Hanford Environmental Information System (HEIS)

Volume 3 Subject Area Reference Manual

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1.0 HOW TO USE A SUBJECT AREA MANUAL

OVERVIEW

The Hanford Environmental Information System (HEIS) Subject Area manuals are designed as reference guides, that is, each chapter provides the information needed to make best use of each subject area, its tables, and reporting capabilities (only available in certain subject areas). Each subject area is documented in a chapter in one of the subject area manuals.

Because these are reference manuals, most of the information is also available in the online help system as well. See Section 5.4.2 of the *HEIS User's Guide* (DOE-RL 1994a) for a detailed description of the online help.

CHAPTER STRUCTURE

Each subject area chapter is uniformly divided into the following sections:

- Section X.1 is an overview that explains the purpose and scope of the subject area. The HEIS database structure is depicted in the subject area data model.
- Section X.2 explores how to access the forms in the subject area and illustrates the entry points.
- Section X.3 describes each table in the subject area. Each subsection presents one table, beginning with an introduction and sources for the data. The requirements for each table include dependencies, special processing, code lookups and validations, required fields, and recommended query fields. These areas are explained below, in the order in which they appear in the subsection.
- Section X.4 explains reporting, including what features are available and how to make best use of them.

INTRODUCTION

The introduction gives a brief overview of the table and the data it contains. Any interrelation with other tables is noted (any dependencies are noted in the "Requirements/Dependencies" section.)

SOURCE

This section explains where the data in this particular HEIS table come from.

REQUIREMENTS

Dependencies

The "Dependencies" section lists conditions that must exist. It also shows the interrelation of the different tables.

An example from the GW Result table:

Dependencies	Analysis Method ID must exist in the Analysis Method table.
	Constituent Comment must exist in the Comments table.
	Constituent ID must exist in the Constituent table.
	The Constituent ID and Analysis Method ID pairing must exist in the Constituent Code table.
	Lab Code must exist in the Laboratory table.
	Sample Number must exist in the Ground-Water Sample table.

Special Processing

The special processing section describes actions that the computer automatically performs that you need to be aware of. Also, dependencies between fields in the same record are noted here. For example:

<u>Requirement</u>	<u>Examples</u>
Automatically Assigned Fields	Load Date/Time
Automatically Generated Fields	Result Reference Number Sample Number
Display-only Fields	Fields displayed from another table
Query-only Fields	Change Indicator
Special Uses of [DETAIL]	Display Sample form if cursor in Sample Number field
Date Ordering	Sample Date/Time before Analysis Date/Time
Change Record Generation	GW Result Change record generated when GW Result is modified or deleted

Below is a partial list of the special processing necessary for the GW Result table:

Special Processing	A GW Result Change record is generated when a GW Result record is modified or deleted (see Section 4.3.5 of the <u>HEIS User's Guide</u> [DOE-RL 1994a] for a detailed description).
--------------------	--

Pressing [DETAIL] in the Sample Number field brings up the associated GW Sample record in browser mode.

Instructions for the following are found in Section 4.3.4 of the HEIS User's Guide:

- Date restrictions
- Fields displayed in scientific notation
- The relationship between Form Number and Format Type
- Processing the Constituent Comment, Qualifier, and Review Flag fields.

The following fields are assigned by the system and are for display/query only:

Change Indicator
Date/Time Last Modified
Load Date/Time
Result Reference Number
Sample Date/Time
Sample Filtered
Well

Code Lookup/ Validation

This section lists the fields for which you can perform a code lookup. A code lookup lists the set of values that you can enter in the field you are currently processing. Each code lookup request displays a window containing the list of codes. Examples of fields with code lookups are Concentration Flag, Qualifiers, and Lab Code. See Section 5.4.2 of the *HEIS User's Guide* (DOE-RL 1994a) for a detailed description of code lookups.

From the GW Result table:

Code Lookup/ Validation	Analytical Quality Level Analysis Method ID Analysis Units Reported Column Type Concentration Flag Concentration Level Confirm Code Constituent Comment Constituent ID Data Documentation Level Extraction Form Number ...
----------------------------	--

Figure 1.0-1 is an example of a code lookup on the Related Sample Type field (highlighted).

Figure 1.0-1. Code Lookup Example.

VALID-CODE-LOOKUP	
VALID CODE	VALID CODE TRANSLATION
A _____	Associated _____
R _____	Replicate _____
S _____	Split _____

Composite Sample Number _____	Composite Flag _____
Related Sample Number _____	Related Sample Type _____
	Master Sample Flag _____
Analysis Sponsor _____	Project Leader _____
Sampler _____	Sample Method _____
Field Log ID _____	Field Log Page _____ Sample Qualifier _____
Document Location _____	
Comment _____	
OWNER ID _____	ACCESS LEVEL _____

MORE-INFORMATION

Required Fields

Required fields are those that must contain a value in that table. For data entry users, this means that these fields must be completed before processing can continue. For browsers, these fields make good query fields, because they will always contain a value (for further information on query fields, see "Recommended Query Fields" below).

Field names with an asterisk (*) following them are the unique identifiers for the record. For example, below are the required fields for the GW Result table:

Required Fields	Analysis Method ID
	Constituent ID
	Form Number
	Format Type
	Lab Code
	Load Date/Time
	Result Reference Number*
	Sample Date/Time
	Sample Filtered
	Sample Number
	Well

Recommended Query Fields

A recommended query choice is a field (or combination of fields that are indexed) to make your queries using the HEIS query-by-form interface, SQL*Plus, and SQR more expedient. If you don't use a field(s) from one recommended query choice in your query, you force HEIS to look at each record in the table. This can be very

time consuming and, therefore, costly. Using the recommended query field(s) whenever possible is strongly suggested.

Most HEIS tables have more than one recommended query choice, identified as Choice 1, Choice 2, and so on. To receive the greatest benefit from the HEIS query structure, construct your query using the specified fields in the order listed in one of the choices. In addition, every query field but the last one must be an exact match (to use a "non-exact" match defeats the purpose of using the recommended query fields; see Section 5.5.1 in the *HEIS User's Guide* (DOE-RL 1994a) for detailed query instructions).

Figure 1.0-2 is an example of a HEIS query-by-form query using the GW Result form and its Choice 2 recommended query fields (as listed below). The query criteria are shown in the highlighted fields. The query as written would retrieve a specific constituent by a specific analysis method for a specific sample. You would probably retrieve only one such record. You could also not specify the analysis method and retrieve all results for a specific constituent for a specific sample. In the case shown in the figure, you might retrieve a few records.

Recommended	Choice 1 - Result Reference Number
Query Fields	
	Choice 2 - Sample Number
	Constituent ID
	Analysis Method ID
	Lab Code
	Format Type
	Form Number
	Choice 3 - Well
	Constituent ID
	Choice 4 - Constituent ID
	Choice 5 - Data Group
	Load Date/Time
	Choice 6 - Sample Date/Time

In SQL*Plus or SQR, this query would be as follows:

```
SELECT * FROM gw_result
WHERE ANAL_MTHD_ID = 2 AND
      CON_ID = 'BETA' AND
      SAMP_NUM = 'B12345';
```

NOTE: Always put your most important field (i.e., the one listed first in the recommended query field choice) last in the WHERE clause of the query; ORACLE processes the WHERE clause using a search from the "bottom" up.

Figure 1.0-2. Query Example.

GW Result

RESULT REFERENCE NUMBER _____ (Press [DETAIL] to generate new value.)		
SAMPLE NUMBER	B12345	WELL _____
SAMPLE DATE/TIME	_____	SAMPLE FILTERED _____
CONSTITUENT ID	BETA	_____
ANALYSIS METHOD ID	2	(_____)
LAB CODE	_____	FORMAT TYPE _____ FORM NUMBER _____
Data Group _____		
LOAD DATE/TIME	_____	Change Indicator _____
Date/Time Last Modified	_____	
Result Received Date	_____	
Analysis Date/Time	_____	
Lab Extracted Date	_____	
Lab Received Date	_____	

**Form Field Names/
Database Field Names**

The form field names/database field names are provided to help you select the correct columns in SQL*Plus and SQR. The names on the left (Form Field Names) are the names you will see on the HEIS query-by-form screens (referred to throughout the HEIS manuals as the HEIS forms). Use the names on the right when you are executing SQR and SQL*Plus queries.

The form field names/database field names below were used in the query example in Figure 1.0-2.

Form Field Name
Analysis Method ID
Constituent ID
Sample Number

Database Field Name
anal_mthd_id
con_id
samp_num

Reporting

Reporting exists for selected subject areas.

2.0 THE CONSTITUENT SUBJECT AREA

2.1 OVERVIEW

PURPOSE

The HEIS Constituent subject area and the tables defined within provide a reference for the standardized identification of constituents. A constituent is a particular chemical or radiological compound or physical property that is tested or measured for a sample.

A primary purpose of the Constituent subject area is to relate constituents to the analytical methods by which those constituents can be tested. It is also the central point for information about constituent aliases and synonyms; data can be stored under one constituent name but referenced using other common names.

The contents of the Constituent subject area are used in identifying analytical results in several areas of investigative work, such as geologic, ground-water, soils, biota, and atmospheric. Each sample submitted for laboratory analysis may return several result records. Each result record is uniquely identified by the combination of sample number, constituent reported, analysis method used in determining the results, and the laboratory that did the testing.

The information in the Constituent subject area is relatively static. There are additions of new information and infrequent changes to existing data. Updates are made as analysis requirements and regulatory and contractual limits change. When new constituents are identified for analysis, they are inserted in the database, and appropriate linkages to analysis methods and laboratories are made. When new laboratories provide analysis results for inclusion in the database, new mappings between their particular analysis methods and the constituents are created.

SCOPE

The Constituent subject area covers the U.S. Environmental Protection Agency (EPA) Contract Laboratory Program (CLP) statement of work Target Compound List, the periodic table of elements, and the constituents contained in the Constituent Code table from the Hanford Ground-Water Database (HGWDB). Other types of constituents will be added as they are identified.

DATA MODEL

Figure 2.1-1 is a data model showing relationships among the tables in the Constituent subject area tables and their relationships with other HEIS tables.

MENU SYSTEM

The Constituent subject area allows you to navigate among the Constituent forms using the HEIS query-by-form interface. Section 2.2 describes how to access the various Constituent forms using this interface. The Constituent tables are described in Section 2.3.

USERS

Every user of analytical and field results or physical properties is an indirect user of the Constituent subject area. Scientists and engineers responsible for an operable unit, laboratory personnel performing the analyses, and data analysts and statisticians are the primary users of the data.

Figure 2.1-1. Data Model Showing Relationships Among the Tables in the Constituent Subject Area.

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2.2 ACCESSING CONSTITUENT DATA

INTRODUCTION

The Constituent menu, presented in Figure 2.2-1, shows the entry points into the Constituent forms. Each form is directly accessible from the menu. See Section 5.3 of the *HEIS User's Guide* (DOE/RL 1994a) for a detailed description of entry point maps. Section 2.3 describes each of the tables and forms associated with individual entry points.

Figure 2.2-1. Constituent Menu.

HANFORD ENVIRONMENTAL INFORMATION SYSTEM	
Constituent Subject Area	
MENU-OPTIONS	
Constituent	Laboratory
Analysis Method	Analysis Site
Constituent Code	Laboratory Contractual Limit
Constituent Synonym	Regulatory Limit
Constituent Alias	Comments
Analysis Method Equivalent	Lab Procedure

MOVE: Press [NEXT RECORD], [PREV RECORD], or Arrow Keys
SELECT: Press [ACCEPT] (Browser), [DETAIL] (Max Privilege) EXIT: Press [QUIT]

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2.3 THE CONSTITUENT TABLES

(HEIS Database Table Name: constituent)

2.3.1 CONSTITUENT TABLE

INTRODUCTION

The Constituent table contains the master list of all constituents that are referenced in HEIS. This table contains the Constituent ID, the Long Name for the constituent, a Short Name, a Description, and the Molecular Formula. The Constituent form is shown in Figure 2.3.1-1.

Figure 2.3.1-1. Constituent Form.

Constituent

CONSTITUENT ID	_____
SHORT NAME	_____
LONG NAME	_____
Description	_____
Molecular Formula	_____

SOURCE

New constituents are added when they are identified. Typically, the source of a new constituent is either a person requiring an analysis for a constituent not in the HEIS database or an analysis laboratory reporting a constituent not in the HEIS database.

REQUIREMENTS

Dependencies	None.
Special Processing	None.
Code Lookup/ Validation	None.
Required Fields	Constituent ID* Long Name Short Name

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Recommended Query
Fields

Constituent ID

FORM FIELD NAMES/
DATABASE FIELD NAMES

Form Field Name
Constituent ID
Description
Long Name
Molecular Formula
Short Name

Database Field Name
con_id
con_desc
con_long_name
molecular_formula
con_short_name

2.3.2 ANALYSIS METHOD TABLE

(HEIS Database Table Name: analysis_method)

INTRODUCTION

The Analysis Method table contains the master list of all analysis methods referenced in HEIS. These methods are used to prepare and test samples for the presence of specified constituents.

Each analysis method is identified by its protocol, class, technique, and test procedure.

- An analysis protocol identifies the protocol defined by the government agency or other group that controls the specified method. Examples are the Contract Laboratory Procedure (CLP) from the U.S. Environmental Protection Agency (EPA) and the American Society for Testing and Materials (ASTM). It may also be defined by an individual laboratory whose internal methods have been approved in place of one of the national methods.
- An analysis class identifies a group of chemical/radiological compounds. Examples are VOA for volatile organics and INORG for inorganics.
- Analysis technique and test procedure further identify the specific analysis method and are specific to the analysis protocol and class.

For each analysis method added to HEIS, an Analysis Method ID is generated by the system. This Analysis Method ID is equivalent to the combination of Analysis Protocol, Analysis Class, Analysis Technique, and Test Procedure. The Analysis Method ID is used in other tables within HEIS to reduce data redundancy. The Analysis Method form is shown in Figure 2.3.2-1.

Figure 2.3.2-1. Analysis Method Form.

Analysis Method	
ANALYSIS METHOD ID	_____ Press [DETAIL] to generate a new Analysis Method ID.
ANALYSIS PROTOCOL	_____
ANALYSIS CLASS	_____
ANALYSIS TECHNIQUE	_____
TEST PROCEDURE	_____
Analysis Method Name	_____
Analysis Method Desc	_____

SOURCE

New analysis methods are added when a new analysis laboratory will be providing data for the HEIS database or when an existing laboratory adds a new analysis method.

REQUIREMENTS

Dependencies

None.

Special Processing

When the analysis method record is inserted into the table, a unique Analysis Method ID is assigned by the system. This identifier is used in the analysis result records in the other subject areas, such as Ground-Water, Soils, Biota, and Atmospheric.

Code Lookup/ Validation

Analysis Class
Analysis Protocol

Required Fields

Analysis Class
Analysis Method ID*
Analysis Protocol
Analysis Technique
Test Procedure

Recommended Query Fields

Choice 1 - Analysis Method ID

Choice 2 - Analysis Protocol
 Analysis Class
 Analysis Technique
 Test Procedure

**FORM FIELD NAMES/
DATABASE FIELD NAMES**Form Field Name

Analysis Class
Analysis Method Desc
Analysis Method ID
Analysis Method Name
Analysis Protocol
Analysis Technique
Test Procedure

Database Field Name

anal_class
anal_mthd_desc
anal_mthd_id
anal_mthd_name
anal_protocol
anal_technique
anal_test_proc

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2.3.3 CONSTITUENT CODE TABLE

(HEIS Database Table Name: constituent code)

INTRODUCTION

The Constituent Code table contains the legal pairings of constituents and analysis methods. Constituent codes are used in the analytic results records within HEIS to uniquely identify the constituent tested for and the analysis method used to obtain the reported value. The Constituent Code form is shown in Figure 2.3.3-1.

Figure 2.3.3-1. Constituent Code Form.

Constituent Code

CONSTITUENT ID _____

ANALYSIS METHOD ID _____ (_____)

SOURCE

New constituent codes are added when either new constituents or new analysis methods are added.

REQUIREMENTS

Dependencies

Analysis Method ID must exist in the Analysis Method table.

Constituent ID must exist in the Constituent table.

Special Processing

None.

Code Lookup/ Validation

Analysis Method ID
Constituent ID

Required Fields

Analysis Method ID*
Constituent ID*

Recommended Query Fields

Constituent ID
Analysis Method ID

**FORM FIELD NAMES/
DATABASE FIELD NAMES**

Form Field Name
Analysis Method ID
Constituent ID

```
Database Field Name
anal_mthd_id
con id
```

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2.3.4 LABORATORY TABLE
(HEIS Database Table Name: laboratory)

INTRODUCTION

The Laboratory table contains the master list of codes for and names of the laboratories that have analyzed samples with results stored in HEIS. The Laboratory form is shown in Figure 2.3.4-1.

Figure 2.3.4-1. Laboratory Form.

Laboratory

LAB CODE	_____
Lab Name	_____
Contact Name	_____
Phone Number	_____
Address	_____
City	_____
State	_____ Zip Code _____

SOURCE

A new laboratory name and its code, complete address, a contact name, and phone number are entered when a laboratory not currently in the Laboratory table is authorized to submit data for inclusion in the HEIS database.

REQUIREMENTS

Dependencies	None.
Special Processing	None.
Code Lookup/ Validation	State
Required Fields	Lab Code*
Recommended Query Fields	Lab Code

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**FORM FIELD NAMES/
DATABASE FIELD NAMES**

Form Field Name

Address
City
Contact Name
Lab Code
Lab Name
Phone Number
State
Zip Code

Database Field Name

address
city
contact_name
lab_code
lab_name
phone_num
state
zip_code

2.3.5 LABORATORY CONTRACTUAL LIMIT TABLE
(HEIS Database Table Name: laboratory_contractual_limit)

INTRODUCTION

The Laboratory Contractual Limit table contains information about the testing limits contractually established for individual laboratories and Hanford Site contractors.

A laboratory contractual limit is the limit agreed to in a contract between the laboratory and the organization submitting samples for analysis. Below this limit, the laboratory does not report actual detected values, but rather reports the detection limit and a qualifier that indicates the result was below the detection level.

Because each limit is established by contractual agreement, the actual limit may change over time. Thus, the Laboratory Contractual Limit table contains a beginning and an ending date to indicate when a specific limit was valid. Laboratory contractual limits that are currently in effect have no end dates. When a record is displayed on the top portion of the form, the Limit Begin and End Dates for all related records (same Constituent ID, Analysis Method ID, Lab Code, Lab Media Type, Contract ID, and Contract Owner) are displayed in the "Display-Only" box at the bottom of the form. The Laboratory Contractual Limit form is shown in Figure 2.3.5-1.

SOURCE

New limits are the result of new or updated contracts between the laboratory and the organization submitting samples for analysis.

REQUIREMENTS**Dependencies**

The combination of Constituent ID and Analysis Method ID must exist in the Constituent Code table.

Lab Code must exist in the Laboratory table.

Figure 2.3.5-1. Laboratory Contractual Limit Form.

Laboratory Contractual Limit

CONSTITUENT ID	_____		
ANALYSIS METHOD ID	_____ (_____)		
LAB MEDIA TYPE	_____		
LAB CODE	_____		
CONTRACT OWNER	_____	CONTRACT ID	_____
LIMIT BEGIN DATE	_____	Limit End Date	_____
LIMIT VALUE	_____	Lab Period	_____
LIMIT UNITS	_____	Lab Period Units	_____
Limit Comment	_____		

DISPLAY-ONLY

Limit Begin Dates	Limit End Dates
_____	_____

Dates associated with above record.

Special Processing Only one limit value can be in effect for a given Constituent ID, Analysis Method ID, Laboratory, Media Type, Contract ID, and Contract Owner.

**Code Lookup/
Validation** Analysis Method ID
Constituent ID
Contract Owner
Lab Code
Lab Media Type
Lab Period Units
Limit Units

Required Fields Analysis Method ID*
Constituent ID*
Contract ID*
Contract Owner*
Lab Code*
Lab Media Type*
Limit Begin Date*
Limit Units
Limit Value

**Recommended Query
Fields** Choice 1 - Constituent ID
Analysis Method ID
Lab Code
Lab Media Type
Contract ID
Contract Owner
Limit Begin Date

**FORM FIELD NAMES/
DATABASE FIELD NAMES**

Form Field Name

Analysis Method ID
Constituent ID
Contract ID
Contract Owner
Lab Code
Lab Media Type
Lab Period
Lab Period Units
Limit Begin Date
Limit Comment
Limit End Date
Limit Units
Limit Value

Database Field Name

anal_mthd_id
con_id
contract_id
contract_owner
lab_code
lab_media_type
lab_period
lab_period_unit
limit_begin_date
limit_comment
limit_end_date
limit_units
limit_value

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2.3.6 ANALYSIS SITE TABLE

(HEIS Database Table Name: analysis_site)

INTRODUCTION

The Analysis Site table contains identifying information concerning each laboratory responsible for analyzing samples. Each analytical laboratory is associated with a parent laboratory responsible for fulfilling the analytical contract. One or more analysis sites can be associated with one parent laboratory, but each analysis site can belong to only one parent laboratory. The address information for the parent and analysis site laboratories is the same if the parent laboratory is also the analysis site. The database identifies the analysis site with a unique code. The Analysis Site form is shown in Figure 2.3.6-1.

Figure 2.3.6-1. Analysis Site Form.

Analysis Site	
ANALYSIS SITE CODE _____	OFFSITE ☐
ANALYSIS SITE NAME _____	
LAB CODE _____	
Contact Name _____	
Phone Number _____	
Address _____	
City _____	
State _____	Zip Code _____

SOURCE

A new laboratory name and its code, complete address, a contact name, and phone number are entered when a laboratory not currently in the Analysis Site table is authorized to submit data for inclusion in the HEIS.

REQUIREMENTS

Dependencies

Lab Code must exist in the Laboratory table.

Special Processing

None.

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Code Lookup/
Validation

Lab Code
State

Required Fields

Analysis Site Code*
Analysis Site Name
Lab Code
Offsite

Recommended Query
Fields

Analysis Site Code

**FORM FIELD NAMES/
DATABASE FIELD NAMES**

Form Field Name

Address
Analysis Site Code
Analysis Site Name
City
Contact Name
Lab Code
Offsite
Phone Number
State
Zip Code

Database Field Name

address
anal_site_code
anal_site_name
city
contact_name
lab_code
off_site_flag
phone_num
state
zip_code

2.3.7 LAB PROCEDURE TABLE

(HEIS Database Table Name: lab_procedure)

INTRODUCTION

The Lab Procedure table contains data received from the laboratory, including the Analysis Method ID, Lab Code, Lab Procedure, who uses the data, the Procedure Begin and End Dates, and the Procedure Name. The Lab Procedure form is shown in Figure 2.3.7-1.

Figure 2.3.7-1. Lab Procedure Form.

Lab Procedure	
ANALYSIS METHOD ID _____	(_____)
LAB CODE _____	
LAB PROCEDURE _____	USED BY _____
Procedure Begin Date _____	
Procedure End Date _____	
Procedure Name _____	

SOURCE

Data for this table come from the laboratory that performed the procedure.

REQUIREMENTS

Dependencies

Analysis Method ID must exist in the Analysis Method table.

Lab Code must exist in the Laboratory table

Procedure Begin Date must be on or before the Procedure End Date.

Special Processing

None.

Code Lookup/ Validation

Analysis Method ID
Lab Code

Required Fields

Analysis Method ID*
Lab Code
Lab Procedure ID*
Used By*

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**Recommended Query
Fields**

Choice 1 - Analysis Method ID
Lab Code
Lab Procedure ID
Used By

Choice 2 - Lab Code
Lab Procedure ID
Used By

**FORM FIELD NAMES/
DATABASE FIELD NAMES**

Form Field Name

Analysis Method ID
Lab Code
Lab Procedure ID
Procedure Begin Date
Procedure End Date
Procedure Name
Used By

Database Field Name

anal_mthd_id
lab_code
lab_proc_id
procedure_begin_date
procedure_end_date
procedure_name
used_by

2.3.8 CONSTITUENT SYNONYM TABLE

(HEIS Database Table Name: constituent_synonym)

INTRODUCTION

The Constituent Synonym table contains other commonly used names for the constituents in the Constituent table. A constituent synonym may be a common commercial name, or it could be the name of a constituent as specified in a contract between the organization submitting samples and the laboratory. The Constituent Synonym form is shown in Figure 2.3.8-1.

Figure 2.3.8-1. Constituent Synonym Form.

Constituent Synonym	
CONSTITUENT ID	_____
SYNONYM	_____
USED BY	_____
Description	_____

SOURCE

New constituent synonyms are added when they are identified.

REQUIREMENTS

Dependencies	Constituent ID must exist in the Constituent table.
Special Processing	None.
Code Lookup/ Validation	Constituent ID
Required Fields	Constituent ID* Synonym* Used By*
Recommended Query Fields	Choice 1 - Constituent ID Synonym

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**FORM FIELD NAMES/
DATABASE FIELD NAMES**

Form Field Name

Constituent ID
Description
Synonym
Used By

Database Field Name

con_id
con_syn_desc
synonym_name
used_by

2.3.9 REGULATORY LIMIT TABLE

(HEIS Database Table Name: regulatory_limit)

INTRODUCTION

The Regulatory Limit table contains records that indicate limits of various constituents in various media as set by several regulating agencies. The Reference Document field identifies the source of the limit.

Because the actual regulatory limits may change over time, the Regulatory Limit table contains a beginning and an ending date to indicate when a specific limit is or was valid. Regulatory limits currently in effect have no end dates. When a record is displayed on the top portion of the form, the Limit Begin and End Dates for all related records (same Regulatory Limit Program, Constituent ID, and Media) are displayed in the "Display-Only" box at the bottom of the form. The Regulatory Limit form is shown in Figure 2.3.9-1.

Figure 2.3.9-1. Regulatory Limit Form.

