United States
Environmental Protection Agency

Office of Water
Washington, D.C. 20460

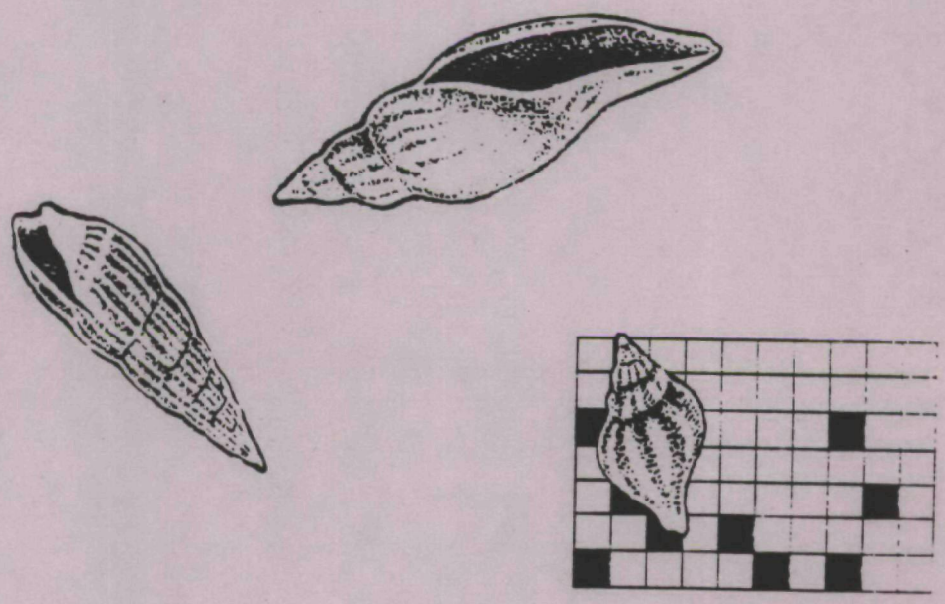
EPA 503/8-90-006
December 1987

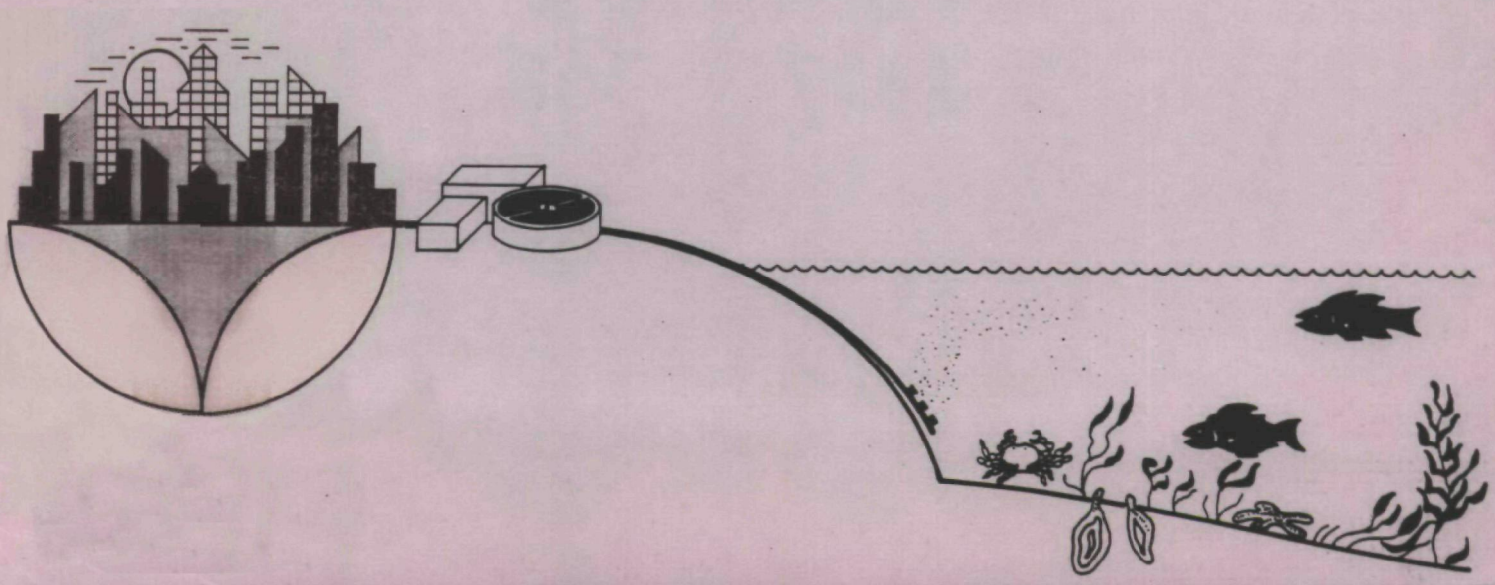
EPA

O·D·E·S

Ocean Data Evaluation System

DATA SUBMISSIONS MANUAL





EPA 503/8-90-006
December 1986

OCEAN DATA EVALUATION SYSTEM (ODES) DATA SUBMISSIONS MANUAL

Prepared by:
Tetra Tech, Inc.
11820 Northup Way, Suite 100
Bellevue, Washington 98005

Prepared for:
Marine Operations Division: 301(h) Program
Office of Marine and Estuarine Protection
U.S. Environmental Protection Agency
401 M Street SW
Washington, D.C. 20460

TABLE OF CONTENTS

PREFACE

The Ocean Data Evaluation System (ODES) is an analytically powerful, user friendly computerized system for supporting federal, state, and local decision-makers associated with the U.S. Environmental Protection Agency (EPA) marine monitoring programs. ODES is managed by the EPA Marine Operations Division (MOD) of the Office of Marine and Estuarine Protection (OMEP). The *ODES Data Submissions Manual* provides a set of comprehensive instructions for the accurate submission of monitoring data to ensure that correct data are entered for use with the ODES analytical tools.

The guidelines developed for this manual are the result of a cooperative effort between MOD, its contractors, and EPA Regional Offices, and are in accordance with the standard formats for marine data developed by the National Oceanographic Data Center (NODC). The approach in creating these guidelines has been to adhere closely to NODC's standard formats for storing and disseminating oceanographic data. This approach will promote standardization, sharing of data, and the evaluation of long-term trends. Where necessary, existing NODC formats have been supplemented with other data elements of particular importance to EPA marine monitoring programs.

Over the last several years new fields and codes have been created and some formats have been modified in the ODES Data Submissions Manual in order to accommodate the various needs of ODES data submitters. This manual has been updated to reflect these changes. All changes and additions are highlighted by a line drawn in the left hand margin of the text, and a summary of all the changes is included to facilitate implementation of all the changes.

This document does not constitute official policy for EPA sampling programs. (Appendix D of this manual provides a list of current EPA guidance documents for 301(h) monitoring programs. Additional guidance on monitoring is available from the EPA Regional or MOD Program Offices.) The data submissions guidelines presented below provide a set of comprehensive procedures for compiling all types of data that are likely to be collected in a given sampling program. While most data elements which may be measured in a given sampling program are discussed in this manual, specific programs may or may not require all of this information. Similarly, if there are other data elements which are needed by your program but are not included in the *Manual*, please contact the ODES Manager to discuss your requirements (see below for address and telephone information).

The *ODES Data Submissions Manual* explains the quality assurance/quality control (QA/QC) cycle that must be completed before a data set can be loaded into ODES, and provides detailed instructions for entering individual data sets onto coding forms, magnetic tape, or floppy diskette for submission to ODES. The *Manual* is organized as follows:

- Chapter I describes the critical QA/QC component of the ODES data entry process. Every individual data set submitted must complete the QA/QC cycle before being loaded into the ODES data base. As a result, ODES users are guaranteed that data are of acceptable quality for conducting analyses and producing reports.

- Chapters II-XV provide data format guidelines for compiling individual data sets for the most commonly collected types of data.

Chapter I provides a comprehensive description of QA/QC procedures for all types of ODES data sets. The remainder of the *Manual* is organized in a modular fashion, allowing the user to select only the chapters of interest, according to the particular requirements of the program. Chapters II through XV provide detailed instructions for compiling different **File Types** for sampling data (e.g., Benthic Survey Data, Receiving Water Quality Data). Each of these chapters includes a general description of the File Type, an explaination of the logical relationships among each of the **Record Types** that make up the file (e.g., Survey Header Records, Data Records), a set of detailed instructions for entering the data, and a complete set of data entry codes.

If you have comments or questions about this manual or about other aspects of ODES, please call or write the ODES Manager:

Mr. Robert King
ODES Manager
Marine Operations Division
Office of Marine and Estuarine Protection
U.S. Environmental Protection Agency
401 M Street, S.W. (Mail Code: WH-556F)
Fairchild Building
Washington, D.C. 20460
(202) 475-7119

The ODES Manager can provide you with more copies of the *Manual* as well as copies of the *ODES User's Guide*. The ODES Manager can also arrange periodic hands-on demonstrations of the system.

If you have technical questions pertaining to the preparation of a data set for submission to ODES, please call ODES User Support at one of the following numbers:

(206) 822-9596 -- 9:00 PM - 5:00 PM Pacific Time Zone
(703) 841-6109 -- 9:00 AM - 6:00 PM Eastern Time Zone.

Summary of Changes in the ODES Data Submissions Manual

The following summaries are provided to allow submitters to quickly identify changes that have been made in this version of the Submissions Manual. This section identifies where changes have occurred in each file type. Data entry codes that have new members are also listed. Refer to the field description in a file type or code listing in the appendices to find out what specific changes have been made.

Changes to Record Layouts

File Type 132 Benthic Survey Data

Current Column Location	Previous Column Location	Variable	Change (C), Deletion (D), or Addition (A)
Survey Header Record			
8	---	SERIES NUMBER	A
9	8-9	SCAN ID	C
Station Header Record			
8	---	SERIES NUMBER	A
9	8-9	SCAN ID	C
76	---	INTERTIDAL ELEVATION SIGN	A
77-79	---	INTERTIDAL ELEVATION	A
Bottom Characteristics Record			
8	---	SERIES NUMBER	A
9	8-9	SCAN ID	C
18-20	19-20	SAMPLE NUMBER	C
Species Abundance Record			
8	---	SERIES NUMBER	A
9	8-9	SCAN ID	C
18-20	19-20	SAMPLE NUMBER	C
Biomass Data Record			
8	---	SERIES NUMBER	A
9	8-9	SCAN ID	C
18-20	19-20	SAMPLE NUMBER	C
55	---	WEIGHT DETERMINATION	A

Changes to Record Layouts

File Type 144 Bioaccumulation Data

Current Column Location	Previous Column Location	Variable	Change (C), Deletion (D), or Addition (A)
Survey Header Record			
8	--	SERIES NUMBER	A
9	8-9	SCAN ID	C
Header Record for Quality Assurance Samples			
8	---	SERIES NUMBER	A
9	8-9	SCAN ID	C
Station Header Record			
8	---	SERIES NUMBER	A
9	8-9	SCAN ID	C
56	---	INTERTIDAL ELEVATION SIGN	A
57-59	---	INTERTIDAL ELEVATION	A
Sample Record			
8	---	SERIES NUMBER	A
9	8-9	SCAN ID	C
15-17	16-17	SAMPLE NUMBER	C
21-22	---	COMPOSITE NUMBER	A
23-24	---	SUBSAMPLE NUMBER	A
---	36-38	INTERTIDAL ELEVATION	D
Data Record			
8	---	SERIES NUMBER	A
9	8-9	SCAN ID	C
12-14	13-14	SAMPLE NUMBER	C
84-86	84-85	SAMPLE NUMBER FOR ANALYTICAL BLANK	C
87	---	MEASUREMENT BASIS	A

Changes to Record Layouts

File Type 013 Fish Pathology Data

Current Column Location	Previous Column Location	Variable	Change (C), Deletion (D), or Addition (A)
Survey Header Record			
8	--	SERIES NUMBER	A
9	8-9	SCAN ID	C
Station Header Record			
8	---	SERIES NUMBER	A
9	8-9	SCAN ID	C
46-50	46-49	DISTANCE FISHED	C
Individual Record			
8	---	SERIES NUMBER	A
9	8-9	SCAN ID	C
Lesion Record			
8	---	SERIES NUMBER	A
9	8-9	SCAN ID	C

Changes to Record Layouts

File Type 144 Influent and Effluent Data

Current Column Location	Previous Column Location	Variable	Change (C), Deletion (D), or Addition (A)
Survey Header Record			
8	--	SERIES NUMBER	A
9	8-9	SCAN ID	C
Header Record for Quality Assurance Samples			
8	---	SERIES NUMBER	A
9	8-9	SCAN ID	C
Influent/Effluent Description Record			
8	---	SERIES NUMBER	A
9	8-9	SCAN ID	C
---	43-47	AVERAGE DISCHARGE	D
Sample Record			
8	---	SERIES NUMBER	A
9	8-9	SCAN ID	C
16-18	16-17	SAMPLE NUMBER	C
44-48	---	FLOW	A
61-63	61-62	SUBSAMPLES PER COMPOSITE	C
Data Record 1			
8	---	SERIES NUMBER	A
9	8-9	SCAN ID	C
14-16	15-16	SAMPLE NUMBER	C
51-55	---	TOTAL SOLIDS	A
56-60	---	ALKALINITY	A
Data Record 2			
8	---	SERIES NUMBER	A
9	8-9	SCAN ID	C
14-16	13-14	SAMPLE NUMBER	C
---	15-17	SPECIMEN NUMBER	D
17	---	SPHERE	A
84-86	84-85	SAMPLE NUMBER FOR ANALYTICAL BLANK	C

Changes to Record Layouts

File Type 144 Receiving Water Quality Data

Current Column Location	Previous Column Location	Variable	Change (C), Deletion (D), or Addition (A)
Survey Header Record			
8	--	SERIES NUMBER	A
9	8-9	SCAN ID	C
Header Record for Quality Assurance Samples			
8	---	SERIES NUMBER	A
9	8-9	SCAN ID	C
Station Header Record			
8	---	SERIES NUMBER	A
9	8-9	SCAN ID	C
Station Environment Record			
8	---	SERIES NUMBER	A
9	8-9	SCAN ID	C
Sample Record			
8	---	SERIES NUMBER	A
9	8-9	SCAN ID	C
15-17	16-17	SAMPLE NUMBER	C
Data Record 1			
8	---	SERIES NUMBER	A
9	8-9	SCAN ID	C
14-16	15-16	SAMPLE NUMBER	C
51-54	---	LIGHT EXTINCTION	A
Data Record 2			
8	---	SERIES NUMBER	A
9	8-9	SCAN ID	C
14-16	15-16	SAMPLE NUMBER	C
84-86	84-85	SAMPLE NUMBER FOR ANALYTICAL BLANKS	C

Changes to Record Layouts

File Type 073 Sediment Grain Size Analysis Data

Current Column Location	Previous Column Location	Variable	Change (C), Deletion (D), or Addition (A)
Survey Header Record			
8	---	SERIES NUMBER	A
9	8-9	SCAN ID	C
Station Header Record			
8	---	SERIES NUMBER	A
9	8-9	SCAN ID	C
Sample Header Record			
8	---	SERIES NUMBER	A
9	8-9	SCAN ID	C
20-22	20-21	SAMPLE NUMBER	C
Size Analysis Record 1			
8	---	SERIES NUMBER	A
9	8-9	SCAN ID	C
20-22	20-21	SAMPLE NUMBER	C
Size Analysis Record 2			
8	---	SERIES NUMBER	A
9	8-9	SCAN ID	C
20-22	20-21	SAMPLE NUMBER	C

Changes to Record Layouts

File Type 144 Sediment Pollutant Data

Current Column Location	Previous Column Location	Variable	Change (C), Deletion (D), or Addition (A)
Survey Header Record			
8	--	SERIES NUMBER	A
9	8-9	SCAN ID	C
Header Record for Quality Assurance Samples			
8	--	SERIES NUMBER	A
9	8-9	SCAN ID	C
Station Header Record			
8	--	SERIES NUMBER	A
9	8-9	SCAN ID	C
Sample/Sub-Sample Record			
8	--	SERIES NUMBER	A
9	8-9	SCAN ID	C
15-17	16-17	SAMPLE NUMBER	C
---	40-41	INSTRUMENT METHOD CODE	D
--	42-43	GEAR TYPE	D
42-44	---	SAMPLING EQUIPMENT CODE	A
Data Record			
8	--	SERIES NUMBER	A
9	8-9	SCAN ID	C
12-14	13-14	SAMPLE NUMBER	C
84-86	84-85	SAMPLE NUMBER FOR ANALYTICAL BLANKS	C

Changes to Record Layouts

File Type 123 Trawl/Seine Sampling Data

Current Column Location	Previous Column Location	Variable	Change (C), Deletion (D), or Addition (A)
Survey Header Record			
8	--	SERIES NUMBER	A
9	8-9	SCAN ID	C
Station Header Record			
8	--	SERIES NUMBER	A
9	8-9	SCAN ID	C
50-52	50-53	DURATION FISHED	C
53-57	54-56	DISTANCE FISHED	C
Environment Record			
8	--	SERIES NUMBER	A
9	8-9	SCAN ID	C
72-74	72-73	CURRENT SPEED	C
Bottom Trawl Record			
8	--	SERIES NUMBER	A
9	8-9	SCAN ID	C
Miscellaneous Gear Record			
8	--	SERIES NUMBER	A
9	8-9	SCAN ID	C
Individual Specimen Record			
8	--	SERIES NUMBER	A
9	8-9	SCAN ID	C

Changes to Record Layouts

File Type 009 Bacterial/Viral Data

Current Column Location	Previous Column Location	Variable	Change (C), Deletion (D), or Addition (A)
Survey Header Record			
8	--	SERIES NUMBER	A
9	8-9	SCAN ID	C
Station Header Record			
8	--	SERIES NUMBER	A
9	8-9	SCAN ID	C
16	---	STATION TYPE	A
Station Environment Record			
8	--	SERIES NUMBER	A
9	8-9	SCAN ID	C
Sample Type Record			
8	--	SERIES NUMBER	A
9	8-9	SCAN ID	C
20-22	19-22	SAMPLE NUMBER	C
24-27	23-27	SAMPLE DEPTH	C
29-32	---	UPPER SEDIMENT DEPTH	A
33-36	---	LOWER SEDIMENT DEPTH	A
Bacterial Data Record			
8	--	SERIES NUMBER	A
9	8-9	SCAN ID	C
12-14	12-13	SAMPLE NUMBER	C
47	---	QUALIFIER CODE	A

Changes to Record Layouts

File Type 900 Bioassay Data

Current Column Location	Previous Column Location	Variable	Change (C), Deletion (D), or Addition (A)
Survey Header Record			
8	--	SERIES NUMBER	A
9	8-9	SCAN ID	C
Station Header Record			
8	--	SERIES NUMBER	A
9	8-9	SCAN ID	C
Sample Header Record			
8	--	SERIES NUMBER	A
9	8-9	SCAN ID	C
Bioassay Conditions Record			
8	--	SERIES NUMBER	A
9	8-9	SCAN ID	C
Data Record 1			
8	--	SERIES NUMBER	A
9	8-9	SCAN ID	C
75-77	---	CONTROL STATION	A
Data Record 2			
8	--	SERIES NUMBER	A
9	8-9	SCAN ID	C
78-80	---	CONTROL STATION	A

Changes to Record Layouts

File Type 901 Fish/Shellfish Landings Data

Current Column Location	Previous Column Location	Variable	Change (C), Deletion (D), or Addition (A)
Landing Location Header Record			
8	--	SERIES NUMBER	A
9	---	SCAN ID	A
Catch Record			
8	--	SERIES NUMBER	A
9	---	SCAN ID	A
Species Record			
8	--	SERIES NUMBER	A
9	---	SCAN ID	A

Changes to Record Layouts

File Type 902 Plankton Data

Current Column Location	Previous Column Location	Variable	Change (C), Deletion (D), or Addition (A)
Survey Header Record			
8	--	SERIES NUMBER	A
9	8-9	SCAN ID	C
Station Header Record			
8	--	SERIES NUMBER	A
9	8-9	SCAN ID	C
Sample Header Record			
8	--	SERIES NUMBER	A
9	8-9	SCAN ID	C
Total Haul Data Record			
8	--	SERIES NUMBER	A
9	8-9	SCAN ID	C
Phytoplankton Data Record			
8	--	SERIES NUMBER	A
9	8-9	SCAN ID	C
Zooplankton Data Record			
8	--	SERIES NUMBER	A
9	8-9	SCAN ID	C
Ichthyoplankton Record			
8	--	SERIES NUMBER	A
9	8-9	SCAN ID	C
15-17	16-17	SAMPLE NUMBER	C

Changes to Record Layouts

File Type 029 Primary Production Data

Current Column Location	Previous Column Location	Variable	Change (C), Deletion (D), or Addition (A)
Survey Header Record			
8	--	SERIES NUMBER	A
9	8-9	SCAN ID	C
Station Header Record			
8	--	SERIES NUMBER	A
9	8-9	SCAN ID	C
Sample Header Record			
8	--	SERIES NUMBER	A
9	8-9	SCAN ID	C
21-23	21-22	SAMPLE NUMBER	C
Productivity Data Record			
8	--	SERIES NUMBER	A
9	8-9	SCAN ID	C
14-16	15-16	SAMPLE NUMBER	C

Changes to Record Layouts

File Type 015 Ocean Currents Data

Current Column Location	Previous Column Location	Variable	Change (C), Deletion (D), or Addition (A)
Survey Header Record			
8	--	SERIES NUMBER	A
9	8-9	SCAN ID	C
Station Header Record			
8	--	SERIES NUMBER	A
9	8-9	SCAN ID	C
Current Meter Data Record 1			
8	--	SERIES NUMBER	A
9	8-9	SCAN ID	C
Current Meter Data Record 2			
8	--	SERIES NUMBER	A
9	8-9	SCAN ID	C

Changes to Appendices

Additions and Changes to the Data Entry Codes, Chemistry Codes, and Taxomonic Codes.

Code Identifier	Field Name
Appendix A	Chemistry Codes
Appendix B	Taxonomic Codes
Appendix C	Data Entry Codes
0075	Gear Type (100)
0076	Bottom Trawl Gear
0077	Bottom Type
0085	Navigation
0093	Sphere
0094	Turbidity
0120	Disease
0129	Gear Type (123)
0134	Gear
0161	Weight Determination
0210	Sample Type (044)
0218	Data Source
0255	Sampling Equipment Code
0347	Wet or Dry Period
0350	Chemical Analysis
0375	Industry Code
0376	Gear Type (144)
0377	Measurement Code (144)
0380	Organ Code
0381	Suborgan/Tissue
0382	Lesion/Etiology
0394	Water Color
EPA-1	Relation to ZID
EPA-3	Data Qualifiers
EPA-4	Salinity Equipment Code
EPA-5	Dissolved Oxygen Equipment Code
EPA-6	Bioassay Type
EPA-10	SCAN ID
OD013	Bacterial/Viral Abundance Estimation
OD014	Analytical Technique
OD015	Growth Medium
OD017	Station Type
OD018	Measurement Basis

I. Data Submission Steps and Quality Assurance Procedures

A. Introduction

ODES has been designed to assist program managers and scientists with their needs for data management and analysis. A crucial element in successfully providing this support is ensuring that quality control and quality assurance (QA/QC) procedures are an integral part of the system. Beginning with data collection in the field and extending through statistical analysis, adherence to QA/QC procedures guarantees users that the decisions derived from their ODES analyses will be based on the best available information.

To accomplish this task, organizations submitting data to ODES must implement QA/QC procedures in accordance with EPA guidance documents. These procedures should be implemented during sample collection, laboratory analysis, data coding, and data entry into ODES formats. All users of ODES, not just the individual organizations who collect and submit data, will benefit from a rigorous QA/QC program.

Once data have been submitted to ODES, they are subjected to computerized error-checking routines and are reviewed by the data submitter and by independent technical experts. Errors discovered during these QA/QC steps are corrected before the information is added to the ODES database. When this comprehensive, multi-stage process is completed, the ODES users can be confident that only the data that has been checked for errors and been technically reviewed is stored within the system.

B. Data Submission and QA/QC Procedures

This chapter provides guidance to persons or organizations who wish to submit data to ODES and outlines the quality assurance steps that must be passed prior to the addition of data to the database. The obligations of organizations submitting data are summarized in Exhibit I-A-1. An overview of the entire data submission process is illustrated in Exhibit I-A-2. Detailed descriptions of each step are included below.

1. Obtain EPA Approval to Submit Data:

Organizations or individuals who plan to have data added to the ODES database must first obtain the consent of EPA. The EPA will determine if the addition of data to the system will contribute to the overall goals of existing programs and projects. If a data set is viewed as appropriate for inclusion into ODES, EPA will notify the organization to proceed with the data submission process.

Requests to submit data should be directed to the EPA ODES Manager at the following address:

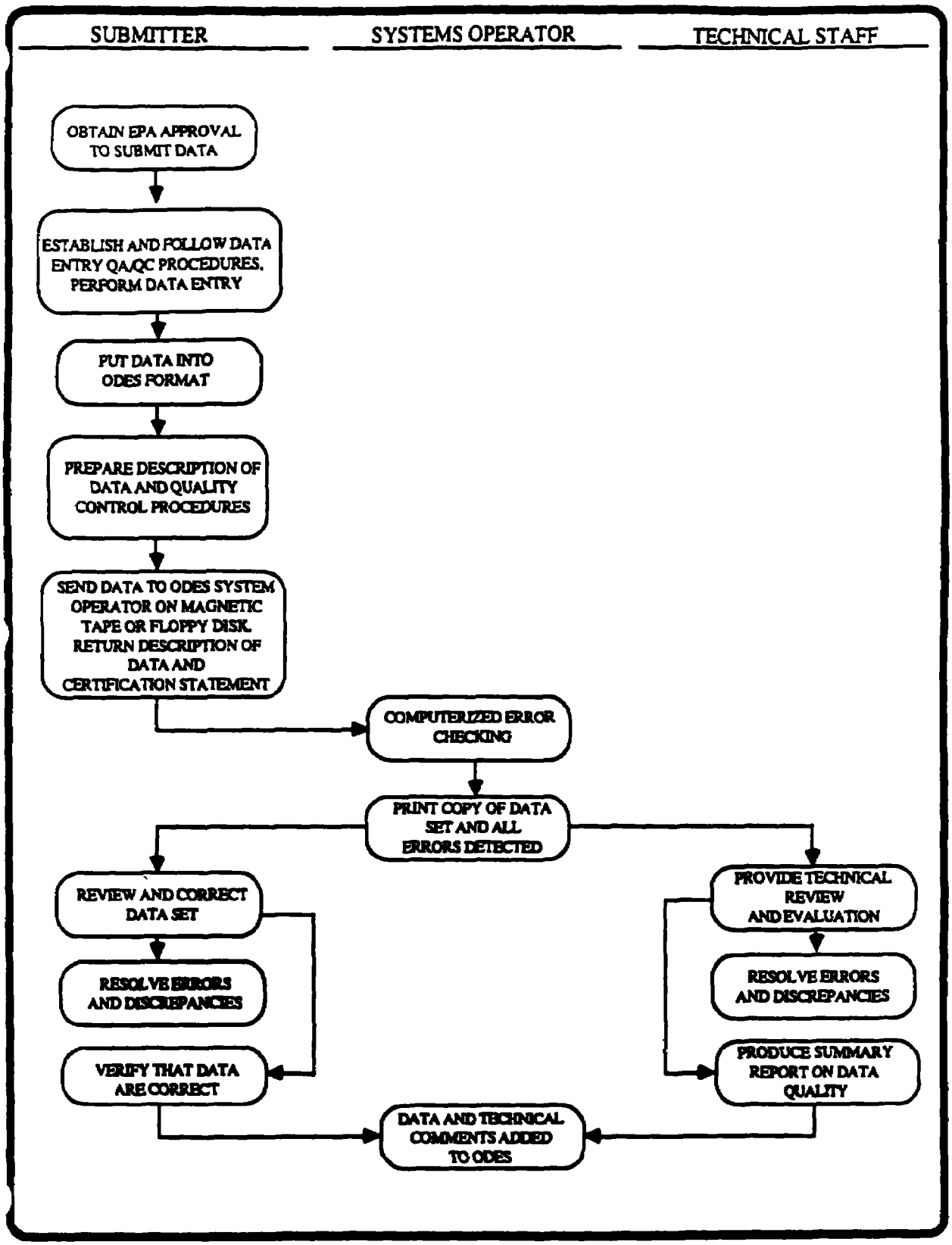
Mr. Robert King
ODES Manager
Marine Operations Division
Office of Marine and Estuarine Protection
U.S. Environmental Protection Agency
401 M Street, S.W. (Mail Code: WH-556F)
Fairchild Building
Washington, D.C. 20460
(202) 475-7119

Exhibit I-A-1

Checklist of Data Submitter Responsibilities

- ❑ Obtain EPA approval to submit data.
- ❑ Perform quality control checks during data entry.
- ❑ Enter data into ODES format.
- ❑ Prepare a description of the data set, including a discussion of all quality control procedures followed during data collection, analysis, and entry.
- ❑ Certify that data are accurate.
- ❑ Send data, data set description, and data certification statement to the ODES Staff.
- ❑ Review hard copy of data and listing of errors detected during machine checks of information.
- ❑ Provide verification statement regarding any necessary data revisions or corrections to the ODES Technical Reviewers.
- ❑ Provide the ODES Technical Reviewers with additional information, as needed, to evaluate the quality of the data.

EXHIBIT I-A-2


SUBMITTER
SYSTEMS OPERATOR
TECHNICAL STAFF
OBTAIN EPA APPROVAL TO SUBMIT DATA
ESTABLISH AND FOLLOW DATA ENTRY QA/QC PROCEDURES. PERFORM DATA ENTRY
PUT DATA INTO ODES FORMAT
PREPARE DESCRIPTION OF DATA AND QUALITY CONTROL PROCEDURES
SEND DATA TO ODES SYSTEM OPERATOR ON MAGNETIC TAPE OR FLOPPY DISK. RETURN DESCRIPTION OF DATA AND CERTIFICATION STATEMENT
COMPUTERIZED ERROR CHECKING
PRINT COPY OF DATA SET AND ALL ERRORS DETECTED
REVIEW AND CORRECT DATA SET
RESOLVE ERRORS AND DISCREPANCIES
VERIFY THAT DATA ARE CORRECT
PROVIDE TECHNICAL REVIEW AND EVALUATION
RESOLVE ERRORS AND DISCREPANCIES
PRODUCE SUMMARY REPORT ON DATA QUALITY
DATA AND TECHNICAL COMMENTS ADDED TO ODES

Each request will be forwarded to the appropriate program office at the the EPA Regional Office and OMEP. Requests should include (1) a brief description of the study objectives, (2) a summary of the dates and locations where data were collected, (3) the types of data to be included (i.e., benthic infauna, trawl/seine, water quality, sediment pollutants, influent/effluent, sediment grain size, fish pathology, bioaccumulation, bacterial, or bioassay), (4) an estimate of the volume of data, (5) the name of the organization(s) that collected the data and performed laboratory analysis, and (6) the name of an individual who can be contacted for questions about the data.

2 Data Entry Quality Control:

Data submitters are obligated to establish and vigorously adhere to quality control procedures when entering their data. Submitters are responsible for data entry QA/QC and for the correction of errors. Mistakes often occur at two steps in the data entry process (1) during the transcription of information from field and laboratory data sheets to data coding forms, and (2) during the entry of data from coding forms at a computer terminal. All submitters must double check their work at both of these critical points. Possible types of checks include:

- Inspection of Coding Forms - after laboratory data is coded onto data entry forms, a portion of the entries (10-20%) are examined to ensure that there are no errors

- Double Entry - the data are entered twice at a terminal and then compared; records that do not match are scanned for errors

- Sub-Sampling and Visual Inspection - the data are entered into a local computer, a copy of the data is printed, and a portion of the entered data (10-20%) is visually compared with the original laboratory data sheets.

When data are mailed to the ODES System Operator, submitters must describe the verification procedures that were followed during the two important phases of data entry.

3. Put Data into ODES Format:

Once approval to submit data has been granted by EPA, the submitter is responsible for compiling information into the standard ODES format. Chapters II through XV of this manual contain a complete description of these formats, including data fields and acceptable codes.

While entering data into the ODES format, submitters may have questions or find that they need new code assignments. In particular, new biological species codes must frequently be added to accommodate the entry of new organisms into the data base. All questions and requests for new codes should be directed to the ODES Technical Staff at the following address:

ODES Technical Staff
Tetra Tech, Inc.
11820 Northup Way, Suite 100
Bellevue, WA 98005

(206) 822-9596

Under no circumstances should submitters assign their own codes without prior approval of the Technical Staff.

A new field (series number) has been established to enable ODES submitters to classify data. A "series number" is a means of identifying a sub-group of data within a data set. Some applications include the following examples:

- To distinguish benthic data from quarterly and semiannual sampling programs with different numbers of replicates
- To correlate effluent and water-quality samples taken at high- and low-flow conditions, even on the same day
- To distinguish fish pathology samples that received different preservation treatments
- To distinguish between PCB analyses carried out using techniques that differed in ways that cannot be coded with the analytical method codes.

As these examples illustrate, the meaning of the series number is entirely dependent upon the submitter and data type. A given series number will have no intrinsic meaning to ODES; it is the user-defined code that will distinguish between different sub-groups ofdata. It is the responsibility of the submitters to ensure that the meaning of each series number is explained in the data description forms which accompany each data set submitted to ODES.

4. Prepare Description of Data and Quality Control Procedures:

A description of the data for each ODES file type submitted must be prepared by the originator. Required information includes descriptions of the sampling scheme, series number, sample handling and storage methods, analytical techniques, as well as the quality control procedures followed during sample collection, analysis, and entry of data into the ODES format. Guidelines for the preparation of the data set description will be supplied by the ODES Technical Staff when the originator's request to submit data is approved by the EPA. These data set descriptions should be returned to the ODES Technical Reviewers at the time the data are submitted. This descriptive information will be used during the technical evaluation of the data.

5. Send Data to ODES Staff:

Properly formatted data can be transferred to the ODES System Operator at the following address:

ODES System Operator
American Management Systems, Inc.
1777 N. Kent St., Room 730
Arlington, VA 22209

(703) 841-6109

Data can be submitted in one of three forms: magnetic tape, floppy disk, or standardized coding forms (small data sets only). Magnetic tapes should have the following characteristics:

- 9-track
- EBCDIC character set
- Either 1600 BPI with density=3 or 6250 BPI with density=4
- Fixed Block Records (RECFM=FB)
- Logical Record Length of 132 (LRECL=132)
- Block Size of 1320 (BLKSIZE=1320)

Floppy disks must contain ASCII files and be IBM-PC DOS compatible. Contact the System Operator prior to sending data to ensure the compatibility of magnetic tape or floppy disk formats. The submission of information on coding forms is restricted to very small data sets. Use of these forms must be approved by the EPA ODES Manager prior to submission.

Once the data have been transferred to the appropriate medium, these storage units should be mailed to the ODES System Operator. A description of the data and any quality assurance or control procedures followed should be sent to the ODES Technical Staff at the same time. A signed certification statement attesting the accuracy of the data should be included.

6. Computerized Machine Checks for Valid Formats, Codes, and Data Ranges:

When the data are received by the ODES System Operator, they are screened using verification algorithms which assure that (1) data are in valid ODES format, (2) only acceptable ODES codes are used, and (3) the data ranges for numeric variables fall within realistic limits. All records which fail to pass these computerized checks are listed. This list is sent to the Technical Reviewers and the data submitter for correction and clarification. Additional computer-generated summaries and copies of the raw data are produced and provided to the Technical Reviewers and the data submitters.

7. Technical Review and Evaluation:

ODES Technical Reviewers designated by EPA's Marine Operations Division (MOD) conduct an evaluation of the data set based on the submitter's descriptions and error checks, and summaries produced by the ODES System Operator. Specific items addressed during data review include sample collection, sample handling, quality control procedures, analytical methods, and detection limits. For applicants submitting data in conjunction with the 301(h) program, data must have been collected and checked in accordance with EPA guidance documents and procedures (see Appendix D). If needed, the ODES Technical Reviewers will contact the data submitter with questions concerning any of these matters.

Printed copies of the data set as received by the ODES System Operator, including the results of the computerized checks, will be provided to the data submitter for review and identification of any errors. The submitter will supply any data revisions and instructions for error corrections to the Technical Reviewer. If substantial modifications are in order, a new data set will be requested from the originator. Once all errors are identified and

missing or revised data are provided, the submitter will be required to certify that the data are accurate. The ODES Staff will then correct the data files. After the technical review is complete and any identified errors have been resolved, a technical evaluation report will be prepared, and a copy will be provided to the data submitter and to the regional ODES Coordinator.

8. Addition of Data to ODES:

Upon completion of this process, the ODES Staff will add the information to the ODES database. A summary of the comments from the technical evaluation report are added to the system at the same time. ODES users can view these comments using the data reference system accessed through ODES Basic Option "C", to scan the contents of the database. Please refer to the ODES User's Guide for details on this option.

C. ODES File Types, Codes, and Hierarchical Record Structure

ODES can accommodate many different kinds of environmental data, including the following:

- Benthic Infauna
- Bioaccumulation
- Fish Pathology
- Influent and Effluent Measurements
- Receiving Water Quality
- Sediment Grain Size
- Sediment Pollutants
- Trawl/Seine Catches
- Bioassays
- Plankton Abundance
- Primary Productivity
- Fish and Shellfish Landings
- Ocean Currents
- Bacterial and Viral Contamination

To accomodate this variety of data, ODES has adopted certain standard data file formats established by the NODC. ODES also uses certain codes established by NODC for the representation of particular kinds of information.

A specific format has been established for submission of each of the kinds of data shown above. These formats all have the same underlying structure in which hierarchically-related records describe the data set in successively greater detail. Records at each level of the hierarchy are linked to higher and lower levels by shared data.

Each data record has an internal structure that is specific to the file type and level. Data are stored in fields of these records. Each field is designed to accomodate a particular kind of data, and the order of these fields, the spacing between them, and the format of their contents are carefully defined to allow unambiguous and error-free entry of data.

There are three fundamental types of data fields: numeric, alphanumeric, and code. Numeric fields contain only numbers, alphanumeric fields contain either numbers or letters, and code fields contain only members of the appropriate code type. Numeric values should be right-justified in their field, alphanumeric data should be left-justified, and code elements should always completely fill the field.

The actual contents of the records for each file type, and their links to higher and lower levels, are described in the subsequent chapters.

D. Coding Assistance

Dedicated ODES User Support telephone lines have been established to provide rapid support for data submitters. Technical questions pertaining to the preparation of a data set for submission to ODES may be directed to one of the following numbers:

(206) 822-9596	9 PM - 5 PM Pacific Time Zone
(703) 841-6109	9 AM - 6 PM Eastern Time Zone

Please ask for ODES User Support.

E. Summary

The QA/QC steps outlined in this chapter are an important component of the ODES system and will benefit all ODES users. By following the steps listed in Table I-A-1 and using the procedures provided in the following chapters, data submitters can add important information to ODES and maximize its usefulness.

II. ODES File Type 132 for Benthic Survey Data

A. Introduction

ODES File Type 132 for Benthic Survey Data can be used to report species abundance and biomass data from benthic samples. This chapter describes how to compile and submit to the ODES Staff a data set containing benthic survey data. The data set will consist of a set of different record types arranged in a hierarchical order. Section B of this chapter provides an illustration of each of the different record types and explains the hierarchical relationships among them. Section C contains detailed instructions for compiling your data set. The instructions for each of the data elements include information such as the length of the field, the type of data (e.g., numeric, character), and a description of the data element. In cases where a data element is a code (e.g., a two-character code for type of sampling equipment), a list of valid codes will accompany the data element description. In some cases, however, where the list of data entry codes is long (e.g., two-character codes to describe the ocean bottom), you will be referred to Appendix C. A list of selected NODC taxonomic codes for marine species (or higher level taxa groups) is provided in Appendix B. If you are unable to locate a taxon in the list, please contact the ODES Technical Staff for additional taxonomic codes. Do not independently assign new taxonomic codes.

B. Hierarchical Relationships

ODES File Type 132 is composed of five record types:

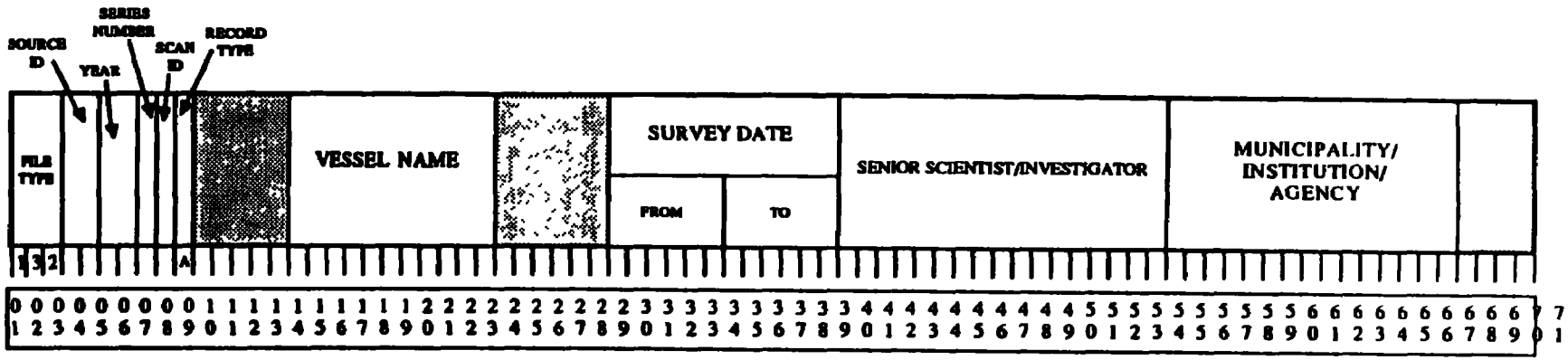
- Record Type "A" is the Survey Header Record. It is used to report information common to the entire data set (e.g., survey dates; investigator's name).
- Record Type "C" is the Station Header Record. It is used to report information about the station where the sample was collected (e.g., station location; water depth).
- Record Type "E" is the Bottom Characteristics Record. It is used to report information about the conditions of the floor where each sample is collected (e.g., bottom type; core segment depth).
- Record Type "F" is the Species Abundance Data Record. It is used to report species abundance counts.
- Record Type "G" is the Biomass Data Record. It is used to report biomass for each species or higher level taxa group.

Exhibit II-B-1 provides an illustration of the structure of each of these record types. These record images, in conjunction with the detailed instructions provided in Section C, will enable you to quickly and accurately complete individual data entry sheets (or enter this data onto tape or disk) for each of the record types.

In addition, it is also necessary to understand the relationships among the different record types so that you can compile a comprehensive data set in the proper hierarchical format. The hierarchical order described herein is designed to minimize the duplication of data entry tasks and is in accordance with standards adopted by the National Oceanographic Data Center (NODC). The relationships are straightforward, and taking just a few minutes now to understand them could save you considerable time and effort later.

EXHIBIT II-B-1
ODES FT132 for Benthic Survey Data

Survey Header Record



Station Header Record

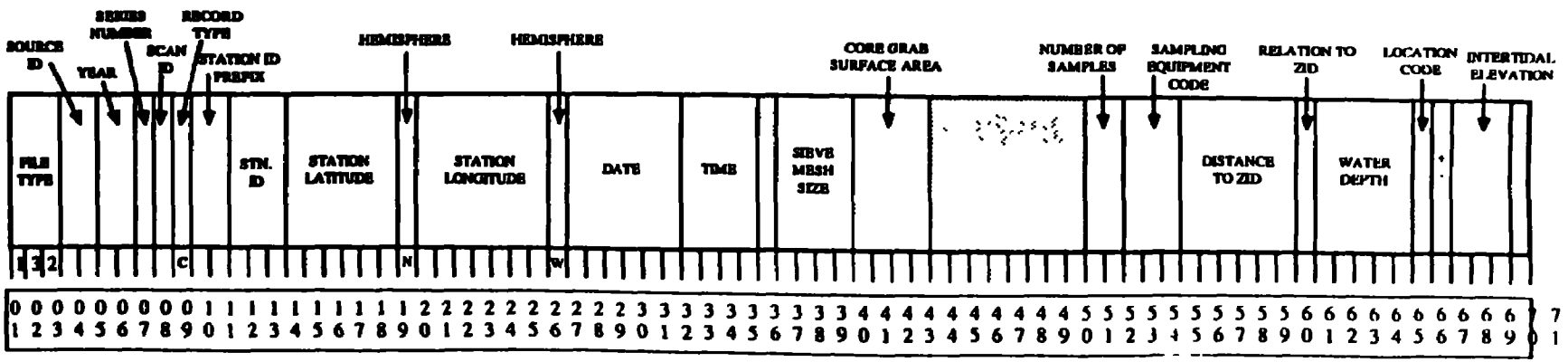
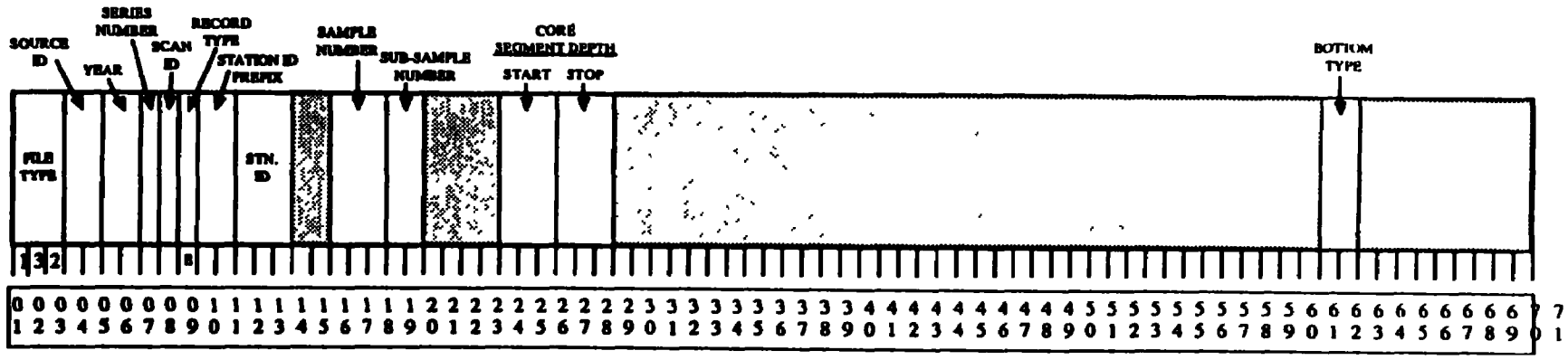


EXHIBIT II-B-1 (Cont'd)

Bottom Characteristics Record



Species Abundance Data Record

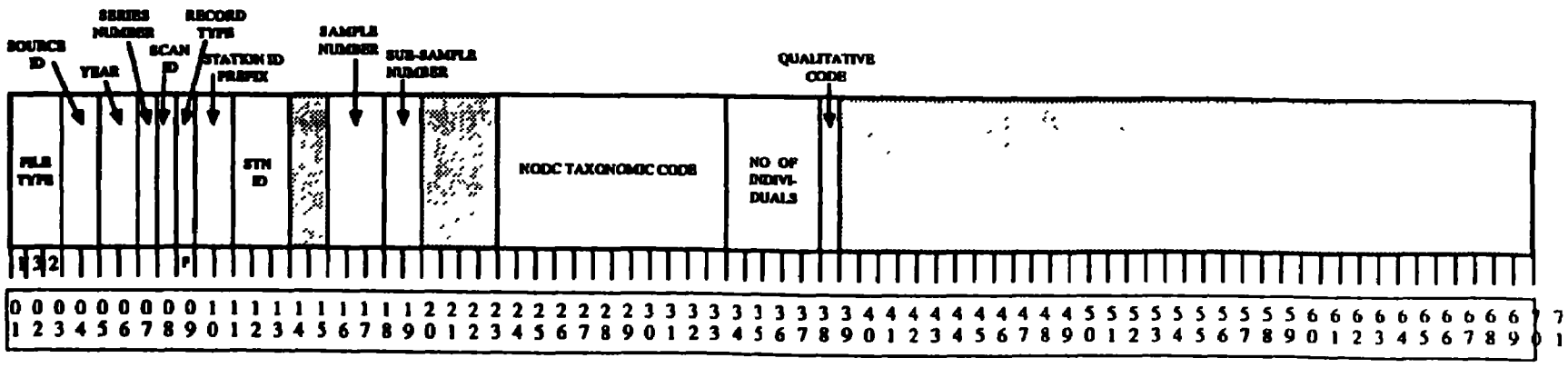
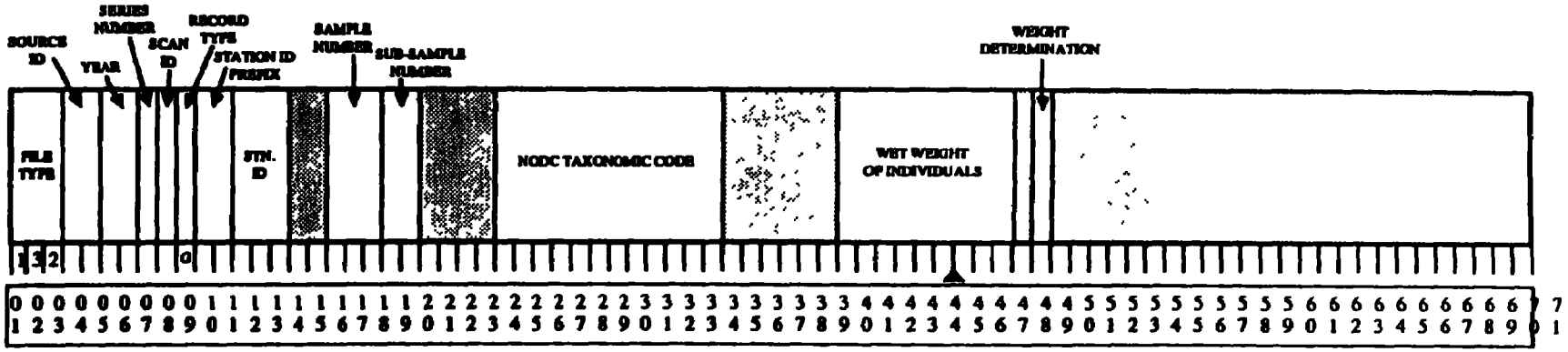


EXHIBIT II-B-1 (Cont'd)

Biomass Data Record



As shown above, different record types report information at different logical levels. For example, the Survey Header Record (Record Type "A") reports information common to the entire survey data set, whereas the Species Abundance Data Record (Record Type "F") reports information about each of the samples taken during the survey. Thus, there will be only one Survey Header Record, but there will typically be many Species Abundance Data Records.

Exhibit II-B-2 shows how the record types would be arranged in a data set reporting information from a survey conducted at one station, where two samples were taken at each station.

If you have any questions about how to complete your data entry sheets or how to compile your data, please contact the ODES Staff. (See the Preface for address and telephone information.)

C. Detailed Data Element Descriptions

Detailed descriptions for all of the data elements in ODES File Type 132 for Benthic Survey Data are provided below. All record types for a given data set will share the same nine-character file identifier. This file ID consists of three characters to identify the file type -- i.e., "132" -- followed by a two-character abbreviation for the municipality/institution/agency conducting the survey, the last two digits of the year in which the survey was taken, a series number assigned by the investigator and a scan code to indicate sampling frequency and collection period.

The contents of all numeric fields should be right-justified, preceded by either blanks, zeroes, or where applicable, positive (+) or negative (-) signs. All decimal points are implied rather than physically included (see Exhibit II-B-1). The contents of all character fields should be left justified, blank-filled.

Survey Header Record

This record is mandatory and should be submitted only once for each data set. See Exhibit II-C-1 for a description of all data elements in this record.

Station Header Record

This record is mandatory; one record should be generated for each sampling station. Stations should be uniquely identified by the Station ID Prefix and Station ID fields (columns 11-15) See Exhibit II-C-2 for a description of all data elements in this record.

Bottom Characteristics Record

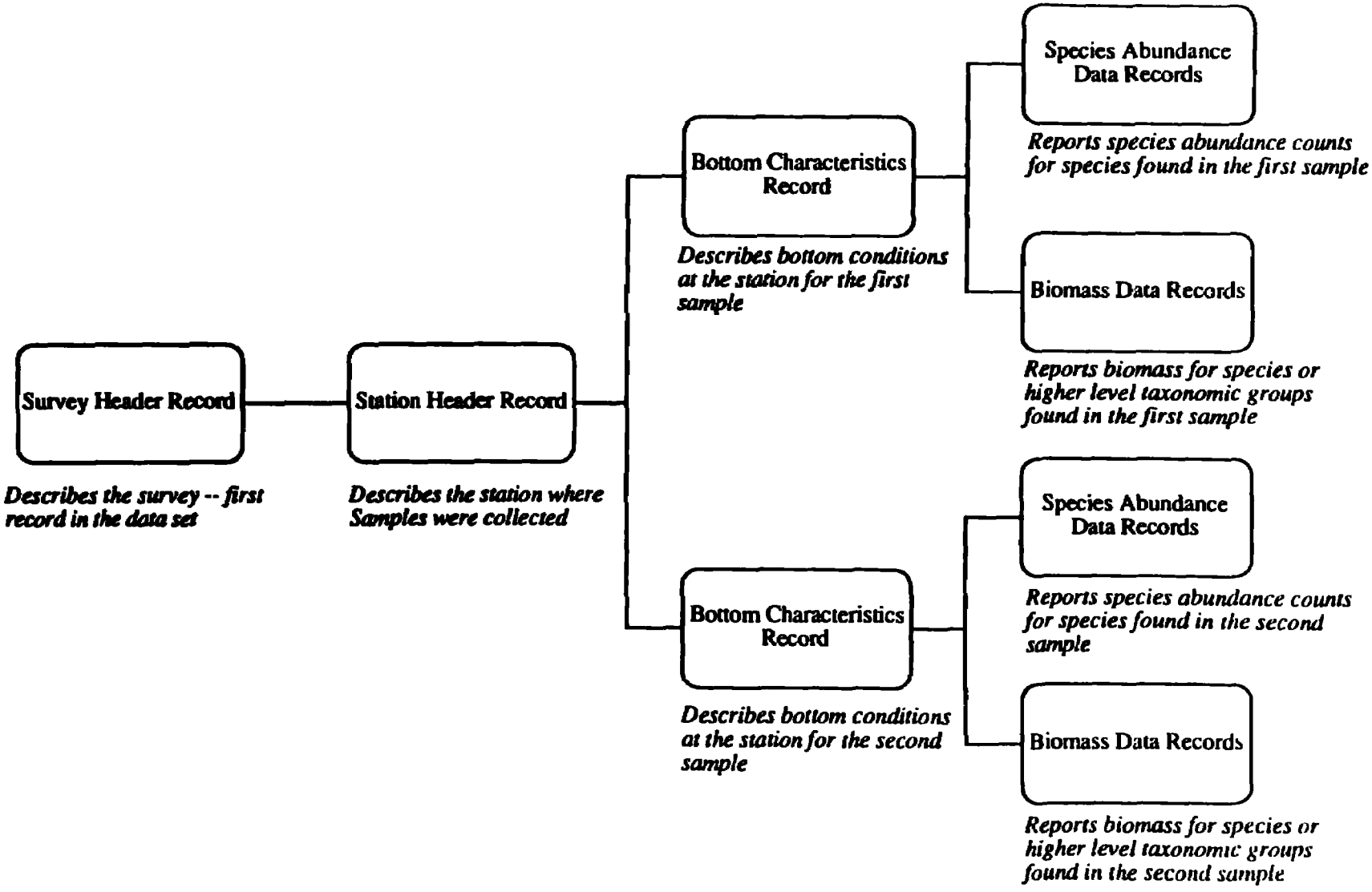
This record is mandatory; one record should be generated for each sample. See Exhibit II-C-3 for a description of all data elements in this record.

Species Abundance Data Record

This record reports species abundance data for each species collected in the sample. These data records are linked to Bottom Characteristics Records by the Sample Number or the Sub-Sample Number (if appropriate). See Exhibit II-C-4 for a description of all data elements in this record.

EXHIBIT II-B-2

Benthic Survey Data Order of Record Types/Reason for Occurrence



Biomass Data Record

This record reports biomass data for species or higher level groups of taxa collected in the sample. These data records are linked to Bottom Characteristics Records by the Sample Number or Sub-sample Number (if appropriate). See Exhibit II-C-5 for a description of all data elements in this record.

D. Data Entry Codes

This section contains a list of all the code types used in ODES File Type 132 for Benthic Survey Data. The codes are listed by their identifiers and the fields in which they are to be used. The elements of these code types are listed in the appendices: Appendix A contains ODES Chemical and Water Quality Codes, Appendix B contains NODC/ODES Taxonomic Codes, and Appendix C contains all other ODES code types.

Code Identifier	Field Name
0255	Sampling Equipment code
EPA-1	Relation to ZID
0346	Station Location code
0077	Bottom Type
0012	Qualifier code
NODC	Taxonomic code
EPA-10	Scan ID
0161	Weight Determination

EXHIBIT II-C-1
Survey Header Record

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "132".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This number appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "A".
11	5	Blank	BLANK.
16	11	Alpha	VESSEL - identity of the survey vessel or platform.
27	6	Blank	BLANK.
33	6	YYMMDD	SURVEY DATE FROM - start of survey sampling date. YY is the last 2 digits of the year, MM is the month (01-12), DD is the day (01-31).
39	6	YYMMDD	SURVEY DATE TO - end of survey sampling date. YY is the last 2 digits of the year. MM is the month (01-12). DD is the day (01-31).

EXHIBIT II-C-1 (Cont'd)
Survey Header Record

Starting Column	Length of Field	Field Format	Description
45	17	Alpha	SENIOR SCIENTIST/INVESTIGATOR - name of the senior scientist or investigator.
62	15	Alpha	MUNICIPALITY/INSTITUTION/AGENCY - name of the investigator's institution.
77	4	Blank	BLANK.

EXHIBIT II-C-2
Station Header Record

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "132".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This number appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "C".
11	2	Alphanumeric	STATION IDENTIFICATION PREFIX - a two- character code to indicate that a station has been revisited during a survey. Leave blank for first occupation. Valid codes for reoccupations of the station are R1-R9.
13	3	Alphanumeric	STATION IDENTIFIER - three characters assigned by the investigator to identify the sampling station.
16	6	DDMMSS	STATION LATITUDE - latitude of station in degrees (DD), minutes (MM), and seconds (SS).
22	1	Code	HEMISPHERE - set to "N".

EXHIBIT II-C-2 (Cont'd)
Station Header Record

Starting Column	Length of Field	Field Format	Description
23	7	DDDMMSS	STATION LONGITUDE - longitude of station in degrees (DDD), minutes (MM), and seconds (SS).
30	1	Code	HEMISPHERE - set to "W".
31	6	YYMMDD	DATE - date of sample collection. YY is the last two digits of the year. MM is the number (01-12) of the month. DD is the day (01-31).
37	4	HHMM	TIME - time of sample collection in 24-hour format (Standard Time). HH is the hour (00-23). MM is the number of minutes (00-59).
41	1	Blank	BLANK.
42	4	Numeric	SIEVE MESH SIZE - mesh size of the sieve used to remove organisms from sediment, in millimeters with two decimal places.
46	4	Numeric	CORE GRAB SURFACE AREA - surface area of core or grab in square meters with three decimal places.
50	8	Blank	BLANK.
58	2	Numeric	NUMBER OF SAMPLES - total number of samples collected at the station for this survey event (e.g., number of replicate grab samples).
60	3	Code	SAMPLING EQUIPMENT CODE - a three-character code for the type of equipment used to collect samples. Use Code No. 0255. (See Appendix C for a list of codes.)
63	6	Numeric	DISTANCE TO ZID - six digits for the distance in meters from the station to the edge of the zone of initial dilution (ZID). This field is only applicable to EPA's 301(h) program. Leave this field blank for stations not classified as part of a 301(h) monitoring program.

EXHIBIT II-C-2 (Cont'd)
Station Header Record

Starting Column	Length of Field	Field Format	Description
69	1	Code	RELATION TO ZID - a one-character code to describe the classification of the station with respect to the ZID. Leave this field blank for all stations not classified as part of a 301(h) monitoring program. Where applicable, use Code No. EPA-1: W -- Within ZID B -- ZID Boundary N -- Near Field R -- Reference F -- Far Field
70	5	Numeric	WATER DEPTH - depth at station in meters with one decimal place.
75	1	Code	STATION LOCATION CODE - a one-character code to describe the location of the station. Use Code No. 0346: A -- Stream B -- Estuary C -- Lake D -- Ocean E -- Well F -- Other
76	1	Symbolic	INTERTIDAL ELEVATION SIGN - Sign (+/-) for intertidal elevation.
77	3	Numeric	INTERTIDAL ELEVATION - intertidal station elevation in meters with one decimal place.
80	1	Blank	BLANK.

EXHIBIT II-C-3
Bottom Characteristics Record

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "132".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This number appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "E".
11	2	Alphanumeric	STATION IDENTIFICATION PREFIX - a two- character code to indicate that a station has been revisited during a survey. Leave blank for first occupation. Valid codes for reoccupations of the station are R1-R9.
13	3	Alphanumeric	STATION IDENTIFIER - three characters to identify the sampling station.
16	2	Blank	BLANK.
18	3	Alphanumeric	SAMPLE NUMBER - three digits to identify each sample. Sample Numbers are assigned by the investigator.

EXHIBIT II-C-3 (Cont'd)
Bottom Characteristics Record

Starting Column	Length of Field	Field Format	Description
21	2	Numeric	SUB-SAMPLE NUMBER - two digits to uniquely identify sub-samples. This field will usually be left blank. Sub-sample Numbers must be provided only if a sample (e.g., a box-core sample) is divided into separate components (e.g., four replicate sub-samples).
23	4	Blank	BLANK.
27	3	Numeric	CORE SEGMENT START DEPTH - top depth of core segment in centimeters (cm) to one decimal place.
30	3	Numeric	CORE SEGMENT STOP DEPTH - bottom depth of core segment in centimeters (cm) to one decimal place.
33	37	Blank	BLANK.
70	2	Code	BOTTOM TYPE - a two-character code to describe the specific bottom type. Use Code No. 0077. (See Appendix C for a list of codes).
72	9	Blank	BLANK.

EXHIBIT II-C-4
Species Abundance Data Record

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "132".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This number appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "F".
11	2	Alphanumeric	STATION IDENTIFICATION PREFIX - a two- character code to indicate that a station has been revisited during a survey. Leave blank for first occupation. Valid codes for reoccupations of the station are R1-R9.
13	3	Alphanumeric	STATION IDENTIFIER - three characters to identify the sampling station.
16	2	Blank	BLANK.
18	3	Alphanumeric	SAMPLE NUMBER - a three-digit number to identify each sample. Sample Numbers are assigned by the investigator.

EXHIBIT II-C-4 (Cont'd)
Species Abundance Data Record

Starting Column	Length of Field	Field Format	Description
21	2	Numeric	SUB-SAMPLE NUMBER - a two-digit number to uniquely identify sub-samples. This field will usually be left blank. Sub-sample Numbers must be provided only if a sample (e.g., a box-core sample) is divided into separate components (e.g., four replicate sub-samples).
23	4	Blank	BLANK.
27	12	Code	NODC TAXONOMIC CODE - a twelve-digit numerical code assigned to a taxon by NODC. Refer to the master species list provided by the ODES Staff (see Appendix B). For unlisted taxa, contact the ODES Technical Staff. Do not independently assign new codes.
39	5	Numeric	NUMBER OF INDIVIDUALS - total number of individuals per taxon for sample unit measured.
44	1	Code	QUALITATIVE CODE - a one-character code used to describe taxon quality as it pertains to counts. Use Code 0012: 1 -- Organism Present in the Sample, But Not Counted 2 -- Fragments of an Organism, But No Whole Organism 3 -- Colonial Organisms That Cannot Be Individually Counted
45	36	Blank	BLANK.

EXHIBIT II-C-5
Biomass Data Record

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "132".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This number appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "G".
11	2	Alphanumeric	STATION IDENTIFICATION PREFIX - a two-character code to indicate that a station has been revisited during a survey. Leave blank for first occupation. Valid codes for reoccupations of the station are R1-R9.
13	3	Alphanumeric	STATION IDENTIFIER - three characters to identify the sampling station.
16	2	Blank	BLANK.
18	3	Numeric	SAMPLE NUMBER - a three-digit number to identify each sample. Sample Numbers are assigned by the investigator.

EXHIBIT II-C-5 (Cont'd)
Biomass Data Record

Starting Column	Length of Field	Field Format	Description
21	2	Numeric	SUB-SAMPLE NUMBER - a two-digit number to uniquely identify sub-samples. This field will usually be left blank. Sub-sample Numbers must be provided only if a sample (e.g., a box-core sample) is divided into separate components (e.g., four replicate sub-samples).
23	4	Blank	BLANK.
27	12	Code	NODC TAXONOMIC CODE - a twelve-digit numerical code assigned to a taxon by NODC. Refer to the master species list provided in Appendix B. For unlisted taxa, contact the ODES Technical Staff. Do not independently assign new codes. If biomass data are reported for major taxa only, use the following ODES codes to indicate major group: Polychaetes — Bivalves Molluscs — Gastropods Echinoderms — Tot-Biomass Crustaceans — Ophiuroids Arthropods Misc.
39	6	Blank	BLANK.
45	9	Numeric	WET WEIGHT OF INDIVIDUALS - total wet weight of individuals for above species (or higher level taxa group), in grams with three decimal places.
54	1	Blank	BLANK.

EXHIBIT II-C-5 (Cont'd)
Biomass Data Record

Starting Column	Length of Field	Field Format	Description
55	1	Numeric	WEIGHT DETERMINATION -- a one-character code for method of determining wet weight of individuals. Use Code No. 0161: 1 -- Total catch of species weighted 2 -- Prorated on basis of subsample 3 -- Rough estimate 4 -- Total catch not included in recorded weight
56	25	Blank	BLANK.

III. ODES File Type 144 for Bioaccumulation Data

A. Introduction

ODES File Type 144 for Bioaccumulation Data can be used to report concentrations of any pollutant or contaminant found in tissue samples of marine organisms. This chapter describes how to compile and submit to the ODES Staff a data set containing bioaccumulation data. The data set will consist of a set of different record types arranged in a hierarchical order. Section B of this chapter provides an illustration of each of the different record types and explains the hierarchical relationships among them. Section C contains detailed instructions for compiling your data set. The instructions for each of the data elements include information such as the length of the field, the type of data (e.g., numeric, character), and a description of the data element. In most cases where a data element is a code (e.g., a two-character code for type of sampling gear), a list of valid codes will accompany the data element description. In some cases, however, where the list of data entry codes is long (e.g., codes for chemical analysis methods), you will be referred to the Appendices. ODES Chemical Codes for identifying pollutants are listed in Appendix A, NODC Taxonomic Codes for marine species (or higher level taxa groups) are listed in Appendix B, and other codes are listed in Appendix C. If you are unable to locate a needed code in these lists, please contact the ODES Technical Staff. Do not independently assign new codes.

B. Hierarchical Relationships

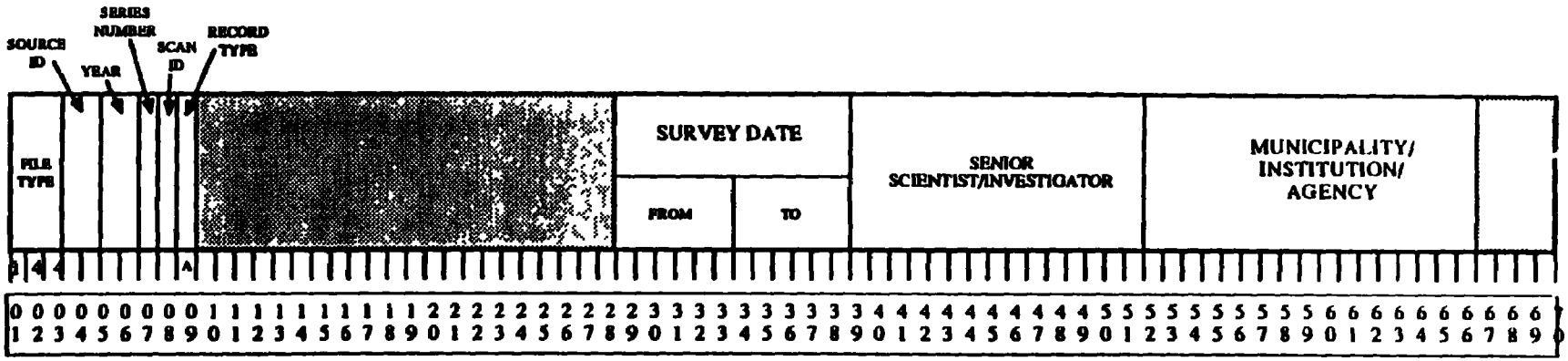
This version of File Type 144 is composed of five record types:

- Record Type "A" is the Survey Header Record. It is used to report information common to the entire data set (e.g., survey dates; investigator's name).
- Record Type "Z" is the Header Record for Quality Assurance Samples. It is used to identify data for analytical blanks or other quality assurance samples referred to within the data set.
- Record Type "C" is the Station Header Record for Samples. It is used to report information about the station where the sample was collected (e.g., station location, water depth).
- Record Type "E" is the Sample Record. It is used to report information about each sample (e.g., organ sampled, wet weight).
- Record Type "F" is the Data Record. It is used to report information on pollutant concentrations found in each of the tissue samples.

Exhibit III-B-1 provides an illustration of the structure of each of these record types. These record images, in conjunction with the detailed instructions provided in Section C, will enable you to quickly and accurately complete individual data entry sheets (or enter this data onto tape or disk) for each of the record types.

EXHIBIT III-B-1
ODES FT144 for Bioacumulation Data

Survey Header Record



Header Record for Quality Assurance Samples

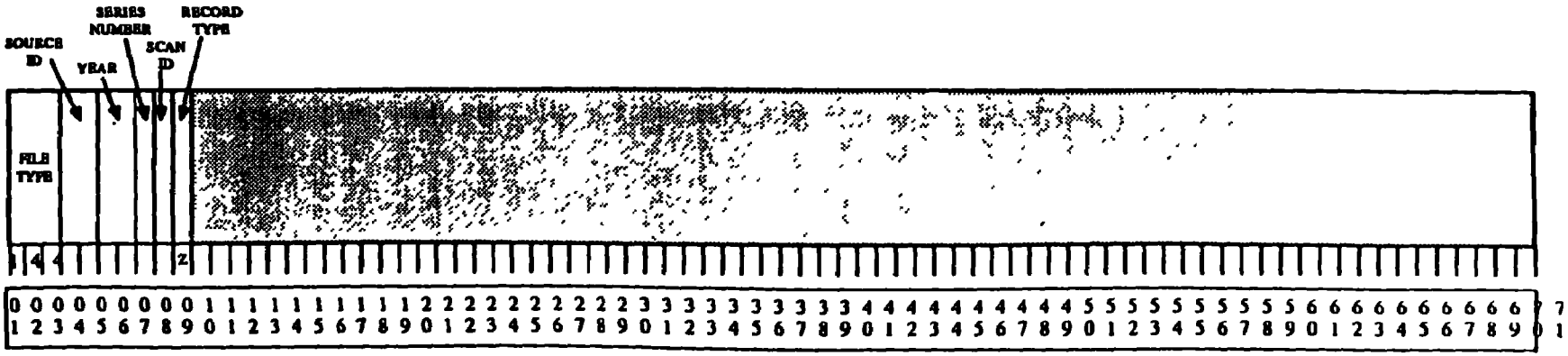
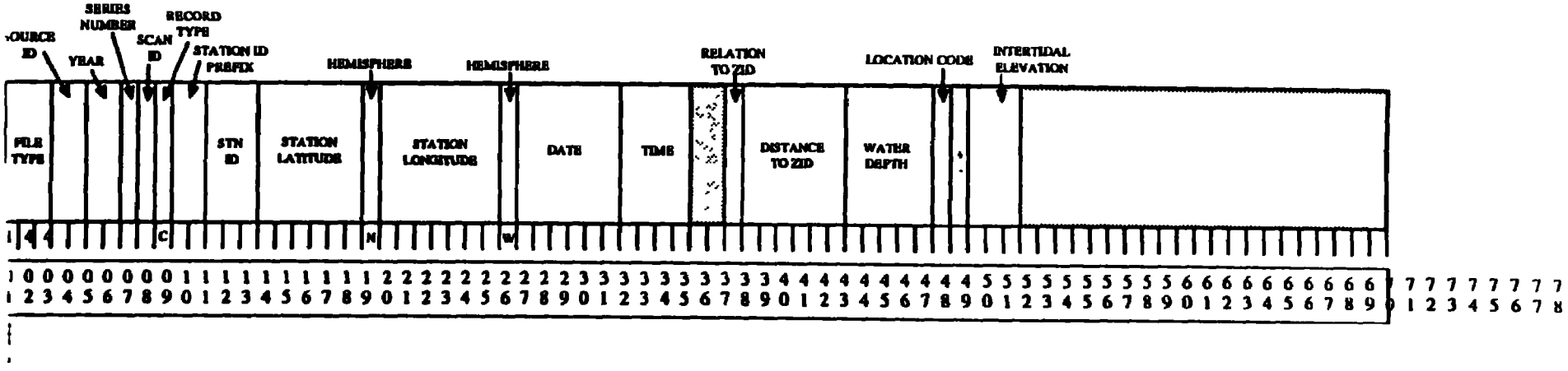


EXHIBIT III-B-1 (Cont'd)

Station Header Record



Sample Record

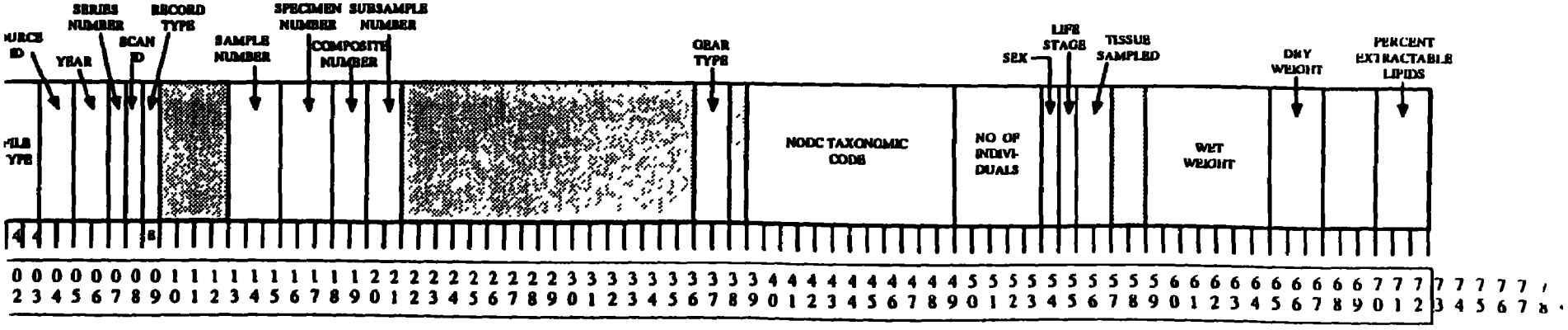
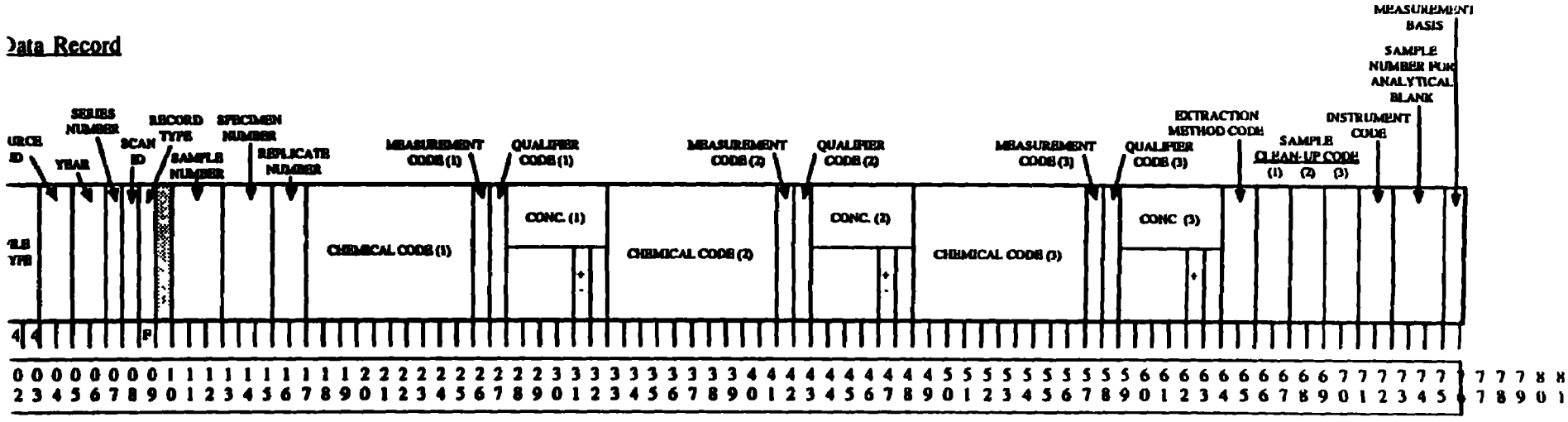


EXHIBIT III-B-1 (Cont'd)

Data Record



In addition, it is also necessary to understand the relationships among the different record types so that you can compile a comprehensive data set in the proper hierarchical format. The hierarchical order described herein is designed to minimize the duplication of data entry tasks and is in accordance with standards adopted by the National Oceanographic Data Center (NODC). The relationships are straightforward and taking just a few minutes now to understand them could save you considerable time and effort later.

As shown above, the different record types report information at different logical levels. For example, the Survey Header Record (Record Type "A") reports information common to the entire survey data set, whereas the Sample Record (Record Type "E") reports information about each of the samples taken during the survey. Thus, there will be only one Survey Header Record per data set, but there will typically be multiple Sample Records.

Exhibit III-B-2 shows how the different record types would be arranged in a data set reporting data from a survey conducted at one sampling station where one sample (e.g., a trawl) was collected. Two organs from two specimens were examined. Data for quality assurance samples (e.g., analytical blanks) are reported first, followed by data for the first specimen and the second specimen.

If you have any questions about how to complete your data entry sheets or how to compile your data, please contact the ODES Staff. (See the Preface for address and telephone information.)

C. Detailed Data Element Descriptions

Detailed descriptions for all of the data elements in ODES File type 144 for Bioaccumulation Data are provided below. All record types for a given data set will share the same nine-character file identifier. This file ID consists of three characters to identify the file type -- i.e., "144" -- followed by a two-character abbreviation for the municipality/institution/agency conducting the survey, the last two digits of the year in which the survey was taken, a series number assigned by the investigator and a scan code to indicate sampling frequency and collection period.

The contents of all numeric fields should be right-justified, preceded by either blanks, zeroes, or where applicable, positive (+) or negative (-) signs. The contents of all decimal points are implied rather than physically included (see Exhibit III-B-1). All character fields should be left justified, blank-filled.

Survey Header Record

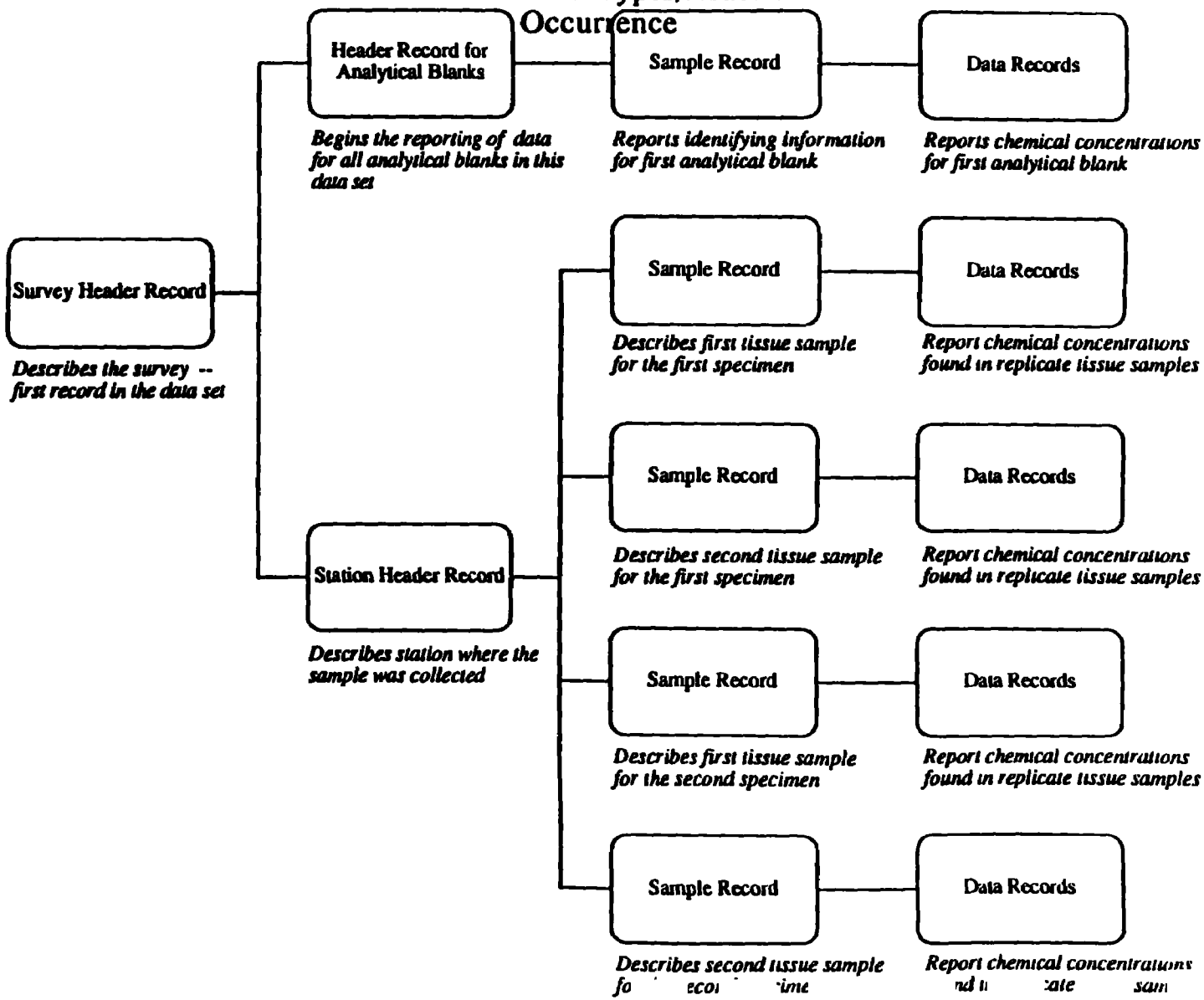
This record is mandatory and should be submitted only once for each data set. See Exhibit III-C-1 for a description of all data elements in this record.

Header Record for Quality Assurance Samples

This record is used to identify data for all quality assurance (QA) samples recorded in the data set. All QA sample measurements (e.g., field, laboratory, or transport blanks or spiked matrix samples) should be reported within this level of the hierarchy. See Exhibit III-C-2 for a description of all data elements in this record. (See Exhibit III-B-2 for a description of how data records for QA samples should be organized within the data set.)

EXHIBIT III-B-2

Bioaccumulation Data
Order of Record Types/Reason for Occurrence



Station Header Record

This record is mandatory; one record must be generated for each sampling station. Stations should be uniquely identified by the Station ID Prefix and Station ID fields (columns 11-15). See Exhibit III-C-3 for a description of all data elements in this record.

Sample Record

This record is mandatory; one record should be generated for each specimen, organ, or analytical blank. Columns 18-83 are relevant only for Sample Records which identify actual field samples. *When the Sample Record is used to identify QA samples (e.g., analytical blanks) columns 18-83 should be left blank.* See Exhibit III-C-4 for a description of all data elements in this record.

Data Record

This record reports chemical concentration data for each of the samples analyzed; data for up to three chemicals can be reported for each record. Data records are "linked" to Sample Records by the Specimen Number. See Exhibit III-C-5 for a description of all data elements in this record.

D. Data Entry Codes

This section contains a list of all the code types used in ODES File Type 144 for Bioaccumulation Data. The codes are listed by their identifiers and the fields in which they are to be used. The elements of these code types are listed in the appendices: Appendix A contains ODES Chemical and Water Quality Codes, Appendix B contains NODC/ODES Taxonomic Codes, and Appendix C contains all other ODES code types.

Code Identifier	Field Name
EPA-1	Relation to ZID
0346	Station Location code
0376	Gear Type
NODC	Taxonomic code
0101	Sex
0148	Life Stage
0037	Organ Sampled
ODES	Chemical code
0377	Measurement code
EPA-3	Qualifier code
0350	Extraction Method
EPA-10	Scan ID

EXHIBIT III-C-1
Survey Header Record

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "144".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier, assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This number also appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "A".
11	22	Blank	BLANK.
33	6	YYMMDD	SURVEY DATE FROM - start of survey date. YY is the last two digits of the year. MM is the month (01-12). DD is the day (01-31).
39	6	YYMMDD	SURVEY DATE TO - end of survey date. YY is the last two digits of the year. MM is the month (01-12). DD is the day (01-31).
45	15	Alpha	SENIOR SCIENTIST/INVESTIGATOR - name of the senior scientist or investigator.

EXHIBIT III-C-1 (Cont'd)
Survey Header Record

Starting Column	Length of Field	Field Format	Description
60	17	Alpha	MUNICIPALITY/INSTITUTION/AGENCY - name of the investigator's institution.
77	4	Blank	BLANK.

EXHIBIT III-C-2
Header Record for Quality Assurance Samples

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "144".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier, assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This number appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "Z".
11	70	Blank	BLANK.

EXHIBIT III-C-3
Station Header Record

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "144".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier, assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This number appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "C".
11	2	Alphanumeric	STATION IDENTIFICATION PREFIX - a two-character code to indicate that a station has been revisited during the survey. Leave this field blank for the first occupation of the station in a given survey. Valid codes for reoccupations of the station are R1-R9.
13	3	Alphanumeric	STATION IDENTIFIER - three characters assigned by the investigator to identify the sampling station.
16	6	DDMMSS	STATION LATITUDE - latitude of the station. DD is degrees. MM is minutes. SS is seconds.
22	1	Code	HEMISPHERE - set to "N".

EXHIBIT III-C-3 (Cont'd)
Station Header Record

Starting Column	Length of Field	Field Format	Description
23	7	DDDMMSS	STATION LONGITUDE - longitude of the station. DDD is degrees. MM is minutes. SS is seconds.
30	1	Code	HEMISPHERE - set to "W".
31	6	YYMMDD	DATE - date of sample collection. YY is the last two digits of the year. MM is the month (01-12). DD is the day (01-31).
37	4	HHMM	TIME - starting time (local standard or daylight savings time) of sample collection in 24-hour format. HH is the hour (00-23). MM is the number of minutes (00-59).
41	2	Blank	BLANK.
43	1	Code	RELATION TO ZID - a one-character code to describe location of the station with respect to the zone of initial dilution (ZID). Leave this field blank for all stations not classified as part of a 301(h) monitoring program. Where applicable, use Code EPA-1: W -- Within ZID B -- ZID Boundary N -- Near Field R -- Reference F -- Far Field
44	6	Numeric	DISTANCE TO ZID - distance in meters from the station to the midpoint of the ZID.
50	5	Numeric	WATER DEPTH - depth at station, in meters, with one decimal place.
55	1	Code	STATION LOCATION CODE - a one-character code to describe the location of the station. Use Code No. 0346: A -- Stream B -- Estuary C -- Lake D -- Ocean E -- Well F -- Other

EXHIBIT III-C-3 (Cont'd)
Station Header Record

Starting Column	Length of Field	Field Format	Description
56	1	Symbolic	INTERTIDAL ELEVATION SIGN - Sign (+/-) for intertidal elevation.
57	3	Numeric	INTERTIDAL ELEVATION -- intertidal station elevation in meters with one decimal place .
60	21	Blank	BLANK.

EXHIBIT III-C-4
Sample Record

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "144".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier, assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This number appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "E".
11	4	Blank	BLANK.
15	3	Alphanumeric	SAMPLE NUMBER - three characters assigned by the investigator to identify the sample. Samples should be numbered sequentially. Quality control samples such as field blanks, lab blanks or spiked matrix samples are identified by a sequential number prefixed by a letter as indicated below: F -- field blank L -- lab blank T -- transport blank S -- spiked matrix sample

EXHIBIT III-C-4 (Cont'd)
Sample Record

Starting Column	Length of Field	Field Format	Description
			(Columns 18-83 should be left blank if the Sample Record is being used to identify analytical blanks.)
18	3	Numeric	SPECIMEN NUMBER - a unique identifier for the individual organism or groups of organisms being analyzed. This number will be assigned by the investigator.
21	2	Alphanumeric	COMPOSITE NUMBER - a unique identifier assigned by the investigator to indicate a sample created by compositing tissues from several individuals.
23	2	Alphanumeric	SUB-SAMPLE NUMBER - a unique identifier assigned by the investigator to indicate further division of a sample for analytical purposes.
25	17	Blank	BLANK.
42	2	Code	GEAR TYPE - a two-character code to identify the general gear type used to collect the sample. Use Code No. 0376: 01 -- Net (Plankton, Trummel, Bongo, etc.) 02 -- Seine (Beach, Purse, etc.) 03 -- Trawl (Otter, Beam, Eastern, etc.) 04 -- Hook and Line 06 -- Grab (Van Veen, Smith-MacIntyre, etc.) 07 -- Core (Piston, Gravity, Box, etc.) 08 -- Dredge (Clam, Pipe, Anchor, etc.) 99 -- Miscellaneous (Hand-Gathered, Traps, Shovel, etc.)
44	1	Blank	BLANK.

EXHIBIT III-C-4 (Cont'd)
Sample Record

Starting Column	Length of Field	Field Format	Description
45	12	Code	NODC TAXONOMIC CODE - a twelve-digit numerical code to identify the species for which the bioaccumulation analysis was conducted. Refer to master species list provided by the ODES Staff for a list of codes (see Appendix B). For unlisted codes, contact the ODES Technical Staff. Do not independently assign new codes to species.
57	5	Numeric	NUMBER OF INDIVIDUALS - five digits for the number of individuals that make up a composite sample.
62	1	Code	SEX - a one digit code to identify sex of sample whenever possible. Use Code No. 0101: -- Blank - No Information 0 -- Indeterminable 1 -- Male 2 -- Female 3 -- Hermaphrodite 4 -- Transitional 5 -- Grouped, Both Sexes Present 6 -- Hermaphroditic, Functional Female 7 -- Hermaphroditic, Functional Male
63	1	Code	LIFE STAGE - a one-character code to identify the life stage (or, if composite, predominate life stage) of sample, where possible. Use Code No. 0148. (See Appendix C for a list of codes.)
64	2	Code	TISSUE SAMPLED - a two-digit code to identify the organ or portion of the sample analyzed. Use Code No. 0037. (See Appendix C for a list of codes.)
66	2	Blank	BLANK.
68	7	Numeric	WET WEIGHT - total wet weight of sample, in grams, to two decimal places.

EXHIBIT III-C-4 (Cont'd)
Sample Record

Starting Column	Length of Field	Field Format	Description
75	3	Numeric	DRY WEIGHT (PERCENT) - percent of total sample remaining after drying. Value should be expressed in percent by weight with one decimal place (e.g., 50.5% should entered "505").
78	3	Blank	BLANK.
81	3	Numeric	PERCENT EXTRACTABLE LIPIDS - lipids extracted as percentage of whole to one decimal place.

EXHIBIT III-C-5
Data Record

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "144".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier, assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This number appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "F".
11	1	Blank	BLANK.
12	3	Alphanumeric	SAMPLE NUMBER - three characters assigned by the investigator to identify the sample. Samples should be numbered sequentially. Quality control samples such as field blanks, lab blanks or spiked matrix samples are identified by a sequential number prefixed by a letter as indicated below: F -- field blank L -- lab blank T -- transport blank S -- spiked matrix sample

EXHIBIT III-C-5 (Cont'd)
Data Record

Starting Column	Length of Field	Field Format	Description
15	2	Numeric	SPECIMEN NUMBER - a unique identifier for the individual fish or composite tissue sample being analyzed. This number will be assigned by the investigator.
18	2	Numeric	REPLICATE NUMBER - a unique identifier for each replicate sample or subsample analyzed. This is a sequencial number assigned by the investigator.
20	10	Code	CHEMICAL CODE (1) - a ten-character code to identify the chemical measured; entries must be left-justified. (See Appendix A for list of ODES Chemical Codes.) For unlisted codes, contact the ODES Technical Staff. Do not assign codes independently.
30	1	Code	MEASUREMENT CODE (1) - code to describe the units of the reported concentration. Use Code No. 0377. (See Appendix C for a list of codes.)
31	1	Code	QUALIFIER CODE (1) - a one-character code to provide additional qualifying information about the measurement. Use Code EPA-3. (See Appendix C for a list of codes.)
32	4	Numeric	CONCENTRATION (1) - concentration of the chemical measured, in units indicated by measurement code, up to four significant digits. Use the EXPONENT field to indicate desired decimal point position. Do not enter a concentration value of zero. Leave blank if necessary. Concentrations must be in units shown in the MEASUREMENT CODE field and in terms of the wet weight (dry weight if wet weight is unavailable) of the sample. (See Appendix A for an example of how to enter chemical concentration data.)
36	1	Symbolic	EXPONENT SIGN (1) - sign (+/-) of the exponent for the concentration entry. If the exponent is 0, leave this blank.

EXHIBIT III-C-5 (Cont'd)
Data Record

Starting Column	Length of Field	Field Format	Description
37	1	Numeric	EXPONENT (1) - exponent of the concentration value reported. Use the exponent to set the decimal point.
38	10	Code	CHEMICAL CODE (2) - a ten-character code to identify the chemical measured; entries must be left-justified. (See Appendix A for a list of ODES Chemical Codes.) For unlisted codes, contact the ODES Technical Staff. Do not assign codes independently.
48	1	Code	MEASUREMENT CODE (2) - code to describe the units of the reported concentration (e.g., ppb, ppm, activity). Use Code No. 0377. (See Appendix C for a list of codes.)
49	1	Code	QUALIFIER CODE (2) - a one-character code to provide additional qualifying information about the meaasurement. Use Code EPA-3. (See Appendix C for a list of codes.)
50	4	Numeric	CONCENTRATION (2) - concentration of the chemical measured, in units indicated by measurement code, up to four significant digits. Use the EXPONENT field to indicate desired decimal point position. Do not enter a concentra- tion value of zero. Leave blank if necessary. Concentrations must be in units shown in the MEASUREMENT CODE field and in terms of the wet weight (dry weight if wet weight is unavailable) of the sample. (See Appendix A for an example of how to enter chemical concentration data.)
54	1	Symbolic	EXPONENT SIGN (2) - sign (+/-) of the exponent for the concentration entry. If the exponent is 0, leave this blank.
55	1	Numeric	EXPONENT (2) - exponent of the concentra- tion value reported. Use the exponent to set the decimal point place.

