



# Basic Electronic Data Deliverable (EDD)



## Specification Manual Version 2.0



U.S. Environmental Protection Agency  
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## ACRONYMS

File Extensions	.csv	Comma Separated Values File
	.ftp	File Transfer Protocol
	.mdb	Microsoft Database
	.txt	Text File
	.xls	Excel Spreadsheet
Acronyms	CAS RN	Chemical Abstract Service Registry Number
	CLP	Contract Laboratory Program
	CPT	Cone Penetration Test
	DNAPL	Dense Non-Aqueous Phase Liquid
	EDD	Electronic Data Deliverable
	EDP	EQuIS Data Processor
	EFDC	Electronic Field Data Checker
	ELDC	Electronic Laboratory Data Checker
	EPA	Environmental Protection Agency
	EQuIS	Environmental Quality Information System
	GEOS	Groundwater Evaluation and Optimization System
	GPS	Global Positioning System
	HUC	Hydrologic Unit Codes
	LCS	Laboratory Control Sample
	LIMS	Laboratory Informaiton Management System
	LNAPL	Light Non-Aqueous Phase Liquid
	NAD	North American Datum
	O&M	Operations and Maintainance
	PK	Primary Key
	QA/QC	Quality Assurance/ Quality Control
	ROD	Record of Decision
	RPM	Remedial Program Manager
	SDG	Sample Delivery Group
TB	Trip Blank	
TCLP	Toxicity Characteristic Leaching Procedures	
TIC	Tentatively Identified Compound	
UTM	Universal Transverse Mercator	

### EXECUTIVE SUMMARY

The purpose of this specification manual is to provide detailed instructions on how to report environmental data electronically to the United States Environmental Protection Agency (EPA) Region 5 Superfund Division. The types of Superfund data that can be reported electronically include, but are not limited to, data generated during facility characterization and investigation phases, data recorded when installing monitoring wells, and monitoring data that is routinely collected after construction completion during the operations and maintenance phase. This manual describes the procedural and formatting requirements you need to know to submit your Electronic Data Deliverable (EDD) to the EPA Region 5 Superfund Division.

EPA recognizes that some information about data collected in the past may not be readily available and in these cases data providers should use this manual for the production of an EDD. This alternate format of the Region 5 EDD provides for less stringent reporting standards. Prior to using this manual, data providers should contact Region 5 through the EDD support e-mail ([geoseddsupport@epa.gov](mailto:geoseddsupport@epa.gov)) and request permission to submit data in the “Basic” format.

The EPA Region 5 Basic EDD is comprised of two sets of files: Initial, and Basic. The Initial EDD Files should be submitted to EPA Region 5 prior to or in conjunction with the first submission of the Basic EDD Files. The three Initial EDD Files are:

- Data Provider (general information about the Data Provider);
- Sub-facility (general information about the Sub-facility); and
- Basic Location (information regarding the sampling locations).

*Note: For the purposes of this manual the term sub-facility shall refer to both Remedial Investigation Areas and Operable Units.*

In most cases data submissions will consist of chemistry and groundwater monitoring data. The Basic Chemistry EDD Files contain data related to sample collection information, chemistry field measurements, sample tests and results, groundwater levels, and extraction-injection well information. The Four Basic Chemistry EDD Files are the:

- Basic Chemistry Test/Result (information on sampling, analytical tests, and results);
- Basic Water Level (information regarding groundwater level measurements);
- Extraction-Injection Well (information about extraction and/or injection wells) and;
- Basic Geology (information about sampling location geology).

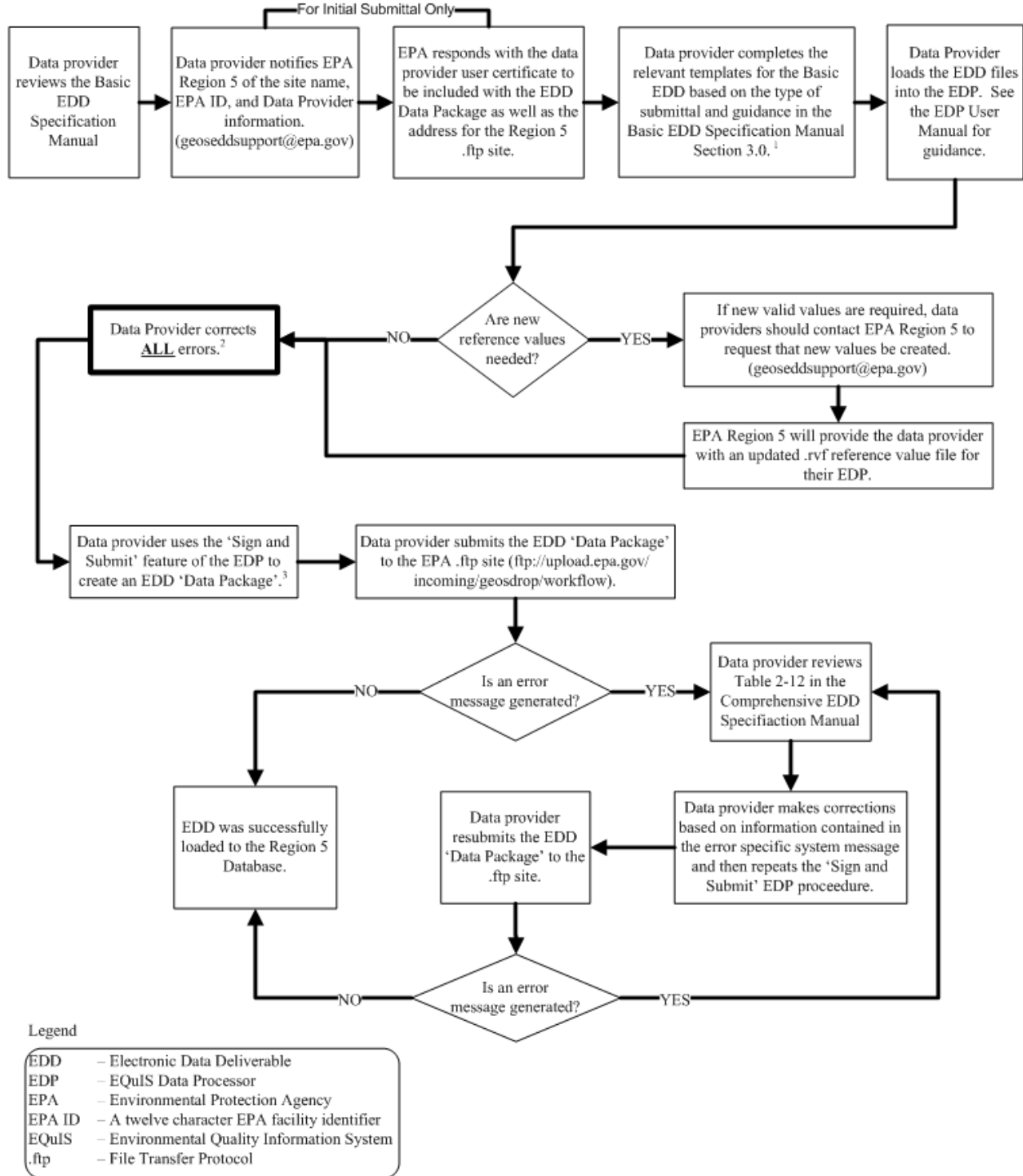
Of the four files listed above, the files that most data providers will submit will be the Basic Chemistry Sample/Test/Result, and Basic Water Level Files.

The process for creating Initial and Basic EDDs is shown in Figure 1-1. The process begins by identifying a software tool for editing and formatting data. Many software tools, such as text editors, word processors, spreadsheets, and databases, are capable of creating EDDs, however, because spreadsheets and databases are designed to enter and manage data they are generally preferred for creating EDDs. Microsoft Excel users can use file templates that are already formatted and ready for data entry on EPA Region 5’s GEOS EDD support website located at <http://www.epa.gov/region5superfund/edman>. Users of other spreadsheet or database software can either use these same templates for data entry, after converting the Excel files into another format, or they can define the EDD in their own software. The production of the data tables will normally be a collaborative effort between laboratories and environmental contractors. The laboratories will typically produce the test/results tables while the contractors normally will produce all of the other tables.

Prior to submitting an EDD to EPA Region 5 it is necessary for data providers to load the data files into the EQUIS Data Processor (EDP) software application that is provided on the EPA Region 5 GEOS EDD Support website listed above. This software application will identify any formatting errors in the files that must be corrected prior to submitting the EDD. The EDP replaces the “Electronic Laboratory Data Checker” (ELDC) and the “Electronic Field Data Checker” (EFDC) which were previously used to check the EDD files. For more information regarding the EDP and associated processes, refer to Section 2.4. In addition to using the EDP for identifying errors in the EDD, data providers will now use the ‘Sign and Submit’ functionality in the EDP to create a ‘Data Package’ for submission to the EPA Region 5 file transfer protocol (.ftp) site.

Both phone and email support is available for EPA Region 5 data providers requiring assistance with preparing and submitting EDDs. Please see Section 4 of this document for technical support information. Additionally, EPA Region 5’s GEOS EDD Support website (<http://www.epa.gov/region5superfund/edman>) is also a source of information. Copies of the EPA Region 5 Basic EDD Specification Manual, several EDD fact sheets, the EPA Region 5 list of valid values, spreadsheet templates, and the EDP software application are available for download at the website.

