ELECTRONIC DELIVERABLE FORMAT (EDF)

VERSION 1.2a

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1 INTRODUCTION

The Electronic Deliverable Format (EDF) is a relational database organized to facilitate the transfer of data files from the laboratory to the end user. This structure is loosely based on the Air Force Center for Environmental Excellence (AFCEE) Installation Restoration Program Information Management System (IRPIMS), incorporating similar data file organization and utilizing many IRPIMS field definitions and valid value codes. However, the EDF contains many fields and data files that have no IRPIMS counterparts. Moreover, occasionally EDF applies the IRPIMS valid value codes in a more restrictive fashion. Therefore, while IRPIMS provided a design model for the EDF, IRPIMS guidelines and documentation do not directly apply to the resultant EDF. Reference to IRPIMS has been maintained throughout this document in efforts to assist and facilitate transition to the EDF for those laboratories currently familiar with the preparation of IRPIMS deliverables.

2 DATABASE DESCRIPTION

The EDF is a relational database consisting of five files, related to one another through key fields. Three of the files, NPDLSAMP, NPDLTEST, and NPDLRES, will be familiar to those with IRPIMS experience. These files include most of the mandatory IRPIMS fields, (with the exception of the site and boring information, which for EDF, has been replaced by *SAMPID* for ease of laboratory use), as well as additional fields to collect non-IRPIMS information required by the U.S. Army Corps of Engineers (USACE). The remaining two files, NPDLQC and NPDLCL, containing QC and control limit information respectively, do not have IRPIMS equivalents. The structure of each of these files is discussed below.

The NPDLSAMP file contains site and administrative information concerning field samples. Most of the information in this file should be available on the chain-of-custody form.

The NPDLTEST file, containing information regarding analytical tests performed on samples, is related to the NPDLSAMP file by sample collection information and field sample number. There is a one-to-many relationship between the NPDLSAMP file and the NPDLTEST file. Meaning, one record in the NPDLSAMP file can link to many NPDLTEST records. The files are linked through a group of fields that are the same in each file. These fields collectively are called the primary key and make the records unique.

One may envision that the sample collection information is unnecessary in the NPDLTEST file and that the field sample identification should be sufficient to link the NPDLSAMP file to the NPDLTEST file. However, not all consultants provide unique field sample numbers. It is conceivable that a sampling technician may assign sample numbers sequentially, starting over with the number "one" at each site. There are many instances of MW-1 (i.e., a sample from monitoring well #1) having been assigned to a variety of separate sites. Certainly, this does not represent a unique sample identifier. However, given the frequency of use, it would seem to have universal appeal. The information carried in the site related fields in the NPDLTEST file will

allow the EDF to distinguish among samples collected from different sites, yet having been assigned the same sample number.

The NPDLRES file contains information on results generated by the laboratory. The NPDLTEST file relates to the NPDLRES file through lab sample ID and analytical information. There is also a one-to-many relationship between the NPDLTEST file and the NPDLRES file, as noted above (i.e., there can be more than one result generated for a test). Each NPDLRES record contains information from a specific result.

The NPDLQC file contains data relating to laboratory quality control samples. Each quality control sample is identified as belonging to a particular quality control batch which serves to relate the NPDLQC and NPDLTEST files. However, the actual result for a quality control sample and its related reference sample, (i.e., the original sample of a duplicate or a spike), is stored in the NPDLRES file.

The NPDLCL file contains data associated with analytical control limits. Each record contains control limit information for a parameter analyzed by a particular analytical method. The NPDLCL file and the NPDLRES file are related through the analytical method, parameter, and control limit revision date, collectively.

3 FILE FORMATS AND RESTRICTIONS

The following sections describe the format and restrictions associated with each of the five EDF data files.

3.1 NPDLSAMP - Sample Data File

The purpose of the NPDLSAMP file is to track the administrative and site information associated with a sample. For every field-generated sample entering the laboratory, one record will be added to this file. Most of the information in this file should be available on the chain-of-custody form, and is to be entered exactly as it appears on that form. Table 1, on page 15-19, presents the NPDLSAMP file structure and field attributes. A populated NPDLSAMP file is available in the binder pocket.

NPDLSAMP FILE Guidelines and Restrictions:

- *LOCID*, *LOGDATE*, *LOGTIME*, *LOGCODE*, *SAMPID*, *MATRIX* and *LABCODE* comprise the primary key.

- Non-Client (NC) and laboratory-generated quality assurance samples prepared in the laboratory are not to be entered into this file. (NC samples are samples that do not originate from a client's sites but were used to generate quality assurance results for a client's group of samples [CS].)

NPDLSAMP FIELD Guidelines and Restrictions:

- All fields require values.

- The *LABCODE*, *LOGCODE*, and *MATRIX* fields require valid value entries. Refer to Appendix A for valid value codes.

- The *LABCODE* field reflects the laboratory that received the sample and is responsible for generating the electronic deliverable.

3.2 NPDLTEST - Test Data File

The NPDLTEST file contains information concerning the analytical test associated with the sample. Each time a test is performed that results in usable data, a test record is generated. Five fields (*LOGDATE*, *LOGTIME*, *LOGCODE*, *SAMPID* and *LABCODE*) from the NPDLSAMP file are carried over to the NPDLTEST file. Most of the information in the NPDLTEST file can be located at the top portion of a standard laboratory bench sheet. Table 2, on page 15-20, presents the NPDLTEST file structure and attributes. A populated NPDLTEST file is available in the binder pocket.

NPDLTEST FILE Guidelines and Restrictions:

- *MATRIX*, *LABCODE*, *LABSAMPID*, *QCCODE*, *ANMCODE*, *EXMCODE*, *ANADATE*, *EXTDATE*, and *RUN_NUMBER* comprise the primary key.

- Each NPDLTEST record must have a corresponding NPDLRES record.

- All sample types must be entered into this file.

