## 3.    DATABASE USER'S GUIDE

### 3.1    Assumptions

This guide to using the database assumes a basic knowledge of computer database management software.  Skills needed to navigate the database include the ability to browse database tables, to link multiple tables in a database query, and to apply simple logic in a database query for extracting the appropriate information.  The database was developed in the PC-based Paradox™ 4.0 database management system but may be used in other relational database management packages provided they are compatible with the electronic file formats.  Database files are provided on CD-ROM in two formats, the original Paradox™ 4.0 format and a FoxPro™/DBase III™ format.  Comprehensive documentation of electronic files is provided in this chapter, including field definitions for database tables and diagrams of database linkages.  Practical examples for common queries and applications of the database are provided in this chapter.

### 3.2    Data Dictionaries and Glossaries

Data dictionaries for all database tables are provided in this report.  The data dictionaries are grouped by directory and subdirectory.  Each set of directory and/or subdirectory data dictionaries is preceded by a table listing data dictionaries contained within.  The database contains more than 100 tables; refer to the list of tables given in the table of contents.  As this chapter touches on each of the database components, the reader will be referred to the relevant data dictionaries.  The glossaries which define the terms of the database are contained in the database itself.  (See Figure 2-2 for files coded with an asterisk).

### 3.3    Using the Data

A theme common to nearly all components of the TAMS/Gradient Hudson River database is the notion of the *one-to-many* relationship.  Simply put, a *one-to-many* relationship exists when a single record or row in one database table links to many records in another database table.  This design suits the nature of monitoring data because often multiple parameters are associated with a single sampling location.  Figure 3-1 shows an example of *one-to-many* relationships from the *PHASE2\HRCORES* subdirectory.  In the center is the **STATIONS** table where one record representing a single sampling location is linked, not only to many records in the **PCBS** table containing the congener results, but also to many records in the **NONPCBS** table containing conventional or non-PCB results.  Each table is linked by the **TAMS ID** and **TAMS Type** fields.  This figure illustrates the basic building block in the database design, and understanding the approach described will assist the reader in properly applying data analysis to the database.  Specific details inherent to each data set vary among directories and are covered below.

The remainder of Section 3-3 discusses the individual data directories and the relationships among the database tables.  Each directory is represented in a figure showing these relationships.  In these figures, rectangles are used to distinguish reference tables; circles denote

TAMS/*Gradient*

tables which provide sample definitions; diamonds represent tables which contain analytical and field data.  The sizes of these shapes are varied to emphasize the main database tables.  The main database tables are emphasized in the larger circles and diamonds.

### 3.3.1   Historical Data

Table 3-1 describes the look-up table **HIST_LUT** in the *HISTORIC* directory.   The **HIST_LUT** table is a glossary for the database parameters and fields contained in the databases of the *HISTORIC* directory.   In addition, Table 3-2 describes the **PARAMKEY** table in the *HISTORIC* directory.   The **PARAMKEY** table provides a parameter key for the **GE89** table under the *HISTORIC\SED* subdirectory and the **CONCFISH** table in the *HISTORIC\FISH* subdirectory.

**Sediment Data**

In the historical sediment subdirectory, there are more than 4,700 samples for the period 1976 through 1990.  Figure 3-2 shows how the tables in the *HISTORIC\SED* subdirectory are linked.  A listing of the database tables follows, and is also provided in Table 3-3. Database table field  definitions are given in  Tables 3-4 through 3-16.

### Tables in *HISTORIC\SED* Subdirectory

| Table Name | Description |
|---|---|
| SAMPLES | Sediment sampling information<br>NYSDEC/OBG (1976-1978)<br>NYSDEC/NYSDOH (1984-1985)<br>GE/Harza (1990) |
| STATIONS | Station number correspondence to **GradNo** (a unique sample identifier for database purposes) |
| GRADNUMS | Core section correspondence to **GradNo** sample identifier |
| SECTION | Section number, depths, and correspondence to **GradNo** sample identifier |
| REACHES | River reach numbers |
| CONCSED | PCB Aroclor data - sediment samples |
| NONCHEM | Non-PCB data - sediment samples |
| SOXHDUP | Duplicate PCB Aroclor data using soxhlet extraction |
| NONDETS | Key to non-detected qualifier codes |
| REF | Key to references used in building the database |
| TEXTURES | Sediment description key |

| Table Name | Description |
|------------|-------------|
| GE89 | Preliminary 1989 GE sediment baseline studies   GE/Harza (1989) |
| MASSPEC | Results for GC/MS performed for sediments collected during 1984-1985 NYSDEC survey of Upper Hudson |

As an illustration of the database format, excerpts from the main sediment database tables are summarized below in four tables.  Each of these tables is linked by a unique sample identification number (**GradNo**), *e.g.*, 30000, 30016, 30032 and 30208 shown here.

The **SAMPLES** table contains information including sample date, location (River Mile, distance from bank, and northing and easting coordinates, where available), sample type (grab versus core), water depth, surface elevation, and type of sampler used.  The table below provides example records, although precise field names have been expanded from their abbreviations so that the reader need not refer to the field definitions.

**Excerpt from the Sample Information Table (SAMPLES)**

| GradNo | Type | M/D/YR | River Mile | Feet from West Bank | Northing (ft) | Easting (ft) | Sampler | Water Depth (ft) | Elev (ft) |
|--------|------|--------|-----------|--------------------|---------------|--------------|---------|-----------------|-----------|
| 30000 | Grab | 5/21/77 | 168.8 | 330.05 | 1071755 | 685695 | 100 | | |
| . . . | | | | | | | | | |
| 30016 | Core | 3/18/77 | 188.4 | 100.0 | 1163740 | 698970 | 100 | 5.8 | 119.6 |
| . . . | | | | | | | | | |
| 30032 | Core | 3/18/77 | 183.4 | 60.0 | 1140410 | 669040 | 100 | 2.2 | 102.4 |
| . . . | | | | | | | | | |
| 30208 | Core | 6/6/78 | 192.5 | | 1182860 | 696350 | 40 | 7.0 | 119.2 |

Core samples in the **SAMPLES** table are linked by **GradNo** with the core section (**SECTION**) table, which identifies the length of each core sample section and the depth beneath

TAMS/*Gradient*

the river bottom, *i.e.,* the interval of sample penetration given by the top and bottom of each section.  Only core sample IDs appear in the **SECTION** table and many sections are associated with a single sampling location.  No grab sample IDs appear in the **SECTION** table because no depth intervals are associated with them.

**Excerpt from the Core Section Table (SECTION)**

| GradNo | Core Section No. | Bottom of Section (in) | Top of Section (in) |
|--------|------------------|------------------------|---------------------|
| 30016 | 1 | 1 | 0 |
| 30016 | 2 | 2 | 1 |
| . . . | | | |
| 30016 | 12 | 12 | 11 |
| . . . | | | |
| 30208 | 1 | 6 | 0 |
| 30208 | 2 | 9.5 | 6 |
| 30208 | 3 | 12 | 9.5 |

Most database queries involve linking **SAMPLES** (and **SECTION**, for cores) to the main database table containing the PCB results, **CONCSED**.  Selecting a **GradNo** from **SAMPLES** and **SECTION** and locating the same **GradNo** in the **CONCSED** data table shows either the Aroclor results for an entire grab sample or section-by-section results for core samples.  Additional information describing analytical measurement methods, that is, extraction method, are contained in the database as available.

**Excerpt from the Chemical Data Table (CONCSED)**

| GradNo | Parameter | Core Section No. | Extraction Method | Concentration (ppm) |
|--------|-----------|------------------|-------------------|---------------------|
| 30000 | Aroclor 1016 | | shake | 1.0 |
| 30000 | Aroclor 1221 | | shake | 1.0 |
| 30000 | Aroclor 1254 | | shake | 1.0 |
| 30016 | Aroclor 1016 | 4 | soxhlet | 6.0 |
| . | | | | |

TAMS/*Gradient*

| GradNo | Parameter | Core Section No. | Extraction Method | Concentration (ppm) |
|---|---|---|---|---|
| . | | | | |
| . | | | | |
| 30016 | Aroclor 1254 | 12 | soxhlet | 0.1 |
| 30032 | Aroclor 1016 | 5 | soxhlet | 234.0 |
| . | | | | |
| . | | | | |
| . | | | | |
| 30032 | Aroclor 1254 | 5 | soxhlet | 163.0 |

Finally, non-chemical data, such as sediment texture class and percent volatile versus total solids, are contained in the **NONCHEM** table. **SAMPLES** is linked to **NONCHEM** through the **GradNo**. The same IDs for the example records for the previous tables are shown.

### Excerpt from the Non-Chemical Data Table (NONCHEM)

| GradNo | Core Section No. | Parameter | Value |
|---|---|---|---|
| 30000 | | % total solids | 78.93 |
| 30000 | | % volatile solids | 0.85 |
| 30016 | 1 | texture | GRAVEL |
| 30016 | 4 | % total solids | 85.97 |
| 30016 | 4 | % volatile solids | 2.2 |
| . | | | |
| . | | | |
| . | | | |
| 30016 | 12 | % total solids | 89.23 |
| 30032 | 1 | texture | CL-WC |
| . | | | |
| . | | | |
| . | | | |

| 30032 | 5 | % volatile solids | 25.39 |
|---|---|---|---|

The remaining database tables provide reference information for the main database tables. **STATIONS** is a two-field table that shows the correspondence between the assigned **GradNo** and the original NYSDEC or GE station number. **GRADNUMS** cross-references the Agency or investigator who collected the data and is linked back to **SAMPLES** and **REF**. Duplicate PCB measurements made using soxhlet extraction reside in a side table called **SOXHDUP**. The key to non-detected data qualifier codes is given in **NONDETS**. **REACHES** indicates the upstream and downstream river miles associated with river reach numbers for the Upper Hudson River. The last table in the *HISTORIC\SED* subdirectory, **GE89**, holds the preliminary 1989 GE baseline studies results separate from the other database tables.

**Fish Data**

Figure 3-3 shows how the database tables contained in the *HISTORIC\FISH* subdirectory are linked. Table 3-17 and the table below describe the contents of each database table. Tables 3-18 through 3-25 explain field names and types in more detail. Results for over 10,000 samples collected from 1973 through 1993 are available in three main database tables: **GRADNUMF**, **SAMPLEF**, and **CONCFISH**. These three tables accommodate most database queries. **GRADNUMF** provides the master index to sample IDs (**GradNo**) and the corresponding original NYSDEC sample identifiers: laboratory number (**Labno**) and sample tag identifier (**Tagno**). **SAMPLEF** is similar to the **SAMPLES** table found in the *HISTORIC\SED* subdirectory and contains sampling information such as location descriptor, river mile, sampling date, species and preparation code. If a sample is composed of more than one individual fish, there will be a number greater than 1 in the **Noincomp** field (number of fish in composite) and a record in the **COMPOS** table connecting sample group weight and length statistics to the sample record. **SAMPLEF** is linked to the data table with all the PCB Aroclor and percent lipid results called **CONCFISH** through the sample ID (**GradNo**). The four tables, **PARAMKEY**, **PREP**, **SPECCODE**, and **REF**, contain keys to parameter codes, preparation codes, species codes and references, respectively, used in building the database. Finally, the **CORRNUM** table identifies corresponding old and new sample identifiers which have changed for some samples between the Phase 1 Report and this Report.

**Tables in *HISTORIC\FISH* Subdirectory**

| Table Name | Description |
|------------|-------------|
| GRADNUMF | Master index to GradNo |
| SAMPLEF | Fish sampling information (location, sex, age.....) |
| CORRNUM | Correspondence between old and new GradNo |
| COMPOS | Sample information for composite samples |
| CONCFISH | PCB Aroclor and percent lipid data - fish samples |
| PREP | Key to tissue and preparation codes |
| SPECCODE | Key to species codes |
| REF | Key to references used in building the database |

**Macroinvertebrate Data**

Some macroinvertebrate data are available in the *HISTORIC\MACROINV* subdirectory. Figure 3-4 shows the database table relationships. The contents of each table are described below and in Table 3-26, while Tables 3-27 through 3-33 define the database fields. The macroinvertebrate sampling information in **SAMPLE** is linked through the sample ID field, **GradNo**, to the **CONC** table which contains the PCB Aroclor measurements. Species codes, sample type codes, and the number of individuals per sample are given in **SPECCODE**, **SAMPREF** and **NUMINDI**, respectively. There are approximately 800 samples but not all species could be identified based on the original documentation. **DOHSITE** contains multiplate and caddisfly sampling location information.

**Tables in *HISTORIC\MACROINV* Subdirectory**

| Table Name | Description |
|---|---|
| SAMPLE | Macroinvertebrate sampling information |
| SAMPREF | Key to sample type |
| NUMINDI | Number of individuals in samples |
| CONC | PCB Aroclor results |
| OTHER | Additional species included in samples |
| SPECCODE | Species codes |
| DOHSITE | Multiple and caddisfly sampling information |

### 3.3.2   Lamont-Doherty Earth Observatory

The *LDEO* directory contains four self-descriptive spreadsheet tables which provide several sediment core results as well as a PCB sediment/water partitioning study.

### 3.3.3   USGS

The database glossary for field names and parameters contained in the database tables under *FLOW* and *WQDATA* subdirectories is provided in the look-up table **USGS_LUT** in the USGS directory (See Table 3-34).  A listing of the database tables follows, and is also provided in Tables 3-35 and 3-37.  Database table field definitions are given in Tables 3-36 for *USGS\FLOW* and 3-38 and 3-39 for *USGS\WQDATA*.

**Tables in *USGS\FLOW* Subdirectory**

| Table Name | Description |
|---|---|
| FTEDWD | Mean daily Hudson River flow at Fort Edward, 1976-1993 |
| GREEN | Mean daily Hudson River flow at Green Island, 1946-1993 |
| HADLEY | Mean daily Hudson River flow at Hadley, 1921-1993 |
| CORINTH | Mean daily Hudson River flow below Sacandaga River near Corinth, 1921-1993 |
| SCHU | Mean daily Hudson River flow at Schuylerville, 1977-1979 |
| STILL | Mean daily Hudson River flow at Stillwater, 1977-1993 |

| Table Name | Description |
|---|---|
| WATR | Mean daily Hudson River flow at Waterford, 1976-1993 |
| BATK | Mean daily Batten Kill flow at Battenville, 1922-1968 |
| HOOS | Mean daily Hoosic River flow near Eagle Bridge, 1910-1993 |
| SACAND | Mean daily Sacandaga River flow at Stewarts Bridge, 1907-1993 |
| MOHK | Mean daily Mohawk River flow, 1917-1993 |
| USGS7693 | Mean daily flow at all above stations, except Battenville, 1976-1993 |

The *USGS\FLOW* subdirectory includes USGS mean daily flow data in cubic feet per second collected at various stations.

**Tables in *USGS\WQDATA* Subdirectory**

| Table Name | Description |
|---|---|
| USGSWQ | Water-column PCB, suspended sediment data, and sediment load, in tons/day, collected by the USGS |
| TOCDAT | Water-column total organic carbon (TOC) collected by the USGS |

The *USGS\WQDATA* subdirectory includes water column PCB, total suspended sediment data, and sediment load in tons/day in **USGSWQ** and water column total organic carbon data in **TOCDAT.**

### 3.3.4   GE Data

The TAMS/Gradient team received data for over 2,000 samples from GE in several files, the most recent being GE081895.DBF and CP081895.DBF received in August 1995.  The former file contains all the field sampling information, the homologue distributions, and the total PCB measurements for all sampling surveys combined.  The latter contains the congener concentrations for all sampling surveys combined.  The results have been divided into five main database tables with one reference table and three glossaries as shown below as well as in Table 3-40 and Figure 3-5.  Data dictionaries for tables contained in *GE* are provided in Tables 3-41 through 3-49.

TAMS/*Gradient*

**Tables in *GE* Directory**

| Table Name | Description |
|------------|-------------|
| SAMPLE | Sampling information for all GE data contained in this directory |
| PCB | PCB data for all media |
| PCBHOMOL | PCB homologue data for all media |
| PCBCONG | PCB congener data for all media |
| NONPCB | Non-PCB data for all media |
| SPECCODE | Fish species code |
| PCB_LUT | Congener data glossary |
| GEPARAMS | Parameter abbreviations glossary |
| FIELD_LUT | Database field glossary |

Sampling information such as sample date, location and medium (*e.g.*, water, sediment or biota) reside in the table **SAMPLE**. Samples for all matrices were assembled into a single **SAMPLE** table and hence not all the fields pertain to every record. For instance, **Age** applies only to biota or fish samples and not to sediment, water or pore water samples. Where a field does not apply, the entry remains blank or contains or a "0" as a placeholder. The **SAMPLE** table is linked to all the PCB and non-PCB results through the **NEA_file** identifier. Total PCB values, qualifiers, and quantitation limits are given in **PCB** for all media. Homologue distributions by mole percent and by weight percent are given in **PCBHOMOL** for all media. Congener concentrations are given in **PCBCONG** for all media. It appears that GE reported non-detected congeners as "0" in **PCBCONG**. **NONPCB** holds all conventional parameters, such as total suspended solids and total organic carbon, with abbreviations explained in **GEPARAMS**. A key to the congener peak numbers is provided in **PCB_LUT** which also gives a corresponding BZ number to relate these results to those being analyzed under the Phase 2 sampling programs.

### 3.3.5   New York State Department of Transportation

The **NYSDOT** directory contains the table **GAUGES** which provides the readings of staff gauges listed in Table 3-50.

### 3.3.6   Phase 2 Data

Database glossaries **CONG_LUT**, **FIELDS**, **PARAMS** and **QUALIFY** in the *PHASE2* directory are described in Tables 3-51 to 3-54 and serve as keys to congener, field name parameter and qualifier definitions, respectively, for tables in the *PHASE2* directory. Data dictionaries for **AROCLSTD** and **ASCREEN** are presented in Tables 3-55 and 3-56,

respectively.

## Water Column Study Data

The *PHASE2\WATER* subdirectory combines the results from the water column transects, flow-averaged events, and PCB equilibration study under the Phase 2 sampling effort. The relationships between the main database tables, *i.e.*, **GROUPS**, **STATIONS**, **PCBW**, **PCBP**, and **NONPCBW**, are shown in Figure 3-6. All tables in the subdirectory are listed below and in Table 3-57, and field definitions are given in Tables 3-58 through 3-64.

**Listing of Tables in *PHASE2\WATER* Subdirectory**
(including Tables in *PHASE2\WATER\QA_QC* and *PHASE2\WATER\EQUILIB*)

| Table Name | Description |
|---|---|
| STATIONS | Water column transects and flow-averaged events stations |
| GROUPS | Sample groupings |
| PCBP | PCB congeners/homologue sums/Aroclor concentrations - particulate samples ( g/Kg) |
| PCBPD | PCB congeners - particulate duplicate pairs ( g/Kg) |
| PCBPE | PCB congener - particulate samples - equilibrium study ( g/Kg) |
| PCBFA7 | PCB congeners/homologue sums/Aroclor concentrations - combined particulate and dissolved samples (ng/l) for flow-averaged event 7 |
| PCBW | PCB congeners/homologue sums/Aroclor sums - water samples (ng/L) |
| PCBWD | PCB congeners - water duplicate pairs (ng/L) |
| PCBWE | PCB congeners - water (dissolved) samples - equilibration study (ng/L) |
| PCBWTT | PCB congeners - whole water samples (TT series) (ng/L) |
| NONPCBW | Non-PCB data - water column samples |
| NONPCBWD | Non-PCB data - water duplicate sample pairs |
| FB | Non-PCB data - field blanks |
| VOLUMES | Sample volumes filtered for PCB analyses |

The **STATIONS** table contains sampling information such as the transect or flow-averaged event number, station number, sample identifier and type, river mile, and northing and easting coordinates where known. The sampling stations are associated with distinct zones in the river identified in **GROUPS**. **STATIONS** is linked to the six PCB data tables, *i.e.*, **PCBP**, **PCBW**,

TAMS/*Gradient*

**PCBPE**, **PCBWE**, **PCBFA7** and **PCBWTT**, through the **TAMS ID** and **TAMS Type** fields. Because congener results from the various efforts are so distinct (*e.g.*, sampling method or matrix), the TAMS/Gradient team felt it necessary to divide the data into separate tables to prevent mixing of data types.

**PCBP** and **PCBW** contain particulate and "dissolved" (*i.e.*, filtered water) PCB congener data, respectively, for the water column transects and the flow-averaged events. While duplicate pairs have been removed from the main database tables to **PCBPD**, for particulate or suspended-matter data, and **PCBWD** for dissolved-phase data, composited results following the method described in Chapter 2 have been returned to the main database tables, *i.e.*, **PCBP** and **PCBW**. The data in **PCBP** have been reported on a mass per unit mass basis, the same as the Phase 2 sediments. These values were obtained by dividing the reported results (ng/filter) by the volume filtered and the TSS value for the sample.

The results for the equilibration study are separate from the main database tables; **PCBPE** and **PCBWE** contain the equilibration study results for the particulate and dissolved fractions, respectively. A few whole-water PCB congener analyses were performed on samples taken for Transect 1 and the results reside in **PCBWTT**. Non-PCB measurements such as total suspended solids (TSS), dissolved organic carbon (DOC), and chlorophyll-*a* are given in **NONPCBW**.

As is the case with the PCB congener data, duplicate pairs have been placed in a supplementary table **NONPCBWD** with composited results placed in **NONPCBW**. Minor tables in this subdirectory include **FB**, which contains non-PCB data field blanks, and **VOLUMES**, which indicates the volume of water sample filtered for PCB analyses.

**Sediment**

The method for linking database tables in the *PHASE2\SEDIMENT* subdirectory is given in Figure 3-7. A listing of all tables in the *PHASE2\SEDIMENT* subdirectory is given below and in Table 3-65, while data dictionaries are given in Tables 3-66 through 3-73.

**Tables in *PHASE2\SEDIMENT* Subdirectory**
(including Tables in *PHASE2\SEDIMENT\QA_QC*)

| Name | Description |
|------|-------------|
| STATIONS | Confirmatory samples and low-resolution core sampling stations |
| PCBS | PCB congeners/homologue sums - sediment samples (ìg/Kg DW) - low-resolution samples only |
| PCBSD | PCB congeners - sediment samples pairs (ìg/Kg DW) |

**Tables in *PHASE2\SEDIMENT* Subdirectory (Continued)**

| Name | Description |
|------|-------------|
| NONPCBS | Non-PCB data - sediment samples |
| NONPCBSD | Non-PCB data - duplicate sediment sample pairs |
| FB | Non-PCB data - field blanks |
| SIEVEGS | Grain size distribution data by sieve analysis |
| SIEVEGSD | Grain size distribution data by sieve analysis - sample duplicates |
| LASERGS | Grain size distribution data by laser particle analysis |
| LASERGSD | Grain size distribution data by laser particle analysis - sample duplicates |
| RADNUC | Radionuclide data - sediment samples - low-resolution only |
| RADNUCD | Radionuclide data - sediment samples field splits and laboratory duplicates |
| LRINFO | Supplemental information for low-resolution core samples only |
| SEDDESC | Descriptive sediment classifications, density, redox and other field data |

As in the *PHASE2\WATER* subdirectory, a **STATIONS** table establishes the sampling locations either by river mile or by northing and easting pairs. The core depth interval for each sample is also indicated in this table. It was not necessary to break PCB congener results into multiple tables, as was the case for the water column study. **PCBS** holds all the PCB congener results including composited duplicate samples as described in Chapter 2. The original duplicate pairs are retained in **PCBSD**. **PCBS** and **PCBSD** are linked back to **STATIONS** through the **TAMS ID** and **TAMS Type**. No other PCB tables are included in this directory because only a single matrix (sediment) was sampled. Note that these tables do not contain results for the high-resolution coring study, which are given in the *PHASE2\HRCORES* subdirectory.

