this component indicates the frequency with which total sediment concentrations are determined. See appendix A for frequency codes.

General Description - Total sediment concentration is the concentration of all the sediment passing through a given cross-section in a stream expressed in milligrams per liter or as parts per million. This is possible only at a total-load measuring section where physical circumstances cause all of the sediment particles being transported to be thrown into a fairly uniform suspension throughout the total depth by natural or artificial turbulence.

600	PART_SIZ_SUS	604
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character alphabetic code in this component indicates the frequency with which suspended particle-size determinations are made. See appendix A for frequency codes.

General Description - The particle-size of suspended sediment is the diameter, usually expressed in millimeters, of a particle measured by settling, sieving, micrometric, or direct measurement methods. Particle-size data are usually expressed as a distribution showing the relative amount, in terms of percent of total weight, of a sediment sample having a specific size finer than a given size.

600	PART_SIZ_BED	605
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character alphabetic code in this component indicates the frequency with which bed material particle-size determinations are made. See appendix A for frequency codes.

General Description - The particle size of bed-material sediment is the diameter, usually expressed in millimeters, of a particle measured by settling, sieving, micrometric, or direct measurement methods. Particle-size data are usually expressed as a distribution showing the relative amount, in terms of percentage of total weight, of a sediment sample having a specific size finer than a given size.

600	SED_DIS_SUS	606
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character alphabetic code in this component indicates the intervals of time for which suspended-sediment discharge records are available. See appendix A for frequency codes.

General Description - Sediment discharge (suspended) is the rate of transport of suspended sediment passing through a given cross-section of a stream expressed in tons per day. It is computed from the measured suspended-sediment concentration (instantaneous sediment discharge), or from the mean-daily suspended-sediment concentration (daily sediment discharge).

600	SED_DIS_TOT	607
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character alphabetic code in this component indicates the intervals of time for which sediment-discharge (total) records are available. See appendix A for frequency codes.

General Description - Sediment discharge (total) is the rate of transport of all the sediment passing through a given cross-section in a stream expressed in tons per day. It is computed from the measured sediment concentration (instantaneous) at a total-load measuring section (see component 603) only, or from computed mean daily total sediment concentration (daily) based on samples.

600	SED_RECMD_MTHDS	630
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - The Sediment Recommended Methods component is valued with a "Y" if the C600 data record describes data collected according to recommended methods. If not, the component is valued with an "N".

General Description - In 1977, the Office of Water Data Coordination published the National Handbook of Recommended Methods for Water Data Acquisition. Another reference for recommended methods is the USGS's Techniques of Water-Resources Investigations (TWRI).

600	SED_BEGIN_YR	640
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY Yes KEY No DATA TYPE Integer

PICTURE 9(4) LARGEST VALUE current year

Data Values - The Sediment Data Collection Begin Year component contains a 4-digit numeric value identifying the year that sediment data were first collected.

General Description - This component identifies the calendar year in which the acquisition of sediment data first began at a site regardless of the types of sediment data that were collected. This date will never change even though sediment data collection may be deactivated and reactivated several times during a site's history.

600	SED_END_YR	641
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Integer

PICTURE 9(4) LARGEST VALUE current year

Data Values - The Sediment data collection end year component contains a 4-digit numeric value identifying the year that all sediment data collection activities were ceased at the site. If the organization is currently collecting sediment data at the site, this component is not valued.

General Description - This component identifies the calendar year in which all sediment data-collection activities at the site were discontinued. If at a later date, the collection of any of the sediment parameters is resumed, the end date is deleted.

600	SED_LST_UPDATE	644
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY Yes KEY No DATA TYPE Integer

PICTURE 9(4) LARGEST VALUE Current YYMM

Data Values - This component contains the year and the month (YY/MM) in which the C600 data record was last updated. This date is generated by the computer.

General Description - An update is defined as any transaction that adds, deletes, or changes data values in the MWDI data base.

600	SEDIMENT_MED	646
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - This component contains a 1-character code indicating the type(s) of storage media (document, computer readable, etc.) on which the sediment data are stored and available to potential users of the data. See appendix B for data storage codes.

General Description - Organizations collect hydrologic data and record and store the information on a variety of storage media ranging from original field notes to computer storage devices. Media is used as a general term encompassing all means of storing and disseminating the data.

600	SED_MODIFIERS	670
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY N/A KEY N/A DATA TYPE SR

PICTURE N/A LARGEST VALUE N/A

A schema record containing codes that indicate the external file that contains the data indexed in the C600 data record. The MWDI indexes data from the Environmental Protection Agency's Storage and Retrieval (STORET) System, the U.S. Geological Survey's National Water Data Storage and Retrieval System (WATSTORE), and the Texas Natural Resources Information System (TNRIS) by means of software interfaces. Multiple occurrences of C670 may exist for each C600 data record having data indexed from more than one external file.

670	SED_POINTER	671
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(4) LARGEST VALUE 4 characters

Data Values - This component contains a 4-character code that indicates an external file from which data have been indexed in the C600 schema record. The codes, assigned at time of interfacing, are described below:

Code	Description
STOR	Data have been indexed from EPA's STORET
TNRS	Data have been indexed from the Texas Natural Resources Information System (TNRIS)
WATD	Data have been indexed from the USGS's WATSTORE Daily Values File
WATG	Data have been indexed from the USGS's WATSTORE Ground-water Site Inventory (GWSI) data base.
WATP	Data have been indexed from the USGS's WATSTORE Peak Flow file
WATS	Data have been indexed from the WATSTORE data base, but exact file unknown.

General Description - Sediment data indexed at the time of interfacing with the major water data bases have the Sediment Pointer component (671) automatically set and stored to indicate the appropriate major water data base. Use of this component simplifies the retrieval of data from the appropriate data base.

670	SED_MOD_FILE	672
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - This component contains a 1-character code to indicate the WATSTORE Ground-Water-Site-Inventory (GWSI) data base subset from which the data were indexed.