EXHIBIT III-C-5 (Cont'd)
Data Record

Starting Column	Length of Field	Field Format	Description
56	10	Code	CHEMICAL CODE (3) - a ten-character code to identify the chemical measured; entries must be left-justified. (See Appendix A for a list of ODES Chemical Codes.) For unlisted codes, contact the ODES Staff. Do not assign codes independently.
66	1	Code	MEASUREMENT CODE (3) - code to describe the units of the reported concentration (e.g., ppb, ppm, activity). Use Code No. 0377. (See Appendix C for a list of codes.)
67	1	Code	QUALIFIER CODE (3) - a one-character code to provide additional qualifying information about the measurement. Use Code EPA-3. (See Appendix C for a list of codes.)
68	4	Numeric	CONCENTRATION (3) - concentration of the chemical measured, in units indicated by measurement code, up to four significant digits. Use the EXPONENT field to indicate desired decimal point position. Do not enter a concentration value of zero. Leave blank if necessary. Concentrations must be in units shown in the MEASUREMENT CODE field and in terms of the wet weight (dry weight if wet weight is unavailable) of the sample. (See Appendix A for an example of how to enter chemical concentration data.)
72	1	Symbolic	EXPONENT SIGN (3) - sign (+/-) of the exponent for the concentration entry. If the exponent is 0, leave this blank.
73	1	Numeric	EXPONENT (3) - exponent of the concentration value reported. Use the exponent to set the decimal point place.
74	2	Code	EXTRACTION METHOD CODE - a two-character code to indicate the method used to extract or digest the sample matrix and remove or isolate the chemical of concern. Use Code No. 0350. (See Appendix C for a list of codes.)

EXHIBIT III-C-5 (Cont'd)
Data Record

Starting Column	Length of Field	Field Format	Description
76	2	Code	SAMPLE CLEAN-UP CODE (1) - a two-character code used to indicate an additional step taken to further purify the sample extracts or digestates. Use Code No. 0350. (See Appendix C for a list of codes.)
78	2	Code	SAMPLE CLEAN-UP CODE (2) - Clean-up Code (2) refers to the second cleanup procedure used during sample processing. Use Code No. 0350. (See Appendix C for a list of codes.)
80	2	Code	SAMPLE CLEAN-UP CODE (3) - Clean-up Code (3) refers to the third cleanup procedure used during sample processing. Use Code No. 0350. (See Appendix C for a list of codes.)
82	2	Code	INSTRUMENT CODE - a two-character code to identify the chemical analyses method(s) used for analyzing the sample. This code should represent the final analysis method or combined methods as listed in Code No. 0350. (See Appendix C for a list of codes.)
84	3	Alphanumeric	SAMPLE NUMBER FOR ANALYTICAL BLANK - a three-character ID for the analytical blank associated with chemical concentrations reported on this record. This ID "links" this Data Record to a particular analytical blank. This ID must match one of the Sample Numbers listed on the Sample Records for data from analytical blanks.
87	1	Alpha	MEASUREMENT BASIS - a one-character code to indicate whether chemical measurements were on a wet or dry-weight basis for tissue analysis. Use Code No. OD017: W -- wet weight basis D -- dry weight basis

IV. ODES File Type 013 for Fish Pathology Data

A. Introduction

ODES File Type 013 for Fish Pathology Data can be used to report information about the diseases in samples of captured fish. These samples will typically be collected with fishing trawls. This chapter describes how to compile and submit to the ODES Staff a data set for fish pathology studies. The data set will consist of a set of different record types arranged in a hierarchical order. Section B of this chapter provides an illustration of each of the different record types and explains the hierarchical relationships among them. Section C contains detailed instructions for compiling your data set. The instructions for each of the data elements include information such as the length of the field, the type of data (e.g., numeric, character), and a description of the data element. In most cases where a data element is a code (e.g., a two-character code for type of trawl), a list of valid codes will accompany the data element description. In some cases, however, where the list of data entry codes is long (e.g., codes for measurement techniques) you will be referred to Appendix C. A master species list of NODC taxonomic codes for identifying species is provided in Appendix B.

B. Hierarchical Relationships

ODES File Type 013 is composed of four record types:

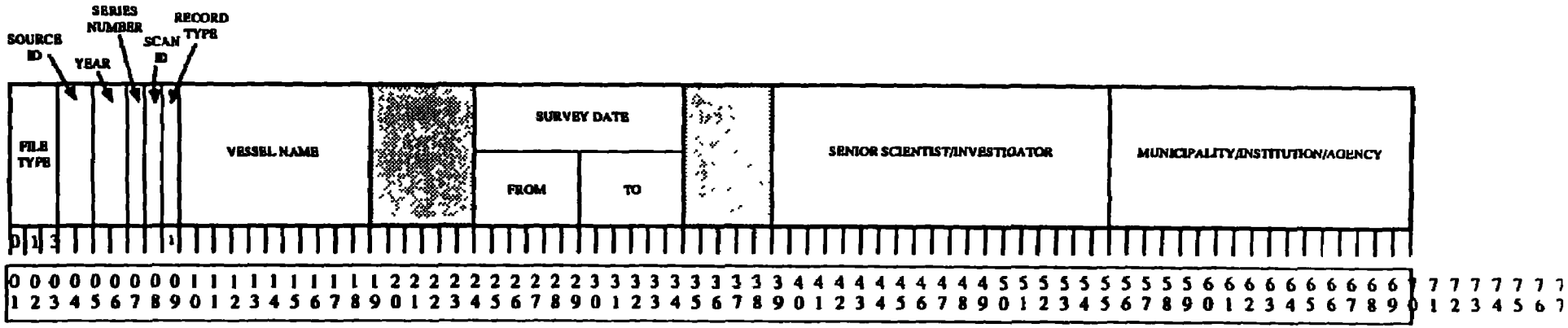
- Record Type "1" is the Survey Header Record. It is used to report information common to the entire data set (e.g., survey dates, investigator's name).
- Record Type "2" is the Station Header Record. It is used to report information about the location where the fish samples were collected (e.g., station location, water depth).
- Record Type "8" is the Individual Record. It is used to report frequency of diseases for each fish sample.
- Record Type "A" is the Lesion Record. It is used to report the characteristics of the lesions for each specimen.

Exhibit IV-B-1 provides an illustration of the structure of each of these record types. These record images, in conjunction with the detailed instructions provided in Section C, will enable you to quickly and accurately complete individual data entry sheets (or enter this data onto tape or disk) for each of the record types.

In addition, it is also necessary to understand the relationships among the different record types so that you can compile a comprehensive data set in the proper hierarchical format. The hierarchical order described herein is designed to minimize the duplication of data entry tasks and is in accordance with standards adopted by the National Oceanographic Data Center (NODC). The relationships are straightforward, and taking just a few minutes now to understand them could save you considerable time and effort later.

EXHIBIT IV-B-1
ODES FT013 for Fish Pathology Data

Survey Header Record



Station Header Record

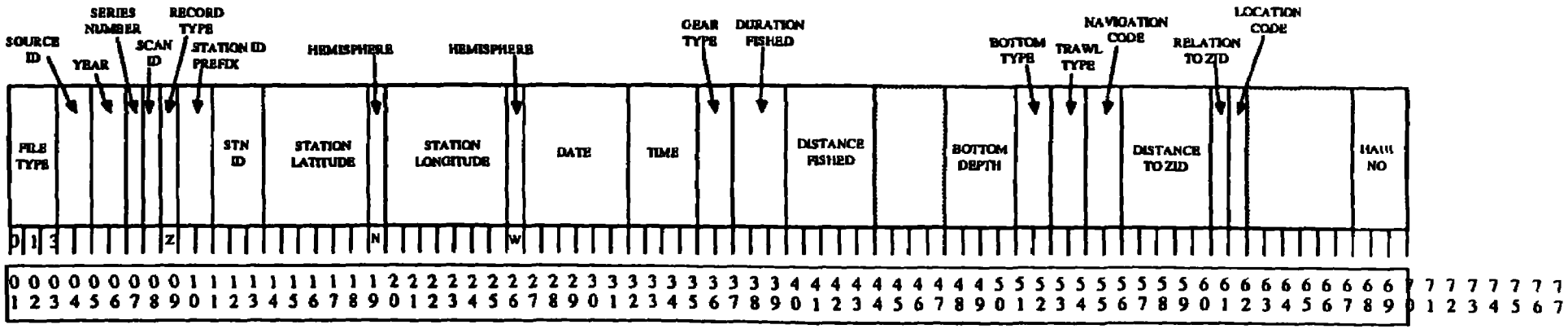
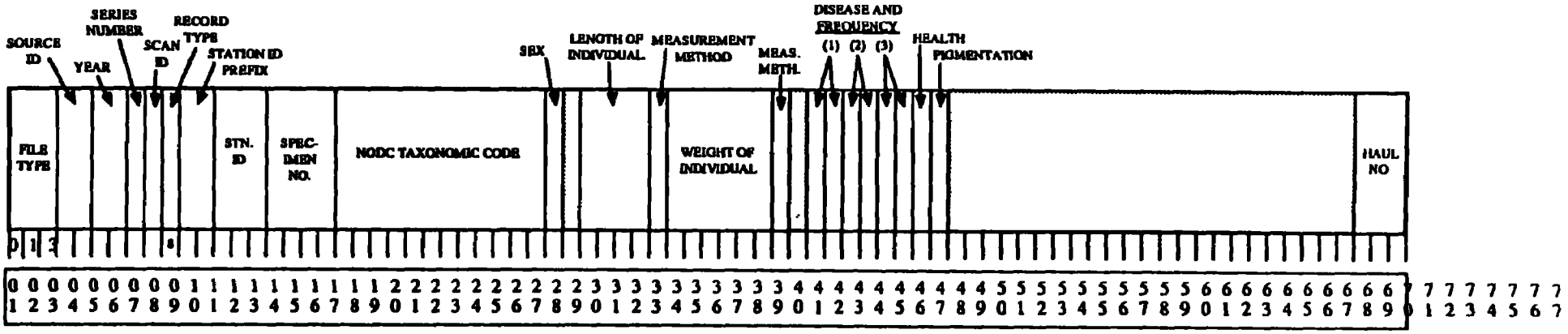
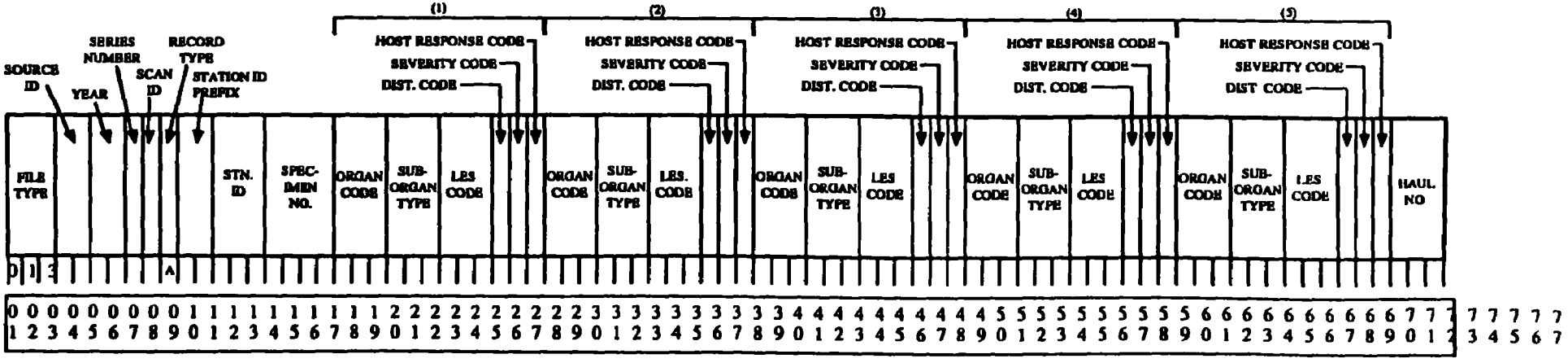


EXHIBIT IV-B-1 (Cont'd)

Individual Record



Lesion Record



As shown above, the different record types report information at different logical levels. For example, the Survey Header Record (Record Type "1") reports information common to the entire survey data set, whereas the Individual Record (Record Type "8") reports information about each of the fish samples collected during the survey. Thus, there will be only one Survey Header Record per data set, but there will typically be multiple Individual Records.

Exhibit IV-B-2 shows how the record types would be arranged in a data set reporting information from a survey which collected fish samples at two stations.

If you have any questions about how to complete your data entry sheets or how to compile your data, please contact the ODES Staff. (See the Preface for address and telephone information.)

C. Detailed Data Element Descriptions

Detailed descriptions for all of the data elements in ODES File Type 013 for Fish Pathology Data are provided below. All record types for a given data set will share the same nine-character file identifier. This file ID consists of three characters to identify the file type -- i.e., "013" -- followed by a two-character abbreviation for the municipality/institution/agency conducting the survey, the last two digits of the year in which the survey is taking place, a series number assigned by the investigator and a scan code to indicate sampling frequency and collection period.

The contents of all numeric fields should be right-justified, preceded by either blanks, zeroes, or where applicable, positive (+) or negative (-) signs. All decimal points are implied rather than physically included (see Exhibit IV-B-1). The contents of all character fields should be left justified, blank-filled.

Survey Header Record

This record is mandatory and should be submitted only once for each data set. See Exhibit IV-C-1 for a description of all data elements in this record.

Station Header Record

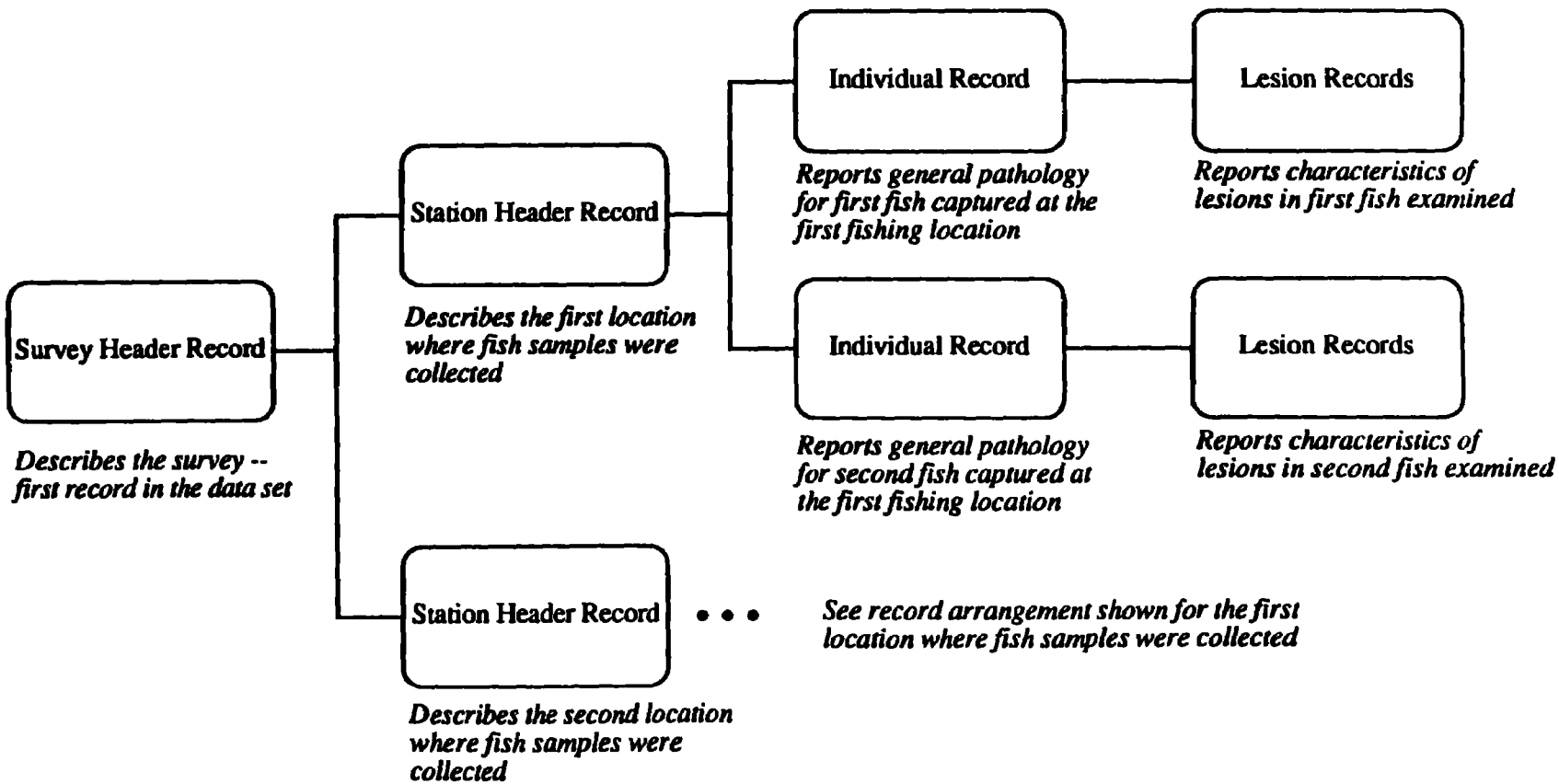
This record is mandatory; one record should be generated for each sampling location. See Exhibit IV-C-2 for a description of all data elements in this record.

Individual Record

This record reports data on the frequency of diseases in the fishes collected in the sample. Observations on as many as three diseases can be reported for each species. The Individual Record is "Linked" to the Station Header Record by the Station ID and Haul Number (columns 78-80). Use the Specimen Number (columns 16-19) to order the records for each species. See Exhibit IV-C-3 for a description of all data elements in this record.

EXHIBIT IV-B-2

Fish Pathology Data
Order of Record Types/Reason for Occurrence



Lesion Record

This record reports the characteristics of the lesions in each fish specimen. Observations on as many as five lesions can be reported for each specimen. The Lesion Record is "linked" to the Individual Record by the Specimen Number (columns 16-19). See Exhibit IV-C-4 for a description of all data elements in this record.

D. Data Entry Codes

This section contains a list of all the code types used in ODES File Type 013 for Fish Pathology Data. The codes are listed by their identifiers and the fields in which they are to be used. The elements of these code types are listed in the appendices: Appendix A contains ODES Chemical and Water Quality Codes, Appendix B contains NODC/ODES Taxonomic Codes, and Appendix C contains all other ODES code types.

Code Identifier	Field Name
0129	Gear Type
0077	Bottom Type
0076	Trawl Type
0085	Navigation code
EPA-1	Relation to ZID
0346	Station Location
0101	Sex
0082	Measurement code
0163	Measurement Method
0120	Disease
0140	Frequency
0121	Health code
0123	Pigmentation
0380	Organ code
0381	Suborgan/tissue type
0382	Lesion/Etiology
0383	Distribution code
0384	Severity code
0385	Host Response code
EPA-10	Scan ID

EXHIBIT IV-C-1
Survey Header Record

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "013".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier, assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This number appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "1".
11	11	Alpha	VESSEL NAME - identity of the survey vessel or platform.
22	6	Blank	BLANK.
28	6	YYMMDD	SURVEY DATE FROM - start date of survey. YY is the last two digits of the year. MM is the the month (01-12). DD is the day (01-31).
34	6	YYMMDD	SURVEY DATE TO - end date of survey. YY is the last two digits of the year. MM is the month (01-12). DD is the day (01-31).
40	5	Blank	BLANK.

EXHIBIT IV-C-1 (Cont'd)
Survey Header Record

Starting Column	Length of Field	Field Format	Description
45	19	Alpha	SENIOR SCIENTIST/INVESTIGATOR - name of the senior scientist or investigator.
64	17	Alpha	MUNICIPALITY/INSTITUTION/AGENCY - name of the investigator's institution.

EXHIBIT IV-C-2
Station Header Record

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "013".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier, assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This number appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "2".
11	2	Alphanumeric	STATION IDENTIFICATION PREFIX - a two-character code to indicate that the station is being revisited during a given survey. Leave this field blank for the first occupation of the station during the survey. Valid codes for reoccupations of the station are R1-R9.
13	3	Alphanumeric	STATION IDENTIFIER - a three-character identifier for the station, assigned by the investigator.
16	6	DDMMSS	STATION LATITUDE - latitude of the station in degrees (DD), minutes (MM), and seconds (SS).
22	1	Code	HEMISPHERE - set to "N".

EXHIBIT IV-C-2 (Cont'd)
Station Header Record

Starting Column	Length of Field	Field Format	Description
23	7	DDDMMSS	STATION LONGITUDE - longitude of station in degrees (DDD), minutes (MM), and seconds (SS).
30	1	Code	HEMISPHERE - set to "W".
31	6	YYMMDD	DATE - date of sample collection. YY is the last two digits of the year. MM is the number (01-12) of the month. DD is the day (01-31).
37	4	HHMM	TIME - time of sample collection (starting time for composite samples). HH is the hour. MM is the number of minutes.
41	2	Code	GEAR TYPE - a two-character code to identify the general gear type used to collect the sample. Use Code No. 0129. (See Appendix C for a list of codes.)
43	3	Numeric	DURATION FISHED - total hours fished to one decimal place.
46	5	Numeric	DISTANCE FISHED - total distance fished in meters to one decimal place.
51	4	Blank	BLANK.
55	4	Numeric	BOTTOM DEPTH - average depth of bottom in whole meters.
59	2	Code	BOTTOM TYPE - a two-character code for the specific bottom type. Use Code No. 0077. (See Appendix C for a list of codes.)
61	2	Code	TRAWL TYPE - a two-character code for the type of trawl used. Use Code No. 0076. (See Appendix C for a list of codes.)

EXHIBIT IV-C-2 (Cont'd)
Station Header Record

Starting Column	Length of Field	Field Format	Description
63	2	Code	NAVIGATION CODE - a two-digit code for the type of navigation equipment used. Use Code No. 0085: 01 -- Loran (Mixed or Unspecified) 02 -- Radar and/or Fixes 03 -- Raydist without Complications 04 -- Raydist with Errors, Drifting, etc. 05 -- Satellite 06 -- OMEGA 07 -- Loran A Only 08 -- Loran C Only 09 -- Mini-Ranger 10 -- Horizontal Sextant 11 -- Photographs 12 -- Siting on Ranges 13 -- Loran C and Mini-Ranger
65	5	Numeric	DISTANCE TO ZID - distance in meters from the station (i.e., the area fished) to the zone of initial dilution (ZID). This field is applicable only to EPA's 301(h) program. Leave this field blank for all stations not classified as part of a 301(h) monitoring program.
70	1	Code	RELATION TO ZID - a one-character code for the classification of the station with respect to the ZID. Leave this field blank for all stations not classified as part of a 301(h) monitoring program. Where applicable, use Code EPA-1: W -- Within ZID B -- ZID Boundary N -- Near Field R -- Reference F -- Far Field

EXHIBIT IV-C-2 (Cont'd)
Station Header Record

Starting Column	Length of Field	Field Format	Description
71	1	Code	STATION LOCATION CODE - a one-character code indicating the type of water body in which a station is located. Use Code No. 0346: A -- Stream B -- Estuary C -- Lake D -- Ocean E -- Well F -- Other
72	6	Blank	BLANK.
78	3	Numeric	HAUL NUMBER - three digits to uniquely identify the number of the haul (sample). This number is assigned by the investigator.

EXHIBIT IV-C-3
Individual Record

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "013".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier, assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This number appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "8".
11	2	Alphanumeric	STATION IDENTIFICATION PREFIX - a two-character code to indicate that a station has been revisited during a survey. Leave blank for first occupation. Valid codes for reoccupations of the station are R1-R9.
13	3	Alphanumeric	STATION IDENTIFIER - a three-character code to identify the sampling station.
16	4	Numeric	SPECIMEN NUMBER - number assigned by the investigator to identify a given specimen of a taxon.

EXHIBIT IV-C-3 (Cont'd)
Individual Record

Starting Column	Length of Field	Field Format	Description
20	12	Numeric	NODC TAXONOMIC CODE - a twelve-digit numerical code assigned to a taxon by NODC. Refer to master species list provided by the ODES Staff for a list of codes (see Appendix B). For unlisted taxa, contact the ODES Staff. Do not independently assign new codes.
32	1	Code	SEX - a one-character code. Use Code No 0101: -- Blank - No Information 0 -- Indeterminable 1 -- Male 2 -- Female 3 -- Hermaphrodite 4 -- Transitional 5 -- Grouped, Both Sexes Present 6 -- Hermaphroditic, Functional Female 7 -- Hermaphroditic, Functional Male
33	1	Blank	BLANK.
34	4	Numeric	LENGTH OF INDIVIDUAL - length in whole millimeters (mm).
38	1	Code	MEASUREMENT METHOD - a one-character code to describe the technique used for measuring length. Use Code No. 0082. (See Appendix C for a list of codes.)
39	6	Numeric	WEIGHT OF INDIVIDUAL - wet weight in whole grams.
45	1	Code	MEASUREMENT METHOD - a one-character code to describe the technique used to weigh the sample. Use Code No. 0163: 1 -- Observed Wet Weight of Specimen 2 -- Calculated Weight of Specimen
46	1	Blank	BLANK.
47	1	Code	DISEASE (1) - a one-character code for the disease of the specimen. Use Code No. 0120. (See Appendix C for a list of codes.)

EXHIBIT IV-C-3 (Cont'd)
Individual Record

Starting Column	Length of Field	Field Format	Description
48	1	Code	FREQUENCY (1) - a one-character code for the number of occurrences of the disease in the specimen. Use Code No. 0140. (See Appendix C for a list of codes.)
49	1	Code	DISEASE (2) - Use Code No. 0120.
50	1	Code	FREQUENCY (2) - Use Code No. 0140.
51	1	Code	DISEASE (3) - Use Code No. 0120.
52	1	Code	FREQUENCY (3) - Use Code No. 0140.
53	1	Code	HEALTH - a one-character code to indicate normal or emaciated. Use Code No. 0121: -- Blank - No information 1 -- Normal Appearing 2 -- Emaciated
54	1	Code	PIGMENTATION - a one-character code for observed pigmentation. Use Code No. 0123: -- Blank - No Information 1 -- Normal 2 -- Darker than Normal 3 -- Lighter than Normal
55	23	Blank	BLANK.
78	3	Numeric	HAUL NUMBER - three digits to uniquely identify the haul. The number is assigned by the investigator.

EXHIBIT IV-C-4
Lesion Record

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "013"
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier, assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This number appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "A".
11	2	Alphanumeric	STATION IDENTIFICATION PREFIX - a two-character code to indicate that a station has been revisited during a survey. Leave blank for first occupation. Valid codes for reoccupations of the station are R1-R9.
13	3	Alphanumeric	STATION IDENTIFIER - a three-character code to identify the sampling station.
16	4	Numeric	SPECIMEN NUMBER - number assigned by the investigator to uniquely identify a given specimen of a species.
20	3	Code	ORGAN CODE (1) - a three-character code indicating the organ sampled. Use Code No. 0380. (See Appendix C for a list of codes.)

EXHIBIT IV-C-4 (Cont'd)
Lesion Record

Starting Column	Length of Field	Field Format	Description
23	3	Code	SUBORGAN/TISSUE TYPE (1) - a three-character code describing the tissue sampled. Use Code No. 0381. (See Appendix C for a list of codes.)
26	3	Code	LESION/ETIOLOGY CODE (1) - a three-digit code describing the type of lesion tested. Use Code No. 0382. (See Appendix C for a list of codes.)
29	1	Code	DISTRIBUTION CODE (1) - a one-digit code describing the area in which the lesions are found. Use Code No. 0383: 1 -- Focal 2 -- Focal-Multifocal 3 -- Multifocal 4 -- Multifocal-Diffuse 5 -- Diffuse
30	1	Code	SEVERITY CODE (1) - a one-digit code indicating the number of lesions. Use Code No. 0384: 1 -- Minimal, sparse, very few 2 -- Minimal - mild 3 -- Mild, few, small amount 4 -- Mild-moderate, several 5 -- Moderate, moderate amount, moderate number 6 -- Moderate-severe 7 -- Severe, abundant, numerous, dense 8 -- Excessive amount or numbers, excessively dense 9 -- Non-uniform, highly variable

EXHIBIT IV-C-4 (Cont'd)
Lesion Record

Starting Column	Length of Field	Field Format	Description
31	1	Code	HOST RESPONSE CODE (1) - a one-digit code which indicates the organism's response to the lesion. Use Code No. 0385: 1 -- No identifiable response 2 -- Minimal response 3 -- Minimal - mild response 4 -- Mild response 5 -- Mild-moderate response 6 -- Moderate response 7 -- Moderate - severe response 8 -- Severe response
32	3	Code	ORGAN CODE (2) - Use Code No. 0380.
35	3	Code	SUBORGAN/TISSUE TYPE (2) - Use Code No. 0381.
38	3	Code	LESION/ETIOLOGY CODE (2) - Use Code No. 0382.
41	1	Code	DISTRIBUTION CODE (2) - Use Code No. 0383.
42	1	Code	SEVERITY CODE (2) - Use Code No. 0384.
43	1	Code	HOST RESPONSE CODE (2) - Use Code No. 0385.
44	3	Code	ORGAN CODE (3) - Use Code No. 0380.
47	3	Code	SUBORGAN/TISSUE TYPE (3) - Use Code No. 0381.
50	3	Code	LESION/ETIOLOGY CODE (3) - Use Code No. 0382.
53	1	Code	DISTRIBUTION CODE (3) - Use Code No. 0383.
54	1	Code	SEVERITY CODE (3) - Use Code No. 0384.
55	1	Code	HOST RESPONSE CODE (3) - Use Code No. 0385.

EXHIBIT IV-C-4 (Cont'd)
Lesion Record

Starting Column	Length of Field	Field Format	Description
56	3	Code	ORGAN CODE (4) - Use Code No. 0380.
59	3	Code	SUBORGAN/TISSUE TYPE (4) - Use Code No. 0381.
62	3	Code	LESION/ETIOLOGY CODE (4) - Use Code No. 0382.
65	1	Code	DISTRIBUTION CODE (4) - Use Code No. 0383.
66	1	Code	SEVERITY CODE (4) - Use Code No. 0384.
67	1	Code	HOST RESPONSE CODE (4) - Use Code No. 0385.
68	3	Code	ORGAN CODE (5) - Use Code No. 0380.
71	3	Code	SUBORGAN/TISSUE TYPE (5) - Use Code No. 0381.
74	3	Code	LESION/ETIOLOGY CODE (5) - Use Code No. 0382.
77	1	Code	DISTRIBUTION CODE (5) - Use Code No. 0383.
78	1	Code	SEVERITY CODE (5) - Use Code No. 0384.
79	1	Code	HOST RESPONSE CODE (5) - Use Code No. 0385.
80	3	Numeric	HAUL NUMBER - three digits to uniquely identify the haul. This number is assigned by the investigator.

V. ODES File Type 144 for Influent and Effluent Data

A. Introduction

ODES File Type 144 for Influent and Effluent Data can be used to report concentrations of organic and inorganic chemicals or measurements for other water quality variables (e.g., temperature, BOD) obtained from samples associated with point-sources. This chapter describes how to compile and submit to the ODES Staff a data set containing influent and effluent data. The data set will consist of a set of different record types arranged in a hierarchical order. Section B of this chapter provides an illustration of each of the different record types and explains the hierarchical relationships among them. Section C contains detailed instructions for compiling your data set. The instructions for each of the data elements include information such as the length of the field, the type of data (e.g., numeric, character), and a description of the data element. In most cases where a data element is a code (e.g., a two-character code for sampling gear type), a list of valid codes will accompany the data element description. In some cases, however, where the list of data entry codes is long (e.g., codes for chemical analysis methods), you will be referred to Appendix C. A list of ten-character ODES Chemical Codes for identifying chemicals can be found in Appendix A of this manual.

B. Hierarchical Relationships

This version of File Type 144 is composed of six record types:

- Record Type "A" is the Survey Header Record. It is used to report information common to the entire data set (e.g., survey dates, investigator's name).

- Record Type "Z" is the Header Record for Quality Assurance Samples. It is used to identify data for analytical blanks or other quality assurance samples referred to within the data set.

- Record Type "B" is the Influent/Effluent Description Record. It is used to report information about the point-source. For each survey, there should be one Influent/Effluent Description Record for each point-source for which sampling was conducted.

- Record Type "C" is the Sample Record. It is used to report information common to all data associated with a sample collected at a particular location (e.g., date, time, gear type).

- Record Type "E" is Data Record 1. It is used to report data for each replicate measurement on selected non-chemical water quality variables (e.g., temperature, salinity, BOD). There should be one Data Record 1 for each replicate measurement.

- Record Type "F" is Data Record 2. It is used to report concentrations of inorganic and organic chemicals for each replicate sample (e.g., cadmium, DDT). Concentrations for up to three chemicals can be reported on each Data Record 2. There will typically be multiple records for each replicate measurement.

Exhibit V-B-1 provides an illustration of the structure of each of these record types. These record images, in conjunction with the detailed instructions provided in Section C, will enable you to quickly and accurately complete individual data entry sheets (or enter this data onto tape or disk) for each of the record types.

In addition, it is also necessary to understand the relationships among the record types so that you can compile a comprehensive data set in the proper hierarchical format. The hierarchical order described herein is designed to minimize the duplication of data entry tasks and is in accordance with standards adopted by the National Oceanographic Data Center (NODC). The relationships are straightforward, and taking just a few minutes now to understand them could save you considerable time and effort later.

As shown above, the different record types report information at differ- ent logical levels. For example, the Survey Header Record (Record Type "A") reports information common to the entire survey data set, whereas the Sample Record (Record Type "C") reports information about each of the replicate samples taken during the survey. Thus, there will be only one Survey Header Record per data set, but there will typically be multiple Sample Records.

Exhibit V-B-2 shows how the different record types would be arranged in a data set reporting data from a survey in which sampling was conducted for one effluent source, where two water samples were collected, and two replicate measurements were taken for each sample. Data for quality assurance samples (e.g., analytical blanks) are reported first, followed by the replicate observations for the first and second samples.

If you have any questions about how to complete your data entry sheets or how to compile your data, please contact the ODES Staff. (See the Preface for address and telephone information.)

C. Detailed Data Element Descriptions

Detailed descriptions for all of the data elements in this version of File Type 144 are provided below. All record types for a given data set will share the same nine-character file identifier. This file ID consists of three characters to identify the file type, i.e., "144", followed by a two-character abbreviation for the municipality/institution/agency conducting the survey, the last two digits of the year in which the survey is taking place, a series number assigned by the investigator and a scan code to indicate sampling frequency and collection period.

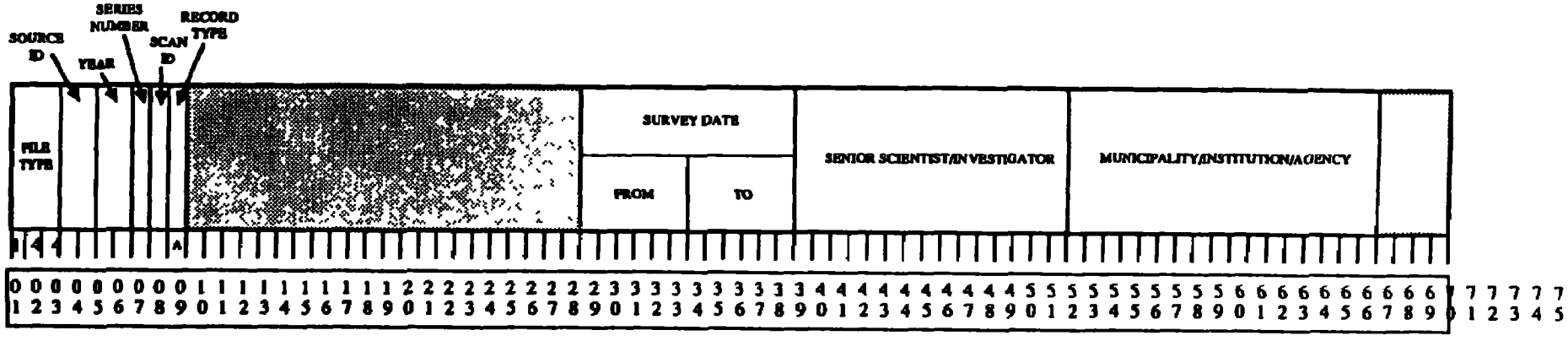
All numeric fields should be right-justified, preceded by either blanks, zeroes, or where applicable, positive (+) or negative (-) signs. All decimal points are implied rather than physically included (see Exhibit V-B-1). All character fields should be left justified, blank-filled.

Survey Header Record

This record is mandatory and should be submitted only once for each data set. See Exhibit V-C-1 for a description of all data elements in this record.

EXHIBIT V-B-1
ODES FT144 for Influent and Effluent Data

Survey Header Record



Header Record for Quality Assurance Samples

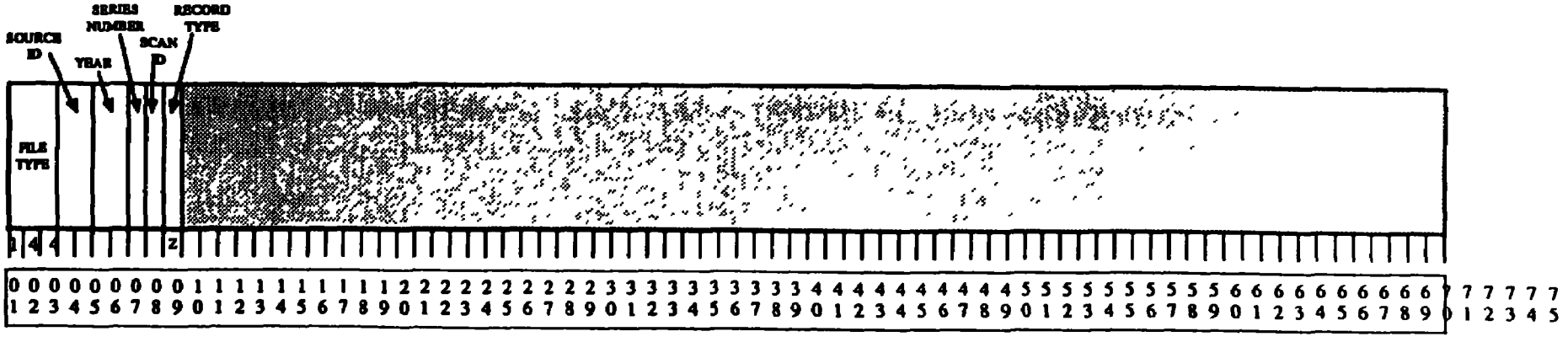
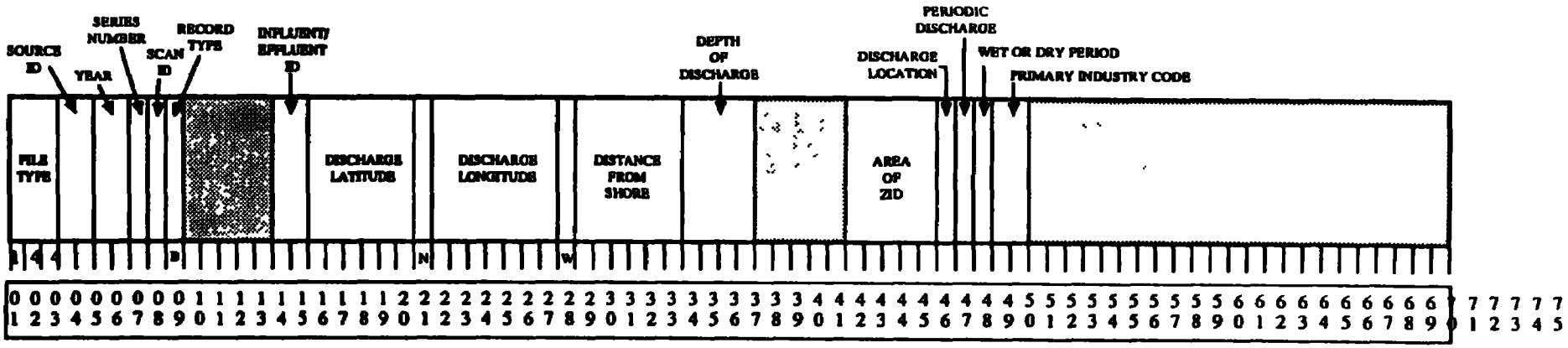


EXHIBIT V-B-1 (Cont'd)

Influent/Effluent Description Record



Sample Record

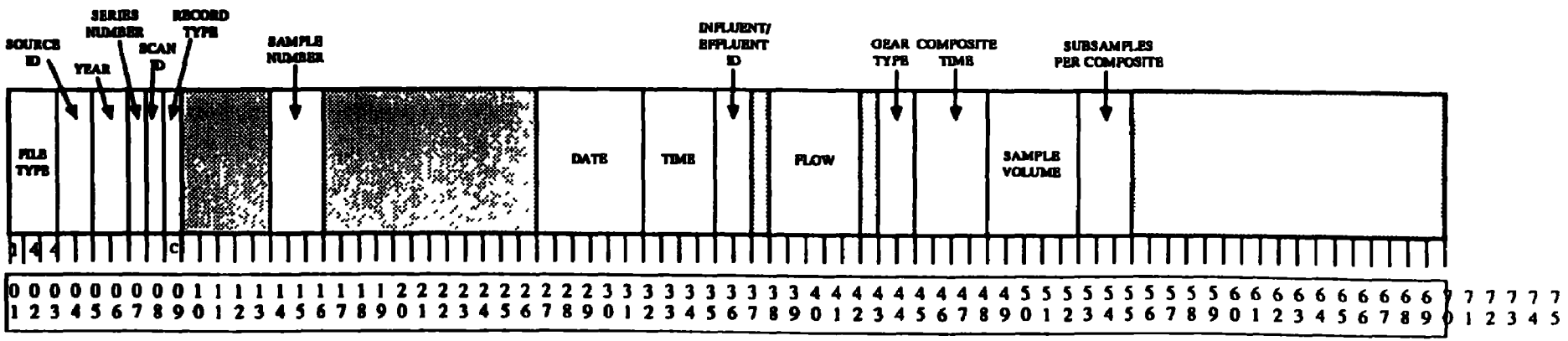
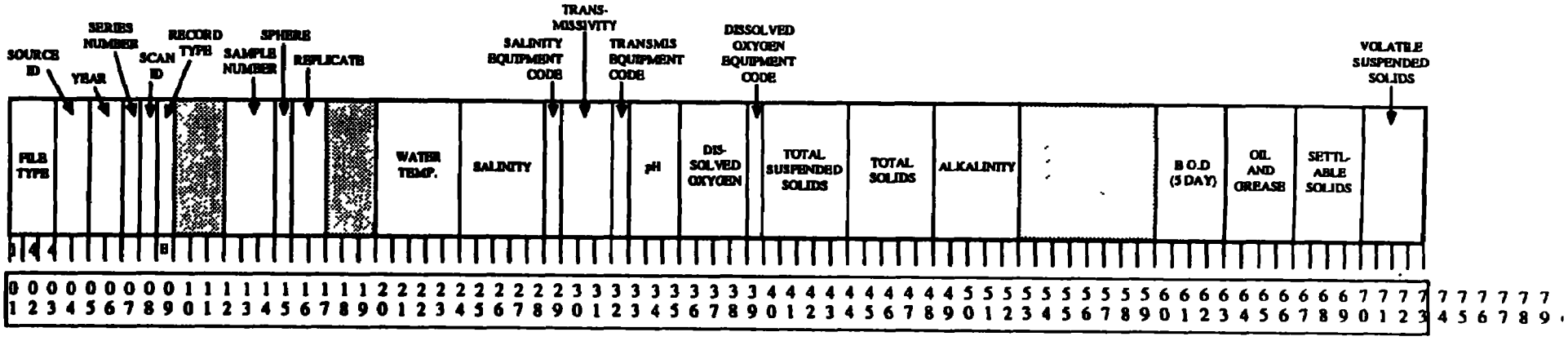


EXHIBIT V-B-1 (Cont'd)

Data Record 1



Data Record 2

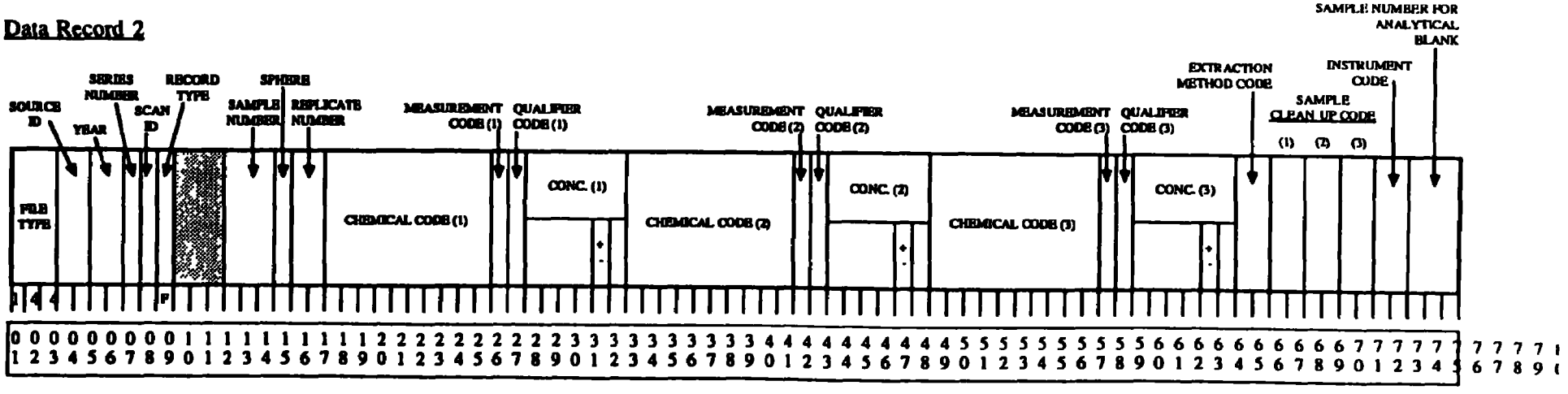
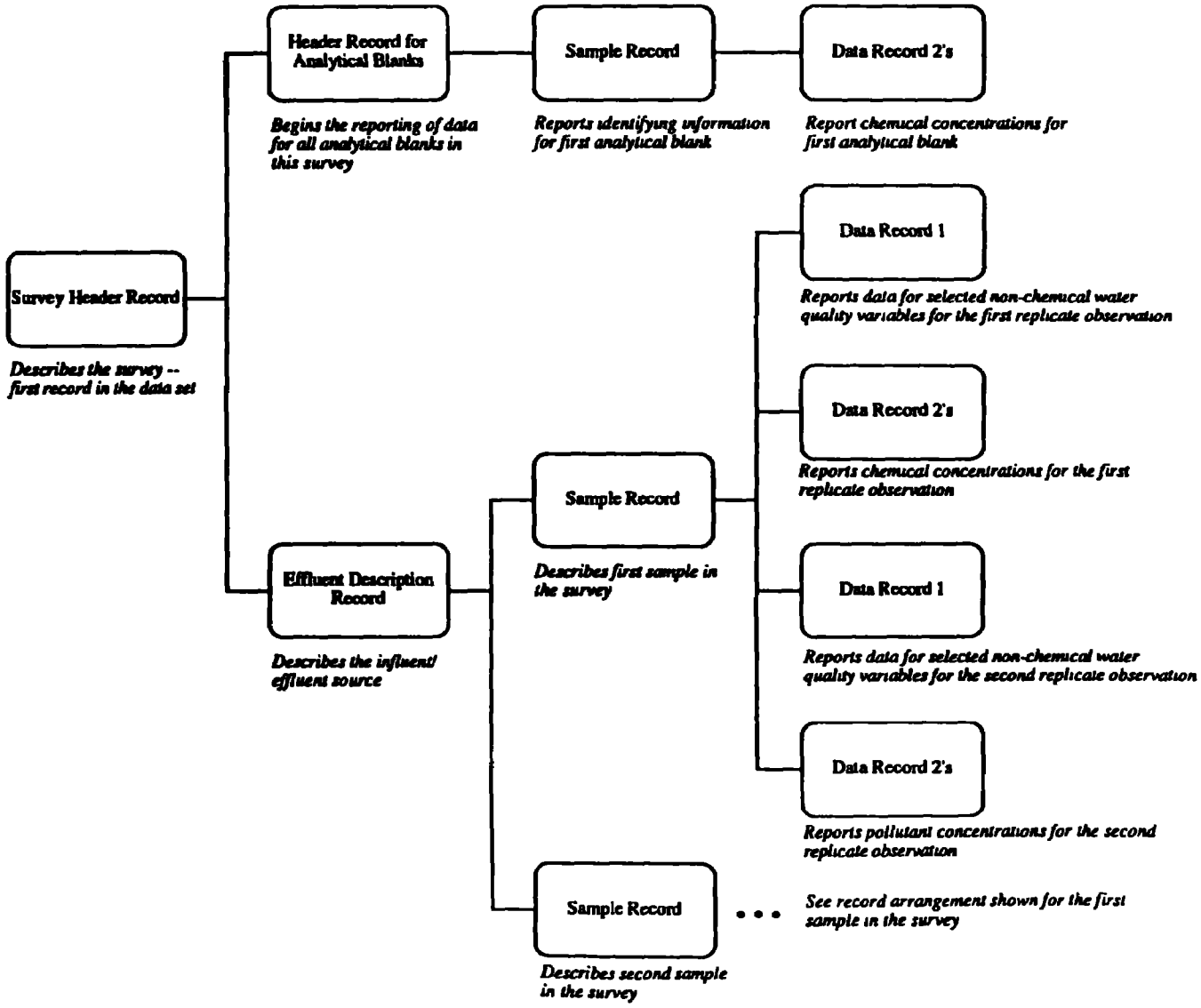


EXHIBIT V-B-2

Influent and Effluent Data
Order of Record Types/Reason for Occurrence



Header Record for Quality Assurance Samples

This record is used to identify data for all quality assurance (QA) samples recorded in the data set. All QA sample measurements (e.g., field, laboratory, or transport blanks or spiked matrix samples) should be reported within this level of the hierarchy. See Exhibit V-C-2 for a description of all data elements in this record. (See Exhibit V-B-2 for a description of how data records for QA samples should be organized within the data set.)

Effluent Description Record

This record reports information about the point-source discharge (e.g., latitude; longitude; physical setting). Effluent Description Records are mandatory; one record per point-source discharge should be submitted. This record is not used when reporting data for analytical blanks. See Exhibit V-C-3 for a description of all data elements in this record.

Sample Record

This record reports information common to each water sample. This is a mandatory record; one should be generated for each sample collected or each quality assurance samples. *When the Sample Record is used to identify blanks or other QA samples columns 19-63 should be left blank.* See Exhibit V-C-4 for a description of all data elements in this record.

Data Record 1

Data Record 1 reports data on selected water quality variables for influent and effluent water samples. This record is "linked" to the Sample Record by the Sample Number. Data Record 1 is not used when reporting data for analytical blanks or other QA samples. See Exhibit V-C-5 for a description of all data elements in this record.

Data Record 2

This record reports concentrations for inorganic and organic chemicals; data for as many as three chemicals can be reported on each Data Record 2. Each compound reported in a single record should have analytical methods in common and be associated with a single blank sample. These records are "linked" to Sample Records by the Sample Number. See Exhibit V-C-6 for a description of all data elements in this record.

D. Data Entry Codes

This section contains a list of all the code types used in ODES File Type 144 for Influent and Effluent Data. The codes are listed by their identifiers and the fields in which they are to be used. The elements of these code types are listed in the appendices: Appendix A contains ODES Chemical and Water Quality Codes, Appendix B contains NODC/ODES Taxonomic Codes, and Appendix C contains all other ODES code types.

Code Identifier	Field Name
0346	Discharge Location
0117	Periodic Discharge
0347	Wet or dry period
0375	Primary Industry code
0376	Gear Type
0093	Sphere
EPA-4	Salinity Equipment
0094	Transmissivity Equipment
EPA-5	Dissolved Oxygen Equipment
EPA-3	Qualifier code
ODES	Chemical code
0377	Measurement code
0350	Extraction Method
EPA-10	Scan ID

EXHIBIT V-C-1
Survey Header Record

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "144".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier, assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This number appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "A".
11	22	Blank	BLANK.
33	6	YYMMDD	SURVEY DATE FROM - start of survey date. YY is the last two digits of the year. MM is the month (01-12). DD is the day (01-31).
39	6	YYMMDD	SURVEY DATE TO - end of survey date. YY is the last two digits of the year. MM is the month (01-12). DD is the day (01-31).
45	15	Alpha	SENIOR SCIENTIST/INVESTIGATOR - name of the senior scientist or investigator.
60	17	Alpha	MUNICIPALITY/INSTITUTION/AGENCY - name of the investigator's institution.

EXHIBIT V-C-1 (Cont'd)
Survey Header Record

Starting Column	Length of Field	Field Format	Description
77	4	Blank	BLANK.

EXHIBIT V-C-2
Header Record for Quality Assurance Samples

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "144".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier, assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This number appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "Z".
11	70	Blank	BLANK.

EXHIBIT V-C-3
Influent/Effluent Description Record

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "144".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier, assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This number appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "B".
11	5	Blank	BLANK.
16	2	Alphanumeric	INFLUENT/EFFLUENT IDENTIFIER - a two-character ID assigned by the investigator for a specific influent or effluent source. This ID is used to differentiate multiple influent sources or discharge points for a given survey.
18	6	DDMMSS	DISCHARGE LATITUDE - latitude of the point-source discharge. DD is degrees. MM is minutes. SS is seconds.
24	1	Code	HEMISPHERE - set to "N".

EXHIBIT V-C-3 (Cont'd)
Influent/Effluent Description Record

Starting Column	Length of Field	Field Format	Description
25	7	DDDMMSS	DISCHARGE LONGITUDE - longitude of the point-source discharge. DDD is degrees. MM is minutes. SS is seconds.
32	1	Code	HEMISPHERE - set to "W".
33	6	Numeric	DISTANCE FROM SHORE - distance from shore to point of discharge in meters.
39	4	Numeric	DEPTH OF DISCHARGE - depth of the point of discharge in meters.
43	5	Blank	BLANK.
48	5	Numeric	AREA OF ZID - five digits for the area of the zone of initial dilution (ZID) in square kilometers to four decimal places. Areas will vary depending upon the discharge plume and water depth at each site. This field is only applicable for EPA's 301(h) program.
53	1	Code	DISCHARGE LOCATION - code to describe the physical setting of the discharge. Use Code No. 0346: A -- Stream B -- Estuary C -- Lake D -- Ocean E -- Well F -- Other
54	1	Code	PERIODIC DISCHARGE - code to indicate whether the effluent is subject to periodic fluctuations in discharge volume. Use Code No. 0117: Y -- Yes N -- No

EXHIBIT V-C-3 (Cont'd)
Influent/Effluent Description Record

Starting Column	Length of Field	Field Format	Description
55	1	Code	WET OR DRY PERIOD - code to indicate wet-dry season or weather conditions. Use Code No. 0347: D -- Dry N -- Normal/average conditions W -- Wet
56	2	Code	PRIMARY INDUSTRY CODE - code to identify the general or primary source of toxic substances or contaminants in the marine environment as related to a specific effluent source. Use Code No. 0375. (See Appendix C for a list of codes).
58	23	Blank	BLANK.

EXHIBIT V-C-4
Sample Record

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "144".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier, assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This number appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "C".
11	5	Blank	BLANK.
16	3	Alphanumeric	SAMPLE NUMBER - three characters assigned by the investigator to identify the sample. Samples should be numbered sequentially. Quality control samples such as field blanks, lab blanks or spiked matrix samples are identified by a sequential number prefixed by a letter as indicated below: F -- field blank L -- lab blank T -- transport blank S -- spiked matrix sample

EXHIBIT V-C-4 (Cont'd)
Sample Record

Starting Column	Length of Field	Field Format	Description
	(Columns 19-63 should be left blank if the Sample Record is being used to identify analytical blanks or other quality assurance samples.)		
19	12	Blank	BLANK.
31	6	YYMMDD	DATE - date of sample collection. YY is the last two digits of the year. MM is the month (01-12). DD is the day (01-31).
37	4	HHMM	TIME - time of sample collection (starting time for composite samples) in 24-hour format. HH is the hour (00-23). MM is the number of minutes (00-59).
41	2	Alphanumeric	INFLUENT/EFFLUENT IDENTIFIER - a two-character ID assigned by the investigator for a specific point-source. This ID is used to differentiate multiple discharge sources for a given survey.
43	1	Blank	BLANK.
44	5	Numeric	FLOW - average discharge flow during the sampling event, in millions of gallons per day, with two decimal places.
49	1	Blank	BLANK.
50	2	Code	GEAR TYPE - a two-character code to identify the type of gear used to collect the sample. Use Code No. 0376: 05 -- Bottle (Nisken, Rosette, etc.) 09 -- Pump (Plankton, Midwater, Airlift, etc.) 99 -- Misc (Hand-Gathered, Traps, Shovel, etc.)
52	4	Numeric	COMPOSITE TIME - the number of hours over which the composite sample is collected, with two decimal places. (Note: This is hours divided by 100, not hours and minutes.)

EXHIBIT V-C-4 (Cont'd)
Sample Record

Starting Column	Length of Field	Field Format	Description
56	5	Numeric	SAMPLE VOLUME - the volume of the sample, in milliliters, for influent and effluent samples.
61	3	Numeric	SUBSAMPLES PER COMPOSITE - For composite samples only, use this field to record the average number of subsamples making up a composite sample. Leave this field blank for samples that are not composites.
64	17	Blank	BLANK.

EXHIBIT V-C-5
Data Record 1

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "144".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier, assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This number appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "E".
11	3	Blank	BLANK.
14	3	Alphanumeric	SAMPLE NUMBER - three characters assigned by the investigator to identify the sample. Samples should be numbered sequentially. Quality control samples such as field blanks, lab blanks or spiked matrix samples are identified by a sequential number prefixed by a letter as indicated below: F -- field blank L -- lab blank T -- transport blank S -- spiked matrix sample

EXHIBIT V-C-5 (Cont'd)
Data Record 1

Starting Column	Length of Field	Field Format	Description
17	1	Code	SPHERE - a one-character code to identify the sphere from which the data came. Use Code No. 0093. (See Appendix C for a list of codes.)
18	2	Numeric	REPLICATE NUMBER - a unique identifier for each replicate measurement taken from the sample. This number is assigned by the investigator.
20	3	Blank	BLANK.
23	5	Numeric	WATER TEMPERATURE - water temperature of the sub-sample or replicate in degrees Celsius with three decimal places.
28	5	Numeric	SALINITY - salinity of the sub-sample or replicate in parts per thousand (PPT) with three decimal places.
33	1	Code	SALINITY EQUIPMENT CODE - a one-character code to describe the type of equipment used to measure salinity. Use Code No. EPA-4: 1 -- Refractometer 2 -- Titration 3 -- Conductivity Cell
34	3	Numeric	TRANSMISSIVITY - three digits for transmissivity with one decimal place if measured by Equipment Code 2. If measured by any other method, no decimal place.

EXHIBIT V-C-5 (Cont'd)
Data Record 1

Starting Column	Length of Field	Field Format	Description
37	1	Code	TRANSMISSIVITY EQUIPMENT CODE - a one-character code to describe the type of equipment to measure transmissivity. Use Code No. 0094: 1 -- Turbidometer; in JTU * 2 -- Transmissometer; in Percent of Light Transmission over a 10 cm Path 3 -- Fluorometer; Suspended Solids Calibration 4 -- Nephelometer, in NTU 5 -- Turbidometer, in FTU 6 -- Transmissometer
38	3	Numeric	pH - three digits for pH, with two decimal places.
41	4	Numeric	DISSOLVED OXYGEN - four digits for dissolved oxygen (DO) in milligrams per liter with two decimal places.
45	1	Code	DISSOLVED OXYGEN EQUIPMENT CODE - a one-character code to describe the type of equipment used to measure dissolved oxygen (DO). Use Code No. EPA-5: 1 -- Winkler Titration 2 -- Probe
46	5	Numeric	TOTAL SUSPENDED SOLIDS - five digits for the concentration of Total Suspended Solids in milligrams per liter (MGL) with two decimal places.
51	5	Numeric	TOTAL SOLIDS - percent using two decimal places.
56	5	Numeric	ALKALINITY - five digit concentration for alkalinity expressed as mg/l $CaCO_3$ to 2 decimal places.
61	8	Blank	BLANK.
69	4	Numeric	BIOLOGICAL OXYGEN DEMAND (BOD) - four digits for the BOD concentration (5-day) in milligrams per liter (MGL).

EXHIBIT V-C-5 (Cont'd)
Data Record 1

Starting Column	Length of Field	Field Format	Description
73	4	Numeric	OIL AND GREASE - four digits for the concentration of oil and grease in milligrams per liter with one decimal place.
77	4	Numeric	SETTLABLE SOLIDS - four digits for the settling rate in milliliters per liter per hour (Ml/l/hour).
81	4	Numeric	VOLATILE SUSPENDED SOLIDS - four digits for concentration of Volatile Suspended Solids, in milligrams per liter (MGL), with one decimal place.

EXHIBIT V-C-6
Data Record 2

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "144".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier, assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This number appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "F".
11	3	BLANK	BLANK.
14	3	Alphanumeric	SAMPLE NUMBER - three characters assigned by the investigator to identify the sample. Samples should be numbered sequentially. Quality control samples such as field blanks, lab blanks or spiked matrix samples are identified by a sequential number prefixed by a letter as indicated below: F -- field blank L -- lab blank T -- transport blank S -- spiked matrix sample

EXHIBIT V-C-6 (Cont'd)
Data Record 2

Starting Column	Length of Field	Field Format	Description
17	1	Code	SPHERE - a one-character code to identify the sphere from which the data came. Use Code No. 0093. (See Appendix C for a list of codes.)
18	2	Numeric	REPLICATE NUMBER - a unique identifier for each replicate observation taken from the sample. This number is assigned by the investigator.
20	10	Code	CHEMICAL CODE (1) - a ten-character code to identify the chemical measured; entries must be left-justified. (See Appendix A for list of ODES Chemical Codes.) For unlisted codes, contact the ODES Technical Staff. Do not assign codes independently.
30	1	Code	MEASUREMENT CODE (1) - code to describe the units of the reported concentration (e.g., ppb, ppm, activity). Use Code No. 0/377. (See Appendix C for a list of codes.)
31	1	Code	QUALIFIER CODE (1) - a one-character code to provide additional qualifying information about the measurement. Use Code EPA-3. (See Appendix C for a list of codes.)
32	4	Numeric	CONCENTRATION (1) - concentration of the chemical measured, in units indicated by measurement code, up to four significant digits. Use the EXPONENT field to indicate desired decimal point position. Do not enter a concentration value of zero. Leave blank if necessary. (See Appendix A for an example of how to enter chemical concentration data.)
36	1	Symbolic	EXPONENT SIGN (1) - sign (+/-) of the exponent for the concentration entry. If the exponent is 0, leave this blank.
37	1	Numeric	EXPONENT (1) - exponent of the concentration value reported. Use exponent to indicate decimal place.

EXHIBIT V-C-6 (Cont'd)
Data Record 2

Starting Column	Length of Field	Field Format	Description
38	10	Code	CHEMICAL CODE (2) - a ten-character code to identify the chemical measured; entries must be left-justified. (See Appendix A for a list of ODES Chemical Codes.) For unlisted codes, contact the ODES Technical Staff. Do not assign codes independently.
48	1	Code	MEASUREMENT CODE (2) - code to describe the units of the reported concentration (e.g., ppb, ppm, activity.) Use Code No. 0377. (See Appendix C for a list of codes.)
49	1	Code	QUALIFIER CODE (2) - a one-character code to provide additional qualifying information about the measurement. Use Code EPA-3. (See Appendix C for a list of codes.)
50	4	Numeric	CONCENTRATION (2) - concentration of the chemical measured in units indicated by the measurement code, up to four significant digits. Use the EXPONENT field to indicate desired decimal point position. Do not enter a concentration value of zero. Leave blank if necessary. (See Appendix A for an example of how to enter chemical concentration data.)
54	1	Symbolic	EXPONENT SIGN (2) - sign (+/-) of the exponent for the concentration entry. If the exponent is 0, leave this blank.
55	1	Numeric	EXPONENT (2) - exponent of the concentration value reported. Use exponent to indicate decimal place.
56	10	Code	CHEMICAL CODE (3) - a ten-character code to identify the chemical measured; entries must be left-justified. (See Appendix A for a list of ODES Chemical Codes.) For unlisted codes, contact the ODES Technical Staff. Do not assign codes independently.

EXHIBIT V-C-6 (Cont'd)
Data Record 2

Starting Column	Length of Field	Field Format	Description
66	1	Code	MEASUREMENT CODE (3) - code to describe the units of the reported concentration (e.g., ppb, ppm, activity). Use Code No. 0377. (See Appendix C for a list of codes.)
67	1	Code	QUALIFIER CODE (3) - a one-character code to provide additional qualifying informa- tion about the measurement. Use Code EPA-3. (See Appendix C for a list of codes.)
68	4	Numeric	CONCENTRATION (3) - concentration of the chemical measured, in units indicated by measurement code, up to four significant digits. Use the EXPONENT field to indicate desired decimal point position. Do not enter a concentration value of zero. Leave blank if necessary. (See Appendix A for an example of how to enter chemical concentration data.)
72	1	Symbolic	EXPONENT SIGN (3) - sign (+/-) of the exponent for the concentration entry. If the exponent is 0, leave this blank.
73	1	Numeric	EXPONENT (3) - exponent of the concentra- tion value reported. Use exponent to indicate decimal place.
74	2	Code	EXTRACTION METHOD CODE - a two-character code to indicate the method used to extract or digest the sample matrix and remove or isolate the chemical of concern. Use Code No. 0/350. (See Appendix C for a list of codes.)
76	2	Code	SAMPLE CLEAN-UP CODE (1) - a two-character code used to indicate an additional step taken to further purify the sample extracts or digestates. Use Code No. 0/350. (See Appendix C for a list of codes.)

EXHIBIT V-C-6 (Cont'd)
Data Record 2

Starting Column	Length of Field	Field Format	Description
78	2	Code	SAMPLE CLEAN-UP CODE (2) - Clean-up Code (2) refers to the second cleanup procedure used during sample processing. Use Code No. 0/350. (See Appendix C for a list of codes.)
80	2	Code	SAMPLE CLEAN-UP CODE (3) - Clean-up Code (3) refers to the third cleanup procedure used during sample processing. Use Code No. 0/350. (See Appendix C for a list of codes.)
82	2	Code	INSTRUMENT CODE - a two-character code to identify the final chemical analysis method(s) used for analyzing the sample. The code should represent the final analysis method or combined methods as listed in Code No. 0350. (See Appendix C for a list of codes.)
84	3	Numeric	SAMPLE NUMBER FOR ANALYTICAL BLANK - a three-character ID for the analytical blank associated with chemical concentrations reported on this record. This ID "links" this Data Record 2 to a particular analytical blank. This ID must match one of the Sample Numbers listed on the Sample Records for data from analytical blanks.

VI. ODES File Type 144 for Receiving Water Quality Data

A. Introduction

ODES File Type 144 for Receiving Water Quality Data can be used to report concentrations of organic and inorganic chemicals, or measurements of selected non-chemical water quality variables (e.g., temperature, BOD). This chapter describes how to compile and submit to the ODES Staff a data set containing receiving water quality data. The data set will consist of a set of different record types arranged in a hierarchical order. Section B of this chapter provides an illustration of each of the different record types and explains the hierarchical relationships among them. Section C contains detailed instructions for compiling your data set. The instructions for each of the data elements include information such as the length of the field, the type of data (e.g., numeric, character), and a description of the data element. In most cases where a data element is a code (e.g., a one-character code for detection limits), a list of valid codes will accompany the data element description. In some cases, where the list of data entry codes is long (e.g., codes for chemical analysis methods), you will be referred to Appendix C. A list of ten-character ODES Chemical Codes for identifying chemicals can be found in Appendix A of this manual.

B. Hierarchical Relationships

This version of File Type 144 is composed of seven record types:

- Record Type "A" is the Survey Header Record. It is used to report information common to the entire data set (e.g., survey dates, investigator's name).
- Record Type "Z" is the Header Record for Quality Assurance Samples. It is used to identify data for analytical blanks or other quality assurance samples referred to within the data set.
- Record Type "C" is the Station Header Record. It is used to report information about the station where the sample was collected (e.g., station location, water depth).
- Record Type "D" is the Station Environment Record. It is used to report information about the environmental conditions at the station where the sample was collected (e.g., current speed, wave height; air temperature).
- Record Type "E" is the Sample Record. It is used to report information about each whole water sample (e.g., sample depth, sphere).
- Record Type "F" is Data Record 1. It is used to report measurements for selected non-chemical water quality variables (e.g., temperature, BOD).
- Record Type "G" is Data Record 2. It is used to report concentrations of inorganic and organic chemicals (e.g., Cadmium, DDT).

Exhibit VI-B-1 provides an illustration of the structure of each of these record types. These record images, in conjunction with the detailed instructions provided in Section C, will enable you to quickly and accurately complete individual data entry sheets (or enter this data onto tape or disk) for each of the record types.

In addition it is also necessary to understand the relationships amoung the different record types so that you can compile a comprehensive data set in the proper hierarchical format. The hierarchical order described herein is designed to minimize the duplication of data entry tasks and is in accordance with standards adopted by the National Oceanographic Data Center (NODC). The relationships are straightforward, and taking just a few minutes now to understand them could save you considerable time and effort later.

As shown above, the different record types report information at different logical levels. For example, the Survey Header Record (Record Type "A") reports information common to the entire survey data set, whereas the Sample Record (Record Type "C") reports information about each of the samples taken during the survey. Thus, there will be only one Survey Header Record per data set, but there will typically be multiple Sample Records. Accordingly, for each Sample Record, there will be multiple Data Records.

Exhibit VI-B-2 shows how the different record types would be arranged in a data set reporting data from a survey conducted at two stations, where one water sample was taken at each station. For each sample, measurements were recorded for both non-chemicals (i.e., Data Record 1) and chemicals (i.e., Data Record 2). Data for quality assurance samples (e.g., analytical blanks) are reported first, followed by the sampling data for the first and second station.

If you have any questions about how to complete your data entry sheets or how to compile your data, please contact the ODES Staff. (See the Preface for address and telephone information.)

C. Detailed Data Element Descriptions

Detailed descriptions for all of the data elements in ODES File Type 144 for Receiving Water Quality Data are provided below. All record types for a given data set will share the same nine-character file identifier. This file ID consists of three characters to identify the file type, i.e., "144", followed by a two-character ID for the municipality/institution/agency conducting the survey, the last two digits of the year in which the survey was taken, a series number assigned by the investigator and a scan code to indicate sampling frequency and collection period.

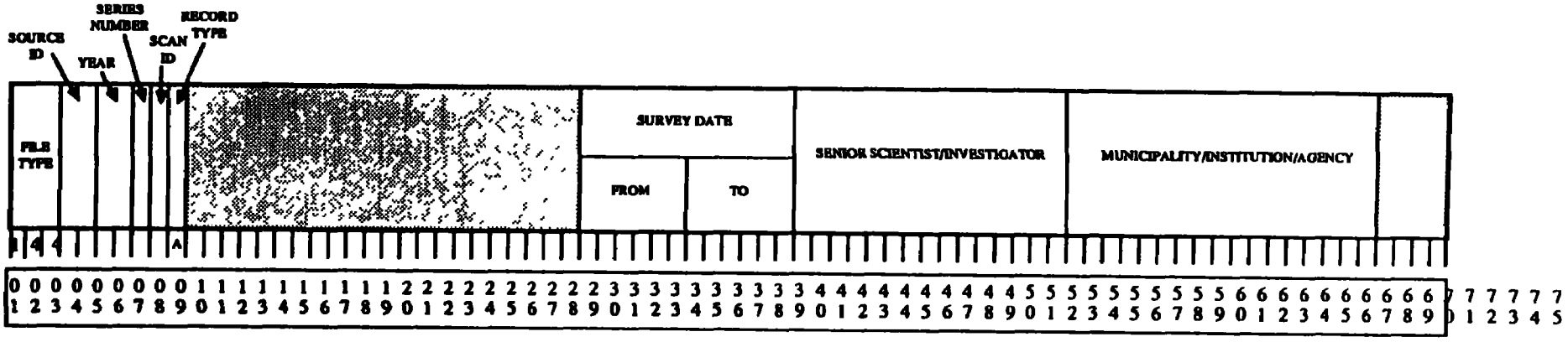
The contents of all numeric fields should be right-justified, preceded by either blanks, zeroes, or where applicable, positive (+) or negative (-) signs. The contents of all decimal points are implied rather than physically included (see Exhibit VI-B-1). All character fields should be left justified, blank-filled.

Survey Header Record

This record is mandatory and should be submitted only once for each data set. See Exhibit VI-C-1 for a description of all data elements in this record.

EXHIBIT VI-B-1
ODES FT144 for Receiving Water Quality Data

Survey Header Record



Header Record for Quality Assurance Samples

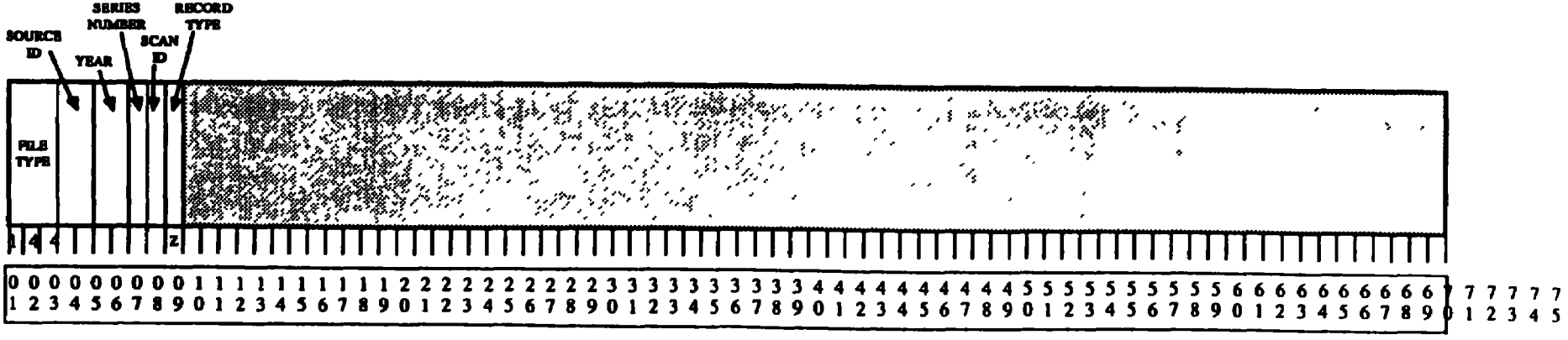
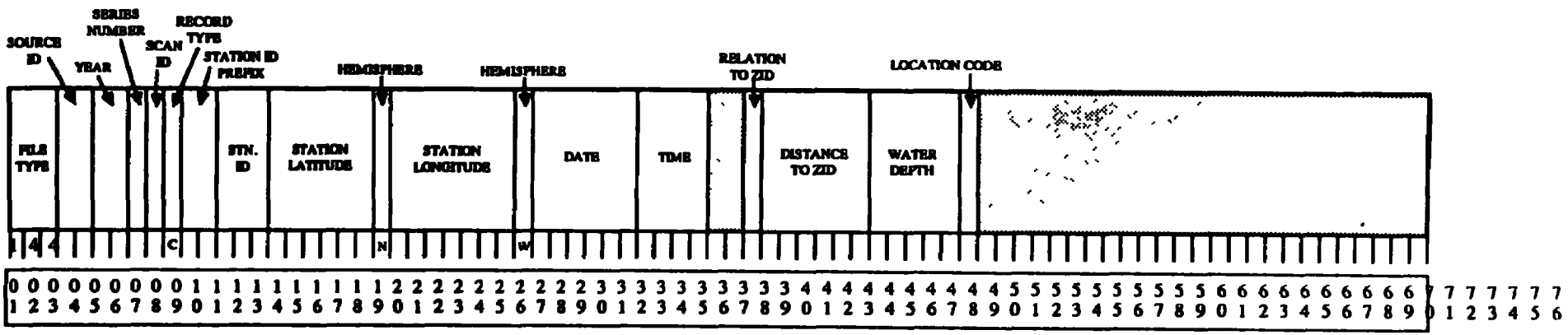


EXHIBIT VI-B-1 (Cont'd)

Station Header Record



Station Environmental Record

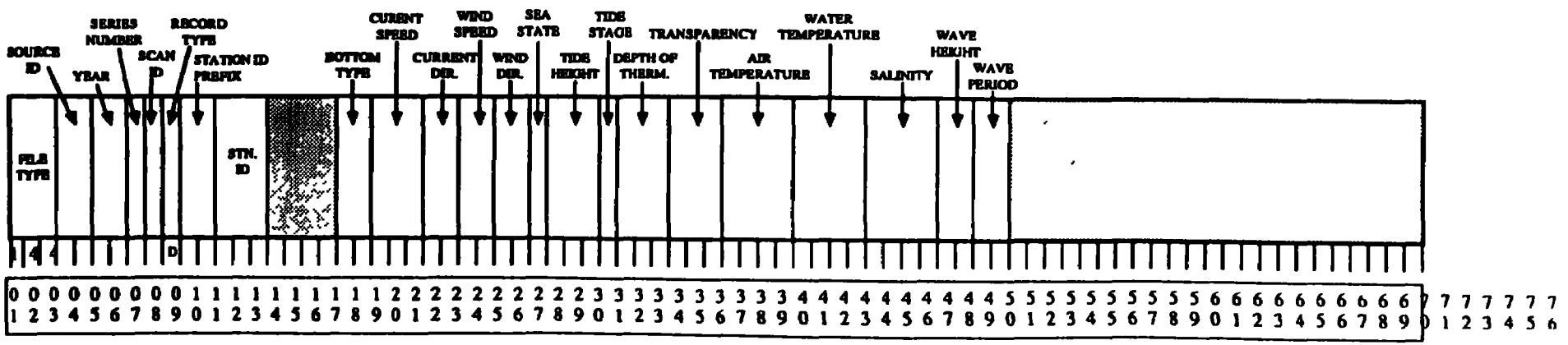
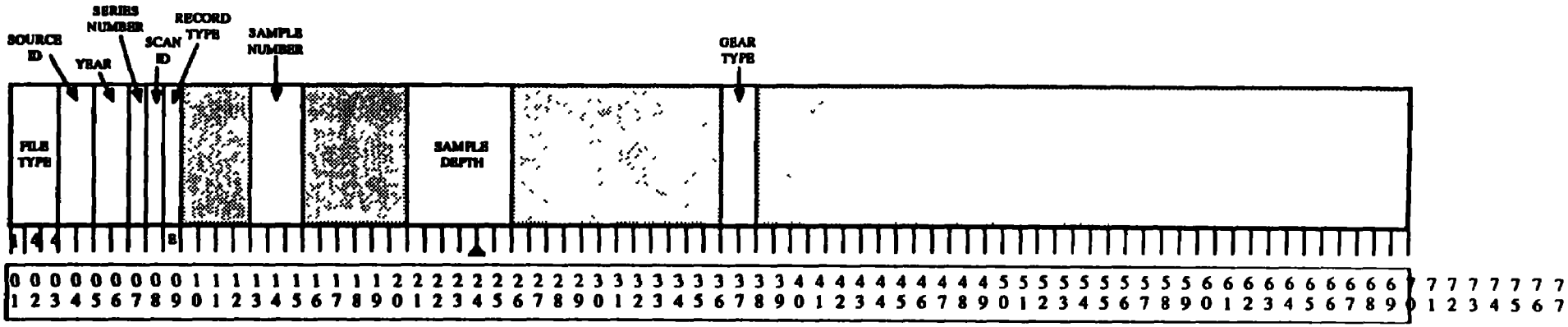


Exhibit VI-B-1 (Cont'd)

Sample Record



Data Record 1

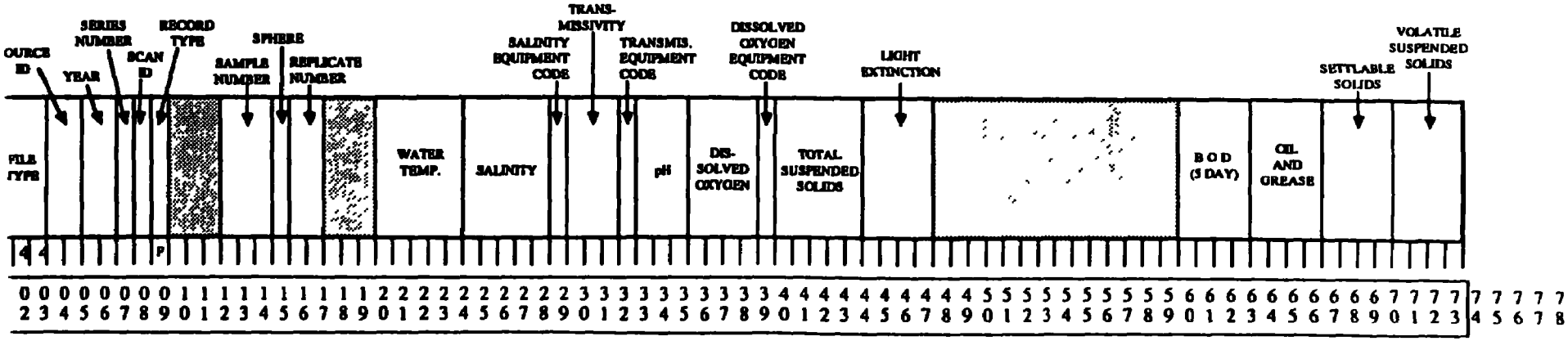


EXHIBIT VI-B-1 (Cont'd)

Data Record 2

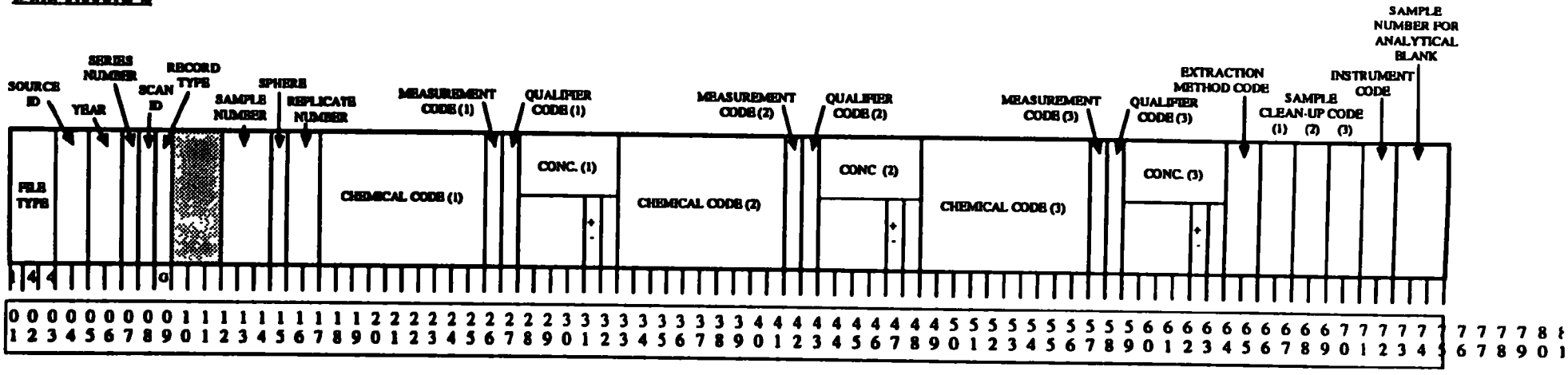
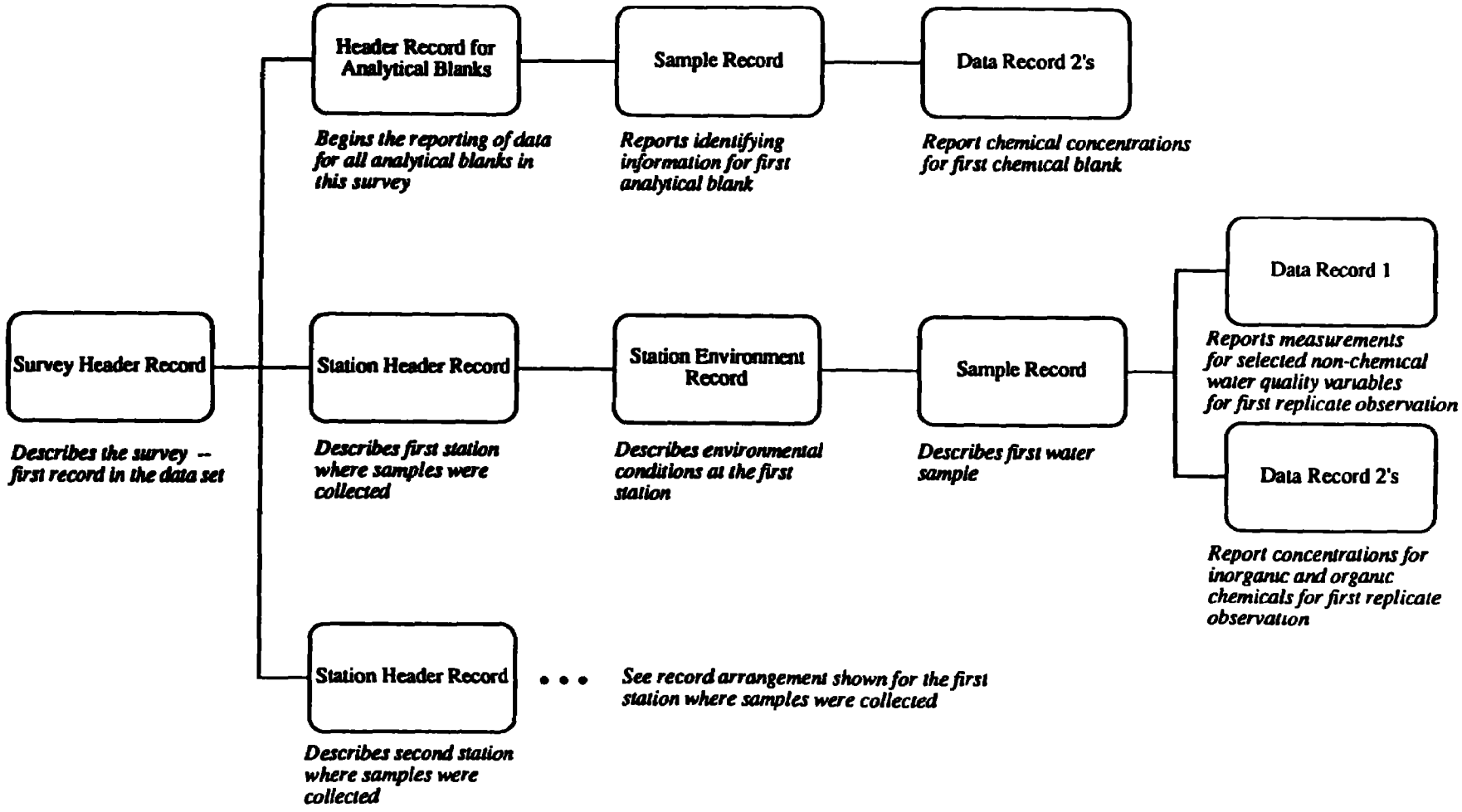


EXHIBIT VI-B-2

Receiving Water Quality Data
Order of Record Types/Reason for Occurrence



Header Record for Quality Assurance Samples

This record is used to identify data for all quality assurance (QA) samples recorded in the data set. All QA sample measurements (e.g., field, laboratory, or transport blanks or spiked matrix samples) should be reported within this level of the hierarchy. See Exhibit VI-C-2 for a description of all data elements in this record. (See Exhibit VI-B-2 for a description of how data records for QA samples should be organized within the data set.)

Station Header Record

This record is mandatory; one record should be generated for each sampling station. Stations should be uniquely identified by the Station ID Prefix and Station ID fields (columns 11-15). See Exhibit VI-C-3 for a description of all data elements in this record.

Station Environment Record

This record is mandatory; one Station Environment Record must accompany each Station Header Record included in the data set. Station Environment Records are "linked" to Station Header Records by the Station Prefix and Station ID fields (columns 11-15) See Exhibit VI-C-4 for a description of all data elements in this record.

Sample Record

This record reports information common to each sample or analytical blank. This is a mandatory record; one record should be generated for each sample or quality assurance samples collected. Columns 18-80 are relevant only for Sample Records which identify actual field samples. *When the Sample Record is used to identify analytical blanks or other QA samples, columns 18-80 should be left blank.* See Exhibit VI-C-5 for a description of all data elements in this record.

Data Record 1

Data Record 1 reports data on selected water quality variables for receiving water quality samples. This record is "linked" to the Sample Record by the Sample Number. Data Record 1 is not used when reporting data for analytical blanks or other QA samples. See Exhibit VI-C-6 for a description of all data elements in this record.

Data Record 2

This record reports concentrations for inorganic and organic chemicals; data for as many as three chemicals can be reported on each Data Record 2. Each compound reported in a single record should have analytical methods in common and be associated with a single blank sample. These records are "linked" to Sample Records by the Sample Number. See Exhibit VI-C-7 for a description of all data elements in this record.

D. Data Entry Codes

This section contains a list of all the code types used in ODES File Type 144 for Water Quality Data. The codes are listed by their identifiers and the fields in which they are to be used. The elements of these code types are listed in the appendices: Appendix A contains ODES Chemical and Water Quality Codes, Appendix B contains NODC/ODES Taxonomic Codes, and Appendix C contains all other ODES code types.

Code Identifier	Field Name
EPA-1	Relation to ZID
0346	Station Location code
0077	Bottom Type
0110	Current Direction
0109	Sea State
0154	Tide Stage
0362	Wave Height
0376	Gear Type
0093	Sphere
EPA-4	Salinity Equipment
0094	Transmissivity Equipment
EPA-5	Dissolved Oxygen Equipment
EPA-2	Limit code
EPA-3	Qualifier code
0377	Measurment code
ODES	Chemical Code
0350	Chemical Analysis Method
EPA-10	Scan ID

EXHIBIT VI-C-1
Survey Header Record

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "144".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier, assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This number appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "A".
11	22	Blank	BLANK.
33	6	YYMMDD	SURVEY DATE FROM - start of survey date. YY is the last two digits of the year. MM is the month (01-12). DD is the day (01-31).
39	6	YYMMDD	SURVEY DATE TO - end of survey date. YY is the last two digits of the year. MM is the month (01-12). DD is the day (01-31).
45	15	Alpha	SENIOR SCIENTIST/INVESTIGATOR - name of the senior scientist or investigator.
60	17	Alpha	MUNICIPALITY/INSTITUTION/AGENCY - name of the investigator's institution.

EXHIBIT VI-C-1 (Cont'd)
Survey Header Record

Starting Column	Length of Field	Field Format	Description
77	4	Blank	BLANK.

EXHIBIT VI-C-2
Header Record for Quality Assurance Samples

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "144".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier, assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This number appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "Z".
11	70	Blank	BLANK.

EXHIBIT VI-C-3
Station Header Record

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "144".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier, assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This number appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "C".
11	2	Alphanumeric	STATION IDENTIFICATION PREFIX - a two-character code to indicate that a station has been revisited during a survey. Leave this field blank for the first occupation of the station in a given survey. Valid codes for reoccupations of the station are R1-R9.
13	3	Alphanumeric	STATION IDENTIFIER - three characters assigned by the investigator to identify the sampling station.
16	6	DDMMSS	STATION LATITUDE - latitude of the station. DD is degrees. MM is minutes. SS is seconds.
22	1	Code	HEMISPHERE - set to "N".

EXHIBIT VI-C-3 (Cont'd)
Station Header Record

Starting Column	Length of Field	Field Format	Description
23	7	DDDMMSS	STATION LONGITUDE - longitude of the station. DDD is degrees. MM is minutes. SS is seconds.
30	1	Code	HEMISPHERE - set to "W".
31	6	YYMMDD	DATE - date of sample collection. YY is the last two digits of the year. MM is the number of the month (01-12). DD is the day (01-31).
37	4	HHMM	TIME - starting time of sample collection in 24-hour format. HH is the hour (00-23). MM is the number of minutes (00-59).
41	2	Blank	BLANK.
43	1	Code	RELATION TO ZID - a one-character code to describe the classification of the station with respect to the zone of inital dilution (ZID). This field is applicable only to EPA's 301(h) program. Leave this field blank for all stations not classified as part of a 301(h) monitoring program. Where applicable, use Code EPA-1: W -- Within ZID B -- ZID Boundary N -- Near Field R -- Reference F -- Far Field
44	6	Numeric	DISTANCE TO ZID - six digits for distance in meters from the station to the edge of the ZID. This field is only applicable for EPA's 301(h) program.
50	5	Numeric	WATER DEPTH - depth at station in meters with one decimal place.

EXHIBIT VI-C-3 (Cont'd)
Station Header Record

Starting Column	Length of Field	Field Format	Description
55	1	Code	STATION LOCATION CODE - a one-character code to describe the location of the station. Use Code No. 0346: A -- Stream B -- Estuary C -- Lake D -- Ocean E -- Well F -- Other
56	25	Blank	BLANK.

EXHIBIT VI-C-4
Station Environment Record

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "144".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier, assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "D".
11	2	Alphanumeric	STATION IDENTIFICATION PREFIX - a two-character code to indicate that a station has been revisited during the survey. Leave this field blank for the first occupation of the station in a given survey. Valid codes for reoccupations of the station are R1-R9.
13	3	Alphanumeric	STATION IDENTIFIER - three characters assigned by the investigator to identify the sampling station.
16	4	Blank	BLANKS.

EXHIBIT VI-C-4 (Cont'd)
Station Environment Record

Starting Column	Length of Field	Field Format	Description
20	2	Code	BOTTOM TYPE - a two-character code to describe the specific bottom type. Use Code No. 0077. (See Appendix C for a list of codes.)
22	3	Numeric	CURRENT SPEED - three digits for the speed of the surface current in meters per second with two decimal places.
25	2	Code	CURRENT DIRECTION - a two-character code for the direction of the current. Use Code No. 0110. (See Appendix C for a list ocodes.)
27	2	Numeric	WIND SPEED - two digits for surface wind speed in meters per second with one decimal place.
29	2	Code	WIND DIRECTION - a two-character code for the wind direction. Use Code No. 0110. (See Appendix C for a list of codes.)
31	1	Code	SEA STATE - a one-character code to describe sea conditions. Use Code No. 0109: 0 -- Calm-Glassy (0 meters) 1 -- Calm-Rippled (0-.1 meters) 2 -- Smooth-Wavelet (.1-.5 meters) 3 -- Slight (.5 -1.25 meters) 4 -- Moderate (1.25-2.5 meters) 5 -- Rough (2.5 -4.0 meters) 6 -- Very Rough (4-6 meters) 7 -- High (6-9 meters) 8 -- Very High (9-14 meters) 9 -- Phenomenal (>14 meters)
32	3	Numeric	TIDE HEIGHT - three digits for tide height in meters with one decimal place.