Figure 1-1 EQuIS 5 EDD ‘Data Package’ Submittal Process Using the Region 5 .ftp Site



<sup>1</sup> Templates for the Comprehensive and Basic EDDs are available on the GEOS EDD Support website (<http://www.epa.gov/R5Super/edman/downloads.html>).

<sup>2</sup> If errors exist within the EDD Data Package, the entire file will be rejected.

<sup>3</sup> For information on using the EDP to correct errors and create an EDD Data Package, refer to the EDP User Manual.



## 1.0 INTRODUCTION TO THE EPA REGION 5 ELECTRONIC DATA DELIVERABLE (EDD)

The EPA Region 5 Superfund Division has developed an electronic data process to improve how environmental data from Superfund sites are acquired and managed. This process will accelerate the review of environmental data submittals, improve service to the data provider community, and enhance the protection of the environment and the public. A vital element in the electronic transfer of environmental data is the submittal of data in a standardized, “user-friendly” format. The specifications and formatting requirements for the EPA Region 5 Basic EDD were developed to facilitate the transfer of data from data providers to the EPA.

The Basic EDD Specification Manual describes the requirements for electronically submitting “Basic” operation and maintenance (O&M) data to EPA Region 5. O&M data is considered to be “Basic” if it was collected between the time remedy construction was completed and the most recent data collection event where sampling and analytical data is available in electronic format and **does not** include sufficient data to produce a “Comprehensive EDD”. Data Providers should anticipate only limited use of the format detailed in this specification manual and should notify EPA Region 5 prior to submitting data using this format. Data Providers who have the ability, should submit EDDs in accordance with the standard EPA Region 5 ‘Comprehensive Manual for Electronic Data Specification Manual’ which can be found on the EPA Region 5 GEOS EDD Support website located at <http://www.epa.gov/region5superfund/edman>.

The intent of developing special requirements for “Basic” information is to decrease the burden associated with reporting in-depth details about data that may have been collected a number of years ago. EPA recognizes that some information about data collected in the past may not be readily available and, by reducing the requirements for electronic basic data, is endeavoring to strike a balance between minimizing the amount of effort involved in inputting information and maximizing the ability to document remedy progress.

The EPA Region 5 Basic EDD is, in part, based on standard EDDs used in applications developed by EarthSoft, Inc. However, the format is designed to be software-independent and easy to achieve. Any spreadsheet, database, or text editor can be used to create the EDD files; however, at the time the files are loaded into the EDP, the files must be in a text, Microsoft Excel, or Microsoft Access format.

The EDD is a series of files that allows data providers to report to EPA Region 5 the individual stages of a chemical or geological sampling event(s) as mandated through an EPA issued enforcement instrument. Multiple files are used to eliminate the need for the reporting of redundant data as would be necessary if all data were contained in one large file. For example, the use of multiple file formats allows for location information for a sampling location to be reported on a one time basis through the Basic Location File. Many years of sampling and result data may then be reported for that location without the need for re-submission of the Basic Location File. This is due to referential integrity standards designed into the EDD template files.

This specification manual includes examples of EDD template files populated with sample data. In addition, several EDD template files are available on the EPA Region 5 GEOS EDD Support website located at <http://www.epa.gov/region5superfund/edman>. The website also contains a no-cost software program, the EDP, which must be used to check EDD files before they are submitted to EPA Region 5. The EDP replaces the two previous Region 5 EDD checker applications, the Electronic Laboratory Data Checker and the Electronic Field Data Checker. The EDP is a single application that checks all EDD files and provides a much easier user interface for identifying and correcting errors.

This EDD Specification Manual discusses EDD submittals in five separate sections:

- General EDD Reporting Requirements;
- General EDD Data Types;
- Specific EDD Data Requirements;
- Types of EDD Submittals; and
- Submitting EDDs to EPA Region 5.

Each file must be reported exactly as defined in these sections. Any deviations will result in errors upon .ftp submission. The .ftp submission process is described in Section 2.5.5.

EPA Region 5 expects all fields referred to as ‘Required’, ‘Required PK’ or ‘If Available’ to be filled in. Data fields indicated as “Reserved for future use” should not be reported as these are reserved strictly for Regional use.

## **2.0 EDD DEVELOPMENT AND SUBMITTAL PROCESS**

### **2.1 General EDD Reporting Requirements**

#### **2.1.1 General Field Formats**

The maximum length of each text field is indicated in parentheses in the EDD tables shown in Section 3.0. Maximum length requirements imply that the field can be no longer than the specified number of characters. However, it is completely acceptable to fill the field with fewer characters than the maximum number. Each record, which is the term used for each line of information, must be terminated with a carriage return/line feed (created by pressing the “Enter” key in a text editor). Guidance on creating entire files can be found in Section 2.5.1.

#### **2.1.2 File Naming Convention**

Each file, within a signed and submitted EDD ‘Data Package’ (see Section 2.5.5) must be named according to the following convention:

EPAR5(EDD Section Name)\_v2.txt

Where (EDD Section Name) refers to the section of the EDD being submitted and is representative of the type of data included within the file. The “\_v2” suffix is an EPA marker to identify which version of the EDD specifications is being followed, and should not be changed by the data provider. Table 2-1 describes the naming formats for the various Initial, Chemistry, and Geology EDD Files.

**Table 2-1 EDD File Naming Formats**

<b>File Type</b>	<b>File Contents</b>	<b>EDD File Name</b>	<b>Submittal Type</b>
Initial	Data Provider	EPAR5DATAPROVIDER_v2.txt	Initial
Initial	Sub-Facility	EPAR5SUBFACILITY_v2.txt	Initial
Initial	Location	EPAR5BASICLOC_v2.txt	Initial
Chemistry	Sample/Test/Results	EPAR5BASICCHEM_v2.txt	One-Time
Chemistry	Water Level	EPAR5BASICGWTR_v2.txt	One-Time
Chemistry	Extraction - Injection Well	EPAR5EIW_v2.txt	One-Time
Geology	Geology	EPAR5BASICGEO_v2.txt	One-Time

### 2.1.3 Data Integrity Rules

Data providers are responsible for enforcing three types of integrity checks on their data.

- **Validity:** All codes used in a data set must be valid. Valid values for all coded fields are either provided in the description columns of the tables in Section 3.0 or in the tables in the Appendix of this manual. For example, sample matrix information is inputted in the `sample_matrix_code` field of the Basic Sample/Test/Result file and must be reported using one of the values provided in Table A-1 in the Appendix.
- **Row Uniqueness:** Row uniqueness must be verified using the guidance provided in Table 2-8. Row uniqueness is assured when no two rows in a file contain the same values for all the fields listed under the heading “What makes a row of data unique?” In database terminology this is called a primary key. For example, no two rows in the Basic Sample/Test/Result file can contain the same `sys_sample_code` (commonly called a sample identifier). In addition, no two rows ever reported for a single facility can contain the same `sys_sample_code`. Each `sys_sample_code` must be unique for a facility.

Files that have multiple primary key fields, such as the Basic Location File, must have a different value in at least one of the primary key fields. For instance, no two rows in the Basic Location File can have the same `sys_loc_code` and `measurement_date`. As another example, two rows with `sys_loc_code` of “SB-01” and a `measurement_date` of “05/02/2000 00:00” would violate row uniqueness. However, row uniqueness would not be violated if one row had a `sys_loc_code` of “SB-01”, and one row had a `measurement_date` of “05/02/2000 00:00”, and the other row had a `measurement_date` of “06/12/2000 00:00”.

- **Row Integrity:** The relationship between rows within the files of the EDD must be assured by enforcing the “referential integrity” rules discussed in Table 2-8 under the column labeled “Dependence of other files on these data.” For example, the values in the `sys_sample_code` field in the Basic Sample/Test/Result File must match with the corresponding fields in the Basic Water Level File. Logical relationships between the various Chemistry EDD Files are shown in Figure 2-1. The lines connecting the files show which column(s) (or field(s)) are related in the two files. The file on the side with the “1” at the end of the connecting line contains one row that is related to more than one row in the related file on the other side. For example, one row in a Sub-facility File corresponds to many rows in a Basic Location File because there is always more than one, and in most cases many locations, designated at a facility. The logical relationship between the Basic Geology Files and the Basic Location File is limited to the requirement that all entries in the `sys_loc_code` fields appear in the Basic Location File.

**Figure 2-1 Relationships Between Basic EDD File Data Structures.**  
 Shaded fields are required to have data. Blue fields define row uniqueness for the specified file.