Code	Subset
N	Northeast Region
S	Southeast Region
C	Central Region
W	Western Region

General Description - This component is set automatically to one of the above codes to indicate the GWSI subset in which the data resides at the time of interfacing with the GWSI.

300	CHEMICAL_QW	700
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY N/A KEY N/A DATA TYPE SR

PICTURE N/A LARGEST VALUE N/A

A schema record containing data values indicating the types of chemical-water quality data-collection activities performed, the frequency at which the observations and/or determinations are made, and the media on which the chemical water-quality data for the site is available.

Chemical water quality parameters are those which pertain to the chemical constituents and properties of substances present in water.

700	SOLIDS_DIS	701
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character alphabetic code in this component indicates the frequency with which dissolved solids determinations are made. See appendix A for frequency codes.

General Description - Dissolved solids in water consist mainly of inorganic salts and small amounts of organic matter. A general working definition of "dissolved" (as compared to suspended) solids is anything which will pass through a 0.45-micron filter.

700	MAJOR_IONS	702
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character alphabetic code in this component indicates the frequency with which major ion determinations are made. See appendix A for frequency codes.

General Description - Major ions include elements which are (or could be) in fairly high concentration in most natural waters, such as calcium, magnesium, sodium, potassium, bicarbonate, carbonate, sulfate, and chloride.

700	HARDNESS	703
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character alphabetic code in this component indicates the frequency with which hardness determinations are made. See appendix A for frequency codes.

General Description - Hardness has historically been defined as a measure of the ability of water to precipitate soap, and, in natural waters, is primarily a function of the presence of calcium and magnesium ions. Other constituents, such as iron, manganese, aluminum, barium, strontium, zinc, and free acid also cause hardness but they are not usually present in quantities large enough to have any objectionable effect.

Hardness is normally expressed in terms of calcium carbonate ($CaCO_3$) and is often reported as "carbonate hardness," "noncarbonate hardness," and "total hardness."

700	SILICA	705
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A-character alphabetic code in this component indicates the frequency with which silica determinations are made. See appendix A for frequency codes.

General Description - Silica (SiO_2) is the term widely used in referring to the presence of silicon, in soluble and colloidal forms, in natural waters. Amounts of silica are commonly reported as tons per day or milligrams per liter of SiO_2.

700	PHOSPHORUS	706
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character alphabetic code in this component indicates the frequency with which total phosphorus determinations are made. See appendix A for frequency codes.

General Description - This component pertains only to the gross measurement (total) of the element phosphorus without regard to individual species. The measurement is usually expressed in milligrams per liter.

700	PHOS_SPECIES	707
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character alphabetic code in this component indicates the frequency with which species determinations of the element phosphorus are made. See appendix A for frequency codes.

General Description - This component pertains to the measurement of any species of the element phosphorus commonly found in water, for example, organic phosphorus, or orthophosphate.

.700	NITROGEN	708
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character alphabetic code in this component indicates the frequency with which total nitrogen determinations are made. See appendix A for frequency codes.

General Description - This component pertains only to the gross measurement (total) of the element nitrogen without regard to individual species. The measurement is usually expressed in milligrams per liter. Nitrogen in water in the form of nitrogen gas will be reported in component 721 (OTHER_DIS_GAS).

700	N_SPECIES	709
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character alphabetic code in this component indicates the frequency with which species determinations of the element nitrogen are made. See appendix A for frequency codes.

General Description - This component pertains to the measurement of any species of the element nitrogen commonly found in water, for example, nitrate, nitrite, or ammonia.

700	DETERGENTS	710
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character alphabetic code in this component indicates the frequency with which detergent determinations are made. See appendix A for frequency codes.

General Description - The term "detergent" is applied to a wide variety of cleansing agents used to wash clothes, dishes, and other articles. Generally, detergents are organic materials that are surfactants in aqueous solutions. Detergents are reported in terms of milligrams per liter or as a visual observation, that is, suds on water in terms of severity values.

700	OMI_CONSTITS	711
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character alphabetic code in this component indicates the frequency with which Other Minor Inorganic Constitutent determinations are made. See appendix A for frequency codes.

General Description - Other minor inorganic constituents are those not included in any of the other components of the 700 series, such as the halides (flouride, bromite, iodide), the rare earths, and the transition metals (iron, manganese, etc.).

700	RADIOACTIVITY	712
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character alphabetic code in this component indicates the frequency with which gross radiation determinations are made. See appendix A for frequency codes.

General Description - This component is concerned with only the gross measurement of radioactivity (alpha, beta, gamma) without regard to the radiochemical species that produces the radiation.

700	RCHM_SPECIES	713
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character alphabetic code in this component indicates the frequency with which radiochemical species determinations are made. See appendix A for frequency codes.

General Description - Radiochemical species refers to the individual radioactive elements that produce radioactivity such as: radium 226, cobalt 60, strontium 90, and tritium.

700	CARBON	714
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character alphabetic code in this component indicates the frequency with which total carbon determinations are made. See appendix A for frequency codes.

General Description - The Carbon component pertains only to the gross measurement of all of the carbon present without regard to groups or species.

700	ORG_GROUPS	715
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character alphabetic code in this component indicates the frequency with which organic group determinations are made. See appendix A for frequency codes.

General Description - This component refers to the reporting of the presence of organic groups, such as the phenols or the methols, rather than of specific organic molecules, such as chloroform or DDT. Such results are obtained from the application of analytic techniques such as mass spectrometry, NMR (Nuclear Magnetic Resonance) and IR (Infrared Spectroscopy).

700	PEST_SPECIES	716
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character alphabetic code in this component indicates the frequency with which pesticide-species determinations are made. See appendix A for frequency codes.

General Description - The Pesticide-Species component includes insecticides, herbicides, fungicides, rodendricides, etc. Examples are: chlordane, DDT, 2,4,5-T, and silvex.

700	OTH_ORG_SPECIES	717
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character alphabetic code in this component indicates the frequency with which determinations of other organic species are made. See appendix A for frequency codes.