NPDLTEST FIELD Guidelines and Restrictions:

- The *LABCODE*, *LOGCODE*, *MATRIX*, *QCCODE*, *ANMCODE*, *EXMCODE*, *BASIS*, *PRESCODE*, *SUB* and *LNOTE* fields require valid value entries. Refer to Appendix A for valid value codes.

- Modified parameter list (*MODPARLIST*) requires a T entry (true) if a parameter from the USACE-approved parameter list (Appendix B) is not reported. The parameter list is not considered modified if extra parameters are reported.

- *LABSAMPID* must be unique.

- *RUN_NUMBER* should have a value of one or greater.

- Multiple *PRESCODE*s may be entered into the *PRESCODE* field separated by commas. If the test sample was not preserved, spaces may be entered in this field.

- Multiple *LNOTE*s may be entered into the *LNOTE* field separated by commas. If the test does not require qualification, spaces may be entered into this field.

- *LABLOTCTL* must uniquely distinguish a group of samples that are prepared together.

- *LABCODE* reflects the laboratory that first receives the sample.

- Enter a *LABCODE* (other than NA) in the *SUB* field if the lab performing the analysis is not the laboratory that received the sample. **NA must be entered into this field unless the test is subcontracted out.** Additional *LABCODE*s are available upon request.

- Blank spaces are entered in the *LOCID*, *LOGDATE*, *LOGTIME*, *SAMPID*, *LOGCODE*, *LAB_REPNO*, *REP_DATE*, and *COCNUM* fields for laboratory-generated and NC samples.

- Enter spaces into the *APPRVD* field for NC samples.

3.3 NPDLRES - Results Data File

The NPDLRES data file contains information concerning analytical results generated by the laboratory. Each record contains a parameter result. Parameter results are coded using the *PVCCODE* to distinguish whether they are primary results or supporting analytical data (i.e., second column confirmation). Results and detection limits are to be adjusted for dilution prior to data entry. Dilution adjustments are the only calculations necessary prior to entering values into the format. All other quality control calculations will be performed in the database receiving the electronic deliverable. **(Note: The exception to this is surrogates, which must be reported in PERCENT.)** Table 3, on page 15-22, presents the NPDLRES file structure and field attributes. A populated NPDLRES file is available in the binder pocket.

NPDLRES FILE Guidelines and Restrictions:

- *MATRIX*, *LABCODE*, *LABSAMPID*, *QCCODE*, *ANMCODE*, *EXMCODE*, *PVCCODE*, *ANADATE*, *PARLABEL*, and *RUN_NUMBER* comprise the primary key.

- Each NPDLRES record must have a corresponding NPDLTEST record.

- All sample types must be entered into this file.

NPDLRES FIELD Guidelines and Restrictions:

- *MATRIX*, *LABCODE*, *QCCODE*, *ANMCODE*, *EXMCODE*, *PVCCODE*, *PARLABEL*, *PARVQ*, *REPDLVQ*, *UNITS*, *SRM*, and *LNOTE* fields require valid value entries. Refer to Appendix A for valid value codes.

- *LABCODE* reflects the laboratory that receives the sample.

- *RUN_NUMBER* should have a value of one or greater.

- Values less than detection must have a *PARVQ* of ND.

- Multiple *LNOTE*s may be entered into the *LNOTE* field separated by commas. If the test does not require qualification, spaces may be entered into this field.

- Enter blank spaces into the *CLREVDATE* field for environmental samples (*QCCODE* of CS or NC), laboratory-generated blanks (*QCCODE* of LB# or RS#) and non-spiked parameter results, except for surrogate results (*PARVQ* of SU).

- Enter zero into the *LABDL* and *REPDL* fields for parameters with units of PERCENT.

- Blank spaces are entered into the *EXPECTED* field for all environmental sample results. For spiked samples, enter the **AMOUNT OF THE SPIKE PLUS THE SAMPLE VALUE** in this field. For non-spiked samples, enter the value expected into this field (i.e., for a distilled water blank, enter zero).

- *CLREVDATE* requires an entry for the following *QCCODE*s: MS/SD, BS/BD, RM/KD, LR, IC, CC.

- *CLREVDATE* requires an entry for *PARVQ*s, SU and IN.

Field Guidelines and Restrictions for Surrogate Compounds:

- SU needs to be entered into the *PARVQ* field.

- **The units of a surrogate record need to be PERCENT.**

- Enter 100 into the *EXPECTED* field.

Field Guidelines and Restrictions for Tentatively Identified Compounds (TICs):

- TI needs to be entered into the *PARVQ* field.

- Chemical Abstract Service (CAS) numbers may be used (FOR TICs ONLY) instead of valid value *PARLABEL*s to identify the parameter being reported. It is recommended that TICs without CAS numbers have *PARLABEL* valid values.

- TIC entry does not require a *LABDL* or *REPDL* entry. Additionally, not applicable (NA) may be entered into the *REPDLVQ* and *SRM* fields.

- Retention Time (*RT*) is a recommended entry field for TIC results.

3.4 NPDLQC - Quality Control File

The quality assurance information in the NPDLQC file is associated with an analytical result contained in the NPDLRES file. The NPDLQC records will contain information on blanks, spikes, duplicates and standard reference materials. No calculated results are required for this file. All quality assurance calculations are performed by the database receiving the electronic deliverable.

Quality assurance samples are entered into the NPDLQC file based upon the quality assurance batch (*LABLOTCTL*) with which they are associated. The *LABLOTCTL* allows the environmental samples to be grouped with their quality control samples in order to evaluate the quality of the analytical results. The *LABLOTCTL* is an arbitrary number assigned by the laboratory to represent a group of samples prepared together, sharing the same quality assurance samples.

Table 4, on page 15-23, presents the NPDLQC file structure and field attributes. A populated NPDLQC file is available in the binder pocket.

NPDLQC FILE Guidelines and Restrictions:

- *MATRIX*, *LABCODE*, *LABLOTCTL*, *ANMCODE*, *PARLABEL*, *QCCODE* and *LABQCID* comprise the primary key.