EXHIBIT VI-C-4 (Cont'd)
Station Environment Record

Starting Column	Length of Field	Field Format	Description
35	1	Code	TIDE STAGE - a one-character code for tide stage. Use Code No. 0154: Blank -- No Information 1 -- Ebb 2 -- Ebb Slack 3 -- Flood 4 -- Flood Slack
36	3	Numeric	DEPTH OF THERMOCLINE - three digits to record depth of the thermocline or mixing layer in meters.
39	3	Numeric	TRANSPARENCY - three digits for secchi disk depth in meters with one decimal place.
42	4	Symbolic/ Numeric	AIR TEMPERATURE - four digits for the temperature of the air at the surface. Negative temperatures should be preceeded with a minus sign. Temperature is recorded in degrees Celsius with one decimal place.
46	4	Symbolic/ Numeric	WATER TEMPERATURE - four digits for the temperature of the water at the surface. Negative temperatures should be preceeded with a minus sign. Temperature is recorded in degrees Celsius with one decimal place.
50	4	Numeric	SALINITY - four digits for salinity of the water at the surface in parts per thousand (PPT) with two decimal places.
54	2	Code	WAVE HEIGHT - a two-character code for wave height. Use Code No. 0362. (See Appendix C for a list of codes.)
56	2	Numeric	WAVE PERIOD - two digits for the average wave period in seconds.
58	23	Blank	BLANK.

EXHIBIT VI-C-5
Sample Record

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "144".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier, assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This number appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "E".
11	4	Blank	BLANK.
15	3	Alphanumeric	SAMPLE NUMBER - three characters assigned by the investigator to identify the sample. Samples should be numbered sequentially. Quality control samples such as field blanks, lab blanks or spiked matrix samples are identified by a sequential number prefixed by a letter as indicated below: F -- field blank L -- lab blank T -- transport blank S -- spiked matrix sample

EXHIBIT VI-C-5 (Cont'd)
Sample Record

Starting Column	Length of Field	Field Format	Description
	(Columns 18-80 should be left blank if the Sample Record is being used to identify analytical blanks or other quality assurance samples.)		
18	6	Blank	BLANK.
24	6	Numeric	SAMPLE DEPTH - depth in meters where the whole water sample was collected, with two decimal places. Surface microlayer samples should be coded as "000000".
30	12	Blank	BLANK.
42	2	Code	GEAR TYPE - a two-character code to identify the general gear type used to collect the sample. Use Code No. 0376: 05 -- Bottle (Nisken, Rosette, etc.) 09 -- Pump (Plankton, Midwater, Airlift, etc.) 99 -- Misc (Hand-Gathered)
44	37	Blank	BLANK.

EXHIBIT VI-C-6
Data Record 1

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "144".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier, assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This number appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "F".
11	3	Blank	BLANK.
14	3	Alphanumeric	SAMPLE NUMBER - three characters assigned by the investigator to identify the sample. Samples should be numbered sequentially. Quality control samples such as field blanks, lab blanks or spiked matrix samples are identified by a sequential number prefixed by a letter as indicated below: F -- field blank L -- lab blank T -- transport blank S -- spiked matrix sample

EXHIBIT VI-C-6 (Cont'd)
Data Record 1

Starting Column	Length of Field	Field Format	Description
17	1	Code	SPHERE - a one-character code to identify the sphere from which the data came. Use Code No. 0093. (See Appendix C for a list of codes.)
18	2	Numeric	REPLICATE NUMBER - a unique identifier for each replicate observation taken from the sample. This number is assigned by the investigator.
20	3	Blank	BLANK.
23	5	Numeric	WATER TEMPERATURE - water temperature of the sub-sample or replicate in degrees Celsius with three decimal places.
28	5	Numeric	SALINITY - salinity of the sub-sample or replicate, in parts per thousand (PPT), with three decimal places.
33	1	Code	SALINITY EQUIPMENT CODE - a one-character code to describe the type of equipment used to measure salinity. Use Code No. EPA-4: 1 -- Refractometer 2 -- Titration 3 -- Conductivity Cell 4 -- CTD
34	3	Numeric	TRANSMISSIVITY - three digits for transmissivity with one decimal place if measured by Equipment Code 2. If measured by any other method, no decimal place.

EXHIBIT VI-C-6 (Cont'd)
Data Record 1

Starting Column	Length of Field	Field Format	Description
37	1	Code	TRANSMISSIVITY EQUIPMENT CODE - a one-character code to describe the type of equipment to measure transmissivity. Use Code No. 0094: 1 -- Turbidometer; in JTU * 2 -- Transmissometer; in Percent of Light Transmission over a 10 cm Path 3 -- Fluorometer; Suspended Solids Calibration 4 -- Nephelometer, in NTU 5 -- Turbidometer in FTU 6 -- Transmissometer
38	3	Numeric	pH - three digits for pH, with two decimal places.
41	4	Numeric	DISSOLVED OXYGEN - four digits for dissolved oxygen (DO), in milligrams per liter, with two decimal places.
45	1	Code	DISSOLVED OXYGEN EQUIPMENT CODE - a one- character code to describe the type of equipment used to measure dissolved oxygen (DO). Use Code No. EPA-5: 1 -- Winkler Titration 2 -- Probe 4 -- CTD
46	5	Numeric	TOTAL SUSPENDED SOLIDS - five digits for the concentration of Total Suspended Solids in milligrams per liter (MGL) with two decimal places.
51	4	Numeric	LIGHT EXTINCTION COEFFICIENT - four digits for the extinction coefficient with two decimal places.
55	14	Blank	BLANK.
69	4	Numeric	BIOLOGICAL OXYGEN DEMAND (BOD) - four digits for the BOD concentration (5-day) in milligrams per liter (MGL).

EXHIBIT VI-C-6 (Cont'd)
Data Record 1

Starting Column	Length of Field	Field Format	Description
73	4	Numeric	OIL AND GREASE - four digits for the concentration of oil and grease in milligrams per liter with one decimal place.
77	4	Numeric	SETTLABLE SOLIDS - four digits for the settling rate, in milliliters per liter per hour (ml/l/hour).
81	4	Numeric	VOLATILE SUSPENDED SOLIDS - four digits for concentration of Volatile Suspended Solids, in milligrams per liter (MGL), with one decimal place.

EXHIBIT VI-C-7
Data Record 2

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "144".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier, assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This number appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "G".
11	3	BLANK	BLANK.
14	3	Alphanumeric	SAMPLE NUMBER - three characters assigned by the investigator to identify the sample. Samples should be numbered sequentially. Quality control samples such as field blanks, lab blanks or spiked matrix samples are identified by a sequential number prefixed by a letter as indicated below: F -- field blank L -- lab blank T -- transport blank S -- spiked matrix sample

EXHIBIT VI-C-7 (Cont'd)
Data Record 2

Starting Column	Length of Field	Field Format	Description
17	1	Code	SPHERE - a one-character code to identify the sphere from which the data came. Use Code No. 0093. (See Appendix C for a list of codes.)
18	2	Numeric	REPLICATE NUMBER - a unique identifier for each replicate observation taken from the whole water sample. This number is assigned by the investigator.
20	10	Code	CHEMICAL CODE (1) - a ten-character code to identify the chemical measured; entries must be left-justified. (See Appendix A for list of ODES Chemical Codes.) For unlisted codes, contact the ODES Staff. Do not assign codes independently.
30	1	Code	MEASUREMENT CODE (1) - code to describe the units of the reported concentration (e.g., ppb, ppm, activity). Use Code No. 0377. (See Appendix C for a list of codes.)
31	1	Code	QUALIFIER CODE (1) - a one-character code to provide additional qualifying information about the measurement. Use Code EPA-3. (See Appendix C for a list of codes.)
32	4	Numeric	CONCENTRATION (1) - concentration of the chemical measured, in units indicated by the measurement code, up to four significant digits. Use the EXPONENT field to indicate desired decimal point position. Do not enter a concentration value of zero. Leave blank if necessary. (See Appendix A for an example of how to enter chemical concentration data.)
36	1	Symbolic	EXPONENT SIGN (1) - sign (+/-) of the exponent for the concentration entry. If exponent is 0, leave this blank.
37	1	Numeric	EXPONENT (1) - exponent of the concentration value reported. Use exponent to indicate decimal places.

EXHIBIT VI-C-7 (Cont'd)
Data Record 2

Starting Column	Length of Field	Field Format	Description
38	10	Code	CHEMICAL CODE (2) - a ten-character code to identify the chemical measured; entries must be left-justified. (See Appendix A for a list of ODES Chemical Codes.) For unlisted codes, contact the ODES Staff. Do not assign codes independently.
48	1	Code	MEASUREMENT CODE (2) - code to describe the units of the reported concentration (e.g., ppb, ppm, activity). Use Code No. 0377. (See Appendix C for a list of codes.)
49	1	Code	QUALIFIER CODE (2) - a one-character code to provide additional qualifying information about the measurement. Use Code EPA-3. (See Appendix C for a list of codes.)
50	4	Numeric	CONCENTRATION (2) - concentration of the chemical measured, in units indicated by measurement code, up to four significant digits. Use the EXPONENT field to indicate desired decimal point position. Do not enter a concentration value of zero. Leave blank if necessary. (See Appendix A for an example of how to enter chemical concentration data.)
54	1	Symbolic	EXPONENT SIGN (2) - sign (+/-) of the exponent for the concentration entry. If the exponent is 0, leave this blank.
55	1	Numeric	EXPONENT (2) - exponent of the concentration value reported. Use exponent to indicate decimal place.
56	10	Code	CHEMICAL CODE (3) - a ten-character code to identify the chemical measured; entries must be left-justified. (See Appendix A for a list of ODES Chemical Codes.) For unlisted codes, contact the ODES Staff. Do not assign codes independently.

EXHIBIT VI-C-7 (Cont'd)
Data Record 2

Starting Column	Length of Field	Field Format	Description
66	1	Code	MEASUREMENT CODE (3) - code to describe the units of the reported concentration (e.g., ppb, ppm, activity). Use Code No. 0377. (See Appendix C for a list of codes.)
67	1	Code	QUALIFIER CODE (3) - a one-character code to provide additional qualifying informa- tion about the measurement. Use Code EPA-3. (See Appendix C for a list of codes.)
68	4	Numeric	CONCENTRATION (3) - concentration of the chemical measured, in units indicated by measurement code, up to four significant digits. Use the EXPONENT field to indicate desired decimal point position. Do not enter a concen- tration value of zero. Leave blank if necessary. (See Appendix A for an example of how to enter chemical concentration data.)
72	1	Symbolic	EXPONENT SIGN (3) - sign (+/-) of the exponent for the concentration entry. If the exponent is 0, leave this blank.
73	1	Numeric	EXPONENT (3) - exponent of the concentra- tion value reported. Use exponent to indicate decimal place.
74	2	Code	EXTRACTION METHOD CODE - a two-character code to indicate the method used to extract or digest the sample matrix and remove or isolate the chemical of concern. Use Code No. 0350. (See Appendix C for a list of codes.)
76	2	Code	SAMPLE CLEAN-UP CODE (1) - a two-character code used to indicate an additional step taken to further purify the sample extracts or digestates. Use Code No. 0350. (See Appendix C for a list of codes.)

EXHIBIT VI-C-7 (Cont'd)
Data Record 2

Starting Column	Length of Field	Field Format	Description
78	2	Code	SAMPLE CLEAN-UP CODE (2) - Clean-up Code (2) refers to the second cleanup procedure used during sample processing. Use Code No. 0350. (See Appendix C for a list of codes.)
80	2	Code	SAMPLE CLEAN-UP CODE (3) - Clean-up Code (3) refers to the third cleanup procedure used during sample processing. Use Code No. 0350. (See Appendix C for a list of codes.)
82	2	Code	INSTRUMENT CODE - a two-character code to identify the final chemical analysis method(s) used for analyzing the sample. The code should represent the final analysis method or combined methods as listed in Code No. 0350. (See Appendix C for a list of codes.)
84	3	Alphanumeric	SAMPLE NUMBER FOR ANALYTICAL BLANK - a three-character ID for the analytical blank associated with chemical concentrations reported on this record. This ID "links" this Data Record 2 to a particular analytical blank. This ID must match one of the Sample Numbers listed on the Sample Records for data from analytical blanks.

VII. ODES File Type 073 for Sediment Grain Size Analysis Data

A. Introduction

ODES File Type 073 for Sediment Grain Size Analysis Data can be used to report grain size distribution data. This chapter describes how to compile and submit to the ODES Staff a data set containing grain size distribution data. The data set will consist of a set of different record types arranged in a hierarchical order. Section B of this chapter provides an illustration of each of the different record types and explains the hierarchical relationships between them. Section C contains detailed instructions for compiling your data set. The instructions for each of the data elements include information such as the length of the field, the type of data (e.g., numeric, character), and a description of the data element. In most cases where a data element is a code (e.g., a two-character code for type of sample), a list of valid codes will accompany the data element description. In some cases, however, where the list of data entry codes is long (e.g., the list of codes for sample types), you will be referred to Appendix C.

B. Hierarchical Relationships

ODES File Type 073 is composed of five record types:

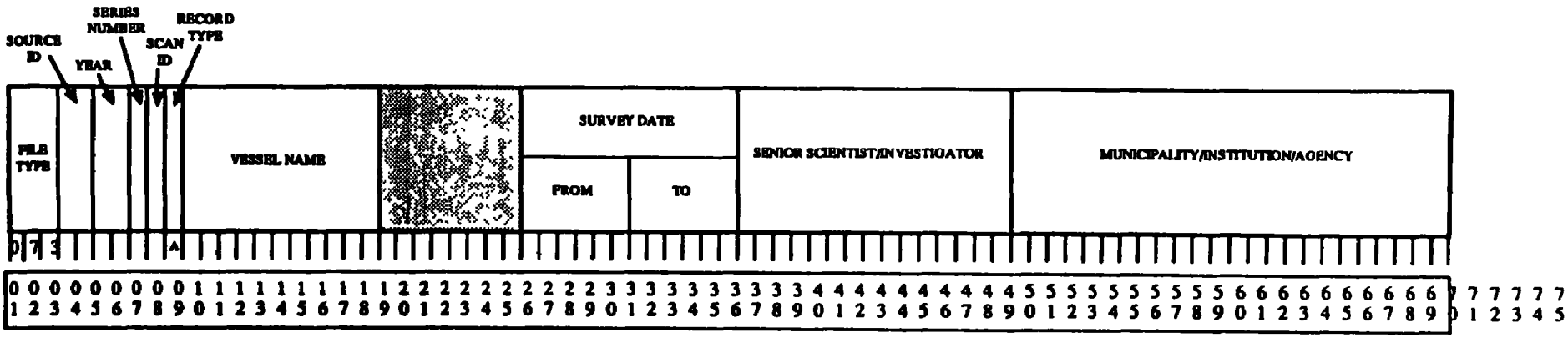
- Record Type "A" is the Survey Header Record. It is used to report information common to the entire data set (e.g., survey dates; investigator's name).
- Record Type "B" is the Station Header Record. It is used to report information about the station where the sample was collected (e.g., station location; water depth).
- Record Type "D" is the Sample Header Record. It is used to report information common to each sample (e.g., depth of sampled interval; method of analysis).
- Record Type "F" is the Size Analysis Record 1. It is used to report grain size distribution data for gravel, sand, silt, and clay.
- Record Type "H" is Size Analysis Record 2. It is used to report percentage weights in intervals from -1.0 to 4.0 phi.

Exhibit VII-B-1 provides an illustration of the structure of each of these record types. These record images, in conjunction with the detailed instructions provided in Section C, will enable you to quickly and accurately complete individual data entry sheets (or enter this data onto tape or disk) for each of the record types.

In addition, it is also necessary to understand the relationships among the different record types so that you can compile a comprehensive data set in the proper hierarchical format. The hierarchical order described herein is designed to minimize the duplication of data entry tasks and is in accordance with standards adopted by the National Oceanographic Data Center (NODC). The relationships are straightforward, and taking just a few minutes now to understand them could save you considerable time and effort later.

EXHIBIT VII-B-1
ODES FT073 for Sediment Grain Size Analysis Data

Survey Header Record



Station Header Record

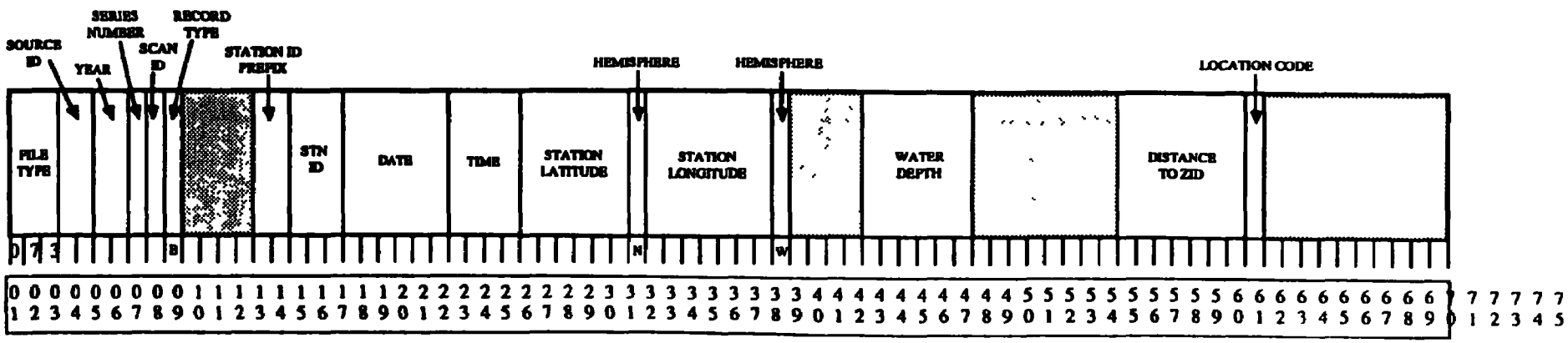
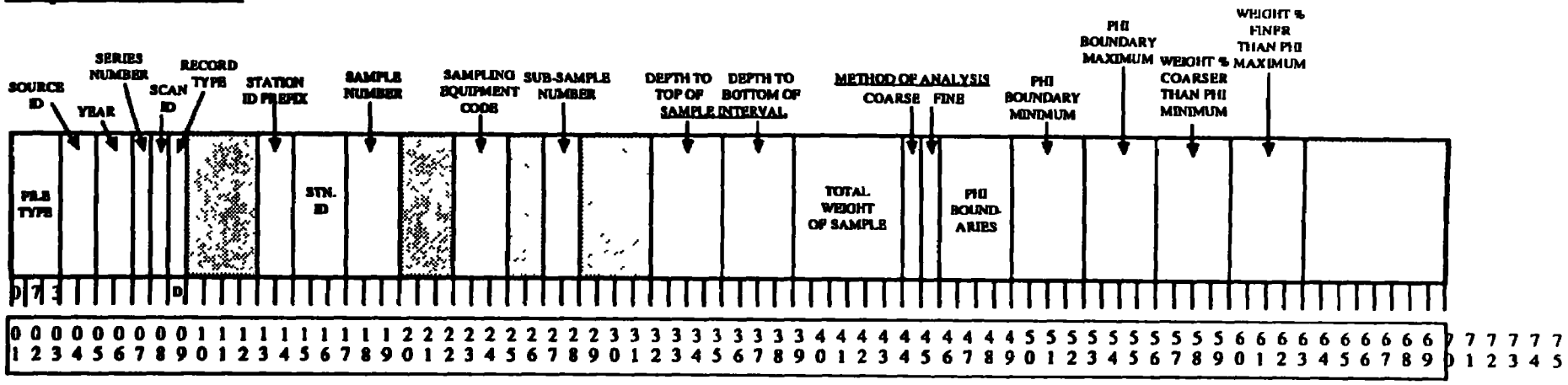


EXHIBIT VII-B-1 (Cont'd)

Sample Header Record



Size Analysis Record 1

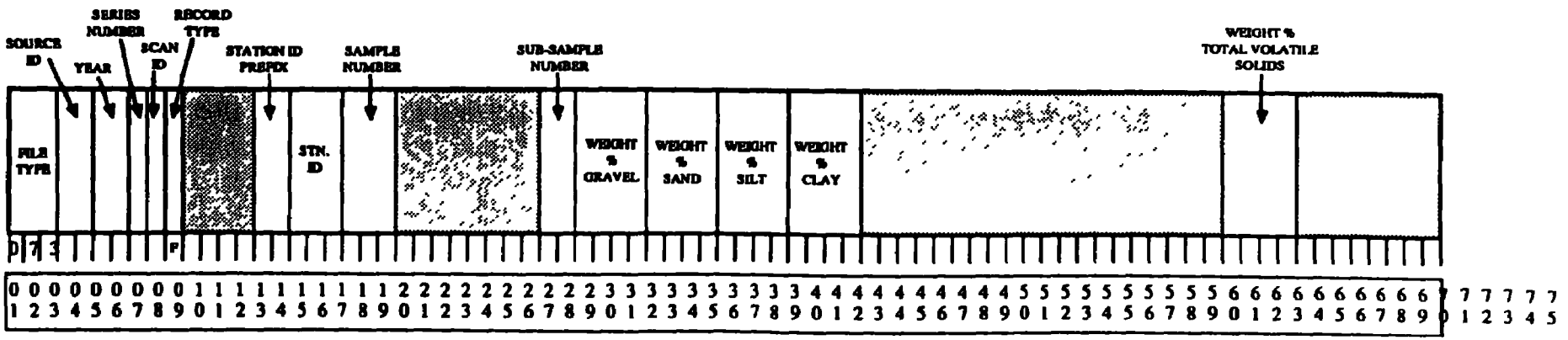
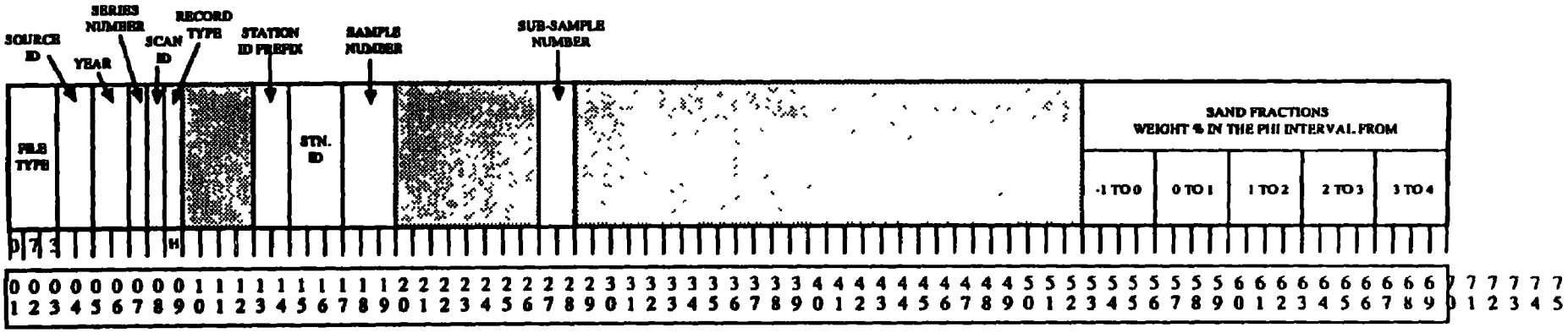


EXHIBIT VII-B-1 (Cont'd)

Size Analysis Record 2



As shown above, the different record types report information at different logical levels. For example, the Survey Header Record (Record Type "A") reports information common to the entire survey data set, whereas the Sample Header Record (Record Type "D") reports information about each of the replicate samples taken during the survey. Thus, there will be only one Survey Header Record per data set, but there will typically be multiple Sample Header Records.

Exhibit VII-B-2 shows how the different record types would be arranged in a data set reporting data from a survey in which sampling was conducted at two stations, where two replicate samples were collected at each station.

If you have any questions about how to complete your data entry sheets or how to compile your data, please contact the ODES Staff. (See the Preface for address and telephone information.)

C. Detailed Data Element Descriptions

Detailed descriptions for all of the data elements in ODES File Type 073 are provided below. All record types for a given data set will share the same nine-character file identifier. This file ID consists of three characters to identify the file type (i.e., "073"), followed by a two-character abbreviation for the municipality/institution/agency conducting the survey, the last two digits of the year in which the survey was taken, a series number assigned by the investigator and a scan code to indicate sampling frequency and collection period.

The contents of all numeric fields should be right-justified, preceded by either blanks, zeroes, or where applicable, positive (+) or negative (-) signs. All decimal points are implied rather than physically included (see Exhibit VII-B-1). The contents of all character fields should be left justified, blank-filled.

Survey Header Record

This record is mandatory and should be submitted once for each data set. See Exhibit VII-C-1 for a description of all data elements in this record.

Station Header Record

This record is mandatory; one record should be generated for each sampling station. Stations should be uniquely identified by the Station ID Prefix and Station ID fields (columns 15-19). See Exhibit VII-C-2 for a description of all data elements in this record.

Sample Header Record

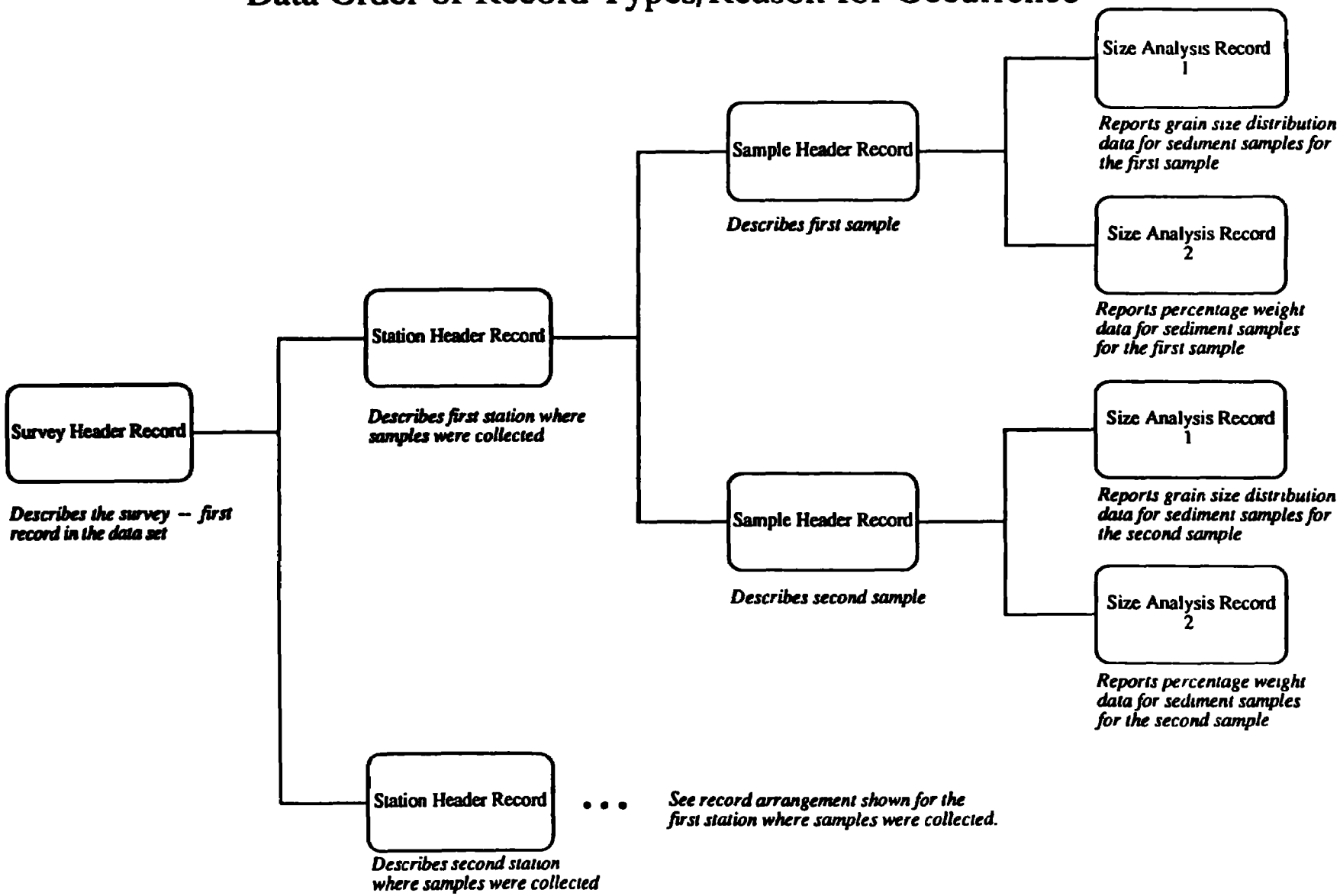
This record is mandatory; one record should be generated for each replicate sample. See Exhibit VII-C-3 for a descritpion of all data elements in this record.

Size Analysis Record 1

This record is used to report grain size distribution data for gravel, sand, silt, and clay. See Exhibit VII-C-4 for a description of all data elements in this record.

EXHIBIT VII-B-2

Sediment Grain Size Analysis
Data Order of Record Types/Reason for Occurrence



Size Analysis Record 2

This record is used to report the grain size distribution or sand fraction. See Exhibit VII-C-5 for a description of all data elements in this record.

D. Data Entry Codes

This section contains a list of all the code types used in ODES File Type 073 for Sediment Grain Size Analysis Data. The codes are listed by their identifiers and the fields in which they are to be used. The elements of these code types are listed in the appendices: Appendix A contains ODES Chemical and Water Quality Codes, Appendix B contains NODC/ODES Taxonomic Codes, and Appendix C contains all other ODES code types.

Code Identifier	Field Name
EPA-1	Relation to ZID
0346	Station Location
0255	Sampling Equipment
0253	Method of Analysis, Coarse
0254	Method of Analysis, Fine
EPA-10	Scan ID

EXHIBIT VII-C-1
Survey Header Record

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "073".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier, assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This number appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "A".
11	11	Alpha	VESSEL NAME - identity of the survey vessel or platform.
22	8	Blank	BLANK.
30	6	YYMMDD	SURVEY DATE FROM - start of survey date. YY is the last 2 digits of the year. MM is the month (01-12). DD is the day (01-31).
36	6	YYMMDD	SURVEY DATE TO - end of survey date, where YY is the last 2 digits of the year. MM is the month (01-12). DD is the day (01-31).
42	15	Alpha	SENIOR SCIENTIST/INVESTIGATOR - name of the senior scientist or investigator.

EXHIBIT VII-C-1 (Cont'd)
Survey Header Record

Starting Column	Length of Field	Field Format	Description
57	24	Alpha	MUNICIPALITY/INSTITUTION/AGENCY - name of the investigator's institution.

EXHIBIT VII-C-2
Station Header Record

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "073".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier, assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This number appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "B".
11	4	Blank	BLANK.
15	2	Alphanumeric	STATION IDENTIFICATION PREFIX - a two- character code to indicate that a station has been revisited during a survey. Leave this field blank for the first occupation of a station. Valid codes for reoccupations of the station are R1-R9.
17	3	Alphanumeric	STATION IDENTIFIER - three characters assigned by the investigator to identify the sampling station.
20	6	YYMMDD	DATE - date of sample collection. YY is the last two digits of the year. MM is the number of the month (01-12). DD is the day (01-31).

EXHIBIT VII-C-2 (Cont'd)
Station Header Record

Starting Column	Length of Field	Field Format	Description
26	4	HHMM	TIME - time of sample collection (starting time for composite samples) in 24-hour format. HH is the hour (00-23). MM is the number of minutes (00-59).
30	6	DDMMSS	STATION LATITUDE - latitude of the station. DD is degrees. MM is minutes. SS is seconds.
36	1	Code	HEMISPHERE - set to "N".
37	7	DDDMMSS	STATION LONGITUDE - longitude of station. DDD is degrees. MM is minutes. SS is seconds.
44	1	Code	HEMISPHERE - set to "W".
45	4	Blank	BLANK.
49	6	Numeric	WATER DEPTH - depth at station in meters to one decimal place.
55	8	Blank	BLANK.
63	6	Numeric	DISTANCE TO ZID - six digits for the distance in meters from the station to the edge of the zone of initial dilution (ZID). This field is applicable only for EPA's 301(h) program. Leave this field blank for stations not classified as part of a 301(h) monitoring program.
69	1	Code	RELATION TO ZID - a one-character code to describe the classification of the station with respect to the ZID. Leave this field blank for all stations not classified as part of a 301(h) monitoring program. Where applicable, use Code No. EPA-1: W -- Within ZID B -- ZID Boundary N -- Near Field R -- Reference F -- Far Field

EXHIBIT VII-C-2 (Cont'd)
Station Header Record

Starting Column	Length of Field	Field Format	Description
70	1	Code	STATION LOCATION CODE - a one-character code to describe the location of the station. Use Code No. 0346: A -- Stream B -- Estuary C -- Lake D -- Ocean E -- Well F -- Other
71	10	Blank	BLANK.

EXHIBIT VII-C-3
Sample Header Record

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "073".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier, assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This number appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "D".
11	4	Blank	BLANK.
15	2	Alphanumeric	STATION IDENTIFICATION PREFIX - a two- character code to indicate that a station has been revisited during a survey. Leave blank for first occupation of a station. Valid codes for reoccupations of the station are R1-R9.
17	3	Numeric	STATION IDENTIFIER - three characters assigned by the investigator to identify the sampling station.
20	3	Alphanumeric	SAMPLE NUMBER - a three-digit number to identify each sample. Sample Numbers are assigned by the investigator.

EXHIBIT VII-C-3 (Cont'd)
Sample Header Record

Starting Column	Length of Field	Field Format	Description
23	3	Blank	BLANK.
26	3	Code	SAMPLING EQUIPMENT CODE - a three-character code indicating equipment used to collect a sample. Use Code No. 0255. (See Appendix C for a list of codes.)
29	2	Blank	BLANK.
31	2	Numeric	SUB-SAMPLE NUMBER - two digits to uniquely identify sub-samples. This field will usually be left blank. Sub-sample Numbers must be provided only if a sample (e.g., a box-core sample) is divided into separate components (e.g., four replicate sub-samples).
33	4	Blank	BLANK.
37	4	Numeric	DEPTH TO TOP OF SAMPLED INTERVAL - depth in meters from sediment surface to top of interval, to two decimal places. If top of interval is at the surface, enter zero.
41	4	Numeric	DEPTH TO BOTTOM OF SAMPLED INTERVAL - depth in meters from sediment surface to bottom of interval, to two decimal places.
45	6	Numeric	TOTAL WEIGHT OF SAMPLE - weight in grams of sample analyzed, to two decimal places.
51	1	Code	METHOD OF ANALYSIS, COARSE - a one-character code for the method of analysis of coarse particles. Leave blank if sample was not split into fractions. Use Code No. 0253: 1 -- Sieves 2 -- Settling Tube 3 -- Rapid Sediment Analyzer

EXHIBIT VII-C-3 (Cont'd)
Sample Header Record

Starting Column	Length of Field	Field Format	Description
52	1	Code	METHOD OF ANALYSIS, FINE - the method of analysis of fine particles. Leave blank if sample was not split into fractions. Use Code No. 0254: 1 -- Pipette 2 -- Hydrometer 3 -- Sedimentation Balance 4 -- Hydrophotometer 5 -- Coulter Counter
53	4	Numeric	PHI BOUNDARIES - the boundary in phi units, between the coarse and fine fractions, to two decimal places. This value will usually be 4.00.
57	4	Numeric	PHI BOUNDARY MINIMUM - the phi boundary at the coarse end of the analyzed range, to 2 decimal places. This value will usually be -1.00.
61	4	Numeric	PHI BOUNDARY MAXIMUM - the phi boundary at the fine end of the analyzed range, to 2 decimal places. This value will usually be 8.00.
65	4	Numeric	WEIGHT % COARSER THAN PHI MIN - % of the total dry weight in the sediment grades that is coarser than the phi minimum (less than -1.00 phi), to 2 decimal places.
69	4	Numeric	WEIGHT % FINER THAN PHI MAX - % of the total dry weight in the sediment grades that is finer than the phi maximum (greater than 8.00 phi), to 2 decimal places.
73	8	Blank	BLANK.

EXHIBIT VII-C-4
Size Analysis Record 1

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "073".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier, assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This number appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "F".
11	4	Blank	BLANK.
15	2	Alphanumeric	STATION IDENTIFICATION PREFIX - a two-character code to indicate that a station has been revisited during a survey. Leave blank for first occupation of a station. Valid codes for reoccupations of the station are R1-R9.
17	3	Numeric	STATION IDENTIFIER - three characters assigned by the investigator to identify the sampling station.
20	3	Alphanumeric	SAMPLE NUMBER - three digits to identify each sample. Sample Numbers are assigned by the investigator.

EXHIBIT VII-C-4 (Cont'd)
Size Analysis Record 1

Starting Column	Length of Field	Field Format	Description
23	8	Blank	BLANK.
31	2	Numeric	SUB-SAMPLE NUMBER - two digits to uniquely identify sub-samples. This field will usually be left blank. Sub-sample Numbers must be provided only if a sample (e.g., a box-core sample) is divided into separate components (e.g., four replicate sub-samples).
33	4	Numeric	WEIGHT % - GRAVEL - percent of total dry weight in the sediment grades that is less than -1.0 phi, to 2 decimal places.
37	4	Numeric	WEIGHT % - SAND - percent of total dry weight in the sediment grades that is greater than -1.0 phi and less than 4.0 phi, to 2 decimal places.
41	4	Numeric	WEIGHT % - SILT - percent of total dry weight in the sediment grades that is greater than 4.0 phi and less than 8.0 phi, to 2 decimal places.
45	4	Numeric	WEIGHT % CLAY - percent of total dry weight in the sediment grades that is greater than 8.0 phi, to 2 decimal places.
49	20	Blank	BLANK.
69	4	Numeric	WEIGHT % TOTAL VOLATILE SOLIDS - percent loss of weight on ignition, to 2 decimal places.
73	8	Blank	BLANK.

EXHIBIT VII-C-5
Size Analysis Record 2

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "073".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier, assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This number appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "H".
11	4	Blank	BLANK.
15	2	Alphanumeric	STATION IDENTIFICATION PREFIX - a two-character code to indicate that a station has been revisited during a survey. Leave blank for first occupation of a station. Valid codes for reoccupations of the station are R1-R9.
17	3	Numeric	STATION IDENTIFIER - three characters assigned by the investigator to identify the sampling station.
20	3	Alphanumeric	SAMPLE NUMBER - three digits to identify each sample. Sample Numbers are assigned by the investigator.

EXHIBIT VII-C-5 (Cont'd)
Size Analysis Record 2

Starting Column	Length of Field	Field Format	Description
23	8	Blank	BLANK.
31	2	Numeric	SUB-SAMPLE NUMBER - two digits to uniquely identify sub-samples. This field will usually be left blank. Sub-sample Numbers must be provided only if a sample (e.g., a box-core sample) is divided into separate components (e.g., four replicate sub-samples).
33	28	Blank	BLANK.
61	4	Numeric	WEIGHT % IN THE PHI INTERVAL FROM: -1 to 0 - % to 2 decimal places.
65	4	Numeric	WEIGHT % IN THE PHI INTERVAL FROM: 0 to 1 - % to 2 decimal places.
69	4	Numeric	WEIGHT % IN THE PHI INTERVAL FROM: 1 to 2 - % to 2 decimal places.
73	4	Numeric	WEIGHT % IN THE PHI INTERVAL FROM: 2 to 3 - % to 2 decimal places.
77	4	Numeric	WEIGHT % IN THE PHI INTERVAL FROM: 3 to 4 - % to 2 decimal places.

VIII. ODES File Type 144 for Sediment Pollutant Data

A. Introduction

ODES File Type 144 for Sediment Pollutant Data can be used to report concentrations of any pollutant or contaminant found in marine sediment samples. This chapter describes how to compile and submit to the ODES Staff a data set containing sediment pollutant data. The set will consist of different record types arranged in a hierarchical order. Section B of this chapter provides an illustration of each of the various record types and explains the hierarchical relationships among them. Section C contains detailed instructions for compiling your data set. The instructions for each of the data elements include such information as the length of the field, the type of data (e.g., numeric; character), and a description of the element. In most instances where a data element is a code (e.g., a two-character code for sampling gear type), a list of valid codes will accompany the data element description. In others, however, where the list of data entry codes is long (e.g., codes for chemical analysis methods), you will be referred to Appendix C. ODES Chemical Codes for identifying pollutants can be found in Appendix A of this manual.

B. Hierarchical Relationships

This version of File Type 144 is composed of five record types:

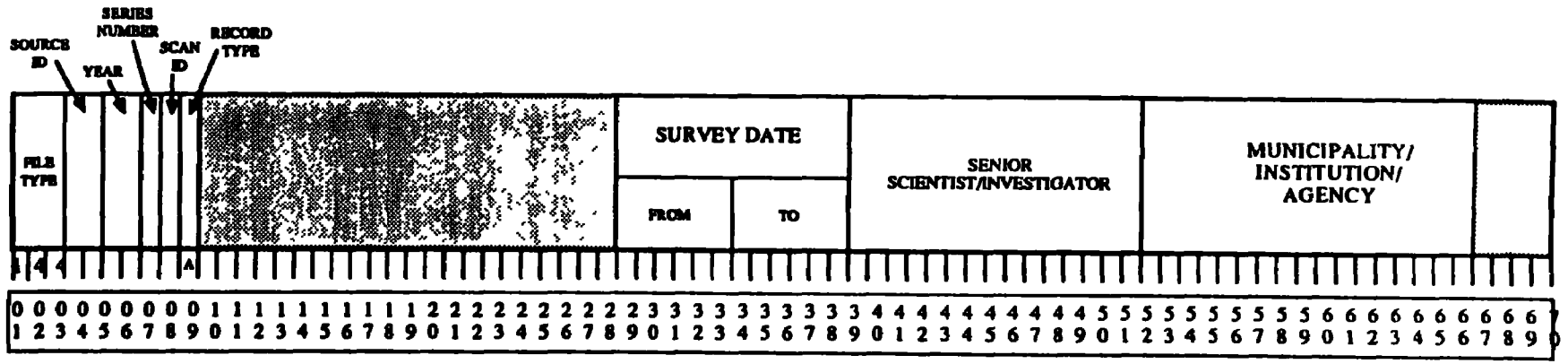
- Record Type "A" is the Survey Header Record. It is used to report information common to the entire data set (e.g., survey dates; investigator's name).
- Record Type "Z" is the Header Record for Quality Assurance Samples. It is used to identify data for analytical blanks or other quality assurance samples referred to within the data set.
- Record Type "C" is the Station Header Record. It is used to report information about the station where the sample was collected (e.g., station location; water depth).
- Record Type "E" is the Sample Record. It is used to report information about the sample (e.g., depth of the sediment core; gear used to collect the sample).
- Record Type "F" is the Data Record. It is used to report information on pollutant concentrations found in each of the sediment samples.

Exhibit VIII-B-1 provides an illustration of the structure of each of these record types. These record images, in conjunction with the detailed instructions provided in Section C, will enable you to quickly and accurately complete individual data entry sheets (or enter this data onto tape or disk) for each of the record types.

In addition, it is also necessary to understand the relationships among these record types so that you can compile a comprehensive data set in the proper hierarchical format. The hierarchical order described herein is designed to minimize the duplication of data entry tasks and is in accordance with standards adopted by the National Oceanographic Data Center (NODC). The relationships are straightforward, and taking just a few minutes now to understand them could save you considerable time and effort later.

EXHIBIT VIII-B-1
ODES FT144 for Sediment Pollutant Data

Survey Header Record



Header Record for Quality Assurance Samples

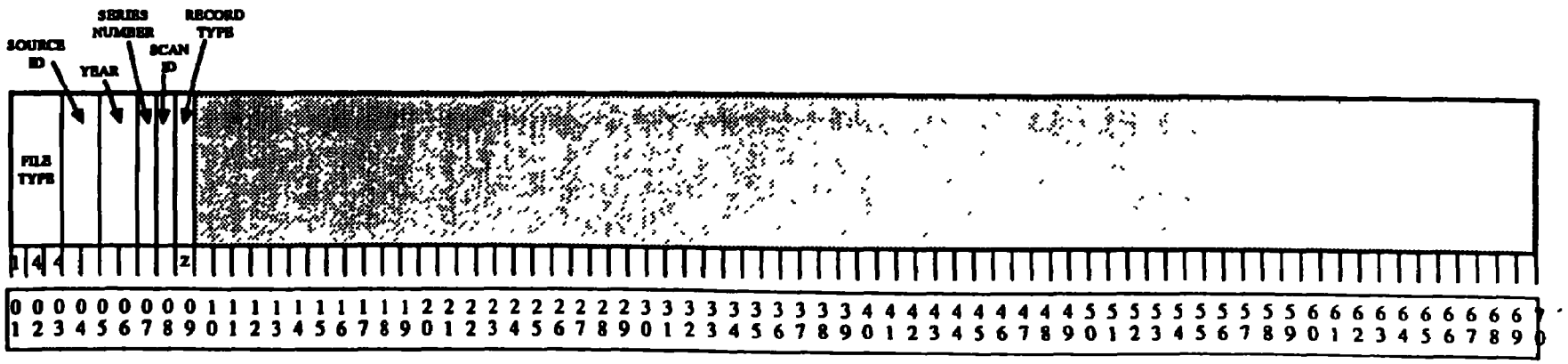
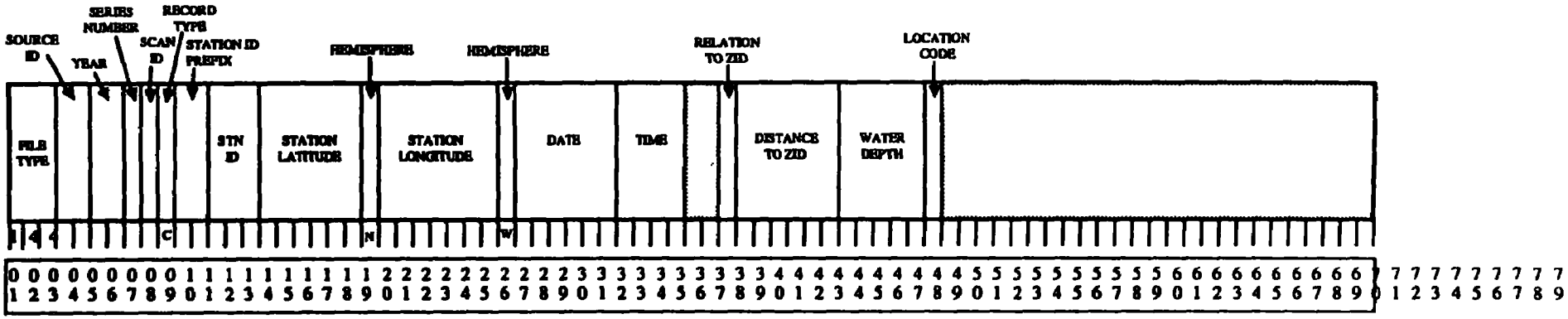


EXHIBIT VIII-B-1 (Cont'd)

Station Header Record



Sample/Sub-Sample Record

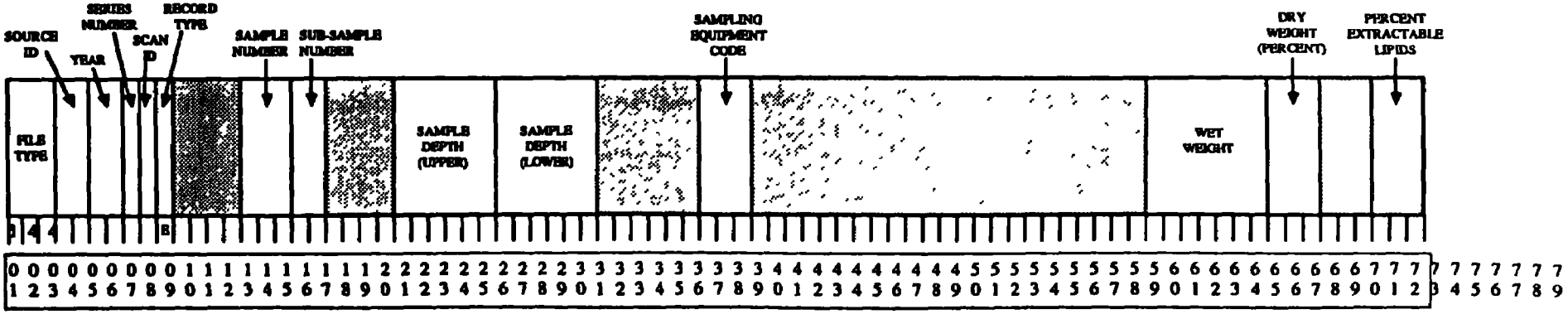
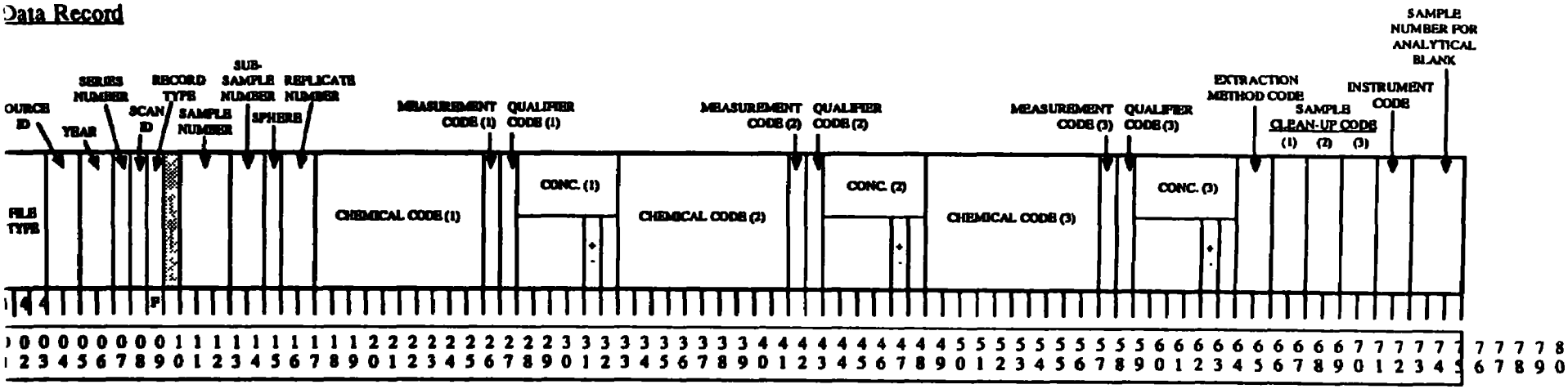


EXHIBIT VIII-B-1 (Cont'd)

Data Record



As shown above, the different record types report information at different logical levels. For example, the Survey Header Record (Record Type "A") reports information common to the entire survey data set, whereas the Sample Record (Record Type "C") reports information about each of the replicate samples taken during the survey. Thus, there will be only one Survey Header Record per data set, while there will typically be many Sample Records and Data Records.

Exhibit VIII-B-2 shows how the different record types would be arranged in a data set reporting data from a survey conducted at two stations, where two replicate samples were taken at each station. Data for quality assurance samples (e.g., analytical blanks) are reported first, followed by the sampling data for the first and second station.

If you have any questions about how to complete your data entry sheets or how to compile your data, please contact the ODES Staff. (See the Preface for address and telephone information.)

C. Detailed Data Element Descriptions

Detailed descriptions for all of the data elements in ODES File Type 144 for Sediment Pollutant Data are provided below. All record types for a given data set will share the same nine-character file identifier. This file ID consists of three characters to identify the file type (i.e., "144"), followed by a two-character abbreviation for the municipality/institution/agency conducting the survey, the last two digits of the year in which the survey was taken, a series number assigned by the investigator and a scan code to indicate sampling frequency and collection period.

The contents of all numeric fields should be right-justified, preceded by either blanks, zeroes, or where applicable, positive (+) or negative (-) signs. The contents of all decimal points are implied rather than physically included (see Exhibit VIII-B-1). All character fields should be left justified, blank-filled.

Survey Header Record

This record is mandatory and should be submitted only once for each data set. See Exhibit VIII-C-1 for a description of all data elements in this record.

Header Record for Quality Assurance Samples

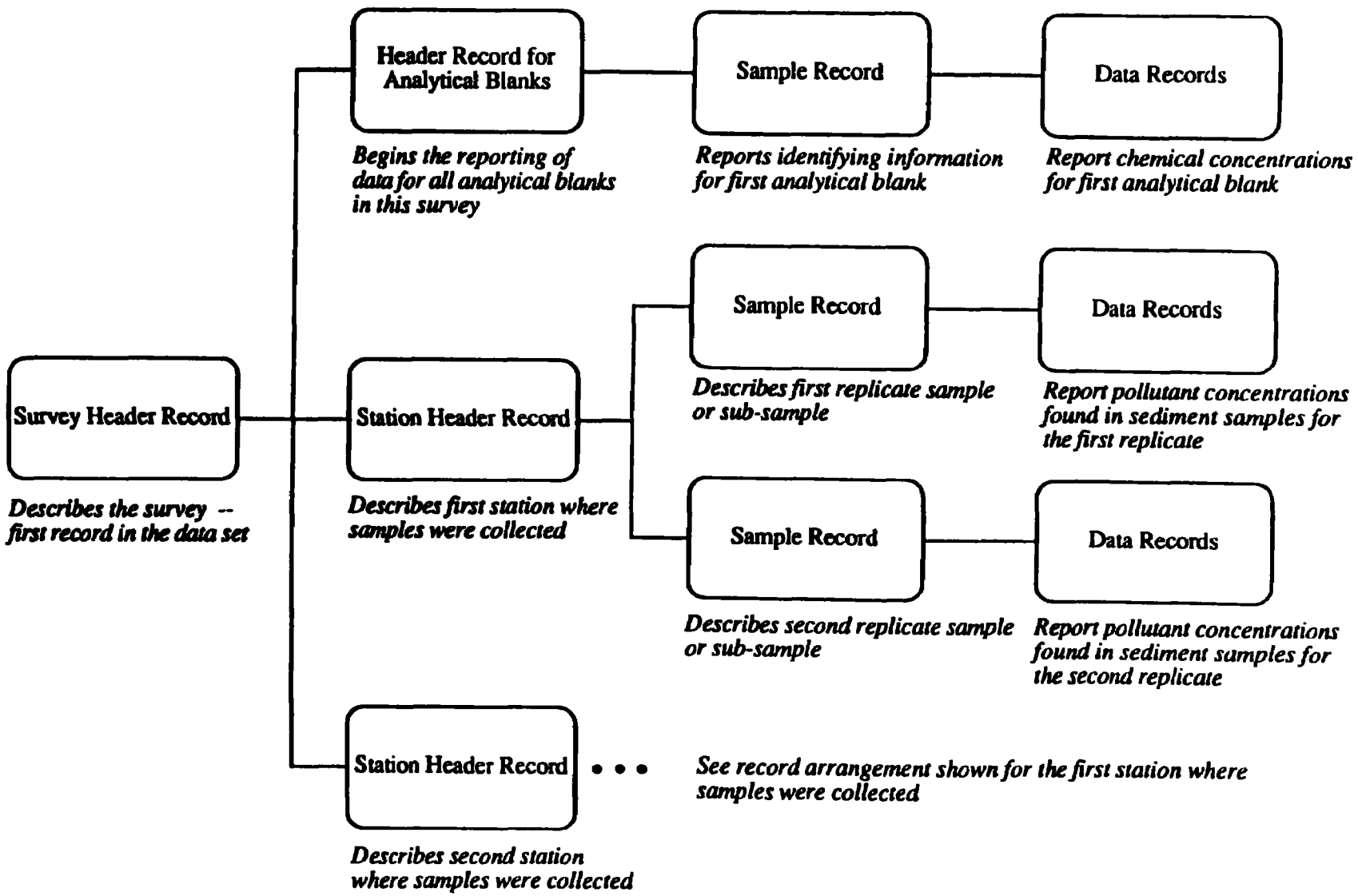
This record is used to identify data for all quality assurance (QA) samples recorded in the data set. All QA sample measurements (e.g., field, laboratory, or transport blanks or spiked matrix samples) should be reported within this level of the hierarchy. See Exhibit VIII-C-2 for a description of all data elements in this record. (See Exhibit VIII-B-2 for a description of how data records for QA samples should be organized within the data set.)

Station Header Record

This record is mandatory; one record should be generated for each sampling station. Stations should be uniquely identified by the Station ID Prefix and Station ID fields (columns 11-15). See Exhibit VIII-C-3 for a description of all data elements in this record.

EXHIBIT VIII-B-2

Sediment Pollutant Data
Order of Record Types/Reason for Occurrence



Sample/Sub-Sample Record

This record is mandatory; one record should be generated for each sample/sub-sample. Columns 18-83 are relevant only for Sample Records which identify actual field samples. *When the Sample Record is used to identify analytical blanks or other QA samples, columns 18-83 should be left blank.* See Exhibit VIII-C-4 for a description of all data elements in this record.

Data Record

This record reports concentrations for inorganic and organic chemicals measured in the sediment samples; data for up to three chemicals can be reported on each Data Record. Each compound reported in a single record should have analytical methods in common and be associated with a single blank sample. These records are "linked" to Sample Records by the Sample Number. See Exhibit VIII-C-5 for a description of all data elements in this record.

D. Data Entry Codes

This section contains a list of all the code types used in ODES File Type 144 for Sediment Pollutant Data. The codes are listed by their identifiers and the fields in which they are to be used. The elements of these code types are listed in the appendices: Appendix A contains ODES Chemical and Water Quality Codes, Appendix B contains NODC/ODES Taxonomic Codes, and Appendix C contains all other ODES code types.

Code Identifier	Field Name
EPA-1	Relation to ZID
0346	Station Location
0350	Chemical Analysis Method
0255	Sampling Equipment
0093	Sphere
ODES	Chemical Code
0377	Measurement code
EPA-3	Qualifier code
EPA-10	Scan ID

EXHIBIT VIII-C-1
Survey Header Record

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "144".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This number appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "A".
11	22	Blank	BLANK.
33	6	YYMMDD	SURVEY DATE FROM - start of survey date. YY is the last two digits of the year. MM is the month (01-12). DD is the day (01-31).
39	6	YYMMDD	SURVEY DATE TO - YY is the last two digits of the year. MM is the month (01-12). DD is the day (01-31).
45	15	Alpha	SENIOR SCIENTIST/INVESTIGATOR - name of the senior scientist or investigator.
60	17	Alpha	MUNICIPALITY/INSTITUTION/AGENCY - name of the investigator's institution.

EXHIBIT VIII-C-1 (Cont'd)
Survey Header Record

Starting Column	Length of Field	Field Format	Description
77	4	Blank	BLANK.

EXHIBIT VIII-C-2
Header Record for Quality Assurance Samples

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "144".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This number appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "Z".
11	70	Blank	BLANK.

EXHIBIT VIII-C-3
Station Header Record

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "144".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This number appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "C".
11	2	Alphanumeric	STATION IDENTIFICATION PREFIX - a two- character code to indicate that a station has been revisited during the survey. Leave this field blank for the first occupation of the station in a given survey. Valid codes for reoccupations of the station are R1-R9.
13	3	Alphanumeric	STATION IDENTIFIER - three characters assigned by the investigator to identify the sampling station.
16	6	DDMMSS	STATION LATITUDE - latitude of the station. DD is degrees. MM is minutes. SS is seconds.
22	1	Code	HEMISPHERE - set to "N".

EXHIBIT VIII-C-3 (Cont'd)
Station Header Record

Starting Column	Length of Field	Field Format	Description
23	7	DDDMMSS	STATION LONGITUDE - longitude of the station. DDD is degrees. MM is minutes. SS is seconds.
30	1	Code	HEMISPHERE - set to "W".
31	6	YYMMDD	DATE - date of sample collection. YY is the last two digits of the year. MM is the month (01-12). DD is the day (01-31).
37	4	HHMM	TIME - starting time of sample collection in 24-hour format. HH is the hour (00-23). MM is the number of minutes (00-59).
41	2	Blank	BLANK.
43	1	Code	RELATION TO ZID - a one-character code to describe the classification of the station with respect to the zone of initial dilution (ZID). Leave this field blank for all stations not classified as part of a 301(h) monitoring program. Where applicable, use Code EPA-1: W -- Within ZID B -- ZID Boundary N -- Near Field R -- Reference F -- Far Field
44	6	Numeric	DISTANCE TO ZID - distance in meters from the station to the edge of the zone of initial dilution (ZID). This field is applicable only to EPA's 301(h) program. Leave this field blank for stations not classified as part of a 301(h) monitoring program.
50	5	Numeric	WATER DEPTH - depth at station in meters to one decimal place.

EXHIBIT VIII-C-3 (Cont'd)
Station Header Record

Starting Column	Length of Field	Field Format	Description
55	1	Code	STATION LOCATION CODE - a one-character code to describe the location of the station. Use Code No. 0346: A -- Stream B -- Estuary C -- Lake D -- Ocean E -- Well F -- Other
56	25	Blank	BLANK.

EXHIBIT VIII-C-4
Sample/Sub-Sample Record

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "144".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This number appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "E".
11	4	Blank	BLANK.
15	3	Alphanumeric	SAMPLE NUMBER - tthree characters assigned by the investigator to identify the sample. Samples should be numbered sequentially. Quality control samples such as field blanks, lab blanks or spiked matrix samples are identified by a sequential number prefixed by a letter as indicated below: F -- field blank L -- lab blank T -- transport blank S -- spiked matrix sample

EXHIBIT VIII-C-4 (Cont'd)
Sample/Sub-Sample Record

Starting Column	Length of Field	Field Format	Description
	(Columns 18-80 should be left blank if the Sample Record is being used to identify analytical blanks or other quality assurance samples.)		
18	2	Numeric	SUB-SAMPLE NUMBER - two character assigned by the investigator to identify a vertical sub-sample. If a sediment core is not vertically partitioned into sub-samples, this field should be left blank.
20	4	Blank	BLANK.
24	6	Numeric	SAMPLE DEPTH (UPPER) - upper depth of sediment core, in centimeters.
30	6	Numeric	SAMPLE DEPTH (LOWER) - lower depth of sediment core, in centimeters.
36	6	Blank	BLANK.
42	3	Code	SAMPLING EQUIPMENT - a three-digit code to identify the general gear type used to collect the sample. Use Code No. 0255. (See Appendix C for a list of codes.)
45	23	Blank	BLANK.
68	7	Numeric	WET WEIGHT - total wet weight of sample in grams to two decimal places.
75	3	Numeric	DRY WEIGHT (PERCENT) - percent of total sample remaining after drying. Value should be expressed in percent by weight to one decimal place (e.g., 50.5% should entered "505").
78	3	Blank	BLANK.
81	3	Numeric	PERCENT EXTRACTABLE LIPIDS - lipids extracted as a percentage of the whole sample to one decimal place.

EXHIBIT VIII-C-5
Data Record

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "144".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This number appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "F".
11	1	Blank	BLANK.
12	3	Alphaumeric	SAMPLE NUMBER - tthree characters assigned by the investigator to identify the sample. Samples should be numbered sequentially. Quality control samples such as field blanks, lab blanks or spiked matrix samples are identified by a sequential number prefixed by a letter as indicated below: F – field blank L – lab blank T – transport blank S – spiked matrix sample

EXHIBIT VIII-C-5 (Cont'd)
Data Record

Starting Column	Length of Field	Field Format	Description
15	2	Numeric	SUB-SAMPLE NUMBER - two characters assigned by the investigator to identify a vertical sub-sample. If a sediment core is not vertically partitioned into sub-samples, this field should be left blank.
17	1	Code	SPHERE - a one-character code to identify the sphere from which the sample came. Use Code No. 0093. (See Appendix C for a list of codes.)
18	2	Numeric	REPLICATE NUMBER - a unique ID for each replicate or sub-sample. This number is assigned by the investigator.
20	10	Code	CHEMICAL CODE (1) - a ten-character code to identify the chemical measured; entries must be left-justified. (See Appendix A for a list of ODES Chemical Codes.) For unlisted codes, contact the ODES Technical Staff. Do not assign codes independently.
30	1	Code	MEASUREMENT CODE (1) - a code to describe the units of the reported concentration (e.g., ppb, ppm, activity). Use Code No. 0377. (See Appendix C for a list of codes.)
31	1	Code	QUALIFIER CODE (1) - a one-character code to provide additional qualifying information about the measurement. Use Code No. EPA-3. (See Appendix C for a list of codes.)
32	4	Numeric	CONCENTRATION (1) - concentration of the chemical measured, in units indicated by measurement code, up to four significant digits. Use the EXPONENT field to indicate desired decimal point position. Do not enter a concentration value of zero. Leave blank if necessary. (See Appendix A for an example of how to enter chemical concentration data.)
36	1	Symbolic	EXPONENT SIGN (1) - sign (+/-) of the exponent for the concentration entry. If the exponent is 0, leave this blank.

EXHIBIT VIII-C-5 (Cont'd)
Data Record

Starting Column	Length of Field	Field Format	Description
37	1	Numeric	EXPONENT (1) - exponent of the concentration value reported. Use exponent to indicate decimal place.
38	10	Code	CHEMICAL CODE (2) - a ten-character code to identify the chemical measured; entries must be left-justified. (See Appendix A for a list of ODES Chemical Codes.) For unlisted codes, contact the ODES Technical Staff. Do not assign codes independently.
48	1	Code	MEASUREMENT CODE (2) - a code to describe the units of the reported concentration (e.g., ppb, ppm, activity). Use Code No. 0377. (See Appendix C for a list of codes..
49	1	Code	QUALIFIER CODE (2) - a one-character code to provide additional qualifying information about the measurement. Use Code EPA-3. (See Appendix C for a list of codes.)
50	4	Numeric	CONCENTRATION (2) - concentration of the chemical measured, in units indicated by measurement code, up to four significant digits. Use the EXPONENT field to indicate desired decimal point position. Do not enter a concentration value of zero. Leave blank if necessary. (See Appendix A for an example of how to enter chemical concentration data.)
54	1	Symbolic	EXPONENT SIGN (2) - sign (+/-) of the exponent for the concentration entry. If the exponent is 0, leave this blank.
55	1	Numeric	EXPONENT (2) - exponent of the concentration value reported. Use exponent to indicate decimal place.
56	10	Code	CHEMICAL CODE (3) - a ten-character code to identify the chemical measured; entries must be left-justified. (See Appendix A for a list of ODES Chemical Codes). For unlisted codes, contact the ODES Technical Staff. Do not assign codes independently.

EXHIBIT VIII-C-5 (Cont'd)
Data Record

Starting Column	Length of Field	Field Format	Description
66	1	Code	MEASUREMENT CODE (3) - a code to describe the units of the reported concentration (e.g., ppb, ppm, activity). Use Code No. 0377. (See Appendix C for a list of codes.)
67	1	Code	QUALIFIER CODE (3) - a one-character code to provide additional qualifying information about the measurement. Use Code EPA-3. (See Appendix C for a list of codes.)
68	4	Numeric	CONCENTRATION (3) - concentration of the chemical measured, in units indicated by measurement code, up to four significant digits. Use the EXPONENT field to indicate desired decimal point position. Do not enter a concentration value of zero. Leave blank if necessary. (See Appendix A for an example of how to enter chemical concentration data.)
72	1	Symbolic	EXPONENT SIGN (3) - sign (+/-) of the exponent for the concentration entry. If the exponent is 0, leave this blank.
73	1	Numeric	EXPONENT (3) - exponent of the concentration value reported. Use exponent to indicate decimal place.
74	2	Code	EXTRACTION METHOD CODE - a two-character code to indicate the method used to extract or digest the sample matrix and remove or isolate the chemical of con- cern. Use Code No. 0350. (See Appendix C for a list of codes.)
76	2	Code	SAMPLE CLEAN-UP CODE (1) - a two-character code used to indicate an additional step taken to further purify the sample extracts or digestates. Use Code No. 0350. (See Appendix C for a list of codes.)

EXHIBIT VIII-C-5 (Cont'd)
Data Record

Starting Column	Length of Field	Field Format	Description
78	2	Code	SAMPLE CLEAN-UP CODE (2) - Clean-up Code (2) refers to the second cleanup procedure used during sample processing. Use Code No. 0350. (See Appendix C for a list of codes.)
80	2	Code	SAMPLE CLEAN-UP CODE (3) - Clean-up Code (3) refers to the third cleanup procedure used during sample processing. Use Code No. 0305. (See Appendix C for a list of codes.)
82	2	Code	INSTRUMENT CODE - a two-character code to identify the final chemical analysis method(s) used for analyzing the sample. The code should represent the final analysis method or combined methods as listed in Code No. 0350. (See Appendix C for a list of codes.)
84	3	Alphanumeric	SAMPLE NUMBER FOR ANALYTICAL BLANK - a three-character ID for the analytical blank associated with chemical concentrations reported on this record. This ID "links" the Data Record to a particular analytical blank. This ID must match one of the Sample Numbers listed on the Sample Records for data from analytical blanks.

IX. ODES File Type 123 for Trawl/Seine Sampling Data

A. Introduction

ODES File Type 123 for Trawl/Seine Sampling Data can be used to report fish and shellfish abundance, and biomass data. Samples of marine organisms will typically be collected by trawls and beach seines. This chapter describes how to compile and submit to the ODES Staff a data set for species data collected from trawl/seine samples. The set will consist of different record types arranged in a hierarchical order. Section B of this chapter provides an illustration of each of the various record types and explains the hierarchical relationships among them. Section C contains detailed instructions for compiling your data set. The instructions for each of the data elements include such information as the length of the field, the type of data (e.g., numeric, character), and a description of the element. In cases where a data element is a code (e.g., a two-character code for type of navigation used onboard the sampling vessel), a list of valid codes will accompany the data element description. In other instances, however, where the list of data entry is long (e.g., codes for specific bottom types), you will be referred to Appendix C. A list of NODC taxonomic codes for marine species can be found in Appendix B of this manual. If you require codes not listed in the appendices, please contact the ODES Technical Staff.

B. Hierarchical Relationships

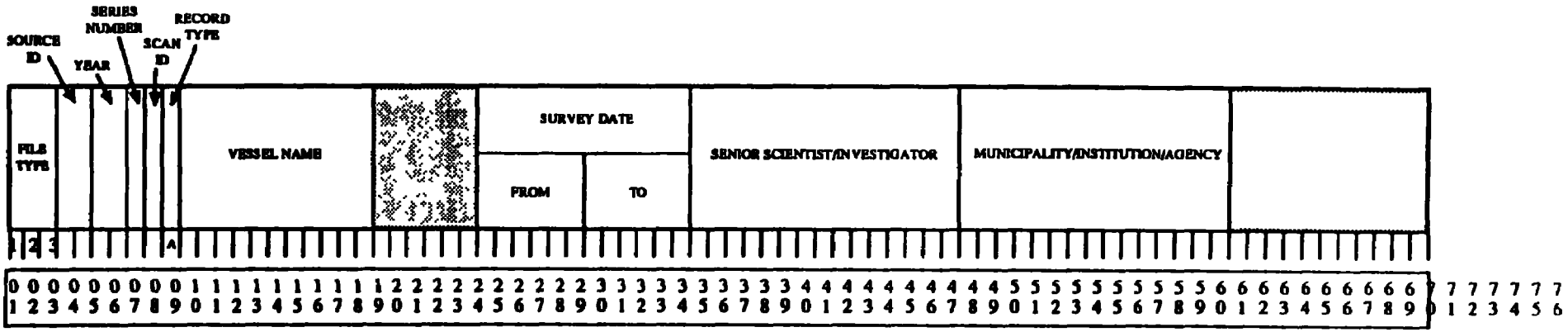
ODES File Type 123 for Trawl/Seine Sampling Data consists of six record types:

- Record Type "A" is the Survey Header Record. It is used to report information common to the entire data set (e.g., survey dates; investigator's name).
- Record Type "B" is the Station Header Record. It is used to report information about the location where the fish samples were collected (e.g., station location; water depth.
- Record Type "C" is the Environment Record. It is used to describe the conditions under which the sample was collected (e.g., general weather; water temperature).
- Record Type "D" is the Bottom Trawl Record. It is used to report information about the types of trawls used for sampling.
- Record Type "E" is the Miscellaneous Gear Record. It is used to report about other types of gear used for sampling (e.g., seines).
- Record Type "J" is the Individual Specimen Record. It is used to report species abundance and biomass data for individual species.

Exhibit IX-B-1 provides an illustration of the structure of each of these record types. These record images, in conjunction with the detailed instructions provided in Section C, will enable you to quickly and accurately complete individual data entry sheets (or enter this data onto tape or disk) for each of the record types.

EXHIBIT IX-B-1
ODES FT123 for Trawl/Seine Sampling Data

Survey Header Record



Station Header Record

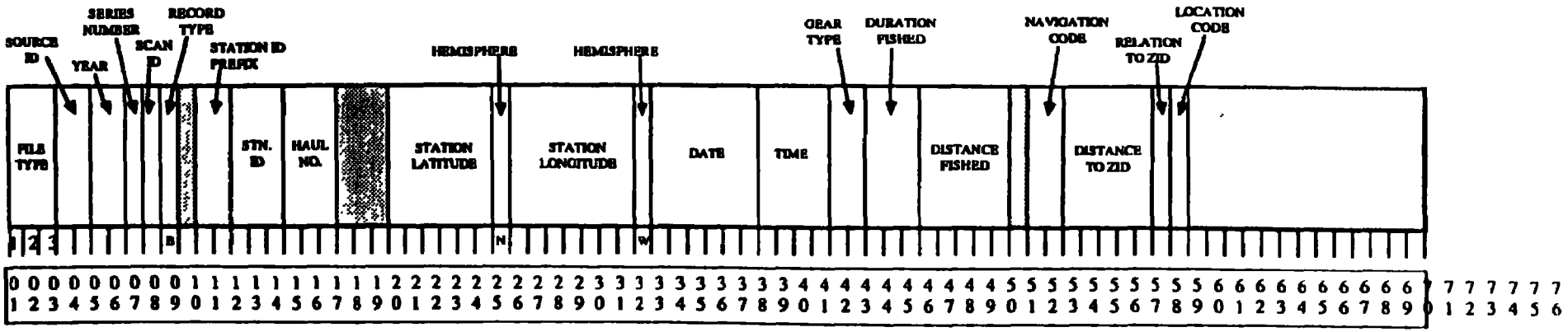
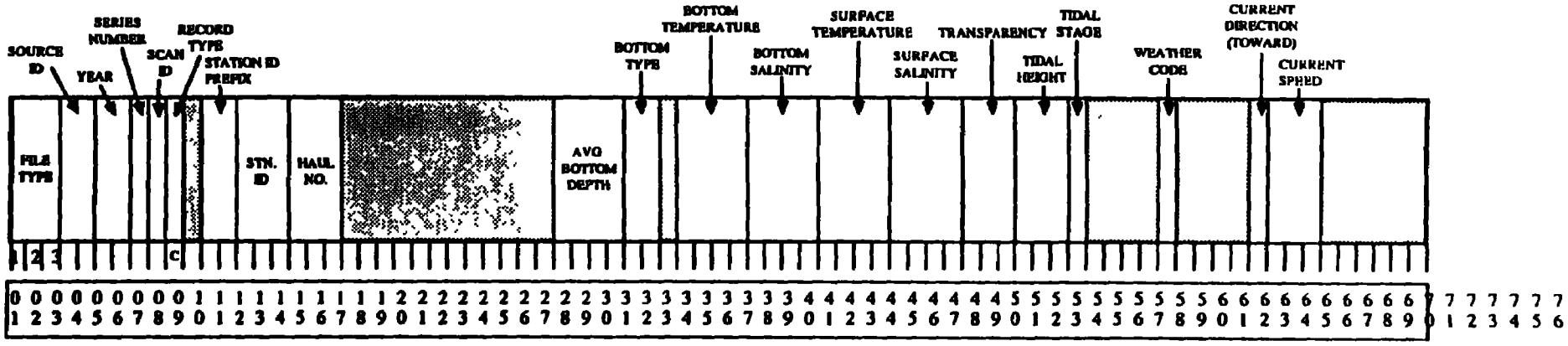


EXHIBIT IX-B-1 (Cont'd)

Environment Record



Bottom Trawl Record

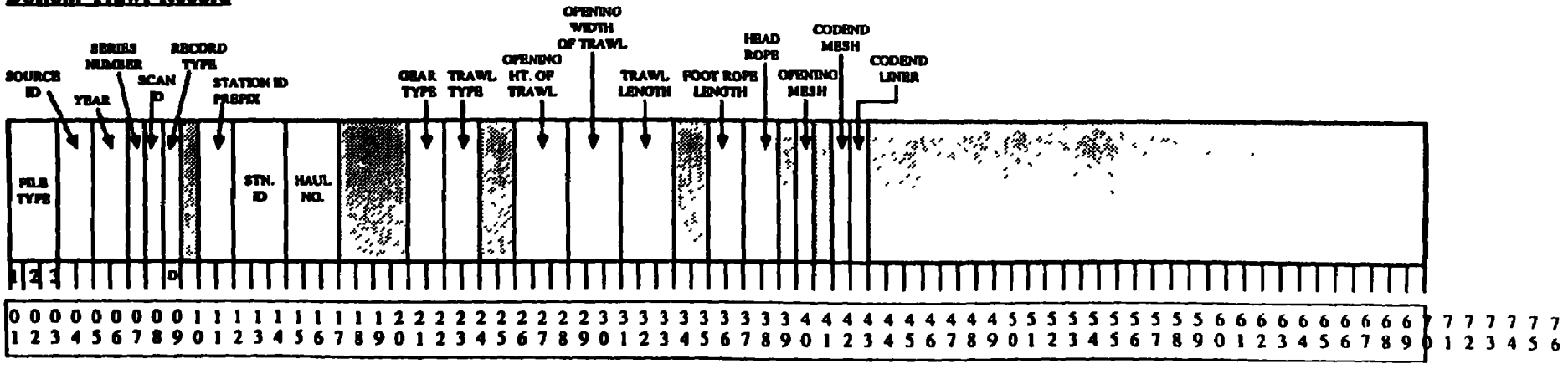
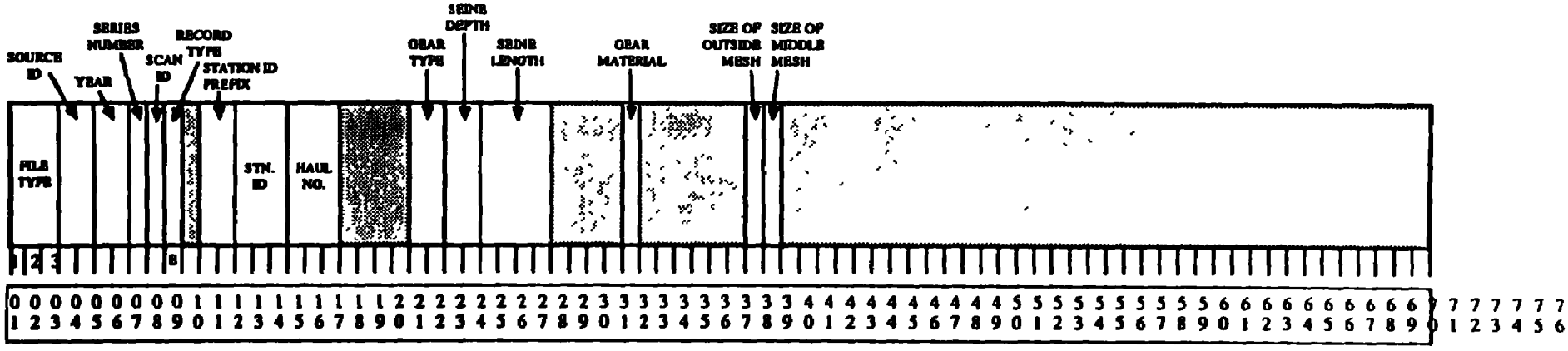
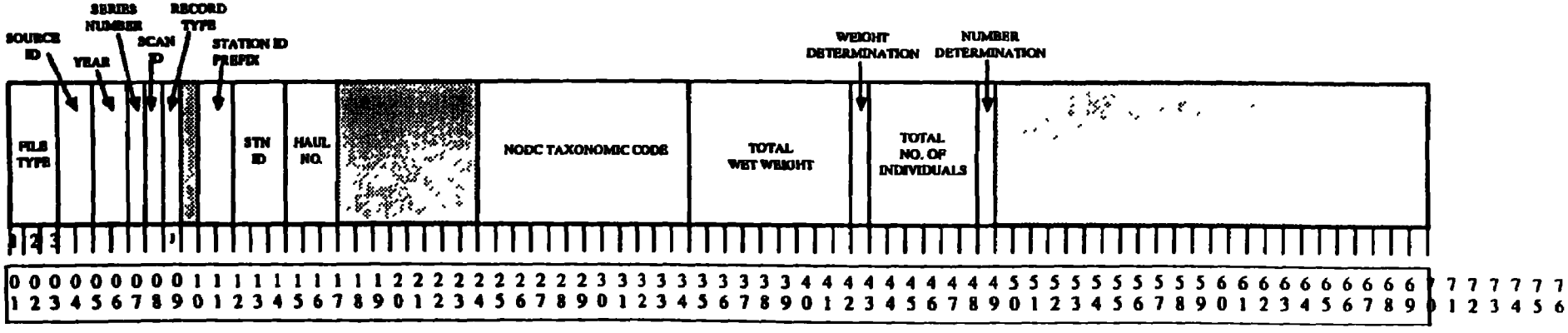


EXHIBIT IX-B-1 (Cont'd)

Miscellaneous Gear Record



Individual Specimen Record



In addition, it is also necessary to understand the relationships among the record types so that you can compile a comprehensive data set in the proper hierarchical format. The hierarchical order described herein is designed to minimize the duplication of data entry tasks and is in accordance with standards adopted by the National Oceanographic Data Center (NODC). The relationships are straightforward, and taking just a few minutes now to understand them could save you considerable time and effort later.

As shown above, the record types report information at different logical levels. For example, the Survey Header Record (Record Type "A") reports information common to the entire survey data set while the Individual Specimen Record (Record Type "J") reports information about each of the fish samples collected during the survey. Thus, there will be only one Survey Header Record per data set, whereas there will typically be many Individual Specimen Records.

Exhibit IX-B-2 shows how the different record types would be arranged in a data set reporting information from a survey conducted at two stations, where one catch was collected at each station. Both the Bottom Trawl Record and the Miscellaneous Gear Record are included in this example for illustrative purposes. Depending on the type of catch -- i.e., trawl vs. seine -- only one of these two records would be appropriate. The other record can be omitted.

If you have any questions about how to complete your data entry sheets or how to compile your data, plase contact the ODES Staff. (See the list of contacts in the Preface to this manual.)

C. Detailed Data Element Descriptions

Detailed descriptions for all of the data elements in ODES File 123 for Trawl/Seine Sampling Data are provided below. All record types for a given data set will share the same nine-character file identifier. This file ID consists of three characters to identify the file type (i.e., "123"), followed by: a two-character abbreviation for the municipality/institution/ agency conducting the survey, the last two digits of the year in which the survey was taken, a series number assigned by the investigator and a scan code to indicate sampling frequency and collection period.

The contents of all numeric fields should be right-justified, preceded by either blanks, zeroes, or where applicable, positive (+) or negative (-) signs. All decimal points are implied rather than physically included (see Exhibit IX-B-1). The contents of all character fields should be left justified, blank-filled.

Survey Header Record

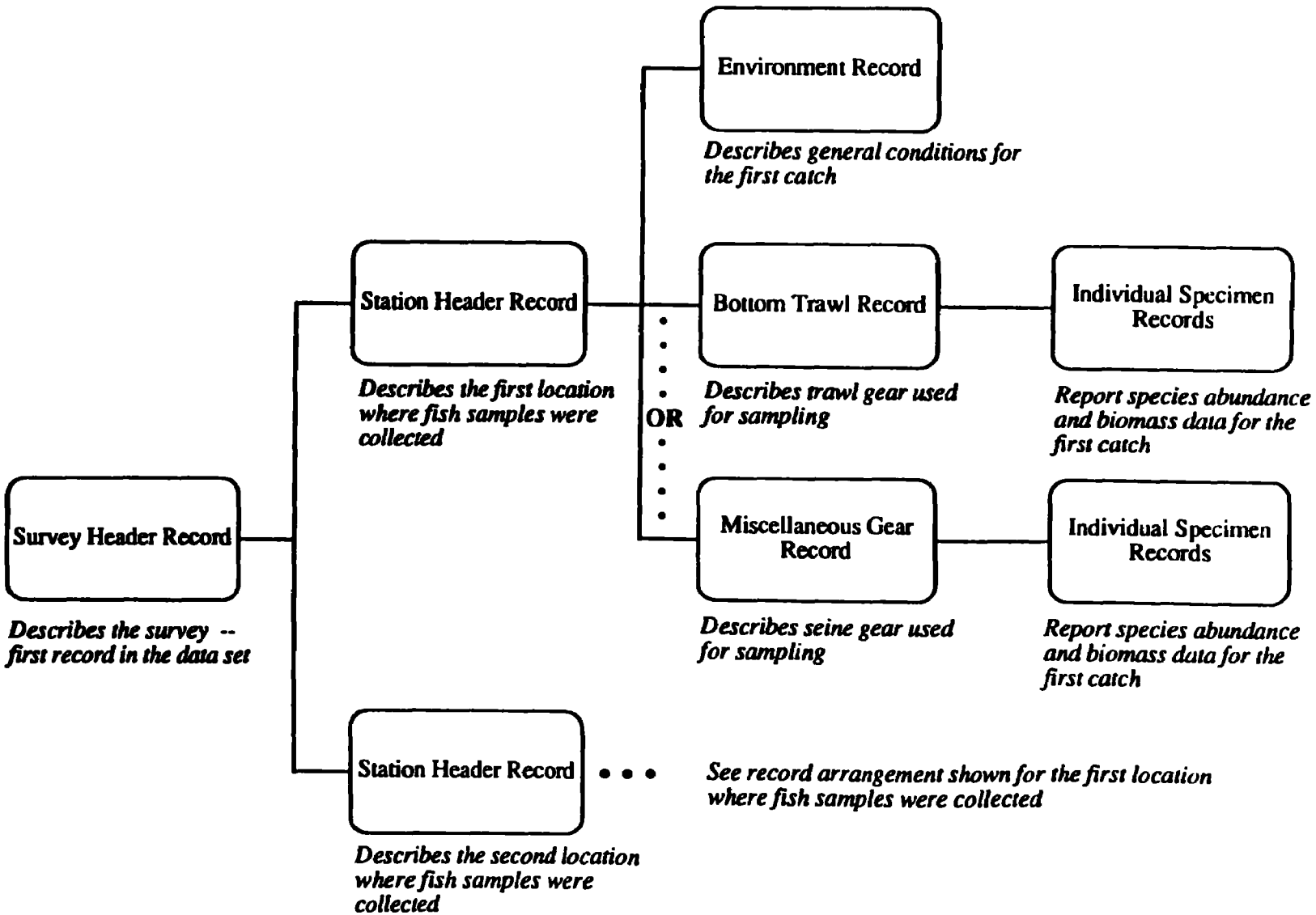
This record is mandatory and should be submitted only once for each data set. See Exhibit IX-C-1 for a description of all data elements in this record.

Station Header Record

This record is mandatory; one record should be generated for each trawl/seine sample collected. Use the Haul Number (columns 17-19) to identify each sample. See Exhibit IX-C-2 for a description of all data elements in this record.

EXHIBIT IX-B-2

Trawl Seine Sampling Data
Order of Record Types/Reason for Occurrence



Environment Record

This record describes general conditions for each trawl/seine sample collected. See Exhibit IX-C-3 for a description of all data elements in this record.

Bottom Trawl Record

This record describes the type of trawl gear used to collect the sample; one record should be submitted for each sample. See Exhibit IX-C-4 for a description of all data elements in this record.

Miscellaneous Gear Record

This record describes the type of seine gear used to collect the sample; one record should be generated for each sample. See Exhibit IX-C-5 for a description of all data elements in this record.

Individual Specimen Record

This record reports species abundance and biomass data. See Exhibit IX-C-6 for a description of all data elements in this record.

D. Data Entry Codes

This section contains a list of all the code types used in ODES File Type 123 for Trawl/Seine Sampling Data. The codes are listed by their identifiers and the fields in which they are to be used. The elements of these code types are listed in the appendices: Appendix A contains ODES Chemical and Water Quality Codes, Appendix B contains NODC/ODES Taxonomic Codes, and Appendix C contains all other ODES code types.

Code Identifier	Field Name
0129	Gear Type
0085	Navigation code
EPA-1	Relation to ZID
0346	Station Location
0077	Bottom Type
0154	Tidal Stage
0108	Weather
0110	Current Direction
0076	Trawl Type
0130	Opening mesh
0324	Codend Liner
0078	Gear Material
NODC	Taxonomic Code
0161	Weight Determination
0162	Number Determination
EPA-10	Scan ID

EXHIBIT IX-C-1
Survey Header Record

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "123".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier, assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This number appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "A".
11	11	Alpha	VESSEL NAME - name of the survey vessel.
22	6	Blank	BLANK.
28	6	YYMMDD	SURVEY DATE FROM - start date of survey. YY is the last two digits of the year. MM is the number of the month (01-12). DD is the day (01-31).
34	6	YYMMDD	SURVEY DATE TO - end date of survey. YY is the last two digits of the year. MM is the number of the month (01-12). DD is the number of the day (01-31).
40	15	Alpha	INVESTIGATOR - name of the senior scientist or investigator.

EXHIBIT IX-C-1 (Cont'd)
Survey Header Record

Starting Column	Length of Field	Field Format	Description
55	15	Alpha	MUNICIPALITY/INSTITUTION/AGENCY - name of the investigator's institution.
70	11	Blank	BLANK.

EXHIBIT IX-C-2
Station Header Record

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "123".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier, assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This number appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "B".
11	1	Blank	BLANK.
12	2	Alphanumeric	STATION IDENTIFICATION PREFIX - a two- character code to indicate that a station has been revisited during a survey. Leave blank for first occupation. Valid codes for reoccupations of the station are R1-R9.
14	3	Alphanumeric	STATION IDENTIFIER - three characters to identify the sampling station.
17	3	Numeric	HAUL NUMBER - three-digit number assigned by the investigator to identify each haul.
20	3	Blank	BLANK.

EXHIBIT IX-C-2 (Cont'd)
Station Header Record

Starting Column	Length of Field	Field Format	Description
23	6	DDMMSS	LATITUDE - latitude of the station in degrees (DD), minutes (MM), and seconds (SS).
29	1	Code	HEMISPHERE - set to "N".
30	7	DDDMMSS	LONGITUDE - longitude of the station in degrees (DDD), minutes (MM), and seconds (SS).
37	1	Code	HEMISPHERE - set to "W".
38	6	YYMMDD	DATE - date of sample collection. YY is the last two digits of the year. MM is the number of the month (01-12). DD is the number of the day (01-31).
44	4	HHMM	TIME - starting time of sample collection in 24-hours format. HH is the hour (00-23). MM is the number of minutes (00-59).
48	2	Code	GEAR TYPE - a two-character code to describe the type of trawl gear being used. Use code No. 0129. (See Appendix C for a list of codes.)
50	3	Numeric	FISHING DURATION - three digits for number of hours fished, with one decimal place (i.e., to tenths of hours).
53	5	Numeric	DISTANCE FISHED - five digits for number of meters fished, with one decimal place.
58	1	Blank	BLANK.

EXHIBIT IX-C-2 (Cont'd)
Station Header Record

Starting Column	Length of Field	Field Format	Description
59	2	Code	NAVIGATION CODE - a two-character code for the type of navigation used onboard the sampling vessel. Use Code No. 0085: 01 -- Loran (Mixed or Unspecified) 02 -- Radar and/or Fixes 03 -- Raydist Without Complications 04 -- Raydist With Errors, Drifting, etc. 05 -- Satellite 06 -- OMEGA 07 -- Loran A Only 08 -- Loran C Only 09 -- Mini-Ranger 10 -- Horizontal Sextant 11 -- Photographs 12 -- Sighting on Ranges 13 -- Loran C and Mini-Ranger
61	5	Numeric	DISTANCE TO ZID - five digits for distance in meters from the station to the edge of the zone of initial dilution (ZID). This field is only applicable to EPA's 301(h) program. Leave this field blank for stations not classified as part of a 301(h) monitoring program.
66	1	Code	RELATION TO ZID - a one-character code to describe location of the station. This field is only applicable to EPA's 301(h) program. Leave this field blank for all stations not classified as part of a 301(h) monitoring program. Where applicable, use Code No. EPA-1: W -- Within ZID B -- ZID Boundary N -- Near Field R -- Reference F -- Far Field

EXHIBIT IX-C-2 (Cont'd)
Station Header Record

Starting Column	Length of Field	Field Format	Description
67	1	Code	STATION LOCATION CODE - a one-character code to describe the location of the station. Use Code No. 0346: A -- Stream B -- Estuary C -- Lake D -- Ocean E -- Well F -- Other
68	13	Blank	BLANK.

EXHIBIT IX-C-3
Environment Record

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "123".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier, assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This number appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "C".
11	1	Blank	BLANK.
12	2	Alphanumeric	STATION IDENTIFICATION PREFIX - a two-character code to indicate that a station has been revisited during the survey. Leave this field blank for the first occupation. Valid codes for reoccupations of the station are R1-R9.
14	3	Alphanumeric	STATION IDENTIFIER - three characters to identify the sampling station.
17	3	Numeric	HAUL NUMBER - three-digit number assigned by the investigator, uniquely identifying all catches.

EXHIBIT IX-C-3 (Cont'd)
Environment Record

Starting Column	Length of Field	Field Format	Description
20	12	Blank	BLANK.
32	4	Numeric	AVERAGE BOTTOM DEPTH - average depth for the station, in meters.
36	2	Code	BOTTOM TYPE - a two-character code to describe the bottom type. Use Code No. 0077. (See Appendix C for a list of codes.)
38	1	Blank	BLANK.
39	4	Numeric	BOTTOM TEMPERATURE - water temperature on the ocean bottom, in degrees Celsius, with two decimal places. Negative temperatures should be preceded by a minus sign.
43	4	Numeric	BOTTOM SALINITY - water salinity on the ocean bottom, in parts per thousand (PPT), with two decimal places.
47	4	Numeric	SURFACE TEMPERATURE - Sea surface temperature, in degrees Celsius, with two decimal places. Negative temperatures should be preceded by a minus sign.
51	4	Numeric	SURFACE SALINITY - sea surface salinity, in parts per thousand (PPT), with two decimal places.
55	3	Numeric	TRANSPARENCY - depth of secchi disc, in meters, with one decimal place.
58	3	Numeric	TIDAL HEIGHT - height with respect to mean low water depth, in meters, with one decimal place. Negative measurements should be preceded by a minus sign.
61	1	Code	TIDAL STAGE - a one-character code to describe tidal stage. Use Code No. 0154: -- Blank - No information 1 -- Ebb 2 -- Ebb Slack 3 -- Flood 4 -- Flood Slack

EXHIBIT IX-C-3 (Cont'd)
Environment Record

Starting Column	Length of Field	Field Format	Description
62	4	Blank	BLANK.
66	1	Code	WEATHER - a one-character code to describe general weather conditions. Use Code No. 0108: 0 -- Clear (No Cloud at any Level) 1 -- Partly Cloudy (Scattered or Broken) 2 -- Continuous Layer(s) of Cloud(s) 3 -- Sandstorm, Duststorm, or Blowing Snow 4 -- Fog, Thick Dust or Haze 5 -- Drizzle 6 -- Rain 7 -- Snow, or Rain and Snow Mixed 8 -- Shower(s) 9 -- Thunderstorm(s)
67	3	Blank	BLANK.
70	2	Code	CURRENT DIRECTION (toward) - a one-character code to indicate primary direction of ocean current. Use Code No. 0110. (See Appendix C for a list of codes.)
72	3	Numeric	CURRENT SPEED - three digits representing speed in centimeters per second, with one decimal place.
75	6	Blank	BLANK.