Regulatory Limit	
REGULATORY LIMIT PROGRAM	_____
CONSTITUENT ID	_____
MEDIA	_____
REGULATING AGENCY	_____
REFERENCE DOCUMENT	_____
LIMIT BEGIN DATE	_____
Limit End Date	_____
MAXIMUM PERMISSIBLE LIMIT	LIMIT UNITS _____
Limit Comments	_____
<div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p style="text-align: center;">DISPLAY-ONLY</p> <p style="text-align: center;">Limit Begin Dates Limit End Dates</p> <p style="text-align: center;">_____</p> <p style="text-align: center;">Dates associated with the above record</p> </div>	

SOURCE

New limits are the result of changing regulations.

REQUIREMENTS

Dependencies Constituent ID must exist in the Constituent table.

Only one limit value can be in effect for a given Regulatory Limit Program, Constituent ID, Media, Regulatory Agency, and Reference Document.

Special Processing None.

**Code Lookup/
Validation** Constituent ID
Limit Units
Media
Reference Document
Regulating Agency
Regulatory Limit Program

Required Fields Constituent ID*
Limit Begin Date*
Limit Units
Max Permissible Limit
Media*
Reference Document*
Regulating Agency*
Regulatory Limit Program*

**Recommended Query
Fields** Choice 1 - Regulatory Limit Program
Constituent ID
Media
Limit Begin Date
Regulating Agency
Reference Document

FORM FIELD NAMES/ DATABASE FIELD NAMES

<u>Form Field Name</u>	<u>Database Field Name</u>
Constituent ID	con_id
Limit Begin Date	limit_begin_date
Limit Comment	limit_comment
Limit End Date	limit_end_date
Limit Units	limit_units
Max Permissible Limit	max_permissible_limit
Media	media
Reference Document	ref_doc
Regulating Agency	regulating_agency
Regulatory Limit Program	reg_limit_program

2.3.10 CONSTITUENT ALIAS TABLE

(HEIS Database Table Name: constituent_alias)

INTRODUCTION

Occasionally, the ID for a constituent will change. The Constituent Alias table contains the correspondence between old Constituent IDs and current Constituent IDs. This table contains the current Constituent ID, the Alias (previous) Constituent ID, Alias Expiration Date, Alias Name and a description of the alias. The Constituent Alias form is shown in Figure 2.3.10-1.

Figure 2.3.10-1. Constituent Alias Form.

Constituent Alias	
ALIAS CONSTITUENT ID	_____
CONSTITUENT ID	_____
Alias Expiration Date	_____
Alias Name	_____
Description	_____

SOURCE

New constituent aliases are added when they are identified.

REQUIREMENTS

Dependencies

Alias Constituent ID and Constituent ID must exist in the Constituent table.

Special Processing

None.

Code Lookup/ Validation

Alias Constituent ID
Constituent ID

Required Fields

Alias Constituent ID*
Constituent ID*

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Recommended Query
Fields

Alias Constituent ID
Constituent ID

FORM FIELD NAMES/
DATABASE FIELD NAMES

Form Field Name
Alias Constituent ID
Alias Expiration Date
Alias Name
Constituent ID
Description

Database Field Name
alias_con_id
alias_expiration_date
alias_name
con_id
con_alias_desc

2.3.11 ANALYSIS METHOD EQUIVALENT TABLE

(HEIS Database Table Name: analysis_method_equivalent)

INTRODUCTION

An analysis method is used to prepare and test a sample for the presence of a specified constituent. Sometimes an analysis laboratory uses its own analysis method rather than one of the standard analysis methods, such as the Contract Laboratory Procedure (CLP) from the U.S. Environmental Protection Agency (EPA) and the American Society for Testing Materials (ASTM). If this is the case, the Analysis Method Equivalent table indicates the correspondence between the laboratory's analysis method and the standard analysis method. The Analysis Method Equivalent form is shown in Figure 2.3.11-1.

Figure 2.3.11-1. Analysis Method Equivalent Form.

Analysis Method Equivalent

STANDARD ANALYSIS METHOD ID	_____ (_____)
EQUIVALENT ANALYSIS METHOD ID	_____ (_____)

SOURCE

New analysis methods are added when either a new analysis laboratory will be providing data to HEIS or when an existing laboratory adds a new analysis method.

REQUIREMENTS

Dependencies

Standard Analysis Method ID and Equivalent Analysis Method ID must exist in the Analysis Method table.

Special Processing

None.

Code Lookup/ Validation

Equivalent Analysis Method ID
Standard Analysis Method ID

Required Fields

Equivalent Analysis Method ID*
Standard Analysis Method ID*

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Recommended Query
Fields

Choice 1 - Standard Analysis Method ID
Equivalent Analysis Method ID

FORM FIELD NAMES/
DATABASE FIELD NAMES

Form Field Name
Equivalent Analysis Method ID
Standard Analysis Method ID

Database Field Name
equiv_anal_mthd_id
std_anal_mthd_id

2.3.12 COMMENTS TABLE
(HEIS Database Table Name: comments)**INTRODUCTION**

The Comments table is a supporting table that stores comment codes and textual descriptions. Comment codes are specified in the contract between the organization submitting samples and the laboratory. These codes provide more information about activities that took place when a sample was analyzed. The Comments form is shown in Figure 2.3.12-1.

Figure 2.3.12-1. Comments Form.

Comments	
COMMENT CODE	_____
LAB CODE	_____
Comment Text	_____

SOURCE

New comments are added when they are identified in a contract.

REQUIREMENTS

Dependencies	Lab Code must exist in the Laboratory table.
Special Processing	None.
Code Lookup/ Validation	Lab Code
Required Fields	Comment Code* Lab Code*
Recommended Query Fields	Choice 1 - Comment Code Lab Code

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**FORM FIELD NAMES/
DATABASE FIELD NAMES**

Form Field Name

Comment Code

Comment Text

Lab Code

Database Field Name

comment_code

comment_text

lab_code

3.0 THE SUPPORT TABLES

PURPOSE

The HEIS Support tables, and the tables defined within, provide standardization for most coded fields within the HEIS system. A coded field is a field in which one of a limited number of choices can be entered. The Site and Constituent subject areas provide standardization for other coded fields.

The primary purpose of the Support tables is to provide the centralization of the codes used in many of the fields in the HEIS database.

The information in the Support tables is relatively static. New codes are added as necessary.

SCOPE

The Support tables contain the codes for coded fields not defined in the Site or Constituent subject areas.

These tables are grouped because of their use, not their relationship. The tables do not relate to each other; instead, each table relates to the tables in the HEIS subject areas that use the codes defined in that particular Support table.

USERS

Because Support tables provide the code lookup capabilities in the forms for the HEIS subject areas, every user of the HEIS database is an indirect user of Support tables.

MENU SYSTEM

The Support tables menu is shown in Figure 3.0-1. You may view the tables by using the forms described in this chapter, but the contents of these tables also can be accessed by using the code lookup facility in the appropriate forms in the HEIS subject areas.

Figure 3.0-i. Support Tables Menu.

HANFORD ENVIRONMENTAL INFORMATION SYSTEM
Support Tables
MENU-OPTIONS

Hydrogeologic Description	Seal Type
Site Type	Valid Codes
Unit Conversion	Reference Elev Description

MOVE: Press [NEXT RECORD], [PREV RECORD], or Arrow Keys
SELECT: Press [ACCEPT] (Browser), [DETAIL] (Max Privilege) EXIT: Press [QUIT]

3.1 HYDROGEOLOGIC DESCRIPTION TABLE

(HEIS Database Table Name: hydrogeologic_description)

INTRODUCTION

The Hydrogeologic Description table contains a code and a name for each hydrogeologic unit. It provides the codes for the code lookup for the Hydrogeologic Code field. The Hydrogeologic Description form is shown in Figure 3.1-1.

Each Hydrogeologic Description record is uniquely identified by a hydrogeologic code. This code is used in other tables in the database as a reference for the hydrogeologic unit name.

Figure 3.1-1. Hydrogeologic Description Form.

Hydrogeologic Description	
HYDROGEOLOGIC CODE	Hydrogeologic Unit
_____	_____

SOURCE

Data for this table come from the geologists and hydrologists who collect and analyze the ground-water and geologic data in the HEIS.

REQUIREMENTS

Dependencies	None.
Special Processing	None.
Code Lookup/ Validation	None.

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Required Fields Hydrogeologic Code*

Recommended Query Hydrogeologic Code
Fields

FORM FIELD NAMES/
DATABASE FIELD NAMES

Form Field Names
Hydrogeologic Code
Hydrogeologic Unit

Database Field Name
hydrogeo_code
hydrogeo_units

3.2 SEAL TYPE TABLE

(HEIS Database Table Name: seal_type)

INTRODUCTION

The Seal Type table contains descriptive information about the annular seals and fills. The table contains a seal or fill code and a description of what that code represents. This table is used as a code lookup table by the Seal Fill table. It provides the codes for the Seal Type Code field code lookup. The Seal Type form is shown in Figure 3.2-1.

Figure 3.2-1. Seal Type Form.

Seal Type	
SEAL TYPE CODE	SEAL TYPE NAME
—	—

SOURCE

REQUIREMENTS

Dependencies	None.
Special Processing	None.
Code Lookup/ Validation	None.
Required Fields	Seal Type Code* Seal Type Name
Recommended Query Fields	Seal Type Code

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**FORM FIELD NAMES/
DATABASE FIELD NAMES**

Form Field Names
Seal Type Code
Seal Type Name

Field Names
seal_type_code
seal_type_name

3.3 SITE TYPE TABLE

(HEIS Database Table Name: site_type)

INTRODUCTION

The Site Type table contains valid codes for and descriptions of the types of waste sites used on the Hanford Site. The Site Type form is shown in Figure 3.3-1.

Figure 3.3-1. Site Type Form.

Site Type	
SITE TYPE	Description
—	_____

SOURCE

REQUIREMENTS

Dependencies	None.
Special Processing	Site Type must be between 1 and 99.
Code Lookup/ Validation	None.
Required Fields	Description Site Type*
Recommended Query Fields	Site Type

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**FORM FIELD NAMES/
DATABASE FIELD NAMES**

Form Field Name
Description
Site Type

Database Field Name
site_type_desc
site_type

3.4 VALID CODES TABLE

(HEIS Database Table Name: valid_codes)

INTRODUCTION

The Valid Codes table provides an interface to most of the valid codes stored in the HEIS database. Specifically, this table contains the codes for all fields that have few codes. It does not contain the codes for fields that have many codes. Each field with a large code list has its own table. For example, the Constituent ID field is in the Constituent table, and the Analysis Method ID field is in the Analysis Method table. Other large code lists are managed using other tables in the Support tables and the Constituent tables. The Valid Codes form is shown in Figure 3.4-1.

Figure 3.4-1. Valid Codes Form.

Valid Codes		
VALID FIELD NAME	VALID FIELD VALUE	Order Seq. Translation

REQUIREMENTS

Dependencies

None.

Special Processing

None.

Code Lookup/
Validation

None.

Required Fields

Valid Field Name*
Valid Field Value*

Recommended Query
Fields

Valid Field Name
Valid Field Value

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**FORM FIELD NAMES/
DATABASE FIELD NAMES**

Form Field Names

Order Seq.
Valid Field Name
Valid Field Translation
Valid Field Value

Database Field Name

order_seq
valid_field_name
valid_field_translation
valid_field_value

3.5 UNIT CONVERSION TABLE

(HEIS Database Table Name: unit_conversion)

INTRODUCTION

The Unit Conversion table provides a method for transforming values from one unit system to another unit system. One or more records exist for each Convert Units From/Convert Units to pair. Each record contains an operation that is to be performed and a factor that corresponds to the operation. The operator order is a sequence number that indicates the order in which the operations are to be performed. The first operation is always performed on the initial value. Subsequent operations are performed on the result of the previous operation. The Unit Conversion form is shown in Figure 3.5-1.

Figure 3.5-1. Unit Conversion Form.

Unit Conversion	
CONVERT UNITS FROM	_____
CONVERT UNITS TO	_____
OPERATOR ORDER	_____
OPERATOR	_____
FACTOR	_____

SOURCE

Data for this table are provided by scientists who work with sample analysis results.

REQUIREMENTS

Dependencies

None.

Special Processing

Operator Order must be > 0.

If Operator is "/" (division), then Factor cannot be "0", i.e., cannot divide by zero.

Code Lookup/ Validation

Convert Units From
Convert Units To
Operator

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Required Fields

Convert Units From*
Convert Units To*
Factor
Operator
Operator Order*

Recommended Query Fields

Choice 1 - Convert Units From
Convert Units To
Operator Order

**FORM FIELD NAMES/
DATABASE FIELD NAMES**

Form Name

Convert Units From
Convert Units To
Factor
Operator
Operator Order

Database Field Name

convert_units_from
convert_units_to
factor
operator
operator_order

3.6 REFERENCE ELEVATION DESCRIPTION TABLE

(HEIS Database Table Name: reference_description)

INTRODUCTION

The Reference Elevation Description table contains descriptions of possible locations on or near a well where the reference point may be located. The reference point is the point on the well from which hydraulic head measurements are taken. Each Reference Elevation Description is unique. The Reference Elevation Description form is shown in Figure 3.6-1.

Figure 3.6-1. Reference Elevation Description Form.

Reference Elev Description

REFERENCE ELEVATION DESCRIPTION
<hr/>

SOURCE

Data for this table come from hydrologists who collect and analyze the ground-water data in the HEIS.

REQUIREMENTS

Dependencies	None.
Special Processing	None.
Code Lookup/ Validation	None.
Required Fields	Reference Elevation Description*
Recommended Query Fields	None.

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**FORM FIELD NAMES/
DATABASE FIELD NAMES**

Form Field Names
Reference Elevation Description

Database Field Name
reference_elev_des

4.0 THE SAMPLE SUBJECT AREA

4.1 OVERVIEW

PURPOSE

The HEIS Sample subject area manages sample numbers and their associated information. This subject area involves the initial generation of sample numbers, their assignment to specific groups or organizations, and assignment of a number to a single sample. This subject area also includes information pertaining to how samples are related to aggregate areas, operable units, sites, and projects (see Section 4.3.2, Sample Assignment Table).

SCOPE

The scope of the Sample subject area includes the tracking of all sample numbers generated and used for environmental monitoring and restoration activities on the Hanford Site. All new samples collected will be registered in the sample subject area within the HEIS.

Sample numbers in HEIS that are generated by HEIS all conform to a specific convention. The numbers have the following format and characteristics:

Format: XYYYYN

X = Alpha consonants (no vowels)

Y = Alpha consonants (no vowels) and numbers 0-9

N = Numbers 0-9

- The sample number is six characters long
- The first position (left-most) must be an alpha consonant (no vowels)
- The last position (right-most) must be a number 0-9
- Between the first and last positions is a combination of alpha consonants (no vowels) and numeric digits.

Interim sample numbers were assigned for samples taken before the availability of the automated HEIS sample number generation software. Although it is not encouraged, users may still specify interim sample numbers when creating subject area sample records, provided that these numbers either begin with a vowel or have character lengths different than six. The

system does not validate these numbers with those in the Sample table before inserting the subject area sample record.

DATA MODEL

Figure 4.1-1 is a data model showing relationships among the tables in the Sample subject area tables and their relationships with other HEIS tables. The associations are described below. Capitalized items refer to both the actual item and the Ground-Water table in which data about that item are stored.

A record in the Sample table may be associated with several records in the Sample Assignment table. A record in the Sample table is associated with one record in a subject area sample table.

MENU SYSTEM

The Sample subject area allows you to navigate among the Sample forms using the HEIS query-by-form interface. Section 4.2 describes how to access the various Sample forms using this interface. The Sample tables are described in Section 4.3.

USERS

There are several user categories for the information contained in the Sample subject area.

- Sample number central control agency--This agency, the Westinghouse Hanford Company Hanford Analytical Services Management (HASM), manages the generation and assignment of sample numbers. HASM is responsible for ensuring that sufficient new numbers exist that can be assigned to a group for use in sample collection activities. HASM also enters information regarding to whom and when the numbers are assigned and any numbers that are returned unused.
- Sample collection and data entry personnel--All personnel collecting samples will provide information about the sample in relation to the sample number. The sample number will be entered into the HEIS database and checked against the Sample table in the Sample subject area. This includes samples collected in the Soil, Biota, Ground-Water, Surface Water, Atmospheric, and Tank Characterization Data (TCD) subject areas.

Figure 4.1-1. Data Model Showing Relationships Among the Tables in the Sample Subject Area and Their Relationships with Tables Located in Other HEIS Subject Areas.

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- Data analysts--Data returned from laboratories will be evaluated by chemists and project or task leaders. Data analysts can then retrieve analytical results for a sample using the sample number.
- Other users--There will be others using the information in the Sample subject area. The sample custody trail information is useful to several groups for sample tracking and as an audit trail of the samples.

4.2 ACCESSING SAMPLE SUBJECT AREA DATA

INTRODUCTION

The Sample subject area menu, presented in Figure 4.2-1, shows the entry points into the Sample forms. Each form is directly accessible from the menu. There are no linkages between forms. Section 4.3 describes each of the tables and forms associated with individual entry points.

Figure 4.2-1. Sample Subject Area Menu.

HANFORD ENVIRONMENTAL INFORMATION SYSTEM
Sample Subject Area
MENU-OPTIONS

Sample Viewing Screen	Sample Assignment
Sample Assignment - Multiple	

MOVE: Press [NEXT RECORD], [PREV RECORD], or Arrow Keys
SELECT: Press [ACCEPT] (Browser), [DETAIL] (Max Privilege) EXIT: Press [QUIT]

HEIS Version Number: 3.0 [ESC]k for keyboard help

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4.3 THE SAMPLE TABLES

(HEIS Database Table Name: sample)

4.3.1 SAMPLE TABLE

INTRODUCTION

The Sample table contains the master list of valid sample numbers used in the HEIS database. A sample is represented by a unique sample number. The contents of this table (see Figure 4.3.1-1) refer to the creation, assignment, and status of a sample number. The table also includes a field to track the media of the sample, as well as fields to link a sample with a sampling effort and the task and project that require the sampling.

Figure 4.3.1-1. Sample Table Form.

Sample Table View-Only Form	
SAMPLE NUMBER _____	Assigned By: _____
GENERATION DATE _____	Assigned To: _____
	Assigned Date _____
Status _____	
Media _____	
Samp. Authorization Number _____	Round Number _____
Project ID _____	Task ID _____
Lambert NS Coordinates _____	Lambert EW Coordinates _____
OWNER ID _____	ACCESS LEVEL _____

SOURCE

There are three main sources of sample number generation.

- The main sample number generation program.
- Automated generation of sample numbers to identify samples for new data. The numbers are generated by PNL to support routine monitoring activities.
- Automated generation of sample numbers to identify samples from historic and/or existing data.

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REQUIREMENTS

Dependencies	None.
Special Processing	None.
Code Lookup/ Validation	Media Status
Required Fields	Generation Date Sample Number*
Recommended Query Fields	Sample Number

FORM FIELD NAMES/ DATABASE FIELD NAMES

Form Field Name

Assigned By
Assigned Date
Assigned To
Generation Date
Lambert E/W Coordinates
Lambert N/S Coordinates
Media
Project ID
Return Count
Round Number
Samp. Authorization Number
Sample Number
Status
Task ID

Database Field Name

asgnd_by
asgnd_date
asgnd_to
gen_date
lambert_ew_coord
lambert_ns_coord
media
proj_id
return_count
round_num
saf_num
samp_num
status
task_id

4.3.2 SAMPLE ASSIGNMENT TABLE

(HEIS Database Table Name: sample_assignment)

INTRODUCTION

The Sample Assignment table contains information that relates a particular sample to different aggregate areas, operable units, sites, and projects. It also contains information about what role the sample has in conjunction with the assignment. For example, a sample may be related to multiple sites. In one case, the sample may be used for actual characterization of the site; for another site assignment, it may be used as a background sample.

There are two ways to access Sample Assignment data depending on whether you want the form to display selected fields for multiple records or all fields for a single record.

- The Sample Assignment form is shown in Figure 4.3.2-1. To access this form, choose the "Sample Assignment" option on the Sample Subject Area menu.
- The Sample Assignment Multiple View form, shown in Figure 4.3.2-2, allows you to view five result records at a time. To access this form, choose the "Sample Assignment - Multiple" option on the Sample Subject Area menu.

This is a view-only form. Its purpose is to allow you to compare several selected records. To improve the performance of this form, there is no code lookup available for the Sample Number field.

SOURCE

There are two main sources of sample assignment generation.

- Assignment can be made automatically from information on the Sample Identification and Data Entry Form (SIDEF).
- Assignment can be made interactively by analysts and scientists as the data from the sample are applied to different aggregate areas, operable units, sites, and projects other than the site for which the sample was collected.

Sample Assignment

SAMPLE ASSIGNMENT TYPE _____

SAMPLE ASSIGNMENT ID _____

SAMPLE NUMBER _____

Assignment Priority - _____

Assignment Role _____

OWNER ID _____ ACCESS LEVEL _____

Sample Assignment - Multiple

SAMPLE ID	ASSIGN TYPE	SAMPLE NUMBER	ASSIGN PRIORITY	Assignment Role	OWNER ID	A L

REQUIREMENTS**Dependencies**

Aggregate Area must exist in the Aggregate Area table.

Operable Unit ID must exist in the Operable Unit table.

Project ID must exist in the Project table.

Sample Number must exist in the Sample table.

Site ID must exist in the Site table.

Special Processing

The following show the requirements for Sample Assignment Type.

When Sample Assignment Type isSample Assignment ID is from

AREA

Aggregate Area table

PROJ

Project table

SITE

Site table

UNIT

Unit table

**Code Lookup/
Validation**

Assignment Priority
Assignment Role
Sample Assignment ID
Sample Assignment Type

Required Fields

Sample Assignment ID*
Sample Assignment Type*
Sample Number*

**Recommended Query
Fields**

Sample Assignment ID
Sample Assignment Type
Sample Number

**FORM FIELD NAMES/
DATABASE FIELD NAMES**Form Field NameDatabase Field Name

Assignment Priority

assign_priority

Assignment Role

assign_role

Sample Assignment ID

samp_assign_id

Sample Assignment Type

samp_assign_type

Sample Number

samp_num

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5.0 THE SITE SUBJECT AREA

5.1 OVERVIEW

PURPOSE

The HEIS Site subject area contains information about aggregate areas, operable units, and sites (waste management units) at the Hanford Site.

SCOPE

Aggregate areas refer to standard areas across the Hanford Site (e.g., the 1100 Area and the 300 Area). Operable units refer to units defined by the *Hanford Federal Facility Agreement and Consent Order*, known as the Tri-Party Agreement (Ecology et al. 1992). The sites refer to those sites defined in the Waste Information Data System (WIDS) (WHC 1990). The WIDS contains the official list of sites. The HEIS receives periodic updates from the WIDS to ensure that the most current information is being used as a reference.

DATA MODEL

Figure 5.1-1 is a data model showing relationships among the tables in the Site subject area tables and their relationships with other HEIS tables. The associations are described below. Capitalized items refer to both the actual item and the subject area table in which data about that item are stored.

An Aggregate Area record may have one or more Operable Unit records with which it is associated. Each Operable Unit record may be associated with one or more Site records.

MENU SYSTEM

The Site subject area allows you to navigate among the Site forms using the HEIS query-by-form interface. Section 5.2 describes how to access the various Site forms using this interface. The Site tables are described in Section 5.3.

USERS

The information in the Site subject area is used in several other subject areas. The sites are primary units of aggregation by which other data are reported. For example, analysis results may be reported as they apply to a specific site. Sampling performed at the Hanford Site can be assigned to one or more aggregate areas, operable units, and/or sites.

apply to a specific site. Sampling performed at the Hanford Site can be assigned to one or more aggregate areas, operable units, and/or sites.

Figure 5.1-1. Data Model Showing Relationships Among the Tables in the Site Subject Area.

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5.2 ACCESSING SITE DATA

INTRODUCTION

The Site subject area menu, presented in Figure 5.2-1, shows the entry points into the Site forms. Each form is directly accessible from the menu. There are no linkages between forms. Section 5.3 describes each of the tables and forms associated with individual entry points.

Figure 5.2-1. Site Subject Area Menu.

```

HANFORD ENVIRONMENTAL INFORMATION SYSTEM
Site Subject Area
MENU-OPTIONS

Aggregate Area                               Operable Unit
Site

MOVE: Press [NEXT RECORD], [PREV RECORD], or Arrow Keys
SELECT: Press [ACCEPT] (Browser), [DETAIL] (Max Privilege) EXIT: Press [QUIT]

```

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5.3 THE SITE TABLES

5.3.1 AGGREGATE AREA TABLE

(HEIS Database Table Name: aggregate_area)

INTRODUCTION

The Aggregate Area table contains information about the different areas into which the Hanford Site is divided, as described by the *Preliminary Operable Units Designation Project* (WHC 1989a). An aggregate area is a geographic delineation that logically associates facilities, sites, and operable units into an area designator that can be referenced as a whole (e.g., the 300 Area). The Aggregate Area form is shown in Figure 5.3.1-1.

The information in the Aggregate Area table is used as reference information for several other tables. This information is the master list of aggregate area IDs for the HEIS database.

Figure 5.3.1-1. Aggregate Area Form.

Aggregate Area	
AGGREGATE AREA	_____
NAME	_____
Description	_____
Comment	_____

SOURCE

The data for the Aggregate Area table come from the *Preliminary Operable Units Designation Project* (WHC 1989).

REQUIREMENTS

Dependencies None.

Special Processing None.

Code Lookup/
Validation None.

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Required Fields

Aggregate Area*
Name

Recommended Query
Fields

Aggregate Area

**FORM FIELD NAMES/
FIELD NAMES**

Form Field Name

Aggregate Area

Comment

Description

Name

ag_area_name

Database Field Name

ag_area_id

ag_area_comment

ag_area_desc

5.3.2 OPERABLE UNIT

(HEIS Database Table Name: operable_unit)

INTRODUCTION

The Operable Unit table contains information about the Operable Units as defined in the *Hanford Federal Facility Agreement and Consent Order*, known as the Tri-Party Agreement (Ecology et al. 1992). An operable unit is a logical collection of one or more sites. These sites are grouped into operable units based on the similarity of waste characteristics and geographic proximity. At the time of this writing, there are 78 operable units defined at Hanford, 74 of which include surface or near-surface sites and 4 ground-water operable units. The Operable Unit table contains the operable unit identification, name, and a description of each unit. The Operable Unit form is shown in Figure 5.3.2-1.