- All spiked or split samples and all laboratory-generated quality control samples need to be entered into this file.

- All quality assurance data from subcontracted laboratories must be entered into this file.

NPDLQC FIELD Guidelines and Restrictions:

- *MATRIX*, *LABCODE*, *QCCODE*, *ANMCODE*, *PARLABEL*, and *UNITS* fields require valid value entries. Refer to Appendix A for valid value codes.

- The valid value entered into the *QCCODE* field is the *QCCODE* of the *LABQCID* sample.

- The *EXPECTED* value is the expected result of the *LABQCID* sample (i.e., **the EXPECTED field result for a matrix spike is the value of the spike plus the value of the original sample, *LABREFID***).

- Enter spaces into the *EXPECTED* field for laboratory-generated blanks (*QCCODE*s, LB# and RS#).

- Enter spaces into the *LABREFID* field for laboratory-generated blanks, reference materials, calibration standards, and spiked blanks (*QCCODE*s, LB#, RS#, RM#, KD#, IC#, CC#, BS#, and BD#).

- *LABCODE* reflects the laboratory that receives the sample, even if the sample has been subcontracted out.

3.5 NPDLCL - Quality Control Limit File

This data file contains control limit information concerning the quality control result. The file does not have to be revised unless new control charts are generated. However, for tracking purposes, it must be submitted with each digital deliverable. Table 5, on page 15-24, presents the NPDLCL file structure and field attributes.

NPDLCL FILE Guidelines and Restrictions:

- *MATRIX*, *LABCODE*, *ANMCODE*, *EXMCODE*, *PARLABEL*, *CLCODE* and *CLREVDATE* comprise the primary key.

- All results with associated quality control criteria must have an associated entry in this file.

NPDLCL FIELD Guidelines and Restrictions:

- *MATRIX*, *LABCODE*, *CLCODE*, *ANMCODE*, *EXMCODE*, and *PARLABEL* fields require valid value entries. Refer to Appendix A for valid value codes.

- Use *UPPERCL* for relative percent difference (RPD) and upper recovery limit entries.

- Enter spaces into *LOWERCL* for RPD.

- The *LABCODE* field reflects the laboratory that performed the analysis (i.e., if a sub-contracted laboratory performed the analysis, the *LABCODE* would be the valid value for the sub-contracted laboratory).

3.6 NPDLNARR - Narrative File

The NPDLNARR file provides a means to transfer descriptive information about analyses that do not easily fit in a standardized format. This file does not require a specific format but should be delivered as an ASCII file. A populated NPDLNARR file is available in the binder pocket.

4 VALID VALUE GUIDELINES AND RESTRICTIONS

Choosing the correct valid values for many of the valid value fields requires little interpretation as they are only abbreviations of common and proper names. However, there are several valid values that must be applied within a group of specific guidelines. The following section details these guidelines.

4.1 ANMCODE

Samples are assigned an analytical method using the *ANMCODE* field. Although many of the analytical methods are similar, compound lists are often slightly different (i.e., SW8260 and E524.2). Each *ANMCODE* implies a specific list of analytes (refer to Appendix B). These analytes must all be reported or the list must be indicated as modified by entering true (T) into the modified parameter list field (*MODPARLIST*) of the NPDLTEST file.

The fuel methods are groups of methods that generally do not have well defined parameter lists. Since data comparability is difficult without fuel parameter lists, the USACE has established the following lists.

Fuel Method List

Code	Parlabel	Name
AK101	GRO	Gasoline Range Organics
AK102	DRO	Diesel Range Organics
AK103	RRO	Residual Range Organics
AKD	DRO	Diesel Range Organics
AKG	GRO	Gasoline Range Organics
CENPD	DIESEL2	Diesel Fuel #2
	GASOLINE	Gasoline
	KEROSENE	Kerosene
	OILM	Oil Misc.
	JETFUEL	Jet Fuel
	BUNKERC	Bunker C
	OTHERS	Others
E418.1	PHC	Petroleum Hydrocarbons (TPH418.1)
M8015	GRO	Gasoline Range Organics
M8100	DRO	Diesel Range Organics
OHCID	DIESEL2	Diesel Fuel #2
OTPH-D	DIESEL2	Diesel Fuel #2
WHCID	DIESEL2	Diesel Fuel #2
WTPH-D	DIESEL2	Diesel Fuel #2
WTPH-G	GASOLINE	Gasoline

If a fuel parameter does not match the USACE-designated parameter for a given method, use an appropriate *LNOTE* or enter a T into the *MODPARLIST* field.

4.2 BASIS

The Basis field is used to indicate wet or dry weight, filtration, and leaching procedures and is coded as follows:

Code	Name
D	Dry
W	Wet
A	Air
C	California Waste Extraction Test (WET) - Title 22 of CAC
F	Field Filtered
L	Lab Filtered
N	Not Filtered
T	SW Method 1311 Toxicity Characteristic Leaching Procedure
E	SW Method 1310A Extraction Procedure (EP) Toxicity Test

If a sample preparation includes a leaching procedure, the *EXMCODE* assigned to the sample is not the leachate method, but the preparation procedure listed in the analytical method that has been performed on the leachate.

4.3 CLCODE

The quality control limit file is used to transfer the quality control limits associated with a given result. The EDF provides a mechanism for identifying the type of control limit associated with a given result. In order to define the type of control limit used to validate the data, a *CLCODE* needs to be assigned. *CLCODE*s are assigned based upon the type of quality assurance sample being analyzed, as well as the system of validation being used.

4.4 EXMCODE

There are five categories to differentiate the extraction or digestion procedure used in the analysis of a sample. They are:

- NONE - Selected when no extraction procedure is used or called for in the analytical method. Examples include determinations such as pH, temperature, percent moisture, etc.

- METHOD - Most commonly used with EPA drinking water procedure or laboratory modified methods where the extraction procedure is directly specified within the analytical method.

- DI - Sample is directly injected into the instrument.