EXHIBIT IX-C-4
Bottom Trawl Record

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "123".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier, assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This number appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "D".
11	1	Blank	BLANK.
12	2	Alphanumeric	STATION IDENTIFICATION PREFIX - a two- character code to indicate that a station has been revisited during a survey. Leave blank for first occupation. Valid codes for reoccupations of the station are R1-R9.
14	3	Alphanumeric	STATION IDENTIFIER - three characters to identify the sampling station.
17	3	Numeric	HAUL NUMBER - three-digit number assigned by the investigator to uniquely identify all catches.
20	4	Blank	BLANK.

EXHIBIT IX-C-4 (Cont'd)
Bottom Trawl Record

Starting Column	Length of Field	Field Format	Description
24	2	Code	GEAR TYPE - a two-character code for the type of gear used. Use Code No. 0129. (See Appendix C for a list of codes.)
26	2	Code	TRAWL TYPE - a two-character code for the type of trawl used. Use Code No. 0076. (See Appendix C of this chapter for a list of codes.)
28	2	Blank	BLANK.
30	3	Numeric	OPENING HEIGHT OF TRAWL - three digits for height of opening of trawl, in meters, with one decimal place.
33	3	Numeric	OPENING WIDTH OF TRAWL - three digits for width of opening of trawl, in meters, with one decimal place.
36	3	Numeric	TRAWL LENGTH - three digits for the overall length of the trawl, in meters.
39	2	Blank	BLANK.
41	2	Numeric	FOOT ROPE LENGTH - two digits for length of trawl foot rope, in meters.
43	2	Numeric	HEAD ROPE - two digits for length of head rope, in meters.
45	1	Blank	BLANK.
46	1	Code	OPENING MESH - a one-character code for the size of the body mesh opening. Use Code No. 0130. (See Appendix C for a list of codes.)
47	1	Blank	BLANK.
48	1	Code	CODEND MESH - a one-character code for the size of the codend mesh. Use Code No. 0130. (See Appendix C of this chapter for a list of codes.)

EXHIBIT IX-C-4 (Cont'd)
Bottom Trawl Record

Starting Column	Length of Field	Field Format	Description
49	1	Code	CODEND LINER - a one-character code to indicate presence or absence of liner. Use Code 0324: -- Blank - Unknown 1 -- No 2 -- Yes
50	31	Blank	BLANK.

EXHIBIT IX-C-5
Miscellaneous Gear Record

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "123".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier, assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This number appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "E".
11	1	Blank	BLANK.
12	2	Alphanumeric	STATION IDENTIFICATION PREFIX - a two-character code to indicate that a station has been revisited during a survey. Leave blank for first occuputation. Valid codes for reoccupations of the station are R1-R9.
14	3	Alphanumeric	STATION IDENTIFIER - three characters to identify the sampling station.
17	3	Numeric	HAUL NUMBER - three-digit number assigned by the investigator to uniquely identify all catches.
20	4	Blank	BLANK.

EXHIBIT IX-C-5 (Cont'd)
Miscellaneous Gear Record

Starting Column	Length of Field	Field Format	Description
24	2	Code	GEAR TYPE - a two-character code for the type of gear used. Use Code No. 0129. (See Appendix C for a list of codes.)
26	2	Numeric	SEINE DEPTH - two digits for depth of seine, in meters.
28	4	Numeric	SEINE LENGTH - four digits for overall length of the seine, in meters.
32	4	Blank	BLANK.
36	1	Code	GEAR MATERIAL - a one-character code to describe the gear material used. Use Code No. 0078: 0 -- Monofilament Nylon 1 -- Multifilament (Braided) Nylon 2 -- Multifilament (Braided) Cotton 3 -- Synthetic, Various 4 -- Silk 5 -- Manila 6 -- Linen
37	6	Blank	BLANK.
43	1	Code	SIZE OF OUTSIDE MESH - a one-character code for the size of the outside mesh. Use Code No. 0130. (See Appendix C for a list of codes.)
44	1	Code	SIZE OF MIDDLE MESH - a one-character code for the size of the mesh in the middle of the trawl/seine. Use Code No. 0130. (See Appendix C for a list of codes.)
45	36	Blank	BLANK.

EXHIBIT IX-C-6
Individual Specimen Record

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "123".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier, assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This number appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "J".
11	1	Blank	BLANK.
12	2	Alphanumeric	STATION IDENTIFICATION PREFIX - a two-character code to indicate that a station has been revisited during a survey. Leave blank for first occupation. Valid codes for reoccupations of the station are R1-R9.
14	3	Alphanumeric	STATION IDENTIFIER - three characters to identify the sampling station.
17	3	Numeric	HAUL NUMBER - three-digit number assigned by the investigator to uniquely identify all catches.
20	8	Blank	BLANK.

EXHIBIT IX-C-6 (Cont'd)
Individual Specimen Record

Starting Column	Length of Field	Field Format	Description
28	12	Code	NODC TAXONOMIC CODE - a twelve-digit numerical code assigned to a taxon by NODC. Refer to the master species list provided the ODES Staff for a list of codes (see Appendix B). For unlisted codes, contact the ODES Technical Staff. Do not assign new codes independently.
40	9	Numeric	TOTAL WET WEIGHT - nine digits for wet weight of each species, in grams with one decimal place.
49	1	Code	WEIGHT DETERMINATION - a one-character code for the method of determining wet weight of individuals. Use Code 0161: 1 -- Total Catch of Species Weighed 2 -- Prorated on Basis of Subsample 3 -- Rough Estimate 4 -- Total catch not included in recorded weight
50	6	Numeric	TOTAL NUMBER OF INDIVIDUALS - six digits for the total number of individuals.
56	1	Code	NUMBER DETERMINATION - a one-character code for the method of calculating the total number of individuals. Use Code 0162: 1 -- Actual Count 2 -- Prorated on Basis of Subsample 3 -- Rough Estimate 4 -- Volumetric Estimation 5 -- Rough Estimate of a Few Hundred 6 -- Rough Estimate of a Few Thousand
57	24	Blank	BLANK.

X. ODES File Type 009 for Bacterial/Viral Sampling Data

A. Introduction

ODES File Type 009 for Bacterial/Viral Sampling Data can be used to report the type and abundance of bacterial and viral organisms in environmental samples. This chapter describes how to compile and submit to the ODES Staff data on bacterial and viral abundances. A data set will consist of different record types arranged in a hierarchical order. Section B of this chapter provides an illustration of each of the record types and explains the hierarchical relationships between them. Section C contains detailed instructions for formatting a data set. The instructions for each of the data elements include such information as the length of the field, the type of data (e.g., numeric, character), and a description of the element. In cases where a data element is to be coded (e.g., sampling gear) a list of valid codes will either accompany the element's description or be available separately in one of the appendices. Appendix B includes ODES codes for bacterial or viral groups or taxon; codes not represented in this list should be requested from the ODES Technical Staff. (See Chapter I for address and telephone information.)

B. Hierarchical Relationships

ODES File Type 009 for Bacterial/Viral Sampling Data consists of five record types:

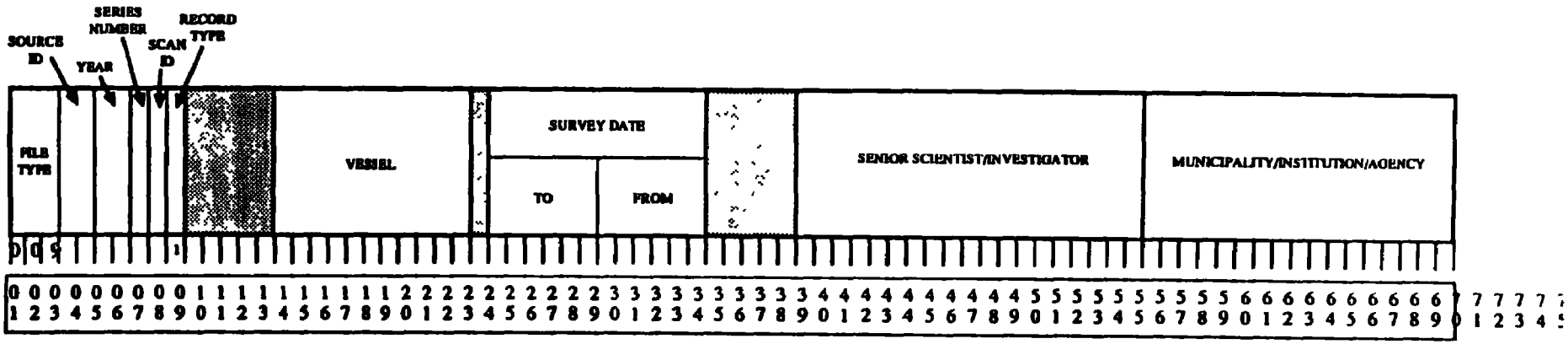
- Record Type '1' is the Survey Header Record. It is used to report information common to the entire data set, such as the survey dates and the investigator's name.
- Record Type '2' is the Station Header Record. It is used to report information about the location where the bacterial/viral samples were collected.
- Record Type '3' is the Station Environment Record. It is used to describe the conditions under which the sample was collected (e.g., weather conditions, water temperature).
- Record Type 'B' is the Sample Type Record. It is used to describe the type of material collected for analysis and the gear used for collection.
- Record Type '4' is the Bacterial Data Record. It is used to report the abundance of each bacterial or viral species found in the sample, and the analysis method used.

Exhibit X-B-1 provides an illustration of the structure of each of these record types. These record images, in conjunction with the detailed instructions provided in Section C, will enable you to quickly and accurately enter the data onto tape or disk in the proper format for each record.

In addition, it is also necessary to understand the relationships among the record types so that you can compile a comprehensive data set in the proper hierarchical format. The hierarchical order described herein is designed to minimize the duplication of data entry tasks and is in accordance with standards adopted by the National Oceanographic Data Center (NODC). The relationships are straightforward, and taking just a few minutes now to understand them could save you considerable time and effort later.

EXHIBIT X-B-1
ODES FT009 for Bacterial/Viral Data

Survey Header Record



Station Header Record

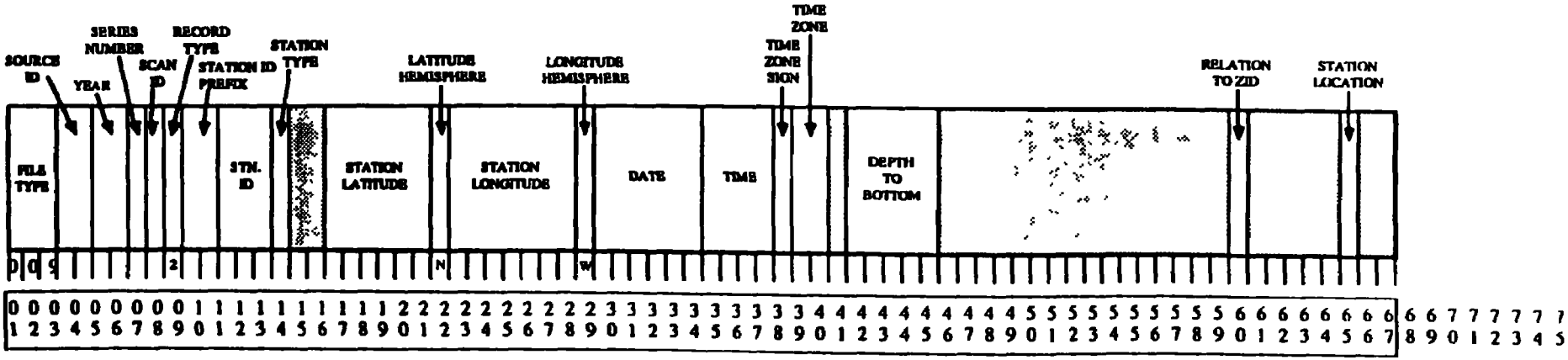
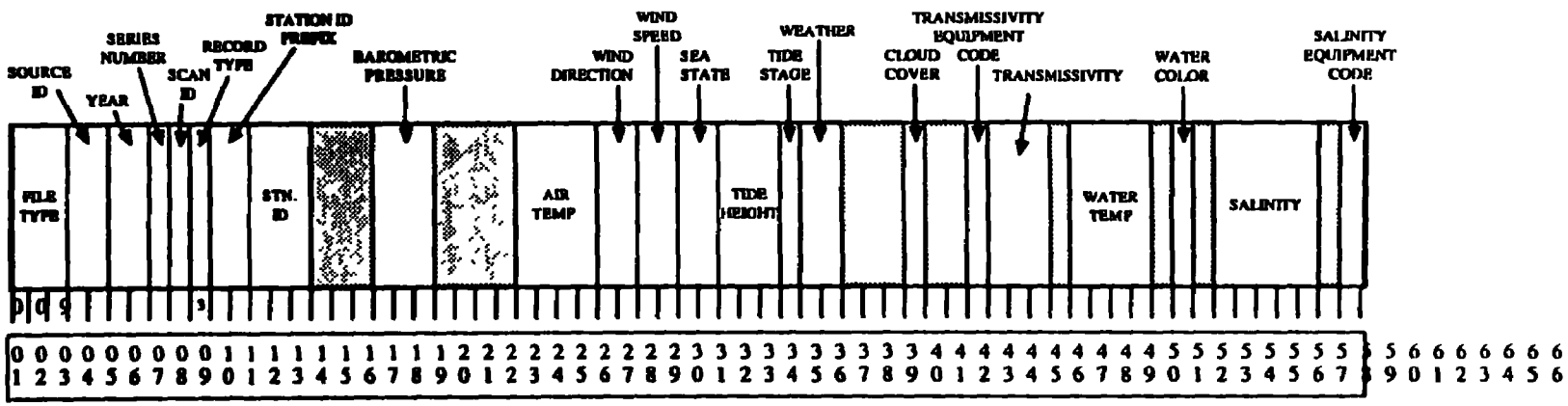


EXHIBIT X-B-1 (Cont'd)

Station Environment Record



Sample Type Record

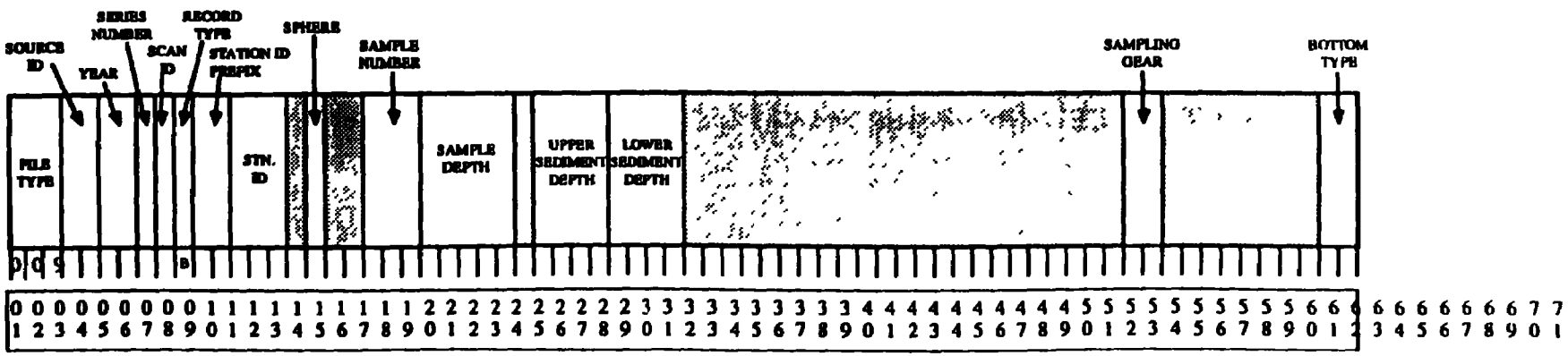
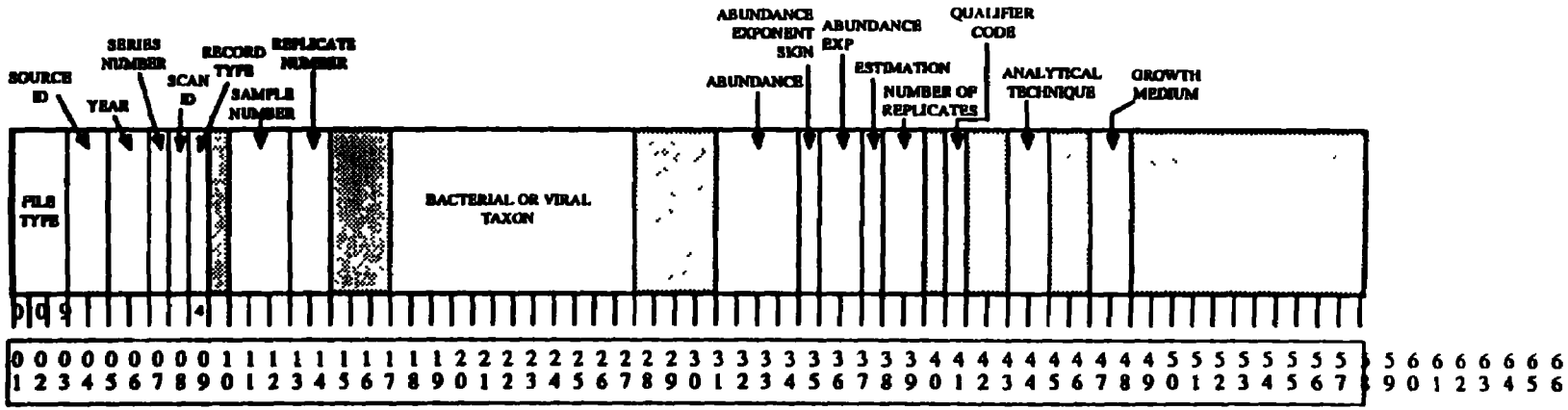


EXHIBIT X-B-1 (Cont'd)

Bacterial Data Record



As shown above, the record types report information at different logical levels. For example, the Survey Header Record reports information common to the entire data set while the Sample Header Record reports information about only one of the samples collected. Thus there will be only one Survey Header Record per data set, whereas there will typically be many Sample Header Records.

Exhibit X-B-2 shows how the different record types would be arranged in a data set, with the hierarchical relationships indicated by the level of indentation. If you have any questions about the data reporting format, please contact the ODES Staff. (A list of contacts is contained in the Preface to this manual.)

C. Detailed Data Element Descriptions

Detailed descriptions for all of the data elements in ODES File Type 009 for Bacterial/Viral Sampling Data are provided below. All record types for a given data set will share the same nine-character file identifier. This file ID consists of three characters to identify the file type (i.e., "009"), followed by: a two-character abbreviation for the municipality/institution/ agency conducting the survey, the last two digits of the year in which the survey was taken, a series number assigned by the investigator and a scan code to indicate sampling frequency and collection period.

All numeric fields should be right-justified, preceded by either blanks, zeroes, or, where applicable, positive (+) or negative (-) signs. All decimal points are implied rather than physically included. All character fields should be left justified and blank-filed to the right.

Survey Header Record

This record is mandatory; it should occur only once, at the beginning of each data set. See Exhibit X-C-1 for a description of all data elements in this record.

Station Header Record

This record is mandatory. One such record should be generated for each occasion on which a sampling station has been occupied. Station occupations should be uniquely identified by the Station ID Prefix and Station ID fields (columns 11-15). See Exhibit X-C-2 for a description of all data elements in this record.

Station Environment Record

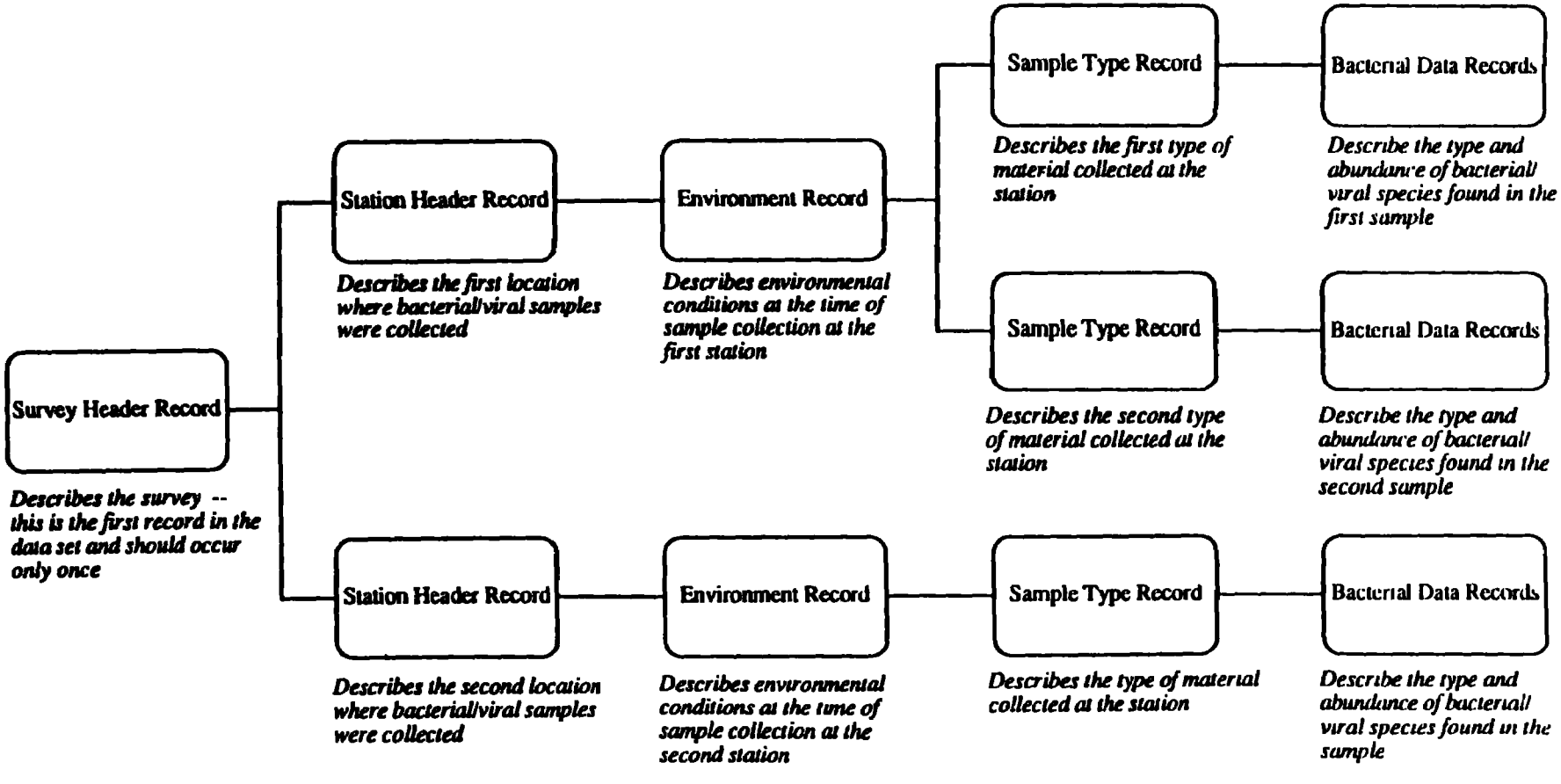
This record is mandatory. One such record must accompany each Station Header Record. Station Environment Records are linked to Station Header Records by the Station ID Prefix and Station ID fields (columns 11-15). See Exhibit X-C-3 for a description of all data elements in this record.

Sample Type Record

This record is mandatory; at least one must be present for each Station Header Record. See Exhibit X-C-4 for a description of all data elements in this record.

EXHIBIT X-B-2

Bacterial/Viral Sampling Data
Order of Record Types/Reason for Occurrence



Bacterial Data Record

At least one such record must exist for each Sample Type Record. A separate Bacterial Data Record must be generated for every taxon reported for each sample type. See Exhibit X-C-5 for a description of all data elements in this record.

D. Data Entry Codes

This section contains a list of all the code types used in ODES File Type 009 for Bacterial/Viral Abundance Data. The codes are listed by their identifier and the field in which they are to be used. The elements of these code types are listed in the appendices: Appendix A contains ODES Chemical and Water-Quality Codes, Appendix B contains NODC/ODES Taxonomic Codes, and Appendix C contains all other ODES code types.

Code Identifier	Field Name
0077	Bottom Type
0093	Sphere
0094	Turbidity Equipment
0105	Cloud Cover
0109	Sea State
0110	Wind Direction
0154	Tide Stage
0108	Weather
0346	Station Location
0376	Sampling Gear
0394	Water Color
EPA-1	Relation to ZID
EPA-4	Salinity Equipment
OD013	Bacterial/Viral Abundance Estimate
OD014	Analytical Technique
OD015	Growth Medium
NODC	Taxonomic Code
EPA-10	Scan ID

EXHIBIT X-C-1
Survey Header Record

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "009".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier, assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This number appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "1".
11	5	Blank	BLANK.
16	11	Alpha	VESSEL - name of vessel.
27	1	Blank	BLANK.
28	6	YYMMDD	SURVEY DATE (FROM) - start of survey date. YY is the last two digits of the year. MM is the month (01-12). DD is the day (01-31).
34	6	YYMMDD	SURVEY DATE (TO) - end of survey date. YY is the last two digits of the year. MM is the month (01-12). DD is the day (01-31).
40	5	Blank	BLANK.

EXHIBIT X-C-1 (Cont'd)
Survey Header Record

Starting Column	Length of Field	Field Format	Description
45	19	Alpha	SENIOR SCIENTIST/INVESTIGATOR - name of senior scientist or investigator.
64	17	Alpha	MUNICIPALITY/INSTITUTION/AGENCY - name of investigator's institution.

EXHIBIT X-C-2
Station Header Record

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "009".
4	2	Alpha	SOURCE IDENTIFIER - unique identifier, assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This number appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "2".
11	2	Alpha	STATION IDENTIFICATION PREFIX - a two-character code to indicate that a station has been revisited during a survey. Leave this field blank for the first occupation of the station in a given survey. Valid codes for reoccupations of the station are R1-R9.
13	3	Alpha	STATION IDENTIFIER - three characters assigned by the investigator to identify the sampling station.

EXHIBIT X-C-2 (Cont'd)
Station Header Record

Starting Column	Length of Field	Field Format	Description
16	1	Alpha	STATION TYPE - a single character code to differentiate between sampling locations at an influent or effluent pipe, sludge container or receiving water. Please use the following codes: R -- Receiving water E -- Effluent I -- Influent S -- Sludge
17	2	Blank	BLANK.
19	6	DDMMSS	STATION LATITUDE - latitude of the station. DD is degrees. MM is minutes. SS is seconds.
25	1	Code	LATITUDE HEMISPHERE - set to 'N'.
26	7	DDDMMSS	STATION LONGITUDE - longitude of the station. DDD is degrees. MM is minutes. SS is seconds.
33	1	Code	LONGITUDE HEMISPHERE - set to 'W'.
34	6	YYMMDD	DATE - date of sample collection. YY is the last two digits of the year. MM is the number of the month (01-12). DD is the day (0-31).
40	4	HHMM	TIME - starting time of sample collection in 24-hour format (Standard Time). HH is the hour (00-23). MM is the minutes (00-59).
44	4	Blank	BLANK.
48	5	Numeric	DEPTH TO BOTTOM - depth to the bottom in meters.
53	16	Blank	BLANK.

EXHIBIT X-C-2 (Cont'd)
Station Header Record

Starting Column	Length of Field	Field Format	Description
69	1	Code	RELATION TO ZID - a one-character code to describe the classification of the station with respect to the zone of initial dilution (ZID). This field is applicable only to EPA's 301(h) program. Leave this field blank for all stations not classified as part of a 301(h) monitoring program. where applicable, use code EPA-1: W -- Within ZID B -- ZID Boundary N -- Near Field R -- Reference F -- Far Field
70	5	Blank	BLANK.
75	1	Code	STATION LOCATION - a one-character code to describe the location of the station. Use Code No. 0346: A -- Stream B -- Estuary C -- Lake D -- Ocean E -- Well F -- Other
76	2	Blank	BLANK.

EXHIBIT X-C-3
Station Environment Record

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - SET TO "009".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier, assigned by EPA,which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "3".
11	2	Alpha	STATION IDENTIFICATION PREFIX - a two-character code to indicate that a station has been revisited during a survey. Leave this field blank for the first occupation of the station in a given survey. Valid codes for reoccupations of the station are R1-R9.
13	3	Alpha	STATION IDENTIFIER - three characters assigned by the investigator to identify the sampling station.
16	3	Blank	BLANK.
19	3	Numeric	BAROMETRIC PRESSURE - in millibars, with one decimal place.

EXHIBIT X-C-3 (Cont'd)
Station Environment Record

Starting Column	Length of Field	Field Format	Description
22	4	Blank	BLANK.
26	4	Symbolic/ Numeric	AIR TEMPERATURE - four digits for the temperature of the air at the surface. Negative temperatures should be preceded by a minus sign. Temperature is recorded in degrees Celsius with one decimal place.
30	2	Code	WIND DIRECTION - a two-character code for the wind direction. Use Code No. 0110. (See Appendix C for a list of codes).
32	2	Numeric	WIND SPEED - two digits for surface wind speed in meters per second with one decimal place.
34	2	Code	SEA STATE - a two-character code for the sea state. Use Code No. 0109: 0 -- Calm-Glassy (0 meters) 1 -- Calm-Rippled (0-.1 meters) 2 -- Smooth-Wavelet (.1-.5 meters) 3 -- Slight (.5-1.25) meters) 4 -- Moderate (1.25-2.5 meters) 5 -- Rough (2.5-4.0 meters) 6 -- Very Rough (4-6 meters) 7 -- High (6-9 meters) 8 -- Very High (9-14 meters) 9 -- Phenomenal (>14 meters)
36	3	Numeric	TIDE HEIGHT - three digits for tide height in meters with one decimal place.
39	1	Code	TIDE STAGE - a one-character code for tide stage. Use Code No. 0154: -- Blank - No Information 1 -- Ebb 2 -- Ebb Slack 3 -- Flood 4 -- Flood Slack
40	1	Code	WEATHER - a two-character code to describe the weather conditions at the time of station occupation. Use Code No. 0108. (See Appendix C for a list of codes.)

EXHIBIT X-C-3 (Cont'd)
Station Environment Record

Starting Column	Length of Field	Field Format	Description
41	4	Blank	BLANK.
45	1	Code	CLOUD COVER - a one-character code to describe the proportion of sky obscured by cloud. Use Code No. 0105: 0 -- 0 (Zero) 1 -- 1 OKTA or less, but not zero (1/10 or less, but not zero) 2 -- 2 OKTAS (2/10-3/10) 3 -- 3 OKTAS (4/10) 4 -- 4 OKTAS (5/10) 5 -- 5 OKTAS (6/10) 6 -- 6 OKTAS (7/10-8/10) 7 -- 7 OKTAS or more, but not 8 OKTAS (9/10 or more, but not 10/10) 8 -- 8 OKTAS (10/10) 9 -- Sky obscured, or cloud amount cannot be estimated
46	2	Blank	BLANK.
48	1	Code	TURBIDITY EQUIPMENT CODE - a one-character code to describe the type of equipment to measure transmissivity. Use Code No. 0094: 1 -- Turbidometer; in JTU * 2 -- Transmissometer; in Percent of Light Transmission over a 10 cm path 3 -- Fluorometer; Suspended Solids Calibration 4 -- Nephelometer, in NTU 5 -- Turbidometer in FTU 6 -- Transmissometer
49	3	Numeric	TRANSMISSIVITY - three digits for transmissivity with one decimal place.if measured by Equipment Code 2. If measured by any other method, no decimal place.
52	1	Blank	BLANK.

EXHIBIT X-C-3 (Cont'd)
Station Environment Record

Starting Column	Length of Field	Field Format	Description
53	4	Symbolic Numeric	WATER TEMPERATURE - four digits for the temperature of the water at the surface. Negative temperatures should be preceded by a minus sign. Temperature is recorded in degrees Celsius with one decimal place.
57	1	Blank	BLANK.
58	1	Code	WATER COLOR - a one-character code to indicate water color. Use Code No. 0394: -- Blank - No Information 1 -- Blue 2 -- Blue-Green 3 -- Green 4 -- Greenish Brown 5 -- Olive 6 -- Brown
59	1	Blank	BLANK.
60	5	Numeric	SALINITY - surface salinity at the station, in parts per thousand (PPT), with three decimal places.
65	1	Blank	BLANK.
66	1	Code	SALINITY EQUIPMENT CODE - a one-character code to describe the equipment used to measure salinity. Use Code No. EPA-4: 1 -- Refactometer 2 -- Titration 3 -- Conductivity 4 -- CTD

EXHIBIT X-C-4
Sample Type Record

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "009"
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier, assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "B".
11	2	Alpha	STATION IDENTIFICATION PREFIX - a two-character code to indicate that a station has been revisited during a survey. Leave this field blank for the first occupation of the station in a given survey. Valid codes for reoccupations of the station are R1-R9.
13	3	Alpha	STATION IDENTIFIER - three characters assigned by the investigator to identify the sampling station.
16	1	Blank	BLANK.

EXHIBIT X-C-4 (Cont'd)
Sample Type Record

Starting Column	Length of Field	Field Format	Description
17	1	Code	SPHERE - a one-character code to identify the type of material analyzed. Use Code No. 0093: -- Blank - no information 1 -- Air 2 -- Surface Floating 3 -- Water Column - dissolved plus particulate 4 -- Bottom 6 -- Biota 7 -- Interstitial water 8 -- Suspended particulate matter 9 -- Re-suspended sediment A -- Suspended solids B -- Sewage sludge H -- Dissolved material
18	2	Blank	BLANK.
20	3	Alphanumeric	SAMPLE NUMBER - three characters assigned by the investigator to identify the sample.
23	5	Numeric	SAMPLE DEPTH - the depth at which the sample was collected. Report in meters to one decimal place.
28	1	Blank	BLANK.
29	4	Numeric	SAMPLE DEPTH (UPPER) - upper depth of sediment core, in meters with 1 decimal place.
33	4	Numeric	SAMPLE DEPTH (LOWER) - lower depth of sediment core, in meters with 1 decimal place.
37	23	Blank	BLANK.

EXHIBIT X-C-4 (Cont'd)
Sample Type Record

Starting Column	Length of Field	Field Format	Description
60	2	Code	SAMPLING GEAR - a two-character code to indicate the sample collection gear. Use Code No. 0376: 05 -- Bottle (Niskin, rosette, etc.) 06 -- Grab (Van Veen, Smith-MacIntyre, etc.) 07 -- Core (piston, gravity, box, etc.) 08 -- Dredge (clam, pipe, anchor, etc.) 09 -- Pump (plankton, midwater, airlift, etc.) 99 -- Miscellaneous (hand-gathered, traps, shovel, etc.)
62	8	Blank	BLANK.
70	2	Code	BOTTOM TYPE - a two-character code to indicate the bottom type. Use Code No. 0077. (See Appendix C for a list of codes.)

EXHIBIT X-C-5
Bacterial Data Record

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "009"
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier, assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "4".
11	1	Blank	BLANK.
12	3	Alphanumeric	SAMPLE NUMBER - three characters assigned by the investigator to identify the sample.
15	2	Numeric	REPLICATE NUMBER - a number assigned by the investigator to identify replicate analyses of a single sample.
17	3	Blank	BLANK.

EXHIBIT X-C-5 (Cont'd)
Bacterial Data Record

Starting Column	Length of Field	Field Format	Description
20	12	Code	NODC TAXONOMIC CODE - a twelve-digit code assigned to a taxon by NODC. Refer to the master species list provided by the ODES Staff (see Appendix B). For unlisted taxa, contact the ODES Technical Staff. Do not independently assign new codes.
32	4	Blank	BLANK.
36	4	Numeric	ABUNDANCE - Use this field to record up to four significant digits of the abundance, expressed as number of colonies per 100 milliliters for water, and as number of colonies per 100 grams dry weight for sediment. Leave this field blank if just presence/absence was recorded.
40	1	+/-	ABUNDANCE EXPONENT SIGN - the sign of the exponent for the abundance. Leave this field blank if there is no exponent or if just presence/absence was recorded.
41	2	Numeric	ABUNDANCE EXPONENT - the exponent of the abundance measurement. Leave this field blank if just presence/absence was recorded.
43	1	Code	ESTIMATION - Use this field to indicate the method used to estimate the abundance. Use Code OD013, Bacterial/Viral Abundance Estimate: 1 -- Single measurement 2 -- Arithmetic mean 3 -- Geometric mean (MPN) 4 -- Presence/absence 5 -- Greater than 6 -- Less than

EXHIBIT X-C-5 (Cont'd)
Bacterial Data Record

Starting Column	Length of Field	Field Format	Description
44	2	Numeric	NUMBER OF REPLICATES - if replicates are not reported separately, and the abundance value above represents an estimate based on a number of replicate analyses, record the number of replicates used. If the 'ESTIMATION' code is '1', or if replicates are reported individually on separate Bacterial Data Records, leave this field blank.
46	1	Blank	BLANK.
47	1	Code	QUALIFIER CODE - a one character code to provide additional qualifying information about the measurement. Use EPA-3. (See Appendix C for a list of codes.)
48	2	Blank	BLANK.
50	2	Code	ANALYTICAL TECHNIQUE - the analytical method used to measure bacterial/viral abundance. Use Code No. OD014. (See Appendix C for code list.)
52	2	Blank	BLANK.
54	2	Code	GROWTH MEDIUM - the medium used to culture microorganisms for the abundance measurement. Use Code No. OD015. (See Appendix C for code list.)
56	11	Blank	BLANK.

XI. ODES File Type 900 for Bioassay Data

A. Introduction

ODES File Type 900 for Bioassay Data can be used to report responses of various organisms exposed to contaminated sediments, drilling muds, effluent or receiving water in a controlled test. This chapter describes how to compile and submit to the ODES Staff a data set containing bioassay data. The data set will consist of a set of different record types arranged in a hierarchical order. Section B of this chapter provides an illustration of each of the different record types and explains the hierarchical relationships among them. Section C contains detailed, data element by data element, instructions for compiling your data set. The instructions for each of the data elements include information such as the length of the field, the type of data (e.g., numeric, character), and a description of the data element.

The File Type 900 has been designed to accept data from many different types of bioassays. Not all data elements in a record type are applicable to every bioassay method. Data elements specific to a particular type of bioassay are noted in the data element descriptions. In most cases where a data element is a code (e.g., a one-character code for sphere), a list of valid codes will accompany the data element description. In some cases, however, where the list of data entry codes is long (e.g., the list of codes for primary industry), you will be referred to Appendix C. A species list of selected NODC taxonomic codes for identifying species (or higher level taxa groups) is provided in Appendix B. If you are unable to locate a taxon in the list, please contact the ODES Technical Staff for additional taxonomic codes. Do not independently assign new taxonomic codes.

B. Hierarchial Relationships

ODES File Type 900 is composed of six record types:

- Record Type "A" is the Survey Header Record. It is used to report information common to the entire data set (e.g., survey dates, investigator's name).

- Record Type "B" is the Station Header Record. It is used to report information about the station where the test material (sediment, effluent or receiving water) was collected (e.g., station location, relation to ZID, station depth).

- Record Type "C" is the Sample Record. It is used to report information about each sample (e.g., sample interval, sphere sampled, date and time sampled) collected at a station.

- Record Type "D" is the Bioassay Conditions Record. It is used to report the type of bioassay conducted and the physical conditions under which the tests were conducted (e.g., photo period, flow for each sample).

- Record Type "E" is the first Data Record for bioassay results. It is used to report the quantal response of the test organism after exposure to potentially contaminated materials (mortality or other measures of a binary type response) for each replicate sample.

- Record Type "F" is the second Data Record used to record bioassay results that measure a graded response (e.g., relative changes in growth rate or reproductive capacity).

Exhibit XI-B-1 provides an illustration of the structure of each of these record types. These record images, in conjunction with the detailed instructions provided in Section C, will enable you to quickly and accurately complete individual data entry sheets (or enter this data onto tape or disk) for each of the record types.

In addition, it is also necessary to understand the relationships among the different record types so that you can compile a comprehensive data set in the proper hierarchical format. The hierarchical order described herein is designed to minimize the duplication of data entry tasks and is in accordance with standards adopted by the National Oceanographic Data Center (NODC). The relationships are straightforward and taking just a few minutes now to understand them could save you considerable time and effort later.

As shown above, different record types report information at different logical levels. For example, the Survey Header Record (Record Type "A") reports information common to the entire survey data set while the Data Record 1 (Record Type "E") reports bioassay results from each of the replicate samples. Thus, there will be only one Survey Header Record while there will typically be many Data Records.

Exhibit XI-B-2 shows how the record types would be arranged in a data set reporting information from a survey conducted at one station, where one sample was taken at each station and two different replicated bioassay methods were used. This example assumes both mortality and changes in the growth rate of survivors were measured in each replicate.

If you have any questions about how to complete your data entry sheets or how to compile your data, please contact the ODES Technical Staff. (See the Preface for address and telephone information.)

C. Detailed Data Element Descriptions

Detailed descriptions for all of the data elements in ODES File Type 900 for Bioassay Data are provided below. All record types for a given data set will share the same nine-character file identifier. This file ID consists of three characters to identify the file type (i.e., "900") followed by a two-character abbreviation for the municipality/ institution/ agency conducting the survey, followed by the last two digits of the year in which the survey was taken, a series number assigned by the investigator and a scan code to indicate sampling frequency and collection period.

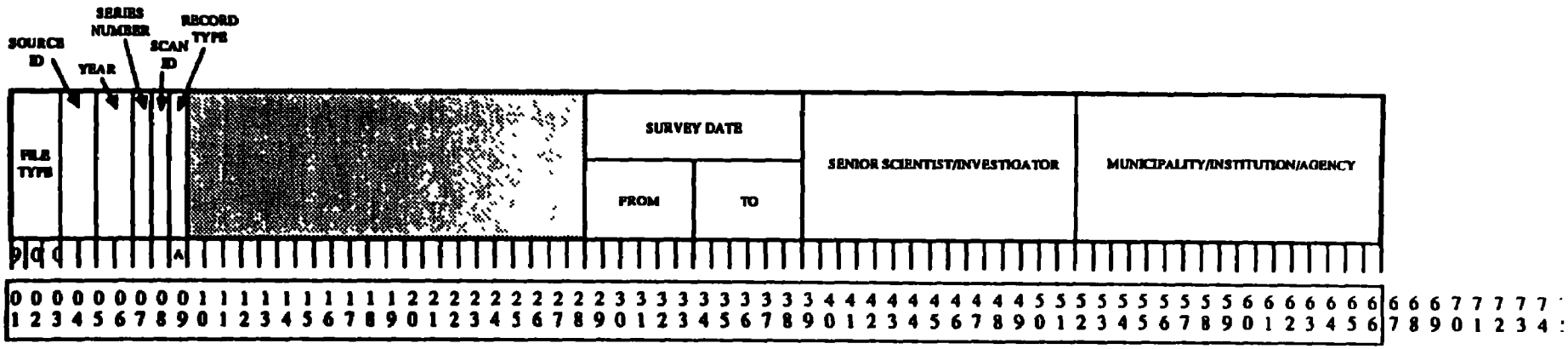
All numeric fields should be right-justified, preceded by either blanks or zeroes, or where applicable, positive (+) or negative (-) signs. All decimal points are implied rather than physically included (see Exhibit XI-B-1). All character fields should be left-justified, blank-filled.

Survey Header Record

This record is mandatory and should be submitted only once for each data set. See Exhibit XI-C-1 for a description of all data elements in this record.

EXHIBIT XI-B-1
ODES FT900 for Bioassay Data

Survey Header Record



Station Header Record

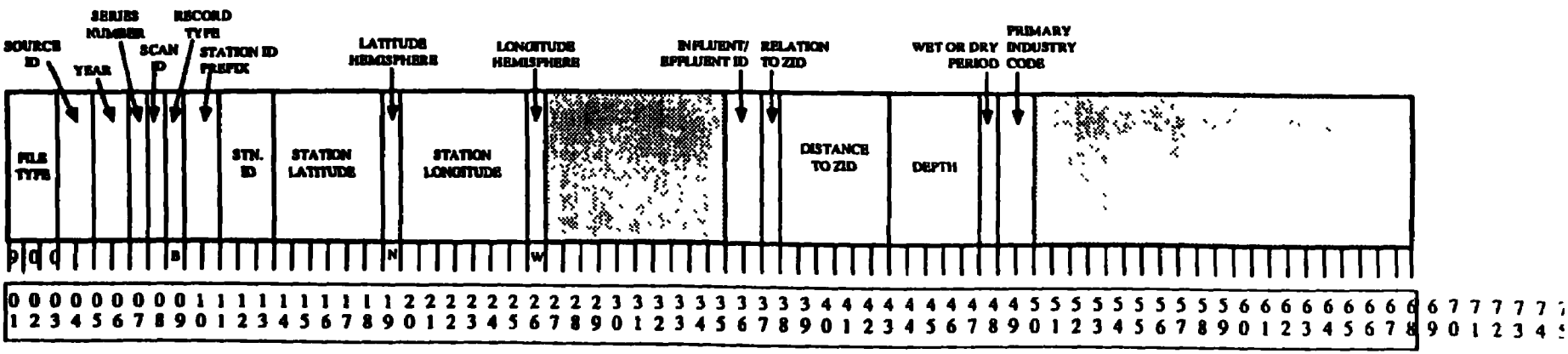
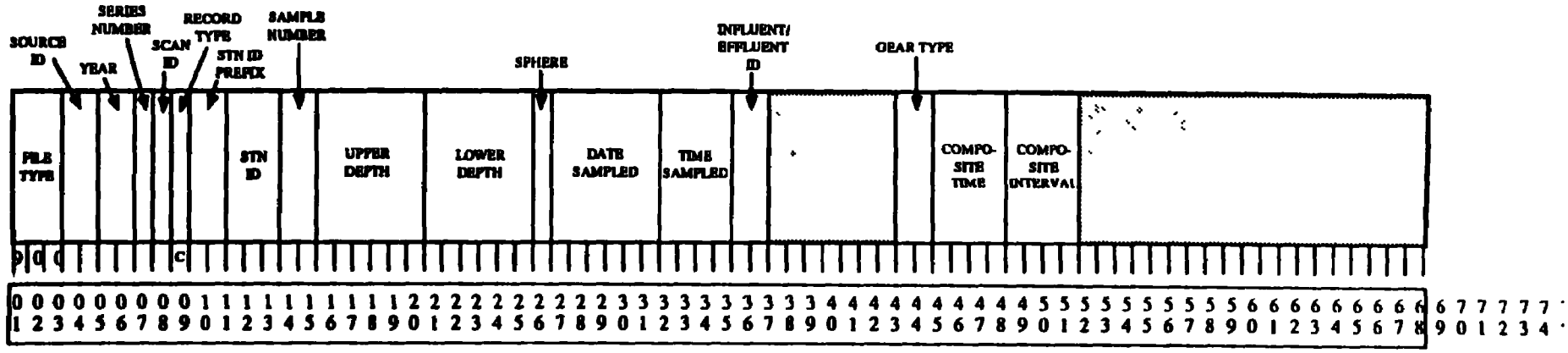


EXHIBIT XI-B-1 (Cont'd)

Sample Header Record



Bioassay Conditions Record

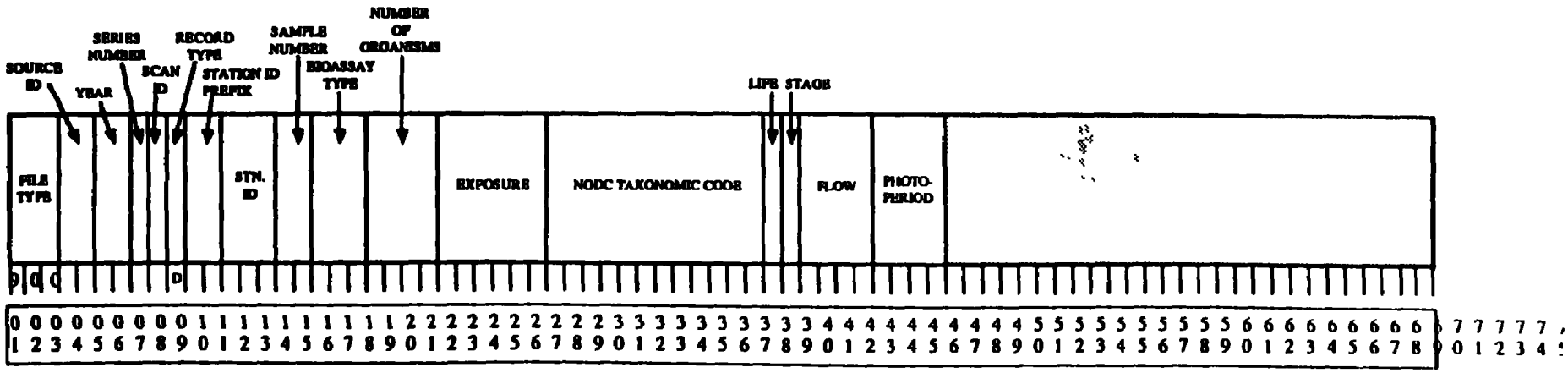
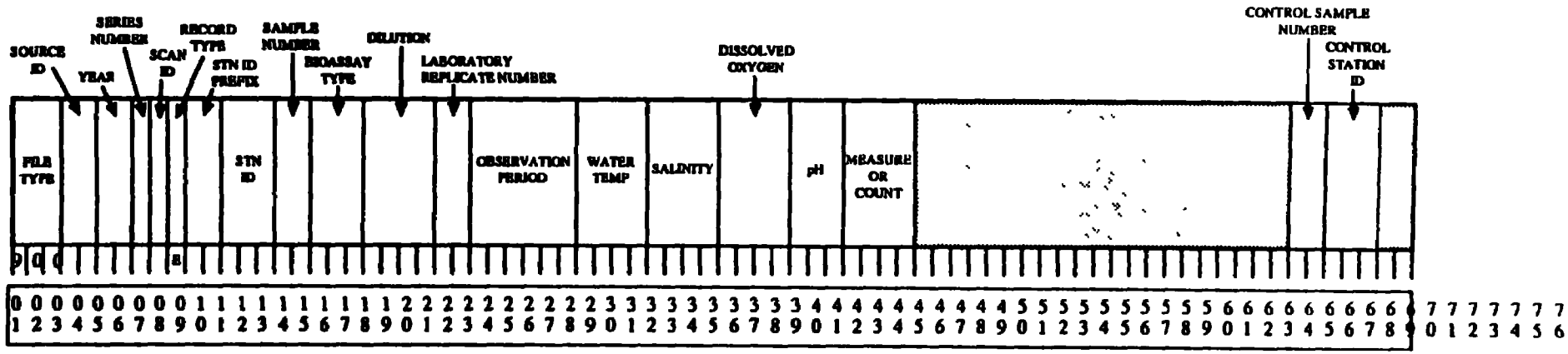


EXHIBIT XI-B-1 (Cont'd)

Data Record 1



Data Record 2

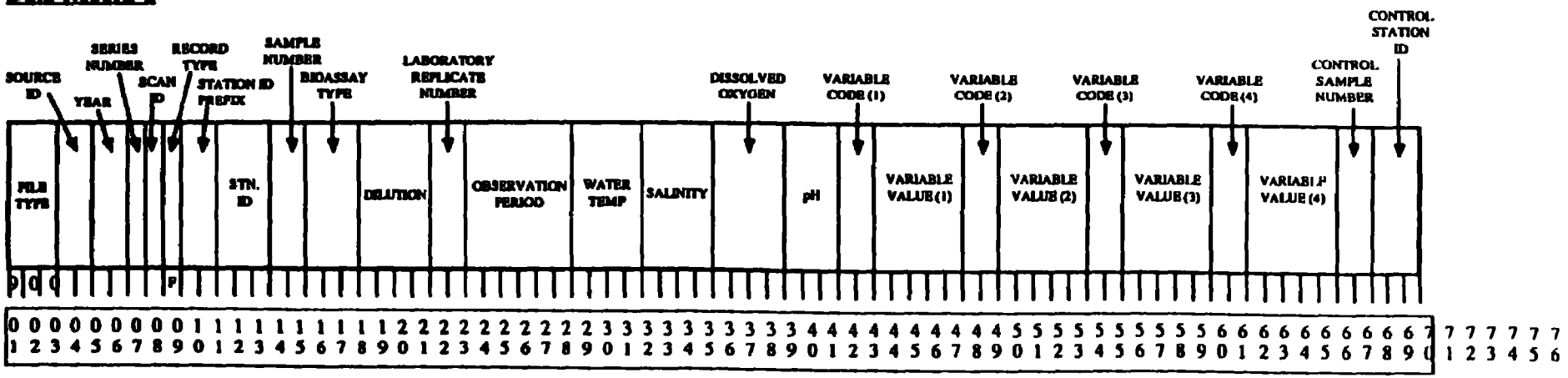
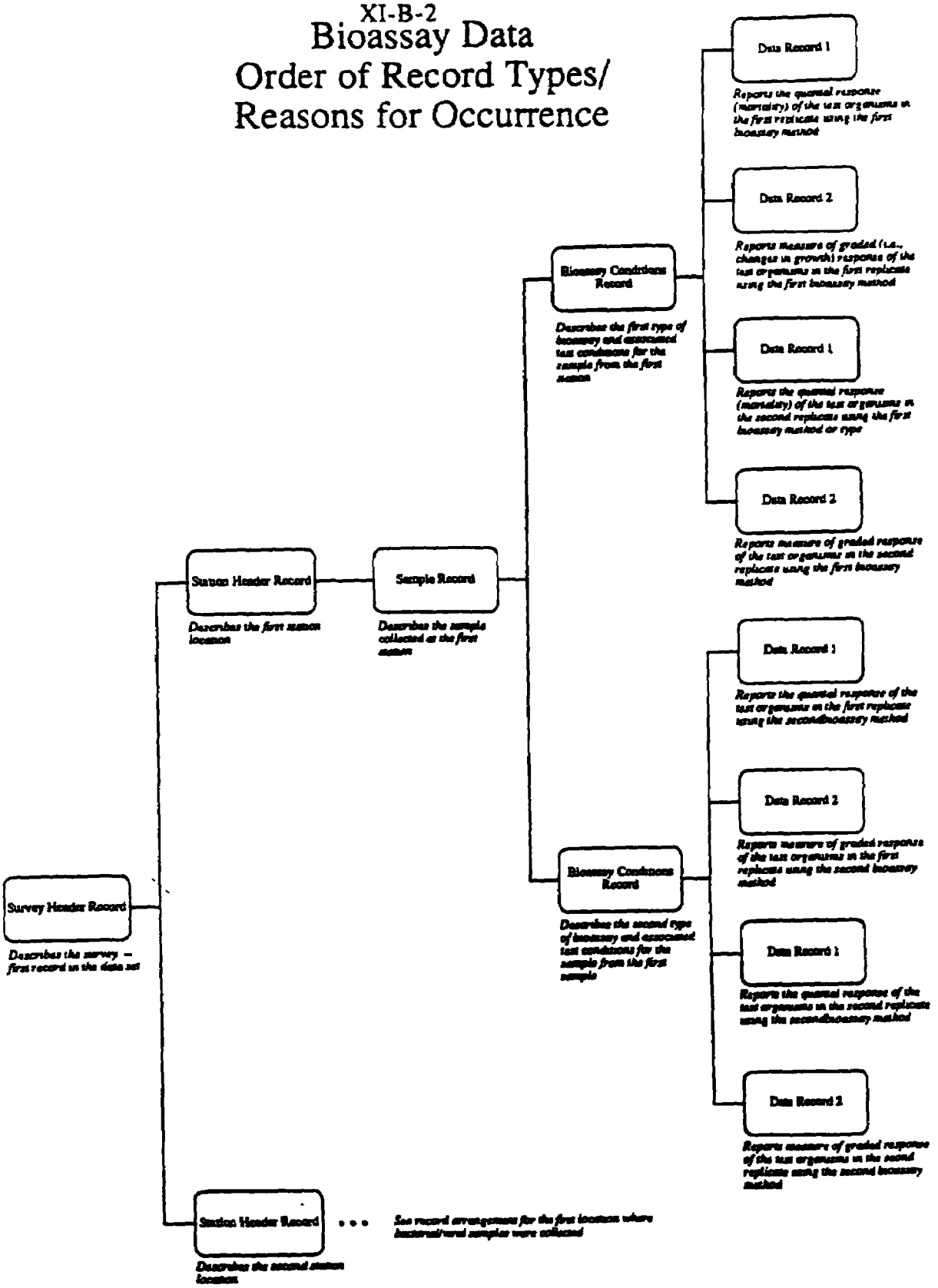


EXHIBIT
XI-B-2

Bioassay Data Order of Record Types/ Reasons for Occurrence



Station Header Record

This record is mandatory; one record should be generated for each sampling station. Stations should be uniquely identified by the Station ID Prefix and Station ID fields (columns 11-15). See Exhibit XI-C-2 for a description of all data elements in this record.

Sample Header Record

This record is mandatory; one record should be generated for each sample collected. See Exhibit XI-C-3 for a description of all data elements in this record.

Bioassay Conditions Record

This record is used to report bioassay test parameters or conditions for each sample. See Exhibit XI-C-4 for a description of all data elements in this record.

Data Record 1

This record is used to record the results from a bioassay measuring a quantal response for each replicate sample. See Exhibit XI-C-5 for a description of all data elements in this record.

Data Record 2

This record is used to record the results of a bioassay measuring a graded or incremental response for each replicate sample. See Exhibit XI-C-6 for a description of all data elements in this record.

D. Data Entry Codes

This section contains a list of all the code types used in ODES File Type 900 for Bioassay Data. The codes are listed by their identifier and the field in which they are to be used. The elements of these code types are listed in the appendices: Appendix A contains ODES Chemical and Water-Quality Codes, Appendix B contains NODC/ ODES Taxonomic Codes, and Appendix C contains all other ODES code types.

Code Identifier	Field Name
EPA-1	Relation to ZID
0347	Wet or Dry Period
0375	Primary Industry Code
0093	Sphere
0376	Gear Type
EPA-6	Bioassay Type
NODC	Taxonomic Code
0148	Life Stage
EPA-7	Bioassay Variable Code
EPA-10	Scan ID

EXHIBIT XI-C-1
Survey Header Record

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "900".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier assigned by EPA. This appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "A".
11	22	Blank	BLANK.
33	6	YYMMDD	SURVEY DATE FROM - start of survey date. YY is the last 2 digits of the year. MM is the month (01-12). DD is the day (01-31).
39	6	YYMMDD	SURVEY DATE TO - end date of survey. YY is the last 2 digits of the year. MM is the month (01-12). DD is the day (01-31).
45	15	Alpha	SENIOR SCIENTIST/INVESTIGATOR - name of senior scientist, investigator, or contract manager.
60	17	Alpha	MUNICIPALITY/INSTITUTION/AGENCY - name of investigator's institution.

EXHIBIT XI-C-2
Station Header Record

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "900".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier assigned by EPA. This appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "B".
11	2	Alphanumeric	STATION IDENTIFICATION PREFIX - a two-character code to indicate a station has been revisited during a survey. Leave blank for first occupation. Valid codes for reoccupations of the station are R1-R9.
13	3	Alphanumeric	STATION IDENTIFIER - three characters to identify the sampling station.
16	6	DDMMSS	STATION LATITUDE - longitude of station in degrees (DD), minutes (MM), and seconds (SS).
22	1	Code	HEMISPHERE - set to "N".

EXHIBIT XI-C-2 (Cont'd)
Station Header Record

Starting Column	Length of Field	Field Format	Description
23	7	DDDMMSS	STATION LONGITUDE - longitude of station in degrees (DD), minutes (MM), and seconds (SS).
30	1	Code	HEMISPHERE - set to "W".
31	10	Blank	BLANK.
41	2	Alphanumeric	INFLUENT/EFFLUENT IDENTIFIER - a two-character ID assigned by the investigator for a specific effluent source. This field is appropriate for effluent bioassays only and is used to differentiate multiple discharge sources for a given survey.
43	1	Code	RELATION TO ZID - a one-character code to describe the classification of the station with respect to the zone of initial dilution (ZID). This field is applicable only to EPA's 301(h) program. Leave this field blank for all stations not classified as part of a 301(h) program. Where applicable, use Code EPA-1: W -- Within ZID B -- ZID Boundary N -- Near Field R -- Reference F -- Far Field
44	6	Numeric	DISTANCE TO ZID - Six digits for distance in meters from the station to the edge of the ZID. This field is only applicable for EPA's 301(h) program.
50	5	Numeric	DEPTH - depth at station in meters with one decimal place.
55	1	Code	WET OR DRY PERIOD - code to indicate wet-dry season or weather conditions. This field is appropriate for effluent bioassays only. Use Code No. 0347: D -- Dry N -- Normal/average conditions W -- Wet

EXHIBIT XI-C-2 (Cont'd)
Station Header Record

Starting Column	Length of Field	Field Format	Description
56	2	Code	PRIMARY INDUSTRY CODE - code to identify the general or primary source of toxic substances or contaminants in the marine environment as related to a specific effluent source. This field will be filled out for effluent bioassays only. Use Code No. 0375. (See Appendix C of this chapter for a list of codes).
58	21	Blank	BLANK.

EXHIBIT XI-C-3
Sample Header Record

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "900".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier assigned by EPA. This appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "C".
11	2	Alphanumeric	STATION IDENTIFICATION PREFIX - two-character code to indicate a station has been revisited during a survey. Leave blank for first occupation. Valid codes for reoccupations of the station are R1-R9.
13	3	Alphanumeric	STATION IDENTIFIER - three characters to identify the sampling station.
16	2	Alphanumeric	SAMPLE NUMBER - a two-character identifier assigned by the investigator for each whole water or sediment sample. Samples can normally be numbered sequentially.

EXHIBIT XI-C-3 (Cont'd)
Sample Header Record

Starting Column	Length of Field	Field Format	Description
18	6	Numeric	UPPER DEPTH - depth to top of sample interval in meters with 2 decimal places. (If sediment is sampled, sediment surface = 0.)
24	6	Numeric	LOWER DEPTH - depth to bottom of sample interval, in meters, with 2 decimal places. (If sediment is sampled, bottom of interval = positive distance from sediment surface to bottom of interval.)
30	1	Code	SPHERE - one-character code to identify sphere from which the sample came. Use Code No. 0093. (See Appendix C for list of codes.)
31	6	YYMMDD	DATE SAMPLED - date of sample collection. YY is last two digits of the year. MM is the number of the month (01-12). DD is the day (01-31).
37	4	HHMM	TIME SAMPLED - time of sample collection in 24-hr format. HH is the hour (00-23). MM is the number of minutes (00-59).
41	2	Alphanumeric	INFLUENT/EFFLUENT IDENTIFIER - a two-character ID assigned by the investigator for a specific point-source. This field will be filled out for effluent bioassays only and is used to differentiate multiple discharge sources for a given survey.
43	7	Blank	BLANK.

EXHIBIT XI-C-3 (Cont'd)
Sample Header Record

Starting Column	Length of Field	Field Format	Description
50	2	Code	GEAR TYPE - a two-character code to identify the type of gear used to collect the sample. Use Code No. 0376: 05 -- Bottle (Nisken, Rosette, etc.) 06 -- Grab (Van Veen, Smith-McIntyre, etc.) 07 -- Core (Piston, Gravity, Box, etc.) 08 -- Dredge (Clam, Pipe, Anchor, etc.) 09 -- Pump (Plankton, Midwater, Airlift, etc.) 10 -- Automatic Composite Sampler 99 -- Misc (Hand-Gathered, Traps, Shovel, etc.)
52	4	HHMM	COMPOSITE TIME - the total number of hours (in 24-h format) over which the sample is composited (e.g., a 24-h composite would be recorded as 2400).
56	4	Numeric	COMPOSITE INTERVAL - the average length of time between each composite subsample recorded to the nearest hundredth of an hour (e.g., an automatic sampler collecting water samples every hour and a half would be recorded as 150).
60	19	Blank	BLANK.

EXHIBIT XI-C-4
Bioassay Conditions Record

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "900".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier assigned by EPA. This appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "D".
11	2	Alphanumeric	STATION IDENTIFICATION PREFIX - two-character code to indicate a station has been revisited during a survey. Leave blank for first occupation. Valid codes for reoccupations of the station are R1-R9.
13	3	Alphanumeric	STATION IDENTIFIER - three characters to identify the sampling station.
16	2	Alphanumeric	SAMPLE NUMBER - a two-character identifier assigned by the investigator for each whole water or sediment sample. Samples can normally be numbered sequentially.

EXHIBIT XI-C-4 (Cont'd)
Bioassay Conditions Record

Starting Column	Length of Field	Field Format	Description
18	3	Code	BIOASSAY TYPE - a three-character code to identify the type of bioassay being conducted. Use Code No. EPA-6 (see Appendix C for list of codes).
21	4	Numeric	NUMBER OF ORGANISMS - a count of the animals or plants in each replicate sample in a given bioassay.
25	6	DDHHMM	EXPOSURE - length of exposure of test organisms to bioassay conditions. Format is days (2 digits), hours (00-23), minutes (00-59).
31	12	Code	NODC TAXONOMIC CODE - 12-digit numerical code assigned to the taxon used in the bioassay. Refer to the master species list provided by the ODES Staff. (See Appendix B.) For unlisted taxa, contact ODES Technical Staff. Do not independently assign new codes.
43	1	Code	LIFE STAGE - one-character code to identify lifestage of organisms during the bioassay. If the bioassay spans more than one life-stage, record the lifestage present at the beginning of the bioassay. Use Code No. 0148 (see Appendix C for list of codes.)
44	1	Code	LIFE STAGE - if the bioassay spans more than one lifestage, use the one-character code from Code No. 0148 to record the predominant lifestage present at the end of the bioassay. (See Appendix C for a list of codes.)
45	4	Numeric	FLOW - four-digit value for flow in cm/sec with two decimal places. Leave blank if static bioassay used.
49	4	HHHH	PHOTOPERIOD - numbers of hours of light vs. number of hours dark used during the bioassay.
53	27	Blank	BLANK.

EXHIBIT XI-C-5
Data Record 1

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "900".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier assigned by EPA. This appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "E".
11	2	Alphanumeric	STATION IDENTIFICATION PREFIX - two-character code to indicate a station has been revisited during a survey. Leave blank for first occupation. Valid codes for reoccupations of the station are R1-R9.
13	3	Alphanumeric	STATION IDENTIFIER - three characters to identify the sampling station.
16	2	Alphanumeric	SAMPLE NUMBER - a two-character identifier assigned by the investigator for each whole water or sediment sample. Samples can normally be numbered sequentially.

EXHIBIT XI-C-5 (Cont'd)
Data Record 1

Starting Column	Length of Field	Field Format	Description
18	3	Code	BIOASSAY TYPE - a three-character code to identify the type of bioassay being conducted. Use Code No. EPA-6. (See Appendix C for list of codes.)
21	4	Numeric	DILUTION - percentage a sample was diluted from standard bioassay with one decimal place. If no dilution, leave blank.
25	2	Numeric	LABORATORY REPLICATE NUMBER - a unique identifier, assigned by investigator, for each replicate or subsample taken from a whole sediment or water sample.
27	6	DDHHMM	OBSERVATION PERIOD - the elapsed time from the beginning of the bioassay at which a count or measure of a variable is made (e.g., mortality, dissolved oxygen). Format is days (2 digits), hours (00-23), minutes (00-59).
33	4	Numeric	WATER TEMPERATURE - water temperature under which bioassay was conducted. In degrees Celcius with two decimal places.
37	4	Numeric	SALINITY - salinity of water in the test chamber, in parts per thousand to two decimal places.
41	4	Numeric	DISSOLVED OXYGEN - four-digit value for dissolved oxygen in milliliters per liter with two decimal places.
45	3	Numeric	pH - three digit value for pH of the water in the test chamber, with one decimal place.
48	4	Numeric	MEASURE OR COUNT - number of dead or affected organisms in a bioassay measuring a quantal response.
52	21	Blank	BLANK.
73	2	Alphanumeric	CONTROL SAMPLE NUMBER - a two-character identifier assigned by the investigator for each whole water or sediment sample used as a bioassay control.

EXHIBIT XI-C-5
Data Record 1

Starting Column	Length of Field	Field Format	Description
75	3	Alphanumeric	CONTROL STATION - a three-character code assigned by an investigator to identify the sampling station where controls were collected (i.e., a reference station).
78	2	Blank	BLANK.

EXHIBIT XI-C-6
Data Record 2

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "900".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier assigned by EPA. This appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "F".
11	2	Alphanumeric	STATION IDENTIFICATION PREFIX - two-character code to indicate a station has been revisited during a survey. Leave blank for first occupation. Valid codes for reoccupations of the station are R1-R9.
13	3	Alphanumeric	STATION IDENTIFIER - three characters to identify the sampling station.
16	2	Alphanumeric	SAMPLE NUMBER - a two-character identifier assigned by the investigator for each whole water or sediment sample. Samples can normally be numbered sequentially.

EXHIBIT XI-C-6 (Cont'd)
Data Record 2

Starting Column	Length of Field	Field Format	Description
18	3	Code	BIOASSAY TYPE - a three-character code to identify the type of bioassay being conducted. Use Code No. EPA-6. (See Appendix C for list of codes.)
21	4	Numeric	DILUTION - percentage a sample was diluted from standard bioassay with one decimal place. No dilution, leave blank.
25	2	Numeric	LABORATORY REPLICATE NUMBER - a unique identifier, assigned by investigator, for each replicate or subsample taken from a whole sediment or water sample.
27	6	DDHHMM	OBSERVATION PERIOD - the elapsed time from the beginning of the bioassay at which a count or measure is made (e.g., growth, temperature). Format is days (2 digits), hours (00-23), minutes (00-59).
33	4	Numeric	WATER TEMPERATURE - water temperature under which bioassay was conducted. In degrees Celcius with two decimal places.
37	4	Numeric	SALINITY - salinity of water in the test chamber, in parts per thousand to two decimal places.
41	4	Numeric	DISSOLVED OXYGEN - four-digit value for dissolved oxygen in milliliters per liter with two decimal places.
45	3	Numeric	pH - three digit value for pH of the water in the test chamber with one decimal place.
48	2	Code	VARIABLE CODE (1) - a two-character code to identify the variable measured. (See Appendix C for the list of codes.) Use Code No. EPA-7. Please contact ODES Technical Staff if you need a new code.
50	5	Numeric	VARIABLE VALUE (1) - the value of the variable measured. The recorded value must take the format described in the variable code.

EXHIBIT XI-C-6 (Cont'd)
Data Record 2

Starting Column	Length of Field	Field Format	Description
55	2	Code	VARIABLE CODE (2) - a two-character code to identify the variable measured. (See Appendix C for the list of codes.) Use Code No. EPA-7. Please contact ODES Technical Staff if you need a new code.
57	5	Numeric	VARIABLE VALUE (2) - the value of the variable measured. The recorded value must take the format described in the variable code.
62	2	Code	VARIABLE CODE (3) - a two-character code to identify the variable measured. (See Appendix C for the list of codes.) Use Code No. EPA-7. Please contact ODES Technical Staff if you need a new code.
64	5	Numeric	VARIABLE VALUE (3) - the value of the variable measured. The recorded value must take the format described in the variable code.
69	2	Code	VARIABLE CODE (4) - a two-character code to identify the variable measured. Use Code No. EPA-7. (See Appendix C for the list of codes.) Please contact ODES Technical Staff if you need a new code.
71	5	Numeric	VARIABLE VALUE (4) - the value of the variable measured. The recorded value must take the format described in the variable code.
76	2	Alphanumeric	CONTROL SAMPLE NUMBER - a two-character identifier assigned by the investigator for each whole water or sediment sample used as a bioassay control.
78	3	Alphanumeric	CONTROL STATION - a three-character code assigned by an investigator to identify the sampling station where controls were collected (i.e., reference station).

XII. ODES File Type 901 for Fish and Shellfish Landings Data

A. Introduction

ODES File Type 901 for Fish and Shellfish Landings Data can be used to report the type and amount of fish or shellfish harvested during any period at any port of landing. This chapter describes how to compile and submit to the ODES Staff data on fish and shellfish landings. A data set will consist of different record types arranged in a hierarchical order. Section B of this chapter provides an illustration of each of the record types and explains the hierarchical relationships between them. Section C contains detailed instructions for formatting a data set. The instructions for each of the data elements include such information as the length of the field, the type of data (e.g., numeric, character), and a description of the element. In cases where a data element is to be represented by a code (e.g., sampling gear and species name) a list of valid codes will either accompany the element's description or be available separately in one of the appendices. Appendix B contains a list of NODC taxonomic codes for marine species; codes for species not represented in this list should be requested from the ODES Staff.

B. Hierarchical Relationships

ODES File Type 901 for Fish and Shellfish Landings consists of three record types:

- Record Type "1" is the Landing Location Header Record. It is used to report information common to the entire data set, such as the survey dates and the port of landing.

- Record Type "2" is the Catch Record. It is used to report information common to one or more landings, such as the beginning and ending dates of the reporting period.

- Record Type "3" is the Species Record. It is used to identify each species landed in the reporting period and the catch weight and value.

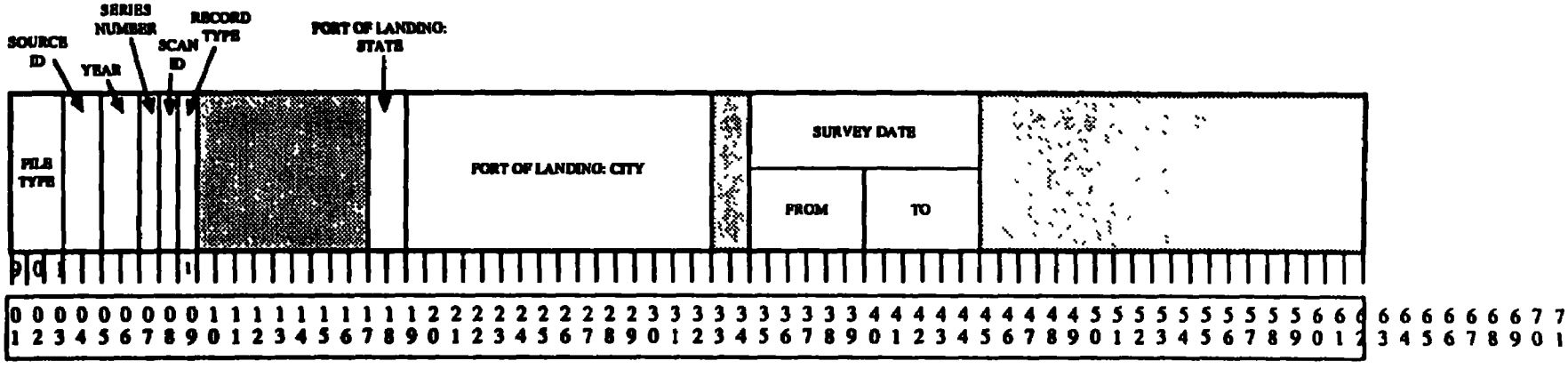
Exhibit XII-B-1 provides an illustration of the structure of each of these record types. These record images, in conjunction with the detailed instructions provided in Section C, will enable you to quickly and accurately enter the data onto tape or disk in the proper format for each record.

In addition, it is also necessary to understand the relationships among the record types so that you can compile a comprehensive data set in the proper hierarchical format. The hierarchical order described herein is designed to minimize the duplication of data entry tasks. The relationships are straightforward, and taking just a few minutes now to understand them could save you considerable time and effort later.

As shown above, the record types report information at different logical levels. For example, the Landing Location Header Record reports information common to the entire data set while the Catch Record reports information about only one period within the survey. Thus there will be only one Landing Location Header Record per data set, whereas there will typically be many Catch Records.

EXHIBIT XII-B-1
ODES FT901 for Fish/Shellfish Landings Data

Landing Location Header Record



Catch Record

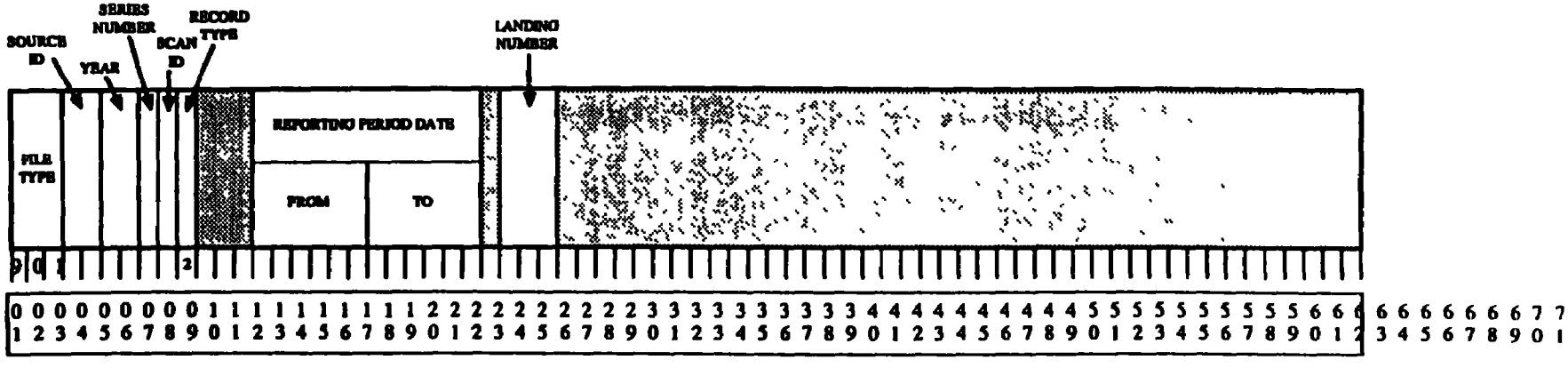


EXHIBIT XII-B-1 (Cont'd)

Species Record

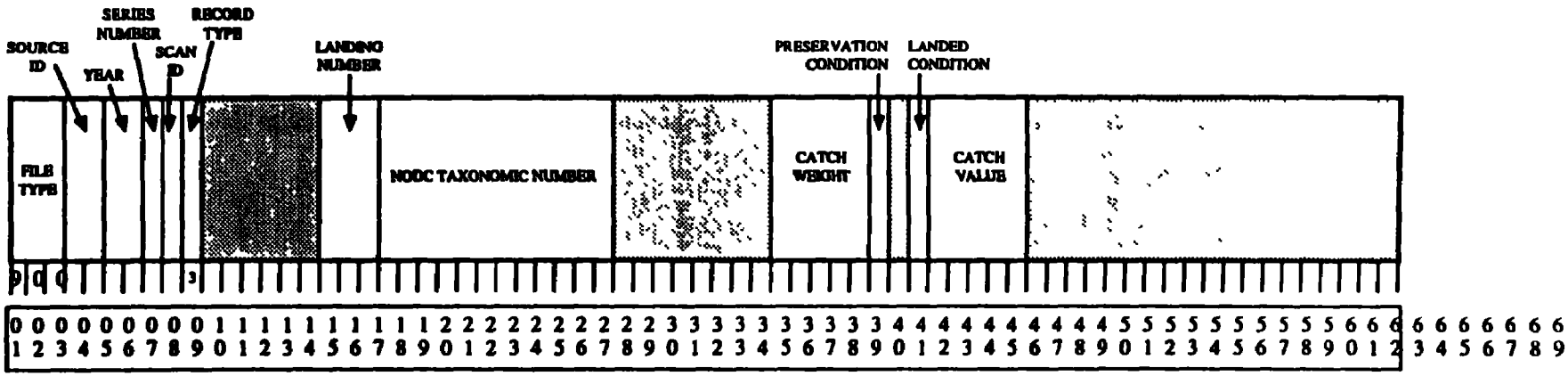


Exhibit XII-B-2 shows how the different record types would be arranged in a data set, with the hierarchical relationships indicated by the level of indentation. If you have any questions about the data reporting format, please contact the ODES Staff. (A list of contacts is contained in the Preface to this manual.)

C. Detailed Data Element Descriptions

Detailed descriptions for all of the data elements in ODES File Type 901 for Fish and Shellfish Landings are provided below. All record types for a given data set will share the same nine-character file identifier. This file ID consists of three characters to identify the file type -- i.e., "901" -- followed by a two-character abbreviation for the municipality/ institution/agency conducting the survey, the last two digits of the year in which the survey was taken, a series number assigned by the investigator and a scan code to indicate sampling frequency and collection period.

All numeric fields should be right-justified, preceded by either blanks, zeroes, or, where applicable, positive (+) or negative (-) signs. All decimal points are implied rather than physically included. All character fields should be left-justified and blank-filled to the right.

Landing Location Header Record

This record is mandatory; it should occur only once, at the beginning of each data set. See Exhibit XII-C-1 for a description of all data elements in this record.

Catch Record

This record is mandatory; it should occur once for every reported landing of fish or shellfish. See Exhibit XII-C-2 for a description of all data elements in this record.

Species Record

This record is mandatory. One such record should be prepared for every species landed in the reporting period. See Exhibit XII-C-3 for a description of all data elements in this record.

D. Data Entry Codes

The section contains a list of all the codes used in ODES File Type 901 for Fish and Shellfish Landings Data. The codes are listed by their identifier and the field in which they are to be used. The elements of these code types are listed in the appendices: Appendix A contains ODES Chemical and Water-Quality Codes, Appendix B contains NODC/ODES Taxonomic Codes, and Appendix C contains all other ODES code types.

Code Identifier	Field Name
0D009	Preservation Condition
0D016	Landed Condition
N0DC	Taxonomic Code
EPA-10	Scan ID

EXHIBIT XII-B-2

Fish and Shellfish Landing Data
Order of Record Types/Reason for Occurrence

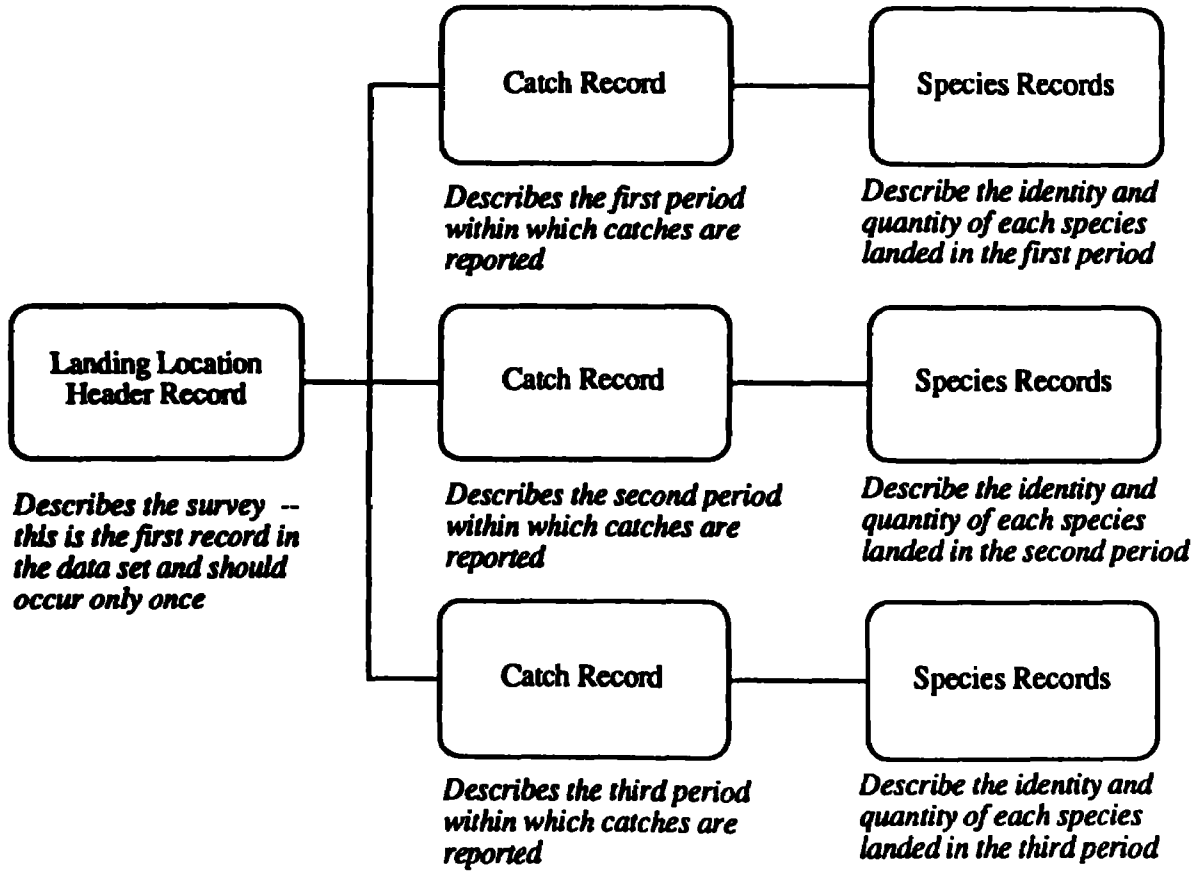


EXHIBIT XII-C-1
Landing Location Header Record

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "901"
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier, assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "1".
11	9	Blank	BLANK.
20	2	Alpha	PORT OF LANDING: STATE - the city at which the catch was landed. Use U.S. postal service designations.
22	16	Alpha	PORT OF LANDING: CITY - the name of the city at which the catch was landed.
38	2	Blank	BLANK.
40	6	YYMMDD	SURVEY STARTING DATE - the earliest date of a catch report in this survey. YY is the year, MM is the month, and DD is the day.

EXHIBIT XII-C-1 (Cont'd)
Landing Location Header Record

Starting Column	Length of Field	Field Format	Description
46	6	YYMMDD	SURVEY ENDING DATE - the latest date of a catch report in this survey. YY is the year, MM is the month, and DD is the day.
52	20	Blank	BLANK.

EXHIBIT XII-C-2
Catch Record

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "901".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier, assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "2".
11	3	Blank	BLANK.
14	6	YYMMDD	REPORTING PERIOD STARTING DATE - the beginning date for this reporting period. YY is the year, MM is the month, and DD is the day.
20	6	YYMMDD	REPORTING PERIOD ENDING DATE - the ending date for this reporting period. YY is the year, MM is the month, and DD is the day.
26	1	Blank	BLANK.

EXHIBIT XII-C-2 (Cont'd)
Catch Record

Starting Column	Length of Field	Field Format	Description
27	3	Numeric	LANDING NUMBER - This is a sequentially-assigned number to distinguish successive landings in a survey. This field should be filled by the data submitter.
30	42	Blank	BLANK.

EXHIBIT XII-C-3
Species Record

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "901".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier, assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "3".
11	6	Blank	BLANK.
17	3	Numeric	LANDING NUMBER - This is a sequentially-assigned number to distinguish successive landings in a survey.
20	12	Code	NODC TAXONOMIC CODE - a twelve-digit code assigned to a taxon by NODC. Refer to the master species list provided by the ODES Staff (see Appendix B). For unlisted taxa, contact the ODES Technical Staff. Do not independently assign new codes.
32	8	Blank	BLANK.

EXHIBIT XII-C-3 (Cont'd)
Species Record

Starting Column	Length of Field	Field Format	Description
40	5	Numeric	CATCH WEIGHT - the total landed weight of this species in the reporting period. Report in whole kg.
45	1	Code	PRESERVATION CONDITION - the preservation condition of the fish or shellfish as landed. Use Code 0D009: -- Blank - no information 1 -- Live 2 -- Fresh 3 -- Frozen 4 -- Salted
46	1	Blank	BLANK.
47	1	Code	LANDED CONDITION - the processed condition of the catch as landed. Use Code 0D016: -- Blank - no information 1 -- Whole 2 -- Gutted 3 -- Filleted 4 -- Shelled
48	5	Numeric	CATCH VALUE - the value of the catch as landed. Report in whole dollars.
53	19	Blank	BLANK.

XIII. ODES File Type 902 for Plankton Abundance Data

A. Introduction

ODES File Type 902 for Plankton Abundance Data can be used to report the type and abundance of planktonic organisms collected in marine and estuarine waters. This chapter describes how to compile and submit to the ODES Staff data on plankton abundances. A data set will consist of different record types arranged in a hierarchical order. Section B of this chapter provides an illustration of each of the record types and explains the hierarchical relationships between them. Section C contains detailed instructions for formatting a data set. The instruction for each of the data elements include such information as length of the field, the type of data (e.g., numeric, character), and a description of the element. In cases where a data element is to be coded (e.g., sampling gear and species name) a list of valid codes will either accompany the element's description or be available separately in one of the appendices. Appendix B contains a list of NODC taxonomic codes for marine species; codes for species not represented in this list should be requested from the ODES Staff.

B. Hierarchical Relationships

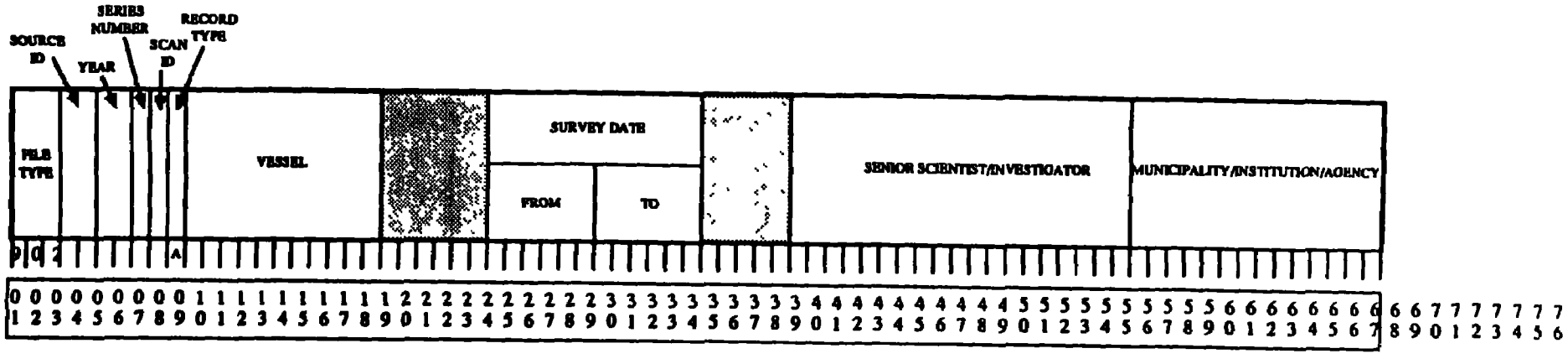
ODES File Type 902 for Plankton Abundance Data consists of seven record types:

- Record Type "A" is the Survey Header Record. It is used to report information common to the entire data set, such as the survey dates and the investigator's name.
- Record Type "B" is the Station Header Record. It is used to report information about the location where the plankton samples were collected.
- Record Type "2" is the Sample Header Record. It is used to identify the sample and the gear used for collection.
- Record Type "D" is the Total Haul Data Record. It is used to report information pertaining to the sample as a whole, such as water volume sampled and total weight of biota collected.
- Record Type "3" is the Phytoplankton Data Record. It is used to identify the species and numbers of phytoplankton collected.
- Record Type "E" is the Zooplankton Data Record. It is used to identify the species and numbers of zooplankton collected.
- Record Type "I" is the Ichthyoplankton Data Record. It is used to identify the species and number of ichthyoplankton collected.

Exhibit XIII-B-1 provides an illustration of the structure of each of these record types. These record images, in conjunction with the detailed instructions provided in Section C, will enable you to quickly and accurately enter the data onto tape or disk in the proper format for each record.