The tables **NONPCBS** and **NONPCBSD** contain all the non-PCB results including total carbon, total nitrogen, total inorganic carbon, total organic nitrogen, the C:N ratio, and summary grain size analyses in sediments. Again, **NONPCBSD** holds all the duplicate pairs, while **NONPCBS** holds composited duplicate results, and **FB** holds the field blank results. Radionuclide data generated for these samples required some additional fields not needed for the other data tables, such as **Detector**, for detector type, and **Sigma**, for the standard deviation of the counting result. **RADNUC** contains all radionuclide data; **RADNUCD** contains only sediment sample duplicate data. These two tables, together with **PCBS** and **PCBSD**, contain only low-resolution sampling information. The remaining tables in this subdirectory contain information on both low-resolution and confirmatory samples. Detailed laser grain size data including composited results are contained in **LASERGS** while sample duplicates are contained in **LASERGSD**. **SEDDESC** provides descriptive sample information based largely on field

TAMS/*Gradient*

observations for both confirmatory and low-resolution coring samples. **LRINFO** provides information pertaining to low-resolution coring sites. Specifically, it provides the corresponding 1984 NYSDEC sediment survey station number from Brown, et. al (1988) for the coring sites located in the Thompson Island Pool. It also provides the hot spot number for low resolution coring sites below the Thompson Island Dam.

### Ecological Sampling

The tables contained within the *PHASE2\ECO* directory are shown in the table below. The data dictionaries are contained in Tables 3-75 through 3-84. Figure 3-8 illustrates how the database tables are linked.

### Tables in *PHASE2\ECO* Subdirectory
(including Tables in *PHASE2\ECO\QA_QC* subdirectory)

| Table Name | Description |
|---|---|
| STATIONS | Ecological survey stations |
| COORDS | Coordinates for stations |
| GROUPS | Sample groupings |
| BENTHIC | Sample composition information - invertebrates |
| FISH | Sample composition information - fish |
| PCBFISH | PCB congeners/homologue sum/Aroclor concentrations - fish |
| PCBFISHD | PCB congeners - diluted fish analyses |
| PCBINV | PCB congeners/homologue sum/Aroclor concentrations - invertebrates |
| PCBINVD | PCB congeners - invertebrate dup. pairs/dilultion analyses |
| NONPCBB | Non-PCB data - biota |
| NONPCBBD | Non-PCB data - biota duplicate pairs |
| PCBS | PCB congeners/homologue sums/Aroclor concentrations - sediment samples ($\tilde{\imath}$g/Kg DW) |
| PCBSD | PCB congeners - sediment duplicate pairs ($\tilde{\imath}$g/Kg DW) |
| NONPCBS | Non-PCB data - sediment samples |
| NONPCBSD | Non-PCB data - sediment duplicate pairs |
| LASERGS | Sediment laser grain size data |
| FB | Non-PCB data - sediment field blanks |

| Table Name | Description |
|---|---|
| SPECIES | Key to species codes |
| LASERGSD | Sediment laser grain size data - duplicate pairs |

The **STATIONS** table, the main database table in the subdirectory, contains sampling information such as **TAMS ID**, **TAMS Type, Species** and location by river mile. **COORDS** is linked to **STATIONS** through the **Station** field, and contains locations by northing and easting pairs as well as sample types collected (*i.e.*, sediment, fish, benthic invertebrates). The **GROUPS** table, containing stations grouped by location, is linked to **STATIONS** in the same way. The **LASERGS** table contains grain size distribution data based on laser particle analysis on the ecological samples, and is linked to **STATIONS** via the **TAMS ID** and **TAMS Type**. **LASERGSD**, linked to **STATIONS** in the same fashion, contains information on duplicate pairs. **STATIONS** is linked to the PCB data tables **PCBS**, **PCBINV** and **PCBFISH** through the **TAMS ID**, **TAMS Type** and **Species** fields. The PCB tables, in turn, relate to the field data tables, *i.e.*, **BENTHIC** and **FISH,** through the same fields. The tables **PCBSD** and **PCBINVD,** which contain duplicate pair information, are supplementary. **PCBFISHD**, also supplementary, contains results for laboratory duplicate analyses for those samples requiring dilution. **NONPCBS** and **NONPCBB** contain all the non-PCB results for sediment samples and biota samples, respectively. Again, information about duplicate pairs can be found in **NONPCBSD** and **NONPCBBD**. These are all linked to **STATIONS** through **TAMS ID** and **TAMS Type** for sediment and **TAMS ID**, **TAMS Type** and **Species** for fish and benthic invertebrate samples. **FB** contains field blank data for ecological sampling program.

**High-Resolution Cores**

Figure 3-9 illustrates how tables in *PHASE2\HRCORES* are linked. A listing of tables in this subdirectory is given below and in Table 3-85. Data dictionaries are given in Tables 3-86 through 3-93.

**Tables in *PHASE2\HRCORES* Subdirectory**
(including Tables in *PHASE2\HRCORES\QA_QC* subdirectory)

| Table Name | Description |
|---|---|
| STATIONS | Confirmatory Sampling and High-Resolution Sediment Coring Program sampling stations |
| PCBS | PCB congeners/homologue sums/Aroclor sums - sediment samples (ìg/Kg DW) |
| PCBSD | PCB congeners - duplicate sediment sample pairs (ìg/Kg DW) |
| NONPCBS | Non-PCB data - sediment samples |

| Table Name | Description |
|---|---|
| NONPCBSD | Non-PCB data - duplicate sediment sample pairs |
| FB | Non-PCB data - field blanks |
| LASERGS | Laser grain size Phi classes |
| LASERGSD | Laser grain size Phi classes - duplicate pairs |
| RADNUC | Radionuclide data - sediment samples |
| RADNUCD | Radionuclide data - sediment sample laboratory duplicates |
| SEDDESC | Redox, density and additional field information |
| GROUPS | Sample groupings |

As in the *PHASE2\WATER* subdirectory, a **STATIONS** table establishes the sampling locations either by river mile or by northing and easting pairs. The core depth interval for each sample is also indicated in this table. In the *PHASE2\HRCORES* subdirectory, sampling locations in **STATIONS** are grouped by the identifiers supplied by the table **GROUPS**. It was not necessary to break PCB congener results into multiple tables, as was the case for the water column study. **PCBS** holds all the PCB congener results including composited duplicate samples as described in Chapter 2. The original duplicate pairs are retained in **PCBSD**. **PCBS** and **PCBSD** are linked back to **STATIONS** through the **TAMS ID** and **TAMS Type**. No other PCB tables are included in this directory because only a single matrix (sediment) was sampled in the high-resolution coring study.

The tables **NONPCBS** and **NONPCBSD** contain all the non-PCB results including total carbon, total nitrogen, total inorganic carbon, total organic nitrogen, the C:N ratio, and summary grain size analyses in sediments. Again, **NONPCBSD** holds all the duplicate pairs, while **NONPCBS** holds composited duplicate results, and **FB** holds the field blank results. Radionuclide data generated for these samples required some additional fields not needed for the other data tables, such as **Detector**, for detector type, and **Sigma**, for the standard deviation of the counting result. **RADNUC** contains all radionuclide data; **RADNUCD** contains only sediment sample laboratory duplicate data. Detailed laser grain size data including composited results are contained in **LASERGS** while sample duplicates are contained in **LASERGSD**. **SEDDESC** is similar in style to a table bearing the same name in subdirectory *PHASE2\SEDIMENT* in that it contains information on redox, sediment density and other descriptive field information.

**FLOW**

The *PHASE2\FLOW* subdirectory contains one table, **FLOW93**, which includes calculated 1993 flow data for Stillwater and Waterford. The **FLOW93** data dictionary is given in Table 3-94.

TAMS/*Gradient*

### 3.3.7 NOAA

Figure 3-10 illustrates how the database tables in the **NOAA** directory are linked. Table 3-95 and the table below list the database tables contained in the **NOAA** directory. Tables 3-96 through 3-102 comprise the data dictionaries for the above-mentioned tables. Glossary definitions can be found in the Phase 2 data glossaries. Groups for NOAA samples are the same as those for the Phase 2 ecological program and can be found in *PHASE2\ECO\***GROUPS**.

**Tables in *NOAA* Directory**
(including Tables in *NOAA\QA_QC* subdirectory)

| Table Name | Description |
|---|---|
| STATIONS | Ecological survey stations |
| COORDS | Coordinates for stations |
| FISH | Sample composition information - fish |
| PCBFISH | PCB congeners/homologue sum/Aroclor concentrations - fish |
| PCBFISHD | PCB congeners - fish dup pairs/dilution analyses |
| NONPCBB | Non-PCB data - biota |
| SPECIES | Key to species codes |

The **STATIONS** table contains sample information such as **TAMS ID**, **TAMS Type** and **Species**, as well as station number and sample location by river mile. **COORDS** is linked to **STATIONS** through the **STATION** field and contains sampling locations by northing and easting pairs. The PCB data tables, **PCBFISH** and **PCBFISHD** (containing laboratory duplicate analyses for those samples requiring dilution), and **NONPCBB**, the non-PCB results table for fish (biota) samples are linked to the **STATIONS** table by **TAMS ID**, **TAMS Type** and **Species**. The tables **FISH** and **SPECIES** are similarly linked and contain field data and species information, respectively.

### 3.4 Database Application Examples

This section describes three example queries showing database manipulations of the draft Phase 2 data. While the examples are most relevant to the Phase 2 data tables, the same general concept may be applied to other subdirectories and data tables. Field definitions for all data tables are provided in the data dictionaries located in the Table Section of this report. The following discussion does not assume a specific database management software package, but rather relates general procedures for conducting database queries. The reader may need to refer to

TAMS/*Gradient*

software manuals for directions on performing queries for the specific database management software package being used.

*1.    Extract Total PCB values and Total Carbon/Total Nitrogen Ratios from High-Resolution Sediment Coring Data for Correlation Analysis.*

This example demonstrates how to extract pairs of Total PCBs and Total Carbon/Total Nitrogen ratio from the high-resolution sediment core samples for the purpose of calculating correlation coefficients or performing other data analysis. The box below summarizes the steps and Figure 3-11 indicates the table links needed to accomplish the database query.

---

1.    Move to the appropriate directory (*PHASE2\HRCORES*).

2.    Select from **NONPCBS** all samples whose carbon to nitrogen ratio (C/N) is greater than 0.

3.    Link through the **TAMS ID** and **TAMS Type** fields and select all the Total PCBs records from **PCBS**. (In this case, **Value2** has been selected to reflect the application of USEPA guidance regarding treatment of non-detected congener results.)

4.    Save merged results to a table and export to a statistics program.

---

Example results are shown below (partial listing):

| TAMS Sample ID | TAMS SampType | C/N - molar | Total PCBs - g/Kg DW* |
|----------------|---------------|-------------|-----------------------|
| HR-001-0002 | P | 13.60 | 534.35 |
| HR-001-0204 | P | 12.60 | 950.00 |
| HR-001-0406 | P | 12.50 | 902.37 |
| HR-001-0608 | P | 13.30 | 1037.47 |
| HR-001-0812 | P | 14.00 | 974.78 |
| HR-001-1216 | P | 14.30 | 1191.13 |
| HR-001-1620 | P | 15.80 | 1441.25 |
| HR-001-2024 | P | 16.00 | 191.76 |
| HR-001-2428 | P | 14.90 | 62.36 |
| HR-001-2832 | P | 14.40 | 90.07 |
| HR-001-3236 | P | 13.70 | 279.38 |
| HR-001-3640 | P | 14.00 | 89.11 |
| HR-001-4044 | P | 12.60 | 49.81 |

\* The actual values may be different from those shown here.

The merged results can now be saved to a computer file for input to a statistics program for determining correlation coefficients.

TAMS/*Gradient*

2. *Extract Homologue Sums and Core Depth Intervals for High-Resolution Sediment Core Number 19 for Graphing a Depth Profile.*

This example query extracts homologue sums for sediment samples taken from core number 19 and pairs the results with core depth intervals for the purpose of generating a sediment profile. Figure 3-12 shows the table links.

| 1. | Move to the appropriate directory (*PHASE2\HRCORES*). |
| --- | --- |
| 2. | Select from **STATIONS** all samples from station "HR-019" and link through the **TAMS ID** and **TAMS Type** fields to **PCBS**. |
| 3. | Input the criteria so as to exclude all congener records (those starting with "BZ") and include homologue sums only. (As above, **Value2** has been selected to reflect the application of USEPA guidance regarding treatment of non-detected congener results.) |
| 4. | Save merged results to a table and display. |

Results displayed in a summary format are as follows:

| Upper Depth (cm) | Lower Depth (cm) | Mono* | Di* | Tri* | Tetra* | Penta* | Hexa* | Hepta* | Octa* | Nona* | Deca* |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 2 | 2837.0 | 6652.9 | 8146.4 | 5284.7 | 2032.7 | 378.6 | 128.4 | 32.2 | 7.3 | 0.0 |
| 2 | 4 | 4152.0 | 10410.4 | 10544.0 | 5070.9 | 1788.3 | 400.4 | 148.1 | 34.3 | 6.3 | 0.0 |
| 4 | 6 | 7731.0 | 16086.6 | 14792.0 | 6499.0 | 2145.7 | 434.9 | 160.5 | 0.0 | 0.0 | 0.0 |
| 6 | 8 | 12160.0 | 27618.2 | 20753.5 | 8595.5 | 2680.0 | 632.6 | 222.7 | 38.3 | 8.5 | 0.0 |
| 8 | 12 | 43480.0 | 95862.0 | 48445.0 | 15893.0 | 3765.8 | 675.0 | 196.9 | 0.0 | 0.0 | 0.0 |
| 8 | 16 | 115830.0 | 232219.0 | 92503.0 | 23288.7 | 7349.2 | 1343.0 | 286.0 | 0.0 | 0.0 | 0.0 |
| 12 | 16 | 174150.0 | 238297.0 | 99322.7 | 29249.3 | 7986.8 | 823.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 16 | 20 | 616800.0 | 845330.0 | 227040.8 | 75873.2 | 27533.4 | 4947.0 | 1589.0 | 0.0 | 0.0 | 0.0 |
| 20 | 24 | 777750.0 | 1045244.0 | 263233.6 | 82505.9 | 26362.6 | 3441.0 | 1101.0 | 0.0 | 0.0 | 0.0 |
| 24 | 28 | 185810.0 | 196751.0 | 61967.6 | 24304.9 | 7443.0 | 1781.0 | 165.0 | 0.0 | 0.0 | 0.0 |
| 28 | 32 | 161340.0 | 261007.0 | 75486.4 | 23170.9 | 7101.2 | 3562.8 | 1423.6 | 557.9 | 222.0 | 0.0 |
| 32 | 36 | 38080.0 | 53766.0 | 26134.6 | 8872.6 | 3607.0 | 1188.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 36 | 40 | 2801.3 | 5483.9 | 1589.9 | 633.8 | 501.8 | 126.6 | 15.0 | 0.0 | 0.0 | 0.0 |
| 40 | 44 | 7.9 | 12.6 | 39.5 | 18.4 | 6.4 | 1.9 | .4 | 0.0 | 0.0 | 0.0 |
| 44 | 48 | 9.5 | 9.0 | 31.2 | 24.0 | 11.5 | 1.8 | .7 | 0.0 | 0.0 | 0.0 |
| 48 | 52 | 5.4 | 7.2 | 14.6 | 9.3 | 4.8 | .9 | .7 | 0.0 | 0.0 | 0.0 |
| 52 | 56 | 8.0 | 7.4 | 17.9 | 13.0 | 7.4 | 1.5 | 1.0 | 0.0 | 0.0 | 0.0 |
| 56 | 61 | 2.1 | 3.9 | 15.1 | 7.5 | 4.2 | .7 | .4 | 0.0 | 0.0 | 0.0 |

* The actual values may be different from those shown here.

3. *Extract Five PCB Congeners from Water Samples Collected during Water Column*

TAMS/*Gradient*

*Transect 2 and Link Them to Station River Mile.*

Because of the quantity of information and sheer number of congeners, it may be more suitable to investigate a few at a time. Subsets of congeners are readily extracted from the database for purposes of data analyses. This example extracts five congeners from a single transect and associates the results with river mile. Refer to Figure 3-13.

| | |
|---|---|
| 1. | Move to the appropriate directory (*PHASE2\WATER*). |
| 2. | Select from **STATIONS** all samples from transect 002 and link through the **TAMS ID** and **TAMS Type** fields to **PCBW**. |
| 3. | Indicate which congeners are to be included in the extracted subset: BZ#1, BZ#12, BZ#27, BZ#41, or BZ#84. (As above, **Value2** has been selected to reflect the application of USEPA guidance regarding treatment of non-detected congener results.) |
| 4. | Save merged results to a table and display. |

Example results are given below:

| Station | River Mile | BZ#1* | BZ#12* | BZ#27* | BZ#41* | BZ#84* |
|---------|-----------|-------|--------|--------|--------|--------|
| 0001 | 201 | 0.00 | 0.00 | 0.00 | 0.00 | .01 |
| 0002 | 197 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 0003 | 196 | .17 | .12 | .10 | .02 | .02 |
| 0004 | 194 | .24 | .07 | .15 | .04 | .02 |
| 0005 | 189 | 11.90 | .03 | 1.32 | .08 | .07 |
| 0006 | 181 | 3.73 | .02 | .57 | .10 | .10 |
| 0007 | 168 | 3.51 | .02 | .55 | .10 | .07 |
| 0008 | 157 | 2.91 | .02 | .61 | .08 | .07 |

* The actual values may be different from those shown here.

PAGE INTENTIONALLY LEFT BLANK

TAMS/*Gradient*

# 4.	REFERENCES

Armstrong, R. W. and R. J. Sloan. 1981. *PCB Patterns in Hudson River Fish. I. Resident/Freshwater Species.* NYSDEC, Albany, NY.

Bopp, R.F. 1979. *The Geochemistry of Polychlorinated Biphenyls in the Hudson River.* Columbia University, Ph.D. thesis.

Bopp, R.F., H.J. Simpson, C.R. Olsen, R.M. Trier and N. Kostyk, 1982. *Chlorinated Hydrocarbons and Radionuclide Chronologies in Sediments of the Hudson River and Estuary, New York.* Environmental Sci. Technol. 16(10):666 - 676.

Bopp, R.F. 1983. *Revised Parameters for Modeling the Transport of PCB Components Across an Air Water Interface.* Journal of Geophysical Research, 88(4).

Bopp, R. F., H. J. Simpson and B. L. Deck. 1985. *Release of Polychlorinated Biphenyls from Contaminated Hudson River Sediments.* Final Report to NYSDEC, Albany, NY; Contract No. NYS C00708.

Bopp, R.F. and H.J. Simpson. 1988. *Sources and Trends of Persistent Contaminants in New York Harbor Complex.* Final Report to Hudson River Foundation.

Bopp, R.F. and H.J. Simpson. 1989. *Contamination of the Hudson River. The Sediment Record* in **Contaminated Marine Sediments - Assessment and Remediation**, Committee on Contaminated Sediments, National Research Council, National Academy Press.

Brown, M.P., M.B. Werner, C.R. Carusone, and M. Klein. 1988. *Distribution of PCBs in the Thompson Island Pool of the Hudson River: Final Report of the Hudson River PCB Reclamation Demonstration Project Sediment Survey.* Division of Water, New York State Department of Environmental Conservation, Albany, NY.

Bush, B. and F. C. Lo. 1973. Thin-layer chromatography for quantitative polychlorinated biphenyl analysis. *J. Chromatogr.*, 77:377-388.

Claussen, J.H., General Electric Company. 1991. Letter to Douglas J. Tomchuk (USEPA Region II), dated March 8, 1991, regarding Hudson River PCBs Site, containing transmittal of GE 1990 sediment samples from selected locations.

Haggard, J.G., General Electric Company. 1994. Letter to Douglas J. Tomchuk (USEPA Region II), dated October 10, 1994, regarding Hudson River Remnant Deposits monthly progress report for September 1994.

Harza Engineering. 1990. *Ft. Edward Dam PCB Remnant Deposit Containment Environmental Monitoring Program Baseline Studies, Report of 1989 Results, August-December 1989.* Report

TAMS/*Gradient*

to General Electric Company, Fairfield, CT, February 1990.

Limburg, K.E. 1984. PCBs in the Hudson. In the *Hudson Review Ecosystem.* Springer-Verlag, NY, pp. 83-130.

Metcalf & Eddy. 1990. *Final Report, Waterford Drinking Water Supply Evaluation.* (Hudson River PCB Remnant Site Project - Task 3). Report prepared for NYSDEC, Albany, NY.

Novak, M.A., A.A. Reilly, and S.J. Jackling. 1988. Long-term monitoring of polychlorinated biphenyls in the Hudson River (New York) using caddisfly larvae and other macroinvertebrates. *Arch. Environ. Contam. Toxicol.* 17:699-711.

Novak, M.A., A.A. Reilly, B. Bush, and L. Shane. 1990. *In-situ* determination of PCB congener-specific first order absorption/desorption rate using *Chironomus tentans* larvae (Insecta: Diptera: *Chironomidea*). *Water Research* 24(3): 321-327.

NUS Corporation. 1984. *Feasibility Study: Hudson River PCBs Site, New York. Volume I.* Pittsburgh, PA.

NYS Thruway Authority, Office of Canals, 1993, Champlain Canal (Hudson River) Staff Gauge Readings between Lock 1 and Lock 7, Transmittals to TAMS Consultants from C. Head. Various dates.

O'Brien and Gere Engineers, Inc. 1993. Data Summary Reports, prepared for General Electric.

O'Brien and Gere Engineers, Inc. 1994. Fort Edward Dam PCB Remnant Containment 1993 Post Construction Monitoring Program, prepared for General Electric.

Rhea, J.R., O'Brien and Gere. 1994. Letter to Edward Garvey (TAMS Consultants, Inc.), dated March 15, 1994, regarding General Electric Co. Hudson River Project and transmittal of GE database.

Rhea, J.R., O'Brien and Gere. 1994a. Letter of transmittal from O'Brien and Gere to J. Haggard of GE, dated December 1, 1994, regarding updated General Electric Hudson River Database.
Rogers, Bob. 1991. Personal communication to Jonathan Butcher from Bob Rogers, USGS, Albany, NY.

Schroeder, R. A. and C. R. Barnes. 1983a. *Trends in Polychlorinated Biphenyl Concentrations in Hudson River Water Five Years after Elimination of Point Sources.* USGS Water-Resources Investigations Report 83-4206. USGS, Albany, NY.

Schroeder, R. A. and C. R. Barnes. 1983b. *Polychlorinated Biphenyl Concentrations in Hudson River Water and Treated Drinking Water at Waterford, New York.* USGS Water-Resources Investigations Report 83-4188. USGS, Albany, NY.

TAMS/*Gradient*

Simpson, K.W., M.A. Novak, and A.A. Reilly. 1986. *Final Report, Biomonitoring of PCBs in the Hudson River*. NYSDOH.

Sloan, R. 1994. Letter to D. Thomchuk - USEPA, A. DiBernardo - TAMS, and J. Haggard -GE, dated July 5, 1994, concerning transmittal of 1992 and 1993 NYSDEC Hudson River striped bass PCB data.

Sloan, R. J. and E.G. Horn. 1986. *Contaminants in Hudson River Striped Bass: 1978-1985*. Technical Report 86-2 (BEP), NYSDEC, Division of Fish and Wildlife, Albany, NY.