- Specific EPA methods - Documented, published methods for which a code exists in the *EXMCODE* valid value list.

- Field Preparation - For Method AK101 Gasoline Range Organics (refer to the *COELT User's Manual, Version 1.2a, May 1997*, page 5-31a, for details).

4.5 MATRIX

Laboratory-generated quality assurance samples using only laboratory reagents are assigned quality control matrix codes such as WQ (water quality control matrix) for a blank spike. (The use of "*Q" matrix codes is recommended for data that will be converted into IRPIMS formats, but is not required.) Laboratory-generated samples which use the original environmental sample matrix are assigned the *MATRIX* valid value code that describes the original sample matrix, rather than the quality assurance sample matrix, [e.g., a matrix spiked waste water sample would be assigned WW (waste water) rather than WQ (water quality control matrix)]. Refer to Table 6, on page 15-25, for matrix valid values associated with quality control samples.

When the laboratory is not completely informed about the exact sample matrix, it should enter the more general *MATRIX* codes (such as WX). This indicates that the sample is an aqueous matrix but does not specify the water source (i.e., it is not specifically understood to be waste water). More specific valid value codes (such as WW) should be assigned only when there is sufficient information to do so (i.e., the sample origin is actually known). If the laboratory is unsure of the exact sample matrix they should use the following codes: SX (soil), WX (water), TX (tissue), AX (air), or MX (multiple phases).

4.6 PARVQ (Qualifier)

The *PARVQ* field may be used in several ways. The field is most commonly used with qualified results. Standard analytical results will be qualified with = or ND. The *PARVQ* field may also be used to identify a special type of parameter such as a tentatively identified compound (TI), surrogates (SU), or internal standards (IN). And last, the *PARVQ* field may be used to indicate that data is not usable for a given parameter, such as NR for Not Reported.

4.7 PVCCODE

The *PVCCODE* distinguishes between primary and confirmatory results. *PVCCODE*s are used to report supporting gas chromatography (GC) confirmation information (used to verify compound identification). The confirmation results are entered using the first column (1C), second column (2C), and Gas Chromatography/Mass Spectroscopy (MS) *PVCCODE*s. For example, if the sample is confirmed using the first column, 1C is entered into the *PVCCODE* field of the confirmation result. The primary result (*PVCCODE* = PR) will be assigned to the column result in which the laboratory places the most confidence. (The primary result will generally be assigned to the first column results.)

4.8 QCCODE

The *QCCODE* field provides a means by which the type of sample can be distinguished. Standard field samples are assigned a *QCCODE* of CS. Tests performed on spiked field samples are assigned *QCCODE*s of MS# or SD#. Tests performed on replicates of a field sample are assigned codes of LR#. All other available *QCCODE*s are assigned to laboratory-generated quality assurance samples, with the exception of the NC code that identifies non-client samples that have been included in the database to provide quality assurance information.

*QCCODE*s follow a form of alphanumeric coding where, in most cases, the first two characters define the type of sample and the third character is for sequential numbering. For example, if two laboratory blanks were associated with an analytical batch, the first blank would be assigned the *QCCODE* of LB1 and the second blank prepared would be assigned the *QCCODE* of LB2.

4.9 UNITS

The codes for units can be found in the *UNITS* valid value list. Blank spikes, blank spike duplicates, matrix spike and matrix spike duplicates must be expressed in absolute units. For all analytes reporting as PERCENT, enter zero into the *LABDL* field and *REPDL* fields, and NA into the *REPDLVQ* field.

When entering percent moisture and solids data use the *PARLABEL* and the unit of measure given below:

PARLABEL	UNITS
SOLIDVOA	PERCENT
MOIST	PERCENT
SOLID	PERCENT
SS	per unit volume
TDS	per unit volume
TSO	per unit volume
TVS	per unit volume

If soil samples are expressed on a dry-weight basis, then percent moisture must be reported and detection limits should be provided on a dry-weight basis.

Whenever multiple percent moisture determinations have been performed on a sample, (i.e., one determination for each analytical method), report the percent moisture results (*PARLABEL* and *PARVAL*) within the analytical method for that particular *ANMCODE*. (Note: Not all analytical methods require percent moisture determinations.)

When entering surrogates and internal standards use the units of measure given below:

QUALIFIER	UNITS
SU	PERCENT
IN	PERCENT

5 FILE, RECORD AND DATA FIELD REQUIREMENTS

File, record and data field requirements, identified below, must be strictly followed in order to generate acceptable electronic deliverables.

5.1 File and Record Requirements

Each line of data is equivalent to a single record in the data submission. Each record is made up of distinct fields of information. A record must not be dependent on another record or field for data. Valid data must be entered in each record. Listed below are the ASCII file and record specifications for entering each record of data in its specified file.

- Do not enter the column heading or field name in the ASCII file. This information is not part of the file. Only authorized codes from the valid value list should be keyed into fields requiring valid values.

- Do not create left margins. In each file, every record starts in the farthest left position of "position number 1." If entering the data via a spreadsheet, set the left margin at zero and the right margin at the end position of the last field of the record. The first record or row in the file, and every subsequent record or row must contain valid data. Blank or empty rows (lines) or records are not allowed in ASCII files.

- Every record within a file must be unique. If, for each key field, a record's data appears exactly the same in another record, these two records are considered to be duplicate records. Do not enter data that refers to another record.

Data formats (attributes) must be strictly followed. Valid data must be entered for every field. Do not add, delete or otherwise omit any fields.

Data fields in a file are limited to a certain number of spaces and the data must be in a specific position. Character data must be left-justified within a field. Numeric data must be right-justified within a field. If the information to be entered is shorter than the field width, insert blank spaces in the field's remaining positions. If the data to be entered is longer than the allowed field width, the data must be shortened to a unique identifier or significant value.

The start- and end-position numbers indicate the exact character locations where the applicable data must be placed in the file (refer to Table 7, on page 15-26). There are some cases where the field is a single character wide. It, therefore, will have the same start- and end-position number. The single character of data must be put in that position of the record.