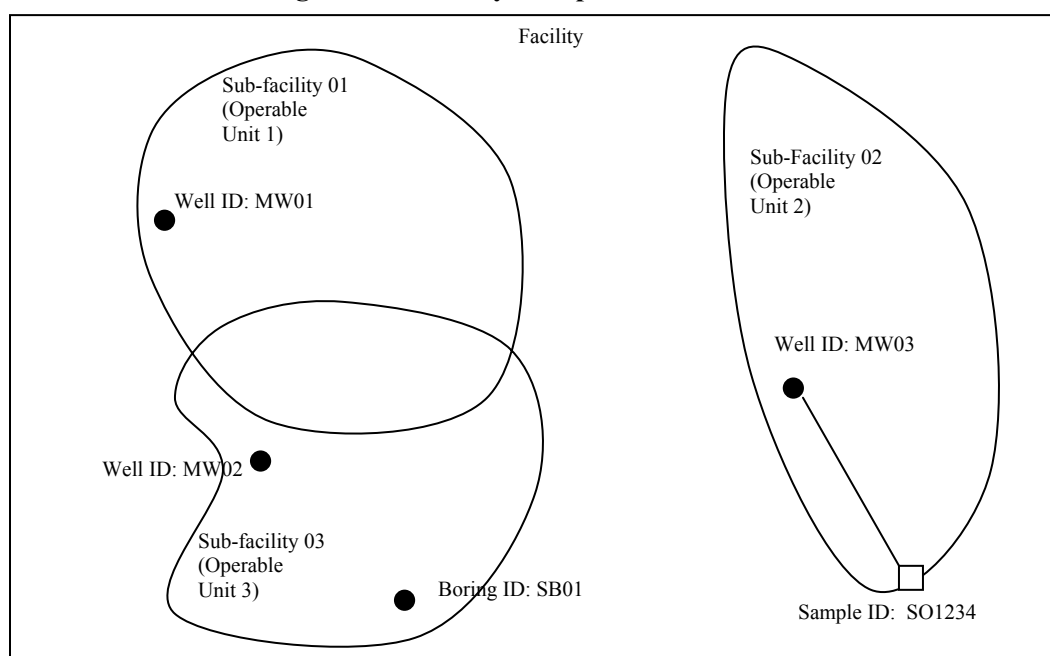


## 2.2 General EDD Data Types

### 2.2.1 Definition of a Facility, Sub-facility, and Location

To submit an error-free EDD, it is important to understand how EPA Region 5 defines facility, sub-facility, and location in this EDD Specification Manual. A facility will be generally defined within this manual as the entirety of the area(s) currently under remediation as specified in a Record of Decision (ROD) or under investigation for remediation. Each facility will be identified with its EPA ID number (see Table A-21 of the Appendix) in each EDD submission. The Sub-Facility (subfacility\_code) will be the operable unit identifier or other name specifically recognized as being part of a Remedial Investigation. There will always be at least one operable unit per facility. EPA Region 5 defines a location as a distinct point defined by X and Y Universal Transverse Mercator (UTM) coordinates; examples of locations include soil borings, monitoring wells, and sampling locations. Each sub-facility can contain one or more locations, as long as uniqueness is maintained (location identifier (sys\_loc\_code) must be unique). Figure 2-2 provides a diagram of the facility components.

Figure 2-2 Facility Component Definitions



Facility ID = EPA ID #

Location = sample location, Well ID, Boring ID = sys\_loc\_code *Must be unique at a Facility*

### 2.2.2 Valid Values

Valid values, also known as reference values, govern the contents of some fields in the EDDs. In other words, some fields may only be populated with data that matches a value listed in the EPA Region 5 list of valid values. The lists of valid values are provided in the “Electronic Data Deliverable Valid Values Appendix” located at <http://www.epa.gov/region5superfund/edman>. A list of all the data fields that must contain valid values is presented in Table 2-2. This list is also cross-referenced to the EDD file(s) the field appears in. If data providers need to enter a value not already in the Region 5 list in the Appendix, they can request the proposed addition to the valid value list by contacting the Region 5 EDD Support e-mail address ([geoseddsupport@epa.gov](mailto:geoseddsupport@epa.gov)). Data providers should reference the value name, the field name in which the new value will be recorded, and a brief description of the meaning of the value. Region 5 will then update the appropriate reference value table and provide the data provider with an updated version of the EDP reference value file. This new reference value file will allow the EDP to then recognize the value as accepted. In the case of requesting a new laboratory code, the data provider should include the full name of the laboratory and its address. When requesting an addition of an analyte, the data provider must include the appropriate cas\_rn along with a description of the analyte.

**Table 2-2 Cross-Reference Between the Valid Value Tables in Appendix and the EDD Files**

<b>Valid Value Table Name</b>	<b>Table Number</b>	<b>Field Name</b>	<b>EDD File</b>
Matrix	A-1	sample_matrix_code, lab_matrix_code	Basic Sample/Test/Results
Reference Point	A-2	reference_point	Basic Location
Horizontal Collection Method	A-3	horz_collection_method_code	Basic Location
Horizontal Accuracy Unit	A-4	horz_accuracy_unit	Basic Location
Horizontal Datum	A-5	horz_datum_code	Basic Location
Elevation Collection Method	A-6	elev_collect_method_code	Basic Location
Elevation Datum	A-7	elev_datum_code	Basic Location
Source Scale	A-8	source_scale	Basic Location
Location Type	A-9	loc_type	Basic Location
Qualifier	A-10	interpreted_qualifiers	Basic Sample/Test/Results
Result Type	A-11	result_type_code	Basic Sample/Test/Results
Sample Type	A-12	sample_type_code	Basic Sample/Test/Results
Standard Preparation Method	A-13	lab_prep_meth	Basic Sample/Test/Results
Analyte	A-14	cas_rn, chemical_name	Basic Sample/Test/Results
Lab Analysis Method Name	A-15	lab_anl_method_name	Basic Sample/Test/Results
Company	A-16	company_code	Basic Sample/Test/Results
Unit	A-17	various_unit fields throughout all files	All Files
Geology Soil Materials	A-18	material_type	Lithology, Geology Samples
Well Segment and Materials	A-19	segment_type, material_type_code	Well Construction
Hydrologic Unit Codes (HUC)	A-20	loc_major_basin	Basic Location
EPA Facility IDs	A-21	facility_id, facility_name	Basic Location

### 2.2.3 Data Types

The table below describes the data types used in the chemistry and geology file descriptions. In addition to the types listed below, certain fields have single and double data types. The single data type stores numbers from  $-3.402823 \times 10^{38}$  to  $-1.401298 \times 10^{-45}$  for negative values and from  $1.401298 \times 10^{45}$  to  $3.402823 \times 10^{38}$  for positive values, with a decimal precision of up to 7 digits. The double data type stores numbers from  $-1.79769313486231 \times 10^{308}$  to  $-4.94065645841247 \times 10^{-324}$  for negative values and from  $1.79769313486231 \times 10^{308}$  to  $4.94065645841247 \times 10^{-324}$  for positive values, with a decimal precision of up to 15 digits.

**Table 2-3 Data Type Descriptions**

Type	Description	DECIMAL PRECISION	Comments
Numeric	Stores numbers from -32,768 to 32,767 (no fractions).	None	
'Y' or 'N'	Boolean field used to indicate yes or no to a question. Enter either Y or N.	NA	
Date/Time	Date format is MM/DD/YYYY followed by a space then Time in 24-hr (military) HH:MM format.	NA	Example: "01/31/2008 18:30"
Text	Stores characters and numbers.	NA	Length restrictions are indicated in parentheses.

## 2.3 SPECIFIC EDD DATA REQUIREMENTS

### 2.3.1 Reporting Null Values

When a field is not listed as required in Section 3.0 and the data is not available or applicable, a null or blank may be appropriate. However, tabs or commas must still delimit the blank value when using a text editor to create an EDD. In other words, the number of fields is always the same, whether or not the fields include data. So a blank field in a tab-delimited file would appear as "<TAB><TAB>" and a blank field in a comma-delimited file would appear as ",". Table 2-4 shows a number of examples.

**Table 2-4 Examples of How to Report Null Values**

Example	Comment
"data_one"<tab>"data_two"<tab>"data_three" "data_one","data two","data three"	<b>O.K.</b> All fields populated, one tab or comma between fields.
"data_one"<tab><tab>"data_three" "data one",,"data three"	<b>O.K.</b> Optional field not populated, two tabs or two commas between first and third field.
"data_one"<tab>"data_three" "data one","data three"	<b>Not O.K.</b> Optional field omitted, only one tab or comma between first and third field.

### 2.3.2 Reporting Re-Tests

For initial tests, all analytes should be reported. In the case where retests are performed on a sample, the result that is considered the reportable result should indicate a "YES" in the reportable\_result field. The initial test, and any retest result not considered reportable will have reportable\_result set to "NO". Table 2-5 provides examples of reporting re-tests.

**Table 2-5 Example of Reporting Re-Tests**

Test Type	Chem Name	Cas_rn	Result Value	Detect Flag	Lab Qualifiers	Reportable Result	Result Comment
INITIAL	Benzene	71-43-2	1000	Y	E	NO	too concentrated to quantitate
INITIAL	Toluene	108-88-3	5	N	U	YES	not detected
INITIAL	Xylenes	1330-20-7	5	N	U	YES	not detected
DILUTION1	Benzene	71-43-2	780	Y		YES	quantitated

### 2.3.3 Reporting Detects and Non-Detects

Non-detects must be reported as shown in the example below. Each non-detect row must show an “N” in the detect\_flag field, must have an actual value entered in the reporting\_limit and detection\_limit\_unit fields, and must contain a null in the result\_value\_field. Table 2-6 provides examples of how to report non-detects.

**Table 2-6 Example of Reporting Detects and Non-Detects**

Cas_rn	Result Value	Detect Flag	Reporting Detection Limit	Detection Limit Unit	Result_comment	Laboratory_qualifiers
108-88-3	.15	Y	.005	ug/ml		
108-88-3		N	.005	ug/ml	not detected	U

### 2.3.4 Reporting Tentatively Identified Compounds

Tentatively Identified Compounds (TICs) should be reported when available. The naming of TICs should be applied in a cascade fashion. The TIC should be identified with an analyte name if possible. If this is not possible, then the class of the TIC should be entered. If neither an analyte name nor a class can be identified, the TIC should be identified as Unknown. The EPA Region 5 EDD only allows for reporting up to 10 TICs. Only the 10 most concentrated or most relevant TICs should be reported. Table 2-7 shows examples of the nomenclature for TICs. As an example, if a sample has three Unknown Hydrocarbons, then the TICs are labeled UnkHydrocarb1, UnkHydrocarb2, and UnkHydrocarb3. TIC names are to be reported in the cas\_rn field, column 24, of the Basic Sample/Test/Result File (Table 3-4). In addition, the result\_type\_code, column 27 in the Basic Sample/Test/Result File should have “TIC” for all TIC records.