Sloan, R.J., B. Young, V. Vecchio, K. McKown, and E. O'Connell. 1988. *PCB Concentrations in the Striped Bass from the Marine District of New York State*. Technical Report 88-1 (BEP), Division of Fish and Wildlife, NYSDEC.

Spagnoli, J.J. and L.C. Skinner. 1977. PCBs in Fish from Selected Waters of New York State. *Pesticides Monitoring Journal*, 11(2):69-87.

TAMS Consultants, Inc. and Gradient Corp. 1992. *Phase 2A Sampling and Analysis Plan/Quality Assurance Project Plan Hudson River PCB Reassessment RI/FS*.

Tofflemire, T.J. and S.O. Quinn. *1979. PCBs in the Upper Hudson River Mapping and Sediment Relationships*. NYSDEC, Technical Paper No. 56, Albany, NY. 140 pp.

Turk, J.T. and D. E. Troutman. 1981. *Polychlorinated Biphenyl Transport in the Hudson River, New York*. USGS Water-Resources Investigations Report 81-9. USGS, Albany, NY.

USEPA and NYSDEC. 1987. *Draft Joint Supplement to the Final Environmental Impact Statement on the Hudson River PCB Reclamation Demonstration Project and Appendices*.

USEPA. 1988. *Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses*.

USEPA. 1989. *Statistical Analysis of Ground-water Monitoring Data at RCRA Facilities - Interim Final Guidance*. EPA/530-SW-89-026. February.

USEPA. 1992. *Standard Operating Procedure (SOP) for the Evaluation of Metals Data for the Contract Laboratory Program (CLP) Inorganics Data Review for Region II (SOP No. HW-2, Rev. XI)*.

Wagner, L.A. 1980. *Drainage Areas of New York Streams by River Basin: A Stream Gazetteer*. USGS Water Resources Investigation, Open File.

Warren, S.D., R.F. Bopp and H.J. Simpson. 1987. *Volatilization of PCBs from Contaminated*

*Sediments and Water.*  Final Report to NYSDEC, Albany, NY.  Contract NYS COO1263.

WATSTORE, 1995. Retrieval from WATSTORE, USGS database, August 1995, by R. Allen of USGS-Water Division, Albany, NY.

Webb, R.G. and A.C. McCall.  1973.  Quantitative PCB standards for electron capture gas chromatography. *J. Chromatographic Sci.*, 11: 366-73.

Weston Environmental Consultants.  1978.  *Migration of PCBs from Landfills and Dredge Spoil Sites in the Hudson River Valley, New York -- Final Report.*  Prepared for New York State Department of Environmental Conservation, Albany, NY.

TAMS/*Gradient*

**Table 3-1**
**Data Dictionary for Table HIST_LUT in *HISTORIC* Directory**

| Field Name<br>Paradox | Field Name<br>FoxPro | Field Type [1] | Description |
|---|---|---|---|
| Fld_Param | [2] | A15 | Contains all field name and parameters in ***HISTORIC*** Directory |
| Field Type | field_type | A3 | [1] |
| Matrix | [2] | A30 | Sample matrix |
| Units | [2] | A10 | Units of result |
| Description | descriptio | A100 | Definition of given field name or parameter |
| Database File | database_f | A50 | Database files that contain given field or parameter |
| Memo | [2] | M | Additional information for certain fields/parameters |

[1]    A: character field with number denoting size of field
D: date field
N: number field
M: memo field

[2]    Same as Paradox

**Table 3-2**
**Data Dictionary for Table PARAMKEY in *HISTORIC* Directory**

| Field Name<br>Paradox | Field Name<br>FoxPro | Field Type [1] | Description |
|---|---|---|---|
| Parameter code | parameter_0 | A2 | Parameter code |
| Parameter | parameter_1 | A20 | Name of parameter |

[1]       A: character field with number denoting size of field
                      D: date field
                      N: number field
                      M: memo field

**Table 3-3**
**Tables in *HISTORIC\SED* Subdirectory**

| Table | Description |
|---|---|
| SAMPLES | Sediment sampling information; NYSDEC/OBG (1976 - 1978); NYSDEC/NYSDOH (1984 - 1985); GE/Harza (1990) |
| STATIONS | NYSDEC or GE station number correspondence to GradNo sample identifier |
| GRADNUMS | Core section correspondence to GradNo sample identifier |
| SECTION | Section number, depths, and correspondence to GradNo for sediment cores |
| REACHES | River reach numbers |
| CONCSED | PCB Aroclor data - sediment samples |
| NONCHEM | Non-PCB data - sediment samples |
| SOXHDUP | Duplicate PCB Aroclor data using soxhlet extraction |
| NONDETS | Key to non-detection qualifier codes |
| REF | Key to references used in building the database |
| TEXTURES | Sediment description key |
| GE89 | Preliminary 1989 GE sediment baseline studies: GE/Harza (1989) |
| MASSPEC | Results for GMS performed for sediments collected during 1984-1985 NYSDEC survey of Upper Hudson |

**Table 3-4**
**Data Dictionary for Tables SAMPLES in *HISTORIC\SED* Subdirectory**

| Field Name Paradox | Field Name FoxPro | Field Type [1] | Description |
|---|---|---|---|
| GradNo | gradientx | A5 | Unique identifying number |
| Dup | dupx | A2 | Duplicate marker field (not used) |
| Sample Type | sample_typ | A2 | Sample Type (C = core, G = Grab) |
| Mo | month | A2 | Sample month |
| Dy | day | A2 | Sample day |
| Yr | year | A4 | Sample year |
| Rmile | river_mile | N | Hudson River mile measured from the Battery |
| Distance ft | distancex | N | Distance from shore in feet |
| Northing ft | northingx | N | NY State Plane northing coordinate |
| Easting ft | easting__f | N | NY State Plane easting coordinate |
| Sampler | [2] | N | Sampling equipment |
| Water Depth ft | water_dept | N | Water depth in feet |
| Elevation ft | elevationx | N | Surface elevation in feet |

[1]     A: character field with number denoting size of field
              D: date field
              N: number field
              M: memo field

[2]     Same as Paradox

**Table 3-5**
**Data Dictionary for Table STATIONS in *HISTORIC\SED* Subdirectory**

| Field Name Paradox | Field Name FoxPro | Field Type [1] | Description |
|---|---|---|---|
| GradNo | gradientx | A5 | Unique identifying number |
| StationNo | stationx | A4 | Station identifier for reference to NYSDEC or GE files |

[1]     A: character field with number denoting size of field
        D: date field
        N: number field
        M: memo field

**Table 3-6**
**Data Dictionary for Table GRADNUMS in *HISTORIC\SED* Subdirectory**

| Field Name Paradox | Field Name FoxPro | Field Type [1] | Description |
|---|---|---|---|
| GradNo | gradientx | A5 | Unique identifying number |
| SectionNo | sectionx | N | Core section number |
| IdentifierNo | identifier | A10 | Identifier for reference to NYSDEC or GE files |
| Agency | [2] | A10 | Agency collecting the data |
| Ref | refx | N | Reference number identifying source of data |

[1]     A: character field with number denoting size of field
        D: date field
        N: number field
        M: memo field

[2]     Same as Paradox

**Table 3-7**
**Data Dictionary for Table SECTION in *HISTORIC\SED* Subdirectory**

| Field Name<br>Paradox | Field Name<br>FoxPro | Field Type [1] | Description |
|---|---|---|---|
| GradNo | gradientx | A5 | Unique identifying number |
| SectionNo | sectionx | N | Core section number |
| Upper Depth inches | upper_dept | N | Top of core depth interval in inches |
| Lower Depth inches | lower_dept | N | Bottom of core depth interval in inches |

[1]     A: character field with number denoting size of field
          D: date field
          N: number field
          M: memo field

**Table 3-8**
**Data Dictionary for Table REACHES in *HISTORIC\SED* Subdirectory**

| Field Name Paradox | Field Name FoxPro | Field Type [1] | Description |
|---|---|---|---|
| Reach | [2] | N | Reach number |
| Lower Rmile | lower_rmil | N | Downstream endpoint river mile |
| Upper Rmile | upper_rmil | N | Upstream endpoint river mile |

[1]      A: character field with number denoting size of field
          D: date field
          N: number field
          M: memo field

[2]      Same as Paradox

**Table 3-9**
**Data Dictionary for Table CONCSED in *HISTORIC\SED* Subdirectory**

| Field Name<br>Paradox | Field Name<br>FoxPro | Field Type [1] | Description |
|---|---|---|---|
| GradNo | gradientx | A5 | Unique identifying number |
| Dups | [2] | A2 | Duplicate marker field (not used) |
| SectionNo | sectionx | N | Core section number |
| Parameter | [2] | A20 | Parameter name (Aroclor) |
| Extraction Method | extraction | A10 | Extraction method code: shaker or soxhlet |
| Value | [2] | N | Positive numerical result |
| Det Limit | det_limit | N | Sample quantitation limit reported for non-detected result |
| Value and Limit Units | value_and | A3 | Units of result or quantitation limit |
| Det? | detx | A3 | Data qualifier (blank means detected; refer to NONDETS) |

[1]     A: character field with number denoting size of field
        D: date field
        N: number field
        M: memo field

[2]     Same as Paradox

**Table 3-10**
**Data Dictionary for Table NONCHEM in *HISTORIC\SED* Subdirectory**

| Field Name Paradox | Field Name FoxPro | Field Type [1] | Description |
|---|---|---|---|
| GradNo | gradientx | A5 | Unique identifying number |
| Dup | [2] | A2 | Duplicate marker field |
| SectionNo | sectionx | N | Core section number |
| Parameter | [2] | A20 | Parameter name (Aroclor) |
| Value | [2] | N | Numerical result |

[1]      A: character field with number denoting size of field
           D: date field
           N: number field
           M: memo field

[2]      Same as Paradox

**Table 3-11**
**Data Dictionary for Table SOXHDUP in *HISTORIC\SED* Subdirectory**

| Field Name Paradox | Field Name FoxPro | Field Type [1] | Description |
|---|---|---|---|
| GradNo | gradientx | A5 | Unique identifying number |
| SectionNo | sectionx | N | Core section number |
| Parameter | [2] | A20 | Parameter name (Aroclor) |
| Extraction Method | extraction | A10 | Extraction method code: shaker or soxhlet |
| Value | value_and | N | Positive numerical result |
| Det Limit | det_limit | N | Sample quantitation limit reported for non-detected result |
| Value and Limit Units | value_and | A3 | Units of result or detection limit |
| Det? | detx | A3 | Data qualifier (blank means detected; refer to NONDETS) |

[1]      A: character field with number denoting size of field
         D: date field
         N: number field
         M: memo field

[2]      Same as Paradox

**TAMS/*Gradient***

**Table 3-12**
**Data Dictionary for Table NONDETS in *HISTORIC\SED* Subdirectory**

| Field Name<br>Paradox | Field Name<br>FoxPro | Field Type [1] | Description |
|---|---|---|---|
| Det Category | det_catag | A3 | Non-detect code |
| Mass Spec Screen Categ | mass_specx | A6 | Mass spectrometer (GMS) screening category |
| Mean Concentration, ppm | mean_conce | N | Mean concentration in the category in ppm |
| Value | [2] | N | Ranking of type of non-detect |
| Comment | [2] | A100 | Comments |

[1]       A: character field with number denoting size of field
           D: date field
           N: number field
           M: memo field

[2]       Same as Paradox

**Table 3-13**
**Data Dictionary for Table REF in *HISTORIC\SED* Subdirectory**

| Field Name<br>Paradox | Field Name<br>FoxPro | Field Type [1] | Description |
|---|---|---|---|
| Ref | [2] | N | Reference number identifying data source |
| Description | descriptio | A40 | Descriptor of data source |

[1]        A: character field with number denoting size of field
                 D: date field
                 N: number field
                 M: memo field

[2]        Same as Paradox

**Table 3-14**
**Data Dictionary for Table TEXTURES in *HISTORIC\SED* Subdirectory**

| Field Name Paradox | Field Name FoxPro | Field Type [1] | Description |
|---|---|---|---|
| Texture# | texturex | N | Sediment texture code number |
| Texture | [2] | A7 | Sediment texture code characters |
| Description | descriptio | A30 | Sediment texture description |

[1]     A: character field with number denoting size of field
             D: date field
             N: number field
             M: memo field

[2]     Same as Paradox

**Table 3-15**
**Data Dictionary for Table GE89 in *HISTORIC\SED* Subdirectory**

| Field Name<br>Paradox | Field Name<br>FoxPro | Field Type [1] | Description |
|---|---|---|---|
| Gradient# | gradientx | A5 | Unique identifying number |
| Identifier# | identifier | A4 | Identifier for reference to NYSDEC or GE files |
| Agency | [2] | A10 | Agency collecting the data |
| Ref# | refx | N6.0 | Reference number identifying source of data |
| Location | [2] | A10 | Location defined as per GE documentation |
| Sample Date | sample_dat | D | Sample date |
| Parameter | [2] | A2 | Parameter key as defined in PARAMKEY and HIST-LUT |
| Det. Lim.-ppb | det__limxx | N | Sample quantitation limit reported for non-detected limit |
| Det. | detx | A3 | ND=non-detect; blank=detect |
| Concentration-ppm | concentrat | N | Concentration in ppm |

[1]    A: character field with number denoting size of field
        D: date field
        N: number field
        M: memo field

[2]    Same as Paradox

**Table 3-16**
**Data Dictionary for Table MASSPEC in *HISTORIC\SED* Subdirectory**

| Field Name<br>Paradox | Field Name<br>FoxPro | Field Type [1] | Description |
|---|---|---|---|
| Gradient# | gradientx | A5 | Unique identifying number |
| Dup | [2] | A2 | Duplicate marker field (not used) |
| Section# | sectionx | N | Core section number |
| Mass Spec Screen Categ | mass_specx | A6 | Mass spectrometer (GC/MS) screening category |

[1]      A: character field with number denoting size of field
         D: date field
         N: number field
         M: memo field

[2]      Same as Paradox

**Table 3-17**
**Tables in *HISTORIC\FISH* Subdirectory**

| Table Name | Description |
|---|---|
| GRADNUMF | Master index to GradNo |
| SAMPLEF | Fish sampling information |
| CORRNUM | Correspondence between old and new GradNo |
| COMPOS | Sample information for composite samples |
| CONCFISH | PCB Aroclor and percent lipid data - fish samples |
| PREP | Key to tissue and preparation codes |
| SPECCODE | Key to species codes |
| REF | Key to references used in building the database |

**Table 3-18**
**Data Dictionary for Table GRADNUMF in *HISTORIC\FISH* Subdirectory**

| Field Name Paradox | Field Name FoxPro | Field Type [1] | Description |
|---|---|---|---|
| GradNo | [2] | A5 | Unique identifying number |
| Labno | [2] | A11 | Laboratory identifier for reference to the NYSDEC files |
| Tagno | [2] | A9 | Tag identifier for reference to the NYSDEC files |
| Ref | [2] | A10 | Reference number identifying data source |
| Comment | [2] | M25 | Memo field recording alterations to the database and cross-reference on GradNo assignments |

[1]     A: character field with number denoting size of field
        D: date field
        N: number field
        M: memo field

[2]     Same as Paradox

**Table 3-19**
**Data Dictionary for Table SAMPLEF in *HISTORIC\FISH* Subdirectory**

| Field Name<br>Paradox | Field Name<br>FoxPro | Field Type [1] | Description |
|---|---|---|---|
| GradNo | Gradientx | A5 | Unique identifying number |
| Location | [2] | A50 | Narrative record of location |
| Rmile | [2] | N | Hudson River mile measured from the Battery |
| Yr | [2] | N | Sample year |
| Mo | [2] | N | Sample month |
| Dy | [2] | N | Sample day |
| Spp | [2] | A5 | Species code (refer to SPECCODE) |
| Basin | [2] | A8 | Numeric designation of watershed basin |
| MnLen | [2] | N | Fish length in mm (for composites, this is the mean length) |
| MnWgt | [2] | N | Weight in grams (for composites, this is the mean weight) |
| Sex | [2] | A1 | Fish gender (contains F, M, U, X, and blank) |
| Age | [2] | A1 | Fish age (contains 0-8, F, I, O, U, Y, and * and not presently positively identified) |
| Prep | [2] | A3 | Fish tissue and preparation codes (refer to PREP) |
| Noincomp | [2] | N | Number of fish in composites |
| UTMN | [2] | N | NY Transverse Mercator northing |
| UTME | [2] | N | NY Transverse Mercator easting |
| Verified | [2] | A2 | NSYDEC verification status (T, F, blank) although meaning of code is not presently clear |

[1] A: character field with number denoting size of field
   D: date field
   N: number field
   M: memo field

[2] Same as Paradox

**Table 3-20**
**Data Dictionary for Table CORRNUM in *HISTORIC\FISH* Subdirectory**

| Field Name<br>Paradox | Field Name<br>FoxPro | Field Type [1] | Description |
|---|---|---|---|
| Oldno | [2] | A5 | Old unique identifying number |
| Newno | [2] | A5 | New unique identifying number |

[1]        A: character field with number denoting size of field
                D: date field
                N: number field
                M: memo field

[2]        Same as Paradox

**TAMS/*Gradient***

**Table 3-21**
**Data Dictionary for Table COMPOS in *HISTORIC\FISH* Subdirectory**

| Field Name<br>Paradox | Field Name<br>FoxPro | Field Type [1] | Description |
|---|---|---|---|
| GradNo | gradientx | A5 | Unique identifying number |
| Noincomp | [2] | N | Number of individuals in composite |
| Mnlen | [2] | N | Mean length in composite |
| Minlen | [2] | N | Minimum length in composite |
| Maxlen | [2] | N | Maximum length in composite |
| Sdlen | [2] | N | Standard deviation of length |
| Mnwgt | [2] | N | Mean weight of individuals in composite (g) |
| Minwgt | [2] | N | Minimum weight in composite |
| Maxwgt | [2] | N | Maximum weight in composite |
| Sdwgt | [2] | N | Standard deviation of weight |

[1]     A: character field with number denoting size of field
         D: date field
         N: number field
         M: memo field

[2]     Same as Paradox

**Table 3-22**
**Data Dictionary for Table CONCFISH in *HISTORIC\FISH* Subdirectory**

| Field Name<br>Paradox | Field Name<br>FoxPro | Field Type [1] | Description |
|---|---|---|---|
| GradNo | gradientx | A5 | Unique identifying number |
| Parameter | [2] | A2 | Parameter code (refer to PARAMKEY) |
| Value | [2] | N | Positive numeric result |
| Det Limit | det_or_qua | N | Sample detection limit reported for a non-detected result |
| Value and Limit Units | value_and | A3 | Units of value or detection limit |
| Det or Qualifier | det_or_qu | A3 | Data qualifier |

[1]        A: character field with number denoting size of field
               D: date field
               N: number field
               M: memo field

[2]        Same as Paradox

**Table 3-23**
**Data Dictionary for Table PREP in *HISTORIC\FISH* Subdirectory**

| Field Name<br>Paradox | Field Name<br>FoxPro | Field Type [1] | Description |
|---|---|---|---|
| Abbrev | [2] | A3 | Tissue or preparation code |
| Tissue Type | tissue_typ | A30 | Type of tissue in sample |

[1]        A: character field with number denoting size of field
                D: date field
                N: number field
                M: memo field

[2]        Same as Paradox

**Table 3-24**
**Data Dictionary for Table SPECCODE in *HISTORIC\FISH* Subdirectory**

| Field Name<br>Paradox | Field Name<br>FoxPro | Field Type [1] | Description |
|---|---|---|---|
| SPP | [2] | A5 | Species code |
| Species | [2] | A30 | Name of species in sample |

[1]      A: character field with number denoting size of field
           D: date field
           N: number field
           M: memo field

[2]      Same as Paradox

**Table 3-25**
**Data Dictionary for Table REF in *HISTORIC\FISH* Subdirectory**

| Field Name<br>Paradox | Field Name<br>FoxPro | Field Type [1] | Description |
|---|---|---|---|
| Ref | [2] | N | Reference number identifying data source |
| Description | descriptio | A40 | Descriptor of data source |

[1]        A: character field with number denoting size of field
                    D: date field
                    N: number field
                    M: memo field

[2]        Same as Paradox

**Table 3-26**
**Tables in *HISTORIC\MACROINV* Subdirectory**

| Table Name | Description |
|------------|-------------|
| SAMPLE | Macroinvertebrate sampling information |
| SAMPREF | Key to sample type |
| NUMINDI | Number of individuals in samples |
| CONC | PCB Aroclor results |
| OTHER | Additional species included in samples |
| SPECCODE | Species codes |
| DOHSITE | Multiple and caddisfly sampling information |

**Table 3-27**
**Data Dictionary for Table SAMPLE in *HISTORIC\MACROINV* Subdirectory**

| Field Name<br>Paradox | Field Name<br>FoxPro | Field Type [1] | Description |
|---|---|---|---|
| GradNo | gradientx | A5 | Unique identifying number |
| Location | [2] | A70 | Location descriptor |
| Mo | [2] | A2 | Sample month |
| Dy | [2] | A2 | Sample day |
| Yr | [2] | N | Sample year |
| Rmile | [2] | N | River Mile measured from the Battery |
| Lab or EHC No | lab_or_ehc | A15 | Laboratory identifier for reference to NYSDOH files |
| Tagno | [2] | A10 | Tag identifier for reference to NYSDOH files |
| Species | [2] | N | Species code (refer to SPECCODE) |
| Sample type | sample_typ | A1 | Sample type code (refer to SAMPREF) |
| Wet wt. (g) | wet_wt_gx | N | Sample wet weight in g |
| Dry wt. (g) | dry_wt_gx | N | Sample dry weight in g |
| Percent lipid | percent_li | N | Percent lipid content |
| PageNo | [2] | N | Reference page number |

[1]     A: character field with number denoting size of field
        D: date field
        N: number field
        M: memo field

[2]     Same as Paradox

**Table 3-28**
**Data Dictionary for Table SAMPREF in *HISTORIC\MACROINV* Subdirectory**

| Field Name<br>Paradox | Field Name<br>FoxPro | Field Type [1] | Description |
|---|---|---|---|
| Sample type | sample_typ | A1 | Sample type code |
| Note | [2] | A80 | Explanation |

[1]     A: character field with number denoting size of field
        D: date field
        N: number field
        M: memo field

[2]     Same as Paradox

**Table 3-29**
**Data Dictionary for Table NUMINDI in *HISTORIC\MACROINV* Subdirectory**

| Field Name Paradox | Field Name FoxPro | Field Type [1] | Description |
|---|---|---|---|
| GradNo | gradientx | A5 | Unique identifying number |
| Number of Individuals | number_of | N | Number of individuals in sample |

[1]     A: character field with number denoting size of field
        D: date field
        N: number field
        M: memo field

**Table 3-30**
**Data Dictionary for Table CONC in *HISTORIC\MACROINV* Subdirectory**

| Field Name<br>Paradox | Field Name<br>FoxPro | Field Type [1] | Description |
|---|---|---|---|
| GradNo | gradientx | A5 | Unique identifying number |
| Parameter | [2] | A20 | Parameter name (Aroclor) |
| Value-ppm | value_ppm | N | Positive numerical result in ppm |
| Det Limit | det_limit | N | Sample quantitation limit reported for non-detected result |
| Det? | detx | A1 | Denotes if sample is detected (y) or non-detected (n) |

[1]     A: character field with number denoting size of field
        D: date field
        N: number field
        M: memo field