EXHIBIT XIII-B-1
ODES FT902 for Plankton Data

Survey Header Record



Station Header Record

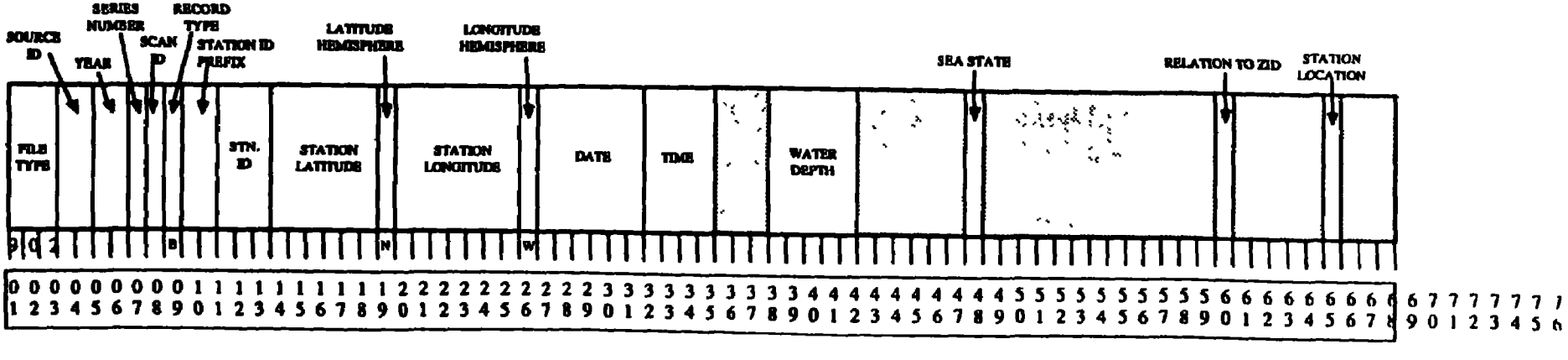
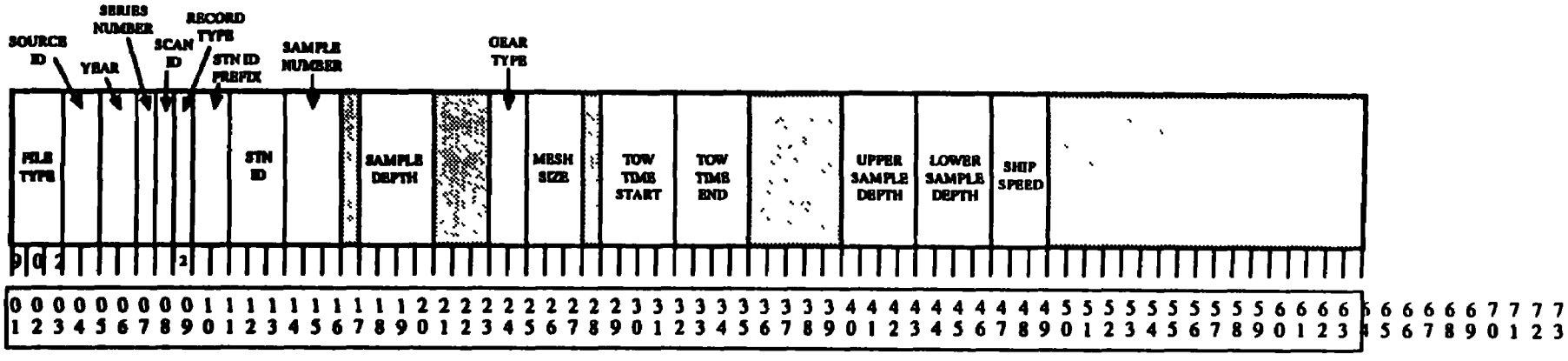


EXHIBIT XIII-B-1 (Cont'd)

Sample Header Record



Total Haul Data Record

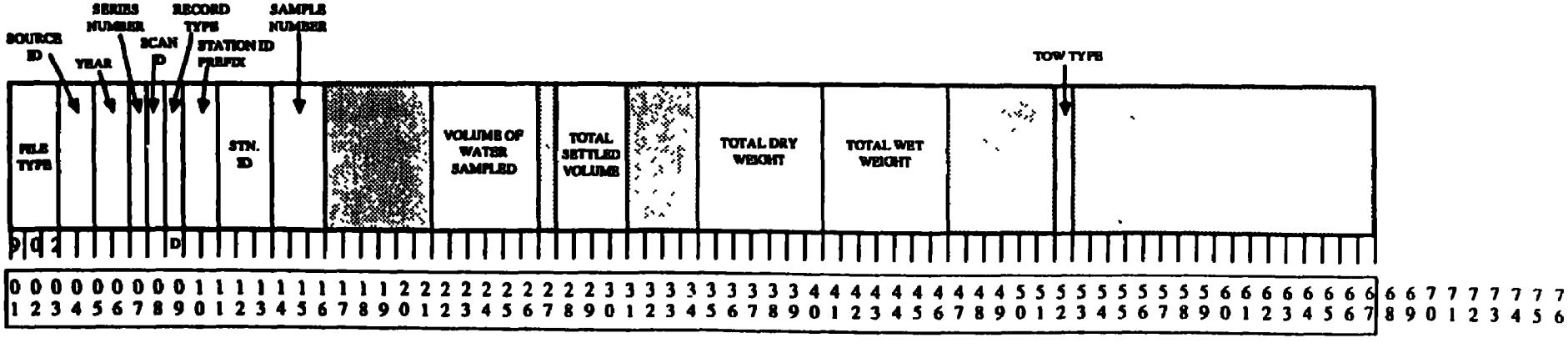
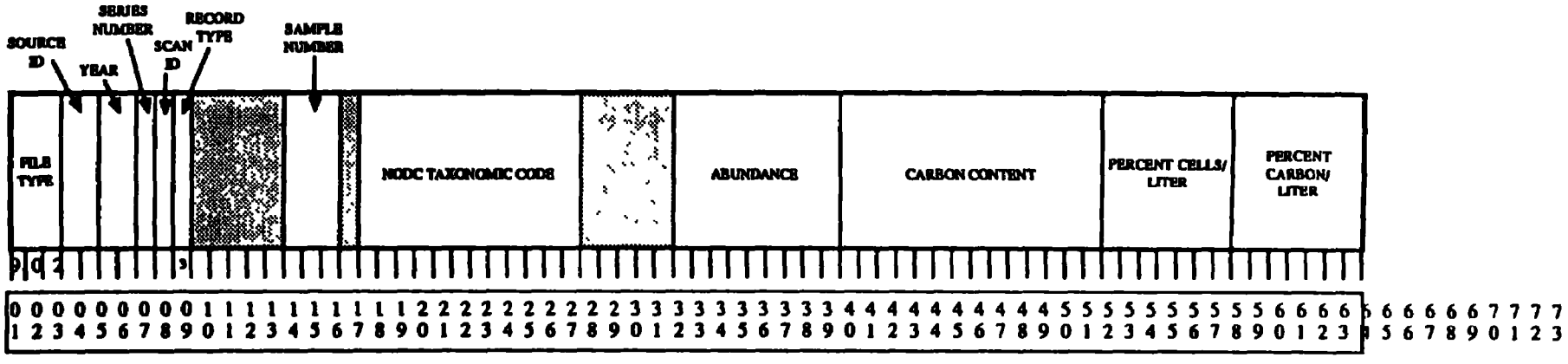


EXHIBIT XIII-B-1 (Cont'd)

Phytoplankton Data Record



Zooplankton Data Record

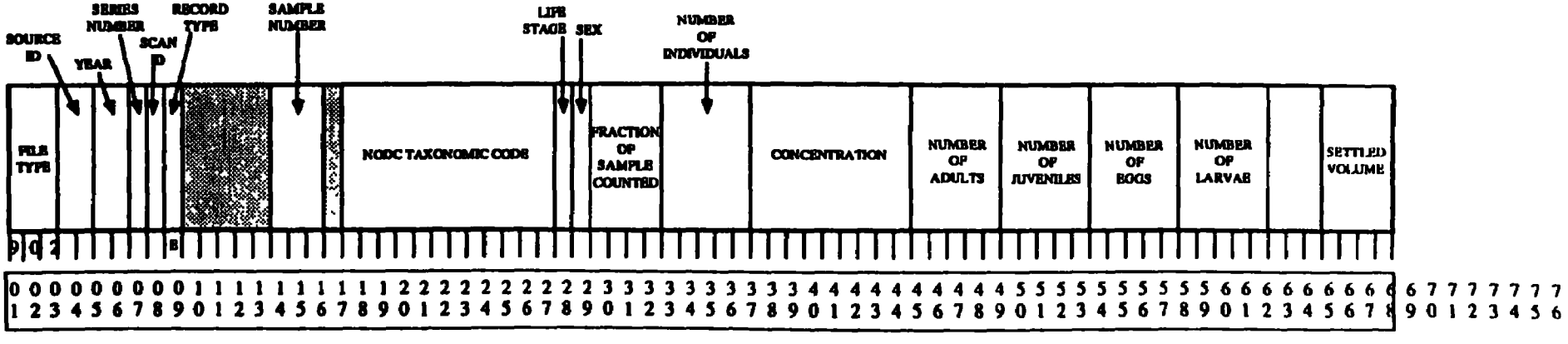
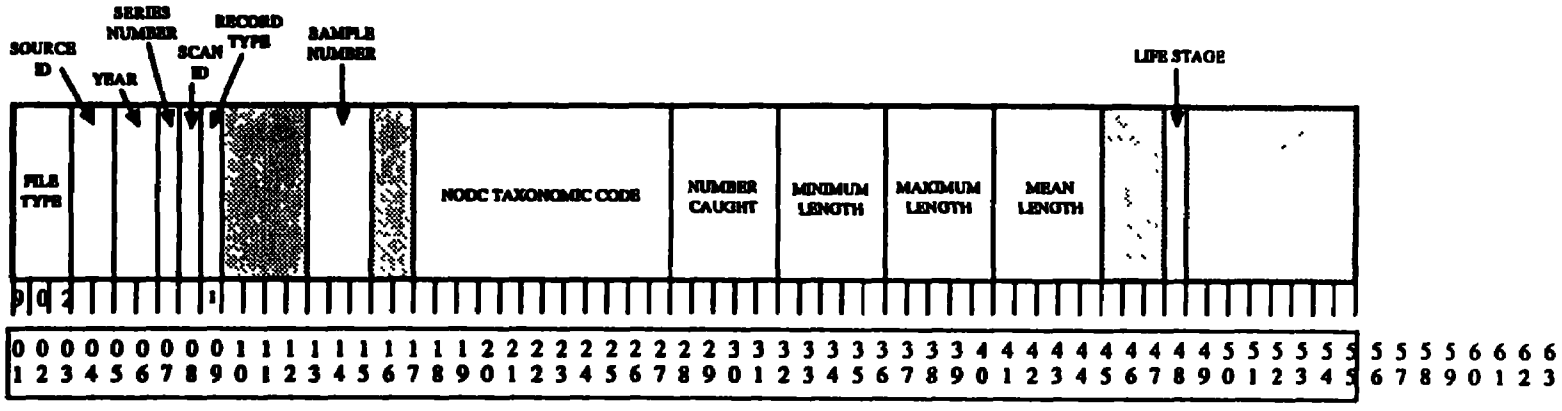


EXHIBIT XIII-B-1 (Cont'd)

Ichthyoplankton Data Record



In addition, it is also necessary to understand the relationships among the record types so that you can compile a comprehensive data set in the proper hierarchical format. The hierarchical order described herein is designed to minimize the duplication of data entry tasks. The relationships are straightforward, and taking just a few minutes now to understand them could save you considerable time and effort later.

As shown above, the record types report information at different logical levels. For example, the Survey Header Record reports information common to the entire data set while the Sample Header Record reports information about only one of the samples collected. Thus there will be only one Survey Header Record per data set, whereas there will typically be many Phytoplankton or Zooplankton Data Records.

Exhibit XIII-B-2 shows how the different record types would be arranged in the data set, with the hierarchical relationships indicated by the level of indentation. In this example each of the Data Record types (phytoplankton, zooplankton, and ichthyoplankton) is shown at a station; an actual survey may report only one of these types of data at a station. At least one Data Record (of some type), however, must appear for each Sample Header Record.

If you have any questions about the data reporting format, please contact the ODES Staff. (A list of contacts is contained in the Preface to this manual.)

C. Detailed Data Element Descriptions

Detailed descriptions for all of the data elements in ODES File Type 902 for Plankton Abundance Data are provided below. All record types for a given data set will share the same nine-character file identifier. This file ID consists of three characters to identify the file type -- i.e., "902" -- followed by a two-character abbreviation for the municipality/ institution/agency conducting the survey, the last two digits of the year in which the survey was taken, a series number assigned by the investigator and a scan code to indicate sampling frequency and collection period.

All numeric fields should be right-justified, preceded by either blanks, zeroes, or, where applicable, positive (+) or negative (-) signs. All decimal points are implied rather than physically included. All character fields should be left-justified and blank-filled to the right. Codes that are not shown with the data element descriptions can be found in the appendicès.

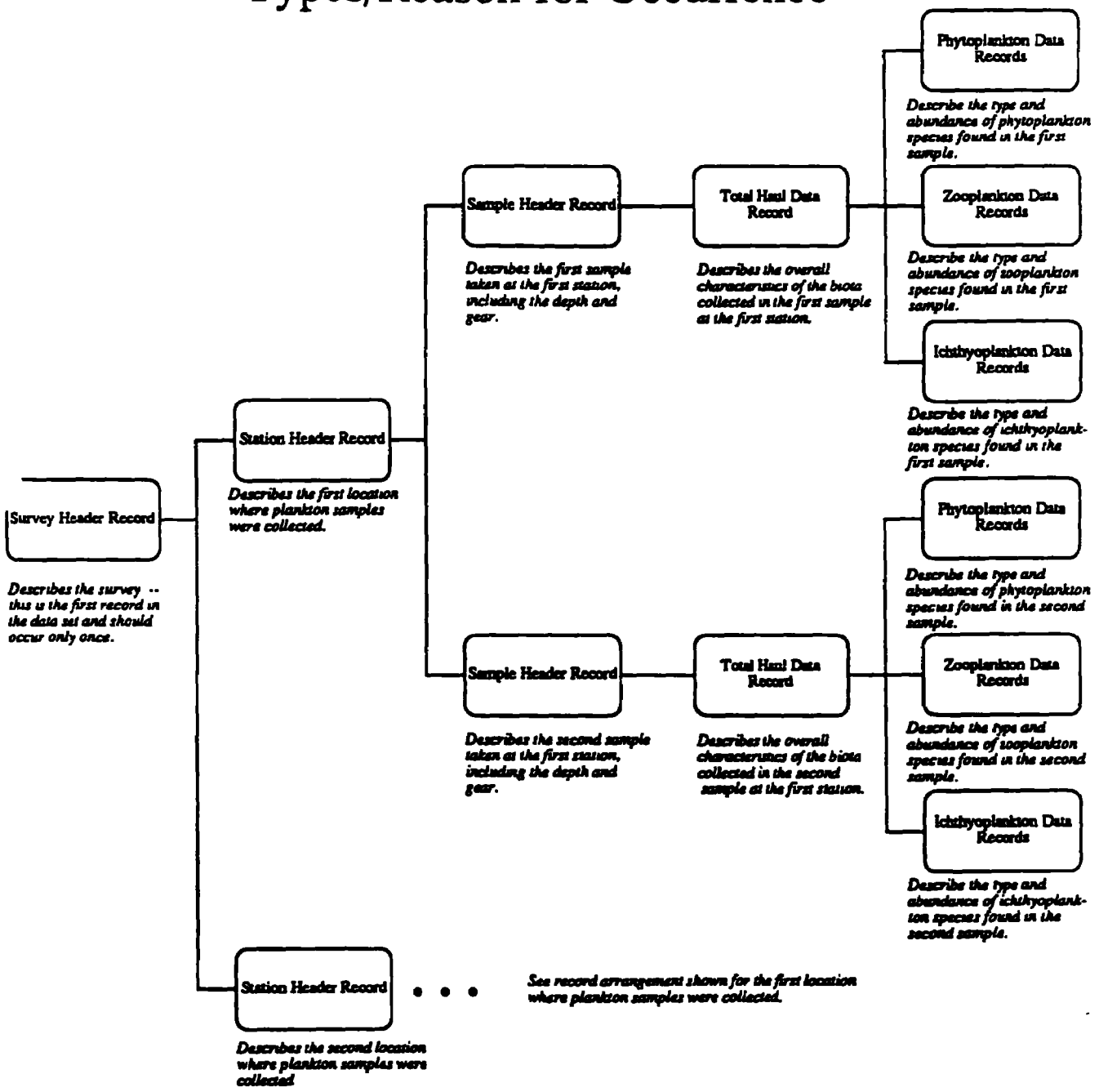
Survey Header Record

This record is mandatory; it should occur only once, at the beginning of each data set. See Exhibit XIII-C-1 for a description of all data elements in this record.

Station Header Record

This record is mandatory. One such record must be generated for every sampling station in the data set. Stations should be uniquely identified by the Station ID Prefix and Station ID fields. See Exhibit XIII-C-2 for a description of all data elements in this record.

EXHIBIT
XIII-B-2
Plankton Abundance Data
Order of Record
Types/Reason for Occurrence



Sample Header Record

This record is mandatory. One such record should be generated for each occasion on which a collection of plankton is made. See Exhibit XIII-C-3 for a description of all data elements in this record.

Total Haul Data Record

This record is mandatory. One (and only one) such record should accompany each Station Header Record. This record is used to report information pertaining to the entire sample collected. See Exhibit XIII-C-4 for a description of all data elements in this record.

Phytoplankton Data Record

A separate record of this type should be used for each Phytoplankton species observed in the sample. This record is not mandatory if either a Zooplankton Data Record or Ichthyoplankton Data Record is filed under the same Station Header Record. See Exhibit XIII-C-5 for a description of all data elements in this record.

Zooplankton Data Record

One such record should be generated for every Zooplankton species or life stage reported in a sample. Each record can be used either to report on the abundance of a single species or the abundance of a single stage. If abundance of an entire species is to be reported, use the fields for the numbers of adult, juveniles, larvae, and eggs. Otherwise, use the fields for stage, sex, and number for individuals. This record is not mandatory if either a Phytoplankton Data Record or Ichthyoplankton Data Record is filed under the same Sample Header Record. See Exhibit XIII-C-6 for a description of all data elements in this record.

Ichthyoplankton Data Record

One such record should be produced for every life stage and fish species in a sample. This record is not mandatory if either a Phytoplankton Data Record or Zooplankton Data Record if filed under this Sample Header Record. See Exhibit XIII-C-7 for a description of all data elements in this record.

D. Data Entry Codes

This section contains a list of all the code types used in ODES File Type 902 for Plankton Abundance Data. The codes are listed by their identifier and the field in which they are to be used. The elements of these code types are listed in the appendices: Apepndix A contains ODES Chemical and Water-Quality codes, Appendix B contains NODC/ODES Taxonomic Codes, and Appendix C contains all other ODES codes types.

Code Identifier	Field Name
0101	Sex
0109	Sea State
0134	Gear
0148	Life Stage
0175	Tow Type
0346	Station Location
EPA-1	Relation to ZID
NODC	Taxonomic Code
EPA-10	Scan ID

EXHIBIT XIII-C-1
Survey Header Record

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "902".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier assigned by EPA which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "A".
11	11	Alpha	VESSEL - the survey vessel or platform.
22	6	Blank	BLANK.
28	6	YYMMDD	SURVEY DATE (FROM) - start of the survey period. YY is the last two digits of the year, MM is the month (01-12), and DD is the day (01-31).
34	6	YYMMDD	SURVEY DATE (TO) - end of survey date. YY is the last two digits of the year. MM is the month (01-12). DD is the day (01-31).
40	5	Blank	BLANK.
45	19	Alpha	SENIOR SCIENTIST/INVESTIGATOR - name of senior scientist or investigator.

EXHIBIT XIII-C-1
Survey Header Record

Starting Column	Length of Field	Field Format	Description
64	14	Alpha	MUNICIPALITY/INSTITUTION/AGENCY - name of investigator's institution.

EXHIBIT XIII-C-2
Station Header Record

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "902".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier assigned by EPA, which appears on every record in the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "B".
11	2	Alpha	STATION IDENTIFICATION PREFIX - a two-character code to indicate that a station has been revisited during a survey. Leave blank for the first occupation. Valid codes for reoccupations of the station are R1-R9.
13	3	Alpha	STATION IDENTIFIER - three characters assigned by the investigator to identify the sampling station.
16	6	DDMMSS	STATION LATITUDE - latitude of station in degrees (DD), minutes (MM), and seconds (SS).
22	1	Code	LATITUDE HEMISPHERES - set to 'N'.

EXHIBIT XIII-C-2 (Cont'd)
Station Header Record

Starting Column	Length of Field	Field Format	Description
23	7	DDDMMSS	STATION LONGITUDE - longitude of station in degrees (DDD), minutes (MM), and seconds (SS).
30	1	Code	LONGITUDE HEMISPHERE - set to 'W'
31	6	YYMMDD	DATE - date of sample collection. YY is last two digits of the year. MM is the number (01-12) of the month. DD is the day (01-31).
37	4	HHMM	TIME - time of sample collection in 24 hour format (Standard Time). HH is the hour (00-23), MM is the minutes (00-59).
41	3	Blank	BLANK.
44	5	Numeric	WATER DEPTH - depth at the station in meters with one decimal place.
49	6	Blank	BLANK.
55	1	Code	SEA STATE - a one-character code indicating the ocean conditions at the time the station is occupied. Use Code No. 0109: 0 -- calm-glassy, 0 meters 1 -- calm-rippled, 0-.1 meters 2 -- smooth-wavelet, .1-.5 meters 3 -- slight, .5-1.25 meters 4 -- moderate, 1.25-2.50 meters 5 -- rough, 2.50-4.0 meters 6 -- very rough, 4-6 meters 7 -- high, 6-9 meters 8 -- very high, 9-14 meters 9 -- phenomenal, > 14 meters
56	13	Blank	BLANK.

EXHIBIT XIII-C-2 (Cont'd)
Station Header Record

Starting Column	Length of Field	Field Format	Description
69	1	Code	RELATION TO ZID - a one-character code to describe the classification of the station with respect to the zone of initial dilution (ZID). This field is applicable only to EPA's 301(h) program. Leave this field blank for all stations not classified as part of a 301(h) monitoring program. Where applicable, use code EPA-1: W -- Within ZID B -- ZID Boundary N -- Near Field R -- Reference F -- Far Field
70	5	Blank	BLANK.
75	1	Code	STATION LOCATION - a one-character code to describe the location of the station. Use Code No. 0346: A -- Stream B -- Estuary C -- Lake D -- Ocean E -- Well F -- Other
76	3	Blank	BLANK.

EXHIBIT XIII-C-3
Sample Header Record

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "902".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier, assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "2".
11	2	Alpha	STATION IDENTIFICATION PREFIX - a two-character code to indicate that a station has been revisited during a survey. Leave this field blank for the first occupation of the station in a given survey. Valid codes for reoccupations of the station are R1-R9.
13	3	Alpha	STATION IDENTIFIER - three characters assigned by the investigator to identify the sampling station.
16	3	Alphanumeric	SAMPLE NUMBER - three characters assigned by the investigator to identify the sample.
19	1	Blank	BLANK.

EXHIBIT XIII-C-3
Sample Header Record

Starting Column	Length of Field	Field Format	Description
20	4	Numeric	SAMPLE DEPTH - depth of samples taken from a single depth, as with a bottle. If samples were taken from a tow integrating several depths, leave this field blank and use the upper and lower depth fields below. Record as meters with one decimal place.
24	3	Blank	BLANK.
27	2	Code	GEAR TYPE - a two-character code to identify the type of collection gear used. Use Code No. 0134. (See Appendix C for a list of codes.)
29	3	Numeric	MESH SIZE - the mesh of the net used for sampling, in microns (um). Leave blank if a net was not used.
32	1	Blank	BLANK.
33	4	HHMM	TOW TIME START - the beginning time for the net tow, in 24 hour format (Standard Time). HH is hours (00-23), MM is minutes (00-59). Use this field to record sampling time if samples were collected from a bottle cast.
37	4	HHMM	TOW TIME END - the ending time for the net tow, in 24 hour format (Standard Time). HH is hours (00-23), MM is minutes (00-59). If samples were collected from a bottle cast, leave this field blank.
41	5	Blank	BLANK.
46	4	Numeric	UPPER SAMPLE DEPTH - meters. Use this field if samples were taken from a net tow. If sampling was performed with a bottle, leave this field blank.
50	4	Numeric	LOWER SAMPLE DEPTH - meters. This is the deepest depth reached by a net tow. Leave this field blank if sampling was performed with a bottle.

EXHIBIT XIII-C-3 (Cont'd)
Sample Header Record

Starting Column	Length of Field	Field Format	Description
54	3	Numeric	SHIP SPEED - for net tows taken underway, record the ship speed in knots with one decimal place.
57	17	Blank	BLANK.

EXHIBIT XIII-C-4
Total Haul Data Record

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "902".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier, assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "D".
11	2	Alpha	STATION IDENTIFICATION PREFIX - a two-character code to indicate that a station has been revisited during a survey. Leave this field blank for the first occupation of the station in a given survey. Valid codes for reoccupations of the station are R1-R9.
13	3	Alpha	STATION IDENTIFIER - three characters assigned by the investigator to identify the sampling station.
16	3	Alphanumeric	SAMPLE NUMBER - three characters assigned by the investigator to identify the sample.
19	6	Blank	BLANK.

EXHIBIT XIII-C-4 (Cont'd)
Total Haul Data Record

Starting Column	Length of Field	Field Format	Description
25	6	Numeric	VOLUME OF WATER SAMPLED - the entire volume of water filtered by a net or collected in a bottle, recorded in whole cubic meters.
31	1	Blank	BLANK.
32	4	Numeric	TOTAL SETTLED VOLUME - the settled volume of all biota collected in a sample, recorded in whole milliliters.
36	4	Blank	BLANK.
40	7	Numeric	TOTAL DRY WEIGHT - the dry weight of all biota in the sample, in grams with two decimal places.
47	7	Numeric	TOTAL WET WEIGHT - the wet weight of all biota in the sample, in grams with two decimal places.
54	6	Blank	BLANK.
60	1	Code	TOW TYPE - the type of net used for sample collection. Use Code No. 0175. C -- double oblique circular D -- double oblique G -- single oblique H -- horizontal R -- surface circular S -- step oblique T -- surface tow V -- vertical Y -- horizontal, open on descent and/or ascent Z -- horizontal, discrete
61	17	Blank	BLANK.

EXHIBIT XIII-C-5
Phytoplankton Data Record

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "902"
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier, assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "3".
11	5	Blank	BLANK.
16	3	Alphaumeric	SAMPLE NUMBER - three characters assigned by the investigator to identify the sample.
19	1	Blank	BLANK.
20	12	Code	NODC TAXONOMIC CODE - a twelve-digit numerical code assigned to a taxon by NODC. Refer to the master species list provided by the ODES Staff (see Appendix B). For unlisted taxa, contact the ODES Technical Staff. Do not independently assign new codes.

EXHIBIT XIII-C-5 (Cont'd)
Phytoplankton Data Record

Starting Column	Length of Field	Field Format	Description
32	5	Blank	BLANK.
37	9	Numeric	ABUNDANCE - the number of cells of this species observed in the sample, reported as cells/liter.
46	14	Numeric	CARBON CONTENT - carbon content of the cells in a sample, reported as picograms/liter.
60	7	Numeric	PERCENT CELLS/LITER - fraction of all cells which belong to this species. Report as percent with five decimal places.
67	7	Numeric	PERCENT CARBON/LITER - fraction of total cellular carbon which belongs to this species. Report as percent with five decimal places.

EXHIBIT XIII-C-6
Zooplankton Data Record

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "902".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier, assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "E".
11	5	Blank	BLANK.
16	3	Alphanumeric	SAMPLE NUMBER - three characters assigned by the investigator to identify the sample.
19	1	Blank	BLANK.
20	12	Code	NODC TAXONOMIC CODE - a twelve-digit numerical code assigned to a taxon by NODC. Refer to the master species list provided by the ODES Staff (see Appendix B). For unlisted taxa, contact the ODES Technical Staff. Do not independently assign new codes.

EXHIBIT XIII-C-6 (Cont'd)
Zooplankton Data Record

Starting Column	Length of Field	Field Format	Description
32	1	Code	LIFE STAGE - Code No. 0148. Use this field only if this record is being used to report the abundance of only a single stage. Otherwise, leave blank. (See Appendix C for a list of codes.)
33	1	Code	SEX - the sex of the individuals in the stage recorded above. Use Code No. 0101: -- Blank - no information 0 -- Indeterminable 1 -- Male 2 -- Female 3 -- Hermaphrodite 4 -- Transitional 5 -- Grouped, both sexes present 6 -- Hermaphroditic, functional female 7 -- Hermaphroditic, functional male
34	4	Numeric	FRACTION OF SAMPLE COUNTED - when samples have been split, use this field to record the fraction of the sample which has been entirely enumerated. Report as percent with one decimal place. This field should be filled whether the record is being used for an entire species or just a single stage.
38	5	Numeric	NUMBER OF INDIVIDUALS - in the fraction of the sample counted. Use this field only if this record is being used to report the abundance of only a single stage. Otherwise, leave blank.
43	9	Numeric	CONCENTRATION - number of individuals per cubic meter with four decimal places. Use this field only if this record is being used to report the abundance of only a single stage. Otherwise, leave blank.
52	5	Numeric	NUMBER OF ADULTS - number of adult animals in the fraction of the sample counted. Use this field only if this record is being used to report on several stages of a species. Otherwise, leave blank.

EXHIBIT XIII-C-6 (Cont'd)
Zooplankton Data Record

Starting Column	Length of Field	Field Format	Description
57	5	Numeric	NUMBER OF JUVENILES - Use this field only if this record is being used to report on several stages of a species. Otherwise, leave blank.
62	5	Numeric	NUMBER OF EGGS - Use this field only if this record is being used to report on several stages of a species. Otherwise, leave blank.
67	5	Numeric	NUMBER OF LARVAE - Use this field only if this record is being used to report on several stages of a species. Otherwise, leave blank.
72	3	Blank	BLANK.
75	4	Numeric	SETTLED VOLUME - volume of all individuals of the species or stage. Report in whole mililiters.

EXHIBIT XIII-C-7
Ichthyoplankton Data Record

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "902".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier, assigned by EPA, which appears on all records withinn the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "I".
11	4	Blank	BLANK.
15	3	Alphanumeric	SAMPLE NUMBER - three characters assigned by the investigator to identify the sample.
18	2	Blank	BLANK.
20	12	Code	NODC TAXONOMIC CODE - a twelve-digit numerical code assigned to a taxon by NODC. Refer to the master species list provided by the ODES Staff (see Appendix B). For unlisted taxa, contact the ODES Technical Staff. Do not independently assign new codes.

EXHIBIT XIII-C-7 (Cont'd)
Ichthyoplankton Data Record

Starting Column	Length of Field	Field Format	Description
32	5	Numeric	NUMBER CAUGHT - the total number of individuals of the species in the sample.
37	5	Numeric	MINIMUM LENGTH - the length of the smallest individual in the sample. Report in millimeters with one decimal place.
42	5	Numeric	MAXIMUM LENGTH - the length of all individuals in the sample. Report in millimeters with one decimal place.
47	5	Numeric	MEAN LENGTH - the mean length of all individuals in the sample. Report in millimeters with one decimal place.
52	3	Blank	BLANK.
55	1	Code	LIFE STAGE - the life stage of the species. Use Code No. 0148. (See Appendix C for a list of codes.)
56	8	Blank	BLANK.

XIV. ODES FILE TYPE 029 for Primary Productivity Data

A. Introduction

ODES File Type 029 for Primary Productivity Data can be used to report the primary productivity rate measured at a marine or estuarine sampling site. This chapter describes how to compile and submit to the ODES Staff data on primary productivity measurements. A data set will consist of different record types arranged in a hierarchical order. Section B of this chapter provides an illustration of each of the record types and explains the hierarchical relationships between them. Section C contains detailed instructions for formatting a data set. The instructions for each of the data elements include such information as the length of the field, the type of data (e.g., numeric, character), and a description of the element. In cases where a data element is to be coded (e.g., sampling gear and treatment method) a list of valid codes will either accompany the element's description or be available separately in one of the appendices. New codes required for submission of a data set should be requested from the ODES Staff.

B. Hierarchical Relationships

ODES File Type 029 for Primary Productivity Data consists of four record types:

- Record Type '0' is the Survey Header Record. It is used to report information common to the entire data set, such as the survey dates and the investigator's name.
- Record Type '1' is the Station Header Record. It is used to report information about the location where the productivity measurements were made.
- Record Type '2' is the Sample Header Record. It is used to describe the sample depth and the gear used for collection.
- Record Type '3' is the Productivity Data Record. It is used to report the conditions and result of the primary productivity measurement.

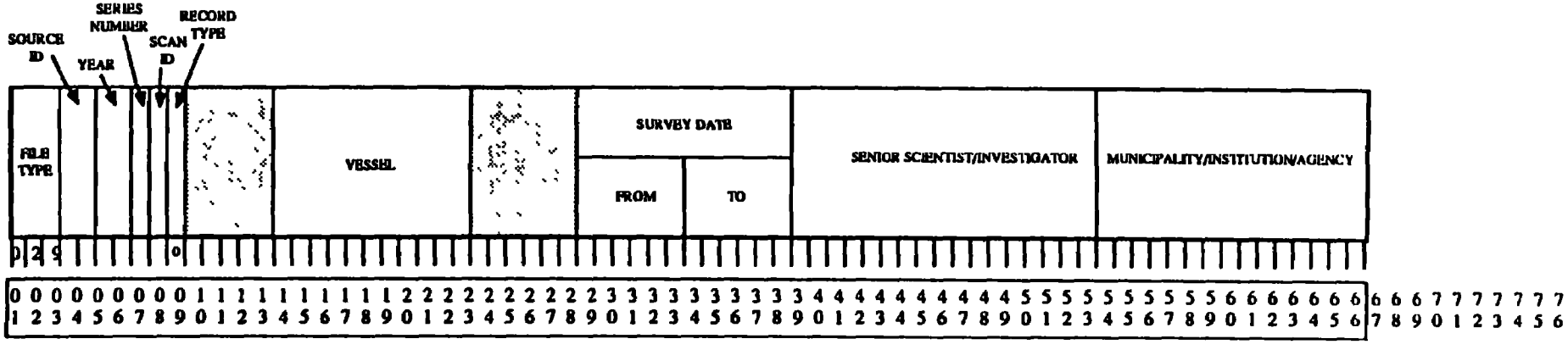
Exhibit XIV-B-1 provides an illustration of the structure of each of these record types. These record images, in conjunction with the detailed instructions provided in Section C, will enable you to quickly and accurately enter the data onto tape or disk in the proper format for each record.

In addition, it is also necessary to understand the relationships among the record types so that you can compile a comprehensive data set in the proper hierarchical format. The hierarchical order described herein is designed to minimize the duplication of data entry tasks. The relationships are straightforward, and taking just a few minutes now to understand them could save you considerable time and effort later.

As shown above, the record types report information at different logical levels. For example, the Survey Header Record reports information common to the entire data set while the Sample Header Record reports information about only one of the samples collected. Thus there will be only one Survey Header Record per data set, whereas there will typically be many Sample Header Records.

EXHIBIT XIV-B-1
ODES FT029 for Primary Production Data

Survey Header Record



Station Header Record

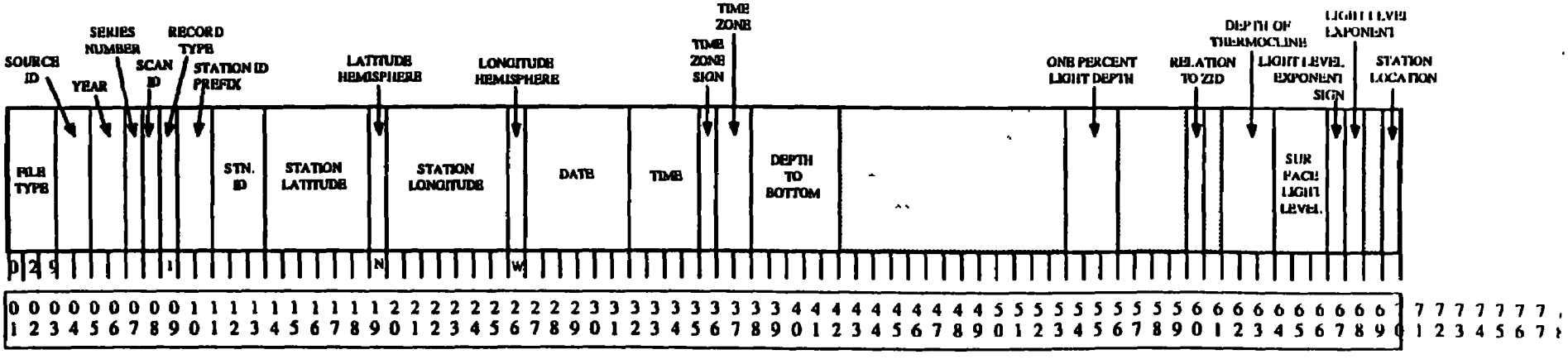
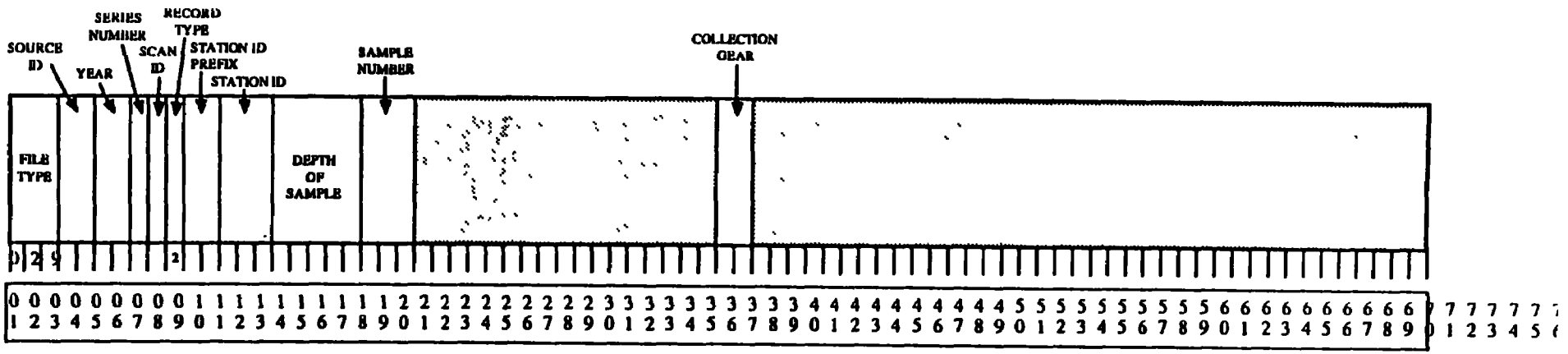


EXHIBIT XIV-B-1 (Cont'd)

Sample Header Record



Productivity Data Record

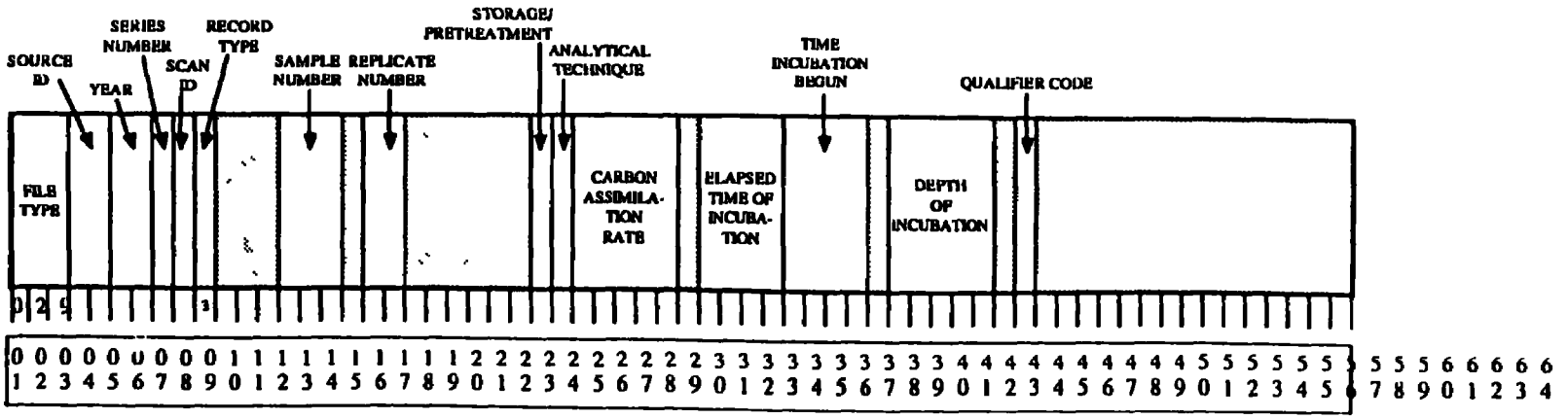


Exhibit XIV-B-2 shows how the different record types would be arranged in a data set, with the hierarchical relationships indicated by the level of indentation. If you have any questions about the data reporting format, please contact the ODES Staff. (A list of contacts is contained in the Preface.)

C. Detailed Data Element Descriptions

Detailed descriptions for all of the data elements in ODES File Type 029 for Primary Productivity Data are provided below. All record types for a given data set will share the same nine-character file identifier. This file ID consists of three characters to identify the file type -- i.e., "029" -- followed by a two-character abbreviation for the municipality/institution/agency conducting the survey, the last two digits of the year in which the survey was taken, a series number assigned by the investigator and a scan code to indicate sampling frequency and collection period.

All numeric values should be right-justified, preceded by either blanks, zeroes, or, where applicable, positive (+) or negative (-) signs. All decimal points are implied rather than physically included. All character fields should be left-justified and blank-filled to the right. Any codes needed for submission of a data set which are not listed in the appendices should be requested from the ODES Staff.

Survey Header Record

This record is mandatory; it should occur only once, at the beginning of each data set. See Exhibit XIV-C-1 for a description of all data elements in this record.

Station Header Record

One such record must be generated for every sampling station in the data set. Stations should be uniquely identified by the Station ID Prefix and Station ID fields. See Exhibit XIV-C-2 for a description of all data elements in this record.

Sample Header Record

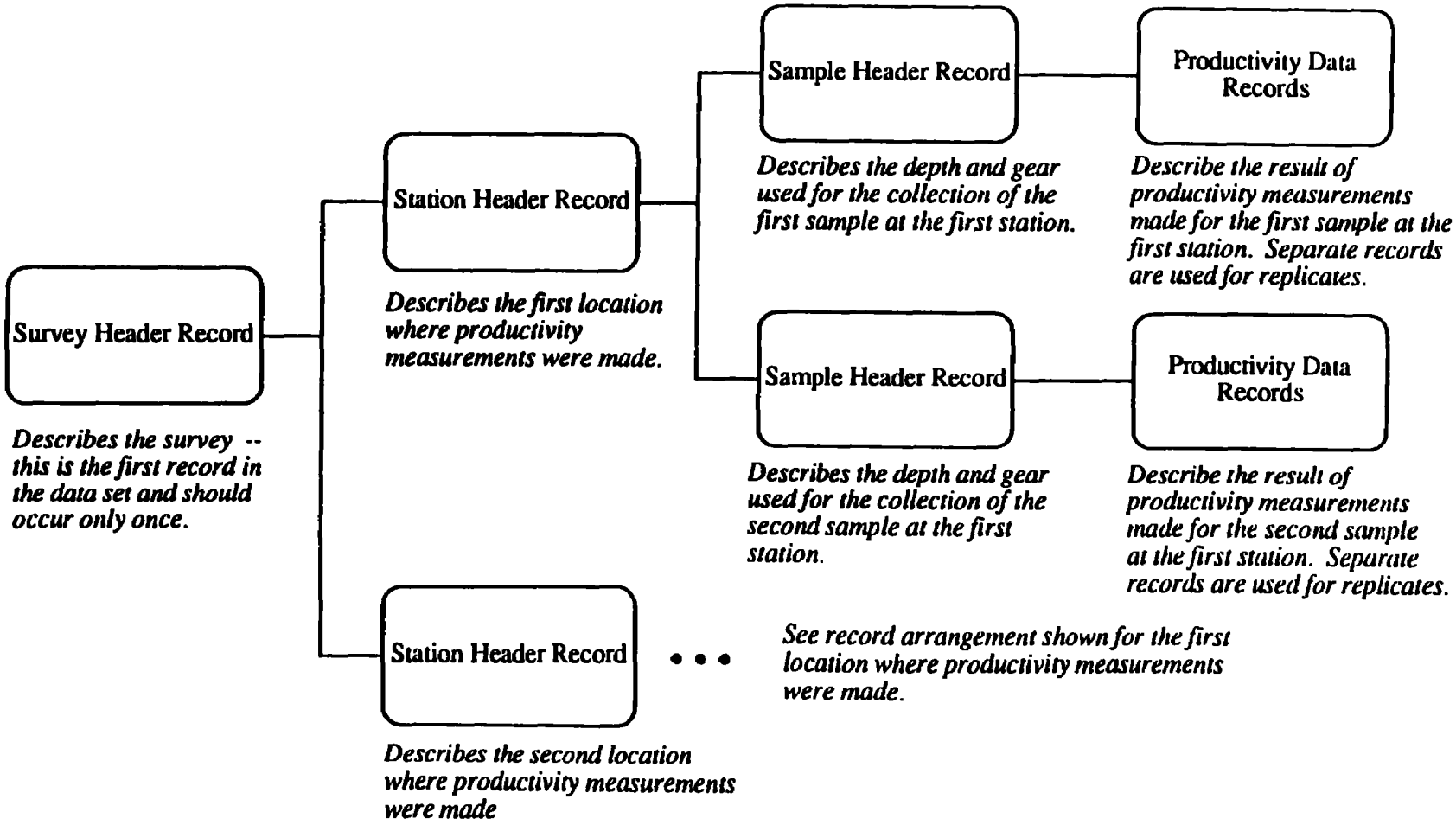
This record is used to report information pertaining to the collection of a sample. At least one such record should appear under each Station Header Record. See Exhibit XIV-C-3 for a description of all data elements in this record.

Productivity Data Record

This record is used to report upon measurements made upon a sample. At least one such record should appear under each Sample Header Record. Replicate measurements made upon a water sample should be reported on individual Productivity Data Records. Note that pigment concentrations should be reported in file type 144W. See Exhibit XIV-C-4 for a description of all data elements in this record.

EXHIBIT XIV-B-2

Primary Productivity Data
Order of Record Types/Reason for Occurrence



D. Data Entry Codes

This section contains a list of all the code types used in ODES File Type 029 for Primary Productivity Data. The codes are listed by their identifier and the field in which they are to be used. The elements of these code types are listed in the appendices: Appendix A contains ODES Chemical and Water-Quality Codes, Appendix B contains NODC/ODES Taxonomic Codes, and Appendix C contains all other ODES code types.

Code Identifier	Field Name
0033	Collection Gear
0346	Station Location
EPA-1	Relation to ZID
EPA-3	Qualifier Code
0D003	Storage/Pretreatment
0D004	Primary Productivity Measurement Technique
EPA-10	Scan ID

EXHIBIT XIV-C-1
Survey Header Record

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "029".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier, assigned by EPA,which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample wass taken. This appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to '0'.
11	5	Blank	BLANK.
16	11	Alpha	VESSEL - identity of the survey vessel or platform.
27	6	Blank	BLANK.
33	6	YYMMDD	SURVEY DATE (FROM) - start of survey date. YY is the last two digits of the year. MM is the month (01-12). DD is the day (01-31).
39	6	YYMMDD	SURVEY DATE (TO) - end of survey date. YY is the last two digits of the year. MM is the month (01-12). DD is the day(01-31).

EXHIBIT XIV-C-1 (Cont'd)
Survey Header Record

Starting Column	Length of Field	Field Format	Description
45	17	Alpha	SENIOR SCIENTIST/INVESTIGATOR - name of the senior scientist or investigator.
62	15	Alpha	MUNICIPALITY/INSTITUTION/AGENCY - name of investigator's institution.

EXHIBIT XIV-C-2
Station Header Record

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "029".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier, assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to '1'.
11	2	Alpha	STATION IDENTIFICATION PREFIX - a two-character code to indicate that a station has been revisited during a survey. Leave this field blank for the first occupation of the station in a given survey. Valid codes for reoccupations of the station are R1-R9.
13	3	Alpha	STATION IDENTIFIER - three characters assigned by the investigator to identify the sampling station.
16	6	DDMMSS	STATION LATITUDE - latitude of the station. DD is degrees. MM is minutes. SS is seconds.
22	1	Code	LATITUDE HEMISPHERE - set to 'N'.

EXHIBIT XIV-C-2
Station Header Record

Starting Column	Length of Field	Field Format	Description
23	7	DDMMSS	STATION LONGITUDE - longitude of the station. DDD is degrees. MM is minutes. SS is seconds.
30	1	Code	LONGITUDE HEMISPHERE - set to 'W'.
31	6	YYMMDD	DATE - date of sample collection. YY is the last two digits of the year. MM is the month (01-12). DD is the day (01-31).
37	4	HHMM	TIME - time of sample collection in 24-hour format (Standard Time). HH is the hour (00-23). MM is the minutes (00-59).
41	3	Blank	BLANK.
44	5	Numeric	DEPTH TO BOTTOM - water depth at the sampling station. Record in whole meters.
49	13	Blank	BLANK.
62	3	Numeric/ Symbolic	ONE PERCENT LIGHT DEPTH - the water depth at which light intensity is one percent of that at the surface. Record in whole meters. If the light level at the bottom is greater than one percent, use a value of 'BBB'.
65	4	Blank	BLANK.
69	1	Code	RELATION TO ZID - a one-character code to describe the classification of the station with respect to the zone of initial dilution (ZID). This field is applicable only to EPA's 301(h) program. Leave this field blank for all stations not classified as part of a 301(h) monitoring program. Where applicable, use code EPA-1: W -- Within ZID B -- ZID Boundary N -- Near Field R -- Reference F -- Far Field
70	1	Blank	BLANK.

EXHIBIT XIV-C-2
Station Header Record

Starting Column	Length of Field	Field Format	Description
71	3	Numeric	DEPTH OF THERMOCLINE - the depth at which the rate of change of temperature with depth is greatest. Record in whole meters. If the water column is well mixed all the way to the bottom, set this field to 'BBB'.
74	3	Numeric	SURFACE LIGHT LEVEL - light intensity at the water surface, recorded as langleys per day with three decimal places.
77	1	Symbolic	LIGHT LEVEL EXPONENT SIGN - sign (+/-) of the exponent for the surface light level.
78	1	Numeric	LIGHT LEVEL EXPONENT - exponent for the surface light level.
79	1	Blank	BLANK.
80	1	Code	STATION LOCATION - a one-character code to describe the location of the station. Use Code No. 0346: A -- Stream B -- Estuary C -- Lake D -- Ocean E -- Well F -- Other

EXHIBIT XIV-C-3
Sample Header Record

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "029".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier, assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to '2'.
11	2	Alpha	STATION IDENTIFICATION PREFIX - a two-character code to indicate that a station has been revisited during a survey. Leave this field blank for the first occupation of the station in a given survey. Valid codes for reoccupations of the station are R1-R9.
13	3	Alpha	STATION IDENTIFIER - three characters assigned by the investigator to identify the sampling station.
16	5	Numeric	DEPTH OF SAMPLE - the water depth at which the sample was collected. Record as meters with one decimal place.

EXHIBIT XIV-C-3 (Cont'd)
Sample Header Record

Starting Column	Length of Field	Field Format	Description
21	3	Alphanumeric	SAMPLE NUMBER - three characters assigned by the investigator to identify the sample.
24	16	Blank	BLANK.
40	2	Code	COLLECTION GEAR - a two-character code to indicate the equipment used to collect a sample. Use Code No. 0033: 11 -- Niskin bottle or similar apparatus. 12 -- In situ pumping system lowered to sampling depth. 13 -- Ship's sea chest or special sea water source from ship's hull - surface samples only.
43	38	Blank	BLANK.

XV. ODES File Type 015 for Ocean Currents Data

A. Introduction

ODES File Type 015 for Current Meter Data can be used to report current meter data, whether obtained from a moored instrument or a profiler. This chapter describes how to compile and submit to the ODES staff a data set containing current meter data. The data set will consist of a set of different record types arranged in a hierarchical order. Section B of this chapter provides an illustration of each of the different record types and explains the hierarchical relationships between them. Section C contains detailed instructions for compiling your data set. The instructions for each of the data elements include information such as the length of the field, the type of data (e.g., numeric, character), and a description of the data element. In most cases where a data element is a code, a list of valid codes will accompany the data element description.

B. Hierarchical Relationships

ODES File Type 015 is composed of four record types:

- Record Type "A" is the Survey Header Record. It is used to report information common to the entire data set (e.g., survey dates, investigator's name).

- Record Type "B" is the Station Header Record. It is used to report information about the station where the sample was collected (e.g., station location, water depth).

- Record Type "C" is the Current Meter Data Record 1. It is used to report current direction and speed, and water temperature, pressure, and conductivity. Also required is the tilt angle of the current meter axis with the vertical, and codes describing to what extent the measurements have been corrected for tilt angle.

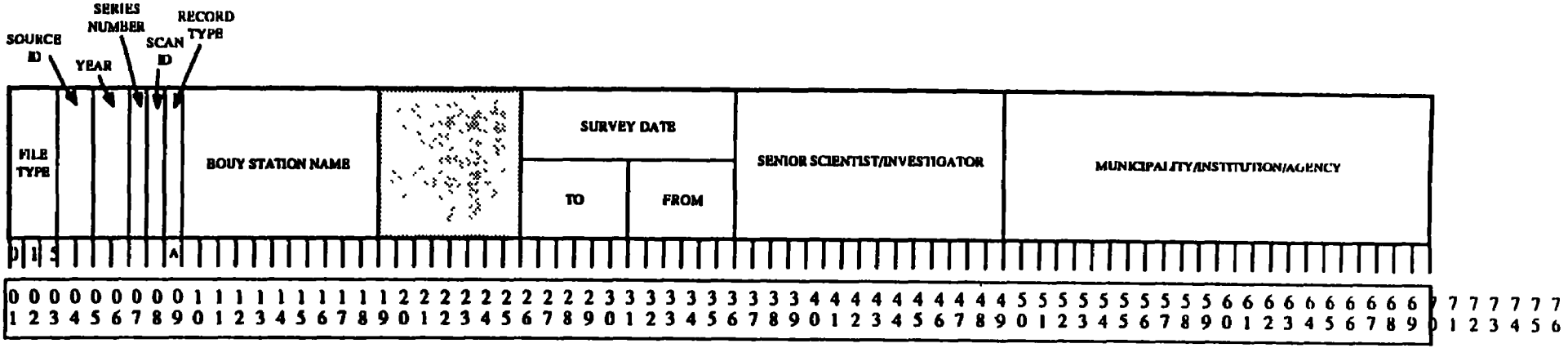
- Record Type "D" is the Current Meter Data Record 2. It is similar to Record Type "C" except salinity and transmissivity are reported instead of pressure and conductivity.

Exhibit XV-B-1 provides an illustration of the structure of each of these record types. These record images, in conjunction with the detailed instructions provided in Section C, will enable you to quickly and accurately complete individual data entry sheets (or enter this data onto tape or disk) for each of the record types.

In addition, it is also necessary to understand the relationships among the different record types so that you can compile a comprehensive data set in the proper hierarchical format. The hierarchical order described herein is designed to minimize the duplication of data entry tasks and is in accordance with standards adopted by the National Oceanographic Data Center (NODC). The relationships are straightforward, and taking just a few minutes now to understand them could save you considerable time and effort later.

EXHIBIT XV-B-1
ODES FT015 for Ocean Currents Data

Survey Header Record



Station Header Record

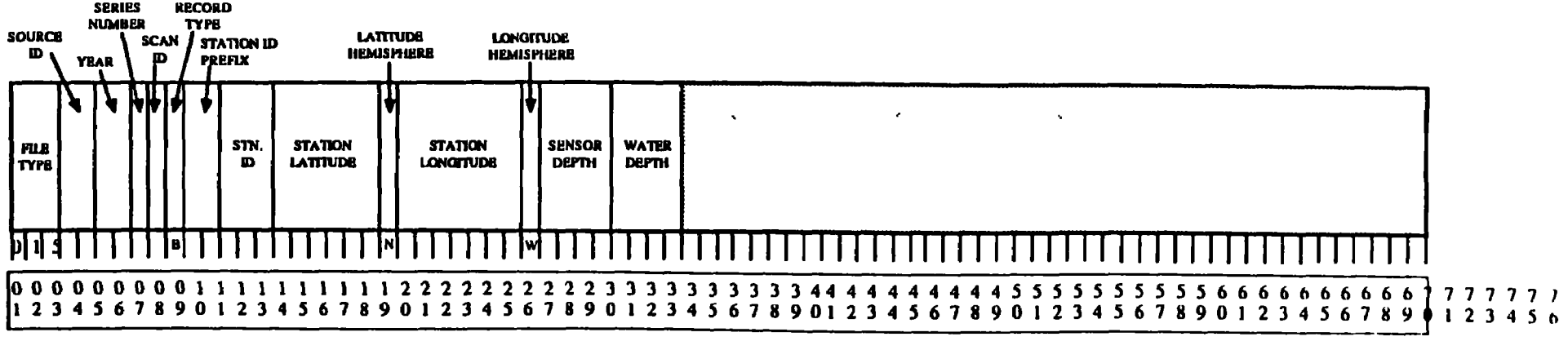
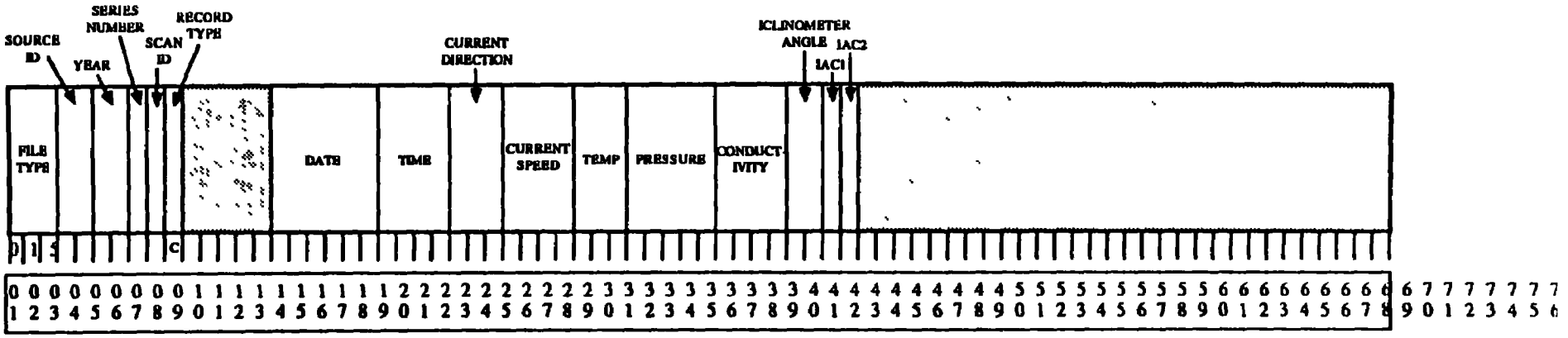
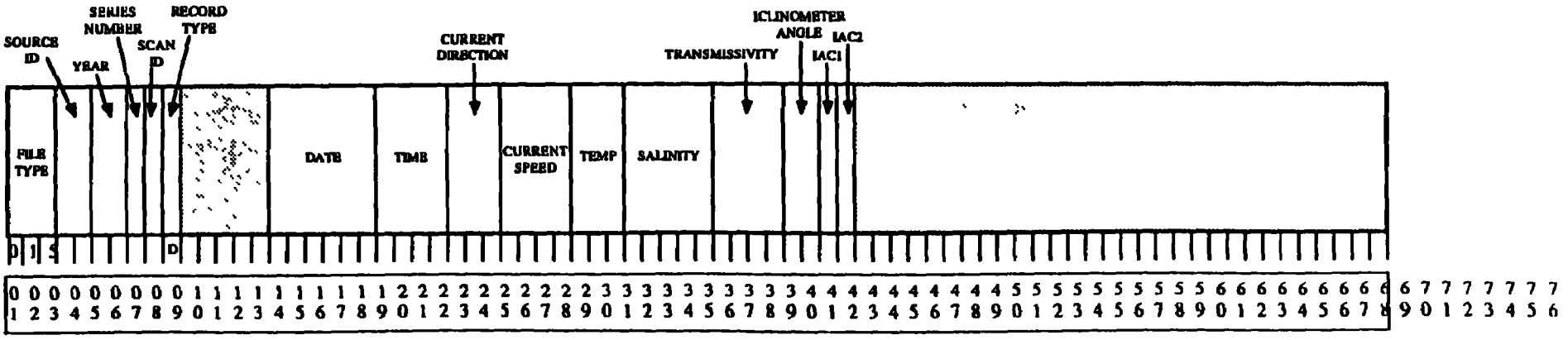


EXHIBIT XV-B-1 (Cont'd)

Current Meter Data Record 1



Current Meter Data Record 2



As shown above, the different record types report information at different logical levels. For example, the Survey Header Record (Record Type "A") reports information common to the entire survey data set, whereas the Current Meter Data Records (Record Types "C" or "D") report information about each of the observations taken during the survey. Thus, there will be only one Survey Header Record per data set, but there will typically be multiple Current Meter Data Records.

Exhibit XV-B-2 shows how the different record types would be arranged in a data set reporting data from a survey in which sampling was conducted at two stations, where two replicate samples were collected at each station.

If you have any questions about how to complete your data entry sheets or how to compile your data, please contact the ODES Systems Administrator. (See the Preface for address and telephone information.)

C. Detailed Data Element Descriptions

Detailed descriptions for all of the data elements in ODES File Type 015 are provided below. All record types for a given data set will share the same nine-character file identifier. This file ID consists of three characters to identify the file type (i.e., "015"), followed by a two-character abbreviation for the institution/agency conducting the survey, the last two digits of the year in which the survey was taken, a series number assigned by the investigator and a scan code to indicate sampling frequency and collection period.

All numeric fields should be right-justified, preceded by either blanks, zeroes, or where applicable, positive (+) or negative (-) signs. All decimal points are implied rather than physically included (see Exhibit XV-B-1). All character fields should be left justified, blank-filled.

Survey Header Record

This record is mandatory and should be submitted once for each data set. See Exhibit XV-C-1 for a description of all data elements in this record.

Station Header Record

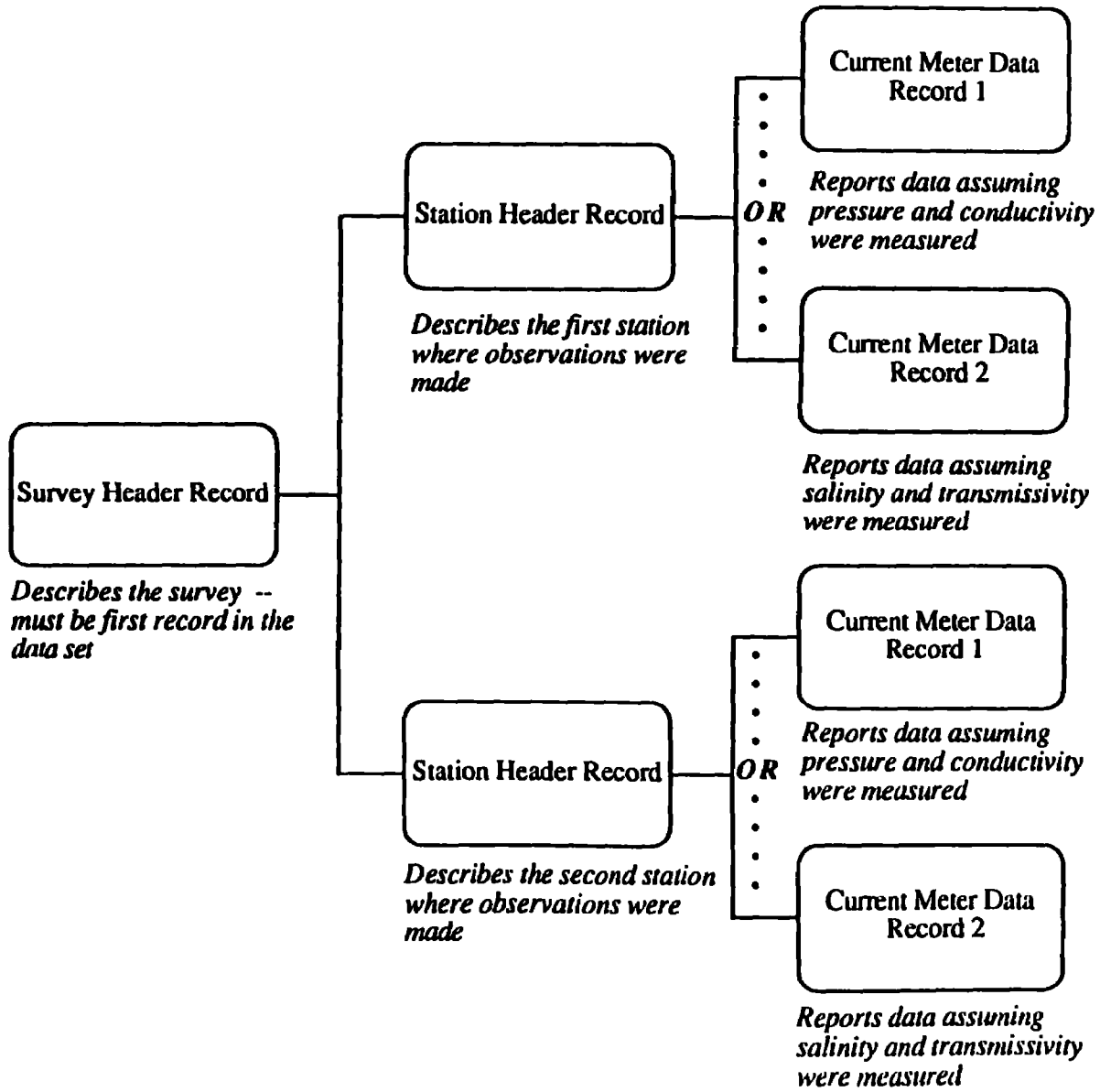
This record is mandatory; one record should be generated for each sampling station. Stations should be uniquely identified by the Station ID Prefix and Station ID fields (columns 11-15). See Exhibit XV-C-2 for a description of all data elements in this record.

Current Meter Data Record 1

This record is used to report current direction, current speed, sea water temperature, pressure, conductivity, tilt angle (of the current meter with the vertical) and two tilt angle codes. The first indicates whether the tilt angle is measured, inferred or unknown, while the second indicates whether or not corrections were made to current direction and speed due to tilt angle. See Exhibit XV-C-3 for a description of all data elements in this record.

EXHIBIT XV-B-2

Current Meter Data
Order of Record Types/Reason for Occurrence



Current Meter Data Record 2

This record is used to report current direction, current speed, seawater temperature, salinity, transmissivity, tilt angle and two tilt angle codes. The first indicates whether the tilt angle is measured, inferred or unknown, while the second indicates whether or not corrections were made to current direction and speed due to tilt angle. See Exhibit XV-C-4 for a description of all data elements in this record.

D. Data Entry Codes

This section contains a list of all the code types used in ODES File Type 015 for Current Meter Data. The codes are listed by their identifier and the field in which they are to be used. The elements of these code types are listed in the appendices: Appendix A contains ODES Chemical and Water-Quality codes, Appendix B contains NODC/ODES Taxonomic Codes, and Appendix C contains all other ODES codes types.

Code Identifier	Field Name
EPA-8	IAC1
EPA-9	IAC2
EPA-10	Scan ID

EXHIBIT XV-C-1
Survey Header Record

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "015".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier, assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This number appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "A".
11	11	Alpha	BUOY STATION NAME - identity of the buoy station.
22	8	Blank	BLANK.
30	6	YYMMDD	SURVEY DATE FROM - start of survey date. YY is the last 2 digits of the year. MM is the month (01-12). DD is the day (01-31).
36	6	YYMMDD	SURVEY DATE TO - end of survey date, where YY is the last 2 digits of the year. MM is the month (01-12). DD is the day (01-31).
42	15	Alpha	SENIOR SCIENTIST/INVESTIGATOR - name of senior scientist or investigator.

EXHIBIT XV-C-1 (Cont'd)
Survey Header Record

Starting Column	Length of Field	Field Format	Description
57	24	Alpha	MUNICIPALITY/INSTITUTION/AGENCY - name of investigator's institution.

EXHIBIT XV-C-2
Station Header Record

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "015".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier, assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This number appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "B".
11	2	Alpha	STATION IDENTIFICATION PREFIX - a two-character code to indicate that a station has been revisited during a survey. Leave this field blank for the first occupation of a station. Valid codes for reoccupations of the station are R1-R9.
13	3	Alpha	STATION IDENTIFIER - three characters assigned by the investigator to identify the sampling station.
16	6	DDMMSS	STATION LATITUDE - latitude of the station. DD is degrees. MM is minutes. SS is seconds.
22	1	Code	HEMISPHERE - set to "N".

EXHIBIT XV-C-2 (Cont'd)
Station Header Record

Starting Column	Length of Field	Field Format	Description
23	7	DDDMMSS	STATION LONGITUDE - longitude of station. DDD is degrees. MM is minutes. SS is seconds.
30	1	Code	HEMISPHERE - set to "W".
31	4	Numeric	SENSOR DEPTH - depth of current meter expressed in meters to one decimal place.
35	4	Numeric	WATER DEPTH - depth at station in meters to one decimal place.
39	2	Blank	BLANK.

EXHIBIT XV-C-3
Current Meter Data Record 1

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "015".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier, assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This number appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "C".
11	5	Blank	BLANK.
16	6	YYMMDD	DATE - date of the current meter observation. YY is the last two digits of the year. MM is the number (01-12) of the month. DD is the day (01-31).
22	4	Numeric	TIME - time of the current observation expressed in units of 0.01 hours.
26	3	Numeric	CURRENT DIRECTION - direction toward which current is flowing expressed in whole degrees.

EXHIBIT XV-C-3 (Cont'd)
Current Meter Data Record 1

Starting Column	Length of Field	Field Format	Description
29	4	Numeric	CURRENT SPEED - current speed expressed in units of centimeters per second with one decimal place..
33	3	Numeric	TEMPERATURE - water temperature expressed in degrees Centigrade with one decimal place. Negative temperatures preceded by a minus sign.
36	5	Numeric	PRESSURE - water pressure measured in decibars with one decimal place.
41	4	Numeric	CONDUCTIVITY - conductivity of seawater expressed in millimeters/cmi with two decimal places.
45	2	Numeric	INCLINOMETER ANGLE - measured meter tilt angle off vertical expressed in whole degrees.
47	1	Code	IAC1 - use code EPA-8: 1 = angle measured 2 = angle inferred 3 = angle unknown
48	1	Code	IAC2 - use code EPA-9: 1 = no corrections made in reported current direction and speed due to tilt angle 2 = corrections made to direction only 3 = corrections made to speed only 4 = corrections made to both direction and speed
49	30	Blank	BLANK.

EXHIBIT XV-C-4
Current Meter Data Record 2

Starting Column	Length of Field	Field Format	Description
1	3	Code	FILE TYPE - set to "015".
4	2	Alpha	SOURCE IDENTIFIER - a unique identifier, assigned by EPA, which appears on all records within the data set.
6	2	YY	YEAR - the last two digits of the year in which the sample was taken. This appears on all records within the data set.
8	1	Alphanumeric	SERIES NUMBER - An alpha (A-Z) or numeric (1-9) code assigned by the investigator. Used to identify subgroups of data within a survey (e.g., analytical groups, or data collected at different frequencies). This code is defined by the investigator in the data description forms which accompany the data sets. If there is no series number, enter "0" (zero) in the field.
9	1	Code	SCAN ID - A one-character code used to indicate sampling frequency and collection period. Use a numeric code to identify the quarter when semi-annual or quarterly data were collected. Use an alpha code to indicate when monthly data were collected. Use Code No. EPA-10 (See Appendix C).
10	1	Code	RECORD TYPE - set to "D".
11	5	Blank	BLANK.
16	6	YYMMDD	DATE - date of the current meter observation. YY is the last two digits of the year. MM is the number (01-12) of the month. DD is the day (01-31).
22	4	Numeric	TIME - time of the current observation expressed in units of 0.01 hours.
26	3	Numeric	CURRENT DIRECTION - direction toward which current is flowing expressed in whole degrees.

EXHIBITXV-C-4 (Cont'd)
Current Meter Data Record 2

Starting Column	Length of Field	Field Format	Description
29	4	Numeric	CURRENT SPEED - current speed expressed in centimeters per second with one decimal place..
33	3	Numeric	TEMPERATURE - water temperature expressed in degrees Centigrade with one decimal place. Negative temperatures preceded by a minus sign.
36	5	Numeric	SALINITY - salinity of seawater measured in PPT with three decimal places.
41	4	Numeric	TRANSMISSIVITY - transmissivity measured in percent with one decimal place.
45	2	Numeric	INCLINOMETER ANGLE - measured meter tilt angle off vertical expressed in whole degrees.
47	1	Code	IAC1 - use code EPA-8: 1 = angle measured 2 = angle inferred 3 = angle unknown
48	1	Code	IAC2 - use code EPA-9: 1 = no corrections made in reported current direction and speed due to tilt angle 2 = corrections made to direction only 3 = corrections made to speed only 4 = corrections made to both direction and speed
49	30	Blank	BLANK.

APPENDIX A
ODES CHEMICAL CODES

NOTE: Appendix A provides a list of valid ODES 10-character codes for identifying chemical compounds. The ODES Technical Staff will supply codes for chemicals not listed in Appendix A (see Chapter I of this manual for address and telephone information). Updated versions of Appendix A will be distributed periodically.

1-METHNAP	1-METHYL NAPHTHALENE	
1-MPENT	1-METHYLPENTANE	107-83-5
11-2CLETH	1,1-DICHLOROETHANE	75-34-3
11-2CLETHE	VINYLIDENE CL (1,1-DICHLOROETHENE)	75-35-4
111-3CLETH	1,1,1-TRICHLOROETHANE	71-55-6
112-3CLETH	1,1,2-TRICHLOROETHANE	79-00-5
1122-4CLET	1,1,2,2-TETRACHLOROETHANE	
12-2BR3CLP	1,2-DIBROMO-3-CHLOROPROPANE	
12-2BRETH	EDB-ETHYLENE BROMIDE	106-93-4
12-2CLBNZ	ORTHODICHLOROBENZENE(PESTICIDE)	95-50-1
12-2CLETH	ETHYLENE CHLORIDE (1,2-DICLETHANE)	107-06-2
12-2CLETHA	1,2-DICHLOROETHANE	
12-2CLETHE	TRANS-1,2-DICHLOROETHENE	156-60-5
12-2CLPRP	1,2-DICHLOROPROPANE	78-87-5
12-2CLPRPE	1,2-DICHLOROPROPENE	563-54-2
12-2MHYZ	1,2-DIMETHYLHYDRAZINE	540-73-8
12-2PHHYZ	1,2-DIPHENYLHYDRAZINE	122-66-7
12-T2CLETH	1,2-TRANS DICHLOROETHENE (-ETHYLENE)	
124-3CLBNZ	1,2,4-TRICHLOROBENZENE	120-82-1
1245-4CLBZ	1,2,4,5-TETRACHLOROBENZENE	95-94-3
13-2CLBNZ	METADICHLOROBENZENE	54-17-1
13-2CLPRP	1,3-DICHLOROPROPANE	78-87-5
13-2CLPRPE	1,3-DICHLOROPROPENE	542-75-6
13-BUTAD	1,3-BUTADIENE	106-99-0
14-2CLBNZ	PARADICHLOROBENZENE	106-46-7
14-DIOXANE	1,4-DIOXANE	123-91-1
177-3M2CYC	177-TRIMETHYLBICYCLO221-HEPTANE2-ONE	
2,4 D	2,4 D (PESTICIDE)	94-75-7
2,4,5 T	2,4,5 T (PESTICIDE)	93-76-5
2-2CLPHN	2-DICHLOROPHENOL	
2-BUTANONE	2-BUTANONE	
2-BUTE1-OL	2-BUTENE-1-OL	
2-BUTOXETH	2-BUTOXYETHANOL	
2-CLEVE	2-CHLOROETHYLVINYL ETHER	110-75-8
2-CLEVESTR	2-CHLOROETHYLVINYL ESTER	
2-CLNAP	2-CHLORONAPHTHALENE	91-58-7
2-CLPHN	ORTHO-CHLOROPHENOL	95-57-8
2-HEXANONE	2-HEXANONE	591-78-6
2-M1-PENTE	2-METHYL-1PENTENE	
2-METHNAP	2-METHYLNAPHTHALENE	
2-METHPHN	2-METHYLPHENOL	
2-MPENT	2-METHYLPENTANE	
2-NANILINE	2-NITROANILINE	
2-NAPANINE	2-NAPHTHYLAMINE	91-59-8
2-NPHN	2-NITROPHENOL	88-75-5
2-PRPHEPTO	2-PROPYLHEPTANOL	
23-2CLPHN	2,3-DICHLOROPHENOL	
23-2ETHLOX	2,3-DIETHYLOXIRANE	
2346CLPHN	2,3,4,6-TETRACHLOROPHENOL	58-90-2
2356CLPHN	2,3,5,6-TETRACHLOROPHENOL	
236-3CLPHN	2,3,6-TRICHLOROPHENOL	93-3755
24-2AMTOL	TOLUENE-2,4-DIAMINE	95-80-7
24-2CLPHN	2,4-DICHLOROPHENOL	120-83-2
24-2MPHN	2,4-DIMETHYL PHENOL	105-67-9
24-2NPHN	2,4-DINITROPHENOL	51-28-5
24-2NTOL	2,4-DINITROTOLUENE	121-14-2
245-3CLPHN	2,4,5-TRICHLOROPHENOL	95-95-4
246-3BRPHN	2,4,6-TRIBROMOPHENOL	118-79-6
246-3CLPHN	2,4,6-TRICHLOROPHENOL	88-06-2
25-2CLPHN	2,5-DICHLOROPHENOL	

26-2CLPHN	2,6-DICHLOROPHENOL	87-65-0
26-2NTOL	2,6-DINITROTOLUENE	606-20-2
2BANTH	DIBENZO(A,H)ANTHRACENE	53-70-3
2BPHOSETHA	2-BUTOXY PHOSPHATE ETHANOL	
2BRCLETH	DBCE-DIBROMOCHLOROETHANE	
2BRCLMETH	DBCM-DIBROMOCHLOROMETHANE	124-48-1
2CL2FLMETH	DICHLORODIFLUOROMETHANE	75-71-8
2CL3FLETH	DICHLOROTRIFLUOROETHANE	
2CLBNZ	DICHLOROBENZENE NOS	
2CLBNZPHN	DICHLOROBENZOPHENOL	
2CLBZID	DICHLORO BENZIDINE	91-94-1
2CLETHENES	TOTAL DICHLOROETHENES	
2CLETHY	DICHLOROETHYLENE	
2CLMETHA	DICHLOROMETHANE	
2CLPRPANES	TOTAL DICHLOROPROPANES	
2CLPRPENES	TOTAL DICHLOROPROPENES	
2M46-2NPHN	2-METHYL-4,6-DINITROPHENOL	
2METH2SULF	DIMETHYL DISULFIDE	624-92-0
2METHSULF	DIMETHYL SULFIDE	75-18-3
2NOCTP	DI-N-OCTYL PHTHALATE	117-84-0
2PHEN2PROP	2-PHENYL 2-PROPANOL	617-94-7
3-BRMETHA	TRIBROMOMETHANE	
3-CLPHN	METACHLORO PHENOL	
3-CLPRPE	ALLYL CHLORIDE	107-05-1
3-M2-PNTNO	3-METHYL-2-PENTANONE	
3-MPENT	3-METHYL PENTANE	
3-NANILINE	3-NITROANILINE	
33-2CLBZID	3,3 -DICHLOROBENZIDINE	91-94-1
34-2CLPHN	3,4-DICHLOROPHENOL	
3CL3FLETH	FREON 113(TRICL-TRIFLETHANE)	
3CLBNZ	TRICHLORO BENZENE	108-70-3
3CLETHE	TRICHLOROETHYLENE (112-TRICLETHENE)	79-01-6
3CLFLMETH	TRICHLOROFLUOROMETHANE	75-69-4
3CLGUAIA	TRICHLOROGUAIACOL	
3MCYCHEXEM	TRI METHYL CYCLOHEXENE-METHANOL	
3MCYHEXE1M	TRI METHYL CYCLOHEXENE-1-METHANOL	
3MET3NITRL	TRIMETHYL-TRIDECATRIENENITRILE	
3PHEN PHOS	TRIPHENYL PHOSPHATE	115-86-6
4-BPE	4-BROMOPHENYL ETHER	
4-BPPE	4-BROMOPHENYL PHENYL ETHER	101-55-3
4-BPPESTER	4-BROMOPHENYL PHENYL ESTER	
4-CL2-MPHN	4-CHLORO-2-METHYLPHENOL	
4-CL3-MPHN	4-CHLORO-3-METHYLPHENOL	
4-CLANILIN	4-CHLOROANILINE	
4-CLPHN	PARACHLORO PHENOL	
4-CLPHN	4 CHLOROPHENOL	
4-CPE	4-CHLOROPHENYL ETHER	
4-CPESTER	4-CHLOROPHENYL ESTER	
4-CPPE	4-CHLOROPHENYL PHENYL ETHER	7005-72-3
4-M2-PNTNO	4-METHYL-2-PENTANONE	
4-METHPHN	4-METHYL PHENOL	
4-NANILINE	4-NITROANILINE	
4-NPHN	4-NITROPHENOL	100-02-7
45-2NOCRES	4,5-DINTRO-O-CRESOL	
46-2N2MPHN	4,6-DINITRO-2-METHYLPHENOL	
46-2NOCRES	4,6-DINITRO-O-CRESOL	534-52-1
4AMINOBIP	4-AMINO BIPHENYL	92-67-1
4CLETHAN	TETRACHLOROETHANE	
4CLETHE	PERCHLOROETHYLENE	127-18-4
4CLETHE	TETRACHLOROETHYLENE	127-18-4
4CLMETHA	TETRACHLOROMETHANE	

4CLSTYRENE	TETRACHLORO STYRENE	
4DECANOIC	MYRISTIC ACID	544-63-8
4DECANOIC	TETRADECANOIC ACID	
4HYDRFURAN	TETRAHYDROFURAN	
5CLBNZ	PENTACHLORO BENZENE	608-93-5
5CLETHAN	PENTACHLOROETHANE	
5CLPHN	PENTACHLOROPHENOL	87-86-5
6-CL4-MPHN	6-CHLORO-3-METHYLPHENOL	
6CL-CHX	HEXACHLOROCYCLOHEXANE	
6CL-CHX-A	HEXACHLOROCYCLOHEXANE-ALPHA	319-84-6
6CL-CHX-B	HEXACHLOROCYCLOHEXANE-BETA	319-85-7
6CL-CHX-D	HEXACHLOROCYCLOHEXANE-DELTA	
6CL-CHX-G	HEXACHLOROCYCLOHEXANE-GAMMA	58-89-9
6CL-CHX-T	HEXACHLOROCYCLOHEXANE-TECH GRADE	608-73-1
6CLBNZ	HEXACHLORO BENZENE	118-74-1
6CLBUTAD	HEXACHLOROBUTADIENE	87-68-3
6CLCYPEN	HEXACHLOROCYCLOPENTADIENE	77-47-4
6CLETH	HEXACHLOROETHANE	67-72-1
6CLETN	PERCHLOROETHANE	67-72-1
6CLPHENE	HEXACHLOROPHENE	70-30-4
6MET4CONEX	HEXAMETHYL TETRACOSANEXANE	
8DECANOIC	OCTADECYL ESTER OCTA DECANOIC ACID	
AC-CELOSOL	CELLOSOLVE ACETATE	
ACENAPE	ACENAPHTHENE (NOT ACENAPHTHYLENE)	83-32-9
ACENAPTYLE	ACENAPHTHYLENE	208-96-8
ACENPHEN	ACENAPHTHENE/PHENANTHRENE	
ACETAL	ACETALDEHYDE	75-07-0
ACETONE	ACETONE	67-64-1
ACETONTRLE	ACETONITRILE	75-05-8
ACROLEIN	ACROLEIN	107-02-8
ACRYLAMIDE	ACRYLAMIDE	79-06-1
ACRYLNTRLE	ACRYLONITRILE	107-13-1
AFLATOXIN	AFLATOXIN	1402-68-2
ALDEHYDES	ALDEHYDES	
ALDRIN	ALDRIN (PESTICIDE)	309-00-2
ALGICIDES	ALGICIDES	
ALIPH HCBN	ALIPHATIC HYDROCARBON	
ALIPH SOLV	ALIPHATIC SOLVENT	
ALKLNTY	ALKALINITY	
ALL PURGEA	ALL PURGEABLE PRIORITY POLLUTANTS	
ALUMINUM	ALUMINUM	7429-90-5
AMMONIA	TOTAL AMMONIA	7664-41-7
AMMONIA-D	DISSOLVED AMMONIA	
AMMONIA-N	AMMONIA-NITROGEN	
AMMONIUM	TOTAL NH4	
AMMONIUM-D	DISSOLVED NH4	
ANILINE	ANILINE	
ANTHRACENE	ANTHRACENE	120-12-7
ANTIMONY	ANTIMONY (SB)	7440-36-0
ANTIRESBAC	ANTIBIOTIC RESISTANT BACTERIA	
AROM HCBN	AROMATIC HYDROCARBONS	
ARSENIC	ARSENIC	7440-38-2
ASBESTOS	ASBESTOS	1332-21-4
ATRAZINE	ATRAZINE (PESTICIDE)	1912-24-9
B2CIE	BIS-(2-CHLOROISOPROPYL) ETHER	108-60-1
B2CIESTER	BIS(2-CHLOROISOPROPYL) ESTER	
B2ETHXPHTH	BIS(2-ETHYLHEXYL)PHTHALATE	117-81-7
BAA	BENZO(A)ANTHRACENE	56-55-3
BAF	BENZO(A)FLUORANTHENE	
BAP	BENZO(A)PYRENE	50-32-8
BARIUM	BARIUM	7440-39-3

BBF	3,4-BENZO(B)FLUORANTHENE	205-99-2
BCEE	BIS(2-CHLOROETHYL)ETHER	111-44-4
BCEESTER	BIS(2-CHLOROETHYL) ESTER	
BCEOM	BIS(2-CHLOROETHOXY) METHANE	111-91-1
BCME	BIS-CHLOROMETHYL ETHER	542-88-1
BENZCHRY	BENZO(A)ANTHRACENE/CHRYSENE	
BENZENE	BENZENE	71-43-2
BENZOIC AC	BENZOIC ACID	
BENZYL-OH	BENZYL ALCOHOL	
BERYLLIUM	BERYLLIUM	
BGHIP	BENZO(G,H,I)PERYLENE	191-24-2
BIPHENOL	BIPHENOL	
BIPHENYL	BIPHENYL	92-52-4
BKF	BENZO(K)FLUORANTHENE	207-08-9
BOD	BIOCHEMICAL OXYGEN DEMAND	
BOD5	BIOCHEMICAL OXYGEN DEMAND-5 DAY TEST	
BORNYL AC	BORNYL ACETATE	5655-61-8
BORON	BORON	7440-42-8
BRCLMETH	DCBM-BROMODICHLOROMETHANE	75-27-4
BROMOFORM	BROMOFORM	75-25-2
BSO	BENZENE SOLUBLE ORGANICS	
BU-CELOSOL	BUTYL CELLOSOLVE	111-76-2
BUTANE	BUTANE	106-97-8
BUTBNZ PHT	BUTYL BENZYL PHTHALATE	85-68-7
BUTYL ACET	BUTYL ACETATE	123-86-4
BUTYL BR	BUTYL BROMIDE	109-65-9
BUTYLALCHL	BUTYL ALCOHOL	71-36-3
BUTYRAL	BUTYRALDEHYDE	123-72-8
BZID	BENZIDINE	92-87-5
C10BTRIAZ	C10-BENZOTRIAZOLE	
C13-2CLPRE	CIS 1,3 DICHLOROPROPENE	10061-01-05
C13-2CLPRP	CIS-1,3-DICHLOROPROPANE	142-28-9
C2NAPHTH	C2-NAPHTHALENE	
C3-ALKBNZ	C3ALKYL BENZENE	
C3ALKBENTL	C3-ALKYL BENZENE + ALKANE	
C3ALKYLBEN	C3-ALKYL BENZENE	
C6H12O	2-METHYL-1-BUTANOL	
CADMIUM	CADMIUM	7440-43-9
CAFFEINE	CAFFEINE	58-08-2
CALCIUM	CALCIUM	7440-70-2
CARBARYL	CARBARYL (PESTICIDE)	63-25-2
CARBAZOLE	CARBAZOLE	86-74-8
CARBON TET	CARBON TETRACHLORIDE	56-23-5
CBTRIAZOLE	CHLORO-BENZOTRIAZOLE	
CELLOSOLVE	CELLOSOLVE	110-80-5
CHLORDAN-A	ALPHA CHLORDANE	5103-71-9
CHLORDAN-G	GAMMA CHLORDANE	5566-34-7
CHLORDANE	CHLORDANE (PESTICIDE)	57-74-9
CHLORIDE	TOTAL CHLORIDE	
CHLORINE	CHLORINE	7782-50-5
CHLOROFORM	CHLOROFORM	67-66-3
CHLOROPHYL	CHLOROPHYLL-A (SPECTROPHOTOGR. METH)	
CHLORPYRIF	CHLORPYRIFOS	2921-88-2
CHOLESTNOL	CHOLESTANOL	80-97-7
CHOLESTROL	CHOLESTEROL	57-88-5
CHROMIUM-3	CHROMIUM TRIVALENT	7440-47-3
CHROMIUM-6	CHROMIUM HEXAVALENT	7440-47-3
CHROMIUM-T	CHROMIUM TOTAL	7440-47-3
CHRY+TRIPH	CHRYSENE+TRIPHENYLENE	
CHRYSENE	CHRYSENE	218-01-9
CL PHENOLS	TOTAL CHLORINATED PHENOLS	

CL2BRMETHA	DIBROMOCHLOROMETHANE	
CLACETAL	CHLOROACETALDEHYDE	107-20-0
CLALKETHES	CHLOROALKLY ETHERS	
CLBNZ	CHLOROBENZENE	108-90-7
CLETHYLVET	CHLOROETHYL VINYL ETHER	
CLO2	CHLORINE DIOXIDE	
CLOROPRENE	CHLOROPRENE	126-99-8
CLOS PERF	CLOSTRIDIUM PERFRINGENS	
CMME	CHLOROMETHYL METHYL ETHER	107-30-2
CO	CARBON MONOXIDE	630-08-0
CO2	CARBON DIOXIDE	
COBALT	COBALT	7440-48-4
COD	CHEMICAL OXYGEN DEMAND	
CONDUCT	CONDUCTIVITY	
COPPER	COPPER	7440-50-8
CPTRIAZOLE	CHLORO-BENZOTRIAZOLE	
CREOSOTE	CREOSOTE	8021-39-4
CRESOLS	CRESOLS	1319-77-3
CS2	CARBON DISULFIDE	75-15-0
CUMENE	CUMENE	98-82-8
CYANIDE	CYANIDE	57-12-5
CYCHBUTAN	CYCLO BUTANOL	
CYCHEXANE	CYCLOHEXANE	110-82-7
CYCHEXANON	CYCLOHEXANONE	108-94-1
CYCHEXENE	CYCLOHEXENE	
DBAHA	DIBENZ(AH)ANTHRACENE	53-70-3
DDD	DDD (PESTICIDE)	72-54-8
DDD	TDE	
DDE	DDE (PESTICIDE)	72-55-9
DDT	DDT (PESTICIDE)	50-29-3
DECHMNAPTA	DECAHYDROMETHYLNAPTHANE	
DECYNE	DECYNE	
DEF	DEF	78-48-8
DEHA	DIETHYL HEXYL ADIPATE	103-23-1
DEHP	DI(2-ETHYLHEXYL)PHTHALATE	117-81-7
DELNAV	DELNAV	78-34-2
DEMETON	DEMENTON	8065-48-3
DEP	DIETHYL PHTHALATE	84-66-2
DHYABIETIC	DEHYDROABIETIC ACID	
DI MEHOATE	DIMETHOATE	60-51-5
DI-SYSTON	DI-SYSTON	298-04-4
DIAZINON	DIAZINON (PESTICIDE)	333-41-5
DIBNZFURAN	DIBENZOFURAN	
DIBNZTHIO	DIBENZOTHIOPHENE	
DIELDRIN	DIELDRIN (PESTICIDE)	60-57-1
DIESEL	DIESEL FUEL	
DIMP	DIMETHYL PHTHALATE	131-11-3
DIMSO4	DIMETHYL SULFATE	77-78-1
DINBP	DI-N-BUTYL PHTHALATE	84-74-2
DINOCRESOL	DINITRO-O-CRESOL	534-52-1
DIOXANE	DIOXANE	123-91-1
DIOXIN	DIOXIN (2,3,7,8-TETRACHLORO)	1746-01-6
DIPHHYZ	DIPHENYLHYDRAZINE	
DIRON	DISSOLVED IRON	
DKN	DISSOLVED KJELDAHL NITROGEN	
DLEAD	DISSOLVED LEAD	
DMBA	7,12-DIMETHYLBENZ(A)ANTHRACENE	57-97-6
DO	DISSOLVED OXYGEN	
DOSAT	DISSOLVED OXYGEN-% SATURATION	
DPA	DIPHENYLAMINE	122-39-4
DSILVER	DISSOLVED SILVER	

DZINC	DISSOLVED ZINC	
E COLI	E. COLI	
EBDCAS	ETHYLENE(BIS)DITHIO CARB ACID SALTS	
EH	EH	
ENDOSLFN-A	ALPHA ENDOSULFAN	959-98-8
ENDOSLFN-B	BETA ENDOSULFAN	33213-65-9
ENDOSLFN-S	ENDOSULFAN SULFATE	1031-07-8
ENDOSULFAN	ENDOSULFAN (PESTICIDE)	115-29-7
ENDRIN	ENDRIN (PESTICIDE)	72-20-8
ENDRIN-ALD	ENDRIN ALDEHYDE	7421-93-4
ENDRIN-KET	ENDRIN KETONE	
EPICLHYD	EPICHLOROHYDRIN	106-89-8
EPOXYSTEAR	EPOXYSTEARIC ACID	
ETHANOL	ETHANOL	925-93-9
ETHE GLYCL	ETHYLENE GLYCOL	107-21-1
ETHETHIO U	ETHYLENE THIOUREA	96-45-7
ETHION	ETHION	563-12-2
ETHPARATHI	PARATHION	56-38-2
ETHYL ACET	ETHYL ACETATE	141-78-6
ETHYL BENZ	ETHYLBENZENE	100-41-4
ETHYL CL	CHLOROETHANE	75-00-3
ETHYLENE O	ETHYLENE OXIDE	75-21-8
FENTHION	FENTHION	55-38-9
FLUORANTHN	FLUORANTHENE	206-44-0
FLUORENE	FLUORENE	86-73-7
FLUORIDE	FLUORIDE	
FLUORIDES	FLUORIDES	
FLUORINE	FLUORINE	7782-41-4
FORMALDEHY	FORMALDEHYDE	50-00-0
FREON	FREON	
FREON 113	FREON 113 (TRICHLOROTRIFLUOROETHANE)	26523-64-8
GLYCETHERS	GLYCOL ETHERS	
GOLD	GOLD	
GUTHION	GUTHION (PESTICIDE)	86-50-0
H-ETHERS	TOTAL HALOETHERS	
H-METHANES	TOTAL HALOMETHANES	
H2S	HYDROGEN SULFIDE	7783-06-4
HC NEC	NEC HYDROCARBONS	
HCL	HYDROCHLORIC ACID	7647-01-0
HEPCL EPOX	HEPTACHLOR EPOXIDE (PESTICIDE METAB)	1024-57-3
HEPTACHLOR	HEPTACHLOR (PESTICIDE)	76-44-8
HEX-METHES	HEXANOIC ACID, METHYL ESTER	106-70-7
HPAH	POLYCYCLIC AROMATIC HYDROCARBON-HEAVY	
HYZ	HYDRAZINE	302-01-2
I BUT BENZ	BUTYLBENZENE ISOMERS	
I DIETBENZ	DIETHYLBENZENE ISOMERS	
I ETHY TOL	ETHYLTOLUENE ISOMERS	
I PENCBD	PENTACHLOROBUTADIENE ISOMERS	
I TETCBD	TETRACHLOROBUTADIENE ISOMERS	
I TM BENZ	TRIMETHYLBENZENE ISOMERS	
I TRICBD	TRICHLOROBUTADIENE ISOMERS	
I XYLENE	XYLENE ISOMERS	
ICDP	INDENO(1,2,3-CD)PYRENE	193-39-5
IRON	IRON	7439-89-6
ISOPHORONE	ISOPHORONE (PESTICIDE)	78-59-1
ISOPROPANL	ISOPROPANOL	67-63-0
KELTHANE	KELTHANE (PESTICIDE)	115-32-2
KEPONE	KEPONE (PESTICIDE)	143-50-0
LEAD	LEAD	7439-92-1
LEAD CHROM	LEAD CHROMATE	7758-97-6
LEAD OXIDE	LEAD OXIDE	1317-36-8

LEADTALL	LEAD TALLATE	
LITHIUM	LITHIUM	7439-93-2
LPAH	POLYCYCLIC AROMATIC HYDROCARBON-LIGHT	
M-3PHEN	M-TERPHENYL	92-06-8
M-CLTOLUEN	META-CHLOROTOLUENE	
MAGNESIUM	MAGNESIUM	7439-95-4
MALATHION	MALATHION (PESTICIDE)	121-75-5
MALEIC A	MALEIC ANHYDRIDE	108-31-6
MANGANESE	MANGANESE	7439-96-5
MCA	3-METHYLCHOLANTHRENE	56-49-5
MCYCHEXANM	METHYLCYCLOHEXANE METHANOL	
MCYCPENT	METHYLCYCLOPENTANE	96-37-7
ME-CELOSOL	METHYL-CELLOSOLVE	109-86-4
MEK	METHYL ETHYL KETONE	78-93-3
MERCURY	MERCURY	7439-97-6
METCYCHHEX	METHYL CYCLOHEXENE	
METH HYZ	METHYL HYDRAZINE	60-34-4
METH PARA	METHYL PARATHION	298-00-0
METH THIO	METHANETHIOL	74-93-1
METHANOL	METHANOL	67-56-1
METHOMYL	METHOMYL (PESTICIDE)	16752-77-5
METHOXYCL	METHOXYCHLOR (PESTICIDE)	72-43-5
METHYL BR	METHYL BROMIDE	74-83-9
METHYL CL	METHYL CHLORIDE	74-87-3
METHYL I	METHYL IODIDE	74-88-4
METHYLE BR	METHYLENE BROMIDE	74-95-3
METHYLE CL	METHYLENE CHLORIDE (DICLMETHANE)	75-09-2
MIBK	METHYL ISOBUTYL KETONE	108-10-1
MIREX	MIREX (PESTICIDE = DECHLORANE)	
MOIST+TVS	MOISTURE AND TOTAL VOLATILE SOLIDS	
MOISTURE	MOISTURE	
MOLYBDENUM	MOLYBDENUM	7439-98-7
MTHYLAMINE	METHYLAMINE CH3NH2	74-89-5
MTXYMETHPR	METHOXYMETHYLPROPANOL	
N-BUTALCH	N-BUTYL ALCOHOL	71-36-3
N-HEXANE	N-HEXANE	110-54-3
N-PHENOLS	TOTAL NITROPHENOLS	
NAPTHA	NAPHTHA & SP NAPHTHAS	8030-30-6
NAPTHALENE	NAPHTHALENE	91-20-3
NBNZ	NITROBENZENE	98-95-3
NEU	N-NITROSO-N-ETHYLUREA	759-73-9
NICKEL	NICKEL	7440-02-0
NITRATE	TOTAL NO3-N (NITRATE NITROGEN)	
NITRATE-D	NITRATE, DISSOLVED	
NITRITE	TOTAL NO2-N (NITRITE NITROGEN)	
NITROGEN	TOTAL NITROGEN	
NITROGEN-D	NITROGEN, DISSOLVED NO2+NO3	
NITROGEN-O	TOTAL ORGANIC NITROGEN	
NITROGN-DO	NITROGEN, DISSOLVED ORGANIC	
NITROSAMIN	NITROSAMINE	
NMU	N-NITROSO-N-METHYLUREA	684-93-5
NNDBA	N-NITROSO DIBUTYLAMINE	924-16-3
NNDEA	N-NITROSO DIETHYLAMINE	55-18-5
NNDMA	N-NITROSO DIMETHYLAMINE	62-75-9
NNDNPRA	N-NITROSO DI-N-PROPYLAMINE	621-64-7
NNP	N-NITROSO DIPHENYLAMINE	86-30-6
NO2-N	NITRITE NITROGEN, TOTAL	
NO2NO3-N	TOTAL NITROGEN (NO2+NO3)	
NO2_NO3	COMBINED NITRITE AND NITRATE	
NO3-N	NITRATE NITROGEN, TOTAL	
NOX	NITROGEN OXIDES	

O-3PHEN	O-TERPHENYL	84-15-1
O-PO4-D	ORTHOPHOSPHATE, DISSOLVED	
O-TOLI-HCL	O-TOLUIDINE HYDROCHLORIDE	636-21-5
OCTYPHN	OCTYLPHENOL	62-75-9
OIL/GREASE	OIL AND GREASE	
OLEIC	OLEIC ACID	
OP DDE	OP DDD	
OP DDT	OP DDT	
OPHOSPHATE	ORGANIC PHOSPHATES	
ORGLIQ NEC	NEC ORGANIC LIQUIDS	
ORTHO PHOS	ORTHO PHOSPHATE	
OZONE	OZONE(HYDROCARBONS)	
P-3PHEN	P-TERPHENYL	92-94-4
P-CL-MCRSL	P-CHLORO-M-CRESOL (PCMC)	59-50-7
P2M2AMBNZ	P-DIMETHYLDIAMINOBENZENE	
PAH	POLYNUCLEAR AROMATIC HYDROCARBONS	
PARATHION	PARATHION (PESTICIDE)	56-38-2
PCB 1016	PCB-1016	
PCB 1221	PCB-1221	
PCB 1232	PCB-1232	
PCB 1242	PCB-1242	
PCB 1248	PCB-1248	
PCB 1254	PCB-1254	
PCB 1260	PCB-1260	
PCBS	POLYCHLORINATED BIPHENYLS	1336-36-3
PCLANILINE	P-CHLOROANILINE	106-47-8
PCNB	POLYCHLORINATED NITROBENZENE	
PENCBD	PENTACHLOROBUTADIENE	
PET HC	PETROLEUM HYDROCARBONS	
PET NAPTHA	PETROLEUM NAPTHA	
PH	PH	
PHENANTHRN	PHENANTHRENE	85-01-8
PHENOL	PHENOL	108-95-2
PHENOL-D5	DEUTERATED PHENOL	
PHENOLICS	PHENOLICS	
PHENOLS	PHENOLS	
PHOSDRIN	CROTONIC ACID	7786-34-7
PHOSPHATE	TOTAL PHOSPHATE	
PHOSPHORUS	PHOSPHORUS	7723-14-0
PHOSPHTE-D	DISSOLVED PHOSPHATE	
PHTH-ESTRS	PHTHALATE ESTERS	
PIRON	PARTICULATE IRON	
PLEAD	PARTICULATE LEAD	
POLYPROPYL	POLYPROPYLENE	9003-07-0
POTASS-D	POTASSIUM, DISSOLVED MG/L	
PROPYLIMIN	PROPYLIMINE	
PRPE O	PROPYLENE OXIDE	75-56-9
PSILVER	PARTICULATE SILVER	
PYRENE	PYRENE	129-00-0
PYRIDINE	PYRIDINE	110-86-1
PZINC	PARTICULATE ZINC	
RADIOACTVA	RADIOACTIVITY GROSS ALPHA	
RADIOACTVB	RADIOACTIVITY GROSS BETA	
SCN	THIOCYANATE	
SELENIUM	SELENIUM	7782-49-2
SILICA-D	DISSOLVED SILICA	
SILICATE	SILICATE	
SILICON	SILICON	7440-21-3
SILVER	SILVER	7440-22-4
SILVEX	SILVEX (PESTICIDE)	93-72-1
SIMAZINE	SIMAZINE (PESTICIDE)	122-34-9

SKN	SUSPENDED KJELDAHL NITROGEN	
SO4	SULFATES	
SODCRO	SODIUM CHROMATE	7775-11-3
SODIUM	SODIUM	7440-23-5
SOX	SULFUR OXIDES	
STRONTIUM	STRONTIUM	7440-24-6
STYRENE	STYRENE	100-42-5
SULFATE	TOTAL SULFATE	
SULFATES	SULFATE PARTICULATES	10482-56-1
SULFIDES	SULFIDES	
SYSTOX	SYSTOX (PESTICIDE)	
T13-2CLPRE	TRANS-1,3-DICHLOROPROPENE	10061-02-6
T13-2CLPRP	TRANS-1,3-DICHLOROPROPANE	142-28-9
TBFLANTH	TOTAL BENZOFLUORANTHENES	
TCDD	2,3,7,8-TETRACHLORODIBENZODIOXIN	
TDI	TOLUENEDIISOCYANATE	26471-62-5
TERPINEOL	TERPINEOL	7440-28-0
TETCBD	TETRACHLOROBUTADIENE	
THALLIUM	THALLIUM	7440-31-5
THIMET	THIMET	298-02-2
THIOBMETHA	THIOBISMETHANE	
THIOUREA	THIOUREA	62-56-6
TIN	TIN (SN)	7440-32-6
TIRON	TOTAL IRON	
TITANIUM	TITANIUM	7440-32-6
TKN	TOTAL KJELDAHL NITROGEN	
TLEAD	TOTAL LEAD	
TOC	TOTAL ORGANIC CARBON	
TOLUENE	TOLUENE	108-88-3
TOLUENE D8	DEUTERATED TOLUENE	
TOT AH	TOTAL AROMATIC HYDROCARBONS	
TOT HC	TOTAL HYDROCARBONS	
TOT RES CL	TOTAL RESIDUAL CHLORINE	
TOT SOLIDS	TOTAL SOLIDS	
TOTAL PAH	TOTAL POLYAROMATIC HYDROCARBONS	
TOXAPHENE	TOXAPHENE (PESTICIDE)	
TRICBD	TRICHLOROBUTADIENE	
TRICHLORFO	TRICHLORFON (PESTICIDE)	52-68-6
TRIMEFLSI	TRIMETHYLFLUOROSILANE	420-56-4
TRITHION	TRITHION	786-19-6
TSILVER	TOTAL SILVER	
TZINC	TOTAL ZINC	
UNDECANE	UNDECANE	1120-21-4
UNKALKENE	UNKNOWN ALKENE	
UOD	ULTIMATE OXYGEN DEMAND	
VANADIUM	VANADIUM	7440-62-2
VCM	VINYL CHLORIDE MONOMERS	
VINYL ACET	VINYL ACETATE	108-05-04
VINYL CL	VINYL CHLORIDE (CH2--CHCL)	75-01-4
XYLENE	XYLENE	1330-20-7
XYLENE-T	TOTAL XYLENE	
YPHPA	ANTHRACENE + PHENANTHRENE	
YTTRIUM	YTTRIUM	
ZINC	ZINC	7440-66-6

Examples For Coding The Concentration Of Chemical Compounds

THE MEASUREMENT CODE FIELD ALLOWS THE SUBMITTER TO PPM ON A WEIGHT TO WEIGHT BASIS; PPB ON A WEIGHT TO VOLUME BASIS). THE FOLLOWING EXAMPLES ILLUSTRATE THIS CONCEPT.