General Description - This component refers to the reporting of the presence of specific organic species, other than pesticides, such as chloroform, PCBs (Polychlorinated Biphenyls), and formaldehyde.

700	BIOCHM_OX_DMND	718
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character alphabetic code in this component indicates the frequency with which biochemical-oxygen-demand determinations are made. See appendix A for frequency codes.

General Description - Biochemical-oxygen-demand (BOD) is a measure of the quantity of dissolved oxygen, in milligrams per liter, required to stabilize the demand for oxygen in a water sample, usually resulting from the process of microorganisms consuming organic matter and utilizing the available dissolved oxygen in the oxidation process.

700	CHM_OX_DMND	719
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character alphabetic code in this component indicates the frequency with which chemical-oxygen-demand determinations are made. See appendix A for frequency codes.

General Description - Chemical-oxygen-demand (COD) determinations provide a measure of the oxygen equivalent of that portion of the organic matter in a water sample that can be oxidized by a strong chemical-oxidizing agent.

700	DISSOLVED OX	720
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character alphabetic code in this component indicates the frequency with which dissolved oxygen determinations are made. See appendix A for frequency codes.

General Description - Dissolved oxygen (DO) in water is expressed in milligrams per liter and the amount present reflects chemical, physical, and biological activities in the water body. It can only be increased by aeration and the photosynthetic processes of aquatic plants.

700	OTHER_DIS_GAS	721
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character alphabetic code in this component indicates the frequency with which other dissolved-gases determinations are made. See appendix A for frequency codes.

General Description - Other dissolved gases include all gases except oxygen, which is accounted for in component number 720. Examples are: nitrogen, hydrogen sulfide, and methane.

700	CHM_RECMD_MTHDS	730
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - The Chemical Recommended Methods component is valued with a "Y" if the C700 data record describes data collected and analyzed according to recommended methods. If not, the component is valued with a "N".

General Description - In 1977, the Office of Water Data Coordination published the National Handbook of Recommended Methods for Water Data Acquisition. Another reference for recommended methods is the USGS's Techniques of Water-Resources Investigation (TWRI).

700	CHM_BEGIN_YR	740
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY Yes KEY No DATA TYPE Integer

PICTURE 9(4) LARGEST VALUE current year

Data Values - The Chemical Data-Collection Begin-Year component contains a 4-digit numeric value identifying the year that chemical data were first collected.

General Description - This component identifies the calendar year in which the acquisition of chemical data first began at a site regardless of the types of chemical data that were collected. This date will never change even though chemical data collection may be deactivated and reactivated several times during a site's history.

700	CHM_END_YR	741
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Integer

PICTURE 9(4) LARGEST VALUE current year

Data Values - The Chemical Data-Collection End-Year component contains a 4-digit numeric value identifying the year that all chemical data-collection activities were ceased at the site. If the organization is currently collecting chemical data at the site, this component is not valued.

General Description - This component identifies the calendar year in which all chemical data-collection activities at the site were discontinued. If at a later date, the collection of any of the chemical parameters is resumed, the end date is deleted.

700	CHM_LST_UPDATE	744
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY Yes KEY No DATA TYPE Integer

PICTURE 9(4) LARGEST VALUE current YYMM

Data Values - This component contains the year and the month (YY/MM), in which the C700 data record was last updated. This date is generated by the computer.

General Description - An update is defined as any transaction that adds, deletes, or changes data values in the MWDI data base.

700	CHEMICAL_MED	746
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - This component contains a 1-character code indicating the type(s) of storage media (document, computer readable, etc.) on which the data values for chemical parameters are stored and available to potential users of the data. See appendix B for Data Storage codes and also see component number 700 (CHEMICAL) for the definition of chemical.

General Description - Organizations collect hydrologic data and record and store the information on a variety of storage media ranging from original field notes to computer storage devices. Media is used as a general term encompassing all means of storing and disseminating the data.

700	CHM_MODIFIERS	770
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY N/A KEY N/A DATA TYPE SR

PICTURE N/A LARGEST VALUE N/A

A schema record containing codes that indicate the external file that contains the data indexed in the C700 data record. The MWDI indexes data in Environmental Protection Agency's Storage and Retrieval (STORET) System, U.S. Geological Survey's National Water Data Storage and Retrieval System (WATSTORE), and the Texas Natural Resources Information System (TNRIS), by means of software interfaces. Multiple occurrences of C770 may exist for each C700 data record having data indexed from more than one external file.

770	CHM_POINTER	771
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(4) LARGEST VALUE 4 characters

Data Values - This component contains a 4-character code that indicates an external file from which data have been indexed in the C700 schema record. The codes, assigned at time of interfacing, are described below:

Code	Description
STOR	Data have been indexed from EPA's STORET.
TNRS	Data have been indexed from the Texas Natural Resources Information System (TNRIS).
WATD	Data have been indexed from the WATSTORE Daily Values.
WATG	Data have been indexed from the WATSTORE Ground-water Site Inventory (GWSI) data base.
WATP	Data have been indexed from the WATSTORE Peak Flow File.
WATS	Data have been indexed from the WATSTORE data base but exact file unknown.

General Description - Chemical data at the time of interface with the major water data bases have the chemical pointer component (C771) automatically set and stored to indicate the appropriate major water data base. Use of this component simplifies the retrieval of data from the appropriate data base.

770	CHM_MOD_FILE	772
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - This component contains a 1-character code to indicate the WATSTORE Ground-Water-Site-Inventory (GWSI) data base subset from which the data were indexed.

Code	Subset
N	Northeast Region
S	Southeast Region
C	Central Region
W	Western Region

General Description - This component is set automatically to one of the above codes to indicate the GWSI subset in which the data resides at the time of interfacing with the GWSI.

0	PROJECTS	800
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY N/A KEY N/A DATA TYPE SR

PICTURE N/A LARGEST VALUE N/A

A schema record identifying hydrologic projects, associated with the data collection station, that are conducted by the Water Resources Division of the U.S. Geological Survey. In some instances more than one project will be associated with a particular station.