[2]     Same as Paradox

**Table 3-31**
**Data Dictionary for Table OTHER in *HISTORIC\MACROINV* Subdirectory**

| Field Name Paradox | Field Name FoxPro | Field Type [1] | Description |
|---|---|---|---|
| GradNo | [2] | A5 | Unique identifying number |
| Other species | other_spec | N6.0 | Other species number |

[1]       A: character field with number denoting size of field
           D: date field
           N: number field
           M: memo field

[2]       Same as Paradox

**Table 3-32**
**Data Dictionary for Table SPECCODE in *HISTORIC\MACROINV* Subdirectory**

| Field Name<br>Paradox | Field Name<br>FoxPro | Field Type [1] | Description |
|---|---|---|---|
| Species | [2] | N6.0 | Species code |
| Species Name | species_na | A20 | Name of species in sample |

[1]        A: character field with number denoting size of field
                   D: date field
                   N: number field
                   M: memo field

[2]        Same as Paradox

**Table 3-33**
**Data Dictionary for Table DOHSITE in *HISTORIC\MACROINV* Subdirectory**

| Field Name<br>Paradox | Field Name<br>FoxPro | Field Type [1] | Description |
|---|---|---|---|
| Location | [2] | A8 | Location descriptor code |
| Description | descriptio | A40 | Description of the macroinvertebrate sampling site |
| Attachment | [2] | A20 | Type of attachment |
| RMile | [2] | N | Hudson River mile measured from the Battery |
| Latitude | [2] | A10 | Site latitude coordinate |
| Longitude | [2] | A10 | Site longitude coordinate |

[1]     A: character field with number denoting size of field
        D: date field
        N: number field
        M: memo field

[2]     Same as Paradox

**Table 3-34**
**Data Dictionary for Table USGS_LUT in *USGS* Directory**

| Field Name<br>Paradox | Field Name<br>FoxPro | Field Type [1] | Description |
|---|---|---|---|
| Field Name | field_name | A30 | Listing of all field names in *USGS* Directory |
| Field Type | field_type | A3 | [1] |
| Description | descriptio | A100 | Definition of given field name |
| Database File | database_x | A50 | Database file(s) which contain given field name |
| Memo | [2] | M | Additional information for certain field names |

[1]       A: character field with number denoting size of field
           D: date field
           N: number field
           M: memo field

[2]       Same as Paradox

**Table 3-35**
**Tables in *USGS\FLOW* Subdirectory**

| Table Name | Description |
|---|---|
| FTEDWD | Mean daily Hudson River flow at Fort Edward, 1976-1993 |
| GREEN | Mean daily Hudson River flow at Green Island, 1946-1993 |
| HADLEY | Mean daily Hudson River flow at Hadley, 1921-1993 |
| CORINTH | Mean daily Hudson River flow below Sacandaga River near Corinth, 1921-1993 |
| SCHU | Mean daily Hudson River flow at Schuylerville, 1977-1979 |
| STILL | Mean daily Hudson River flow at Stillwater, 1977-1979 |
| WATR | Mean daily Hudson River flow at Waterford, 1976-1993 |
| BATK | Mean daily Batten Kill flow at Battenville, 1922-1968 |
| HOOS | Mean daily Hoosic River flow near Eagle Bridge, 1910-1993 |
| SACAND | Mean daily Sacandaga River flow at Stewarts Bridge, 1907-1993 |
| MOHK | Mean daily Mohawk River flow, 1917-1993 |
| USGS7693 | Mean daily flow at all above stations, except Battenville, 1976-1993 |

**Table 3-36**
**Data Dictionary for All Tables in *USGS\FLOW* Subdirectory**

| Field Name<br>Paradox | Field Name<br>FoxPro | Field Type [1] | Description |
|---|---|---|---|
| Year | [2] | N | Measurement year |
| Month | [2] | N | Measurement month |
| Day | [2] | N | Measurement day |
| Flow_day | [2] | N | Sequential numbered day starting October 1 and ending September 30 |
| Flow | [2] | N | Flow rate |
| Flow_units | [2] | A8 | Flow rate units (cubic feet per second) |
| Station | [2] | A12 | Station name |

[1]    A: character field with number denoting size of field
         D: date field
         N: number field
         M: memo field

[2]    Same as Paradox

**Table 3-37**
**Tables in *USGS\WQDATA* Subdirectory**

| Table Name | Description |
|------------|-------------|
| USGSWQ | Water-column PCB, suspended sediment data, and sediment load, in tons/day, collected by the USGS |
| TOCDAT | Water-column total organic carbon (TOC) collected by the USGS |

| Field Name Paradox | Field Name FoxPro | Field Type [1] | Description |
|---|---|---|---|
| Station Name | station_na | A15 | USGS Station Name |
| Sample Date | sample_dat | D | Sample date |
| Year | [2] | N | Sample year |
| Month | [2] | N | Sample month |
| Day | [2] | N | Sample day |
| Hour | [2] | N | Sample hour |
| Min | [2] | N | Sample minute |
| Inst. Discharge | inst_disc | N | Instantaneous discharge in units of cubic feet per second (cfs) |
| PCB Total | pcb_total | N | Total PCB value (ug/L) |
| PCB Dissolved | pcb_dissol | N | Dissolved PCB value (ug/L) |
| Suspended Sed | suspended | N | Total suspended sediment value (mg/L) |
| Key 2 | key_2 | N | 1 indicates Total PCB value is below minimum detection limit |
| Key 3 | key_3 | N | 1 indicates Dissolved PCB value is below minimum detection limit |
| Fines | [2] | N | Percent less than 0.062 mm |
| Sediment Load | sediment_l | N | Sediment load in tons/day |
| Aro1016 | [2] | N | Aroclor 1016, in µg/L |
| Aro1016-ND | aro1016_nd | N | Aroclor 1016 - non-detect flag |
| Aro1221 | [2] | N | Aroclor 1221, in µg/L |
| Aro1221-ND | aro1016_nd | N | Aroclor 1221 - non-detect flag |
| Aro1232 | [2] | N | Aroclor 1232, in µg/L |
| Aro1232-ND | aro1232_nd | N | Aroclor 1232 - non-detect flag |
| Aro1242 | [2] | N | Aroclor 1242, in µg/L |
| Aro1242-ND | aro1242_nd | N | Aroclor 1242 - non-detect flag |
| Aro1248 | [2] | N | Aroclor 1248, in µg/L |
| Aro1248-ND | aro1248_nd | N | Aroclor 1248 - non-detect flag |
| Aro1254 | [2] | N | Aroclor 1254, in µg/L |

| Field Name<br>Paradox | Field Name<br>FoxPro | Field Type [1] | Description |
|---|---|---|---|
| Aro1254-ND | aro1254_nd | N | Aroclor 1254 - non-detect flag |
| Aro1260 | [2] | N | Aroclor 1260, in µg/L |
| Aro1260-ND | aro1260_nd | N | Aroclor 1260 - non-detect flag |

[1]        A: character field with number denoting size of field
            D: date field
            N: number field
            M: memo field

[2]        Same as Paradox

**Table 3-39**
**Data Dictionary for Table TOCDAT in *USGS\WQDATA* Subdirectory**

| Field Name<br>Paradox | Field Name<br>FoxPro | Field Type [1] | Description |
|---|---|---|---|
| Station Name | station_na | A15 | USGS Station Name |
| Date | [2] | D | Sample date |
| TOC, mg/L | toc_mg_1 | N | Total organic carbon (TOC) in mg/L |

[1]       A: character field with number denoting size of field
             D: date field
             N: number field
             M: memo field

[2]       Same as Paradox

**Table 3-40**
**Tables in *GE* Directory**

| Table Name | Description |
|------------|-------------|
| SAMPLE | Sampling information for all GE data contained in this directory |
| PCB | Total PCBs data for all media |
| PCBHOMOL | PCB homologue data for all media |
| PCBCONG | PCB congener data for all media |
| NONPCB | Non-PCB data for all media |
| SPECCODE | Fish species code |
| PCB_LUT | Congener data glossary |
| GEPARAMS | Parameter abbreviations glossary |
| FIELD_LUT | Database field glossary |

| Field Name [1] Paradox | Field Name FoxPro | Field Type [2] | Description [3] |
|---|---|---|---|
| NEA_file | [4] | C12 | NEA file identification as reported on the PCB Congener Amount Report; "X" only means sample is a Temporal Water-Column Sample analyzed for dissolved PCBs |
| ID | [4] | A12 | Unique identifier for environmental samples |
| Media | [4] | A1 | Sample matrix: f=fish, w=water, a=air, b=biota, p=pore water, s=sediment, blank was assigned u=unknown |
| NEA_Desc | [4] | A40 | NEA file description as reported on PCB summary report sheet |
| NEA_Com | [4] | A40 | NEA comment as reported on PCB summary report sheet |
| Location | [4] | A10 | Sample location |
| CP->Location | cp__locati | A25 | Sample location from CP031194.DBF |
| CP->Mix_type | cp_mix_ty | A1 | Type of mixed peak deconvolution as reported on the PCB congener amount report |
| Invest | [4] | A3 | Organization that collected the sample |
| Lab | [4] | A8 | Laboratory that performed the analysis |
| Customer | [4] | A20 | Customer identification as reported on the PCB summary report sheet |
| Program | [4] | A20 | Sampling program |
| Date_col | [4] | D | Sample date |
| St_dpth | [4] | N | Depth of top of sediment core (cm) or composite water sample (ft) |
| End_dpth | [4] | N | Depth of bottom of sediment core (cm) or composite water sample (ft) |
| Tot_diss | [4] | A1 | Denotes total or dissolved (derived from a filtered water sample) |
| Desc | [4] | A150 | Sample description |
| CP->Reach | cp__reach | A20 | Hudson River reach where sediment samples were collected |
| CP->Sampsed | cp__sampse | A20 | Sediment sample texture and ordinal descriptor |

| Field Name [1]<br>Paradox | Field Name<br>FoxPro | Field Type [2] | Description [3] |
|---|---|---|---|
| Northing | [4] | N | 1927 NY State Plane northing in ft (estimated for Temporal Water Column Sampling Program) |
| Easting | [4] | N | 1927 NY state plane easting in ft (estimated for Temporal Water Column Sampling Program) |
| Elev | [4] | N | River elevation (estimated for Temporal Water Column Sampling Program) |
| Mile | [4] | N | River Mile designation (estimated at confluent for Batten Kill and Hoosic River Temporal Water Column Sampling locations; estimated for Float Survey sampling location; estimated at the midpoint of each of the sampling reaches for the Sediment Survey) |
| Hrcol | [4] | N | Sample hour |
| Mincol | [4] | N | Sample minute |
| GE->Verified | ge__verifi | A3 | Verified data has been checked for accuracy and validated |
| OBG_ID | [4] | A8 | O'Brien and Gere sample identification for parameters: TSS, TDS, SP_COND, TOT_ALK, TOC_F |
| Wtr_dpth | [4] | N | Water depth at sample location (ft) |
| Age | [4] | A1 | Fish age in years |
| Len | [4] | N | Fish length in mm |
| Wgt | [4] | N | Fish weight in g |
| Sex | [4] | A1 | Sex of fish: M=Male, F=Female, U=Undetermined |
| Spp | [4] | A4 | Fish species (refer to SPECCODE) |
| Pclpd | [4] | N | Percent lipids |
| Prep | [4] | A3 | Preparation method: F=Fillet, W=Whole fish, U=Unknown |

[1]    Fields overlapping between CP031194.DBF and GE031194.DBF are generally from GE031194.DBF unless specifically annotated with "CP->".
[2]    A: character field with number denoting size of field
       D: date field
       N: number field
       M: memo field
[3]    Adapted from documentation provided by James R. Rhea, O'Brien & Gere Engineers (1994).
[4]    Same as Paradox

**TAMS/*Gradient***

**Table 3-42**
**Data Dictionary for Table PCB in *GE* Directory**

| Field Name [1] Paradox | Field Name FoxPro | Field Type [2] | Description [3] |
|---|---|---|---|
| NEA_file | [4] | A12 | NEA file identification as reported on the PCB Congener Amount Report; "X" only means sample is a Temporal Water Column Sample analyzed for dissolved PCBs |
| ID | [4] | A12 | Unique sample identifier for environmental samples |
| Method | [4] | A20 | Analysis method: Capillary Column, USGS, Webb & McCall |
| Col_type | [4] | A1 | Column type: C=Capillary column, P=Packed column |
| Aroc_ID | [4] | A20 | Visually identified nominal Aroclor pattern reported by NEA for Webb & McCall analyses |
| Parameter | [4] | A30 | Parameter name |
| Value | [4] | N | Positive numerical result |
| Dl_ | dlx | N | Method detection limit reported for non-detected results |
| Units | [4] | A5 | Units of result |
| Ql_ | qlx | A2 | Data validation qualifier: J=approximate sample result, U=approximate quantitation limit, UJ=approximate the sample result and the detection limit, R=reject the sample result or the detection limit |

[1]    Fields overlapping between CP031194.DBF and GE031194.DBF are generally from GE031194.DBF unless specifically annotated with "CP->".

[2]    A: character field with number denoting size of field
       D: date field
       N: number field
       M: memo field

[3]    Adapted from documentation provided by James R. Rhea, O'Brien & Gere Engineers (1994).

[4]    Same as Paradox

**TAMS/*Gradient***

**Table 3-43**
**Data Dictionary for Table PCBHOMOL in *GE* Directory**

| Field Name [1]<br>Paradox | Field Name<br>FoxPro | Field Type [2] | Description [3] |
|---|---|---|---|
| NEA_file | [4] | A7 | NEA file identification as reported on the PCB Congener Amount Report, "X" only means sample is a Temporal Water Column Sample Analyzed for dissolved PCBs |
| ID | [4] | A12 | Unique sample identifier for environmental samples |
| Parameter | [4] | A30 | Parameter name |
| Value | [4] | N | Numerical result |
| Units | [4] | A20 | Units of result |

[1]     Fields overlapping between CP031194.DBF and GE031194.DBF are generally from GE031194.DBF unless specifically annotated with "CP->".

[2]     A: character field with number denoting size of field
        D: date field
        N: number field
        M: memo field

[3]     Adapted from documentation provided by James R. Rhea, O'Brien & Gere Engineers (1994).

[4]     Same as Paradox

**Table 3-44**
**Data Dictionary for Table PCBCONG in *GE* Directory**

| Field Name [1] Paradox | Field Name FoxPro | Field Type [2] | Description [3] |
|---|---|---|---|
| NEA_file | [4] | A7 | NEA file identification as reported on the PCB Congener Amount Report, "X" only means sample is a Temporal Water Column Sample Analyzed for dissolved PCBs |
| ID | [4] | A12 | Unique sample identifier for environmental samples |
| Parameter | [4] | A30 | Parameter name |
| Value | [4] | N | Numerical result |
| Units | [4] | A20 | Units of result |

[1]    Fields overlapping between CP031194.DBF and GE031194.DBF are generally from GE031194.DBF unless specifically annotated with "CP->".

[2]    A: character field with number denoting size of field
       D: date field
       N: number field
       M: memo field

[3]    Adapted from documentation provided by James R. Rhea, O'Brien & Gere Engineers (1994).

[4]    Same as Paradox

**Table 3-45**
**Data Dictionary for Table NONPCB in *GE* Directory**

| Field Name [1]<br>Paradox | Field Name<br>FoxPro | Field Type [2] | Description [3] |
|---|---|---|---|
| NEA_file | [4] | A7 | NEA file identification as reported on the PCB Congener Amount Report, "X" only means sample is a Temporal Water Column Sample Analyzed for dissolved PCBs |
| ID | [4] | A12 | Unique sample identifier for environmental samples |
| Parameter | [4] | A30 | Parameter name |
| Value | [4] | N | Numerical result |
| Units | [4] | A20 | Units of result |

[1]     Fields overlapping between CP031194.DBF and GE031194.DBF are generally from GE031194.DBF unless specifically annotated with "CP->".

[2]     A: character field with number denoting size of field
        D: date field
        N: number field
        M: memo field

[3]     Adapted from documentation provided by James R. Rhea, O'Brien & Gere Engineers (1994).

[4]     Same as Paradox

**Table 3-46**
**Data Dictionary for Table SPECCODE in *GE* Directory**

| Field Name<br>Paradox | Field Name<br>FoxPro | Field Type [1] | Description |
|---|---|---|---|
| Spp | [2] | A5 | Species code |
| Species | [2] | A30 | Name of species in samples |

[1]      A: character field with number denoting size of field
                     D: date field
                     N: number field
                     M: memo field

[2]      Same as Paradox

**Table 3-47**
**Data Dictionary for Table PCB_LUT in *GE* Directory**

| Field Name<br>Paradox | Field Name<br>FoxPro | Field Type [1] | Description |
|---|---|---|---|
| Parameter | [2] | A11 | Parameter code fr |
| NEA Parameter name | nea_parame | A31 | Reported parameter name |
| Congener 1 | congener_1 | A45 | First congener name or description |
| Congener 2 | congener_2 | A39 | Second congener name if coelution |
| Congener 3 | congener_3 | A35 | Third PCB congener name if coelution |
| Group | [2] | A7 | Homologue group |
| BZ | [2] | A38 | Corresponding BZ number |

[1]     A: character field with number denoting size of field
        D: date field
        N: number field
        M: memo field

[2]     Same as Paradox

**Table 3-48**
**Data Dictionary for Table GEPARAMS in *GE* Directory**

| Field Name<br>**Paradox** | Field Name<br>**FoxPro** | Field Type [1] | Description |
|---|---|---|---|
| Parameter | parameter_0 | A20 | Database parameter abbreviation |
| Parameter Name | parameter_1 | A60 | Parameter name |

[1]    A: character field with number denoting size of field
       D: date field
       N: number field
       M: memo field

**Table 3-49**
**Data Dictionary for Table FIELD_LUT in *GE* Directory**

| Field Name<br>Paradox | Field Name<br>FoxPro | Field Type [1] | Description |
|---|---|---|---|
| Field Name | field_name | A15 | Contains all field names in GE Directory |
| Field Name | field_type | A3 | [1] |
| Description | descriptio | A100 | Definition of each field name |
| Database File | database_f | A30 | Files that contain given field |
| Memo | [2] | M | Additional information on field names |

[1]        A: character field with number denoting size of field
                 D: date field
                 N: number field
                 M: memo field

[2]        Same as Paradox

**Table 3-50**
**Data Dictionary for Table GAUGES in *NYSDOT* Directory**

| Field Name Paradox | Field Name FoxPro | Field Type [1] | Description |
|---|---|---|---|
| Year | [2] | N | Measurement year |
| Month | [2] | N | Measurement month |
| Day | [2] | N | Measurement day |
| Wy day | wy:day | N | Water year day |
| Gauge 119 | gauge:119 | N | Reading at staff gauge located below Lock 7 (Fort Edward) [3] |
| Gauge 118 | gauge:118 | N | Reading at staff gauge located above Crocker's Reef guard gate (Thompson Island Dam) at landcut portion of canal (near Fort Miller) [3] |
| Gauge 116 | gauge:116 | N | Reading at staff gauge located above Lock 6 (near Fort Miller) [3] |
| Gauge 115 | gauge:115 | N | Reading at staff gauge located below Lock 6 (near Fort Miller) [3] |
| Gauge 114 | gauge:114 | N | Reading at staff gauge located above Lock 5 (near Schuylerville) [3] |
| Gauge 113 | gauge:113 | N | Reading at staff gauge located below Lock 5 (near Schuylerville) [3] |
| Gauge 109 | gauge:109 | N | Reading at staff gauge located above Lock 4 (near Stillwater) [3] |
| Gauge 108 | gauge:108 | N | Reading at staff gauge located below Lock 4 (near Stillwater) [3] |
| Gauge 106 | gauge:106 | N | Reading at staff gauge located above Lock 3 (near Mechanicville) [3] |
| Gauge 105 | gauge:105 | N | Reading at staff gauge located below Lock 3 (near Mechanicville) [3] |
| Gauge 104 | gauge:104 | N | Reading at staff gauge located above Lock 2 (near Mechanicville) [3] |
| Gauge 103 | gauge:103 | N | Reading at staff gauge located below Lock 2 (near Mechanicville) [3] |

[1]   A: character field with number denoting size of field
      D: date field
      N: number field
      M: memo field

[2]   Same as Paradox

[3]   Reading in ft., relative to NYS Barge Canal Datum.
      This reading can be converted to NGVD 1929 by subtracting 1.177 ft.

**TAMS/*Gradient***

**Table 3-51**
**Data Dictionary for Table CONG_LUT in *PHASE2* Directory**

| Field Name Paradox | Field Name FoxPro | Field Type [1] | Description |
|---|---|---|---|
| BZ-No | bz_no | A3 | Congener number |
| Parameter | [2] | A25 | Contains all PCB parameters in *PHASE2* Directory |
| Homologue | [2] | A10 | Classification based on number of chlorine atoms |
| Description | descript | A50 | Definition of given PCB parameter |
| Conversion | [2] | A11 | Correction factor see *PHASE2*\**FIELDS** |
| Target | [2] | A10 | Yes: target congener (calibrated with standard) No: non-target congener No-cal: calibrated non-target congener Mix: congener pair coelutes |
| Unit_water | [2] | A8 | Units for water samples, in ng/L |
| Unit_sed | [2] | A8 | Units for sediment samples, in ug/Kg DW |
| Unit_part | [2] | A8 | Units for particulate samples, in ug/kg DW |
| Subdirectory | Subdirectox | A45 | *PHASE2* Subdirectory(ies) that contain given parameters |
| Database | [2] | A30 | Database files that contain given parameter |
| Comment | [2] | A100 | Comments |

**Table 3-52**
**Data Dictionary for Table FIELDS in *PHASE2* Directory**

| Field Name<br>Paradox | Field Name<br>FoxPro | Field Type [1] | Description |
|---|---|---|---|
| Field Name | field_name | A30 | Contains database field names for *PHASE2* Directory |
| Field Type | field_type | A3 | [1] |
| Description | descriptio | A100 | Definition of field name |
| Database File | database_f | A100 | Files that contain given field name |
| Memo | [2] | M | Additional information for certain fields |

[1]        A: character field with number denoting size of field
                 D: date field
                 N: number field
                 M: memo field

[2]        Same as Paradox

**Table 3-53**
**Data Dictionary for Table PARAMS in *PHASE2* Directory**

| Field Name<br>Paradox | Field Name<br>FoxPro | Field Type [1] | Description |
|---|---|---|---|
| Parameter | [2] | A30 | Contains every parameter in the *PHASE2* Directory |
| Matrix | [2] | A12 | Sample matrix |
| Units | [2] | A15 | Units of result |
| Description | descriptio | A100 | Definition of given parameter |
| Subdirectory | [2] | A30 | Lists *PHASE2* Subdirectories containing given parameter |
| Database | [2] | A30 | Database table within subdirectories where given parameter can be found |
| Memo | [2] | M | Additional information for certain parameters |

[1]        A: character field with number denoting size of field
                D: date field
                N: number field
                M: memo field

[2]        Same as Paradox

**Table 3-54**
**Data Dictionary for Table QUALIFY in *PHASE2* Directory**

| Field Name<br>Paradox | Field Name<br>FoxPro | Field Type [1] | Description |
|---|---|---|---|
| QA Comment | qa_comment | A5 | Specific Quality Assurance qualifier [3] |
| Type | [2] | A30 | Designates laboratory or data validation qualifier |
| Definition | [2] | M | Definition of QA Comment |
| Parameter Type | Parameter | A20 | Parameter type for which qualifier is applicable |
| Assigned Qualifier | assigned_q | A5 | Simplified reported qualification [3] |

[1]      A: character field with number denoting size of field
            D: date field
            N: number field
            M: memo field

[2]      Same as Paradox

[3]      QA Comment specifies the reason for qualification, e.g., why a value is estimated, while the Assigned Qualifier designates whether the value is non-detect estimated, presumed present, or rejected.