EXCERPT FROM DATA RECORD

EXAMPLE 1:

COPPER IS MEASURED AT 150 MICROGRAMS/CC. THE MEASUREMENT CODE IS CODED AS FOLLOWS:

MEASUREMENT CODE (1)

↓
A

CONCENTRATION, EXPONENT SIGN, AND EXPONENT ARE CODED ACCORDING TO THE UNIT OF MEASURE INDICATED BY THE MEASUREMENT CODE.AS FOLLOWS:

CONCENTRATION (1)					
				+ -	
	1	5	0		0

EXAMPLE 2:

PCBS ARE MEASURED AT A CONCENTRATION OF 8.5 MICROGRAMS/LITER. THE MEASUREMENT CODE IS CODED AS FOLLOWS:

MEASUREMENT CODE (1)

↓
K

CONCENTRATION, EXPONENT SIGN, AND EXPONENT ARE CODED ACCORDING TO THE UNIT OF MEASURE INDICATED BY THE MEASUREMENT CODE.AS FOLLOWS:

CONCENTRATION (1)					
				+ -	
		8	5	-	1

APPENDIX B
MASTER SPECIES LIST OF NODC TAXONOMIC CODES

NOTE: Appendix B provides a list of ODES/NODC taxonomic codes. This list includes some codes with the following qualifiers: (S) synomym; (A) part of a longer taxonomic name; (T) temporary code; and (P) provisional species code. The ODES Technical Staff will supply codes for taxa not listed in Appendix B (see Chapter I for address and telephone information). Do not independently assign new codes.

NODC TAXONOMIC CODES
SORTED BY TAXON NAME

NODC CODE		TAXON NAME
513105010200	=	ACANTHODORIS BRUNNEA
513105010600	=	ACANTHODORIS RHODOCERAS
513105010000	=	ACANTHODORIS SPP.
615301010900	=	ACANTHOMYSIS COSTATA
615301010200	=	ACANTHOMYSIS DAVISI
615301010400	=	ACANTHOMYSIS MACROPSIS
615301010500	=	ACANTHOMYSIS NEPHROPHTHALMA
615301010700	=	ACANTHOMYSIS SCULPTA
615301010000	=	ACANTHOMYSIS SPP.
375401030000	=	ACANTHOPTILUM
375401030200	=	ACANTHOPTILUM GRACILE
500141090100	=	ACESTA ASSIMILIS
500141130600	=	ACESTA CATHERINAE
500141130100	=	ACESTA CERRUTI
500141090500	=	ACESTA FINITIMA
500141130400	=	ACESTA HORIKOSHII
500141021500	S	ACESTA LOPEZI
500141130500	=	ACESTA SIMPLEX
500141090000	=	ACESTA SP.
616934010200	=	ACIDOSTOMA HANCOCKI
550202010100	=	ACILA CASTRENSIS
510205000000	=	ACMAEIDAE
500141130300	=	ACMIRA ASSIMILIS
500141130600		ACMIRA CATHERINAE
500141130100		ACMIRA CERRUTI
500141130400		ACMIRA HORIKOSHII
500141130202	=	ACMIRA LOPEZI RUBRA
500141130202		ACMIRA LOPEZI RUBRA
500141130500		ACMIRA SIMPLEX
511004040300		ACTEOCINA CULCITELLA
511004011900	=	ACTEOCINA EXIMIA
511004010200	=	ACTEOCINA HARPA
511004012000	=	ACTEOCINA HAWAIENSIS
511004010000	=	ACTEOCINA SPP.
511001010100	=	ACTEON PUNCTOSTRIATUS
511001010000	=	ACTEON SP.
511001011900	=	ACTEON TRASKII
511001000000	=	ACTEONIDAE
616906120300	=	ACUMINODEUTOPUS HETERUROPUS
616906120200	=	ACUMINODEUTOPUS OCULATUS STEENOPROPODUS
616906120400	=	ACUMINODEUTOPUS STEENOPROPODUS
510323000000	=	ADEORBIDAE
551502010200	=	ADONTORHINA CYCLIA
551502010000	=	ADONTORHINA SP.
550701110200	=	ADULA DIEGENSIS
550701110000	=	ADULA SP.
500141010100	=	AEDICIRA ANTENNATA
500141070500	=	AEDICIRA ANTENNATA
500141010300	=	AEDICIRA PACIFICA
514200000000	A	AEOLIDACEA
514203010100	=	AEOLIDIA PAPILLOSA
514203000000	=	AEOLIDIIDAE
550905012402	=	AEQUIPECTEN AEQUISULCATUS

MODC TAXONOMIC CODES
SORTED BY TAXON NAME

MODC CODE		TAXON NAME
511006010100	=	AGLAJA DIOMEDEUM
511006010200	=	AGLAJA OCELLIGERA
511006010000	=	AGLAJA SP.
500125030600	=	AGLAOPHAMUS DICIRRIS
500125030700	=	AGLAOPHAMUS ERECTANS
370407111000	=	AGLAOPHENIA DIEGENSIS
370407110000	=	AGLAOPHENIA SPP.
840407010100	=	AGNESIA SEPTENTRIONALIS
883108010200	=	AGONOPSIS STERLETUS
780301010200	=	ALCYONIDIUM MAMMILLATUM
510503070500	=	ALIA CARINATA
615301010400	S	ALIENACANTHOMYSIS MACROPSIS
500141070500		ALLIA ANTENNATA
500141070400	=	ALLIA CARINATA
500141070200	=	ALLIA MOLANI
500141070600	=	ALLIA RAMOSA
500141070000	=	ALLIA SP.
615301010400	S	ALLIENACANTHOMYSIS MACROPSIS
814903010100	=	ALLOCENTROTUS FRAGILIS
617914000000	=	ALPHEIDAE
617914011800	=	ALPHEUS BELLIMANUS
617914011300	=	ALPHEUS CLAMATOR
617914010000	=	ALPHEUS SPP.
510320010600	=	ALVANIA COMPACTA
510320014000	=	ALVANIA ROSANA
510320010000	=	ALVANIA SPP.
500168230200	=	AMAEANA OCCIDENTALIS
500168230000	=	AMAEANA SPP.
500167010100	=	AMAGE AMOPS
500167010700	=	AMAGE ARIETICORNUTA
500167010500	=	AMAGE SCUTATA
500167010000	=	AMAGE SP.
600104030000	=	AMMOTHELLA SPP.
500158010100	=	AMMOTRYPANE AULOGASTER
616902011100	=	AMPELISCA AGASSIZI
616902012500	=	AMPELISCA BREVISIMULATA
616902013500	=	AMPELISCA CAREYI
616902013300	=	AMPELISCA COMPRESSA
616902011200	=	AMPELISCA CRISTATA
616902011201	=	AMPELISCA CRISTATA MICRODENTATA
616902011700	=	AMPELISCA CRISTOIDES
616902013600	=	AMPELISCA CUCULLATA
616902011300	=	AMPELISCA HANCOCKI
616902012600	=	AMPELISCA INDENTATA
616902013400	=	AMPELISCA LOBATA
616902010100	=	AMPELISCA MACROCEPHALA
616902012700	=	AMPELISCA MILLERI
616902012800	=	AMPELISCA PACIFICA
616902012900	=	AMPELISCA PANAMENSIS
616902011400	=	AMPELISCA PUGETICA
616902013000	=	AMPELISCA ROMIGI
616902013100	=	AMPELISCA SHOEMAKERI
616902010000	=	AMPELISCA SP.

NODC TAXONOMIC CODES
SORTED BY TAXON NAME

NODC CODE		TAXON NAME
616902019999	=	AMPELISCA SP. A (SCAMIT)
616902013200	=	AMPELISCA UNSOCALAE
616902000000	=	AMPELISCIDAE
616915110100	=	AMPELISCIPHOTIS PODOPHTHALMA
500167020800	=	AMPHARETE ACUTIFRONS
500167020100	=	AMPHARETE ARCTICA
500167070100	=	AMPHARETE GRACILIS
500167021500	=	AMPHARETE LABROPS
500167020000	=	AMPHARETE SP.
500167000000	=	AMPHARETIDAE
500167009989	=	AMPHARETIDAE SP. A (HONOLULU ONLY)
812903180200	=	AMPHICHONDRIUS GRANULOSUS
812903180000	=	AMPHICONDRIUS SP.
500167030200	=	AMPHICTEIS GLABRA
500167030300	=	AMPHICTEIS GUNNERI
500167030400	=	AMPHICTEIS SCAPHOBRANCHIATA
500167030000	=	AMPHICTEIS SP.
500166000000	=	AMPHICTENIDAE
616906130200	=	AMPHIDEUTOPUS OCULATUS
500121060100	=	AMPHIDUROS PACIFICUS
500121060000	=	AMPHIDUROS SPP.
500170120200	=	AMPHIGLENA MEDITERRANEA
616903000000	=	AMPHILOCHIDAE
616903020600	=	AMPHILOCHUS PICADURUS
500110000000	=	AMPHINOMIDAE
812903010900	=	AMPHIODIA DIGITATA
812903030200	=	AMPHIODIA OCCIDENTALIS
812903011000	=	AMPHIODIA PSARA
812903010000	=	AMPHIODIA SP.
812903010400	=	AMPHIODIA URTICA
812903090600	=	AMPHIOPLUS HEXICANTHUS
812903090000	=	AMPHIOPLUS SP
812903090800	=	AMPHIOPLUS SQUAMATA
812903090700	=	AMPHIOPLUS STRONGYLOPLAX
850001030000	=	AMPHIOXUS SP
812903020100	=	AMPHIPHOLIS PUGETANA
812903020000	=	AMPHIPHOLIS SPP.
812903020200	=	AMPHIPHOLIS SQUAMATA
616800000000	=	AMPHIPODA
430605000000	=	AMPHIPORIDAE
430605010200	=	AMPHIPORUS BIMACULATUS
430605011500	=	AMPHIPORUS CRUENTATUS
430605010000	=	AMPHIPORUS SP.
500167180100	=	AMPHISAMYTHA BIOCULATA
500167180000	=	AMPHISAMYTHA SP
510503010400	=	AMPHISSA BICOLOR
510503010000	=	AMPHISSA SPP.
510503010500	=	AMPHISSA UNDATA
510503010600	=	AMPHISSA VERSICOLOR
500167009999	=	AMPHITRITINAE SP. A (GOLETA/MORRO BAY)
812903101600	=	AMPHIURA ACRYSTATA
812903101700	=	AMPHIURA DIASTATA
812903100000	=	AMPHIURA SPP.

MODC TAXONOMIC CODES
SORTED BY TAXON NAME

MODC CODE		TAXON NAME
812903000000	=	AMPHIURIDAE
616926110100	=	AMPILISCIPHOTIS PODOPTHALMA
616904010000	=	AMPITHOE SPP.
616904012000	=	AMPITHOE TEA
550701100500	=	AMYGDALUM PALLIDULUM
550701100000	=	AMYGDALUM SP
510602530100	=	ANACITHARA PERFECATA
500113010200	=	ANAITIDES GROENLANDICA
500113010201	=	ANAITIDES GROENLANDICA ORIENTALIS
500113011200	=	ANAITIDES LONGIPES
500113010300	=	ANAITIDES MEDIPAPILLATA
500113010900	=	ANAITIDES MULTISERIATA
500113011500	=	ANAITIDES PAPILLOSA
500113010000	=	ANAITIDES SP.
500113011400	=	ANAITIDES WILLIAMSI
600106020500	=	ANAPLODACTYLUS NODOSUS
615405050100	=	ANCHICOLURUS OCCIDENTALIS
884702000000	=	ANCHOVIES
874702010100	C	ANCHOVY NORTHERN
616102090100	S	ANCINUS DALTONAE
616102090100	S	ANCINUS DALTONAE
500122100100	=	ANCISTARGIS HAMATA
500122010900	=	ANCISTROSYLLIS BREVICEPS
500122010400	=	ANCISTROSYLLIS GROENLANDICA
500122010100	=	ANCISTROSYLLIS HAMATA
513106020300	=	ANCULA PACIFICA
375800000000		ANEMONE (ACTINARIA) SPP.
375800000000	=	ANEMONE SP.
375800009992	=	ANEMONE SP. 103 (ORANGE CO. ONLY
375800009989	=	ANEMONE SP. 12 (ENCINA/KLI)
375800009993	=	ANEMONE SP. 12 (ORANGE CO. ONLY)
375800009988	=	ANEMONE SP. 84 (ENCINA ONLY)
375800009999	=	ANEMONE SP. 85 (ORANGE CO. ONLY)
375800009998	=	ANEMONE SP. 87 (ORANGE CO ONLY)
375800009994	=	ANEMONE SP. 88 (ORANGE CO. ONLY)
375800009997	=	ANEMONE SP. 92 (ORANGE CO ONLY)
375800009996	=	ANEMONE SP. 93 (ORANGE CO ONLY)
375800009995	=	ANEMONE SP. 96 (ORANGE CO. ONLY)
513002020100	=	ANISODORIS NOBILIS
500000000000	=	ANNELIDA
500167070100		ANOBOTHRUS GRACILIS
500167070200	=	ANOBOTHRUS OCCIDENTALIS
500167070000	=	ANOBOTHRUS SP.
500167070300	=	ANOBOTHRUS TRILOBOTUS
618300000000	=	ANOMURA
616934380200	=	ANONYX DOROTHEAE
600106020100	=	ANOPLODACTYLUS ERECTUS
600106021100	=	ANOPLODACTYLUS OCULOSPINUS
600106021300	=	ANOPLODACTYLUS PROJECTUS
600106020000	=	ANOPLODACTYLUS SPP.
600106021200	=	ANOPLODACTYLUS VIRIDINTESTINALE
500160140100	=	ANOTOMASTUS GORDIODES
370407150300	=	ANTENNELLA AVALONIA

MODC TAXONOMIC CODES
SORTED BY TAXON NAME

MODC CODE		TAXON NAME
374000000000	=	ANTHOZOA
610000000000	=	ANTHROPODA MANDIBULATA CRUSTACEA
616000000000	=	ANTHURIDEA SP
781507040100	=	ANTROPORA TINCTA
500143220000	=	AONIDES SPP.
616906000000	=	AORIDAE
616906020200	=	AOROIDES COLUMBIAE
616906020500	=	AOROIDES EXILIS
616906020300	=	AOROIDES INERMIS
616906020600	=	AOROIDES INTERMEDIUS
616906020000	=	AOROIDES SP.
616906020400	=	AOROIDES SPINOSUS
616001040400	=	APANTHURA INORNATA
500101010600	=	APHRODITA ARMIFERA
500101010100	=	APHRODITA JAPONICA
500101010200	=	APHRODITA NEGLIGENS
500101010300	=	APHRODITA PARVA
500101011000	=	APHRODITA REFULGIDA
500101010000	=	APHRODITA SP.
500101019998	=	APHRODITA SP. B (GOLETA/MORRO BAY)
500142010200	=	APISTOBRANCHUS ORNATUS
500142019999	=	APISTOBRANCHUS SP. A (SCAMIT)
500142010000	=	APISTOBRANCHUS TULLBERGI
500142010100	=	APISTOBRANCHUS TULLBERGI
540000000000	=	APLACOPHORA
500143050700	=	APOPRIONOSPIO PYGMAEA
500133020300	=	ARABELLA ENDONATA
500133020100	=	ARABELLA IRICOLOR
500133020100	S	ARABELLA OPALINA
500133020100	S	ARABELLA SEMIMACULATA
500133020000	=	ARABELLA SPP.
500133000000	=	ARABELLIDAE
615701030000	=	ARAPHURA SPP.
390600000000	=	ARCHOOPHORA POLYCLADIDA ACOTYLEA
613201010400	=	ARCOSCAPELLUM CALIFORNICUM
500102039999	=	ARCTEOBIA SP. A (GOLETA/MORRO BAY)
500102030000	=	ARCTEOBIA SPP.
550905060000	=	ARCTINULA SP.
500102040100	=	ARCTONOE PULCHRA
500102040000	=	ARCTONOE SPP.
616201000000	=	ARCTURIDAE
616201020300	=	ARCTURUS GLABER
500162020300	=	ARENICOLA BRASILIENSIS
500162029999	=	ARENICOLA SP A (HONOLULU)
500162000000	=	ARENICOLIDAE
875601020600	=	ARGENTINA SIALIS
875601020600	C	ARGENTINE PACIFIC
616907010100	=	ARGISSA HAMATIPES
616907010200	=	ARGISSA STEBBINGI
730102010200	=	ARHYNCHITE CALIFORNICUS
730102010500	=	ARHYNCHITE PUGETTENSIS
730102010000	=	ARHYNCHITE SP.
500141130600	S	ARICIDEA CATHERINAE

MODC TAXONOMIC CODES
SORTED BY TAXON NAME

MODC CODE		TAXON NAME
500141130100	S	ARICIDEA CERRUTI
500141020400	=	ARICIDEA JEFFREYSI
500141021500	=	ARICIDEA LOPEZI
500141070600	S	ARICIDEA RAMOSA
500141130500	S	ARICIDEA SIMPLEX
500141020000	=	ARICIDEA SPP.
500141020600	=	ARICIDEA WASSI
500158020100	=	ARMANDIA BIOCULATA
500158020500	=	ARMANDIA INTERMEDIA
513602010100	=	ARMINA CALIFORNICA
500168110100	=	ARTACAMA CONIFERI
500168120100	=	ARTACAMELLA HANCOCKI
600000000000	=	ARTHROPODA PYCNOGONIDA
500167080400	=	ASABELLIDES LINEATA
840100000000	=	ASCIDIACEA
840100009999	=	ASCIDIAN SP. A (KINNETICS ONLY)
720003012900	=	ASPIDOSIPHON KLUNZINGERI
616201040000	=	ASTACILLA SP.
810400000000	=	ASTEROIDEA
611103020300	=	ASTEROPELLA SLATTERYI
611103020000	=	ASTEROPELLA SP.
552008010300	=	ASTHENOTHAERUS VILLOSIOR
811703080100	=	ASTROMETIS SERTULIFERA
810601051202	=	ASTROPECTEN BRASILIENSIS ARMATUS
810601051200	=	ASTROPECTEN BRAZILIENSIS
810601050000	=	ASTROPECTEN SPP.
810601051100	=	ASTROPECTEN VERRILLI
810601051102	=	ASTROPECTEN VERRILLI CALIFORNICUS
500163010500	=	ASYCHIS DISPARIDENTATA
375900009999	=	ATHENARIA SP. 84 (ORANGE CO. ONLY)
880502000000	=	ATHERINIDAE
510373010000	=	ATLANTA SPP.
616909010100	=	ATYLUS TRIDENS
511012020500	=	ATYS CURTA
511012020400	=	ATYS SEMISTRIATA
511012020000	=	ATYS SP
500165070100	=	AUGENERIELLA DUBIA
510501200100	=	AUSTROTROPHON CATALINENSIS
500123010100	=	AUTOLYTUS CORNUTUS
500123010000	S	AUTOLYTUS SPP.
366501010000	=	AXINELLA SPP.
551502020100	=	AXINOPSIDA SERRICATA
812903020200	S	AXIOGNATHUS SQUAMATUS
618302040100	=	AXIOPSIS HIRSUTIMANA
618302040200	=	AXIOPSIS SPINULICAUDA
500163080200	=	AXIOTHELLA RUBROCINCTA
500163080201	=	AXIOTHELLA RUBROCINCTA COMPLEXA
613402010000	=	BALANUS
613402011700	=	BALANUS CONCAVUS PACIFICUS
613402012400	=	BALANUS FLOS
613402011600	=	BALANUS GALEATUS
613402011700		BALANUS PACIFICUS
510353010000	S	BALCIS

MODC TAXONOMIC CODES
SORTED BY TAXON NAME

MODC CODE		TAXON NAME
510353011500	=	BALCIS CATALINENSIS
510602420100	S	BALCIS CATALINENSIS
510353060400	=	BALCIS COMPACTA
510353010200	=	BALCIS MICRANS
510353010400	=	BALCIS RUTILA
510353060000	=	BALCIS SP
550601050500	=	BARBATIA (ACAR) DIVARICATA
790201020300	=	BARENTSIA GRACILIS
790201020000	=	BARENTSIA SPP.
510320040500	=	BARLEEIA CALIFORNICA
883502160400	C	BASS BARRED SAND
617914020300	=	BATAEUS BELLIMANUS
616102090100	=	BATHYCOPEA DALTONAE
611103040400	=	BATHYLEBERIS CALIFORNICA
611103040500	=	BATHYLEBERIS GARTHI
611103040600	=	BATHYLEBERIS HANCOCKI
611103040000	=	BATHYLEBERIS SP.
616937050900	=	BATHYMEDON COVIHANI
616937050800	=	BATHYMEDON PUMILUS
616937051000	=	BATHYMEDON ROQUEDO
616937050000	=	BATHYMEDON SPP.
512602050300	=	BERTHELLA CALIFORNICA
512602040300	=	BERTHELLA CITRINA
500168340100	=	BETAPISTA DEKKERAE
370301170400	=	BIMERIA PUSILLA
510346010200	=	BITTIUM ATTENUATUM
510346010200	S	BITTIUM BOREALIS
510346010200	S	BITTIUM ESURIENS
510346012100	=	BITTIUM LARUM
510346010200	S	BITTIUM LATIFILOSUM
510346010200	S	BITTIUM MULTIFILIOSUM
510346019900	=	BITTIUM PERPARVULUM
510346012900	=	BITTIUM QUADRIFILATUM
510346010000	=	BITTIUM SP.
510346010200	S	BITTIUM SUBPLANATUM
550000000000		BIVALVE SP.
550000000000	=	BIVALVIA
883562030600	C	BLACKSMITH
618313040100	=	BLEPHARIPODA OCCIDENTALIS
882601012700	C	BOCACCIO
500143080900	=	BOCCARDIA BASILARIA
500143081200	=	BOCCARDIA PUGETTENSIS
500143080000	=	BOCCARDIA SP.
500143089999	=	BOCCARDIA SP. A (GOLETA/MORRO BAY)
500143280100	=	BOCCARDIELLA HAMATA
840602020300	=	BOLTENIA VILLOSA
730101000000	=	BONELLIIDAE
885003020100	C	BONITO PACIFIC
551552020100	S	BORNIA RETIFERA
885703000000	=	BOTHIDAE
370301000000	=	BOUGAINVILLIIDAE
780501020000	=	BOWERBANKIA SPP.
780501020100	=	BOWERBANKIA GRACILLIS

MODC TAXONOMIC CODES
SORTED BY TAXON NAME

MODC CODE		TAXON NAME
800000000000	=	BRACHIOPODA
800201010000	=	BRACHIOPODA GLOTTIDIA ALBIDA
618900000000	=	BRACHYRHYNCHA
618400000000	=	BRACHYURA
618400000000		BRACHYURA SP
618400009999	=	BRACHYURA SP A (HONOLULU)
618400009998	=	BRACHYURA SP B (HONOLULU)
500154010800	=	BRADA PLEURIBRANCHIATA
500154010000	=	BRADA SP.
500154010200	=	BRADA VILLOSA
850010103000	=	BRANCHIOSTOMA CALIFORNIENSE
500123270200	=	BRANCHIOSYLLIS EXILIS
500123090800	=	BRANIA MEDIODENTATA
500123090000	=	BRANIA SP.
375001000000	=	BRIAREIDAE
816204010300	=	BRISASTER LATIFRONS
816301030600	=	BRISSOPSIS PACIFICA
510213010100	=	BROOKULA IKI
780000000000	=	BRYOZOA
511011010700	=	BULLA GOULDIANA
511011000000	=	BULLIDAE
510379010400	=	BURSA CALIFORNICA
616902020800	=	BYBLIS BARBARENSIS
616902020900	=	BYBLIS MILLSI
616902020000	=	BYBLIS SPP.
616902020600	=	BYBLIS VELERONIS
513002010000	=	CADLINA SPP.
560002011800	=	CADULUS FUSIFORMIS
560002012000	=	CADULUS QUADRIFISSATUS
560002010000	=	CADULUS SP.
510336034200	=	CAECUM ARCUATUM
510336031600	=	CAECUM CALIFORNICUM
510336032100	=	CAECUM CREBRICINCTUM
510336032102	=	CAECUM CREBRICINCTUM BARKLEYENSE
510336032103	=	CAECUM CREBRICINCTUM CATALINENSE
510336322101	=	CAECUM CREBRICINCTUM CREBRICINCTUM
510336032104	=	CAECUM CREBRICINCTUM OREGONENSE
510336032105	=	CAECUM CREBRICINCTUM PEDROENSE
510336034300	=	CAECUM OAHUENSE
510336034400	=	CAECUM SEPIMENTUM
510336039600	=	CAECUM SP. A (HONOLULU)
611800000000	=	CALANOIDA
618302010300	=	CALASTACUS QUINQUESERIATUS
510376110100	=	CALINATICINA OLDROYDII
618304021700	=	CALLIANASSA AFFINIS
618304020400	=	CALLIANASSA CALIFORNIENSIS
618304020000	=	CALLIANASSA SP.
616912000000	=	CALLIOPIIDAE
510210010100	=	CALLIOSTOMA ANNULATUM
510210015100	=	CALLIOSTOMA GLORIOSUM
510210015200	=	CALLIOSTOMA SPLENDENS
510210010000	=	CALLIOSTOMA SPP.
510210014800	=	CALLIOSTOMA TRICOLOR

NODC TAXONOMIC CODES
SORTED BY TAXON NAME

NODC CODE		TAXON NAME
600109020300	=	CALLIPALLENE PACIFICA
370404040100	=	CALYCELLA SYRINGA
510364010400	=	CALYPTRAEA CONTORTA
510364010100	=	CALYPTRAEA FASTIGIATA
510364000000	=	CALYPTRAEIDAE
510364010000	=	CALYPTREA SP
510364019999	=	CALYPTREA SP. A (HONOLULU)
370401010000	=	CAMPANULARIA SPP.
370401000000	=	CAMPANULARIIDAE
370404130000	=	CAMPANULINA SPP.
370404000000	=	CAMPANULINIDAE
615407010200	=	CAMPYLASPIS CANALICULATA
615407011000	=	CAMPYLASPIS COSTATA
615407011001	=	CAMPYLASPIS COSTATA SPECIOSA
615407010500	=	CAMPYLASPIS HARTAE
615407011900	=	CAMPYLASPIS RUBROMACULATA
615407010000	=	CAMPYLASPIS SP.
615407019999	=	CAMPYLASPIS SP. B (SCAMIT)
615407019997	=	CAMPYLASPIS SP. E
615407019996	=	CAMPYLASPIS SP. H
615407019998	=	CAMPYLASPIS SP. M (SCAMIT)
615407019995	=	CAMPYLASPIS SP. P
510514020700	=	CANCELLARIA COOPERI
510514020500	=	CANCELLARIA CRAWFORDIANA
510514020600	=	CANCELLARIA RHYSSA
618803011300	=	CANCER AMPHIOETUS
618803010200	=	CANCER ANTENNARIUS
618803010900	=	CANCER ANTHONYI
618803010500	=	CANCER GRACILIS
618803011200	=	CANCER JORDANI
618803010000	=	CANCER SP.
500160010100	=	CAPITELLA CAPITATA
500160019999	=	CAPITELLA SP. A (HONOLULU ONLY)
500160019997	=	CAPITELLA SP. C (HONOLULU ONLY)
500160000000	=	CAPITELLIDAE
617101071500	=	CAPRELLA AUGUSTA
617101071100	=	CAPRELLA BOREALIS
617101071700	=	CAPRELLA CALIFORNICA
617101071800	=	CAPRELLA EQUILIBRA
617101071900	=	CAPRELLA MENDAX
617101072000	=	CAPRELLA PILIDIGITA
617101070000	=	CAPRELLA SP.
617101000000	=	CAPRELLIDAE
617100000000	=	CAPRELLIDEA
500143270700	=	CARAZZIELLA CALAFIA
500143270500	=	CARAZZIELLA CITRONA
500143270000	=	CARAZZIELLA SPP.
552010010100	=	CARDIOMYA BERINGENSIS
552010010800	=	CARDIOMYA CALIFORNICA
552010011300	=	CARDIOMYA COSTATA
552010010300	=	CARDIOMYA OLDROYDI
552010010100		CARDIOMYA PECTINATA
552010010200	=	CARDIOMYA PLANETICA

NODC TAXONOMIC CODES
SORTED BY TAXON NAME

NODC CODE		TAXON NAME
552010010000	=	CARDIOMYA SP.
551517040100	=	CARDITA BOREALIS
551518010100	=	CARDITELLA HAWAIENSIS
617900000000	=	CARIDEA
510602520100	=	CARINAPEX MINUTISSIMA
430202010200	=	CARINOMA MUTABILIS
430201020100	=	CARINOMELLA LACTEA
817902010400	=	CAUDINA ARENICOLA
817902010300	=	CAUDINA CHILENSIS
817902010000	=	CAUDINA SPP.
500150020200	=	CAULLERIELLA ALATA
500150020500	=	CAULLERIELLA BIOCULATUS
500150020300	=	CAULLERIELLA GRACILIS
500150020100	=	CAULLERIELLA HAMATA
500150020000	=	CAULLERIELLA SP.
500150020600	=	CAULLERIELLA ZETLANDICA
883522010100	=	CAULOLATILUS PRINCEPS
511000000000	=	CEPHALASPIDEA
511000009999	=	CEPHALASPIDEA SP. A (SCAMIT)
511000009988	=	CEPHALASPIDEA SP. B (KINMETICS ONLY)
616915010200	=	CERAPUS TUBULARIS
500124150100	=	CERATOCEPHALE CROSSLANDI
500124010500	=	CERATONEREIS MIRABILIS
430302020900	=	CEREBRATULIS LACTEUS
430302020800	=	CEREBRATULUS CALIFORNIENSIS
430302020400	=	CEREBRATULUS MARGINATUS
430302020000	=	CEREBRATULUS SPP.
374300000000	=	CERIANTHARIA
374300009989	=	CERIANTHARIA SP. A (ENCINA/KLI)
374300009999	=	CERIANTHARIA SP. A (ORANGE CO. ONLY)
374300009988	=	CERIANTHARIA SP. B (ENCINA/KLI)
374300009997	=	CERIANTHARIA SP. C (ORANGE COUNTY ONL
374300009996	=	CERIANTHARIA SP. D (ORANGE COUNTY ONL
374300009985	=	CERIANTHARIA SP. E (ENCINA/KLI)
374300009995	=	CERIANTHARIA SP. E (ORANGE CO.)
374300009990	=	CERIANTHARIA SP. P (ENCINA ONLY)
374301000000	=	CERIANTHIDAE
374301019999	=	CERIANTHUS SP. A
374301010000	=	CERIANTHUS SPP.
374300000000		CERIANTIPATHARIA CERIANTHARIA
510346130200	=	CERITHIDIUM DIPLAX
510346130100	=	CERITHIDIUM PERPARVULUM
510346020000	=	CERITHIOPSIS SP
510346029999	=	CERITHIOPSIS SP. A (HONOLULU)
510346029998	=	CERITHIOPSIS SP. B (HONOLULU)
510346062000	=	CERITHIUM INTERSTRIATUM
510602510100	=	CERITOTURRIS BITTIUM
540201010000	=	CHAETODERMA SP.
540201000000	=	CHAETODERMATIDAE
830000000000	=	CHAETOGNATHA
500149000000	=	CHAETOPTERIDAE
500149010100	=	CHAETOPTERUS PERGAMENTACEUS
500149010000	=	CHAETOPTERUS SPP.

MODC TAXONOMIC CODES
SORTED BY TAXON NAME

MODC CODE		TAXON NAME
500149010100		CHAETOPTERUS VARIOPEDATUS
500150040600	=	CHAETOZONE ARMATA
500150040400	=	CHAETOZONE CORONA
500150040200	=	CHAETOZONE GRACILIS
500150040500	=	CHAETOZONE MULTIOCULATA
500150040100	=	CHAETOZONE SETOSA
500150040000	=	CHAETOZONE SP.
500150049969	=	CHAETOZONE SP. A (CSDOC/MEC/OC)
500150049999	=	CHAETOZONE SP. A (L.A. COUNTY ONLY)
500150040700	=	CHAETOZONE SPINOSA
551551010800	=	CHAMA ?
551551011200	=	CHAMA ARCANA
510801020000	S	CHEMNITZIA SP.
879201330100	=	CHILARA TAYLORI
551547151000	=	CHIONE CALIFORNIENSIS
551547150200	=	CHIONE GRUS
551547150000	=	CHIONE SP.
817802010000	=	CHIRIDOTA SPP.
817802010600	=	CHIRODOTA PACIFICA
817802000000	=	CHIRODOTIDAE
551508010000	=	CHIRONIA SP.
650508000000	=	CHIRONOMIDAE
883102400100	=	CHITONOTUS PUGETENSIS
550905120000	=	CHLAMYS (ARGOPECTEN) SP.
550905010100	=	CHLAMYS HASTATA
500110010300	=	CHLOEIA ENTYPA
500110010100	=	CHLOEIA PINNATA
510801025800		CHOCOLATA PAINEI
500170010900	=	CHONE ALBOCINCTA
500170010400	=	CHONE DUMERI
500170010500	=	CHONE ECAUDATA
500170010100	=	CHONE GRACILIS
500170011300	=	CHONE MINUTA
500170011100	=	CHONE MOLLIS
500170010000	=	CHONE SP.
500170019998	=	CHONE SP. B (SCAMIT)
500170019997	=	CHONE SP. C (ORANGE CO. ONLY)
500170011200	=	CHONE VELERONIS
838800000000	=	CHORDATA
883562030600	=	CHROMIS PUNCTIPINNIS
500108000000	=	CHRYSOPETALIDAE
500108040100	=	CHRYSOPETALUM OCCIDENTALE
840401010100	=	CIONA INTESTINALIS
510323120000	=	CIRCULUS SP
616101011500	=	CIROLANA DIMINUTA
616101010000	=	CIROLANA SP.
616101019999		CIROLANA SP. A (ENCINA/KLI)
616101019999	=	CIROLANA SP. A (KINNETICS ONLY)
616101000000	=	CIROLANIDAE
500150000000	=	CIRRATULIDAE
500150009993	=	CIRRATULIDAE SP. G (HONOLULU ONLY)
500150010100	=	CIRRATULUS CIRRATUS
500150010000	=	CIRRATULUS SPP.

MODC TAXONOMIC CODES
SORTED BY TAXON NAME

MODC CODE		TAXON NAME
500150060100	=	CIRRIFORMIA SPIRABRANCHIA
613000000000	=	CIRRIPEDIA
500141060500	=	CIRROPHORUS BRANCHIATUS
500141060600	=	CIRROPHORUS FURCATUS
500141060300	=	CIRROPHORUS LYRA
500141060000	=	CIRROPHORUS SPP.
510350040500	=	CIRSOTREMA VARICOSA
885703011200	=	CITHARICHTHYS FRAGILIS
885703010100	=	CITHARICHTHYS SORDIDUS
885703010000	=	CITHARICHTHYS SPP.
885703010200	=	CITHARICHTHYS STIGMAEUS
885703011100	=	CITHARICHTHYS XANTHOSTIGMA
500126080100	=	CLAVODORUM CLAVATUM
500126080000	=	CLAVODORUM SP.
514200000000	=	CLEIOPROCTA
884701010100	=	CLEVELANDIA LOS
551522010200	=	CLINOCARDIUM NUTTALLI
512506000000	=	CLIONIDAE
874701000000	=	CLUPEIDAE
500163020400	=	CLYMENELLA COMPLANATA
500163029999	=	CLYMENELLA SP. A (GOLETA/MORRO BAY)
500163029989	=	CLYMENELLA SP. A (SCAMIT)
500163260200	=	CLYMENOPSIS CALIFORNIENSIS
500163120600	=	CLYMENURA COLUMBIANA
500163120300	=	CLYMENURA GRACILIS
618601020500	=	CLYTHROCERUS PLANUS
618601020000	=	CLYTHROCERUS SPP.
370401051300	=	CLYTIA EXILIS
370401051100	=	CLYTIA UNIVERSITATIS
370000000000	=	CNIDARIA
551501080300	=	CODAKIA CALIFORNIA
396201010100	=	COENOCYATHUS BOWERSI
616914010600	=	COLOMASTIX KAPIOLANI
615405050100		COLUROSTYLIS OCCIDENTALIS
882701040100	C	COMBFISH LONGSPINE
882701040200	=	COMBFISH SHORTSPINE
551547030100	=	COMPSOMYAX SUBDIAPHANA
513003110100	=	CONUALEVIA ALBA
510603015900	=	CONUS ACUTANGULUS
510603012000	=	CONUS CALIFORNICUS
510603010000	=	CONUS SP
551549010200	=	COOPERELLA SUBDIAPHANA
551549000000	=	COOPERELLIDAE
611700000000	=	COPEPOD SPP.
611800000000		COPEPODA CALANOIDA
612000000000	=	COPEPODA CYCLOPOIDA
611900000000	=	COPEPODA HARPACTICOIDA
513107010100	=	CORAMBE PACIFICA
551702021800	=	CORBULA ?
551702021500	=	CORBULA LUTEOLA
551502021800	=	CORBULA PORCELLA
840404020200	=	CORELLA WILLMERIANA
883901239900	=	CORIS ?

MODC TAXONOMIC CODES
SORTED BY TAXON NAME

MODC CODE		TAXON NAME
616915000000	=	COROPHIIDAE
616915021400	=	COROPHIUM BACONI
513107019999	=	CORUMBE SP A (SAN DIEGO)
370303010600	=	CORYMORPHA AURATA
370303010500	=	CORYMORPHA PALMA
370303010000	=	CORYMORPHA SPP.
375701010500	=	CORYNACTIS CALIFORNICA
884701020100	=	CORYPHAPTERUS ALLOIDES
500152010500	=	COSSURA CANDIDA
500152000000	=	COSSURIDAE
550204020000	=	COSTELLOLEDA SP.
617922010201	=	CRANGON ALASKENSIS ELONGATA
617922010400	=	CRANGON ALBA
617922010900	=	CRANGON COMMUNIS
617922012200	=	CRANGON HOLMESI
617922011100	=	CRANGON MUNITA
617922011500	=	CRANGON MUNITELLA
617922010100	=	CRANGON NIGRICAUDA
617922012100	=	CRANGON NIGROMACULATA
617922011600	=	CRANGON RESIMA
617922010000	=	CRANGON SP.
617922012000	=	CRANGON SPINOSISSIMA
617922100100	=	CRANGON ZACAE
550701020100	=	CRENELLA DECUSSATA
550701020500	=	CRENELLA DIVARICATA
510364021600	=	CREPIDULA ?
510364020300	=	CREPIDULA ADUNCA
510364021300	=	CREPIDULA COEI
510364021700	=	CREPIDULA DORSATA
510364021200	=	CREPIDULA EXCAVATA
510364021300		CREPIDULA INCURVA
510364021700	S	CREPIDULA LINGULATA
510364021200	S	CREPIDULA NATICARUM
510364021200	S	CREPIDULA NORRISIARUM
510364020100	=	CREPIDULA NUMMARIA
510364021500	=	CREPIDULA ONYX
510364020900	=	CREPIDULA PERFORANS
510364020000	=	CREPIDULA SP.
510364000000	S	CREPIDULIDAE
510364030100	=	CREPIPATELLA LINGULATA
510364030000	=	CREPIPATELLA SP.
780901010000	=	CRISIA SPPP.
883544240100		CROAKER SPOTFIN
610000000000	A	CRUSTACEA
551501090200	=	CTENA BELLA
551501090100	=	CTENA TRANSVERSA
817206012200	=	CUCUMARIA CRUCIGERA
817206010000	=	CUCUMARIA SP.
615400000000	=	CUMACEA
615400009999	=	CUMACEA SP A (HONOLULU)
615400009998	=	CUMACEA SP B (HONOLULU)
514101030100	=	CUMANOTUS FERNALDI
615408010000	=	CUMELLA SP.

MODC TAXONOMIC CODES
SORTED BY TAXON NAME

MODC CODE		TAXON NAME
615408019999	=	CUMELLA SP. A (SCAMIT)
615408019998	=	CUMELLA SP. B
615408019996	=	CUMELLA SP. D (ORANGE COUNTY OML
551535030300	=	CUMINGIA CALIFORNICA
879201260100	C	CUSK-EEL DUSKY
552010022500	=	CUSPIDARIA PARAPODEMA
552010020000	=	CUSPIDARIA SP
552010000000	=	CUSPIDARIIDAE
552008040300	=	CYATHODONTA DUBIOSA
552008040200	=	CYATHODONTA UNDULATA
615409020600	=	CYCLASPIS NUBILA
615409020000	=	CYCLASPIS SP.
615409029999	=	CYCLASPIS SP. A (SCAMIT)
615409019998	=	CYCLASPIS SP. B (SCAMIT)
615409029968	=	CYCLASPIS SP. C(CSDOC/MEC/ORANGE C
551517010100	=	CYCLOCARDIA VENTRICOSA
551517010102	=	CYCLOCARDIA VENTRICOSA MONTEREYENSIS
551517010103	=	CYCLOCARDIA VENTRICOSA REDONDOENSIS
551517010101	=	CYCLOCARDIA VENTRICOSA VENTRICOSA
618601020500	S	CYCLODORIPPE PLANA
550905021100	=	CYCLOPECTEN BENTHALIS
550905020000	=	CYCLOPECTEN SPP.
510323031400	=	CYCLOSTREMISCUS COSMIUS
510323031500	=	CYCLOSTREMISCUS EMERYI
510323030000	=	CYCLOSTREMISCUS SP
511004020500	=	CYLICHNA ATTONSA
511004020900	=	CYLICHNA DIEGENSIS
511004020000	=	CYLICHNA SPP.
511004040200	=	CYLICHNELLA CARINATA
511004040300	=	CYLICHNELLA CULCITELLA
511004040400	=	CYLICHNELLA EXIMA
511004040500	=	CYLICHNELLA HARPA
511004040700	=	CYLICHNELLA INCULTA
511004040600	=	CYLICHNELLA INTERMEDIA
511004040000	=	CYLICHNELLA SP.
611103000000	=	CYLINDROLEBERIDIDA
611103010100	=	CYLINDROLEBERIS MARIAE
616904020200	=	CYMADUSA UNCINATA
500166030000	=	CYSTENIDES SP.
611308090000	=	CYTHERE SP.
551522070000	=	DALLOCARDIA SP.
510602220000	=	DAPHNELLA SP
510602229998	=	DAPHNELLA SP. B (HONOLULU)
500160050100	=	DECAMASTUS GRACILIS
617500000000	=	DECAPODA
883528120400	=	DECAPTERUS HYPODUS
550905060000		DELECTOPECTEN SP.
500170280000	=	DEMONAX SPP.
815501010100	=	DENDRASTER EXCENTRICUS
817200000000	=	DENDROCHIROTIDA
513406010100	=	DENDRONOTUS IRUS
513406010000	=	DENDRONOTUS SP.
560001000000	=	DENTALIIDAE

MODC TAXONOMIC CODES
SORTED BY TAXON NAME

MODC CODE		TAXON NAME
560001013500	=	DENTALIUM NEOHEXAGONUM
560001013600	=	DENTALIUM RECTIUS
560001010000	=	DENTALIUM SP.
560001013700	=	DENTALIUM VALLICOLENS
376008010000	=	DIADUMENE SPP.
510346100200	=	DIALA SCOPULORUM
510346100100	=	DIALA VARIA
812903030200		DIAMPHIODIA OCCIDENTALIS
511009010300	=	DIAPHANA CALIFORNICA
511009010100	=	DIAPHANA MINUTA
611103110100	=	DIASTEROPE PILOSA
615405000000	=	DIASTYLIDAE
615405013200	=	DIASTYLIS CALIFORNICA
615405011500	=	DIASTYLIS PARASPINULOSA
615405011400	=	DIASTYLIS PELLUCIDA
615405012600	=	DIASTYLIS QUADRISPINOSA
615405010000	=	DIASTYLIS SP.
615405019999	=	DIASTYLIS SP. A (SCAMIT)
615405019998	=	DIASTYLIS SP. B (SCAMIT)
615405020200	=	DIASTYLOPSIS TENUIS
513002030100	=	DIAULULA SANDIEGENSIS
510204042900	=	DIODORA GRANIFERA
618306000000	=	DIOGENIDAE
500129020200	=	DIOPATRA ORNATA
500129020000	=	DIOPATRA SP.
500129020300	=	DIOPATRA TRIDENTATA
500123210000	=	DIOPLOSYLLIS SPP.
500154040200	=	DIPLOCIRRUS HIRSUTUS
650100000000	=	DIPTERA
616102110100	=	DISCERCEIS GRANULOSA
500143190100	=	DISPIO UNCINATA
375307010200	=	DISTICHOPTILUM VERRILLI
500150050100	=	DODECACERIA CONCHARUM
500160150100	=	DODECASETA ORARIA
871001020100	C	DOGFISH SPINY
512800000000	=	DORIDOIDEA
513201020300	=	DORIOSPILLA ALBOPUNCTATA
500136050500	=	DORVILLEA CAECA
500136019999	=	DORVILLEID SP. A (SCAMIT)
500136000000	=	DORVILLEIDAE
513409011200	=	DOTO KYA
513409010000	=	DOTO SPP.
812903190100	=	DOUGALOPLUS AMPHACANTHA
500133050000	=	DRILOGNATHUS SP.
500133010400	=	DRILONEREIS FALCATA
500133010402	=	DRILONEREIS FALCATA MINOR
500133010100	=	DRILONEREIS FILUM
500133010300	=	DRILONEREIS LONGA
500133010900	=	DRILONEREIS MEXICANA
500133010000	=	DRILONEREIS SP.
500133019997	=	DRILONERIS SP. C (GOLETA/MORRO BAY)
371704010100	=	DROMALIA ALEXANDRI
370405060000	=	DYNAMENA SPP.

MODC TAXONOMIC CODES
SORTED BY TAXON NAME

MODC CODE		TAXON NAME
810000000000	=	ECHINODERMATA
813600000000	=	ECHINOIDEA
815100000000	=	ECHINOIDEA HOLECTYPOIDA ECHINONEINA
730000000000	=	ECHIURA
730000000000	S	ECHIURIDA
500167070300	S	ECLYSIPPE TRILOBOTUS
780000000000	S	ECTOPROCTA
616202070100	=	EDOTEA MONTOSA
616202079998	=	EDOTEA SP. B (CSDOC/MEC/OC)
616202070200	=	EDOTEA SUBLITTORALIS
375901010500	=	EDWARDSIA CALIFORNICA
375901010200	=	EDWARDSIA SIPUNCULOIDES
375901019998	=	EDWARDSIA SP. B (SCAMIT)
375901010000	S	EDWARDSIA SPP.
375901000000	=	EDWARDSIIDAE
375901009999	=	EDWARDSIIDAE SP. A (SCAMIT)
375901009998	=	EDWARDSIIDAE SP. B (SCAMIT)
370404170100	=	EGMUNDELLA GRACILIS
500123220100	=	EHLERSIA HETEROCHAETA
500123032100	S	EHLERSIA HYPERIONI
500123032100	S	EHLERSIA HYPERIONI
500123220200	=	EHLERSIA HYPERIONI
500123229999	=	EHLERSIA SP. A (SCAMIT)
500123220000	=	EHLERSIA SPP.
510602380500	=	ELAEOCYMA EMPYROSIA
616921039999	=	ELASMOPUS SP. A (KINMETICS ONLY)
883560030200	=	EMBIOTOCA JACKSONI
874702010100	=	ENGRAULIS MORDAX
550202020000	=	ENNUCULA SP.
551529030700	=	ENSIS CALIFORNICUS
551529030600	=	ENSIS MYRAE
820100000000	=	ENTEROPNEUSTA
820100009999	=	ENTEROPNEUSTA SP. A (SAN DIEGO)
820100009998	=	ENTEROPNEUSTA SP. B (SAN DIEGO)
552005010000	=	ENTODESMA SPP.
790000000000	=	ENTOPROCTA
616942190200	=	EOBROLGUS CHUMASHI
616942092800	=	EOBROLGUS SPINOSUS
616922010500	=	EOHAUSTORIUS SENCILLUS
500126030300	=	EPHESIELLA BREVICAPITIS
500126030200	=	EPHESIELLA MACROCIRRUS
500126030000	=	EPHESIELLA SP.
614501010200	S	EPINEBALIA PUGETTENSIS
510350014200	=	EPITONIUM BELLASTRIATUM
510350010500	=	EPITONIUM CAAMANOI
510350014200	S	EPITONIUM CALIFORNICUM
510350010400	=	EPITONIUM INDIANORUM
510350013900	=	EPITONIUM LOWEI
510350014100	=	EPITONIUM SAWINAE
510350019100	=	EPITONIUM SAWINAE
510350019999	=	EPITONIUM SP A
510350019998	=	EPITONIUM SP B
510350019997	=	EPITONIUM SP C

NODC TAXONOMIC CODES
SORTED BY TAXON NAME

NODC CODE		TAXON NAME
510350010000	=	EPITONIUM SP.
510350019900	=	EPITONIUM SP. ? (MEC)
510350014000	=	EPITONIUM TINCTUM
860601010200	=	EPTATRETUS STOUTI
510367010300	=	ERATO COLUMBELLA
616915030200	=	ERICHTHONIUS BRASILIENSIS
616915030100	=	ERICHTHONIUS HUNTERI
616915030000	=	ERICHTHONIUS SPP.
618701470100	=	ERILEPTUS SPINOSUS
616921280100	=	ERIOPSIELLA SECHELLENSIS
551528010300	=	ERVILIA BISCULPTA
551528010400	=	ERVILIA SANDWICENSIS
551528010000	=	ERVILIA SP
551507000000	=	ERYCINIDAE
500113021300	=	ETEONE ALBA
500113020100	=	ETEONE CALIFORNICA
500113021500	=	ETEONE DILATAE
500113021600	=	ETEONE LIGHTI
500113020500	=	ETEONE LONGA
500113020500	S	ETEONE ROBUSTA
500113020000	=	ETEONE SP.
874701060100	=	ETRUMEUS TERES
617916041600	=	EUALUS LINEATUS
617500000000		EUCARIDA DECAPODA
618900000000		EUCARIDA DECAPODA BRAC. BRACHYRHYNCHA
618300000000		EUCARIDA DECAPODA PLEOCYEMATA ANOMURA
618100000000	=	EUCARIDA DECAPODA PLEOCYEMATA ASTACIDE
618700000000	=	EUCARIDA DECAPODA PLEOCYEMATA BRAC. OXYR
618400000000		EUCARIDA DECAPODA PLEOCYEMATA BRACHY
617900000000		EUCARIDA DECAPODA PLEOCYEMATA CARIDEA
618000000000	=	EUCARIDA DECAPODA PLEOCYEMATA STENOPOD
617400000000	=	EUCARIDA EUPHAUSIACEA
510210100600	=	EUCHELUS GEMMATUS
999000000000	=	EUCHITHARA PUSILLA
998900000000	=	EUCHITHARA SP
998800000000	=	EUCHITHARA SP A
998700000000	=	EUCHITHARA SP B
994000000000	=	EUCHITHARA SP C
500170020800	=	EUCHONE ARENAE
500170021400	=	EUCHONE CAPENSIS
500170020900	=	EUCHONE HANCOCKI
500170020400	=	EUCHONE INCOLOR
500170021200	=	EUCHONE LIMNICOLA
500170020000	=	EUCHONE SP.
500170029999	=	EUCHONE SP. A (SCAMIT)
500170029998	=	EUCHONE SP. B (HONOLULU ONLY)
500170021300	=	EUCHONE VELIFERA
510602500100	=	EUCITHARA PUSILLA
510602500000	=	EUCITHARA SP.
510602509999	=	EUCITHARA SP. A
510602509998	=	EUCITHARA SP. B
500163000000	S	EUCLYMENAE
500163110500	=	EUCLYMENE CAMPANULA

NODC TAXONOMIC CODES
SORTED BY TAXON NAME

NODC CODE		TAXON NAME
500163009999	=	EUCLYMENINAE SP. A (HONOLULU ONLY)
500163009998	=	EUCLYMENINAE SP. B (ORANGE CO.)
500163009995	=	EUCLYMENINAE SP. C (GOLETA/MORRO BAY)
500163009997	=	EUCLYMENINAE SP. C (SCAMIT)
500163009994	=	EUCLYMENINAE SP. D (GOLETA/MORRO BAY)
500163009996	=	EUCLYMENINAE SP. L (SCAMIT)
615404020200	=	EUDORELLA PACIFICA
615404030600	=	EUDORELLOPSIS LONGIROSTRIS
840603040200	=	EUGYRA ARENOSA
500113030400	=	EULALIA BILINEATA
500113031000	=	EULALIA LEVICORNUTA
500113031300	=	EULALIA MYRIACYCLUM
500113030600	=	EULALIA QUADRIOCULATA
500113030000	=	EULALIA SP.
500113039998	=	EULALIA SP. B (GOLETA/MORRO BAY)
510353030200	=	EULIMA ALMO
510353031400	=	EULIMA CALIFORNICA
510350030000	=	EULIMA SP.
510801010000	=	EULIMASTOMA SP.
500113110600	=	EUMIA BIFOLIATA
500113110100	=	EUMIDA MACULOSA
500113110100		EUMIDA SANGUINEA
500113110000	=	EUMIDA SP.
500113119989	=	EUMIDA SP. A (ORANGE CO.)
500113119979	=	EUMIDA SP. A (SAN DIEGO)
500113119999	=	EUMIDA SP. A (SCAMIT)
500113119988	=	EUMIDA SP. B (CSDOC/MEC)
500113119998	=	EUMIDA SP. B (SCAMIT)
500113119990	=	EUMIDA SP. 1 (GOLETA/MORRO BAY)
500113119980	=	EUMIDA SP. 1 (SCAMIT)
500130011200	=	EUNICE AMERICANA
500130021000	=	EUNICE AUSTRALIS
500130010000	=	EUNICE SP.
500130019900	=	EUNICE SP. ?
500130010600	=	EUNICE VITTATA
500130000000	=	EUNICIDAE
500102050200	=	EUNOE DEPRESSA
500102059999	=	EUNOE SP. A (GOLETA/MORRO BAY)
500102059979	=	EUNOE SP. A (ORANGE CO. ONLY)
500102059989	=	EUNOE SP. A (SCAMIT)
500102050000	=	EUNOE SPP.
617400000000	A	EUPHAUSIACEA
611107030100	=	EUPHILOMEDES CARCHARODONTA
611107030300	=	EUPHILOMEDES PRODUCTA
500168020400	=	EUPHYMNIA CRESCENTIS
370303129999	=	EUPHYSA SP. A
370303129989	=	EUPHYSA SP. A (ENCINA/KLI)
500168020100	=	EUPOLYMNIA HETEROBRANCHIA
812500000000	=	EURYALINA
616101020700	=	EURYDICE BRANCHUROPUS
616101020300	=	EURYDICE CAUDATA
611104019999	=	EUSARSIELLA THOMINX
611104041300	=	EUSARSIELLA THOMINX

MODC TAXONOMIC CODES
SORTED BY TAXON NAME

MODC CODE		TAXON NAME
500123060000	=	EUSYLLIS SP.
500123069998	=	EUSYLLIS SP. ?
500123069999	=	EUSYLLIS SP. B (HONOLULU ONLY)
500123060700	=	EUSYLLIS TRANSECTA
510801170100	=	EVALEA PEASEI
500123070200	=	EXOGONE CF GEMMIFERA
500123071100	=	EXOGONE LONGICORNIS
500123070300	=	EXOGONE LOUREI
500123070400	=	EXOGONE MOLESTA
500123070000	=	EXOGONE SP.
500123079990	=	EXOGONE SP. A (GOLETA/MORRO BAY)
500123079979	=	EXOGONE SP. A (HONOLULU ONLY)
500123079999	=	EXOGONE SP. A (ORANGE CO. ONLY)
500123079998	=	EXOGONE SP. B (CSDOC/MEC)
500123079988	=	EXOGONE SP. B (GOLETA/MORRO BAY)
500123079987	=	EXOGONE SP. C (GOLETA/MORRO BAY)
500123079977	=	EXOGONE SP. C (HONOLULU ONLY)
500123079997	=	EXOGONE SP. C (ORANGE CO. ONLY)
500123070800	=	EXOGONE UNIFORMIS
500123070600	=	EXOGONE VERUGERA
616942092000	=	EYAKIA CALCARATUS
616942091800	=	EYAKIA ROBUSTUS
618906030100	=	FABIA CONCHARUM
618906030100	S	FABIA SUBQUADRATA
500170130000	=	FABRICIA SPP.
500170190300	=	FABRICIOLA BERKELEYI
500170279999	=	FABRISABELLA SP. A (ORANGE COUNTY ONL
500170199989	=	FABRISABELLA SP. A (SCAMIT)
500170279998	=	FABRISABELLA SP. B (ORANGE CO. ONLY)
540201029989	=	FALCIDENS SP. A (ENCINA/KLI)
540201029999	=	FALCIDENS SP. A (SCAMIT)
540201029998	=	FALCIDENS SP. B (SCAMIT)
540201029997	=	FALCIDENS SP. C (SCAMIT)
540201029995	=	FALCIDENS SP. E (SCAMIT)
540201020000	=	FALCIDENS SPP.
510509000000	=	FASCIOLARIIDAE
500155010000	=	FAUVELIOPSIS SPP.
551505020100	=	FELANIELLA CORNEA
375103090100	=	FILIGELLA MITZUKURII
510346080300	=	FINELLA PUPOIDES
510346080000	=	FINELLA SPP.
500154020000	=	FLABELLIFERA SPP.
500154020100	=	FLABELLIGERA INFUNDIBULARIS
500154000000	=	FLABELLIGERIDAE
885703000000	C	FLOUNDERS LEFTEYE
616942200200	=	FOXIPHALUS ?
616942092900	=	FOXIPHALUS COGNATUS
616942200100	=	FOXIPHALUS GOLFENSIS
616942200400	=	FOXIPHALUS MAJOR
616942092400	=	FOXIPHALUS OBTUSIDENS
616942093000	=	FOXIPHALUS SIMILIS
616942200000	=	FOXIPHALUS SPP.
510509050900	=	FUSINUS BARBARENSIS

MODC TAXONOMIC CODES
SORTED BY TAXON NAME

MODC CODE		TAXON NAME
510509050800	=	FUSINUS LUTEOPICTUS
510509050000	=	FUSINUS SP.
500164049999	=	GALATHOWENIA SP. A (HONOLULU ONLY)
616921000000	=	GAMMARIDAE
616900000000	=	GAMMARIDEA
616926040000	=	GAMMAROPSIS ATLANTICA
616926040100	=	GAMMAROPSIS THOMPSONI
551533010000	=	GARI CALIFORNICA
551533010600	=	GARI EDENTULA
551533010000		GARI SPP.
616950060100	=	GAROSYRRHOE BIGARRA
370301110400	=	GARVEIA FORMOSA
370301110000	=	GARVEIA SPP.
881801010100	=	GASTEROSTEUS ACULEATUS
510000000000	=	GASTROPODA
510000009998	=	GASTROPODA SP. B
511007010100	=	GASTROPTERON PACIFICUM
510602490100	=	GEMMULA MONILIFERA
885001000000	=	GEMPYLIDAE
500113070100	=	GEMETYLLIS CASTANEA
500113070000	=	GEMETYLLIS SPP.
883544020100	=	GENYONEMUS LINEATUS
616921480200	=	GIBBEROSUS DEVANEYI
616921480100	=	GIBBEROSUS MYERSI
616903030400	=	GITANA CALITEMPLADO
800201010200	=	GLOTTIDIA ALBIDA
500127010400	=	GLYCERA AMERICANA
500127010900	=	GLYCERA BRANCHIOPODA
500127010100	=	GLYCERA CAPITATA
500127011000	=	GLYCERA CONVOLUTA
500127010800	=	GLYCERA OXYCEPHALA
500127010600	=	GLYCERA ROBUSTA
500127010000	=	GLYCERA SP.
500127019989	=	GLYCERA SP. A (CSDOC/MEC)
500127019999	=	GLYCERA SP. A (LOS ANGELES ONLY)
500127010300	=	GLYCERA TESSELATA
500127000000	=	GLYCERIDAE
500128010300	=	GLYCINDE ARMIGERA
885704050100		GLYPTOCEPHALUS ZACHIRUS
615901010500	=	GNATHIA CREMULATIFRONS
615901010000	=	GNATHIA SP.
616102030200	=	GNORIMOSPHAEROMA INSULARE
884701000000	=	GOBIIDAE
720002011900	=	GOLFINGIA CATHARINAE
720002013700	=	GOLFINGIA HESPERA
720002010200	=	GOLFINGIA MARGARITACEA
720002010210	=	GOLFINGIA MARGARITACEA ?
720002010600	=	GOLFINGIA MINUTA
720002016300	=	GOLFINGIA MISAKIANA
720002016900	=	GOLFINGIA NIGRA
720002010000	=	GOLFINGIA SP.
720002019999	=	GOLFINGIA SP. 1 (ORANGE CO. ONLY)
720002019998	=	GOLFINGIA SP. 2 (ORANGE CO. ONLY)

MODC TAXONOMIC CODES
SORTED BY TAXON NAME

MODC CODE		TAXON NAME
720002000000	=	GOLFINGIIDAE
720002060000	=	GOLGINGIA SPP.
500128020300	=	GONIADA BRUNNEA
500128020500	=	GONIADA LITTOREA
500128020200	=	GONIADA MACULATA
500128020000	=	GONIADA SP.
500128000000	=	GONIADIDAE
375105000000	=	GORGONIIDAE
500901039999	=	GRANIA SP. A (HONOLULU ONLY)
510515060100	=	GRANULA SANDWICENSIS
510515010300	=	GRANULINA VITREA
618907000000	=	GRAPSIDAE
550701120200	=	GREGARIELLA CHENUI
781600000000	=	GYMNOLAEMATA CHEILOSTOMATA ASCOPHORA
780800000000	=	GYMNOLAEMATA CYCLOSTOMATA
500124150100		GYMNONEREIS CROSSLANDI
500121010200	=	GYPTIS BREVIPALPA
500121190100	=	GYPTIS BREVIPALPA
500121010400	=	GYPTIS BRUNNEA
500121010000	=	GYPTIS SPP.
860601010200	C	HAGFISH PACIFIC
593001000000	=	HALACARIDAE
375904010100	=	HALCAMPA DECEMTENTACULATA
375904010000	=	HALCAMPA SP.
375904000000	=	HALCAMPIDAE
375902010000	=	HALCAMPOIDES SPP.
375902000000	=	HALCAMPOIDIDAE
885703030900	C	HALIBUT CALIFORNIA
616940010200	=	HALICE SYNOPIAE
616937150000	=	HALIMEDON SP.
616001160100	=	HALIOPHASMA GEMINATA
510210060100	=	HALISTYLUS PUPOIDES
840602040200	=	HALOCYNTHIA HILGENDORFI
551541010100	=	HALODAKRA SALMONEA
500102070100	=	HALOSYDNA BREVISETOSA
500102070200	=	HALOSYDNA JOHNSONI
500102070300	=	HALOSYDNA LATIOR
500102070000	=	HALOSYDNA SPP.
511012010700	=	HAMINOEA CURTA
511012010000	=	HAMINOEA SP
511012019999	=	HAMINOEA SP. A (HONOLULU)
511012019998	=	HAMINOEA SP. B (HONOLULU)
511012010100	=	HAMINOEA VESICULA
511012010300	=	HAMINOEA VIRESCENS
510222060400	=	HAPLOCOCHLIAS MINUTISSIMA
500140010200	=	HAPLOSCOLOPLOS ELONGATUS
500140010100	=	HAPLOSCOLOPLOS PANAMENSIS
375903020100	=	HARENACTIS ATTENUATA
500102083300	=	HARMOTHOE CRASSICIRRATA
500102083400	=	HARMOTHOE FORCIPATA
500102080500	=	HARMOTHOE HIRSUTA
500102080600	=	HARMOTHOE IMBRICATA
500102081000	=	HARMOTHOE LUNULATA

MODC TAXONOMIC CODES
SORTED BY TAXON NAME

MODC CODE		TAXON NAME
500102081700	=	HARMOTHOE PRIOPS
500102230200	=	HARMOTHOE PRIOPS
500102081800	=	HARMOTHOE SCRIPTORIA
500102080000	=	HARMOTHOE SP.
611900000000	A	HARPACTICOIDA
611900000000	A	HARPEPACTICOID SPP.
616942020400	=	HARPINIOPSIS FULGENS
616942020300	=	HARPINIOPSIS GALERUS
550905160100	=	HAUMEA JUDDI
616922000000	=	HAUSTORIIDAE
817204020200	=	HAVELOCKIA BENTI
817204020000	=	HAVELOCKIA SPP.
510331020000	=	HELIACUS SP
993900000000	=	HEMICARDIUM MUNDUM
820000000000	=	HEMICHORDATA
618907010000	=	HEMIGRAPSIS SP.
618907010100	=	HEMIGRAPSUS NUDUS
618907010200	=	HEMIGRAPSUS OREGONENSIS
615401020600	=	HEMILAMPROPS CALIFORNICA
615401020500	=	HEMILAMPROPS QUADRUPLICATA
617103019999	=	HEMIPROTO SP. A (ORANGE CO. ONLY)
619101080102	=	HEMISQUILLA ENSIGERA CALIFORNIENSIS
619101080000	=	HEMISQUILLA SPP.
617916051000	=	HEPTACARPUS BREVIROSTRIS
617916051400	=	HEPTACARPUS CRISTATA
617916050100	=	HEPTACARPUS DECORA
617916050600	=	HEPTACARPUS KINCAIDI
617916051800	=	HEPTACARPUS PICTUS
617916050000	=	HEPTACARPUS SPP.
617916051100	=	HEPTACARPUS STIMPSONI
617916051600	=	HEPTACARPUS TAYLORI
617916051300	=	HEPTACARPUS TENUISSIMUS
514201010100	=	HERMASSENDA CRASSICORNIS
874701000000	C	HERRINGS
510801170100		HERVIERA GLIRIELLA
500121000000	=	HESIONIDAE
500121009999	=	HESIONIDAE SP. A (HONOLULU ONLY)
500121009997	=	HESIONIDAE SP. C (HONOLULU ONLY)
500102170200	=	HESPERONOE ADVENTOR
500102170300	=	HESPERONOE LAEVIS
500102170000	=	HESPERONOE SP.
500150020200	S	HETEROCIRRUS ALATUS
618701120200	=	HETEROCRYPTA OCCIDENTALIS
618701120000	=	HETEROCRYPTA SP.
500902160200	=	HETERODRILUS KEENANI
375103130200	=	HETEROGORGIA GRACILIS
375103130100	=	HETEROGORGIA PACIFICA
500160020100	=	HETEROMASTUS FILIFORMIS
500160020300	=	HETEROMASTUS FILOBRANCHUS
500160020000	=	HETEROMASTUS SPP.
616942030100	=	HETEROPHOXUS OCULATUS
500147010200	=	HETEROSPIO CATALINENSIS
884209130100	=	HETEROSTICHUS ROSTRATUS

NODC TAXONOMIC CODES
SORTED BY TAXON NAME

NODC CODE		TAXON NAME
551706020000	=	HIATELA SP.
551706020100	=	HIATELLA ARCTICA
510801200100	=	HINEMOA INDICA
550905030200	=	HINNITES GIGANTEUS
550905030100	=	HINNITES MULTIRUGOSUS
885703110200	=	HIPPOGLOSSINA STOMATA
617916010100	=	HIPPOLYTE CALIFORNIENSIS
617916000000	=	HIPPOLYTIDAE
616934141100	=	HIPPOMEDON COECUS
616934141200	=	HIPPOMEDON COLUMBIANUS
616934140200	=	HIPPOMEDON DENTICULATUS
616934140500	=	HIPPOMEDON PROPINQUUS
616934141300	=	HIPPOMEDON SUBROBUSTUS
616934141400	=	HIPPOMEDON ZETESIMUS
510361020200	=	HIPPONIX GRAYANUS
781602010100	=	HIPPOTHOA HYALINA
501200000000	=	HIRUDINEA
615301010700	S	HOLMESIMYSS SCULPTA
817000000000	=	HOLOTHUROIDEA
817200000000		HOLOTHUROIDEA DENDROCHIROTACEA DENDROCHI
817000009999	=	HOLOTHUROIDEA SP. A (KINNETICS ONLY)
510212019800	=	HOMALOPOMA SP. ?
510212019900	=	HOMALOPOMA SP. ?
550607020200	=	HUXLEYIA MUNITA
500129050200	=	HYALINOECIA JUVENALIS
500129050000	=	HYALINOECIA SP.
511003000000	=	HYDATINA SP
370301080000	=	HYDRACTINIA
871602010100	=	HYDROLAGUS COLLIEI
370100000000	=	HYDROZOA
370200000000	=	HYDROZOA HYDROIDA
883560040100	=	HYPERPROSOPON ARGENTEUM
885704220100	=	HYPSOPSETTA GUTTULATA
883102160800	=	ICELINUS QUADRISERIATUS
616201050100	=	IDARCTURUS ALLELOMORPHUS
616202030900	=	IDOTEA PHOSPHOREA
616202080200	=	IDOTEA RESECATA
616202030400	=	IDOTEA RUFESCENS
616202030000	=	IDOTEA SP.
616202000000	=	IDOTHEIDAE
998100000000	=	INANIDRILUS SP. A
620000000000	=	INSECTA I
615301100300	=	INUSITATOMYSIS CALIFORNICA
510602450000	=	IREDALEA SP.
551547270100	=	IRUS LAMELLIFER
551547290100	=	IRUSELLA LAMELLIFERA
616926000000	=	ISAEIDAE
616927021700	=	ISCHYROCERUS PELAGOPS
616927029999	=	ISCHYROCERUS SP. A (HONOLULU)
616927029989	=	ISCHYROCERUS SP. A (KINNETICS ONLY)
616927020000	=	ISCHYROCERUS SPP.
618316040200	=	ISOCHELES PILOSUS
500163200100	=	ISOCIRRUS LONGICEPS

NODC TAXONOMIC CODES
SORTED BY TAXON NAME

NODC CODE		TAXON NAME
615800000000	=	ISOPODA
510320160100	=	ISSELIA HILOENSIS
616311010300	=	JAEROPSIS DUBIA
616311010301	=	JAEROPSIS DUBIA DUBIA
616311010600	=	JAEROPSIS HAWAIIENSIS
616311019998	=	JAEROPSIS SP. B (SCAMIT)
997800000000	=	JAMIESONIELLA SP. A
616306080600	=	JANIRALATA OCCIDENTALIS
500170170600	=	JASMINEIRA CAUDATA
500170179999	=	JASMINEIRA SP. A (GOLETA/MORRO BAY)
500170179979	=	JASMINEIRA SP. A (HONOLULU ONLY)
500170179989	=	JASMINEIRA SP. A (ORANGE CO. ONLY)
500170179998	=	JASMINEIRA SP. B (SCAMIT)
500170170000	=	JASMINEIRA SPP.
616927030200	=	JASSA FALCATA
512308020100	=	JULIA EXQUISITA
884014030300	=	KATHETOSTOMA AVERRUNCUS
510504130100	=	KELLETIA KELLETI
551508010000		KELLIA SP.
551508010200	=	KELLIA SUBORBICULARIS
884209130100	C	KELPFISH GIANT
510602480100	=	KERMIA BRUNNEA
510602480200	=	KERMIA DAEDALEA
500129150000	=	KINBERGONUPHIS SP.
510801210100	=	KOLOONELLA HAWAIIENSIS
616906140100	=	KONATOPUS PAAO
510602410100	=	KURTZIA ARTEAGA
510602110600	=	KURTZIELLA BETA
510602110700	=	KURTZIELLA PLUMBEA
510602110000	=	KURTZIELLA SP.
510602440100	=	KYLIX HALOCYDNE
611827020000	=	LABIDOCERA SP.
510309030000	=	LACUNA SPP.
510309030700	=	LACUNA UNIFASCIATA
510309030500	=	LACUNA VINCTA
370402010300	=	LAFOEA FRUTICOSA
500102290200	=	LAGISCA MULTISETOSA
615401000000	=	LAMPROPIDAE
615401010400	=	LAMPROPS CARINATA
615401010500	=	LAMPROPS QUADRUPLICATA
615401010000	=	LAMPROPS SP.
615401019999	=	LAMPROPS SP. A (SCAMIT)
615401019998	=	LAMPROPS SP. D (ORANGE CO.)
500168130300	=	LANASSA GRACILIS
500168139986	=	LANASSA SP. D (CSDOC/MEC)
500168139996	=	LANASSA SP. D (SCAMIT)
500168130000	=	LANASSA SPP.
500168130201	=	LANASSA VENUSTA VENUSTA
500123100100	=	LANGERHANSIA CORNUTA
500168270100	=	LANICE CONCHILEGA
500170149999	=	LAONAME SP. A (HONOLULU ONLY)
500143020300	=	LAONICE APPELLOEFI
500143020100	=	LAONICE CIRRATA

MODC TAXONOMIC CODES
SORTED BY TAXON NAME

MODC CODE		TAXON NAME
500143020400	=	LAONICE PUGETTENSIS
500143020000	=	LAONICE SP.
500168030500	=	LEAEMA CAECA
550204020000	S	LEDA SP.
550204020000	S	LEDELLA SP.
500140010200	S	LEITOSCOLOPLOS ELONGATUS
500140010100	S	LEITOSCOLOPLOS PANAMENSIS
500140011601	=	LEITOSCOLOPLOS PUGETTENSIS
616906031300	=	LEMBOS AUDBETTIUS
616906030000	=	LEMBOS SPP.
500102180100	=	LEPIDASTHENIA BERKELEYAE
500102180700	=	LEPIDASTHENIA INTERRUPTA
500102180500	=	LEPIDASTHENIA LONGICIRRATA
500102180000	=	LEPIDASTHENIA SP.
616934219999	=	LEPIDEPECREUM SP. A (SCAMIT)
616934210000	=	LEPIDEPECREUM SPP.
884701030100	=	LEPIDOGOBIUS LEPIDUS
500102110300	=	LEPIDONOTUS CAELORUS
500102110300		LEPIDONOTUS SQUAMATUS
618313010400	=	LEPIDOPA CALIFORNICA
618313019100	=	LEPIDOPA MYOPS
530302070400	=	LEPIDOZONA CALIFORNIENSIS
530302070500	=	LEPIDOZONA RETIPOROSA
615407010300	=	LEPTOCHELIA DUBIA
615702010300	=	LEPTOCHELIA DUBIA
615702010000	=	LEPTOCHELIA SP.
615702019989	=	LEPTOCHELIA SP. A (ENCINA/KLI)
615702019999	=	LEPTOCHELIA SP. A (ORANGE CO.)
530201010500	=	LEPTOCHITON RUGATUS
615409090100	=	LEPTOCUMA FORSMANI
513800009996	=	LEPTOGNATHA SP. D (KINMETICS ONLY)
513800000000	=	LEPTOGNATHA SPP.
615702020400	=	LEPTOGNATHIA BREVIMANUS
615702020300	=	LEPTOGNATHIA LONGIREMUS
615702020000	=	LEPTOGNATHIA SP.
615702029999	=	LEPTOGNATHIA SP. A (SCAMIT)
615702029998	=	LEPTOGNATHIA SP. B (SCAMIT)
615702029997	=	LEPTOGNATHIA SP. C (SCAMIT)
615702029996	=	LEPTOGNATHIA SP. D (SCAMIT)
615702029995	=	LEPTOGNATHIA SP. E (SCAMIT)
551509020200	=	LEPTON MEROEUM
551509020000	=	LEPTON SPP.
550905140100	=	LEPTOPECTEN LATIAURATUS
550905140000	=	LEPTOPECTEN SP.
616942050102	=	LEPTOPHOXUS FALCATUS ICELUS
615405040400	=	LEPTOSTYLIS LONGIMANA
615405040000	=	LEPTOSTYLIS SP.
615405049989	=	LEPTOSTYLIS SP. A (GOLETA/MORRO BAY)
615405049999	=	LEPTOSTYLIS SP. A (SCAMIT)
615405049998	=	LEPTOSTYLIS SP. B (SCAMIT)
817801020100	=	LEPTOSYNAPTA INHAERENS
817801020000	=	LEPTOSYNAPTA SP.
817801029998	=	LEPTOSYNAPTA SP. B (GOLETA/MORRO BAY)

MODC TAXONOMIC CODES
SORTED BY TAXON NAME

MODC CODE		TAXON NAME
510212050100	=	LEPTOTHYRA CANDIDA
510212050200	=	LEPTOTHYRA RUBRICINCTA
615404011600	=	LEUCON MAGNADENTATA
615404019999	=	LEUCON SP. A (ORANGE CO.)
615404011500	=	LEUCON SUBNASICA
616932010400	=	LEUCOTHOE HYHELIA
611103090100	=	LEUROLEBERIS SHARPEI
500141080100	=	LEVINSENIA GRACILIS
500141140100	=	LEVINSENIA OCULATA
500141149998	=	LEVINSENIA SP. B (SCAMIT)
500141140000	=	LEVINSENIA SPP.
510602470100	=	LIEMARDIA MIGHELSI
616933020200	=	LILJEBORGIA COTA
616933000000	=	LILJEBORGIIDAE
550910011100	=	LIMA HEMPHILLI
550910010000	=	LIMA SP
511301010300	=	LIMACINA INFLATA
540201030100	=	LIMIFOSSOR FRATULA
500902070300	=	LIMNODRILOIDES BARNARDI
500902079998	=	LIMNODRILOIDES SP. B (HONOLULU)
500902070600	=	LIMNODRILOIDES VICTORIENSIS
550605010000	=	LIMNOPSIS SP
550605011700	=	LIMOPSIS DIEGENSIS
550605011500	=	LIMOPSIS WAIKIKIA
430302000000	=	LINEIDAE
430302041100	=	LINEUS ALBOLINEATUS
430302040100	=	LINEUS BILINEATUS
430302040200	=	LINEUS RUBER
430302041000	=	LINEUS RUBESCENS
430302040000	=	LINEUS SPP.
882701020100	C	LINGCOD
500110030200	=	LINOPHERUS MICROCHEPHALA
883109080000	=	LIPARIS SPP.
874302000000	=	LIPOGENYIDAE
616106030400	=	LIRONECA VULGARIS
616933030600	=	LISTRIELLA ALBINIA
616933030700	=	LISTRIELLA DIFFUSA
616933031000	=	LISTRIELLA ERIOPISA
616933030800	=	LISTRIELLA GOLETA
616933031100	=	LISTRIELLA HOLMESI
616933030900	=	LISTRIELLA MELANICA
616933030000	=	LISTRIELLA SP.
730102040600	=	LISTRIOLOBUS PELODES
730102040000	=	LISTRIOLOBUS SPP.
510310012700	=	LITTORINA PINTADO
500122080200	=	LOANDALIA FAUVELI
500168200100	=	LOIMIA MEDUSA
500168200000	=	LOIMIA SPP.
570601010100	=	LOLIGO OPALESCENS
375105020000	=	LOPHOGORGIA SPP.
618902010100	=	LOPHOPANOPEUS BELLUS
618902010102	=	LOPHOPANOPEUS BELLUS DIEGENSIS
618902010102	S	LOPHOPANOPEUS DIEGENSIS

NODC TAXONOMIC CODES
SORTED BY TAXON NAME

NODC CODE		TAXON NAME
618902010301	=	LOPHOPANOPEUS LEUCOMANUS LEUCOMANUS
618902010000	=	LOPHOPANOPEUS SPP.
816303020100	=	LOVENIA CORDIFORMIS
816303020000	=	LOVENIA SP.
618701150100	=	LOXORHYNCHUS CRISPATUS
618701150200	=	LOXORHYNCHUS GRANDIS
618701150000	=	LOXORHYNCHUS SPP.
551501030700	=	LUCINA APPROXIMATUS
551501030800	=	LUCINA EXCAVATA
551501030900	=	LUCINA NUTTALLI
551501030000	=	LUCINA SP.
551501000000	=	LUCINIDAE
551501020100	=	LUCINOMA ANNULATA
551501020000	=	LUCINOMA SP.
810501011100	=	LUIDIA ASTHENOSOMA
810501010100	=	LUIDIA FOLIOLATA
810501011000	=	LUIDIA LUDWIGI
810501010000	=	LUIDIA SPP.
500163150000	=	LUMBRICLYMENE SPP.
500131000000	=	LUMBRINERIDAE
500131010100	=	LUMBRINERIS BICIRRATA
500131013200	=	LUMBRINERIS CALIFORNIENSIS
500131011800	=	LUMBRINERIS CRUZENSIS
500131013300	=	LUMBRINERIS ERECTUS
500131013400	=	LUMBRINERIS INDEX
500131010700	=	LUMBRINERIS JAPONICA
500131012900	=	LUMBRINERIS LAGUNAE
500131010400	=	LUMBRINERIS LATREILLI
500131012800	=	LUMBRINERIS LIMICOLA
500131011100	=	LUMBRINERIS PALLIDA
500131010000	=	LUMBRINERIS SP.
500131019901	=	LUMBRINERIS SP. (GROUP I)
500131019902	=	LUMBRINERIS SP. (GROUP II)
500131019903	=	LUMBRINERIS SP. (GROUP III)
500131019904	=	LUMBRINERIS SP. (GROUP IV)
500131019999	=	LUMBRINERIS SP. A (GOLETA/MORRO BAY)
500131019988	=	LUMBRINERIS SP. A (ORANGE CO.)
500131019998	=	LUMBRINERIS SP. B (GOLETA/MORRO BAY)
500131011700	=	LUMBRINERIS TETRAURA
781514000000	=	LUNULARIDAE
781514000000		LUNULITIDAE
879301080100	=	LYCODOPSIS PACIFICA
552005020200	=	LYONSIA CALIFORNICA
552005020600	=	LYONSIA HYALINA
552005020500	=	LYONSIA PUGETTENSIS
552005020000	=	LYONSIA SP.
885704110100	=	LYOPSETTA EXILIS
616934220600	=	LYSIANASSA HOLMESI
616934220400	=	LYSIANASSA OCULATA
616934220500	=	LYSIANASSA PARITER
616934220000	=	LYSIANASSA SP.
616934000000	=	LYSIANASSIDAE
616934530300	=	LYSIANOPSIS OCULATA

NODC TAXONOMIC CODES
SORTED BY TAXON NAME

NODC CODE		TAXON NAME
500130030000	=	LYSIDICE SPP.
500167040200	=	LYSIPPE ANNECTENS
500167040100	=	LYSIPPE LABIATA
500167049999	=	LYSIPPE SP. A (SCAMIT)
500167049998	=	LYSIPPE SP. B (SCAMIT)
500167040000	=	LYSIPPE SPP.
814802010600	=	LYTECHINUS ANAMESUS
814802010200	=	LYTECHINUS PICTUS
814802010000	=	LYTECHINUS SPP.
883528010100	C	MACKEREL JACK
551531019998	=	MACOMA ?
551531013400	=	MACOMA ACOLASTA
551531011600	=	MACOMA BALTHICA
551531011200	=	MACOMA CARLOTTENSIS
551531013500	=	MACOMA LEPTONOIDEA
551531013400	S	MACOMA MORROENSIS
551531011400	=	MACOMA NASUTA
551531010000	=	MACOMA SP.
551531019999	=	MACOMA SP. A (SCAMIT)
551531011100	=	MACOMA YOLDIFORMIS
616921080200	=	MAERA SIMILE
500144012300	=	MAGELONA BERKELEYI
500144011900	=	MAGELONA HARTMANAE
500144010200	=	MAGELONA PACIFICA
500144010300	=	MAGELONA PITELKAI
500144011600	=	MAGELONA SACCULATA
500144010000	=	MAGELONA SP.
500144019999	=	MAGELONA SP. A (HONOLULU ONLY)
500144019989	=	MAGELONA SP. A (SCAMIT)
500144000000	=	MAGELONIDAE
618701000000	=	MAJIDAE
500143120100	=	MALACOCEROS GLUTAEUS
500143140000	=	MALACOCEROS SPP.
500163030300	=	MALDANE CRISTATA
500163030100	=	MALDANE SARSI
500163030000	=	MALDANE SPP.
500163000000	=	MALDANIDAE
500163009989	=	MALDANIDAE SP. A (HONOLULU ONLY)
500163009989		MALDANIDAE SP. A (SAN DIEGO)
500102081000	S	MALMGRENIA CASTANEA
500102081000	S	MALMGRENIA LUNULATA
500902280100	=	MARCUSAEDRILUS CAPRICORNAE
500130020201	=	MARPHYSA BELLI OCULATA
500130020700	=	MARPHYSA CONFERTA
500130020800	=	MARPHYSA DISJUNCTA
500130020000	=	MARPHYSA SP.
500130029999	=	MARPHYSA SP. A (GOLETA/MORRO BAY)
510366050400	=	MARSENINA STEARNSII
617101030100	=	MAYERELLA BANKSIA
500160040400	=	MEDIOMASTUS ACUTUS
500160040100	=	MEDIOMASTUS AMBISETA
500160040200	=	MEDIOMASTUS CALIFORNIENSIS
500160040000	=	MEDIOMASTUS SP.