5.2 Diskette Submittal

Data disks are submitted on a per laboratory report basis. Hence, as a laboratory report is completed and converted into the electronic deliverable format, it then must be processed for submittal. The submittal process is outlined below:

- Copy files onto an MS-DOS formatted disk.

- Check the consistency of the file formats by loading them into the Electronic Deliverable Consistency Checker (EDCC). The EDCC is a stand-alone software program that checks each data submission for the proper EDF format, warns the user of potential formatting problems, and reports the results of the consistency check.

- The EDF deliverable that does not pass the EDCC will not be accepted.

- Each of the five files must be named exactly as specified in this document (i.e., NPDLSAMP.TXT, NPDLTEST.TXT, NPDLRES.TXT, NPDLQC.TXT, and NPDLCL.TXT).

- Try to place all five files associated with one laboratory report on a single diskette. If the files are too large, compress each file individually with PKZIP 2.04g and attempt to place all of the compressed files onto one diskette.

- Note, if the files are compressed, they must be delivered with a "ZIP" file extension. The files then would be named NPDLSAMP.ZIP, NPDLTEST.ZIP, NPDLRES.ZIP, etc.

- Use multiple diskettes only if all five of the compressed files will not fit on a single diskette.

- Each diskette must be externally labeled with the laboratory name, date, the Report Number, the Work Order Number, and the names of the files supplied on that specific diskette.

- Write-protect all disks before submittal.

- Provide a hard copy of the laboratory report.

- Include an EDCC Error Report with each submittal.

FIELD DEFINITIONS AND ATTRIBUTES

ANADATE (Analysis Date) - The date a sample or extract is analyzed. The date format for this field is YYYYMMDD. (D8)

ANMCODE (Analytical Method) - The code identifying the method of analysis by which the sample was analyzed. Refer to Section 4.1 for field guidelines and descriptions, and Appendix A for valid value codes. (C7)

APPRVD (Approved By) - Initials of the individual approving the laboratory report. (C3)

BASIS (Basis) - Identifies the basis (W = wet, D = dry, F = field filtered, L = lab filtered, or N = not filtered) on which analytical results are reported for all matrices. This field is also used to indicate leaching procedures. Refer to page 15-9 for codes. (C1)

CLCODE (Control Limit Code) - The code identifying the type of quality control limits. *CLCODE*s are assigned based upon the type of quality assurance sample as well as the source of validation criteria. Refer to Section 4.2 for field guidelines and descriptions, and Appendix A for valid value codes. (C6)

CLREVDATE (Control Limit Revision Date) - The date that the control limit is established. The format of this field is YYYYMMDD. (D8)

CNTSHNUM (Control Sheet Number) - USACE-assigned administration number. (C12)

COCNUM (Chain-of-Custody Number) - The number assigned to the chain-of-custody. (C16)

DILFAC (Dilution Factor) - Numeric factor indicating level of sample dilution. (N10,3)

EXLABLOT (Extraction QC Lot Number) - An obsolete field into which spaces need to be entered. (C10)

EXMCODE (Extraction Method) - A code showing the method that was used to extract or prepare a sample for analysis. Refer to Section 4.3 for field guidelines and restrictions, and Appendix A for valid value codes. (C7)

EXTDATE (Extraction Date) - The date a sample is extracted or prepared for analysis. The format of this field is YYYYMMDD. (D8)

EXPECTED - (Expected Value) - The target result for a quality control sample. Samples that are reported in units of PERCENT have expected values of 100. (N14,4)

LABCODE (Laboratory) - A code identifying the analytical laboratory. Refer to Appendix A for valid value code descriptions. (C4)

LABDL (Detection Limit) - The laboratory-established method detection limit (i.e., the minimum detectable concentration of an analyte that can be measured and reported with 99% confidence that the analyte concentration is different from a blank for a given matrix). This limit must be adjusted for dilution. The *LABDL* field may or may not contain the same value as the *REPDL* field, depending on the reporting format of the individual laboratory. Regardless, the laboratory must enter a value into *LABDL* unless the parameter is a tentatively identified compound, or has units of PERCENT. (N9,4)

LABLOTCTL (Lab QC Lot Number) - A unique number identifying an autonomous batch or group of environmental samples prepared together, and sharing the same quality control within the same time period. This group is equivalent to the EPA SW-846 concept of a "Quality Assurance Batch." (C10)

LABQCID (Laboratory QC Sample ID) - The laboratory-assigned QC sample ID number. All quality assurance samples are entered into this field, including laboratory-generated samples (blanks and laboratory control samples), as well as environmental samples that have been altered by the laboratory (matrix spike). This field requires unique laboratory-assigned sample identifiers. (C12)

LABREFID (Laboratory Reference Sample ID) - The reference sample is the sample upon which the quality control sample is referenced in order to calculate the quality assurance result. A reference sample is used in conjunction with a quality control sample (*LABQCID*) to determine precision and accuracy. (C12)

LAB_REPNO (Laboratory Report Number) - Laboratory-assigned number uniquely identifying the hard copy report. (C20)

LABSAMPID (Lab Sample ID) - The unique identification number assigned to a sample by the laboratory doing the testing. (C12)

LNOTE (Laboratory Notes) - These are data qualifiers describing various observations and difficulties with the analysis associated with a test or analyte. Multiple data qualifiers may be entered into this field separated by commas. For laboratory data without qualifiers, spaces may be entered into this field. Refer to Appendix A for the valid value code descriptions. (C20)

LOCID (Location Identification) - This is a unique identifier assigned to a specific point (location) where measurements or samples are taken. (C10)

LOGCODE (Logging Company) - A code identifying the company responsible for the collection of samples or the performing of field tests (environmental sampling information). Refer to Appendix A for valid value code descriptions. (C4)

LOGDATE (Log Date) - This is the date that a sample is collected. The format of this field is YYYYMMDD. (D8)