**TAMS/*Gradient***

**Table 3-55**
**Data Dictionary for Table AROCLSTD in *PHASE2* Directory**

| Field Name<br>Paradox | Field Name<br>FoxPro | Field Type [1] | Description |
|---|---|---|---|
| Lab Sample ID | lab_sample | A10 | Laboratory sample identifier |
| Sample ID | sample_id | A25 | Sample identifier |
| Date Analyzed | date_analx | D | Data sample was analyzed |
| Matrix | [2] | A8 | Sample matrix |
| Parameter | [2] | A28 | Parameter name |
| Units | [2] | A10 | Units of result |
| Value | [2] | N | Numerical result with non-detected values set to sample detection limit |
| Qualifier | [2] | A10 | Data qualifier |
| Validated | [2] | A3 | Field denoting if results have been validated (yes/no) |

[1]      A: character field with number denoting size of field
            D: date field
            N: number field
            M: memo field

[2]      Same as Paradox

**TAMS/*Gradient***

**Table 3-56**
**Data Dictionary for Table ASCREEN in *PHASE2* Directory**

| Field Name<br>Paradox | Field Name<br>FoxPro | Field Type [1] | Description |
|---|---|---|---|
| Parameter | [2] | A28 | Congener |
| 1016 | [2] | N | Aroclor 1016 [3] |
| 1221 | [2] | N | Aroclor 1221 [3] |
| 1232 | [2] | N | Aroclor 12321 [3] |
| 1242 | [2] | N | Aroclor 1242 [3] |
| 1248 | [2] | N | Aroclor 1248 [3] |
| 1254 | [2] | N | Aroclor 1254 [3] |
| 1260 | [2] | N | Aroclor 1260 [3] |
| 1016-1242 | 1016_1242 | N | Aroclors 1016 and 1242 [3] |
| 1221-1232 | 1221_1232 | N | Aroclors 1221 and 1232 [3] |
| 1016-1248-1254 | 1016_1248x | N | Aroclors 1016, 1248 and 1254 [3] |

[1]     A: character field with number denoting size of field
         D: date field
         N: number field
         M: memo field

[2]     Same as Paradox

[3]     Congener is considered present in the Aroclor or sum of Aroclors when marked with a "1". Congener is absent when marked with a "0".

**TAMS/*Gradient***

**Table 3-57**
**Tables in *PHASE2\WATER* Subdirectory**

| Table Name | Description |
|---|---|
| STATIONS | Water column transects and flow-averaged events stations |
| GROUPS | Sample groupings |
| PCBP | PCB congeners/homologue sums/Aroclor concentrations - particulate samples (Fg/Kg) |
| PCBPD | PCB congeners - particulate duplicate pairs (Fg/Kg) |
| PCBPE | PCB congeners - particulate samples equilibration study (Fg/Kg) |
| PCBFA7 | PCB congeners/homologue sums/Aroclor concentrations - combined particulate and dissolved samples (ng/L) for flow-averaged event 7 |
| PCBW | PCB congeners/homologue sums/Aroclor concentrations - water samples (ng/L) |
| PCBWD | PCB congeners - water duplicate pairs (ng/L) |
| PCBWE | PCB congeners - water (dissolved) samples - equilibration study (ng/L) |
| PCBWTT | PCB congeners - whole water samples (TT series) (ng/L) |
| NONPCBW | Non-PCB data - water column samples |
| NONPCBWD | Non-PCB data - water duplicate sample pairs |
| FB | Non-PCB data - field blanks |
| VOLUMES | Sample volumes filtered for PCB analyses |

**TAMS/*Gradient***

**Table 3-58**
**Data Dictionary for Table STATIONS in *PHASE2\WATER* Subdirectory**

| Field Name Paradox | Field Name FoxPro | Field Type [1] | Description |
|---|---|---|---|
| Transect | [2] | A5 | Transect or flow-averaged sampling event number |
| Station | [2] | A6 | Station number |
| TAMS ID | tams_id | A11 | Sample identifier |
| TAMS Type | tams_type | A3 | Sample type [3] |
| Date Sampled | date_sampl | D | Date sample was taken |
| Matrix | [2] | A6 | Sample matrix (WATER, FILTER) |
| Est Easting | [2] | N | Estimated NY State Plane easting (ft) |
| Est Northing | [2] | N | Estimated NY State Plane northing (ft) |
| River Mile | river_mile | N | River mile measured from the Battery |
| Location | [2] | A30 | Station description |
| Program | [2] | A3 | Program abbreviation (TW, TS, TT, FW, TS) [4] |
| SAS No. | sas_nox | A18 | Sample identifier for laboratory program |
| Comment | [2] | A120 | Sample comment |

[1] A: character field with number denoting size of field
   D: date field
   N: number field
   M: memo field

[2] Same as Paradox

[3] B: Field blank
   C: Composite
   D: Duplicate
   M: Miscellaneous

[4] TS: Water column transect suspended matter sample
   TT: Water column transect whole (total) water sample
   TW: Water column transect filtered water sample
   FS: Flow-average filtered water sample
   FW: Flow-average suspended matter sample

**TAMS/*Gradient***

**Table 3-59**
**Data Dictionary for Table GROUPS in *PHASE2\WATER* Subdirectory**

| Field Name<br>Paradox | Field Name<br>FoxPro | Field Type [1] | Description |
|---|---|---|---|
| Station | [2] | A6 | Station number |
| Group | [2] | A25 | Group identifier |

[1]     A: character field with number denoting size of field
            D: date field
            N: number field

[2]     Same as Paradox

**Table 3-60**
**Data Dictionary for Tables PCBP, PCBW, PCBFA7, PCBPE, PCBWE**
**in *PHASE2\WATER* Subdirectory**

| Field Name Paradox | Field Name FoxPro | Field Type [1] | Description |
|---|---|---|---|
| TAMS ID | tams_id | A11 | Sample identifier |
| TAMS Type | tams_type | A3 | Sample type [2] |
| Split | [2] | A10 | Field denoting if record represents a composite of duplicate analyses (Avg-FD - average of field duplicates); not contained in PCBFA7, PCBPE or PCBWE. |
| Matrix | [2] | A8 | Sample matrix (WATER, FILTER) |
| Parameter | [2] | A28 | Parameter name |
| Units | [2] | A10 | Units of result |
| Value1 | [2] | N | Numerical result with non-detected values set to sample detection limit [3]; in PCBFA7, value1=value |
| Value2 | [2] | N | Numerical result with non-detected values set to 0 or 1/2 detection limit; not contained in PCBFA7 |
| Qualifier | [2] | A5 | Data qualifier |
| QA Comment | qa_comment | A10 | Quality Assurance comment codes see *PHASE2*\**QUALIFY** |
| Validated? | validated | A3 | Field denoting if results have been validated (Yes/No) |

[1]  A: character field with number denoting size of field
     D: date field
     N: number field
     M: memo field

[2]  B: Field blank
     C: Composite
     D: Duplicate
     M: Miscellaneous

[3]  Homologue sums and Total PCBs values represent sums of detected values only.

**TAMS/*Gradient***

**Table 3-61**
**Data Dictionary for Tables PCBWTT, PCBWD, PCBPD**
**in *PHASE2\WATER* Subdirectory**

| Field Name<br>Paradox | Field Name<br>FoxPro | Field Type [1] | Description |
|---|---|---|---|
| TAMS ID | tams_id | A11 | Sample identifier |
| TAMS Type | tams_type | A3 | Sample type [2] |
| Matrix | [3] | A8 | Sample matrix (WATER, FILTER) |
| Parameter | [3] | A28 | Parameter name |
| Units | [3] | A10 | Units of result |
| Value | [3] | N | Numerical result with non-detected values set to sample detection limit |
| Qualifier | [3] | A5 | Data qualifier |
| QA Comment | qa_comment | A10 | Quality assurance comment codes see ***PHASE2\QUALIFY*** |
| Validated | [3] | A3 | Field denoting if results have been validated (Yes/No) |

[1]     A: character field with number denoting size of field
          D: date field
          N: number field
          M: memo field

[2]     B: Field blank
          C: Composite
          D: Duplicate
          M: Miscellaneous

[3]     Same as Paradox

**Table 3-62**
**Data Dictionary for Tables NONPCBW, NONPCBWD in *PHASE2\WATER* Subdirectory**

| Field Name Paradox | Field Name FoxPro | Field Type [1] | Description |
|---|---|---|---|
| TAMS ID | tams_id | A11 | Sample identifier |
| TAMS Type | tams_type | A3 | Sample type [2] |
| SAS No. | sas_nox | A8 | Sample identifier for laboratory program |
| Split | [3] | A10 | Field denoting if record represents a composite of duplicate analyses (Avg-FD - average of field duplicates) in **NONPCBW**; Non-blank entry in **NONPCBWD** represents a laboratory duplicate anlaysis |
| Laboratory | [3] | A10 | Name of laboratory performing analysis |
| SDG No. | sdg_nox | A12 | Sample delivery group (for data validation) |
| Parameter | [3] | A30 | Parameter name |
| Units | [3] | A10 | Units of result |
| Value | [3] | N | Numerical result with non-detected values set to sample detection limit |
| Qualifier | [3] | A4 | Data qualifier |
| Validated | [3] | A4 | Field denoting if results have been validated (Yes/No) |

[1]    A: character field with number denoting size of field
        D: date field
        N: number field
        M: memo field

[2]    B: Field blank
        C: Composite
        D: Duplicate
        M: Miscellaneous

[3]    Same as Paradox

**TAMS/*Gradient***

**Table 3-63**
**Data Dictionary for Table FB in *PHASE2\WATER* Subdirectory**

| Field Name<br>Paradox | Field Name<br>FoxPro | Field Type [1] | Description |
|---|---|---|---|
| TAMS ID | tams_id | A11 | Sample identifier |
| TAMS Type | tams_type | A3 | Sample type [2] |
| SAS No. | sas_nox | A8 | Sample identifier for laboratory program |
| Split | [3] | A10 | Non-blank entry denotes a laboratory duplicate or split sample |
| Laboratory | [3] | A10 | Name of laboratory performing analysis |
| SDG No. | sdg_nox | A12 | Sample delivery group (for data validation) |
| Parameter | [3] | A30 | Parameter name |
| Units | [3] | A10 | Units of result |
| Value | [3] | N | Numerical result with non-detected values set to sample detection limit |
| Qualifier | [3] | A4 | Data qualifier |

[1]      A: character field with number denoting size of field
               D: date field
               N: number field
               M: memo field

[2]      B: Field blank
               C: Composite
               D: Duplicate
               M: Miscellaneous

[3]      Same as Paradox

**Table 3-64**
**Data Dictionary for Table VOLUMES in *PHASE2\WATER* Subdirectory**

| Field Name<br>Paradox | Field Name<br>FoxPro | Field Type [1] | Description |
|---|---|---|---|
| TAMSW | [2] | A11 | Sample identifier - water sample |
| SampTypeW | [2] | A3 | Sample type - water sample [3] |
| TAMSP | [2] | A11 | Sample identifier - corresponding filtered sample |
| SampTypeP | [2] | A3 | Sample type - corresponding filtered sample [3] |
| Volume Filtered | volume_fil | N | Volume filtered |
| Units | [2] | A4 | Units of volume filtered |

[1]        A: character field with number denoting size of field
                    D: date field
                    N: number field
                    M: memo field

[2]        Same as Paradox

[3]        B: Field blank
                    C: Composite
                    D: Duplicate
                    M: Miscellaneous

**Table 3-65**
**Tables in *PHASE2\SEDIMENT* Subdirectory**

| Table Name | Description |
|---|---|
| STATIONS | Confirmatory Sampling and High-Resolution Sediment Coring Program sampling stations |
| PCBS | PCB congeners/homologue sums/Aroclor sums - sediment samples (µg/kg DW) |
| PCBSD | PCB congeners - duplicate sediment sample pairs (µg/kg DW) |
| NONPCBS | Non-PCB data - sediment samples |
| NONPCBSD | Non-PCB data - duplicate sediment sample pairs |
| FB | Non-PCB data - field blanks |
| SIEVEGS | ASTM Grain size distribution data by sieve analysis |
| SIEVEGSD | ASTM Grain size distribution data by sieve analysis - sample duplicates |
| LASERGS | Grain size distribrution data by laser particle analysis |
| LASERGSD | Grain size distribution data by laser particle anlaysis - sample duplicates |
| RADNUC | Radionuclide data - sediment samples |
| RADNUCD | Radionuclide data - sediment samples field duplicates |
| LRINFO | Supplemental Low Resolution Sediment Coring Program information |
| SEDDESC | Descriptive sediment classifications density, redox and other field data |

**TAMS/*Gradient***

**Table 3-66**
**Data Dictionary for Table STATIONS in *PHASE2\SEDIMENT* Subdirectory**

| Field Name Paradox | Field Name FoxPro | Field Type [1] | Description |
|---|---|---|---|
| Station | [2] | A8 | Station number |
| TAMS ID | tams_id | A11 | Sample identifier |
| TAMS Type | tams_type | A3 | Sample type [3] |
| Date Sampled | date_sampl | D | Date sample was taken |
| Time Sampled | time_sampl | A10 | Time sample was taken |
| Lower Depth (cm) | lower_dept | N | Depth of top of sediment slice (cm) |
| Upper Depth (cm) | upper_dept | N | Depth of bottom of sediment slice (cm) |
| Easting | [2] | N | NY State Plane easting (ft) |
| Northing | [2] | N | NY State Plane northing (ft) |
| Location | [2] | A30 | Station description |
| Program | [2] | A3 | Program abbreviation (HR, CS, CG) [4] |
| SAS No. | sas_nox | A10 | Sample identifier for laboratory program |
| Comment | [2] | A120 | Sample comment |

[1]      A: character field with number denoting size of field
        D: date field
        N: number field
        M: memo field

[2]      Same as Paradox

[3]      A: Archive core
        B: Field blank
        D: Duplicate core
        G: Grain-size core
        M: Matrix spike sample or core
        P: PCB core
        X: X-Ray core

[4]      CC: Confirmatory sampling core
        CG: Confirmatory sampling grab
        HR: High-resolution sediment core
        LR: Low-resolution sediment core

**Table 3-67**
**Data Dictionary for Table PCBS in *PHASE2\SEDIMENT* Subdirectory**

| Field Name Paradox | Field Name FoxPro | Field Type [1] | Description |
|---|---|---|---|
| TAMS ID | tams_id | A11 | Sample identifier |
| TAMS Type | tams_type | A3 | Sample type [2] |
| Split | [3] | A10 | Field denoting if record represents a composite of duplicate analyses (Avg-FD - average of field duplicates) |
| Matrix | [3] | A8 | Sample matrix (SED) |
| Parameter | [3] | A28 | Parameter name |
| Units | [3] | A10 | Units of result |
| Value1 | [3] | N | Numerical result with non-detected values set to sample quantitation limit [4] |
| Value2 | [3] | N | Numerical result with non-detected values set to 0 of 1/2 quantitation limit |
| Qualifier | [3] | A5 | Data qualifier |
| QA Comment | qa_comment | A10 | Quality Assurance comment code see *PHASE2*\QUALIFY |
| Validated? | validated | A3 | Field denoting if results have been validated (Yes/No) |

[1]   A: character field with number denoting size of field
      D: date field
      N: number field
      M: memo field

[2]   A: Archive core
      B: Field blank
      D: Duplicate core
      G: Grain-size core
      M: Matrix spike sample or core
      P: PCB core
      X: X-Ray core

[3]   Same as Paradox

[4]   Homologue sums and Total PCBs values represent sums of detected values only.

**TAMS/*Gradient***

**Table 3-68**
**Data Dictionary for Tables PCBSD in *PHASE2\SEDIMENT* Subdirectory**

| Field Name Paradox | Field Name FoxPro | Field Type [1] | Description |
|---|---|---|---|
| TAMS ID | tams_id | A11 | Sample identifier |
| TAMS Type | tams_type | A3 | Sample type [2] |
| Matrix | [3] | A8 | Sample matrix (SED) |
| Parameter | [3] | A28 | Parameter name |
| Units | [3] | A10 | Units of result |
| Value | [3] | N | Numerical result with non-detected values set to sample detection limit |
| Qualifier | [3] | A5 | Data qualifier |
| QA Comment | qa_comment | A10 | Quality Assurance comment code see *PHASE2\QUALIFY* |
| Validated | [3] | A3 | Field denoting if results have been validated (Yes/No) |
| Date Sampled | date_sampl | D | Date sample was taken |

[1]       A: character field with number denoting size of field
            D: date field
            N: number field
            M: memo field

[2]       A: Archive core
            B: Field blank
            D: Duplicate core
            G: Grain-size core
            M: Matrix spike sample or core
            P: PCB core
            X: X-Ray core

[3]       Same as Paradox

**Table 3-69**
**Data Dictionary for Tables NONPCBS, NONPCBSD, SIEVEGS, SIEVEGSD, LASERGS,
LASERGSD in *PHASE2\SEDIMENT* Subdirectory**

| Field Name<br>Paradox | Field Name<br>FoxPro | Field Type [1] | Description |
|---|---|---|---|
| TAMS ID | tams_id | A11 | Sample identifier |
| TAMS Type | tams_type | A3 | Sample type [2] |
| SAS No. | sas_nox | A8 | Sample identifier for laboratory program |
| Split | [3] | A10 | Field denoting if record represents a composite of duplicate analyses (Avg-FD - average of field duplicates) in **NONPCBS**;  Non-blank entry in **NONPCBSD** represents a laboratory duplicate anlaysis |
| Laboratory | [3] | A10 | Name of laboratory performing analysis |
| SDG No. | sdg_nox | A12 | Sample delivery group (for data validation) |
| Parameter | [3] | A30 | Parameter name |
| Units | [3] | A10 | Units of result |
| Value | [3] | N | Numerical result with non-detected values set to sample detection limit |
| Qualifier | [3] | A4 | Data qualifier |
| Validated | [3] | A4 | Field denoting if results have been validated (Yes/No) |

[1]     A: character field with number denoting size of field
        D: date field
        N: number field
        M: memo field

[2]     A: Archive core
        B: Field blank
        D: Duplicate core
        G: Grain-size core
        M: Matrix spike sample or core
        P: PCB core
        X: X-Ray core

[3]     Same as Paradox

**Table 3-70**
**Data Dictionary for Table FB in *PHASE2\SEDIMENT* Subdirectory**

| Field Name<br>Paradox | Field Name<br>FoxPro | Field Type [1] | Description |
|---|---|---|---|
| TAMS ID | tams_id | A11 | Sample identifier |
| TAMS Type | tams_type | A3 | Sample type [2] |
| SAS No. | sas_nox | A8 | Sample identifier for laboratory program |
| Split | [3] | A10 | Non-blank entry denotes a laboratory duplicate or split sample |
| Laboratory | [3] | A10 | Name of laboratory performing analysis |
| SDG No. | sdg_nox | A12 | Sample delivery group (for data validation) |
| Parameter | [3] | A30 | Parameter name |
| Units | [3] | A10 | |
| Value | [3] | N | Numerical result with non-detected values set to sample detection limit |
| Qualifier | [3] | A3 | Data qualifier |

[1]  A: character field with number denoting size of field
D: date field
N: number field
M: memo field

[2]  A: Archive core
B: Field blank
D: Duplicate core
G: Grain-size core
M: Matrix spike sample or core
P: PCB core
X: X-Ray core

[3]  Same as Paradox

**TAMS/*Gradient***

**Table 3-71**
**Data Dictionary for Tables RADNUC, RADNUCD in *PHASE2\SEDIMENT* Subdirectory**

| Field Name<br>Paradox | Field Name<br>FoxPro | Field Type [1] | Description |
|---|---|---|---|
| TAMS ID | tams_id | A11 | Sample identifier |
| TAMS Type | tams_type | A3 | Sample type [2] |
| Split | [3] | A4 | Non-blank entry denotes a laboratory duplicate or split sample |
| Laboratory | [3] | A10 | Name of laboratory performing analysis |
| SDG No. | sdg_nox | A5 | Sample delivery group (for data validation) |
| Date Sampled | date_sampl | D | Date sample was taken |
| Counting Date | counting_d | D | Date sample was counted |
| Detector | [3] | A11 | Detector type |
| Parameter | [3] | A30 | Parameter name |
| Units | [3] | A10 | Units of result |
| Sigma | [3] | N | Standard deviation associated with counting result |
| Value | [3] | N | Numerical result with non-detected values set to sample quantitation limit |
| Det Limit | det_limit | N | Reported counter detector limit |
| Qualifier | [3] | A3 | Data qualifier |
| Validated | [3] | A4 | Field denoting if results have been validated (Yes/No) |

[1]  A: character field with number denoting size of field
      D: date field
      N: number field

[2]  Sample Type Categories
      A: Archive core
      B: Field blank
      D: Duplicate core
      G: Grain-size core
      M: Matrix spike sample or core
      P: PCB core
      X: X-Ray core

[3]  Same as Paradox

**TAMS/*Gradient***

**Table 3-72**
**Data Dictionary for Table LRINFO in *PHASE2\SEDIMENT* Subdirectory**

| Field Name<br>Paradox | Field Name<br>FoxPro | Field Type [1] | Description |
|---|---|---|---|
| TAMS ID | tams_id | A11 | Sample identifier |
| TAMS Type | tams_type | A3 | Sample type [2] |
| NYSDEC No. | nysdec_nox | A8 | Corresponding 1984 NYSDEC Sediment Survey Station No. (from Brown et. al 1988) |
| Hotspot No. | hotspot_nx | A10 | NYSDEC Hotspot Number |

[1]    A: character field with number denoting size of field
        D: date field
        N: number field

[2]    Sample Type Categories
        A: Archive core
        B: Field blank
        D: Duplicate core
        G: Grain-size core
        M: Matrix spike sample or core
        P: PCB core
        X: X-Ray core

**Table 3-73**
**Data Dictionary for Table SEDDESC in *PHASE2\SEDIMENT* Subdirectory**

| Field Name Paradox | Field Name FoxPro | Field Type [1] | Description |
|---|---|---|---|
| TAMS ID | tams_id | A11 | Sample identifier |
| TAMS Type | tams_type | A3 | Sample type [2] |
| Eh | [3] | N | Redox potential in meV |
| Temperature | temperatur | N | Temperature of redox measurement in EC |
| Field Comment | field_comm | A50 | Comments from field notes |
| Color_1 | [3] | A5 | Primary sediment coloration noted in field |
| Color_2 | [3] | A5 | Secondary sediment coloration noted in field |
| Sed_Clas_1 | [3] | A5 | TAMS descriptive sediment classification (based on ASTM method) |
| Sed_Clas_2 | [3] | A5 | TAMS descriptive sediment classification (based on ASTM method) |
| Sed_Clas_3 | [3] | A5 | TAMS descriptive sediment classification (based on ASTM method) |
| Sed_Clas_4 | [3] | A5 | TAMS descriptive sediment classification (based on ASTM method) |
| Sed_Clas_5 | [3] | A7 | TAMS descriptive sediment classification (based on ASTM method) |
| Description | descriptio | A120 | Complete field description of sediment characteristics |
| Wet Weight | wet_weight | N | Wet weight of sample, in grams |
| Volume | [3] | N | Volume of container, in cc |
| Bulk Density | bulk_densi | N | Bulk density of sample, in g/cc |
| Percent Solids | percent_so | N | Measured percent of solids |
| Particle Density | particle_x | N | Particle density, in g/cc |