800	WRD_PROJ_NO	801
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(5) LARGEST VALUE 5 characters

Data Values - The WRD Project Number is 5 characters in length. The first 2 characters contain a meaningful alphabetic code and the remaining 3 characters contain a numeric serial number.

General Description - The WRD Project Number is assigned by the Water Resources Division and pertains only to U.S. Geological Survey operations. It uniquely identifies a specific work effort in a given program and provides the funding basis for hydrologic data collection activities. One project usually provides the funding support (wholly or partially) for many sites. The project is set up as follows:

State - A 2-character alphabetic abbreviation designating the district, region, or division headquarters office from which the project is programmed and supervised. For district offices, the alphabetic FIPS code of the state in which the office is located is used. All others have a meaningful abbreviation of the organizational name (WR = Western Region, WD = WRD (national) headquarters, etc.)).

Serial Number - A 3-digit sequence number of a project activated within a given jurisdiction (right justified, for example, 017). Serial numbers 001 through 009 are reserved for dedicated projects as follows:

001	Surface Water Stations
002	Ground Water Stations
003	Water Quality Stations (SW and GW)
004	Sediment Stations
005	Precipitation Stations
006	HUD Flood Insurance Studies
007	Water Use Studies
008-009	May be assigned at a later date

0	NETWORKS	900
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY N/A KEY N/A DATA TYPE SR

PICTURE N/A LARGEST VALUE N/A

A schema record identifying and containing information about networks that the site is a member of.

900	NETWORK_CODE	901
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY Yes DATA TYPE Char

PICTURE X(4) LARGEST VALUE 4 characters

Data Values - If applicable, this component will contain a 4-character network code indicating that the site is a member of one or more networks. Possible codes are:

Code	Meaning
ADAS	Automatic Data Acquisition System - This system, operated by Tennessee Valley Authority's Data Services Branch in support of the Reservoir Operations Branch, is used to collect real-time precipitation and stream elevation data for the daily operation of the TVA reservoir system. The system is currently composed of 125 precipitation gages and 6 stream elevation gages which are interrogated by a master computer using the dial telephone network. The network, when complete, will include 185 precipitation gages and 32 stream elevation gages. The system is scheduled for completion in fiscal year 1985.
BRFW	Blue Ridge Flood Warning System - This system, operated by TVA, will be lused by the Reservoir Operations Branch to monitor dam safety at the Blue Ridge Dam. The system will be composed of 6 precipitation gages, 2 stream elevation gages, and 1 headwater gage at the Blue Ridge Dam. These gages will report to the ADAS computer by means of the GOES satellite and a direct readout ground station.
COOP	The U.S. Geological Survey maintains data for some sites for which the collection of data was not funded by the U.S. Geological Survey. These sites should not have C1000 (FUNDING) data record existing and component C35 (WRD-ACCT) should contain a "N". This code is applicable only for sites identified as USGS sites.
CORE	National Ambient Water Monitoring Network - A network operated by the Environmental Protection Agency of approximately 1000 ambient water quality monitoring stations, composed primarily of a minimum core network of State stations selected as a subset of stations supporting ongoing State programs and national trend assessments.

Code	Meaning
CQMI	The California Surface Water Quality Monitoring Inventory is maintained by the California Water Resources Control Board. This is an inventory of all water-quality sites in California with which the Water Resources Control Board has jurisdiction, or make use, of the data collected as a part of their programs.
DAEW	Department of Agriculture Experimental Watershed.
FLGQ	The Florida Groundwater Quality Monitoring Network established and operated by the Water Resources Division of the U.S. Geological Survey and the Florida State Department of Environmental Regulation.
NSQN	The National Stream Quality Accounting Network (NASQAN) is a group of interrelated sites established and operated by the Water Resources Division of the U.S. Geological Survey at which systematic and continuing measurements are made to determine long-term trends in the physical, chemical, and biological characteristics of the Nation's surface waters.
NWQS	The National Water Quality Surveillance System is a group of interrelated sites monitored by the U.S. Environmental Protection Agency as a part of their program to monitor pollutants on a national basis.
NWSF	River gages used by the National Weather Service for river and flood forecasting.
NWSP	River gages that the National Weather Service plans to use in river or water-supply forecasting.
NWSS	River gages used by the National Weather Service for water-supply forecasting only.
RCWP	Soil Conservation Services sites where both water quantity and quality are measured as part of the Rural Clean Water Program to monitor the effects of conservation and farming practices on water quality.
SCSF	River gages used by the Soil Conservation Service for water supply forecasting.
SCSR	River gages used by the Soil Conservation Service reservoir operation.

General Description - The network code identifies sites as being members of a network of interrelated sites where data are collected for specific purpose programs.

0	SITE FUNDING	990
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY N/A KEY N/A DATA TYPE SR

PICTURE N/A LARGEST VALUE N/A

A schema record identifying the total amount of funding for the current fiscal year associated with the station if it is identified as a U.S. Geological Survey data-collection site.

990	TOTAL DOLLARS	991
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Integer

PICTURE 9(6) LARGEST VALUE 999,999

Data Values - This component contains up to 6 numeric characters to represent the total funds in dollars required for operating this site. This component is valued for U.S. Geological Survey sites only.

General Description - This component contains the total funds, in dollars, required for operating USGS sites only if component C35 (WRD-ACCT) is valued with a "Y". Additionally, if this component is valued and component C1004 (DOLLARS) is valued, then the corresponding percentage (C1002) will be computed from C1004 and C991.

990	SITE_FISCAL_YR	992
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Integer

PICTURE 9(2) LARGEST VALUE 99

Data Values - This component contains a 2-digit number which is the last two digits of the fiscal year for which the funding applies.

General Description - This component represents the current fiscal year for which the total funding in dollars has been stored in component TOTAL_DOLLARS (C991) for U.S. Geological Survey operated sites. The fiscal year begins on October 1.