**Table 2-7 Example Nomenclature for TIC Reporting**

TIC Name	Number for TIC	Reported Name in cas_rn
Unknown	1-10	Unknown1 – Unknown10
Unknown Hydrocarbon	1-10	UnkHydrocarb1 – UnkHydrocarb10
Unknown PAHs	1-10	UnkPAH1 – UnkPAH10
Unknown Aromatics	1-10	UnkAromatic1 – UnkAromatic10
Unknown VOA	1-10	UnkVOA1 – UnkVOA10
Unknown SV	1-10	UnkSV1 – UnkSV10

## **2.4 TYPES OF DATA SUBMITTALS**

The tables in this guidance identify the various types of data being requested. Table 2-8 provides general information on the files that make up this EDD. Detailed instructions for creating all the EDD files are provided in Section 3.0. Instructions for submitting your EDDs to EPA Region 5 are presented in Section 2.5.5.



**Table 2-8 General Information on EDD Files**

<b>File Type</b>	<b>File Name</b>	<b>Created By</b>	<b>Contents</b>	<b>What makes a row of data unique?</b>	<b>Dependence of other files on these data</b>
Data Provider (Section 3.1)	EPAR5DATAPROVIDER_v2.txt (or .csv, .xls, .mdb)	Data provider	One-time reporting of the data provider contact information.	data_provider	The Basic Location and Basic Sample/Test/Results Files require the reporting of the data_provider code as described in this file.
Sub-facility (Section 3.2)	EPAR5SUBFACILITY_v2.txt (or .csv, .xls, .mdb)	Data provider	One-time definition of the Operable Units at a Sub-Facility and Operable Unit contact information.	subfacility_code	The Basic Location File cannot be loaded without properly referenced sub-facilities (subfacility_code).
Basic Location (Section 3.3)	EPAR5BASICLOC_v2.txt (or .csv, .xls, .mdb)	Data provider's surveyor	One entry for each location in a facility. Contains elevation, coordinate, and general locational data. Data should only be reported once for a location.	sys_loc_code	Basic Sample/Test/Results, Basic Water Levels, Basic Geology, and Extraction-Injection Well data can only be reported for locations that are defined in this file.
Basic Chemistry Sample/Test/Result (Section 3.3)	EPAR5BASICHEM_v2.txt (or .csv, .xls, .mdb)	Data provider's field sampling team(s) and testing lab(s)	One row for each analyte reported for a given sample and test. Additional rows can be added to report total and dissolved results and to report results for re-extracts.	sys_sample_code lab_anl_method_name analysis_date total_or_dissolved test_type cas_m	None
Basic Water Level (Section 3.4)	EPAR5BASICWTR_v2.txt (or .csv, .xls, .mdb)	Data provider's field sampling team(s)	Groundwater level data for monitoring wells.	sys_loc_code measurement_date	None.
Basic Geology (Optional) (Section 3.5)	EPAR5BASICGEO_v2.txt (or .csv, .xls, .mdb)	Data provider's geologist	Geology data for a borehole.	sys_loc_code start_depth	None.
Extraction-Injection Well (If Applicable) (Section 3.6)	EPAR5EIW_v2.txt (or .csv, .xls, .mdb)	Data provider's field sampling team(s)	Data that relates to any extraction wells that are operating as part of the remedial action.	sys_loc_code start_measurement_date start_measurement_time	None.

## **2.5 SUBMITTING YOUR EDDS**

### **2.5.1 Data Entry Tools to Create the EDD Files**

Formatted EDD files for the EDP can be produced using any software with the capability to create text files. These files are especially easy to create using spreadsheet or database software packages. However, if these are unavailable, the files can be created using a text editor. Table 2-9 provides instructions for creating EDD files from some widely-used software packages.

**Table 2-9 Producing Tab-Delimited Text Files Using Common Software Packages**

<b>Package</b>	<b>Type</b>	<b>Instructions</b>
Access	Database	<ol style="list-style-type: none"> <li>1. Create individual tables for each EDD section using file structures in Section 3.0.</li> <li>2. After data are entered, close the tables.</li> <li>3. Once the file is saved it will be possible to load the entire .mdb file into the EDP.</li> </ol> <p>Note: The table names should follow the proper naming conventions.</p>
Excel	Spreadsheet	<ol style="list-style-type: none"> <li>1. Create the file structures in Section 3 either as individual tabs within a single Excel file or create individual files for each EDD type.</li> <li>2. Select 'File', 'Save As', from the top menu. Change 'Save as Type' to an '.xls' or '.csv' file. Press the 'Save' button.</li> </ol>

Several files, described below, are included on EPA Region 5's GEOS EDD Support website located at <http://www.epa.gov/region5superfund/edman> to assist in creating the chemistry and geology EDDs.

A Microsoft Excel Workbook file, EPAR5BASICEDD.xls provides electronic templates for Basic EDD Files. Templates for the Initial EDD Files are included in this Excel file. To create an EDD, simply enter your data into the worksheets provided and then follow the instructions to load and review an EDD as described in the "EDP Users Manual".

### **2.5.2 EDD Submittal Types**

There are three EDD submittal types: a primary EDD submittal, a correction resubmittal, and an update submittal. These three EDD types are described below.

- **Primary EDD Submittal:** A primary EDD submittal contains data being submitted for the first time to EPA Region 5. When submitting data to the EPA Region 5, the automated system will review and either accept or reject data based on the same set of error criteria referenced by the EDP. The system will generate an automated message depending on the EDDs status. Further information is provided in Section 2.5.5.
- **Correction Resubmittal:** In the case where a primary EDD submittal contains errors, the EQUIS 5 system will automatically generate a user notification. Data providers should follow the steps in Section 2.5.5 to identify the cause of the rejection and make corrections as necessary. Data providers should then resubmit the data in the same fashion as the primary EDD submittal.
- **Update Submittal:** This type of submittal updates data that has previously been accepted by EPA Region 5. The files of an update submittal should follow the normal naming convention of an EDD submittal and contain only data for the records being updated. For example, a data provider submits an EDD in 2001 that includes a Location File that contains ten locations, and the EDD is accepted by EPA Region 5 and loaded into the EPA database. If, in 2003, the facility is resurveyed, and it is discovered that three of the locations'

coordinate information has changed due to increased accuracy, a new Location File containing data for only those three locations would need to be submitted as an update submittal. The update submittal would be named using the current submittal date of the update. **The reason for the update submittal must be conveyed to EPA Region 5 via the GEOS EDD Support e-mail prior to submission ([geoseddsupport@epa.gov](mailto:geoseddsupport@epa.gov)).**

*Note: All required fields must be populated for the three locations regardless of whether or not these fields were updated.*

### 2.5.3 Using the EQUIS Data Processor to Check EDD Formatting

The EDP should be used by Data Providers to check EDD files prior to submittal to EPA Region 5. The EDP is a no-cost application that performs a series of formatting checks on the files and then identifies any records that have errors along with a description of the errors. This allows the Data Provider to correct the errors before sending the files to EPA Region 5. EDD files that pass through the EDP error-free should also result in an error-free import into the EPA Region 5 database.

EDP is available as a no-cost download from the EPA Region 5 GEOS EDD Support website located at <http://www.epa.gov/region5superfund/edman>. Instructions on how to install and use the EDP are also provided on the website.

### 2.5.4 EDP and the ‘Data Package’

After populating the appropriate sections of the EDD, data providers must utilize the EDP software provided on the EPA Region 5 GEOS EDD Support website located at <http://www.epa.gov/region5superfund/edman> to review data quality and to create the final ‘Data Package’. A ‘Data Package’ is a single .zip file created by the EDP which contains all files that were currently loaded and processed in the EDP as well a unique user certificate that is assigned by Region 5 to data providers.

To obtain a user certificate, users must contact Region 5 through the GEOS support e-mail address ([geoseddsupport@epa.gov](mailto:geoseddsupport@epa.gov)). In their initial e-mail data providers should include the facility name, EPA ID, and data provider contact information including the e-mail of the individual who will submit all data. Region 5 will then create a data provider profile and the appropriate user certificate will be automatically forwarded to the specified data provider e-mail address. Details on the sign and submit function of the EDP are contained within the “EDP Users Manual”, and data providers should refer to this document when creating the final “Data Package”.

### 2.5.5 Submitting Your EDD to EPA

Once your EDD files are compressed using the sign and submit function of the EDP, Data Providers should copy the ‘Data Package’ from their local disk and paste the file into the GEOS .ftp blind drop folder located at <ftp://upload.epa.gov/incoming/geosdrop/workflow>. After posting a ‘Data Package’ to the .ftp folder, data providers will receive one of several automated systems messages. The various system messages and their interpreted meanings are included in Table 2-10 below. Upon receiving the system message, data providers should review the system message and any system generated attachments to determine the cause of the error (*Note: If the ‘Data Package’ is accepted by the system, an acceptance message will be returned and no further action is required by the Data Provider*). If data providers are unclear regarding the reason for a ‘Data Package’ rejection they should contact Region 5 ([geoseddsupport@epa.gov](mailto:geoseddsupport@epa.gov)) to request assistance with error message interpretation.