[1]      A: character field with number denoting size of field
           D: date field
           N: number field

[2]      Sample Type Categories
           A: Archive core
           B: Field blank
           D: Duplicate core
           G: Grain-size core
           M: Matrix spike sample or core
           P: PCB core
           X: X-Ray core

[3]      Same as Paradox

**TAMS/*Gradient***

**Table 3-74**
**Tables in *PHASE2\ECO* Subdirectory**

| Table Name | Description |
|---|---|
| STATIONS | Ecological survey stations |
| COORDS | Coordinates for stations |
| GROUPS | Sample groupings |
| BENTHIC | Sample composition information - invertebrates |
| FISH | Sample composition information - fish |
| PCBFISH | PCB congeners/homologue sum/Aroclor concentrations - fish |
| PCBFISHD | PCB congeners - fish dup pairs/dilution analyses |
| PCBINV | PCB congeners/homologue sum/Aroclor concentrations - invertebrates |
| PCBINVD | PCB congeners - invertebrate dup. pairs/dilultion analyses |
| NONPCBB | Non-PCB data - biota |
| NONPCBBD | Non-PCB data - biota duplicate pairs |
| PCBS | PCB congeners/homologue sums/Aroclor concentrations - sediment samples (ug/kg DW) |
| PCBSD | PCB congeners - sediment duplicate pairs (ug/kg DW)) |
| NONPCBS | Non-PCB data - sediment samples |
| NONPCBSD | Non-PCB data - sediment duplicate pairs |
| LASERGS | Sediment laser grain size data |
| FB | Non-PCB data - sediment field blanks |
| SPECIES | Key to species codes |
| LASERGSD | Sediment laser grain size data - duplicate pairs |

**Table 3-75**
**Data Dictionary for Table STATIONS in *PHASE2\ECO* Subdirectory**

| Field Name<br>Paradox | Field Name<br>FoxPro | Field Type [1] | Description |
|---|---|---|---|
| Station | [2] | A8 | Station number |
| TAMS ID | tams_id | A11 | Sample identifier |
| TAMS Type | tams_type | A3 | Sample type [3] |
| Species | [2] | A4 | Species code |
| Date Sampled | date_sampl | D | Date sample was taken |
| Est Easting | est_eastin | N | Estimated NY State Plane easting (ft) |
| Est Northing | est_northi | N | Estimated NY State Plane northing (ft) |
| River Mile | river_mile | N | Mile measured from the Battery |
| Description | descriptio | A26 | Station description |
| Program | [2] | A3 | Program abbreviation (EC) [4] |
| SAS No. | sas_nox | A8 | Sample identifier for laboratory program |
| RAS No. | ras_nox | A8 | Second sample identifier for laboratory program |
| Comment. | [2] | A120 | Sample comment |

[1]     A: character field with number denoting size of field
        D: date field
        N: number field
        M: memo field

[2]     Same as Paradox

[3]     B: Field blank
        D: Duplicate sample

[4]     EC: Ecological survey

**TAMS/*Gradient***

**Table 3-76**
**Data Dictionary for Table COORDS in *PHASE2\ECO* Subdirectory**

| Field Name Paradox | Field Name FoxPro | Field Type [1] | Description |
|---|---|---|---|
| Station | [2] | A16 | Station name |
| Est Easting | [2] est_eastin | N | Estimated NY State Plane easting (ft) |
| Est Northing | [2] est_northin | N | Estimated NY State Plane northing (ft) |
| Sample Type | sample_typ | A23 | Type of sample taken |
| Fish Type | fish_typ | A18 | Type of fish taken |

[1] A: character field with number denoting size of field
   D: date field
   N: number field
   M: memo field

[2] Same as Paradox

**TAMS/*Gradient***

**Table 3-77**
**Data Dictionary for Table GROUPS in *PHASE2\ECO* Subdirectory**

| Field Name<br>Paradox | Field Name<br>FoxPro | Field Type [1] | Description |
|---|---|---|---|
| Station | [2] | A8 | Station number |
| Group | [2] | A25 | Group identifier |

[1]        A: character field with number denoting size of field
                D: date field
                N: number field
                M: memo field

[2]        Same as Paradox

**TAMS/*Gradient***

**Table 3-78**
**Data Dictionary for Table BENTHIC in *PHASE2\ECO* Subdirectory**

| Field Name Paradox | Field Name FoxPro | Field Type [1] | Description |
|---|---|---|---|
| TAMS ID | tams_id | A11 | Sample identifier |
| TAMS Type | tams_type | A3 | Sample type [2] |
| Species | [3] | A8 | Species code |
| SAS No. | sas_nox | A8 | Laboratory identifier |
| Wet Weight (mg) | wet_weight | N | Sample wet weight in mg |
| Comments | [3] | A160 | Sample comment |

[1]     A: character field with number denoting size of field
         D: date field
         N: number field
         M: memo field

[2]     B: Field blank
         D: Duplicate sample

**Table 3-79**
**Data Dictionary for Table FISH in *PHASE2\ECO* Subdirectory**

| Field Name<br>Paradox | Field Name<br>FoxPro | Field Type [1] | Description |
|---|---|---|---|
| TAMS ID | tams_id | A11 | Sample identifier |
| TAMS Type | tams_type | A3 | Sample type [2] |
| Species | [3] | A8 | Species code |
| SAS No. | sas_nox | A8 | Laboratory identifier |
| # of fish in sample | xxof_fish | N | Number of fish in samples |
| L1 (mm) | l1_mmx | N | Length in mm of fish number 1 |
| L2 (mm) | l2_mmx | N | Length in mm of fish number 2 |
| L3 (mm) | l3_mmx | N | Length in mm of fish number 3 |
| L4 (mm) | l4_mmx | N | Length in mm of fish number 4 |
| L5 (mm) | l5_mmx | N | Length in mm of fish number 5 |
| L6 (mm) | l6_mmx | N | Length in mm of fish number 6 |
| L7 (mm) | l7_mmx | N | Length in mm of fish number 7 |
| L8 (mm) | l8_mmx | N | Length in mm of fish number 8 |
| Length# | lengthx | N | Number of fish used to determine average length |
| Sum | [3] | N | Sum of fish lengths used to determine average lenth |
| Average length | average_le | N | Average of lengths |
| Average weight | average_we | N | Average of weights |
| Bulk weight | bulk_weigh | N | Total weight of the fish sample |

[1]       A: character field with number denoting size of field
                D: date field
                N: number field
                M: memo field

[2]       B: Field blank
                D: Duplicate sample

[3]       Same as Paradox

**Table 3-80**
**Data Dictionary for Tables PCBS, PCBINV, PCBFISH in *PHASE2\ECO* Subdirectory**

| Field Name<br>Paradox | Field Name<br>FoxPro | Field Type [1] | Description |
|---|---|---|---|
| TAMS ID | tams_id | A11 | Sample identifier |
| TAMS Type | tams_type | A3 | Sample type [2] |
| Species | [3] | A4 | Species code (not present in **PCBS**) |
| Split | [3] | A10 | Field denoting if record represents a composite of duplicate analyses (Avg-FD - average of field duplicates) |
| Matrix | [3] | A10 | Sample matrix (SED, BIOTA) |
| Parameter | [3] | A28 | Parameter name |
| Units | [3] | A10 | Units of result |
| Value1 | [3] | N | Numerical result with non-detected values set to sample quantitation limit [4] |
| Value2 | [3] | N | Numerical result with non-detected values set to 0 of 1/2 quantitation limit |
| Qualifier | [3] | A6 | Data qualifier |
| QA Comment | qa_comment | A10 | Quality Assurance comment code see ***PHASE2\QUALIFY*** |
| Validated? | validated | A3 | Field denoting if results have been validated (Yes/No) |

[1]     A: character field with number denoting size of field
        D: date field
        N: number field
        M: memo field

[2]     B: Field blank
        D: Duplicate sample

[3]     Same as Paradox

[4]     Homologue sums and Total PCBs values represent sums of detected values only.

**TAMS/*Gradient***

**Table 3-81**
**Data Dictionary for Tables PCBSD, PCBINVD, PCBFISHD in *PHASE2\ECO* Subdirectory**

| Field Name<br>Paradox | Field Name<br>FoxPro | Field Type [1] | Description |
|---|---|---|---|
| TAMS ID | tams_id | A11 | Sample identifier |
| TAMS Type | tams_type | A3 | Sample type [2] |
| Matrix | [3] | A8-A10 | Sample matrix (SED, BIOTA) |
| Parameter | [3] | A28 | Parameter name |
| Units | [3] | A10 | Units of result |
| Species | [3] | A4 | Contained in PCBINVD only |
| Value | [3] | N | Numerical result with non-detected values set to sample quantitation limit; PCBINVD contains value1 and value2 |
| Qualifier | [3] | A6-A10 | Data qualifier |
| QA Comment | qa_comment | A10 | Quality Assurance comment code see *PHASE2\QUALIFY* |
| Validated | [3] | A3 | Field denoting if results have been validated (Yes/No) |

[1]        A: character field with number denoting size of field
                D: date field
                N: number field
                M: memo field

[2]        B: Field blank
                D: Duplicate sample

[3]        Same as Paradox

**Table 3-82**
**Data Dictionary for Tables NONPCBB, NONPCBBD, NONPCBS, NONPCBSD, LASERGS, LASERGSD in *PHASE2\ECO* Subdirectory**

| Field Name<br>Paradox | Field Name<br>FoxPro | Field Type [1] | Description |
|---|---|---|---|
| TAMS ID | tams_id | A11 | Sample identifier |
| TAMS Type | tams_type | A3 | Sample type [2] |
| Species | [3] | A4 | Species code (not present in **NONPCBS, NONPCBSD or LASERGS**) |
| SAS No. | sas_nox | A8 | Sample identifier for laboratory program |
| Split | [3] | A10 | Field denoting if record represents a composite of duplicate analyses (Avg-FD - average of field duplicates) in **NONPCBB** or **NONPCBS**; non-blank entry in **NONPCBBD** or **NONPCBSD** represents a laboratory duplicate anlaysis |
| Laboratory | [3] | A10 | Name of laboratory performing analysis |
| SDG No. | sdg_nox | A12 | Sample delivery group (for data validation) |
| Parameter | [3] | A30 | Parameter name |
| Units | [3] | A10 | Units of result |
| Value | [3] | N | Numerical result with non-detected values set to sample detection limit |
| Qualifier | [3] | A4 | Data qualifier |
| Validated | [3] | A4 | Field denoting if results have been validated (Yes/No) |

[1]  A: character field with number denoting size of field
     D: date field
     N: number field
     M: memo field

[2]  B: Field blank
     D: Duplicate sample

[3]  Same as Paradox

**TAMS/*Gradient***

**Table 3-83**
**Data Dictionary for Table FB in *PHASE2/ECO* Subdirectory**

| Field Name Paradox | Field Name FoxPro | Field Type [1] | Description |
|---|---|---|---|
| TAMS ID | tams_id | A11 | Sample identifier |
| TAMS Type | tams_type | A3 | Sample type [2] |
| SAS No. | sas_nox | A8 | Sample identifier for laboratory program |
| Split | [3] | A10 | Non-blank entry denotes a laboratory duplicate or split sample |
| Laboratory | [3] | A10 | Name of laboratory performing analysis |
| SDG No. | sdg_nox | A12 | Sample delivery group (for data validation) |
| Parameter | [3] | A30 | Parameter name |
| Value | [3] | N | Numerical result with non-detected values set to sample detection limit |
| Qualifier | [3] | A4 | Data qualifier |

[1]     A: character field with number denoting size of field
        D: date field
        N: number field
        M: memo field

[2]     B: Field blank
        D: Duplicate core

[3]     Same as Paradox

**TAMS/*Gradient***

**Table 3-84**
**Data Dictionary for Table SPECIES in *PHASE2\ECO* Subdirectory**

| Field Name Paradox | Field Name FoxPro | Field Type | Description |
|---|---|---|---|
| Species | [2] | A8 | Species code |
| Definition | [2] | A20 | Definition of species code |

[1]        A: character field with number denoting size of field
                    D: date field
                    N: number field
                    M: memo field

[2]        Same as Paradox

**TABLE 3-85**
**Tables in *PHASE2\HRCORES* Subdirectory**

| Table Name | Description |
|---|---|
| STATIONS | Confirmatory Sampling and High-Resolution Sediment Coring Program sampling stations |
| PCBS | PCB congeners/homologue sums/Aroclor sums - sediment samples (µg/kg DW) |
| PCBSD | PCB congeners - duplicate sediment sample pairs (µg/kg DW) |
| NONPCBS | Non-PCB data - sediment samples |
| NONPCBSD | Non-PCB data - duplicate sediment sample pairs |
| FB | Non-PCB data - field blanks |
| LASERGS | Laser grain size Phi classes |
| LASERGSD | Laser grain size Phi classes - duplicate pairs |
| RADNUC | Radionuclide data - sediment samples |
| RADNUCD | Radionuclide data - sediment samples field duplicates |
| SEDDESC | Redox, density and additional field information |
| GROUPS | Sample groupings |

**TAMS/*Gradient***

**TABLE 3-86**
**Data Dictionary for Table STATIONS in *PHASE2\HRCORES* Subdirectory**

| Field Name Paradox | Field Name FoxPro | Field Type [1] | Description |
|---|---|---|---|
| Station | [2] | A8 | Station number |
| TAMS ID | tams_id | A11 | Sample identifier |
| TAMS SampType | tams_type | A3 | Sample type [3] |
| Date Sampled | date_sampl | D | Date sample was taken |
| Time Sampled | time_sampl | A10 | Time sample was taken |
| Lower Depth (cm) | lower_dept | N | Depth of top of sediment slice (cm) |
| Upper Depth (cm) | upper_dept | N | Depth of bottom of sediment slice (cm) |
| River Mile | river_mile | N | River mile measured from the Battery |
| Est Easting | [2] | N | Estimated NY State Plane easting (ft) |
| Est Northing | [2] | N | Estimated NY State Plane northing (ft) |
| Location | [2] | A30 | Station description |
| Program | [2] | A3 | Program abbreviation (HR, CS, CG) [4] |
| SAS No. | sas_nox | A10 | Sample identifier for laboratory program |
| Comment | [2] | A120 | Sample comment |

[1]    A: character field with number denoting size of field
        D: date field
        N: number field
        M: memo field

[2]    Same as Paradox

[3]    A: Archive core
        B: Field blank
        D: Duplicate core
        G: Grain size core
        M: Matrix spike sample or core
        P: PCB core
        X: X-Ray core

[4]    CC: Confirmatory sampling core
        CG: Confirmatory sampling grab
        HR: High-resolution sediment core
        LR: Low-resolution sediment core

**TAMS/*Gradient***

**TABLE 3-87**
**Data Dictionary for Table GROUPS in *PHASE2\HRCORES* Subdirectory**

| Field Name Paradox | Field Name FoxPro | Field Type [1] | Description |
|---|---|---|---|
| Station | [2] | A8 | Station number |
| Group | [2] | A25 | Group identifier |

[1]        A: character field with number denoting size of field
                     D: date field
                     N: number field
                     M: memo field

[2]        Same as Paradox

**TAMS/*Gradient***

**TABLE 3-88**
**Data Dictionary for Table PCBS in *PHASE2\HRCORES* Subdirectory**

| Field Name<br>Paradox | Field Name<br>FoxPro | Field Type [1] | Description |
|---|---|---|---|
| TAMS ID | tams_id | A11 | Sample identifier |
| TAMS Type | tams_type | A3 | Sample type [2] |
| Split | [3] | A10 | Field denoting if record represents a composite of duplicate analyses (Avg-FD - average of field duplicates) |
| Matrix | [3] | A8 | Sample matrix (SED) |
| Parameter | [3] | A28 | Parameter name |
| Units | [3] | A10 | Units of result |
| Value1 | [3] | N | Numerical result with non-detected values set to sample quantitation limit [4] |
| Value2 | [3] | N | Numerical result with non-detected values set to 0 of 1/2 quantitation limit |
| Qualifier | [3] | A5 | Data qualifier |
| QA Comment | qa_comment | A10 | Quality Assurance comment code see *PHASE2\QUALIFY* |
| Validated? | validated | A3 | Field denoting if results have been validated (Yes/No) |

[1]        A: character field with number denoting size of field
                D: date field
                N: number field
                M: memo field

[2]        A: Archive core
                B: Field blank
                D: Duplicate core
                G: Grain size core
                M: Matrix spike sample or core
                P: PCB core
                X: X-Ray core

[3]        Same as Paradox

[4]        Homologue sums and Total PCBs values represent sums of detected values only.

**Table 3-89**
**Data Dictionary for Tables PCBSD in *PHASE2\HRCORES* Subdirectory**

| Field Name<br>Paradox | Field Name<br>FoxPro | Field Type [1] | Description |
|---|---|---|---|
| TAMS Sample ID | tams_sampl | A11 | Sample identifier |
| TAMS SampType | tams_sampt | A3 | Sample type [2] |
| Matrix | [3] | A8 | Sample matrix (SED) |
| Parameter | [3] | A28 | Parameter name |
| Units | [3] | A10 | Units of result |
| Value | [3] | N | Numerical result with non-detected values set to sample detection limit |
| Qualifier | [3] | A5 | Data qualifier |
| Validated | [3] | A3 | Field denoting if results have been validated (Yes/No) |
| Date Sampled | date_sampl | D | Date sample was taken |

[1]      A: character field with number denoting size of field
           D: date field
           N: number field
           M: memo field

[2]      A: Archive core
           B: Field blank
           D: Duplicate core
           G: Grain size core
           M: Matrix spike sample or core
           P: PCB core
           X: X-Ray core

[3]      Same as Paradox

**Table 3-90**
**Data Dictionary for Tables NONPCBS, NONPCBSD, LASERGS, LASERGSD in**
*PHASE2/HRCORES* **Subdirectory**

| Field Name<br>Paradox | Field Name<br>FoxPro | Field Type [1] | Description |
|---|---|---|---|
| TAMS ID | tams_id | A11 | Sample identifier |
| TAMS Type | tams_type | A3 | Sample type [2] |
| SAS No. | sas_nox | A8 | Sample identifier for laboratory program |
| Split | [3] | A10 | Field denoting if record represents a composite of duplicate analyses (Avg-FD - average of field duplicates) in **NONPCBS**; non-blank entry in **NONPCBSD** represents a laboratory duplicate anlaysis |
| Laboratory | [3] | A10 | Name of laboratory performing analysis |
| SDG No. | sdg_nox | A12 | Sample delivery group (for data validation) |
| Parameter | [3] | A30 | Parameter name |
| Units | [3] | A10 | Units of result |
| Value | [3] | N | Numerical result with non-detected values set to sample detection limit |
| Qualifier | [3] | A4 | Data qualifier |
| Validated | [3] | A4 | Field denoting if results have been validated (Yes/No) |

[1]       A: character field with number denoting size of field
              D: date field
              N: number field
              M: memo field

[2]       A: Archive core
              B: Field blank
              D: Duplicate core
              G: Grain size core
              M: Matrix spike sample or core
              P: PCB core
              X: X-Ray core

[3]       Same as Paradox

**Table 3-91**
**Data Dictionary for Table FB in *PHASE2\HRCORES* Subdirectory**

| Field Name Paradox | Field Name FoxPro | Field Type [1] | Description |
|---|---|---|---|
| TAMS ID | tams_id | A11 | Sample identifier |
| TAMS Type | tams_type | A3 | Sample type [2] |
| SAS No. | sas_nox | A8 | Sample identifier for laboratory program |
| Split | [3] | A10 | Non-blank entry denotes a laboratory duplicate or split sample |
| Laboratory | [3] | A10 | Name of laboratory performing analysis |
| SDG No. | sdg_nox | A12 | Sample delivery group (for data validation) |
| Parameter | [3] | A30 | Parameter name |
| Units | [3] | A10 | Units of result |
| Value | [3] | N | Numerical result with non-detected values set to sample detection limit |
| Qualifier | [3] | A3 | Data qualifier |

[1]      A: character field with number denoting size of field
            D: date field
            N: number field
            M: memo field

[2]      A: Archive core
            B: Field blank
            D: Duplicate core
            G: Grain size core
            M: Matrix spike sample or core
            P: PCB core
            X: X-Ray core

[3]      Same as Paradox

**Table 3-92**
**Data Dictionary for Tables RADNUC, RADNUCD in *PHASE2\HRCORES* Subdirectory**

| Field Name<br>Paradox | Field Name<br>FoxPro | Field Type [1] | Description |
|---|---|---|---|
| TAMS ID | tams_id | A11 | Sample identifier |
| TAMS Type | tams_type | A3 | Sample type [2] |
| Split | [3] | A4 | Non-blank entry denotes a laboratory duplicate or split sample |
| Laboratory | [3] | A10 | Name of laboratory performing analysis |
| SDG No. | sdg_nox | A5 | Sample delivery group (for data validation) |
| Date Sampled | date_sampl | D | Sample date |
| Counting Date | counting_d | D | Date sample was counted |
| Detector | [3] | A11 | Detector type |
| Parameter | [3] | A30 | Parameter name |
| Units | [3] | A10 | Units of result |
| Sigma | [3] | N | Standard deviation associated with counting result |
| Value | [3] | N | Numerical result with non-detected values set to sample quantitation limit |
| Det Limit | det_limit | N | Reported counter detector limit |
| Qualifier | [3] | A3 | Data qualifier |
| Validated | [3] | A4 | Field denoting if results have been validated (Yes/No) |

[1]      A: character field with number denoting size of field
        D: date field
        N: number field

[2]      Sample Type Categories
        A: Archive core
        B: Field blank
        D: Duplicate core
        G: Grain size core
        M: Matrix spike sample or core
        P: PCB core
        X: X-Ray core

[3]      Same as Paradox

**Table 3-93**
**Data Dictionary for Table SEDDESC in *PHASE2\HRCORES* Subdirectory**

| Field Name Paradox | Field Name FoxPro | Field Type [1] | Description |
|---|---|---|---|
| TAMS ID | tams_id | A13 | Sample identifier |
| TAMS Type | tams_type | A3 | Sample type [2] |
| Eh | [3] | N | Redox potential in meV |
| Temperature | temperatux | N | Temperature of redox measurement in EC |
| Field Comment | field_comx | A50 | Comments from field notes |
| Percent Solids | percent_sx | N | Percent solids by dry weight |
| Bulk density (g/cc) | bulk_densx | N | Calculated bulk density in g/cc |
| Part. density (g/cc) | part_densx | N | Calculated particle density in g/cc |

[1] A: character field with number denoting size of field
   D: date field
   N: number field
   M: memo field

[2] A: Archive core
   B: Field blank
   D: Duplicate core
   G: Grain size core
   M: Matrix spike sample or core
   P: PCB core
   X: X-Ray core

[3] Same as Paradox

**Table 3-94**
**Data Dictionary for Table FLOW93 in *PHASE2\FLOW* Subdirectory**

| Field Name<br>Paradox | Field Name<br>FoxPro | Field Type [1] | Description |
|---|---|---|---|
| Date | date | D | Measurement data |
| Fort Edward Meas. Flow | fort_edwar | N | Reported USGS flow at Fort Edward in cfs |
| Stillwater Calc. Flow | stillwater | N | Calculated flow at Stillwater in cfs [2] |
| Model-Stillwater | model_stil | A4 | Model used to calculate flow at Stillwater [2] |
| Waterford Calc. Flow | waterfordx | N | Calculated flow at Waterford in cfs [2] |
| Model-Waterford | model_wate | A4 | Model used to calculate flow at Waterford [2] |

[1]        A: character field with number denoting size of field
                D: date field
                N: number field
                M: memo field

[2]        These flows were modelled based on the reported flow at Fort Edward and the Champlain Canal staff gauge data contained in *NYSDOT\***GAUGES**.
                These models will be explained in the Phase2 Data Evaluation and Interpretation Report.