0	FUNDING	1000
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY N/A KEY N/A DATA TYPE SR

PICTURE N(A) LARGEST VALUE N/A

A schema record containing information about supportive funding, which will only be valued for sites operated by the Water Resources Division of the U.S. Geological Survey. It is possible that there will be multiple occurrences of funding support for one site, each one in dollars, representing a separate customer, hydrologic discipline, funding in dollars, and percentage of funds combination. If the USGS provides no funding for the operation of the site and the site is identified as a USGS site (C4=USGS) then component C35 (WRD-ACCT) should contain a "N" and C901 (NETWORK-CODE) should equal "COOP".

1000	CUSTOMER_NUM	1001
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(4) LARGEST VALUE 4 characters

Data Values - The customer number is a 4-character alpha-numeric value. It is only valued for U.S. Geological Survey sites.

General Description - A customer number is a unique code identifying organizations that provide funding in support of Geological Survey project and site activities. The Finance and Fiscal Analysis Section, Water Resources Division, serves as liaison with the Branch of Finanacial Management in coordination of the assignment of customer numbers, and a list is maintained for internal use only.

1000	PERCENTAGE	1002
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Integer

PICTURE 9(3) LARGEST VALUE 100

Data Values - The percentage component will contain up to 3 numeric characters indicating the percentages of the site's operating funds supplied by a customer (see component 1001) for activities associated with a particular discipline (see component 1003). This component is valued for U.S. Geological Survey-operated sites only.

General Description - The Percentage component indicates the proportionate share of total station funds that each supporting organization allocates to each type of data (discipline activity) collected at the site. The figures are shown to the nearest 5 percent and computed by using the site operating fund total as the base figure. When added, the percentage figures will equal 100 percent for the site regardless of the number of customers or discipline activities involved.

1000	DISCIPLINE	1003
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(2) LARGEST VALUE 2 characters

Data Values - The Discipline component will contain a two-character alphabetic abbreviation as follows:

Code	Meaning
SW	Surface Water
GW	Ground Water
QW	Water Quality
SD	Sediment
PR	Precipitation

General Description - Discipline indicates the type of hydrologic data collection activities being funded by supporting organizations (customers). It indicates the discipline for which customer (component 1001) supplies a percentage (component 1002) of the operating funds for the site.

1000	DOLLARS	1004
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Integer

PICTURE 9(6) LARGEST VALUE 999,999

Data Values - This component contains up to 6 digits that indicate, in dollars, the amount of the site's operating funds supplied by a customer for activities associated with a particular discipline. This component is valued for U.S. Geological Survey-operated sites only.

General Description - The dollars component indicates, in dollars, the amount of station funds each supporting organization allocates to each type of data (discipline activity) collected at the site.

1000	FISCAL_YR	1005
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Integer

PICTURE 9(2) LARGEST VALUE 99

Data Values - This component contains a 2-digit number which is the last two digits of the fiscal year for which the funding information applies. This component is valued for U.S. Geological Survey operated sites only.

General Description - This component represents the fiscal year for which the station funding, by each supportive organization, applies. The fiscal year begins on October 1.

1000	FUND_LST_UPDATE	1044
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY Yes KEY No DATA TYPE Integer

PICTURE 9(4) LARGEST VALUE Current YYMM

Data Values - This component contains the year and the month (YY/MM) in which the C1000 data record was last updated. This date is generated by the computer.

General Description - An update is defined as any transaction that adds, deletes, or changes data values in the MWDI data base.

0	OTHR_SRC	1100
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY N/A KEY N/A DATA TYPE SR

PICTURE N/A LARGEST VALUE N/A

The "Other Source" schema record identifies organizations, other than, or in addition to, the operating organization cited in component 4 (NAWDEX_AGCY), that store and make water data available for the site.

1100	OT_SRC_AGCY	1101
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(5) LARGEST VALUE 5 characters

Data Values - The Other Source Agency component will contain a NAWDEX Agency code. The NAWDEX Agency code varies in length from three to five characters. For Federal organizations, it will be US followed by an up to three-character abbreviation of the organization's name. Non-Federal organizations whose activities are contained within a given State boundary will have a 2-character alphabetic state code followed by an arbitrary sequence number. Alphabetic state codes are contained in the Federal Information Processing Standards (FIPS) Publication 5-1, dated June 15, 1970. Non-Federal organizations having activities at the multi-state or national level will have a three to five character abbreviation of the organization name (the characters US will not appear in the first two character positions).

NAWDEX Agency codes are presented in the publication entitled "Identification Codes for Organizations Listed in Computerized Data Systems of the U.S. Geological Survey" which may be obtained from the National Water Data Exchange, U.S. Geological Survey, 421 National Center, Reston, Virginia 22092.

General Description - The Other Source Agency component will contain the NAWDEX Agency code of any organization, other than the operating organization cited in component number 4, that also is a source of data collected at the site. The NAWDEX Agency code is assigned by the NAWDEX Program Office and is the unique organization identifier for the participating Federal and non-Federal organizations that actively collect and/or store water data. Non-Federal organizations State, county, and municipal organizations, as well as intergovernmental compacts, private organizations, universities, and any local organizations at other than the county or municipal level.

0	SOURCE INFORMATION	1200
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY N/A KEY N/A DATA TYPE SR

PICTURE N/A LARGEST VALUE N/A

A schema record containing codes indicating the data base which is the source in which some or all of the data collected at the site reside and the organization code utilized by the data base source to indicate the organization operating the site. More than one schema record may exist for each site if data have been stored in more than one data base.

1200	SOURCE_FILE_ID	1201
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY NO KEY NO DATA TYPE Char

PICTURE X(4) LARGEST VALUE 4 characters

Data Values - The Source File ID contains a 4-character code identifying the data base in which some or all of the data for the indexed site is stored.