*Note: It is essential that the ‘Data Package’ naming convention include the correct twelve character EPA ID. In an instance where a Data Provider is assigned as a user for multiple facilities, it may be possible for data to be incorrectly submitted and accepted by the database for the wrong facility. If a data provider suspects that they have submitted data to the wrong facility, they should contact Region 5 immediately ([geoseddsupport@epa.gov](mailto:geoseddsupport@epa.gov)).*

**Table 2-10 Automated EQUIS System Messages**

<b>Message Name</b>	<b>Subject Line</b>	<b>Body</b>	<b>Remark</b>
Duplicate File	EDD File {FileName} Rejected - Duplicate Submission	Your EDD file '{FileName}' has been rejected because it is a duplicate submission ({DuplicateID}).	This notice is sent to the data provider if the system has accepted an EDD of the same name previously.
Invalid Filename	EDD File {FileName} Rejected - Invalid file name	Your EDD file '{FileName}' has been rejected because it does not match the required package naming conventions.	This notice is sent to the data provider if the EDD was submitted and the EDD file name does not match the file naming convention.
Invalid Facility	EDD File {FileName} Rejected - Facility not found	Your EDD file '{FileName}' has been rejected because the corresponding facility was not found. Please check the specified file naming conventions.	This notice is sent to the data provider if the EDD was submitted to a facility that does not exist or the EDD file name does not match the file naming convention.
Invalid Facility User	EDD File {FileName} Rejected - Not a Valid Data Submitter for Facility	Your EDD file '{FileName}' has been rejected because the user does not have permission to submit data to the corresponding facility. Please contact your system administrator.	This notice is sent to the data provider if the EDD was submitted to a facility that the user does not have permission to submit to.
Valid Package	EDD File {FileName} - User Certificate Authenticated	Your EDD file '{FileName}' has been successfully received and is currently being process. You will receive further notification upon completion.	This notice is sent to the data provider if the EDD is valid (i.e. correct user, facility, filename, etc.). This notice is sent prior to actually processing the data within the EDD.
Empty EDD	EDD File {FileName} Rejected - No Data Found	Your EDD file '{FileName}' has been rejected because no valid data were found. Please make the necessary corrections before resubmitting the EDD.	This notice is sent to the data provider if the EDD is empty or if the EDD files do not match the EDD section names.
EDD Has Errors	EDD File {FileName} Rejected - Data Errors	Your EDD file '{FileName}' has been rejected because of errors found in the data. Please review the attached error report and make the necessary corrections before resubmitting the EDD.	This notice is sent to the data provider if errors are found in the EDD during the automated system processing.
EDD Has Warnings	EDD File {FileName} Rejected - Data Warnings	Your EDD file '{FileName}' contains warnings (as shown in the attached file). However, no errors were found so the EDD will continue to be processed.	This notice is sent to the data provider if warnings (but no errors) are found in the EDD.
EDD Accepted	EDD File {FileName} Accepted	Your EDD file '{FileName}' has been accepted and no errors were found.	This notice is sent to the data provider when an EDD with no errors is accepted and loaded into the database.

**2.6 EXAMPLES OF BASIC EDD FILES**

Figures 2-3 and 2-4 show examples of EDD files with the first few rows of the EDD populated. These examples were produced using Excel worksheets. To submit these files, the data provider would check the files using the EDP (see section 2.5.3), and then follow the process for creating and submitting the “Data Package” as described in section 2.5.6. In order to fit the examples on one page, not all of the fields (i.e., columns) were included for certain files (e.g., Sub-facility, Basic Location, and Basic Sample/Test/Result). The notation “*Additional Fields*” has been inserted where, for purposes of these examples, one or more fields have been omitted. It should be noted that all fields must appear in the EDD files you submit regardless of whether or not the field is populated (see Section 2.3.1 regarding reporting blanks, or “null” values).

**Figure 2-3 Example Initial EDD Files**

**Data Provider File:**

data_provider	data_contact_person	data_contact_address1	data_contact_address2	data_contact_city	data_contact_state	data_contact_zipcode	data_contact_email	data_contact_phone
RFW	John Smith	77 W. Jackson		Chicago	IL	60601	John Smith@abd.com	312-555-0213

**Sub-facility File**

subfacility_code	subfacility_name	subfacility_task_code	subfacility_desc1	subfacility_desc2	contact_name	address1	<i>Additional Fields</i>	email_address
01	Example Operable Unit				John Smith	23 Main Street		abc@abd.com

**Basic Location File:**

data_provider	facility_id	sys_loc_code	Primary_subfacility_code	x-coord	y-coord	surf_elev	coord_sys_desc
RFW	ABC000115423	MW01	01	414456.78	4424543.21	120.2	UTM ZONE 17
RFW	ABC000115423	SB-01	01	414709.23	4424304.12	126.3	UTM ZONE 17
RFW	ABC000115423	MW03	01	414601.23	4424700.33	130.1	UTM ZONE 17
RFW	ABC000115423	MW04	01	414601.23	4424700.33	130.1	UTM ZONE 17

**Notes:** MW03 and MW04 are multiple wells within same boring.

**Basic Location File (Continued):**

Loc_name	Loc_desc	Loc_type	Loc_purpose	<i>Additional Fields</i>	comment
LAGOON		MW			
		SOILBORE			
LANDFILL	SHALLOW WELL	MW			
LANDFILL	DEEP WELL	MW			

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**Figure 2-4 Example Basic EDD Files**

**Basic Sample/Test/Result File:**

data_provider	sys_sample_code	Sys_loc_code	sample_name	sample_matrix_code	sample_type_code	sample_source	parent_sample_code	sample_date	Start_depth	End_depth	Depth_unit	Composite_y/n	lab_anl_method_name	Analysis_date	Total_or_dissolved
RFW	MW01040198	MW-01		WG	N	FIELD		04/01/1998 00:00	10	12	ft		SW8240	04/02/1998 00:00	D
RFW	MW02040198	MW-03		WG	N	FIELD		04/01/1998 00:00				N	SW8240	04/02/1998 00:00	D
RFW	MW02040198	MW-03		WG	N	FIELD		04/01/1998 00:00				N	SW8240	04/02/1998 00:00	D

**Basic Sample/Test/Result File (Continued):**

test_type	Lab Matrix code	analysis location	<i>Additional Fields</i>	qc_level	lab_sample_id	<i>Additional Fields</i>	Cas_rn	Chemical name	Result value	Result type code	reportable result	Detect flag	<i>Additional Fields</i>	reporting limit	<i>Additional Fields</i>
INITIAL	WG	LB		QUANT			71-43-2	BENZENE	23.20	TRG	YES	Y		5	
INITIAL	WG	LB		QUANT	LAB02		108-88-3	TOLUENE		TRG	YES	N		100	
REANALYSIS	WG	LB		QUANT			1330-20-7	XYLENES		TRG	YES	N		10	

**Basic Water File:**

sys_loc_code	measurement_date	ref_elev	water_level_depth	water_level_elev	<i>Additional Fields</i>	remark
MW01	05/10/1999 13:10	120.2	31.1	89.1		
MW02	05/10/1999 13:45	123.1	34.1	89.0		

**Extraction-Injection Well File:**

sys_loc_code	sys_well_code	Start_measurement_date	end_measure_date	avg_pump_rate	pump_rate_unit	<i>Additional Fields</i>	remark
EX-01	EX-01	05/12/2000 11:23	06/12/2000 11:30	2.5	mgd		
EX-02	EX-02	11/12/2000 12:00	12/12/2000 13:10	1.75	mgd		

**Basic Geology File:**

sys_loc_code	start_depth	material_type	geo_unit_1	geo_unit_2	Remark
MW-03	0	CL	GLACIAL	AQUIFER0	
MW-03	10	SW	OUTWASH	AQUIFER1	
MW-03	23	SP	OUTWASH	AQUIFER2	
SB-01	0	ML	ALLUVIAL	AQUIFER0	

### 3.0 FORMATS FOR BASIC EDD FILES

This section contains tables that define the file structures for the Basic Chemistry EDD sections. The file structures are included for the following sections: Data Provider, Sub-facility, Basic Location, Basic Chemistry Sample Result, Basic Water Level, and Extraction-Injection Well. Please notice that some columns are labeled as “Reserved for future use”. These columns should simply be reported as null values and are only needed to comply with standard reporting formats. Columns marked “Required” must be reported for each row in the file. Columns marked “Required PK” are required fields as well as primary keys that help to define row uniqueness. If an EDD is submitted with one or more “Required” fields not filled in, the EDD will not be able to load into the database, and the EDD will require further data provider correction(s). Columns marked “If Available” must be reported if the information is available.

*Note: “If Available” fields may be required depending on data populated in the other fields.*

#### 3.1 DATA PROVIDER FILE

The Data Provider File is used by Region 5 to define the entity responsible for the reporting of data. This file should be submitted along with the other Initial EDD Files. Information that is populated in this file should be specific to the data provider and not to the facility for which the data is being submitted. If at any time the data provider information changes, a new Data Provider File must be submitted to accurately reflect the current chain of responsibility for the data.