**TAMS/*Gradient***

**Table 3-95**
**Tables in *NOAA* Directory**

| Table Name | Description |
|---|---|
| STATIONS | Ecological Survey stations |
| COORDS | Coordinates for stations |
| FISH | Sample composition information - fish |
| PCBFISH | PCB congeners/homologue sum/Aroclor concentrations - fish |
| PCBFISHD | PCB congeners - fish duplicate pairs/dilution analyses |
| NONPCBB | Non-PCB data - biota |
| SPECIES | Key to species codes |

**Table 3-96**
**Data Dictionary for Table STATIONS in *NOAA* Directory**

| Field Name<br>Paradox | Field Name<br>FoxProx | Field Type [1] | Description |
|---|---|---|---|
| Station | [2] | A8 | Station number |
| TAMS ID | tams_id | A11 | Sample identifier |
| TAMS Type | tams_type | A4 | Sample type [3] |
| Species | [2] | A4 | Species code |
| Date Sampled | date_sampl | D | Sample date |
| Est Easting | est_eastin | N | Estimated NY State Plane easting (ft) |
| Est Northing | est_northi | N | Estimated NY State Plane northing 9ft) |
| River Mile | river_mile | N | Mile measured from the Battery |
| Description | descriptio | A26 | Station description |
| Program | [2] | A4 | Program abbreviation (EC) [4] |
| SAS No. | sas_nox | A8 | Sample identifier for laboratory program |
| Comment. | comment | A120 | Sample comment |

[1]     A: character field with number denoting size of field
        D: date field
        N: number field
        M: memo field

[2]     Same as Paradox

[3]     B: Field blank
        D: Duplicate sample
        N: NOAA sample

[4]     EC: Ecological survey

**Table 3-97**
**Data Dictionary for Table COORDS in *NOAA* Directory**

| Field Name<br>Paradox | Field Name<br>FoxPro | Field Type [1] | Description |
|---|---|---|---|
| Station | [2] | A16 | Station name |
| Est Easting | est_eastin | N | Estimated NY state plane easting (ft) |
| Est Northing | est_northi | N | Estimated NY state plane northing (ft) |
| Sample Type | sample_typ | A23 | Type of sample taken |
| Fish Type | fish_typ | A18 | Type of fish taken |

[1]     A: character field with number denoting size of field
        D: date field
        N: number field
        M: memo field

[2]     Same as Paradox

**Table 3-98**
**Data Dictionary for Table FISH in *NOAA* Directory**

| Field Name<br>Paradox | Field Name<br>FoxPro | Field Type [1] | Description |
|---|---|---|---|
| TAMS ID | tams_id | A11 | Sample identifier |
| TAMS Type | tams_type | A3 | Sample type [2] |
| Species | [3] | A8 | Species code |
| SAS No. | sas_nox | A8 | Laboratory identifier |
| Noincomp | [3] | A3 | Number of fish in composite |
| Length | [3] | N | Length in centimeters |
| Weight | [3] | N | Weight in grams |
| Sex | [3] | A1 | Sex |

[1] A: character field with number denoting size of field
   D: date field
   N: number field
   M: memo field

[2] B: Field blank
   D: Duplicate sample
   N: NOAA sample

[3] Same as Paradox

**Table 3-99**
**Data Dictionary for Table PCBFISH in *NOAA* Directory**

| Field Name<br>Paradox | Field Name<br>FoxPro | Field Type [1] | Description |
|---|---|---|---|
| TAMS ID | tams_id | A11 | Sample identifier |
| TAMS Type | tams_type | A3 | Sample type [2] |
| Species | [3] | A4 | Species code |
| Split | [3] | A10 | Field denoting if record represents a composite of duplicate analyses (Avg-FD - average of field duplicates) |
| Matrix | [3] | A8 | Sample matrix (SED, BIOTA) |
| Parameter | [3] | A28 | Parameter name |
| Units | [3] | A10 | Units of result |
| Value1 | [3] | N | Numerical result with non-detected values set to sample quantitation limit [4] |
| Value2 | [3] | N | Numerical result with non-detected values set to 0 of 1/2 quantitation limit |
| Qualifier | [3] | A6 | Data qualifier |
| QA Comment | qa_comment | A10 | Quality Assurance comment code see ***PHASE2*\QUALIFY** |
| Validated? | validated | A4 | Field denoting if results have been validated (Yes/No) |

[1]     A: character field with number denoting size of field
         D: date field
         N: number field
         M: memo field

[2]     B: Field blank
         D: Duplicate sample

[3]     Same as Paradox

[4]     Homologue sums and Total PCBs values represent sums of detected values only.

**Table 3-100**
**Data Dictionary for Table PCBFISHD in *NOAA* Directory**

| Field Name<br>Paradox | Field Name<br>FoxPro | Field Type [1] | Description |
|---|---|---|---|
| TAMS ID | tams_id | A11 | Sample identifier |
| TAMS Type | tams_type | A4 | Sample type [2] |
| Matrix | [3] | A8 | Sample matrix  (BIOTA) |
| Parameter | [3] | A28 | Parameter name |
| Units | [3] | A10 | Units of result |
| Species | [3] | A4 | Species code; see **SPECIES** table for definition of codes |
| Value | [3] | N | Numerical result with non-detected values set to sample quantitation limit |
| Qualifier | [3] | A6 | Data qualifier |
| QA Comment | qa_comment | A10 | Quality Assurance comment code see *PHASE2\QUALIFY* |

[1]      A: character field with number denoting size of field
            D: date field
            N: number field
            M: memo field

[2]      B: Field blank
            D: Duplicate sample
            N: NOAA sample

[3]      Same as Paradox

**TAMS/*Gradient***

**Table 3-101**
**Data Dictionary for Tables NONPCBB in *NOAA* Directory**

| Field Name Paradox | Field Name FoxPro | Field Type [1] | Description |
|---|---|---|---|
| TAMS ID | tams_id | A11 | Sample identifier |
| TAMS Type | tams_type | A3 | Sample type [2] |
| Species | [3] | A4 | Species code |
| SAS No. | sas_nox | A8 | Sample identifier for laboratory program |
| Split | [3] | A10 | Field denoting if record represents a composite of duplicate analyses (Avg-FD - average of field duplicates) |
| Laboratory | [3] | A10 | Name of laboratory performing analysis |
| SDG No. | sdg_nox | A12 | Sample delivery group (for data validation) |
| Parameter | [3] | A30 | Parameter name |
| Units | [3] | A4 | Units of result |
| Value | [3] | N | Numerical result with non-detected values set to sample detection limit |
| Qualifier | [3] | A4 | Data qualifier |
| Validated | [3] | A4 | Field denoting if results have been validated (Yes/No) |

[1]    A: character field with number denoting size of field
       D: date field
       N: number field
       M: memo field

[2]    B: Field blank
       D: Duplicate sample
       N: NOAA sample

[3]    Same as Paradox

**TAMS/*Gradient***

**Table 3-102**
**Data Dictionary for Table SPECIES in *NOAA* Directory**

| Field Name<br>Paradox | Field Name<br>FoxPro | Field Type [1] | Description |
|---|---|---|---|
| Species | [2] | A8 | Species code |
| Definition | [2] | A20 | Definition of species code |

[1]        A: character field with number denoting size of field
                    D: date field
                    N: number field
                    M: memo field

[2]        Same as Paradox

**TAMS/*Gradient***

**PCBS Table**

| TAMS ID | TAMS Type | Split | Matrix | Parameter | Units | Value 1 | Value 2 | Qualifier | QA Comment | Validated |
|---------|-----------|-------|--------|-----------|-------|---------|---------|-----------|------------|-----------|
| HR-001-00002 | P | | SED | BZ#8 | μg/Kg DW | 9.25 | 9.25 | J | GP | Yes |
| HR-001-00002 | P | | SED | BZ#22 | μg/Kg DW | 8.09 | 8.09 | J | G | Yes |
| HR-001-00002 | P | | SED | BZ#87 | μg/Kg DW | 6.64 | 6.64 | J | GHS | Yes |
| HR-001-00002 | P | | SED | BZ#180 | μg/Kg DW | 6.51 | 6.51 | JN | GST | Yes |

**STATIONS Table**

| Station | TAMS ID | TAMS Type | Date Sampled | Lower Depth (cm) | Upper Depth (cm) | Est. Easting (ft) | Est. Northing (ft) | River Mile | Location | Program | SAS No. | Comments |
|---------|---------|-----------|--------------|------------------|------------------|-------------------|--------------------|-----------|----------|---------|---------|----------|
| HR-001 | HR-001-0002 | P | 8-23-92 | 0 | 2 | 618700 | 375750 | 25 | Piermont Marsh 12 | HR | SB0618 | |
| HR-011 | HR-011-0608 | P | 9-30-92 | 8 | 6 | 654600 | 952700 | 143.5 | Albany Turning Basin | HR | SB2143 | |
| HR-027 | HR-027-1216 | P | 9-30-92 | 16 | 12 | 676700 | 1200550 | 202.9 | Background – Bishop's Dock | HR | SB1206 | |

**NONPCBS Table**

| TAMS ID | TAMS Type | SAS No. | Split | Laboratory | SDG. No. | Parameter | Units | Value | Qualifier | Validated |
|---------|-----------|---------|-------|------------|----------|-----------|-------|-------|-----------|-----------|
| HR-001-00002 | P | SB0618 | | LDEO | 19 | TC | % | 2.34 | | Yes |
| HR-001-00002 | P | SB0618 | | LDEO | 19 | TN | % | 0.2 | J | Yes |
| HR-001-00002 | P | SB0618 | | LDEO | 19 | C/N | molar | 13.6 | | Yes |

Figure 3-1

Examples of One-To Many Relationships from
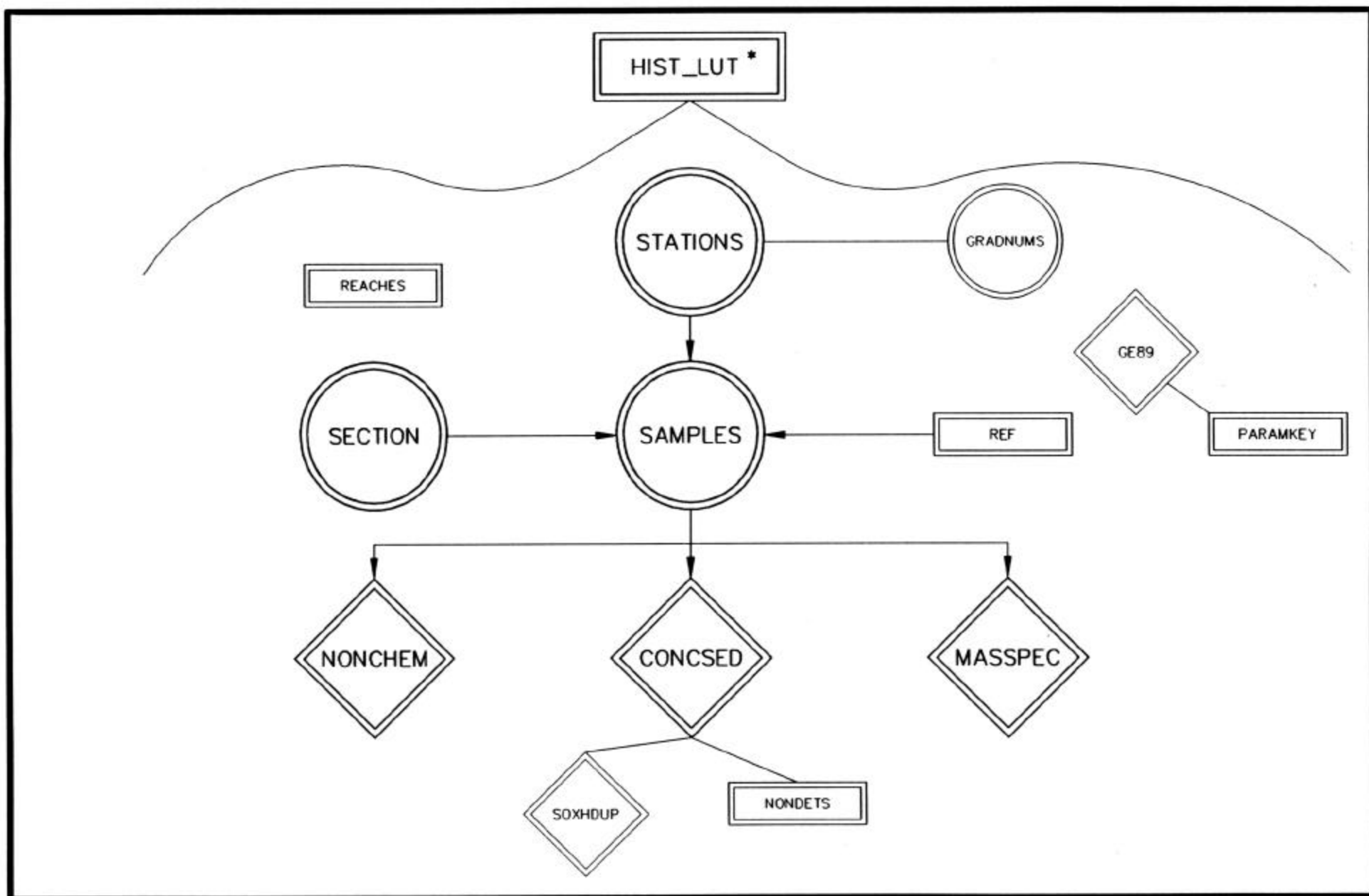*PHASE2\HRCORES* Database Tables

**TAMS/**Gradient
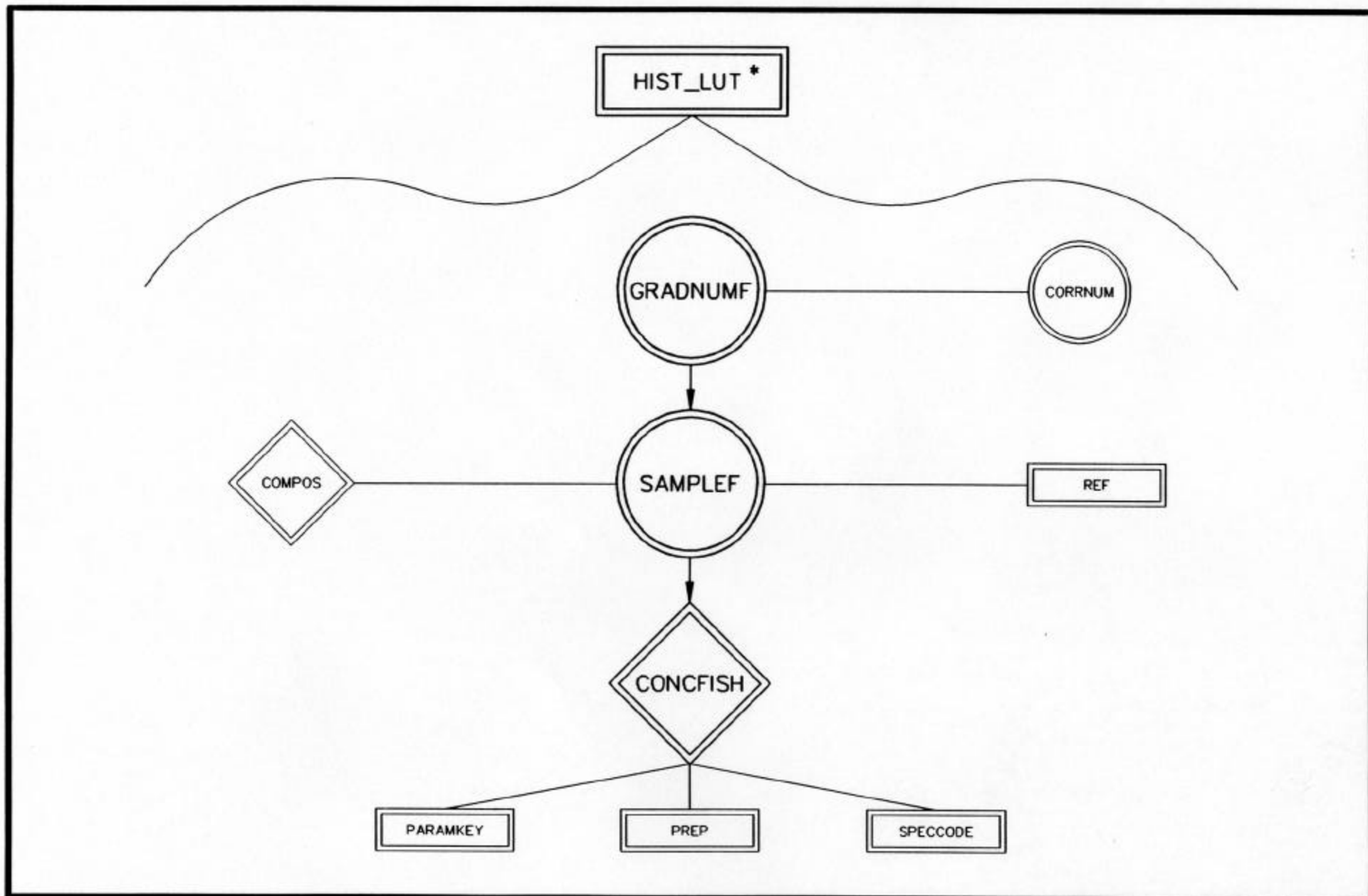
Figure 3-2
Database Tables in *HISTORIC\SED* Subdirectory

Figure 3-3
Database Tables in *HISTORIC\FISH* Subdirectory

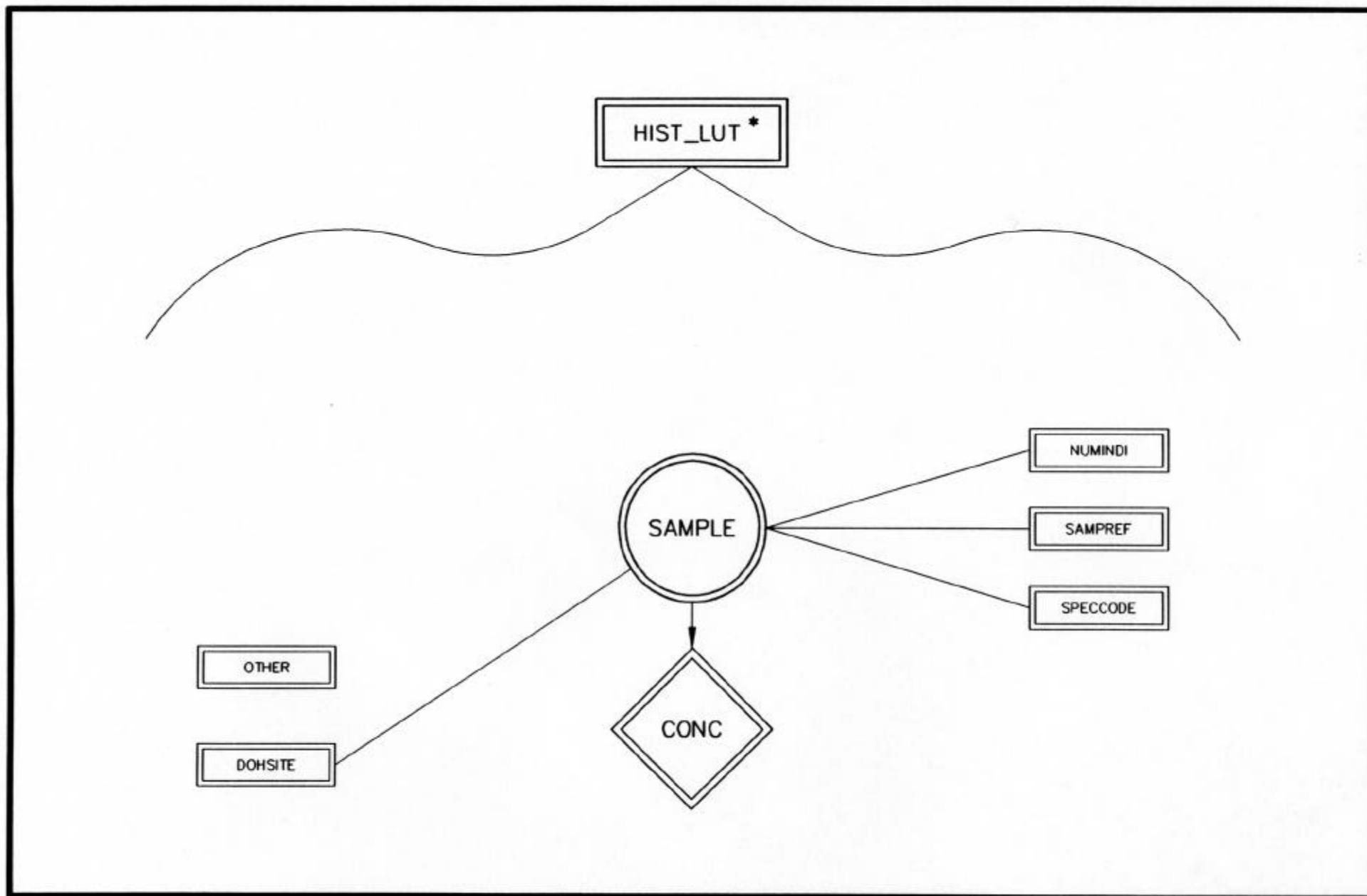* In HISTORIC directory – contains information
  on all files in this directory