General Description - The NAWDEX Program Office has developed interfaces with major water-data base systems of other organizations to directly index the data stored in the system in the MWDI data base. Presently, the three major data bases the MWDI is interfaced with are:

Code	Data base
STOR	U.S. Environmental Protection Agency's Storage and Retrieval (STORET) System
TNRI	Texas Natural Resources Information System (TNRIS)
WATS	U.S. Geological Survey's National Water Data Storage and Retrieval System (WATSTORE).

1200	SOURCE_FILE_AGENCY	1202
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY NO KEY NO DATA TYPE Char

PICTURE 8(X) LARGEST VALUE 8 characters

Data Values - This component contains the organization (agency) code utilized in the source water data base identified in component number 1201 (SOURCE_FILE_ID) to identify the operating organization of the site.

General Description - Organizations having large data bases for storing water data use organization (agency) codes that may differ from those assigned by NAWDEX. This code is often necessary to accomplish the retrieval of water data for a site from data bases of other organizations.

0	METEOROLOGICAL	1300
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY N/A KEY N/A DATA TYPE SR

PICTURE N/A LARGEST VALUE N/A

A schema record containing values indicating the types of meteorological data collection activities performed, the years in which these activities took place, and the media on which meteorological data for the sites are stored.

1300	MET_BEGIN_YR	1301
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY Yes KEY No DATA TYPE Integer

PICTURE 9(4) LARGEST VALUE current year

Data Values - The Meteorological Data-Collection Begin Year component contains a 4-digit numeric value identifying the year that meteorological data were first collected at the site, for example, 1910.

General Description - This component identifies the calendar year in which the acquisition of meteorological data first began at a site, regardless of the types of meteorological data that were collected. This date will never change even though meteorological data collection may be deactivated and reactivated several times during a site's history.

1300	MET_END_YR	1302
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Integer

PICTURE 9(4) LARGEST VALUE current year

Data Values - The Meteorological Data Collection End Year component contains a 4-digit numeric value identifying the year that all meteorological data collection activities were ceased at the site. If the organization is currently collecting meteorological data at the site, this component is not valued.

General Description - This component identifies the calendar year in which all meteorological data collection activities at the site were discontinued. If at a later date, the collection of any of the meteorological parameters is resumed, the end date is deleted.

1300	MET_INTERRUPTED	1303
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - The Meteorological Interrupted component contains a value of "Y" if the collection of meteorological parameters has been discontinued (for more than one year) and later resumed one or more times in the history of the site. If meteorological data collection has not been discontinued at any time, the component is not valued.

General Description - The presence of a value of "Y" for this component indicates one or more interruptions in the period of record of meteorological data acquisition during the period beginning with MET_BEGIN_YR (component 1301) through the present time (if currently active), or ending with MET_END_YR (component 1302).

1300	MET RAINFALL	1310
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character code in this component indicates the frequency with which rainfall observations or instrument recorded rainfall determinations are made at this site. See appendix A for frequency codes.

General Description - Rainfall is the quantity of water that falls as rain only and is not synonymous with precipitation.

1300	MET_UNIT_RAINFALL	1311
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - The Unit Rainfall component if applicable is valued with a 1-character code as follows:

Code	Recording Interval	Readings Per Day
A	0.5 min (30 sec)	2880
B	1 min.	1440
C	2 min.	720
D	3 min.	480
E	4 min.	360
F	5 min.	288
G	6 min.	240
H	10 min.	144
I	15 min.	96
J	30 min.	48
K	45 min.	32
L	1 hr	24
M	2 hr	12
N	3 hr	8
O	4 hr	6

Code	Recording Interval	Readings Per Day
P	6 hr	4
Q	12 hr	2
R	24 hr	1

General Description - A meteorological unit data value is an instantaneous rainfall amount determination or reading. The Unit Rainfall component indicates the time intervals at which the rainfall determinations or readings are made and the number of readings that are available for a given 24-hour period of time. This component pertains primarily to those sites where more than one data reading per day is available. The code does not indicate the total length of the period of record for which the data are available.

1300	MET_AIR_TEMPERATURE	1312
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character alphabetic code in this component indicates the frequency with which observed or instrument recorded air temperature data are collected. See appendix A for frequency codes.

General Description - Air temperature is a measure of the intensity aspect of heat energy present in the atmosphere.

1300	MET_RSVD1	1313
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - This component is reserved for future use.

1300	MET WIND VELOCITY	1314
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - A 1-character code in this component indicates the frequency with which wind velocity observation or instrument recorded wind velocity determinations are made at this site. See appendix A for frequency codes.

General Description - Wind velocity is the velocity of the natural movement of air parallel to the Earth's surface.

1300	MET_RSVD2	1315
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - This component is reserved for future use.

1300	MET_RSVD3	1316
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - This component is reserved for future use.

1300	MET_RECMD_MTHDS	1330
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - The Meteorological Recommended Methods component is valued with a "Y" if the C1300 data record describes data collected according to recommended methods. If not, the component is valued with a "N".

General Description - In 1977, the Office of Water Data Coordination published the National Handbook of Recommended Methods for Water Data Acquisition. Another reference for recommended methods is the USGS's Techniques of Water-Resources Investigations (TWRI).

1300	MET OTHER	1340
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(6) LARGEST VALUE 6 characters

Data Values - This component is reserved for future use.

1300	MET TELEMETRY	1343
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Integer

PICTURE 9(1) LARGEST VALUE 9

Data Values - The Meteorological Telemetry code is a 1-digit numeric code identifying, if applicable, the type of telemetry system in use at the sites:

Code	Meaning
1	Telemeter-land line - A telemetry system that uses electrical current conducting wires (telephone, etc.) to transmit data from a site to a distant receiving site.
2	Telemeter-radio network - A telemetry system that uses terrestrial line of sight radios (wireless transmission of electric impulses) to transmit data from a site to a distant receiving site.
3	Landsat - A satellite telemetry system used to relay data two or more times daily from in situ sensors.
4	GOES (Geostationary Operational Environmental Satellite) - A satellite telemetry system used to relay data, normally once every three hours, from in situ sensors.
5	DARDC (Device for Automatic Remote Data Collection) - A telemetry system interface used to enter in situ sensor data into a land-line, line of sight radio, or satellite telemetry system.
6	Other - Other telemetry systems.
7	Two or more of the above telemetry systems are in use.
8	Telemetry equipment used but type not specified.