Each Data Provider File must be named according to the following convention:

EPAR5DATAPROVIDER\_v2.txt (or .csv, .xls, .mdb)

**Table 3-1 Data Provider File Structure**

Column #	Column Name	Data Type	Required	Description
1	data_provider	Text(20)	Required PK	Unique code representing the name of company or agency responsible for completion and submittal of any part of this EDD. See Appendix section A-16 for a complete list of valid company codes. To request the creation of a company code, follow the instructions for requesting a new valid value in Section 2.2.2.
2	data_contact_person	Text(30)	If Available	Name of the primary point of contact associated with the data provider. If not available, report as null.
3	data_contact_address1	Text(40)	If Available	Data provider contact street address and/or box number. If not available, report as null.
4	data_contact_address2	Text(40)	If Available	Data provider contact address, part two. Box number or other info. If not available, report as null.
5	data_contact_city	Text(30)	If Available	Data provider contact city. If not available, report as null.
6	data_contact_state	Text(5)	If Available	Data provider contact state postal abbreviation. If not available, report as null.
7	data_contact_zipcode	Text(10)	If Available	Data provider contact zip code. If not available, report as null.
8	data_contact_email	Text(60)	If Available	Data provider contact e-mail address. If not available, report as null.
9	data_contact_phone	Text(30)	If Available	Data provider contact phone number. If not available, report as null.

### 3.2 SUB-FACILITY FILE

The Sub-facility File provides general information about an Operable Unit(s) or Remedial Investigation area (generally referred to here as the “Sub-Facility”) and provides the name, e-mail address, and other contact information for the individual or group responsible for the reported Operable Unit or Remedial Investigation area. The Sub-Facility File is a required part of any initial EDD submittal. An example of a Sub-facility File is provided in Figure 2-3, Section 2.6

*Note: If the Site File was previously submitted, you DO NOT need to resubmit the file again unless contact information has significantly changed.*

Each Sub-facility File must be named according to the following convention:

EPAR5SUBFACILITY\_v2.txt (or .csv, .xls, .mdb)

**Table 3-2 Sub-facility File Data Structure**

Column #	Column Name	Data Type	Required	Description
1	subfacility_code	Text(3)	Required PK	Unique code indicating the sub-facility Operable Unit for which the data is collected. Typically the code is “01” unless there is a second or third operable unit at the facility. Codes of “02” and “03” should be used for second and third operable units, respectively. For Remedial Investigation areas begin numbering with “01”. Contact the EPA RPM if unsure of proper code.
2	subfacility_name	Text(60)	Required	Name of the sub-facility area for which data is being reported.
3	subfacility_task_code	Text(8)	If Available	Code used to identify the task under which the sub-facility is investigated. This field is for informational purposes only. Field samples are formally associated with task codes. If not available, report as null.
4	subfacility_desc1	Text(255)	If Available	General description of the sub-facility. If not available, report as null.
5	subfacility_desc2	Text(255)	If Available	Additional description of the sub-facility, if necessary. If not available, report as null.
6	contact_name	Text(50)	Required	Name of person to contact regarding general sub-facility information (May be the same as the data provider).
7	address1	Text(40)	Required	Sub-facility address, part one.
8	address2	Text(40)	If Available	Sub-facility address, part two. If not available, report as null.
9	city	Text(30)	Required	Sub-facility city (May be the same as the Data Provider).
10	state	Text(2)	Required	Sub-facility state (May be the same as the Data Provider).
11	zipcode	Text(10)	Required	Sub-facility zip code (May be the same as the Data Provider).
12	phone_number	Text(30)	Required	Sub-facility contact phone number (May be the same as the Data Provider).
13	alt_phone_number	Text(30)	If Available	Alternate phone number for sub-facility contact. If not available, report as null.
14	fax_number	Text(30)	If Available	Fax number of sub-facility contact. If not available, report as null.
15	email_address	Text(100)	Required	Sub-facility contact e-mail address (May be the same as the data provider).



### 3.3 BASIC LOCATION FILE

The primary purpose of the Basic Location File is to define the sampling locations for a facility. This file is referred to as one of the Initial EDD Files because it must be submitted and **error-free** before EDD files that contain chemistry and geology data can be used. Each row of the Basic Location File contains the definition of a unique sampling location. Do not create any records (i.e., rows) for any samples not associated with a specific sampling location, such as field blanks and trip blanks. In the case of multiple wells located in one borehole, each well in the borehole must have a unique sampling location identifier (sys\_loc\_code).

Each sampling location should only be reported once for a sub-facility. The only time data for a previously reported location should be resubmitted is if some information about the location changes, such as when a location is resurveyed after settling has occurred or after a resurvey using an instrument or methodology with higher accuracy. When resubmitting changes to the Location File, the file should only contain rows pertaining to the affected locations. As in a typical EDD submittal, all “required” fields should be populated when updating data. See section 2.4 for more information regarding submitting updated data files.

An example of a Basic Location File is provided in Figure 2-3, Section 2.6.

Basic Location Files for must be named according to the following convention:

EPAR5BASICLOC\_v2.txt (or .csv, .xls, .mdb)

**Table 3-3 Basic Location File Data Structure**

Column #	Column Name	Data Type	Required	Description
1	data_provider	Text(20)	Required	Data Provider code corresponding to the code entered in the Data Provider File. See Table 3-1, Column 1.
2	facility_id	Text(20)	Required	Twelve character EPA ID code which designates the appropriate facility. Use values in Table A-21 of the Appendix.
3	sys_loc_code	Text(20)	Required PK	Sample location ID, such as MW-01, A24, SW12, or SB-2S, for all samples, including groundwater samples, hydropunch samples, surface water/sediment samples, and soil samples.
4	primary_subfacility_code	Text(3)	Required	Code indicating the sub-facility operable unit for which the data is being submitted. Must match the entry in column 1 (“sub-facility_code”) of the Sub-Facility File. Typically the code is “01” unless there is a second or third operable unit. Codes “02” or “03” for example, should be used for the second and third operable unit, respectively. Contact the EPA RPM if you are unsure of the proper code to use.
5	x_coord	Numeric	Required	Sampling location numeric x coordinate, i.e., latitude. Required coordinate system is UTM NAD83 meters.
6	y_coord	Numeric	Required	Sampling location numeric y coordinate, i.e., longitude. Required coordinate system is UTM NAD83 meters.
7	surf_elev	Numeric	Required	Elevation in feet above sea level of the ground surface at the sampling location.
8	coord_sys_desc	Text(50)	Required	Description of sampling location coordinate system. Typical format for this field is “UTM Zone ##”, where “##” is the zone number.
9	loc_name	Text(40)	If Available	Sampling location name. (May be identical to entry in column 3) If not available, report as null.
10	loc_desc	Text(255)	If Available	Description of sampling location. If not available, report as null.

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Column #	Column Name	Data Type	Required	Description
11	loc_type	Text(10)	If Available	Description of sampling type, such as direct push, extraction-injection well, or sediment. Use values in Table A-9 of the Appendix. If not available, report as null.
12	loc_purpose	Text(20)	If Available	Brief description of purpose for collecting sample. If not available, report as null.
13	within_facility_yn	Text(1)	Required	Indicate whether this sampling location is within the facility boundary.
14	depth_to_top_of_screen	Numeric	Required*	Depth in feet below ground surface to the top of the well screen. This information is required to obtain the vertical location from which the groundwater sample was taken.  Report as null if this location is not a well.  <i>*Note: Required only if location is a well</i>
15	depth_to_bottom_of_screen	Numeric	Required*	Depth in feet below ground surface to bottom of well screen. This information is required to obtain the vertical location from which the groundwater sample was taken.  Report as null if this location is not a well.  <i>*Note: Required only if location is a well</i>
16	top_casing_elev	Numeric	Required*	Elevation of the top of casing in feet.  Report as null if well is not at this location.  <i>*Note: Required only if location is a well</i>
17	depth_to_bottom_of_well	Numeric	Required*	Depth to bottom of well in feet below ground surface.  Report as null if this location is not a well.  <i>*Note: Required only if location is a well</i>
18	total_depth	Numeric	Required*	Total depth of boring below ground surface in feet.  Report as null if this location is not a well.  <i>*Note: Required only if location is a well</i>
19	remark	Text(255)	If needed	Any comments or information regarding the information in this EDD file. If not available, report as null.

### 3.4 Basic Sample/Test/Result EDD File

The Basic Sample/Test/Result File contains sample, test, and result data. Data from both laboratory analysis and in situ measurements taken in the field, such as pH, conductivity, and dissolved oxygen, are to be reported in this file. For trip blank samples, please record the sys\_sample\_code as “TB” plus the date on which the sample was collected in MMDDYY format. For example a trip blank collected on April 5, 2008 would have a sys\_sample\_code of TB040508. A sys\_sample\_code of “Trip Blank” is unacceptable because it cannot be distinguished from another trip blank labeled the same way\*. For surface water samples, record the sample depths, start\_depth (Column 9) and end\_depth (Column 10), as depth below the water surface elevation. The water surface elevation at the time of the sampling should be recorded in the Basic Water Level File (see Section 3.5).