LOGTIME (Sample Collection Time) - The time that an environmental sample is collected. The format of this field is a 24-hour military clock HHMM. (C4)

LOWERCL (Lower Control Limit) - The lower limit of a quality control acceptance criterion. Enter spaces into this field for relative percent difference. (N4)

MATRIX (Matrix) - A code identifying a sample's medium or makeup (e.g., soil, water, air, etc.). Refer to Section 4.4 for field guidelines and descriptions, Appendix A for valid value codes, or Table 6 (page 15-25) for further clarification. (C2)

MODPARLIST (Modified Parameter List) - A field indicating whether the compound list of a method has been amended. If the parameter list is modified, enter T (true) into this field. A modification indicates the deletion of compounds analyzed within a method, as listed in SW-846. (L1)

NPDLWO (Work Order Number) - Administrative number assigned by the USACE. (C7)

PARLABEL (Parameter Label) - The parameter label is the code assigned to a measurement parameter. The code is generally a common acronym representing the parameter or analyte. The *PARLABEL* is used in the database instead of the full analyte name to reduce the error inherent in transferring large names with numbers, commas and spaces. Refer to Appendix A for valid value codes. (C12)

PARUN (Parameter Uncertainty) - The analytical uncertainty associated with a laboratory result. This field is present only for radiochemical results. For all other analytes enter a zero. (N12,4)

PARVAL (Parameter Value) - This field represents the actual analytical value for a compound or analyte. It is the result generated after a sample has been analyzed or a test performed. For parameter results not calculated due to multiple runs, or if the analyte is below the *LABDL*, enter a zero into this field. (N14,4)

PARVQ (Parameter Value Qualifier) - A code qualifying the analytical result. The parameter value qualifier is designed to describe to what the analytical value is equivalent, (i.e., not detected, equals to, or not reported). These codes also identify TICs and surrogates. Refer to Section 4.5 for field guidelines and descriptions, and Appendix A for valid value codes. (C2)

PRESCODE (Preservative Added Code) - This is the code identifying the type of chemical preservative added to the sample. This code only applies to the chemical additives--holding temperature and container selection is assumed to be within EPA guidelines, unless otherwise identified in the *LNOTE* field. More than one *PRESCODE* may be entered into this field. Use commas to separate multiple code entries. If the sample is not chemically preserved, enter spaces into this field. Refer to Appendix A for valid value code descriptions. (C15)

PROJNAME (Corps of Engineers Project Name) - USACE-assigned project name. (C25)

PVCCODE (PVC Code) - This allows the coding of Gas Chromatography or Gas Chromatography/Mass Spectroscopy results to show whether the reported result was obtained from a primary or a confirmatory analysis. Methods or analytes not requiring confirmation and requiring only one analysis run, should be reported with the *PVCCODE* of PR. Refer to Section 4.6 for field guidelines and descriptions, and Appendix A for valid value codes. (C2)

QCCODE (Quality Control Code) - A code identifying the sample type, i.e., field samples or laboratory-generated quality control samples. Refer to Section 4.7 for field guidelines and description, Appendix A for valid value codes, or Table 6 (page 15-25) for further clarification. (C3)

RECDATE (Date Laboratory Received Sample) - Date that the laboratory physically takes custody of the sample. The format of this field is YYYYMMDD. (D8)

REP_DATE (Report Date) - Date that the laboratory generates the hard copy report. The format for this field is YYYYMMDD. (D8)

REPDL (Reported Detection Limit) - The detection limit reported by the laboratory to determine whether a parameter is detectable. (N9,4)

REPDLVQ (Reported Laboratory Detection Limit Qualifier) - A qualifier used to define the type of detection limit that the laboratory is reporting, (i.e., practical quantitation limits, instrument detection limits, etc.). Refer to Appendix A for valid value codes. (C3)

RT (Retention Time) - Retention time of a TIC. It is reported in minutes. (N7,2)

RUN_NUMBER (Run Number) - This field permits the numerical coding of multiple or repeat analyses of a sample (one *LABSAMPID*) by the same analytical method. (N2)

SAMPID (Field-Assigned Sample Number) - The number assigned during sample collection in the field. (C25)

SRM (Standard Reference Material) - Code identifying source of reference material for calibration standard confirmation. Refer to Appendix A for valid value code descriptions. (C12)

SUB (Subcontracted) - Field identifying the subcontracted laboratory. (C4)

UPPERCL (Upper Control Limit) - The upper limit of a quality control acceptance criterion. Enter relative percent difference and percent difference limits into the *UPPERCL*. (N4)

UNITS (Units) - The units of measure used to report a result (e.g., for soil or for water). Refer to Section 4.8 for field guidelines and descriptions, and Appendix A for valid value codes. (C10)

TABLE 1. NPDLSAMP FILE INFORMATION

FIELD NAME	VVL	DEFINITION
LOCID		LOCATION (C10) - The location from which the sample is collected.
LOGDATE		SAMPLE COLLECTION DATE (D8) - The date that the sample is collected.
LOGTIME		SAMPLE COLLECTION TIME (C4) - The time that the sample is collected.
LOGCODE	VVL	SAMPLE COLLECTION COMPANY (C4) - The company that collected the sample or performed the field test.
SAMPID		FIELD-ASSIGNED SAMPLE NUMBER (C25) - The number assigned to the sample at the time of collection.
MATRIX	VVL	MATRIX (C2) - The medium or make-up of the sample.
PROJNAME		PROJECT NAME (C25) - USACE-assigned project name.
NPDLWO		WORK ORDER NUMBER (C7) -USACE-assigned administrative number.
CNTSHNUM		CONTROL SHEET NUMBER (C12) - An administrative number assigned by the USACE.
LABCODE	VVL	LABORATORY (C4) - The code identifying the laboratory receiving the sample.