General Description - A telemeter is an electrical apparatus for measuring quantity (for example, State data) and transmitting the value to a distant receiving site, and there indicating or recording the quantity measured. The meteorological telemetry component identifies the type of system or equipment being used to transmit meteorological information from the data-collection site to a central-receiving site.

1300	MET_LST_UPDATE	1344
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY Yes KEY No DATA TYPE Integer

PICTURE 9(4) LARGEST VALUE Current YYMM

Data Values - This component contains the year and month (YY/MM) in which the C1300 data record was last updated. This date is generated by the computer.

General Description - An update is defined as any transaction that adds, deletes, or changes data values in the MWDI data base.

1300	MET_MEDIA	1346
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - This component contains a 1-character code indicating the type(s) of storage media (document, computer readable, etc.) on which the meteorological data values are stored and available to potential users of the data. See appendix B for Data Storage codes.

General Description - Organizations collect meteorological data and record and store the information on a variety of storage media ranging from original field notes to computer storage devices. Media is used as a general term encompassing all means of storing and disseminating the data.

1300	MET_RECORDER_TYPE	1347
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - The Meteorological Recorder Type component is valued with a 1-character code to indicate the type of recorder used to collect the water data.

Code	Meaning
A	Digital Recorder - Records data at intervals throughout the day by storing the values on paper tape or magnetic recording devices.
B	Graphic Recorder - Supplies a continuous trace of parameter value with respect to time on a chart.

General Description - A recorder is an automatic (self-acting or self-regulating) device that registers and stores data values without human intervention. Telemetry equipment, which is used to transmit data to points distant from the data collection site, is separately accounted for in component 1343 (MET_TELEMETRY).

1300	MET_RECORDER_FREQ	1348
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - This component contains a 1-character code to indicate the frequency at which data are being recorded at site.

Code	Recording Interval	Readings Per Day
A	0.5 min (30 sec)	2880
B	1 min.	1440
C	2 min.	720
D	3 min.	480
E	4 min.	360
F	5 min.	288
G	6 min.	240
H	10 min.	144
I	15 min.	96
J	30 min.	48
K	45 min.	32
L	1 hr	24
M	2 hr	12
N	3 hr	8
O	4 hr	6

Code	Recording Interval	Readings Per Day
P	6 hr	4
Q	12 hr	2
R	24 hr	1
S	Continuous	-
T	Periodic	-

General Description - This component pertains to the frequency at which the data are recorded. The code does not indicate the total length of the period of record for which the data are available.

1300	MET_PN_CODE	1349
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

Data Values - For sites which are in the plannng stage, the Meteorological Planned or Needed component contains a 1-character code as follows:

B Plan to establish - The establishment of a new site is planned.

R Plan to reestablish - The reestablishment of a discontinued site is planned.

D Plan to discontinue - An active site is planned to be discontinued.

C Plan to change - A change in the parameter types or frequency of data collection at an active site is planned.

1 Need to establish - There is a need for the establishment of a new site.

2 Need to reestablish - There is a need for the reestablishment of a discontinued site.

3 Need to discontinue - There is a need for discontinuing an active site.

4 Need to change - A change in the parameter types or frequency of data collection at an active site is needed.

General Description - The Office of Water Data Coordination (OWDC) is responsible for coordinating Federal agency needs and plans for long-term site activities for obtaining data on stage, flow, and quality of surface waters and quality of ground waters. "Planned" activities are those for which funds have been budgeted. "Needed" activities are those that are planned but do not yet have funds budgeted for them.

1300	MET_MODIFIERS	1370
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY N/A KEY N/A DATA TYPE SR

PICTURE N/A LARGEST VALUE N/A

A schema record containing codes that indicate the external file that contains the data indexed in the C1300 data record. The MWDI indexes data in the Environmental Protection Agency's Storage and Retrieval (STORET) System, the U.S. Geological Survey's National Water Data Storage and Retrieval System (WATSTORE), and the Texas Natural Resources Information System (TNRIS) by means of software interfaces. Multiple occurrences of C1370 may exist for each C1300 data record having data indexed from more than one external file.

1370	MET POINTER	1371
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(4) LARGEST VALUE 4 characters

Data Values - This component contains a 4-character code that indicates an external file from which data have been indexed in the C1300 data record. The codes, assigned at time of interfacing, are described below:

Code	Description
STOR	Data have been indexed from EPA's STORET.
TNRS	Data have been indexed from the Texas Natural Resources Information System (TNRIS).
WATD	Data have been indexed from the WATSTORE Daily Values File.
WATG	Data have been indexed from the WATSTORE Groundwater Site Inventory (GWSI).
WATP	Data have been indexed from USGS's WATSTORE Peak Flow File.
WATS	Data have been indexed from the WATSTORE data base but exact file unknown.

General Description - Meteorological data indexed at the time of interfacing with the major water data bases have the Meteorological Pointer component (C1371) automatically set and stored to indicate the retrieval of data from the appropriate major water data base. Use of this component simplifies the retrieval of data from the appropriate data base.

1370	MET_MOD_FILE	1372
IN SR	COMPONENT NAME	COMPONENT NUMBER

MANDATORY No KEY No DATA TYPE Char

PICTURE X(1) LARGEST VALUE 1 character

This component is reserved for future use.