NODC TAXONOMIC CODES
SORTED BY TAXON NAME

NODC CODE		TAXON NAME
550701030100	=	MEGACRENELLA COLUMBIANA
500170040700	=	MEGALOMMA CIRCUMSPECTUM
500170040800	=	MEGALOMMA INTERMEDIUM
500170040600	=	MEGALOMMA PIGMENTUM
500170040000	=	MEGALOMMA SP.
616921090100	=	MEGALUROPUS LONGIMERUS
616921090000	=	MEGALUROPUS SP.
510602420100	=	MEGASURCULA CARPENTERIANA
510602420300	=	MEGASURCULA STEARNSIANA
510353010000	=	MELANELLA
510353011500		MELANELLA CATALINENSIS
510353010200		MELANELLA MICRANS
510353011300	=	MELANELLA OLDROYDI
510353010400		MELANELLA RUTILA
511006010100	S	MELANOCHLAMYS DIOMEDEA
500167050900	=	MELINNA EXILIA
500167050500	=	MELINNA HETERDONTA
500167050600	=	MELINNA OCULATA
616935020100	=	MELIPHISANA BOLA
616935020000	=	MELIPHISANA SP.
616921100700	=	MELITA APPENDICULATA
511004050000	=	MELOSCAPHANDER SP.
511004059999	=	MELOSCAPHANDER SP. A (GOLETA/MORRO BAY)
616935000000	=	MELPHIDIPPIDAE
781504010000	=	MEMBRANIPORA SPP.
781504010300	=	MEMBRANIPORA TENUIS
510320180200	=	MERELINA HEWA
510320180100	=	MERELINA WAMAWANA
879104010200	=	MERLUCCIUS PRODUCTUS
616001140400	=	MESANTHURA HIEROGLYPHICA
500149040000	=	MESOCHAETOPTERUS SPP.
500149040100	=	MESOCHAETOPTERUS TAYLORI
617922011500	S	MESOCRANGON MUNITELLA
615401030200	=	MESOLAMPROPS BISPINOSA
615401030100	=	MESOLAMPROPS DILLONENSIS
615401030000	=	MESOLAMPROPS SPP.
615303140600	=	METAMYSIDOPSIS ELONGATA
616942060100	=	METAPHOXUS FREQUENS
616942060200	=	METAPHOXUS FULTONI
375901039999	=	METEDWARDSIA SP. A (GOLETA/MORRO BAY)
375901030000	=	METEDWARDSIA SPP.
616942140300	=	METHARPINIA FLORIDANA
616942140200	=	METHARPINIA JONESI
616948152500	=	METOPA DAWSONI
376006010100	=	METRIDIUM SENILE
510336032100	S	MICRAMELLUM CREBRICINCTUM
616906040500	=	MICRODEUTOPUS OCULATUS
996800000000	=	MICRODOCHUS ROBERTSONI
616927040200	=	MICROJASSA LITOTES
616927040000	=	MICROJASSA SPP.
500121080100	=	MICROPODARKE DUBIA
781611010100	=	MICROPORELLA CILIATA
500121020200	=	MICROPTHALMUS ABERRANS

NODC TAXONOMIC CODES
SORTED BY TAXON NAME

NODC CODE		TAXON NAME
500143230500	=	MICROSPIO MACULATA
500143230100	=	MICROSPIO PIGMENTATA
500143230000	=	MICROSPIO SP.
500143239999	=	MICROSPIO SP. A (ORANGE CO. ONLY)
885704120100		MICROSTOMUS PACIFICUS
430302050400	=	MICRURA ALASKENSIS
430302050000	=	MICRURA SPP.
878301010100	=	MIDSHIPMAN PLAINFIN
878301010700	C	MIDSHIPMAN SPECKLEFIN
510801018900	=	MIRALDA PAULBARTSCHI
510801160100	=	MIRALDA SCOPULOORUM
510801018700	=	MIRALDA SP.
510601031700	=	MITRA FLAMMULATA
510601040100	=	MITRA FOVEOLATA
510601031600	=	MITRA SALTATA
510601030000	=	MITRA SP
510503020600	=	MITRELLA CARINATA
510503024300	=	MITRELLA MARGARITA
510503020000	=	MITRELLA SP.
510503020200	=	MITRELLA TUBEROSA
550701060700	=	MODIOLUS CAPAX
550701060800	=	MODIOLUS NEGLECTUS
550701060300	=	MODIOLUS RECTUS
550701069999	=	MODIOLUS SP. A
550701060000	=	MODIOLUS SPP.
840603010000	=	MOLGULA SP.
540000000000		MOLLUSCA APLACOPHORA
550000000000		MOLLUSCA BIVALVIA
510000000000		MOLLUSCA GASTROPODA
560000000000	=	MOLLUSCA SCAPHOPODA
817801010100	=	MOLPADIA INTERMEDIA
817901010100	=	MOLPADIA INTERMEDIA
817901010000	=	MOLPADIA SP.
370504010100	=	MONOBRACHIUM PARASITUM
616937080500	=	MONOCULODES DIAMESUS
616937082800	=	MONOCULODES EMARGINATUS
616937082700	=	MONOCULODES GLYCONICA
616937082600	=	MONOCULODES HARTMANAE
616937082900	=	MONOCULODES LATISSIMANUS
616937082400	=	MONOCULODES NORVEGICUS
616937080000	=	MONOCULODES SP.
616937082200	=	MONOCULODES SPINIPES
551510000000	=	MONTACUTIDAE
551510009999	=	MONTACUTIDAE SP. A (SCAMIT)
500129011500	=	MOOREONUPHIS LITORALIS
500129140100	=	MOOREONUPHIS NEBULOSA
616312011000	=	MUNNA ACARINA
616312010000	=	MUNNA SP.
616312019999	=	MUNNA SP. A (MEC)
616312010300	=	MUNNA UBIQUITA
616312000000	=	MUNNIDAE SP
616312030200	=	MUNNOGONIUM ERRATUM
616312030300	=	MUNNOGONIUM TILLERAE

MODC TAXONOMIC CODES
SORTED BY TAXON NAME

MODC CODE		TAXON NAME
375104010400	=	MURICEA CALIFORNIA
375104010000	=	MURICEA SPP.
618602060100	=	MURSIA GAUDICHAUDII
870802040500	=	MUSTELUS HENLEI
871307020200	=	MYLIOBATIS CALIFORNICA
500164020300	=	MYRIOCHELE GRACILIS
500164020400	=	MYRIOCHELE PYGIDIALIS
500164029989	=	MYRIOCHELE SP. A (HONOLULU ONLY)
500164029987	=	MYRIOCHELE SP. C (HONOLULU ONLY)
500164029999	=	MYRIOCHELE SP. M (SCAMIT)
500164020000	=	MYRIOCHELE SPP.
500164030200	=	MYRIOWENIA CALIFORNIENSIS
500164030000	=	MYRIOWENIA SP.
551510010300	=	MYSELLA ALEUTICA
551510010100	=	MYSELLA COMPRESSA
551510011300	=	MYSELLA GOLISCHI
551510010900	=	MYSELLA GRIPPI
551510011200	=	MYSELLA PEDROANA
551510010000	=	MYSELLA SP.
551510019999	=	MYSELLA SP. A (SCAMIT)
551510019998	=	MYSELLA SP. B (SCAMIT)
551510019997	=	MYSELLA SP. C (SCAMIT)
551510019996	=	MYSELLA SP. D (CSDOC/MEC)
551510019994	=	MYSELLA SP. F (SCAMIT)
551510019993	=	MYSELLA SP. M
551510010200	=	MYSELLA TUMIDA
615300000000	=	MYSIDA
615100000000	=	MYSIDACEA
615301000000	=	MYSIDAE
615301130100	=	MYSIDELLA AMERICANA
615301210200	=	MYSIDOPSIS BAHIA
615301214800	S	MYSIDOPSIS BRATTEGARTTI
615301210400	=	MYSIDOPSIS CALIFORNICA
615301214800	=	MYSIDOPSIS ONOFRENSIS
615301140200	=	MYSIS LITTORALIS
550701000000	=	MYTILIDAE
550701010100	=	MYTILUS EDULIS
500170050200	=	MYXICOLA INFUNDIBULUM
366411150200	=	MYXILLA FIMBRIATA
500140020000	=	NAIMERIS SPP.
611927080100	=	NANNOPUS PALUSTRIS
510320100000	=	NANNOTERITES SPIRA
510508013800	=	NASSARIUS CREMMATUS
510508010500	=	NASSARIUS FOSSATUS
510508012200	=	NASSARIUS GORDANUS
510508012200		NASSARIUS INSCULPTUS
510508010100	=	NASSARIUS MENDICUS
510508010102	=	NASSARIUS MENDICUS COOPERI
510508010101	=	NASSARIUS MENDICUS MENDICUS
510508013200	=	NASSARIUS PERPINGUIS
510508010000	=	NASSARIUS SP.
510376021400	=	NATICA GUALTERIANA
510376000000	=	NATICIDAE

NODC TAXONOMIC CODES
SORTED BY TAXON NAME

NODC CODE		TAXON NAME
551509010100	=	NEAEROMYA COMPRESSA
500124030500	=	NEANTHES ARENACEDONTA
616201070100	=	NEASTACILLA CALIFORNICA
616201070000	=	NEASTICILLA SP.
500124030200	=	NEAUTHES VIRENS
614501010200	=	NEBALIA PUGETTENSIS
614501010000	=	NEBALIA SP
730101140100	=	NELLOBIA EUSOMA
470000000000	=	NEMATODA
500130050100	=	NEMATONEREIS UNICORNIS
375901020100	=	NEMATOSTELLA VECTENSIS
430000000000	=	NEMERTEA
430200009976	=	NEMERTEA SP D
430200009974	=	NEMERTEA SP F (HONOLULU ONLY)
430200009979	=	NEMERTEA SP. A (HONOLULU ONLY)
430200009975	=	NEMERTEA SP. E (HONOLULU ONLY)
430200009998	=	NEMERTEAN SP. B (ORANGE CO. ONLY)
430200009997	=	NEMERTEAN SP. C (ORANGE CO. ONLY)
430200009996	=	NEMERTEAN SP. D (ORANGE CO. ONLY)
430200009984	=	NEMERTEAN SP. P (ORANGE CO. ONLY)
370407079999	=	NEMERTESIA SP. A (CSDOC/MEC/OC)
551522030100	=	NEMOCARDIUM CENTIFILOSUM
500168040500	=	NEOAMPHITRITE EDWARDSII
500168040000	=	NEOAMPHITRITE SPP.
617922011600	S	NEOCRANGON RESIMA
500160260100	=	NEOMEDIOMASTUS GLABRAS
615301150400	=	NEOMYSIS KADIAKENSIS
615301150700	=	NEOMYSIS RAYII
615301150000	=	NEOMYSIS SPP.
500125000000	=	NEPHTYIDAE
500125011900	=	NEPHTYS CAECOIDES
500125011300	=	NEPHTYS CALIFORNIENSIS
500125010402	=	NEPHTYS CORNUTA CORNUTA
500125010401	=	NEPHTYS CORNUTA FRANCISCANA
500125012900	=	NEPHTYS ERECTENS
500125011100	=	NEPHTYS FERRUGINEA
500125012400	=	NEPHTYS GLABRA
500125012000	=	NEPHTYS PARVA
500125010500	=	NEPHTYS PUNCTATA
500125010000	=	NEPHTYS SP.
500124000000	=	NEREIDAE
500121039999	=	NEREIMYRA SP. A (HONOLULU ONLY)
500124042100	=	NEREIS LATESCENS
500124040400	=	NEREIS PROCERA
500124040000	=	NEREIS SP.
500124049999	=	NEREIS SP. A (HONOLULU ONLY)
500124030200	S	NEREIS VIRENS
500143200700	=	NERINE FOLIOSA
510376042100	=	NEVERITA RECLUSIANA
616940020100	=	NICIPPE TUMIDA
617917020000	=	NIKOIDES SP
500131020500	=	NINOE FOLIOSA
500131020200	=	NINOE GEMMEA

NODC TAXONOMIC CODES
SORTED BY TAXON NAME

NODC CODE		TAXON NAME
500131020400	=	NINOE NIGRIPES
500131020000	=	NINOE SP.
500131029999	=	NINOE SP. A (SCAMIT)
510503070500		NITIDELLA CARINATA
500129030100	=	NOTHRIA CONCHYLEGA
500129030101	=	NOTHRIA CONCHYLEGA OCCIDENTALIS
500129030400	=	NOTHRIA ELEGANS
500129030801	=	NOTHRIA INTERMEDIA
500129030000	=	NOTHRIA SP.
500129030801		NOTHRIA STIGMATIS INTERMEDIA
500133030200	=	NOTOCIRRUS CALIFORNIENSIS
500133030000	=	NOTOCIRRUS SP.
500160030300	=	NOTOMASTUS LINEATUS
500160031100	=	NOTOMASTUS MAGNUS
500160030000	=	NOTOMASTUS SP.
500160030200	=	NOTOMASTUS TENUIS
390605050000	=	NOTOPLANA SPP.
500163060100	=	NOTOPROCTUS PACIFICUS
500163060000	=	NOTOPROCTUS SPP.
615707000000	=	NOTOTANAIDAE
615707010000	=	NOTOTANAIS SPP.
550607020200		NUCINELLA MUNITA
550202020000		NUCULA SP.
550202020100	=	NUCULA SUBOVATA (PART)
550202020100		NUCULA TENUIS
550204029900	=	NUCULANA ?
550204021200	=	NUCULANA HAMATA
550204023000	=	NUCULANA ORNATA
550204022700	=	NUCULANA OXIA
550204022900	=	NUCULANA PENDERI
550204020000		NUCULANA SP.
550204022800	=	NUCULANA TAPHIRA
512700009998	=	NUDIBRANCH SP. B (KINMETICS ONLY)
512700000000	=	NUDIBRANCHIA
514200000000		NUDIBRANCHIA AEOLIDOEDEA CLEIOPROCTA
513500000000	=	NUDIBRANCHIA ARMINOIDEA LEPTOGNATHA
512800000000		NUDIBRANCHIA DORIDOIDEA
513000000000	=	NUDIBRANCIA DORIDOIDEA GNATHODORIDOIDEA
600101010700	=	NYMPHON PIXELLAE
370401020500	=	OBELIA DICHOTOMA
370401021100	=	OBELIA PLICATA
370401020000	=	OBELIA SPP.
510501021100	=	OCENEBRA BETA
510501021000	=	OCENEBRA FOVEOLATA
375000000000	=	OCTOCORALLIA GORGONACEA SCLERAXONIA
375200000000	=	OCTOCORALLIA PENNATULACEA
375400000000	=	OCTOCORALLIA PENNATULACEA SUBSELLIFLORAE
570801020900	=	OCTOPUS BIMACULATUS
570801029900	=	OCTOPUS BIMACULATUS
570801020300	=	OCTOPUS RUBESCENS
570801020000	=	OCTOPUS SPP.
883108100100	=	ODONTOPYXIS TRISPINOSA
500123130300	=	ODONTOSYLLIS PHOSPHOREA

MODC TAXONOMIC CODES
SORTED BY TAXON NAME

MODC CODE		TAXON NAME
500123130000	=	ODONTOSYLLIS SPP.
510801019989	=	ODOSTOMIA (AMOURA) SP. A (ORANGE CO.)
510801019987	=	ODOSTOMIA (AMOURA) SP. B. (ENCINA ONLY)
510801019999	=	ODOSTOMIA (EVALEA) SP. A (ORANGE CO.)
510801019998	=	ODOSTOMIA (EVALEA) SP. B (ORANGE CO.)
510801019997	=	ODOSTOMIA (EVALEA) SP. C (ORANGE CO.)
510801019994	=	ODOSTOMIA (EVALEA) SP. F (ORANGE CO.)
510801019993	=	ODOSTOMIA (EVALEA) SP. G (ORANGE CO.)
510801019990	=	ODOSTOMIA (EVALEA) SP. I (ORANGE CO.)
510801018800	=	ODOSTOMIA ?
510801015500	=	ODOSTOMIA ASTRICTA
510801091500	=	ODOSTOMIA CALIFORNICA
510801017000	=	ODOSTOMIA CANFIELDI
510801011000	=	ODOSTOMIA COLUMBIANA
510801090200	=	ODOSTOMIA EUCOSMIA
510801019500	=	ODOSTOMIA EUGLYPTA
510801091500		ODOSTOMIA GRAVIDA
510801010000		ODOSTOMIA SP.
510801019969	=	ODOSTOMIA SP. A (SAN DIEGO)
510801019978	=	ODOSTOMIA SP. B
510801019977	=	ODOSTOMIA SP. C
510801019996	=	ODOSTOMIA SP. D (CSDOC/MEC)
510801019976	=	ODOSTOMIA SP. D (GOLETA/MORRO BAY)
510801019975	=	ODOSTOMIA SP. E (SCAMIT)
510801098800	=	ODOSTOMIA STEARNSIELLA
510801019600	=	ODOSTOMIA SUBTURRITA
510801010400	=	ODOSTOMIA TENUISCULPTA
510801011500	=	ODOSTOMIA WILLETI
616937000000	=	OEDICEROTIDAE
510602042800	=	OENOPOTA REGULUS
430604020100	=	OERSTEDIA DORSALIS
617915019999	=	OGYRIDES SP. A (ORANGE CO. ONLY)
617915019989	=	OGYRIDES SP. A (SAN DIEGO)
617915019998	=	OGYRIDES SP. B (ORANGE CO. ONLY)
617915019997	=	OGYRIDES SP. C (CSDOC/MEC/OC)
513106050600	=	OKENIA PLANA
513106059999	=	OKENIA SP. A(GOL/MORRO B/OC/MEC
996600000000	=	OLAVIUS SP A
500400000000	=	OLIGOCHAETA
510510010200	=	OLIVELLA BAETICA
510510010200	S	OLIVELLA DIEGENSIS
510510010200	S	OLIVELLA MEXICANA
510510014100	=	OLIVELLA PYCNA
510325010300	=	OMALOGYRA JAPONICA
720002029999	=	ONCHNESOMA SP. A (SCAMIT)
500129000000	=	ONUPHIDAE
500129011100	=	ONUPHIS ELEGANS
500129010702	=	ONUPHIS EREMITA PARVA
500129010200	=	ONUPHIS GEOPHILIFORMIS
500129010300	=	ONUPHIS IRIDESCENS
500129011500		ONUPHIS LITORALIS
500129011200	=	ONUPHIS NEBULOSA
500129140100	S	ONUPHIS NEBULOSA

NODC TAXONOMIC CODES
SORTED BY TAXON NAME

NODC CODE		TAXON NAME
500129011900	=	ONUPHIS PALLIDA
500129010500	=	ONUPHIS PARVA
500129130100	=	ONUPHIS PARVA
500129010000	=	ONUPHIS SP.
500129019999	=	ONUPHIS SP. 1 (LOS ANGELES ONLY)
500158030800	=	OPHELIA PULCHELLA
500158000000	=	OPHELIIDAE
500158010100	S	OPHELINA ACUMINATA
500158060400	=	OPHELINA BREVIATA
879201061700	=	OPHIDION SCRIPPSAE
510602430200	=	OPHIODERMELLA CANCELLATA
510602430200	S	OPHIODERMELLA HALCYONIS
510602430100	=	OPHIODERMELLA INERMIS
510602430100		OPHIODERMELLA OPHIODERMA
510602430200		OPHIODERMELLA RHINES
882701020100	=	OPHIODON ELONGATUS
500121150100	=	OPHIODROMUS PUGETTENSIS
812703030300	=	OPHIOPSILA CALIFORNICA
812904010100	=	OPHIOTHRIX SPICULATA
812701060700	=	OPHIURA LUTKENI
812701060000	=	OPHIURA SPP.
812701000000	=	OPHIURIDAE
812705070100	=	OPHIUROCONIS BISPINOSA
812600000000	=	OPHIUROIDAE OPHIURIDA
812000000000	=	OPHIUROIDEA
812500000000		OPHIUROIDEA PHRYNOPHIURIDA EURYALINA
812700009999	=	OPHIUROIDEA SP. A (HONOLULU)
812700009997	=	OPHIUROIDEA SP. C (HONOLULU)
812700009996	=	OPHIUROIDEA SP. D (HONOLULU)
812700009995	=	OPHIUROIDEA SP. E (HONOLULU)
500136040100	=	OPHRYOTROCHA GRACILIS
500136040100		OPHRYOTROCHA PUERILIS
500136040000	=	OPHRYOTROCHA SPP.
812700000000	=	OPHURIDA
616934280200	=	OPISA TRIDENTATA
518100000000	=	OPISTHOBRANCHIA
618906060100	=	OPISTHOPUS TRANSVERSUS
370404140200	=	OPLORHIZA GRACILIS
616912080000	=	ORADEREA
500140051000	=	ORBINIA FELIX
500140051100	=	ORBINIA JOHNSONI
500140000000	=	ORBINIIDAE
510215010100	=	ORBITESTELLA REGINA
510215999900	=	ORBITESTELLA SP. A (HONOLULU)
616934291800	=	ORCHOMENE ANAGUELA
616934291400	=	ORCHOMENE DECIPIENS
616934291500	=	ORCHOMENE DIAMESUS
616934291600	=	ORCHOMENE HOLMESI
616934291700	=	ORCHOMENE MAGDALENENSIS
616934291300	=	ORCHOMENE OBTUSA
616934290400	=	ORCHOMENE PINGUIS
616934290000	=	ORCHOMENE SP.
616934520100	=	ORCHOMENELLA MINUTA

NODC TAXONOMIC CODES
SORTED BY TAXON NAME

NODC CODE		TAXON NAME
618306060100	*	ORTHOPAGURUS MINIMUS
871700000000	*	OSTEICHTHYES
873500000000	*	OSTEICHTHYES ACTINOPTERYGII TELEOSTEI
875001000000	*	OSTEOGLOSSIDAE
611000000000	*	OSTRACODA
611300000000	*	OSTRACODA PODOCOPA
551002020000	*	OSTREA SP
500164010201	S	OWENIA COLLARIS
500164010201	*	OWENIA FUSIFORMIS COLLARIS
500164010000	*	OWENIA SP.
500164000000	*	OWENIIDAE
883901110100	*	OXYJULIS CALIFORNICA
615405080200	*	OXYUROSTYLIS PACIFICA
374301030300	*	PACHYCERIANTHUS FIMBRIATUS
374301030000	*	PACHYCERIANTHUS SP.
616934310100	*	PACHYNUS BARNARDI
616934319999	*	PACHYNUS SP. A (KINNETICS ONLY)
615301010500	S	PACIFACANTHOMYSIS NEPHROPHTHALMA
618306000000		PAGURIDAE
618306009999	*	PAGURIDAE SP. A (ORANGE CO. ONLY)
618306012100	*	PAGURISTES BAKERI
618316012100	*	PAGURISTES BAKERI
618316012200	*	PAGURISTES PARVUS
618306010000	*	PAGURISTES SP.
618306010200	*	PAGURISTES TURGIDUS
618306010100	*	PAGURISTES ULREYI
618306020200	*	PAGURUS OCHOTENSIS
618306025800	*	PAGURUS REDONDOENSIS
618306020000	*	PAGURUS SP.
618306025300	*	PAGURUS SPILOCARPUS
618306021700	*	PAGURUS TANNERI
500108010100	*	PALEANOTUS BELLIS
430200000000	*	PALEONEMERTEA
617918010500	*	PANDALUS PLATYCEROS
617918010000	*	PANDALUS SPP.
552002010300	*	PANDORA BILIRATA
552002011200	*	PANDORA PUNCTATA
552002010000	*	PANDORA SP.
500103040100	*	PANTHALIS PACIFICA
600100000000	*	PANTOPODA
618201010300	*	PANULIRUS ?
616102020100	*	PARACERCEIS CORDATA
376801020300	*	PARACYATHUS STEARNSII
616944030200	*	PARADULICHIA TYPICA
883502160400	*	PARALABRAX NEBULIFER
885703030900	*	PARALICHTHYS CALIFORNICUS
616948070400	*	PARAMETOPELLA MINIS
551702010000	*	PARAMYA SP.
551702019999	*	PARAMYA SP. A (SCAMIT)
500113080300	*	PARANAITIS POLYNOIDES
500122080200		PARANDALIA FAUVELI
500122080100	*	PARANDALIA OCULARIS
500122080000	*	PARANDALIA SP.

NODC TAXONOMIC CODES
SORTED BY TAXON NAME

NODC CODE		TAXON NAME
430601060500	=	PARANEMERTES CALIFORNICA
430601060000	=	PARANEMERTES SP.
430601069989	=	PARANEMERTES SP. A (KINNETICS ONLY)
430601069999	=	PARANEMERTES SP. A (SCAMIT)
430601069998	=	PARANEMERTES SP. B
430601069997	=	PARANEMERTES SP. C (ORANGE CO. ONLY)
430601069996	=	PARANEMERTES SP. D (ORANGE CO. ONLY)
500141000000	=	PARAONIDAE
500141080100	S	PARAONIS GRACILIS
500141080101	=	PARAONIS GRACILIS OCULATA
500141080200	S	PARAONIS MULTIBRANCHIATA
618306270100	=	PARAPAGUROIDES LAURENTAE
879201260100	=	PARAPHIDION SCHMIDTI
618942093600	=	PARAPHOXUS BICUSPIDATUS
616942092000		PARAPHOXUS CALCARATUS
616942092900	S	PARAPHOXUS COGNATUS
616942092700	=	PARAPHOXUS EPISTOMUS
616942150100	=	PARAPHOXUS EPISTOMUS
616942093500	=	PARAPHOXUS HETEROCUSPIDATUS
616942140200	S	PARAPHOXUS JONESI
616942092400	S	PARAPHOXUS OBTUSIDENS
616942091800		PARAPHOXUS ROBUSTUS
616942093000	S	PARAPHOXUS SIMILIS
616942090000	=	PARAPHOXUS SP.
616942092800		PARAPHOXUS SPINOSUS
618906050100	=	PARAPINNIXA HENDERSONI
616943030700	=	PARAPLEUSTES OCULATUS
616943030200	=	PARAPLEUSTES PUGETTENSIS
616943030000	=	PARAPLEUSTES SP.
500143170100	=	PARAPRIONOSPIO PINNATA
617104010100	=	PARAPROTELLA PRIMA
510320190100	=	PARASHIELA BEESTI
611103050300	=	PARASTEROPE BARNESI
611103050400	=	PARASTEROPE HULINGSI
611103050000	=	PARASTEROPE SP
817502010100	=	PARASTICHOPUS CALIFORNICUS
817502010200	=	PARASTICHOPUS PARVIMENSIS
616940030400	=	PARDALISCA MARIONIS
616940040300	=	PARDALISCELLA SYMMETRICA
616940000000	=	PARDALISCIDAE
500110050200	=	PAREURYTHOE CALIFORNICA
616937120200	=	PAROEDICEROS LYNCEUS
885704130100		PAROPHYRS VETULUS
551501010100	=	PARVILUCINA TENUISCULPTA
617905010100	=	PASIPHAEA PACIFICA
811401040100	=	PATIRIA MINIATA
550905040600	=	PECTEN DIEGENSIS
550905140100	S	PECTEN LATIAURATUS
500166030400	=	PECTINARIA CALIFORNIENSIS
500166030000		PECTINARIA SP.
500166000000		PECTINARIIDAE
550905000000	=	PECTINIDAE
500104020200	S	PEISIDICE ASPERA

NODC TAXONOMIC CODES
SORTED BY TAXON NAME

NODC CODE		TAXON NAME
550000000000	S	PELECYPODA
617701010500	*	PENAEUS CALIFORNIENSIS
617701000000	*	PENAIIDAE SP
375200000000	A	PENNATULACEA
375902020100	*	PENTACTINIA CALIFORNICA
817206030400	*	PENTAMERA POPULIFERA
817206030100	*	PENTAMERA PSEUDOCALCIGERA
817206030500	*	PENTAMERA PSEUDOPOPULIFERA
817206039998	*	PENTAMERA SP. B (GOLETA/MORRO BAY)
817206039997	*	PENTAMERA SP. C (GOLETA/MORRO BAY)
817206030000	*	PENTAMERA SPP.
616202080200		PENTIDOTEA RESECATA
616202080200		PENTIDOTEA RESECATA
885103010100	*	PEPRILUS SIMILLIMUS
617000000000	*	PERACARIDA
616800000000		PERACARIDA AMPHIPODA
617100000000		PERACARIDA AMPHIPODA CAPRELLIDEA
616900000000		PERACARIDA AMPHIPODA GAMMARIDEA
615400000000		PERACARIDA CUMACEA
615800000000		PERACARIDA ISOPODA
616200000000	*	PERACARIDA ISOPODA VALVIFERA
615100000000		PERACARIDA MYSIDACEA
615300000000		PERACARIDA MYSIDACEA MYSIDA
615500000000	*	PERACARIDA TANAIDACEA
616904040000	*	PERAMPHITHOE SP.
883560030200	C	PERCH BLACK
370301010900	*	PERIGONIMUS SERPENS
370301010000	*	PERIGONIMUS SPP.
552007010500	*	PERIPLOMA DISCUS
552007011100	*	PERIPLOMA PLANUISCULUM
552007010000	*	PERIPLOMA SP.
500163070000	*	PETALOPROCTUS
500163070500	*	PETALOPROCTUS NEOBOREALIS
500163079999	*	PETALOPROCTUS SP. A (GOLETA/MORRO BAY)
500163070101	*	PETALOPROCTUS TENUIS BOREALIS
551548010000	*	PETRICOLA SP.
500902119999	*	PHALLODRILUS SP. A (HONOLULU)
883560050100	*	PHANEROPON FURCATUS
720004015700	*	PHASCOLOSOMA PELMUM
510219010000	*	PHENACOLEPAS SP
500154030700	*	PHERUSA CAPULATA
500154030300	*	PHERUSA INFLATA
500154030800	*	PHERUSA NEOPAPILLATA
500154030100	*	PHERUSA PAPILLATA
511005019999	*	PHILINE SP. A (SCAMIT)
511004059998	*	PHILINE SP. B (MEC)
511005010000	*	PHILINE SPP.
510331040000	*	PHILLIPPIA SP.
611107020200	*	PHILOMEDES DENTATA
500106010200	*	PHOLOE GLABRA
500104020200	*	PHOLOIDES ASPERA
770000000000	*	PHORONIDA
770001020400	*	PHORONIS PSAMMOPHILA

MODC TAXONOMIC CODES
SORTED BY TAXON NAME

MODC CODE		TAXON NAME
770001020000	=	PHORONIS SP.
616926000000	S	PHOTIDAE
616926021000	=	PHOTIS BIFURCATA
616926020100	=	PHOTIS BREVIPES
616926021500	=	PHOTIS CALIFORNICA
616926021800	=	PHOTIS CONCHICOLA
616926020700	=	PHOTIS DENTATA
616926022000	=	PHOTIS KAPAPA
616926021100	=	PHOTIS LACIA
616926021900	=	PHOTIS MACROTICA
616926022200	=	PHOTIS MCINERNEYI
616926022300	=	PHOTIS PARVIDOMS
616926020000	=	PHOTIS SP.
616926029989	=	PHOTIS SP. A (GOLETA/MORRO BAY)
616926029999	=	PHOTIS SP. A (ORANGE CO. ONLY)
616926022100	=	PHOTIS VIUDA
616942000000	=	PHOXOCEPHALIDAE
500149020400	=	PHYLLOCHAETOPTERUS LIMICOLUS
500149020200	=	PHYLLOCHAETOPTERUS PROLIFICA
500149020300	=	PHYLLOCHAETOPTERUS SOCIALIS
500149020000	=	PHYLLOCHAETOPTERUS SPP.
500113141100	=	PHYLLODOCE (A) CUSPIDATA
500113010200	S	PHYLLODOCE (A) GROENLANDICA
500113010300	S	PHYLLODOCE (A) MEDIPAPILLATA
500113011500	S	PHYLLODOCE (A) PAPILLOSA
500113149989	=	PHYLLODOCE (ANAITIDES) SP. A (SCAMIT)
500113140000	=	PHYLLODOCE (ANAITIDES) SPP.
500113070100	S	PHYLLODOCE CASTANEA
500113140200	=	PHYLLODOCE HARTMANAE
500113011200	S	PHYLLODOCE LONGICEPS
500113010600	=	PHYLLODOCE MACULATA
500113010700	=	PHYLLODOCE MADEIRENSIS
500113011500	S	PHYLLODOCE MULTISERIATA
500113149999	=	PHYLLODOCE SP. A (GOLETA/MORRO BAY)
500113000000	=	PHYLLODOCIDAE
500140040100	=	PHYLO FELIX
879191030300	=	PHYSICULUS RASTRELLIGER
500122000000	=	PILARGIDAE
500122009998	=	PILARGIDAE SP. B (HONOLULU ONLY)
500122030100	=	PILARGIS BERKELEYI
500122030300	=	PILARGIS MACULATA
500122030000	=	PILARGIS SP.
500122019999	=	PILARGIS SP. A
500122039999	=	PILARGIS SP. A (GOLETA/MORRO BAY)
500122039989	=	PILARGIS SP. A (SCAMIT)
551501100100	=	PILLUCINA HAWAIIENSIS
551501100000	=	PILLUCINA SP.
883901120100	=	PIMELOMETOPON PULCHRUM
996000000000	=	PINGUITELLINA SP.
618906041500	=	PINNIXA BARNHARDTI
618906041600	=	PINNIXA FRANCISCANA
618906041700	=	PINNIXA HIATUS
618906041800	=	PINNIXA LONGIPES

MODC TAXONOMIC CODES
SORTED BY TAXON NAME

MODC CODE		TAXON NAME
618906040300	=	PINNIXA OCCIDENTALIS
618906040400	=	PINNIXA SCHMITTI
618906040000	=	PINNIXA SP.
618906042100	=	PINNIXA TOMENTOSA
618906041900	=	PINNIXA TUBICOLA
618906042000	=	PINNIXA WEYMOUTHI
618906000000	=	PINNOTHERIDAE
500123021000	=	PIONOSYLLIS EHLERSIAEFORMIS
500123020700	=	PIONOSYLLIS GESAE
500123029999	=	PIONOSYLLIS SP. A (HONOLULU ONLY)
500123029998	=	PIONOSYLLIS SP. B (HONOLULU ONLY)
500123020000	=	PIONOSYLLIS SPP.
882002011100	C	PIPEFISH KELP
500154050100	=	PIROMIS ERUCA
500154050500	=	PIROMIS HOSPITIS
500154059999	=	PIROMIS SP. A (GOLETA/MORRO BAY)
500154059989	=	PIROMIS SP. A (SCAMIT)
500154050000	=	PIROMIS SPP.
811703050100	=	PISASTER BREVISPINUS
500107010100	=	PISIONE REMOTA
500168071500	=	PISTA ALATA
500168071000	=	PISTA BREVIBRANCHIA
500168070100	=	PISTA CRISTATA
500168071600	=	PISTA DISJUNCTA
500168070200	=	PISTA FASCIATA
500168071200	=	PISTA MOOREI
500168070000	=	PISTA SP.
500168079998	=	PISTA SP. B (SCAMIT)
551509020200	S	PLATOMYSIA MEROEUM
390000000000	=	PLATYHELMINTHES
390601029989	=	PLATYHELMINTHES SP. A (KINNETICS ONLY)
390601029988	=	PLATYHELMINTHES SP. B (KINNETICS ONLY)
390601029997	=	PLATYHELMINTHES SP. C (GOLETA/MORRO BAY)
390601029987	=	PLATYHELMINTHES SP. C (KINNETICS ONLY)
390601029996	=	PLATYHELMINTHES SP. D (GOLETA/MORRO BAY)
390601029995	=	PLATYHELMINTHES SP. E (GOLETA/MORRO BAY)
390601029994	=	PLATYHELMINTHES SP. F (GOLETA/MORRO BAY)
390601029983	=	PLATYHELMINTHES SP. G (ENCINA/KLI)
390601029984	=	PLATYHELMINTHES SP. P (GOLETA/MORRO BAY)
500124050100	=	PLATYNEREIS BICANALICULATA
500124050300	=	PLATYNEREIS DUMERILII
884212110100	=	PLECTOBRANCHUS EVIDES
510346090100	=	PLESIOTROCHUS LUTEUS
512602030300	=	PLEUROBRANCHAEA CALIFORNICA
618310040100	=	PLEURONCODES PLANIPES
618310040000	=	PLEURONCODES SP.
885704160200	=	PLEURONICHTHYS DECURRENS
885704160300	=	PLEURONICHTHYS RITTERI
885704160400	=	PLEURONICHTHYS VERTICULIS
616943040900	=	PLEUSTES PLATYPA
616943000000	=	PLEUSTIDAE
616943050300	=	PLEUSYMPTES GLABER
616943059999	=	PLEUSYMPTES SP. A (ORANGE CO. ONLY)

NODC TAXONOMIC CODES
SORTED BY TAXON NAME

NODC CODE		TAXON NAME
616943050100	*	PLEUSYMTES SUBGLABER
510505091000	*	PLICIFUSUS INCISUS
510505090000	*	PLICIFUSUS SPP.
370407010600	*	PLUMULARIA ALICIA
370401080000	*	PLUMULARIA LAGENIFERA
370407010800	*	PLUMULARIA LAGENIFERA
370407010000	*	PLUMULARIA SPP.
883108130100	*	POACHER BLACKTIP
883108100100	C	POACHER PYGMY
883108010200	C	POACHER SOUTHERN SPEARNOSE
500121150400	*	PODARKE ANGUSTIFRONS
500121150100		PODARKE PUGETTENSIS
500121190400	*	PODARKEOPSIS BICANALICULATA
500121190100		PODARKEOPSIS BREVIPALPA
500121190300	*	PODARKEOPSIS GLABRA
500121199999	*	PODARKEOPSIS SP. A (GOLETA/MORRO BAY)
500121199989	*	PODARKEOPSIS SP. A (SCAMIT)
500121190000	*	PODARKEOPSIS SPP.
616944000000	*	PODOCERIDAE
616944040100	*	PODOCERUS CRISTATUS
616944040000	*	PODOCERUS SPP.
618701190600	*	PODOCHELA HEMPHILLI
618701190700	*	PODOCHELA LOBIFRONS
611300000000	A	PODOCOPA
611300009998	*	PODOCOPID SP. B (CSDOC/MEC/OC)
500146000000	*	POECILOCHAETIDAE
500146010100	*	POECILOCHAETUS JOHNSONI
500146010000	*	POECILOCHAETUS SP.
500146019999	*	POECILOCHAETUS SP. A (SCAMIT)
510376040400	*	POLINICES DRACONIS
510376040600	*	POLINICES LEWISI
510376042100		POLINICES RECLUSIANUS
510376040000	*	POLINICES SPP.
874303020200	*	POLYACANTHONOTUS LONGUS
500100000000	*	POLYCHAETA
500168081000	*	POLYCIRRUS CALIFORNICUS
500168081000	S	POLYCIRRUS PERPLEXUS
500168081200	*	POLYCIRRUS PLUMOSUS
500168080000	*	POLYCIRRUS SP.
500168089997	*	POLYCIRRUS SP. III (CSDOC/MEC)
390600009993	*	POLYCLADIA SP. G (ORANGE COUNTY ONL
390600009992	*	POLYCLADIA SP. H (ORANGE COUNTY ONL
390600009990	*	POLYCLADIA SP. J (ORANGE COUNTY ONL
390600009989	*	POLYCLADIA SP. K (ORANGE CO. ONLY)
390600009985	*	POLYCLADIA SP. M (ORANGE CO. ONLY)
390600009982	*	POLYCLADIA SP. R (ORANGE COUNTY ONL
390600009979	*	POLYCLADIA SP. U (ORANGE COUNTY ONL
390600000000	A	POLYCLADIDA
390600009969	*	POLYCLADIDA SP A (OXNARD ONLY)
390600009967	*	POLYCLADIDA SP C (OXNARD ONLY)
390600009963	*	POLYCLADIDA SP G (OXNARD ONLY)
390600009999	*	POLYCLADIDA SP. A (ORANGE CO. ONLY)
390600009970	*	POLYCLADIDA SP. AA (ORANGE CO. ONLY)

MODC TAXONOMIC CODES
SORTED BY TAXON NAME

MODC CODE		TAXON NAME
390600009998	=	POLYCLADIDA SP. B (ORANGE CO. ONLY)
390600009997	=	POLYCLADIDA SP. C (ORANGE CO. ONLY)
390600009995	=	POLYCLADIDA SP. E (ORANGE CO. ONLY.
390600009977	=	POLYCLADIDA SP. W (CSDOC/MEC)
390600009972	=	POLYCLADIDA SP. 27 (CSDOC/MEC)
390600009970		POLYCLADIDA SP. 28 (CSDOC/MEC)
390600009971	=	POLYCLADIDA SP. 28 (ORANGE CO. ONLY)
390600009973	=	POLYCLADIDA SP. 29 (CSDOC/MEC)
840302040100	=	POLYCLINUM PLANUM
500143041900	=	POLYDORA ARMATA
500143042900	=	POLYDORA BRACHYCEPHALA
500143043100	=	POLYDORA CARDALIA
500143270500	S	POLYDORA CITRONA (PART)
500143043400	=	POLYDORA CONVEXA
500143044300	=	POLYDORA HETEROCHAETA
500143041100	=	POLYDORA LIGNI
500143041500	=	POLYDORA LIMICOLA
500143044200	=	POLYDORA MARICA
500143043000	=	POLYDORA NEOCARDALIA
500143043600	=	POLYDORA NUCHALIS
500143040200	=	POLYDORA PLENA
500143040200		POLYDORA SOCIALIS
500143040000	=	POLYDORA SP.
500143210000	=	POLYDORELLA SP.
500102000000	=	POLYNOIDAE
500103020100	=	POLYODONTES LUPINA
500103020000	=	POLYODONTES SP.
500103000000	=	POLYODONTIDAE
500158080100	=	POLYOPHTHALMUS PICTUS
530000000000	=	POLYPLACOPHORA
616920120000	=	PONTAGENEIA SPP.
616920120400	=	PONTOGENEIA INTERMEDIA
616920120800	=	PONTOGENEIA ROSTRATA
878301010700	=	PORICHTHYS MYRIASTER
878301010100		PORICHTHYS NOTATUS
360000000000	=	PORIFERA
360000009999	=	PORIFERA SP. A
618901061300	=	PORTUNUS XANTUSII
500170229999	=	POTAMETHUS SP. A (CSDOC/MEC)
500170229989	=	POTAMETHUS SP. A (EMCINA/KLI)
500170220000	=	POTAMETHUS SPP.
500170060700	=	POTAMILLA INTERMEDIA
500170060800	=	POTAMILLA OCCELATA
500170061000		POTAMILLA SOCIALIS
500170060000	=	POTAMILLA SPP.
510320170100	=	POWELLSETIA FALLAX
616934570100	=	PRACHYNELLA LODO
500163090300	=	PRAXILLELLA AFFINIS
500163090301	=	PRAXILLELLA AFFINIS PACIFICA
500163090100	=	PRAXILLELLA GRACILIS
500163090000	=	PRAXILLELLA SP
500163180200	=	PRAXILLURA MACULATA
740001010100	=	PRIAPULUS CAUDATUS

NODC TAXONOMIC CODES
SORTED BY TAXON NAME

NODC CODE		TAXON NAME
884212110100	C	PRICKLEBACK BLUEBARRED
870802060100	=	PRIONACE GLAUCA
500143050800	=	PRIONOPROIO CIRROBRANCHIATA
500143050200	=	PRIONOSPIO CIRRIFERA
500143050200	S	PRIONOSPIO DELTA
500143051600	=	PRIONOSPIO LOBULATA
500143050100	=	PRIONOSPIO MALMGRENI
500143050101	=	PRIONOSPIO MALMGRENI DUBIA
500143050200	S	PRIONOSPIO MULTIBRANCHIATA
500143050200	S	PRIONOSPIO PATAGONICA
500143050700		PRIONOSPIO PYGMAEA
500143050000	=	PRIONOSPIO SP.
500143059999	=	PRIONOSPIO SP. A (SCAMIT)
500143059988	=	PRIONOSPIO SP. B (GOLETA/MORRO BAY)
500143059995	=	PRIONOSPIO SP. B (ORANGE CO. ONLY)
500143059998	=	PRIONOSPIO SP. B (SCAMIT)
500143059996	=	PRIONOSPIO SP. D (ORANGE CO. ONLY)
500143050600	=	PRIONOSPIO STEENSTRUPI
615407020000	=	PROCAMPYLASPIS SP.
615407029999	=	PROCAMPYLASPIS SP. A (SCAMIT)
500123010100	S	PROCERAEA CORNUTA
500123010000	=	PROCERAEA SPP.
518000000000	=	PROSOBRANCHIA
430604010100	=	PROSORHOCHMUS ALBIDUS
500136020100	=	PROTODORVILLEA GRACILIS
500136020600	=	PROTODORVILLEA PUGETTENSIS
500136029999	=	PROTODORVILLEA SP. A (HONOLULU ONLY)
500202019999	=	PROTODRILLUS SP. A (HONOLULU ONLY)
616926030700	=	PROTOMEDEIA ARTICULATA
616926031200	=	PROTOMEDEIA PRUDENS
616926030000	=	PROTOMEDEIA SPP.
616926030700		PROTOMEDEIA SPP.
616926030800	=	PROTOMEDEIA ZOTEA
551547070300	=	PROTOTHACA LACINIATA
551547070000	=	PROTOTHACA SP.
500173110300	=	PROTULA SUPERBA
512504020000	=	PROVOTELLA SP.
551547050100	=	PSEPHIDIA LORDI
390701020100	=	PSEUDOCEROS CANADENSIS
551551030200	=	PSEUDOCHAMA EXOGYRA
616934580100	=	PSEUDOKOROGA RIMA
615301190100	=	PSEUDOMMA BERKELEYI
615301193600	=	PSEUDOMMA CALIFORNICA
615301190000	=	PSEUDOMMA SPP.
500143150100	=	PSEUDOPOLYDORA KEMPI
500170060700	S	PSEUDOPOTAMILLA INTERMEDIA
500170061000	=	PSEUDOPOTAMILLA SOCIALIS
500170060000	S	PSEUDOPOTAMILLA SPP.
551509010400	=	PSEUDOPYTHINA MYACIFORMIS
550901020000	=	PTERIA SP
500113179999	=	PTEROCIRRUS SP. A (GOLETA/MORRO BAY)
500113179998	=	PTEROCIRRUS SP. B (GOLETA/MORRO BAY)
510501180200	=	PTEROPURPURA FESTIVA

MODC TAXONOMIC CODES
SORTED BY TAXON NAME

MODC CODE		TAXON NAME
510501180200	S	PTEROPURPURA MACROPTERA
161104020300	=	PTEROSIPHONIA DENDROIDEA
618701050400	=	PUGETTIA DALLI
618701050200	=	PUGETTIA RICHII
511001050200	=	PUPA PUDICA
511001050000	=	PUPA SP
600000000000	A	PYCNOGONIDA
500143130200	=	PYGOSPIO ELEGANS
618306130500	=	PYLOPAGURUS DIEGENSIS
618306130400	=	PYLOPAGURUS HOLMESI
618306130000	=	PYLOPAGURUS SPP.
510801030000	=	PYRAMIDELLA SP
510801039999	=	PYRAMIDELLA SP. A (HONOLULU)
510801039998	=	PYRAMIDELLA SP. B (HONOLULU)
510801039997	=	PYRAMIDELLA SP. C (HONOLULU)
510801000000	=	PYRAMIDELLIDAE
510801190100	=	PYRGULINA OODES
510801190000	=	PYRGULINA SP.
618701230000	=	PYROMAIA SPP.
618701230300	=	PYROMAIA TUBERCULATA
840801000000	=	PYROSOMIDAE
883544250100	C	QUEENFISH
500174020100	=	QUESTA CAUDICIRRA
500174029999	=	QUESTA SP. A (HONOLULU ONLY)
871304010400	=	RAJA INORNATA
871304010800	=	RAJA RHINA
618603090300	=	RANDALLIA BULLIGERA
618603090200	=	RANDALLIA ORNATA
618603090000	=	RANDALLIA SPP.
500150080100	=	RARICIRRUS MACULATUS
871602010100	C	RATFISH
884003030200	=	RATHBUNELLA HYROPLECTA
811703220100	=	RATHBURMASTER CALIFORNICUS
871307020200	C	RAY BAT
871303010100	C	RAY PACIFIC ELECTRIC
375303010300	=	RENILLA KOLLIKERI
618910000000	=	RETROPLUMIDAE
511004010200	S	RETUSA HARPA
511013010800	=	RETUSA XYSTRUM
616920130800	=	RHACHOTROPIS GRIMALDI
616920130400	=	RHACHOTROPIS INFLATA
616920130900	=	RHACHOTROPIS KLEMENS
616920130700	=	RHACHOTROPIS OCULATA
616920139999	=	RHACHOTROPIS SP. A (KINNETICS ONLY)
616920130000	=	RHACHOTROPIS SPP.
616920130000		RHACHOTROPIS SPP.
551552020100	=	RHAMPHIDONTA RETIFERA
500129040200	=	RHAMPHOBRACHIUM LONGISETOSUM
500129040400	=	RHAMPHOBRANCHIUM CRISTOBALENSIS
616942150400	=	RHEPOXYNIUS ABRONIUS
616942150300	=	RHEPOXYNIUS BICUSPIDATUS
616942150500	=	RHEPOXYNIUS DABOIUS
616942150100		RHEPOXYNIUS EPISTOMUS

NODC TAXONOMIC CODES
SORTED BY TAXON NAME

NODC CODE		TAXON NAME
616942150600	*	RHEPOXYNIUS HETEROCUSPIDATA
616942150700	*	RHEPOXYNIUS LUCUBRANS
616942150800	*	RHEPOXYNIUS MENZIESI
616942151100	*	RHEPOXYNIUS OBTUSIDENS
616942150000	*	RHEPOXYNIUS SPP.
616942150000		RHEPOXYNIUS SPP.
616942150900	*	RHEPOXYNIUS STENODES
616942151000	*	RHEPOXYNIUS VARIATUS
871302010400	*	RHINOBATOS PRODUCTUS
344800000000	*	RHIZOPODEA GRANULORETICULOSIA FORAM.
500163100100	*	RHODINE BITORQUATA
995300000000	*	RHYACODRILUS SP A
430000000000		RHYNCHOCOELA
500143120100		RHYNCHOSPIO GLUTAEA
781615020200	*	RHYNCHOZOON ROSTRATUM
511001040200	*	RICTAXIS PAINEI
511001040100	*	RICTAXIS PUNCTOCAELATUS
511001040102	*	RICTAXIS PUNCTOCAELATUS VANCOUVERENSIS
511001010100	S	RICTAXIS PUNCTOSTRIATUS
511001040000	*	RICTAXIS SP.
510327010000	*	RISSOELLA SP
510320052900	*	RISSOINA EPHAMILLA
510320053000	*	RISSOINA MILTOZONA
510320053100	*	RISSOINA PULCHELLA
510320052800	*	RISSOINA TRITICEA
510320053200	*	RISSOINA TURRICULA
551510010000		ROCHEFORTIA SP
882601012400	C	ROCKFISH BLUE
882601010300	C	ROCKFISH BROWN
882601014500	C	ROCKFISH CALICO
882601010800	C	ROCKFISH COPPER
882601015500	C	ROCKFISH FLAG
882601014300	C	ROCKFISH GREENSPOTTED
882601011200	C	ROCKFISH GREENSTRIPED
882601015700	C	ROCKFISH HALFBANDED
882601015800	C	ROCKFISH OLIVE
882601013200	C	ROCKFISH ROSY
882601011900	C	ROCKFISH SHORTBELLY
882601011100	C	ROCKFISH SPLITNOSE
882601014800	*	ROCKFISH SQUARESPOT
882601013500	*	ROCKFISH STRIPETAIL
882601012300	*	ROCKFISH VERMILION
883544240100	*	RONCADOR STEARNSI
884003030200	C	RONQUIL SMOOTH
570402010100	*	ROSSIA PACIFICA
616906120400	S	RUDILEMBOIDES STENOPROPODUS
611106010300	*	RUTIDERMA LOMAE
611106010100	*	RUTIDERMA ROSTRATA
611106010000	*	RUTIDERMA SP.
611106019999	*	RUTIDERMA SP. A (KINNETICS ONLY)
611106019998	*	RUTIDERMA SP. B (KINNETICS ONLY)
500170089999	*	SABELLA SP. A (GOLETA/MORRO BAY)
500170089989	*	SABELLA SP. A (ORANGE CO. ONLY)

NODC TAXONOMIC CODES
SORTED BY TAXON NAME

NODC CODE		TAXON NAME
500165020100	*	SABELLARIA CEMENTARIUM
500165020500	*	SABELLARIA GRACILIS
500165020000	*	SABELLARIA SPP.
500165000000	*	SABELLARIIDAE
500170000000	*	SABELLIDAE
500167060000	*	SABELLIDES SPP.
510353080100	*	SABINELLA BAKERI
841101030400	*	SALPA TILSI-COSTATA
841101000000	*	SALPIDAE
500167140200	*	SAMYTHA CALIFORNIENSIS
500167140100	*	SAMYTHA SEXCIRRATA
500167140000	*	SAMYTHA SP.
500167159999	*	SAMYTHELIA SP. A (HONOLULU ONLY)
885703011100	C	SANDAB LONGFIN
885703010100	C	SANDAB PACIFIC
885703010200	C	SANDAB SPECKLED
510222110000	*	SANSONIA SP
885003020100	*	SARDA CHILENSIS
611104010000	*	SARSIELLA SP.
611104019989	*	SARSIELLA SP. A (KINMETICS ONLY)
611104019998	*	SARSIELLA SP. B (ORANGE CO.)
611104019997	*	SARSIELLA SP. C (ORANGE CO.)
500129130100		SARSONUPHIS PARVA
551706050200	*	SAXICAVELLA PACIFICA
551547020200	*	SAXIDOMUS NUTTALLI
883528120400	C	SCAD MEXICAN
510350010000	S	SCALA SP.
510350010000	S	SCALARIA SP.
500157010100	*	SCALIBREGMA INFLATUM
500157000000	*	SCALIBREGMIDAE SPP.
510346120000	*	SCALIOLA SP.
613201000000	*	SCALPELLIDAE
613201010400		SCALPELLUM CALIFORNICUM
613201010400	S	SCALPELLUM OSSEUM
511004030000	*	SCAPHANDER SPP.
560000000000	A	SCAPHOPODA
500167250100	*	SCHISTOCOMUS HILTONI
500167250000	*	SCHISTOCOMUS SP.
500167259999	*	SCHISTOCOMUS SP. A (GOLETA/MORRO BAY)
500157000000		SCHISTOCOMUS SP. A (SCAMIT)
500136050500		SCHISTOMERINGOS CAECA
500136050700	*	SCHISTOMERINGOS JAPONICA
500136050100	*	SCHISTOMERINGOS LONGICORNIS
500136050400	*	SCHISTOMERINGOS RUDOLPHI
500136050000	*	SCHISTOMERINGOS SP.
619101090100	*	SCHMITTIUS POLITUS
500168180300	*	SCIONELLA ESTEVANICA
500168180200	*	SCIONELLA JAPONICA
510202011200	*	SCISSURELLA CORONATA
611107040100	*	SCLEROCONCHA TRITUBERCULATA
618907030100	*	SCLEROPLAX GRANULATA
375901019999	*	SCOLANTHUS SP. A
375901019989	*	SCOLANTHUS SP. A (KINMETICS ONLY)

NODC TAXONOMIC CODES
SORTED BY TAXON NAME

NODC CODE		TAXON NAME
375901010000	*	SCOLANTHUS SPP.
500143120100	S	SCOLECOLEPIS GLUTAEA
500143201500	*	SCOLELEPIS ACUTA
500143200700		SCOLELEPIS FOLIOSA
500143200700	S	SCOLELEPIS FOLIOSA OCCIDENTALIS
500143200000	*	SCOLELEPIS SP.
500143200100	*	SCOLELEPIS SQUAMATA
500140031100	*	SCOLOPLOS ACMECEPS
500140030500	*	SCOLOPLOS ACUTUS
500140030100	*	SCOLOPLOS ARMIGER
500140010200	S	SCOLOPLOS ELONGATA
500140030100	S	SCOLOPLOS ELONGATA (PART)
500140030000	*	SCOLOPLOS SPP.
885003030100	*	SCOMBER JAPONICUS
882601061600	*	SCORPAENA GLUTTATA
882601061600	C	SCORPIONFISH CALIFORNIA
781528010600	*	SCRUPOCELLARIA DIEGENSIS
883102160800	C	SCULPIN YELLOWCHIN
618701070100	*	SCYRA ACUTIFRONS
375401029989	*	SEA PEN #11 (CSDOC/MEC)
883560110100	C	SEAPERCH PINK
883560050100	C	SEAPERCH WHITE
616946010800	*	SEBA EKAPUU
882601016100	*	SEBASTES ?
882601010300	*	SEBASTES AURICULATUS
882601010800	*	SEBASTES CAURINUS
882601014300	*	SEBASTES CHLOROSTICTUS
882601014500	*	SEBASTES DALLI
882601011100	*	SEBASTES DIPLOPROA
882601011200	*	SEBASTES ELONGATUS
882601016300	*	SEBASTES ENSIFER
882601014800		SEBASTES HOPKINSI
882601011900	*	SEBASTES JORDANI
882601012300		SEBASTES MINIATUS
882601012400	*	SEBASTES MYSTINUS
882601012700	*	SEBASTES PAUCISPINUS
882601013200	*	SEBASTES ROSACEUS
882601016600	*	SEBASTES ROSENBLATTI
882601015500	*	SEBASTES RUBRIVINCTUS
882601013500		SEBASTES SAXICOLA
882601015700	*	SEBASTES SEMICINCTUS
882601015800	*	SEBASTES SERRANOIDES
882601019999	*	SEBASTES SP. A (KINNETICS ONLY)
882601019998	*	SEBASTES SP. B (KINNETICS ONLY)
882601010000	*	SEBASTES SPP.
882601020100	*	SEBASTOLOBUS ALACANUS
551535010600	*	SEMELE DECISA
510503100100	*	SEMINELLA VARIA
883901110100	C	SENORITA
550701190200	*	SEPTIFER BRYANAE
550701190000	*	SEPTIFER SP
883544250100	*	SERIPHUS POLITUS
616103000000	*	SEROLIDAE

NODC TAXONOMIC CODES
SORTED BY TAXON NAME

NODC CODE		TAXON NAME
616103010200	*	SEROLIS CARINATA
500173049999	*	SERPULA SP. A (HONOLULU ONLY)
500173000000	*	SERPULIDAE
870802060100	C	SHARK BLUE
870802040500	C	SHARK BROWN SMOOTHHOUND
883901120100	C	SHEEPHEAD CALIFORNIA
617701040900	*	SICYONIA INGENTIS
500106000000	*	SIGALIONIDAE
500122029999	*	SIGAMBRA SP. A (HONOLULU ONLY)
500122020100	*	SIGAMBRA TENTACULATA
500113150100	*	SIGE CALIFORNIENSIS
500113150300	*	SIGE MONTEREYENSIS
551529019100	*	SILIQUA LUCIDA
616001150100	*	SILOPHASMA GEMINATA
510372020502	S	SIMNIA AEQUALIS VIDLERI
510372020300	*	SIMNIA LOEBBECKEANA
510372029999	*	SIMNIA SP. A (CSDOC/MEC)
510372020502	*	SIMNIA VIDLERI
615701060100	*	SIMELOBUS STANFORDI
510376050300	*	SINUM SCOPULOSUM
560002000000	*	SIPHONODENTALIIDAE
720001031200	*	SIPHONOSOMA INGENS
720000000000	*	SIPUNCULA
720000009998	*	SIPUNCULA SP. B (HONOLULU)
871304010400	C	SKATE CALIFORNIA
871304010800	C	SKATE LONGNOSE
510217050200	*	SMARAGDIA BRYANAE
883109080000	C	SNAILFISHES
616934410200	*	SOCARNOIDES EUGENOVI
885703110200	C	SOLE BIGMOUTH
885704160200	C	SOLE CURLFIN
885704120100	*	SOLE DOVER
885704130100	*	SOLE ENGLISH
885703150100	C	SOLE FANTAIL
885704050100	*	SOLE REX
885704110100	C	SOLE SLENDER
550401010800	*	SOLEMYA PANAMENSIS
550401010600	*	SOLEMYA REIDI
550401010000	*	SOLEMYA SP.
550401010700	*	SOLEMYA VALVULUS
551529020400	*	SOLEN ROSACEAUS
430605011800	*	SOLEN SICARIUS
551529020100	*	SOLEN SICARIUS
551529020000	*	SOLEN SP.
551529020200	*	SOLEN VIRIDIS
500167360100	*	SOSANE OCCIDENTALIS
500126000000	*	SPHAERODORIDAE
500126020300	*	SPHAERODOROPSIS BISERIALIS
500126020000	*	SPHAERODOROPSIS SPP.
500126020300	S	SPHAERODORUM BISERIALIS
616102000000	*	SPHAEROMATIDAE
500123081600	*	SPHAEROSYLLIS BILOBATA
500123080600	*	SPHAEROSYLLIS BRANDHORSTI

MODC TAXONOMIC CODES
SORTED BY TAXON NAME

MODC CODE		TAXON NAME
500123080800	*	SPHAEROSYLLIS CALIFORNIENSIS
500123082100	*	SPHAEROSYLLIS CAPENSIS
500123089989	*	SPHAEROSYLLIS SP. A (ORANGE CO. ONLY)
500123089998	*	SPHAEROSYLLIS SP. B (GOLETA/MORRO BAY)
500123081400	*	SPHAEROSYLLIS SUBLAEVIS
500143071200	*	SPIO PACIFICA
500143071100	*	SPIO PUNCTATA
500143079999	*	SPIO SP. A (HONOLULU ONLY)
500143070000	*	SPIO SPP.
500149030200	*	SPIOCHAETOPTERUS COSTARUM
500149030201	*	SPIOCHAETOPTERUS COSTARUM OCULATUS
500143000000	*	SPIONIDAE
500143100800	*	SPIOPHANES ANOCULATA
500143100400	*	SPIOPHANES BERKELEYORUM
500143100100	*	SPIOPHANES BOMBYX
500143100200	*	SPIOPHANES FIMBRIATA
500143100200		SPIOPHANES KROYERI
500143100600	*	SPIOPHANES MISSIONENSIS
500143100000	*	SPIOPHANES SPP.
500143100500	*	SPIOPHANES WIGLEYI
612605010100	*	SPIOPHANICOLA SPINULOSUS
511301010000	*	SPIRATELLA SP.
617916020200	*	SPIRONTOCARIS LAMELLICORNIS
617916021200	*	SPIRONTOCARIS SICA
617916020400	*	SPIRONTOCARIS SNYDERI
617916020000	*	SPIRONTOCARIS SPP.
500173060200	*	SPIRORBIS SPIRILLUM
551525010800	*	SPISULA PLANULATA
871001020100	*	SQUALUS ACANTHIAS
884014030300	C	STARGAZER SMOOTH
500136050500	S	STAUROCEPHALUS CAECUS
500136050500		STAUROMEREIS CAECUS
500136050000	S	STAUROMEREIS SP. (PART)
500113160100	*	STEGOOA CALIFORNIENSIS
616943061200	*	STENOPLEUSTES MONOCUSPIS
616943060000	*	STENOPLEUSTES SPP.
616943061300		STENOPLEUSTES SUBGLABER
616948100500	*	STENOTHOE ESTACOLA
616948100600	*	STENOTHOE FRECANDA
616948109998	*	STENOTHOE SP. B (HONOLULU)
616948100000	*	STENOTHOE SPP.
616948000000	*	STENOTHOIDAE
616948110800	*	STENOTHOIDES BICOMA
616948110000	*	STENOTHOIDES SPP.
500159000000	*	STERNASPIDAE
500159010200	*	STERNASPIS FOSSOR
500106030100	*	STHENELAIS BERKELEYI
500106070300	S	STHENELAIS FIMBRIARUM
500106030600	*	STHENELAIS FUSCA
500106030000	*	STHENELAIS SP.
500106039999	*	STHENELAIS SP. A (GOLETA/MORRO BAY)
500106039989	*	STHENELAIS SP. A (HONOLULU ONLY)
500106030500	*	STHENELAIS TERTIAGLABRA

MODC TAXONOMIC CODES
SORTED BY TAXON NAME

MODC CODE		TAXON NAME
500106030700	*	STHENELAIS VERRUCULOSA
500106120200	*	STHENELANELLA UNIFORMIS
500106070300	*	STHENOLEPIS FIMBRIARUM
881801010100	C	STICKLEBACK THREE-SPINE
871305030200	C	STINGRAY ROUND
619100000000	*	STOMATOPODA
610908030300	*	STREBLOCERAS ANNULATUM
500168250300	*	STREBLOSOMA CRASSIBRANCHIA
500168250000	*	STREBLOSOMA SP.
500168259998	*	STREBLOSOMA SP. B (SCAMIT)
500143180100	*	STREBLOSPIO BENEDICTI
500143189998	*	STREBLOSPIO SP. B (SCAMIT)
500123160000	*	STREPTOSYLLIS SPP.
814903020400	*	STRONGYLOCENTROTUS PURPURATUS
840601050000	*	STYELA SP
375401010300	*	STYLATULA ELONGATA
375401019994	*	STYLATULA SP. 6 (MEC)
375401010000	*	STYLATULA SPP.
510346110100	*	STYLIFERINA GONIOCHILA
390603010500	*	STYLOCHUS TRIPARTITUS
500102270200	*	SUBADYTE MEXICANA
500102279999	*	SUBADYTE SP. A (SAN DIEGO/LA)
500102270000	*	SUBADYTE SPP.
510601040200	*	SUBCANCILLA FLAMMEA
510601040100		SUBCANCILLA FOVEOLATA
375400000000	A	SUBSELLIFLORAE
511013010800	S	SULCORETUSA XYSTRUM
883560040100	C	SURFPERCH WALLEYE
500123000000	*	SYLLIDAE
500123009999	*	SYLLIDAE SP. A (HONOLULU ONLY)
500123150000	*	SYLLIDES SPP.
500123009989	*	SYLLINAE SP. A (HONOLULU ONLY)
500123050900	*	SYLLIS ADAMANTEA
500123030800	*	SYLLIS ELONGATA
500123030200	*	SYLLIS GRACILIS
500123032100	*	SYLLIS HYPERIONI
885802011600	*	SYMPHURUS ATRICAUDA
616943061300	*	SYMPLEUSTES SUBGLABER
817801020000	S	SYNAPTA SP.
817801000000	*	SYNAPTIDAE
510210180300	*	SYNAPTOCOCHLEA CONCINNA
616937140300	*	SYNCHELIDIUM RECTIPALMUM
616937140200	*	SYNCHELIDIUM SHOEMAKERI
616937140000	*	SYNCHELIDIUM SP.
500122059998	*	SYNELMIS SP. B (HONOLULU ONLY)
882002011100	*	SYNGNATHUS CALIFORNIENSIS
616202020100	*	SYNIDOTEA BICUSPIDA
616202021100	*	SYNIDOTEA CALCAREA
616202021200	*	SYNIDOTEA HARFORDI
616202021300	*	SYNIDOTEA MAGNIFICA
616202021400	*	SYNIDOTEA MEDIA
616202020000	*	SYNIDOTEA SP.
876202010300	*	SYNODUS LUCIOCEPS

MODC TAXONOMIC CODES
SORTED BY TAXON NAME

MODC CODE		TAXON NAME
616950000000	*	SYMOPIIDAE
616950030200	*	SYRRHOE LONGIFRONS
616950030000	*	SYRRHOE SP.
616951000000	*	TALITRIDAE
615500000000	A	TANAIDACEA
500141080100		TAUBERIA GRACILIS
500141080101		TAUBERIA GRACILIS OCULATA
500141080200	*	TAUBERIA MULTIBRANCHIATA
500141140100	S	TAUBERIA OCULATA
616102010300	*	TECTICEPS CONVEXA
500902189999	*	TECTIDRILIS SP. A (HONOLULU)
500902180100	*	TECTIDRILUS DIVERSUS
551531020300	*	TELLINA ARENICA
551531023300	*	TELLINA BODEGENSIS
551531020400	*	TELLINA BUTTONI
551531020300		TELLINA CARPENTERI
551531024700	*	TELLINA IDAE
551531020400		TELLINA MODESTA
551531027300	*	TELLINA OAHUANA
551531020000	*	TELLINA SP.
551531029999	*	TELLINA SP. A (SCAMIT)
551531029998	*	TELLINA SP. B (HONOLULU)
551531029997	*	TELLINA SP. C (HONOLULU)
551531020300	S	TELLINA VARIEGATA (PART)
551531000000	*	TELLINIDAE
500102230200		TENONIA PEDROANA
500102230200		TENONIA PRIOPS
510604010000	*	TERBRA SP
510604019999	*	TERBRA SP A
510604019998	*	TERBRA SP B
500168000000	*	TEREBELLIDAE
500169010300	*	TEREBELLIDES CALIFORNICA
500169019998	*	TEREBELLIDES SP. B (LOS ANGELES ONLY)
500169019997	*	TEREBELLIDES SP. C (SCAMIT)
500169010000	*	TEREBELLIDES SPP.
500169010100	*	TEREBELLIDES STROEMI
510604011300	*	TEREBRA DANAI
510604011100	*	TEREBRA PEDROANA
430606021800	*	TETRASTEMMA ALBIDA
430606020300	*	TETRASTEMMA CANDIDUM
430606020900	*	TETRASTEMMA NIGRIFRONS
430606020000	*	TETRASTEMMA SPP.
781517010200	*	THALAMOPORELLA CALIFORNICA
781517010000	*	THALAMOPORELLA SPP.
500106060100	*	THALENESSA SPINOSA
841100000000	*	THALIACEA SALPIDA
510210220200	*	THALOTIA RUBRA
510210220100	*	THALOTIA SUBANGULATA
500150030700	*	THARYX MARIONI
500150030100	*	THARYX MONILARIS
500150030000	*	THARYX SP.
500150039989	*	THARYX SP. A (EMCIMA/KLI)
500150039999	*	THARYX SP. A (SCAMIT)

MODC TAXONOMIC CODES
SORTED BY TAXON NAME

MODC CODE		TAXON NAME
500150039998	=	THARYX SP. B (SCAMIT)
500150039987	=	THARYX SP. C (ENCINA/KLI)
500150039997	=	THARYX SP. C (SCAMIT)
500150030800	=	THARYX TESSELATA
500168100500	=	THELEPUS JAPONICUS
500168100400	=	THELEPUS SETOSUS
551535050100	=	THEORA LUBRICA
375103019998	=	THESEA SP. B (CSDOC/MEC/OC)
345103010000	=	THESEA SPP.
375103010000	=	THESEA SPP.
882601020100	C	THORNYHEAD SHORTSPINE
552008020400	=	THRACIA CURTA
552008020000	=	THRACIA SP.
552008020300	=	THRACIA TRAPEZOIDES
552008000000	=	THRACIIDAE
551502030100	=	THYASIRA FLEXUOSA
551502030101	=	THYASIRA FLEXUOSA FLEXUOSA
551502030102	=	THYASIRA FLEXUOSA GOULDI
551502030103	=	THYASIRA FLEXUOSA SARSI
551502032500	=	THYASIRA GOULDI
551502030100	S	THYASIRA INAEQUALIS
551502030100	S	THYASIRA INEQUALIS
551502030100	S	THYASIRA PLANA
720002016900	S	THYSANOCARDIA NIGRA
616950050300	=	TIRON BIOCELLATA
616950050200	=	TIRON BIOCULATA
616950050500	=	TIRON TROPAKIS
513401020100	=	TOCHUINA TETRAGUETRA
510323000000	S	TORNIDAE
871303010100	=	TORPEDO CALIFORNICA
883528010100	=	TRACHURUS SYMMETRICUS
551522070400	=	TRACHYCARDIUM QUADRAGENARIUM
551547010000	=	TRANSENNELLA SP.
551547010100	=	TRANSENNELLA TANTILLA
500158040100	=	TRAVISIA BREVIS
500158041000	=	TRAVISIA GIGAS
500158040000	=	TRAVISIA SPP.
616942150100	S	TRICHOPHOXUS EPISTOMUS
510214011100	=	TRICOLIA PULLOIDES
510214011000	=	TRICOLIA RUBRILINEATA
510214011300	=	TRICOLIA VARIABILIS
510214011000		TRICOLIA VARIEGATA
514107030000	=	TRINCHESIA SPP.
510348010000	=	TRIPHORA SP
617101060100	=	TRITELLA LAEVIS
617101060200	=	TRITELLA PILIMANA
513401010400	=	TRITONIA FESTIVA
513401010000	=	TRITONIA SPP.
513401010000		TRITONIA SPP.
510210210100	=	TROCHUS INTEXTUS
500154030000	=	TROPHONIA SP.
500902000000	=	TUBIFICIDAE
500902009995	=	TUBIFICIDAE SP. E (HONOLULU)

MODC TAXONOMIC CODES
SORTED BY TAXON NAME

MODC CODE		TAXON NAME
500902090900	=	TUBIFICOIDES BAKERI
500902090100	=	TUBIFICOIDES BROWNAE
500902090000	=	TUBIFICOIDES SP.
430201000000	=	TUBULANIDAE SPP.
430201010500	=	TUBULANUS ALBOCINCTUS
430201010900	=	TUBULANUS CINGULATUS
430201010600	=	TUBULANUS FRENATUS
430201010800	=	TUBULANUS MOTHUS
430201010400	=	TUBULANUS PELLUCIDUS
430201010200	=	TUBULANUS POLYMORPHUS
430201019998	=	TUBULANUS SP. B (EMCINA/KLI)
430201010000	=	TUBULANUS SPP.
370303020000	=	TUBULARIA SPP.
781002010000	=	TUBULIPORA SPP.
781002010500	=	TUBULIPORA TUBA
510212030700	=	TURBO SANDWICENSIS
510801029900	=	TURBONILLA (CHEMNITZIA) SP.
510801029939	=	TURBONILLA (CHEMNITZIA) SP. A (HONOLULU)
510801029959	=	TURBONILLA (CHEMNITZIA) SP. A (HONOLULU)
510801029998	=	TURBONILLA (CHEMNITZIA) SP. B
510801029997	=	TURBONILLA (CHEMNITZIA) SP. C
510801029996	=	TURBONILLA (CHEMNITZIA) SP. D
510801029995	=	TURBONILLA (CHEMNITZIA) SP. E
510801029994	=	TURBONILLA (CHEMNITZIA) SP. F
510801029993	=	TURBONILLA (CHEMNITZIA) SP. G
510801029990	=	TURBONILLA (CHEMNITZIA) SP. J
510801029992	=	TURBONILLA (CHEMNITZIA) SP. M
510801109993	=	TURBONILLA (PYRGISCUS) SP. G
510801029979	=	TURBONILLA (PYRGOLAMPROS) SP. A (EMCINA/
510801022100	=	TURBONILLA ACRA
510801113400	=	TURBONILLA AURANTIA
510801113200	=	TURBONILLA CORNELLIANA
510801102100	=	TURBONILLA KELSEYI
510801113300	=	TURBONILLA LYALLI
510801105400	=	TURBONILLA MUTTINGI
510801025800	=	TURBONILLA PAINEI
510801107600	=	TURBONILLA RAYMONDI
510801029949	=	TURBONILLA SP. A (SAN DIEGO)
510801029989	=	TURBONILLA SP. A (SCAMIT)
510801029948	=	TURBONILLA SP. B (SAN DIEGO)
510801029988	=	TURBONILLA SP. B (SCAMIT)
510801029947	=	TURBONILLA SP. C (SAN DIEGO)
510801029987	=	TURBONILLA SP. C (SCAMIT)
510801029946	=	TURBONILLA SP. D (SAN DIEGO)
510801029986	=	TURBONILLA SP. D (SCAMIT)
510801029975	=	TURBONILLA SP. E (GOLETA/MORRO BAY)
510801029974	=	TURBONILLA SP. F (GOLETA/MORRO BAY)
510801029972	=	TURBONILLA SP. H (GOLETA/MORRO BAY)
510801029970	=	TURBONILLA SP. J (GOLETA/MORRO BAY)
510801029968	=	TURBONILLA SP. L (GOLETA/MORRO BAY)
510801029966	=	TURBONILLA SP. M (GOLETA/MORRO BAY)
510801020000	=	TURBONILLA SPP.
510801100000	=	TURBONILLA SPP.

NODC TAXONOMIC CODES
SORTED BY TAXON NAME

NODC CODE		TAXON NAME
510801029600	*	TURBONILLA TENUICULA
885704220100	C	TURBOT DIAMOND
885704160400	C	TURBOT HORNYHEAD
885704160300	C	TURBOT SPOTTED
510602000000	*	TURRIDAE
510602000000		TURRIDAE SP
500123051600	*	TYPOSYLLIS ACICULATA
500123050900		TYPOSYLLIS ADAMANTEA
500123051900	*	TYPOSYLLIS FARALLONENSIS
500123050000	*	TYPOSYLLIS SP.
500123059998	*	TYPOSYLLIS SP. B (HONOLULU ONLY)
500123059997	*	TYPOSYLLIS SP. C (HONOLULU ONLY)
500123051200	*	TYPOSYLLIS VARIEGATA
618317010700	*	UPOGEBIA MACGINTIEORUM
618304010100	*	UPOGEBIA PUGETTENSIS
618304010000	*	UPOGEBIA SPP.
840000000000	*	UROCHORDATA
871305030200	*	UROLOPHUS HALLERI
616922040700	*	UROTHOE VARVARINI
616200000000	A	VALVIFERA
510360010100	*	VANIKORO CANCELLATA
611102020200	*	VARGULA AMERICANA
611102020000	*	VARGULA SPP.
611102020100	*	VARGULA TSUJII
050601010000	*	VAUCHERIA
510602460100	*	VEPRECULA BRUNONIA
500173170500	*	VERMILIOPSIS BIFORMIS
514302000000	*	VERONICELLIDAE
552011030100	*	VERTICORDIA ORNATA
552011030000	*	VERTICORDIA SP.
510601020800	*	VEXILLUM CASTUM
510601020700	*	VEXILLUM MACROSPIRUM
375401020300	*	VIRGULARIA BROMLEYI
375401020000	*	VIRGULARIA SPP.
510320200100	*	VITRICITHMA MARMORATA
510323021400	*	VITRINELLA OLDROYDI
510323020000	*	VITRINELLA SP.
510323009999	*	VITRINELLID SP. A (HONOLULU)
510323000000		VITRINELLIDAE
511013020600	*	VOLVULELLA CALIFORNICA
511013020400	*	VOLVULELLA CALLICERA
511013020800	*	VOLVULELLA CATHARIA
511013020400		VOLVULELLA CYLINDRICA
511013020700	*	VOLVULELLA PANAMICA
511013020000	*	VOLVULELLA SPP.
781617040000	*	WATERSIPORA SP.
616937150200	*	WESTWOODILLA CAECULA
616937150000		WESTWOODILLA SP.
511402020200	*	WILLIAMIA RADIATA
511005020000	*	WOODBRIDGEA SPP.
050000000000	*	XANTHOPHYTA
883108130100		XENERETMUS LATIFRONS
551801110200	*	XYLOPHAGA WASHINGTONA

MODC TAXONOMIC CODES
SORTED BY TAXON NAME

MODC CODE		TAXON NAME
885703150100	*	XYSTREURYS LIOLEPIS
550204050400	*	YOLDIA ENSIFERA
550204051100	*	YOLDIA LIMATULA
550204050400	S	YOLDIA PLENA
550204050400		YOLDIA SCISSURATA
883560110100	*	ZALEMBIUS ROSACEUS
882701040200		ZANIOLEPIS FRENATA
882701040100	*	ZANIOLEPIS LATIPINNIS
376009010100	*	ZAOLUTUS ACTIUS
375900000000	*	ZOANTHARIA ACTINIARIA MYNANTHEAE ATHENAR
376000000000	*	ZOANTHARIA ACTINIARIA THENARIA
430302070100	*	ZYGEUPOLIA RUBENS
430605030200	*	ZYGONEMERTES VIRESCENS
999000000000	S	ZYGONEMERTES ZOTEA W (CSDOC/MEC)

APPENDIX C
ADDITIONAL DATA ENTRY CODES - ODES CODES

NOTE: Appendix C provides a complete listing of all data entry codes. If you need additional codes, please contact the ODES Technical Staff for new code assignments.

APPENDIX C

ADDITIONAL DATA ENTRY CODES - ODES CODES

Code EPA-1 - Relation to ZID

W -- WITHIN ZID
B -- ZID BOUNDARY
N -- NEAR FIELD
R -- REFERENCE
F -- FAR FIELD

Code EPA-3 - Data Qualifiers

A -- BACTERIAL COLONY COUNTS OUTSIDE THE ACCEPTABLE RANGE
B -- VALUE CORRECTED FOR "BLANK" CONTRIBUTIONS DOWN TO THE DETECTION LIMIT
C -- VALUE FOR SUBSTANCE IS INCLUDED IN THE TOTAL FOR A DEFINED COMBINATION OF UNRESOLVED SUBSTANCES
D -- VALUE REPORTED ATTRIBUTABLE TO LAB CONTAMINATION
E -- ESTIMATED VALUE
G -- ESTIMATED VALUE IS GREATER THAN THE MINIMUM SHOWN
I -- INTERFERENCE OBSERVED IN GC/MS ANALYSIS (ADDITIONAL COMPOUND MAY BE CONTRIBUTING TO ANALYTE PEAK AREA).
K -- DETECTED, NOT QUANTIFIED. VALUE IS DETECTION LIMIT.
L -- VALUE IS LESS THAN THE MAXIMUM SHOWN
M -- VALUE IS A MEAN
N -- REPORTED VALUE IS NOT CORRECTED FOR ANALYTICAL BLANK
P -- DETECTED, NOT QUANTIFIED.
Q -- QUESTIONABLE DATA
T -- DETECTED AT LESS THAN THE QUANTIFICATION LIMIT. VALUE IS THE QUANTIFICATION LIMIT.
U -- SUBSTANCE UNDETECTED AT THE METHOD DETECTION LIMIT SHOWN, IF AVAILABLE
Z -- VALUE CORRECTED FOR "BLANK" CONTRIBUTIONS; RESULTING VALUE STILL EXCEEDS THE DETECTION LIMIT

Code EPA-4 - Salinity Equipment Code

1 -- REFRACTOMETER
2 -- TITRATION
3 -- CONDUCTIVITY CELL
4 -- CTD PROBE

Code EPA-5 - Dissolved Oxygen Equipment Code

1 -- WINKLER TITRATION
2 -- PROBE
4 -- CTD PROBE

Code EPA-6 - Bioassay Type

001 -- AMPHIPOD MORTALITY
002 -- BIVALVE LARVAE ABNORMALITY
003 -- ANAPHASE ABERRATION
004 -- MICROTOX/LUMINESCENCE
005 -- MARINE PHYTOPLANKTON GROWTH
006 -- OYSTER SHELL DEPOSITION
007 -- CALANOID COPEPOD MORTALITY
008 -- ACUTE MYSID MORTALITY
009 -- MYSID 7-DAY SURVIVAL/GROWTH/REPRODUCTION
010 -- SHEEPSHEAD MINNOW SURVIVAL/GROWTH
011 -- MARINE MACROALGAE (CHAMPIA PARVULA) REPRODUCTION
012 -- ECHINODERM SPERM CELL
013 -- ECHINODERM EMBRYO
014 -- SURF SMELT PARTIAL LIFE-CYCLE
015 -- OLIGOCHAETE RESPIRATION
016 -- COPEPOD PARTIAL LIFE-CYCLE
017 -- NEMATODE LIFE-CYCLE
018 -- FAT HEAD MINNOW MORTALITY
019 -- 3 SPINE STICKLEBACK MORTALITY
020 -- DAPHNID 7-DAY SURVIVAL

Code EPA-7 - Bioassay Variable

ME -- MEAN NUMBER OF AMPHIPODS EMERGING FROM SEDIMENTS OVER THE BIOASSAY PERIOD
PI -- PERCENT INCREASE IN LUMINESCENCE AFTER 30 MINUTES IN THE MICROTOX BIOASSAY
PD -- PERCENT DECREASE IN LUMINESCENCE AFTER 30 MINUTES IN THE MICROTOX BIOASSAY
GW -- MEAN DRY WEIGHT IN GRAMS (WITH ONE DECIMAL PLACE) FOR ADULT FEMALES IN EACH REPLICATE
GM -- MEAN DRY WEIGHT IN GRAMS (WITH ONE DECIMAL PLACE) FOR MALES AND IMMATURES IN EACH REPLICATE

Code EPA-8 - Indinometer Angle Code 1

1 -- ANGLE MEASURED
2 -- ANGLE INFERRED
3 -- ANGLE UNKNOWN

Code EPA-9 - Indinometer Angle Code 2

1 -- NO CORRECTIONS MADE IN REPORTED CURRENT DIRECTION AND SPEED DUE TO TILT ANGLE
2 -- CORRECTIONS MADE TO DIRECTION ONLY
3 -- CORRECTIONS MADE TO SPEED ONLY
4 -- CORRECTIONS MADE TO BOTH DIRECTION AND SPEED

Code EPA -10 - Scan ID

1 -- FIRST QUARTER
2 -- SECOND QUARTER
3 -- THIRD QUARTER
4 -- FOURTH QUARTER
J -- JANUARY
F -- FEBRUARY
M -- MARCH
A -- APRIL
Y -- MAY
E -- JUNE
U -- JULY
G -- AUGUST
S -- SEPTEMBER
O -- OCTOBER
N -- NOVEMBER
D -- DECEMBER

Code Number 0012 - Qualitative Code

1 -- ORGANISM PRESENT IN THE SAMPLE, BUT NOT COUNTED
2 -- FRAGMENTS OF AN ORGANISM, BUT NO WHOLE ORGANISM
3 -- COLONIAL ORGANISMS THAT CANNOT BE INDIVIDUALLY COUNTED
4 -- TOO SMALL TO WEIGH: ORGANISM WEIGHS LESS THAN 1/1000 GRAM
5 -- ENCRUSTED: IMPOSSIBLE TO WEIGH ORGANISM AS IT IS ENCRUSTED ON SUBSTRATE

Code Number 0033 - Collection Gear

11 -- NISKIN BOTTLE OR SIMILAR APPARATUS
12 -- IN SITU PUMPING SYSTEM LOWERED TO SAMPLING DEPTH
13 -- SHIP'S SEA CHEST OR SPECIAL SEA WATER SOURCE FROM SHIP'S HULL - SURFACE SAMPLES ONLY

Code Number 0037 - Material Analyzed

01 -- MUSCLE
02 -- LIVER
03 -- DIGESTIVE GLAND
04 -- GONAD
05 -- GILLS
06 -- KIDNEY
07 -- SPLEEN
08 -- HEART
09 -- BRAIN
10 -- BLOOD
11 -- STOMACH CONTENTS
12 -- TOP 1 1/2" OF SEDIMENT CORE
13 -- MIDDLE 1 1/2" OF SEDIMENT CORE
14 -- REMAINDER OF SEDIMENT CORE
15 -- WHOLE ORGANISM
16 -- WATER
17 -- PARTICULATE MATTER
18 -- INTERNAL ORGANS
19 -- SOFT PARTS
20 -- ARM
21 -- BODY
22 -- BODY WALL
23 -- EGGS
24 -- FOOT
25 -- BLADE
26 -- SPOROPHYLL
27 -- STALK MUSCLE
28 -- ABDOMEN
29 -- TAIL MUSCLE
30 -- WHOLE ORGANISM (LESS SHELL)
31 -- SURFICIAL SEDIMENT
32 -- UNDIFFERENTIATED SEDIMENT
33 -- ZOOPLANKTON
34 -- UNDIFFERENTIATED PLANKTON
35 -- PHYTOPLANKTON
36 -- SEDIMENT EXTRACTS
37 -- ORCHARD LEAVES (N.B.S. STANDARD)
38 -- BOVINE LIVER (N.B.S. STANDARD)
40 -- SEDIMENT CORE
51 -- ALIPHATIC FRACTION (F1)
52 -- AROMATIC FRACTION (F2)
53 -- ASPHALTINE FRACTION (F3)
54 -- ALIPHATIC PLUS AROMATIC FRACTIONS (F1+F2)
55 -- ALIPHATIC PLUS ASPHALTINE FRACTIONS (F1+F3)
56 -- AROMATIC PLUS ASPHALTINE FRACTIONS (F2+F3)
57 -- ALIPHATIC PLUS AROMATIC PLUS ASPHALTINE FRACTIONS (F1+F2+F3)

Code Number 0075 - Gear Type (100)

-- BLANK - NO INFORMATION
01 -- 4.9M (16FT.) TRAWL NET WITH 3.8 TO .6CM (1 1/2 TO 1/4IN.) MESH
02 -- 14M (46FT.) TRAWL NET WITH 5.7 TO .6CM (2 1/2 TO 1/4IN.) MESH
03 -- 9.2M (30FT.) BEACH SEINE WITH .6CM (1/4IN.) MESH BAG
04 -- 36.6M (120FT.) BEACH SEINE WITH .6CM MESH BAG (SINKING NET)
05 -- 36.6M (120FT.) BEACH SEINE WITH .6CM MESH BAG, EQUIPPED WITH FLOTATION SUFFICIENT TO MAINTAIN NET AT THE WATER'S SURFACE
06 -- 3.1M X 6.1M (10 X 20FT.) TOW NET WITH 7.6 TO .6CM (3 TO 1/4IN.) MESH
07 -- TRAMMEL NET WITH 50.8CM (20IN.) LARGE MESH AND 5.1CM (2IN.) SMALL MESH
08 -- GILL NET
09 -- SCUBA COLLECTIONS BY SPEAR, HAND, OR SLURP GUN
10 -- SUBA TRANSECT OBSERVATIONS
11 -- ROTENONE OR OTHER NARCOTIC COLLECTIONS
12 -- HAND COLLECTIONS
13 -- PLANKTON PUMP WITH 209 NM AND 500 NM MESHED NETS
14 -- QUADRAT (50CM X 50CM) - SURFACE SCRAPINGS ONLY
15 -- QUADRAT (50CM X 50CM) - TO A DEPTH OF 15CM
16 -- QUADRAT (50CM X 50CM) - TO A DEPTH OF 30CM
17 -- QUADRAT (22.5CM X 22.5CM) TO A DEPTH OF 15CM
18 -- QUADRAT (50CM X 50CM) SURFACE ONLY - SCRAPINGS BY SCUBA
19 -- VAN VEEN GRAB SAMPLER (31.6CM X 31.6CM)
20 -- CIRCULAR CORE, 7.5CM DIAMETER TO A DEPTH OF 15CM
21 -- VAN VEEN GRAB SAMPLER (17.3CM X 17.3CM)
22 -- SURFACE CORING DEVICE
23 -- 70CM BONGO NET (BOTH MESH - 505 MIC.)
24 -- 70CM BONGO NET (BOTH MESH - 333 MIC.)
25 -- 70 CM BONG NET (MESH 505 AND 333 MIC.)
26 -- AIRLIFT SYSTEM TO 1MM MESH BAG
27 -- AIRLIFT SYSTEM TO 1/2MM MESH BAG
28 -- QUADRAT (10CM X 10CM) - SURFACE SCRAPING ONLY
29 -- QUADRAT (.20 M2), SURFACE SCRAPING ONLY. THIS IS A STANDARD .25 M2 QUADRAT WITH FIVE .01 M2 QUADRATS RANDOMLY REMOVED.
30 -- PURSE SEINE - 250 FATHOMS LONG, 15 FATHOMS DEEP (475 MESHES); 4 INCH STRETCH EXCEPT FIRST 100 MESHES BELOW CORKLINE WHICH HAS 5 INCH STRETCH. BUNT IS 10 FATHOMS LONG, 200 MESHES DEEP, 3 1/2 INCH STRETCH MESH
31 -- QUADRAT (22.5CM X 11.25CM) - TO A DEPTH OF 15CM
32 -- VAN VEEN GRAB SAMPLER (SAME AS CODE 19, BUT PARTITIONED ROUGHLY INTO TWO HALVES)
33 -- DISSOLVED HYDROCARBON SAMPLING DEVICE - ONE GALLON
34 -- PLANKTON PUMP WITH 209 U MESH NET ONLY
35 -- PLANKTON PUMP WITH 505 U MESH NET ONLY
36 -- HOOK AND LINE - SPORT
37 -- COMMERCIAL TROLLING GEAR
38 -- GOFLOW BOTTLE, 10L, TEFLON COATED

Code Number 0075 - Gear Type (100) (cont'd)

39 -- VAN VEEN GRAB, STAINLESS STELL, 1/25 SQ METER
40 -- PURSE SEINE - 1650 FT LONG BY 120 FT. DEEP WITH .75 INCH STRETCH MESH (HERRING SEINE)
41 -- AIRLIFT CORES .05M2 BY 15CM DEEP, SIEVED INTO A .7MM MESH BAG
42 -- .20M2 QUADRAT SURFACE ONLY, FOR SELECTED INVERTEBRATES > 1CM
43 -- .25M2 AIRLIFT SCRAPE TO A 0.7MM MESH BAG
44 -- .25M2 AIRLIFT SCRAPE FOR SELECTED ANIMALS >1CM
45 -- .05M2 QUADRAT SURFACE SCRAPINGS ONLY, 2MM SIZE ORGANISMS OR GREATER
46 -- QUADRAT (22.5CM X 22.5CM) TO A DEPTH OF 15CM, 2MM ORGANISMS OR GREATER
47 -- QUADRAT (50CM X 50CM) SURFACE ALGAE SCRAPES ONLY, 2MM SIZE ORGANISMS OR GREATER
48 -- SMITH MCINTYRE GRAB
49 -- PISTON CORER
50 -- .5 METER DIAMETER PLANKTON NET, 505U MESH (6:1 AREA ASPECT RATIO)
51 -- .05M2 (22.5CM BY 22.5CM) AIRLIFT SCRAPE TO .7MM MESH BAG FOR ORGANISMS GREATER THAN OR EQUAL TO 1MM
52 -- PURSE SEINE 200FT LONG BY 9 FT DEEP, 1/4 INCH MESH
53 -- BEACH SEINE 60FT LONG BY 9FT. DEEP, 1/16 INCH MESH
54 -- PLANKTON PUMP (CREDDP) EQUIPPED WITH A 130U, 253U AND 500U MESH NET, .1M2 SAMPLING AREA TIMES .025 M3 SAMPLING VOLUME
55 -- FRI-CREDDP EPIBENTHIC SLED, 0.25M2, EQUIPPED WITH TWO 0.12M2 (130U) NETS
56 -- FRI-CREDDP EPIBENTHIC SLED, 0.25M2, EQUIPPED WITH ONE 0.25M2 (130U) NET
57 -- FRI-CREDDP EPIBENTHIC SLED, 0.25M2, EQUIPPED WITH ONE 0.25M2 (253U) NET
58 -- FRI-CREDDP EPIBENTHIC SLED, 0.25M2, EQUIPPED WITH ONE 0.12M2 (130U) NET AND ONE 0.12M2 (253U) NET
59 -- FRI-CREDDP EPIBENTHIC SLED, 0.25M2, EQUIPPED WITH TWO 0.12M2 (253U) NET
60 -- PURSE SEINE, 7 METERS DEEP BY 60 METERS LONG; MESH SIZE WINGS AND BODY 1 IN. BUNT END .25 IN AND .5 IN KNOTLESS NYLON
61 -- 0.1M2 EPIBENTHIC PLANKTON PUMP WITH 130U NET FRACTION OF 3 NETS
62 -- 0.1M2 EPIBENTHIC PLANKTON PUMP WITH 253U NET FRACTION OF 3 NETS
63 -- 0.1M2 EPIBENTHIC PLANKTON PUMP WITH 500U NET FRACTION OF 3 NETS
64 -- 0.1M2 EPIBENTHIC PLANKTON PUMP WITH 130U NET ONLY, UNNESTED
65 -- 20CM BONGO NET (WITH 253U MESH NET)

Code Number 0075 - Gear Type (100) (cont'd)

66 -- QUADRAT, .2M2 (50CM X 50CM), SURFACE SCRAPES ONLY FOR ALGAE > 1MM HAS ONE .05M2 SURFACE SCRAPE REMOVED FROM THE CENTER
67 -- .05M2 SURFACE SCRAPE FOR ORGANISMS > 1MM
68 -- HAND SEINE, 4.3M LONG, 1.2M DEEP WITH 0.32CM MESH
69 -- BEACH SEINE, FIVE 3.05CM SECTIONS, TWO OUTER HAVE 2.54CM MESH, NEXT TWO HAVE 1.27CM MESH CENTER SECTION HAS 0.64CM MESH, 1.83CM DEEP
70 -- ROUNDHAUL SEINE 91.5M LONG, 6.86M DEEP, 9.15M BUNT WITH 0.64CM MESH, BODY HAS 1.91CM MESH
71 -- OTTER TRAWL 3.05M LEAD LINE, BODY HAS 1.91CM MESH USED WITH 3.50MM MESH LINER
72 -- MINNOW TRAPS 40.0CM LONG 20.0CM WIDE, 2.0CM OPENING, 3.0MM MESH
73 -- HOOP NETS, HOOP HAS 2.50MM MESH USED WITH TWO CLEATS: ONE 24.4M X 1.83M WITH 1.27CM MESH ONE 24.4M X 2.44MM WITH 1.91CM MESH
74 -- PLANKTON NET 0.5M DIAMETER, 0.560MM MESH SIZE
75 -- PLANKTON NET 0.3M DIAMETER, 0.243MM MESH SIZE
76 -- EKMAN DREDGE 15.24CM X 15.24CM OPENING OR 0.023SQ.M AREA, SAMPLES SIEVED WITH 1.27CM AND 2.54CM SIEVES
77 -- MODIFIED HESS SAMPLER, 14.9CM DIAMETER, 5CM DEEP WITH A 280MICRON MESH NET
78 -- STACKED DRIFT NETS, 30.5CM SQUARE MOUTH OPENING, 111.8CM LONG WITH A 280MICRON NET
79 -- ELECTROSHOCKER
80 -- EPIBENTHIC PUMP, (ELECTRIC MINI-PUMP) SAMPLES 63.6 SQ.CM., INTAKE FILTERED THRU A 125U SCREEN
94 -- EPIBENTHIC ZOOPLANKTON PUMP (0.016 M^2, 130u MESH)

Code Number 0076 - Bottom Trawl Type

00 -- MODIFIED EASTERN TRAWL WITH 94' FOOTROPE AND 70' HEADROPE; 5 1/2" MESH (#42) IN WINGS AND BODY, 3 1/2" MESH (#60) IN INTERMEDIATE, AND 3 1/2" MESH (#96) IN CODEND; 21 FLOATS (8" DIAM.) ON HEADROPE; CHAIN AND RUBBER DISCS ON FOOTROPE.