The information in the Operable Unit table is used as reference information for several other tables. This information is the master list of operable unit IDs for the HEIS database.

Figure 5.3.2-1. Operable Unit Form.

Operable Unit	
OPERABLE UNIT	_____
NAME	_____
Aggregate Area	_____
Description	_____
Comment	_____

SOURCE

The data for the Operable Unit table come from the *Hanford Federal Facility Agreement and Consent Order* (Tri-Party Agreement, Ecology et al. 1992).

REQUIREMENTS

Dependencies

Aggregate Area must exist in the Aggregate Area table.

Special Processing

None.

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Code Lookup/
Validation

Aggregate Area

Required Fields

Operable Unit*
Name

Recommended Query
Fields

Operable Unit

**FORM FIELD NAMES/
FIELD NAMES**

Form Field Name

Aggregate Area
Comment
Description
Name oper_unit_name
Operable Unit

Database Field Name

ag_area_id
oper_unit_comment
oper_unit_desc
oper_unit_id

5.3.3 SITE TABLE

(HEIS Database Table Name: site)

INTRODUCTION

The Site table contains information about waste management units or sites. A site is an area bounded by a specific set of points that has been, is, or will be used as the receiving area for some type of waste. Each site is restricted to being only one instance of a waste mechanism (i.e., a single tank, trench, crib, pond, spill, etc.). The Site form is shown in Figure 5.3.3-1.

Figure 5.3.3-1. Site Form.

Site	
SITE ID	_____
TYPE	_____
NAME	_____
Aggregate	_____
Operable	_____
Description	_____
Comment	_____

SOURCE

The data for the Site table come from the Waste Information Data System (WIDS) (WHC 1990d).

REQUIREMENTS

Dependencies

Aggregate Area must exist in the Aggregate Area table.

Type must exist in the Site Type table.

Operable Unit must exist in the Operable Unit table.

Special Processing

None.

Code Lookup/ Validation

Aggregate Area
Operable Unit
Type

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Required Fields

Name
Site ID*
Type

**Recommended Query
Fields**

Choice 1 - Site ID
Choice 2 - Name

**FORM FIELD NAMES/
FIELD NAMES**

Form Field Name

Aggregate Area
Comment
Description
Name
Site ID
Type
Operable Unit

Database Field Name

ag_area_id
site_comment
site_desc
site_name
site_id
site_type
oper_unit_id

6.0 THE LOCATION SUBJECT AREA

6.1 OVERVIEW

PURPOSE

The purpose of the HEIS Location subject area is to manage the data describing locations where samples are collected. These locations can then be used in data analysis. In some cases, such as when using the HEIS Geographic Information System (HGIS), geographic coordinates are necessary. For other uses, a description of the where the sample was collected, known as the sampling site, is sufficient.

Samples are often taken at fixed structures such as wells and waste tanks that have known geographic coordinates. Samples are also taken repeatedly from sampling sites described by non-geographical means, such as a sample taken from a named pond or a specific location. Grab samples are taken and, if the geographic location is known, it is applicable to only this sample.

Location records are entered and maintained by the data owner who established the sampling location; such records may also be used by other data owners to define the locations at which their samples were collected.

SCOPE

Two major types of data make up the Location subject area.

- Data about sampling sites--A sampling site is any site that will be used as the location for more than one sample. This includes named points as well as areas (such as a specific pond or farm).
- Data about the geographic location of a point--When the location of the point is reported in Lambert coordinates (using the NAD83 or NAD91 standard), the coordinate information is stored in the Entity Point Location table. When the location is reported in other coordinates, the information is stored in the Other Coordinate Location table.

DATA MODEL

Figure 6.1-1 is a data model showing relationships among the tables in the Location subject area and their relationships with other HEIS tables. The associations are described below. Capitalized items

refer to both the actual item and the Location table in which data about that item are stored.

A subject area sample (e.g., biota, surface water, soil) can be collected at either a sampling site or a known point (an Entity Point Location if the geographic coordinates are specified using the NAD83 or NAD91 standard, or an Other Coordinate Location[s] if other coordinate systems are used). Ground-water samples and, during well construction, soil samples are collected at wells. Each well has an associated Entity Point Location record and can have an associated Other Coordinate Location record(s).

An Entity Point Location record can have an associated Entity Point Location Change record(s), which provides a time-stamped history of changes to the Entity Point Location record. The NAD83 or NAD91 coordinates in the Entity Point Location might have been derived from a transformation process. If so, details of the transformation are stored in the Coordinate Transformation table.

A Sampling Site record can have an associated Sampling Site Change record(s), which provides a time-stamped history of changes to the Sampling Site record.

In certain cases, sampling sites comprise combinations of other sampling sites. In such cases, a Sampling Site record identifies the Composite Site, and the Sampling Site Composite table contains the record(s) of individual sampling sites that make up the composite sampling site.

MENU SYSTEM

The Location subject area allows you to navigate among the Location forms using the HEIS query-by-form interface. Section 6.2 describes how to access the various Location forms using this interface. The Location tables are described in Section 6.3.

Figure 6.1-1. Data Model Showing Relationships Among the Tables in the Location Subject Area and Their Relationships with Tables Located in Other HEIS Subject Areas.

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USERS

The location subject area is used by (1) technical staff interested in data related to sampling locations, (2) data entry staff responsible for inserting and maintaining sampling location data, and (3) technical staff at regulatory agencies interested in data related to sampling locations.

6.2 ACCESSING LOCATION SUBJECT AREA DATA

INTRODUCTION

The Location menu, presented in Figure 6.2-1, shows the entry points into the Location forms. Figure 6.2-2 is a diagram of how these forms and other forms accessible from the menu options are connected. See Section 5.3 of the *HEIS User's Guide* (DOE/RL 1994a) for a detailed description of entry point maps. Section 6.3 describes each of the tables and forms associated with individual entry points.

Figure 6.2-1. Location Menu.

HANFORD ENVIRONMENTAL INFORMATION SYSTEM Location Subject Area MENU-OPTIONS	
Sampling Site	Sampling Site Change View
Entity Point Location	Sampling Site Change Update
Other Coordinate Location	Entity Pt Location Chg View
Coordinate Transformation	Entity Pt Location Chg Update

MOVE: Press [NEXT RECORD], [PREV RECORD], or Arrow Keys
SELECT: Press [ACCEPT] (Browser), [DETAIL] (Max Privilege). EXIT: Press [QUIT]

Figure 6.2-2. Map of Location Entry Points.

6.3 LOCATION SUBJECT AREA TABLES

6.3.1 SAMPLING SITE TABLES

6.3.1.1 Sampling Site Table (HEIS Database Table Name: sampling_site)

INTRODUCTION

A Sampling Site describes a location for sampling when it is important to reference the same location for additional samples (such as routine sampling). This location can be an area or a point and be described using either a set of bounding coordinates or a textual description of the boundaries. The Sampling Site table is the upper half of the form shown in Figure 6.3.1.1-1. The Sampling Site Composite portion of the form is described in Section 6.3.6.

For some types of sampling, such as animals or routine monitoring of plants, the exact point of collection is not as relevant as the area in which it was collected. Examples of sampling sites are (1) a known point where routine biota, surface water, atmospheric, or soil samples would be collected over time, and (2) an area, such as a farm, where routine milk samples would be collected.

SOURCE

The description and/or coordinates for a sampling site are provided by the data owner who establishes the site.

Figure 6.3.1.1-1. Sampling Site and Sampling Site Composite Form.

Sampling Site

SAMPLE SITE ID _____ (Press [DETAIL] to generate new value.)		
SAMPLE SITE NAME _____		
SAMPLE SITE TYPE _____		
Schedule Label Code _____		
Coordinate Type _____		
Bounding Coordinate _____		
Distance Classification _____		
Radiation Level _____	COESS Site _____	
Date/Time Last Modified _____	Change Indicator _____	
Bounding Condition _____		
Sample Site Description _____		

SAMPLING-SITE-COMPOSITE		
SAMP SITE PART ID	SAMPLE SITE NAME	SAMPLE SITE TYPE
_____	_____	_____

OWNER ID _____	MORE-INFORMATION	ACCESS LEVEL _____
----------------	------------------	--------------------

Press [DETAIL] for more information on:

- Entity Point Location Records
- Sampling Site Change Records

REQUIREMENTS

Dependencies	Bounding Coordinate and Coordinate Type must exist as a pair.
Special Processing	None.
Code Lookup/ Validation	Coordinate Type Distance Classification Radiation Level Sample Site ID Schedule Label Code
Required Fields	Sample Site ID* Sample Site Name Sample Site Type

Recommended Query
Fields

Sample Site ID
Sample Site Name

FORM FIELD NAMES/
DATABASE FIELD NAMES

Form Field Names

Bounding Condition
Bounding Coordinate
Change Indicator
COESS Site
Date/Time Last Modified
Distance Classification
Radiation Level
Sample Site Description
Sample Site ID
Sample Site Name
Sample Site Type
Schedule Label Code

Database Field Name

bounding_condition
bounding_coord
change_indicator
coess_site
date_last_modified
dist_class
rad_level
samp_site_desc
samp_site_id
samp_site_name
samp_site_type
sched_label_code

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6.3.1.2 Sampling Site Change Table
(HEIS Database Table Name: sampling_site_change)

INTRODUCTION

The Sampling Site Change table contains a time-stamped historical record of changes made to Sampling Site records. The reason for the change, the change authority and user name, the change code, and the date/time of change also are stored. The Sampling Site Change View form is shown in Figure 6.3.1.2-1. To access this form, choose the "Sampling Site Change View" option on the Location Subject Area menu.

SOURCE

The source of the data is a previous record in the Sampling Site table. These records are generated automatically when a Sampling Site record is modified or deleted. See Section 4.3.5 of the *HEIS User's Guide* (DOE-RL 1994a) for details.

REQUIREMENTS

"Dependencies" and "Special Processing" are the same as found in the Sampling Site table (see Section 6.3.1.1). The "Required Fields," "Code Lookup/Validation," and "Form Field Name/Database Field Name" lists are the same with the exception of specific changes listed in the sections below. A complete description of the change record generation process is found in Section 4.3.5 of the *HEIS User's Guide*.

**Code Lookup/
Validation**

All fields in the Sampling Site table plus -
Change Code

Required Fields

All fields in the Sampling Site table plus -
Change Authority
Change Code
Change Reason
Change User Name

Figure 6.3.1.2-1. Sampling Site Change View Form.

Sampling Site Change View		
SAMPLE SITE ID	CHANGE DATE/TIME	
SAMPLE SITE NAME		
SAMPLE SITE TYPE		
CHANGE AUTHORITY	CHANGE CODE	CHANGE USER NAME
CHANGE REASON		
Schedule Label Code		
Coordinate Type		
Bounding Coordinate		
Distance Classification		
Radiation Level	COESS Site	
Date/Time Last Modified	Change Indicator	
Bounding Condition		
Sample Site Description		
OWNER ID	ACCESS LEVEL	

Recommended Query
Fields

Sample Site ID
Change Date/Time

FORM FIELD NAMES/
DATABASE FIELD NAMES

All fields in the Sampling Site table plus -

Form Field Name
Change Authority
Change Code
Change Date/Time
Change Reason
Change User Name

Database Field Name
change_authority
change_code
change_date_time
change_reason
change_user_name

6.3.1.3 Sampling Site Composite Table

(HEIS Database Table Name: sampling_site_composite)

INTRODUCTION

Sampling Sites can be combined so that the composite sampling site represents multiple discrete areas and/or points. Records describing the composites are stored in the Sampling Site Composite table, which is shown in the lower portion of the form illustrated in Figure 6.3.1.3-1.

Figure 6.3.1.3-1. Sampling Site and Sampling Site Composite Form.

Sampling Site		
SAMPLE SITE ID: _____ (Press [DETAIL] to generate new value.)		
SAMPLE SITE NAME _____		
SAMPLE SITE TYPE _____		
Schedule Label Code _____		
Coordinate Type _____		
Bounding Coordinate _____		
Distance Classification _____		
Radiation Level _____	COESS Site _____	
Date/Time Last Modified _____	Change Indicator _____	
Bounding Condition _____		
Sample Site Description _____		
SAMPLING-SITE-COMPOSITE		
SAMP SITE PART ID	SAMPLE SITE NAME	SAMPLE SITE TYPE
_____	_____	_____
OWNER ID _____		ACCESS LEVEL _____
<p align="center">MORE-INFORMATION</p> <p align="center">Press [DETAIL] for more information on:</p> <p align="center">_ Entity Point Location Records</p> <p align="center">_ Sampling Site Change Records</p>		

SOURCE

The description of a composite sampling site is provided by the owner who combines multiple sites into a composite.

REQUIREMENTS

Dependencies	Samp Site Part ID must exist in the Sampling Site table (i.e., must have a Sample Site ID defined).
Special Processing	Samp Site Part ID cannot be the same as the Sample Site ID value.
Code Lookup/ Validation	Samp Site Part ID
Required Fields	Samp Site Part ID* Sample Site Name Sample Site Type
Recommended Query Fields	Querying is not available from the composite portion of this form. Query from the Sampling Site portion of the form to retrieve all composite sampling data for the query criteria. You can query the Sampling Site Composite table directly using SQL*Plus or SQR. See Section 5.5.1 of the <i>HEIS User's Guide</i> for further information.

FORM FIELD NAMES/ DATABASE FIELD NAMES

Form Field Names
Samp Site Part ID
Sample Site Name
Sample Site Type

Database Field Name
samp_site_part_id
samp_site_name
samp_site_type

6.3.2 ENTITY POINT LOCATION TABLES

6.3.2.1 Entity Point Location Table

(HEIS Database Table Name: entity_pt_location)

INTRODUCTION

The Entity Point Location table contains information about a location when the coordinates are reported using 1983 or 1991 Lambert coordinates. This table also contains data about the coordinate source, coordinate lineage information, data verifying the location, whether the coordinates were converted from another coordinate system, and the error estimate from that conversion process. The Entity Point Location form is shown in Figure 6.3.2.1-1.

Each Entity Point Location is assigned a Point Identifier and a Point Identifier Type, which link it to the physical point (e.g., a well, a specific sample, an area, or a named point) for which coordinates are to be recorded. To represent this variety, the Point Identifier/ Point Identifier Type pair is used to denote the type of physical point (e.g., a well, an area, or a specific sample) and the specific physical point (e.g., well xxx-xx-x, a named pond or sampling site on the Columbia River, or sample Bxxxxx).

SOURCE

The entity point location comes from either (1) a physical survey of the point or a GPS measurement, (2) an estimated distance from a known measured point, or (3) the conversion of the point from another coordinate system (e.g., Richland or plant coordinates) to the NAD83 system. Verification information is added when it is received. The data owner responsible for this location enters and modifies the data.

Figure 6.3.2.1-1. Entity Point Location Form.

Entity Point Location

POINT IDENTIFIER TYPE _____	
POINT IDENTIFIER _____	
COORDINATE TYPE _____	
LAMBERT N/S COORDINATE _____	LAMBERT E/W COORDINATE _____
Coordinate Source _____	
Date/Time Last Modified _____	Change Indicator _____
Verify Date _____	
Verify Result _____	
Verify Method _____	
Verify Number _____	
Verified By _____	
Sampler Elevation _____	Sampler Elevation Unit _____
Transform Code _____	
Coordinate Error Estimate _____	
Coordinate Error Estimate Method _____	
Survey Number _____	
Verification Document Location _____	
Point Description _____	
Coordinate Lineage Comment _____	
Coordinate Lineage Reference _____	
OWNER ID _____	ACCESS LEVEL _____

MORE-INFORMATION

Press [DETAIL] for more information on:

 Entity Point Location Change Records

REQUIREMENTS

Dependencies

The Point Identifier is dependent on a variety of other identifiers (e.g., well or sampling site). The Point Identifier Type determines what the Point Identifier is dependent on, as listed below:

<u>When Point Identifier Type is</u>	<u>Point Identifier is a valid</u>
WELL	Well from the Well table
SURFACE WATER SAMPLE	Sample Number from the Surface Water Sample table
SOIL SAMPLE	Sample Number from the Soil Sample table
BIOTA SAMPLE	Sample Number from the Biota Sample table
AREA	Sample Site ID from the Sample Site table and the Point Identifier Type is the same as the one in the Sampling Site.

NAMED POINT

Sample Site ID from the Sample Site table
and the Point Identifier Type is the same
 as the one in the Sampling Site.

AM STATION

Sample Site ID from the Sample Site table
and the Point Identifier Type is the same
 as the one in the Sampling Site.

Special Processing

Date/Time Last Modified is system generated.

Code Lookup/
Validation

Coordinate Error Estimate Method
 Coordinate Source
 Coordinate Type
 Point Identifier
 Point Identifier Type
 Sampler Elevation Unit
 Transform Code
 Verify Method
 Verify Result

Required Fields

Coordinate Type
 Lambert E/W Coordinate
 Lambert N/S Coordinate
 Point Identifier*
 Point Identifier Type

Recommended Query
Fields

Point Identifier

FORM FIELD NAMES/
DATABASE FIELD NAMESForm Field Names

Change Indicator
 Coordinate Error Estimate
 Coordinate Error Estimate Method
 Coordinate Lineage Comment
 Coordinate Lineage Reference
 Coordinate Source
 Coordinate Type
 Date/Time Last Modified
 Lambert E/W Coordinate
 Lambert N/S Coordinate
 Point Description
 Point Identifier
 Point Identifier Type
 Sampler Elevation
 Sampler Elevation Unit
 Survey Number
 Transform Code
 Verification Document Location
 Verified By
 Verify Date
 Verify Method
 Verify Number
 Verify Result

Database Field Name

change_indicator
 coord_error_est
 coord_error_est_mthd
 coord_lineage_comment
 coord_lineage_ref
 coord_source
 coord_type
 date_last_modified
 ew_coord
 ns_coord
 point_desc
 point_identifier
 point_identifier_type
 sampler_elevation
 sampler_elevation_unit
 survey_num
 transform_code
 verif_doc_loc
 verified_by
 verif_date
 verif_mthd
 verif_num
 verif_result

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6.3.2.2 Entity Point Location Change Table
(HEIS Database Table Name: entity_pt_location_change)

INTRODUCTION

The Entity Point Location Change table contains a time-stamped historical record of changes made to Entity Point Location records. The reason for the change, the change authority and user name, the change code, and the date/time of change also are stored. The Entity Point Location View form is shown in Figure 6.3.2.2-1. To access this form, choose the "Entity Pt Location Chg View" option on the Location Subject Area menu.

SOURCE

The source of the data is a previous record in the Entity Point Location table. These records are generated automatically when a Location record is modified or deleted. See Section 4.3.5 of the *HEIS User's Guide* (DOE-RL 1994a) for details.

REQUIREMENTS

"Dependencies" and "Special Processing" are the same as found in the Entity Point Location table (see Section 6.3.2.1). The "Required Fields," "Code Lookup/Validation," and "Form Field Name/Database Field Name" lists are the same with the exception of specific changes listed in the sections below. A complete description of the change record generation process is found in Section 4.3.5 of the *HEIS User's Guide*.

**Code Lookup/
Validation**

All fields in the Entity Point Location table plus -
Change Code

Required Fields

All fields in the Entity Point Location table plus -
Change Authority
Change Code
Change Reason
Change User Name

Figure 6.3.2.2-1. Entity Point Location Change View Form.

Entity Pt Location Chg View

POINT IDENTIFIER TYPE _____		
POINT IDENTIFIER _____		
CHANGE DATE/TIME _____		
COORDINATE TYPE _____		
LAMBERT N/S COORDINATE _____		LAMBERT E/W COORDINATE _____
CHANGE AUTHORITY _____	CHANGE CODE _____	CHANGE USER NAME _____
CHANGE REASON _____		
Coordinate Source _____		
Date/Time Last Modified _____		Change Indicator _____
Verify Date _____		
Verify Result _____		
Verify Method _____		
Verify Number _____		
Verified By _____		
Sampler Elevation _____		Sampler Elevation Unit _____
Transform Code _____		
Coordinate Error Estimate _____		
Coordinate Error Estimate Method _____		
Survey Number _____		
Verification Document Location _____		
Point Description _____		
Coordinate Lineage Comment _____		
Coordinate Lineage Reference _____		
OWNER ID _____		ACCESS LEVEL _____

Recommended Query
Fields

Point Identifier
Change Date/Time

FORM FIELD NAMES/
DATABASE FIELD NAMES

All fields in the Entity Point Location table plus -

Form Field Name
Change Authority
Change Code
Change Date/Time
Change Reason
Change User Name

Database Field Name
change_authority
change_code
change_date_time
change_reason
change_user_name

6.3.3 OTHER COORDINATE LOCATION TABLE

(HEIS Database Table Name: other_coord_location)

INTRODUCTION

The Other Coordinate Location table stores information about a specific location using non-Lambert coordinates. Each Other Coordinate Location is assigned a Point Identifier and a Point Identifier Type, which link it to the physical point (e.g., a well, a specific sample, an area, or a named point) for which coordinates are to be recorded. To represent this variety, the Point Identifier/Point Identifier Type pair is used to denote the type of physical point (e.g., a well, an area, or a specific sample) and the specific physical point (e.g., well xxx-xx-x, a named pond or sampling site on the Columbia River, or sample Bxxxxx). The Other Coordinate Location form is shown in Figure 6.3.3-1.

This table also contains data about the coordinate source, coordinate lineage information, data verifying the location, and the error estimate for the coordinates.

Figure 6.3.3-1. Other Coordinate Location Form.

Other Coordinate Location NON-LAMBERT-COORDINATE-SYSTEMS	
POINT IDENTIFIER TYPE	_____
POINT IDENTIFIER	_____
COORDINATE TYPE	_____
N/S COORDINATE	_____ E/W COORDINATE _____
Coordinate Source	_____
Verify Date	_____
Verify Result	_____
Verify Method	_____
Verify Number	_____
Verified By	_____
Sampler Elevation	_____ Sampler Elevation Units _____
Coordinate Error Estimate	_____
Coordinate Error Estimate Method	_____
Survey Number	_____
Verification Document Location	_____
Point Description	_____
Coordinate Lineage Comment	_____
Coordinate Lineage Reference	_____
OWNER ID	_____ ACCESS LEVEL _____

SOURCE

The original Other Coordinate Location record comes from a physical survey of the point or from the conversion from another coordinate system. Verification information is added when received. The data owner responsible for this location enters and modifies the data.

REQUIREMENTS

Dependencies

The Point Identifier is dependent on a variety of other identifiers (e.g., well or sampling site). The Point Identifier Type determines what the Point Identifier is dependent on as described below:

<u>When Point Identifier Type is</u>	<u>Point Identifier is a valid</u>
WELL	Well from the Well table
SURFACE WATER SAMPLE	Sample Number from the Surface Water Sample table
SOIL SAMPLE	Sample Number from the Soil Sample table
BIOTA SAMPLE	Sample Number from the Biota Sample table
AREA	Sample Site ID from the Sample Site table <u>and</u> the Point Identifier Type is the same as the one in the Sampling Site.
NAMED POINT	Sample Site ID from the Sample Site table <u>and</u> the Point Identifier Type is the same as the one in the Sampling Site.
AM STATION	Sample Site ID from the Sample Site table <u>and</u> the Point Identifier Type is the same as the one in the Sampling Site.

Special Processing

No code lookups are available for Point Identifier until you specify a Point Identifier Type.

Code Lookup/ Validation

Coordinate Error Estimate Method
Coordinate Source
Coordinate Type
Point Identifier
Point Identifier Type
Sampler Elevation Unit
Verify Method
Verify Result

Required Fields

Coordinate Type
Lambert E/W Coordinate
Lambert N/S Coordinate
Point Identifier*
Point Identifier Type

Recommended Query Fields

Point Identifier
Coordinate Type

**FORM FIELD NAMES/
DATABASE FIELD NAMES**Form Field Names

Coordinate Error Estimate
Coordinate Error Estimate Method
Coordinate Lineage Comment
Coordinate Lineage Reference
Coordinate Source
Coordinate Type
Lambert E/W Coordinate
Lambert N/S Coordinate
Point Description
Point Identifier
Point Identifier Type
Sampler Elevation
Sampler Elevation Unit
Survey Number
Verification Document Location
Verified By
Verify Date
Verify Method
Verify Number
Verify Result

Database Field Name

coord_error_est
coord_error_est_mthd
coord_lineage_comment
coord_lineage_ref
coord_source
coord_type
ew_coord
ns_coord
point_desc
point_identifier
point_identifier_type
sampler_elevation
sampler_elevation_unit
survey_num
verif_doc_loc
verified_by
verif_date
verif_mthd
verif_num
verif_result

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6.3.4 COORDINATE TRANSFORMATION TABLE

(HEIS Database Table Name: coord_transform)

INTRODUCTION

The Coordinate Transformation table contains information on coordinate transformations that are made from the original coordinate system to the reference GIS coordinate system (NAD83 Lambert). This transformation is accomplished using a derived algorithm or using the ARC/INFO Transform command with a set of local reference points (points known in both coordinate systems) for a given area or region. The Coordinate Transformation form is shown in Figure 6.3.4-1.

Figure 6.3.4-1. Coordinate Transformation Form.

Coordinate Transformation		
TRANSFORM CODE	SOURCE COORDINATE TYPE	TRANSFORM DESCRIPTION

SOURCE

The Coordinate Transformation information is provided by the HEIS GIS staff as part of converting existing data to coordinates usable within the GIS.

REQUIREMENTS

Dependencies	None.
Special Processing	None.
Code Lookup/ Validation	Source Coordinate Type
Required Fields	Source Coordinate Type Transform Code* Transform Description

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Recommended Query
Fields

Transform Code

FORM FIELD NAMES/
DATABASE FIELD NAMES

Form Field Names

Source Coordinate Type
Transform Code
Transform Description

Database Field Name

source_coord_type
transform_code
transform_desc

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APPENDIX A
DATA DICTIONARY

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Description of Data Dictionary Columns**FORM FIELD NAME**

In the Hanford Environmental Information System (HEIS), the name used on all forms, reports and plots for the field.