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APPENDIX A

DATA COLLECTION
FREQUENCY CODES

CATEGORY	Year-round	Seasonal	Eliminated 1/
Continuous-Recorder Instrument	I	J	L
Continuous-Nonrecorder	C	D	T
Daily	O	P	2
Weekly	W	X	3
Bi-weekly	F	G	4
Monthly	M	N	5
Bi-monthly	H	K	6
Quarterly	Q	R	7
Semiannual (twice per year)	S		8
Annual (once per year)	A		9
Other Periodic (less often than once per year)	B		
Seasonal (no time period specified)		Y	
Data Collected at an irregular or unspecified frequency	Z		
Unique (one-time) measurement	U		
Eliminated Activity			E

1/ The Eliminated Frequency Codes may be used to indicate that the collection of data for a single parameter, or data component, has been discontinued at a site and that data were being collected at the frequency indicated at the time of discontinuance. These codes are not shown on the data encoding forms. They may, therefore, be written beside the appropriate encoding field and circled.

Frequency codes indicate the intervals of time for which records of water data are available. The meanings of the codes cited in the above table are self explanatory except for "continuous." Continuous records are those which are based upon recordings of data at intervals of four hours or less (six or more times in a 24 hour period). Continuous records based upon data automatically recorded by a recording instrument are associated with frequency codes "I" or "J", while continuous records based upon manually recorded observations are associated with codes "C" or "D." Data collected at intervals greater than four hours but at least once daily fall under the codes designated as "daily." Data collection intervals that actually fall between those listed above are recorded under the next longer frequency.

APPENDIX B

DATA STORAGE CODES

Code	Meaning
P	Published - Includes methods of data dissemination such as documents (work sheets, etc.) which may be copied or communicated over the telephone, as well as formal publications.
C	Computer recognizable format - Includes data stored in digital form in punched paper tapes, punched cards, magnetic tapes, magnetic disks, etc., that potentially can be transmitted to computer terminals and displayed on cathode-ray tube screens, printed out on paper, or copied to another digital recording medium.
M	Microform - Includes data that has been recorded on microfilm or microfiche.
D	C and P - Computer recognizable format and published.
E	C and M - Computer recognizable format and microform.
F	C, P, and M - Computer recognizable format, published, and microform.
G	M and P - Microform and published.

*U.S. GOVERNMENT PRINTING OFFICE: 1985-461-431:20008

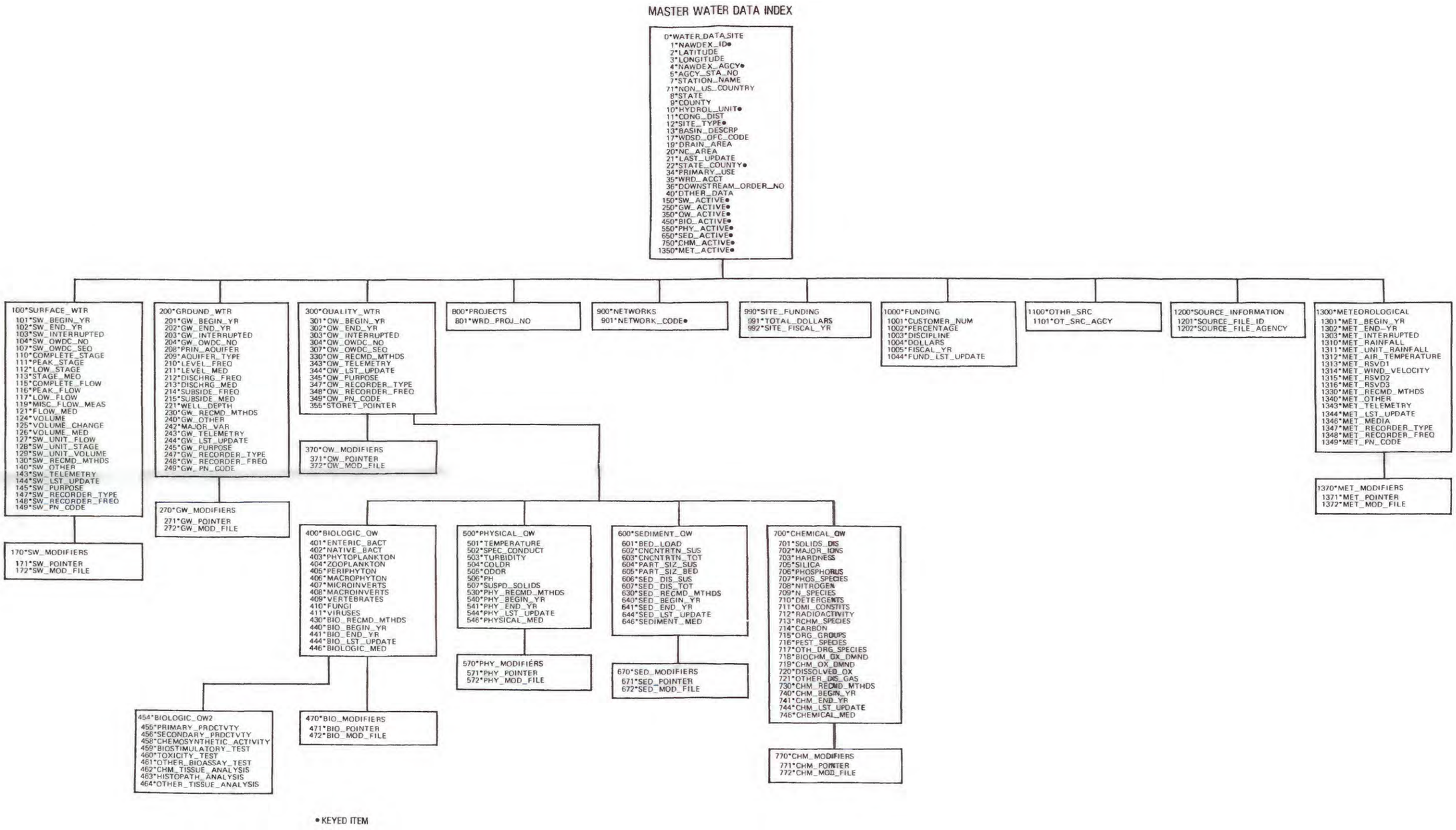

Figure 1.--Hierarchical structure and contents of the Master Water Data Index data base.