01 -- SAME AS 00 BUT NO CHAIN ON FOOTROPE

05 -- MODIFIED EASTERN TRAWL WITH 111' FOOTROPE; 5 1/2" MESH WEB IN WINGS AND BODY, 3 1/4" WEB IN INTERMEDIATE, AND 3" MESH WEB IN CODEND; 21 FLOATS - 18 OF 8" DIAM. AND 3 OF 10" DIAM.

06 -- SAME AS 05 BUT WITH ROLLER GEAR.

10 -- NORWEGIAN TRAWL.

11 -- SAME AS 10 BUT WITH ROLLER GEAR.

20 -- 400 MESH EASTERN FISH TRAWL WITH 94' FOOTROPE AND 71' HEADROPE; 4" MESH (#36) IN WINGS, SQUARE AND BELLY, 3 1/2" MESH (#60) IN INTERMEDIATE, AND 3 1/2" MESH (#96) IN CODEND, 11 TO 15 (DEEP-SEA) FLOATS (8" DIAM.) ON HEADROPE.

21 -- EASTERN OTTER TRAWL WITH 112FT. FOOTROPE AND 83FT. HEADROPE; 4IN. MESH (#48 THREAD) IN WINGS AND BODY, 3 1/2IN. MESH (#96 THREAD) IN INTERMED, AND CODEND; 41 FLOATS (8IN. DIAM.) ON HEADROPE; 20 FATHOM DANDELIONS.

22 -- 21 FLOATS (8" DIAM.) ON HEADROPE.

23 -- 21 FLOATS (8" DIAM.) ON HEADROPE AND ROLLER GEAR.

24 -- 36 FLOATS (8" DIAM.) ON HEADROPE AND ROLLER GEAR.

25 -- EASTERN OTTER TRAWL WITH 112FT. FOOTROPE AND 83FT. HEADROPE; 4IN. MESH (#48 THREAD) IN WINGS AND BODY, 3 1/2IN. MESH (#96 THREAD) IN INTERMEDIATE, AND CODEND; 41 FLOATS (8IN. DIAM.) ON HEADROPE; ROLLER GEAR; 20 FATHOM DANDELIONS.

26 -- MARINOVICH OTTER TRAWL (WITH 7.62M HEAD ROPE)

30 -- MARK II (MODIFIED) UNIVERSAL TRAWL WITH 94' FOOTROPE AND 94' HEADROPE; 5 1/2" (#36) MESH IN WINGS AND FORWARD SECTIONS, 2 1/2" (#36) MESH IN AFTER SECTIONS, 3 1/2" (#96) MESH IN CODEND; 31 FLOATS (8" DIAM.) ON HEADROPE.

35 -- MARK I UNIVERSAL TRAWL WITH 121FT. HEADROPE AND FOOTROPE; 2 1/2" MESH THROUGHUT WINGS, BODY AND CODEND; CODEND LINES WITH 11/4" MESH; TOWED WITH 6-30 FATHOM DANDELIONS.

40 -- 2/3 SCALE COBB PELAGIC TRAWL, 2" SIZE MULTIFILAMENT WEB (#18) IN BODY AND 2" SIZE MULTIFILAMENT WEB (#60) IN CODEND, 41 FLOATS.

41 -- 61FT. HEADROPE AND FOOTROPE SHRIMP TRAWL.

45 -- BOTTOM TRAWL 40/54 FLY NET (40FT HEADROPE, 54FT FOOTROPE, 42FT VERTICAL HEIGHT, STRETCH MESH DIMENSION = 20.3CM, 10.2CM IN BODY, 4.1CM CODEND, 0.6CM CODEND LINER

99 -- A GILL NET WITH 7 50M X30M FATHOM SHACKLES HAVING MESH SIZES: .83", 1.38", 1.65", 2.5", 3.25", 4.5", AND 5.25".

Code Number 0077 - Bottom Type

01 -- MUD
02 -- GREEN MUD
03 -- GREY MUD AND SAND
10 -- GREY MUD
11 -- GREY CLAY
12 -- MUD AND CLAY
13 -- GREY MUD AND CLAY
14 -- MUD, CLAY, AND SAND
15 -- SAND, MUD, AND GRAVEL
20 -- DENSE GROWTH OF LARGE MARINE PLANTS (MACROCYSTIS, ALERIA, LAMINARIA, ETC.)
21 -- DENSE GROWTH OF SMALL MARINE PLANTS (FUCUS, ZOSTERA, AND/OR ULVA), BOTTOM OCCLUDED
22 -- DENSE GROWTH OF SMALL MARINE PLANTS (E.G. FUCUS) ON ROCKS
30 -- GREEN MUD AND CLAY
31 -- MUD AND SAND
32 -- MUD AND CLAY-PIPES (WORM TUBES)
33 -- GREEN MUD, BLACK SAND
34 -- SAND, MUD
35 -- MUDDY SAND
36 -- SANDY GRAVEL
37 -- GRAVELLY SAND
48 -- GREEN SAND AND MUD
49 -- GREY SAND AND WORM TUBES
50 -- GREEN SAND
51 -- SANDY
52 -- GREY SAND
53 -- GREEN SAND AND CLAY
54 -- BLACK SAND
55 -- GREY SAND, MUD, GRAVEL
56 -- GREEN SAND, MUD, STONES
57 -- GREEN SAND, GRAVEL
58 -- GREEN SAND, GRAVEL, OR PEBBLES
59 -- GRAVEL AND SAND
60 -- ROCK AND MUD
61 -- GRAVEL AND MUD
62 -- ROCKY
63 -- GRAVEL
64 -- GRAVEL AND SHELL
65 -- ROCKY AND GRAVEL
66 -- GREEN SAND AND SHELL
67 -- STONES AND SAND
68 -- STONES
69 -- STONES AND GRAVEL
70 -- HARD CLAY WITH SAND AND MUD
71 -- CLAY AND ROCK
72 -- HARD CLAY
73 -- HARD CLAY AND ROCK

Code Number 0077 - Bottom Type (cont'd)

74 -- HARD ROCK
75 -- ROCK AND GREY MUD
76 -- GRAVEL AND GREY MUD
77 -- BLUE-GREY MUD AND SAND
78 -- ROCK, GREEN SAND
79 -- BLUE MUD
83 -- CORAL, GREY MUD
84 -- CORAL, GREEN SAND
85 -- CORAL, GRAVEL AND GREY MUD
86 -- CORAL AND STONES
90 -- SHELLS, ROCKS
91 -- SHELLS, GREY MUD AND SAND
92 -- SHELLS, MUD, AND SAND
93 -- SHELLS, SHALE, AND MUD
95 -- BOULDERS

Code Number 0078 - Gear Material

0 -- MONOFILAMENT NYLON
1 -- MULTIFILAMENT (BRAIDED) NYLON
2 -- MULTIFILAMENT (BRAIDED) COTTON
3 -- SYNTHETIC, VARIOUS
4 -- SILK
5 -- MANILA
6 -- LINEN

Code Number 0082 - Length

-- BLANK - NO INFORMATION
1 -- TIP OF SNOUT TO FORK OF TAIL
2 -- MIDEYE TO FORK OF TAIL
3 -- TIP OF SNOUT TO HYPURAL PLATE
4 -- MIDEYE TO HYPURAL PLATE
5 -- TOTAL LENGTH (EXTREMITY TO EXTREMITY)
6 -- SNOUT TO SECOND DORSAL (RATFISH...)
7 -- ESTIMATED TOTAL LENGTH, PART OF CAUDAL MISSING
8 -- APERTURE LENGTH
9 -- RADIUS
A -- REGULAR DIAMETER
B -- LENGTH OF CARAPACE (BACK OF RIGHT EYE SOCKET TO END OF CARAPACE FOR KOREAN HORSEHAIR CRABS; BASE OF EYESIGHT TO MID-DORSAL POINT FOR SHRIMP)
C -- WIDTH OF CARAPACE (WIDEST POINT EXCLUDING SPINES)
D -- METASOME LENGTH (BOARD STANDARD LENGTH - SCCWRP)

Code Number 0085 - Navigation Code

01 -- LORAN (MIXED OR UNSPECIFIED)
02 -- RADAR AND/OR FIXES
03 -- RAYDIST WITHOUT COMPLICATIONS
04 -- RAYDIST WITH ERRORS, DRIFTING, ETC.
05 -- SATELLITE
06 -- OMEGA
07 -- LORAN A ONLY
08 -- LORAN C ONLY
09 -- MINI-RANGER
10 -- HORIZONTAL SEXTANT
11 -- PHOTOGRAPHS
12 -- SITING ON RANGES
13 -- LORAN C AND MINI-RANGER

Code Number 0093 - Sphere

-- BLANK - NO INFORMATION
2 -- SURFACE FLOATING
3 -- WHOLE WATER SAMPLE
4 -- BOTTOM SEDIMENT
6 -- BIOTA
7 -- INTERSTITIAL WATER
8 -- SUSPENDED PARTICULATE MATTER
9 -- RESUSPENDED SEDIMENT
A -- SUSPENDED SOLIDS
B -- SEWAGE SLUDGE
G -- INDUSTRIAL WASTE
H -- DRILLING MUDS
I -- DISSOLVED FRACTION - WATER SAMLE
J -- RECEIVING WATER
K -- SEWAGE EFLUENT
L -- SEWAGE INFLUENT
M -- PARTICULATE FRACTION - WATER SAMPLE
N -- DEWATERED SLUDGE

Code Number 0094 - Transmissivity Equipment Code

1 -- TURBIDOMETER; IN JTU
2 -- TRANSMISSOMETER; IN PERCENT OF LIGHT TRANSMISSION OVER A 10 CM PATH
3 -- FLUOROMETER; SUSPENDED SOLIDS CALIBRATION
4 -- NEPHELOMETER, IN NTU
5 -- TURBIDOMETER; IN FTU
6 -- TRANSMISSOMETER; IN PERCENT LIGHT TRANSMISSION OVER A 1 M PATH

Code Number 0096 - Compass Direction

-- BLANK - NO INFORMATION
0 -- CALM (STATIONARY, NONE)
1 -- N 337.5 DEGREES TO 22.5 DEGREES
2 -- NE 22.5 DEGREES TO 67.5 DEGREES
3 -- E 67.5 DEGREES TO 112.5 DEGREES
4 -- SE 112.5 DEGREES TO 157.5 DEGREES
5 -- S 157.5 DEGREES TO 202.5 DEGREES
6 -- SW 202.5 DEGREES TO 247.5 DEGREES
7 -- W 247.5 DEGREES TO 292.5 DEGREES
8 -- NW 292.5 DEGREES TO 337.5 DEGREES
9 -- MULTIPLE DIRECTIONS (CONFUSED)
A -- DIRECTLY OVERHEAD

Code Number 0101 - Sex

-- BLANK - NO INFORMATION
0 -- INDETERMINABLE
1 -- MALE
2 -- FEMALE
3 -- HERMAPHRODITE
4 -- TRANSITIONAL
5 -- GROUPED, BOTH SEXES PRESENT
6 -- HERMAPHRODITIC, FUNCTIONAL FEMALE
7 -- HERMAPHRODITIC, FUNCTIONAL MALE

Code Number 0105 - Cloud Cover

0 -- ZERO
1 -- 1 OKTA OR LESS, BUT NOT ZERO (1/10 OR LESS, BUT NOT ZERO)
2 -- 2 OKTAS (2/10 - 3/10)
3 -- 3 OKTAS (4/10)
4 -- 4 OKTAS (5/10)
5 -- 5 OKTAS (6/10)
6 -- 6 OKTAS (7/10 - 8/10)
7 -- 7 OKTAS OR MORE, BUT NOT 8 OKTAS (9/10 OR MORE, BUT NOT 10/10)
8 -- 8 OKTAS (10/10)
9 -- SKY OBSCURED, OR CLOUD AMOUNT CANNOT BE ESTIMATED

Code Number 0108 - Weather

0 -- CLEAR (NO CLOUD AT ANY LEVEL)
1 -- PARTLY CLOUDY (SCATTERED OR BROKEN)
2 -- CONTINUOUS LAYERS OF CLOUDS
3 -- SANDSTORM, DUSTSTORM, OR BLOWING SNOW
4 -- FOG, THICK DUST OR HAZE
5 -- DRIZZLE
6 -- RAIN
7 -- SNOW, OR RAIN AND SNOW MIXED
8 -- SHOWERS
9 -- THUNDERSTORMS

Code Number 0109 - Sea State

0 -- CALM - GLASSY (0 METERS)
1 -- CALM -RIPPLED (0 - .1 METERS)
2 -- SMOOTH - WAVELET (.1 - .5 METERS)
3 -- SLIGHT (.5 - 1.25 METERS)
4 -- MODERATE (1.25 - 2.5 METERS)
5 -- ROUGH (2.5 - 4.0 METERS)
6 -- VERY ROUGH (4 - 6 METERS)
7 -- HIGH (6 - 9 METERS)
8 -- VERY HIGH (9 - 14 METERS)
9 -- PHENOMENAL (GREATER THAN 14 METERS)

Code Number 0110 - Wind-Wave Direction

00 -- CALM (NO WAVES-NO MOTION)
01 -- 5 DEGREES - 14 DEGREES
02 -- 15 DEGREES - 24 DEGREES
03 -- 25 DEGREES - 34 DEGREES
04 -- 35 DEGREES - 44 DEGREES
05 -- 45 DEGREES - 54 DEGREES
06 -- 55 DEGREES - 64 DEGREES
07 -- 65 DEGREES - 74 DEGREES
08 -- 75 DEGREES - 84 DEGREES
09 -- 85 DEGREES - 94 DEGREES
10 -- 95 DEGREES - 104 DEGREES
11 -- 105 DEGREES - 114 DEGREES
12 -- 115 DEGREES - 124 DEGREES
13 -- 125 DEGREES - 134 DEGREES
14 -- 135 DEGREES - 144 DEGREES
15 -- 145 DEGREES - 154 DEGREES
16 -- 155 DEGREES - 164 DEGREES
17 -- 165 DEGREES - 174 DEGREES
18 -- 175 DEGREES - 184 DEGREES
19 -- 185 DEGREES - 194 DEGREES
20 -- 195 DEGREES - 204 DEGREES

Code Number 0110 - Wind-Wave Direction (cont'd)

21 -- 205 DEGREES - 214 DEGREES
22 -- 215 DEGREES - 224 DEGREES
23 -- 225 DEGREES - 234 DEGREES
24 -- 235 DEGREES - 244 DEGREES
25 -- 245 DEGREES - 254 DEGREES
26 -- 255 DEGREES - 264 DEGREES
27 -- 265 DEGREES - 274 DEGREES
28 -- 275 DEGREES - 284 DEGREES
29 -- 285 DEGREES - 294 DEGREES
30 -- 295 DEGREES - 304 DEGREES
31 -- 305 DEGREES - 314 DEGREES
32 -- 315 DEGREES - 324 DEGREES
33 -- 325 DEGREES - 334 DEGREES
34 -- 335 DEGREES - 344 DEGREES
35 -- 345 DEGREES - 354 DEGREES
36 -- 355 DEGREES - 4 DEGREES
49 -- WAVES CONFUSED, DIRECTION INDETERMINATE (WAVES EQUAL TO OR LESS THAN 4 3/4 METERS)
99 -- WAVES CONFUSED, DIRECTION INDETERMINATE (WAVES GREATER THAN 4 3/4 METERS), WINDS VARIABLE, OR ALL DIRECTIONS OR UNKNOWN

Code Number 0120 - Disease

-- BLANK - NO INFORMATION
0 -- NORMAL CONTROL
1 -- EPIDERMAL PAPILLOMA
2 -- PSEUDOBRANCHIAL TUMORS
3 -- LYMPHOCYSTIS
4 -- SKIN ULCERATION
5 -- FIN EROSION
6 -- LIVER DISEASE
7 -- LARGE RED GILL PARASITE
8 -- SEVERE INTERNAL PARASITISM
9 -- MISCELLANEOUS
A -- SMALL WHITE GILL PARASITE
B -- NECROTIC GILL DISEASE
C -- WHITE CYSTS IN MUSCLE
D -- LEECH INSIDE OPERCULUM
E -- BLACK SPOT DISEASE
F -- ORANGE SKIN GROWTH
G -- SANDPAPER-LIKE SKIN - WHITE SPOTS
H -- WORMS IN AIR BLADDER
J -- LORDOSIS/SCOLIOSIS
K -- PRESUMED OSTEOMA
L -- WHITE NODULES UNDER EPIDERMIS
M -- RAISED WHITE SPOT RINGED BY RED HEMORRHAGIC AREA

Code Number 0120 - Disease (cont'd)

N -- UNUSUAL MORPHOLOGY
P -- EPITHELIAL TUMOR OF SEBASTES ALUTUS
Q -- FIBROMA OF ISOPSETTA ISOLEPIS
R -- SHORTENED OPERCLES
S -- FIN MISSING
T -- EYE MISSING

Code Number 0121 - Health

-- BLANK - NO INFORMATION
1 -- NORMAL APPEARING
2 -- EMACIATED

Code Number 0123 - Pigmentation

-- BLANK - NO INFORMATION
1 -- NORMAL
2 -- DARKER THAN NORMAL
3 -- LIGHTER THAN NORMAL

Code Number 0129 - Gear Type

10 -- PURSE SEINES, RINGNETS, ETC.
11 -- PURSE SEINE WITH POWER BLOCK
12 -- LAMPARA
13 -- BEACH SEINE
20 -- GILLNETS
21 -- DRIFT GILLNET
22 -- TOWED GILLNET
23 -- SET GILLNET
24 -- VARIABLE MESH GILLNET
30 -- BOTTOM TRAWLS
31 -- OTTER TRAWL
32 -- PAIR TRAWL
33 -- DANISH SEINE
34 -- BEAM TRAWL
35 -- SHRIMP TRAWL
36 -- TRY NET
40 -- MIDWATER TRAWLS
41 -- ISAACS-KIDD TRAWL
42 -- BONGO NET
43 -- HERRING TRAWL
50 -- SURFACE TRAWLS
51 -- TOWNET
52 -- TWO-VESSEL OPERATED TOWNET
53 -- SINGLE-VESSEL OPERATED TOWNET

Code Number 0129 - Gear Type (cont'd)

54 -- PLANKTON-LARVAE NET
60 -- PELAGIC LONGLINE
61 -- SURFACE LONGLINE
62 -- MIDWATER LONGLINE
63 -- BENTHIC BIOLOGICAL ROCK DREDGE, RECTANGULAR BOX 0.5M X 1M
70 -- BOTTOMSET LONGLINE
80 -- SETNETS, REEF NETS, TRAPS
81 -- TRAMMEL NET
82 -- FYKE NET
90 -- TROLLS, HANDLINES, ETC.
91 -- TROLL
92 -- HANDLINES
93 -- DIPNETS, HAND-HELD
94 -- LIFTNETS
95 -- SCUBA GEAR
96 -- SPEAR GUN
97 -- DIVER TAKEN
99 -- GILL NET WITH 7 50MX 3M FATHOM SHACKLES WITH MULTIPLE MESH SIZES
88 -- ROV (REMOTELY OPERATED VEHICLE)

Code Number 0130 - Mesh Size

0 -- 0-0.99" (0-25MM)
1 -- 1.0-1.99" (25.4-50.5MM)
2 -- 2.0-2.99" (51-76MM)
3 -- 3.0-3.99" (76.2-101.4MM)
4 -- 4.0-4.99" (101.6-126.8MM)
5 -- 5.0-5.99" (127-152.2MM)
6 -- 6.0-6.99" (152.4-177.5MM)
7 -- 7.0-7.99" (177.8-203MM)
8 -- 8.0-8.99" (203.2-228.4)
9 -- 9.0"++
A -- 0-1MM
B -- 1-4MM
C -- VARIABLE MESH, SINKING
D -- VARIABLE MESH, FLOATING
E -- 0.01-0.49 INCH
F -- 0.50-0.99 INCH
G -- 1.00-1.49 INCH
H -- 1.50-1.99 INCH
J -- 2.00-2.49 INCH
K -- 2.50-2.99 INCH
L -- 3.00-3.49 INCH
M -- 3.50-3.99 INCH
N -- 4.00-4.49 INCH
P -- 4.50-4.99 INCH
Q -- 5.00-5.49 INCH
R -- 5.50-5.99 INCH
S -- 6.00-6.49 INCH
T -- 6.50-6.99 INCH
U -- 7.00-7.49 INCH
V -- 7.50-7.99 INCH

Code Number 0134 - Gear Type

01 -- 3/4 METER RING NET
02 -- 1 METER RING NET
03 -- 1 METER NIO (NATIONAL INSTITUTE OF OCEANOGRAPHY) NET
04 -- 60 CENTIMETER BONGO NET
05 -- 60 CENTIMETER VERTICAL CLOSING RING NET
06 -- 1 FOOT RING NET
07 -- NISKIN BOTTLE
08 -- 2 METER TUCKER NET
09 -- SAMIYOTO NEUSTON SAMPLER
10 -- .5 X 1.0 METER MARMAP NEUSTON NET
11 -- 61 CENTIMETER BONGO NET
12 -- 20 CENTIMETER BONGO NET
13 -- .0 X 2.0 METER MARMAP NEUSTON NET
14 -- 6 FT. ISAACS-KIDD MIDWATER TRAWL
15 -- EPIBENTHIC SLED WITH TWO 1 METER TUCKER TRAWLS

Code Number 0134 - Gear Type (cont'd)

16 -- 1 METER TUCKER TRAWLS WITH 2 NETS
17 -- 1 METER TUCKER TRAWLS WITH 4 NETS
18 -- ENGLISH UMBRELLA NET
19 -- GULF V SAMPLER
20 -- 1 METER PLUMMET NET WITH 571U MESH NET
21 -- 5 INCH CLARKE BUMPUS SAMPLER
22 -- MOCHNESS NET
23 -- MTD NET
24 -- BURRELL EPIBENTHIC SLED (947 MICRON MESH NET)
25 -- .0.5 METER NET
26 -- PULLSLED - 0.15 X 0.57 METERS
27 -- NORPAC NET
28 -- 1 METER TUCKER TRAWL WITH SINGLE NET
29 -- MILLER HIGH-SPEED SAMPLER (5 INCH)
30 -- BONGO SAMPLER (1/2 METER)
31 -- NEUSTON NET, PNS (ZAITSEN-TYPE)
32 -- NUESTON NET, SIMPLE RECTANGLE
33 -- NEUSTON NET, WHOI TYPE
34 -- CLARK-BUMPUS (12 INCH)
35 -- GARRET SCREEN SAMPLER FOR SURFACE MICROLAYER
36 -- CAPTURE BY SCUBA DIVER
37 -- SUBMERSIBLE PUMP
38 -- SHIP'S SEA CHEST
39 -- 5-LITER NISKIN BOTTLE
40 -- 10-LITER NISKIN BOTTLE
41 -- 30-LITER NISKIN BOTTLE
42 -- LONGHURST-HARDY CONTINUOUS PLANKTON RECORDER

Code Number 0140 - Frequency

1 -- 1 OCCURRENCE
2 -- 2 OCCURRENCES
3 -- 3 OCCURRENCES
4 -- 4 OCCURRENCES
5 -- 5 OCCURRENCES
6 -- 6 OCCURRENCES
7 -- 7 OCCURRENCES
8 -- 8 OCCURRENCES
9 -- 9 OCCURRENCES
A -- 10-25 OCCURRENCES
B -- 26-40 OCCURRENCES
C -- 41-60 OCCURRENCES
D -- 61-80 OCCURRENCES
E -- 81-100 OCCURRENCES
F -- GREATER THAN 100 OCCURRENCES

Code Number 0148 - Life History

-- BLANK - NO INFORMATION
0 -- INDETERMINABLE
1 -- EGG
2 -- NAUPLIUS
3 -- ZOEA
4 -- MEGALOPA
5 -- VELIGER
6 -- LARVA
7 -- JUVENILE
8 -- ADULT
9 -- COMBINATION OF 6, 7, AND 8
A -- COMBINATION OF 7 AND 8
B -- COMBINATION OF 6 AND 7
C -- JUVENILE/ADULT - SEXUAL MATURITY UNKNOWN
D -- POLYP
E -- CYPRIS
F -- COPEPODID
G -- PUPA
H -- NYMPH
I -- POSTLARVA
J -- PROTOZOEA
K -- MEDUSA
L -- EGG CARRYING FEMALE
M -- EGG CASE
P -- PARTS
Q -- IMMATURE
R -- SUBADULT
S -- TROCHOPHORE LARVAE
T -- SUBADULTS AND JUVENILES
U -- MATING PAIRS
V -- MYSIS
W -- COLONY
X -- CYPHONAUTES LARVE
Y -- GLAUCOTHOE
Z -- YOLK SAC LARVAE

Code Number 0154 - Tide Stage

-- BLANK - NO INFORMATION
1 -- EBB
2 -- EBB SLACK
3 -- FLOOD
4 -- FLOOD SLACK

Code Number 0161 - Weight Determination

1 -- TOTAL CATCH OF SPECIES WEIGHED
2 -- PRORATED ON BASIS OF SUBSAMPLE
3 -- ROUGH ESTIMATE
4 -- TOTAL CATCH NOT INCLUDED IN RECORDED WEIGHT

Code Number 0162 - Number Determination

1 -- ACTUAL COUNT
2 -- PRORATED ON BASIS OF SUBSAMPLE
3 -- ROUGH ESTIMATE
4 -- VOLUMETRIC ESTIMATION
5 -- ROUGH ESTIMATE OF A FEW HUNDRED
6 -- ROUGH ESTIMATE OF A FEW THOUSAND

Code Number 0163 - Measurement Method

1 -- OBSERVED WET WEIGHT OF SPECIMEN
2 -- CALCULATED WEIGHT OF SPECIMEN

Code Number 0175 - Tow Type

C -- DOUBLE OBLIQUE CIRCULAR
D -- DOUBLE OBILQUE
G -- SINGLE OBILQUE
H -- HORIZONTAL
R -- SURFACE CIRCULAR
S -- STEP OBLIQUE
T -- SURFACE TOW
V -- VERTICAL
Y -- HORIZONTAL, OPEN ON DESCENT AND/OR ASCENT
Z -- HORIZONTAL, DISCRETE

Code Number 0210 - Sample Type

A -- ALGAE
B -- ECHINODERMS
C -- ANNELIDS
D -- ARTHROPODS
E -- HEMICHORDATES
F -- FISHES
G -- REPTILES
H -- AMPHIBIANS
I -- BIRDS
J -- MAMMALS
K -- BLUBBER

Code Number 0210 - Sample Type (cont'd)

M -- MUSSEL SAMPLE (COMPOSITE OF MANY SUBSAMPLES)
R -- TAR BALLS
S -- COMPOSITE SEDIMENT SAMPLE
T -- DREDGED MATERIAL
U -- WASTE MATERIAL
V -- SEWAGE SLUDGE
W -- WATER
X -- MOLLUSKS
Y -- SUSPENDED SEDIMENT
3 -- COMPOSITE SAMPLE

Code Number 0253 - Method of Analysis, Coarse

1 -- SIEVES
2 -- SETTLING TUBE
3 -- RAPID SEDIMENT ANALYZER

Code Number 0254 - Method of Analysis, Fine

1 -- PIPETTE
2 -- HYDROMETER
3 -- SEDIMENTATION BALANCE
4 -- HYDROPHOTOMETER
5 -- COULTER COUNTER

Code Number 0255 - Equipment Type

100 -- GRAB SAMPLE (UNDIFFERENTIATED)
101 -- ORANGE PEEL GRAB
102 -- CLAMSHELL GRAB
103 -- VAN VEEN GRAB
104 -- SHIPEK GRAB
105 -- PETERSON GRAB
106 -- CAMPBELL GRAB
107 -- SMITH-MCINTYRE GRAB
108 -- FREE FALL GRAB
109 -- PONAR GRAB
110 -- SCOOPFISH (GRAB)
111 -- DIETZ-LAFOND GRAB
112 -- BOOMERANG GRAB
113 -- EKMAN GRAB
200 -- DREDGE SAMPLE (UNDIFFERENTIATED)
201 -- CHAIN DREDGE
202 -- PIPE DREDGE
203 -- BOD DREDGE
204 -- ANCHOR BOX DREDGE

Code Number 0255 - Equipment Type

300 -- BOX CORE
400 -- GRAVITY CORE (UNDIFFERENTIATED)
401 -- PHLEGER CORER (GRAVITY)
402 -- DART CORER (GRAVITY)
403 -- BOOMERANG CORER
404 -- HYDROPLASTIC (PVC) GRAVITY CORER
405 -- KULLENBERG GRAVITY CORER
406 -- EWING GRAVITY CORER
500 -- PISTON CORE (UNDIFFERENTIATED)
501 -- KULLENBERG GRAVITY CORER
502 -- EWING PISTON CORER
503 -- HYDROPLASTIC (PVC) PISTON CORER
600 -- VIBRATING CORER
700 -- DRIVE SAMPLER (UNDIFFERENTIATED)
701 -- HAND CORER
702 -- PAMATMAT MULTIPLE QUARTZ CORER
703 -- DIVER-HELD HAND CORER
800 -- DRILLED SAMPLE

Code Number 0324 - Codend Liner

-- BLANK - UNKNOWN
1 -- NO
2 -- YES

Code Number 0346 - Station Location Code

A -- STREAM
B -- ESTUARY
C -- LAKE
D -- OCEAN
E -- WELL
F -- OTHER

Code Number 0347 - Wet or Dry Period

-- BLANK - NO INFORMATION
D -- DRY
N -- NORMAL/ AVERAGE CONDITIONS
W -- WET

Code Number 0350 - Chemical Analysis Methods

01 -- ALPHA SPECTROMETRY
02 -- POLAROGRAPHY
03 -- CANDLE/GRAVIMETRY
04 -- CANDLE/TITRATION
05 -- ATOMIC ABSORPTION SPECTROMETRY
06 -- TRANSMISSION ELECTRON MICROSCOPY (TEM)
07 -- AUTOANALYZER
08 -- PLATE/GRAVIMETRY
09 -- PLATE/REFLECTANCE
10 -- GEL CHROMATOGRAPHY
11 -- BIOASSAY
12 -- DISTILLATION
13 -- HEATED PURGE AND TRAP
14 -- CHEMICAL OXIDATION
15 -- CHEMILUMINESCENCE
16 -- VISUAL
17 -- COLUMN CHROMATOGRAPHY
18 -- CALCULATED
19 -- GAS CHROMATOGRAPHY
20 -- ACID DIGESTION/DISTILLATION
21 -- ACID DIGESTION/GRAVIMETRY
22 -- LIQUID SCINTILLATION CHROMATOGRAPHY
23 -- THIN LAYER CHROMATOGRAPHY
24 -- CRYSTAL SCINTILLATION COUNTER
25 -- COLORIMETRY
26 -- CONDUCTIVITY
27 -- COULOMETRY
28 -- GLASS CAPILLARY/GAS CHROMATOGRAPHY
29 -- DRY COMBUSTION/GAS DISPLACEMENT
30 -- DRY COMBUSTION/GRAVIMETRY
31 -- DRY COMBUSTION/INFRARED SPECTROMETRY
32 -- DRY COMBUSTION/THERMAL CONDUCTIVITY SENSOR
33 -- EDTA TITRATION
34 -- ALCOHOL TITRATION
35 -- SEPARATION
36 -- SETTLING/WEIGHING
37 -- ELECTROPHORESIS
38 -- NEUTRON ACTIVATION ANALYSIS
39 -- ESTIMATE
40 -- EXTRACTION/WEIGHT
41 -- FLAME SPECTROMETRY
42 -- FLAME PHOTOMETRY
43 -- FLUOROMETRY
44 -- DISPLACEMENT
45 -- GAMMA RAY SPECTROMETRY
46 -- EMISSION SPECTROMETRY
47 -- GAS CHROMATOGRAPHY/ELECTRON CAPTURE
48 -- ANODIC STRIPPING VOLTOMETRY
49 -- GAS CHROMATOGRAPHY/FLAME SPECTROMETRY

Code Number 0350 - Chemical Analysis Methods (cont'd)

50	--	GAS CHROMATOGRAPHY/MASS SPECTROMETRY
51	--	GAS CHROMATOGRAPHY/IONIZATION
52	--	ACID DIGESTION/TITRATION
53	--	X-RAY SPECTROMETRY
54	--	FILTRATION
55	--	GAS DISPLACEMENT
56	--	MANOMETRY
57	--	GRAVIMETRY
58	--	MEMBRANE FILTRATION
59	--	INFRARED SPECTROMETRY
60	--	LIQUID SCINTILLATION UNILUXI
61	--	SCINTILLATION COUNTER
62	--	LIQUID SCINTILLATION COUNTER
63	--	MASS SPECTROMETRY
64	--	MICROSCOPE
65	--	NEPHELOMETRY
66	--	PROPORTIONAL COUNTER
67	--	PETROGRAPHIC MICROSCOPE
68	--	DOBSON TECHNIQUE
69	--	EH METER
70	--	PH PAPER
71	--	SPECIFIC ION ELECTRODE
72	--	PH METER
73	--	SPECTROPHOTOMETRY
74	--	PLATE/SPECTROPHOTOMETRY
75	--	TITRATION
78	--	SOAP TEST
79	--	WET COMBUSTION/GAS DISPLACEMENT
81	--	WET COMBUSTION/INFRARED SPECTROMETRY
82	--	WET COMBUSTION/SPECTROPHOTOMETRY
83	--	WET COMBUSTION/TITRATION
84	--	WET OXIDATION/COLORIMETRY
85	--	X-RAY FLUORESCENCE
86	--	X-RAY DIFFRACTION
87	--	MULTISPECTRAL SCANNER
88	--	DIGESTION
89	--	DIFFERENCE BETWEEN DRY AND ASH WEIGHT
90	--	ASH WEIGHT
92	--	DRY WEIGHT
93	--	MACROBOMB CALORIMETRY
94	--	PLANCHET GAS FLOW COUNTER
95	--	MICROBOMB CALORIMETRY
96	--	OZONESONDE
97	--	UV SPECTROMETRY
98	--	ELECTRODEPOSITION
99	--	ELECTROLIC ENRICHMENT/PROPORTIONAL COUNTER
A1	--	GAS CHROMATOGRAPHY/FLAME SPECTROMETRY
A2	--	GAS CHROMATOGRAPHY/NITROGEN-PHOSPHORUS DETECTION
A3	--	GAS CHROMATOGRAPHY/THERMAL CONDUCTIVITY

Code Number 0350 - Chemical Analysis Methods (cont'd)

A4 -- HIGH PRESSURE LIQUID CHROMATOGRAPHY
A5 -- LIQUID CHROMATOGRAPHY/MASS SPECTROMETRY
A6 -- ACID DIGESTION/COLORIMETRY
A7 -- MERCURIC NITRATE TITRATION
A8 -- TURBIDITY/SPECTROPHOTOMETRY
A9 -- FLAMELESS ATOMIC ABSORPTION SPECTROMETRY
B1 -- COLD VAPOR ATOMIC ABSORPTION SPECTROMETRY
B2 -- SOLVENT EXTRACTION
B3 -- ACID BACK-EXTRACTION FROM SOLVENT MATRIX
B4 -- ACID DIGESTION
B5 -- DRY ASHING
B6 -- CO-PRECIPITATION
B7 -- ALCOHOL REFLUX
B8 -- ATOMIC ABSORPTION - GASEOUS HYDRIDE GENERATION
B9 -- LOW BACKGROUND BETA COUNTER
C1 -- ATOMIC ABSORPTION - HEATED GRAPHITE FURNACE
C2 -- ICP - INDUCTIVELY COUPLED PLASMA EMISSION SPECTROPHOTOMETRY
C3 -- AMPERIMETRIC TITRATION (CHLORINE RESIDUAL ANALYSIS)
C4 -- PURGE AND TRAP
C5 -- GAS CHROMATOGRAPHY WITH HA ELECTROLYTE CONDUCTIVITY DETECTION
C6 -- DILUTE ACID EXTRACTION

Code Number 0362 - Wave Height

-- BLANK - WAVE HEIGHT NOT DETERMINED
00 -- CALM
01 -- .5 METER
02 -- 1 METER
03 -- 1.5 METER
04 -- 2 METER
05 -- 2.5 METER
06 -- 3 METER
07 -- 3.5 METER
08 -- 4 METER
09 -- 4.5 METER
10 -- 5 METER
11 -- 5.5 METER
12 -- 6 METER
13 -- 6.5 METER
14 -- 7 METER
15 -- 7.5 METER
16 -- 8 METER
17 -- 8.5 METER
18 -- 9 METER
19 -- 9.5 METER

Code Number 0362 - Wave Height (cont'd)

20 -- 10 METER
21 -- 10.5 METER
22 -- 11 METER
23 -- 11.5 METER
24 -- 12 METER
25 -- 12.5 METER
26 -- 13 METER

Code Number 0375 - Primary Industry Code

01 -- AGRICULTURE AND FARMING
02 -- LIVESTOCK, POULTRY, ETC.
07 -- CROP, ANIMAL, FARM, AND GARDEN MANAGEMENT
08 -- FORESTRY
09 -- FISH PRODUCTS
10 -- METAL ORES
11 -- ANTHRACITE MINING
12 -- BITUMINOUS MINING
13 -- OIL AND GAS DRILLING AND SERVICES
14 -- NON-METALLIC MINING
15 -- GENERAL CONTRACTING
16 -- HEAVY CONSTRUCTION
17 -- SPECIAL TRADES - PLUMBING, PAINTING, ETC.
20 -- FOOD PREPARATIONS AND KINDRED PRODUCTS
21 -- TOBACCO MANUFACTURERS
22 -- TEXTILE MILL PRODUCTS
23 -- APPAREL PRODUCTS MADE WITH FABRICS
24 -- LUMBER AND WOOD PRODUCTS
25 -- FURNITURE AND FIXTURES
26 -- PULP AND PAPER MILLS AND ALLIED PAPER PRODUCTS
27 -- PRINTING, PUBLISHING, AND ALLIED PRODUCTS
28 -- CHEMICALS AND ALLIED PRODUCTS - PAINTS, PESTICIDES, FERTILIZERS, EXPLOSIVES, ETC.
29 -- PETROLEUM REFINING AND RELATED INDUSTRIES
30 -- RUBBER AND PLASTICS INDUSTRIES
31 -- LEATHER AND LEATHER PRODUCTS
32 -- STONE, CLAY, GLASS, CEMENT, AND OTHER NONMETALLIC MINERAL PRODUCTS
33 -- PRIMARY METAL INDUSTRIES
34 -- FABRICATED METAL PRODUCTS
35 -- MACHINERY EXCEPT ELECTRICAL
36 -- ELECTRICAL AND ELECTRONIC MACHINERY AND EQUIPMENT
37 -- TRANSPORTATION EQUIPMENT
38 -- MEASURING AND ANALYZING DEVICES - ENGINEERING, LABORATORY, RESEARCH INSTRUMENTS, ETC.
39 -- MISC MANUFACTURING INDUSTRIES - NOT CLASSIFIED ABOVE
40 -- RAILROAD TRANSPORTATION
41 -- CITY AND SUBURBAN PASSENGER TRANSPORTATION

Code Number 0375 - Primary Industry Code (cont'd)

42 -- TRUCKING AND WAREHOUSING
43 -- U.S. POSTAL SERVICE
44 -- WATER TRANSPORTATION
45 -- AIR TRANSPORTATION
46 -- PETROLEUM PIPE LINES
47 -- MISC TRANSPORTATION SERVICES - NOT CLASSIFIED ABOVE
48 -- COMMUNICATION SERVICES
49 -- MUNICIPAL SERVICES
50 -- DURABLE GOODS WHOLESALE/RETAIL TRADE
51 -- NONDURABLE GOODS
52 -- HARDWARE/LUMBER/MISC STORES
53 -- GENERAL MERCHANDISE STORES
54 -- MISC FOOD STORES
55 -- AUTOMOTIVE AND RECREATIONAL VEHICLE DEALERS, AND GASOLINE SERVICE STATIONS
56 -- APPAREL AND ACCESSORY STORES
57 -- HOME FURNISHING STORES
58 -- RESTAURANTS
59 -- MISC RETAIL - NOT CLASSIFIED ABOVE
60 -- BANKS (DEPOSIT BANKING)
61 -- FINANCIAL INSTITUTIONS OTHER THAN DEPOSIT BANKING
62 -- SECURITY EXCHANGES
63 -- INSURANCE CARRIERS
64 -- INSURANCE BROKERS AND SERVICES
65 -- BUILDING AND PROPERTY OPERATORS AND DEVELOPERS
66 -- COMBINATION OF REAL ESTATE, INSURANCE, LOANS, LAW OFFICES
67 -- INVESTMENT AND TRUST OFFICES
70 -- HOTELS, LODGING, CAMPSITES
72 -- MISC PERSONAL SERVICES (LAUNDRIES, BEAUTY SHOPS, ETC.)
73 -- MISC BUSINESS SERVICES (RADIO & TV, ADVERTISING, DATA PROCESSING, R&D LABS, ETC.)
75 -- AUTOMOBILE SERVICES, EXCEPT REPAIR AND CAR WASHES
76 -- REPAIR SHOPS AND RELATED SERVICES
78 -- MOTION PICTURE INDUSTRY
79 -- AMUSEMENT AND RECREATION SERVICES
80 -- HEALTH AND ALLIED SERVICES - PHYSICIANS, HOSPITALS, MEDICAL LABS, ETC.
81 -- LEGAL SERVICES
82 -- SCHOOLS AND EDUCATIONAL SERVICES
83 -- SOCIAL SERVICES
84 -- MUSEUMS, GALLERIES, AND FORMAL GARDENS
86 -- MISC ORGANIZATIONS - BUSINESS, PROFESSIONAL, RELIGIOUS ASSOCIATIONS, ETC.
88 -- PRIVATE HOUSEHOLDS
89 -- MISC SERVICES NOT CLASSIFIED ABOVE
90 -- MICROCHIP MANUFACTURERS, FOOD PROCESSORS, PETROLEUM
91 -- GOVERNMENT FACILITIES
98 -- MULTIPLE INDUSTRIES (E.G., 28 +29)
99 -- NONCLASSIFIABLE ESTABLISHMENTS

Code Number 0376 - Gear Type

01 -- NET (PLANKTON, TRUMMEL, BONGO, ETC.)
02 -- SEINE (BEACH, PURSE, ETC.)
03 -- TRAWL (OTTER, BEAM, EASTERN, ETC.)
04 -- HOOK AND LINE
05 -- BOTTLE (NISKEN, ROSETTE, VAN DORN ETC.)
06 -- GRAB (VAN VEEN, SMITH-MCINTYRE, ETC.)
07 -- CORE (PISTON, GRAVITY, BOX, ETC.)
08 -- DREDGE (CLAM, PIPE, ANCHOR, ETC.)
09 -- PUMP (PLANKTON, MIDWATER, AIRLIFT, ETC.)
10 -- AUTOMATIC COMPOSITE SAMPLER
99 -- MISCELLANEOUS (HAND-GATHERED, TRAPS, SHOVEL, ETC.)

Code Number 0377 - Measurement Code

A -- WEIGHT/VOLUME (E.G., MICROGRAMS/CC)
B -- WEIGHT/WEIGHT (E.G., MICROGRAMS/GM)
C -- VOLUME/WEIGHT (E.G., MICROLITERS/GM)
D -- VOLUME/VOLUME (E.G., MICROLITERS/LITER)
E -- ACTIVITY/VOLUME (E.G., MICROCURIES/ML)
F -- ACTIVITY/WEIGHT (E.G., MICROCURIES/GM)
G -- WEIGHT/AREA (E.G., MILLIGRAMS/SQ. M)
H -- MILLIVOLTS
I -- PERCENT
J -- WEIGHT/WEIGHT (E.G., NANOGRAMS/GRAM)
K -- WEIGHT/VOLUME (E.G., MICROGRAMS/LITER)
L -- WEIGHT/VOLUME (E.G.,MILLIGRAMS/LITER)
M -- NEGATIVE RATIO
N -- POSITIVE RATIO OR PURE NUMBER
W -- DEGREES CELCIUS
O -- mEQ/100G
P -- STANDARD pH UNITS

Code Number 0380 - Organ Code

002 -- PHARYNX
003 -- ESOPHAGUS
004 -- FUNDIC STOMACH
005 -- PYLORIC STOMACH
006 -- PYLORIC CAECAE
007 -- SMALL(UPPER) INTESTINE
008 -- LOWER INTESTINE(TO RECTUM)
009 -- RECTUM
010 -- ANUS
011 -- LIVER
012 -- PANCREAS(NOS = NOT OTHERWISE SPECIFIED)
013 -- PANCREAS(EXOCRINE)
014 -- GALL BLADDER
015 -- TAIL(POSTERIOR, TRUNK) KIDNEY
016 -- URINARY BLADDER
017 -- OPISTHONEPHRIC DUCT
018 -- HEART (NOS)
019 -- BULBUS ARTERIOSUS
020 -- ATRIUM, AURICLE
021 -- VENTRICLE
022 -- SINUS VENOSUS
023 -- SEMILUNAR VALVE
024 -- AURICULOVENTRICULAR VALVE
025 -- VISCERAL CAVITY
026 -- ORAL(BUCCAL) CAVITY
027 -- PERICARDIAL CAVITY
028 -- OPERCULAR CAVITY
029 -- NASAL SINUSES
030 -- SPLEEN
031 -- THYMUS
032 -- HEAD(ANTERIOR)KIDNEY
033 -- GILL
034 -- PSEUDOBRANCH
035 -- TESTIS
036 -- OVARY
037 -- SEMINAL VESICLE, SPERMATIC DUCT
038 -- OVIDUCT
039 -- ENDOCRINE PANCREAS
040 -- CORPUSCLE OF STANNIUS
041 -- ADRENOCORTICAL(INTERRENAL) TISSUE
042 -- CHROMAFFIN TISSUE
043 -- PITUITARY GLAND
044 -- THYROID GLAND
045 -- SWIM BLADDER
046 -- GAS GLAND RETE
047 -- HEAD
048 -- LIPS
049 -- EYES
050 -- SKIN(NOS)

Code Number 0380 - Organ Code (cont'd)

051 -- SKIN, EYED/RIGHT
052 -- SKIN, BLIND/LEFT
053 -- SKELETAL MUSCLE (NOS)
054 -- SKELETAL MUSCLE, EYED/RIGHT
055 -- SKELETAL MUSCLE, BLIND/LEFT
056 -- FIN(NOS)
057 -- PECTORAL FIN(NOS)
058 -- PECTORAL FIN, EYED/RIGHT
059 -- PECTORAL FIN, BLIND/LEFT
060 -- PELVIC FIN(NOS)
061 -- PELVIC FIN, EYED/RIGHT
062 -- PELVIC FIN, BLIND/LEFT
063 -- DORSAL FIN(NOS)
064 -- DORSAL FIN, EYED/RIGHT
065 -- DORSAL FIN, BLIND/LEFT
066 -- ANAL FIN(NOS)
067 -- ANAL FIN, EYED/RIGHT
068 -- ANAL FIN, BLIND/LEFT
069 -- CAUDAL FIN(NOS)
070 -- CAUDAL FIN, EYED/RIGHT
071 -- CAUDAL FIN, BLIND/LEFT
072 -- CAUDAL PEDUNCLE(NOS)
073 -- CAUDAL PEDUNCLE, EYED/RIGHT
074 -- CAUDAL PEDUNCLE, BLIND/LEFT
075 -- SKELETAL BONE(NOS)
076 -- NEUROCRANIUM
077 -- BRANCHIOCRANIUM
078 -- VERTEBRAL COLUMN
079 -- RIBS
080 -- CARTILAGE(NOS)
081 -- OPERCULUM
082 -- GONAD
083 -- BRAIN(NOS)
084 -- TELENCEPHALON
085 -- DIENCEPHALON
086 -- MESENCEPHALON
087 -- CEREBELLUM
088 -- MEDULLA OBLONGATA
089 -- SPINAL CORD
090 -- PINEAL GLAND
091 -- OLFACTORY ORGAN
092 -- LATERAL LINE SYSTEM
093 -- MESENTERY
094 -- KIDNEY
095 -- MUSCLE
096 -- STOMACH
097 -- GALL BLADDER/MESENTERIC CORPUSCLES

Code Number 0381 - Suborgan/Tissue

001 -- EPITHELIUM
002 -- GLANDULAR EPITHELIUM
003 -- DUCTULAR EPITHELIUM, SIMPLE
004 -- TRANSITIONAL EPITHELIUM(E.G. URINARY BLADDER)
005 -- COLUMNAR EPITHELIUM, SIMPLE
006 -- COLUMNAR EPITHELIUM, STRATIFIED
007 -- CUBOIDAL EPITHELIUM, SIMPLE
008 -- CUBOIDAL EPITHELIUM, STRATIFIED
009 -- SQUAMOUS EPITHELIUM, SIMPLE
010 -- SQUAMOUS EPITHELIUM, STRATIFIED
011 -- PERITONEUM
012 -- SEROSA, MESOTHELIUM(NOS)
013 -- MUCOSA(NOS)
014 -- HEPATOCELLULAR EPITHELIUM(NOS)
015 -- HEPATOCELLULAR EPITHELIUM, CENTROLOBULAR
016 -- HEPATOCELLULAR EPITHELIUM, MIDZONAL
017 -- HEPATOCELLULAR EPITHELIUM, PERIPORTAL
018 -- INTRAHEPATIC BILE DUCT EPITHELIUM
019 -- EXTRAHEPATIC BILE DUCT EPITHELIUM
020 -- TUBULAR EPITHELIUM OF RENAL EXCRETORY ELEMENTS (NOS)
021 -- TUBULAR EPITHELIUM OF NECK SEGMENT
022 -- TUBULAR EPITHELIUM OF PROXIMAL SEGMENT
023 -- TUBULAR EPITHELIUM OF DISTAL SEGMENT
024 -- TUBULAR EPITHELIUM OF COLLECTING DUCT
025 -- TUBULAR EPITHELIUM OF OPISTHONEPHRIC SEGMENT
026 -- RESPIRATORY(LAMELLAR) EPITHELIUM
027 -- GILL FILAMENT EPITHELIUM
028 -- SPERMATOGENIC EPITHELIUM
029 -- OOGENIC EPITHELIUM
030 -- CONNECTIVE TISSUE(NOS)
031 -- STROMA(NOS)
032 -- LAMINA PROPRIA
033 -- SUBMUCOSA/SUBEPITHELIA
034 -- SUBSEROSA
035 -- INTRALAMELLAR SUPPORTIVE E.T.(E.G. PILLAR CELL AND MATRIX)
036 -- LOOSE C.T.(NOS)
037 -- LOOSE COLLAGENOUS C.T., REGULAR
038 -- LOOSE COLLAGENOUS C.T., IRREGULAR
039 -- DENSE C.T.(NOS)
040 -- DENSE COLLAGENOUS C.T., REGULAR
041 -- DENSE COLLAGENOUS C.T., IRREGULAR
042 -- ELASTIC C.T.
043 -- RETICULAR C.T.
044 -- ADIPOSE TISSUE
045 -- FIBROBLASTS
046 -- CARTILAGE(NOS)

Code Number 0381 - Suborgan/Tissue (cont'd)

047 -- CARTILAGE, CELLULAR ELEMENTS(E.G. CHONDROCYTES, CHONDROBLASTS)
048 -- CARTILAGE GROUND SUBSTANCE(MATRIX)
049 -- PERICHONDRIUM
050 -- BONE(NOS)
051 -- CELLULAR BONE
052 -- ACELLULAR BONE
053 -- BONE, CELLULAR ELEMENTS(NOS)
054 -- OSTEOBLASTS
055 -- OSTEOCYTES
056 -- OSTEOCLASTS
057 -- BONE MATRIX(NOS)
058 -- BONE MATRIX, ORGANIC
059 -- BONE MATRIX, INORGANIC
060 -- PERIOSTEUM
061 -- LEPIDOTRICHIA
062 -- CENTRAL CONNECTIVE TISSUE OF LEPIDOTRICHIA
063 -- SPLENIC ELLIPSOIDS/RETICULAR SHEATHS
064 -- CAPSULE
065 -- TUNICA MUSCULARIS
066 -- HEPATOPANCREAS DUCT LUMEN
067 -- OVARIAN FOLDS
068 -- OUTSIDE/ADJACENT TO ORGAN
069 -- BETWEEN FOLLICLES
070 -- OUTSIDE/BETWEEN OVIGENOUS FOLDS
071 -- TESTES - TUBULES AND/OR CYSTS
072 -- BILE DUCT
073 -- PARENCHYMA
074 -- HEPATOPANCREAS
090 -- HAEMATOPOIETIC TISSUE(NOS)
091 -- ERYTHROID TISSUE
092 -- LYMPHOID TISSUE
093 -- RETICULOENDOTHELIAL/MONONUCLEAR PHAGOCYTIC SYSTEM(NOS)
094 -- ERYTHROCYTES
095 -- ERYTHROBLASTS
096 -- THROMBOCYTES
097 -- LEUKOCYTES
098 -- GRANULOCYTES
099 -- NEUTROPHILS
100 -- BASOPHILS
101 -- EOSINOPHILS
102 -- MONOCYTES
103 -- MELANOMACROPHAGE CENTERS(MM-C)
104 -- MUSCLE TISSUE(NOS)
105 -- SMOOTH MUSCLE(NOS)
106 -- MUSCULARIS MUCOSA
107 -- MUSCULARIS EXTERNAE
108 -- STRIATED SKELETAL MUSCLE(NOS)

Code Number 0381 - Suborgan/Tissue (cont'd)

109 -- ENDOMYSIUM
110 -- PERIMYSIUM
111 -- EPIMYSIUM
112 -- MYOCARDIUM(NOS)
113 -- MYOCARDIUM, SUBENDOCARDIAL
114 -- MYOCARDIUM, MIDZONAL
115 -- MYOCARDIUM, SUBEPICARDIAL
116 -- ENDOCARDIUM
117 -- EPICARDIUM
118 -- PERICARDIUM
119 -- VASCULATURE(NOS)
120 -- ENDOTHELIUM
121 -- ARTERIES(NOS)
122 -- LARGE ELASTIC ARTERIES
123 -- MUSCULAR ARTERIES
124 -- SMALL ARTERIES
125 -- ARTERIOLES
126 -- VEINS(NOS)
127 -- LARGE VEINS
128 -- SMALL VEINS
129 -- VENULES
130 -- CAPILLARIES
131 -- CENTRAL VEIN(LIVER)
132 -- SINUSES
133 -- SINUSOIDS
134 -- LYMPHATIC DUCTS
150 -- NERVOUS TISSUE(NOS)
151 -- NEURON(NOS)
152 -- NEURONAL SOMA(CELL BODY)
153 -- AXON
154 -- DENDRITE
155 -- NEUROGLIAL CELL(NOS)
156 -- EPENDYMAL CELL
157 -- NEUROGLIAL CELL OF CENTRAL NERVOUS SYSTEM
158 -- SATELLITE CELL OF PERIPHERAL GANGLIA
159 -- SCHWANN CELL
160` -- CEREBRUM(NOS)
161 -- CEREBRAL CORTEX
162 -- CEREBRAL MEDULLA
163 -- CEREBELLUM(NOS)
164 -- CEREBELLUM, MOLECULAR LAYER
165 -- CEREBELLUM, GRANULAR LAYER
166 -- CEREBELLUM, PURKINJE CELLS
167 -- MENINGES(NOS)
168 -- VENTRICLES
169 -- CHOROID PLEXUS
170 -- SACCUS VASCULOSUS
171 -- OPTIC TECTUM
172 -- TEGMENTUM

173 -- GRAY MATTER
174 -- WHITE MATTER
175 -- NERVE TRACT(NOS)
176 -- NERVE, UNMYELINATED
177 -- NERVE, MYELINATED
178 -- ENDONEURIUM
179 -- PERINEURIUM
180 -- EPINEURIUM
181 -- PERIPHERAL GANGLION
182 -- NEUROMAST OF LATERAL LINE
200 -- EPIDERMIS
201 -- SUBCUTANEOUS TISSUE(NOS)
202 -- DERMIS(NOS)
203 -- STRATUM SPONGIOSUM
204 -- STRATUM COMPACTUM
205 -- HYPODERMIS
206 -- SCALE(NOS)
300 -- NEPHRON(NOS)
301 -- GLOMERULUS(NOS)
302 -- BOWMAN'S SPACE
303 -- GLOMERULAR TUFT
304 -- GLOMERULAR CAPILLARIES
305 -- GLOMERULAR MESANGIUM
306 -- MESANGIAL MATRIX
307 -- VISCERAL EPITHELIUM OF BOWMAN'S CAPSULE
308 -- PARIETAL EPITHELIUM OF BOWMAN'S CAPSULE
309 -- AFFERENT ARTERIOLE OF GLOMERULUS
310 -- EFFERENT ARTERIOLE OF GLOMERULUS
311 -- JUXTAGLOMERULAR COMPLEX
312 -- GILL ARCH
313 -- GILL FILAMENT
314 -- GILL(SECONDARY) LAMELLA
315 -- ADENOHYPOPHYSIS
316 -- NERUOHYPOPHYSIS
317 -- SPERMATOGONIA
318 -- PRIMARY SPERMATOCYTE
319 -- SECONDARY SPERMATOCYTE
320 -- SPERMATIDS
321 -- SPERMATOZOA
322 -- OOGONIA
323 -- OOCYTE, STAGE A(PRIMARY)
324 -- OOCYTE, STAGE B(SECONDARY)
325 -- MATURING OVA, STAGE C
326 -- MATURING OVUM, STAGE D
327 -- MATURING OVUM, STAGE E
328 -- DEVELOPING EMBRYO
350 -- GOBLIT/MUCOUS CELLS
351 -- LUMEN
352 -- BASEMENT MEMBRANE/BASAL LAMINA
353 -- CHLORIDE CELLS OF GILL EPITHELIUM

Code Number 0382 - Lesion/Etiology

001 -- NORMAL
002 -- ALGAE
003 -- FUNGAL INFECTION
004 -- ICTHYOPHONUS
005 -- HELMINTHS
006 -- NECROSIS
007 -- UNKNOWN
008 -- OTHER
009 -- ATRETIC EGGS
010 -- HYPERPLASIA - ABNORMAL CELLS
011 -- HYPERPLASIA - NORMAL CELLS
012 -- CYST - PROBABLE DEGENERATE PARASITE
013 -- CYST - UNKNOWN
014 -- LEUKOCYTIC INFILTRATION BY UNKNOWN
015 -- SARCODINA
016 -- AMOEBIDAE
017 -- MASTIGOPHORA(FLAGELLATES)(NOS)
018 -- DINOFLAGELLATES(NOS)
019 -- EUGLENA(NOS)
020 -- PROTOMONADINA(NOS)
021 -- TRYPANOSOMA(NOS)
022 -- POLYMASTIGINA
023 -- COSTIA SPP.
024 -- HEXAMITA SPP.
025 -- CILIOPHORA(INFUSORIA)(NOS)
026 -- SUCTORIA(NOS)
027 -- NON-SUCTORIAN CILIATES(NOS)
028 -- SPIROTRICHIA(NOS)
029 -- HOLOTRICHIA(NOS)
030 -- ICHTHYOPHTHIRIUS SPP.
031 -- CRYPTOCARYON SPP.
032 -- GYMNOSTOMATIDA(NOS)
033 -- PERITRICHIA(NOS)
034 -- TRICHODINA SPP.
035 -- UNIDENTIFIED NON-SPOROZOAN(PROTOZOA)
036 -- GENERAL - LEUKOCYTIC INFILTRATION
037 -- HYALINIZATION
038 -- FIBROPLAST INFILTRATION
039 -- DEGENERATED GONAD
040 -- VESICULATION
041 -- PYCNOTIC NUCLEI
042 -- FLUID STROMA
043 -- CELLULAR DEBRIS
044 -- REABSORBED OCCYTES
045 -- UNDEVELOPED GONADS
046 -- INCREASED CONNECTIVE TISSUE
047 -- ACIDOPHILLIC CELLS
048 -- MURALIUM STRUCTURE
049 -- TUBULAR STRUCTURE

Code Number 0382 - Lesion/Etiology (cont'd)

050 -- MIXED STRUCTURE
051 -- SINUSOID OPEN
052 -- SINUSOID CLOSED
053 -- HEPATOPANCREAS PRESENT
054 -- GRANULOMA
055 -- ACNIDOOSPORIDIA(NOS)
056 -- SARCOCYSTIS SPP.
057 -- TELEOSPOREA(NOS)
058 -- COCCIDIA(NOS)
059 -- EIMERIA SPP.
060 -- HAEMOGREGARINA SPP.
061 -- HAEMOSPORIDIA
062 -- CNIDOSPORA(NOS)
063 -- MYXOSPORIDEA(NOS)
064 -- EURYSPORIDEA(NOS)
065 -- SPAEROSPORIDEA(NOS)
066 -- PLATYSPOREA
067 -- MYXIDIIAE
068 -- MYXIDIUM SPP.
069 -- COCCOMYXIDAE(NOS)
070 -- MYXOSOMATIDAE(NOS)
071 -- MYXOBOLIDAE (NOS)
072 -- ELONGIDAE(NOS)
073 -- MICROSPORIDEA
074 -- UNIDENTIFIED PROTOZOAN
075 -- UNIDENTIFIED SPOROZOAN
076 -- KUDOA
077 -- UNKNOWN DISEASE
078 -- SAMPLE LOST
079 -- NO PATHOLOGICAL CONDITION FOUND
100 -- MONOGENE
101 -- NONOPISTHOCOTYLEA(NOS)
102 -- POLYOPISTHOCOTYLEA(NOS)
103 -- ASPIDOCOTYLEA(NOS)
104 -- ADULT DIGENETIC TREMATODE(NOS)
105 -- LARVAL(METACERCARCIAL) DIGENETIC TREMATODE(NOS)
106 -- DIGENETIC TREMATODE, LIFE STAGE UNSPECIFIED(NOS)
107 -- ADULT CESTODE(NOS)
108 -- CESTODE, UNSPECIFIED LIFE STAGE(NOS)
109 -- UNSPECIFIED ADULT HELMINTH
110 -- UNSPECIFIED LARVAL HELMINTH
111 -- UNSPECIFIED HELMINTH, UNSPECIFIED LIFE STAGE
112 -- UNSPECIFIED HELMINTH OVUM
113 -- ADULT NEMATODE
114 -- PHILOMETRA SPP.
115 -- LARVAL NEMATODE(NOS)
116 -- NEMATODE, UNSPECIFIED LIFE STAGE
117 -- ADULT ACANTHOCEPHALID(NOS)
118 -- LARVAL ACANTHOCEPHALID(NOS)

Code Number 0382 - Lesion/Etiology (cont'd)

119 -- ACANTHOCEPHALAN, UNSPECIFIED LIFE STAGE
120 -- HIRUDINEA(LEECH)(NOS)
121 -- CRUSTACEA(NOS)
122 -- BRANCHIURA(NOS)
123 -- COPEPODA(NOS)
124 -- UNIDENTIFIED METAZOAN
125 -- HEMIURAN TREMATODE
126 -- APICAL END OF CELL EOSINOPHITIC
127 -- BASOPHILIC HEPATOCYTES
175 -- BACTERIAL INFECTION
176 -- ROD-LIKE BACTERIA
177 -- COCCI BACTERIA
178 -- GRAM-NEGATIVE BACTERIA
179 -- GRAM-POSITIVE BACTERIA
180 -- CHALMYDIAL INFECTION
181 -- RICKETTSIAL INFECTION(NOS)
182 -- EPITHELIOCYSTIS
183 -- VIRAL INFECTION
184 -- RODLET CELLS
185 -- UNSPECIFIED, UNIDENTIFIABLE PARASITIC INFECTION/INFESTATION
186 -- LYMPHOCYSTIS
187 -- LARVAL CESTODE
200 -- INFLAMMATION, INFLAMMATORY REACTION(NOS)
201 -- ACUTE INFLAMMATION(NOS)
202 -- SUBACUTE INFLAMMATION(NOS)
203 -- CHRONIC INFLAMMATION(NOS)
204 -- ULCERATIVE INFLAMMATION(NOS)
205 -- EROSIVE INFLAMMATION(NOS)
206 -- GIANT CELL INFLAMMATION
207 -- SEROUS(TRANSUDATIVE) INFLAMMATION
208 -- CATARRHAL INFLAMMATION(MUCOUS MEMBRANES)
209 -- EXUDATIVE INFLAMMATION(NOS)
210 -- SUPPURATIVE INFLAMMATION(PUS)
211 -- MUCOPURULENT EXUDATE
212 -- FIBRINOUS INFLAMMATION(NOS)
213 -- MEMBRANOUS INFLAMMATION(NOS)
214 -- HEMORRHAGIC INFLAMMATION(NOS)
215 -- NECROTIZING INFLAMMATION(NOS)
216 -- CHRONIC ULCERATIVE INFLAMMATION(FIN EROSION)
217 -- CHRONIC EXUDATIVE INFLAMMATION
218 -- CHRONIC NECROTIZING INFLAMMATION
219 -- GRANULOMATOUS INFLAMMATION(NOS)
220 -- GIANT CELL GRANULOMA(NOS)
221 -- FOREIGN BODY GIANT CELL GRANULOMA
222 -- LANGHANS GIANT CELL REACTION
223 -- NON-NECROTIZING GRANULOMA
224 -- NECROTIZING GRANULOMA
225 -- CALCIFIED GRANULOMATOUS INFLAMMATION

Code Number 0382 - Lesion/Etiology (cont'd)

226 -- INFLAMMATION WITH FIBROSIS
227 -- FIBROGRANULATION TISSUE
228 -- INFLAMMATION WITH FAT NECROSIS
229 -- INFLAMMATION WITH THROMBOSIS
230 -- INFLAMMATION WITH STASIS
231 -- PROLIFERATIVE INFLAMMATION (E.G., MESANGIOPROLIFERATIVE GLOMERULONEPHRITIS)
232 -- INFLAMMATORY CELL INFILTRATE(NOS)
233 -- ACUTE INFLAMMATORY CELL INFILTRATE
234 -- CHRONIC(LYMPHOCYTIC, MONONUCLEAR) INFLAMMATORY CELL INFILTRATE
235 -- HYSTIOCYTIC INFILTRATE
236 -- EOSINOPHILIC/GRANULOCYTIC INFILTRATE
260 -- ERYTHEMA(NOS)
261 -- FIBROSIS, FIBROPLASIA(NOS)
262 -- FIBROUS SCLEROSIS
263 -- GLIOSIS
264 -- ADHESION(NOS)
265 -- FIBROUS ADHESION
267 -- CIRRHOSIS(NOS)
268 -- MICRONODULAR CIRRHOSIS
269 -- MACRONODULAR CIRRHOSIS
270 -- BILIARY OBSTRUCTIVE CIRRHOSIS
271 -- SEPTAL CIRRHOSIS
272 -- POST-NECROTIC CIRRHOSIS
273 -- NEW BONE FORMATION
274 -- ECTOPIC BONE FORMATION
300 -- DEGENERATION(NOS)
301 -- LIQUIFACTIVE DEGENERATION
302 -- GRANULAR(FLOCCULAR, CLOUDY SWELLING)
303 -- HYALINE DEGENERATION
304 -- HYDROPIC DEGENERATION
305 -- FATTY DEGENERATION, FATTY CHANGE
306 -- MUCOID DEGENERATION
307 -- PIGMENTARY DEGENERATION
308 -- NECROSIS(NOS)
309 -- LIQUEFACTIVE NECROSIS
310 -- COAGULATIVE NECROSIS
311 -- HYALIN BODIES
312 -- FATTY NECROSIS
313 -- HEMMORHAGIC NECROSIS
314 -- CASEOUS NECROSIS
315 -- FIBRINOID NECROSIS
316 -- EXFOLIATION, SLOUSING
317 -- INFARCT(NOS)
318 -- ACUTE INFARCT
319 -- HEMORRHAGIC INFARCT
320 -- HEALEC INFARCT
321 -- EOSINOPHILIC CHANGE

Code Number 0382 - Lesion/Etiology (cont'd)

350 -- DEPOSITION(NOS)
351 -- HYALINIZATION
352 -- FIBRIN DEPOSITION
353 -- AMYLOID DEPOSITION
354 -- PARA-AMYLOID DEPOSITION
355 -- FATTY INFILTRATION
356 -- CALCIFICATION, MINERALIZATION (NOS)
357 -- NUTRITIONAL(METASTIC) CALCIFICATION
358 -- DYSTROPHIC CALCIFICATION
359 -- CALCINOSIS
360 -- PROTEIN DEPOSITION
361 -- FILTRATE PROTEIN DEPOSITION
362 -- FOREIGN MATERIAL DEPOSITION
363 -- PIGMENTATION (NOS)
364 -- PIGMENT ALTERATION(NOS)
365 -- MELANIN PIGMENTATION
366 -- MELANOSIS
367 -- DYSTROPHY (NOS)
368 -- CONNECTIVE TISSUE DYSTROPHY(NOS)
369 -- ATROPHY(NOS)
370 -- FATTY ATROPHY
371 -- COMPRESSION ATROPHY
372 -- DEPLETION(NOS)
373 -- LIPID DEPLETION
374 -- DECALCIFICATION/DEMINERALIZATION
375 -- CYTOPENIA(NOS)
376 -- PILIOSIS HEPATITIS (RED SPOT)
400 -- NUCLEAR ALTERATION(NOS)
401 -- MULTIPLE NUCLEI(NOS)
402 -- BINUCLEATE
403 -- NUCLEAR DEGENERATION(KARYORRHEXIS, KARYOLYSIS)
404 -- PYKNOSIS
405 -- NUCLEAR ENLARGEMENT
406 -- NUCLEAR PLEOMORPHISM(ANISOKARYOSIS)
407 -- NUCLEAR SHAPE ALTERATION(NOS)
408 -- FOLDED NUCLEUS
409 -- FISSURED NUCLEUS
410 -- GENERAL CHROMATIN ALTERATION(NOS)
411 -- CHROMATIN COARSELY DISPERSED
412 -- CHROMATIN FINELY DISPERSED
413 -- NUCLEAR HYPERCHROMASIA
414 -- NUCLEAR ACHROMASIA
415 -- NUCLEAR HYPOCHROMASIA
416 -- MARGINATION OF CHROMATIN
417 -- SUSPECTED POLYPLOIDY
418 -- SUSPECTED MITOTIC ARREST
419 -- NUCLEOLAR ALTERATION(NOS)
420 -- MULTIPLE NUCLEOLI
421 -- ALTERATION OF FILAMENTOUS PORTION OF NUCLEOLUS

Code Number 0382 - Lesion/Etiology (cont'd)

422 -- ALTERATION OF AMORPHOUS PORTION OF NUCLEOLUS
423 -- NUCLEOLAR ENLARGEMENT
424 -- NUCLEAR MEMBRANE ALTERATION(NOS)
425 -- NUCLEAR MEMBRANE THICKENING
426 -- NUCLEAR MEMBRANE REDUPLICATION/PROLIFERATION
427 -- NUCLEAR PORE ALTERATION
428 -- INTRANUCLEAR INCLUSION
429 -- NUCLEAR VACUOLATION
450 -- MITOCHONDRIAL ALTERATION(NOS)
451 -- ALTERATION OF MITOCHONDRIAL CRISTAE
452 -- ALTERATION OF MITOCHONDRIAL MATRIX
453 -- ALTERATION OF MITOCHONDRIAL MEMBRANE
454 -- FUSED CRISTAE
455 -- MITOCHONDRIAL ENLARGEMENT
456 -- GIANT MITOCHONDRIA
457 -- MITOCHONDRIAL VACUOLATION
458 -- MITOCHONDRIAL HYPERPLASIA
459 -- ENDOPLASMIC RETICULUM ALTERATION(NOS)
460 -- SMOOTH ENDOPLASMIC RETICULUM ALTERATION(NOS)
461 -- SMOOTH ENDOPLASMIC RETICULUM FRAGMENTATION
462 -- SMOOTH ENDOPLASMIC RETICULUM PROLIFERATION
463 -- SMOOTH ENDOPLASMIC RETICULUM DILATION
464 -- ROUGH ENDOPLASMIC RETICULUM ALTERATION(NOS)
465 -- ROUGH ENDOPLASMIC RETICULUM FRAGMENTATION
466 -- ROUGH ENDOPLASMIC RETICULUM PROLIFERATION
467 -- ROUGH ENDOPLASMIC RETICULUM DILATION
468 -- GOLGI APPARATUS ALTERATION(NOS)
469 -- GOLGI APPARATUS MEMBRANE ALTERATION
470 -- GOLGI APPARATUS CAVITY ALTERATION
471 -- GOLGI APPARATUS MEMBRANE ALTERATION
472 -- GOLGI APPARATUS VACUOLATION
473 -- GOLGI APPARATUS HYPERTROPHY
474 -- GOLGI APPARATUS HYPERPLASIA
475 -- RIBOSOME ALTERATION(NOS)
476 -- POLYSOME ALTERATION(NOS)
477 -- LYSOSOME ALTERATION(NOS)
478 -- LYSOSOMAL DEBRIS
479 -- MYELIN FIGURE FORMATION
480 -- CYTOPLASMIC INCLUSION BODIES(NOS)
481 -- CYTOPLASMIC DROPLETS(NOS)
482 -- CYTOPLASMIC VACUOLATION
483 -- CYTOPLASMIC DEPOSITION(NOS)
484 -- CYTOPLASMIC ELECTRON-DENSE DEPOSITION
485 -- CYTOPLASMIC HEMOSIDERIN
486 -- CYTOPLASMIC HEMATIN
487 -- CYTOPLASMIC LIPOFUSCIN/CEROID
488 -- CYTOPLASMIC MELANIN
489 -- CYTOPLASMIC BILIRUBIN/BILIVERDIN
490 -- CYTOPLASMIC GLYCOGEN DEPOSITION

Code Number 0382 - Lesion/Etiology (cont'd)

491 -- CYTOPLASMIC FAT DEPOSITION
492 -- CYTOPLASMIC HYALIN DEPOSITION(INCLUDING ALCOHOLIC HYALIN, MALLORY BODIES)
493 -- CYTOPLASMIC PROTEIN DEPOSITION(INCLUDING RUSSELL BODIES)
494 -- CYTOPLASMIC AGGREGATES(NOS)
495 -- CYTOPLASMIC GRANULATION
497 -- PERINUCLEAR HALO
498 -- CYTOPLASMIC FIBER ALTERATION(NOS)
499 -- CYTOPLASMIC FILAMENT ALTERATION(NOS)
500 -- MICROTUBULE ALTERATION
501 -- MYOFIBRILLAR CONTRACTION BANDS ALTERATION
502 -- MYOFILAMENT FRAGMENTATION
503 -- MYOFILAMENT LOSS
504 -- SARCOPLASMIC MASSES
505 -- PLASMA MEMBRANE ALTERATION(NOS)
506 -- PLASMA MEMBRANE RUPTURE
507 -- PLASMA MEMBRANE REDUPLICATION
508 -- PLASMA MEMBRANE THICKENING
509 -- DESMOSOME ALTERATION(NOS)
510 -- TIGHT JUNCTION ALTERATION(NOS)
511 -- MICROVILLUS ALTERATION(NOS)
512 -- FOOT PROCESS ALTERATION(NOS)
513 -- PINOCYTOTOC/PHAGOCYTOTIC VACUOLE
514 -- AUTOPHAGIC VACUOLE ALTERATION(NOS)
515 -- CYTOLOGIC ALTERATION(NOS)
516 -- PLEOMORPHISM
517 -- ABNORMAL CELL SIZE(NOS)
518 -- GIANT CELL(NOS)
519 -- CYTOMEGALY/MEGALOCYTOSIS
520 -- MICROCYTOSIS
521 -- CELL SHAPE ALTERATION(NOS)
522 -- FUSIFORM CELL
523 -- CELL STRUCTURE ALTERATION (NOS)
524 -- INCREASED NUCLEAR/CYTOPLASMIC RATIO
525 -- DECREASED NUCLEAR/CYTOPLASMIC RATIO
526 -- SYNSYTIAL FORMATION
527 -- CELL CONTENT ALTERATION(NOS)
528 -- CELL MITOSIS ALTERATION(NOS)
529 -- INCREASED MITOTIC ACTIVITY
530 -- DECREASED MITOTIC ACTIVITY
531 -- CYTOLOGIC ATYPIA(NOS)
532 -- EXTRACELLULAR ALTERATION (NOS)
533 -- BASEMENT MEMBRANE ALTERATION(NOS)
534 -- BASEMENT MEMBRANE FRAGMENTATION
535 -- BASEMENT MEMBRANE THICKENING
536 -- DUPLICATION/PROLIFERATION OF BASEMENT MEMBRANE
537 -- BASEMENT MEMBRANE-LIKE MATERIAL(NOS)
538 -- EXTRACELLULAR FIBER ALTERATION(NOS)

Code Number 0382 - Lesion/Etiology (cont'd)

539 -- EXTRACELLULAR LIPID AGGREGATE ALTERATION(NOS)
540 -- EXTRACELLULAR MACROMOLECULE AGGREGATE ALTERATION
541 -- EXTRACELLULAR ELECTRON-DENSE DEPOSITION20382LESION/ETIOLOGY
542 -- EXTRACELLULAR MATRIX ALTERATION(NOS)
543 -- DECREASED CYTOPLASMIC VACUOLATION
544 -- INCRASED CYTOPLASMIC BASOPHILIA
545 -- INCREASED CYTOPLASMIC EOSINOPHILIA
700 -- HYPERTROPHY(NOS)
701 -- IDIOPATHIC HYPERTROPHY
702 -- COMPENSATORY HYPERTROPHY
703 -- EOSINPHILIC HYPERTROPHY
704 -- BASOPHILIC HYPERTROPHY
705 -- CARTILAGINOUS OVERGROWTH
706 -- BONE OVERGROWTH
707 -- HYPERPLASIA(NOS)
708 -- IDIOPATHIC HYPERPLASIA
709 -- COMPENSATORY HYPERPLASIA
710 -- NODULAR HYPERPLASIA
711 -- POLYPOID HYPERPLASIA
712 -- PAPILLARY HYPERPLASIA
713 -- CYSTIC HYPERPLASIA
714 -- MURALIAL(NON-NODULAR) HYPERPLASIA
715 -- METAPLASIA(NOS)
716 -- NEOVASCULARIZATION/HYPERVASCULARIZATION
717 -- DYSPLASIA(NOS)
718 -- LIPOMATOSIA(NOS)
719 -- ADENOSIS(NOS)
720 -- CYSTIC DISEASE
721 -- MATURATION DEFECT(NOS)
722 -- MATURATION ARREST
723 -- HYPOPLASIA
724 -- APLASIA(NOS)
725 -- HAMARTOMA(NOS)
726 -- PROLIFERATION(NOS)
727 -- CELLULAR PROLIFERATION
728 -- GLANDULAR/DUCTULAR PROLIFERATION
729 -- FIBROMATOSIS
730 -- TELANGIASIA/HEMANGIECTASIS
731 -- POLYP(NOS)
732 -- HISTIOCYTOSIS
733 -- PERIPHERAL BLOOD CELL ABNORMALITY
734 -- REGENERATION(NOS)
735 -- ATYPICAL REGENERATION
736 -- COMPENSATORY
737 -- HERMAPHRODITISM
738 -- HYPOCELLULARITY
739 -- RESORPTION/RETRACTION
800 -- NEOPLASM(NOS)

Code Number 0382 - Lesion/Etiology (cont'd)

801 -- BENIGN NEOPLASM(NOS)
802 -- MIXED BENIGN NEOPLASM(NOS)
803 -- MALIGNANT NEOPLASM(NOS)
804 -- PRIMARY METASTASIZING NEOPLASM(NOS)
805 -- METASTASIS
806 -- METASTASIZING NEOPLASM, UNSPECIFIED WHETHER PRIMARY OR METASTATIC SITE
807 -- MIXED MALIGNANT NEOPLASM(NOS)
808 -- MIXED METASTASIZING NEOPLASM(NOS)
818 -- HYPERBASOPHILIC FOCUS
819 -- CLEAR CELL FOCUS
820 -- MINIMUM DEVIATION NODULE
821 -- LIVER CELL ADENOMA(NOS)
822 -- LIVER CELL ADENOMA, UNENCAPSULATED
823 -- LIVER CELL ADENOMA, ENCAPSULATED
824 -- CHOLANGIOMA(NOS)
825 -- CHOLANGIOMA, UNENCAPSULATED
826 -- CHOLANGIOMA, ENCAPSULATED
827 -- HEPATOCELLULAR CARCINOMA(NOS)
828 -- METASTASIZING HEPATOCELLULAR CARCINOMA
829 -- CHOLANGIOCELLULAR CARCINOMA(NOS)
830 -- METASTASIZING CHOLANGIOCELLULAR CARCINOMA
831 -- MESEC HEPATOCELLULAR & BILE DUCT CARCINOMA(NOS)
832 -- METASTASIZING HEPATOCELLULAR & BILE DUCT CARCINOMA
833 -- FIBROMA
834 -- FIBROSARCOMA
835 -- NEUROFIBROMA
836 -- NEUROFIBROSARCOMA
837 -- LIPOMA
838 -- LIPOSARCOMA
839 -- CHONDROMA
840 -- CHONDROSARCOMA
841 -- OSTEOMA
842 -- OSTEOGENIC SARCOMA
843 -- HEMANGIOMA
844 -- HEMANGIOSARCOMA
845 -- LYMPHANGIOMA
846 -- MESOTHELIOMA
847 -- LEUKEMIA(NOS)
848 -- LEIOMYOMA
849 -- LEIOMYOSARCOMA
850 -- RHABDOMYOMA
851 -- RHABDOMYOSARCOMA
852 -- ADENOMA
853 -- ADENOCARCINOMA
854 -- PAPILLOMA
855 -- PAPILLARY CARCINOMA
856 -- CYSTADENOMA
857 -- CYSTADENOCARCINOMA

Code Number 0382 - Lesion/Etiology (cont'd)

858 -- CARCINOMA
859 -- CARCINOMA-IN-SITU
860 -- SARCOMA
861 -- NEURILEMMOMA
890 -- XENOMA(NOS)
891 -- ANGIOEPITHELIAL NODULE
892 -- TRANSITIONAL ANGIOEPITHELIAL NODULE
893 -- EPIDERMAL PAPILLOMA
900 -- CALCULUS
901 -- MALPOSITION, DISPLACEMENT
902 -- CYSTIC FORMATION(NOS), CYSTIC BILIARY DUCT
903 -- DILATION, DILATATION(NOS)
904 -- DISTENSION(NOS)
905 -- HYPERDISTENSION
906 -- ANEURYSM
907 -- MICROANEURYSM
908 -- DIVERTICULUM(NOS)
909 -- STASIS(NOS)
910 -- PROTEIN CAST
911 -- BILE CAST
912 -- MUCUS CAST
913 -- CYST(NOS)
914 -- HEMORRHAGIC CYST
915 -- PARASITIC CYST
916 -- OBSTRUCTION, ATRESIA(NOS)
917 -- STENOSIS(NOS)
918 -- DISRUPTION(NOS)
940 -- BLOOD CLOT(NOS)
941 -- ANTEMORTEM BLOOD CLOT
942 -- POSTMORTEM BLOOD CLOT
943 -- DISSEMINATED INTRAVASCULAR COAGULATION
944 -- THROMBUS(NOS)
945 -- OCCLUSIVE THROMBUS
946 -- NON-OCCLUSIVE THROMBUS
947 -- CANALIZED THROMBUS
948 -- FIBRIN THROMBUS
949 -- EMBOLUS(NOS)
950 -- CONGESTION(NOS)
951 -- HYPEREMIA
952 -- PASSIVE CONGESTION
953 -- ACTIVE CONGESTION
954 -- LEAKAGE, SPILLAGE
955 -- EDEMA(NOS)
956 -- LOCALIZED EDEMA
957 -- GENERALIZED EDEMA
958 -- INTERCELLULAR EDEMA(SPONGIOSIS)
959 -- HEMORRHAGE, HEMATOMA(NOS)
960 -- PETECHIAL HEMORRHAGE
961 -- PURPURA
962 -- ECCHYMOSES
963 -- ULCERATION

Code Number 0384 - Severity Code

1 -- MINIMAL, SPARSE, VERY FEW
2 -- MINIMAL-MILD
3 -- MILD, FEW, SMALL AMOUNT
4 -- MILD-MODERATE, SEVERAL
5 -- MODERATE, MODERATE AMOUNT, MODERATE NUMBER
6 -- MODERATE-SEVERE
7 -- SEVERE, ABUNDANT, NUMEROUS, DENSE
8 -- EXCESSIVE AMOUNT OR NUMBERS, EXCESSIVELY DENSE
9 -- NON UNIFORM, HIGHLY VARIABLE

Code Number 0385 - Host Response Code

-- BLANK - NO IDENTIFIABLE RESPONSE
2 -- MINIMAL RESPONSE
3 -- MINIMAL-MILD RESPONSE
4 -- MILD RESPONSE
5 -- MILD-MODERATE RESPONSE
6 -- MODERATE RESPONSE
7 -- MODERATE-SEVERE RESPONSE
8 -- SEVERE RESPONSE

Code Number 0394 - Water Color

-- BLANK - NO INFORMATION
1 -- BLUE
2 -- BLUE-GREEN
3 -- GREEN
4 -- GREENISH BROWN
5 -- OLIVE
6 -- BROWN
990 -- NO OBSERVATION TAKEN

Code Number 0D003 - Storage/Pretreatment

1 -- PRODUCTIVITY MEASURED IMMEDIATELY
2 -- FROZEN
3 -- ULTRA-FROZEN (LN2)
4 -- FILTERED
5 -- FILTERED AND FROZEN
6 -- FILTERED AND ULTRA-FROZEN
7 -- MEASUREMENT DELAYED; NO PRETREATMENT

Code Number 0D004 - Analytical Technique

1 -- C-14 METHOD
2 -- 02 METHOD

Code Number 0D009 - Preservative Condition

-- BLANK - NO INFORMATION
1 -- LIVE
2 -- FRESH
3 -- FROZEN
4 -- SALTED

Code Number 0D013 - Bacterial/ Viral Abundance Estimation

1 -- SINGLE MEASUREMENT
2 -- ARITHMETIC MEAN
3 -- GEOMETRIC MEAN (MPN)
4 -- PRESENCE/ ABSENCE
5 -- GREATER THAN
6 -- LESS THAN

Code Number 0D014 - Analytical Technique

01 -- POUR PLATE METHOD
02 -- SPREAD PLATE METHOD
03 -- MEMBRANE FILTER METHOD
04 -- TOTAL COLIFORM MULTIPLE TUBE TEST (MPN)
05 -- FECAL COLIFORM MPN TEST
06 -- PRESENCE/ABSENCE COLIFORM TEST
07 -- IMMUNOFLOURESCENCE
08 -- MICROPOROUS FILTER ADSORPTION-ELUTION
09 -- ALUMINUM-HYDROXIDE ADSORPTION-PRECIPITATION
10 -- HYDROEXTRACTION-DIALYSIS WITH POLYETHYLENE GLYCOL
11 -- THERMO TOLERANT (STEPPED) E. COLI METHOD
12 -- IMPROVED MEMBRANE FILTER TECHNIQUE FOR ENTEROCOCCI

Code Number 0D015 - Growth Medium

01 -- TRYPTONE GLUCOSE EXTRACT
02 -- TRYPTONE GLUCOSE YEAST AGAR
03 -- R2A AGAR
04 -- M-HPC AGAR
05 -- LAURYL TRYPTOSE BROTH
06 -- BRILLIANT GREEN LACTOSE BILE BROTH
07 -- LACTOSE BROTH
08 -- EC MEDIUM
09 -- A-1 BROTH
10 -- P-A BROTH
11 -- LES ENDO AGAR
12 -- M-ENDO MEDIUM
13 -- M-FC BROTH
14 -- MODIFIED M-FC AGAR (M-FCIC)
15 -- MODIFIED MACCONKEY AGAR (MCIC)
16 -- AZIDE DEXTROSE BROTH
17 -- PFIZER SELECTIVE ENTEROCOCCUS (PSE) AGAR
18 -- KF STREPTOCOCCUS AGAR
19 -- BRAIN-HEART INFUSION
20 -- TRYPTOPHANE BROTH
21 -- KOSER'S CITRATE BROTH
22 -- SIMMONS' CIRTATE AGAR
23 -- XYLOSE LISINE DESOXYCHOLATE (XLD) AGAR
24 -- CAMPY - BAP
25 -- BUTZLER'S MEDIUM
26 -- THIOSULFATE-CITRATE-BILE-SALT-SUCROSE (TCBS) AGAR
27 -- MTEC MEDIUM (FEC. COLI)
28 -- ME MEDIUM (ENTEROCOCCUS)

Code Number 0D016 - Landed Condition

-- BLANK - NO INFORMATION
1 -- WHOLE
2 -- GUTTED
3 -- FILLETED
4 -- SHELLED

Code Number OD017 - Station Type

R -- RECEIVING WATER
E -- EFFLUENT
I -- INFLUENT
S -- SLUDGE

Code Number OD018 - Measurement Basis

W -- WET WEIGHT BASIS
D -- DRY WEIGHT BASIS

APPENDIX D
Supporting Documents for 301(h) Monitoring Programs

APPENDIX D
301(h) Guidance Document List
For ODES Data Submission Manual

1. Revised Section 301(h) Support Document. 1982.

2. Design of 301(h) Monitoring Programs for Municipal Wastewater Discharges to Marine Waters. 1982.

3. Summary of U.S. EPA-Approved Methods, Standard Methods, and Other Guidance for 301(h) Monitoring Variables. September 1985.

4. Recommended Biological Indices for 301(h) Monitoring Programs. 1985.

5. Bioaccumulation Monitoring Guidance: 1. Estimating the Potential for Bioaccumulation of Priority Pollutants and 301(h) Pesticides Discharged into Marine and Estuarine Waters. September 1985.

6. Bioaccumulation Monitoring Guidance: 2. Selection of Target Species and Review of Available Bioaccumulation Data, Volume I. September 1985.

7. Bioaccumulation Monitoring Guidance: 2. Selection of Target Species and Review of Available Bioaccumulation Data, Volume II. Appendices. March 1986.

8. Bioaccumulation Monitoring Guidance: 3. Recommended Analytical Detection Limits. September 1985.

9. Bioaccumulation Monitoring Guidance: 4. Analytical Methods for U.S. EPA Priority Pollutants and 301(h) Pesticides in Tissues from Estuarine and Marine Organisms. May 1986.

10. Bioaccumulation Monitoring Guidance: 5. Strategies for Sample Replication and Compositing. June 1987.

11. Quality Assurance and Quality Control (QA/QC) for 301(h) Monitoring Programs: Guidance on Field and Laboratory Methods. May 1986.

12. Evaluation of Survey Positioning Methods for Nearshore Marine and Estuarine Waters. May 1986.

13. Technical Evaluation and Quality Assurance Procedures for the Ocean Data Evaluation System. April 1986.

14. ODES User Guide: Supplement A. Description and Use of Ocean Data Evaluation System (ODES) Tools. September 1986.

15. Guidance for Conducting Fish Liver Histopathology Studies During 301(h) Monitoring. May 1987.

16. Technical Support Document for ODES Statistical Power Analysis. June 1987.

17. ODES Data Brief: 1. Using ODES QA/QC Reference Comments. September 1987.

18. ODES Data Brief: 2. Using ODES Numerical Classification Tool. December 1987.

19. ODES Data Brief: 3. Using ODES ANOVA Tools. December 1987.

20. ODES Data Brief: 4. Using ODES Graphic and Mapping Tools. September 1987.

21. Framework for 301(h) Monitoring Programs. September 1987.

22. A Simplified Deposition Calculation (DECAL) for Organic Accumulation Near Marine Outfalls. September 1987.