TYPE(size)

Indicates the type and size of data that the field can accommodate. The valid types are

CHAR(n): The field may contain any characters (alpha or alphanumeric) with a maximum of "n" characters.

DATE: The field must contain either a valid date in the format MM/DD/YYYY or a valid date and time in the format MM/DD/YYYY HH:MI:SS (24-hour clock). The definition identifies whether the field contains a date or a date/time.

NUMBER (n): The field must contain only digits and possibly a plus or minus sign. The "n" indicates the maximum number of digits in the number excluding the plus or minus sign. On the HEIS forms, the field will contain n or n+1 spaces depending on whether a negative number is an acceptable value. On the HEIS forms, all NUMBER(n) fields have range checks to limit the user-entered value to the range that can be stored in the table. Generally, the definition specifies the legal range.

NUMBER(n,m): The field must contain only digits and possibly a decimal point and/or a leading plus or minus sign. The "n" indicates the maximum number of digits in the number. The "m" indicates how many of these "n" digits are to the right of the decimal point. The space for the decimal point and the plus or minus sign are not included in either "n" or "m." On the HEIS forms, the field will contain n+1 or n+2 spaces depending on whether a negative number is an acceptable value. On the HEIS forms, all NUMBER(n,m) fields have range checks to limit the user-entered value to the range that can be stored

value to the range that can be stored in the table. Generally, the definition specifies the legal range.

DATABASE FIELD NAME The name of this field in the HEIS database. This name is needed if you want to use SQL*Plus or Structured Query Report Writer (SQR) (SQ Software 1987) to access the database directly.

DEFINITION A definition of the field as it is used within HEIS. The definition can include the following items, as appropriate:

- A format specification, e.g., for dates or numbers
- A reference to a document containing additional information
- Relationship(s) between this field and another field(s). Typical relationships are
(1) ordering, such as for dates and depths, and
(2) pairing of a numeric value and the engineering units.
- Range of legal values.

A list of codes is not provided. To view the list of legal codes, access HEIS and press the [DETAIL] key in the appropriate field. For additional details, see Section 5.4.3 of the *HEIS User's Guide* (DOE/RL 1994a).

LOCATED IN Lists all tables that include the field.

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FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Access Level	NUMBER(1)	access_level	Each record in HEIS that contains an access level goes through a process to annotate the data with appropriate flags about the quality of the data and/or to correct the data record. The Access Level field stores the state of the record in this process.	Air Monitoring Result, Air Monitoring Result Change, Air Monitoring Sample, Biota Distribution, Biota Population, Biota Result, Biota Result Change, Biota Sample, Casing Construction, Constituent Group, Constituent In Group, Drill, Driller's Log, Entity Point Location, Entity Point Location Change, Geologic Summary, GW Result, GW Result Change, GW Sample, Hydraulic Head, Hydraulic Head Change, Meteorologic Result, Meteorologic Station, Other Coordinate Location, Particle, Previous Well Name, Pump, River Characteristics, Safety Criteria, Sample, Sample Assignment, Sample Group, Sample Group Element, Sample Relation, Sampling Site, Sampling Site Change, Sampling Site Composite, Seal Fill, SIDEF, Soil Result, Soil Result Change, Soil Sample, SW Result, SW Result Change, SW Sample, Tank Core, Tank Core Segment, Tank Farm, Tank Inventory, Tank Inventory Source, Tank Inventory Uncertainty, Tank Supernate Sample, TCD Analysis, TCD Analysis Result, TCD Analysis Result Change, TCD Result Group, TCD Result Group Element, TCD Sample, Waste Tank, Waste Tank Status, Well, Well Assignment, Well Change, Well Log Location, Well Screen
Actual Sample End Date	DATE	actual_saf_end_date	The actual date when the sampling team completed sampling. Format is MM/DD/YYYY.	Sample Authorization
Actual Sample Start Date	DATE	actual_saf_start_date	The actual date when the sampling started. Format is MM/DD/YYYY.	Sample Authorization

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FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Actual Task End Date	DATE	actual_task_end _date	The actual date when the task ended. Format is MM/DD/YYYY.	Task
Actual Task Start Date	DATE	actual_task _start_date	The actual date when the task started. Format is MM/DD/YYYY.	Task
Address	CHAR(50)	address	The street address.	Analysis Site, Laboratory
Admin Coordinator	CHAR(30)	saf_admin_coord	Name of the person or organization responsible for coordinating the sample analysis requirements and the laboratory(ies) that will perform the analysis.	Sample Authorization
Aggregate Area ID	CHAR(15)	ag_area_id	Unique code to identify an aggregate area as defined by the Preliminary Operable Units Designation Project (see WHC-EP-0216, Preliminary Operable Units Designation Project, Westinghouse Hanford Company, Richland, WA, 1989).	Aggregate Area, Operable Unit, SIDEF, Site
Air Calibrator Number	NUMBER	air_calibrator _num	Unique identifier for an air calibrator.	Air Monitoring Sample
Air Sampled Volume	NUMBER	air_sampled_vol	Quantity of air that was sampled. If specified, Air Sampled Volume Units must also be specified.	Air Monitoring Sample
Air Sampled Volume Units	CHAR(10)	air_sampled_vol _unit	Units that a quantity of air is measured in. If specified, Air Sampled Volume must also be specified.	Air Monitoring Sample
Alias Constituent ID	CHAR(10)	alias_con_id	Previous ID for a specific chemical or radiological compound or physical property.	Constituent Alias
Alias Expiration Date	DATE	alias_expiration _date	Date after which the Alias Constituent ID field was replaced by the Constituent ID field. Format is MM/DD/YYYY.	Constituent Alias
Alias Name	CHAR(40)	alias_name	Name for this alias.	Constituent Alias

FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Ambient Temperature	NUMBER(4,1)	ambient_temp	Temperature (degrees C) of the medium surrounding the sampled organism. Format is 999.9. If specified, the value must be between -40 and 65.	Biota Sample
Analysis Class	CHAR(10)	anal_class	Name or acronym of the major analysis grouping. This grouping is based on the characteristics of the compounds.	Analysis Method
Analysis Date/Time	DATE	anal_date_time	Date and time the sample was analyzed. Format is MM/DD/YYYY HH:MI:SS (24-hour clock).	Air Monitoring Result, Air Monitoring Result Change, Biota Result, Biota Result Change, GW Result, GW Result Change, Soil Result, Soil Result Change, SW Result, SW Result Change
Analysis Date/Time	DATE	analysis_date _time	Date and time the sample was analyzed to produce this result. Format is MM/DD/YYYY HH:MI:SS (24-hour clock).	TCD Analysis Result, TCD Analysis Result Change
Analysis Method Description	CHAR(240)	anal_mthd_desc	A description of the analysis method.	Analysis Method
Analysis Method ID	CHAR(10)	anal_mthd_id	A unique, system-generated ID that is equivalent to a unique combination of Analysis Protocol, Analysis Class, Analysis Technique, and Test Procedure. This shorter identifier is used in results data, such as the Biota or Soil Result table. Analysis Method IDs represent specific methods from standards such as EPA or ASTM or laboratory-specific analysis methods. Only methods that have been authorized by an applicable contracting authority are assigned an Analysis Method ID.	Air Monitoring Result, Air Monitoring Result Change, Analysis Method, Biota Result, Biota Result Change, Constituent Code, Constituent In Group, Constituent Verification, GW Result, GW Result Change, Laboratory Contractual Limit, Laboratory Procedure, Soil Result, Soil Result Change, SW Result, SW Result Change, TCD Analysis, TCD Analysis Result, TCD Analysis Result Change
Analysis Method Name	CHAR(30)	anal_mthd_name	The commonly accepted name for the analysis method.	Analysis Method
Analysis Protocol	CHAR(6)	anal_protocol	Name or acronym of a protocol defined by an agency or other group. This protocol may be a national protocol such as ASTM, CLP, or SW-846 (Test Methods for Evaluating Solid Waste, Vol. 1-4, SW-846, U.S. Environmental Protection Agency, Washington, D.C., 1986), or it may be defined by an individual laboratory whose internal methods have been approved for use instead of one of the national methods.	Analysis Method

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FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Analysis Site Code	CHAR(10)	anal_site_code	Unique code to identify the laboratory responsible for analyzing the sample.	Analysis Site, Laboratory Data Package
Analysis Site Name	CHAR(30)	anal_site_name	The full name of the laboratory site responsible for analyzing the sample.	Analysis Site
Analysis Sponsor	CHAR(6)	anal_sponsor	The person, organization, or project that provided funding for the analysis.	GW Sample
Analysis Technique	CHAR(15)	anal_technique	Unique identifier (within a specific Analysis Protocol and Analysis Class) for a particular technique used in analyzing a sample for a certain constituent. Use "NA" if the technique is completely described by the combination of the Analysis Protocol and Analysis Class fields.	Analysis Method
Analysis Units Reported	CHAR(10)	anal_units_rptd	The units in which the Value Reported was recorded. If specified, the Value Reported must also be specified.	Air Monitoring Result, Air Monitoring Result Change, Biota Population, Biota Result, Biota Result Change, GW Result, GW Result Change, Soil Result, Soil Result Change, SW Result, SW Result Change
Analyst	CHAR(20)	analyst	First and middle initials and last name of the person who analyzed the sample.	TCD Analysis
Analytical Quality Level	CHAR(1)	aql	Quality level as defined by the U.S. Environmental Protection Agency (EPA). Rather than storing the Roman numerals I-V, the integers 1 through 5 are stored.	Air Monitoring Result, Air Monitoring Result Change, Biota Result, Biota Result Change, GW Result, GW Result Change, Soil Result, Soil Result Change, SW Result, SW Result Change
Aquifer Penetrated	CHAR(20)	aquifer_penetrated	Name of the targeted aquifer that is penetrated by the well.	Well, Well Change
Artifacts	CHAR(3)	artifacts	If artifacts were found in the sample, enter "YES"; otherwise leave the field blank. This is applicable to solid samples only.	Biota Result, Biota Result Change, Soil Result, Soil Result Change
Assigned By	CHAR(20)	asgnd_by	The name of the person, project, or office responsible for assigning the HEIS sample number.	Sample
Assigned Date	DATE	asgnd_date	Date the sample number was checked out or assigned. Format is MM/DD/YYYY.	Sample

FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Assigned To	CHAR(20)	asgned_to	Name of the person, project, or function to whom the HEIS sample number was assigned.	Sample
Assignment Priority	CHAR(1)	assign_priority	Relative priority of the sample to its assignment.	Sample Assignment
Assignment Role	CHAR(20)	assign_role	Role the sample plays with respect to this assignment.	Sample Assignment
Assignment Role	CHAR(20)	assignment_role	Role the well plays with respect to this assignment.	Well Assignment
Averaging Period	NUMBER(6,1)	averaging_period	Time period for which the meteorologic result was measured. Format is 99999.9. If specified the value must be >= 0.	Meteorologic Result
Averaging Period Units	CHAR(10)	averaging_period_units	Units in which the averaging period was measured.	Meteorologic Result
Batch ID	CHAR(20)	batch_id	ID for a group of laboratory samples with something in common, such as being analyzed as a group or having single calibration for the instrument used.	TCD Analysis
Batch ID	NUMBER	sidef_batch_id	A system-assigned identifier for a group of SIDEf records. This group of SIDEf records is to be processed together (for reporting and propagation into the HEIS database). The data technician determines which SIDEf records belong to the same batch.	SIDEf
Bill of Lading	CHAR(15)	bill_of_lading	Identifier for a contract issued to a shipper by a transportation agency, promising delivery to a location on time and intact.	Movement
Biota Media	CHAR(1)	biota_media	Indicates the class of organism sampled.	Biota Sample, SIDEf
Biota Population Count	NUMBER(8,2)	biota_pop_count	Number of organisms counted.	Biota Population
Boulder	NUMBER(5,2)	boulder_pcmt	Geologist field estimate for percentage of sample composed of particles with a diameter greater than 256 mm. Format is 99.99. If specified, value must be between 0 and 100.	Particle

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FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Bounding Condition	CHAR(240)	bounding_condition	Textual description of the physical bounds for the sampling site. For example, "From property line to river."	Sampling Site, Sampling Site Change
Bounding Coordinate	CHAR(240)	bounding_coord	Text containing the list of coordinates that form the vertices of the boundary for the site.	Sampling Site, Sampling Site Change
COESS Site	CHAR(1)	coess_site	If the sampling site is a community environmental surveillance site (COESS), enter "Y"; otherwise leave the field blank.	Sampling Site, Sampling Site Change
Calcium Carbonate Percent	NUMBER(5,2)	calcium_carbonate_pcmt	Percentage of calcium carbonate in the sample. Format is 99.99. If specified, value must be between 0 and 100.	Particle
Case Number	CHAR(10)	case_num	A number assigned by the laboratory to a group of samples collected over a given time period from a particular site.	Air Monitoring Result, Air Monitoring Result Change, Biota Result, Biota Result Change, GW Result, GW Result Change, Soil Result, Soil Result Change, SW Result, SW Result Change
Casing Bottom Depth	NUMBER(7,2)	casing_bottom_depth	Depth of the lowest point of the casing below land surface. Format is 99999.99. If specified, value must be >= 0.01, and Casing Depth Units must also be specified. If both are specified, Casing Depth Bottom must be >= Casing Top Depth.	Casing Construction
Casing Bottom Elevation Feet	NUMBER(7,2)	casing_bottom_elev_ft	Elevation of the lowest point of the casing (ft). This value is calculated from the land surface elevation and the Casing Bottom Depth.	Casing Construction
Casing Bottom Elevation Meters	NUMBER(7,2)	casing_bottom_elev_meters	Elevation of the lowest point of the casing (m). This value is calculated from the land surface elevation and the Casing Bottom Depth.	Casing Construction
Casing Comment	CHAR(240)	casing_comment	Additional information that further describes the well casing.	Casing Construction
Casing Depth Units	CHAR(10)	casing_depth_units	The distance units assigned to the Casing Bottom Depth and Casing Top Depth. If the units are specified, either Casing Top Depth or Casing Bottom Depth must also be specified.	Casing Construction

FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Casing Nominal Diameter	NUMBER(5,2)	casing_nominal _diam	The diameter (in.) of the well structure. For diameters less than 12 in., this measurement refers to the inner-diameter. For larger diameters, this is the outer diameter. Format is 999.99. If specified, must be >= 0.01. If both are specified, Casing Nominal Diameter must be <= Casing Outer Diameter.	Casing Construction
Casing Outer Diameter	NUMBER(5,2)	casing_outer _diam	The outer diameter (in.) of the well casing. Format is 999.99. If specified, must be >= 0.01. If both are specified, Casing Outer Diameter must be >= Casing Nominal Diameter.	Casing Construction
Casing Status	CHAR(1)	casing_status	Casing status.	Casing Construction
Casing Top Depth	NUMBER(7,2)	casing_top_depth	Depth of the highest point of the casing below land surface. A negative value indicates that the casing extends above the ground. Format is 99999.99. If specified, Casing Depth Units must be specified. If both are specified, Casing Top Depth must be <= Casing Bottom Depth.	Casing Construction
Casing Top Elevation Feet	NUMBER(7,2)	casing_top_elev _ft	Elevation of the highest measured point of the casing (ft). This value is calculated from the land surface elevation and the Casing Top Depth.	Casing Construction
Casing Top Elevation Meters	NUMBER(7,2)	casing_top_elev _meters	Elevation of the highest measured point of the casing (m). This value is calculated from the land surface elevation and the Casing Top Depth.	Casing Construction
Casing Type	CHAR(20)	casing_type	Brief description of the casing material, such as carbon steel or stainless steel.	Casing Construction
Change Authority	CHAR(20)	change_authority	The computer project account that performed the change on the record. The system inserts this field from the process that generated the change.	Air Monitoring Result Change, Biota Result Change, Entity Point Location Change, GW Result Change, Hydraulic Head Change, Sampling Site Change, Soil Result Change, SW Result Change, TCD Analysis Result Change, Well Change, Well Elevation Change

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FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Change Code	CHAR(1)	change_code	System-generated code indicating whether this change record corresponds to a modification or a deletion of the original record.	Air Monitoring Result Change, Biota Result Change, Entity Point Location Change, GW Result Change, Hydraulic Head Change, Sampling Site Change, Soil Result Change, SW Result Change, TCD Analysis Result Change, Well Change, Well Elevation Change
Change Date	DATE	change_date	Date and time the change record was inserted into the database. The current system date and time are inserted into this field when the change is made. Format is MM/DD/YYYY HH:MI:SS (24-hour clock).	TCD Analysis Result Change
Change Date/Time	DATE	change_date_time	The date and time the change record was inserted in the database. The current system date and time are inserted into this field when the change is made. Format is MM/DD/YYYY HH:MI:SS (24-hour clock).	Air Monitoring Result Change, Biota Result Change, Entity Point Location Change, GW Result Change, Hydraulic Head Change, Sampling Site Change, Soil Result Change, SW Result Change, Well Change, Well Elevation Change
Change Date/Time	DATE	db_mod_date_time	The date and time the well name was changed. This is system assigned. Format is MM/DD/YYYY HH:MI:SS (24-hour clock). If specified, value must be >= Effective Start Date.	Previous Well Name
Change Indicator	CHAR(1)	change_indicator	Flag used to indicate that the record has been changed. Set to "Y" by the system if a change has been made to the record. If the field is blank, no change has been made to the record.	Air Monitoring Result, Air Monitoring Result Change, Biota Result, Biota Result Change, Entity Point Location, Entity Point Location Change, GW Result, GW Result Change, Hydraulic Head, Hydraulic Head Change, Sampling Site, Sampling Site Change, Soil Result, Soil Result Change, SW Result, SW Result Change, TCD Analysis Result, TCD Analysis Result Change, Well, Well Change, Well Elevation, Well Elevation Change
Change Reason	CHAR(240)	change_reason	An owner-supplied explanation of why the record was changed.	Air Monitoring Result Change, Biota Result Change, Entity Point Location Change, GW Result Change, Hydraulic Head Change, Sampling Site Change, Soil Result Change, SW Result Change, TCD Analysis Result Change, Well Change, Well Elevation Change

FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Change User Name	CHAR(8)	change_user_name	User account name of the person who made the change.	Air Monitoring Result Change, Biota Result Change, Entity Point Location Change, GW Result Change, Hydraulic Head Change, Sampling Site Change, Soil Result Change, SW Result Change, TCD Analysis Result Change, Well Change, Well Elevation Change
Changed From Name	CHAR(15)	changed_from _name	The previous name of the well.	Previous Well Name
Changed To Name	CHAR(15)	changed_to_name	The new name of the well.	Previous Well Name
Charge Code	CHAR(6)	saf_charge_code	Account code used for the analytical services.	Sample Authorization
Charge Code	CHAR(6)	task_charge_code	Task accounting code used for the sampling effort.	Task
Chemical Contamination	CHAR(1)	chem_contam	Indicates whether chemical contamination is suspected. Enter "Y" if contamination is suspected, "N" if no contamination is suspected, and leave blank if contamination is unknown.	Soil Sample
City	CHAR(30)	city	City portion of the address.	Analysis Site, Laboratory
Clarity After	CHAR(6)	clarity_after	The clarity of sample after analysis. Accepted values are CLEAR, CLOUDY, or OPAQUE.	Air Monitoring Result, Air Monitoring Result Change, Biota Result, Biota Result Change, GW Result, GW Result Change, Soil Result, Soil Result Change, SW Result, SW Result Change
Clarity Before	CHAR(6)	clarity_before	The clarity of the sample before analysis. Accepted values are CLEAR, CLOUDY, or OPAQUE.	Air Monitoring Result, Air Monitoring Result Change, Biota Result, Biota Result Change, GW Result, GW Result Change, Soil Result, Soil Result Change, SW Result, SW Result Change
Classification Code	CHAR(7)	class_code	The geologic classification code for the interval. Depending on the Scheme Code (field), this is one of the Modified Folk codes or one of the Pattern codes. The Modified Folk codes are determined from the ternary diagram modified by Folk. The Pattern codes are defined on the Driller's Log screen. See also the Lithologic Classification and Pattern Code fields.	Geologic Summary

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FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Classification Geologist	CHAR(20)	class_geologist	First and middle initials and last name of the geologist who determined the pattern code.	Driller's Log
Classification Scheme Code	CHAR(2)	class_scheme_code	The scheme used to determine what classification the sediments fit into.	Driller's Log, Geologic Summary
Clay	NUMBER(6,2)	clay_wt	Weight (g) from lab analysis. Format is 9999.99. If specified, value must be >= 0.	Particle
Clay Percent	NUMBER(5,2)	clay_pcnt	Geologist field estimate for clay percent. Format is 99.99. If specified, value must be between 0 and 100.	Particle
Coarse Pebble Percent	NUMBER(5,2)	coarse_pebble_pcnt	Lab analysis or geologist field estimate for percentage of sample composed of particles with a diameter between 16 and 32 mm. Format is 99.99. If specified, value must be between 0 and 100.	Particle
Coarse Pebble Weight	NUMBER(6,2)	coarse_pebble_wt	Lab analysis weight (g) for particles with a diameter between 16 and 32 mm. Format is 9999.99. If specified, value must be >= 0.	Particle
Coarse Sand Percent	NUMBER(5,2)	coarse_sand_pcnt	Lab analysis or geologist field estimate for percentage of sample composed of particles with a diameter between .5 and 1 mm. Format is 99.99. If specified, value must be between 0 and 100.	Particle
Coarse Sand Weight	NUMBER(6,2)	coarse_sand_wt	Lab analysis weight (g) for particles with a diameter between .5 and 1 mm. Format is 9999.99. If specified, value must be >= 0.	Particle
Collected Sample Size	NUMBER	coll_samp_size	The physical quantity of sample collected.	Biota Sample, Soil Sample, SW Sample
Collected Units	CHAR(10)	coll_samp_size_units	The units associated with the physical quantity of sample collected.	Biota Sample, Soil Sample, SW Sample
Collection Equipment Desc	CHAR(80)	collection equip_desc	Description of the specific type of equipment used to collect the sample.	Air Monitoring Sample

FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Collection Method	CHAR(20)	coll_mthd	The method used to collect the sample.	SW Sample
Collection Purpose	CHAR(1)	collection_purpose	The reason a sample was collected. This field allows the user to note whether sample collection was routine or a special study, etc.	Biota Sample
Color After	CHAR(9)	color_after	The color of the sample after analysis. Accepted colors are RED, BLUE, YELLOW, GREEN, ORANGE, VIOLET, WHITE, COLORLESS, BROWN, GRAY, and BLACK.	Air Monitoring Result, Air Monitoring Result Change, Biota Result, Biota Result Change, GW Result, GW Result Change, Soil Result, Soil Result Change, SW Result, SW Result Change
Color Before	CHAR(9)	color_before	The color of the sample before analysis. Accepted colors are RED, BLUE, YELLOW, GREEN, ORANGE, VIOLET, WHITE, COLORLESS, BROWN, GRAY, and BLACK.	Air Monitoring Result, Air Monitoring Result Change, Biota Result, Biota Result Change, GW Result, GW Result Change, Soil Result, Soil Result Change, SW Result, SW Result Change
Color Dry	CHAR(9)	dry_color	Use the Munsel Soil Color Charts to delineate the alphanumeric value of dry fine portion of sample (e.g., 5YR4/2 is dark reddish gray).	Particle
Color Wet	CHAR(9)	wet_color	Use the Munsel Soil Color Charts to delineate the alphanumeric value of wet fine portion of sample (e.g., 5YR4/2 is dark reddish gray).	Particle
Column Type	CHAR(10)	column_type	The type of gas chromatographic column (a glass or metal tube containing sample material) used in the analysis.	Air Monitoring Result, Air Monitoring Result Change, Biota Result, Biota Result Change, GW Result, GW Result Change, Soil Result, Soil Result Change, SW Result, SW Result Change
Comment	CHAR(60)	ag_area_comment	Comment about the aggregate area.	Aggregate Area
Comment	CHAR(240)	anal_comment	Comment about this analysis result.	TCD Analysis Result, TCD Analysis Result Change
Comment	CHAR(240)	analysis_comment	Comment about the analysis.	TCD Analysis
Comment	CHAR(240)	con_ver_comment	Comment about the constituent verification.	Constituent Verification
Comment	CHAR(240)	drilling_comment	General comments about drilling operation.	Drill

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FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Comment	CHAR(240)	geo_comment	Comment associated with the geologic interval.	Geologic Summary
Comment	CHAR(240)	hyd_head_comment	General comments related to the record.	Hydraulic Head, Hydraulic Head Change
Comment	CHAR(240)	inventory _comment	Comment about the inventory.	Tank Inventory
Comment	CHAR(240)	inventory_src _comment	Comment about the inventory source or overall inventory.	Tank Inventory Source
Comment	CHAR(60)	limit_comment	Comment about the limit.	Laboratory Contractual Limit, Regulatory Limit
Comment	CHAR(240)	movement_comment	Comment about the sample movement.	Movement
Comment	CHAR(60)	oper_unit _comment	Comment about the operable unit.	Operable Unit
Comment	CHAR(240)	particle_anal _comment	Field or lab comment pertaining to sample.	Particle
Comment	CHAR(60)	proj_comment	Comment about the project.	Project
Comment	CHAR(60)	pump_comment	A description of the pump or the pump location, including location of the inlet.	Pump
Comment	CHAR(240)	sa_comment	Comment about the sampling authorization/round effort.	Sample Authorization
Comment	CHAR(240)	safety_criteria _comment	Comment about the safety criteria.	Safety Criteria
Comment	CHAR(240)	samp_comment	Comment about the sample.	Air Monitoring Sample, Biota Sample, GW Sample, SIDEF, Soil Sample, SW Sample, TCD Sample
Comment	CHAR(60)	site_comment	Comments about the site.	Site
Comment	CHAR(240)	tank_comment	Comment about the waste tank.	Waste Tank
Comment	CHAR(240)	tank_core _comment	Comment about the tank core.	Tank Core
Comment	CHAR(240)	tank_core _segment_comment	Comment about the tank core segment.	Tank Core Segment

FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Comment	CHAR(240)	tank_farm _comment	Comment about the tank farm.	Tank Farm
Comment	CHAR(240)	tank_supernate _comment	Comment about the tank supernate sample.	Tank Supernate Sample
Comment	CHAR(240)	task_comment	Comment about the task.	Task
Comment	CHAR(240)	waste_tank _status_comment	Comment about the current record of waste tank status values.	Waste Tank Status
Comment Code	CHAR(10)	comment_code	The comment code provided by the laboratory to give further clarification concerning the analysis.	Comments
Comment Text	CHAR(70)	comment_text	A textual explanation of the comment code.	Comments
Comments	CHAR(240)	previous_well _comment	A description of the well name change.	Previous Well Name
Common Name	CHAR(40)	common_name	Generic name for an organism.	Biota Sample, Biota Species, SIDEF
Composite Flag	CHAR(1)	composite_flag	A composite sample is a sample made up of other samples or portions of other samples. If this sample is a composite, enter "Y"; otherwise leave the field blank. If "Y" is specified, the Composite Sample Number field must be left blank. If the field is blank and the Composite Sample Number field is not blank, this sample is part of the composite sample.	Air Monitoring Sample, Biota Sample, GW Sample, SIDEF, Soil Sample, SW Sample
Composite Sample Number	CHAR(12)	composite_samp _num	If this sample is part of a composite sample, the field contains the sample number of the composite.	Air Monitoring Sample, Biota Sample, GW Sample, SIDEF, Soil Sample, SW Sample
Concentration Extract Volume	NUMBER(8)	conc_extract_vol	For CLP data only. Used for semivolatiles and pesticides / Aroclors. This volume is typically 1,000 uL (water), or 500 uL (water and soil) when GPC was performed. For pesticides/aroclor, the volume of the most concentrated extract typically will be 10,000 uL (water) or 5,000 uL (water and soil) when GPC is performed. If specified, value must be >= 0.	Air Monitoring Result, Air Monitoring Result Change, Biota Result, Biota Result Change, GW Result, GW Result Change, Soil Result, Soil Result Change, SW Result, SW Result Change

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FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Concentration Flag	CHAR(2)	conc_flag	Flag specifying additional information about the quality of the data.	Air Monitoring Result, Air Monitoring Result Change, Biota Result, Biota Result Change, GW Result, GW Result Change, Soil Result, Soil Result Change, SW Result, SW Result Change
Concentration Level	CHAR(3)	conc_level	Determination of concentration level.	Air Monitoring Result, Air Monitoring Result Change, Biota Result, Biota Result Change, GW Result, GW Result Change, Soil Result, Soil Result Change, SW Result, SW Result Change
Confidence Level	CHAR(6)	confidence_level	Indication of the confidence associated with the accuracy of the hydraulic head measurement.	Hydraulic Head, Hydraulic Head Change
Confidence Level Comment	CHAR(240)	confidence_level _comment	Comment concerning special circumstances surrounding the confidence level.	Hydraulic Head, Hydraulic Head Change
Confirm Code	CHAR(2)	confirm_code	Supplied by United States Testing Company, Inc. (U.S. Testing). When a sample is rerun because the initial result was high, this field contains a "C+" if the rerun confirmed the initial high result or a "C-" if the rerun did not confirm the initial high result. Usually this field is blank.	Air Monitoring Result, Air Monitoring Result Change, Biota Result, Biota Result Change, GW Result, GW Result Change, Soil Result, Soil Result Change, SW Result, SW Result Change
Consolidation	CHAR(2)	consolidation	The consolidation, compaction, or cementation of the sample.	Soil Sample
Constituent Comment	CHAR(24)	con_comment	Comment code from the lab pertaining to the constituent.	Air Monitoring Result, Air Monitoring Result Change, Biota Result, Biota Result Change, GW Result, GW Result Change, Soil Result, Soil Result Change, SW Result, SW Result Change
Constituent Due Date	DATE	con_due_date	The date on which a constituent result is due back from the analysis laboratory. Format is MM/DD/YYYY.	Constituent Verification
Constituent ID	CHAR(15)	con_id	A unique ID for a specific chemical or radiological compound or physical property. If available, the Chemical Abstract Services (CAS) number is used; otherwise, the identifier is assigned by the HEIS Configuration Control Board.	Air Monitoring Result, Air Monitoring Result Change, Biota Result, Biota Result Change, Constituent, Constituent Alias, Constituent Code, Constituent Synonym, Constituent In Group, Constituent Verification, GW Result, GW Result Change, Laboratory Contractual Limit, Regulatory Limit, Safety Criteria, Soil Result, Soil Result Change, SW Result, SW Result Change, Tank Inventory, TCD Analysis Result, TCD

FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Constituent Return Date	DATE	con_return_date	The date on which a constituent result is returned from the analysis laboratory. Format is MM/DD/YYYY.	Analysis Result Change Constituent Verification
Construction Date	DATE	construction_date	Date construction was completed. Format is MM/DD/YYYY.	Waste Tank
Contact Name	CHAR(25)	contact_name	Name of the primary contact person.	Analysis Site, Laboratory
Contract ID	CHAR(20)	contract_id	ID designating a contract between the contract owner and the analysis laboratory.	Constituent Verification, Laboratory Contractual Limit
Contract Owner	CHAR(10)	contract_owner	Hanford Site company that issued the contract.	Constituent Verification, Laboratory Contractual Limit
Convert Units From	CHAR(10)	convert_units_from	The units in which the value was originally reported.	Unit Conversion
Convert Units To	CHAR(10)	convert_units_to	The units to which the value should be converted.	Unit Conversion
Coordinate Confidence	NUMBER(22)	coord_confidence	Code to indicate confidence in well coordinate data. Zero indicates least amount of confidence, 9 the greatest amount of confidence.	Other Well Location
Coordinate Error Estimate	NUMBER	coord_error_est	A quantitative estimate of the accuracy of the coordinate values. This could come from survey closure information on survey wells, GPS error estimates, or GIS rms error values. If specified, Coordinate Error Estimate Method must also be specified.	Entity Point Location, Entity Point Location Change, Other Coordinate Location
Coordinate Error Estimate Method	CHAR(10)	coord_error_est_mthd	The method used to estimate the error of the coordinates. If specified, Coordinate Error Estimate must also be specified.	Entity Point Location, Entity Point Location Change, Other Coordinate Location
Coordinate Lineage Comment	CHAR(240)	coord_lineage_comment	A comment referring to additional coordinate lineage information.	Entity Point Location, Entity Point Location Change, Other Coordinate Location

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FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Coordinate Lineage Reference	CHAR(240)	coord_lineage _ref	Reference to a document containing further information on the determination/verification of the location.	Entity Point Location, Entity Point Location Change, Other Coordinate Location
Coordinate Source	CHAR(10)	coord_source	The source of the coordinates.	Entity Point Location, Entity Point Location Change, Other Coordinate Location
Coordinate Type	CHAR(3)	coord_type	Indicates the system used for location of north-south and east-west coordinates values. For Entity Point Locations, the type is limited to L83 and L91 For Other Coordinate Locations, the type must NOT be L83 or L91.	Entity Point Location, Entity Point Location Change, Other Coordinate Location, Other Well Location, Sampling Site, Sampling Site Change, SDEF
Core Top Elevation	NUMBER(7,2)	core_top_elev	Elevation of the top of the core. Format is 99999.99 If specified, the Core Top Elevation Units must also be specified.	Geologic Summary
Core Top Elevation Units	CHAR(16)	core_top_elev _units	Units associated with the elevation of the top of the core. If the Core Top Elevation Units is specified, a Core Top Elevation must be specified.	Geologic Summary
Counting Error	NUMBER	counting_error	A measure of the uncertainty in the value reported resulting from the random nature of nuclear decay.	Air Monitoring Result, Air Monitoring Result Change, Biota Result, Biota Result Change, GW Result, GW Result Change, Soil Result, Soil Result Change, SW Result, SW Result Change
Criteria Begin Date	DATE	criteria_begin _date	Date the safety criteria value went into effect. Format is MM/DD/YYYY. If both are specified, Criteria Begin Date must be <= Criteria End Date.	Safety Criteria
Criteria End Date	DATE	criteria_end _date	Date the safety criteria value was superseded by an updated value. Format is MM/DD/YYYY. If both are specified, Criteria End Date must be >= Criteria Begin Date.	Safety Criteria

FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Customer Number	CHAR(6)	customer_num	Identifies lab's customer.	Air Monitoring Result, Air Monitoring Result Change, Biota Result, Biota Result Change, GW Result, GW Result Change, Soil Result, Soil Result Change, SW Result, SW Result Change
Data Documentation Level	CHAR(1)	data_documentation_level	Coded value indicating the type of supporting documentation that exists for this result.	Air Monitoring Result, Air Monitoring Result Change, Biota Result, Biota Result Change, GW Result, GW Result Change, Soil Result, Soil Result Change, SW Result, SW Result Change
Data Group	CHAR(20)	data_group	Identifies the source document from which these data were loaded/entered.	Air Monitoring Result, Air Monitoring Result Change, Biota Result, Biota Result Change, GW Result, GW Result Change, Hydraulic Head, Hydraulic Head Change, Soil Result, Soil Result Change, SW Result, SW Result Change
Data Responsibility	CHAR(60)	data_responsibility	Person or group responsible for the data reported by this station.	Meteorologic Station
Date Received Laboratory Data Package EDMC	DATE	date_rcv_lab_dp_edmc	Date on which the laboratory data package (DP) is received at the Environmental Data Management Center (EDMC). Format is MM/DD/YYYY.	Laboratory Data Package
Date/Time Last Modified	DATE	date_last_modified	The date and time when the record was last modified. Format is MM/DD/YYYY HH:MI:SS (24-hour clock).	Air Monitoring Result, Air Monitoring Result Change, Biota Result, Biota Result Change, Entity Point Location, Entity Point Location Change, GW Result, GW Result Change, Hydraulic Head, Hydraulic Head Change, Sampling Site, Sampling Site Change, Soil Result, Soil Result Change, SW Result, SW Result Change
Delivery Group	CHAR(16)	delivery_group	Unique identifier assigned by a laboratory for a set of sample analyses (delivery group) returned to the Hanford Site.	Movement

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FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Depth to Water	NUMBER(7,2)	depth_to_water	Depth to the water level in a well as measured from the top of the casing reference point to the ground-water surface. Format is 99999.99. If specified, value must be >= 0, and Depth To Water Units must also be specified. If specified, Dry Well Indicator must not be "DRY",	Hydraulic Head, Hydraulic Head Change
Depth to Water Units	CHAR(10)	depth_to_water_units	The measurement units of Depth to Water. If specified, Depth To Water must also be specified.	Hydraulic Head, Hydraulic Head Change
Derivation Method	CHAR(2)	deriv_mthd	Method used to arrive at a coordinate location for a point.	SIDEF
Description	CHAR(240)	ag_area_desc	Description of the aggregate area.	Aggregate Area
Description	CHAR(240)	biota_dist_desc	Description of the distribution study.	Biota Distribution
Description	CHAR(240)	biota_pop_desc	Description of the population study.	Biota Population
Description	CHAR(240)	con_alias_desc	Description of the constituent alias, possibly including its source, purpose, and use(s).	Constituent Alias
Description	CHAR(240)	con_desc	Description of the particular constituent or physical property.	Constituent
Description	CHAR(240)	con_group_desc	A description of a constituent group.	Constituent Group
Description	CHAR(240)	con_syn_desc	Description of the synonym, possibly including its source, purpose, and use(s).	Constituent Synonym
Description	CHAR(240)	geo_drill_desc	Geologist's or driller's description.	Driller's Log
Description	CHAR(240)	oper_unit_desc	Description of the operable unit.	Operable Unit
Description	CHAR(240)	point_desc	Description of the location of the point.	Entity Point Location, Entity Point Location Change, Other Coordinate Location, Other Well Location
Description	CHAR(240)	proj_desc	Description of the project.	Project
Description	CHAR(60)	reference_elev_desc	A description of the location of the reference point on the well.	Reference Description

FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Description	CHAR(240)	result_group_desc	Description of the result group.	TCD Result Group
Description	CHAR(240)	samp_desc	Description of the sample.	TCD Sample
Description	CHAR(240)	samp_group_desc	Description of the sample group.	Sample Group
Description	CHAR(240)	site_desc	Description of the site.	Site
Description	CHAR(60)	site_type_desc	Description of the type of waste site.	Site Type
Description	CHAR(240)	tank_farm_desc	Description of the tank farm.	Tank Farm
Description	CHAR(240)	task_desc	Describes what the task is and what it requires.	Task
Detected	CHAR(1)	detected	Indicates whether a particular constituent was detected. If specified, enter "T" if the constituent was detected or "F" if it was not detected.	Air Monitoring Result, Air Monitoring Result Change, Biota Result, Biota Result Change, GW Result, GW Result Change, Soil Result, Soil Result Change, SW Result, SW Result Change
Dilution Factor	NUMBER (14,7)	dilut_factor	If a sample has been diluted for analysis, Dilution Factor is the multiplicative factor by which the raw analytical result was multiplied to determine the amount of the constituent in the sample (reported in Value Reported). Enter the dilution factor as a single number, such as 100 for a 1 to 100 dilution of the sample. Enter 0.1 for a concentration of 10 to 1. If a sample was not diluted, either leave the field blank or enter a 1. The value must be >= 0 and <= 999999.999999.	Air Monitoring Result, Air Monitoring Result Change, Biota Result, Biota Result Change, GW Result, GW Result Change, Soil Result, Soil Result Change, SW Result, SW Result Change, TCD Analysis
Distance Classification	CHAR(20)	dist_class	A code that qualitatively describes the location of the sampling site relative to the Hanford Site.	Sampling Site, Sampling Site Change
Document Location	CHAR(150)	doc_loc	Indicates where the documentation for this item is located.	Air Monitoring Result, Air Monitoring Result Change, Air Monitoring Sample, Biota Result, Biota Result Change, Biota Sample, GW Result, GW Result Change, GW Sample, Soil Result, Soil Result Change, Soil Sample, SW Result, SW Result Change, SW Sample, TCD Analysis, TCD Sample, Waste Tank Status

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FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Drainable Interstitial Liquid Volume	NUMBER(4)	drainable _interstitial _liq_vol	Amount of drainable interstitial liquid remaining in the tank after jet pumping (kgal). If specified, value must be >= 0.	Waste Tank Status
Drainable Liquid Volume Remaining	NUMBER(4)	drainable_liq _vol_remaining	Amount of drainable liquid remaining in the tank after jet pumping (kgal). If specified, value must be >= 0.	Waste Tank Status
Drill Begin Date	DATE	drill_begin_date	Date drilling of the well began. Format is MM/DD/YYYY. If both are specified, Drill Begin Date must be <= Drill End Date.	Drill
Drill Completion Depth	NUMBER(7,2)	drill_completion _depth	Maximum depth drilled to during construction of the well. This may be greater than the completed depth of the well. Format is 99999.99. If specified, value must be >= 0.01, and Drill Depth Unit must also be specified.	Drill
Drill Depth Unit	CHAR(10)	drill_depth _units	The distance units assigned to the Drill Completion Depth. If specified, Drill Completion Depth must also be specified.	Drill
Drill End Date	DATE	drill_end_date	The date the drilling of the well was completed. Format is MM/DD/YYYY. If specified, value must be <= current system date, and Drill End Date must be >= Drill Begin Date.	Drill
Drill Method	CHAR(2)	drill_mthd	The method used to drill the well.	Drill
Driller's Name	CHAR(20)	drillers_name	The first and middle initials and last name of the person responsible for drilling the well.	Drill
Drilling Company	CHAR(50)	drilling_co	The name of the company that drilled the well.	Drill
Drilling Completion Elevation Feet	NUMBER(7,2)	drill_completion _elev_ft	Drilled depth given as an elevation measurement (ft). This value is calculated from the land surface elevation and the Drill Completion Depth.	Drill

FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Drilling Completion Elevation Meters	NUMBER(7,2)	drill_completion _elev_meters	Drilled depth given as an elevation measurement (m). This value is calculated from the land surface elevation and the Drill Completion Depth.	Drill
Drilling Rate	NUMBER(5,2)	drill_rate	Drill rate in feet per hour. Format is 99.99. If specified, value must be >= 0.	Soil Sample
Dry Well Indicator	CHAR(3)	dry_well _indicator	Indicates if the well was dry. Enter "DRY" if the well was dry; otherwise leave the field blank. If Dry Well Indicator is "DRY", Depth to Water must be blank.	Hydraulic Head, Hydraulic Head Change
ELEVATION UNITS	CHAR(10)	elevation_units	The units of the elevation measurement.	Well Elevation, Well Elevation Change
Effective End Date	DATE	effective_end _date	The date the unique well or vadose borehole identifier was changed to another name. Format is MM/DD/YYYY. If both are specified, Effective End Date must be > = Effective Start Date.	Previous Well Name
Effective Start Date	DATE	effective_start _date	The date the previous well name was changed to the unique well or vadose borehole identifier. Format is MM/DD/YYYY. If both are specified, Effective Start Date must be <= Effective End Date. If both are specified, Effective Start Date must be <= Change Date/Time.	Previous Well Name
Elevation	NUMBER(7,2)	elevation	The elevation of a point on or near a well (ft or m above mean sea level). The information comes from the Well_Elevation table.	Well Elevation, Well Elevation Change
Elevation Begin Date	DATE	elev_begin_date	The date that this elevation measurement became effective. Format is: MM/DD/YYYY HH24:MI:SS (24-hour clock).	Well Elevation, Well Elevation Change
Elevation Change Description	CHAR(240)	elev_change_desc	A description of the physical changes to the casing that resulted in a change in the point on the well from which the reference elevation is measured.	Well Elevation, Well Elevation Change
Elevation Description	CHAR(240)	elev_desc	A description of the location of the reference point on the well.	Well Elevation, Well Elevation Change

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FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Elevation End Date	DATE	elev_end_date	The date that this elevation measurement ceased to be applicable. Format is: MM/DD/YYYY HH24:MI:SS (24-hour clock).	Well Elevation, Well Elevation Change
Elevation Inspection Method	CHAR(15)	elev_inspection_mthd	The method used to inspect the casing of the well.	Well Elevation, Well Elevation Change
Elevation Survey Num	CHAR(10)	elev_survey_num	The number of the survey that established the elevation for the well.	Well Elevation, Well Elevation Change
Elevation System	CHAR(10)	elev_system	Code indicating type of measurement system used to measure elevation.	Well Elevation, Well Elevation Change
Elevation Type	CHAR(3)	elev_type	Type of elevation measurement.	Well Elevation, Well Elevation Change
Elevation Verification Date	DATE	elev_verification_date	The date that this elevation was verified. Format is MM/DD/YYYY.	Well Elevation, Well Elevation Change
Elevation Verified By	CHAR(3)	elev_verified	Initials of the person who verified the elevation measurement.	Well Elevation, Well Elevation Change
End Date	DATE	expected_saf_end_date	Date when the sampling team expects to complete sampling. Format is MM/DD/YYYY.	Sample Authorization
End Date	DATE	expected_task_end_date	The date when the task is expected to end. Format is MM/DD/YYYY.	Task
End Flow Rate	NUMBER	end_flow_rate	The flow rate at the end of the sampling period.	Air Monitoring Sample, SW Sample
Eng Change Request Num	CHAR(80)	eng_change_request_num	Request number associated with modifications to be made to the casing.	Well, Well Change
Equivalent Analysis Method ID	CHAR(10)	equiv_anal_mthd_id	A system-assigned ID for a unique combination of Analysis Protocol, Analysis Class, Analysis Technique, and Test Procedure. ID represents an equivalent analysis method used by a laboratory.	Analysis Method Equivalent
Evaluation Date/Time	DATE	eval_date_time	Date and time field evaluation or laboratory sieve analysis was conducted. Format is MM/DD/YYYY HH:MI:SS (24-hour clock).	Particle

FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Exposure Hours	NUMBER	expose_hours	The number of hours that the sampling media was exposed.	Air Monitoring Sample
Extraction	CHAR(4)	extraction	Method of extracting the compound from the sample matrix that was amenable to gas chromatography.	Air Monitoring Result, Air Monitoring Result Change, Biota Result, Biota Result Change, GW Result, GW Result Change, Soil Result, Soil Result Change, SW Result, SW Result Change
Facility	CHAR(15)	fac_id	The building or structure involved with producing, processing (e.g., treating, sorting, packaging), or storing waste material.	Sample Authorization
Factor	NUMBER	factor	The numeric constant used to transform the initial units to the final units.	Unit Conversion
Field Gravel Percent	NUMBER(5,2)	field_gravel_pcmt	Geologist field estimate for percentage of sample composed of particles with a diameter greater than 2 mm. Format is 99.99. If specified, value must be between 0 and 100.	Particle
Field Log ID	CHAR(14)	field_log_id	The identification for the log book containing additional notes.	Air Monitoring Sample, Biota Sample, GW Sample, SIDEF, Soil Sample, SW Sample
Field Log Page	NUMBER	field_log_page	Log book page on which notes about this sample were recorded when the sample was collected.	Air Monitoring Sample, Biota Sample, GW Sample, SIDEF, Soil Sample, SW Sample
Field Mud Percent	NUMBER(5,2)	field_mud_pcmt	Field estimate for percentage of sample composed of particles smaller than 0.0625 mm. Format is 99.99. If specified, value must be between 0 and 100.	Particle
Field Sand Percent	NUMBER(5,2)	field_sand_pcmt	Geologist field estimate for percentage of sample composed of particles with a diameter between 0.0625 and 2 mm. Format is 99.99. If specified, value must be between 0 and 100.	Particle
File ID	CHAR(240)	file_id	Disk file ID for analysis data storage. The file ID can include the full path name (such as network node name), directory hierarchy, file name, and type.	TCD Analysis

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FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Fine Pebble Percent	NUMBER(5,2)	fine_pebble_pcnt	Lab analysis or geologist field estimate for percentage of sample composed of particles with a diameter between 4 and 8 mm. Format is 99.99. If specified, value must be between 0 and 100.	Particle
Fine Pebble Weight	NUMBER(6,2)	fine_pebble_wt	Lab analysis weight (g) for particles with a diameter between 4 and 8 mm. Format is 9999.99. If specified, value must be >= 0.	Particle
Fine Sand Percent	NUMBER(5,2)	fine_sand_pcnt	Lab analysis or geologist field estimate for percentage of sample composed of particles with a diameter between .125 and .25 mm. Format is 99.99. If specified, value must be between 0 and 100.	Particle
Fine Sand Weight	NUMBER(6,2)	fine_sand_wt	Lab analysis weight (g) for particles with a diameter between .125 and .25 mm. Format is 9999.99. If specified, value must be >= 0.	Particle
Flow Rate	NUMBER	flow_rate	The flow rate of air at the discharge point.	River Characteristics
Flow Rate Units	CHAR(10)	flow_rate_units	The units associated with the Flow Rate.	Air Monitoring Sample, River Characteristics, SW Sample
Form Number	CHAR(3)	form_num	Indicates the form number from which these data came. Contains "NA" for data that do not come in on a specified form.	Air Monitoring Result, Air Monitoring Result Change, Biota Result, Biota Result Change, Constituent Verification, GW Result, GW Result Change, Soil Result, Soil Result Change, SW Result, SW Result Change
Form Type	CHAR(4)	form_type	The format of electronic deliverable used to deliver this result.	Constituent Verification
Format Type	CHAR(4)	format_type	The format of electronic deliverable used to deliver this result.	Air Monitoring Result, Air Monitoring Result Change, Biota Result, Biota Result Change, GW Result, GW Result Change, Soil Result, Soil Result Change, SW Result, SW Result Change

FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
GC Column Internal Diameter	NUMBER(4,2)	gc_column_id	The gas chromatograph (GC) column internal diameter (mm). The value must be >= 0 and <= 9.99.	Air Monitoring Result, Air Monitoring Result Change, Biota Result, Biota Result Change, GW Result, GW Result Change, Soil Result, Soil Result Change, SW Result, SW Result Change
GIS Map ID	CHAR(30)	gis_map_id	ID for Geographic Information System (GIS) overlay.	Biota Distribution
GPC Cleanup	CHAR(1)	gpc_cleanup	If gel permeation chromatography (GPC) cleanup was performed, enter "Y". If no GPC cleanup was performed, enter "N". If GPC cleanup is unknown, leave the field blank.	Air Monitoring Result, Air Monitoring Result Change, Biota Result, Biota Result Change, GW Result, GW Result Change, Soil Result, Soil Result Change, SW Result, SW Result Change
Generation Date	DATE	gen_date	Date that this specific sample number was generated by the system (or the date that it was input into the system in the case of it being a non-system-generated sample number). Format is MM/DD/YYYY.	Sample
Geologist	CHAR(20)	geologist	First and middle initials and last name of the geologist who described the sample.	Particle
Geologist	CHAR(20)	summary _geologist	First and middle initials and last name of the geologist who summarized the data and/or provided the formation name.	Geologic Summary
Gravel Basalt Percent	NUMBER(5,2)	gravel_basalt _pcnt	Estimated percentage of basalt in the gravel. Format is 99.99. If specified, value must be between 0 and 100.	Particle
Gravel Other Major Lithologies	CHAR(8)	gravel_litho	Code that identifies major mineral or rock particles other than basalt.	Particle
Gravel Roundness	CHAR(5)	gravel_roundness	Roundness is determined by using a scale. You may enter a range of angularity, for example VA-SA (meaning very angular to subangular). The code SA-A is equivalent to A-SA and should be entered as A-SA to make querying easier.	Particle
HCL Reaction	CHAR(1)	hcl_reaction	Reaction of the sample to hydrochloric acid (HCL).	Soil Sample