TABLE 2. NPDLTEST FILE INFORMATION

FIELD NAME	VVL	DEFINITION
LOCID		LOCATION (C10) - The location from which the sample is collected.
LOGDATE		SAMPLE COLLECTION DATE (D8) - The date that the sample is collected.
LOGTIME		SAMPLE COLLECTION TIME (C4) - The time that the sample is collected.
LOGCODE	VVL	SAMPLE COLLECTION COMPANY (C4) - The company that collected the sample or performed the field test.
SAMPID		FIELD-ASSIGNED SAMPLE NUMBER (C25) - The number assigned to the sample at the time of collection.
MATRIX	VVL	MATRIX (C2) - The medium or make-up of the sample.
LABCODE	VVL	LABORATORY (C4) - The code identifying the laboratory receiving the sample.
LABSAMPID		LABORATORY SAMPLE IDENTIFICATION (C12) - The unique identification number assigned to the sample by the laboratory.
QCCODE	VVL	QUALITY CONTROL CODE (C3) - The code identifying laboratory-generated quality control samples. <u>All</u> samples require a QCCODE.
ANMCODE	VVL	ANALYTICAL METHOD CODE (C7) - The code identifying the analytical method of analysis.
MODPARLIST		MODIFIED PARAMETER LIST (L1) - A database field indicating whether the parameter list of an analytical method has been modified.
EXMCODE	VVL	EXTRACTION METHOD CODE (C7) - The code identifying the extraction or digestion method used during sample preparation.
LABLOTCTL		LABORATORY CONTROL NUMBER (C10) - A number identifying a group of samples prepared together, sharing the same quality assurance information.
EXLABLOT		EXTRACTION LABORATORY LOT NUMBER - obsolete field.
ANADATE		ANALYSIS DATE (D8) - The date the sample (aliquot, extract, digest and/or leachate) is analyzed.
EXTDATE		EXTRACTION DATE (D8) - The date the sample is prepared or extracted.
RUN_NUMBER		RUN_NUMBER (N2) - The numeric code distinguishing multiple or repeat analysis of a sample (one *SAMPID*) by the same method.
RECDATE		RECEIVED DATE (D8) - The date that the laboratory physically assumes custody of the sample.
COCNUM		CHAIN-OF-CUSTODY NUMBER (C16) - The number assigned to the chain-of-custody.
BASIS	VVL	BASIS (C1) - Wet or Dry (Basis for Soil Samples). This field is also used to indicate filtration and leaching procedures.
PRESCODE	VVL	PRESERVATIVE CODE (C15) - The code identifying the type of preservative added to the sample.
SUB	VVL	SUBCONTRACTED LABORATORY (C4) - The *LABCODE* of the subcontracted laboratory.

TABLE 2. NPDLTEST FILE INFORMATION (CONTINUED)

REP_DATE		**REPORT DATE (D8) - The date of the laboratory report.**
LAB_REPNO		**LABORATORY REPORT NUMBER (C20) - The laboratory-assigned number uniquely identifying the hard copy report.**
APPRVD		**APPROVED BY (C3) - The initials of the individual approving the laboratory report.**
LNOTE	**VVL**	**LABORATORY NOTES (C20) - Analytical notes providing descriptive information.**

TABLE 3. NPDLRES FILE INFORMATION

FIELD NAME	VVL	DEFINITION
MATRIX	VVL	MATRIX (C2) - The medium or make-up of the sample.
LABCODE	VVL	LABORATORY (C4) - The code identifying the laboratory receiving the sample.
LABSAMPID		LABORATORY SAMPLE IDENTIFICATION (C12) - The identification number assigned to a sample by the laboratory performing the analyses.
QCCODE	VVL	QUALITY CONTROL CODE (C3) - The code identifying laboratory-generated quality control samples.
ANMCODE	VVL	ANALYTICAL METHOD CODE (C7) - The code identifying the analytical method of analysis.
EXMCODE	VVL	EXTRACTION METHOD CODE (C7) - The code identifying the extraction or digestion method.
PVCCODE	VVL	PRIMARY VALUE CODE (C2) - The code identifying whether a sample result is a primary or a confirmatory value.
ANADATE		ANALYSIS DATE (D8) - The date the sample (aliquot, extract, digest and/or leachate) is analyzed.
RUN_NUMBER		RUN NUMBER (N2) - The numeric code distinguishing multiple or repeat analysis of a sample by the same method.
PARLABEL	VVL	PARAMETER LABEL (C12) - The parameter label associated with a given parameter.
PARVAL		PARAMETER VALUE (N14,4) - The analytical value for a compound or analyte.
PARVQ	VVL	PARAMETER VALUE QUALIFIER (C2) - A code for qualifying analytical results (i.e., greater than, equal to, etc.).
LABDL		METHOD DETECTION LIMIT (N9,4) - The laboratory-established method detection limit.
REPDL		REPORTED DETECTION LIMIT (N9,4) - The detection limit reported by the laboratory to determine whether a parameter is detectable.
REPDLVQ	VVL	REPORTED DETECTION LIMIT QUALIFIER (C3) - A code identifying the type of reporting limit (i.e., practical quantitation limit, instrument detection limit, etc.).
PARUN		PARAMETER UNCERTAINTY (N12,4) - The uncertainty associated with a test result.
UNITS	VVL	UNITS (C10) - The units of measure used to report a result.
RT		RETENTION TIME (N7,2) - The retention time of a tentatively identified compound (TIC).
DILFAC		DILUTION FACTOR (N10,3) - Numeric factor indicating level of sample dilution.
CLREVDATE		CONTROL LIMIT REVISION DATE (D8) - The date the control limit is established.
SRM	VVL	STANDARD REFERENCE MATERIAL (C12) - A code identifying the source of the reference material for the calibration method.
LNOTE	VVL	LABORATORY NOTES (C20) - Analytical notes providing descriptive information.