*\*Note: If data providers feel that cross contamination has occurred, as evidenced by the detection of analytes in the trip blank samples, then data providers must complete the “Batch Partner” spreadsheet located in the downloads section of the GEOS EDD Support website (<http://www.epa.gov/region5superfund/edman>) and e-mail it to the GEOS Support e-mail ([geoseddsupport@epa.gov](mailto:geoseddsupport@epa.gov)).*

Each Basic Sample/Test/Result File should be named according to the following convention:

EPAR5BASICCHEM\_v2.txt (or .csv, .xls, .mdb)

**Table 3-4 Basic Sample/Test/Result File Data Structure**

Column #	Column Name	Data Type	Required	Description
1	data_provider	Text(20)	Required	Data Provider code corresponding to the code entered in the Data Provider File. See Table 3-1, Column 1.
2	sys_sample_code	Text(40)	Required PK	Unique sample identifier. Each sample at a facility, including spikes and duplicates, must have a unique value. There is considerable flexibility in the methods used to derive and assign unique sample identifiers and Data Providers should report in the fashion to which they are accustomed; however, uniqueness throughout the Basic Sample/Test/Result File is required.  <b>Note: Sample identifiers must be unique with relation to EVERY sample identifier that has been submitted in every EDD to date.</b>
3	sys_loc_code	Text(20)	Required*	Sample collection location. Enter the same sys_loc_code, such as MW-01, A24, SW12, or SB-2S, as it appeared in the Basic Location File.  <i>*Note: Field should be null if sample is not associated with a location, such as a field QC sample (e.g., field blank or trip blank).</i>
4	sample_name	Text(30)	If Available	Additional sample identification information, if necessary. Should be the same value as in the sys_sample_code field if no further naming information applies. If not available, report as null.
5	sample_matrix_code	Text(3)	Required	Code that identifies the matrix, such as soil, groundwater, and sediment, being sampled. Use values in Table A-1 of the Appendix.

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<b>Column #</b>	<b>Column Name</b>	<b>Data Type</b>	<b>Required</b>	<b>Description</b>
6	sample_type_code	Text(3)	Required	Code which distinguishes between different types of samples; for example field samples versus laboratory method blank samples. Use values in Table A-12 of the Appendix.
7	sample_source	Text(5)	Required	This field indicates if the sample originated in the field or in the lab. For the Basic Sample/Test/Result File, in almost all cases the correct entry will be "FIELD".
8	parent_sample_code	Text(40)	Required*	This field applies to duplicate samples only and should contain the entry in the "sys_sample_code" field for the sample from which the duplicate sample was derived, i.e., the "parent" sample. If the sample is not a duplicate sample, the field should be reported as null. A value other than "null" is required whenever the entry in the sample_type_code column is "FD", "FR", "FS", or "LR".  <i>*Note: Required for field duplicate samples only.</i>
9	sample_date	Date(10)	Required	Date sample was collected in MM/DD/YYYY HH:MM format. Time must be reported in 24-hr (military) format; report as 00:00 if time is unknown. If exact date is not known, enter the best estimate for the date of sampling. If an estimated date is entered, note this and provide an explanation for how the estimate was made in the comment field in this file (Column 38).
10	start_depth	Numeric	If Available	Beginning depth (top) of sample in feet below ground surface. For surface water samples, use beginning depth below water surface elevation. The water surface elevation at the time sample was collected should be reported in the Water Level File.  Enter depth for groundwater samples only if discrete samples are taken at different depth elevations from a single well, i.e. multiple well packer samples.  If not available, report as null.
11	end_depth	Numeric	If Available	Ending depth (bottom) of sample in feet below ground surface. For surface water samples, use ending depth below water surface elevation. The water surface elevation at the time sample was collected should be reported in the Water Level File.  Enter depth for groundwater samples only if discrete samples are taken at different depth elevations from a single well, i.e. multiple well packer samples.  If not available, report as null.
12	depth_unit	Text(15)	If Available	Unit of measurement for the sample beginning and ending depths. Use values in Table A-17 of the Appendix. If not available, report as null.
13	composite_yn	Text(1)	If Available	Code used to indicate whether a sample is a composite sample. Enter "Y" for yes and "N" for no. If not available, report as null.
14	lab_anl_method_name	Text(35)	Required PK	Laboratory analytic method name or description. Use values in Table A-15 of the Appendix. Default to "UNKNOWN" if the information is not available.

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<b>Column #</b>	<b>Column Name</b>	<b>Data Type</b>	<b>Required</b>	<b>Description</b>
15	analysis_date	Date/Time	Required PK	Date and time analysis was conducted in MM/DD/YYYY HH:MM format. Time must be reported in 24-hr (military) format; report as 00:00 if time is unknown. Should refer to either beginning or end time of the analysis as required by EPA. Please report the analysis date as the collection date plus 30 days where the analysis date is unknown, or with another approximate date if a more accurate estimated date of analysis is known. For measurements taken in the field (e.g., pH, dissolved oxygen), use the same date as sample date (Column 9). Whenever an approximate date is used, document the way the date was determined in the comment field (Column 38) and in the cover letter that accompanies the EDD.
16	total_or_dissolved	Text(1)	Required PK	Must be either “D” for dissolved or filtered [metal] concentrations, <b>and “T” for every other case including all organics.</b>
17	test_type	Text(10)	Required PK	Type of test. Valid values include “INITIAL”, “REEXTRACT1”, “REEXTRACT2”, “REEXTRACT3”, “REANALYSIS”, “DILUTION1”, “DILUTION2”, and “DILUTION3”. Use “INITIAL” if unknown or data is from measurements taken in the field (e.g., pH, dissolved oxygen).
18	lab_matrix_code	Text(3)	If Available	Code that identifies the matrix, such as soil, groundwater, and sediment, being sampled. Acceptable valid values can be found in Table A-1 in the EDD Specification Manual Valid Value Appendix. This field is included because the matrix of the sample as analyzed in the lab may differ from the matrix in which it arrived at the lab (e.g., TCLP leachate samples). If not available, report as null.
19	analysis_location	Text(2)	Required	Must be either “FI” for field instrument or probe (i.e., “in the field” measurements such as pH, temperature, conductivity, and dissolved oxygen), “FL” for mobile field laboratory analysis, or “LB” for an analysis done at a laboratory.
20	basis	Text(3)	If Available	Must be either “WET” for wet weight basis reporting, “DRY” for dry weight basis reporting, or “NA” for tests for which this distinction is not applicable. EPA prefers that results be reported on the basis of dry weight. If not available, report as null.
21	dilution_factor	Numeric	If Available	Effective test dilution factor. If not available, report as null.
22	qc_level	Text(6)	Required	May be either “SCREEN” for screening data or “QUANT” for quantitative data. Default value is “QUANT”.
23	lab_sample_id	Text(20)	If Available	Laboratory Information Management System (LIMS) sample identifier. If necessary, a field sample may have more than one LIMS lab_sample_id (maximum one per each test event). If not available, report as null.
24	cas_m	Text(15)	Required PK	Analyte code corresponding to chemical being tested for. Use values in Table A-14 of the Appendix.
25	chemical_name	Text(75)	Required	Name of chemical being tested for. Use values in Table A-14 of the Appendix.

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<b>Column #</b>	<b>Column Name</b>	<b>Data Type</b>	<b>Required</b>	<b>Description</b>
26	result_value	Text(20)	Required *	Analytical result reported at an appropriate number of significant digits.  <i>*Note: Required if detect_flag = "Y" and result_type_code is "TRG" or "TIC". If not required, report as null.</i>
27	result_type_code	Text(3)	Required	Should be either "TRG" for a target or regular result, "TIC" for a tentatively identified compound, "SUR" for a surrogate, "IS" for an internal standard, or "SC" for spiked compound. Use "TRG" for data from field measurements.
28	reportable_result	Text(3)	Required	Must be either "YES" for results that are considered reportable, or "NO" for other results. This field can be used to distinguish between multiple results when a sample is retested after dilution. It can also be used to indicate which of the first or second column result should be considered primary. In both examples, the proper value for this field should be provided by the laboratory, i.e., only one result should be flagged as reportable.
29	detect_flag	Text(1)	Required	Enter "Y" for detected analytes and for estimated results above detection limit but below the quantitation limit. Enter "N" for non-detects. For tests such as flash point, use ">" and "<".  <i>Note: Do not use "&lt;" to indicate non-detects.</i>
30	lab_qualifiers	Text(10)	If Available	Qualifier flags assigned by the laboratory. If not available, report as null.
31	validator_qualifiers	Text(10)	If Available	Qualifier flags assigned by the person who validates the laboratory data. If not available, report as null.
32	interpreted_qualifiers	Text(10)	Required*	Qualifier flags assigned by the person who interpreted the validated data for the most appropriate qualifier. Use values in Table A-10 of the Appendix.  <i>*Note: Required if lab qualifier or validator qualifier field is populated. If not required, report as null.</i>
33	organic_yn	Text(1)	Required	Must be either "Y" for organic constituents or "N" for inorganic constituents. Use "Y" for data from field measurements.
34	reporting_detection_limit	Text(20)	Required*	Concentration level above which results can be quantified with confidence as they relate to a pre-defined minimum reporting detection limit. The value must reflect conditions such as dilution factors and moisture content, and must be sample-specific.  <i>*Note: Required if result_value IS NULL. The reporting_detection_limit column must be reported as the sample specific detection limit. If not required, report as null.</i>
35	result_unit	Text(15)	Required*	Units of measurement for the result. Use values in Table A-17 of the Appendix.  <i>*Note: Required if result_value IS NOT NULL. If not required, report as null.</i>

<b>Column #</b>	<b>Column Name</b>	<b>Data Type</b>	<b>Required</b>	<b>Description</b>
36	detection_limit_unit	Text(15)	Required*	Units of measurement for the detection limit(s). Use values in Table A-17 of the Appendix.  <i>*Note: Required if detect_flag = N. If not required, report as null.</i>
37	task_code	Text(8)	Required	Date in YYYYMMDD format used to associate individual samples to a specific sampling event. For example, if sampling was performed over a three day period from 05-03-2003 to 05-06-2003, the task-code would be the first sampling date, 20030503.
38	result_comments	Text(255)	If Available	Record any comments here.
39	task_phase	Text(50)	If Available	Identifies the phase in which the sampling event occurred. Must use one of the following: PR = Pre Remedial, RI = Remedial Investigation, FS = Feasibility Study, PD = Pre-Design, RD = Remedial Design, RA = Remedial Construction, PC = Post Construction, RM = Removal Action, BD = Before Dredge, AD = After Dredge, BR = Brown Fields, SP = Special Project); plus the date the sampling event started formatted as MM-DD-YYYY. An example is PC04-01-2001. If not available, report as null.