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FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
HMSR Number	CHAR(10)	hmsr_num	Hazardous Material Shipment Record (HMSR) number assigned to each hazardous sample.	Movement
Height Above Ground (Meters)	NUMBER(6,3)	height_agl_meters	Height above ground level (m), where the meteorologic result was measured.	Meteorologic Result
Hold Time Miss Flag	CHAR(1)	hold_time_miss_flag	Flag set by user to show that the constituent hold time was missed. If constituent hold time was missed, enter "Y"; otherwise leave the field blank.	Constituent Verification
Hole Diameter Inches	NUMBER(22,2)	hole_diam	The diameter (in.) of the borehole before installation of the casing. Format 999.99. If specified, value must be >=0. If both are specified, Hole Diameter Inches must be >= Well Diameter Inches.	Well, Well Change
Hyd Head Date/Time	DATE	hyd_date_time	The date and time at which the water level was measured. Format is MM/DD/YYYY HH:MI:SS (24-hour clock). Hyd Head Date/Time must be <= Load Date/Time.	Hydraulic Head, Hydraulic Head Change
Hydraulic Head Feet	NUMBER(7,2)	hyd_head_ft	The water level elevation (ft). This value is calculated from the reference elevation and Depth to Water. Format is 99999.99. If specified, value must be >= 0.	Hydraulic Head, Hydraulic Head Change
Hydraulic Head Meters	NUMBER(7,2)	hyd_head_meters	The water level elevation (m). This is calculated from the reference elevation and Depth to Water. Format is 99999.99. If specified, value must be >= 0.	Hydraulic Head, Hydraulic Head Change
Hydrogeologic Code	CHAR(4)	hydrogeo_code	A code used to identify the hydrogeologic unit where the hydraulic head is being measured. Used for data interpreted and correlated to surrounding geologic and hydrogeologic units. This code is specific to the Hanford Site.	Geologic Summary, Hydraulic Head, Hydraulic Head Change, Hydrogeologic Description
Hydrogeologic Unit	CHAR(120)	hydrogeo_units	A description of the hydrogeologic unit.	Hydrogeologic Description

FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Ice Chest ID	CHAR(10)	ice_chest_id	ID for an ice chest used to transport samples between the field and the laboratory.	Movement
Ice Chest Temperature	NUMBER(6,2)	ice_chest_temp	Temperature of the ice chest when it is received at the laboratory. Format is 999.99. If specified, the value must be between -40.00 to +200.00.	Movement
Ice Chest Temperature Unit	CHAR(1)	ice_chest_temp_unit	The temperature unit for the ice chest temperature value reported.	Movement
Initial Alpha Reading	NUMBER(4)	initial_alpha_reading	The initial Alpha reading taken in the field.	Air Monitoring Sample
Initial Beta Reading	NUMBER(4)	initial_beta_reading	The initial Beta reading taken in the field.	Air Monitoring Sample
Initial Water Depth	NUMBER (22,2)	init_water_depth	The initial depth at which water from the target aquifer was encountered (ft below land surface). Format is 99999.99. If specified, value must be >= 0 and Initial Water Depth Units must also be specified. If both are specified, Initial Water Depth must be <= Well Completion Depth.	Well, Well Change
Initial Water Depth Units	CHAR(10)	init_water_depth_units	Units of Initial Water Depth. If specified, Initial Water Depth must also be specified.	Well, Well Change
Initial Water Elev Feet	NUMBER (22,2)	init_water_elev_ft	The initial water depth in the well expressed as an elevation (ft). This value is calculated from the land surface elevation and the Initial Water Depth. Format is 99999.99. If specified, value must be >= 0.	Well, Well Change
Initial Water Elev Meters	NUMBER (22,2)	init_water_elev_meters	The initial water depth in the well expressed as an elevation (m). This value is calculated from the land surface elevation and the Initial Water Depth. Format is 99999.99. If specified, value must be >= 0.	Well, Well Change

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FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Initials	CHAR(3)	geo_verified	Initials of geologist who verified results.	Geologic Summary
Injection Volume	NUMBER(8,1)	injection_vol	For CLP data only; must be reported in microliters. The amount of extract injected into the laboratory instrumentation that performed the analysis. Generally used for BNAs and Pesticide analysis. If specified, value must be between 0 and 99999.9. Note: If pesticides are analyzed using two GC columns in parallel (i.e., both columns are connected to the same injection port), then the injection volume must be entered as half the volume in the injection syringe. This assumes that the injection into the two columns was evenly split when it was injected into the instrument.	Air Monitoring Result, Air Monitoring Result Change, Biota Result, Biota Result Change, GW Result, GW Result Change, Soil Result, Soil Result Change, SW Result, SW Result Change
Inventory Basis	CHAR(15)	inventory_basis	Basis for the inventory results.	Tank Inventory Source
Inventory Date	DATE	inventory_date	The date associated with the tank inventory (as opposed to the publication date of the supporting document). Format is MM/DD/YYYY.	Tank Inventory, Tank Inventory Source
Inventory Quantity	NUMBER	inventory _quantity	Calculated quantity for a constituent in the specified portion of the tank.	Tank Inventory
Inventory Record Number	NUMBER	inventory_rec _num	Type of tank inventory being described.	Tank Inventory, Tank Inventory Uncertainty
Inventory Type	CHAR(30)	inventory_type	Type of tank inventory being described.	Tank Inventory
Lab Code	CHAR(6)	lab_code	Unique code for the laboratory performing the analyses.	Air Monitoring Result, Air Monitoring Result Change, Analysis Site, Biota Result, Biota Result Change, Comments, GW Result, GW Result Change, Laboratory, Laboratory Contractual Limit, Laboratory Procedure, Movement, Particle, Soil Result, Soil Result Change, SW Result, SW Result Change, TCD Analysis, TCD Analysis Result, TCD Analysis Result Change
Lab DP ID	CHAR(10)	lab_dp_id	Unique ID for a laboratory data package (DP).	Constituent Verification, Laboratory DP Sample, Laboratory Data Package

FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Lab DP Receive Date	DATE	lab_dp_receive_date	Date on which the laboratory data package (DP) was received from the laboratory. Format is MM/DD/YYYY.	Laboratory Data Package
Lab DP Transmittal Number	CHAR(10)	lab_dp_trans_num	The transmittal number used when transferring the laboratory data package (DP) to the Environmental Data Management Center (EDMC).	Laboratory Data Package
Lab DP Validation Date	DATE	lab_dp_validation_date	Date on which a laboratory data package (DP) completed validation procedures. Format is MM/DD/YYYY.	Laboratory Data Package
Lab DP Verification Date	DATE	lab_dp_verification_date	Date on which a laboratory data package (DP) completed verification procedures. Format is MM/DD/YYYY.	Laboratory Data Package
Lab Extracted Date	DATE	lab_extracted_date	The date the sample aliquot was extracted for analysis from the sample. Format is MM/DD/YYYY format.	Air Monitoring Result, Air Monitoring Result Change, Biota Result, Biota Result Change, GW Result, GW Result Change, Soil Result, Soil Result Change, SW Result, SW Result Change
Lab File ID	CHAR(14)	lab_file_id	A unique, lab-generated ID used for tracking the electronic data file containing the data associated with this result within the analysis laboratory.	Air Monitoring Result, Air Monitoring Result Change, Biota Result, Biota Result Change, GW Result, GW Result Change, Soil Result, Soil Result Change, SW Result, SW Result Change
Lab Media Type	CHAR(1)	lab_media_type	Identifies the medium to which the limit applies.	Laboratory Contractual Limit
Lab Name	CHAR(25)	lab_name	Name currently used for the analytical laboratory.	Laboratory
Lab Period	NUMBER(3)	lab_period	The time that a laboratory has to return the result before it is considered late. If specified, Lab Period Units must also be specified.	Laboratory Contractual Limit
Lab Period Units	CHAR(5)	lab_period_unit	The unit associated with the lab period. If specified, Lab Period must also be specified.	Laboratory Contractual Limit

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FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Lab Procedure	CHAR(10)	lab_proc_id	The laboratory's unique identifier (ID) for the analytical procedure.	Laboratory Procedure
Lab Receipt Date	DATE	lab_receipt_date	Date the analysis laboratory received a set of samples (data package) grouped by a chain-of-custody (COC) number. Format is MM/DD/YYYY.	Movement
Lab Received Date	DATE	lab_received_date	Date sample was received at laboratory. Format is MM/DD/YYYY.	Air Monitoring Result, Air Monitoring Result Change, Biota Result, Biota Result Change, GW Result, GW Result Change, Soil Result, Soil Result Change, SW Result, SW Result Change, TCD Sample
Lab Sample ID	CHAR(12)	lab_samp_id	Lab-specific ID for tracking of samples during analysis.	Air Monitoring Result, Air Monitoring Result Change, Biota Result, Biota Result Change, GW Result, GW Result Change, Soil Result, Soil Result Change, SW Result, SW Result Change, TCD Analysis
Lambert E/W Coordinate	NUMBER	ew_coord	The east-west half of a coordinate pair.	Entity Point Location, Entity Point Location Change, Other Coordinate Location, Other Well Location
Lambert E/W Coordinate	NUMBER(9,1)	lambert_ew_coord	The east-west half of a coordinate pair.	SIDEF
Lambert N/S Coordinate	NUMBER(9,1)	lambert_ns_coord	The north-south half of a coordinate pair.	SIDEF
Lambert N/S Coordinate	NUMBER	ns_coord	The north-south half of a coordinate pair.	Entity Point Location, Entity Point Location Change, Other Coordinate Location, Other Well Location
Large Cobble Percent	NUMBER(5,2)	large_cobble_pcmt	Geologist field estimate for percentage of sample composed of particles with a diameter between 128 and 256 mm. Format is 99.99. If specified, value must be between 0 and 100.	Particle

FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Last Photo Date	DATE	last_photo_date	Date the most recent photograph of the tank waste was taken. Format is MM/DD/YYYY.	Waste Tank Status
Level	NUMBER	tank_supernate_level	Height from the bottom of the tank (in.) at which the supernate sample was taken. If specified, value must be >= 0.	Tank Supernate Sample
Level (in. from bottom)	NUMBER	tank_segment_level	Height of the center of the segment (in.). Height is measured in relation to the bottom of the tank. If specified, value must be >= 0.	Tank Core Segment
Limit Begin Date	DATE	limit_begin_date	Date this limit became applicable. If the begin date is unknown, a default date of January 1, 1901 is used. Format is MM/DD/YYYY. If both are specified, Limit Begin Date must be <= Limit End Date.	Laboratory Contractual Limit, Regulatory Limit
Limit End Date	DATE	limit_end_date	Date this limit was superseded by another limit. A missing limit end date means the limit is still in effect. Format is MM/DD/YYYY. If both are specified, Limit End Date must be >= Limit Begin Date.	Laboratory Contractual Limit, Regulatory Limit
Limit Units	CHAR(5)	limit_units	Units associated with this limit value. If specified, Limit Value must also be specified.	Laboratory Contractual Limit, Regulatory Limit
Limit Value	NUMBER (15,5)	limit_value	The specified analysis laboratory must be able to detect concentrations of the constituent that are greater than or equal to this limit. If specified, Limit Units must also be specified.	Laboratory Contractual Limit
Liquids Volume Method	CHAR(4)	liquids_volume_method	Method used to determine the amount of liquids in the tank.	Waste Tank Status
Lithologic Classification	CHAR(7)	litho_class	Name given to sediments based on ternary diagram modified from Folk. See Environmental Investigations and Site Characterization Manual (WHC-CM-7-7, EII 9.1, Rev. 1, Westinghouse Hanford Company, Richland, WA, 1989). Also see Section 3.3.1 in the HEIS Well-based Subject Areas Manual (DOE/RL-93-24-4, U.S. Department of Energy, Richland Operations Office, Richland, WA, 1994).	Particle

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FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Load Date	DATE	load_date	Date on which this record was originally added to the database. Format is MM/DD/YYYY.	Constituent Group, Constituent Group Assignment, Constituent Verification, TCD Analysis Result, TCD Analysis Result Change
Load Date/Time	DATE	load_date_time	Date and time this record was originally added to the database. Format is MM/DD/YYYY HH:MI:SS (24-hour clock).	Air Monitoring Result, Air Monitoring Result Change, Biota Result, Biota Result Change, GW Result, GW Result Change, Hydraulic Head, Hydraulic Head Change, SDEF, Soil Result, Soil Result Change, SW Result, SW Result Change, Well, Well Change
Log Custodian	CHAR(20)	log_custodian	The person responsible for maintaining the log.	Well Log Location
Log ID	CHAR(20)	log_id	ID of the log book in which notes about this sample are recorded.	TCD Sample
Log Location	CHAR(240)	log_loc	The place the log is stored.	Well Log Location
Log Page	CHAR(10)	log_page	Log book page on which notes about this sample are recorded.	TCD Sample
Long Name	CHAR(60)	con_long_name	Name used for reporting purposes. The name comes from the Chemical Abstract Services (CAS) listing, if possible.	Constituent
Master Sample Flag	CHAR(1)	master_samp_flag	Identifies a sample number that is master (or parent) to Related Sample Numbers. The master sample number is at the top of a group of related sample numbers arranged in a hierarchical structure. Related samples, known as children samples, include associates, replicates, and splits. If this is the master sample in a group, enter "Y"; otherwise leave the field blank.	Air Monitoring Sample, Biota Sample, GW Sample, SDEF, Soil Sample, SW Sample
Max Allowable Waste Height	NUMBER(4,1)	max_allowable_waste_height	Maximum allowable waste fill height (ft) in the tank. Format is 999.9. If specified, value must be > 0.	Waste Tank
Maximum Permissible Limit	NUMBER(15,5)	max_permissible_limit	The maximum concentration of the constituent that a particular medium can have and still be in compliance with the regulation.	Regulatory Limit

FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Measurement Group	CHAR(3)	measurement_group	The organization that measured the hydraulic head.	Hydraulic Head, Hydraulic Head Change
Measurement Procedure	CHAR(30)	measurement_procedure	The procedure used to measure the Flow Rate.	Hydraulic Head, Hydraulic Head Change
Measurement Technique	CHAR(10)	measurement_technique	Method used to measure the depth to water.	Hydraulic Head, Hydraulic Head Change
Media	CHAR(3)	media	Code to identify the type of sample.	Regulatory Limit, Sample
Media	CHAR(3)	sidef_media	Code to identify the type of sample.	SIDEF
Medium Sand Percent	NUMBER(5,2)	medium_sand_pcmt	Lab analysis or geologist field estimate for percentage of sample composed of particles with a diameter between .25 and .5 mm. Format is 99.99. If specified, value must be between 0 and 100.	Particle
Medium Sand Weight	NUMBER(6,2)	medium_sand_wt	Lab analysis weight (g) for particles with a diameter between .25 and .5 mm. Format is 9999.99. If specified, value must be >= 0.	Particle
Meteorologic Value Reported	NUMBER	met_value_rptd	The results associated with this meteorologic parameter.	Meteorologic Result
Min Detectable Activity	NUMBER	min_detectable_activity	Minimum Detectable Activity (MDA) is the minimum value that may be detected by the instrument. It is assumed to be a sample-dependent estimate, typically dependent on the measured instrument background and sample yield.	Air Monitoring Result, Air Monitoring Result Change, Biota Result, Biota Result Change, GW Result, GW Result Change, Soil Result, Soil Result Change, SW Result, SW Result Change
Minimum Valid Percent	NUMBER(2)	min_valid_pcmt	If only a portion of the samples were examined during the validation process, Minimum Valid Percent is the percentage of samples reviewed. If the Validation Level is 2 or 2A, this field must be between 0 and 99. For any other Validation Level, leave the field blank.	Air Monitoring Result, Air Monitoring Result Change, Biota Result, Biota Result Change, GW Result, GW Result Change, Soil Result, Soil Result Change, SW Result, SW Result Change
Moisture	CHAR(6)	moisture	Percentage of moisture in the sample (preferred) or a code. Acceptable entries are a number between 0 and 100 or one of these codes: D (Dry), M (Moist), W (Wet).	Soil Sample

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FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Moisture Decanted	CHAR(1)	moisture_dec	Indicates whether the sample was decanted before the Percent Moisture was determined. If decanted, enter "Y". If not, enter "N". If decanting is unknown, leave the field blank.	Biota Result, Biota Result Change, Soil Result, Soil Result Change
Molecular Formula	CHAR(50)	molecular _formula	Molecular formula of the constituent.	Constituent
Monitoring Reason	CHAR(240)	monitoring _reason	Reason the sample is being collected.	Air Monitoring Sample
Movement Number	CHAR(10)	movement_num	Unique identifier assigned to one or more samples for tracking their chain of custody (COC).	Movement, Movement Sample Assignment
Movement Number Organization	CHAR(20)	movement_num_org	The organization in which the chain-of-custody (COC) identification schema is implemented.	Movement, Movement Sample Assignment
Mud Weight	NUMBER(6,2)	mud_wt	Weight (g) from lab analysis. Format is 9999.99. If specified, value must be >= 0.	Particle
Name	CHAR(60)	ag_area_name	Official aggregate area name.	Aggregate Area
Name	CHAR(60)	formation_name	Name of major geologic formation (i.e., Ringold or Hanford).	Geologic Summary
Name	CHAR(60)	oper_unit_name	Official operable unit name.	Operable Unit
Name	CHAR(60)	proj_name	Official project name.	Project
Name	CHAR(60)	result_group _name	User-assigned descriptive name for a result group.	TCD Result Group
Name	CHAR(25)	seal_type_name	Short description of seal/fill.	Seal Type
Name	CHAR(25)	site_name	Official site name.	Site
Name	CHAR(60)	station_name	Unique name used to identify the station. For station names entered into HEIS before use in the field, no restriction on the name is necessary. Station names assigned in the field (not preassigned in the HEIS database) must contain the sample number of the first sample taken at the station. For example, "VERNITA BRIDGE" could be a preassigned station name, and BY 699-S14-E13 B00090" could be a station name assigned in the field.	Meteorologic Station

FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Name	CHAR(30)	tank_farm_name	Name given to the tank farm.	Tank Farm
Name Change	CHAR(1)	name_change	Flag indicating if well has had another name at some point. A "Y" indicates that this is true; otherwise, leave the field blank.	Well, Well Change
Number TICs Found	NUMBER(2)	num_tics_found	The number of tentatively identified compounds (TIC) found during the analysis that generated this result.	Air Monitoring Result, Air Monitoring Result Change, Biota Result, Biota Result Change, GW Result, GW Result Change, Soil Result, Soil Result Change, SW Result, SW Result Change
Number of Samples	NUMBER(4)	num_of_samp	Number of samples projected during the sampling/round effort. Used to assist the laboratory in scheduling the analysis.	Sample Authorization
OPCF Number	CHAR(15)	opcf_num	Offsite Property Control Form (OPCF) number for nonhazardous shipments.	Movement
ORSR Number	CHAR(10)	orsr_num	Off-site Radioactive Shipment Record (ORSR) number for radioactive shipments.	Movement
Offsite	CHAR(1)	off_site_flag	Indicates whether the analysis site is on the Hanford Site. If yes, enter "Y"; otherwise enter "N".	Analysis Site
Online Date From	DATE	online_date	Date when meteorologic station went online.	Meteorologic Station
Open Interval	CHAR(240)	open_interval	A description of the interval that is perforated or screened and allows water into the well.	Hydraulic Head, Hydraulic Head Change
Operable Unit	CHAR(15)	oper_unit_id	Unique code to identify an operable unit, as defined in the Tri-Party Agreement (see Hanford Federal Facility Agreement and Consent Order, 2 vols., as amended, Washington State Department of Ecology, U.S. Environmental Protection Agency, and U.S. Department of Energy, Olympia, WA, 1992).	Operable Unit, Sample Authorization, SDEF, Site
Operator	CHAR(3)	operator	The mathematical operation used in the conversion from initial to final units.	Unit Conversion
Operator Order	NUMBER(2)	operator_order	A number indicating the order (sequence) in which to perform the operation in the conversion from initial to final units. If multiple operations are required to complete the conversion, the operators are applied in ascending order by Operator Order.	Unit Conversion

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FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Owner ID	CHAR(50)	owner_id	Database ID of the computer project account that owns the data.	Air Monitoring Result, Air Monitoring Result Change, Air Monitoring Sample, Biota Distribution, Biota Population, Biota Result, Biota Result Change, Biota Sample, Casing Construction, Constituent Group, Constituent In Group, Drill, Driller's Log, Entity Point Location, Entity Point Location Change, Geologic Summary, GW Result, GW Result Change, GW Sample, Hydraulic Head, Hydraulic Head Change, Meteorologic Result, Meteorologic Station, Other Coordinate Location, Other Well Location, Particle, Previous Well Name, Pump, River Characteristics, Safety Criteria, Sample, Sample Assignment, Sample Group, Sample Group Element, Sample Relation, Sampling Site, Sampling Site Change, Sampling Site Composite, Seal Fill, SDEF, Soil Result, Soil Result Change, Soil Sample, SW Result, SW Result Change, SW Sample, Tank Core, Tank Core Segment, Tank Farm, Tank Inventory, Tank Inventory Source, Tank Inventory Uncertainty, Tank Supernate Sample, TCD Analysis, TCD Analysis Result, TCD Analysis Result Change, TCD Result Group, TCD Result Group Element, TCD Sample, Waste Tank, Waste Tank Status, Well, Well Assignment, Well Change, Well Log Location, Well Screen
Pan Percent	NUMBER(5,2)	pan_pcmt	Lab estimate for pan percent.	Particle
Pan Weight	NUMBER(6,2)	pan_wt	Weight (g) from lab analysis. Format is 9999.99. If specified, value must be >= 0.	Particle
Parameters Monitored For	CHAR(150)	parameters_monitored_for	Types of constituents for which the site is being monitored.	Air Monitoring Sample

FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Parent Result Group	CHAR(20)	parent_result_group_id	Name of the previously defined result group to which the current result group belongs. The default is ROOT if the result group has no parent.	TCD Result Group
Parent Sample Group	CHAR(30)	parent_samp_group_id	Name of the previously defined sample group to which the current sample group belongs. The default is ROOT if the sample group has no parent.	Sample Group
Parent Table	CHAR(30)	parent_table	TCD source table (if any) in which this sample belongs.	TCD Sample
Pattern Code	CHAR(5)	pattern_code	Geologic classification code for the interval.	Driller's Log
Pebble Percent	NUMBER(5,2)	pebble_pcmt	Lab analysis or geologist field estimate for percentage of sample composed of particles with a diameter between 8 and 16 mm.	Particle
Pebble Weight	NUMBER(6,2)	pebble_wt	Lab analysis weight (g) for particles with a diameter between 8 and 16 mm. Format is 9999.99. If specified, value must be >= 0.	Particle
Percent Moisture Decanted	NUMBER(2)	pcmt_moisture_dec	An approximation of the percentage by weight of water in a sample determined by drying an aliquot of sample at 105 degree C until constant weight is achieved. If specified, must be between 0 and 100.	Biota Result, Biota Result Change, Soil Result, Soil Result Change
Percent Solids	NUMBER(5,1)	pcmt_solids	The proportion of solids in a soil/sediment sample determined by drying an aliquot sample at 105 degrees C until constant weight is achieved. Required for solid samples only. If specified, must be between 0 and 100.0.	Biota Result, Biota Result Change, Soil Result, Soil Result Change
Phase	CHAR(1)	phase	Physical type of sample.	TCD Sample
Phone Number	CHAR(15)	phone_num	Phone number and extension.	Analysis Site, Laboratory
Piezometer Status	CHAR(1)	piezometer_flag	A code indicating if this well is a piezometer tube or contains one or more piezometer tubes.	Well, Well Change

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FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Point Identifier	CHAR(20)	point_identifier	Identifier for a location where samples are taken. Point Identifier Type specifies what type of location this is. For physical structures such as wells, the Point Identifier is the name of the structure. When samples taken over time are to be related to the same location, Point Identifier names the location. For grab samples (when same sample location will only be used once), Point Identifier is the HEIS Sample Number for the sample taken.	Entity Point Location, Entity Point Location Change, Other Coordinate Location
Point Identifier Type	CHAR(30)	point_identifier_type	Code that identifies the type of object being located.	Entity Point Location, Entity Point Location Change, Other Coordinate Location
Procedure Begin Date	DATE	procedure_begin_date	The date the laboratory began reporting data using this Lab Procedure.	Laboratory Procedure
Procedure End Date	DATE	procedure_end_date	The date the laboratory stopped reporting data using this Lab Procedure.	Laboratory Procedure
Procedure Name	CHAR(60)	procedure_name	Name of the laboratory procedure.	Laboratory Procedure
Project ID	CHAR(15)	proj_id	Unique ID for the project.	Constituent Verification, Project, Sample, Sample Authorization, Task
Project Leader	CHAR(20)	project_lead	First and middle initials and last name of the person responsible for sample collection.	Air Monitoring Sample, Biota Sample, GW Sample, SIDEF, Soil Sample, SW Sample
Project Manager	CHAR(20)	proj_mgr	First and middle initials and last name of the project manager.	Project
Project Name	CHAR(20)	project_name	Name of the project that sponsored the construction of the well or that the well is associated with.	Well, Well Change
Protocol	CHAR(10)	task_protocol	The analytical protocol defined by the task for which the analytical laboratory must perform the sample analysis.	Task
Pump Depth	NUMBER(7,2)	pump_depth	Depth of the pump inlet below the reference point. If specified, value must be between -9999.99 and 99999.99, and Pump Depth Units must also be specified.	Pump

FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Pump Effective Date	DATE	pump_effective_date	Date the pump was installed. Format is MM/DD/YYYY. If specified, value must be <= current system date.	Pump
Pump Elevation Feet	NUMBER(7,2)	pump_elev_ft	Depth of the pump inlet expressed as an elevation (ft). This value is calculated from the reference elevation and the Pump Depth.	Pump
Pump Elevation Meters	NUMBER(7,2)	pump_elev_meters	Depth of the pump inlet expressed as an elevation (m). This value is calculated from the reference elevation and the Pump Depth.	Pump
Pump Equipment Tracking Number	CHAR(20)	pump equip_tracking_num	The DOE number attached to the pump.	Pump
Pump Number	NUMBER	pump_num	Unique identifier for the pump.	Air Monitoring Sample
Pump Type	CHAR(1)	pump_type	Type of pump that was installed in the well.	Pump
Pump Unit	CHAR(10)	pump_depth_units	The distance units assigned to the Pump Depth. If specified, the Pump Depth must also be specified.	Pump
Pumpable Liquid Volume Remaining	NUMBER(5,1)	pumpable_liq_vol_remaining	Amount of pumpable liquid remaining in the tank after jet pumping (kgal). Format is 9999.9. If specified, value must be >= 0.	Waste Tank Status
Purge Water Dump	CHAR(1)	purge_water_dump	Indicates whether water purged from the well may be dumped on the ground or whether it must be contained. Enter "N" if the water must be contained; leave the field blank if the water may be dumped.	Well, Well Change
Qualifiers	CHAR(6)	qualifier	A combination of one or more codes that signify the quality of the resulting data. Different format types (e.g., CLP or LAS) and different forms within these format types have different combinations of valid qualifiers. Qualifiers are provided by both the analytical laboratories and data validators. See Appendix B of the HEIS Subject Area Reference Manual (DOE/RL-93-24-3, U.S. Department of Energy, Richland Operations Office, Richland WA, 1994) for a complete listing of the codes and their meanings for each format type and form.	Air Monitoring Result, Air Monitoring Result Change, Biota Result, Biota Result Change, GW Result, GW Result Change, Soil Result, Soil Result Change, SW Result, SW Result Change

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FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Qualifiers	CHAR(6)	tcd_result_qualifiers	A combination of one or more codes that signify the quality of the resulting data. Qualifiers are provided by the analytical laboratories, data validators, or both. See Appendix A of the HEIS TCD Subject Area Manual (DOE/RL-93-24-8, U.S. Department of Energy, Richland Operations Office, Richland WA, 1994) for a complete listing of the codes and their meaning.	TCD Analysis Result, TCD Analysis Result Change
Radiation Level	CHAR(15)	rad_level	The level of radiation detected.	Sampling Site, Sampling Site Change
Radioactive Contamination	NUMBER(7)	rad_contam	Indicates the disintegrations per minute if radioactive contamination is detected.	Soil Sample
Receive Lab DP Trans Date	DATE	receive_lab_dp_trans_date	Date on which the Environmental Data Management Center (EDMC) receives the laboratory data package (DP). Format is MM/DD/YYYY.	Laboratory Data Package
Recommended Purge Volume	NUMBER(22)	recommended_purge_volume	The volume of water (gal) that should be purged from the well before a sample is taken.	Well, Well Change
Reference Document	CHAR(10)	ref_doc	Identifier for the reference document that contains the described regulatory limit. See References in the HEIS User's Guide (DOE/RL-93-24-1, U.S. Department of Energy, Richland Operations Office, Richland, WA, 1994).	Regulatory Limit
Regulating Agency	CHAR(4)	regulating_agency	Acronym for the agency that established the limit.	Regulatory Limit
Regulatory Limit Program	CHAR(20)	reg_limit_program	Name of the program using this regulatory limit.	Regulatory Limit
Related Sample Number	CHAR(12)	related_samp_num	For other than TCD: A group of samples may be related as replicates, splits, or associates (such as filtered and unfiltered). The Related Sample Number is the sample number used to connect a set of related sample numbers within the database. The Related Sample Number belongs to this group and is picked arbitrarily. If this field is specified, a Related Sample Type must also be specified. For TCD: Unique number to identify a sample that has a defined relationship to another sample.	Air Monitoring Sample, Biota Sample, GW Sample, Sample Relation, SIDEF, Soil Sample, SW Sample

FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Related Sample Type	CHAR(1)	related_samp _type	Indicates the relationship between the current sample and the sample identified in the Related Sample Number field. If this field is specified, a Related Sample Number must also be specified.	Air Monitoring Sample, Biota Sample, GW Sample, SIDEF, Soil Sample, SW Sample
Relationship	CHAR(30)	relationship	Explanation of the association of two samples; a relationship to help in the interpretation of why two samples are associated.	Sample Relation
Reported Date/Time	DATE	rptd_date_time	Date and time for which the result is reported. For example, the value 1/1/90 2:00 reports the results occurring between 1/1/90 1:00 and 1/1/90 2:00, if the averaging period is one hour. The time value of 23:59:59 represents the results occurring between 23:00:00 and 24:00:00. Format is MM/DD/YYYY HH:MI:SS (24-hour clock).	Meteorologic Result
Result Comment	CHAR(240)	result_comment	Comment about the result.	Air Monitoring Result, Air Monitoring Result Change, Biota Result, Biota Result Change, GW Result, GW Result Change, Soil Result, Soil Result Change, SW Result, SW Result Change
Result Group ID	CHAR(20)	result_group_id	Unique ID for a group of results, assigned by the user.	TCD Result Group, TCD Result Group Element
Result Received Date	DATE	result_received _date	Date on which laboratory result was received by the requestor. Format is MM/DD/YYYY.	Air Monitoring Result, Air Monitoring Result Change, Biota Result, Biota Result Change, GW Result, GW Result Change, Soil Result, Soil Result Change, SW Result, SW Result Change
Result Reference Number	NUMBER(34)	rrn	A system-assigned unique identifier for an analysis result record.	Air Monitoring Result, Air Monitoring Result Change, Biota Result, Biota Result Change, GW Result, GW Result Change, Soil Result, Soil Result Change, SW Result, SW Result Change, TCD Analysis Result, TCD Analysis Result Change, TCD Result Group Element

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FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Retention Time	NUMBER(6,2)	retention_time	The time from initiation of the gas chromatograph (GC) run to elution of the constituent. The value must be between 0 and 9999.99.	Air Monitoring Result, Air Monitoring Result Change, Biota Result, Biota Result Change, GW Result, GW Result Change, Soil Result, Soil Result Change, SW Result, SW Result Change
Review Flag	CHAR(6)	review_flag	A set of one or more codes indicating that the quality of the result is or has been questioned by the validator. Each character represents a different flag. Examining the individual codes will reveal whether the result is still under review or if the review has been completed.	Air Monitoring Result, Air Monitoring Result Change, Biota Result, Biota Result Change, GW Result, GW Result Change, Soil Result, Soil Result Change, SW Result, SW Result Change
Round Number	NUMBER(3)	round_num	Identifies the round of sampling within a sampling authorization effort.	Constituent Group Assignment, Constituent Verification, Sample, Sample Matrix, Sample Authorization
SA Number	CHAR(10)	saf_num	Sample authorization (SA) number that uniquely identifies a sampling effort.	Constituent Group Assignment, Constituent Verification, Sample, Sample Matrix, Sample Authorization
SA Title	CHAR(20)	saf_title	Title (or name) given to a sampling authorization (SA) effort.	Sample Authorization
SAS Number(Special Analytical Services)	CHAR(6)	sas_num	Special Analytical Services (SAS) number. Used if other than routine analytical services are requested.	Air Monitoring Result, Air Monitoring Result Change, Biota Result, Biota Result Change, GW Result, GW Result Change, Soil Result, Soil Result Change, SW Result, SW Result Change
SDG Number (Sample Delivery Group)	CHAR(6)	sdg_num	Sample delivery group (SDG) number. A laboratory-assigned number that identifies the batch of samples analyzed together.	Air Monitoring Result, Air Monitoring Result Change, Biota Result, Biota Result Change, GW Result, GW Result Change, Soil Result, Soil Result Change, SW Result, SW Result Change
SOW Number (Statement of Work)	CHAR(5)	sow_num	Identifies the statement of work (SOW) under which the analysis was accomplished.	Air Monitoring Result, Air Monitoring Result Change, Biota Result, Biota Result Change, GW Result, GW Result Change, Soil Result, Soil Result Change, SW Result, SW Result Change

FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Safety Category	CHAR(30)	safety_category	Type of safety issue to which the limit value pertains.	Safety Criteria
Safety Criteria Value	NUMBER	safety_criteria_value	Limiting value for a specific constituent associated with a safety category. Any deviation from this value may place the associated tank on a tank watch list.	Safety Criteria
Safety Units	CHAR(10)	safety_criteria_units	Engineering units associated with the safety criteria value.	Safety Criteria
Saltcake Volume	NUMBER(4)	saltcake_volume	Amount of saltcake in the tank (kgal). If specified, value must be >= 0.	Waste Tank Status
Samp Site Part ID	NUMBER	samp_site_part_id	The ID of a Sampling Site defined to be part of a composite Sampling Site. The identity of the composite Sampling Site can be found in the Sample Site ID field. For example, a composite Sampling Site could be a collection of farms. The Samp Site Part ID is the Sample Site ID of one of the farms.	Sampling Site Composite
Sample Aliquot Size	NUMBER	samp_aliquot_size	The size of the sample on which analysis was performed. The word "aliquot" is used to denote the portion of the sample used for analysis. If specified, the value must be >= 0, and the Sample Aliquot Size Units must also be specified.	Air Monitoring Result, Air Monitoring Result Change, Biota Result, Biota Result Change, GW Result, GW Result Change, Soil Result, Soil Result Change, SW Result, SW Result Change
Sample Aliquot Units	CHAR(10)	samp_aliquot_units	The units in which the Sample Aliquot Size is reported. If the units are specified, the Sample Aliquot Size must also be specified.	Air Monitoring Result, Air Monitoring Result Change, Biota Result, Biota Result Change, GW Result, GW Result Change, Soil Result, Soil Result Change, SW Result, SW Result Change
Sample Assignment ID	CHAR(15)	samp_assign_id	Contains either an aggregate area ID, an operable unit ID, a site ID, or a project ID depending on the Sample Assignment type.	Sample Assignment
Sample Assignment Type	CHAR(4)	samp_assign_type	Type of entity to which the sample is assigned.	Sample Assignment
Sample Contract	CHAR(20)	samp_contract	Identifier of the contract under which the analysis was performed.	Air Monitoring Result, Air Monitoring Result Change, Biota Result, Biota Result Change, GW Result, GW Result Change, Soil Result, Soil Result Change, SW Result, SW Result Change

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FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Sample Date/Time	DATE	samp_date_time	Date and time of sample collection. Format is MM/DD/YYYY HH:MI:SS (24-hour clock).	GW Result, GW Result Change, GW Sample, River Characteristics, Soil Sample, SW Result, SW Result Change, SW Sample, TCD Sample
Sample Date/Time Off	DATE	samp_date_time _off	Date and time sample collection ended. Format is MM/DD/YYYY HH:MI:SS (24-hour clock). If the sample was collected at a discrete time, record the time here.	Air Monitoring Sample, Biota Sample, SIDEF
Sample Date/Time On	DATE	samp_date_time _on	Date and time sample collection started. Format is MM/DD/YYYY HH:MI:SS (24-hour clock). Field is left blank if the sample was collected at a discrete time.	Air Monitoring Sample, Biota Sample, SIDEF
Sample Filtered	CHAR(1)	samp_filtered	Indicates whether the sample was filtered or not. Enter "Y" if the sample was filtered and "N" if it was not.	GW Result, GW Result Change, GW Sample, SIDEF, SW Result, SW Result Change, SW Sample
Sample Group ID	CHAR(30)	samp_group_id	Unique ID for a group of samples, assigned by the user.	Sample Group, Sample Group Element
Sample Group Name	CHAR(80)	samp_group_name	User-assigned descriptive name for a sample group.	Sample Group
Sample ID	CHAR(12)	tank_supernate _sample_id	ID for the sample as recorded in the log book.	Tank Supernate Sample
Sample Interval Bottom	NUMBER(7,2)	samp_interval _bottom	Depth for the bottom of the sample interval. If specified, the value must be between 0 and 9999.99, and Sample Interval Units must be specified. If both are specified, Sample Interval Top must be <= Sample Interval Bottom.	Driller's Log, GW Sample, Particle, SIDEF, Soil Sample
Sample Interval Top	NUMBER(7,2)	samp_interval _top	Depth for the top of the sample interval. If specified, value must be between 0 and 9999.99, and Sample Interval Units must be specified. If both are specified, Sample Interval Top must be <= Sample Interval Bottom.	Driller's Log, GW Sample, Particle, SIDEF, Soil Sample
Sample Interval Units	CHAR(30)	samp_interval _units	Units of the sampled interval. If a unit is specified, either Sample Interval Top or Sample Interval Bottom must also be specified.	Driller's Log, GW Sample, Particle, SIDEF, Soil Sample

FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Sample Location	CHAR(30)	samp_loc	Location or area of sampling activities.	Sample Authorization
Sample Matrix Code	CHAR(10)	samp_matrix_code	Code to identify the sample media expected in a sampling effort.	Air Monitoring Result, Air Monitoring Result Change, Biota Result, Biota Result Change, GW Result, GW Result Change, Sample Matrix, Soil Result, Soil Result Change, SW Result, SW Result Change
Sample Method	CHAR(20)	samp_mthd	Method used to obtain the sample.	Air Monitoring Sample, Biota Sample, GW Sample, Soil Sample, SW Sample
Sample Number	CHAR(12)	samp_num	Unique HEIS-generated identifier for a sample.	Air Monitoring Result, Air Monitoring Result Change, Air Monitoring Sample, Biota Distribution, Biota Population, Biota Result, Biota Result Change, Biota Sample, Constituent Group Assignment, Constituent Verification, GW Result, GW Result Change, GW Sample, Laboratory DP Sample, Movement Sample Assignment, Sample, Sample Assignment, Sample Group Element, Sample Relation, SIDEF, Soil Result, Soil Result Change, Soil Sample, SW Result, SW Result Change, SW Sample, Tank Core Segment, Tank Supernate Sample, TCD Analysis, TCD Analysis Result, TCD Analysis Result Change, TCD Sample
Sample Part	CHAR(8)	samp_part	Class of chemical analyses to which this result belongs.	Air Monitoring Result, Air Monitoring Result Change, Biota Result, Biota Result Change, GW Result, GW Result Change, Soil Result, Soil Result Change, SW Result, SW Result Change
Sample Portion	CHAR(20)	samp_portion	Description of where the current sample was taken from the segment.	TCD Sample
Sample Preparation Date/Time	DATE	samp_prep_date _time	Date and time of sample preparation. Format is MM/DD/YYYY HH:MI:SS (24-hour clock).	TCD Analysis

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FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Sample Priority	NUMBER(2)	samp_priority	Defines for the sampling team and laboratory those projects that take precedence when conflicts exist or arise during sampling and analytical activities. Priorities, which range from 1 - 3, are for established projects, not individual samples.	Sample Authorization
Sample Priority Rank	NUMBER(2)	samp_priority_rank	<p>Rankings are dependent on the priority selected for the Samp Priority field. Tri-Party Agreement (TPA) ranking is obtained from the Hanford Federal Facility Agreement and Consent Order, Volume 2 of 2, Appendix C (Washington State Department of Ecology, U.S. Environmental Protection Agency, and U.S. Department of Energy, Olympia, Washington, 1992).</p> <p>Non-TPA ranking ranges from 1 - 4, using the following priorities: 1 = RCRA 90-day Waste (Resource Conservation and Recovery Act of 1976) 2 = Non-TPA regulatory commitments 3 = Facility process 4 = General nonregulatory information.</p>	Sample Authorization
Sample Qualifier	CHAR(2)	samp_qual	Identifies what type of quality control sample the sample is. If the sample is not a quality control sample, leave this field blank.	Air Monitoring Sample, Biota Sample, GW Sample, SIDEF, Soil Sample, SW Sample
Sample Ship Date	DATE	samp_ship_date	<p>The date on which samples were shipped to an offsite laboratory (the date the samples are delivered is used for onsite laboratories).</p> <p>Format is MM/DD/YYYY.</p>	Movement
Sample Ship Method	CHAR(20)	samp_ship_mthd	The method of shipment to an off-site laboratory.	Movement
Sample Site Description	CHAR(240)	samp_site_desc	A text description of the sampling site. This field may also contain a description of the composite area, such as "Multi-farm compositing area."	Sampling Site, Sampling Site Change
Sample Site ID	NUMBER	samp_site_id	A unique number assigned by the system for each sample site.	Air Monitoring Sample, Biota Sample, River Characteristics, Sampling Site, Sampling Site Change, Sampling Site Composite, SIDEF, Soil Sample, SW Sample

FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Sample Site Name	CHAR(40)	samp_site_name	Name given to a particular sampling site.	Sampling Site, Sampling Site Change
Sample Site Type	CHAR(30)	samp_site_type	Type of sampling site.	Sampling Site, Sampling Site Change
Sample Type	CHAR(15)	samp_type	Used to identify the source of the sample.	Air Monitoring Sample, SIDEF, SW Sample
Sample Type	CHAR(20)	tcd_samp_type	Type of tank sample.	TCD Sample
Sampled Portion	CHAR(10)	sampled_portion	Portion of the organism that was included in the sample.	Biota Sample, SIDEF
Sampler	CHAR(20)	sampler	First and middle initials and last name of the person who took or is responsible for taking the sample.	Air Monitoring Sample, Biota Sample, GW Sample, SIDEF, Soil Sample, SW Sample, TCD Sample
Sampler Code	CHAR(1)	hyd_sampler	Indicates for which contractor the person works who took the sample.	Hydraulic Head, Hydraulic Head Change
Sampler Elevation	NUMBER	sampler _elevation	Elevation of the sampler. If specified, value must be >= 0 and Sampler Elevation Units must also be specified.	Entity Point Location, Entity Point Location Change, Other Coordinate Location
Sampler Elevation Unit	CHAR(10)	sampler _elevation_unit	Units for the Sampler Elevation. If specified, Sampler Elevation must also be specified.	Entity Point Location, Entity Point Location Change, Other Coordinate Location
Sampling Begin Date	DATE	sampling_begin _date	Date this sampling activity started. Format is MM/DD/YYYY. If both are specified, Sampling Begin Date must be <= Sampling End Date.	Tank Core
Sampling End Date	DATE	sampling_end _date	Date this sampling activity was completed. Format is MM/DD/YYYY. If both are specified, Sampling End Date must be >= Sampling Begin Date.	Tank Core
Sampling Group Accept Date	DATE	samp_grp_accept _date	Date on which the sampling group accepted the responsibility for the task's sampling effort. The date also indicates to the task manager that the task requirements, as determined by the sampling group, have been identified in the sample plan. Format is MM/DD/YYYY.	Task

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FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Sampling Group Assigned	CHAR(20)	samp_grp_asgned	Defines which sampling group is responsible for the task's sampling effort.	Task
Sampling Task Coordinator	CHAR(30)	samp_task_coord	The person or organization responsible for coordinating the sampling effort with the laboratories. An entry also indicates to the task manager that the manager's task requirements have been recognized by the coordinator.	Task
Sand Other Major Lithologies	CHAR(8)	sand_other_major _lithologies	Code that identifies other major mineral or rock particles.	Particle
Sand Percent Mafic	NUMBER(5,2)	sand_mafic_pcnt	Estimated percentage of the sand composed of one or more ferro-magnesian, dark-colored minerals. Format is 99.99. If specified, value must be >= 0.	Particle
Sand Roundness	CHAR(5)	sand_roundness	Roundness is determined by using a scale. You may enter a range of angularity, for example VA-SA (meaning very angular to subangular). The code SA-A is equivalent to A-SA and should be entered as A-SA to make querying easier.	Particle
Schedule Label Code	CHAR(1)	sched_label_code	Scheduling Code for sampling site.	Sampling Site, Sampling Site Change
Screen Bottom Depth	NUMBER(7,2)	screen_bottom _depth	Depth to the bottom of the screen measured from the land surface. Format is 99999.99. If specified, value must be >= 0.01, and Screen Units must be specified. If both are specified, Screen Bottom Depth must be >= Screen Top Depth.	Well Screen
Screen Bottom Elevation Feet	NUMBER(7,2)	screen_bottom _elev_ft	Elevation of the bottom of the screen (ft). This value is calculated from the land surface elevation and the Screen Bottom Depth.	Well Screen
Screen Bottom Elevation Meters	NUMBER(7,2)	screen_bottom _elev_meters	Elevation of the bottom of the screen (m). This value is calculated from the land surface elevation and the Screen Bottom Depth.	Well Screen

FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Screen Comment	CHAR(240)	screen_comment	Comment about the well screen.	Well Screen
Screen Diameter	NUMBER(5,2)	screen_diam	Nominal inner diameter of the screen. Format is 99999.99. If specified, value must be >= 0.01.	Well Screen
Screen Length	NUMBER(7,2)	screen_length	Length of the interval in the well that has been screened (in ft or m). Format is 99999.99. If specified, value must be >= 0.01.	Well Screen
Screen Slot Size	NUMBER(2)	screen_slot_size	Slot size of the well screen (thousandths of an in., i.e., 10/1000 is written as 10). If specified, value must be between 1 and 99.	Well Screen
Screen Top Depth	NUMBER(7,2)	screen_top_depth	Depth of the top of the screen measured from land surface. Format is 99999.99. If specified, value must be >= 0.01, and Screen Units must be specified. If both are specified, Screen Top Depth must be <= Screen Bottom Depth.	Well Screen
Screen Top Elevation Feet	NUMBER(7,2)	screen_top_elev _ft	Elevation of the top of the screen (ft). This value is calculated from the land surface elevation and the Screen Top Depth.	Well Screen
Screen Top Elevation Meters	NUMBER(7,2)	screen_top_elev _meters	Elevation of the top of the screen (m). This value is calculated by the system from the land surface elevation and the Screen Top Depth.	Well Screen
Screen Type	CHAR(40)	screen_type	Short description of the type of screen, such as stainless steel or telescoping. If the data describe a perforated interval rather than a screen, enter "PERFORATED."	Well Screen
Screen Unit	CHAR(10)	screen_units	The distance units assigned to the Screen Bottom Depth, Screen Top Depth, and Screen Length.	Well Screen
Seal Bottom Depth Feet	NUMBER(7,2)	seal_bottom _depth	Depth of the seal/fill bottom, below land surface. Format is 99999.99. If specified, value must be >= 0.01, and Seal Depth Units must also be specified. If both are specified, Seal Bottom Depth must be >= Seal Top Depth.	Seal Fill

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FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Seal Bottom Elevation Feet	NUMBER(7,2)	seal_bottom_elev _ft	The bottom elevation of the seal/fill (ft). This value is calculated from the land surface elevation and the Seal Bottom Depth.	Seal Fill
Seal Bottom Elevation Meters	NUMBER(7,2)	seal_bottom_elev _meters	The bottom elevation of the seal/fill (m). This value is calculated from the land surface elevation and the Seal Bottom Depth.	Seal Fill
Seal Comment	CHAR(240)	seal_comment	Additional information that will further describe the seal/fill.	Seal Fill
Seal Depth Unit	CHAR(10)	seal_depth_units	The distance units assigned to the Seal Bottom Depth and Seal Top Depth. If specified, either the Seal Top Depth or the Seal Bottom Depth must also be specified.	Seal Fill
Seal Top Depth Feet	NUMBER(7,2)	seal_top_depth	Depth of the seal/fill top, below land surface. Format is -9999.99 and 99999.99. If specified, Seal Depth Units must also be specified. If both are specified, Seal Depth Top must be <= Seal Depth Bottom.	Seal Fill
Seal Top Elevation Feet	NUMBER(7,2)	seal_top_elev_ft	The elevation of the top of the seal/fill (ft). This value is calculated from the land surface elevation and the Seal Top Depth.	Seal Fill
Seal Top Elevation Meters	NUMBER(7,2)	seal_top_elev _meters	The elevation of the top of the seal/fill (m). This value is calculated from the land surface elevation and the Seal Top Depth.	Seal Fill
Seal Type Code	CHAR(2)	seal_type_code	Type of seal or fill used in the well.	Seal Fill, Seal Type
Sent to EDMC On	DATE	send_lab_dp_edmc _date	Date on which the laboratory data package (DP) is sent to the Environmental Data Management Center (EDMC). Format is MM/DD/YYYY.	Laboratory Data Package
Serial Number	CHAR(7)	tank_segment _serial_num	Serial log number of the tank core segment. Format is YY-9999, with "9999" being ascending numbers denoting the sequence of tank core segments obtained in a given year.	Tank Core Segment

FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Short Name	CHAR(10)	con_short_name	Abbreviation for the constituent.	Constituent
Silt Percent	NUMBER(5,2)	silt_pcmt	Lab analysis for percentage of sample composed of particles with a diameter less than 0.0625 mm. Geologist field estimate of silt, which is finer than sand and coarser than clay.	Particle
Silt Weight	NUMBER(6,2)	silt_wt	Lab analysis weight (g) for particles with a diameter less than 0.0625 mm. Format is 9999.99. If specified, value must be >= 0.	Particle
Site ID	CHAR(15)	site_id	A unique ID for a site as it exists in the Waste Information Data System (WIDS) (see WHC-MR-0056, WIDS Database Field Descriptions and Data, Rev. 0, Westinghouse Hanford Company, Richland, Washington, 1990).	Sample Authorization, SDEF, Site
Sludge Volume	NUMBER(4)	sludge_volume	Amount of sludge in the tank (kgal). If specified, value must be >= 0.	Waste Tank Status
Small Cobble Percent	NUMBER(5,2)	small_cobble_pcmt	Lab analysis or geologist field estimate for percentage of sample composed of particles with a diameter between 64 and 128 mm.	Particle
Soil Aliquot Volume	NUMBER	soil_aliquot_vol	For CLP only: The volume of the methanol extract added to the reagent water in the purge tube and analyzed, measured in microliters. If specified, the value must be >= 0.	Soil Result, Soil Result Change
Soil Extract Volume	NUMBER	soil_extract_vol	For CLP only: The total volume of the methanol extract, measured in microliters. This includes any methanol not collected from the filtration of the extract through glass wool. If specified, the value must be >= 0.	Soil Result, Soil Result Change
Soil Layer	CHAR(15)	soil_layer	Layer at which the sample is taken. Samples in the interval from 0 - 1 in. are considered surface samples. All other samples are considered subsurface.	Soil Sample
Soil Sample Number	CHAR(12)	soil_samp_num	Unique HEIS-generated identifier for a soil sample.	Particle