TABLE 4. NPDLQC FILE INFORMATION

FIELD NAME	VVL	DEFINITION
MATRIX	VVL	MATRIX (C2) - The medium or make-up of the sample.
LABCODE	VVL	LABORATORY (C4) - The code identifying the laboratory receiving the sample.
LABLOTCL		LABORATORY CONTROL NUMBER (C10) - A unique number identifying a group of samples prepared together, sharing the same quality assurance information.
ANMCODE	VVL	ANALYTICAL METHOD CODE (C7) - The code identifying the analytical method used to perform the analysis.
PARLABEL	VVL	PARAMETER CODE (C12) - The code assigned to the measurement parameter.
QCCODE	VVL	QUALITY CONTROL CODE (C3) - The code identifying laboratory-generated quality control samples.
LABQCID		LABORATORY QUALITY CONTROL SAMPLE IDENTIFICATION (C12) - The laboratory-assigned sample identification number for a quality control sample, e.g., MS/MSD, LCS/LCSD. This number is equivalent to the *LABSAMPID*.
LABREFID		LABORATORY REFERENCE IDENTIFICATION (C12) - The laboratory-assigned reference sample identification number.
EXPECTED		EXPECTED PARAMETER VALUE (N14,4) - The target result for a quality control sample or surrogate spike.
UNITS	VVL	UNITS OF MEASURE (C10) - Units of measure used to report a result.

TABLE 5. NPDLCL FILE INFORMATION

FIELD NAME	VVL	DEFINITION
LABCODE	VVL	LABORATORY (C4) - The code identifying the laboratory performing the analysis.
MATRIX	VVL	MATRIX (C2) - The medium or make-up of the sample.
ANMCODE	VVL	ANALYTICAL METHOD CODE (C7) - The code identifying the analytical method of analysis.
EXMCODE	VVL	EXTRACTION METHOD CODE (C7) - The code identifying the extraction method of analysis.
PARLABEL	VVL	PARAMETER CODE (C12) - The code assigned to the measurement parameter.
CLREVDATE		CONTROL LIMIT REVISION DATE (D8) - The date a control limit is established.
CLCODE	VVL	CONTROL LIMIT CODE (C6) - The code identifying the type of quality control limit.
UPPERCL		UPPER CONTROL LIMIT (N4) - The upper control limit of a quality control criterion.
LOWERCL		LOWER CONTROL LIMIT (N4) - The lower control limit of a quality control criterion.

TABLE 6.   VALUES USED FOR ENTRY OF QUALITY CONTROL SAMPLES

QC Sample Type	Matrix	QCCode	Expected
Blank Spike	xQ	BS1	[Amount added]
Blank Spike Duplicate	xQ	BD1	[Amount added]
Lab Blank	xQ	LB1	0
Lab Matrix Spike	[Actual]	MS1	[Amount added + amount in original sample]
Lab Matrix Spike Duplicate	[Actual]	SD1	[Amount added + amount in original duplicate sample]
Lab Replicate	[Actual]	LR1	[Concentration amount in the original sample]
Reference Material	xQ	RM1	[Amount present in reference material]
Reference Material Duplicate	xQ	KD1	[Amount present in reference material duplicate]
Continuing Calibration	xQ	CC1	[Amount added]
Initial Calibration	xQ	IC1	[Amount added]

Note: x - Use of WQ, SQ, AQ, or TQ for aqueous, solid, gaseous, and tissue quality control samples is recommended for data that will be converted from EDF to IRPIMS, but is not required.

TABLE 7. DATA FIELD POSITIONS

POSITION	FIELD	START/END
NPDLSAMP	LOCID	1--10
	LOGDATE	11--18
	LOGTIME	19--22
	LOGCODE	23--26
	SAMPID	27--51
	MATRIX	52--53
	PROJNAME	54--78
	NPDLWO	79--85
	CNTSHNUM	86--97
	LABCODE	98--101
NPDLTEST	LOCID	1--10
	LOGDATE	11--18
	LOGTIME	19--22
	LOGCODE	23--26
	SAMPID	27--51
	MATRIX	52--53
	LABCODE	54--57
	LABSAMPID	58--69
	QCCODE	70--72
	ANMCODE	73--79
	MODPARLIST	80--80
	EXMCODE	81--87
	LABLOTCTL	88--97
	EXLABLOT	98--107 (obsolete)
	ANADATE	108--115
	EXTDATE	116--123
	RUN_NUMBER	124--125
	RECDATE	126--133
	COCNUM	134--149
	BASIS	150--150
	PRESCODE	151--165
	SUB	166--169
	REP_DATE	170--177
	LAB_REPNO	178--197
	APPRVD	198--200
	LNOTE	201--220

TABLE 7. DATA FIELD POSITIONS (continued)

POSITION	FIELD	START/END
NPDLRES	**MATRIX**	**1--232**
	LABCODE	**3--6**
	LABSAMPID	**7--18**
	QCCODE	**19--21**
	ANMCODE	**22--28**
	EXMCODE	**29--35**
	PVCCODE	**36--37**
	ANADATE	**38--45**
	RUN_NUMBER	**46--47**
	PARLABEL	**48--59**
	PARVAL	**60--73**
	PARVQ	**74--75**
	LABDL	**76--84**
	REPDL	**85--93**
	REPDLVQ	**94--96**
	PARUN	**97--108**
	UNITS	**109--118**
	RT	**119--125**
	DILFAC	**126--135**
	CLREVDATE	**136--143**
	SRM	**144--155**
	LNOTE	**156--175**
NPDLQC	**MATRIX**	**1--2**
	LABCODE	**3--6**
	LABLOTCTL	**7--16**
	ANMCODE	**17--23**
	PARLABEL	**24--35**
	QCCODE	**36--38**
	LABQCID	**39--50**
	LABREFID	**51--62**
	EXPECTED	**63--76**
	UNITS	**77--86**
NPDLCL	**LABCODE**	**1--4**
	MATRIX	**5--6**
	ANMCODE	**7--13**
	EXMCODE	**14--20**
	PARLABEL	**21--32**
	CLREVDATE	**33--40**
	CLCODE	**41--46**
	UPPERCL	**47--50**
	LOWERCL	**51--54**