**TAMS/**Gradient*

Figure 3–4

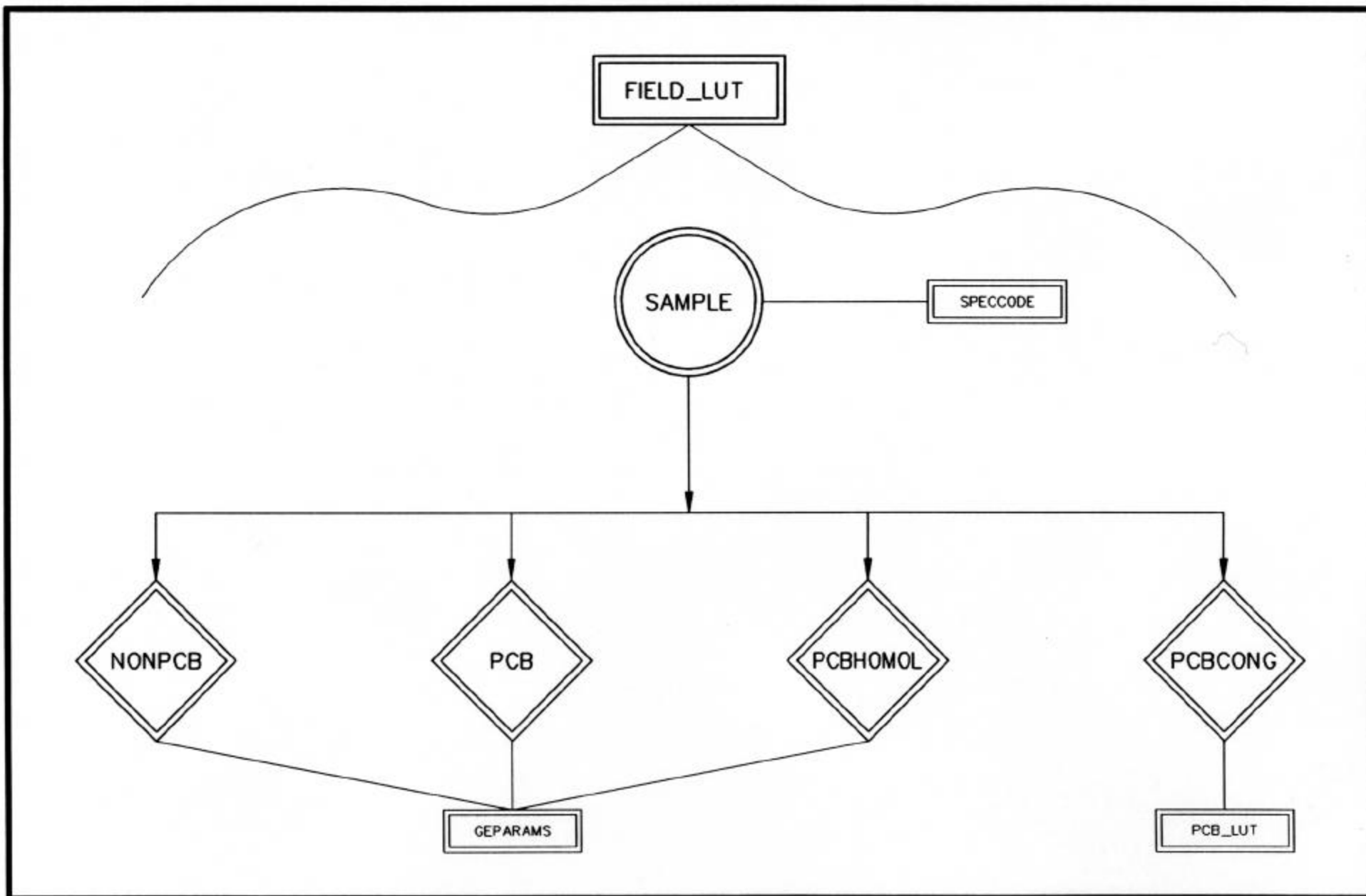Database Tables in *HISTORIC \ MACROINV* Subdirectory

**TAMS/** *Gradient*

Figure 3-5
Database Tables in *GE* Directory
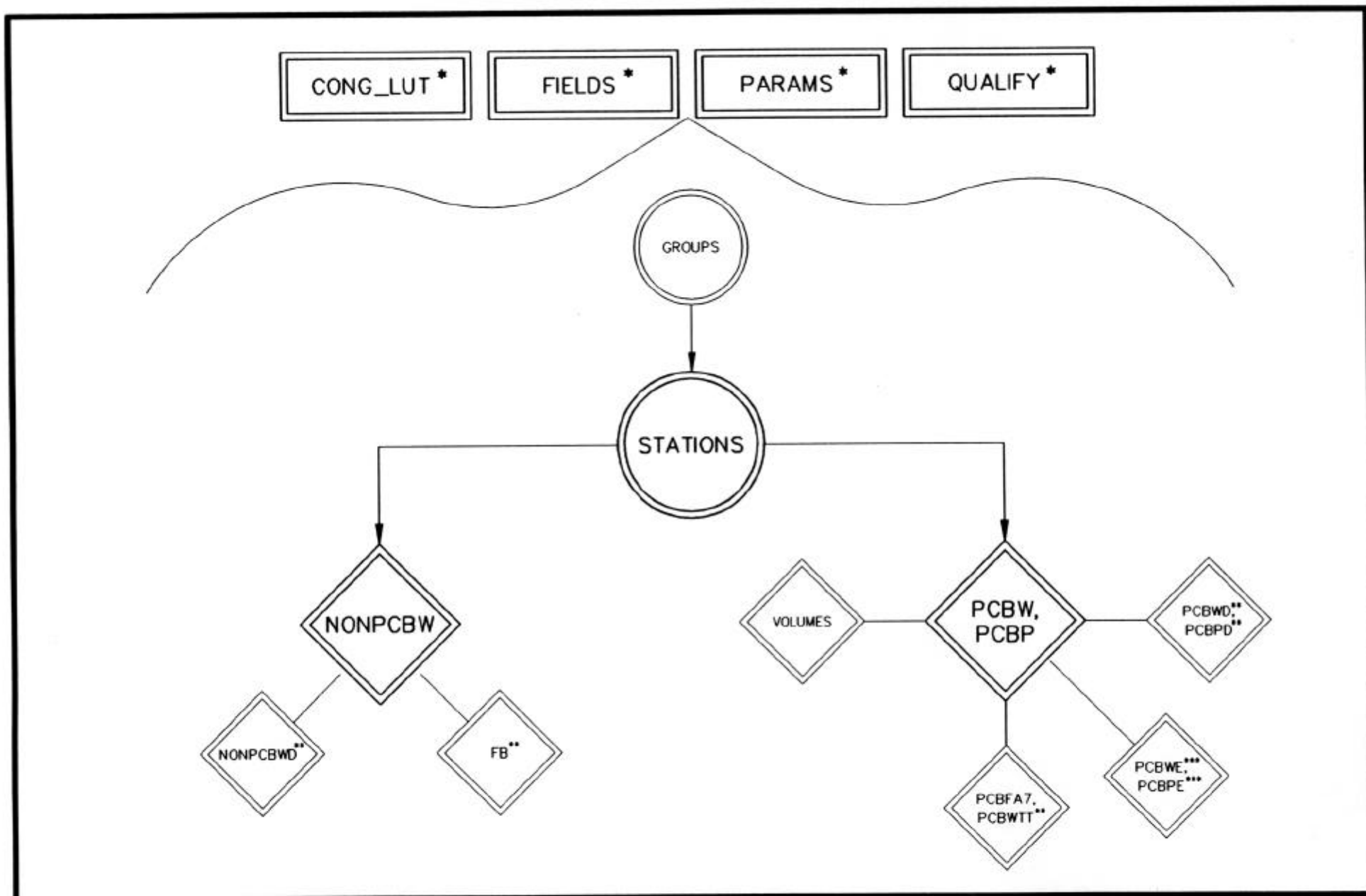
Figure 3-6
Database Tables in *PHASE2\WATER* Subdirectory

* In PHASE2 directory – reference for information
  on all files in this directory

** Files located in PHASE2\WATER\QA_QC subdirectory
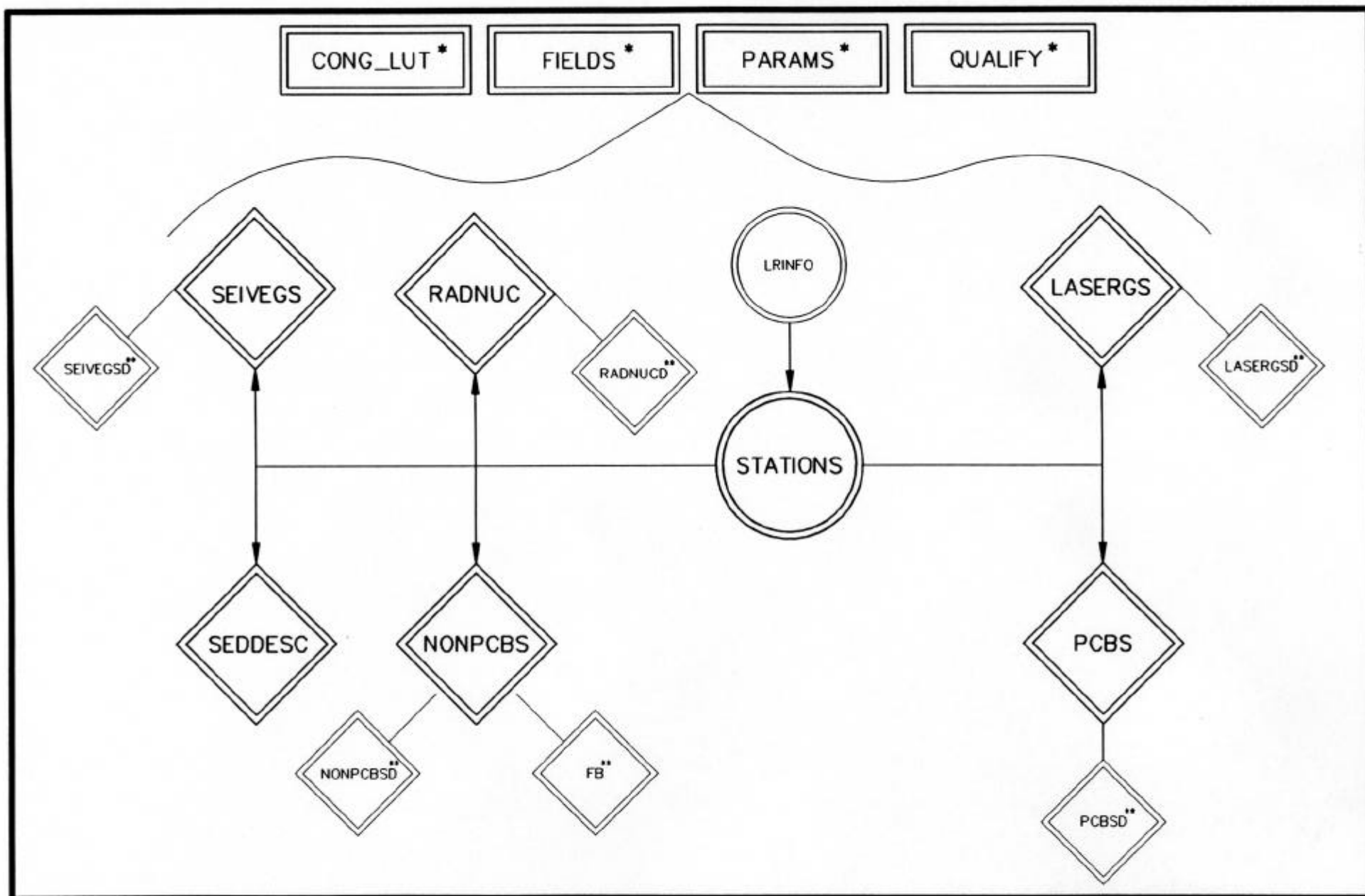*** Files located in PHASE2\WATER\EQUILIB subdirectory

**TAMS/***Gradient***

Figure 3–7
Database Tables in *PHASE2\SEDIMENT* Subdirectory

* In PHASE2 directory – reference for information on all files in this directory

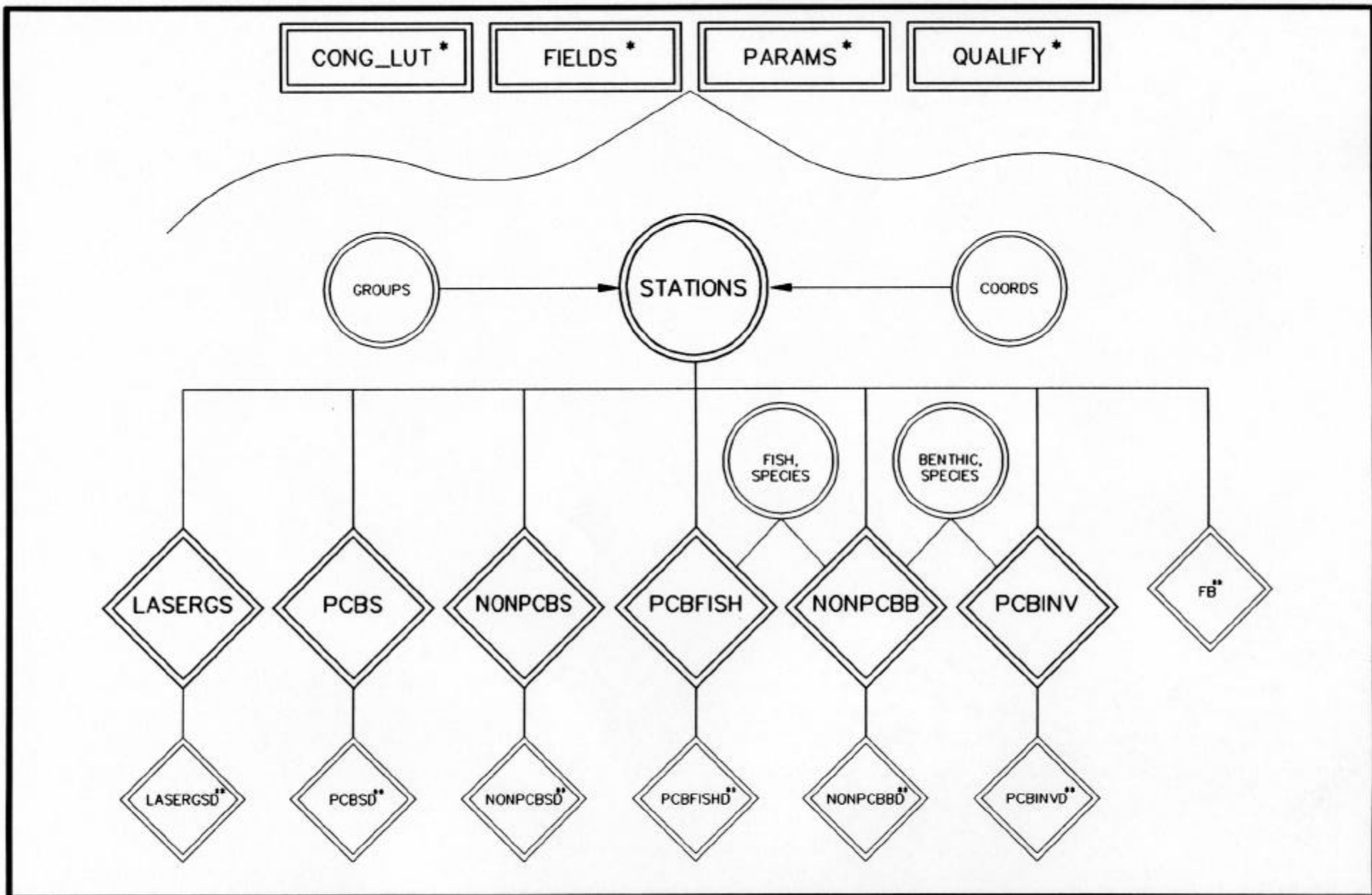** Files located in PHASE2\SEDIMENT\QA_QC subdirectory

**TAMS/***Gradient***

Figure 3-8
Database Tables in *PHASE2\ECO* Subdirectory

* In PHASE2  directory - reference for information     ** Files located in PHASE2\ECO\QA_QC  subdirectory     **TAMS/**Gradient*
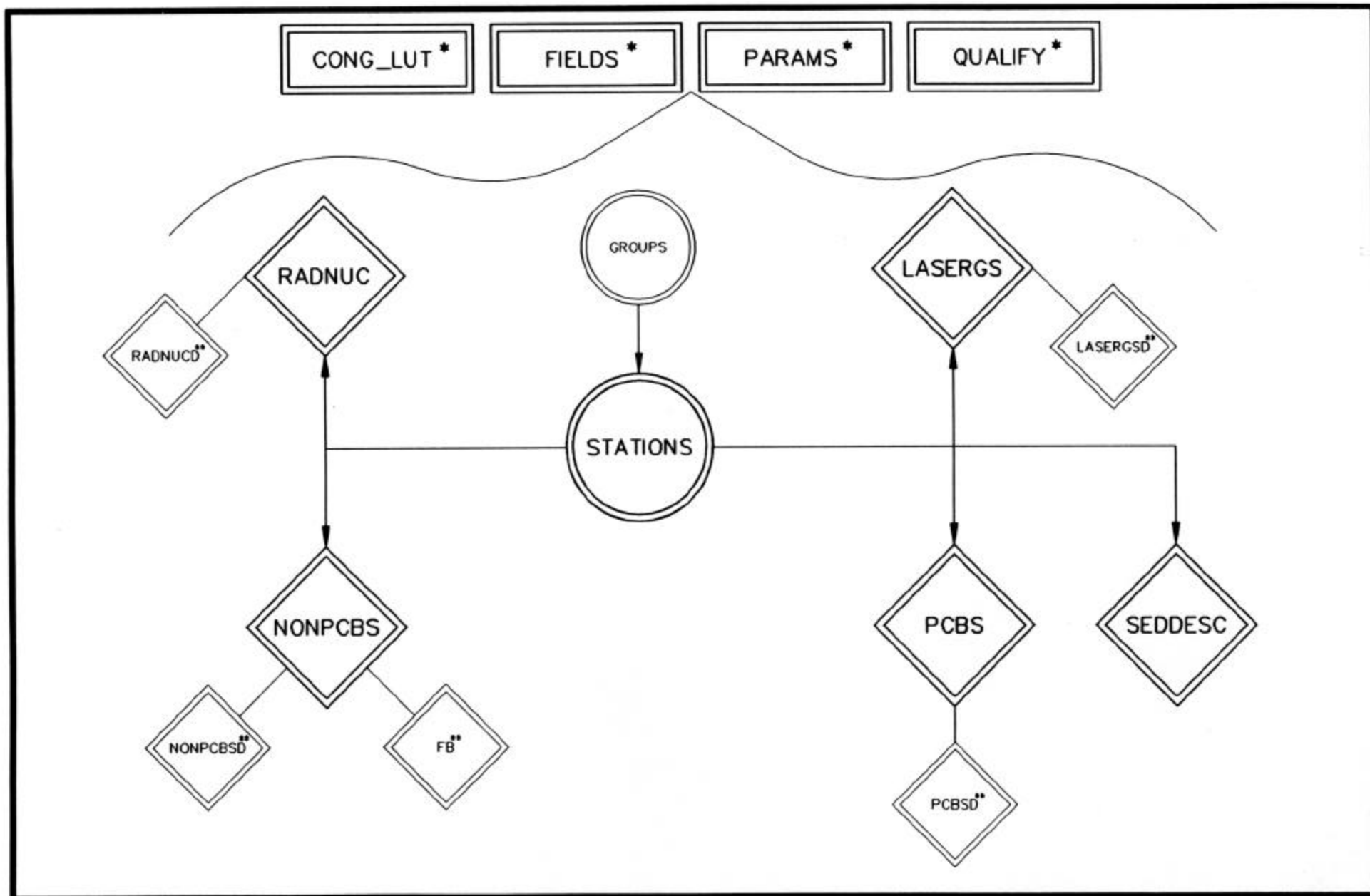
Figure 3-9
Database Tables in *PHASE2\HRCORES* Subdirectory

\* In PHASE2 directory – reference for information on all files in this directory

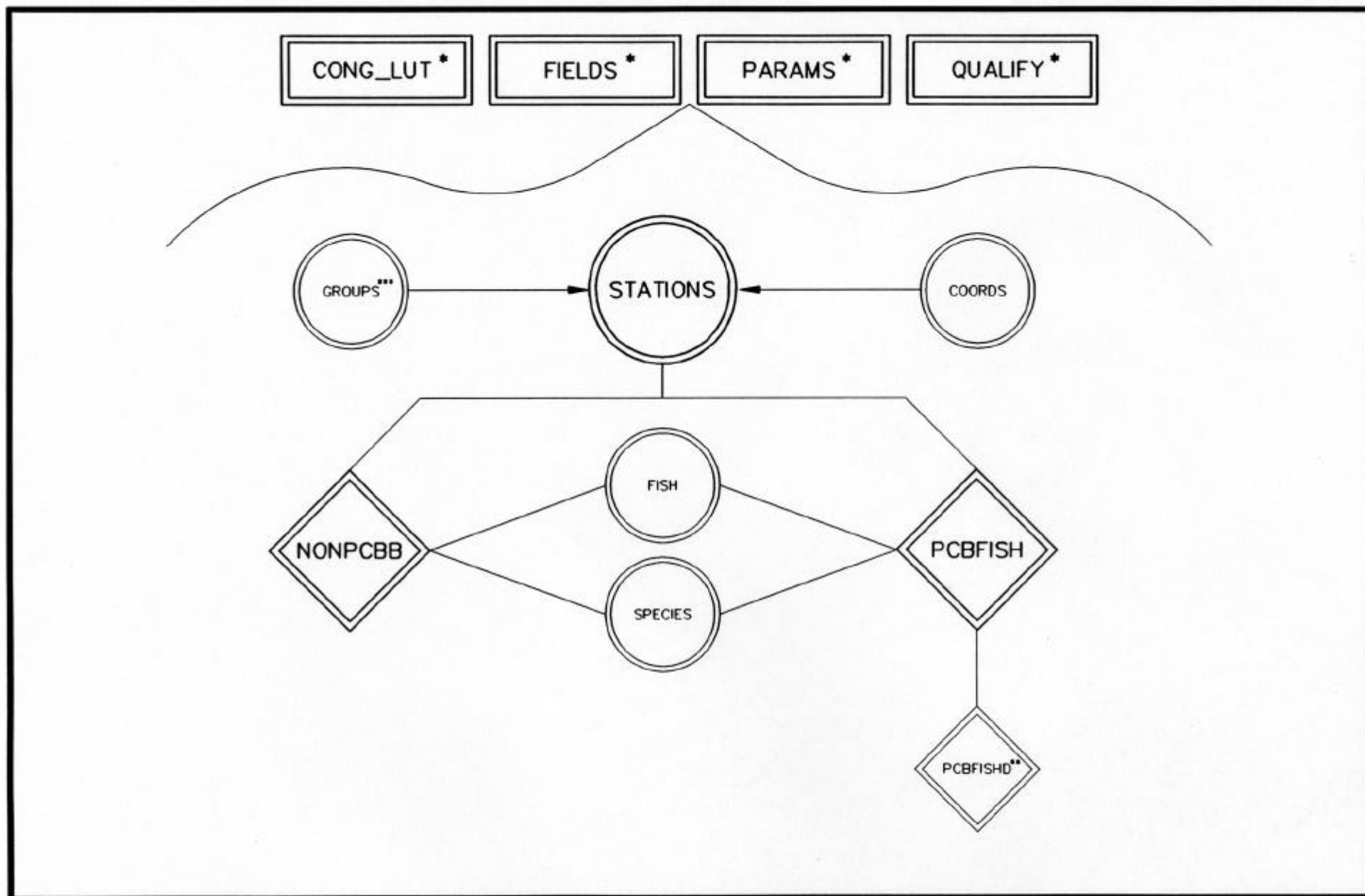\*\* Files located in PHASE2\HRCORES\QA_QC subdirectory

**TAMS/***Gradient*

**Figure 3-10**
Database Tables in *NOAA* Directory

* In PHASE2 directory – reference for information
  on all files in this directory

** Files located in NOAA\QA_QC subdirectory
*** Files located in PHASE2\ECO subdirectory

**TAMS/*Gradient*

**HRCORES\NONPCBS (Partial Listing)**

| TAMS ID | TAMS Type | Parameter | Value |
|---------|-----------|-----------|-------|
| √ | √ | | √ |
| | | "C/N" | > 0 |

Criteria

**PCBS (Partial Listing)**

| TAMS ID | TAMS Type | Parameter | Value2 |
|---------|-----------|-----------|--------|
| | | | √ |
| | | Total PCBs | |

Criteria

√     Include field in answer

↓     Link tables

TAMS/ *Gradient*

**Figure 3-11**
**Table Links for Example Database Query 1**

**HRCORES\STATIONS (Partial Listing)**

| | Station | TAMS ID | TAMS Type | Lower Depth (cm) | Upper Depth (cm) |
|---|---|---|---|---|---|
| | | | | √ | √ |
| Criteria | HR-019 | | | | |

**PCBS (Partial Listing)**

| | TAMS ID | TAMS Type | Parameter | Value2 |
|---|---|---|---|---|
| | | | | √ |
| Criteria | | | Not Like BZ | |

√  Include field in answer

Link tables

TAMS/ *Gradient*

**Figure 3-12**
**Table Links for Example Database Query 2**