### 3.5 Basic Water Level File

The Basic Water Level EDD File includes information on water level measurements collected at the facility. Groundwater levels and surface water elevations should be reported using this file; however, in most cases, the file will only be used to report groundwater levels. All fields in the Basic Water Level File should be populated for groundwater elevation data (if data is available). For surface water data, use only the first six fields (Columns 1 through 6) and the “remark” field (Column 10).

Each Basic Water Level File containing data should be named according to the following convention:

EPAR5BASICWTR\_v2.txt (or .csv, .xls, .mdb)

**Table 3-5 Basic Water Level File Data Structure**

<b>Column #</b>	<b>Column Name</b>	<b>Data Type</b>	<b>Required</b>	<b>Description</b>
1	sys_loc_code	Text(20)	Required PK	Sample location ID, such as MW-01, from which water level measurement was collected. Must be the same sys_loc_code as reported in the Basic Location File.
2	measurement_date	Date/Time	Required PK	Date water level measurement was collected in MM/DD/YYYY HH:MM format. Time must be reported in 24-hr (military) format; report as 00:00 if time is unknown. If exact date is not known, enter the best estimate for the date of sampling. If an estimated date is entered, note this and provide an explanation for how the estimate was made in the comment field in this file (Column 10).

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<b>Column #</b>	<b>Column Name</b>	<b>Data Type</b>	<b>Required</b>	<b>Description</b>
3	historical_reference_elev	Numeric	Required	<p>For groundwater samples, the value in this field should be the elevation, in feet above mean sea level, of the reference point used to take measurements of the water level depth. Typically the reference point for groundwater measurements is the top of the well casing.</p> <p>For surface water samples, the value in this field should be the elevation of the surface water in feet above mean sea level.</p> <p>If elevation is given in units other than feet above mean sea level, please indicate the unit used in the remark column of this file (Column 10).</p>
4	water_level_depth	Numeric	If Available	<p>For groundwater, the value in this field should be the depth of ground water below the elevation defined in historical_reference_elev field (Column 3).</p> <p>For surface water, the value in this field should be the default value of "0".</p> <p>If not available, report as null.</p>
5	water_level_elev	Numeric	If Available	Elevation of water level. Elevation must be in feet. If not available, report as null.
6	measured_depth_of_well	Numeric	If Available	Depth below ground surface to bottom of well. If not available, report as null.
7	depth_unit	Text(15)	If Available	Unit used for depth measurements. Use values in Table A-17 of the Appendix. If not available, report as null.
8	remark	Text(255)	If Available	Remark or comment on measurement. If not available, report as null.
9	dry_indicator_yn	Text(1)	If Available	Enter "Y" if the well was dry and "N" if it was not dry. If not available, report as null.
10	Lnapl_cas_rn	Text(15)	If Available	Analyte code of the light non-aqueous phase liquid (lnapl) present in the well. Use values in Table A-14 of the Appendix. If not available, report as null.
11	Lnapl_depth	Numeric	If Available	Depth to the top surface of the lnapl in feet below the reference elevation. If not available, report as null.
12	Dnapl_cas_rn	Text(15)	If Available	Analyte code of the dense non-aqueous phase liquid (dnapl) present in the well. Use values in Table A-14 of the Appendix. If not available, report as null.
13	Dnapl_depth	Numeric	If Available	Depth to the top surface of the dnapl in feet below the reference elevation. If not available, report as null.
14	Task_code	Text(20)	If Available	Date in YYYYMMDD format used to associate individual measurements to a specific measurement event. For example, if sampling was performed over a three day period from 05-03-2003 to 05-06-2003, the task-code would be the first sampling date, 20030503. If not available, report as null.



### 3.6 Basic Geology EDD File - Optional

The Basic Geology File contains general information on geology data collected at and in the vicinity of the facility.

*Note: This file is an optional file that Region 5 requests be submitted if the data is readily available. However, this file may become a required submittal at the discretion of the responsible RPM in order to perform certain analyses.*

The basic Geology EDD File should be named according to the following naming convention:

EPAR5BASICGEO\_v2.txt (or .csv, .xls, .mdb)

**Table 3-6 Basic Geology File Data Structure**

Column #	Column Name	Data Type	Required	Description
1	sys_loc_code	Text(20)	Required PK	Sample location ID, such as MW-01. Must be the same sys_loc_code as reported in the Basic Location File.
2	start_depth	Numeric	Required PK	Start depth of the geologic unit in feet below ground surface.
3	material_type	Text(40)	If Available	The type of material that composes the lithologic unit. Use values in Table A-18 of the Appendix. Must be filled in all cases except if a depth-specific comment is being made. If not available, report as null.
4	geo_unit_code_1	Text(20)	Required	The data providers' interpretation of the hydrogeologic unit. This field may be used to indicate the geologic unit in terms of general hydrostratigraphy (e.g., AQUIFER1, AQUICLUDE, AQUIFER2) or in terms of a grouping of lithologic layers (e.g., FILL, CLAY, GRAVEL). Examples of possible geologic groupings are provided in Figure A-2 of the Appendix.
5	geo_unit_code_2	Text(20)	If Available	Alternate geologic unit grouping. This can be a sub-classification of geo_unit_code_1 or a layer used for groundwater flow and/or transport computer modeling that contains the lithologic unit. Examples of possible geologic groupings are provided in Figure A-2 of the Appendix. If not available, report as null.
6	remark	Text(255)	If Available	General remarks concerning the lithologic or geologic unit(s). If not available, report as null.

### 3.7 Extraction-Injection Well File

The Extraction-Injection Well File should be submitted for all facilities where extraction and/or injection wells are a part of the remedial action at the facility. The purpose of the Extraction-Injection Well File is to provide EPA Region 5 with designed pumping rates as well as the actual pumping rates for each well during a particular reporting period. This information will be useful for determining if the remedial system is successfully capturing the contaminant plume. This file is identical to the file described in the EPA Region 5 Comprehensive EDD Specification Manual. When checking this file with the EDP, use the EPAR5EIW\_v2 format.

Each Extraction-Injection Well File must be named according to the following convention:

EPAR5EIW\_v2.txt (or .csv, .xls, .mdb)

Table 3-7 Extraction-Injection Well File Data Structure

Column #	Column Name	Data Type	Required	Description
1	sys_loc_code	Text(20)	Required PK	Well installation location. Must be a valid code for the facility and must match one of the reported values in the sys_loc_code field of the Basic Location File (Table 3-3, Column 3) submitted in the current or previous EDD.
2	start_measure_date	Date/Time	Required PK	Date and time that the pumping rate measurements began in MM/DD/YYYY HH:MM format. Time should be reported in 24-hr (military) format.
3	end_measure_date	Date/Time	Required	Date and time that the pumping rate measurements concluded in MM/DD/YYYY HH:MM format. Time should be reported in 24-hr (military) format.
4	avg_pump_rate	Numeric	Required	Average pumping rate. Recommended method is to use volume pumped divided by the reported date span, i.e., from the start measurement date to end measurement date.
5	pump_rate_unit	Text(15)	Required	Unit of measure for the pumping rate. Use values in Table A-17 of the Appendix.
6	pct_operating_time	Text(3)	If Available	Percentage of the measurement time interval during which the well was operating. Use a value from 0 to 100 (do not include the percent symbol, "%"). If not available, report as null.
7	operating_mode	Text(14)	Required	Mode in which well was operating during the reported interval. Select from the following valid values: "EXTRACTION", "INJECTION", "RECIRCULATION", "PULSE", "DEVEL", and "UNUSE".
8	design_rate	Text(14)	Required	Pumping rate as specified in the approved remedial design report for fully capturing sub-facility groundwater contamination.
9	design_rate_unit	Text(14)	Required	Unit of measure for the design pumping rate. Use values in Table A-17 of the Appendix.
10	rate_measurement_type	Text(14)	If Available	Type of measurements used for averaging. Select from the following valid values: "TOTALIZER" (totalizing flow meter), "MANIFOLD" (estimated from total manifold flow), "ESTIMATE" (estimate from prior values), and "AVERAGE" (average of instantaneous measurements). If not available, report as null.
11	suction	Text(14)	If Available	Vacuum in well (e.g., wellpoint vacuum) or well casing (e.g., vacuum well), reported in equivalent feet of water. If not available, report as null.
12	remark	Text(255)	If Available	Remarks regarding the pumping rate measurements. If not available, report as null.

## 4.0 TECHNICAL SUPPORT

EPA Region 5 provides technical support for users of this EDD Specification Manual. For questions concerning data, data formats, and EDD submittal procedures, please contact GEOS Technical Support listed below. For more general questions relating to the facility, please contact the EPA RPM assigned to the facility.

GEOS Technical Support: (312) 353-1200, or [geoseddsupport@epa.gov](mailto:geoseddsupport@epa.gov).