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FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Soil Type	CHAR(10)	soil_type	The type of soil being sampled.	Soil Sample
Solids Volume Method	CHAR(4)	solids_volume _method	Method used to determine the amount of solids in the tank.	Waste Tank Status
Solids Volume Update Date	DATE	solids_volume _update_date	Date the solids volume was updated. Format is MM/DD/YYYY.	Waste Tank Status
Sorting	CHAR(5)	sorting	Identifies the type of sorting found in the soil sample. Codes may be combined (e.g., M-P) to indicate a range of sorting.	Soil Sample
Source	CHAR(1)	geo_code_src	Person who assigned the classification.	Geologic Summary
Source Coordinate Type	CHAR(3)	source_coord _type	The source units from which the new coordinate values were calculated. Allowable sources are identified in the Valid Codes table.	Coordinate Transformation
Source Document	CHAR(30)	src_doc	Source in which the safety criteria values are documented.	Safety Criteria
Source Report Document Author	CHAR(60)	src_rpt_author	Author of the document supporting the specified tank inventory determination.	Tank Inventory Source
Source Report Document Name	CHAR(240)	src_rpt_doc_name	Name of the document supporting the specified tank inventory determination.	Tank Inventory Source
Source Report Document Number	CHAR(30)	src_rpt_doc_num	ID number associated with the document supporting the specified tank inventory determination.	Tank Inventory Source
Species	CHAR(30)	species	Latin binomial or generic name for the organism.	Biota Species
Split Weight	NUMBER(6,2)	split_wt	Weight (g) from lab analysis. Format is 9999.99. If specified, value must be >= 0.	Particle
Standard Analysis Method ID	CHAR(10)	std_anal_mthd_id	A system-assigned identifier (ID) for a unique combination of Analysis Protocol, Analysis Class, Analysis Technique, and Test Procedure representing a standard analysis method.	Analysis Method Equivalent
Start Date	DATE	expected_saf _start_date	Date when the sampling team expects to or is required to begin sampling. Used to assist the laboratory in scheduling the analysis. Format is MM/DD/YYYY.	Sample Authorization

FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Start Date	DATE	expected_task_start_date	The date when the task is expected or is required to start. Format is MM/DD/YYYY.	Task
Start Flow Rate	NUMBER	start_flow_rate	The flow rate at the beginning of the sampling period.	Air Monitoring Sample, SW Sample
State	CHAR(2)	state	Standard two-character abbreviation for the state in which the laboratory is located.	Analysis Site, Laboratory
Station Code	CHAR(10)	station_code	Unique code designating a particular meteorologic station.	Meteorologic Result, Meteorologic Station
Status	CHAR(4)	status	Code that indicates the status of the sample number.	Sample
Sulphur Cleanup	CHAR(1)	sulphur_cleanup	Used as an optional process for pesticide/arocloris. If sulphur cleanup is employed, enter "Y". If sulphur cleanup was not used, enter "N". If sulphur cleanup is unknown, leave the field blank.	Air Monitoring Result, Air Monitoring Result Change, Biota Result, Biota Result Change, GW Result, GW Result Change, Soil Result, Soil Result Change, SW Result, SW Result Change
Summary Interval Bottom	NUMBER(7,2)	summary_interval_bottom	Depth for the bottom of the summary interval (from ground surface). Format is 99999.99. If specified, Summary Interval Units must also be specified. If both are specified, Summary Interval Bottom must be >= Summary Interval Top.	Geologic Summary
Summary Interval Top	NUMBER(7,2)	summary_interval_top	Depth for the top of the summary interval (from ground surface). Format is 99999.99. If specified, Summary Interval Units must also be specified. If both are specified, Summary Interval Top must be <= Summary Interval Bottom.	Geologic Summary
Summary Interval Units	CHAR(16)	summary_interval_units	Units associated with the summary interval. If specified, either Summary Interval Top or Summary Interval Bottom must also be specified.	Geologic Summary
Supernatant Liquid Volume	NUMBER(4)	supernatant_liquid_volume	Supernatant liquid volume of waste in the tank (kgal). If specified, value must be >= 0.	Waste Tank Status

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FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Survey Number	CHAR(10)	survey_num	The identification number associated with the survey.	Entity Point Location, Entity Point Location Change, Other Coordinate Location
Survey Report Location	CHAR(240)	survey_report_location	The location of the hardcopy report from which the elevation measurement was taken.	Well Elevation, Well Elevation Change
Synonym	CHAR(40)	synonym_name	Another name for the constituent.	Constituent Synonym
Tag ID	CHAR(40)	tag_id	Identifier used to group Biota Sample Numbers when multiple samples are taken from the same physical object. For example, two separate samples, one of leaves and one of bark from the same tree, could be grouped using this identifier. This number is generated by the Surface Environmental Surveillance Scheduling system. Format is YY, Common Name, collected number.	Biota Sample
Tank Capacity	NUMBER(4)	tank_capacity	Capacity of the waste tank (kgal). If specified, value must be > 0.	Waste Tank
Tank Content Portion	CHAR(30)	tank_content_portion	Part of the tank with which the inventory value is associated. The portion varies based on the Inventory Type.	Tank Inventory
Tank Core ID	NUMBER(5)	tank_core_id	Unique ID for a core collected from a waste tank. The IDs start at one (1) for the first core collected from each tank and must be unique when combined with Tank ID and Tank Farm ID. If specified, value must be > 0.	Tank Core, Tank Core Segment
Tank Core Serial Number	NUMBER(4)	tank_core_serial_num	Serial log number of the tank core. If specified, value must be >= 0.	Tank Core
Tank Diameter	NUMBER	tank_diameter	The diameter of the waste tank (ft). If specified, value must be > 0.	Waste Tank
Tank Elevation	NUMBER(22)	tank_elevation	Elevation of the bottom of the waste tank (ft). If specified, value must be > 0.	Waste Tank

FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Tank Farm ID	CHAR(3)	tank_farm_id	Unique ID assigned to a tank farm.	Tank Core, Tank Core Segment, Tank Farm, Tank Inventory, Tank Inventory Source, Tank Supernate Sample, Waste Tank, Waste Tank Status
Tank ID	NUMBER(3)	tank_id	Unique ID assigned to a waste storage tank within a tank farm.	Tank Core, Tank Core Segment, Tank Inventory, Tank Inventory Source, Tank Supernate Sample, Waste Tank, Waste Tank Status
Tank Integrity	CHAR(1)	tank_integrity	Code to describe the integrity of the tank.	Waste Tank Status
Tank Removed from Service Date	DATE	tank_removed _from_service _date	Date the tank was removed from service. Format is MM/DD/YYYY.	Waste Tank Status
Tank Riser	CHAR(3)	tank_riser	Waste tank riser that provided access for collecting the sample(s).	Tank Core, Tank Supernate Sample
Tank Segment ID	NUMBER(2)	tank_segment_id	Unique ID for a tank segment. IDs start at one (1) for the first segment obtained from each tank core. A higher segment ID implies greater depth. If specified, must be > 0.	Tank Core Segment
Tank Slurry Volume	NUMBER(4)	tank_slurry _volume	Amount of slurry in a tank (kgal). If specified, value must be >= 0.	Waste Tank Status
Tank Specific Gravity	NUMBER	tank_specific _gravity	Specific gravity measurement made at the tank (not on a sample).	Waste Tank Status
Tank Stabilization Date	DATE	tank _stabilization _date	Date the tank was stabilized. Format is MM/DD/YYYY.	Waste Tank Status
Tank Stabilization Status	CHAR(7)	tank _stabilization _status	Code describing the status of the tank (for single-shell tanks only). If the field is blank, stabilization status is still described in the Tank Integrity field.	Waste Tank Status
Tank Use	CHAR(5)	tank_use	Tank use. For double-shell tanks only.	Waste Tank Status
Task ID	CHAR(10)	task_id	Unique ID for a particular sampling task.	Constituent Verification, Sample, Sample Authorization, Task

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FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Task Manager	CHAR(25)	task_manager	Name of the person responsible for the task implementation.	Task
Temperature	NUMBER	temperature	The temperature (degrees C) of the river where the reading was taken. This the mean value reported by USGS.	River Characteristics
Temperature of Sample	NUMBER(4,1)	temp_of_samp	Temperature (degrees C) of the organism at the time the specimen was collected. Format is 999.9. If specified, value must be between -40 and 65.	Biota Sample
Test Procedure	CHAR(15)	anal_test_proc	Specific test procedure. Use "NA" if the test is completely described by the combination of Analysis Protocol, Analysis Class, and Analysis Technique.	Analysis Method
Texture	CHAR(6)	texture	The texture of the sample. Accepted values are FINE, MEDIUM, or COARSE.	Biota Result, Biota Result Change, Soil Result, Soil Result Change
Through	DATE	offline_date	Date when meteorologic station went offline.	Meteorologic Station
Total Analytical Error	NUMBER	total_anal_error	A lab-specific value, dependent on the chosen analysis methods, representing all error that could possibly be introduced into the sample while at the analytical laboratory.	Air Monitoring Result, Air Monitoring Result Change, Biota Result, Biota Result Change, GW Result, GW Result Change, Soil Result, Soil Result Change, SW Result, SW Result Change
Total Error	NUMBER	total_error	A measure of the total error from any source of error, including counting error, in the Value Reported.	Air Monitoring Result, Air Monitoring Result Change, Biota Result, Biota Result Change, GW Result, GW Result Change, Soil Result, Soil Result Change, SW Result, SW Result Change
Total Gravel Percent	NUMBER(5,2)	total_gravel_pct	Sum of Total Gravel Percent, Boulder Percent, Large Cobble Percent, Small Cobble Percent, Very Coarse Pebble Percent, Coarse Pebble Percent, Medium Pebble Percent, Fine Pebble Percent, and Very Fine Pebble Percent.	Particle
Total Jet-Pumped Liquid	NUMBER(5,1)	total_jet_pumped_liquid	Amount of liquid jet pumped from the tank (kgal). Format is 9999.9. If specified, value must be >= 0.	Waste Tank Status

FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Total Mud Percent	NUMBER(5,2)	total_mud_pcmt	Sum of Total Mud Percent, Silt Percent, Clay Percent, and Pan Percent.	Particle
Total Sand Percent	NUMBER(5,2)	total_sand_pcmt	Sum of Total Sand Percent, Very Coarse Sand Percent, Coarse Sand Percent, Medium Sand Percent, Fine Sand Percent, and Very Fine Sand Percent.	Particle
Total Waste Volume	NUMBER(4)	total_waste _volume	Total volume of waste in the tank (kgal). If specified, value must be >= 0.	Waste Tank Status
Training Requirement	CHAR(240)	training _requirement	Identifies any extra sampling training required for the task.	Task
Transform Code	CHAR(5)	transform_code	Identification of the coordinate conversion or transformation method.	Coordinate Transformation, Entity Point Location, Entity Point Location Change
Transform Description	CHAR(240)	transform_desc	A description of the Transform Code used.	Coordinate Transformation
Treatment, Storage and Disposal	CHAR(15)	tsd	Treatment, storage, and disposal groups/units identified in the Tri-Party Agreement (see Hanford Federal Facility Agreement and Consent Order, 2 vols., Washington State Department of Ecology, U.S. Environmental Protection Agency, and U.S. Department of Energy, Olympia, Washington, 1992), e.g., 244-AR Vault.	Sample Authorization
Type	CHAR(1)	eval_type	Indicates whether this field contains field or lab data.	Particle
Type	CHAR(10)	lab_dp_type	The type of laboratory data package (DP) received.	Laboratory Data Package
Type	CHAR(8)	met_parameter _type	Code for the type of meteorologic result.	Meteorologic Result
Type	CHAR(2)	samp_loc_type	The location type specified in the Sample Location column of the hardcopy SDEF form.	SIDEF
Type	CHAR(20)	samp_prep_type	Types of sample preparation that may be useful in understanding the analysis and associated results. Recommended entries include ACID LEACH, EXTRACTION, FILTERED SOILS, FILTRATE, FUSION, and WATER LEACH.	TCD Analysis

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FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Type	NUMBER(2)	site_type	A unique code to identify a site type.	Site, Site Type
Type	CHAR(18)	tank_type	Type of tank.	Waste Tank
Type	CHAR(20)	value_type	Indication of what the numeric value in the Value Reported field represents.	TCD Analysis Result, TCD Analysis Result Change
Uncertainty Type	CHAR(30)	inventory_uncertainty_type	Type of uncertainty calculated for the inventory record.	Tank Inventory Uncertainty
Uncertainty Units	CHAR(10)	uncertainty_units	Engineering units of the uncertainty value. If specified, Uncertainty Value must also be specified.	TCD Analysis Result, TCD Analysis Result Change
Uncertainty Value	NUMBER	uncertainty_value	Primary measure of uncertainty associated with the analysis result value. If specified, Uncertainty Units must also be specified.	TCD Analysis Result, TCD Analysis Result Change
Under Review Flag	CHAR(1)	under_review_flag	If this data record is currently or was ever under review, enter "Y"; otherwise, leave the field blank.	TCD Analysis Result, TCD Analysis Result Change, TCD Sample
Units	CHAR(10)	inventory_uncertainty_units	Engineering units of the uncertainty value.	Tank Inventory Uncertainty
Units	CHAR(10)	inventory_units	Engineering units associated with the inventory quantity.	Tank Inventory
Used By	CHAR(20)	used_by	Identifies the person, group or computer software that uses this entry.	Constituent Synonym, Laboratory Procedure
User Account	CHAR(8)	user_account	Your user account name (as entered when you log into the HEIS Sequent).	SIDEF
Validation Level	CHAR(2)	validation_level	Level to which this result was validated and/or verified.	Air Monitoring Result, Air Monitoring Result Change, Biota Result, Biota Result Change, GW Result, GW Result Change, Soil Result, Soil Result Change, SW Result, SW Result Change
Value	NUMBER	inventory_uncertainty_value	Measure of uncertainty associated with an inventory calculation.	Tank Inventory Uncertainty

FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Value Reported	NUMBER	value_rptd	Result associated with the analysis for this constituent. If a value is specified, the Analysis Units Reported must also be specified.	Air Monitoring Result, Air Monitoring Result Change, Biota Result, Biota Result Change, GW Result, GW Result Change, Soil Result, Soil Result Change, SW Result, SW Result Change, TCD Analysis Result, TCD Analysis Result Change
Value Units	CHAR(10)	met_value_rptd_units	Engineering units associated with the value reported.	Meteorologic Result
Value Units	CHAR(10)	value_units	Engineering units associated with the value reported.	TCD Analysis Result, TCD Analysis Result Change
Verification Date	DATE	verification_date	Date of verification. Format is MM/DD/YYYY. If specified, date must be >= Hyd Head Date/Time.	Hydraulic Head, Hydraulic Head Change, Other Well Location
Verification Document Location	CHAR(240)	verif_doc_loc	The location of the verification document.	Entity Point Location, Entity Point Location Change, Other Coordinate Location
Verification Location	CHAR(150)	verification_loc	Location of the verification documentation.	Other Well Location
Verified	CHAR(3)	verified	The person (initials) or organization that verified the record.	Hydraulic Head, Hydraulic Head Change, Other Well Location
Verified By	CHAR(20)	verified_by	The initials or name of the person or organization that verified the coordinates.	Entity Point Location, Entity Point Location Change, Other Coordinate Location
Verify Date	DATE	verif_date	Date of verification.	Entity Point Location, Entity Point Location Change, Other Coordinate Location
Verify Method	CHAR(10)	verif_mthd	How the coordinates were verified.	Entity Point Location, Entity Point Location Change, Other Coordinate Location
Verify Number	CHAR(20)	verif_num	Identification number associated with a location calculation.	Entity Point Location, Entity Point Location Change, Other Coordinate Location

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FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Verify Result	CHAR(10)	verif_result	Result of the verification.	Entity Point Location, Entity Point Location Change, Other Coordinate Location
Vertical Survey Precision Level	CHAR(8)	vert_survey_precision_level	An indicator of the vertical accuracy of the survey used to establish the elevation at the well.	Well Elevation, Well Elevation Change
Very Coarse Pebble Percent	NUMBER(5,2)	very_coarse_pebble_pcmt	Lab analysis or geologist field estimate for percentage of sample composed of particles with a diameter between 32 and 64 mm.	Particle
Very Coarse Pebble Weight	NUMBER(6,2)	very_coarse_pebble_wt	Lab analysis weight, in grams, for particles with a diameter between 32 and 64 mm. Format is 9999.99. If specified, value must be >= 0.	Particle
Very Coarse Sand Percent	NUMBER(5,2)	very_coarse_sand_pcmt	Lab analysis or geologist field estimate for percentage of sample composed of particles with a diameter between 1 and 2 mm.	Particle
Very Coarse Sand Weight	NUMBER(6,2)	very_coarse_sand_wt	Lab analysis weight (g) for particles with a diameter between 1 and 2 mm. Format is 9999.99. If specified, value must be >= 0.	Particle
Very Fine Pebble Percent	NUMBER(5,2)	very_fine_pebble_pcmt	Lab analysis or geologist field estimate for percentage of sample composed of particles with a diameter between 2 and 4 mm.	Particle
Very Fine Pebble Weight	NUMBER(6,2)	very_fine_pebble_wt	Lab analysis weight (g) for particles with a diameter between 2 and 4 mm. Format is 9999.99. If specified, value must be >= 0.	Particle
Very Fine Sand Percent	NUMBER(5,2)	very_fine_sand_pcmt	Lab analysis or geologist field estimate for percentage of sample composed of particles with a diameter between .0625 and .125 mm.	Particle
Very Fine Sand Weight	NUMBER(6,2)	very_fine_sand_wt	Lab analysis weight (g) for particles with a diameter between .0625 and .125 mm. Format is 9999.99. If specified, value must be >= 0.	Particle
Waste Material	CHAR(6)	waste_material	Code to describe the waste present in the tank	Waste Tank Status

FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Waste Tank Status Date	DATE	waste_tank _status_date	Date for which the status information was taken or should be accurate. Format is MM/DD/YYYY.	Waste Tank Status
Waste Tank Temperature	NUMBER	waste_tank _temperature	Temperature (degree F) of the waste tank, reported in the Monthly Waste Tank Farm Surveillance and Waste Status Report (C-EP-0182-01 et seq., Westinghouse Hanford Company, Richland, WA [1988]).	Waste Tank Status
Weather Condition	CHAR(80)	weather _condition	Description of the weather conditions during the sample collection.	Air Monitoring Sample
Well	CHAR(15)	well_name	Unique well, vadose borehole, or test pit identifier.	Casing Construction, Drill, Driller's Log, Geologic Summary, GW Result, GW Result Change, GW Sample, Hydraulic Head, Hydraulic Head Change, Other Well Location, Particle, Previous Well Name, Pump, Seal Fill, SDEF, Soil Sample, Well, Well Assignment, Well Change, Well Elevation, Well Elevation Change, Well Log Location, Well Screen
Well Assignment Begin Date	DATE	well_assignment _begin_date	The date and time the well was assigned to this Well Assignment Type. Format is MM/DD/YYYY HH:MI:SS (24-hour clock). If both are specified, Well Assignment Begin Date must be <= Well Assignment End Date.	Well Assignment
Well Assignment End Date	DATE	well_assignment _end_date	The date and time the well was no longer assigned to this Well Assignment Type. No value in this field indicates that the Well Assignment Type for this record is still in effect. Format is MM/DD/YYYY HH:MI:SS (24-hour clock). If both are specified, Well Assignment End Date must be >= Well Assignment Begin Date.	Well Assignment
Well Assignment ID	CHAR(15)	well_assignment _id	Contains either an Aggregate Area ID, an Operable Unit ID, a Site ID or a Project ID depending on the Well Assignment Type.	Well Assignment
Well Assignment Type	CHAR(4)	well_assignment _type	Type of entity to which the well is assigned.	Well Assignment

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FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Well Comment	CHAR(50)	well_comment	Comment about the well.	Well, Well Change
Well Completion Depth	NUMBER (22,2)	well_completion _depth	Depth below land surface at which the well was completed. This depth is less than or equal to the total drilled depth of the well. Format is 99999.99. If specified, value must be >= 0 and Well Completion Depth Units must also be specified. If both are specified, Well Completion Depth must be >= Initial Water Depth.	Well, Well Change
Well Completion Depth Units	CHAR(10)	well_completion _depth_units	Units of Well Completion Depth. If specified, Well Completion Depth must also be specified.	Well, Well Change
Well Completion Elev Feet	NUMBER (22,2)	well_completion _elev_ft	The completed depth of the well expressed as an elevation (ft). This value is calculated from the land surface elevation and the Well Completion Depth. Format is 99999.99.	Well, Well Change
Well Completion Elev Meters	NUMBER (22,2)	well_completion _elev_meters	The completed depth of the well expressed as an elevation (m). This value is calculated from the land surface elevation and the Well Completion Depth. Format is 99999.99.	Well, Well Change
Well Diameter Inches	NUMBER (22,2)	well_diam	Nominal diameter of the smallest permanent casing in the well (in.). Format is 999.99. If specified, value must be >= 0. If both are specified Well Diameter Inches must be <= Hole Diameter Inches.	Well, Well Change
Well Log Type	CHAR(15)	well_log_type	The type of log associated with the Well.	Well Log Location
Well Ref No.	NUMBER(9)	well_rn	A system-generated identifier for the well, vadose borehole, or testpit. This number remains permanently assigned to a well even if the name of the well is changed.	Well, Well Change

FORM FIELD NAME	TYPE(SIZE)	DATABASE FIELD NAME	DEFINITION	LOCATED IN
Well Status	CHAR(2)	well_status	The usability status of the well.	Well, Well Change
Well Type	CHAR(2)	well_type	Indicates why the well was initially drilled.	Well, Well Change
Well Verticality	CHAR(40)	well_verticality	Amount by which the well wanders from the vertical in degrees.	Well, Well Change
Wind Condition	CHAR(80)	wind_condition	Description of the general wind conditions during the sample collection.	Air Monitoring Sample
Zip Code	CHAR(10)	zip_code	Zip code portion of the address. Format is 5 digits (99999) or 10 digits (99999-9999).	Analysis Site, Laboratory

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APPENDIX B

DATA QUALIFIERS

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B1.1 CLP Data Qualifiers - Organics (Format Type CLP, Form Numbers 1A, 1B, 1C, 1D, 1F)

B1.2 CLP Data Qualifiers - Inorganics (Format Type CLP, Form Number I)

B2.1 LAS Data Qualifiers

B2.2 LAS Data Qualifiers (for Lab Code "US Test" only)

Table B1.1. CLP Data Qualifiers - Organics (Format Type CLP, Form Numbers 1A, 1B, 1C, 1D, 1F).

Qualifier	Definition
B	The analyte is found in the associated blank as well as in the sample. It indicates possible contamination of the blank and warns the data user to take appropriate action. Should be replaced by "J" during validation.
D	Analysis was performed at a secondary dilution factor.
E	Identifies compounds whose concentrations exceed the calibration range of the GC/MS for that specific analysis.
J	The associated numerical value is an estimated quantity. The mass spectral data indicate the presence of a compound that meets the identification criteria, but the result is less than the contract-required quantitation limit and greater than zero.
NJ	Presumptive evidence of the presence of the material at an estimated quantity.
R	The data are unusable.
U	Undetected - Analysis did not detect the material. The associated numerical value is the contract-required quantitation limit corrected for dilution and percent moisture.
UJ	The material was analyzed for but was not detected. The contract-required quantitation limit is estimated.

GC/MS = gas chromatograph/mass spectrometer

Table B1.2. CLP Data Qualifiers - Inorganics (Format Type CLP, Form Number I).

Qualifier	Definition
B	Reported value is less than the contract-required quantitation limit but is greater than the instrument detection limit. Should be replaced by "J" during data validation.
BJ	Reported value is less than the instrument standardization but is greater than the instrument detection limit. Should be replaced by "J" during data validation.
J	The analyte was analyzed for and detected. The associated numerical value is an estimated quantity usable for decision-making processes.
N	Spike sample recovery is outside control limits. Presumptive evidence of the presence of the analyte.
R	The data are unusable.
U	Undetected - Analyte is below the detection limits of the methods and instruments used. The associated numerical value is the calculated contract-required quantitation limit based on wet weight of the soil sample. The contract-required quantitation limit based on dry weight (stated in the work plan) is higher.
UJ	The material was analyzed for but was not detected. The contract-required quantitation limit is estimated.

Table B2.1. LAS Data Qualifiers.
(sheet 1 of 2)

Qualifier	Definition
L	Used when an analytical result below a CRQL and at or above an MDL is reported.
U	Indicates compound was analyzed for but not detected. The sample quantitation limit is corrected for dilution and for percent moisture.
J	Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed, or when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the sample quantitation limit and greater than zero. The sample quantitation limit is corrected for dilution and for percent moisture as in the "U" flag.
C	Applies to pesticide results where the identification has been confirmed by GC/MS. Single component pesticides ≥ 10 ng/ul in the final extract shall be confirmed by GC/MS.
B	Used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action. This flag must be used for a TIC as well as for a TCL compound.
E	Identifies compounds whose concentration exceed the calibration range of the GC/MS for that specific analysis. This flag does <u>not</u> apply to pesticides/PCBs analyzed by GC/EC methods. If one or more compounds have a response greater than full scale, the sample or extract must be diluted and reanalyzed. If the dilution of the extract causes any compounds identified in the first analysis to be below the calibration range in the second analysis, then the results of both analyses shall be reported.
D	Identifies all compounds identified in an analysis at a secondary dilution factor.
A	Identifies a TIC as a suspected aldol-condensation product.
X	Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the Sample Data Summary Package and Case Narrative. Begin by using "X." If more than one flag is required, use "Y" and "Z" as needed.

Table B2.1. LAS Data Qualifiers.
(sheet 2 of 2)

NOTE: The qualifiers "B" and "U" are mutually exclusive; therefore, there can never be a qualifier of "BU."

CRQL = contractually required quantitation limit
EC = eddy current (flowmeter)
GC = gas chromatograph
MDL = maximum detectable limit
MS = mass spectrometer
PCB = polychlorinated biphenyl(s)
TCL = target compound list
TIC = tentatively identified compound

Reference - EPA (1988a)

Table B2.2. LAS Data Qualifiers (for Lab Code "US Test" only).

Qualifier	Definition
L	Used in reporting radiological data in which the data values are less than or equal to the counting error.
<	Used in reporting data that are less than the contractual detection limit.
#	Used in reporting data that are less than the contractual detection limit but still quantifiable.
>	Used in reporting data that are greater than the contractual detection limit but not quantifiable above some upper limit.

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